Navigation Tools: Click on the “Table of Contents” below, or use the Bookmarks to the left.

INTRODUCTION

How to Use This Manual

This manual is divided into multiple sections. The first page of each section is marked with a black tab that lines up with its corresponding thumb index tab on this page and the back cover. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

Each section includes:

1. A table of contents, or an exploded view index showing:
   - Parts disassembly sequence.
   - Bolt torques and thread sizes.
   - Page references to descriptions in text.
2. Disassembly/assembly procedures and tools.
3. Inspection.
4. Testing/troubleshooting.
5. Repair.
6. Adjustments.

Safety Messages

Your safety, and the safety of others, is very important. To help you make informed decisions, we have provided safety messages, and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgment.

You will find important safety information in a variety of forms including:

- **Safety Labels** — on the vehicle.
- **Safety Messages** — preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

⚠ DANGER	You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ WARNING	You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ CAUTION	You CAN be HURT if you don't follow instructions.

- **Instructions** — how to service this vehicle correctly and safely.

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at anytime without notice. No part of this publication may be reproduced, or stored in a retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, images, and tables.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

First Edition 10/2011
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Specifications apply to USA and Canada

Honda Motor Co., Ltd.
Service Publication Office

As sections with * include SRS and IMA components; special precautions are required when servicing.

marked sections are not included in this manual, see Volume 2.

General Information
Specifications
Maintenance
*Engine Electrical
*Engine Mechanical
Engine Cooling
*Fuel and Emissions
IMA System
*Transaxle
*Steering
Suspension (Including TPMS)
*Brakes (Including VSA)
*Body
*Heating, Ventilation, and Air Conditioning
*Body Electrical
*Audio, Navigation, and Telematics
*Restraints

2011-12 Honda CR-Z

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BISHKO AUTOMOBILE LITERATURE

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

General Information

General Information

General Information
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Chassis and Paint Codes - '11 Model

Vehicle Identification Number

JHM ZF1 C 4 * B S 000001

a b c d e f g h

a. Manufacturer, Make and Type of Vehicle
JHM: Honda Motor Co., Ltd.
Honda passenger vehicle

b. Line, Body and Engine Type
ZF1: CR-Z/LEA1

c. Body Type and Transmission Type
C: 2-door Hatchback/6-speed Manual
D: 2-door Hatchback/CVT

d. Vehicle Grade (Series)

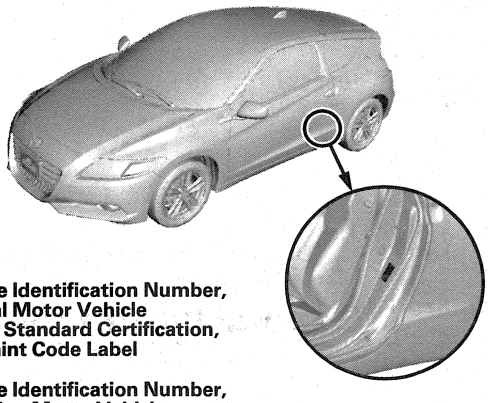
USA models	Canada models
4: CR-Z	6: CR-Z
6: CR-Z EX	

e. Check Digit

f. Model Year
B: '11

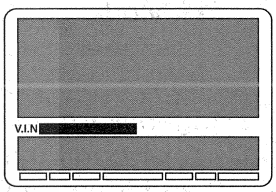
g. Factory Code
S: Suzuka Factory in Japan

h. Serial Number
000001—: USA models
800001—: Canada models



Vehicle Identification Number, Federal Motor Vehicle Safety Standard Certification, and Paint Code Label

Vehicle Identification Number, Canadian Motor Vehicle Safety Standard Certification, and Paint Code Label



Engine Number

LEA1 - 1000001

a b

a. **Engine Type**
LEA1: 1.5 L SOHC i-VTEC Sequential Multiport Fuel-injected engine
b. **Serial Number**

Motor Number

MF6 - 1000001

a b

a. **Motor Type**
MF6: DC brushless-3 phases
b. **Serial Number**

Transmission Number

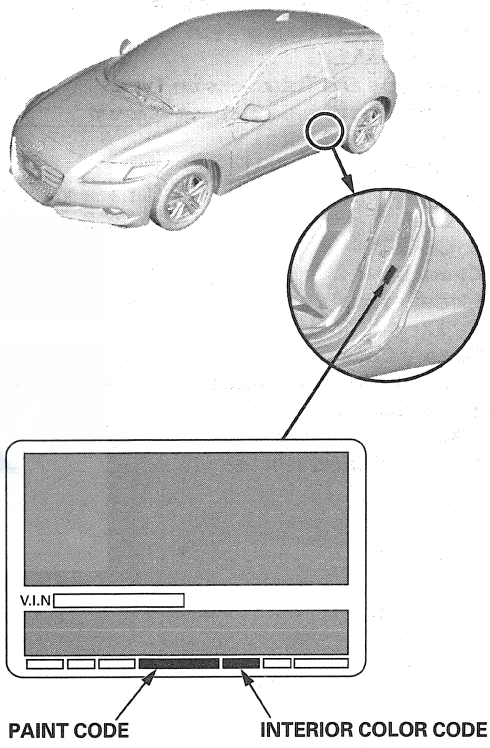
STXM - 1000001

a b

a. **Transmission Type**
STXM: 6-speed Manual
STYA: CVT
b. **Serial Number**

Paint Code

Code	Color	USA models	Canada models
NH-624P	Premium White Pearl	○	○
NH-642M	Storm Silver Metallic	○	○
NH-731P	Crystal Black Pearl	○	
BG-57P	North Shore Blue Pearl	○	○
R-81	Milano Red	○	○



Chassis and Paint Codes - '12 Model

Vehicle Identification Number

JHM ZF1 C 4 * C S 000001

a b c d e f g h

a. Manufacturer, Make and Type of Vehicle
JHM: Honda Motor Co., Ltd.
Honda passenger vehicle

b. Line, Body and Engine Type
ZF1: CR-Z/LEA1

c. Body Type and Transmission Type
C: 2-door Hatchback/6-speed Manual
D: 2-door Hatchback/CVT

d. Vehicle Grade (Series)

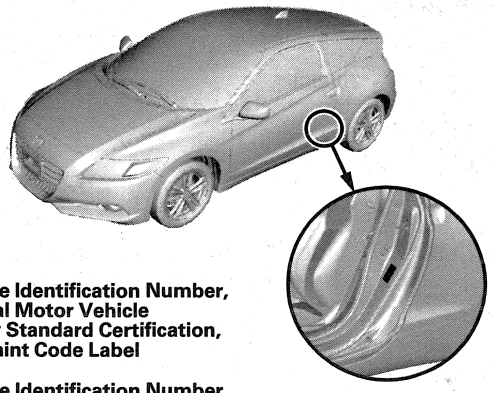
USA models	Canada models
4: CR-Z	6: CR-Z
6: CR-Z EX	

e. Check Digit

f. Model Year
C: '12

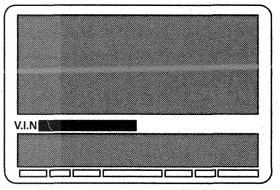
g. Factory Code
S: Suzuka Factory in Japan

h. Serial Number
000001—: USA models
800001—: Canada models



Vehicle Identification Number, Federal Motor Vehicle Safety Standard Certification, and Paint Code Label

Vehicle Identification Number, Canadian Motor Vehicle Safety Standard Certification, and Paint Code Label



Engine Number

LEA1 - 2000001

a b

a. **Engine Type**
LEA1: 1.5 L SOHC i-VTEC Sequential Multiport Fuel-injected engine
b. **Serial Number**

Motor Number

MF6 - 1000001

a b

a. **Motor Type**
MF6: DC brushless-3 phases
b. **Serial Number**

Transmission Number

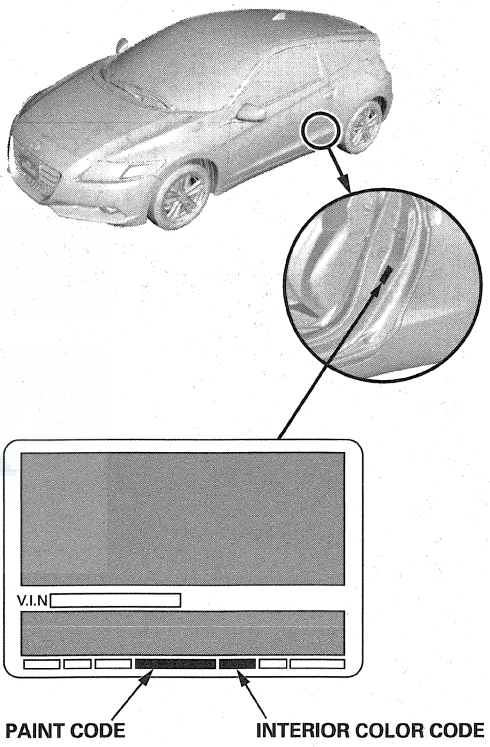
STXM - 2000001

a b

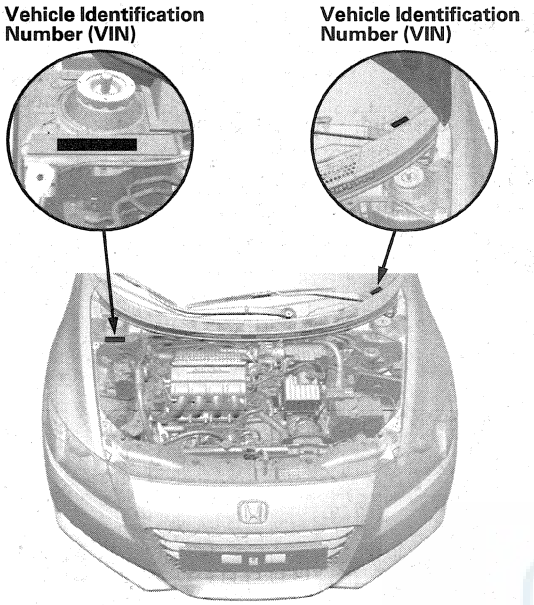
a. **Transmission Type**
STXM: 6-speed Manual
STYA: CVT
b. **Serial Number**

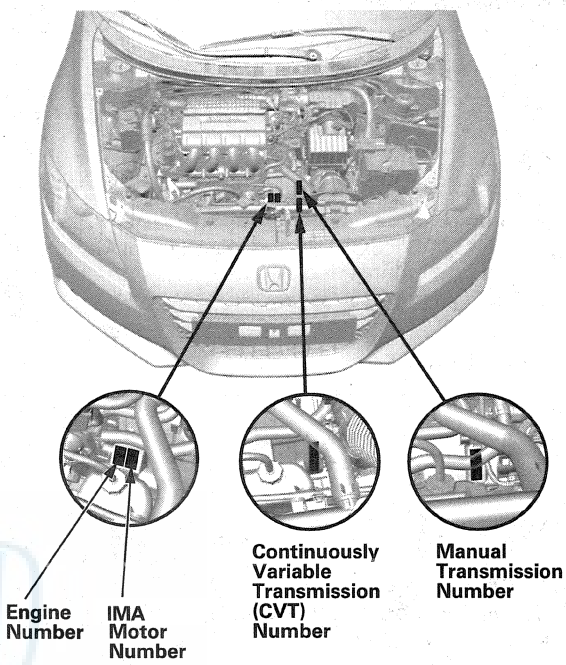
Paint Code

Code	Color	USA models	Canada models
NH-624P	Premium White Pearl	○	○
NH-642M	Storm Silver Metallic	○	○
NH-731P	Crystal Black Pearl	○	○
BG-57P	North Shore Blue Pearl	○	
R-81	Milano Red	○	○



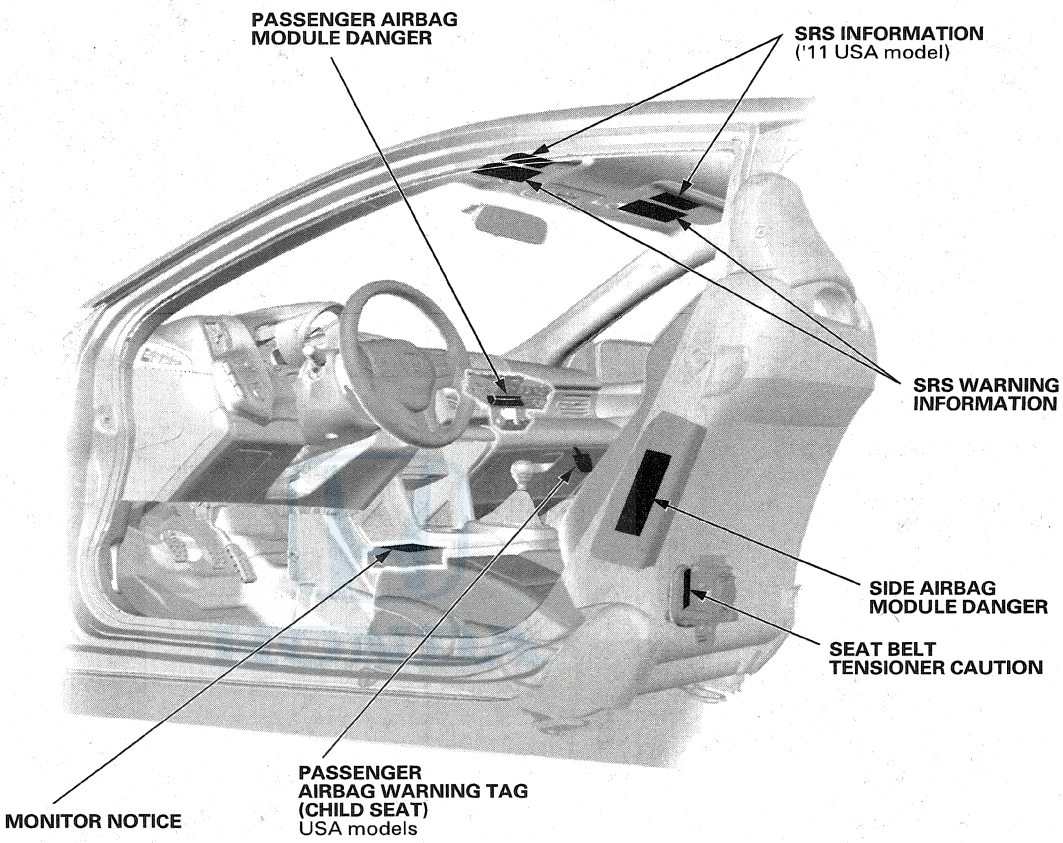
Identification Number Locations



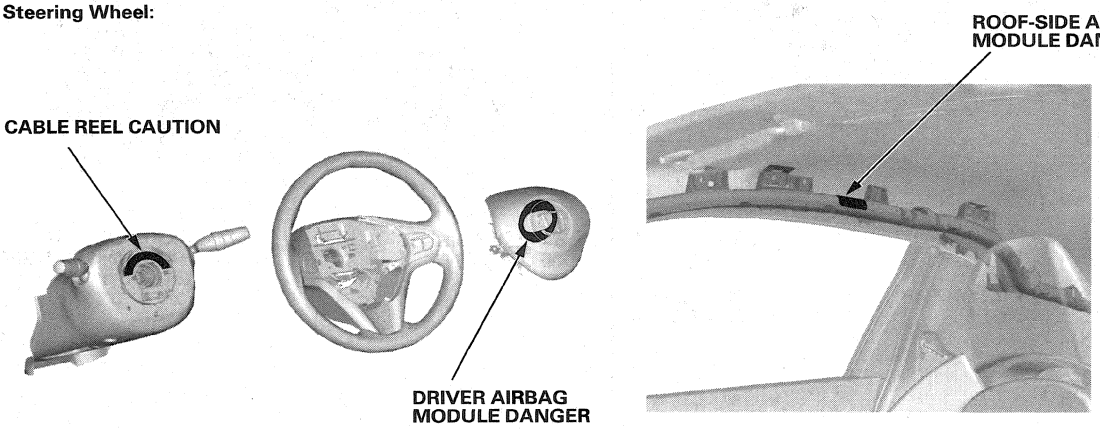


Danger/Warning/Caution Label Locations

Passenger's Compartment:



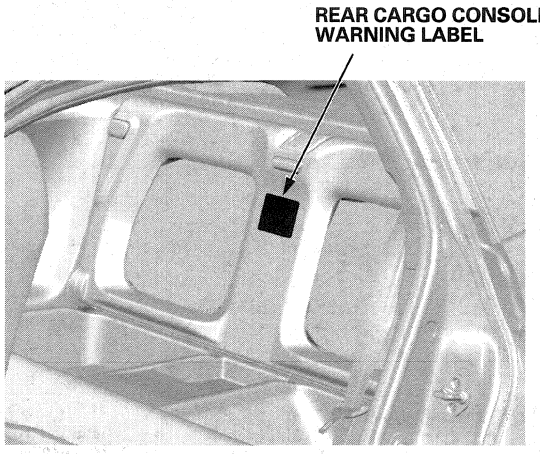
Steering Wheel:



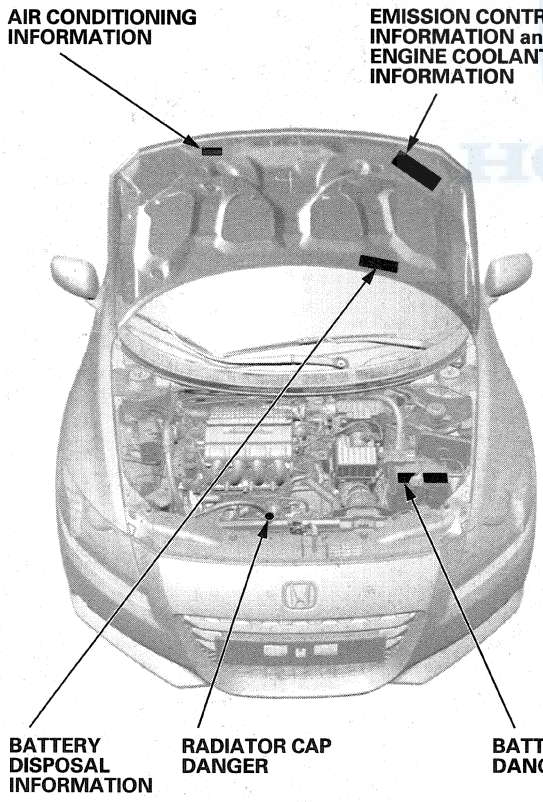
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Danger/Warning/Caution Label Locations (cont'd)

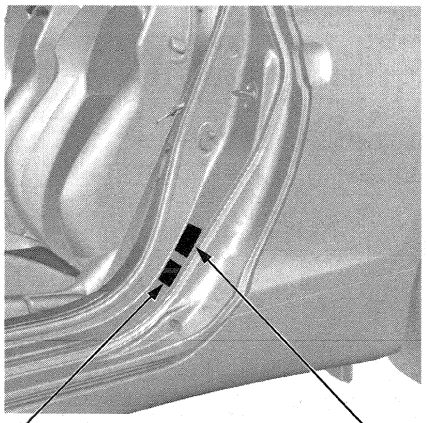
Rear Compartment:



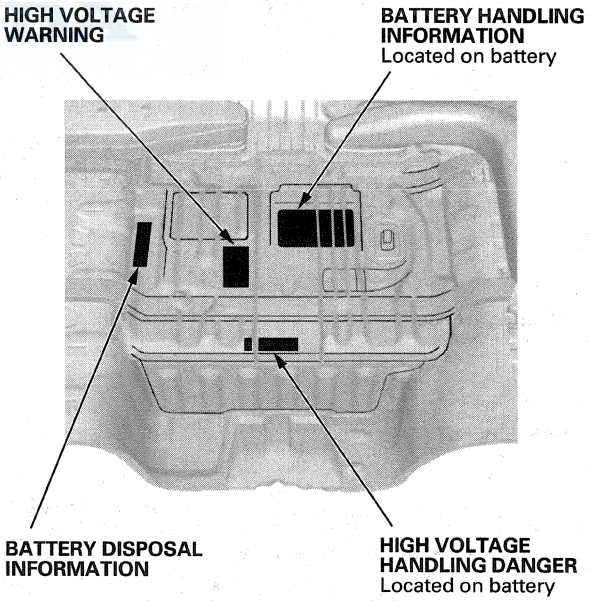
Engine Compartment:



Doorjamb Area:



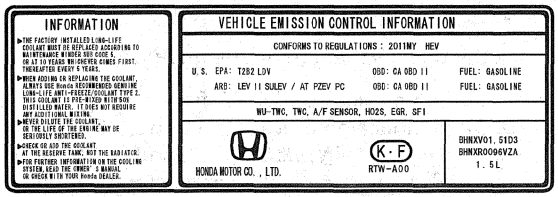
Cargo Area:



Under-Hood Emission Control Label

Emission Group Identification

Example:



'11 Model
CONFORMS TO REGULATIONS: 2011 MY HEV

'12 Model
CONFORMS TO REGULATIONS: 2012 MY HEV

Test Group and Evaporative Family

Test Group:

B HNX V 01.5 1D3
a b c d e

- **a. Model Year**
  B: '11
  C: '12
- **b. Manufacturer Subcode**
  HNX: Honda
- **c. Family Type**
  V: LDV
- **d. Displacement Group**
- **e. Sequence Characters**
  1D3: '11 model
  6D2: '12 model

Evaporative Family:

B HNX R 0096 VZA
a b c d e

- **a. Model Year**
  B: '11
  C: '12
- **b. Manufacturer Subcode**
  HNX: Honda
- **c. Family Type**
  R: Refueling
- **d. Canister Working Capacity Group**
- **e. Sequence Characters**
  VZA: '11 model
  VZB: '12 model

Lift and Support Points

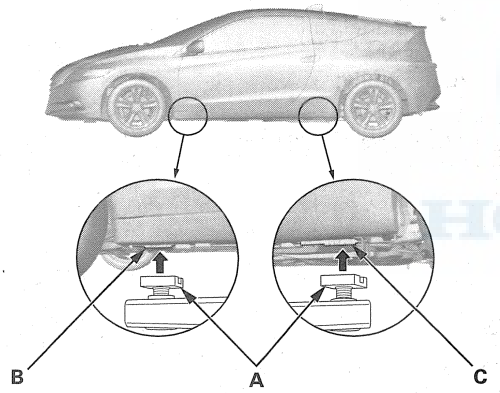
NOTE: If you are going to remove heavy components such as suspension or the IMA battery from the rear of the vehicle, first support the front of the vehicle with tall safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change, causing the vehicle to tip forward on the lift.

Vehicle Lift

1. Position the lift pads (A), under the vehicle's front support points (B) and rear support points (C).

NOTICE

- This vehicle has low ground clearance. To avoid damaging the vehicle, make sure there is enough clearance around the support points.
- Be sure the lift pads are properly placed to avoid damaging the vehicle.



2. Raise the lift a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the lift to its full height, and inspect the vehicle support points for solid contact with the lift pads.

Safety Stands

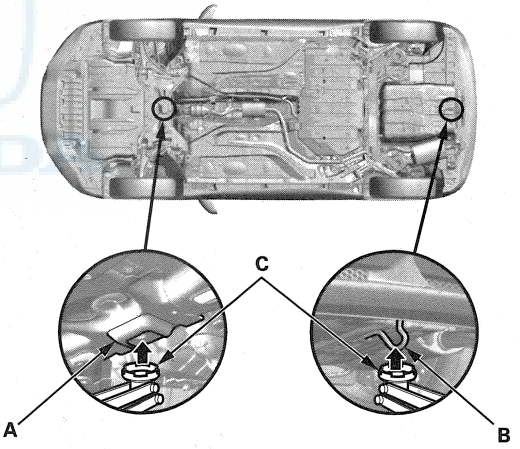
To support the vehicle on safety stands, use the same support points as for a vehicle lift. Always use safety stands when working on or under any vehicle that is supported only by a jack.

Floor Jack

1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in reverse for manual transmission, or in P for CVT.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or the rear jacking bracket (B). Center the jacking bracket on the jack lift platform (C), and jack up the vehicle high enough to fit the safety stands under it.

NOTICE

- This vehicle has low ground clearance. To avoid damaging the vehicle, make sure there is enough clearance around the support points.
- Be sure the floor jack is properly placed to avoid damaging the vehicle.



4. Position the safety stands under the support points, and adjust them so the vehicle is level side-to-side.
5. Lower the vehicle onto the stands.

Towing

If the vehicle needs to be towed, call a professional towing service. Never tow the vehicle behind another vehicle with just a rope or chain. It is very dangerous.

Emergency Towing

There are three popular methods of towing a vehicle.

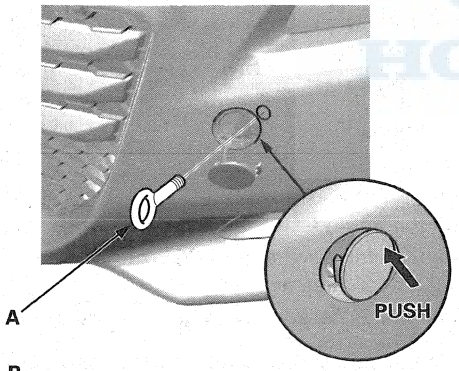
Flat-bed Tow Truck Equipment — The operator loads the vehicle on the back of a flat-bed tow truck. **This is the best way of transporting the vehicle.**

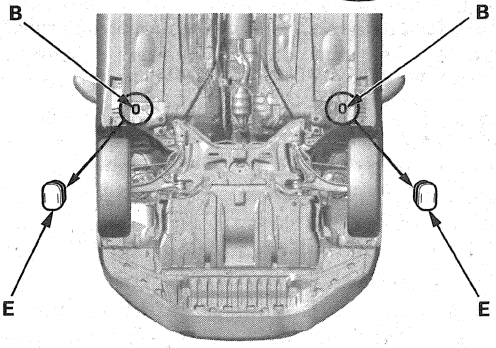
To accommodate the flat-bed tow truck equipment, the vehicle is equipped with a detachable front towing hook (A), front tie down hook slots (B), a rear towing hook (C), and rear tie down hook slots (D).

The towing hooks can be used with a winch to pull the vehicle onto the flat-bed tow truck, and the tie down hook slots can be used to secure the vehicle to the flat-bed tow truck.

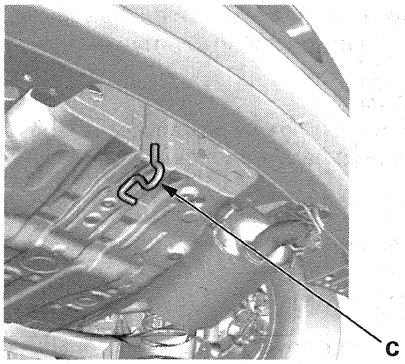
NOTE: The tie down hook slots has rubber plugs (E) over the openings. Be sure to reinstall the plugs after use.

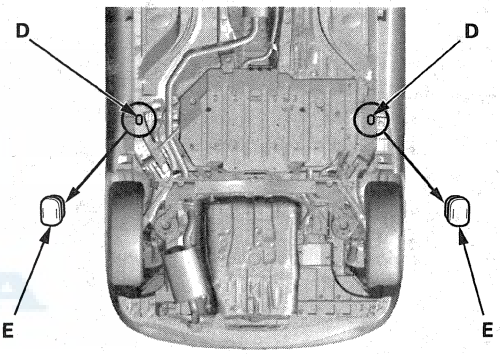
Front:





Rear:





(cont'd)

Towing (cont'd)

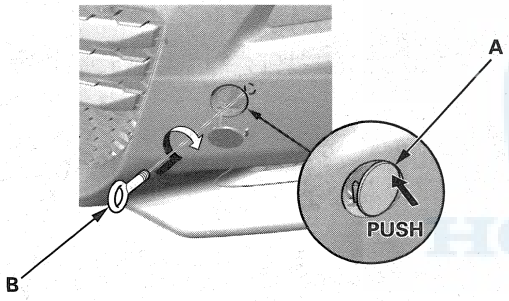
Front Towing Hook Installation

The detachable front towing hook is for towing very short distances, such as freeing the vehicle. The hook attaches to the anchor in the front bumper.

NOTICE

- To avoid damage to the vehicle, use the towing hook for straight flat ground towing only. Do not tow on an angle.
- Do not use the detachable tow hook as a tie down for securing the vehicle on a flat-bed tow truck. To secure the vehicle on a flat-bed tow truck, use the tie down hook slots provided.

1. Remove the cover (A) from the front bumper by pushing its edge.



2. Remove the detachable towing hook from the tool kit under the cargo area floor.
3. Screw in the detachable towing hook (B), and tighten it securely by hand.

Wheel Lift Equipment — The tow truck uses two pivoting arms that go under the tires (front or rear) and lifts them off the ground. The other two wheels remain on the ground. **This is an acceptable way of towing the vehicle.**

Sling-type Equipment — The tow truck uses metal cables with hooks on the ends. These hooks go around parts of the frame or suspension, and the cables lift that end of the vehicle off the ground. The vehicle's suspension and body can be seriously damaged if this method of towing is attempted. **This method of towing the vehicle is unacceptable.**

If the vehicle cannot be transported by a flat-bed tow truck, it should be towed with the front wheels off the ground. If the vehicle is damaged, and must be towed with the front wheels on the ground, or with all four wheels on the ground, do this:

Manual Transmission

- Release the parking brake.
- Shift the transmission to neutral.
- Leave the ignition switch in ACCESSORY (I) so the steering wheel does not lock.
- Make sure all accessories are turned off to minimize battery current draw.

CVT

- Release the parking brake.
- Start the engine.
- Shift to D, then to N.
- Turn off the engine.
- Leave the ignition switch in ACCESSORY (I) so the steering wheel does not lock.
- Make sure all accessories are turned off to minimize battery current draw.

It is best to tow the vehicle no farther than 50 miles (80 km), and keep the vehicle speed below 35 mph (55 km/h).

NOTICE

- Improper towing preparation will damage the transmission. Follow the above procedure exactly. If you cannot shift the transmission or start the engine (CVT model), the vehicle must be transported on a flat-bed tow truck.
- Trying to lift or tow the vehicle by the bumpers will cause serious damage. The bumpers are not designed to support the vehicle's weight.

Parts Marking

To deter vehicle theft, certain major components are marked with the vehicle identification number (VIN). Original parts have self-adhesive labels. Replacement body parts have generic self-adhesive labels. These labels should not be removed. The original engine or transmission VIN plates are not transferable to the replacement engine or transmission.

NOTE: Be careful not to damage the parts marking labels during body repair. Mask the labels before repairing the part.

Service Precautions

IMA System

The CR-Z has an Auto-Stop system that shuts the engine off under certain conditions to improve fuel economy when the vehicle comes to a stop. In Auto-Stop mode, driver input, such as releasing the brake pedal, causes the engine to restart.

Before servicing the CR-Z, turn the ignition switch to LOCK (0), and remove the key so the engine cannot be started.

Before doing any service on the CR-Z's IMA system, make sure to turn the battery module switch OFF and wait at least 5 minutes before working on the vehicle (see page 12-3).

Specifications

Standards and Service Limits 2–2

Torque Summary
Torque Specifications 2–12

Design Specifications 2–17
Body Specifications 2–19

HONDA

Standards and Service Limits

Engine Electrical

Item	Measurement	Qualification	Standard or New	Service Limit
Ignition coil	Rated voltage		12 V	
	Firing order		1−3−4−2	
Spark plug	Type	NGK ('11 model)	DIFR6A13G	
		NGK ('12 model)	DIFR6D13	
		DENSO	DK20PR-D13	
	Gap		1.2−1.3 mm (0.047−0.051 in)	−
Ignition timing	At idle Check the red mark	M/T in neutral, CVT in N or P	10 ±2 ° BTDC	
Starter	Output		1.0 kW	
	Commutator mica depth		0.40−0.50 mm (0.0157−0.0197 in)	0.15 mm (0.0059 in)
	Commutator runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	Commutator O.D.		28.0−28.1 mm (1.102−1.106 in)	27.5 mm (1.083 in)
	Brush length		11.1−11.5 mm (0.437−0.453 in)	4.3 mm (0.169 in)

Engine Assembly

Item	Measurement	Qualification	Standard or New	Service Limit
Compression	Pressure (checked with engine starter cranking at wide-open throttle)	Minimum	−	980 kPa (9.99 kgf/cm², 142.1 psi)
		Maximum variation	−	200 kPa (2.04 kgf/cm², 29.0 psi)

Cylinder Head

Item	Measurement	Qualification	Standard or New	Service Limit
Head	Warpage		0.08 mm (0.003 in) max.	−
	Height		119.9−120.1 mm (4.720−4.728 in)	−
Camshaft	End play		0.05−0.25 mm (0.0020−0.0098 in)	0.5 mm (0.020 in)
	Camshaft-to-holder oil clearance		0.045−0.084 mm (0.00177−0.00331 in)	0.100 mm (0.00394 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
	Cam lobe height	Intake PRI	34.945 mm (1.37578 in)	−
		Intake SEC	30.529 mm (1.20193 in)	−
		Exhaust	35.614 mm (1.40212 in)	−
Valve	Clearance (cold)	Intake	0.15−0.19 mm (0.006−0.007 in)	−
		Exhaust	0.26−0.30 mm (0.011−0.011 in)	−
	Stem O.D.	Intake	5.48−5.49 mm (0.2157−0.2161 in)	5.45 mm (0.2146 in)
		Exhaust	5.45−5.46 mm (0.2146−0.2150 in)	5.42 mm (0.2134 in)
	Stem-to-guide clearance	Intake	0.02−0.05 mm (0.0008−0.0020 in)	0.08 mm (0.0031 in)
		Exhaust	0.05−0.08 mm (0.0020−0.0031 in)	0.11 mm (0.0043 in)
Valve seat	Width	Intake	0.850−1.150 mm (0.03346−0.04528 in)	1.60 mm (0.0630 in)
		Exhaust	1.250−1.550 mm (0.04921−0.06102 in)	2.00 mm (0.0787 in)
	Stem installed height	Intake	46.1−46.5 mm (1.815−1.831 in)	46.8 mm (1.843 in)
		Exhaust	46.2−46.6 mm (1.819−1.835 in)	46.9 mm (1.846 in)
Valve guide	Installed height	Intake	15.85−16.35 mm (0.6240−0.6437 in)	−
		Exhaust	15.85−16.35 mm (0.6240−0.6437 in)	−
Rocker arm	Arm-to-shaft clearance	Intake	0.019−0.050 mm (0.00075−0.00197 in)	0.08 mm (0.0031 in)
		Exhaust	0.019−0.050 mm (0.00075−0.00197 in)	0.08 mm (0.0031 in)

Engine Block

Item	Measurement	Qualification	Standard or New	Service Limit
Block	Warpage of deck		0.07 mm (0.002 in) max.	—
	Bore diameter		73.000—73.015 mm (2.87401—2.87460 in)	73.065 mm (2.87657 in)
	Bore taper	Difference between first and third measurement	—	0.05 mm (0.0020 in)
	Reboring limit		—	0.25 mm (0.0098 in)
Piston	Skirt O.D. at 16 mm (0.63 in) from bottom of skirt		72.98—72.99 mm (2.8732—2.8736 in)	72.97 mm (2.8728 in)
	Clearance in cylinder		0.010—0.035 mm (0.00039—0.00138 in)	0.05 mm (0.0020 in)
Piston ring	Ring-to-groove clearance	Top (RIKEN)	0.065—0.090 mm (0.003—0.003 in)	0.15 mm (0.005 in)
		Top (NIPPON)	0.061—0.090 mm (0.003—0.003 in)	0.15 mm (0.005 in)
		Second	0.030—0.055 mm (0.002—0.002 in)	0.12 mm (0.004 in)
	Ring end gap	Top	0.15—0.30 mm (0.006—0.011 in)	0.60 mm (0.023 in)
		Second (RIKEN)	0.30—0.42 mm (0.012—0.016 in)	0.65 mm (0.025 in)
		Second (NIPPON)	0.35—0.50 mm (0.014—0.019 in)	0.65 mm (0.025 in)
		Oil	0.20—0.70 mm (0.008—0.027 in)	0.80 mm (0.031 in)
Piston pin	O.D.		17.996—18.000 mm (0.70850—0.70866 in)	—
	Pin-to-piston clearance		0.010—0.017 mm (0.00039—0.00067 in)	—
Connecting rod	Pin-to-rod clearance		-0.036—-0.019 mm (-0.00142—-0.00075 in)	—
	Small end bore diameter		17.964—17.977 mm (0.70724—0.70775 in)	—
	Big end bore diameter		43.0 mm (1.693 in)	—
	End play		0.15—0.35 mm (0.006—0.013 in)	0.40 mm (0.015 in)
Crankshaft	Main journal diameter		49.976—50.000 mm (1.96756—1.96850 in)	—
	Rod journal diameter		39.976—40.000 mm (1.57386—1.57480 in)	—
	Rod/main journal taper		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	Rod/main journal out-of-round		0.005 mm (0.00020 in) max.	0.010 mm (0.00039 in)
	End play		0.10—0.35 mm (0.0039—0.0138 in)	0.45 mm (0.0177 in)
	Total runout		0.03 mm (0.0012 in) max.	0.04 mm (0.0016 in)
Crankshaft bearing	Main bearing-to-journal oil clearance		0.016—0.034 mm (0.00063—0.00134 in)	0.050 mm (0.00197 in)
	Connecting rod bearing-to-journal oil clearance		0.020—0.038 mm (0.00079—0.00150 in)	0.050 mm (0.00197 in)

Engine Lubrication

Item	Measurement	Qualification	Standard or New	Service Limit
Engine oil	Capacity	Engine overhaul	4.2 L (4.4 US qt)	—
		Oil change including filter	3.6 L (3.8 US qt)	—
		Oil change without filter	3.4 L (3.6 US qt)	—
Oil pump	Inner rotor-to-outer rotor radial clearance		0.06—0.16 mm (0.003—0.006 in)	0.20 mm (0.007 in)
	Pump housing-to-outer rotor radial clearance		0.100—0.175 mm (0.004—0.006 in)	0.20 mm (0.007 in)
	Pump housing-to-rotor axial clearance		0.02—0.06 mm (0.001—0.002 in)	0.15 mm (0.005 in)
	Oil pressure with oil temperature at 176 °F (80 °C)	At idle	69 kPa (0.70 kgf/cm², 10.0 psi) min.	—
		At 3,000 rpm	343 kPa (3.50 kgf/cm², 49.8 psi) min.	—

Standards and Service Limits

Cooling System

Item	Measurement	Qualification	Standard or New	Service Limit
Radiator	Coolant capacities (including engine, heater, hoses, and reservoir) (M/T model)	Engine overhaul	4.92 L (1.300 US gal)	—
		Coolant change	4.42 L (1.168 US gal)	—
	Coolant capacities (including engine, heater, hoses, and reservoir) (CVT model)	Engine overhaul	4.84 L (1.279 US gal)	—
		Coolant change	4.35 L (1.149 US gal)	—
	Coolant type		Honda Lomg Life Antifreeze/Coolant Type 2	
Coolant reservoir	Coolant capacity		0.44 L (0.116 US gal)	—
Radiator cap	Opening pressure		93.3—122.7 kPa (0.951—1.251 kgf/cm², 13.53—17.79 psi)	—
Thermostat	Opening temperature	Begins to open	169—176 °F (76—80 °C)	—
		Fully open	194 °F (90 °C)	—
	Valve lift at fully open		8.0 mm (0.315 in) min.	—
Drive belt	Tension		Auto-tensioner	

Fuel and Emissions

Item	Measurement	Qualification	Standard or New	Service Limit
Fuel pressure regulator	Pressure with fuel pressure gauge connected		320—370 kPa (3.3—3.8 kgf/cm², 47—54 psi)	—
Fuel tank	Capacity		40 L (10.6 US gal)	—
Engine idle	Idle speed without load	M/T in neutral, CVT in N or P	750 ± 50 rpm	
	Idle speed with high electrical load	M/T in neutral, CVT in N or P	750 ± 50 rpm	

Clutch

Item	Measurement	Qualification	Standard or New	Service Limit
Clutch pedal	Height from floor	With clutch pedal pad cover	203.3 mm (8.004 in)	—
		Without clutch pedal pad cover	201.5 mm (7.933 in)	—
	Stroke		120—130 mm (4.72—5.12 in)	—
	Play		4.5—18.5 mm (0.177—0.728 in)	—
	Disengagement height from the floor	With clutch pedal pad cover	117.5 mm (4.626 in)	—
		Without clutch pedal pad cover	115.7 mm (4.555 in)	—
Flywheel	Runout on clutch mating surface		0.05 mm (0.0020 in) max.	0.15 mm (0.0059 in)
Clutch disc	Rivet head depth		1.2—1.7 mm (0.047—0.067 in)	0.4 mm (0.016 in)
	Thickness		8.3—9.0 mm (0.327—0.354 in)	6.5 mm (0.256 in)
Pressure plate	Warpage		0.03 mm (0.001 in) max.	0.15 mm (0.005 in)
	Evenness of the height of the diaphragm spring fingers		0.6 mm (0.024 in) max.	0.8 mm (0.031 in)

Manual Transmission and M/T Differential

Item	Measurement	Qualification	Standard or New	Service Limit
Manual transmission fluid	Capacity: use Honda MTF	Fluid change	1.4 L (1.5 US qt)	—
		Overhaul	1.6 L (1.7 US qt)	—

Manual Transmission and M/T Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Mainshaft	End play		0.11—0.18 mm (0.0043—0.0071 in)	Adjust
	Diameter of bushing contact area		18.800—18.850 mm (0.74016—0.74212 in)	18.750 mm (0.73819 in)
	Diameter of ball bearing contact area (clutch housing side)		25.977—25.990 mm (1.02271—1.02323 in)	25.920 mm (1.02047 in)
	Diameter of needle bearing contact area		34.984—35.000 mm (1.37732—1.37795 in)	34.930 mm (1.37519 in)
	Diameter of ball bearing contact area (transmission housing side)		24.987—25.000 mm (0.98374—0.98425 in)	24.930 mm (0.98149 in)
	Diameter of 4th/5th gear distance collar contact area		28.992—29.005 mm (1.14142—1.14193 in)	28.930 mm (1.13897 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
Mainshaft 3rd gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	Clearance	2nd—3rd	0.06—0.21 mm (0.003—0.008 in)	0.30 mm (0.011 in)
	Thickness		27.02—27.07 mm (1.0638—1.0657 in)	26.95 mm (1.0610 in)
Mainshaft 4th gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	End play (distance collar side)		0.06—0.19 mm (0.0024—0.0075 in)	0.28 mm (0.0110 in)
	Thickness		25.52—25.57 mm (1.0047—1.0067 in)	25.45 mm (1.0020 in)
Mainshaft 5th gear	I.D.		39.009—39.025 mm (1.53578—1.53641 in)	38.95 mm (1.5335 in)
	End play (distance collar side)		0.06—0.14 mm (0.0024—0.0055 in)	0.23 mm (0.0091 in)
	Thickness		22.42—22.47 mm (0.8827—0.8846 in)	22.35 mm (0.8799 in)
Mainshaft 6th gear	I.D.		35.009—35.025 mm (1.37830—1.37893 in)	35.09 mm (1.3815 in)
	End play (ball bearing side)		0.06—0.16 mm (0.003—0.006 in)	0.25 mm (0.009 in)
	Thickness		23.92—23.97 mm (0.9417—0.9437 in)	23.85 mm (0.9390 in)
Mainshaft 4th/5th gear distance collar	I.D.		29.014—29.024 mm (1.14228—1.14267 in)	29.03 mm (1.1429 in)
	O.D.		34.989—35.000 mm (1.37752—1.37795 in)	34.940 mm (1.37559 in)
	Overall length		48.97—49.03 mm (1.9279—1.9303 in)	—
	Length of needle bearing contact area	4th, 5th	22.53—22.56 mm (0.8870—0.8882 in)	—
Mainshaft 6th gear distance collar	I.D.		25.00—25.01 mm (0.9843—0.9846 in)	25.02 mm (0.9850 in)
	O.D.		30.989—31.000 mm (1.22004—1.22047 in)	30.940 mm (1.21811 in)
	Length		24.03—24.08 mm (0.9461—0.9480 in)	—
Countershaft	Diameter of needle bearing contact area (clutch housing side)		34.000—34.015 mm (1.33858—1.33917 in)	33.950 mm (1.33661 in)
	Diameter of ball bearing contact area (transmission housing side)		26.020—26.033 mm (1.02441—1.02492 in)	25.970 mm (1.02244 in)
	Diameter of 1st gear distance collar contact area		38.987—39.000 mm (1.53492—1.53543 in)	38.940 mm (1.53307 in)
	Runout		0.02 mm (0.0008 in) max.	0.05 mm (0.0020 in)
	32 mm shim-to-bearing inner race clearance		0.04—0.10 mm (0.002—0.003 in)	Adjust
Countershaft 1st, 2nd gear	I.D.		48.509—48.525 mm (1.90980—1.91043 in)	48.58 mm (1.9126 in)
	Clearance	2nd—3rd	0.06—0.14 mm (0.003—0.005 in)	0.23 mm (0.009 in)
	End play	1st	0.06—0.21 mm (0.003—0.008 in)	0.25 mm (0.009 in)
	Thickness	1st	27.42—27.47 mm (1.0795—1.0815 in)	27.35 mm (1.0768 in)
		2nd	26.42—26.47 mm (1.0402—1.0421 in)	26.35 mm (1.0374 in)
Countershaft 1st gear distance collar	I.D.		39.00—39.01 mm (1.5354—1.5358 in)	39.02 mm (1.5362 in)
	O.D.		44.489—44.500 mm (1.75153—1.75196 in)	44.44 mm (1.7496 in)
	Overall length		30.40—30.44 mm (1.1968—1.1984 in)	—
	Length of needle bearing contact area		26.53—26.58 mm (1.0445—1.0465 in)	—
Countershaft 2nd gear distance collar	I.D.		39.00—39.01 mm (1.5354—1.5358 in)	39.02 mm (1.5362 in)
	O.D.		44.489—44.500 mm (1.75153—1.75196 in)	44.44 mm (1.7496 in)
	Length		26.53—26.56 mm (1.0445—1.0457 in)	—

Manual Transmission and M/T Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Reverse idler gear	I.D.		18.016—18.043 mm (0.70929—0.71035 in)	18.08 mm (0.7118 in)
	Gear-to-reverse idler gear shaft clearance		0.032—0.077 mm (0.00126—0.00303 in)	0.14 mm (0.0055 in)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.655—1.334 mm (0.025—0.052 in)	0.4 mm (0.016 in)
Double cone synchro	Outer synchro ring-to-synchro cone clearance (ring pushed against gear)		0.70—1.19 mm (0.028—0.046 in)	0.3 mm (0.012 in)
	Synchro cone-to-gear clearance (ring pushed against gear)		0.50—1.04 mm (0.020—0.040 in)	0.3 mm (0.012 in)
	Outer synchro ring-to-gear clearance (ring pushed against gear)		0.95—1.68 mm (0.038—0.066 in)	0.6 mm (0.024 in)
Shift fork	Finger thickness	1st/2nd	6.7—6.9 mm (0.264—0.272 in)	—
		3rd/4th, 5th/6th	7.4—7.6 mm (0.291—0.299 in)	—
	Fork-to-synchro sleeve clearance		0.35—0.65 mm (0.014—0.025 in)	1.0 mm (0.039 in)
Reverse shift fork	Finger width		14.7—14.9 mm (0.579—0.587 in)	—
	Fork-to-reverse idler gear clearance		0.2—0.6 mm (0.01—0.02 in)	1.2 mm (0.047 in)
Detent ball spring	Free length	1st/2nd, 3rd/4th, 5th/6th	26.0 mm (1.024 in)	When worn or damaged
Steel ball	Ball size		7.94 mm (0.3126 in)	When worn or damaged
Shift arm	I.D.		14.013—14.058 mm (0.55169—0.55346 in)	—
	Finger width		15.584—15.794 mm (0.61354—0.62181 in)	—
	Shift arm-to-shift piece clearance		0.206—0.616 mm (0.009—0.020 in)	0.7 mm (0.028 in)
Select lever	O.D.		13.941—13.968 mm (0.54886—0.54992 in)	—
M/T differential carrier	Pinion shaft contact area I.D.		18.010—18.028 mm (0.70905—0.70976 in)	—
	Clearance between carrier and pinion shaft		0.027—0.057 mm (0.00106—0.00224 in)	0.100 mm (0.00394 in)
	Driveshaft contact area I.D.		28.025—28.045 mm (1.10334—1.10413 in)	—
M/T differential pinion gear	Backlash		0.05—0.15 mm (0.0020—0.0059 in)	—
	I.D.		18.042—18.066 mm (0.71031—0.71126 in)	—
	Clearance between pinion gear and pinion shaft		0.059—0.095 mm (0.00232—0.00374 in)	0.150 mm (0.00591 in)
M/T differential 80 mm shim	80 mm shim-to-bearing outer race clearance in transmission housing		0.01—0.10 mm (0.001—0.003 in)	Adjust
Shift piece	I.D.		16.000—16.018 mm (0.62992—0.63063 in)	16.03 mm (0.6311 in)
	Shift piece groove width		16.00—16.20 mm (0.6299—0.6378 in)	—
	Shift piece finger width		15.9—16.0 mm (0.626—0.630 in)	—
	Shift piece-to-shift fork clearance		0.20—0.50 mm (0.008—0.019 in)	0.6 mm (0.024 in)
Select arm	I.D.		13.973—14.000 mm (0.55012—0.55118 in)	14.01 mm (0.5516 in)
	Shift piece width at contact area		12.9—13.0 mm (0.508—0.512 in)	—
	Select arm-to-interlock clearance		0.01—0.21 mm (0.001—0.008 in)	0.3 mm (0.012 in)

CVT and CVT Differential

Item	Measurement	Qualification	Standard or New	Service Limit
Continuously variable transmission fluid	Capacity: use genuine Honda CVTF	Fluid change	2.8 L (3.0 US qt)	—
		Overhaul	5.2 L (5.5 US qt)	—

CVT and CVT Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Hydraulic pressure	Forward clutch pressure	At 1,700 rpm in D	1,570—1,840 kPa (16.01—18.76 kgf/cm², 227.7—266.8 psi)	—
	Reverse brake pressure	At 1,700 rpm in R	1,570—1,840 kPa (16.01—18.76 kgf/cm², 227.7—266.8 psi)	—
	Drive pulley pressure	At 1,700 rpm in N	240—540 kPa (2.45—5.51 kgf/cm², 34.8—78.4 psi)	—
	Driven pulley pressure	At 1,700 rpm in N	830—1,130 kPa (8.46—11.52 kgf/cm², 120.3—163.8 psi)	—
	Lubrication pressure	At 3,000 rpm in N	250—400 kPa (2.55—4.08 kgf/cm², 36.3—58.0 psi)	—
Stall speed	Check with vehicle on level ground	D position: Standard or new	2,050 rpm	—
		D position: Service limit	1,900—2,200 rpm	—
		R position: Standard or new	2,500 rpm	—
		R position: Service limit	2,400—2,600 rpm	—
Clutch	Clearance between clutch end-plate and top disc	Forward clutch	0.6—0.8 mm (0.024—0.031 in)	—
		Reverse brake	0.55—0.70 mm (0.0217—0.0276 in)	—
	Clutch return spring free length	Reverse brake	18.1 mm (0.713 in)	16.1 mm (0.634 in)
	Clutch disc thickness	Reverse brake	2.00 mm (0.0787 in)	When worn or damaged
	Clutch plate thickness	Reverse brake	1.95 mm (0.0768 in)	When discolored
	Reverse brake end-plate thickness	Mark 2	3.8 mm (0.150 in)	When discolored
		Mark B	3.9 mm (0.154 in)	When discolored
		Mark 3	4.0 mm (0.157 in)	When discolored
		Mark C	4.1 mm (0.161 in)	When discolored
		Mark 4	4.2 mm (0.165 in)	When discolored
		Mark D	4.3 mm (0.169 in)	When discolored
		Mark 5	4.4 mm (0.173 in)	When discolored
		Mark E	4.5 mm (0.177 in)	When discolored
		Mark 6	4.6 mm (0.181 in)	When discolored
		Mark F	4.7 mm (0.185 in)	When discolored
		Mark 7	4.8 mm (0.189 in)	When discolored
		Mark 8	5.0 mm (0.197 in)	When discolored

CVT and CVT Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Input shaft	Diameter of needle bearing contact area	At flywheel side	19.987—20.000 mm (0.78689—0.78740 in)	When worn or damaged
		At forward clutch side	19.987—20.000 mm (0.78689—0.78740 in)	When worn or damaged
	Thrust clearance	CVTF pump drive sprocket hub	0.37—0.65 mm (0.015—0.025 in)	—
		Planetary carrier	0.050—0.115 mm (0.002—0.004 in)	—
	Feed pipe O.D.	Drive pulley feed pipe	6.97—6.98 mm (0.2744—0.2748 in)	6.95 mm (0.2736 in)
		Forward clutch feed pipe	11.470—11.480 mm (0.45157—0.45197 in)	11.450 mm (0.45079 in)
	Feed pipe bushing I.D.	Drive pulley feed pipe	7.000—7.015 mm (0.27559—0.27618 in)	7.030 mm (0.27677 in)
		Forward clutch feed pipe	11.500—11.518 mm (0.45276—0.45346 in)	11.533 mm (0.45405 in)
	Sealing ring groove width		2.000—2.100 mm (0.07874—0.08268 in)	2.105 mm (0.08287 in)
	Thrust shim thickness (25 x 31 mm: planetary carrier)	A	1.05 mm (0.0413 in)	When worn or damaged
		B	1.12 mm (0.0441 in)	When worn or damaged
		C	1.19 mm (0.0469 in)	When worn or damaged
		D	1.26 mm (0.0496 in)	When worn or damaged
		E	1.33 mm (0.0524 in)	When worn or damaged
		F	1.40 mm (0.0551 in)	When worn or damaged
		G	1.47 mm (0.0579 in)	When worn or damaged
		H	1.54 mm (0.0606 in)	When worn or damaged
		I	1.61 mm (0.0634 in)	When worn or damaged
		J	1.68 mm (0.0661 in)	When worn or damaged
		K	1.75 mm (0.0689 in)	When worn or damaged
		L	1.82 mm (0.0717 in)	When worn or damaged
		M	1.085 mm (0.04272 in)	When worn or damaged
		N	1.155 mm (0.04547 in)	When worn or damaged
		O	1.225 mm (0.04823 in)	When worn or damaged
		P	1.295 mm (0.05098 in)	When worn or damaged
		Q	1.365 mm (0.05374 in)	When worn or damaged
		R	1.435 mm (0.05650 in)	When worn or damaged
		S	1.505 mm (0.05925 in)	When worn or damaged
		T	1.575 mm (0.06201 in)	When worn or damaged
		U	1.645 mm (0.06476 in)	When worn or damaged
		V	1.715 mm (0.06752 in)	When worn or damaged
		W	1.785 mm (0.07028 in)	When worn or damaged

CVT and CVT Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Input shaft (cont'd)	Thrust shim thickness (22 x 28 mm: CVTF pump drive sprocket hub)	C	1.15 mm (0.0453 in)	When worn or damaged
		D	1.40 mm (0.0551 in)	When worn or damaged
		E	1.65 mm (0.0650 in)	When worn or damaged
		F	1.90 mm (0.0748 in)	When worn or damaged
		G	2.15 mm (0.0846 in)	When worn or damaged
		H	2.40 mm (0.0945 in)	When worn or damaged
Drive pulley shaft	Diameter of needle bearing contact area	At flywheel side	24.007—24.020 mm (0.94516—0.94567 in)	When worn or damaged
		At forward clutch side	24.007—24.020 mm (0.94516—0.94567 in)	When worn or damaged
	I.D.	At sealing ring	24.007—24.020 mm (0.94516—0.94567 in)	When worn or damaged
Driven pulley shaft	Diameter of needle bearing contact area	At start clutch side	43.981—43.991 mm (1.73153—1.73193 in)	When worn or damaged
	Thrust clearance	At start clutch side	0—0.13 mm (0.00—0.005 in)	—
	Cotter thickness (25.5 mm: start clutch hub)	A	2.90 mm (0.1142 in)	When worn or damaged
		B	3.00 mm (0.1181 in)	When worn or damaged
		C	3.10 mm (0.1220 in)	When worn or damaged
		D	3.20 mm (0.1260 in)	When worn or damaged
	Feed pipe O.D.	Canceler pressure	6.97—6.98 mm (0.2744—0.2748 in)	6.95 mm (0.2736 in)
		Clutch pressure	8.97—8.98 mm (0.3531—0.3535 in)	8.95 mm (0.3524 in)
	Feed pipe bushing I.D.	Canceler pressure	7.000—7.015 mm (0.27559—0.27618 in)	7.030 mm (0.27677 in)
		Clutch pressure	9.000—9.015 mm (0.35433—0.35492 in)	9.030 mm (0.35551 in)
	Driven pulley shaft pressure feed pipe	O.D.	11.470—11.480 mm (0.45157—0.45197 in)	11.450 mm (0.45079 in)
		Bushing I.D.	11.500—11.518 mm (0.45276—0.45346 in)	11.533 mm (0.45405 in)
	Secondary drive gear sealing ring groove width		2.500—2.650 mm (0.09843—0.10433 in)	2.655 mm (0.10453 in)
Park gear and pawl	—		—	When worn or damaged

CVT and CVT Differential (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Final drive shaft	Secondary drive gear thrust clearance		0—0.15 mm (0.00—0.0059 in)	—
	Thrust shim thickness (25 x 35 mm)	A	2.80 mm (0.1102 in)	When worn or damaged
		B	2.90 mm (0.1142 in)	When worn or damaged
		C	3.00 mm (0.1181 in)	When worn or damaged
		D	3.10 mm (0.1220 in)	When worn or damaged
		E	3.20 mm (0.1260 in)	When worn or damaged
		F	3.30 mm (0.1299 in)	When worn or damaged
		G	3.40 mm (0.1339 in)	When worn or damaged
		H	3.50 mm (0.1378 in)	When worn or damaged
		I	3.60 mm (0.1417 in)	When worn or damaged
		J	3.70 mm (0.1457 in)	When worn or damaged
		K	3.80 mm (0.1496 in)	When worn or damaged
		L	3.90 mm (0.1535 in)	When worn or damaged
		M	4.00 mm (0.1575 in)	When worn or damaged
CVT differential carrier	Pinion shaft contact area I.D.		18.010—18.028 mm (0.70905—0.70976 in)	—
	Clearance between carrier and pinion shaft		0.023—0.057 mm (0.00091—0.00224 in)	0.1 mm (0.004 in)
	Driveshaft/intermediate shaft contact area I.D.		26.025—26.045 mm (1.02460—1.02539 in)	—
	Clearance between carrier and driveshaft/intermediate shaft		0.045—0.086 mm (0.00177—0.00339 in)	0.12 mm (0.0047 in)
	Clearance between set ring and carrier bearing outer race		0—0.15 mm (0.00—0.005 in)	Adjust
CVT differential pinion gear	Backlash		0.05—0.15 mm (0.0020—0.0059 in)	—

Steering

Item	Measurement	Qualification	Standard or New	Service Limit
Steering wheel	Rotational play measured at outside edge		0—10 mm (0.00—0.39 in)	—
	Initial turning load measured at outside edge with engine running		29 N (3.0 kgf, 6.6 lbf)	—

Suspension

Item	Measurement	Qualification	Standard or New	Service Limit
Wheel alignment	Camber	Front	0 ° 00 ′ ±1 °	
		Rear	−1 ° 30 ±1 °	
	Caster	Front	3 ° 22 ′ ±1 °	
	Total toe-in	Front	0±3 mm (0±0.12 in)	
		Rear	3^{+2}_{-3} mm ($0.12^{+0.08}_{-0.12}$ in)	
	Front wheel turning angle	Inward	38 ° 08 ′ ±2 °	
		Outward (reference)	31 ° 46 ′ ±1 °	
Wheel	Runout	Axial	0—0.7 mm (0.00—0.028 in)	2.0 mm (0.079 in)
		Radial	0—0.7 mm (0.00—0.028 in)	1.5 mm (0.059 in)
Wheel bearing	End play	Front	0—0.05 mm (0.00—0.0020 in)	—
		Rear	0—0.05 mm (0.00—0.0020 in)	—

Brakes

Item	Measurement	Qualification	Standard or New	Service Limit
Parking brake	Number of clicks when lever pulled with 196 N (20.0 kgf, 44.1 lbf) of force		6 to 8	
Brake pedal	Height from floor (M/T)	With clutch pedal pad cover	170 mm (6.69 in)	—
		Without clutch pedal pad cover	168 mm (6.61 in)	—
	Height from floor (CVT)	With clutch pedal pad cover	196 mm (7.72 in)	—
		Without clutch pedal pad cover	194 mm (7.64 in)	—
	Free play		1.0—7.2 mm (0.039—0.283 in)	—
Brake disc	Thickness	Front	21.0 mm (0.827 in)	19.0 mm (0.748 in)
		Rear	9.0 mm (0.354 in)	8.0 mm (0.315 in)
	Runout		—	0.04 mm (0.0016 in)
	Parallelism		—	0.015 mm (0.00059 in)
Brake pad	Thickness	Front	10.0 mm (0.394 in)	1.6 mm (0.063 in)
		Rear	9.0 mm (0.354 in)	1.6 mm (0.063 in)

Air Conditioning

Item	Measurement	Qualification	Standard or New	Service Limit
Refrigerant	Type		HFC-134a (R-134a)	
	Capacity of system		450—500 g (15.87—17.64 oz)	—
Refrigerant oil	Type		SP-10 (P/N 38897-P13-A01AH)	
	Capacity of components	Condenser	25 mL (5/6 fl·oz)	
		Evaporator	35 mL (1 1/6 fl·oz)	
		Each line and hose	10 mL (1/3 fl·oz)	
		Dryer desiccant	10 mL (1/3 fl·oz)	
		Compressor	80—90 mL (2 2/3—3 fl·oz)	
Compressor ('11 model)	Field coil resistance	At 20 °C (68 °F)	3.35—3.45 Ω	
	Pulley-to-pressure plate clearance		0.35—0.65 mm (0.014—0.025 in)	—
Compressor ('12 model)	Field coil resistance	At 20 °C (68 °F)	3.35—3.65 Ω	
	Pulley-to-pressure plate clearance		0.35—0.65 mm (0.014—0.025 in)	—

Torque Summary

Torque Specifications

NOTE

- Refer to the S/M section for the precautions and complete procedures.
- Refer to the S/M section for the bolts/nuts not indicated here.

*1: Parts to be tightened in a particular order.

*2: Follow the S/M procedures closely for torque, sequence, and special steps.

Engine Electrical

Location	Item	Remark	Torque
Starting system	Starter bolts		44 N·m (4.5 kgf·m, 32 lbf·ft)
	Positive starter cable nut		9.0 N·m (0.92 kgf·m, 6.6 lbf·ft)
Ignition system	Spark plugs		18 N·m (1.8 kgf·m, 13 lbf·ft)

Engine Mechanical

Location	Item	Remark	Torque
Engine assembly	Side engine mount bracket bolt	Use new bolt	69 N·m (7.0 kgf·m, 51 lbf·ft)
	Side engine mount bracket nuts	Use new nuts	93 N·m (9.5 kgf·m, 69 lbf·ft)
	Side engine mount bolts	Use new bolts	59 N·m (6.0 kgf·m, 44 lbf·ft)
	Transmission mount bolts	Use new bolts	59 N·m (6.0 kgf·m, 44 lbf·ft)
	M/T model: Transmission mount bracket bolt	Use new bolt	54 N·m (5.5 kgf·m, 40 lbf·ft)
	M/T model: Transmission mount bracket nuts	Use new nuts	74 N·m (7.5 kgf·m, 54 lbf·ft)
	CVT model: Transmission mount bracket bolt (10 mm)	Use new bolt	54 N·m (5.5 kgf·m, 40 lbf·ft)
	CVT model: Transmission mount bracket bolt (12 mm)	Use new bolt	74 N·m (7.5 kgf·m, 54 lbf·ft)
	CVT model: Transmission mount bracket nuts	Use new nuts	74 N·m (7.5 kgf·m, 54 lbf·ft)
	Torque rod bolt	Use new bolt	83 N·m (8.5 kgf·m, 61 lbf·ft)
	Torque rod nut	Use new nut	93 N·m (9.5 kgf·m, 69 lbf·ft)
	M/T model: Torque rod bracket bolt (14 mm)	Use new bolt	83 N·m (8.5 kgf·m, 61 lbf·ft)
	M/T model: Torque rod bracket bolts (12 mm)		83 N·m (8.5 kgf·m, 61 lbf·ft)
	CVT model: Torque rod bracket bolts		83 N·m (8.5 kgf·m, 61 lbf·ft)
Engine lubrication	Oil filter		12 N·m (1.2 kgf·m, 9 lbf·ft)
	Oil filter feed pipe	Use oil on threads	39 N·m (4.0 kgf·m, 29 lbf·ft)
	Oil pan drain bolt	Use new washer	39 N·m (4.0 kgf·m, 29 lbf·ft)
	Oil pressure switch	Use liquid gasket on threads	18 N·m (1.8 kgf·m, 13 lbf·ft)
Intake air system and exhaust system	Intake manifold chamber bolts (8 mm) Qty 5		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Intake manifold bolts (8 mm) Qty 5		24 N·m (2.4 kgf·m, 18 lbf·ft)
	Intake manifold nuts		24 N·m (2.4 kgf·m, 18 lbf·ft)
	Intake manifold bracket A bolt		24 N·m (2.4 kgf·m, 18 lbf·ft)
	Intake manifold bracket B bolts		24 N·m (2.4 kgf·m, 18 lbf·ft)
	Exhaust pipe self-locking nuts	Use new nuts	33 N·m (3.4 kgf·m, 25 lbf·ft)
	Muffler bolts*1		22 N·m (2.2 kgf·m, 16 lbf·ft)

Engine Cooling

Location	Item	Remark	Torque
Cooling system	Engine block drain bolt	Use new washer	78 N·m (8.0 kgf·m, 58 lbf·ft)
	Drive belt auto-tensioner bolts		24 N·m (2.4 kgf·m, 18 lbf·ft)
	Tensioner pulley bolt		40 N·m (4.1 kgf·m, 30 lbf·ft)

Fuel Emissions

Location	Item	Remark	Torque
Fuel and emissions	A/F sensor		44 N·m (4.5 kgf·m, 32.5 lbf·ft)
	EGR pipe bolts		24 N·m (2.4 kgf·m, 17.7 lbf·ft)
	EGR pipe nuts		24 N·m (2.4 kgf·m, 17.7 lbf·ft)
	EGR valve nuts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	EVAP canister bracket bolts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	EVAP canister bracket nuts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	Fuel tank locknut*2		125 N·m (12.7 kgf·m, 92.2 lbf·ft)
	Fuel tank support straps bolts		38 N·m (3.9 kgf·m, 28 lbf·ft)
	Knock sensor		32 N·m (3.3 kgf·m, 23.6 lbf·ft)
	Trailing arm braces bolts		38 N·m (3.9 kgf·m, 28 lbf·ft)
	Trailing arm braces nuts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	Rocker arm oil control valve bolts		11 N·m (1.1 kgf·m, 8.1 lbf·ft)
	Rocker arm oil pressure switch		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	Secondary HO2S		44 N·m (4.5 kgf·m, 32.5 lbf·ft)
	Throttle body bolts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	Under floor three way converter cover self-locking nuts	Use new nuts	33 N·m (3.4 kgf·m, 24.3 lbf·ft)
	Warm up TWC bracket bolt		44 N·m (4.5 kgf·m, 32.5 lbf·ft)
	Warm up TWC lower bolts		22 N·m (2.2 kgf·m, 16.2 lbf·ft)
	Warm up TWC upper bolts		31 N·m (3.2 kgf·m, 22.9 lbf·ft)
	Warm up TWC upper nuts		31 N·m (3.2 kgf·m, 22.9 lbf·ft)

Clutch

Location	Item	Remark	Torque
Clutch	Clutch pedal nut		13 N·m (1.3 kgf·m, 10 lbf·ft)
	Clutch pedal position switch locknuts		9.4 N·m (0.96 kgf·m, 6.9 lbf·ft)
	Master cylinder nuts		13 N·m (1.3 kgf·m, 10 lbf·ft)
	Master cylinder push rod nut		17 N·m (1.7 kgf·m, 13 lbf·ft)
	Clutch line flare nuts		15 N·m (1.5 kgf·m, 11 lbf·ft)
	Slave cylinder bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Flywheel bolts*2	Use oil on the seating surface	44 N·m (4.5 kgf·m, 32 lbf·ft)
	Pressure plate bolts*1		25 N·m (2.5 kgf·m, 18 lbf·ft)
	Release fork bolt		29 N·m (3.0 kgf·m, 21 lbf·ft)

Torque Summary

Torque Specifications

NOTE

- Refer to the S/M section for the precautions and complete procedures.
- Refer to the S/M section for the bolts/nuts not indicated here.

*1: Parts to be tightened in a particular order.

*2: Follow the S/M proceduers closely for torque, sequence, and special steps.

Manual Transmission and M/T Differential

Location	Item	Remark	Torque
Manual transmission	MTF drain plug	Use new sealing washer	39 N·m (4.0 kgf·m, 29 lbf·ft)
	MTF filler plug	Use new sealing washer	44 N·m (4.5 kgf·m, 32 lbf·ft)
	Back-up light switch	Use new washer	29 N·m (3.0 kgf·m, 21 lbf·ft)
	Back-up light switch harness bracket bolt		27 N·m (2.8 kgf·m, 20 lbf·ft)
	Neutral position switch	Use liquid gasket on threads	29 N·m (3.0 kgf·m, 21 lbf·ft)
	Transmission housing bolts		64 N·m (6.5 kgf·m, 47 lbf·ft)
	Transmission mount bracket base bolts		74 N·m (7.5 kgf·m, 55 lbf·ft)
	Transmission hanger bolts		27 N·m (2.8 kgf·m, 20 lbf·ft)
	Shift cable bracket bolts		27 N·m (2.8 kgf·m, 20 lbf·ft)
	Shift lever housing bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Shift lever boot ring		7.4 N·m (0.75 kgf·m, 5.5 lbf·ft)

CVT

Location	Item	Remark	Torque
CVT	CVTF drain plug	Use new sealing washer	49 N·m (5.0 kgf·m, 36 lbf·ft)
	Shift cable holder bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Transmission housing mounting bolts		64 N·m (6.5 kgf·m, 47 lbf·ft)
	Drive plate bolts*2		44 N·m (4.5 kgf·m, 32 lbf·ft)
	Shift lever assembly bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Shift cable end nut		22 N·m (2.2 kgf·m, 16 lbf·ft)

Driveline/Axle

Location	Item	Remark	Torque
Driveline/axle	Driveshaft spindle nut	Use oil on the seating surface Use new nut	181 N·m (18.5 kgf·m, 133 lbf·ft)
	Intermediate shaft dowel bolts		39 N·m (4.0 kgf·m, 29 lbf·ft)
	Intermediate shaft flange bolt		39 N·m (4.0 kgf·m, 29 lbf·ft)
	Heat shield bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)

Steering

Location	Item	Remark	Torque
Steering	Steering wheel bolt		39 N·m (4.0 kgf·m, 29 lbf·ft)
	Steering joint bolt		28 N·m (2.9 kgf·m, 21 lbf·ft)
	Steering column bolts*1		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Steering column nuts*1		13 N·m (1.3 kgf·m, 10 lbf·ft)
	Steering gearbox bolts*1	Use new bolts	60 N·m (6.1 kgf·m, 44 lbf·ft)
	Steering gearbox stiffener plate bolts*1	Use new bolts	59 N·m (6.0 kgf·m, 44 lbf·ft)
	Tie-rod end ball joint nut		54 N·m (5.5 kgf·m, 40 lbf·ft)
	Tie-rod end locking nut		44 N·m (4.5 kgf·m, 32 lbf·ft)

Suspension

Location	Item	Remark	Torque
Front suspension	Wheel nuts		108 N·m (11.0 kgf·m, 80 lbf·ft)
	Knuckle damper pinch bolts/nuts	Use new bolts/nuts	90 N·m (9.2 kgf·m, 66 lbf·ft)
	Lower arm ball joint castle nut	Use new nut	64—74 N·m (6.5—7.5 kgf·m, 47—55 lbf·ft)
	Lower arm bolts	Use new bolts	93 N·m (9.5 kgf·m, 69 lbf·ft)
	Stabilizer bar bushing holders flange bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Stabilizer link flange nut (to damper)	Use new nut	30 N·m (3.1 kgf·m, 22 lbf·ft)
	Stabilizer link self-locking nut (to stabilizer bar)	Use new nut	38 N·m (3.9 kgf·m, 28 lbf·ft)
	Damper upper nut		44 N·m (4.5 kgf·m, 32 lbf·ft)
Rear suspension	Wheel nuts		108 N·m (11.0 kgf·m, 80 lbf·ft)
	Axle beam bolts	Use new bolts	93 N·m (9.5 kgf·m, 69 lbf·ft)
	Dynamic damper nuts	Use new nuts	12 N·m (1.2 kgf·m, 9 lbf·ft)
	Damper lower flange bolt	Use new bolt	54 N·m (5.5 kgf·m, 40 lbf·ft)
	Damper upper self-locking nut	Use new nut	30 N·m (3.1 kgf·m, 22 lbf·ft)

Brakes

Location	Item	Remark	Torque
Conventional brake	Front brake caliper bolts		23 N·m (2.3 kgf·m, 17 lbf·ft)
	Front brake caliper bracket bolts		108 N·m (11.0 kgf·m, 80 lbf·ft)
	Front brake hose banjo bolt	Use new washers	35 N·m (3.6 kgf·m, 26 lbf·ft)
	Rear brake caliper bolts		23 N·m (2.3 kgf·m, 17 lbf·ft)
	Rear brake caliper bracket bolts		55 N·m (5.6 kgf·m, 41 lbf·ft)
	Rear brake hose banjo bolt	Use new washers	35 N·m (3.6 kgf·m, 26 lbf·ft)
	Master cylinder nuts		15 N·m (1.5 kgf·m, 11 lbf·ft)
	Master cylinder brake line		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Brake booster/brake pedal nuts		12 N·m (1.2 kgf·m, 9 lbf·ft)
	Brake pedal bolt		22 N·m (2.2 kgf·m, 16 lbf·ft)
	Parking brake lever bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
VSA	VSA modulator-control unit brake line (10 mm)		15 N·m (1.5 kgf·m, 11 lbf·ft)
	VSA modulator-control unit brake line (12 mm)		22 N·m (2.2 kgf·m, 16 lbf·ft)

Torque Summary

Torque Specifications

NOTE

- Refer to the S/M section for the precautions and complete procedures.
- Refer to the S/M section for the bolts/nuts not indicated here.

*1: Parts to be tightened in a particular order.

*2: Follow the S/M proceduers closely for torque, sequence, and special steps.

Body

Location	Item	Remark	Torque
Frame	Front subframe bolts	Use new bolts	93 N·m (9.5 kgf·m, 69 lbf·ft)
	Rear trailing arm brace bolts		38 N·m (3.9 kgf·m, 28 lbf·ft)
	Rear trailing arm brace nuts		22 N·m (2.2 kgf·m, 16 lbf·ft)
Exterior trim	Under-cowl panel bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
Bumpers	Front bumper absorber bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)

Heating, Ventilation, and Air Conditioning

Location	Item	Remark	Torque
A/C compressor	A/C compressor bolts		22 N·m (2.2 kgf·m, 16 lbf·ft)
	A/C compressor center nut	Use new nut	26 N·m (2.7 kgf·m, 19 lbf·ft)
	A/C compressor relief valve	Use new O-ring	9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
Receiver line	A/C pressure sensor	Use new O-ring	11 N·m (1.1 kgf·m, 8.1 lbf·ft)

Body Electrical

Location	Item	Remark	Torque
Wipers/washers	Windshield wiper arm nut		18 N·m (1.8 kgf·m, 13 lbf·ft)
	Windshield wiper linkage nut		18 N·m (1.8 kgf·m, 13 lbf·ft)
	Rear window wiper motor mount nut		8.4 N·m (0.86 kgf·m, 6.1 lbf·ft)

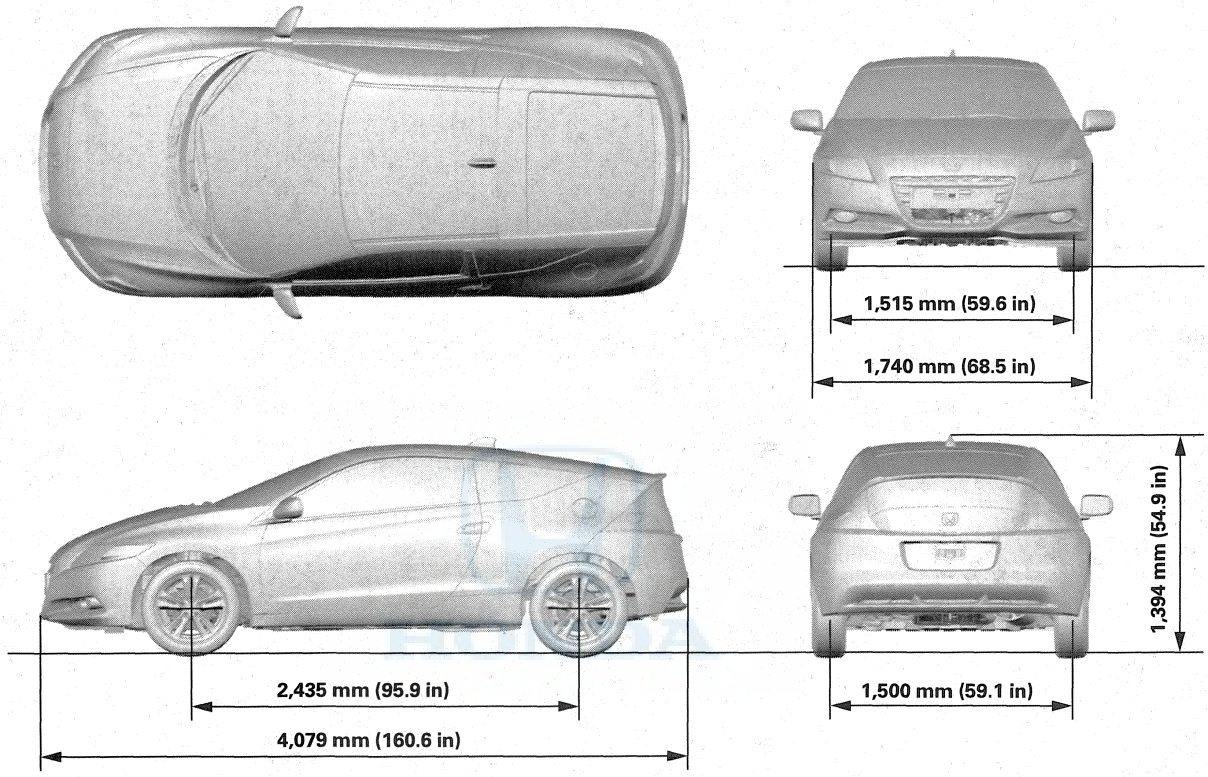
Design Specifications

Item	Measurement	Qualification	Specification
DIMENSION	Overall length		4,079 mm (160.6 in)
	Overall width		1,740 mm (68.5 in)
	Overall height		1,394 mm (54.9 in)
	Wheelbase		2,435 mm (95.9 in)
	Track	Front	1,515 mm (59.6 in)
		Rear	1,500 mm (59.1 in)
	Seating capacity		Two (2)
WEIGHT	Gross Vehicle Weight Rating (GVWR)		1,435 kg (3,164 lbs)
ENGINE	Type		Water-cooled, 4-stroke SOHC i-VTEC gasoline engine
	Cylinder arrangement		Inline 4-cylinder, transverse
	Bore and stroke		73 x 89 mm (2.87 x 3.50 in)
	Displacement		1,497 cm^3 (91 cu in)
	Compression ratio		10.4
	Valve train		Chain drive, SOHC i-VTEC 4 valves per cylinder
	Lubrication system		Forced, wet sump, with trochoid pump
	Fuel required		Regular UNLEADED gasoline with 87 Pump Octane Number or higher
STARTER	Type		Gear reduction
	Nominal output		1.0 kW
	Nominal voltage		12 V
	Hour rating		30 seconds
	Rotation direction		Counterclockwise as viewed from drive end
IMA MOTOR	Type		DC brushless-3 phases
BATTERY MODULE	Type		7.2 V Ni-MH
	Number		14
	Output		100 V
CLUTCH	Type		Single plate dry, diaphragm spring
MANUAL TRANSMISSION	Type		Synchronized six-speed forward, one reverse
	Primary reduction		Direct 1:1
	Gear ratio	1st	3.142
		2nd	1.870
		3rd	1.303
		4th	1.054
		5th	0.853
		6th	0.689
		Reverse	3.307
	Final reduction	Type	Single helical gear
		Gear ratio	4.111
CVT	Type		Electronically-controlled continuously variable transmission, multi plates wet sump, hydraulic
	Primary reduction		Direct 1:1
	Gear ratio	Low—High	2.526—0.421
		Reverse	4.510—1.725
	Final reduction	Type	Single helical gear
		Gear ratio	5.274
STEERING	Type		Electrical power-assisted rack and pinion
	Overall ratio		12.75
	Turns, lock-to-lock		2.48
	Steering wheel diameter		360 mm (14.17 in)
SUSPENSION	Type	Front	Macpherson strut with stabilizer, coil spring
		Rear	Torsion beam, coil spring
	Shock absorber	Front and rear	Telescopic, hydraulic, nitrogen gas-filled
TIRES	Size		See tire information label attached to the doorjamb
WHEEL ALIGNMENT	Camber	Front	0° 00′
		Rear	−1° 30′
	Caster	Front	3° 22′
	Total toe-in	Front	0 mm (0 in)
		Rear	3 mm (0.12 in)
	Front wheel turning angle	Inward	38° 08′
		Outward (reference)	31° 46′

Design Specifications

Item	Measurement	Qualification	Specification
BRAKES	Type of service brake	Front	Power-assisted self-adjusting ventilated disc
		Rear	Power-assisted self-adjusting solid disc
	Type of parking brake		Mechanical actuating, rear wheels
AIR CONDITIONING	Compressor	Type	Scroll
		Capacity	77.1 mL (4.7 cu in)/rev.
		Maximum speed	10,000 rpm
		Lubricant capacity	80 mL (2 2/3 fl·oz)
		Lubricant type	SP-10
	Condenser	Type	Corrugated fin
	Evaporator	Type	Corrugated fin
	Blower	Type	Radial
		Motor type	220W/12 V
		Speed control	Infinitely variable
		Maximum capacity	400 m^3 (14,126 cu ft)/h
	Temperature control		Air-mix type
	Compressor clutch	Type	Dry, single plate, Poly V-belt drive
		Electrical power consumption at 68 °F (20 °C)	42 W maximum at 12 V
	Refrigerant	Type	HFC-134a (R-134a)
		Capacity	450—500 g (15.8—17.6 oz)
ELECTRICAL RATINGS	Battery		12 V—34 Ah/5 HR (12 V—40 Ah/20 HR)
			12 V—32 Ah/5 HR (12 V—40 Ah/20 HR)
	Fuses	Battery terminal fuse box	100 A, 70 A, 20 A
		Under-dash fuse/relay box	50 A, 40 A, 30 A, 20 A, 15 A, 10 A, 7.5 A
	Light bulbs	Headlight high beam	12 V—60 W
		Headlight low beam	12 V—55 W
		Headlight low beam (HID)	12 V—35 W
		Fog light	12 V—55 W
		Front turn signal lights	12 V—28 W
		Front side marker lights	12 V—8 W
		Side turn signal lights	LED
		Rear turn signal lights	12 V—21 W
		Rear side marker lights	3CP
		Brake/taillights	LED
		High mount brake light	LED
		Back-up lights	12 V—16 W
		License plate lights	12 V—5 W
		Individual map lights	12 V—8 W
		Cargo area light	12 V—5 W
		Console box lights	LED
		Footwell lights	LED
		Door courtesy lights	12 V—3.8 W
		Vanity mirror lights	12 V—1.8 W
		Ambient light	LED
		Rear tray lights	12 V—3.4 W
		Glove box light	12 V—1.4 W
		Gauge lights	LED
		Indicator lights	LED

Body Specifications



Maintenance

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Lubricants and Fluids 3–2

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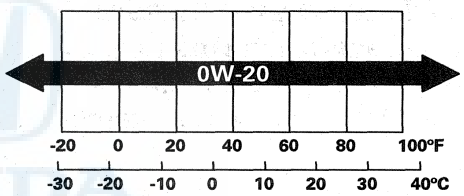
Lubricants and Fluids

Application	Lubricant or Fluid
Engine	Honda Motor Oil: 0W-20 Look for the API certification seal on the oil container. Make sure it says "For Gasoline Engines." SAE viscosity: See chart.
Manual transmission	Honda Manual Transmission Fluid (MTF): Always use Honda MTF. Using motor oil can cause stiffer shifting because it does not contain the proper additives.
CVT	Honda CVTF: Always use Honda CVTF. Using a non-Honda CVTF can affect shift quality.
Brake system (including VSA lines) Clutch system (Manual transmission)	Honda DOT 3 Brake Fluid: Always use Honda DOT 3 Brake Fluid. Using a non-Honda brake fluid can cause corrosion and decrease the life of the system.
Cooling system	Always use Honda Long Life Antifreeze/Coolant Type 2.

API CERTIFICATION SEAL



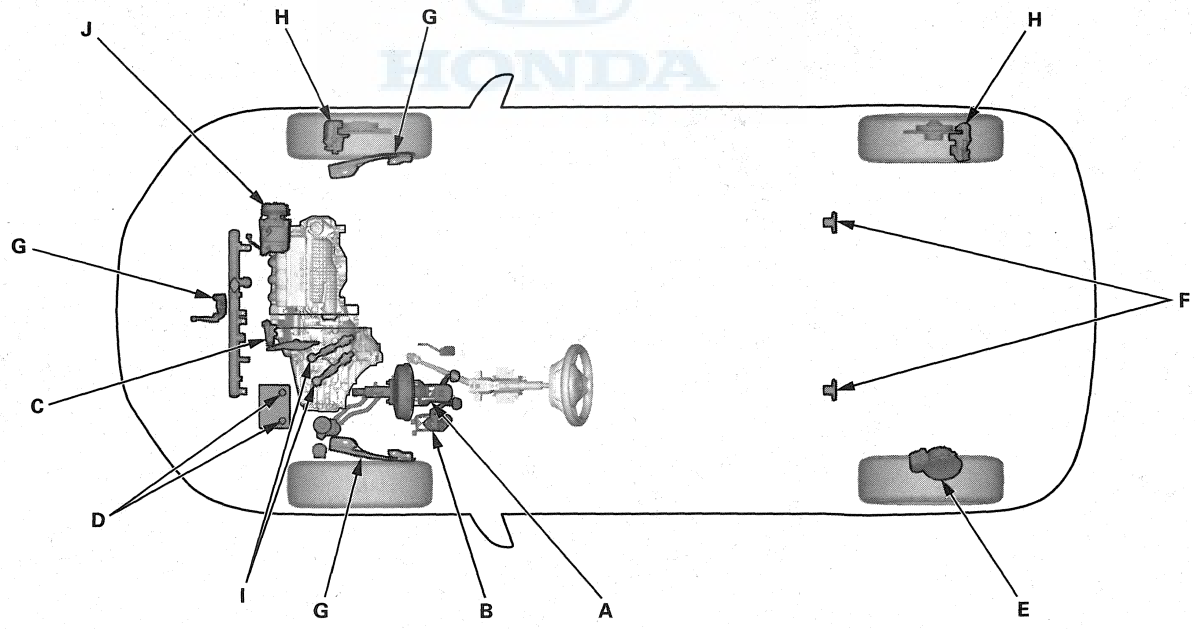
Recommended Engine Oil
Engine oil viscosity for ambient temperature ranges



For the details of the lubrication points and the type of lubricants to be applied, refer to the illustrated index and the various work procedures (such as Assembly/Reassembly, Replacement, Overhaul, Installation, etc.) contained in each section.

	Application	Lubricant or Fluid
A B C D E F G	Brake pedal pin Clutch pedal pin (manual transmission) Slave cylinder push rod (manual transmission) Battery terminals Fuel fill door (lock rod sliding area) Hatch hinges Hood hinges and hood latch	Multipurpose grease
H I	Caliper piston boots, caliper piston seals, caliper pins, and caliper pin boots Shift cable ends (manual transmission)	Honda silicone grease: P/N 08C30-B0234M
J	Air conditioning compressor	Compressor oil: SP-10 (P/N 38897-P13-A01AH) for refrigerant HFC-134a (R-134a)

NOTE:
- Lubricate the following areas using the recommended lubricants and fluids.
- In corrosive areas, more frequent lubrication is necessary.



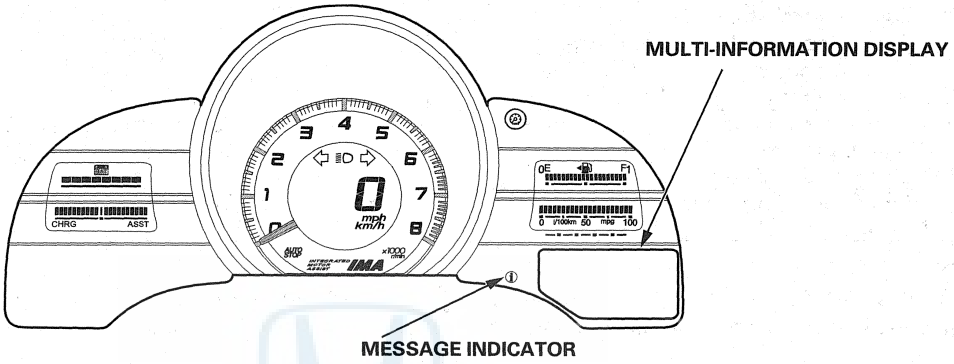
Maintenance Minder™

General Information

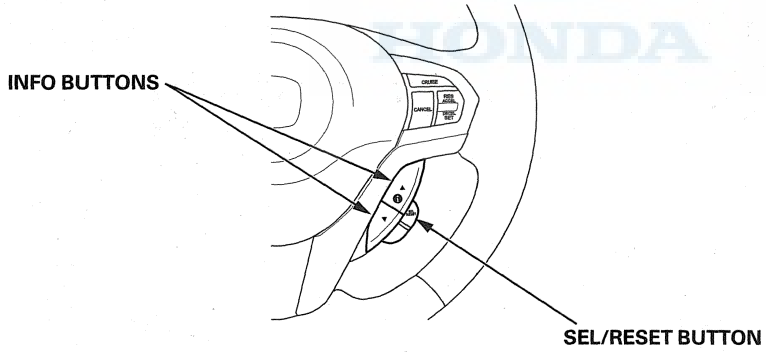
Maintenance Minder

The Maintenance Minder is an important feature of the multi-information display. Based on engine and transmission operating conditions, and accumulated engine revolutions, the CR-Z's onboard computer (ECM/PCM) calculates the remaining engine oil and transmission fluid life. The system also displays the remaining engine oil life along with the code(s) for other scheduled maintenance items needing service.

Meter:

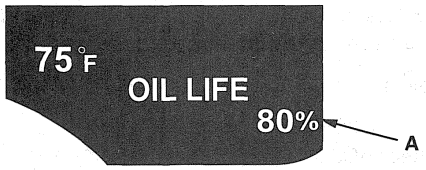


Steering Wheel:

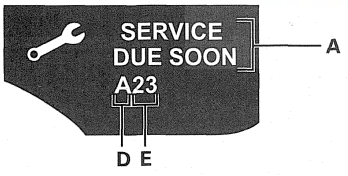


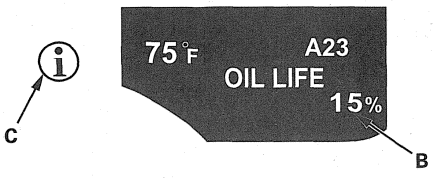
Service Information

1. The remaining engine oil life (A) is shown as a percentage on the multi-information display. To see the current engine oil life, turn the ignition switch to ON (II), then push and release the SEL/RESET button repeatedly until the engine oil life displays.



2. When the ignition switch is ON (II) and the remaining engine oil life is 15 % to 6 %, the remaining engine oil life and other scheduled maintenance item(s) needing service are displayed.
The Maintenance Minder message "SERVICE DUE SOON" (A) also comes on. To cancel the message, press the INFO button. The display continues to show the remaining engine oil life (B) and the message indicator (C) until it is reset.
   - Complete list of maintenance main items (D) (see page 3-7).
   - Complete list of maintenance sub items (E) (see page 3-8).





3. When the ignition switch is ON (II) and the remaining engine oil life is 5 % to 1 %, the Maintenance Minder message "SERVICE DUE NOW" is displayed along with the same maintenance item code(s). If the Maintenance Minder message display is canceled, a "SERVICE" message appears.



4. When the ignition switch is ON (II) and the remaining engine oil life is 0 %, the Maintenance Minder message "SERVICE PAST DUE" is displayed along with the same maintenance item code(s).



5. If the indicated maintenance is not done, the "SERVICE PAST DUE" message shows a total distance traveled, for example "10 miles," on the display. If the total distance traveled is between 0 and 9, the message is displayed for only a few seconds when the ignition switch is turned to ON (II). The total distance traveled (A) remains displayed after the vehicle is driven more than 10 miles (or 10 km) after 0 % oil life is reached, and the display cannot be canceled. This means the indicated maintenance item(s) should have been done more than 10 miles (or 10 km) ago.



(cont'd)

General Information (cont'd)

Resetting the Maintenance Minder

NOTE:

- The vehicle must be stopped to reset the Maintenance Minder.
- If a required service is done and the Maintenance Minder is not reset, or if the Maintenance Minder is reset without doing the service, the system will not show the proper maintenance timing. This can lead to serious mechanical problems because there will be no accurate record of when the required maintenance is needed.
- The engine oil life and maintenance item(s) can be independently reset with the HDS.

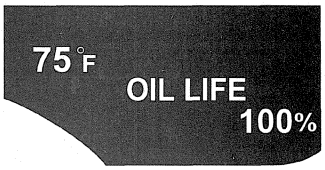
1. Turn the ignition switch to ON (II).
2. If system message(s) are displayed, press the INFO button to cancel the display.
3. Push the SEL/RESET button repeatedly until the engine oil life indicator is displayed.
4. Press and hold the SEL/RESET button for about 10 seconds, the "OIL LIFE RESET" mode display appears.

   NOTE:

   - If you are resetting the Maintenance Minder when the engine oil life is more than 15 %, make sure any maintenance item(s) requiring service are done before resetting the display.
   - To cancel the "OIL LIFE RESET" mode, press the INFO button repeatedly until the "CANCEL" indicator is displayed, then press the SEL/RESET button.



5. Press INFO button repeatedly until the "RESET" indicator is displayed, then press the SEL/RESET button. The maintenance item code(s) will disappear, and the engine oil life will reset to "100%."



Resetting Individual Maintenance Items

1. Connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the engine control module/powertrain control module (ECM/PCM). If it doesn't communicate, troubleshoot the DLC circuit (see page 11-383).
4. Select GAUGES in the BODY ELECTRICAL with the HDS.
5. Select ADJUSTMENT in the GAUGES with the HDS.
6. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
7. Select RESET in the MAINTENANCE MINDER with the HDS.
8. Select the individual maintenance item you wish to reset with the HDS.

Maintenance Main Items

If the message "SERVICE DUE NOW" does not appear more than 12 months after the display is reset, change the engine oil every year.

NOTE:

- Independent of the maintenance messages in the multi-information display, replace the brake fluid every 3 years.
- Inspect idle speed every 160,000 miles (256,000 km).
- Adjust the valves during services A, B, 1, 2, or 3 if they are noisy.

Symbol	Maintenance Main Items
A	Replace engine oil (see page 8-10) - Engine oil capacity without oil filter: 3.4 L (3.6 US qt)
B	Replace engine oil and oil filter (see page 8-11) - Engine oil capacity with oil filter: 3.6 L (3.8 US qt)
	Check front and rear brakes (see page 19-3) • Check pads and discs for wear (thickness), damage, and cracks. • Check calipers for damage, leaks, and tightness of mounting bolts.
	Check parking brake adjustment (see page 19-8) - Check the number of clicks (5 to 7) when parking brake lever is pulled with 196 N (20.0 kgf, 44.1 lbf) of force.
	Inspect tie-rod ends, steering gearbox, and gearbox boots (see page 17-5) • Check steering linkage. • Check boots for damage and leaking grease.
	Inspect suspension components (see page 18-3) • Check bolts for tightness. • Check condition of ball joint boots for deterioration and damage.
	Inspect driveshaft boots (see page 16-4) - Check boots for cracks and boot bands for tightness.
	Inspect brake hoses and lines including VSA lines (see page 19-36) - Check master cylinder and VSA modulator-control unit for damage or leakage.
	Inspect all fluid levels, and condition of fluids • Engine coolant (see page 10-8) • Manual transmission fluid (see page 13-41) • CVT fluid (see page 14-153) • Brake fluid (see page 19-10) • Windshield washer fluid
	Inspect exhaust system* (see page 9-17) - Check catalytic converter heat shields, exhaust pipes, and muffler for damage, leaks, and tightness.
	Inspect fuel lines* (see page 11-291), and connections* (see page 11-293) - Check for loose connections, cracks, and deterioration; retighten loose connections and replace damaged parts.

NOTE: According to state and federal regulations, failure to do the maintenance items marked with an asterisk (*) will not void the customer's emissions warranties. However, Honda recommends that all maintenance services be done at the recommended interval, to ensure long-term reliability.

Maintenance Minder™

Maintenance Sub Items

Number	Maintenance Sub Items
1	Rotate tires, and check tire inflation and condition - Follow the pattern shown in the Owner's Manual.
2	Replace air cleaner element (see page 9-3) - If the vehicle is driven primarily in dusty conditions, replace every 15,000 miles (24,000 km).
	Replace dust and pollen filter (see page 21-99) • If the vehicle is driven mostly in areas that have high concentrations of dust, pollen, or soot in the air, replace every 15,000 miles (24,000 km). • Replace filter whenever airflow from the heating and air conditioning system is less than normal.
	Inspect drive belt (see page 10-17) - Look for cracks and damage, and inspect auto-tensioner; no adjustment is needed.
3	Replace manual transmission fluid (MTF) (see page 13-41) - Manual transmission fluid capacity: 1.4 L (1.5 US qt); use Honda MTF
	Replace CVT fluid (CVTF) (see page 14-154) - CVT fluid capacity: 2.8 L (3.0 US qt); use Honda CVTF
4	Replace spark plugs (see page 4-21) - Use DIFR6A13G (NGK) or DK20PR-D13 (DENSO).
	Inspect the valve clearance (cold) (see page 6-8) • Intake: 0.15—0.19 mm (0.006—0.007 in) • Exhaust: 0.26—0.30 mm (0.011—0.011 in)
5	Replace engine coolant (see page 10-8) • Use Honda Long Life Antifreeze/Coolant Type 2. • Capacity (including engine, heater, hoses , and reservoir) - M/T model: 4.42 L (1.168 US gal) - CVT model: 4.35 L (1.149 US gal)

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If engine electrical maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If engine electrical maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

Engine Electrical



Starting System

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Starter Performance Test 4–9
Starter Removal and Installation 4–10
Starter Overhaul 4–12

Ignition System

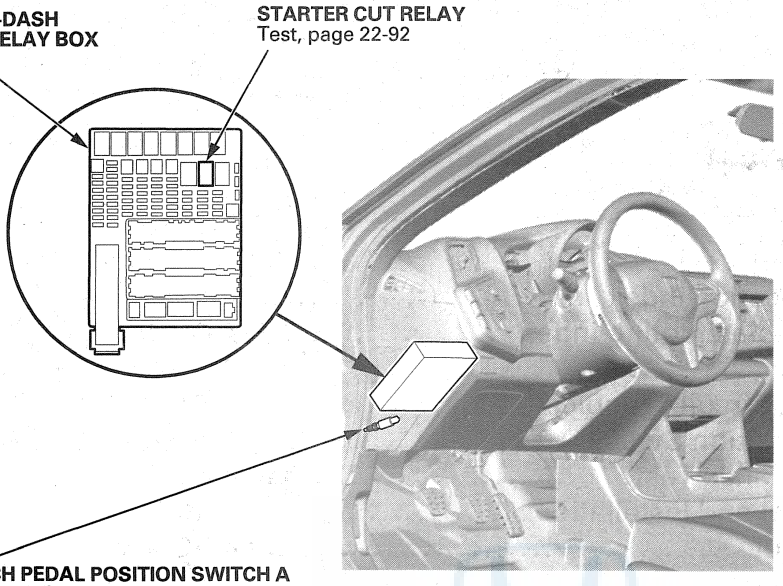
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Cruise Control

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* Cruise Control Combination Switch Test/Replacement 4–29
Clutch Pedal Position Switch B Test 4–29

Starting System

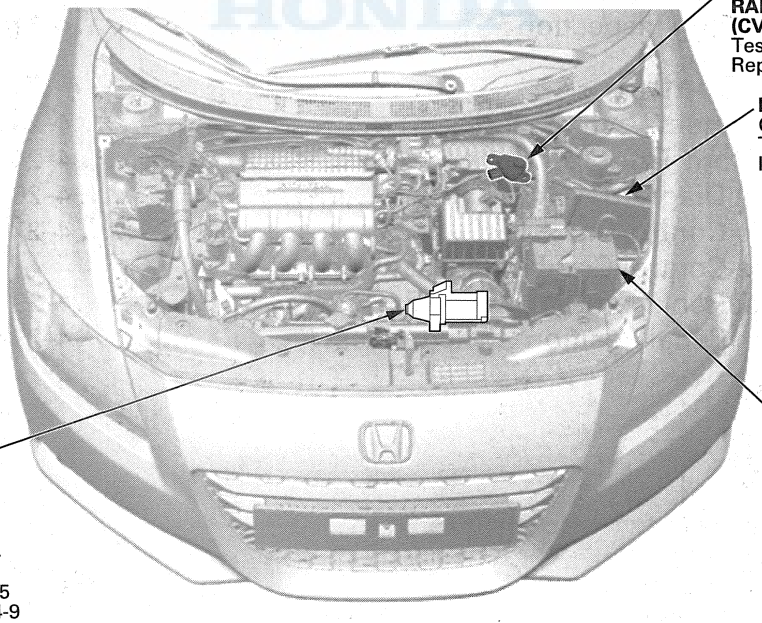
Component Location Index



UNDER-DASH FUSE/RELAY BOX

STARTER CUT RELAY
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CLUTCH PEDAL POSITION SWITCH A (M/T model)
Test, page 4-8
Adjustment, page 13-6
Replacement, page 13-9



TRANSMISSION RANGE SWITCH (CVT model)
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ECM/PCM
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BATTERY
Test, page 22-85

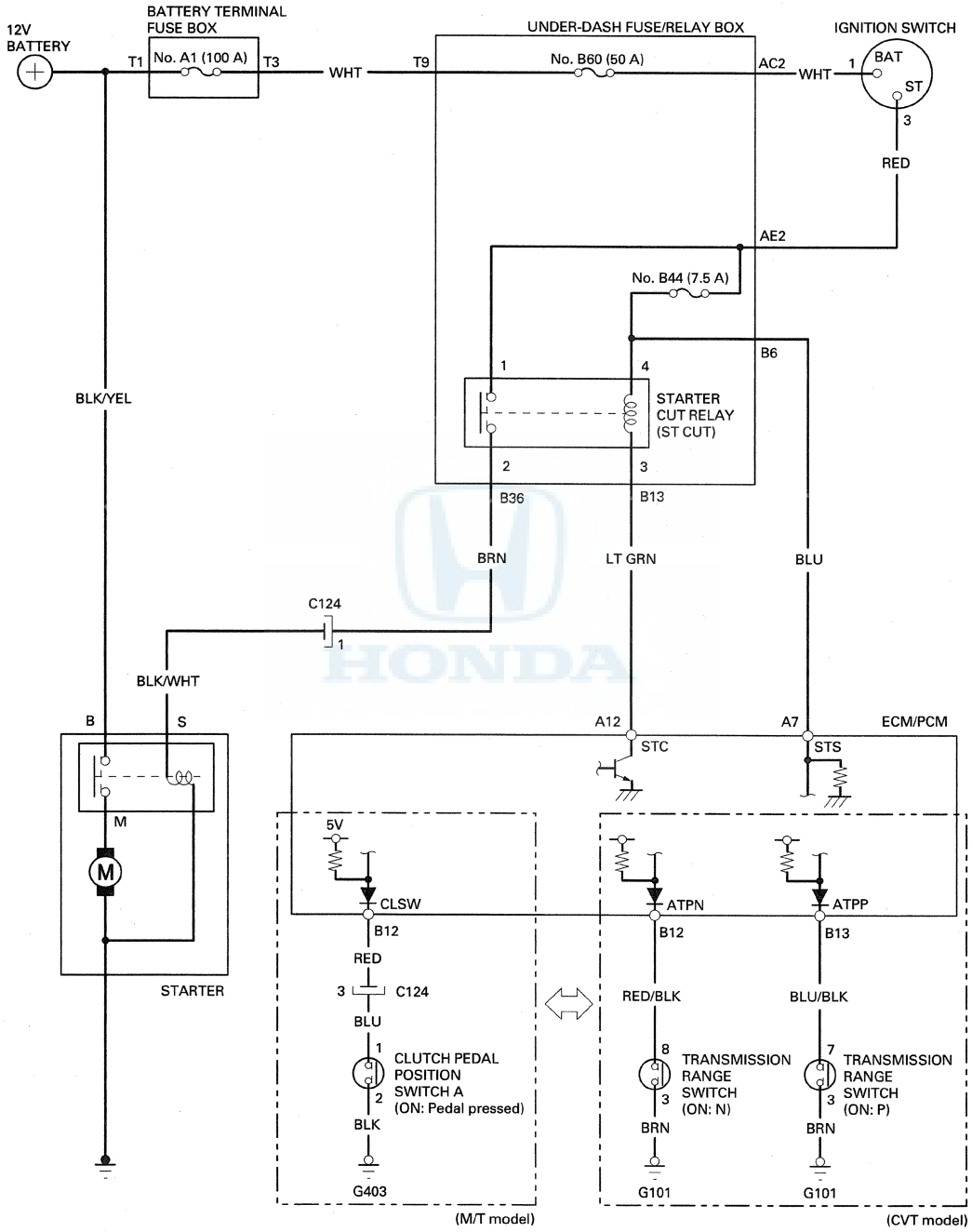
STARTER
Circuit Diagram, page 4-4
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Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Engine does not crank	1. Check for loose battery terminals or connections. 2. Test the 12 volt battery for a low state of charge (see page 22-85). 3. Check for PGM-FI DTCs (see page 11-3). 4. Check the starter (see page 4-9). 5. Check the starter cut relay (see page 22-92). 6. Check the starter system circuit troubleshooting (see page 4-5). 7. Check the transmission range switch (CVT model) (see page 14-199). 8. Check the clutch pedal position switch A (M/T model) (see page 4-8). 9. Check the ignition switch or related circuits (see page 22-100).	• Poor ground at G101 (CVT model), G403 (M/T model) • Seized engine
Engine cranks, but does not start	1. Check for PGM-FI DTCs (see page 11-3). 2. Check for IMMOBI status and function (see page 22-193). 3. Check the fuel pressure (see page 11-290). 4. Check for a plugged or damaged fuel line (see page 11-291). 5. Check for a plugged fuel filter (see page 11-304). 6. Check the throttle body (see page 11-246). 7. Check for low engine compression (see page 6-6). 8. Check the camshaft timing (see page 6-12). 9. Do the ECM/PCM reset in the PGM-FI INSPECTION menu to cancel ALL INJECTORS STOP with the HDS.	• Fuel level in tank • Weak or fouled spark plugs
Engine is hard to start	1. Check for PGM-FI DTCs (see page 11-3). 2. Check the fuel pressure (see page 11-290). 3. Check for a plugged or damaged fuel line (see page 11-291). 4. Check for a plugged fuel filter (see page 11-304).	Weak or fouled spark plugs
Engine cranks slowly	1. Check for loose battery terminals or connections. 2. Test the 12 volt battery for a low state of charge (see page 22-85). 3. Check the starter for binding (see page 4-12). 4. Check for excessive drag in the engine. 5. Check for excessive drag in the transmission.	

Starting System

Circuit Diagram



Starter System Circuit Troubleshooting

Special Tools Required

Alternator, Regulator, Battery, and Starter Tester OTC3131*

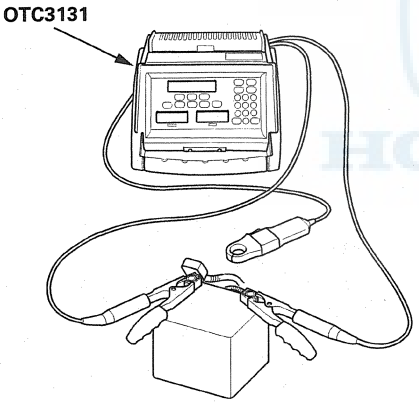
*Available through the Honda Tool and Equipment Program 888-424-6857

NOTE:

- Air temperature must be within 59—100 °F (15—38 °C) during this procedure.
- After this inspection, you must reset PGM-FI ECM/PCM in the PGM-FI INSPECTION menu with the HDS to cancel ALL INJECTORS and STARTER TEST functions.
- The 12 V battery must be in good condition and fully charged.

1. Connect the alternator, regulator, battery, and starter tester (OTC3131) to the battery as shown.

   NOTE: The probe is not used for battery testing.



2. Do the BATTERY TEST.

   Does the display indicate GOOD or LOW CHARGE?

   YES–The battery is OK. Charge the battery if necessary, then go to step 3.

   NO–If the display indicates BAD BATTERY, replace the battery, then retest. If the display indicates CHARGE & RETEST, charge the battery, then retest.

3. Connect the HDS to the DLC (see step 2 on page 11-3).

4. Turn the ignition switch to ON (II).

5. Make sure the HDS communicates with the vehicle and the ECM/PCM, If it does not communicate, troubleshoot the DLC circuit (see page 11-383).

6. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.

7. Select STARTER TEST in the PGM-FI INSPECTION menu with the HDS.

8. Set the parking brake, then with the clutch pedal pressed (M/T model) or the shift lever in P or N (CVT model), turn the ignition switch to START (III).

   Does the starter crank the engine normally?

   YES–The starting system is OK. Go to step 17.

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).

10. Check the electrical connections at the battery, the negative battery cable to the body, the engine ground cables, and the starter for looseness and corrosion. Then try cranking the engine again.

    Does the starter crank the engine normally?

    YES–Repairing the loose connection corrected the problem. The starting system is OK. Go to step 17.

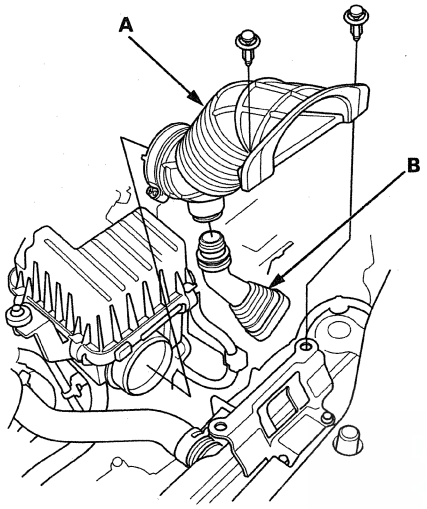
    NO–Based on the following symptoms, take the appropriate action:

    - If the starter does not crank the engine at all, go to step 11.
    - If the starter cranks the engine erratically or too slowly, go to step 14.
    - If the starter does not disengage from the flywheel ring gear (M/T model) or the torque converter ring gear (CVT model) when you release the key, replace the starter (see page 4-10), or remove and disassemble it (see page 4-12), and check for the following:
      - Starter solenoid and switch malfunction
      - Dirty drive gear or damaged overrunning clutch
      - Damaged flywheel ring gear (M/T model)
      - Damaged torque converter ring gear (CVT model)

(cont'd)

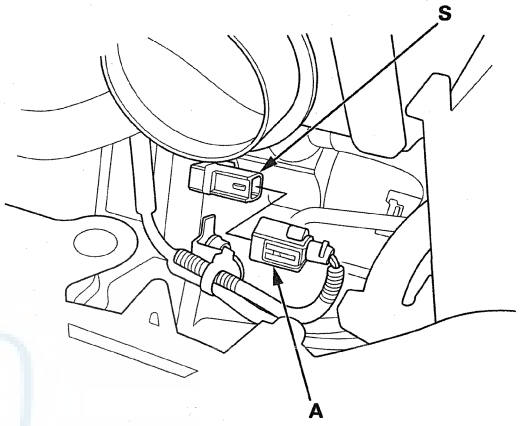
Starter System Circuit Troubleshooting (cont'd)

11. Remove the intake air tube (A) and the resonator chamber joint (B).

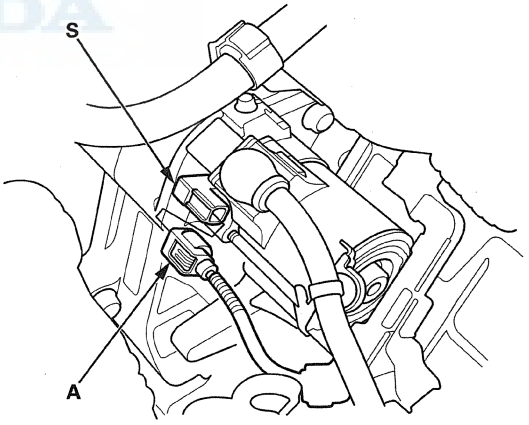


12. Make sure the shift lever is in neutral (M/T model) or P or N (CVT model), and set the parking brake, then disconnect the S terminal connector (A) from the starter S terminal. Connect a jumper wire from the battery positive terminal to the S terminal.

M/T model



CVT model



Does the starter crank the engine?

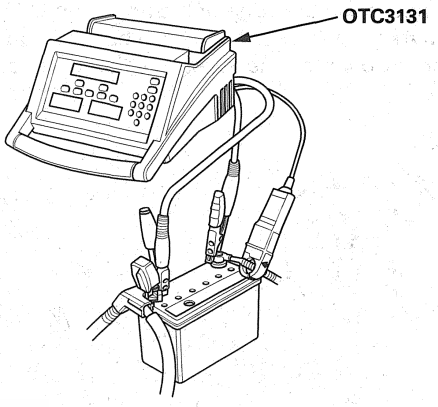
YES–Go to step 13.

NO–Remove the starter (see page 4-10), or remove and disassemble it (see page 4-12) as necessary.■

13. Check the following items in the order listed until you find the problem in the circuit:

    NOTE: After the problem in the circuit is found and repaired, go to step 17.
    - A blown No. B44 (7.5A) fuse in the under-dash fuse/relay box.
    - Check for an open or short in the RED wire and connectors between the under-dash fuse/relay box and the ignition switch.
    - Check for an open or short in the BLU wire and connectors between the under-dash fuse/relay box and the ECM/PCM.
    - Check for an open or short in the LT GRN wire and connectors between the under-dash fuse/relay box and the ECM/PCM.
    - Check for an open or short in the BRN wire, BLK/WHT wire, and connectors between the under-dash fuse/relay box and the starter.
    - Check for an open or short in the RED wire, BLU wire and connectors between the clutch pedal position switch A and the ECM (M/T model).
    - Check for an open or short in the RED/BLK wire and connectors between the transmission range switch and the PCM (CVT model).
    - Check for an open or short in the BLU/BLK wire and connectors between the transmission range switch and the PCM (CVT model).
    - Check for poor connections or loose terminals at the clutch pedal position switch A and body ground (G403) (M/T model).
    - Check for poor connections or loose terminals at the transmission range switch and body ground (G101) (CVT model).
    - Check for a faulty ignition switch (see page 22-100).
    - Check a faulty starter cut relay (see page 22-92).
    - Check for a faulty clutch pedal position switch A (M/T model) (see page 4-8).
    - Check for a faulty transmission range switch (CVT model) (see page 14-199).

14. Connect the alternator, regulator, battery, and starter tester (OTC3131) to the battery.



15. Do the STARTER TEST.

    Does the display indicate cranking voltage greater than or equal to 8.5 V and is the current draw less than or equal to 350 A ?

    YES–Go to step 16.

    NO–Replace the starter (see page 4-10), or remove and disassemble it (see page 4-12), and check for these problems:■
    - Drag in the starter armature
    - Shorted armature winding
    - Excessive drag in the engine
    - Open circuit in starter armature commutator segments
    - Excessively worn starter brushes
    - Open circuit in starter brushes
    - Dirty or damaged helical splines or drive gear
    - Faulty overrunning clutch

16. Remove the starter (see page 4-10), and inspect its drive gear and the flywheel ring gear (M/T model) or the torque converter ring gear (CVT model) for damage. Replace any damaged parts.

17. Select PGM-FI ECM/PCM reset (see page 11-4) in the PGM-FI INSPECTION menu with the HDS to cancel ALL INJECTORS STOP and STARTER TEST.

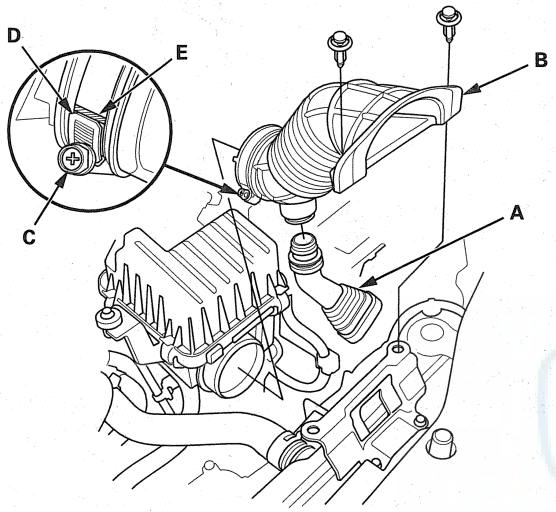
18. If the IMA battery level indicator displays no level, start the engine, and hold the engine speed between 3,500 and 4,000 rpm without load (in P or N (CVT model)) or (in neural (M/T model)) until the level in the indicator is half full.

(cont'd)

Starter System Circuit Troubleshooting (cont'd)

19. Install the resonator chamber joint (A) and the intake air tube (B).

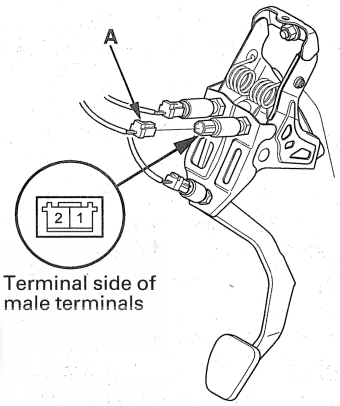
    NOTE: When tightening the screw (C) of the hose band, align the edge of the hose band (D) with the mark (E) painted on the hose band. If you tighten the screw over the mark, replace the hose band.



Clutch Pedal Position Switch A Test

M/T model

1. Remove the driver's dashboard undercover (see page 20-86).
2. Remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the 2P connector (A) from the clutch pedal position switch A.



4. Check for continuity between the terminals according to the table.
   - If the continuity is not as specified, replace the clutch pedal position switch A (see page 13-9), and adjust the pedal height (see page 13-6).
   - If OK, connect the clutch pedal position switch A 2P connector.

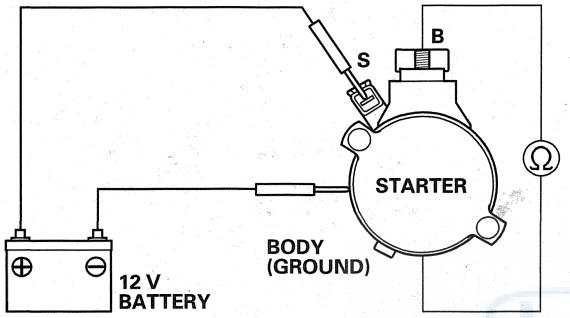
Terminal / Clutch Pedal	1	2
PRESSED	○	○
RELEASED		

5. Install the driver's dashboard lower cover (see page 20-85).
6. Install the driver's dashboard undercover (see page 20-86).

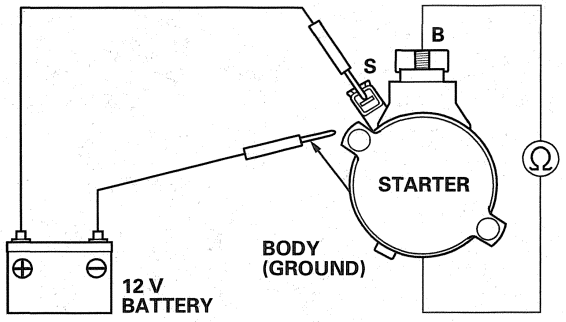
Starter Performance Test

1. Remove the starter (see page 4-10).
2. Clamp the starter firmly in a vise.
3. Make the connection for this test using the thickest (gauge) wire possible (preferably the same gauge as used on the vehicle).

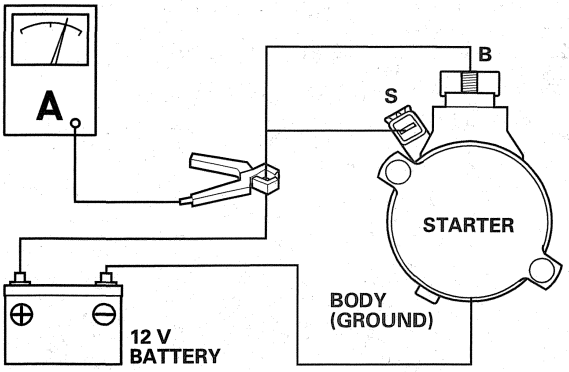
   NOTE: To avoid damaging the starter, never leave the battery connected for more than 5 seconds.



4. Connect the battery as shown, and check for continuity between the B terminal and the starter body. If there is continuity, it is working properly.
5. Disconnect the battery from the starter body as shown, and check for continuity between the B terminal and the starter body. If there is no continuity, it is working properly.



6. Connect the starter to the battery as shown, and confirm that the motor runs.



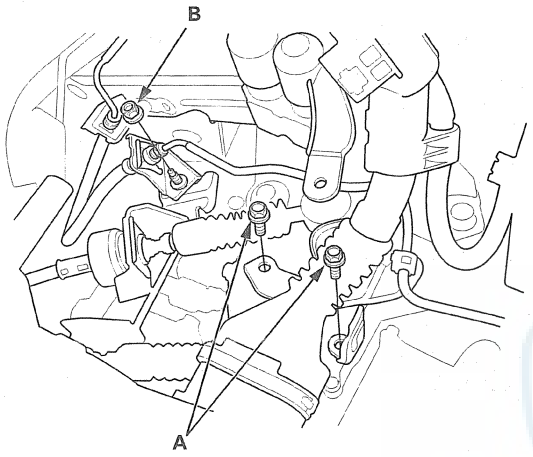
7. If the electric current meets the specification when the battery voltage is at 11.5 V, the starter is working properly.

Specification
Electric Current: 80 A or less

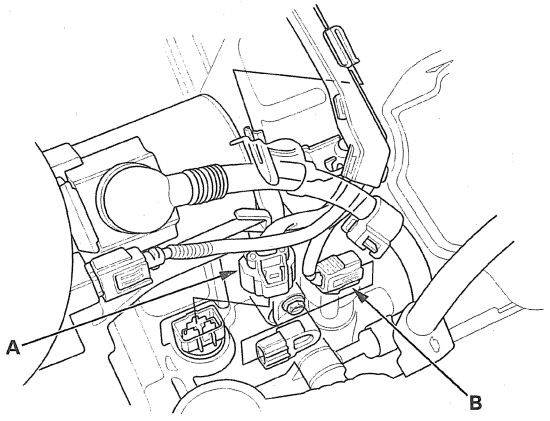
Starter Removal and Installation

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the air cleaner (see page 9-3).
3. M/T model: Remove the clutch hose bracket bolts (A) and nut (B).

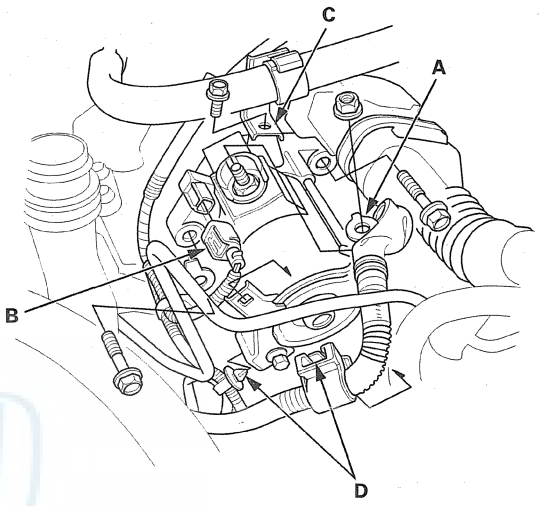


4. CVT model: Disconnect the solenoid wire harness connector (A) and the CVT input shaft (drive pulley) speed sensor connector (B).

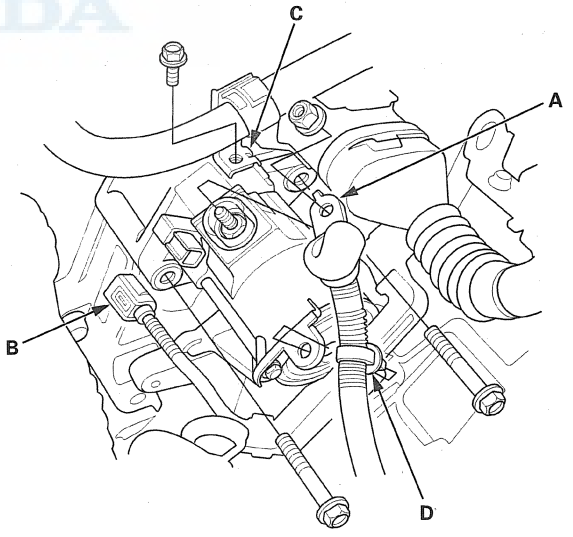


5. Disconnect the positive starter cable (A) and the harness connector (B) from the S terminal, then remove the heater hose bracket (C) and the harness clamps (D).

M/T model



CVT model

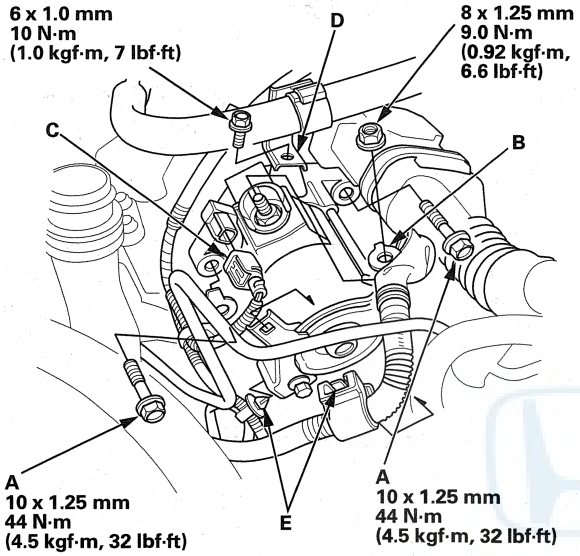


6. Remove the two bolts securing the starter, then remove the starter.

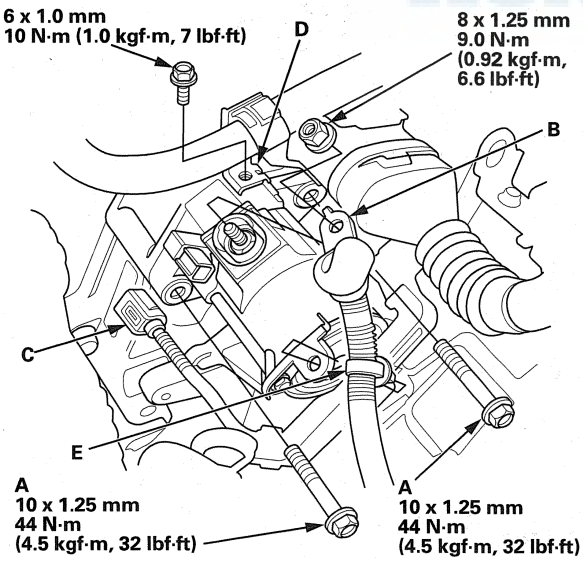
Installation

1. Install the starter, then tighten the starter mounting bolts (A).

M/T model

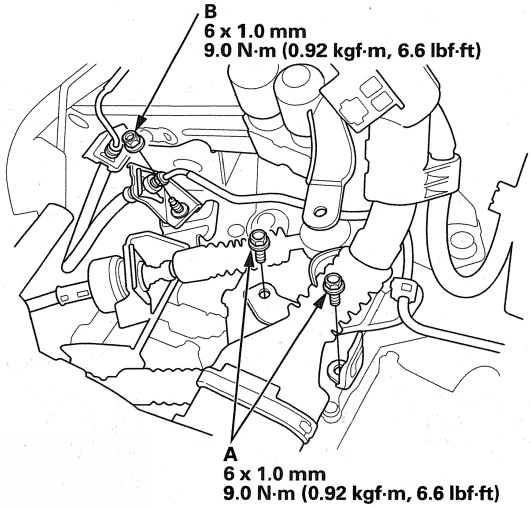


CVT model

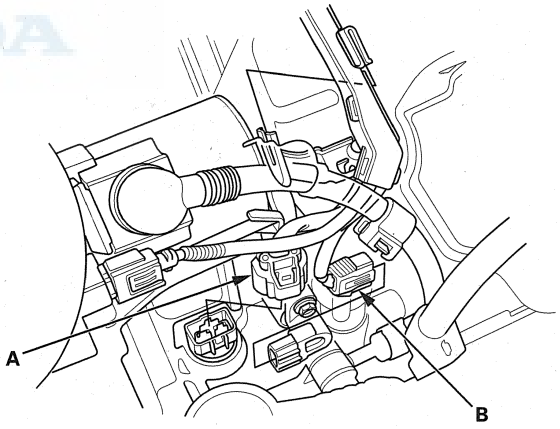


2. Connect the positive starter cable (B) and the harness connector (C) to the S terminal, then install the heater hose bracket (D) and the harness clamps (E). Make sure the crimped side of the ring terminal is facing out.

3. M/T model: Install the clutch hose bracket bolts (A) and nut (B).



4. CVT model: Install the solenoid wire harness connector (A) and the CVT input shaft (drive pulley) speed sensor connector (B).

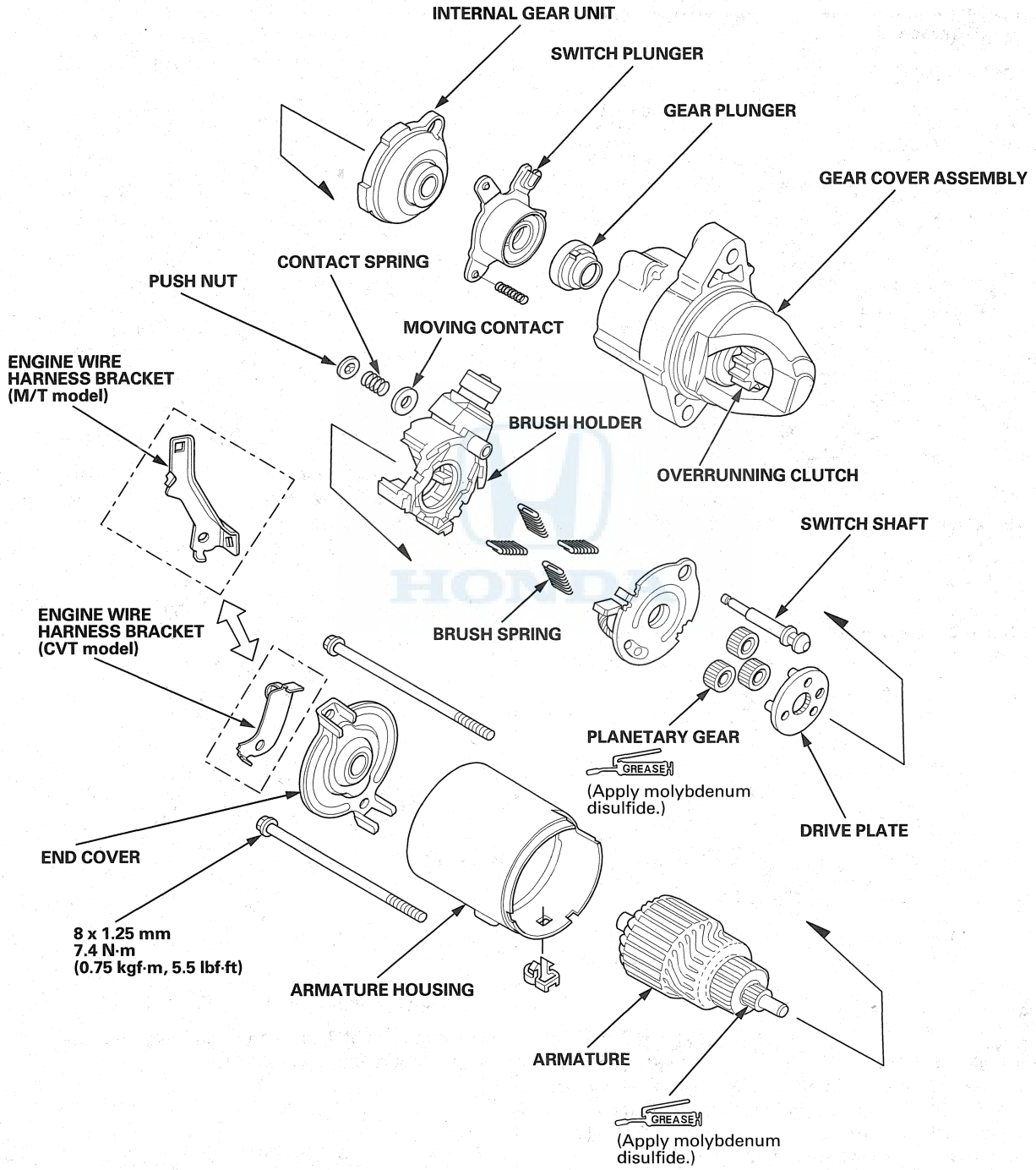


5. Install the air cleaner (see page 9-3).

6. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

Starter Overhaul

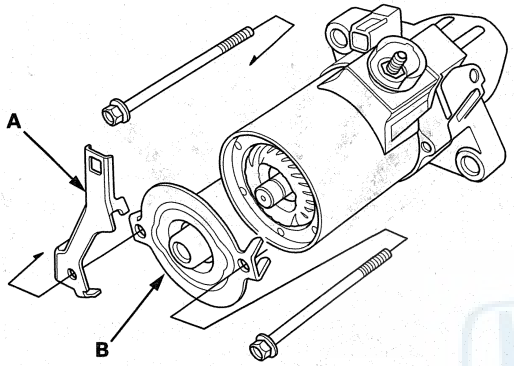
Exploded View



NOTE: Refer to the Exploded View if needed during this procedure.

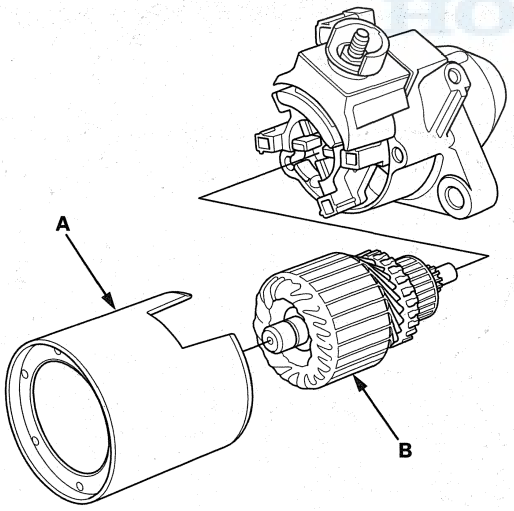
Starter Disassembly

1. Remove the starter (see page 4-10).
2. Remove the engine wire harness bracket (A) and the end cover (B).



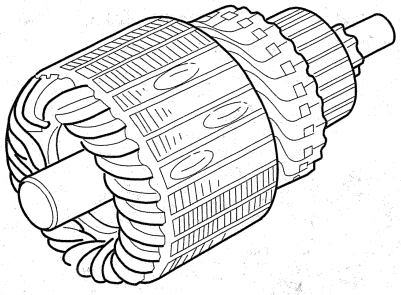
The illustration shows M/T model.

3. Remove the armature housing (A) and the armature (B).



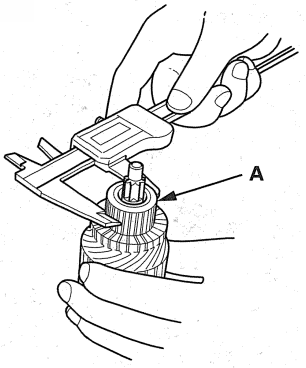
Armature Inspection and Test

4. Inspect the armature for wear or damage from contact with the permanent magnet. If there is wear or damage, replace the armature.



5. Check the commutator (A) diameter with a digital caliper or dial type caliper. If the diameter is below the service limit, replace the armature.

Commutator Diameter
Standard (New): 28.0—28.1 mm (1.102—1.106 in)
Service Limit: 27.5 mm (1.083 in)

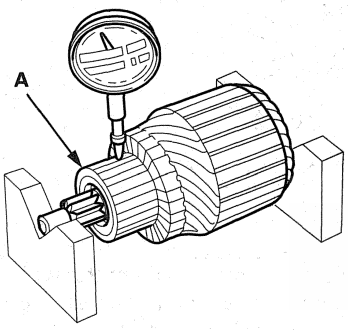


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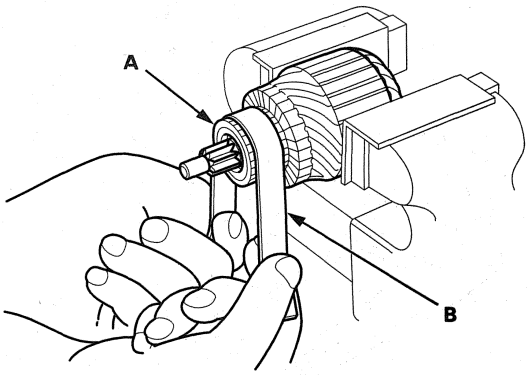
Starter Overhaul (cont'd)

6. Measure the commutator (A) runout:
   - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
   - If the commutator runout is not within the service limit, replace the armature.

   Commutator Runout
   Standard (New): 0.02 mm (0.0008 in) max.
   Service Limit: 0.05 mm (0.0020 in)

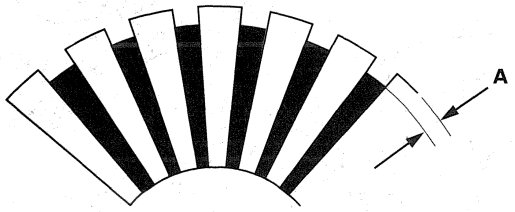


7. Check the commutator (A) surface. If the surface is dirty or burnt, resurface it with an emery cloth or a lathe to the specification in step 5, or recondition with #500 or #600 sandpaper (B).

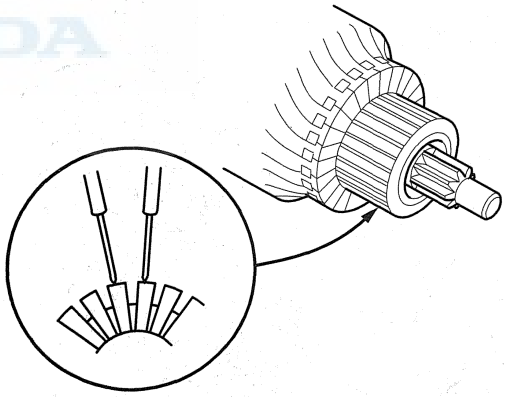


8. Use a digital caliper or dial type caliper to check the mica depth (A). If the mica depth is below the service limit, replace the armature.

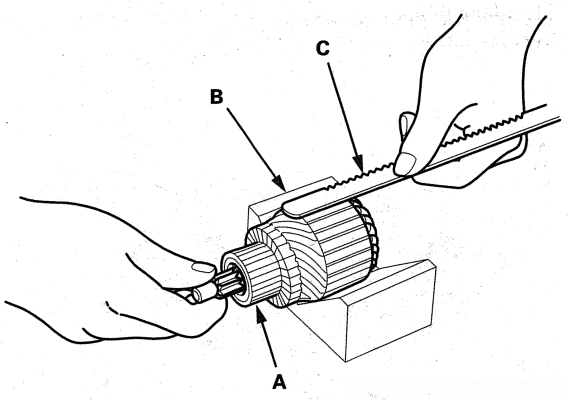
   Commutator Mica Depth
   Standard (New): 0.40—0.50 mm (0.0157—0.0197 in)
   Service Limit: 0.15 mm (0.0059 in)



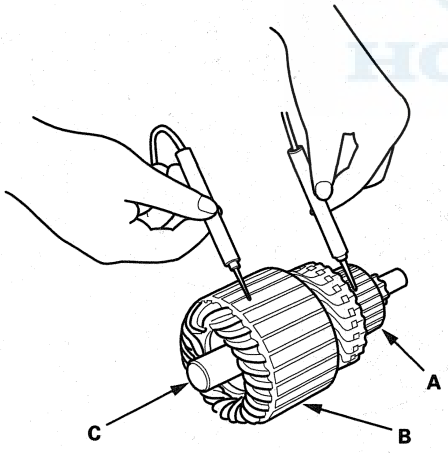
9. Use an ohmmeter to check for continuity between the segments of the commutator. If there is an open circuit between any segments, replace the armature.



10. Place the armature (A) on an armature tester (B). Hold a hacksaw blade (C) on the armature core. If the blade is attracted to the core while the core is turned, the armature is shorted. Replace the armature.

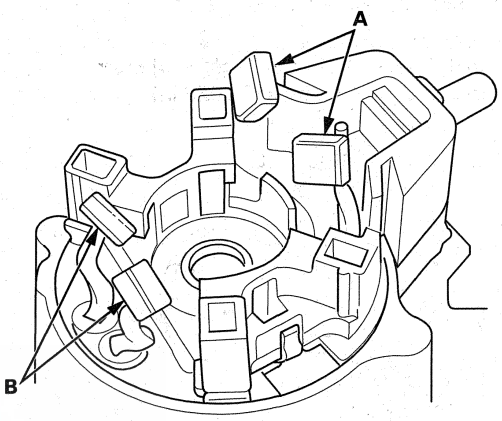


11. Use an ohmmeter to check for continuity between the commutator (A) and the armature coil core (B), and between the commutator and the armature shaft (C). If there is continuity, replace the armature.



Starter Brush Holder Test

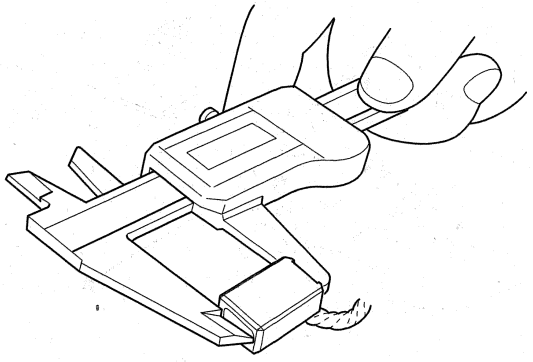
12. Check for continuity between the (+) brushes (A) and the (−) brushes (B). If there is continuity, replace the brush holder set.



Starter Brush Inspection

13. Measure the brush length. If it is shorter than the service limit, replace the brush holder set.

Brush Length
Standard (New): 11.1−11.5 mm (0.437−0.453 in)
Service Limit: 4.3 mm (0.169 in)

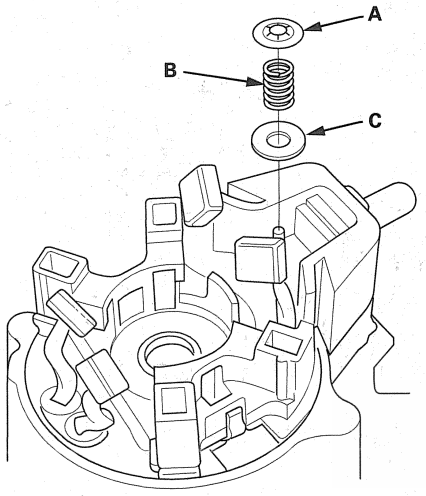


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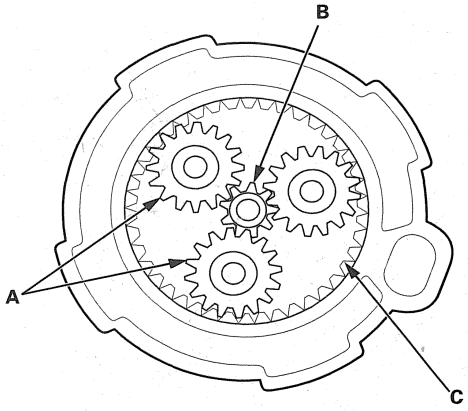
Starter Overhaul (cont'd)

Planetary Gear Inspection

14. Remove the push nut (A), contact spring (B) and moving contact (C), then remove the brush holder set.

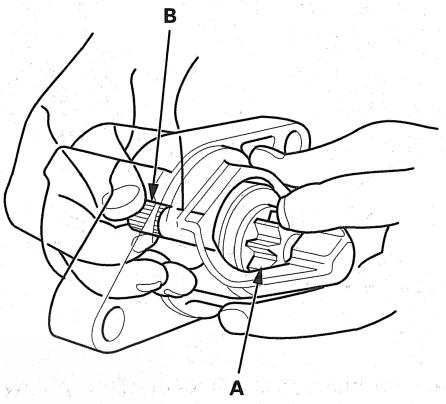


15. Check the planetary gears (A), the armature shaft gear (B) and the internal ring gear (C). Replace them if they are worn or damaged.



Overrunning Clutch Inspection

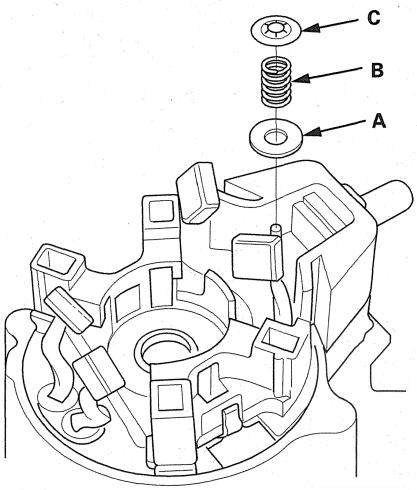
16. Holding the drive gear (A), turn the gear shaft (B) clockwise. Check that the drive gear comes out to the other end. If the drive gear does not move smoothly, replace the gear cover set.



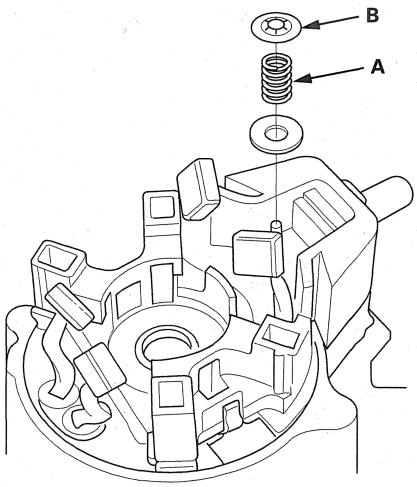
17. Holding the drive gear, turn the gear shaft counterclockwise. The gear shaft should rotate freely. If the gear shaft does not rotate smoothly, replace the gear cover set.

Starter Reassembly

18. When the brush holder is replaced: Replace the brush holder set with the moving contact (A), the contact spring (B), and the push nut (C).

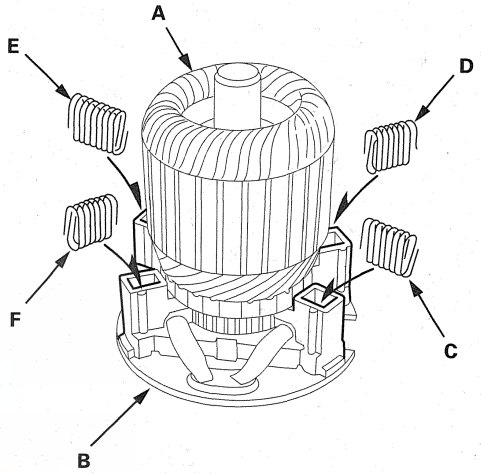


19. When the gear cover/reduction gear/plunger is replaced: Replace the new parts set with the contact spring (A) and the push nut (B).



20. Install the brush into the brush holder, and set the armature (A) in the brush holder (B).

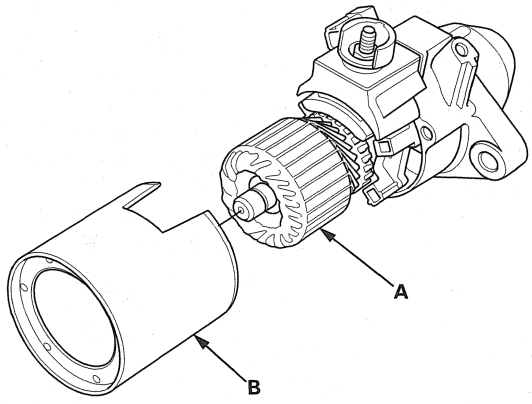
    NOTE: To seat the new brushes, slip a strip of #500 or #600 sandpaper, with the grit side up, between the commutator and each brush, and smoothly rotate the armature. The contact surface of the brushes will be sanded to the same contour as the commutator.



21. While squeezing a brush spring (C), insert it in the hole on the brush holder, and push it until it bottoms. Repeat this for the other three springs (D, E, and F).

22. Install the armature and the brush holder assembly (A) into the armature housing (B).

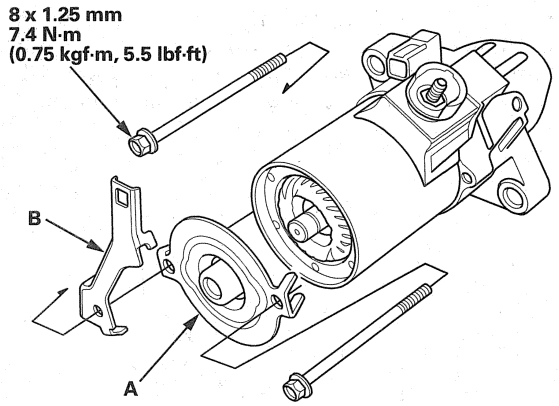
    NOTE: Make sure the armature brackets in the holder.



(cont'd)

Starter Overhaul (cont'd)

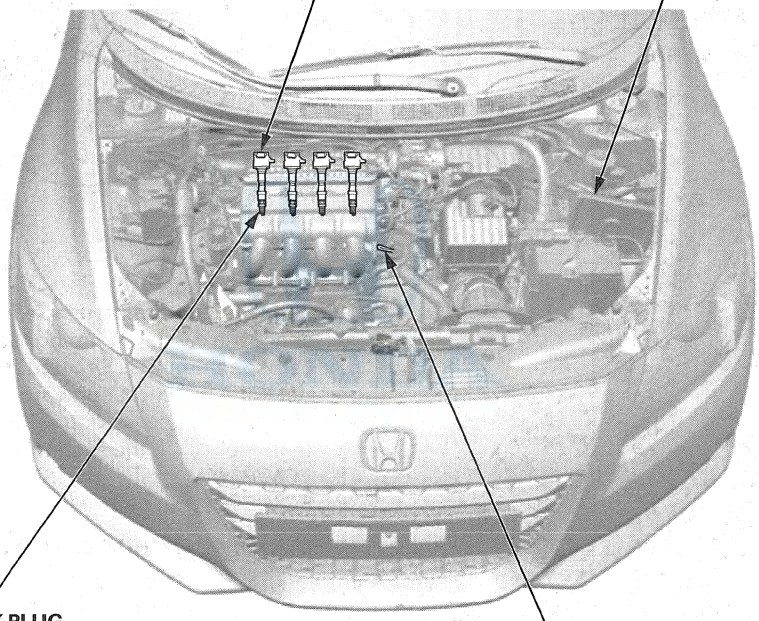
23. Install the end cover (A) with the engine wire harness bracket (B).



The illustration shows M/T model.

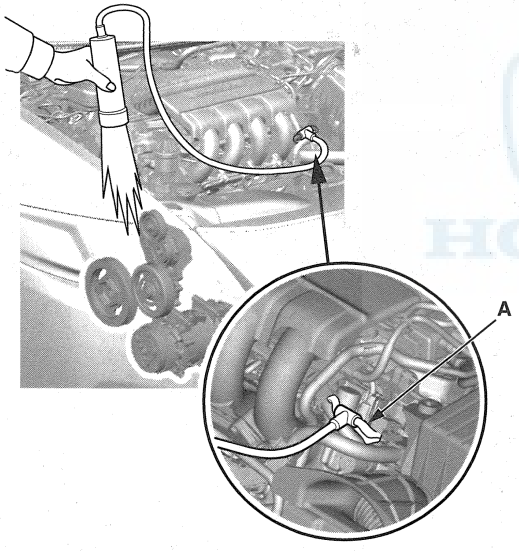
24. Install the starter (see page 4-11).

Component Location Index



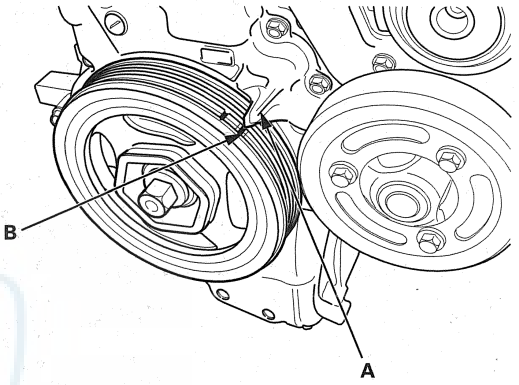
Ignition Timing Inspection

1. Connect the HDS to the DLC (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
4. Check for DTCs (see page 11-3). If a DTC is present, diagnose and repair the cause before continuing with this test.
5. Start the engine. Hold the engine speed at 3,000 rpm with no load (M/T in neutral, CVT in P or N) until the radiator fan comes on, then let it idle.
6. Check the idle speed (see page 11-273).
7. Jump the SCS line with the HDS.
8. Connect the timing light to the service loop (A).



9. Aim the light toward the pointer (A) on the chain case. Check the ignition timing under no load condition (headlights, blower fan, rear window defogger, and air conditioner are turned off).

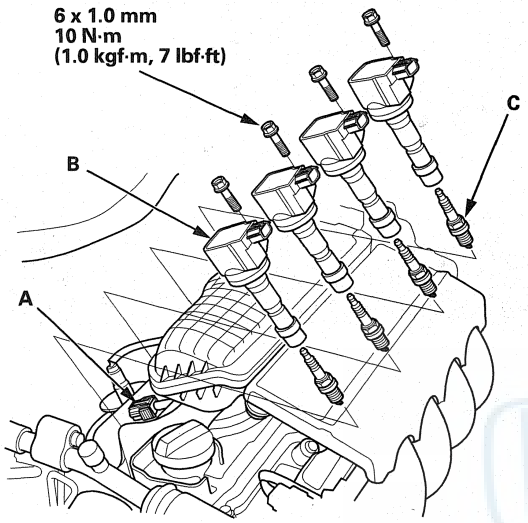
Ignition Timing
M/T model: 10 ±2 ° BTDC (RED mark (B)) at idle in neutral
CVT model: 10 ±2 ° BTDC (RED mark (B)) at idle in P or N



10. If the ignition timing differs from the specification, check the camshaft timing (see page 6-12). If the camshaft timing is OK, update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the system works properly, and the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209).
11. Disconnect the HDS and the timing light.

Ignition Coil and Spark Plug Removal/Installation

1. Remove the cowl cover and the under-cowl panel. (see page 20-153).
2. Disconnect the ignition coil connectors (A), then remove the ignition coils (B).



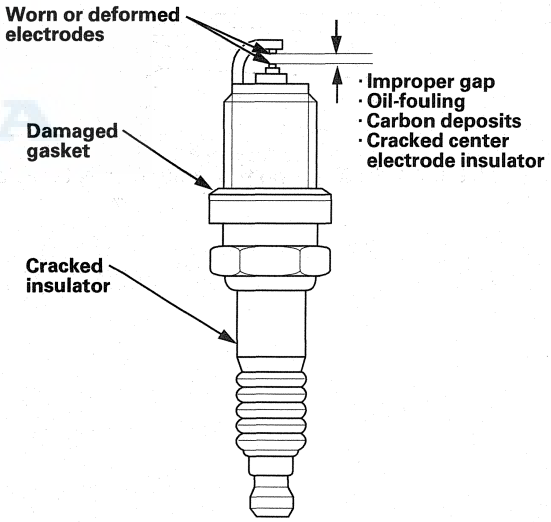
3. Remove the spark plugs (C), and inspect them (see page 4-21).
4. Apply a small amount of anti-seize compound to the plug threads, and screw the plugs into the cylinder head, finger-tight, then tighten the plugs to the specified torque.

   Specified Torque
   18 N·m (1.8 kgf·m, 13 lbf·ft)

5. Install all remaining parts in the reverse order of removal.

Spark Plug Inspection

1. Remove the ignition coils and the spark plugs (see page 4-21).
2. Inspect the electrodes and ceramic insulator:
   - Burned or worn electrodes may be caused by these conditions:
     - Advanced ignition timing
     - Loose spark plug
     - Plug heat range too hot
     - Insufficient cooling
   - Fouled plugs may be caused by these conditions:
     - Retarded ignition timing
     - Oil in combustion chamber
     - Incorrect spark plug gap
     - Plug heat range too cold
     - Excessive idling/low speed running
     - Clogged air cleaner element
     - Deteriorated ignition coils



(cont'd)

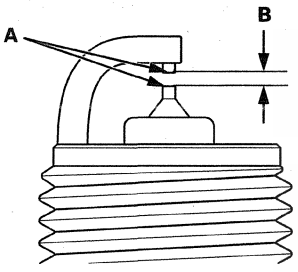
Spark Plug Inspection (cont'd)

3. Replace the plug at the specified interval, or if the center electrode (A) is rounded, or if the spark plug gap (B) is out of specification, or if the spark plug electrode is dirty or contaminated. Use only the spark plugs listed.

   NOTE:
   - Do not adjust the gap of iridium tip plugs.
   - Do not use a plug cleaner.

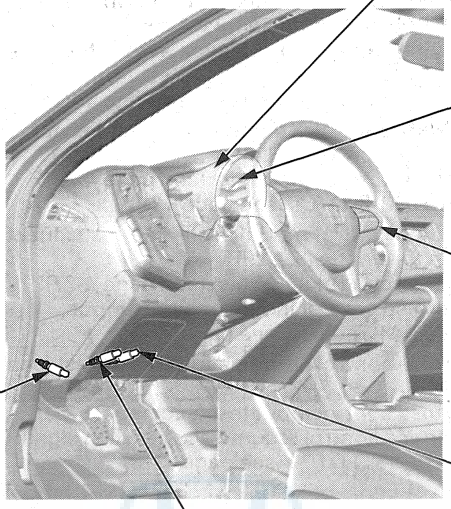
   Spark Plugs
   NGK ('11 model): DIFR6A13G
   NGK ('12 model): DIFR6D13
   DENSO: DK20PR-D13

   Electrode Gap
   Standard (New): 1.2—1.3 mm (0.047—0.051 in)



4. Install the spark plugs and the ignition coils (see page 4-21).

Component Location Index



GAUGE CONTROL MODULE
Self-Diagnostic Function, page 22-325

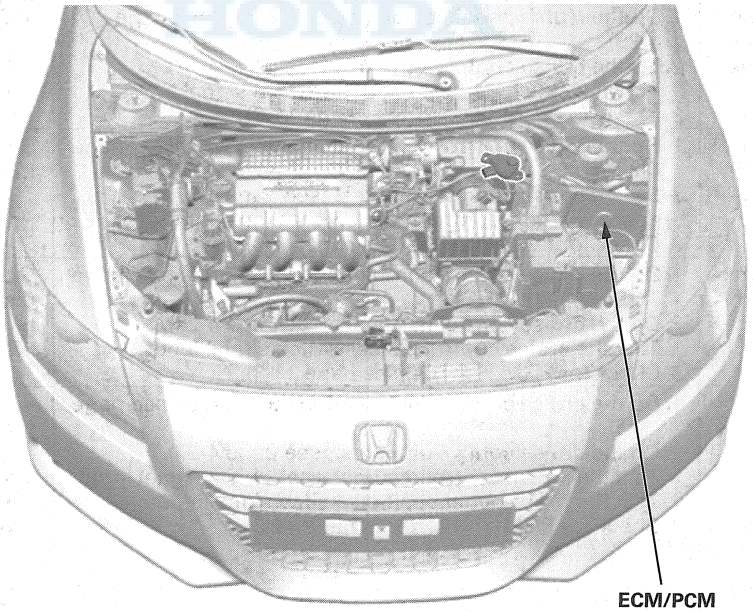
CRUISE MAIN INDICATOR/
CRUISE CONTROL INDICATOR
[Built into gauge control module]

CRUISE CONTROL
COMBINATION SWITCH
Circuit Diagram, page 4-26
Test/Replacement, page 4-29

BRAKE PEDAL POSITION SWITCH
Test, page 22-246
Adjustment, page 19-6

CLUTCH PEDAL POSITION SWITCH B
(M/T model)
Test, page 4-29
Replacement, page 13-9
Adjustment, page 13-6

IDLE STOP SWITCH
(CVT model)
Replacement, page 12-229
Adjustment, page 19-6



ECM/PCM
Cruise Control Input Test, page 4-27

Symptom Troubleshooting Index

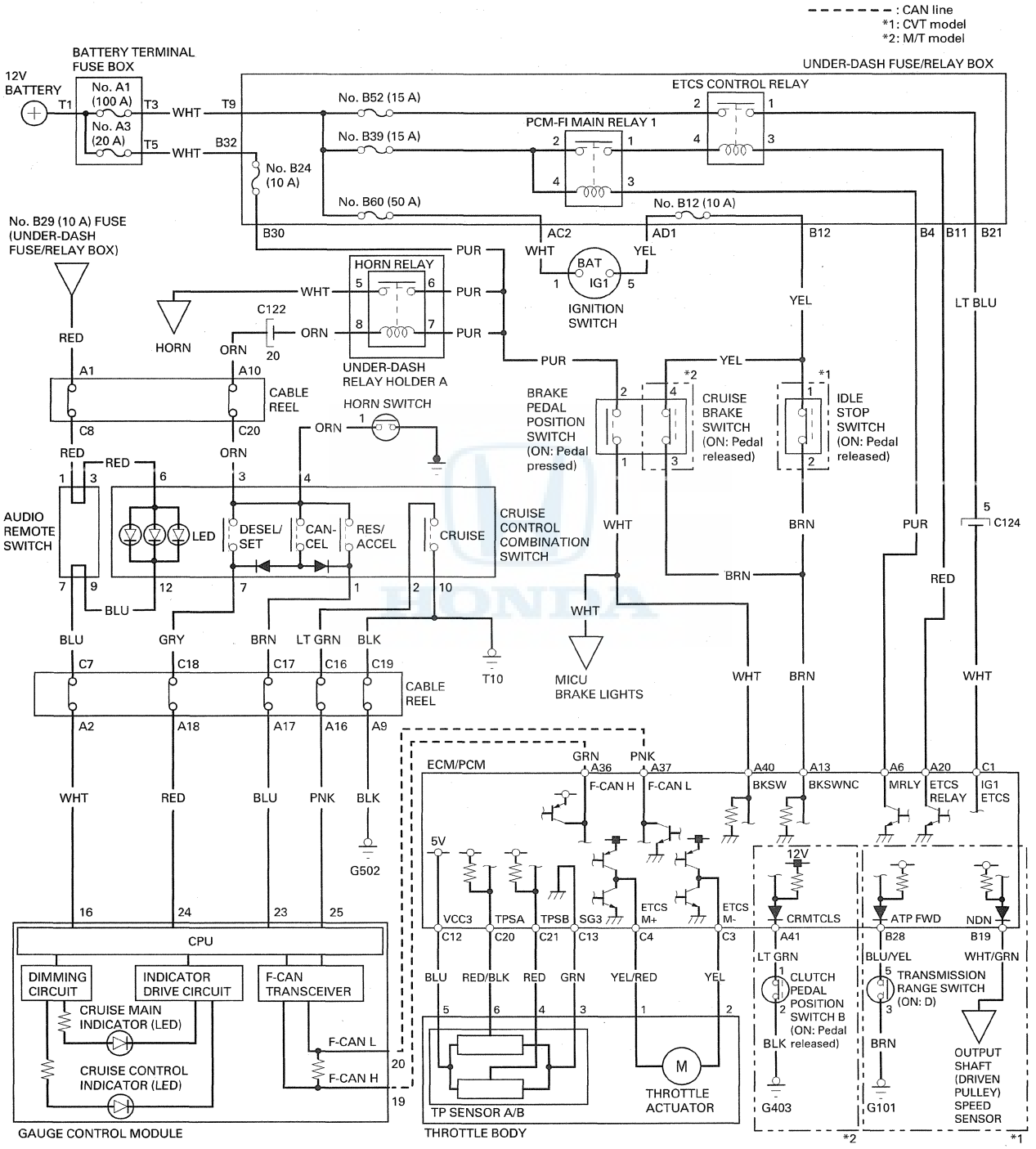
Symptom	Diagnostic procedure	Also check for
Cruise control cannot be set	1. Check for PGM-FI DTCs (see page 11-3). 2. Check the No. B24 (10 A) fuse and the No. B12 (10 A) fuse in the under-dash fuse/relay box. 3. Do the cruise control combination switch test (see page 4-29). 4. Do the cruise control input test (see page 4-27).	Poor ground G502, T10
Cruise control can be set, but cruise main indicator does not come on	1. Do the gauge control module self-diagnostic function procedure (see page 22-325). 2. Do the cruise control input test (see page 4-27). 3. Check for PGM-FI DTCs (see page 11-3).	Faulty gauge control module
Cruise control can be set, but cruise control indicator does not come on	1. Do the gauge control module self-diagnostic function procedure (see page 22-325). 2. Do the cruise control input test (see page 4-27). Test the cruise control indicator signal input. 3. Check for PGM-FI DTCs (see page 11-3).	Faulty gauge control module
Vehicle does not accelerate accordingly when the resume/accel button is pressed	1. Do the cruise control combination switch test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the cruise control resume/accel switch signal input. 3. Check for PGM-FI DTCs (see page 11-3).	Open circuit, loose or disconnected terminals: BRN or BLU wire
Set speed does not cancel when the brake pedal is pressed	1. Do the brake pedal position switch test (M/T model) (see page 22-246). 2. Do the cruise control input test (see page 4-27). Test the cruise brake pedal position switch signal input (M/T model). Test the idle stop switch signal input (CVT model). 3. Check for PGM-FI DTCs (see page 11-3).	• Short to power on the BRN wire • Faulty brake pedal position switch (M/T model) • Faulty idle stop switch (CVT model)
Set speed does not cancel (engine rpm stays high) when the clutch pedal is pressed (M/T model)	1. Do the clutch pedal position switch B test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the clutch pedal position switch B signal input. 3. Check for PGM-FI DTCs (see page 11-3).	• Short to power on the LT GRN wire • Faulty clutch pedal position switch B
Set speed does not cancel when the cruise control main button is pressed	1. Do the cruise control combination switch test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the cruise control main switch signal input. 3. Check for PGM-FI DTCs (see page 11-3).	Short to ground on the LT GRN, PNK wire
Set speed does not cancel when the cancel button is pressed	1. Do the cruise control combination switch test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the cruise control cancel switch signal input. 3. Check for PGM-FI DTCs (see page 11-3).	Open circuit, loose or disconnected terminals: GRY, RED or BRN, BLU wire
Set speed does not resume when the resume/ accel button is pressed (with the cruise control main button pressed on, and set speed temporarily canceled by pressing the brake pedal)	1. Do the cruise control combination switch test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the cruise control resume/accel switch signal input. Test the brake pedal position switch signal input. 3. Check for PGM-FI DTCs (see page 11-3).	• Open circuit, loose or disconnected terminals: BRN, BLU wire • Faulty brake pedal position switch

Symptom	Diagnostic procedure	Also check for
Set speed does not resume when the resume/accel button is pressed (with the cruise control main button pressed on, and set speed temporarily canceled by pressing the clutch pedal) (M/T model)	1. Do the cruise control combination switch test (see page 4-29). 2. Do the cruise control input test (see page 4-27). Test the cruise control resume/accel switch signal input. Test the clutch pedal position switch B signal input. 3. Check for PGM-FI DTCs (see page 11-3).	• Open circuit, loose or disconnected terminals: BRN, BLU wire • Faulty clutch pedal position switch B
Light switch turned on, the cruise control combination switch illumination does not come on	1. Check the No. B29 (10 A) fuse in the under-dash fuse/relay box. 2. Do the cruise control combination switch test (see page 4-29). 3. Do the audio remote switch test (see page 23-125).	Open circuit, loose or disconnected terminals: RED, BLU and WHT wire

HONDA

Cruise Control

Circuit Diagram



Cruise Control Input Test

NOTE: Always make sure that you have the latest HDS software.

1. Connect the HDS to the DLC (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
4. Check for and troubleshoot any DTCs (see page 11-3).
5. Do the following tests while monitoring parameters in the PGM-FI DATA LIST with the HDS.
6. If the input tests prove OK, replace the ECM/PCM (see page 11-209).

   NOTE: Intermittent failures are often caused by loose circuit connections. While monitoring cruise control inputs, flex their circuits, and note if any of the test results change.

Signal to be tested	Test condition	Parameter: Desired result	Possible cause if result is not obtained
Cruise brake switch signal (M/T model)	Brake pedal pressed, then released	CRUISE BRAKE SW/IDLE STOP SW should indicate OPEN when the brake pedal is pressed and CLOSE when the brake pedal is released.	• Faulty brake pedal position switch • Blown No. B12 (10 A) fuse in the under-dash fuse/relay box • An open in the wire between the ECM and the brake pedal position switch • A wire shorted to ground between the ECM and the brake pedal position switch
Idle stop switch signal (CVT model)	Brake pedal pressed, then released	CRUISE BRAKE SW/IDLE STOP SW should indicate OPEN when the brake pedal is pressed and CLOSE when the brake pedal is released.	• Faulty idle stop switch • Blown No. B12 (10 A) fuse in the under-dash fuse/relay box • An open in the wire between the PCM and the idle stop switch • A wire shorted to ground between the PCM and the idle stop switch
Clutch pedal position switch B signal (M/T model)	Clutch pedal pressed, then released	SHIFT/CLUTCH SW should indicate OFF when the clutch pedal is pressed and ON when the clutch pedal is released.	• Faulty clutch pedal position switch B • An open in the wire between the ECM and the clutch pedal position switch B • A wire shorted to ground between the ECM and the clutch pedal position switch B • Poor ground at G403
Cruise control main switch signal	Cruise control main button ON and OFF	CRUISE MASTER (MAIN) SW should indicate ON when the cruise control main button is pressed and OFF when the cruise control main button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch • An open in the wire between the cruise control combination switch and ground G502, T10
Set switch signal	Decel/set button pressed and released	CRUISE SET SW should indicate ON when the decel/set button is pressed and OFF when the decel/set button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch

(cont'd)

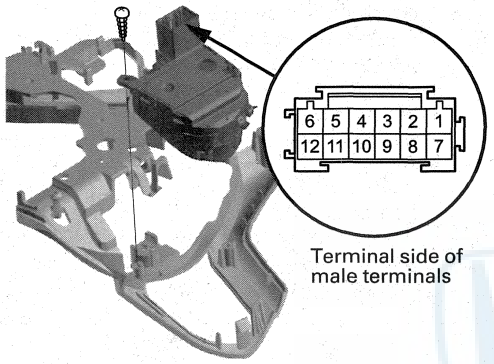
Cruise Control Input Test (cont'd)

Signal to be tested	Test condition	Parameter: Desired result	Possible cause if result is not obtained
Resume switch signal	Resume/accel button pressed and released	CRUISE RESUME SW should indicate ON when the resume/accel button is pressed and OFF when the resume/accel button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Cancel switch signal	Cancel button pressed and released	CRUISE CANCEL SW should indicate ON when the cancel button is pressed and OFF when the cancel button is released.	• Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch
Cruise control indicator signal	Start the engine, press the cruise control main button on, and drive the vehicle above 25 mph (40 km/h), with cruise control set and cancel the cruise control.	CRUISE INDICATOR should indicate ON when the cruise control is set and OFF when the cruise control is canceled.	• Faulty gauge control module • Faulty cruise control combination switch • An open in the wire between the gauge control module and the cruise control combination switch • A wire shorted to ground between the gauge control module and the cruise control combination switch

Cruise Control Combination Switch Test/Replacement

There are SRS components located in this area. Review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13), in the SRS before doing repairs or service.

1. Remove the driver's airbag (see page 24-166), then remove the steering wheel (see page 17-6).
2. Disassemble the steering wheel (see page 17-7).
3. Remove the cruise control combination switch.



4. Check for continuity between the terminals in each cruise control combination switch position according to the table:
   - If there is continuity, and it matches the table, but the cruise control combination switch failure occurred on the cruise control input test, check and repair the wire harness on the switch circuit.
   - If there is no continuity in one or more positions, replace the cruise control combination switch.

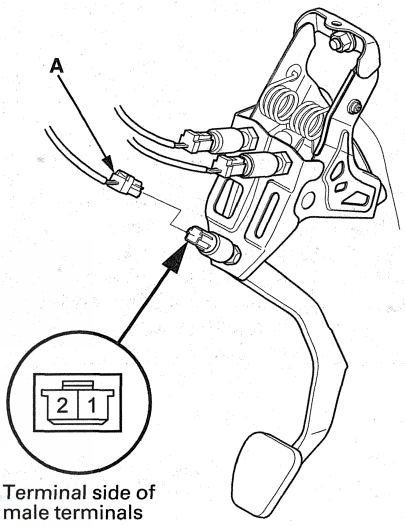
Terminal / Position	1		2	3	6		7	10	12
Cruise control main (ON)			○					○	
Cruise control main (OFF)									
Decel/set (PRESSED)				○			○		
Resume/accel (PRESSED)	○			○					
Cancel (PRESSED)	○	⊣		○		▶	○		
Combination light switch (ON)					○				○

5. Install all remaining parts in the reverse order of removal.

Clutch Pedal Position Switch B Test

M/T model

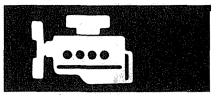
1. Remove the driver's dashboard undercover (see page 20-86).
2. Remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the clutch pedal position switch B 2P connector (A) from the clutch pedal position switch B.



4. Check for continuity between the terminals according to the table:
   - If the continuity is not as specified, replace the clutch pedal position switch B (see page 13-9) and adjust the pedal height (see page 13-6).
   - If OK, connect the clutch pedal position switch B 2P connector.

Terminal / Clutch Pedal	1	2
PRESSED		
RELEASED	○	○

5. Install the driver's dashboard lower cover (see page 20-85).
6. Install the driver's dashboard undercover (see page 20-86).



Engine Mechanical

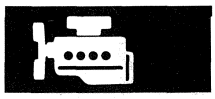
Engine Assembly 5–1

Cylinder Head 6–1

Engine Block 7–1

Engine Lubrication 8–1

Intake Air System and Exhaust System 9–1



Engine Mechanical

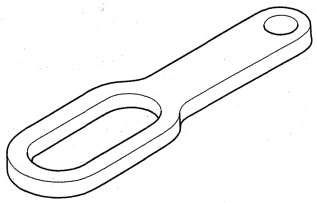
Engine Assembly

Special Tools 5–2
Engine Removal 5–3
Engine Installation 5–11
Side Engine Mount Replacement 5–20
Transmission Mount Replacement 5–24
Torque Rod Replacement 5–28
Side Engine Mount Bracket Replacement 5–29
Transmission Mount Bracket Replacement 5–32
Torque Rod Bracket Replacement 5–35

Engine Assembly

Special Tools

Ref.No.	Tool Number	Description	Qty
①	07AAK-SNAA120	Universal Lifting Eyelet	2



①

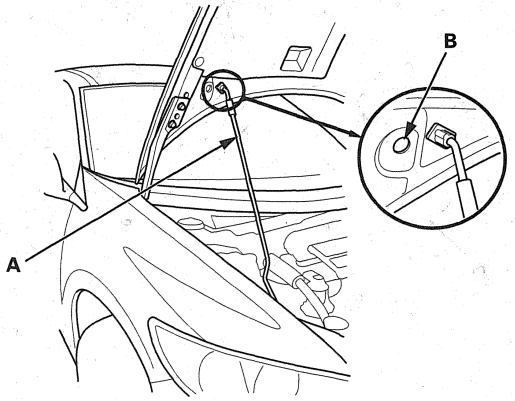
Engine Removal

Special Tools Required
- Universal Lifting Eyelet 07AAK-SNAA120
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*

*: Available through the Honda Tool and Equipment Program 888-424-6857

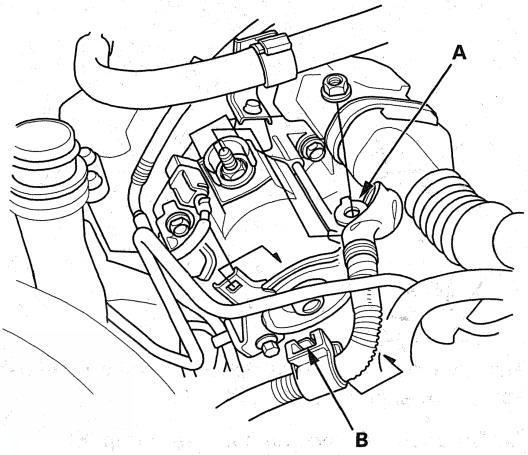
NOTE:
- IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precaution before doing repairs or service (see page 12-3).
- Use fender covers to avoid damaging painted surfaces.
- To avoid damaging the wiring and terminals, unplug the wiring connectors carefully while holding the connector portion.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses, or interfere with other parts.

1. Turn the battery module switch OFF (see page 12-4).
2. Before removing the engine/transmission, read the Service Precautions for the IMA System (see page 12-3).
3. Open the hood, and secure it with the hood support rod (A) in the wide-open position (B).

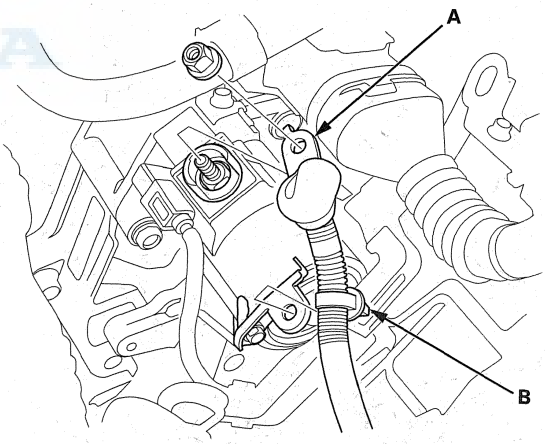


4. Relieve fuel pressure (see page 11-287).
5. Do the 12 volt battery removal procedure (see page 22-87).
6. Remove the cowl cover and the under-cowl panel (see page 20-153).
7. Remove the front bumper center upper beam (see page 20-149).
8. Remove the air cleaner (see page 9-3).
9. Remove the starter cable (A) and the harness clamp (B).

M/T model



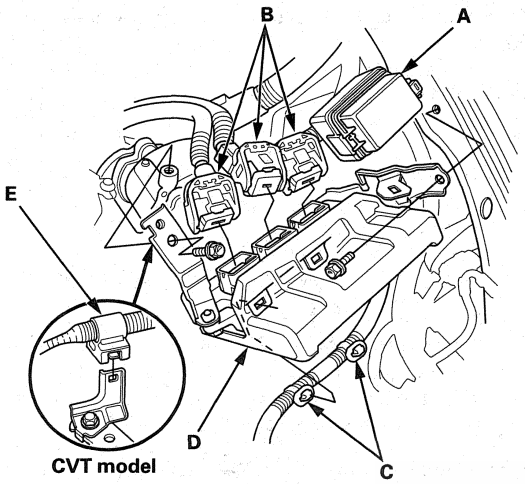
CVT model



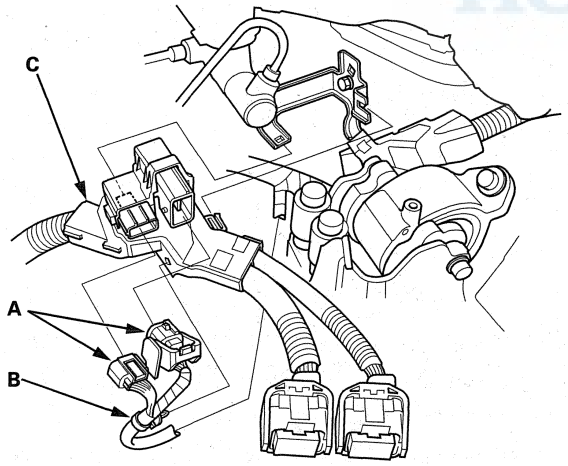
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Engine Removal (cont'd)

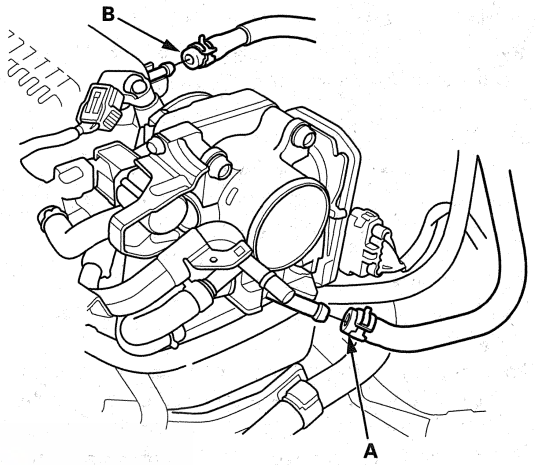
10. Disconnect the ECM/PCM connectors (B).



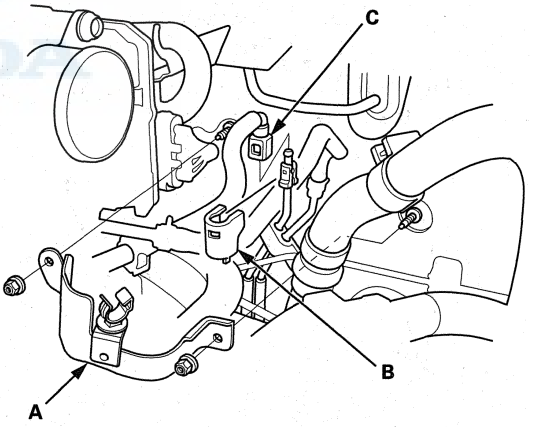
11. Remove the harness clamps (C), auxiliary under-hood relay box A, and the ECM/PCM (D).
12. CVT model: Remove the harness clamp (E).
13. Disconnect the engine compartment wire harness connectors (A).



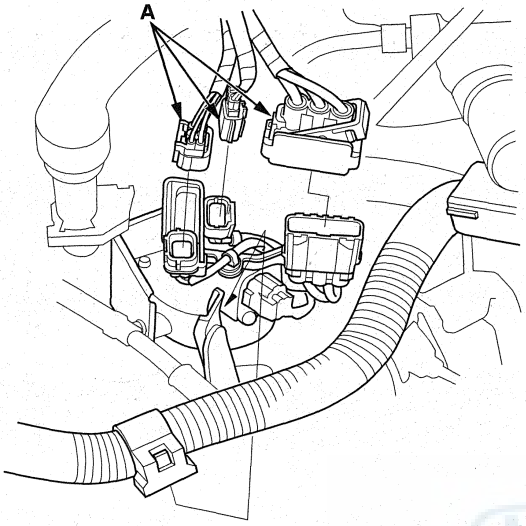
14. Remove the harness clamp (B) and the harness holder (C).
15. Disconnect the EVAP canister hose (A) and the brake booster vacuum hose (B).



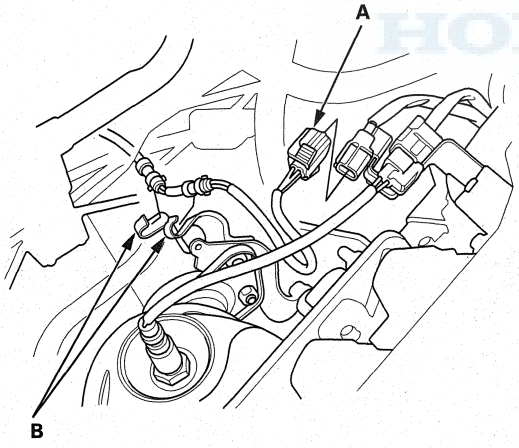
16. Remove the fuel feed hose clamp bracket (A) and the quick-connect fitting cover (B), then disconnect the fuel feed hose (C) (see page 11-295).



17. Disconnect the EPS connectors (A).



18. Disconnect the secondary HO2S connector (A), then remove the secondary HO2S harness from the clamps (B).



19. Remove the steering joint cover, then disconnect the steering joint from the steering gearbox pinion shaft (see page 17-64).

    NOTE:
    - Hold the steering wheel in the steering wheel holder tool
    - Hold the lower slide shaft on the column with a piece of wire between the joint yokes.

20. M/T model: Remove the cable guard bracket and the clutch line bracket (see step 7 on page 13-44).

21. M/T model: Remove the slave cylinder, then carefully move the slave cylinder out of the way to avoid bending the clutch line (see step 8 on page 13-44).

    NOTE:
    - Do not disconnect the clutch line joints.
    - Do not press the clutch pedal after the slave cylinder has been removed.

22. M/T model: Remove the harness bracket (see step 9 on page 13-44).

23. M/T model: Remove the lock pins and the shift cable bracket bolts, then carefully remove both cables and the shift cable bracket together out of the way to avoid bending the cables (see step 10 on page 13-44).

24. M/T model: Disconnect the reverse lockout solenoid 2P connector (see step 11 on page 13-44).

25. CVT model: Remove the clamp bracket (see step 24 on page 14-159).

26. CVT model: Remove the lock pin and the control pin from the selector control lever (see step 25 on page 14-159).

27. CVT model: Remove the bolts securing the shift cable holder, then separate the shift cable end from the selector control lever (see step 26 on page 14-159).

28. Remove the drive belt (see page 10-17).

29. Remove the radiator cap.

    NOTE: Wait until the engine is cool, then carefully remove the radiator cap.

30. Raise the vehicle on the lift.

31. Remove the front wheels.

32. Remove the splash shield (see page 20-163).

33. Loosen the drain plug in the radiator, and drain the engine coolant (see page 10-8).

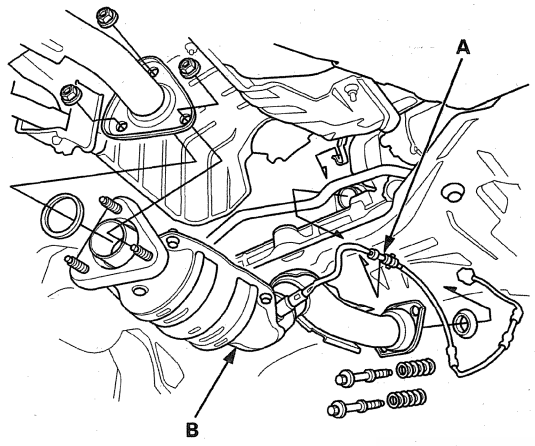
34. Drain the engine oil (see page 8-10).

35. Drain the transmission fluid:
    - M/T model (see page 13-41)
    - CVT model (see page 14-154)

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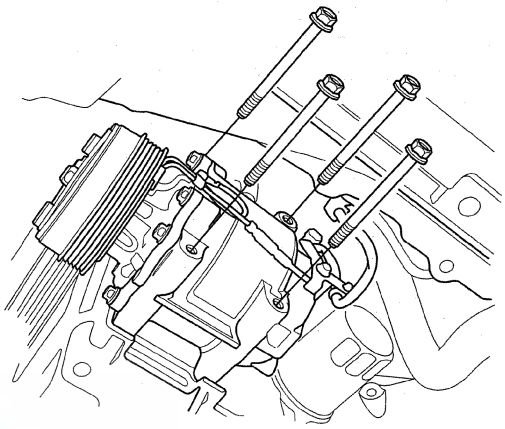
Engine Removal (cont'd)

36. Remove the harness clamp (A).



37. Remove the under-floor TWC (B).
38. Remove the stabilizer links from the stabilizer bar on both sides (see page 18-20).
39. Remove the cotter pin from the tie-rod end ball joint, then remove the nut on both sides (see step 11 on page 17-65).
40. Disconnect the tie-rod end ball joint from the knuckle using the ball joint remover and the ball joint thread protector on both sides (see step 12 on page 17-65).
41. Remove the lock pin from the lower arm ball joint, and remove the castle nut from both sides (see step 13 on page 17-66).
42. Disconnect the lower arm ball joint from the knuckle using the ball joint remover and the ball joint thread protector on both sides (see step 14 on page 17-66).
43. Remove the driveshafts (see page 16-4). Coat all precision-finished surfaces with clean engine oil. Tie a plastic bags over the driveshaft ends.
44. Remove the A/C compressor without disconnecting the A/C hoses. Do not bend the A/C hoses excessively.

    NOTE: Hang the A/C compressor with a wire tie.

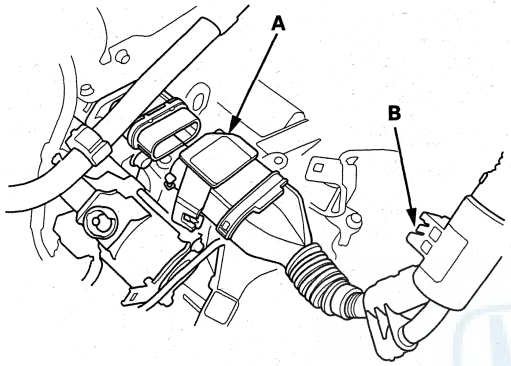


45. Lower the vehicle on the lift.

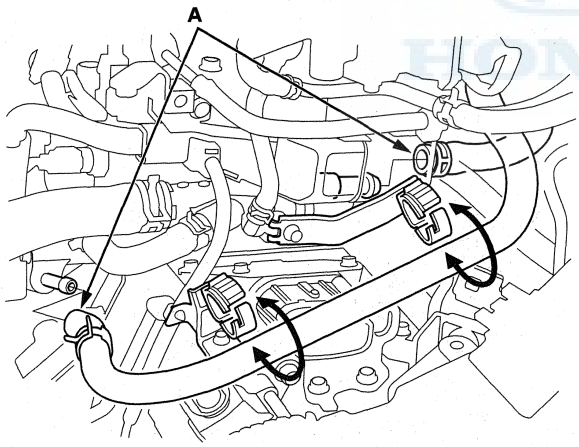
46. Remove the radiator (see page 10-24).

47. Disconnect the IMA motor power cable connector (A) and the harness clamp (B).

    NOTE: Make sure you have read the IMA system service precautions (see page 12-3).

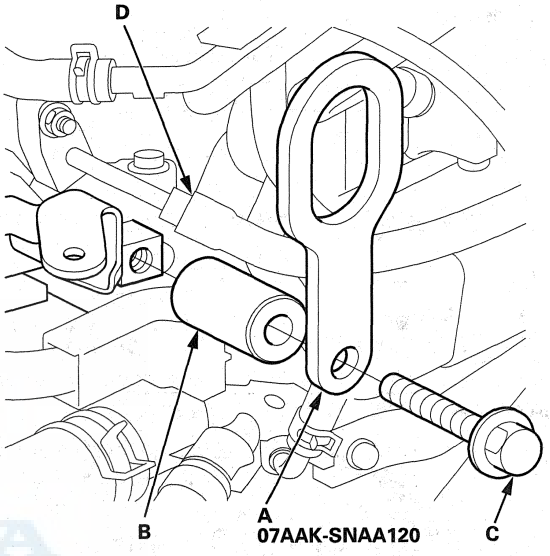


48. Disconnect the heater hoses (A).



49. Attach the first universal lifting eyelet (A) to the cylinder head with a spacer (B) and an 8 x 1.25 mm bolt (C).

    NOTE: Select a spacer that is long enough that the universal lifting eyelet does not interfere with the fuel feed tube (D).

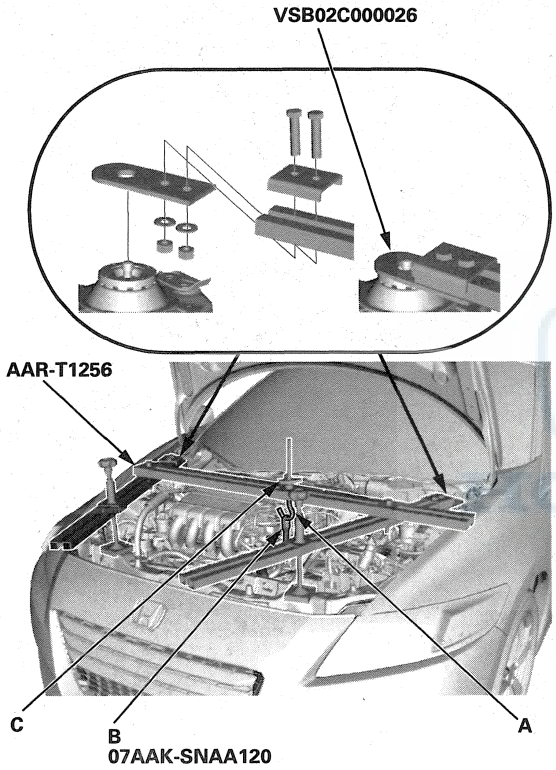


(cont'd)

Engine Removal (cont'd)

50. Install the engine hanger adapter (VSB02C000026) to the engine support hanger (AAR-T1256), then install the engine support hanger onto the vehicle, and attach the hook (A) to the first universal lifting eyelet (B). Tighten the wing nut (C) by hand, and lift and support the engine/IMA motor/transmission.

    NOTE: Be careful when working around the windshield.



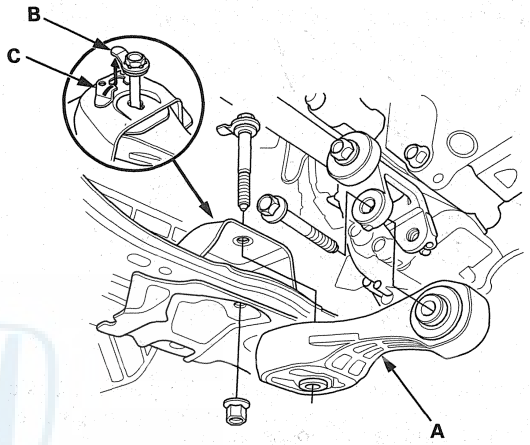
51. Raise the vehicle on the lift.

52. Support the transmission with a transmission jack and a wood block under the transmission.

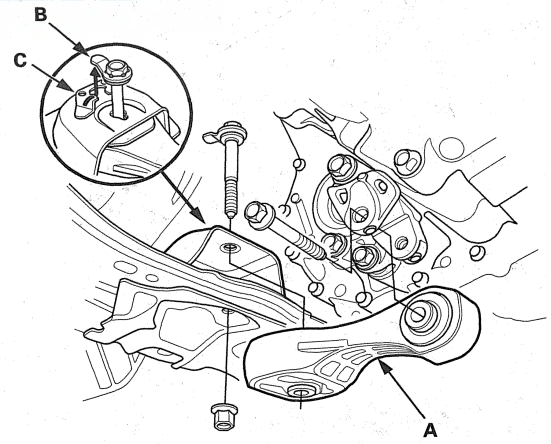
53. Remove the torque rod (A).

    NOTE: Make sure the tab (B) on the bolt head aligned with the guide (C) on the front subframe.

M/T model



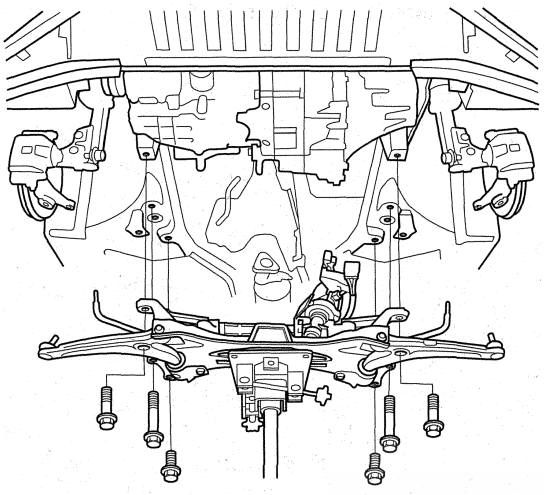
CVT model



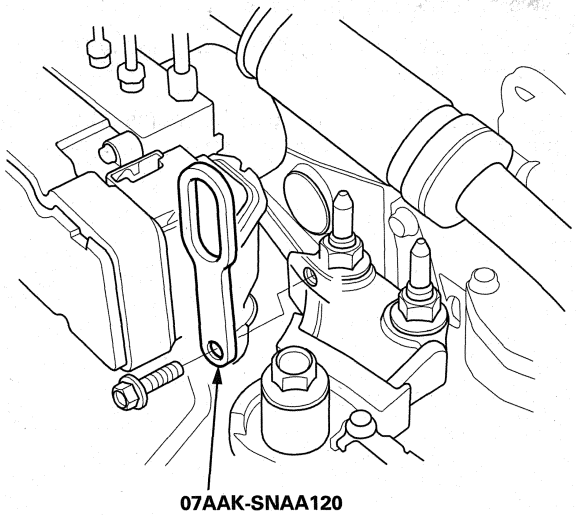
54. Remove the transmission jack and the wood block from under the transmission.

55. Support the front subframe with a transmission jack and a wood block under the front subframe.

56. Remove the front subframe bolts.

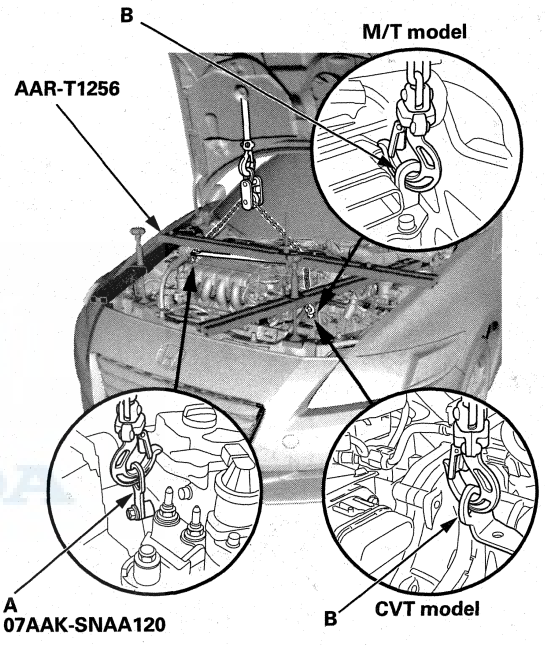


57. Lower the front subframe and steering gearbox as an assembly by lowering the jack slowly, then remove the assembly from under the vehicle.
58. Lower the vehicle on the lift.
59. Attach the second universal lifting eyelet to the chain case.



60. Attach a chain hoist to the second universal lifting eyelet (A) and the transmission hanger (B), then lift the engine/IMA motor/transmission until it is securely supported by the chain hoist, then remove the engine support hanger.

NOTE: Wrap the VSA modulator-control unit with the clean shop towel.

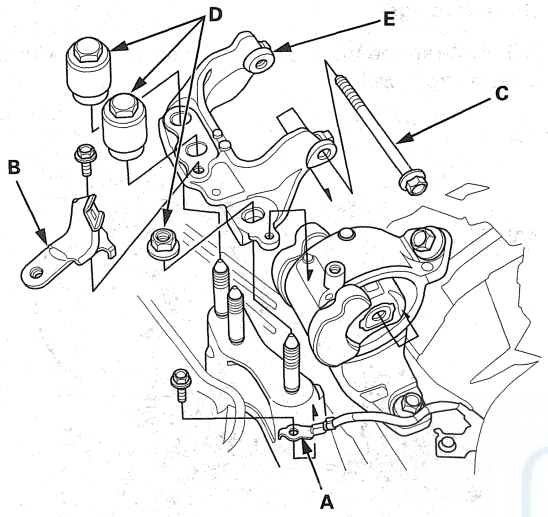


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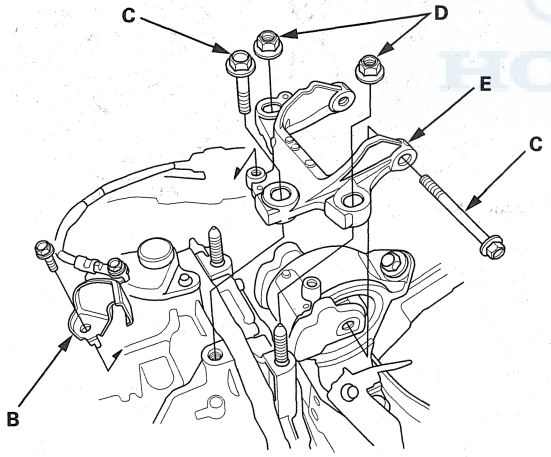
Engine Removal (cont'd)

61. Remove the ground cable (A) and the harness holder (B).

M/T model

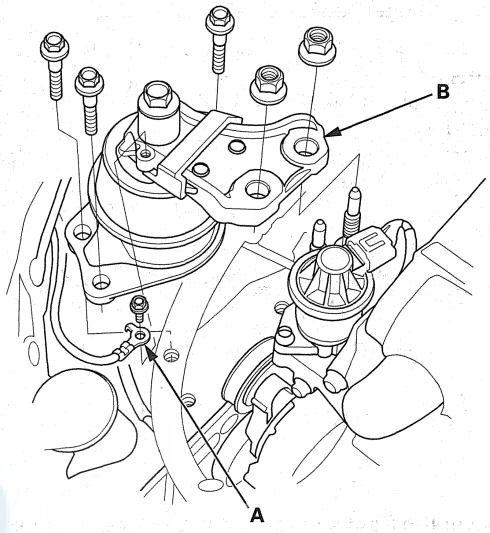


CVT model



62. Remove the transmission mount bolts (C) and nuts (D), then remove the transmission mount bracket (E).

63. Remove the ground cable (A), then remove the side engine mount/bracket assembly (B).



64. Check that the engine/IMA motor/transmission is completely free of the vacuum hoses, the fuel hoses, the coolant hoses, and electrical wiring.

65. Slowly lower the engine/IMA motor/transmission about 150 mm (5.91 in). Check once again that all the hoses and the electrical wiring are disconnected and free from the engine/IMA motor/transmission, then lower it all the way and support it.

66. Disconnect the chain hoist from the engine/IMA motor/transmission.

67. Raise the vehicle, and remove the engine/IMA motor/transmission from under the vehicle.

Engine Installation

Special Tools Required
- Universal Lifting Eyelet 07AAK-SNAA120
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*

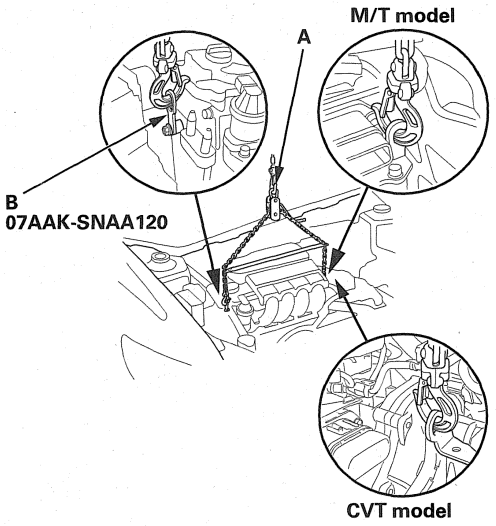
*: Available through the Honda Tool and Equipment Program 888-424-6857

NOTE: IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precaution before doing repairs or service (see page 12-3).

1. Raise the vehicle on the lift, and position the engine/IMA motor/transmission under the vehicle.

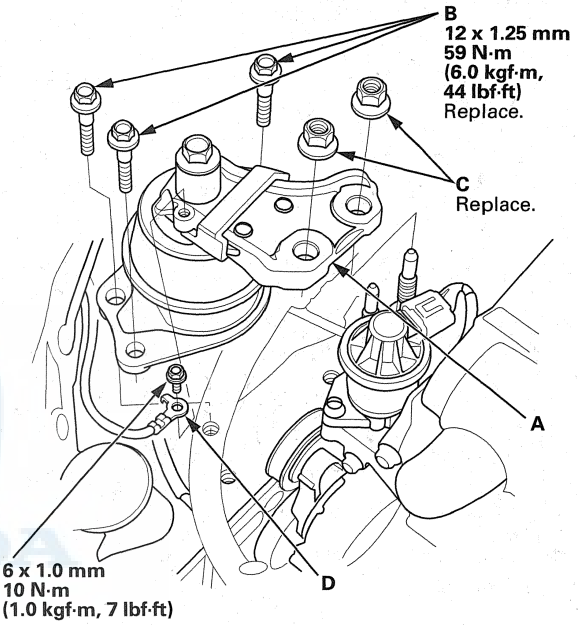
   Be sure that they are properly aligned. Carefully lower the vehicle until the engine/IMA motor/transmission are properly positioned in the engine compartment. Make sure the vehicle is not resting on any part of the engine/IMA motor/transmission. Support the engine/IMA motor/transmission with a chain hoist (A) and carefully raise the engine/IMA motor/transmission into place.

   NOTE:
   - Attach the first universal lifting eyelet (B) to the chain case (see step 59 on page 5-9).
   - Reinstall the mounting bolts and support nuts in the sequence given in the following steps. Failure to follow this sequence may cause excessive noise and vibration, and reduce engine mount life.
   - Wrap the VSA modulator-control unit with the clean shop towel.



2. Install the side engine mount/bracket assembly (A), then tighten new side engine mount/bracket assembly mounting bolts (B).

   NOTE: Refer to the installation of the side engine mount bracket if you take the side engine mount and the side engine mount bracket apart (see page 5-20).



3. Loosely install new side engine mount/bracket assembly mounting nuts (C).

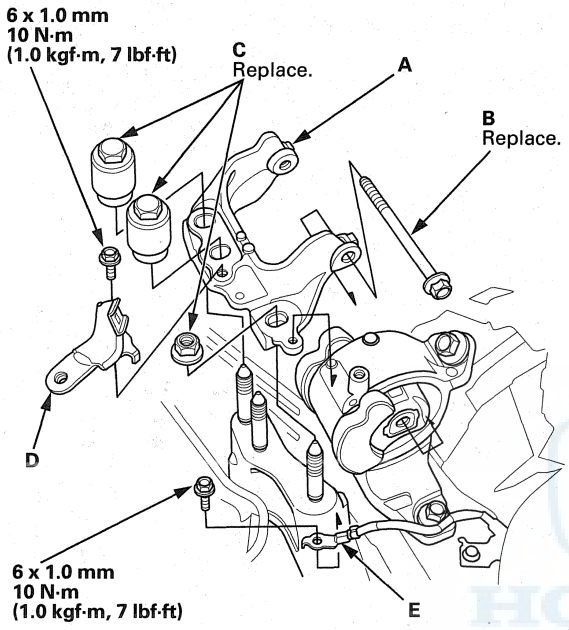
4. Install the ground cable (D).

(cont'd)

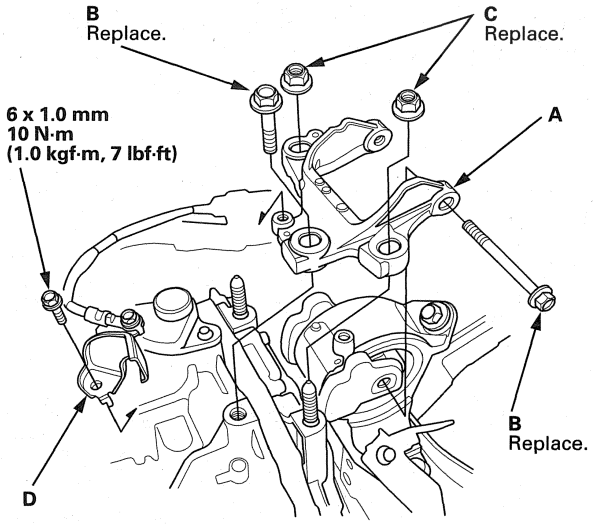
Engine Installation (cont'd)

5. Install the transmission mount bracket (A), and loosely install new transmission mount bracket mounting bolts (B) and nuts (C).

M/T model



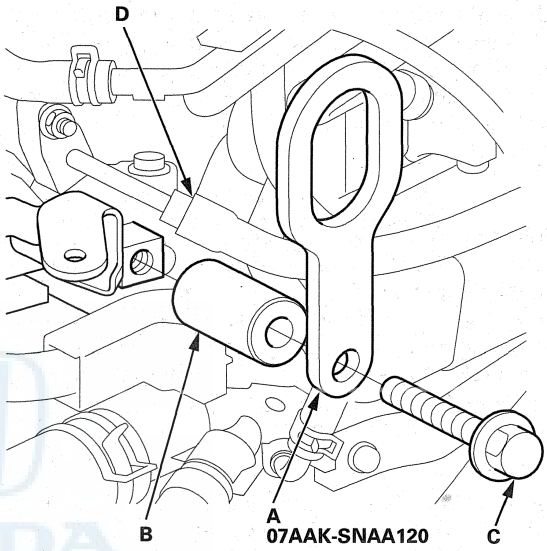
CVT model



6. Install the harness holder (D) and the ground cable (E).

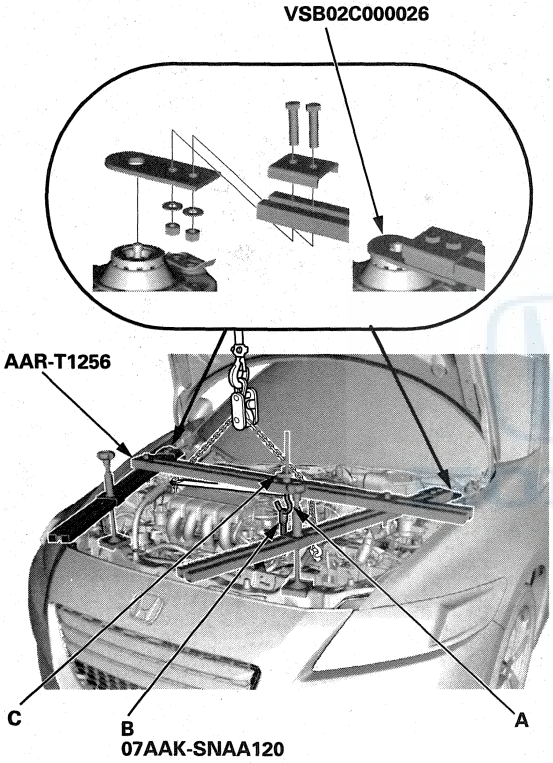
7. Attach the second universal lifting eyelet (A) to the cylinder head with a spacer (B) and an 8 x 1.25 mm bolt (C).

NOTE: Select a spacer that is long enough that the universal lifting eyelet does not interfere with the fuel feed tube (D).



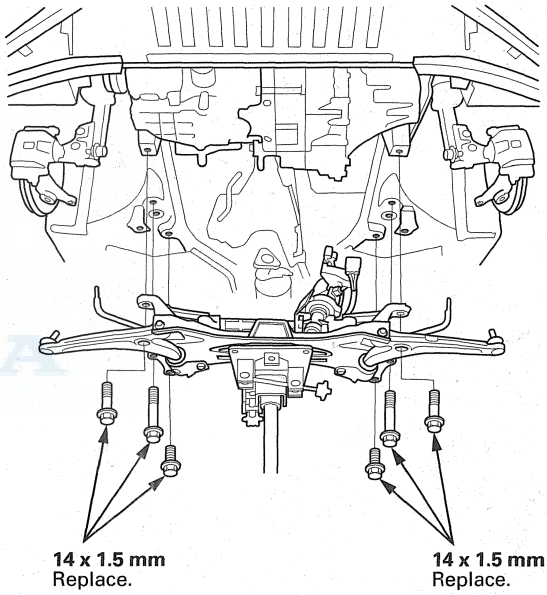
8. Install the engine hanger adapter (VSB02C000026) to the engine support hanger (AAR-T1256), then install the engine support hanger onto the vehicle, and attach the hook (A) to the second universal lifting eyelet (B). Tighten the wing nut (C) by hand, and lift and support the engine/IMA motor/transmission.

   NOTE: Be careful when working around the windshield.



9. Remove the chain hoist from the engine/IMA motor/transmission, then remove the first universal lifting eyelet from the chain case.
10. Raise the vehicle on the lift.
11. Support the front subframe with a transmission jack and a wood block under the front subframe.
12. Install the front subframe, then loosely install the new front subframe mounting bolts.

    NOTE:
    - Be sure that the pinion shaft grommet is in place securely. Make sure the pinion shaft grommet is not turned up. Incorrect installation can cause leakage of water or mud, and noise.
    - Take care not to damage the lower arm ball joint boot with the edge of the knuckle, etc.



13. Align the front subframe, then torque the subframe mounting bolts to specification (see page 20-173).
14. Remove the transmission jack and the wood block from under the subframe.

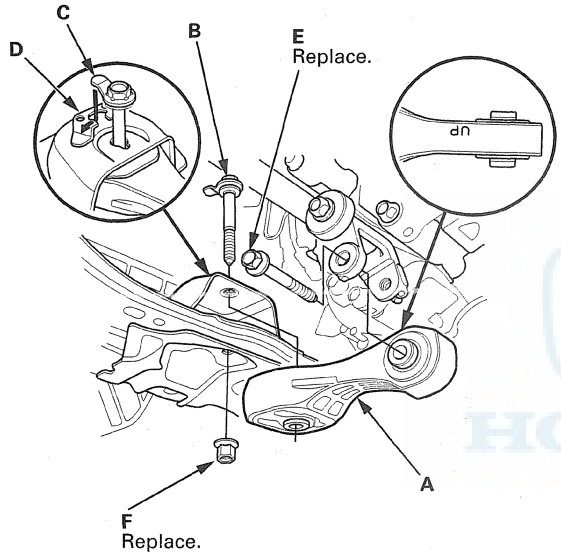
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Engine Installation (cont'd)

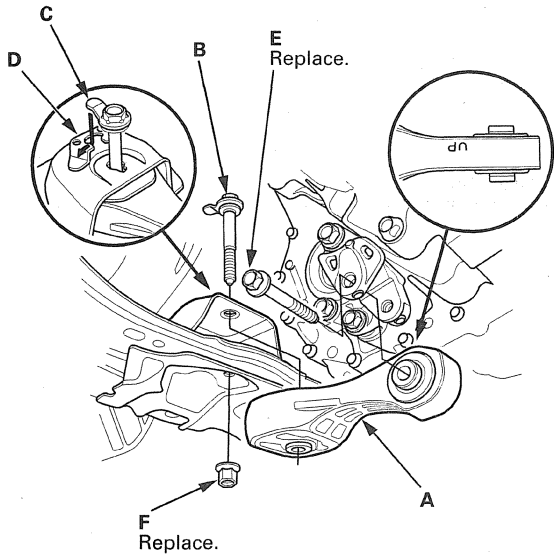
15. Support the transmission with a transmission jack and a wood block under the transmission.
16. Install the torque rod (A). Install the bolt (B) with the tab (C) on the bolt head aligned with the guide (D) on the front subframe, then loosely install a new torque rod mounting bolt (E) and nut (F).

    NOTE: Be sure to install the torque rod with the "UP" mark facing up.

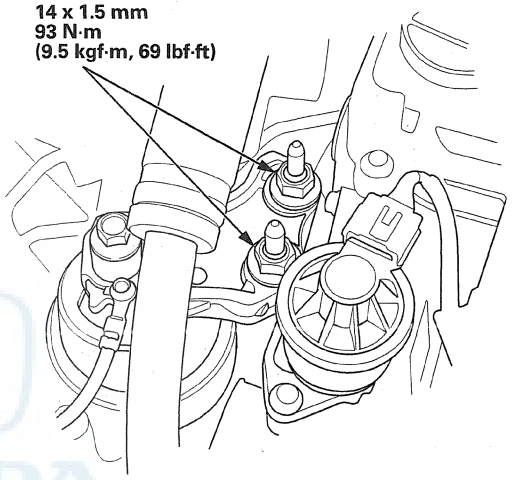
M/T model



CVT model

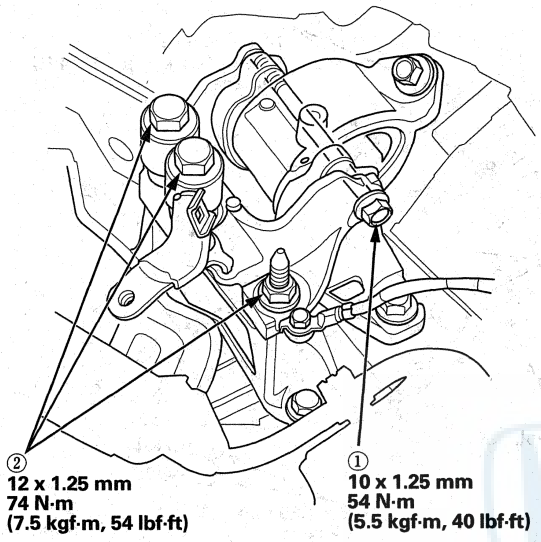


17. Remove the transmission jack and the wood block from under the transmission.
18. Lower the vehicle on the lift.
19. Remove the engine support hanger and the second universal lifting eyelet.
20. Tighten the side engine mount/bracket assembly mounting nuts.

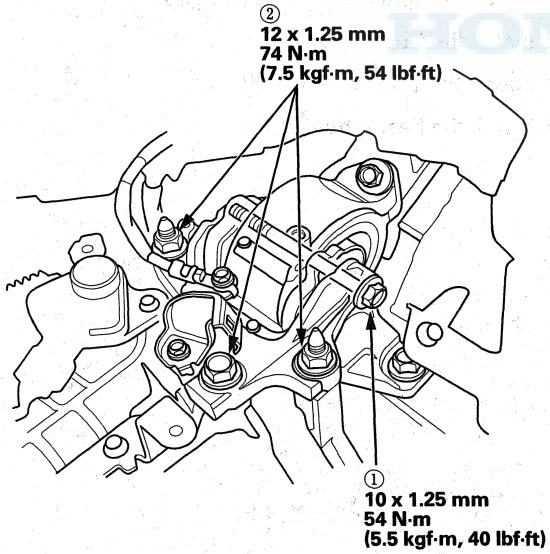


21. Tighten the transmission mount mounting bolts and nuts in the numbered sequence shown.

M/T model



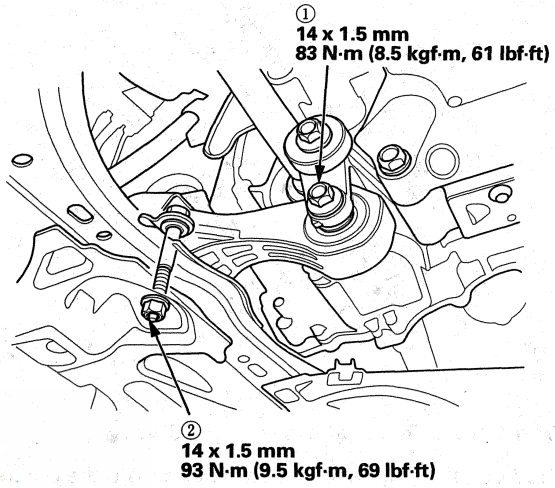
CVT model



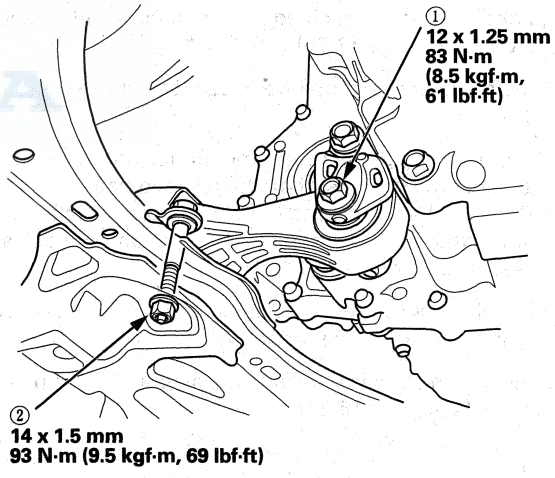
22. Raise the vehicle on the lift.

23. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



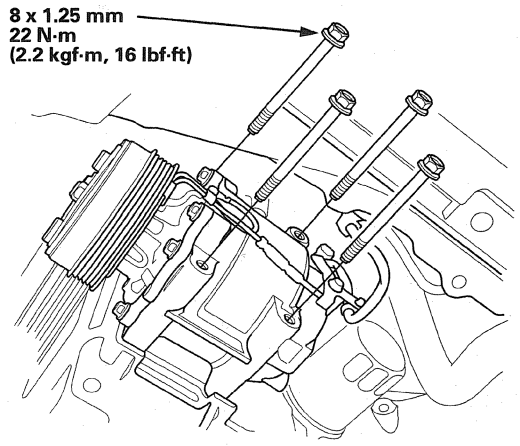
CVT model



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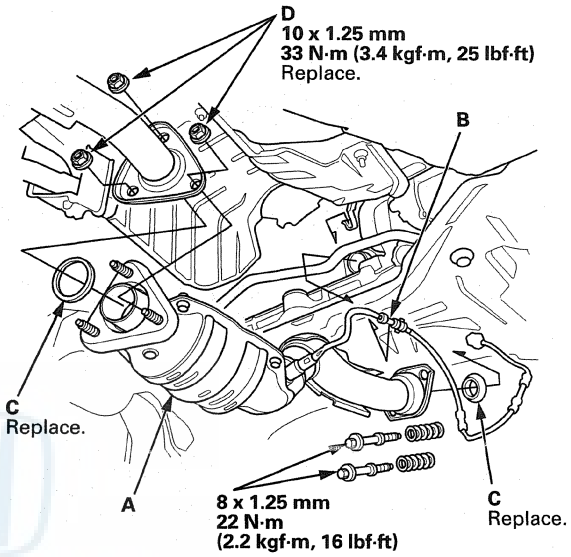
Engine Installation (cont'd)

24. Install the A/C compressor.

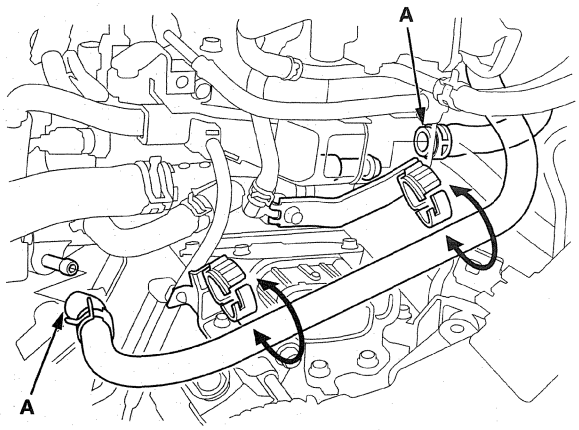


25. Install the driveshafts (see page 16-19).
26. Wipe off any grease contamination from the tapered section and threads of the ball joint. Connect the lower arm to the knuckle. Install a new castle nut, and tighten it to the specified torque on both sides (see step 18 on page 17-70).
27. Install the lock pin on both sides (see step 19 on page 17-70).
28. Wipe off any grease contamination from the tapered section and threads of the tie-rod end ball joint. Connect the tie-rod end to the knuckles. Install the nut, and tighten it to the specified torque on both sides (see step 20 on page 17-71).
29. Install a new cotter pin, and bend it as shown on both sides (see step 21 on page 17-71).
30. Install the stabilizer links to the stabilizer bar on both sides (see page 18-20).
31. Install the under-floor TWC (A) and the harness clamp (B).

    NOTE: Use new gaskets (C) and new self-locking nuts (D).

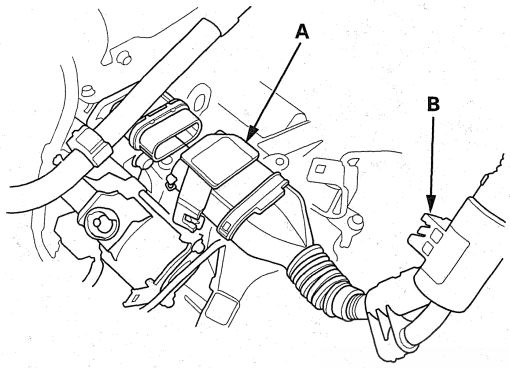


32. Install the splash shield (see page 20-163).
33. Install the front wheels.
34. Lower the vehicle on the lift.
35. Install the heater hoses (A).

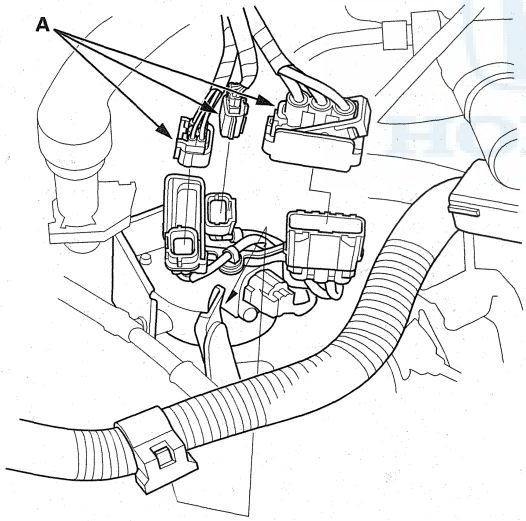


36. Connect the IMA motor power cable connector (A) and the harness clamp (B).

    NOTE: Make sure you have read the IMA system service precautions (see page 12-3).



37. Connect the EPS connectors (A).



38. Install the radiator (see page 10-24).
39. Install the drive belt (see page 10-17).
40. M/T model: Connect the reverse lockout solenoid 2P connector (see step 38 on page 13-54).
41. M/T model: Apply a light coat of silicone grease (P/N 08C30-B0234M) to the cable ends, and connect the cable end to the change lever assembly, then install the shift cable bracket, the harness bracket, and the lock pins. Do not bend or damage the shift cables. (see step 39 on page 13-54).

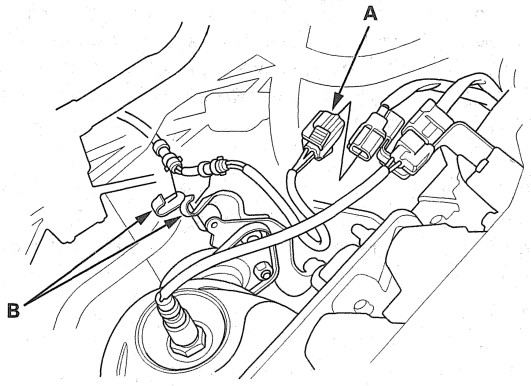
    NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

42. M/T model: Apply a light coat of super high temp urea grease (P/N 08798-9002) to the end of the slave cylinder push rod. Install the slave cylinder. Be careful not to bend the clutch line (see step 40 on page 13-55).
43. M/T model: Install the cable guard bracket and the clutch line bracket (see step 41 on page 13-55).
44. CVT model: Secure the shift cable holder on the transmission with the bolts (see step 36 on page 14-171).
45. CVT model: Install the clamp bracket (see step 37 on page 14-171).
46. CVT model: Apply molybdenum grease to the hole in the shift cable end collar (A). Attach the shift cable end to the selector control lever. Insert the control pin through the selector control lever hole, through the shift cable end collar hole, and into the selector control lever slotted hole in the direction shown. Push the control pin until its flange contacts the selector control lever surface (see step 38 on page 14-171).
47. CVT model: Insert the lock pin in the direction shown through the control pin hole and out the opening of the selector control lever so that the hooked end of the lock pin locks into the countersunk hole of the control pin (see step 39 on page 14-171).
48. Connect the steering joint onto the steering gearbox pinion shaft, then install the steering joint cover (see page 17-64), then remove the steering wheel holder tool.

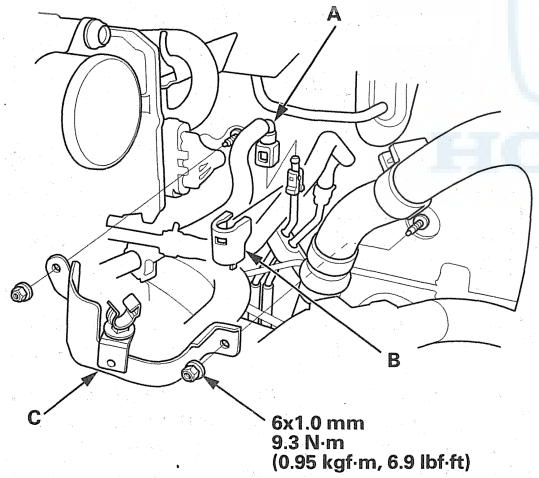
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Engine Installation (cont'd)

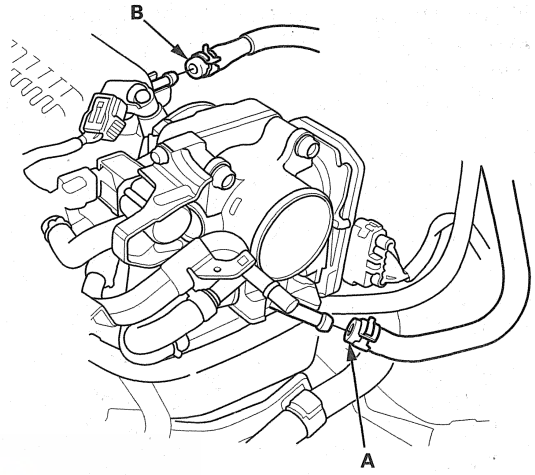
49. Connect the secondary HO2S connector (A), then install the secondary HO2S harness to the clamps (B).



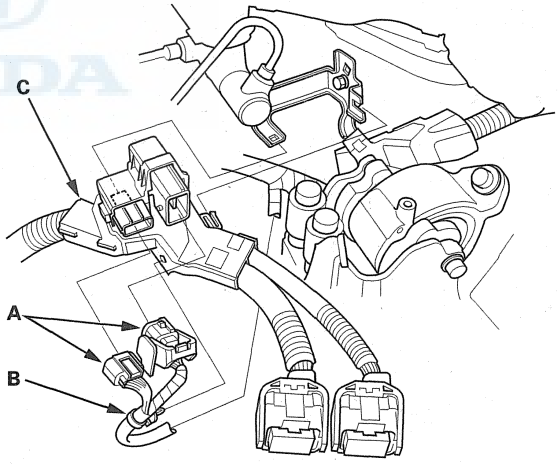
50. Connect the fuel feed hose (A) (see page 11-297), then install the quick-connect fitting cover (B) and the fuel feed hose clamp bracket (C).



51. Install the EVAP canister hose (A) and the brake booster vacuum hose (B).



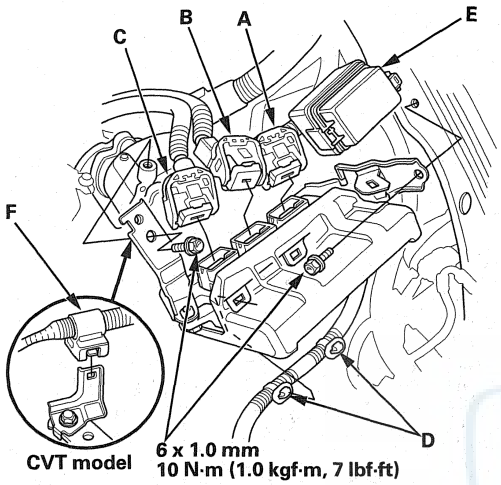
52. Connect the engine compartment wire harness connectors (A), then install the harness clamp (B).



53. Install the harness holder (C).

54. Install the ECM/PCM with the bracket, then connect ECM/PCM connectors A, B, and C.

    NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.

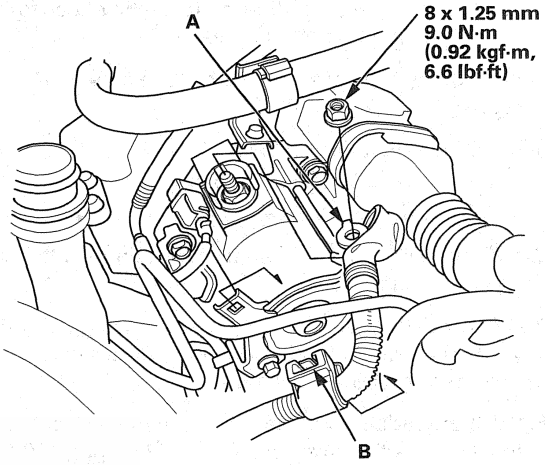


55. Install the harness clamps (D) and auxiliary under-hood relay box A (E).

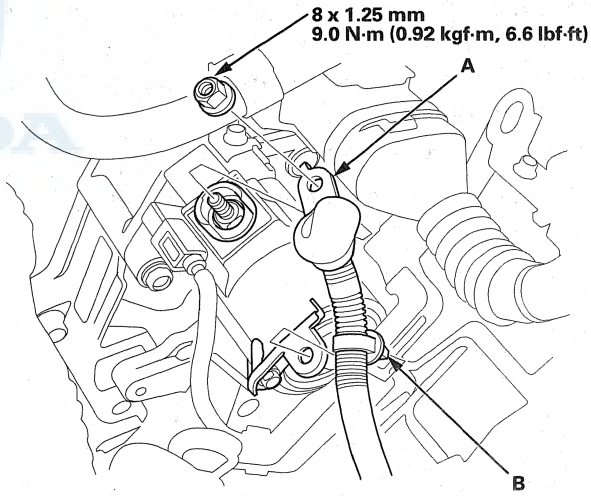
56. CVT model: Install the harness clamp (F).

57. Install the starter cable (A) and the harness clamp (B).

M/T model



CVT model



58. Install the air cleaner (see page 9-3).

59. Install the front bumper center upper beam (see page 20-149).

60. Install the cowl cover and the under-cowl panel (see page 20-153).

61. Do the 12 volt battery installation procedure (see page 22-88).

62. Turn the battery module switch ON (see page 12-4).

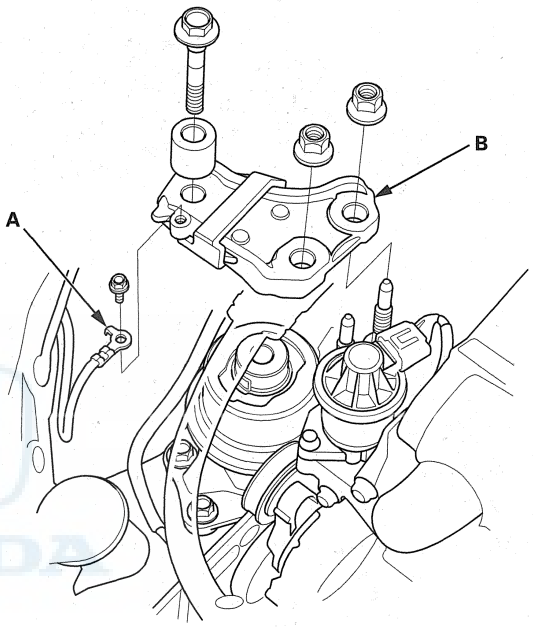
(cont'd)

Engine Installation (cont'd)

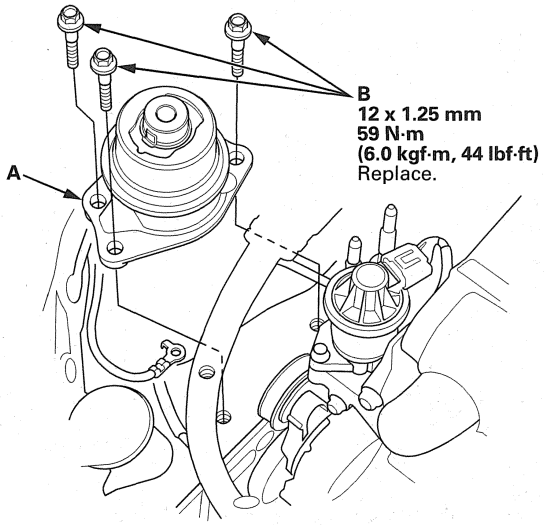
63. Inspect for fuel leaks. Turn the ignition switch to ON (II) (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
64. Refill the engine with engine oil (see step 6 on page 8-10).
65. Refill the transmission fluid:
    - M/T model (see step 5 on page 13-41)
    - CVT model (see step 9 on page 14-155)
66. M/T model: Check that the transmission shifts into all gears smoothly.
67. CVT model: Move the shift lever to each gear, and verify that the CVT gear position indicator follows the transmission range switch.
68. Refill the radiator with engine coolant, and bleed air from the cooling system (see step 8 on page 10-9).
69. Do the ECM/PCM reset procedure (see page 11-4).
70. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
71. Do the IMA motor rotor position calibration procedure (see page 12-7).
72. Inspect the idle speed (see page 11-273).
73. Inspect the ignition timing (see page 4-20).

Side Engine Mount Replacement

1. Support the engine with a jack and a wood block under the oil pan.
2. Remove the ground cable (A), then remove the side engine mount bracket (B).



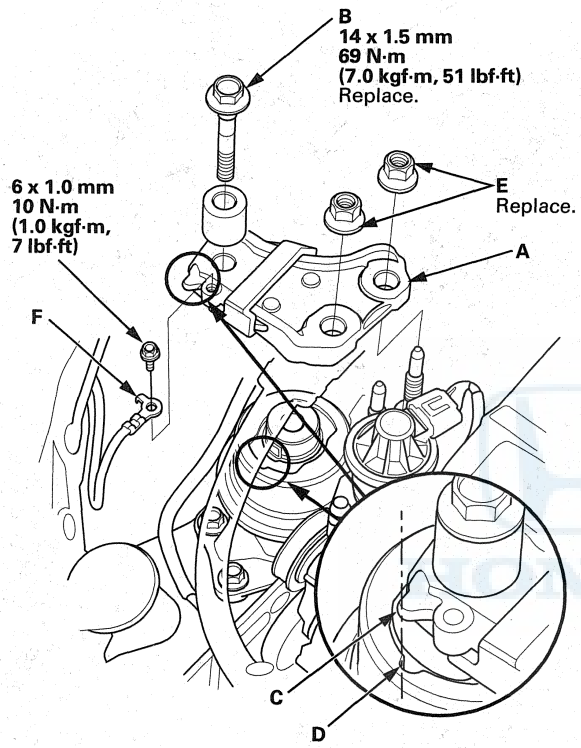
3. Remove the side engine mount (A).



4. Install the side engine mount, then tighten new side engine mount mounting bolts (B).

5. Install the side engine mount bracket (A) with a new bolt (B).

NOTE: Make sure to align the projection (C) with the mark (D) when you install the bracket as shown in the illustration.



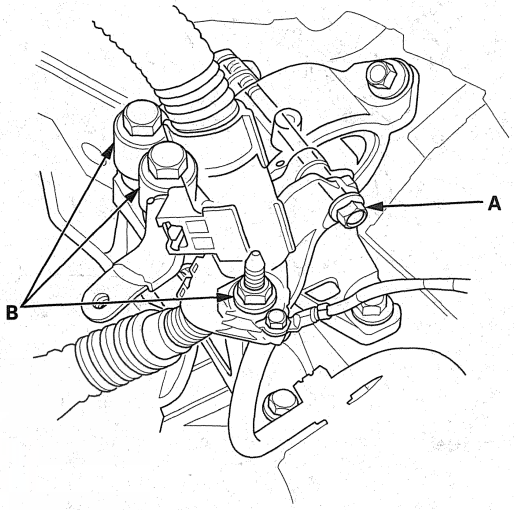
6. Loosely install new side engine mount/bracket assembly mounting nuts (E), and install the ground cable (F).

7. Remove the jack and the wood block from under the oil pan.

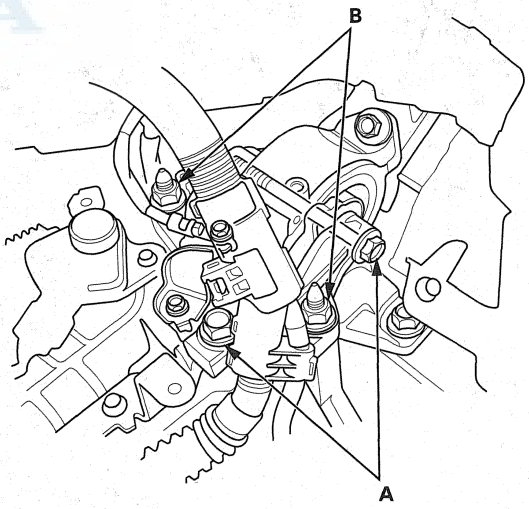
8. Remove the air cleaner (see page 9-3).

9. Loosen the transmission mount bracket mounting bolts (A) and nuts (B).

M/T model



CVT model



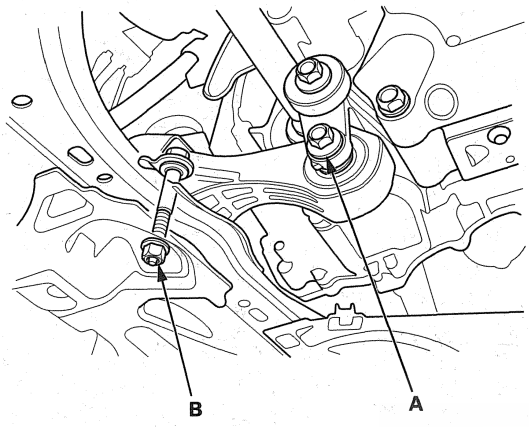
10. Raise the vehicle on the lift.

(cont'd)

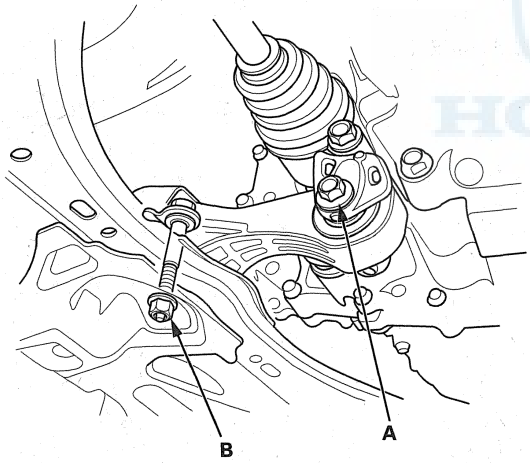
Side Engine Mount Replacement (cont'd)

11. Loosen the torque rod mounting bolt (A) and nut (B).

M/T model

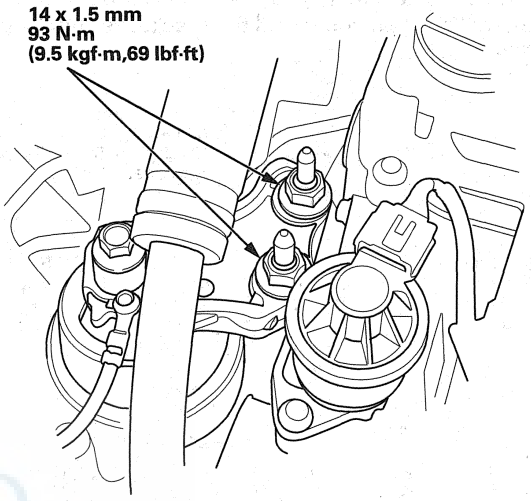


CVT model



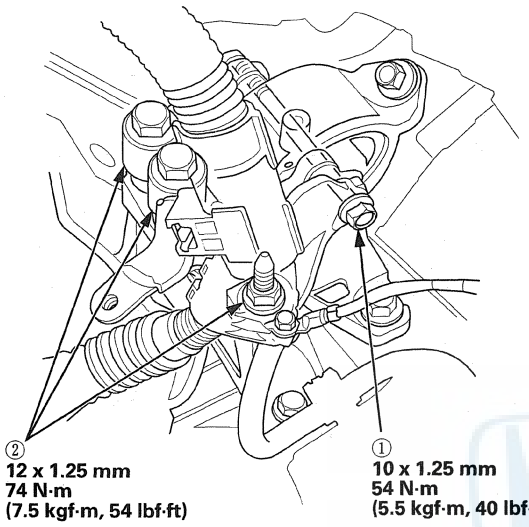
12. Lower the vehicle on the lift.

13. Tighten the side engine mount/bracket assembly mounting nuts.

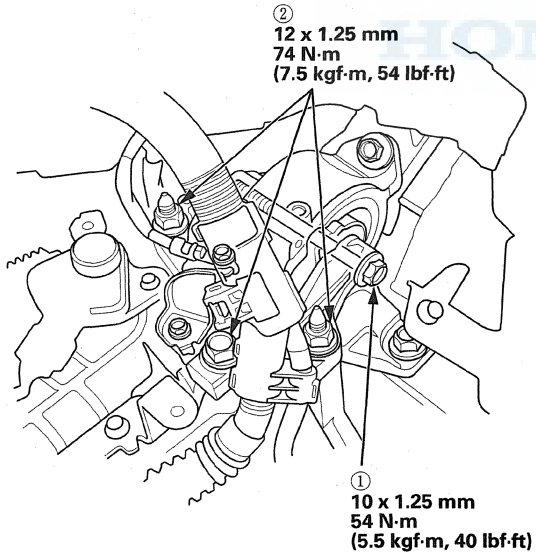


14. Tighten the transmission mount mounting bolts and nuts in the numbered sequence shown.

M/T model



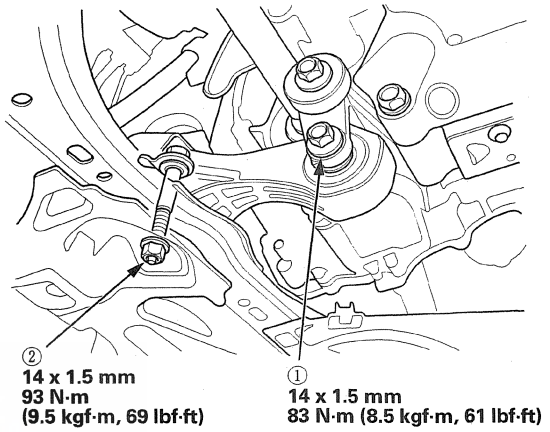
CVT model



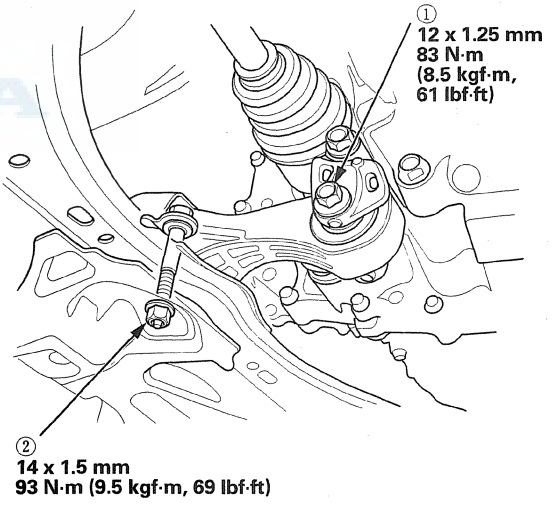
15. Raise the vehicle on the lift.

16. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



CVT model

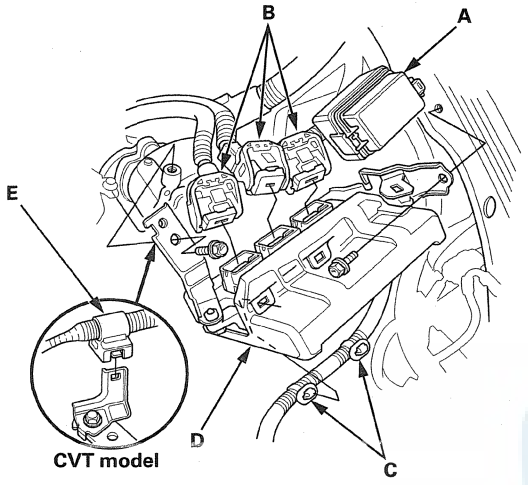


17. Lower the vehicle on the lift.

18. Install the air cleaner (see page 9-3).

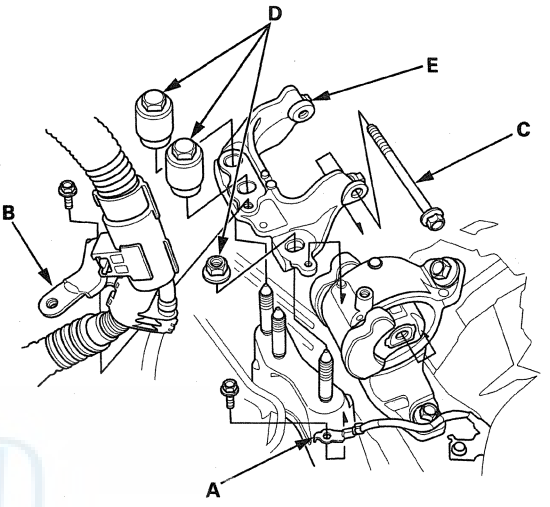
Transmission Mount Replacement

1. Do the 12 volt battery removal procedure (see page 22-87).
2. Remove the air cleaner (see page 9-3).
3. Disconnect the ECM/PCM connectors (B).

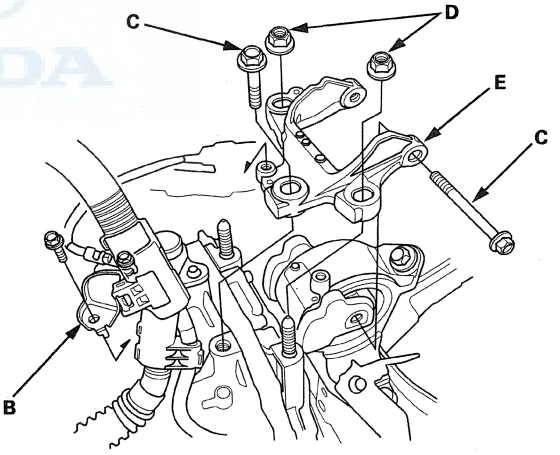


4. Remove the harness clamps (C), auxiliary under-hood relay box A, and the ECM/PCM (D).
5. CVT model: Remove the harness clamp (E).
6. Support the transmission with a jack and a wood block under the transmission.
7. Remove the ground cable (A) and the harness holder (B).

M/T model



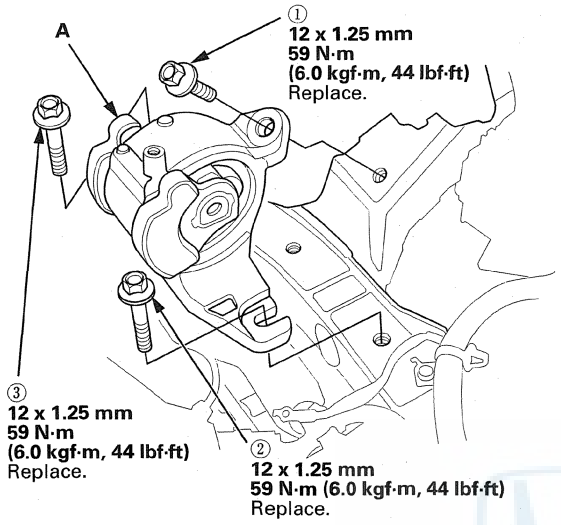
CVT model



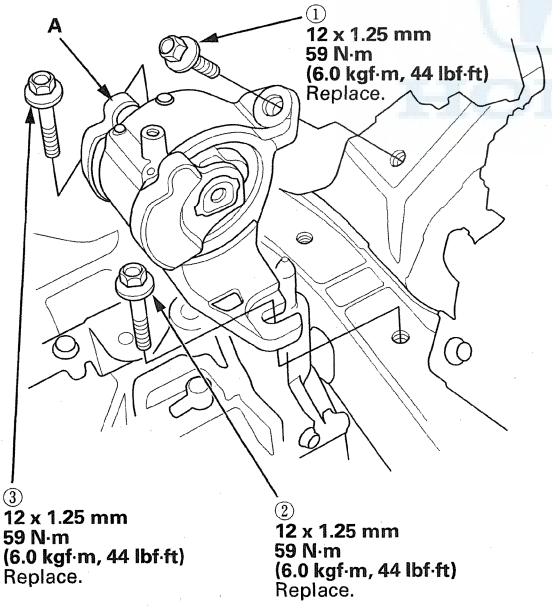
8. Remove the transmission mount bolts (C) and nuts (D), then remove the transmission mount bracket (E).

9. Remove the transmission mount (A).

M/T model



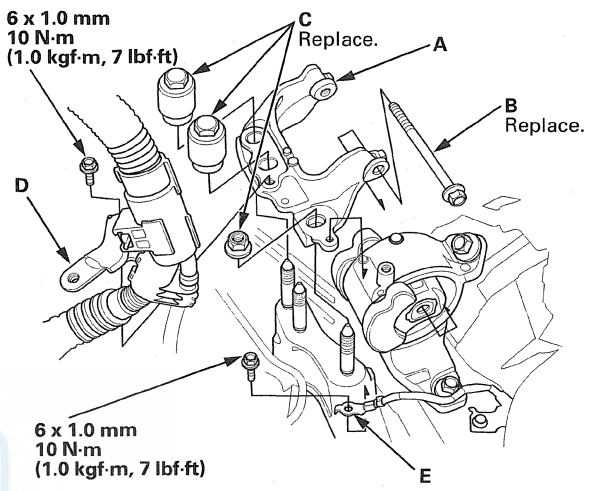
CVT model



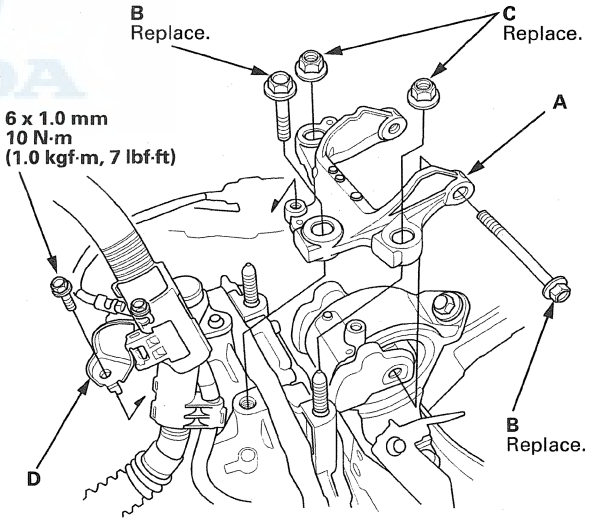
10. Install the transmission mount, and loosely install new transmission mount mounting bolts, then tighten the transmission mount mounting bolts in the numbered sequence shown.

11. Install the transmission mount bracket (A), and loosely install new transmission mount bracket mounting bolts (B) and nuts (C).

M/T model



CVT model



12. Install the harness holder (D) and the ground cable (E).

13. Remove the jack and the wood block from under the transmission.

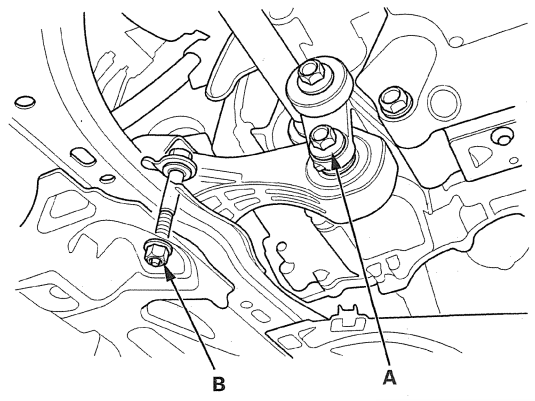
14. Raise the vehicle on the lift.

(cont'd)

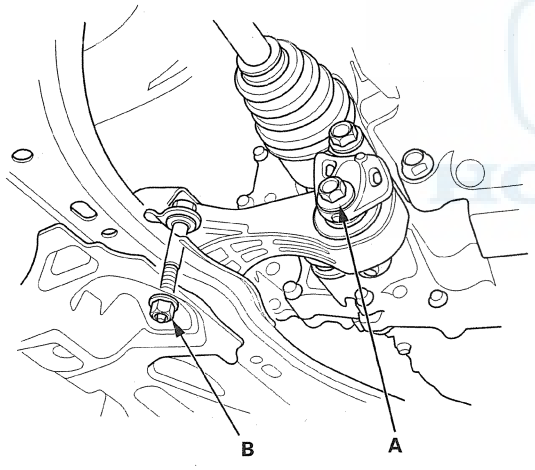
Transmission Mount Replacement (cont'd)

15. Loosen the torque rod mounting bolt (A) and nut (B).

M/T model



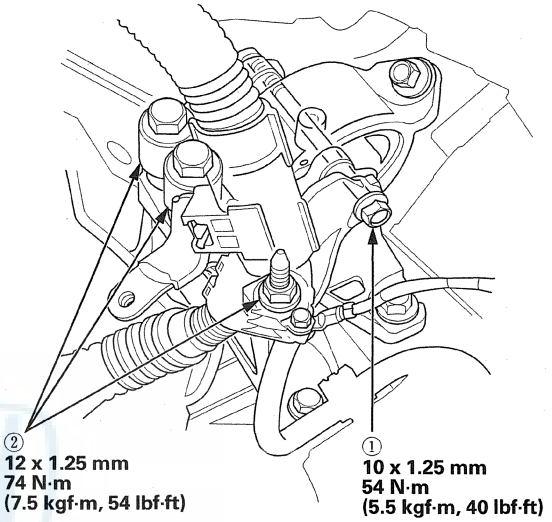
CVT model



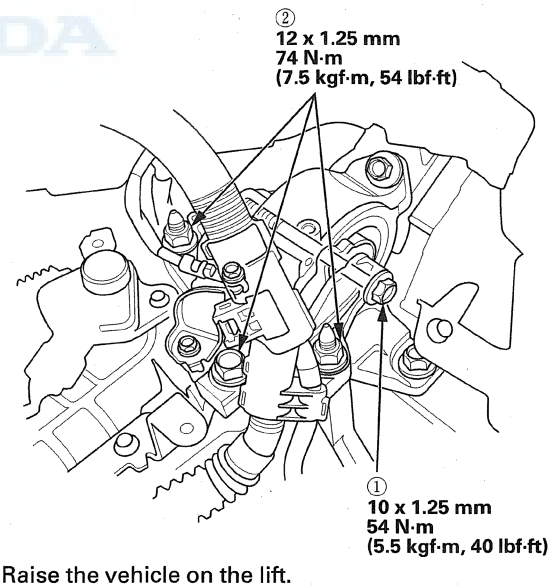
16. Lower the vehicle on the lift.

17. Tighten the transmission mount mounting bolts and nuts in the numbered sequence shown.

M/T model



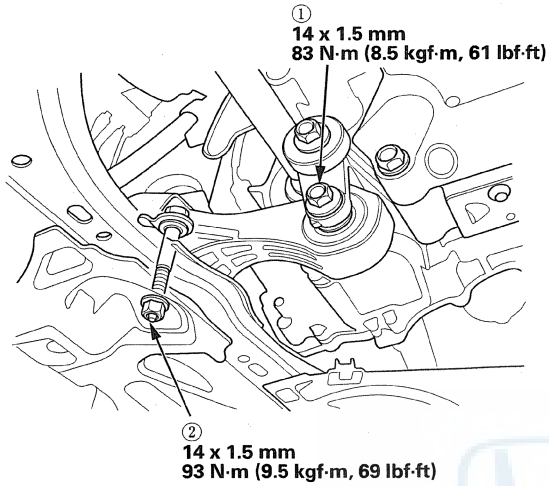
CVT model



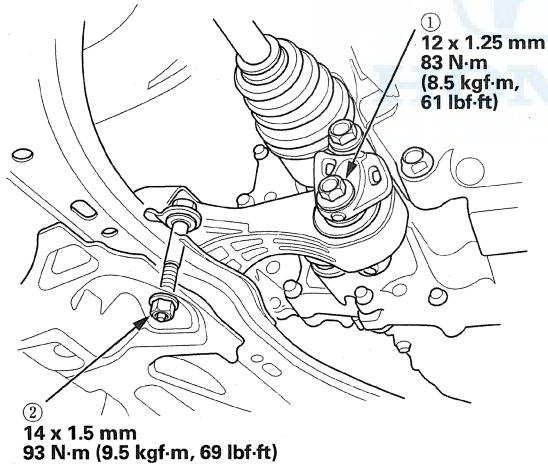
18. Raise the vehicle on the lift.

19. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model

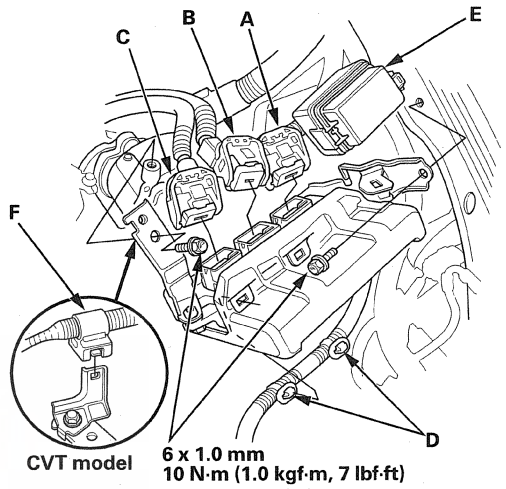


CVT model



20. Install the ECM/PCM with the ECM/PCM bracket. Then connect ECM/PCM connectors A, B, and C.

NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.



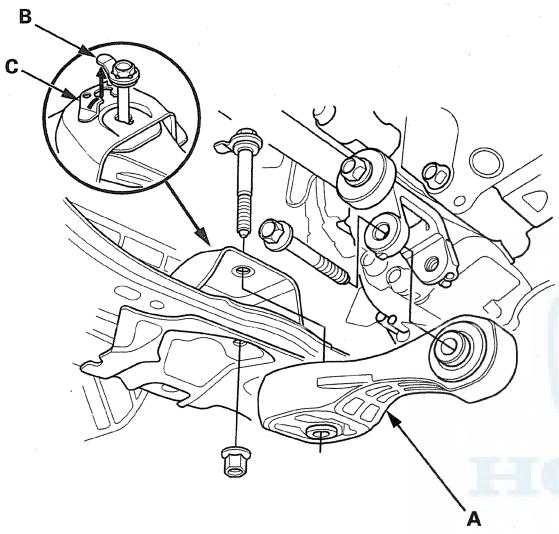
21. Install the harness clamps (D) and auxiliary under-hood relay box A (E).
22. CVT model: Install the harness clamp (F).
23. Do the 12 volt battery installation procedure (see page 22-88).
24. Install the air cleaner (see page 9-3).
25. Do the ECM/PCM reset procedure (see page 11-4).

Torque Rod Replacement

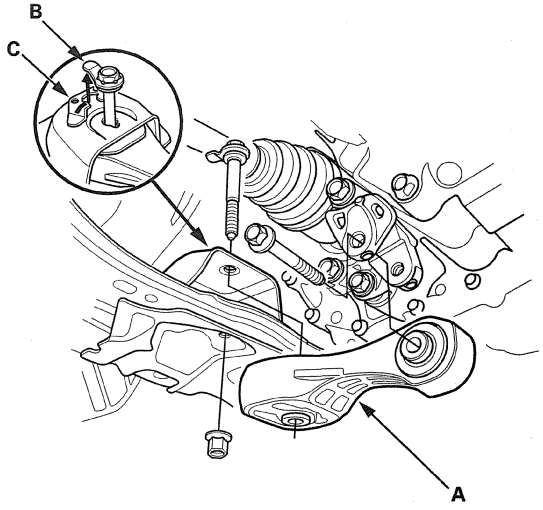
1. Raise the vehicle on the lift.
2. Support the transmission with a transmission jack and a wood block under the transmission.
3. Remove the torque rod (A).

   NOTE: Make sure the tab (B) on the bolt head aligned with the guide (C) on the front subframe.

M/T model



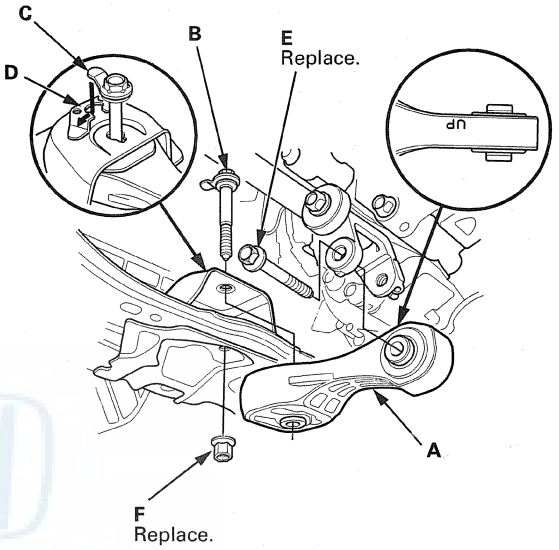
CVT model



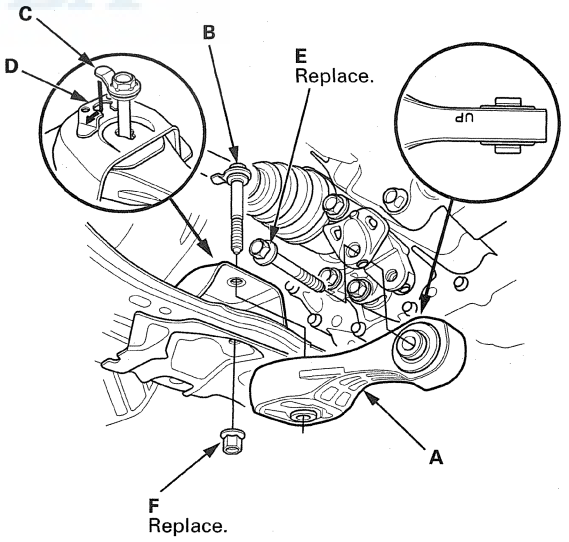
4. Install the torque rod (A).

   NOTE: Be sure to install the torque rod with the "UP" mark facing up.

M/T model



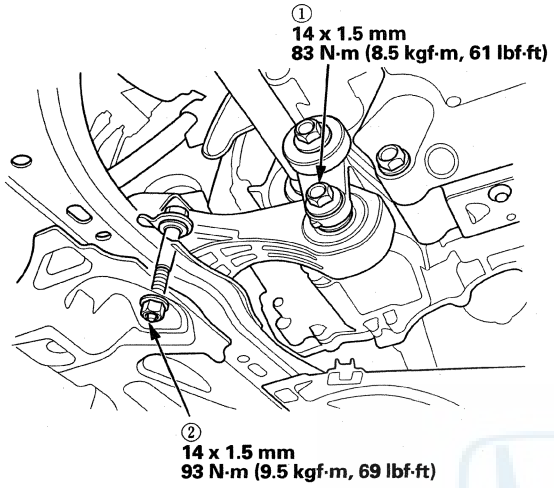
CVT model



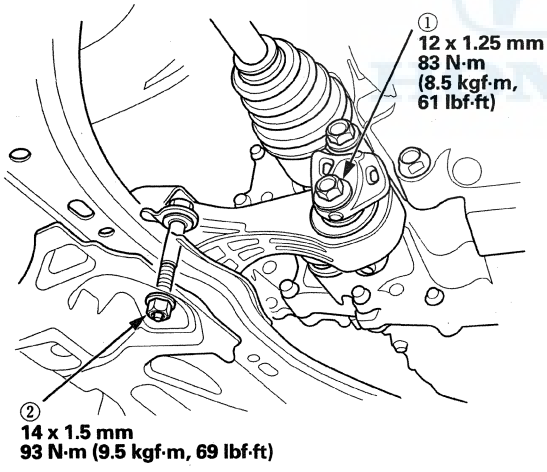
5. Install the bolt (B) with the tab (C) on the bolt head aligned with the guide (D) on the front subframe, then loosely install a new torque rod mounting bolt (E) and nut (F).
6. Remove the transmission jack and the wood block from under the transmission.

7. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model

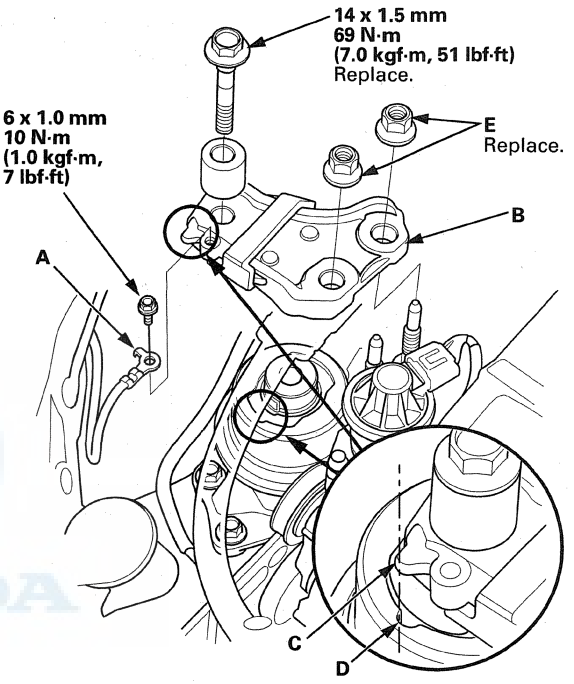


CVT model



Side Engine Mount Bracket Replacement

1. Support the engine with a jack and a wood block under the oil pan.
2. Remove the ground cable (A) and the side engine mount bracket (B)



3. Install the side engine mount bracket with a new bolt.

   NOTE: Make sure to align the projection (C) with the mark (D) when you install the bracket as shown in the illustration.

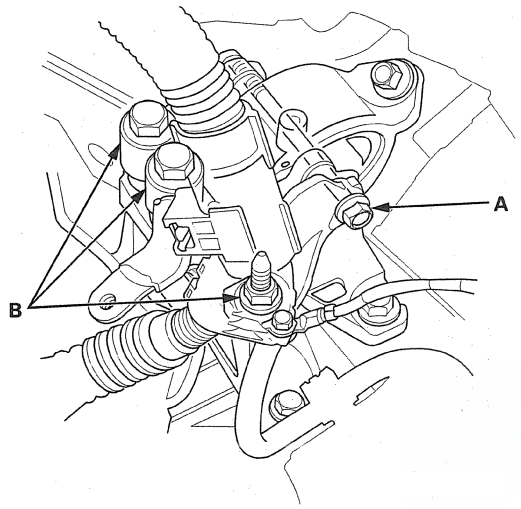
4. Loosely install new side engine mount/bracket assembly mounting nuts (E), and install the ground cable.
5. Remove the jack and the wood block from under the oil pan.
6. Remove the air cleaner (see page 9-3).

(cont'd)

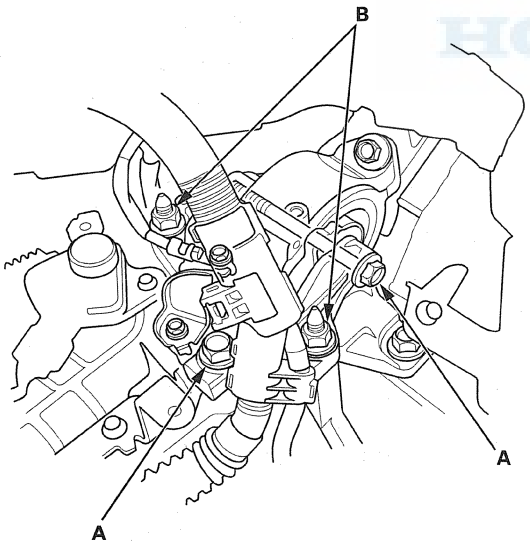
Side Engine Mount Bracket Replacement (cont'd)

7. Loosen the transmission mount bracket mounting bolts (A) and nuts (B).

M/T model



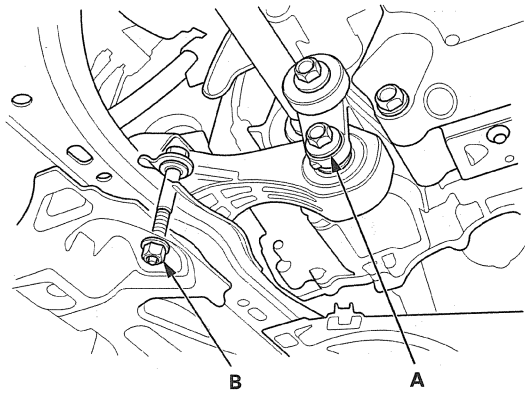
CVT model



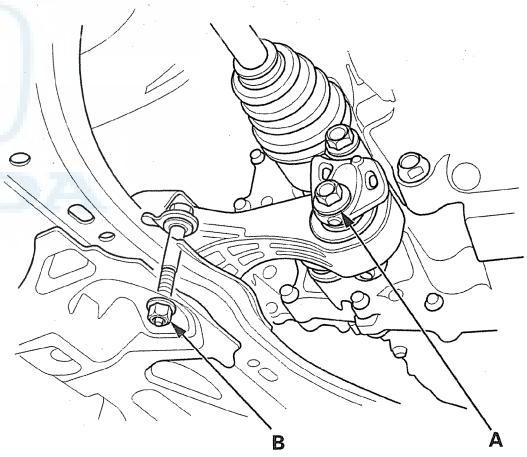
8. Raise the vehicle on the lift.

9. Loosen the torque rod mounting bolt (A) and nut (B).

M/T model

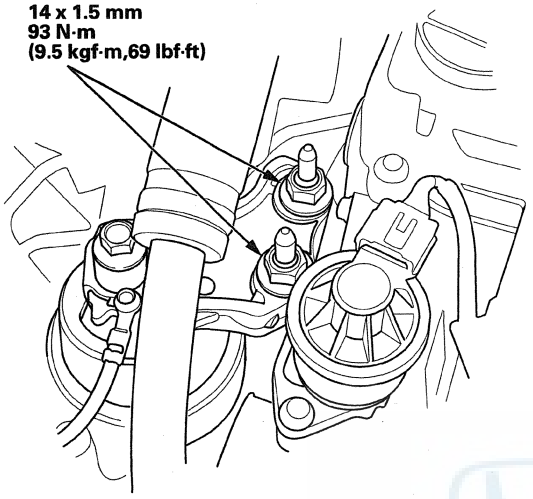


CVT model



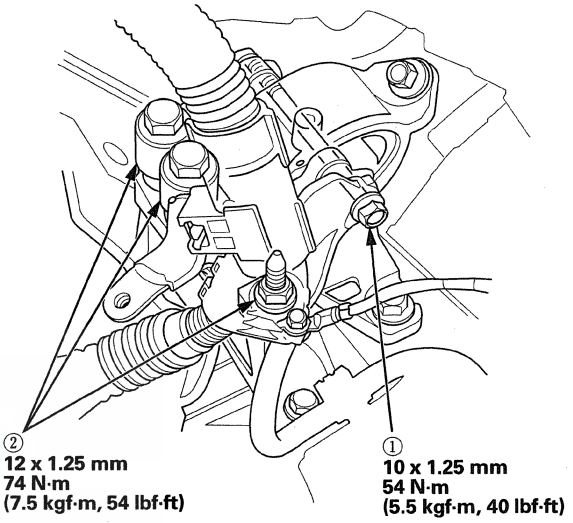
10. Lower the vehicle on the lift.

11. Tighten the side engine mount/bracket assembly mounting nuts.

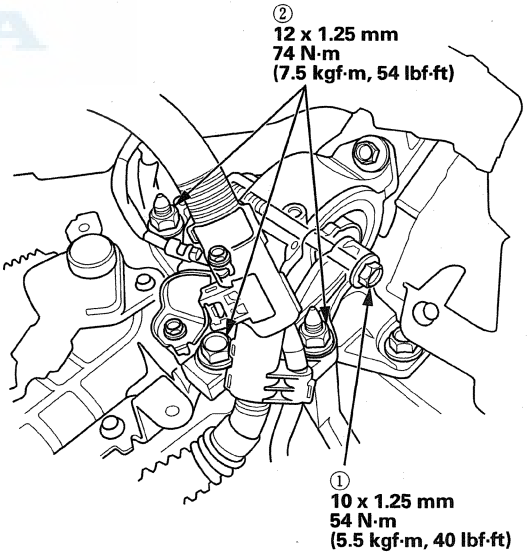


12. Tighten the transmission mount mounting bolt and nuts in the numbered sequence shown.

M/T model



CVT model



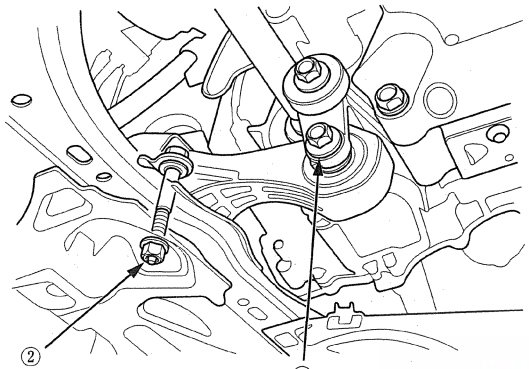
13. Raise the vehicle on the lift.

(cont'd)

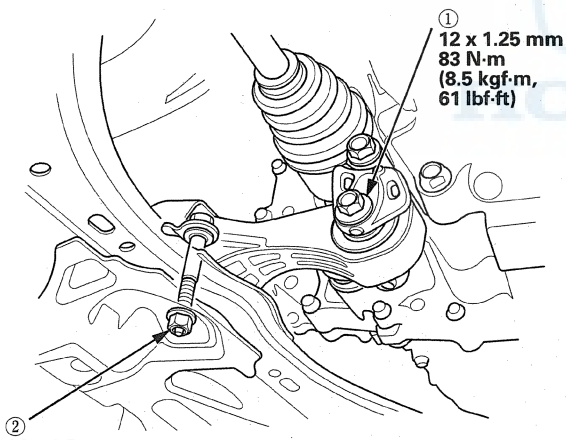
Side Engine Mount Bracket Replacement (cont'd)

14. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



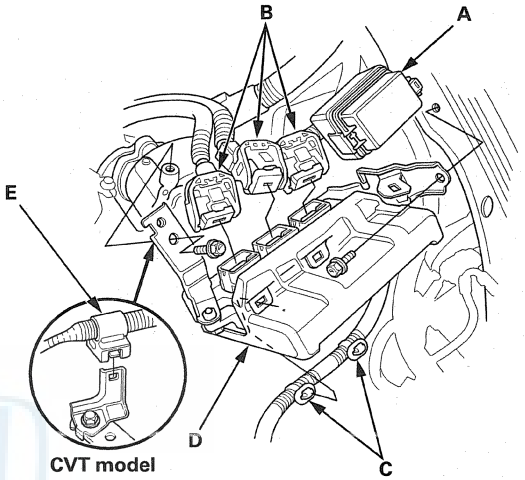
CVT model



15. Lower the vehicle on the lift.
16. Install the air cleaner (see page 9-3).

Transmission Mount Bracket Replacement

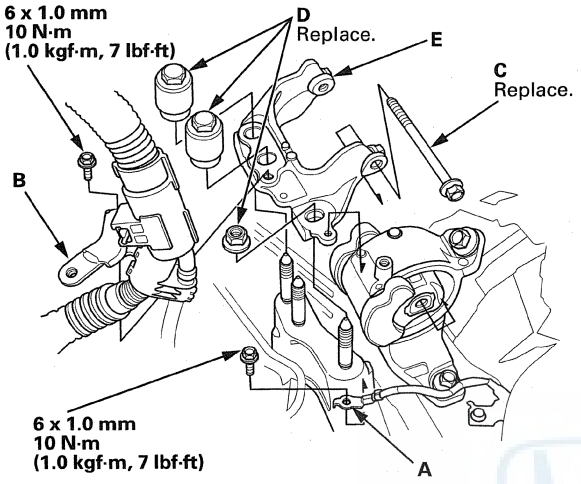
1. Do the 12 volt battery removal procedure (see page 22-87).
2. Remove the air cleaner (see page 9-3).
3. Disconnect the ECM/PCM connectors (B).



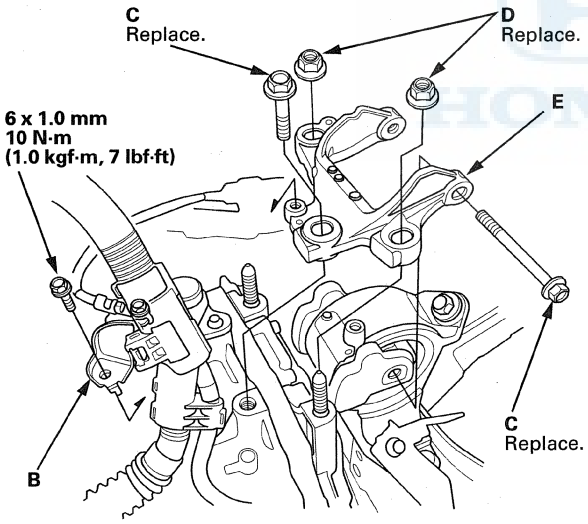
4. Remove the harness clamps (C), auxiliary under-hood relay box A, and the ECM/PCM (D).
5. CVT model: Remove the harness clamp (E).
6. Support the transmission with a jack and a wood block under the transmission.

7. Remove the ground cable (A) and the harness holder (B).

M/T model

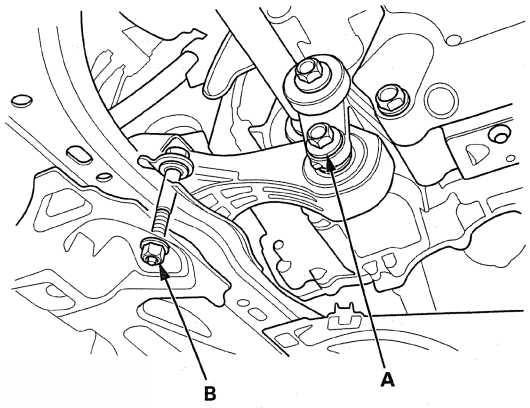


CVT model

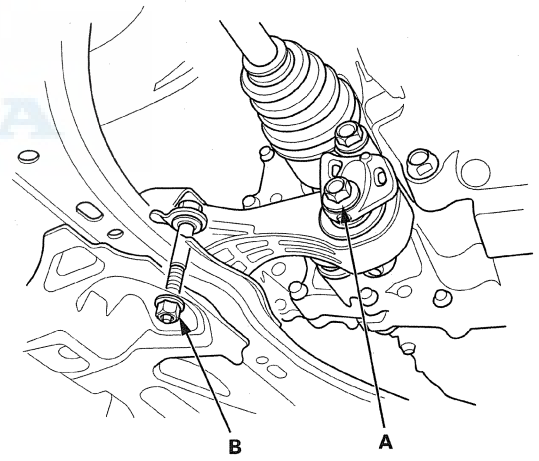


8. Remove the transmission mount bolts (C) and nuts (D), then remove the transmission mount bracket (E).
9. Install the transmission mount bracket, and loosely install new transmission mount bracket mounting bolts and nuts.
10. Install the harness holder and the ground cable.
11. Remove the jack and the wood block from under the transmission.
12. Raise the vehicle on the lift.
13. Loosen the torque rod mounting bolt (A) and nut (B).

M/T model



CVT model



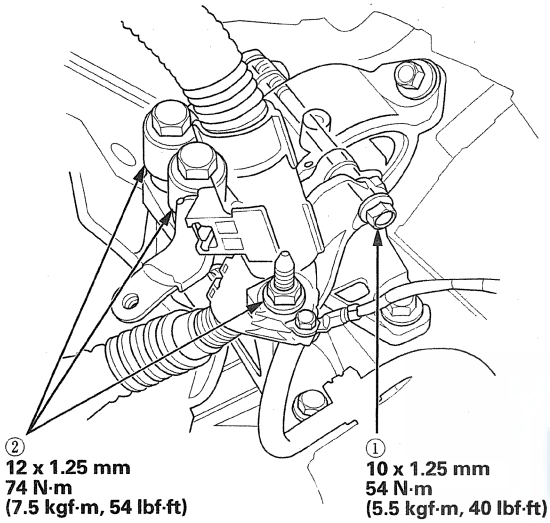
14. Lower the vehicle on the lift.

(cont'd)

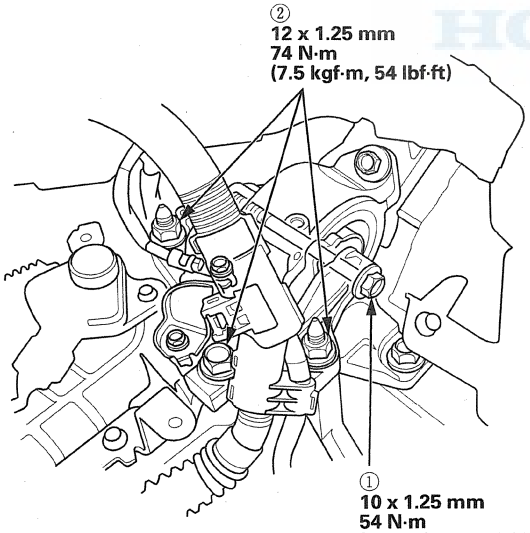
Transmission Mount Bracket Replacement (cont'd)

15. Tighten the transmission mount mounting bolts and nuts in the numbered sequence shown.

M/T model



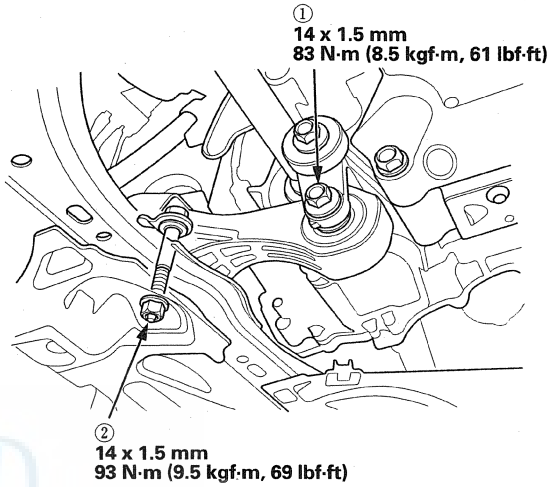
CVT model



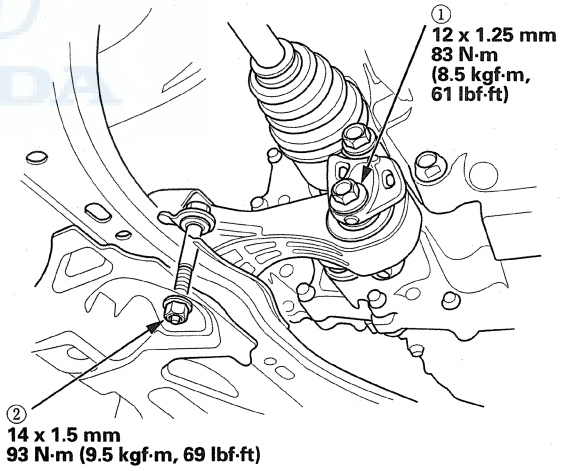
16. Raise the vehicle on the lift.

17. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



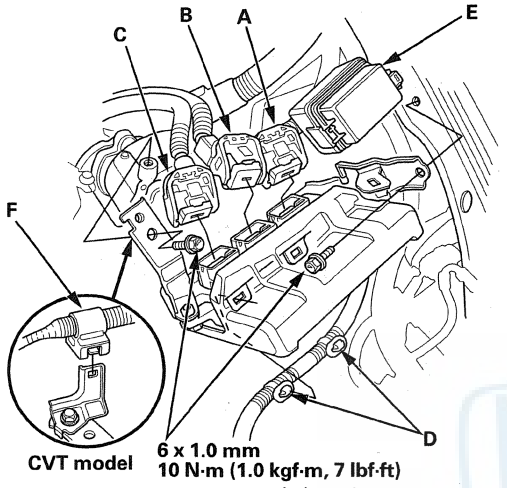
CVT model



18. Lower the vehicle on the lift.

19. Install the ECM/PCM with the ECM/PCM bracket. Then connect ECM/PCM connectors A, B, and C.

    NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.



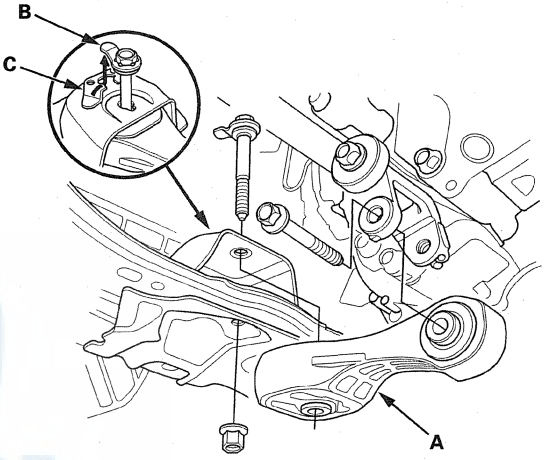
20. Install the harness clamps (D) and auxiliary under-hood relay box A (E).
21. CVT model: Install the harness clamp (F).
22. Do the 12 volt battery installation procedure (see page 22-88).
23. Install the air cleaner (see page 9-3).
24. Do the ECM/PCM reset procedure (see page 11-4).

Torque Rod Bracket Replacement

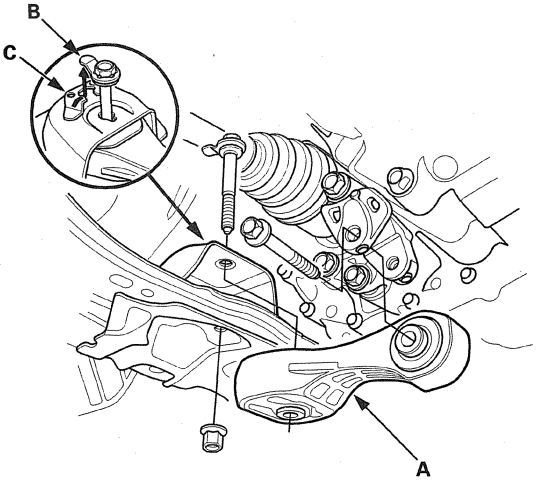
1. Raise the vehicle on the lift.
2. Support the transmission with a transmission jack and a wood block under the transmission.
3. Remove the torque rod (A).

    NOTE: Make sure the tab (B) on the bolt head aligned with the guide (C) on the front subframe.

M/T model



CVT model

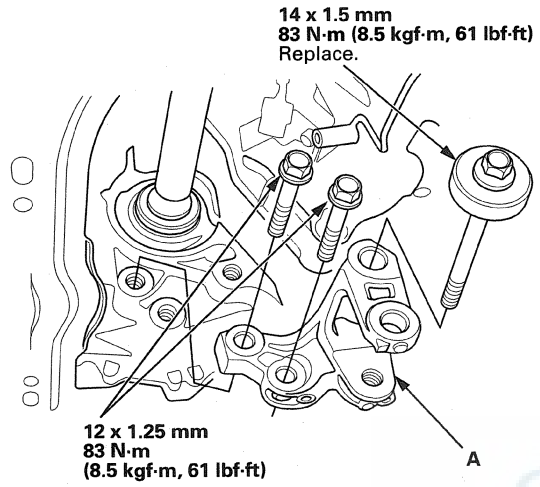


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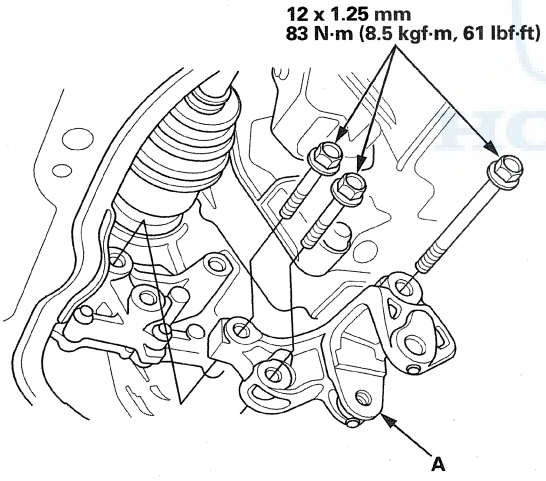
Torque Rod Bracket Replacement (cont'd)

4. Remove the torque rod bracket (A).

M/T model



CVT model

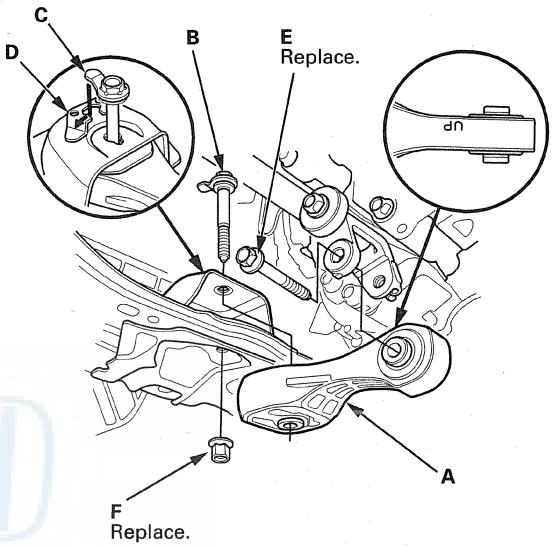


5. Install the torque rod bracket.

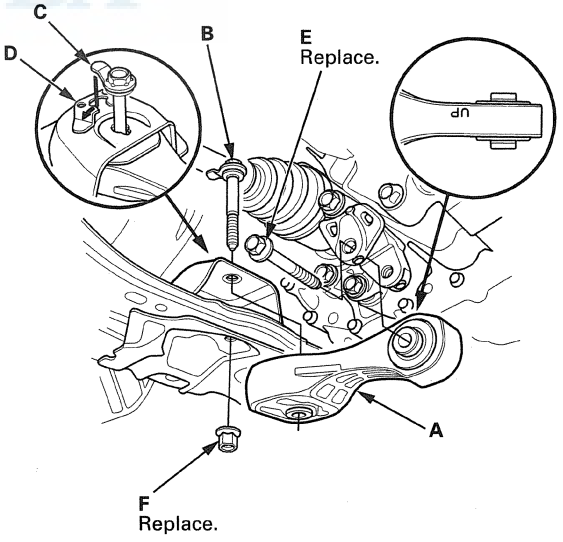
6. Install the torque rod (A).

NOTE: Be sure to install the torque rod with the "UP" mark facing up.

M/T model



CVT model

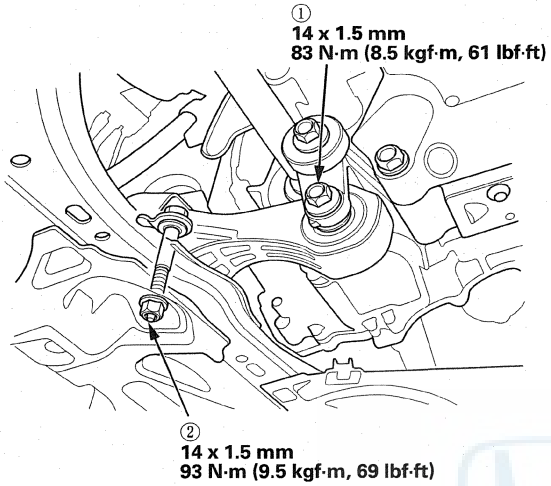


7. Install the bolt (B) with the tab (C) on the bolt head aligned with the guide (D) on the front subframe, then loosely install a new torque rod mounting bolt (E) and nut (F).

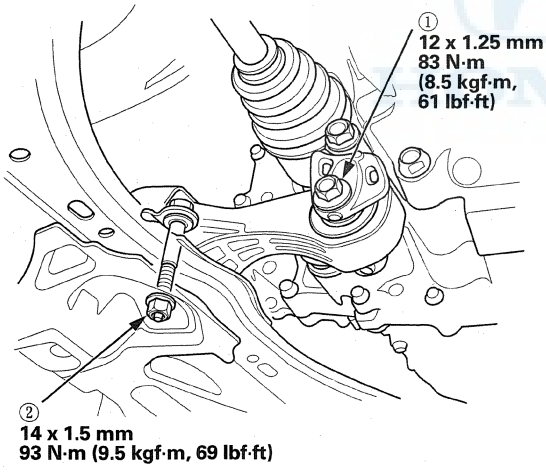
8. Remove the transmission jack and the wood block from under the transmission.

9. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



CVT model



Engine Mechanical

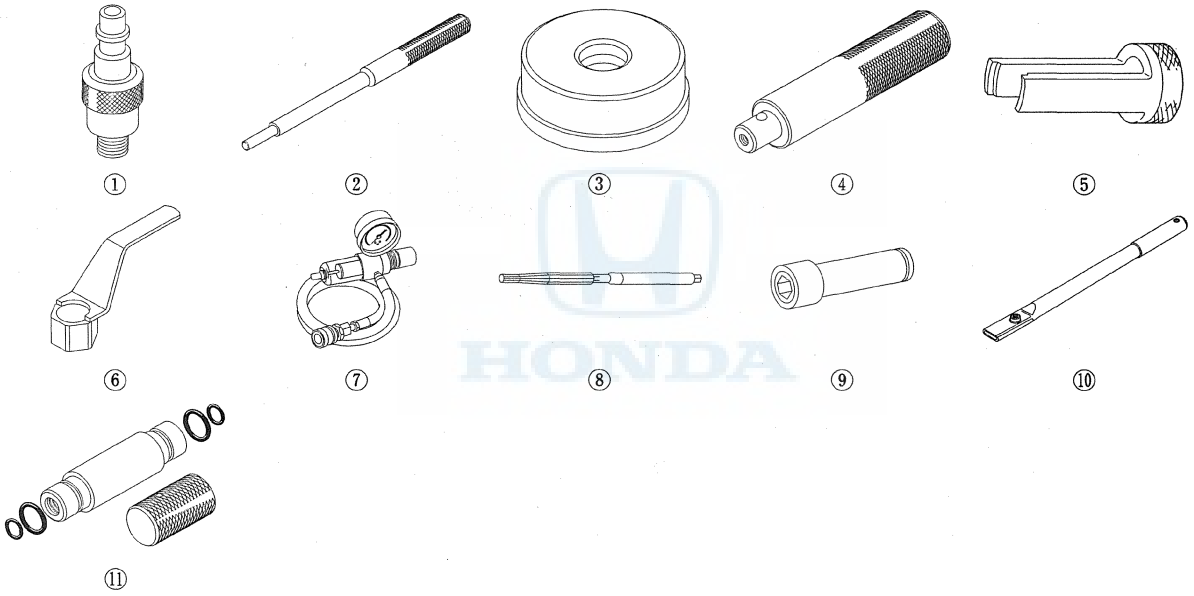
Cylinder Head

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Cylinder Head

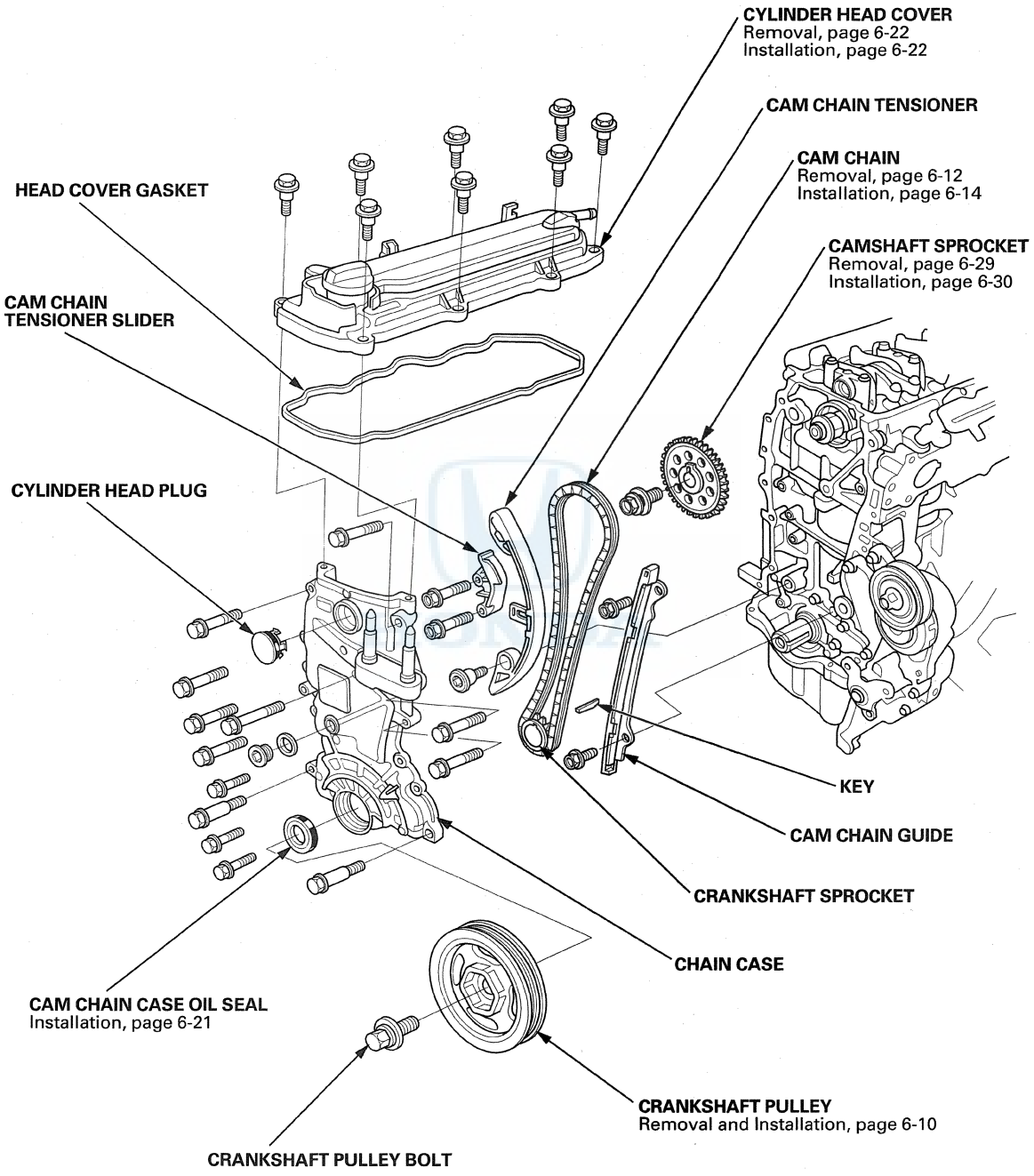
Special Tools

Ref.No.	Tool Number	Description	Qty
①	070AJ-001A101	VCM Air Adapter	1
②	07742-0010100	Valve Guide Driver, 5.35 x 9.7 mm	1
③	07746-0010400	Bearing Driver Attachment, 52 x 55 mm	1
④	07749-0010000	Driver Handle, 15 x 135L	1
⑤	07757-PJ1010A	Valve Spring Compressor Attachment	1
⑥	07AAB-RJAA100	Crankshaft Pulley Holder	1
⑦	07AAJ-PNAA101	Air Pressure Regulator	1
⑧	07HAH-PJ7A100	Valve Guide Reamer, 5.5 mm	1
⑨	07JAA-001020A	Socket, 19 mm	1
⑩	07JAB-001020B	Holder Handle	1
⑪	07PAD-0010000	Stem Seal Driver	1



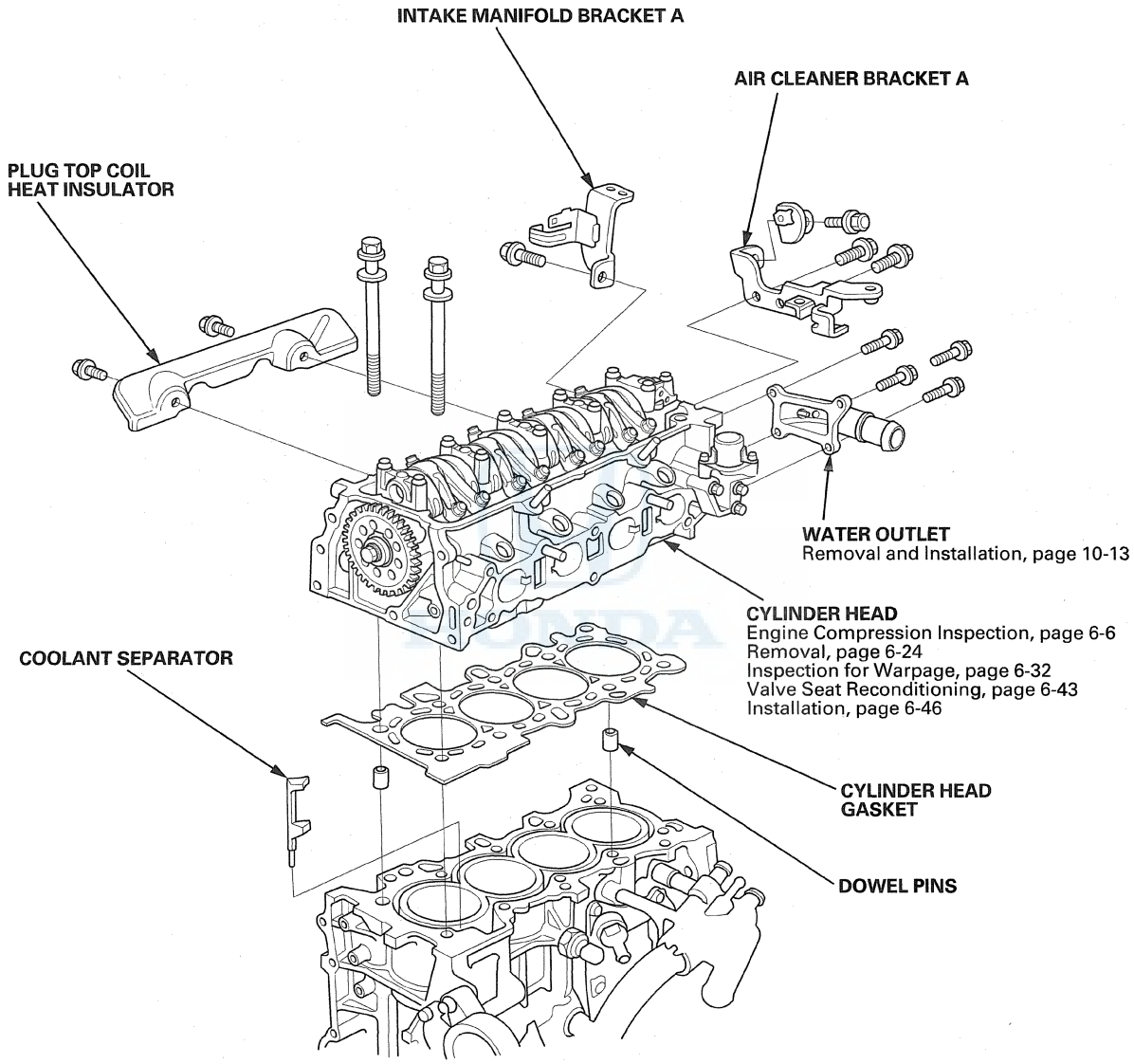
HONDA

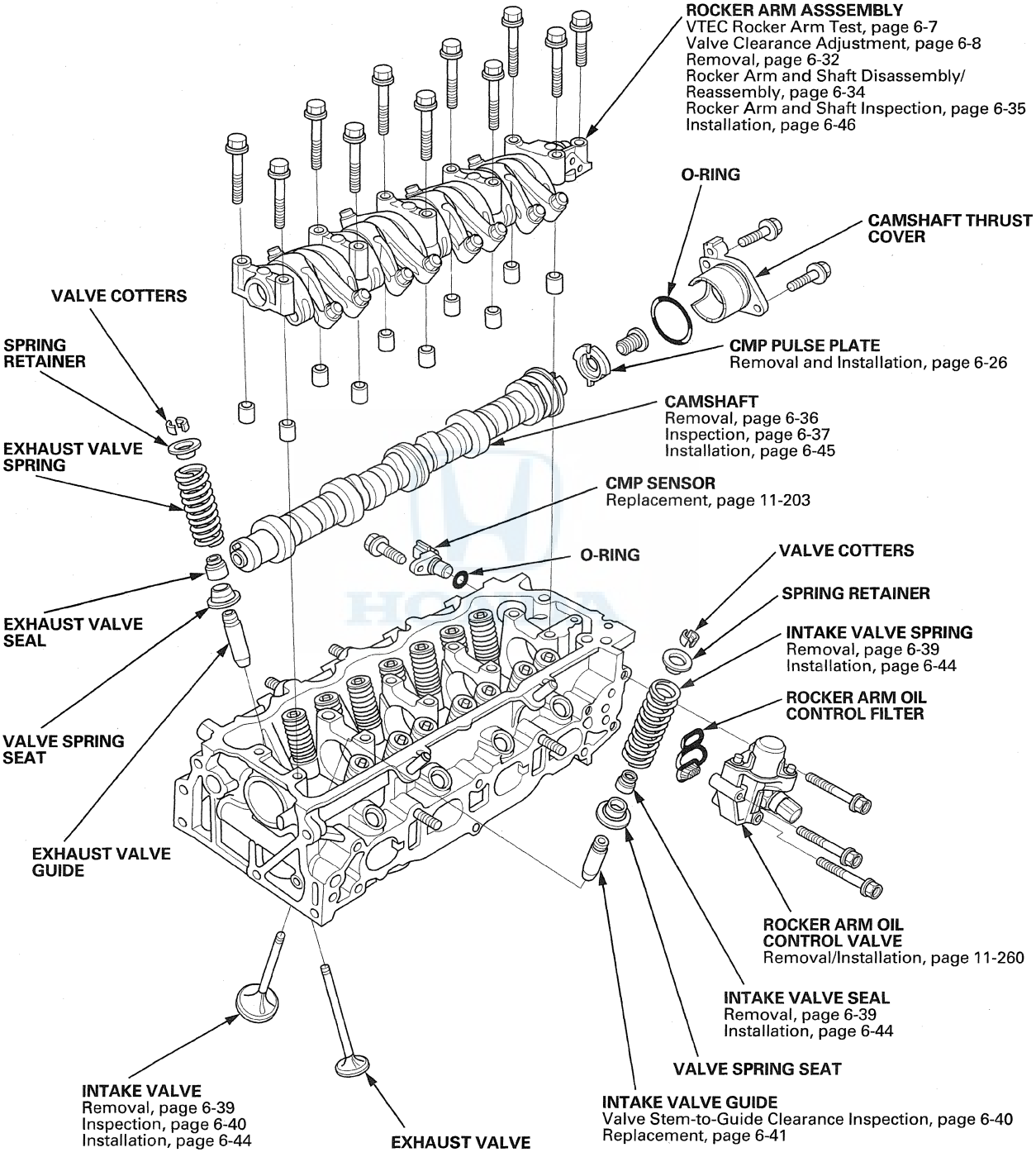
Component Location Index



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Component Location Index (cont'd)

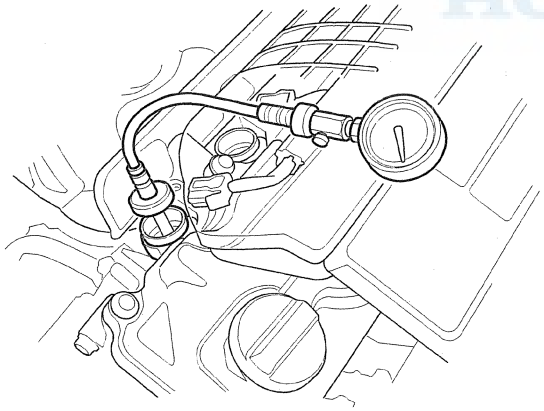



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Engine Compression Inspection

NOTE: After this inspection, you must reset PGM-FI ECM/PCM in the PGM-FI INSPECTION menu with the HDS to cancel ALL INJECTORS and STARTER TEST functions.

1. Warm up the engine to normal operating temperature (cooling fan comes on).
2. Turn the ignition switch to LOCK (0).
3. Connect the HDS to the DLC (see step 2 on page 11-3).
4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
6. Select ALL INJECTORS STOP in the PGM-FI INSPECTION menu with the HDS.
7. Select STARTER TEST in the PGM-FI INSPECTION menu with the HDS.
8. Turn the ignition switch to LOCK (0).
9. Remove the four ignition coils and the four spark plugs (see page 4-21).
10. Attach the compression gauge to the spark plug hole.



11. Step on the accelerator pedal to open the throttle fully, then crank the engine with the starter motor and measure the compression.

    Compression Pressure
    Above: 980 kPa (9.99 kgf/cm², 142.1 psi)

12. Measure the compression on the remaining cylinders.

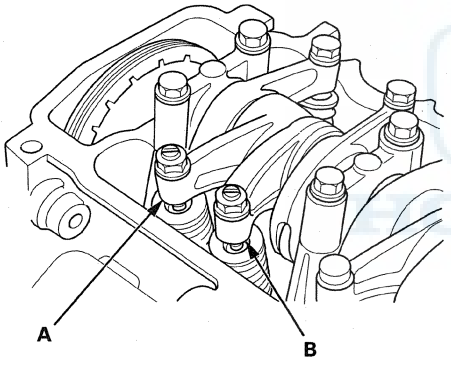
    Maximum Variation
    Within 200 kPa (2.04 kgf/cm², 29.0 psi)

13. If the compression is not within specifications, perform a cylinder leak down test to determine the problem area. Then check the following items, and remeasure the compression:
    - Incorrect valve clearance
    - Confirmation of cam timing
    - Damaged or worn cam lobes
    - Damaged or worn valves and seats
    - Damaged cylinder head gasket
    - Damaged or worn piston rings
    - Damaged or worn piston and cylinder bore
14. Remove the compression gauge from the spark plug hole.
15. Install the four spark plugs and the four ignition coils (see page 4-21).
16. Select PGM-FI ECM/PCM reset (see page 11-4) in the PGM-FI INSPECTION menu with the HDS to cancel ALL INJECTORS STOP and STARTER TEST.

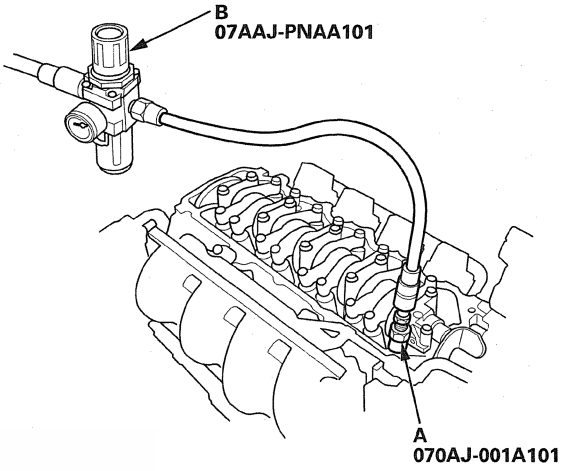
VTEC Rocker Arm Test

Special Tools Required
- Air Pressure Regulator 07AAJ-PNAA101
- VCM Air Adapter 070AJ-001A101

1. Remove the cylinder head cover (see page 6-22).
2. Rotate the crankshaft pulley clockwise. Make sure that the primary rocker arm (A) and the secondary rocker arm (B) are separated and that the primary rocker arm should move independently:
   - If the primary rocker arm and the secondary rocker arm move together, remove the primary rocker arm and the secondary rocker arm as an assembly, and check that the pistons in the primary and secondary rocker arms move smoothly (see page 6-36). If any rocker arm needs replacing, replace the rocker arm set, then retest.
   - If all the primary rocker arms and the secondary rocker arms move independently, go to step 3.

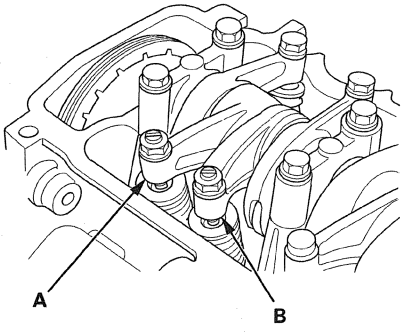


3. Check that the air pressure on the shop air compressor gauge indicates over 340 kPa (3.47 kgf/cm², 49.3 psi).
4. Inspect the valve clearance (see page 6-8).
5. Install the VCM air adapter (A) to the inspection hole, then connect the air pressure regulator (B).



6. Loosen the valve on the regulator, and apply the specified air pressure.

   Specified Air Pressure:
   340 kPa (3.47 kgf/cm², 49.3 psi)
7. With the specified air pressure applied, rotate the crankshaft pulley clockwise. The primary rocker arm (A) should move together with the secondary rocker arm (B):
   - If the primary rocker arm and the secondary rocker arm move independently of each other, remove the primary rocker arm and the secondary rocker arm as an assembly, and check that the pistons in the primary and secondary rocker arms move smoothly (see page 6-36). If any rocker arm needs replacing, replace the rocker arm set, then retest.
   - If all the primary rocker arms and the secondary rocker arms move together, go to step 8.

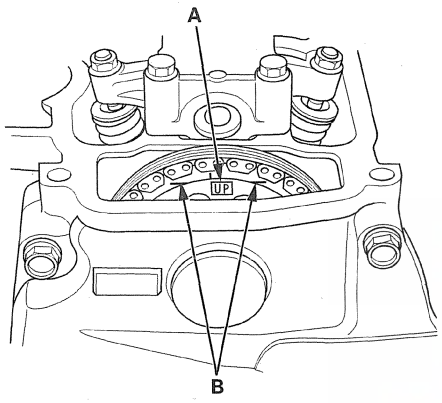


8. Remove the air pressure regulator and the VCM air adapter.
9. Install the cylinder head cover (see page 6-22).

Valve Clearance Adjustment

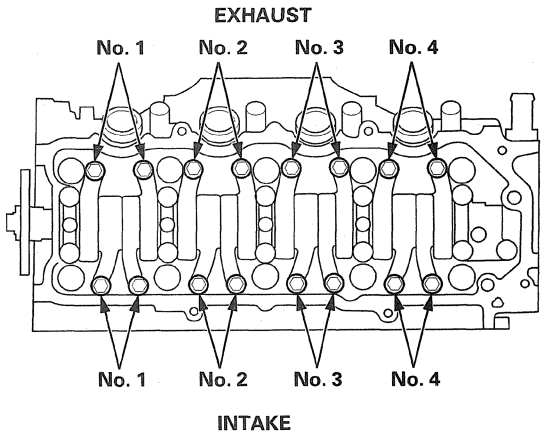
NOTE: Connect the HDS to the DLC (see step 2 on page 11-3), and monitor ECT SENSOR 1. Adjust the valve clearance only when the engine coolant temperature is less than 100 °F (38 °C).

1. Remove the cylinder head cover (see page 6-22).
2. Set the No. 1 piston at top dead center (TDC). The "UP" mark (A) on the camshaft sprocket should be at the top, and the TDC grooves (B) on the camshaft sprocket should line up with the top edge of the head.

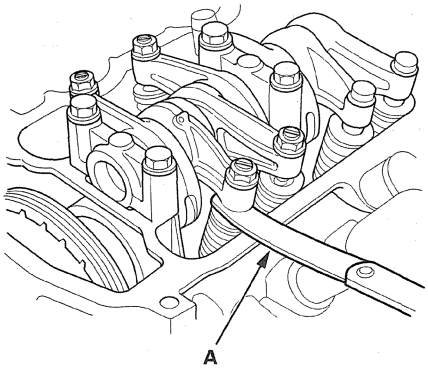


3. Select the correct feeler gauge for the valve clearance you are going to check.

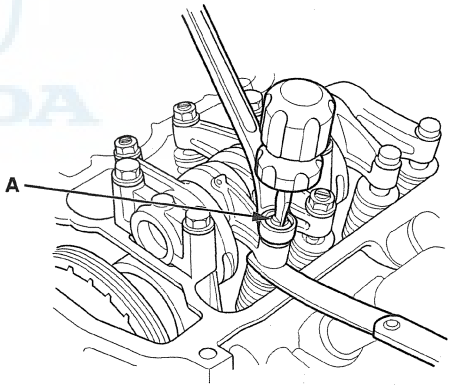
Valve Clearance
Intake: 0.15—0.19 mm (0.006—0.007 in)
Exhaust: 0.26—0.30 mm (0.011—0.011 in)



4. Insert the feeler gauge (A) between the adjusting screw and the end of the valve stem on No. 1 cylinder, and slide it back and forth; you should feel a slight amount of drag.



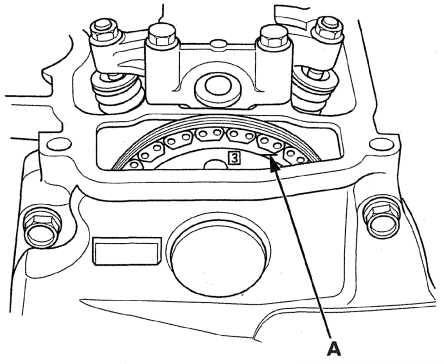
5. If you feel too much or too little drag, loosen the locknut, and turn the adjusting screw (A) until the drag on the feeler gauge is correct.



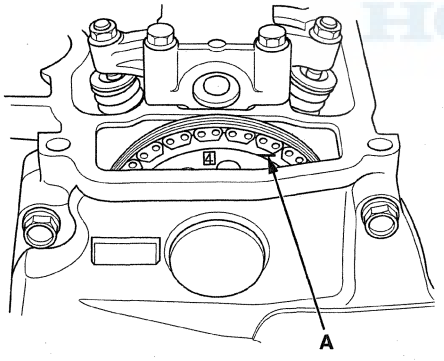
6. While holding the adjusting screw with the screw driver, tighten the locknut, then recheck the clearance. Repeat the adjustment, if necessary.

Specified Torque
7 x 0.75 mm
14 N·m (1.4 kgf·m, 10 lbf·ft)
Apply new engine oil to the nut threads.

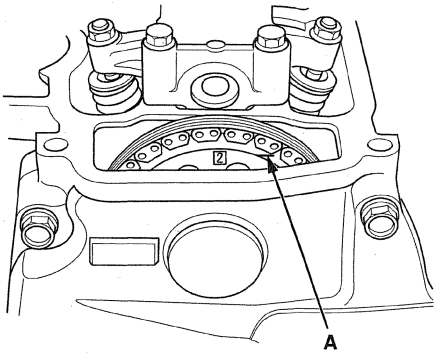
7. Rotate the crankshaft pulley clockwise. Align the No. 3 piston TDC groove (A) on the camshaft sprocket with the top edge of the head.



8. Check and, if necessary, adjust the valve clearance on the No. 3 cylinder.
9. Rotate the crankshaft pulley clockwise. Align the No. 4 piston TDC groove (A) on the camshaft sprocket with the top edge of the head.



10. Check and, if necessary, adjust the valve clearance on the No. 4 cylinder.
11. Rotate the crankshaft pulley clockwise. Align the No. 2 piston TDC groove (A) on the camshaft sprocket with the top edge of the head.



12. Check and, if necessary, adjust the valve clearance on the No. 2 cylinder.
13. Install the cylinder head cover (see page 6-22).

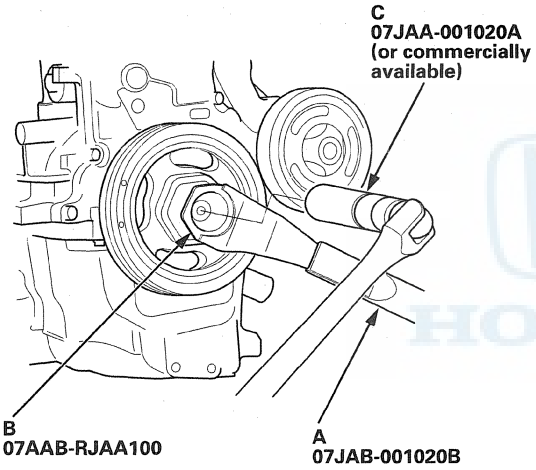
HONDA

Crankshaft Pulley Removal and Installation

Special Tools Required
- Holder Handle 07JAB-001020B
- Crankshaft Pulley Holder 07AAB-RJAA100
- Socket, 19 mm 07JAA-001020A or equivalent

Removal

1. Raise the vehicle on the lift.
2. Remove the right front wheel.
3. Remove the splash shield (see page 20-163).
4. Remove the drive belt (see page 10-17).
5. Hold the pulley with the holder handle (A) and the crankshaft pulley holder (B).

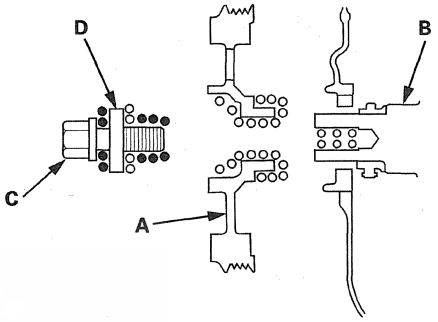


6. Remove the bolt with a socket, 19 mm (C) and a breaker bar, then remove the crankshaft pulley.

Installation

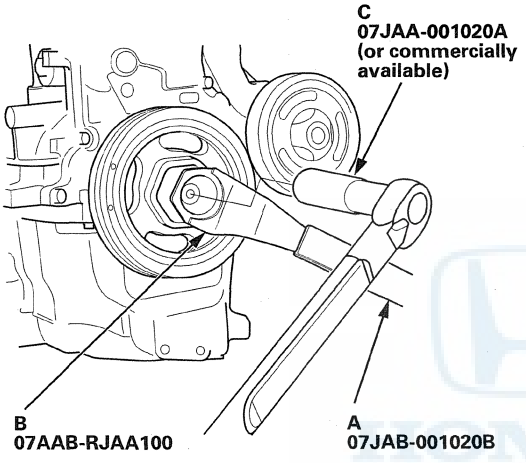
1. Remove any oil and clean the crankshaft pulley (A), the crankshaft (B), the bolt (C), and the washer (D). Lubricate with new engine oil as shown.

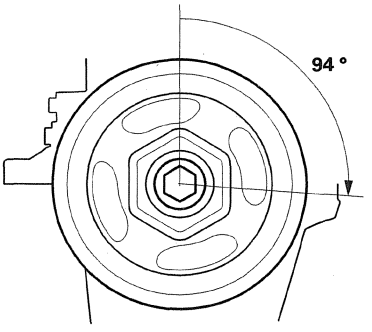
○: **Clean**
●: **Lubricate with new engine oil**



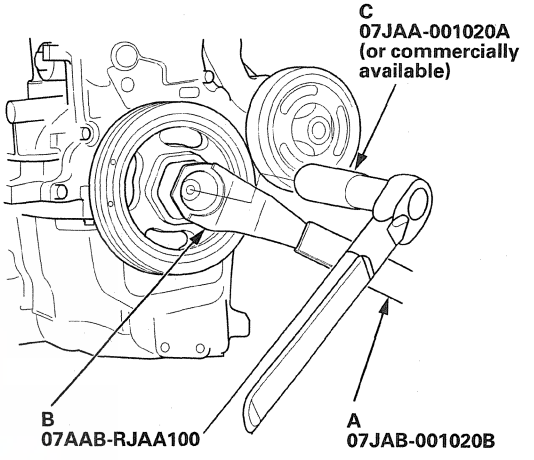
2. Install the crankshaft pulley.

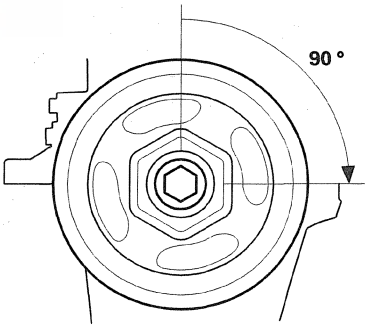
3. When a new crankshaft or a new pulley bolt is installed: Tighten the crankshaft pulley bolt. Do not use an impact wrench.
   -1. Hold the pulley with the holder handle (A) and crankshaft pulley holder (B), torque the bolt to 177 N·m (18.0 kgf·m, 130 lbf·ft) with a torque wrench and a socket (C), then remove the bolt.
   -2. Torque the bolt to 39 N·m (4.0 kgf·m, 29 lbf·ft) with a torque wrench and a socket.
   -3. Tighten the bolt an additional 94 °.





4. When the crankshaft or the pulley bolt is reused: Tighten the crankshaft pulley bolt. Do not use an impact wrench.
   -1. Hold the pulley with the holder handle (A) and crankshaft pulley holder (B), then torque the bolt to 37 N·m (3.8 kgf·m, 27 lbf·ft) with a torque wrench and a socket (C).
   -2. Tighten the bolt an additional 90 °.



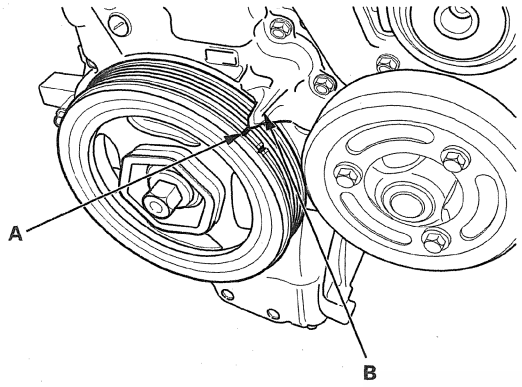


5. Install the drive belt (see page 10-17).
6. Install the splash shield (see page 20-163).
7. Install the right front wheel.

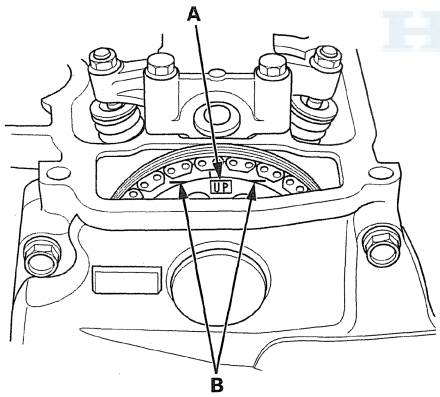
Cam Chain Removal

NOTE: Keep the cam chain away from magnetic fields.

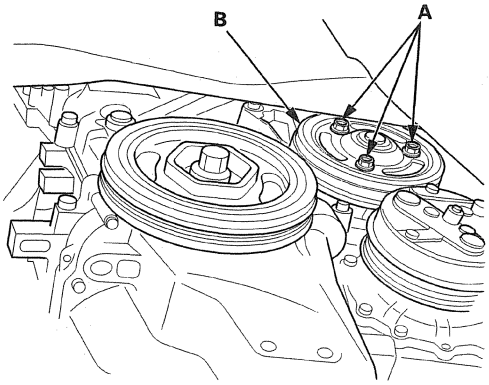
1. Turn the crankshaft pulley so its top dead center (TDC) mark (A) lines up with the pointer (B).



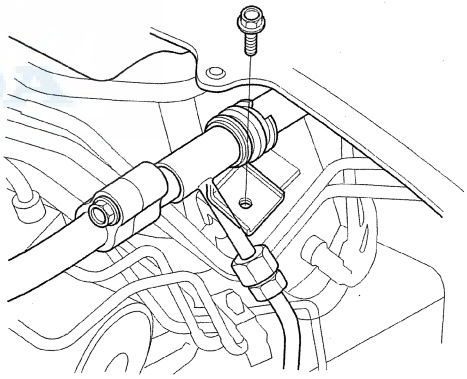
2. Remove the cylinder head cover (see page 6-22).
3. Check the No. 1 piston at TDC. The "UP" mark (A) on the camshaft sprocket should be at the top, and the TDC grooves (B) on the camshaft sprocket should line up with the top edge of the head.



4. Remove the right front wheel.
5. Remove the splash shield (see page 20-163).
6. Loosen the water pump pulley mounting bolts (A).

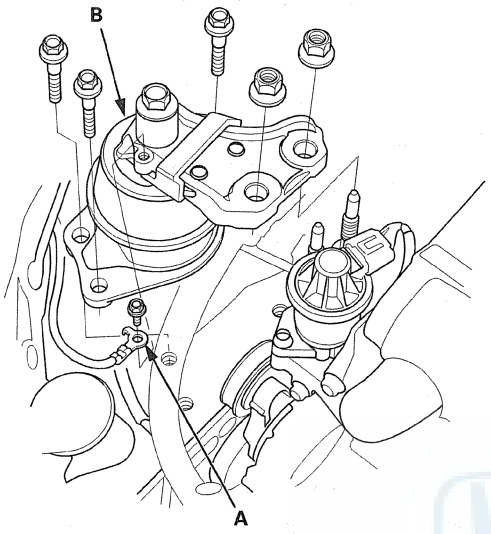


7. Remove the drive belt (see page 10-17).
8. Remove the water pump pulley (B).
9. Remove the crankshaft pulley (see page 6-10).
10. Remove the A/C line bracket mounting bolt.

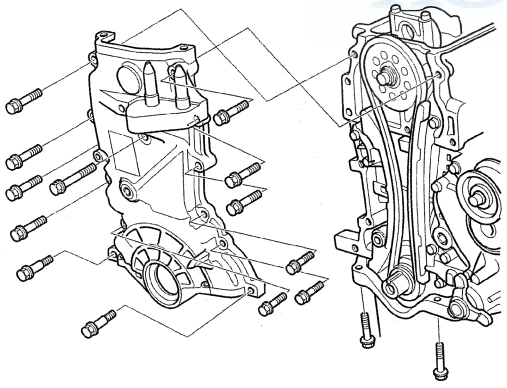


11. Support the engine with a jack and a wood block under the oil pan.

12. Remove the ground cable (A), then remove the side engine mount/bracket assembly (B).

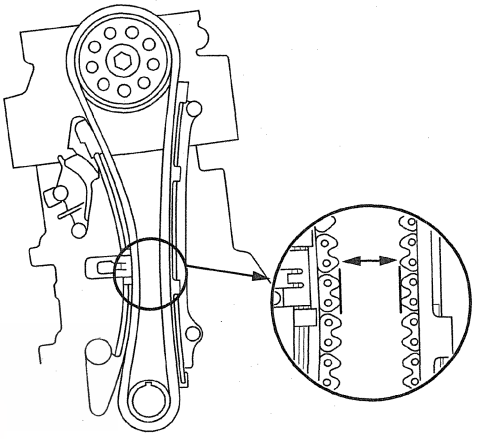


13. Remove the chain case.

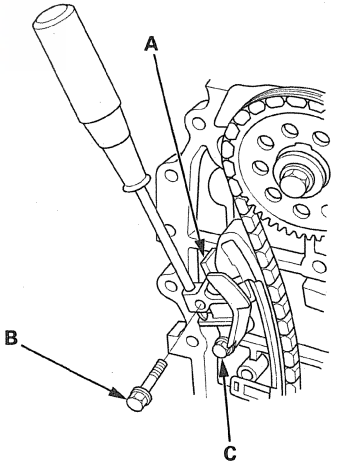


14. Measure the cam chain separation. If the distance is less than the service limit, replace the cam chain and the cam chain tensioner.

Standard Distance: **19 mm (0.75 in)**
Service Limit: **15 mm (0.59 in)**



15. Apply new engine oil to the sliding surface of the cam chain tensioner slider (A).

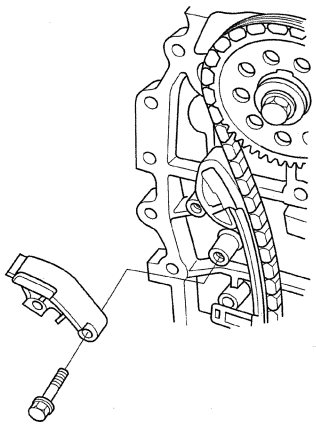


16. Hold the cam chain tensioner slider with a screwdriver, then remove the upper bolt (B), and loosen the lower bolt (C).

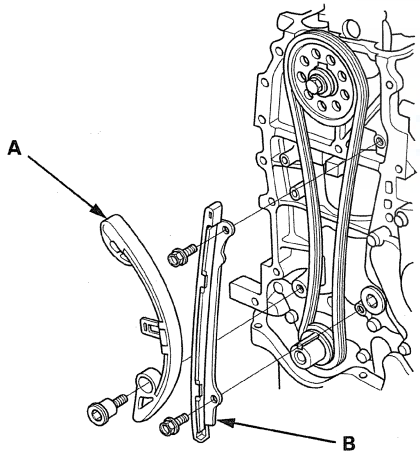
(cont'd)

Cam Chain Removal (cont'd)

17. Remove the cam chain tensioner slider.



18. Remove the cam chain tensioner (A) and the cam chain guide (B).

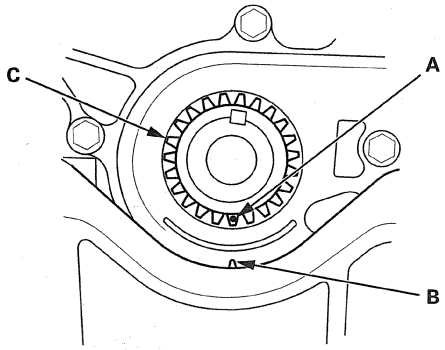


19. Remove the cam chain.

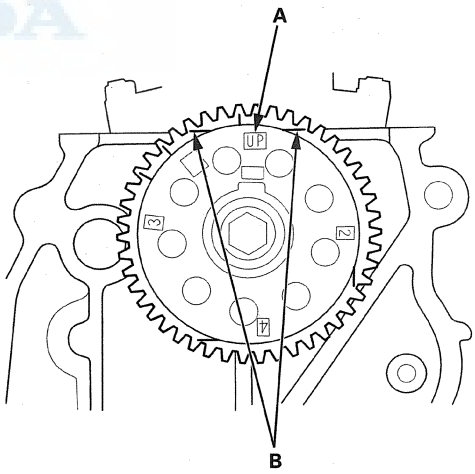
Cam Chain Installation

NOTE: Keep the cam chain away from magnetic fields.

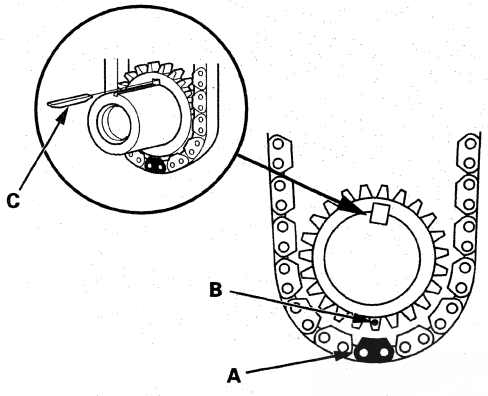
1. Set the crankshaft to top dead center (TDC). Align the TDC mark (A) on the crankshaft sprocket with the pointer (B) on the oil pump.



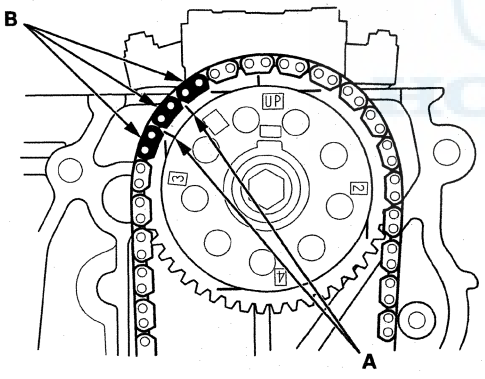
2. Remove the crankshaft sprocket (C).
3. Set the camshaft to TDC. The "UP" mark (A) on the camshaft sprocket should be at the top, and the TDC grooves (B) on the camshaft sprocket should line up with the top edge of the head.



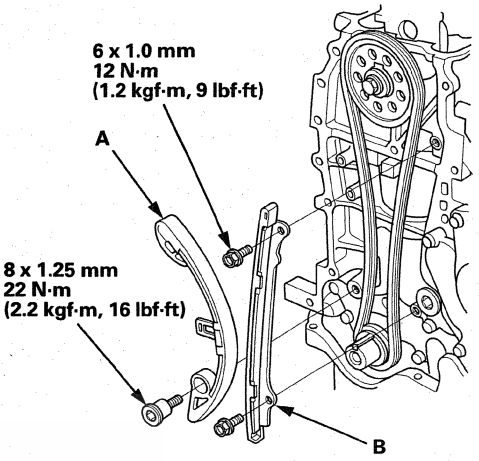
4. Install the cam chain on the crankshaft sprocket with the colored piece (A) aligned with the TDC mark (B) on the crankshaft sprocket, then install the crankshaft sprocket with the special key (C) to the crankshaft.



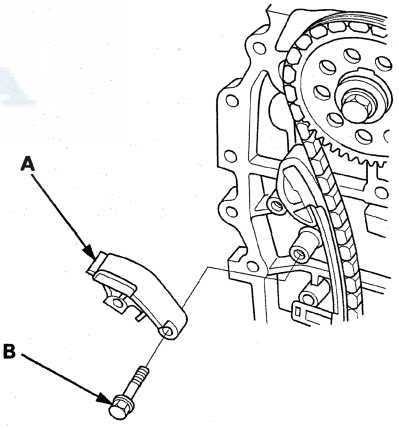
5. Install the cam chain on the camshaft sprocket with the pointers (A) aligned with the three colored pieces (B) as shown.



6. Install the cam chain tensioner (A) and the cam chain guide (B).



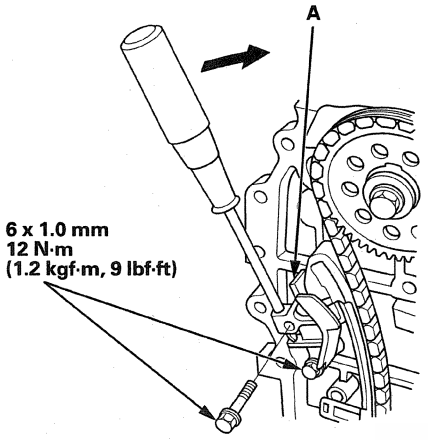
7. Install the cam chain tensioner slider (A), and loosely install the bolt (B).



(cont'd)

Cam Chain Installation (cont'd)

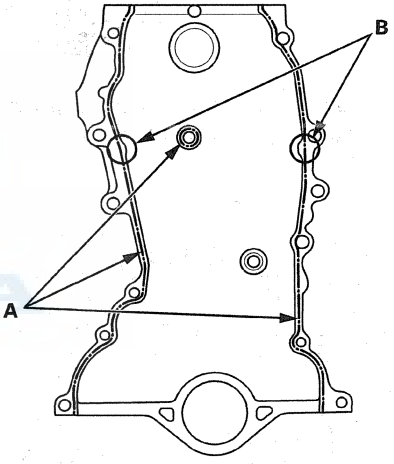
8. Apply new engine oil to the sliding surface of the cam chain tensioner slider (A).

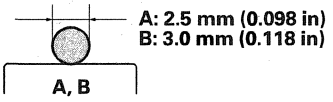


9. Rotate the cam chain tensioner slider clockwise to compress the cam chain tensioner, and install the remaining bolt, then tighten the bolts to the specified torque.
10. Check the cam chain case oil seal for damage. If the oil seal is damaged, replace the cam chain case oil seal (see page 6-21).
11. Remove all of the old liquid gasket from the chain case mating surfaces, the bolts, and the bolt holes.
12. Clean and dry the chain case mating surfaces.
13. Apply liquid gasket (P/N 08718-0004) to the cylinder head and the engine block mating surfaces of the chain case and to the inside edge of the bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

- Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
- Apply a 3.0 mm (0.118 in) diameter bead of liquid gasket to the upper surface contact areas of the engine block (B).
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

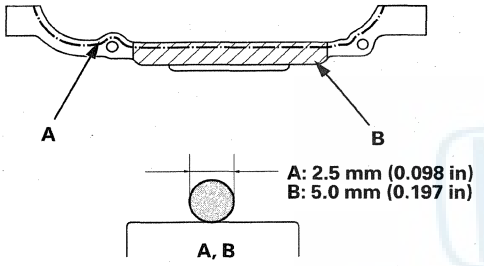




14. Apply liquid gasket (P/N 08718-0004) to the oil pan mating surface of the chain case and to the inside edge of the bolt holes. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

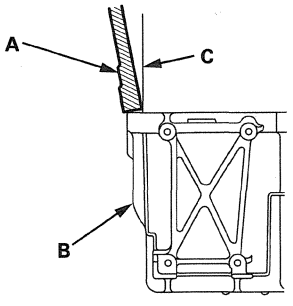
- Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
- Apply a 5.0 mm (0.197 in) diameter bead of liquid gasket to the shaded area (B).
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



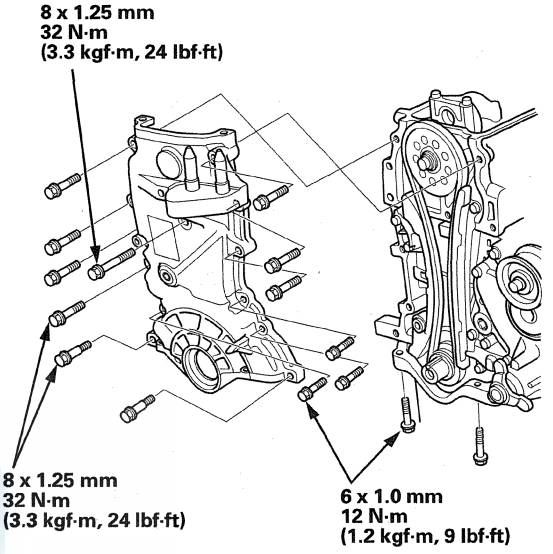
15. Set the edge of the chain case (A) on the edge of the oil pan (B), then install the chain case on the engine block (C).

NOTE:

- When installing the chain case, do not slide the bottom surface onto the oil pan mounting surface.
- Wait at least 30 minutes before filling the engine with oil.
- Do not run the engine for at least 3 hours after installing the chain case.



16. Tighten the chain case mounting bolts. Wipe off the excess liquid gasket from the oil pan and the chain case mating area.

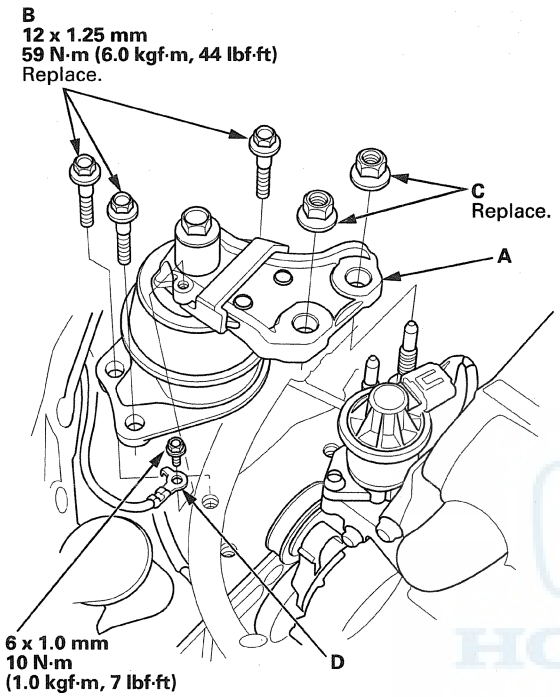


17. Install the cylinder head cover (see page 6-22).

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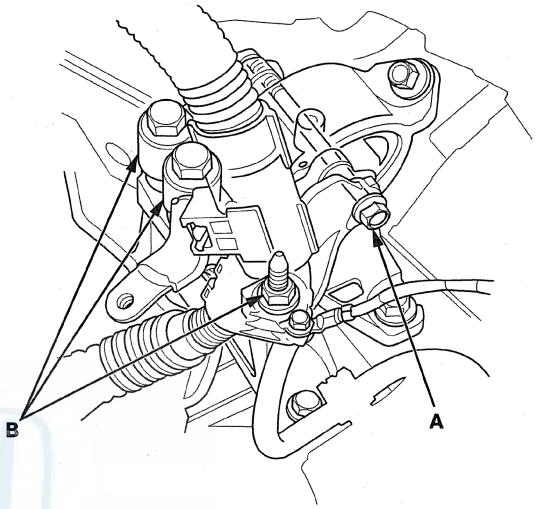
Cam Chain Installation (cont'd)

18. Install the side engine mount/bracket assembly (A), then tighten new side engine mount/bracket assembly mounting bolts (B).

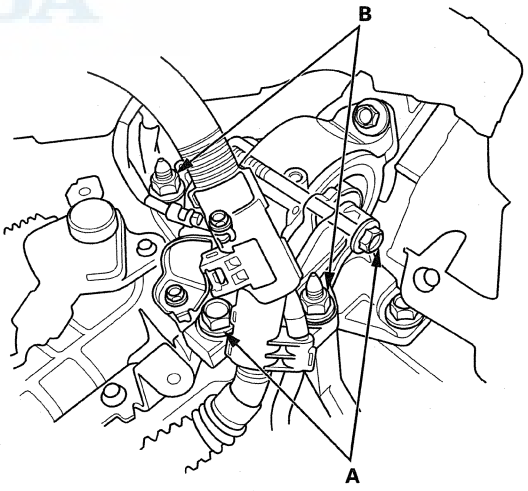


19. Loosely install new side engine mount/bracket assembly mounting nuts (C).
20. Install the ground cable (D).
21. Remove the jack and the wood block from under the oil pan.
22. Remove the air cleaner (see page 9-3).
23. Loosen the transmission mount bracket mounting bolts (A) and nuts (B).

M/T model



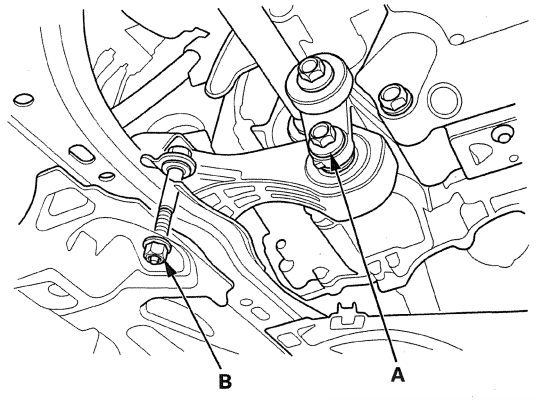
CVT model



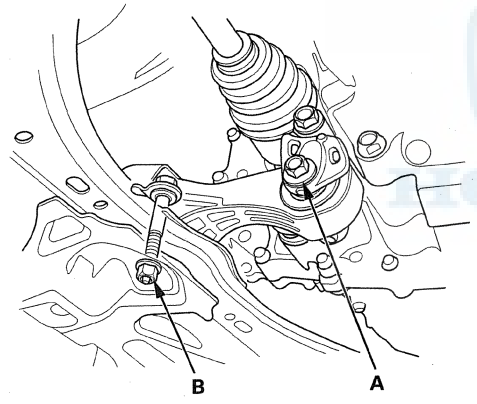
24. Raise the vehicle on the lift.

25. Loosen the torque rod mounting bolt (A) and nut (B).

M/T model

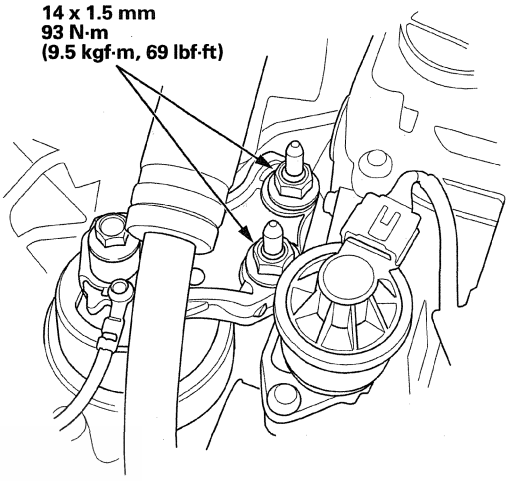


CVT model



26. Lower the vehicle on the lift.

27. Tighten the side engine mount/bracket assembly mounting nuts.

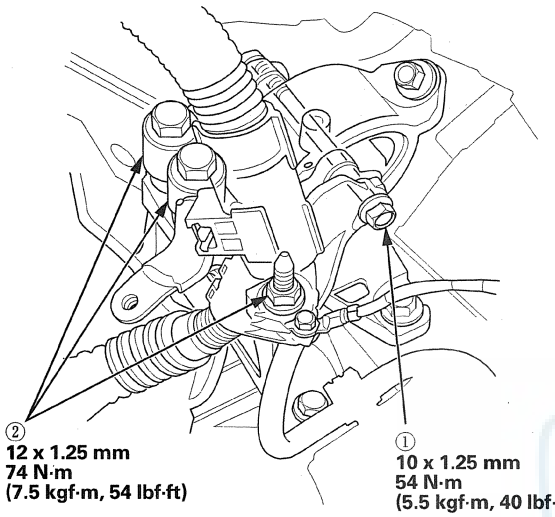


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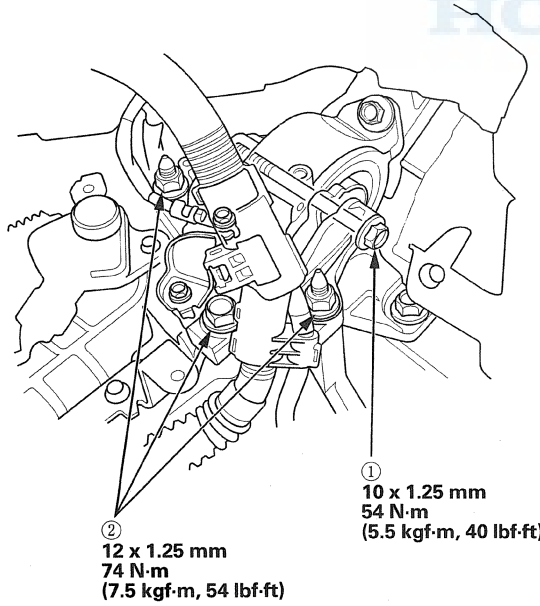
Cam Chain Installation (cont'd)

28. Tighten the transmission mount mounting bolts and nuts in the numbered sequence shown.

M/T model



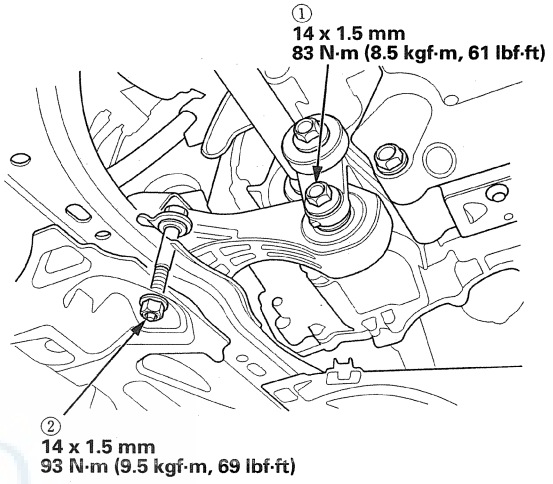
CVT model



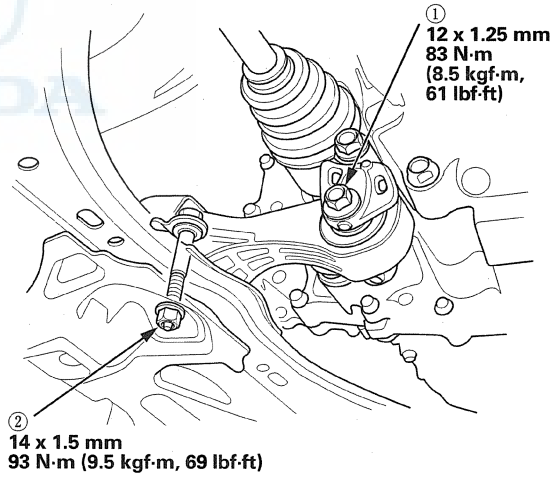
29. Raise the vehicle on the lift.

30. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.

M/T model



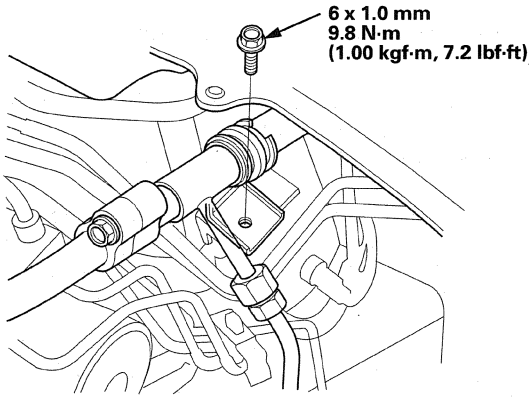
CVT model



31. Lower the vehicle on the lift.

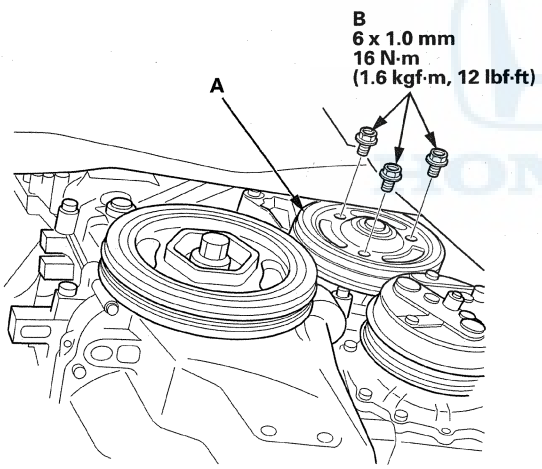
32. Install the air cleaner (see page 9-3).

33. Install the A/C line bracket mounting bolt.



34. Install the crankshaft pulley (see page 6-10).

35. Install the water pump pulley (A), and loosely install the water pump pulley mounting bolts (B).



36. Install the drive belt (see page 10-17).

37. Tighten the water pump pulley mounting bolts.

38. Install the splash shield (see page 20-163).

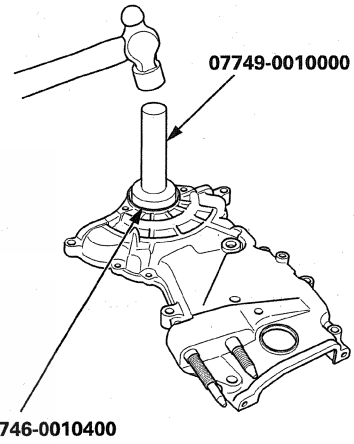
39. Install the right front wheel.

40. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).

Cam Chain Case Oil Seal Installation

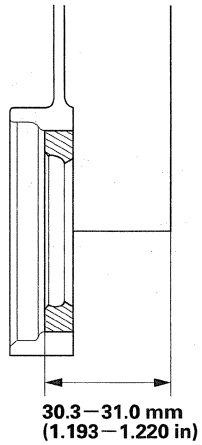
Special Tools Required
- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000

1. Clean and dry the cam chain case oil seal housing.
2. Apply a light coat of new engine oil to the lip of the cam chain case oil seal.
3. Use the driver handle, 15 x 135 L, and the bearing driver attachment, 52 x 55 mm, to drive a new oil seal squarely into the chain case to the specified installed height.



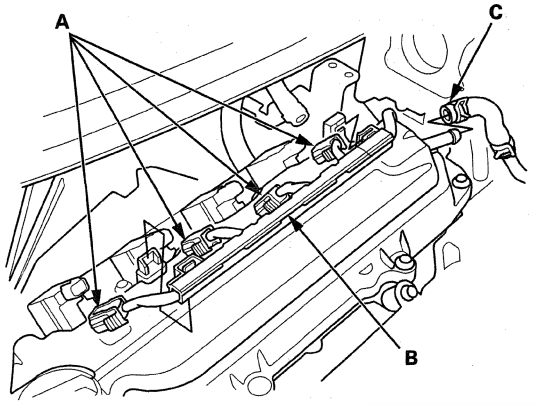
4. Measure the distance between the chain case surface and the oil seal.

Oil Seal Installed Height
30.3—31.0 mm (1.193—1.220 in)

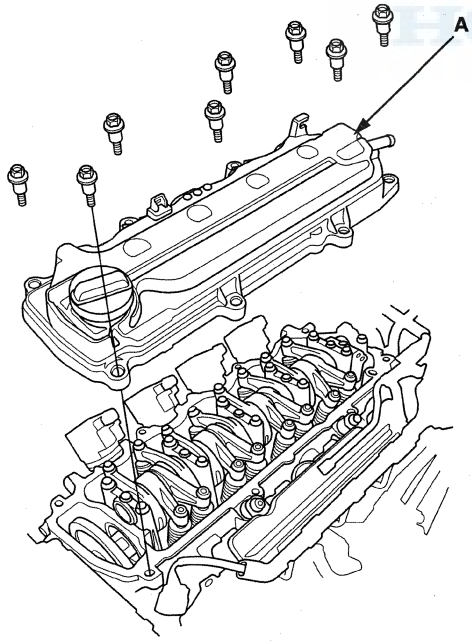


Cylinder Head Cover Removal

1. Remove the intake manifold chamber (see page 9-6).
2. Disconnect the four ignition coil connectors (A).



3. Remove the harness holder (B), and disconnect the breather hose (C).
4. Remove the cylinder head cover (A).

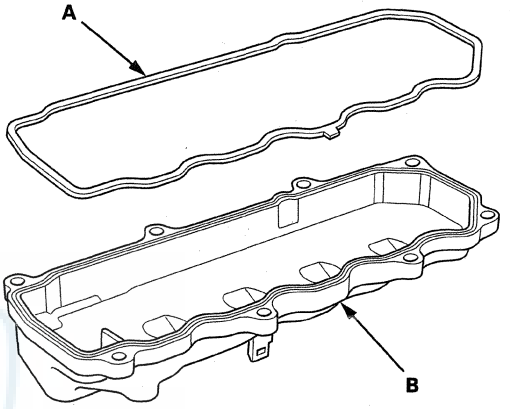


Cylinder Head Cover Installation

1. Thoroughly clean the head cover gasket and the groove of the cylinder head cover.

   NOTE: Check and if necessary, replace the head cover gasket.

2. Install the head cover gasket (A) in the groove of the cylinder head cover (B). Make sure the head cover gasket is seated securely.

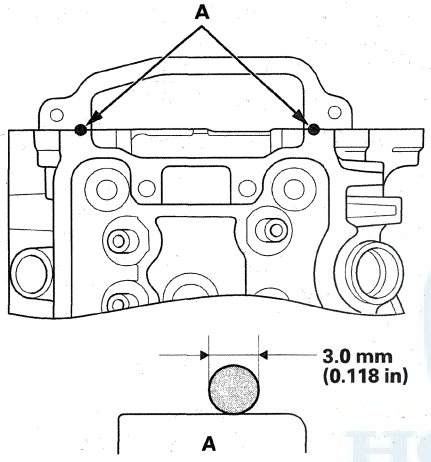


3. Remove all of the old liquid gasket from the cylinder head.
4. Clean the head cover contacting surfaces with a shop towel.

5. Apply liquid gasket (P/N 08718-0004) to the chain case contact areas (A). Install the component within 5 minutes of applying the liquid gasket.

NOTE:

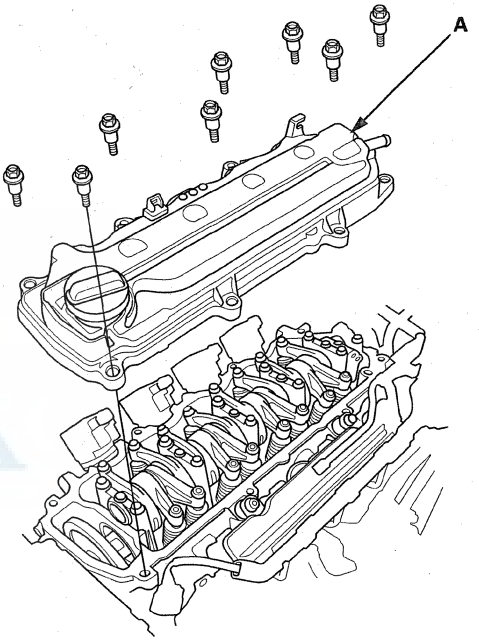
- Apply a 3.0 mm (0.118 in) diameter bead of liquid gasket to the chain case contact areas.
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



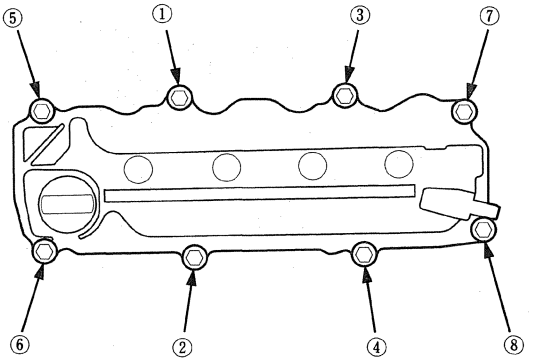
6. Place the cylinder head cover (A) on the cylinder head, then slide the cover slightly back and forth to seat the head cover gasket.

NOTE:

- Wait at least 30 minutes before filling the engine with oil.
- Do not run the engine for at least 3 hours after installing the head cover.



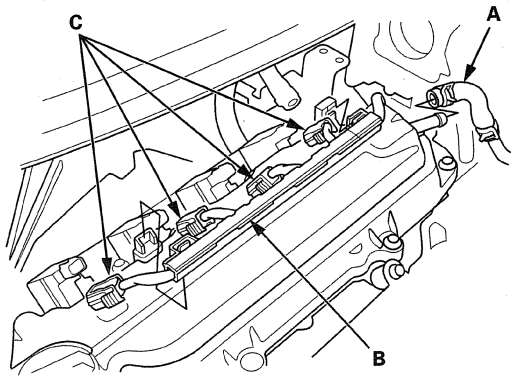
7. Tighten the bolts in three steps. In the final step, torque all bolts, in sequence, to 10 N·m (1.0 kgf·m, 7 lbf·ft).



(cont'd)

Cylinder Head Cover Installation (cont'd)

8. Connect the breather hose (A), and install the harness holder (B).



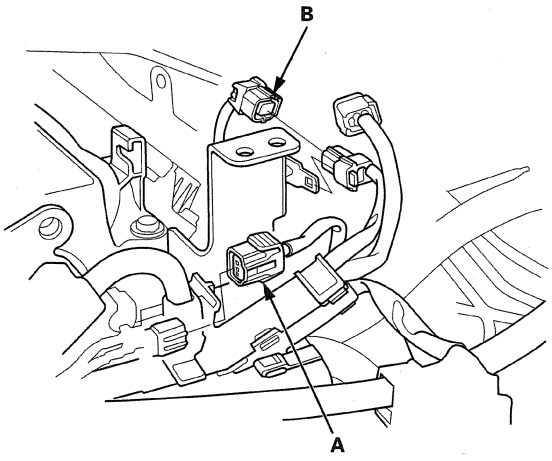
9. Connect the four ignition coil connectors (C).
10. Install the intake manifold chamber (see page 9-11).

Cylinder Head Removal

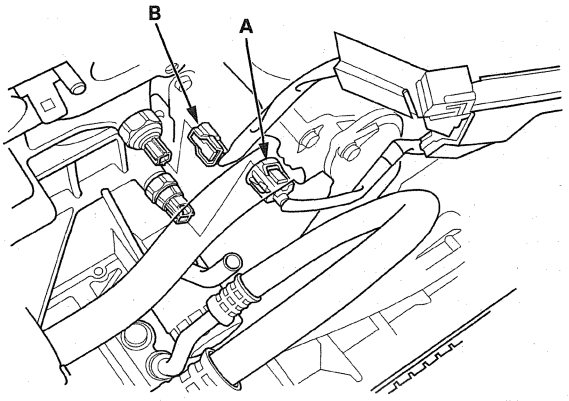
NOTE:

- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.
- Connect the HDS to the DLC (see step 2 on page 11-3), and monitor ECT SENSOR 1. To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 100 °F (38 °C) before loosening the cylinder head bolts.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses, or interfere with other parts.
- Keep the cam chain away from magnetic fields.

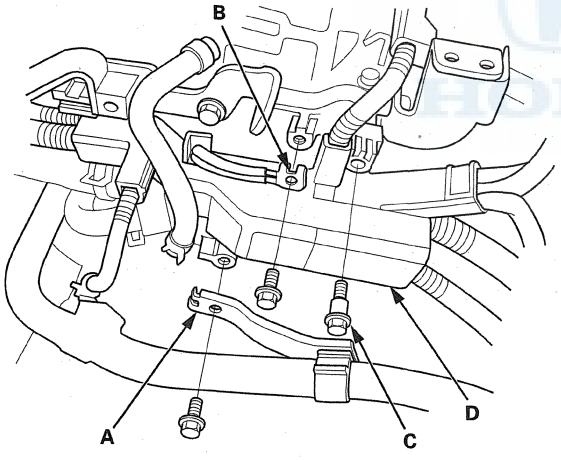
1. Remove the cowl cover and the under-cowl panel (see page 20-153).
2. Relieve the fuel pressure (see page 11-287).
3. Drain the engine coolant (see page 10-8).
4. Do the 12 volt battery removal procedure (see page 22-87).
5. Remove the throttle body (see page 11-248).
6. Remove the intake manifold/chamber assembly (see page 9-13).
7. Remove the injectors (see page 11-200).
8. Remove the four ignition coils (see page 4-21).
9. Remove the warm-up TWC (see page 11-313).
10. Disconnect the CMP sensor connector (A) and the secondary HO2S connector (B).



11. Disconnect the oil pressure switch connector (A) and the knock sensor connector (B).

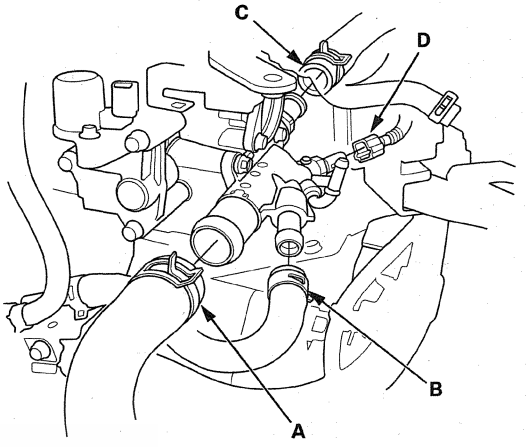


12. Remove the heater hose bracket (A) and the ground cable (B).



13. Remove the harness holder bolt (C), then remove the harness holder (D) from the bracket.

14. Disconnect the upper radiator hose (A), the water bypass hose (B), and the heater hose (C).

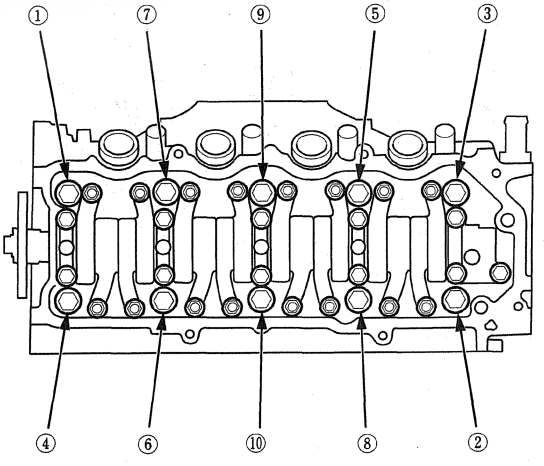


15. Disconnect the ECT sensor 1 connector (D).

16. Remove the cylinder head cover (see page 6-22).

17. Remove the cam chain (see page 6-12).

18. Remove the cylinder head bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.



19. Remove the cylinder head.

CMP Pulse Plate Removal and Installation

Removal

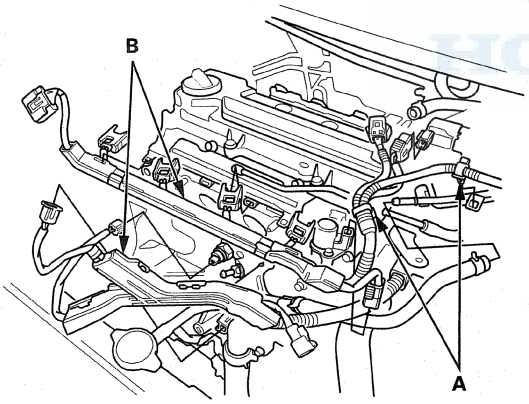
1. Remove the throttle body (see page 11-248).

   NOTE: Plug the water bypass hoses.

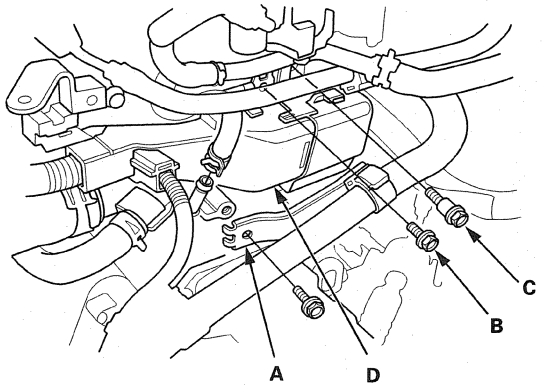
2. Remove the intake manifold/chamber assembly (see page 9-13).

3. Disconnect the following engine wire harness connectors, and remove the wire harness clamps from the cylinder head:
   - Four injector connectors
   - Rocker arm oil control valve connector
   - Rocker arm oil pressure switch connector
   - ECT sensor 1 connector
   - CMP sensor connector
   - A/F sensor connector
   - Secondary HO2S connector
   - Oil pressure switch connector
   - Knock sensor connector

4. Remove the harness clamps (A) with the harness holders (B).



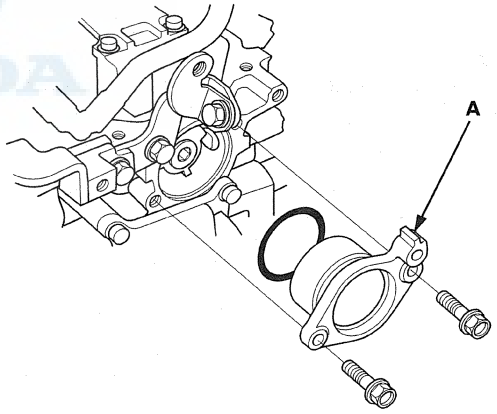
5. Remove the heater hose bracket (A) and the ground cable bolt (B).



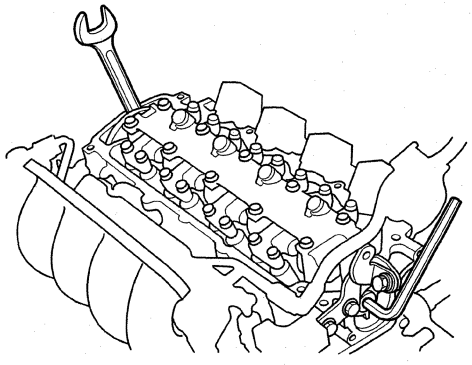
6. Remove the harness holder bolt (C), then remove the harness holder (D) from the bracket.

7. Remove the cylinder head cover (see page 6-22).

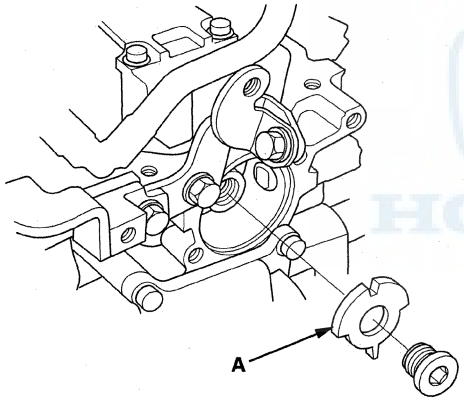
8. Remove the camshaft thrust cover (A).



9. Hold the camshaft with an open-end wrench, then loosen the bolt.

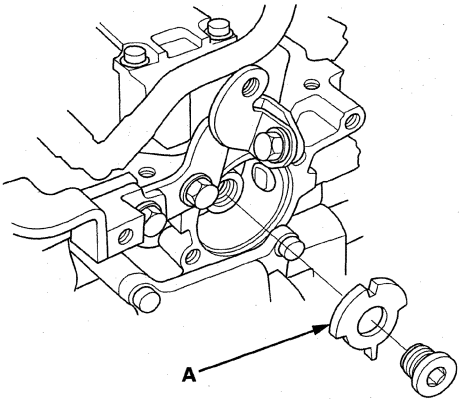


10. Remove the CMP pulse plate (A).



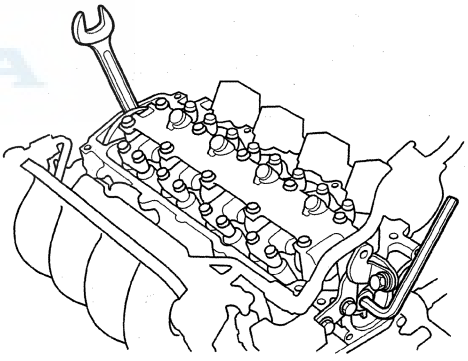
Installation

1. Install the CMP pulse plate (A).



2. Hold the camshaft with an open-end wrench, then tighten the bolt.

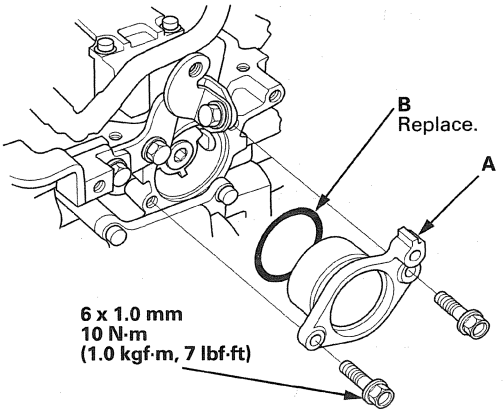
Specified Torque
14 x 1.5 mm
35 N·m (3.6 kgf·m, 26 lbf·ft)



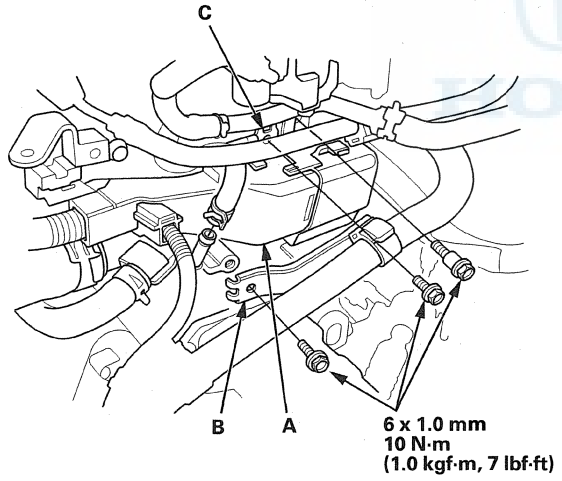
(cont'd)

CMP Pulse Plate Removal and Installation (cont'd)

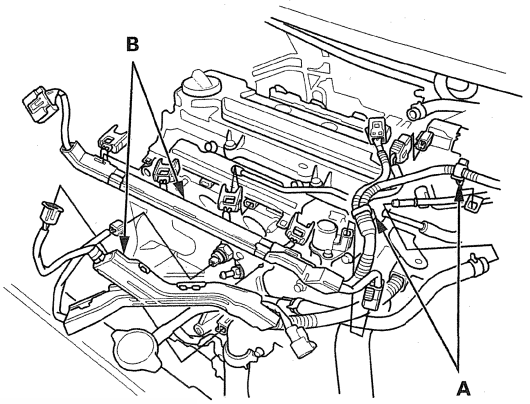
3. Install the camshaft thrust cover (A) with a new O-ring (B).



4. Install the cylinder head cover (see page 6-22).
5. Install the harness holder (A).



6. Install the heater hose bracket (B) and the ground cable (C).
7. Install the harness clamps (A) with the harness holders (B).

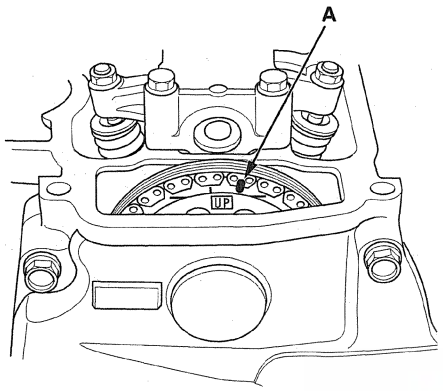


8. Connect the following engine wire harness connectors, and install the wire harness clamps to the cylinder head:
   - Four injector connectors
   - Rocker arm oil control valve connector
   - Rocker arm oil pressure switch connector
   - ECT sensor 1 connector
   - CMP sensor connector
   - A/F sensor connector
   - Secondary HO2S connector
   - Oil pressure switch connector
   - Knock sensor connector
9. Install the intake manifold/chamber assembly (see page 9-14).
10. Install the throttle body (see page 11-248).
11. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).

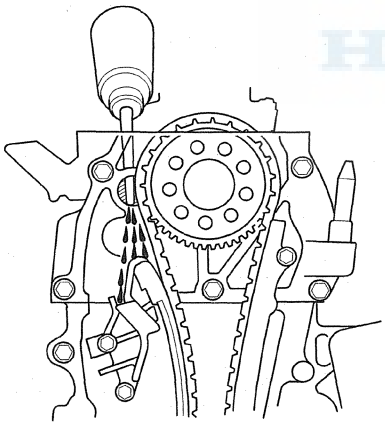
Camshaft Sprocket Removal

NOTE: Keep the cam chain away from magnetic fields.

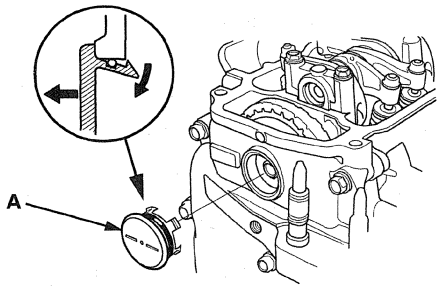
1. Remove the cylinder head cover (see page 6-22).
2. Make a reference mark (A) across the camshaft sprocket and the cam chain.



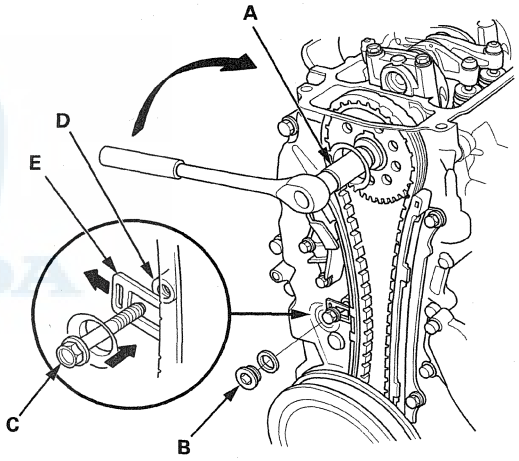
3. Apply new engine oil to the slider surface of the cam chain tensioner slider through the oil return hole in the cylinder head.



4. Remove the cylinder head plug (A).



5. Hold the crankshaft pulley, and set the socket wrench (A) on the camshaft sprocket bolt.



6. Remove the maintenance bolt (B), and turn the camshaft clockwise to compress the cam chain tensioner, then install the 6 x 1.0 mm bolt (C) in the bolt hole (D) in the engine block through the maintenance hole and cam chain tensioner (E).

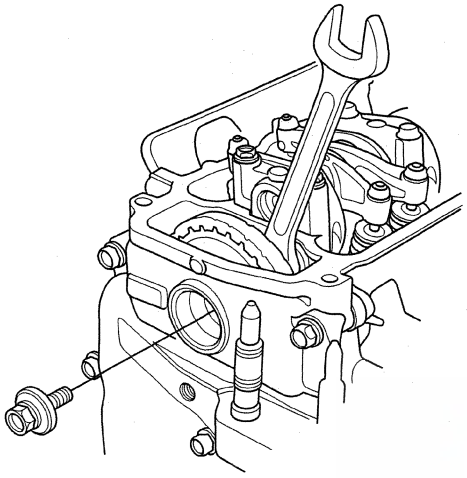
   NOTE:
   - The turning torque should not exceed 57 N·m (5.8 kgf·m, 42 lbf·ft) when turning the camshaft.
   - Do not turn the camshaft counterclockwise.

(cont'd)

Camshaft Sprocket Removal (cont'd)

7. Hold the camshaft with an open-end wrench, then remove the camshaft sprocket.

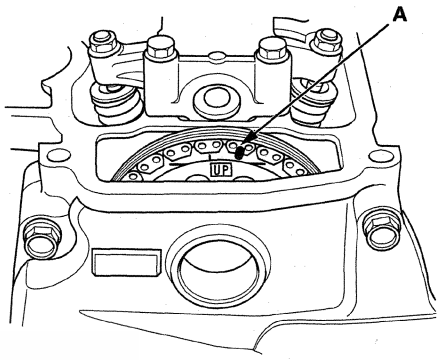
   NOTE: Hang the cam chain with a wire.



Camshaft Sprocket Installation

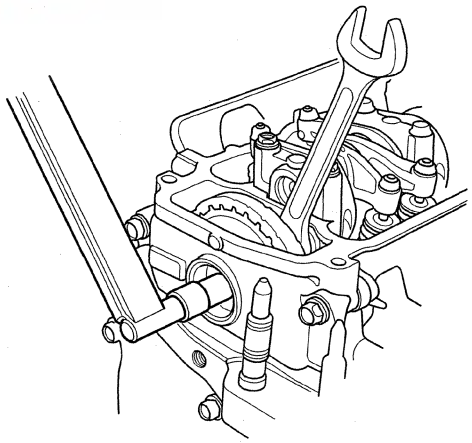
NOTE: Keep the cam chain away from magnetic fields.

1. Install the cam chain to the camshaft sprocket by aligning the reference mark (A), then install the camshaft sprocket on the camshaft.

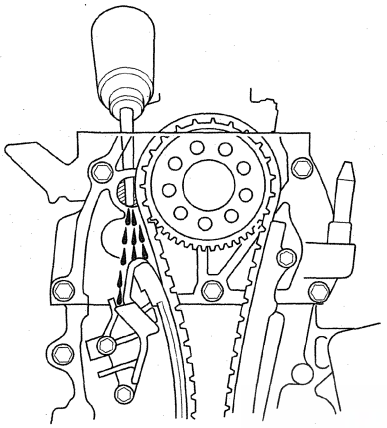


2. Apply new engine oil to the threads and flange of camshaft sprocket bolt.
3. Hold the camshaft with an open-end wrench, then tighten the bolt.

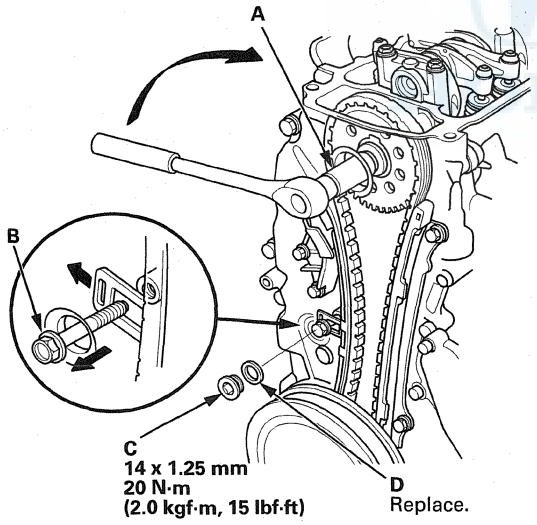
   Specified Torque
   57 N·m (5.8 kgf·m, 42 lbf·ft)



4. Apply new engine oil to the slider surface of the cam chain tensioner slider through the oil return hole in the cylinder head.



5. Hold the crankshaft pulley, and set the socket wrench (A) on the camshaft sprocket bolt.



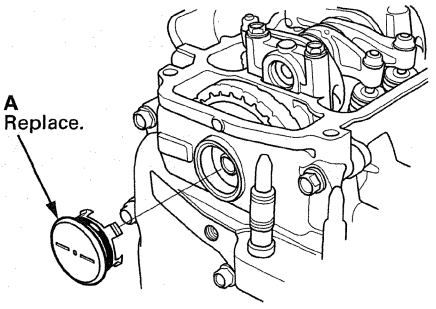
6. Turn the camshaft clockwise to compress the cam chain tensioner, then remove the 6 x 1.0 mm bolt (B).

NOTE:

- The turning torque should not exceed 57 N·m (5.8 kgf·m, 42 lbf·ft) when turning the camshaft.
- Do not turn the camshaft counterclockwise.

7. Install the maintenance bolt (C) with a new washer (D).

8. Install a new cylinder head plug (A).



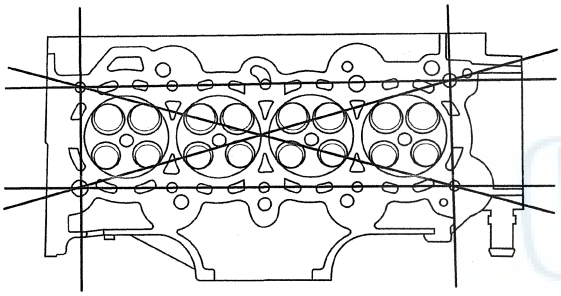
9. Install the cylinder head cover (see page 6-22).

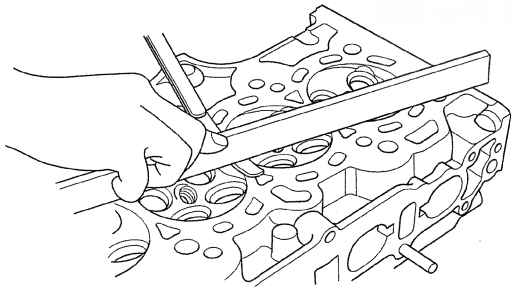
Cylinder Head Inspection for Warpage

1. Remove the cylinder head (see page 6-24).
2. Inspect the camshaft (see page 6-37).
3. Check the cylinder head for warpage. Measure along the edges, and three ways across the center.
   - If warpage is less than 0.08 mm (0.003 in) cylinder head resurfacing is not required.
   - Maximum resurface is limited to the cylinder head height standard as shown.

Cylinder Head Warpage
Standard (New): 0.08 mm (0.003 in) max.

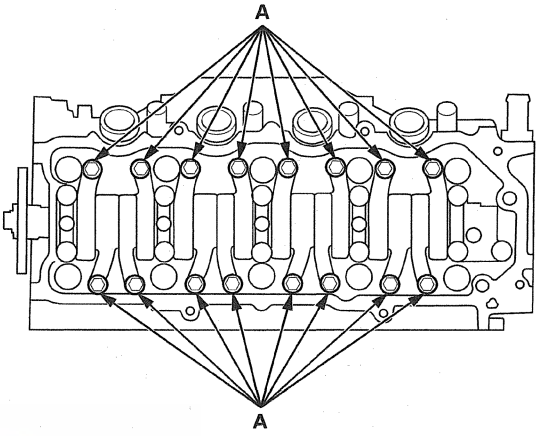
Cylinder Head Height
Standard (New): 119.9—120.1 mm (4.720—4.728 in)





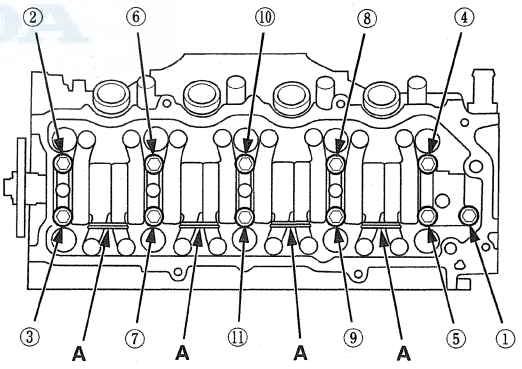
Rocker Arm Assembly Removal

1. Remove the cylinder head cover (see page 6-22).
2. Loosen the rocker arm adjusting screws (A).

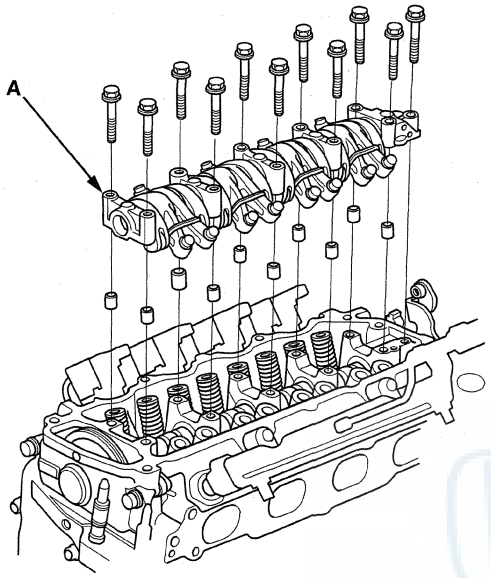


3. Unscrew the rocker shaft mounting bolts two turns at a time, in the sequence below.

   NOTE: Bundle the intake rocker arms with rubber bands (A) to keep them together as a set.



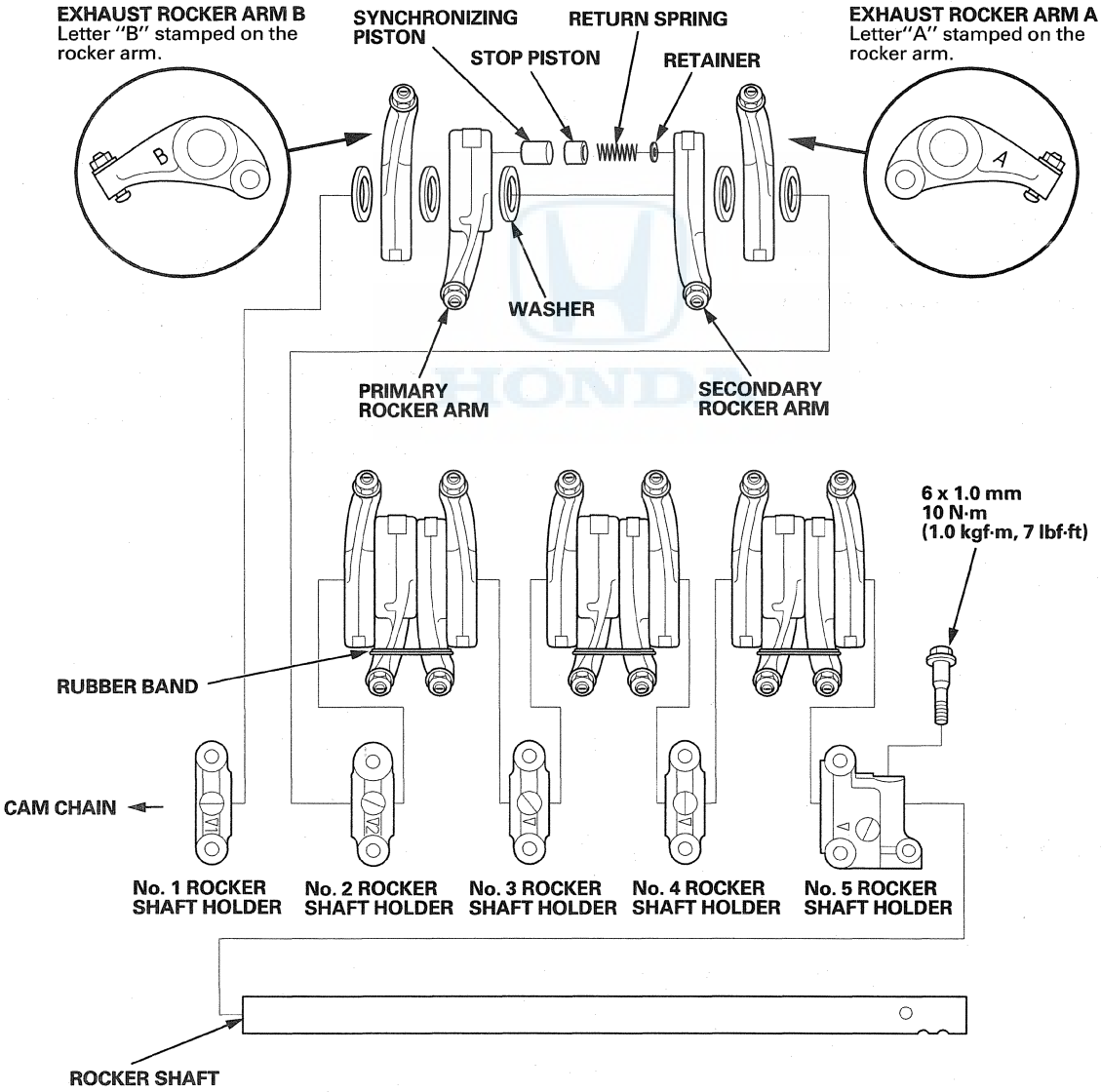
4. Remove the rocker shaft mounting bolts, then remove the rocker arm assembly (A).



HONDA

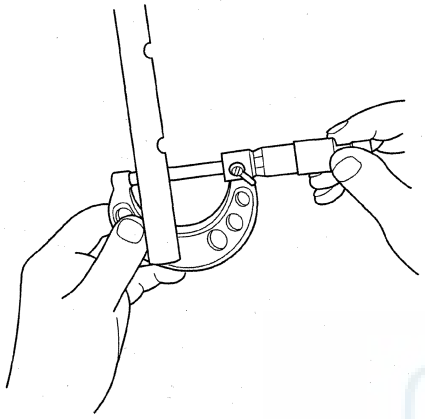
Rocker Arm and Shaft Disassembly/Reassembly

NOTE:
- Identify each part as it is removed so that each item can be reinstalled in its original location.
- Inspect the rocker arm shaft and the rocker arms (see page 6-35).
- If reused, the rocker arms must be installed in the their original locations.
- Bundle the rocker arms with rubber bands to keep them together as a set, and remove the bands after the rocker arms have been installed.
- Remove the rocker shaft bolt before removing the rocker shaft from the No. 5 rocker shaft holder.
- Prior to reassembling, clean all the parts in solvent, dry them, and apply new engine oil to any contact points, the bearing surfaces.
- When replacing the rocker arm assembly, remove the fastening hardware from new rocker arm assembly.
- When reassembling the rocker arm and shaft assembly, position the arrows on the rocker shaft holders facing the cam chain side.

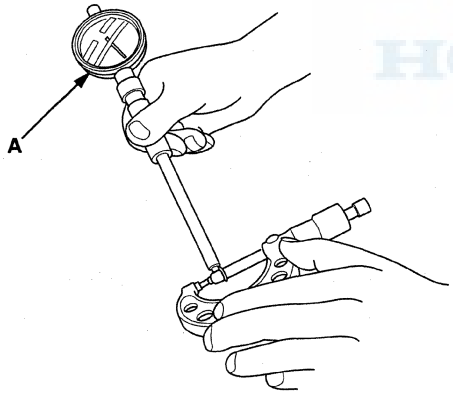


Rocker Arm and Shaft Inspection

1. Remove the rocker arm assembly (see page 6-32).
2. Disassemble the rocker arm assembly (see page 6-34).
3. Measure the diameter of the shaft at the first rocker location.

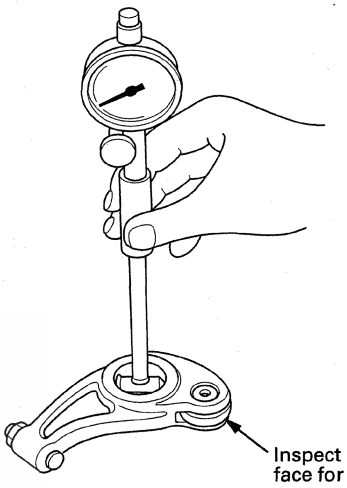


4. Zero the gauge (A) to the shaft diameter.



5. Measure the inside diameter of the rocker arm, and check it for an out-of-round condition.

Rocker Arm-to-Shaft Clearance
Standard (New): 0.019—0.050 mm (0.00075—0.00197 in)
Service Limit: 0.08 mm (0.0031 in)



6. Repeat for all rockers and shaft. If the clearance is beyond the service limit, replace the rocker shaft and all out of service limit rocker arms. If any VTEC rocker arm needs replacement, replace the rocker arms as an assembly.

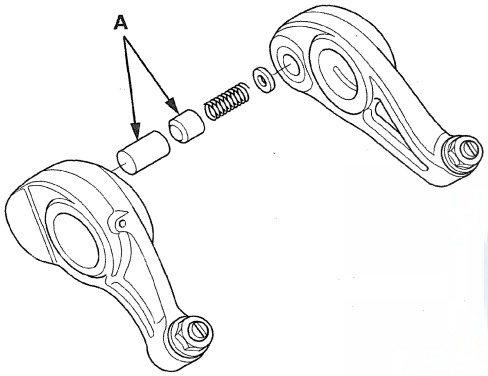
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Rocker Arm and Shaft Inspection (cont'd)

VTEC Rocker Arms

7. Inspect the rocker arm pistons (A). Push on them manually. If they do not move smoothly, replace the rocker arm set.

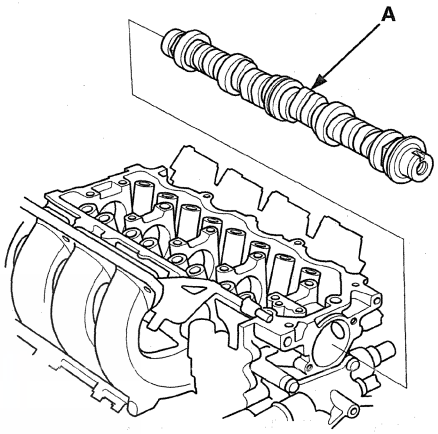
   NOTE:
   - When removing the rocker arm piston from the primary rocker arm, carefully apply air pressure to the oil passage of the rocker arm.
   - Apply new engine oil to the rocker arm pistons when reassembling.



8. Reassemble the rocker arm assembly (see page 6-34).
9. Install the rocker arm assembly (see page 6-46).

Camshaft Removal

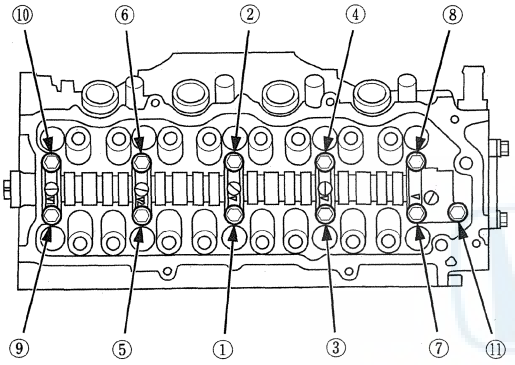
1. Remove the camshaft sprocket (see page 6-29).
2. Remove the rocker arm assembly (see page 6-32).
3. Remove the CMP sensor (see page 11-203).
4. Remove the CMP pulse plate (see page 6-26).
5. Remove the camshaft (A).



Camshaft Inspection

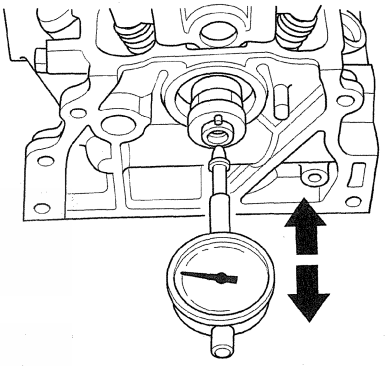
1. Remove the camshaft sprocket (see page 6-29).
2. Remove the rocker arm assembly (see page 6-32).
3. Disassemble the rocker arm (see page 6-34).
4. Put the rocker shaft holder bridge/rocker shaft holders on the cylinder head, then tighten the bolts to the specified torque.

Specified Torque
6 x 1.0 mm
①—⑩: 15 N·m (1.5 kgf·m, 11 lbf·ft)
⑪ 10 N·m (1.0 kgf·m, 7 lbf·ft)

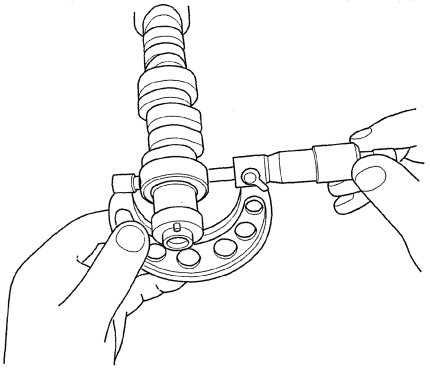


5. Seat the camshaft by pushing it toward the rear of the cylinder head.
6. Zero the dial indicator against the end of the camshaft. Push the camshaft back and forth, and read the end play. If the end play is beyond the service limit, replace the thrust cover and recheck. If it is still beyond the service limit, replace the cylinder head. If it is still beyond the service limit, replace the camshaft.

Camshaft End Play
Standard (New): 0.05—0.25 mm (0.0020—0.0098 in)
Service Limit: 0.5 mm (0.020 in)



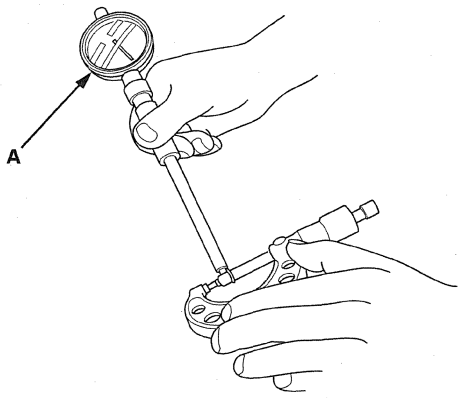
7. Remove the camshaft (see page 6-36).
8. Wipe the camshaft clean, then inspect the lift ramps. Replace the camshaft if any lobes are pitted, scored, or excessively worn.
9. Measure the diameter of each camshaft journal.



(cont'd)

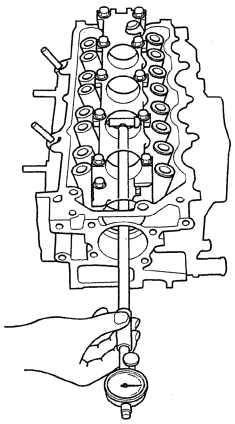
Camshaft Inspection (cont'd)

10. Zero the gauge (A) to the journal diameter.



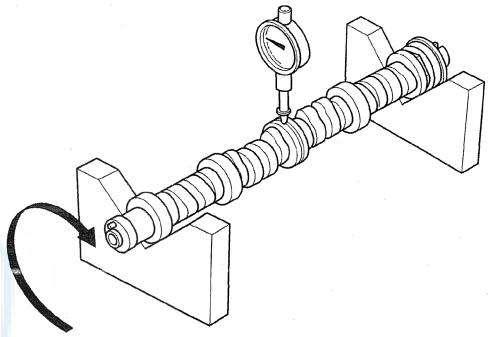
11. Clean the camshaft bearing surfaces in the cylinder head. Measure the inside diameter of each camshaft bearing surface, and check for an out-of-round condition:
    - If the camshaft-to-holder clearance is within limits, go to step 13.
    - If the camshaft-to-holder clearance is beyond the service limit, and the camshaft has been replaced, replace the cylinder head.
    - If the camshaft-to-holder clearance is beyond the service limit, and the camshaft has not been replaced, go to step 12.

Camshaft-to-Holder Oil Clearance
Standard (New): 0.045—0.084 mm (0.00177—0.00331 in)
Service Limit: 0.100 mm (0.00394 in)



12. Check the total runout with the camshaft supported on V-blocks:
    - If the total runout is within the standard, replace the cylinder head.
    - If the total runout is not within the standard, replace the camshaft, and recheck the oil clearance. If the oil clearance is still out of tolerance, replace the cylinder head.

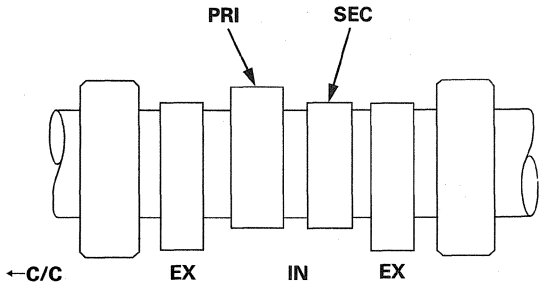
Camshaft Total Runout
Standard (New): 0.03 mm (0.0012 in) max.



13. Measure the cam lobe height.

Cam Lobe Height Standard (New)

	INTAKE	EXHAUST
PRI	34.945 mm (1.37578 in)	35.614 mm (1.40212 in)
SEC	30.529 mm (1.20193 in)	



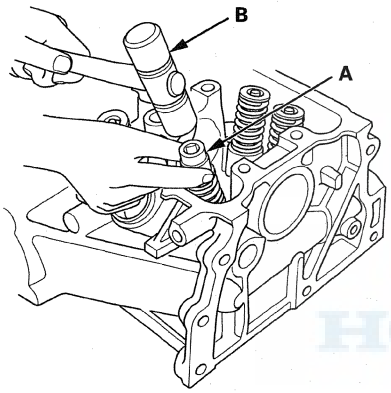
PRI: Primary SEC: Secondary IN: Intake
EX: Exhaust C/C: Cam Chain

Valve, Spring, and Valve Seal Removal

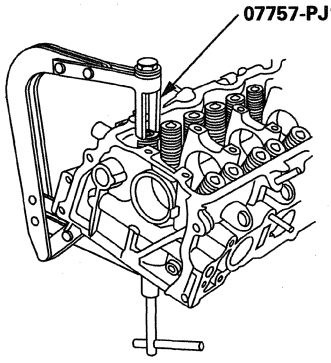
Special Tools Required
Valve Spring Compressor Attachment 07757-PJ1010A

Identify the valves and the valve springs as they are removed so that each item can be reinstalled in its original position.

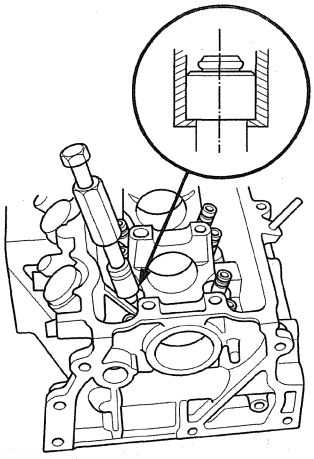
1. Remove the cylinder head (see page 6-24).
2. Remove the rocker arm assembly (see page 6-32).
3. Remove the camshaft (see page 6-36).
4. Using an appropriate-sized socket (A), and a plastic mallet (B), lightly tap the valve retainer to loosen the valve cotters.



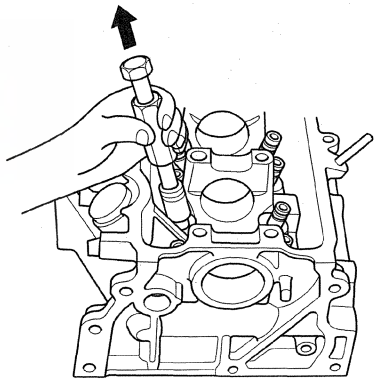
5. Install the valve spring compressor and the attachment. Compress the valve spring, and remove the valve cotters.



6. Remove the valve spring compressor and the valve spring compressor attachment, then remove the spring retainer, the valve spring, and the valve.
7. Install the valve guide seal remover.



8. Remove the valve seal.



9. Remove the valve spring seat.

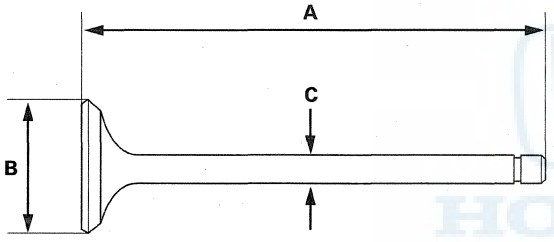
HONDA

Valve Inspection

1. Remove the valves (see page 6-39).
2. Measure the valve in these areas.

Intake Valve Dimensions
A Standard (New): 118.55—119.15 mm (4.6673—4.6910 in)
B Standard (New): 27.85—28.15 mm (1.0965—1.1083 in)
C Standard (New): 5.48—5.49 mm (0.2157—0.2161 in)
C Service Limit: 5.45 mm (0.2146 in)

Exhaust Valve Dimensions
A Standard (New): 117.25—117.85 mm (4.6161—4.6398 in)
B Standard (New): 22.85—23.15 mm (0.8996—0.9114 in)
C Standard (New): 5.45—5.46 mm (0.2146—0.2150 in)
C Service Limit: 5.42 mm (0.2134 in)



Valve Stem-to-Guide Clearance Inspection

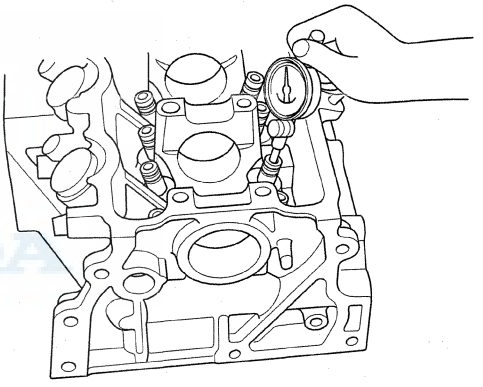
1. Remove the valves (see page 6-39).
2. Subtract the O.D. of the valve stem, measured with a micrometer, from the I.D. of the valve guide, measured with an inside micrometer or ball gauge.

   Take the measurements in three places along the valve stem and three places inside the valve guide.

   The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

Intake Valve Stem-to-Guide Clearance
Standard (New): 0.02—0.05 mm (0.0008—0.0020 in)
Service Limit: 0.08 mm (0.0031 in)

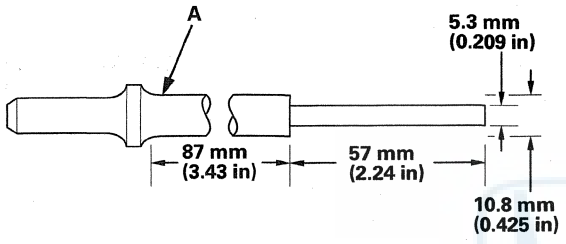
Exhaust Valve Stem-to-Guide Clearance
Standard (New): 0.05—0.08 mm (0.0020—0.0031 in)
Service Limit: 0.11 mm (0.0043 in)



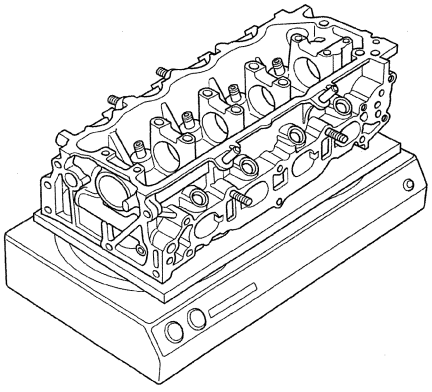
Valve Guide Replacement

Special Tools Required
- Valve Guide Driver, 5.35 x 9.7 mm 07742-0010100
- Valve Guide Reamer, 5.5 mm 07HAH-PJ7A100

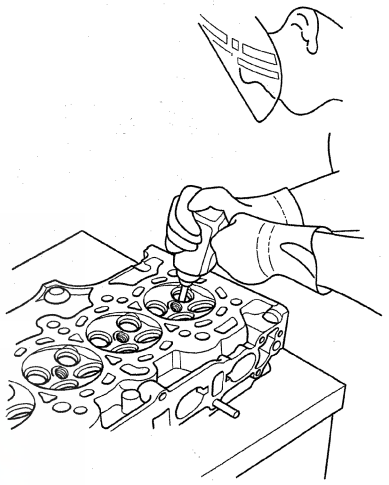
1. Inspect valve stem-to-guide clearance (see page 6-40).
2. As illustrated below, use a commercially available air-impact valve guide driver, 5.35 x 9.7 mm (A) modified to fit the diameter of the valve guides. In most cases, the same procedure can be done using the valve guide driver and a conventional hammer.

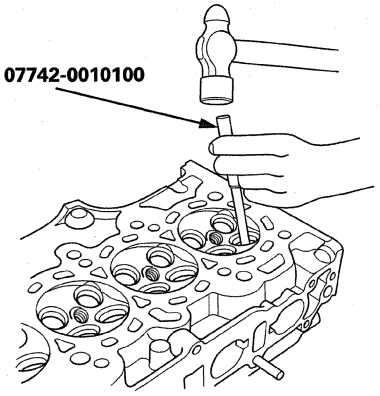


3. Select the proper replacement guides, and chill them in the freezer section of a refrigerator for at least an hour.
4. Use a hot plate or oven to evenly heat the cylinder head to 300 °F (150 °C). Monitor the temperature with a cooking thermometer. Do not get the head hotter than 300 °F (150 °C); excessive heat may loosen the valve seats.



5. Working from the camshaft side, use the valve guide driver and an air hammer to drive the guide about 2 mm (0.08 in) towards the combustion chamber. This will knock off some of the carbon and make removal easier. Hold the air hammer directly in line with the valve guide to prevent damaging the driver. Wear safety goggles or a face shield.
6. Turn the head over, and drive the guide out toward the camshaft side of the head.





7. If a valve guide will not move, drill it out with an 8 mm (5/16 in) bit, then try again.

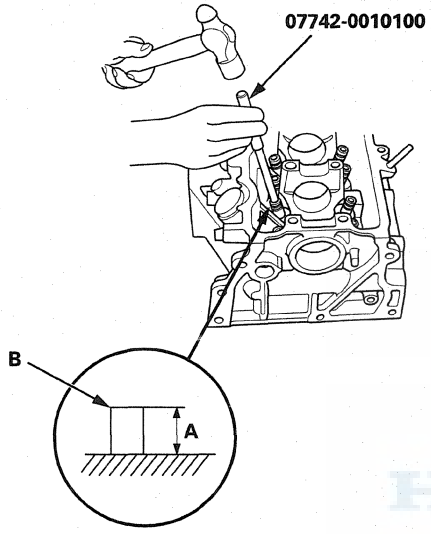
   NOTE: Drill guides only in extreme cases; you could damage the cylinder head if the guide breaks.
8. Remove the new guide(s) from the freezer, one at a time, as you need them.

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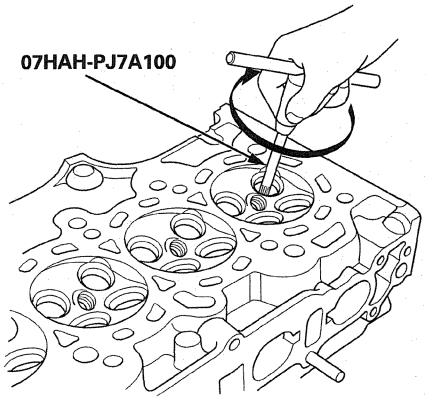
Valve Guide Replacement (cont'd)

9. Apply a thin coat of new engine oil to the outside of the new valve guide. Install the guide from the camshaft side of the head; use the valve guide driver to drive the guide in to the specified installed height (A) of the guide (B). If you have all 16 guides to do, you may have to reheat the head.

   Valve Guide Installed Height
   15.85—16.35 mm (0.6240—0.6437 in)



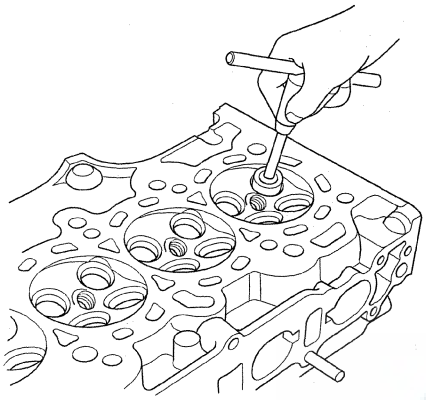
10. Coat both the valve guide reamer, 5.5 mm and the valve guide with cutting oil.
11. Rotate the reamer clockwise the full length of the valve guide bore.



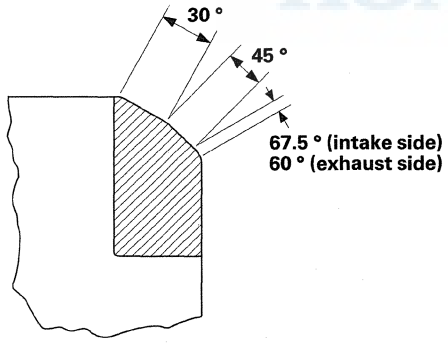
12. Continue to rotate the valve guide reamer, 5.5 mm clockwise while removing it from the bore.
13. Thoroughly wash the guide in detergent and water to remove any cutting residue.
14. Check the clearances with a valve (see page 6-40). Verify that a valve slides in the intake and exhaust valve guides without sticking.
15. Inspect the valve seat. If necessary renew the valve seat using a valve seat cutter (see page 6-43).

Valve Seat Reconditioning

1. Inspect valve stem-to-guide clearance (see page 6-40). If the valve guides are worn, replace them (see page 6-41) before cutting the valve seats.
2. Renew the valve seats in the cylinder head using a valve seat cutter.



3. Carefully cut a 45 ° seat, removing only enough material to ensure a smooth and concentric seat.
4. Bevel the upper and lower edges at the angles shown in the illustration. Check the width of the seat and adjust accordingly.

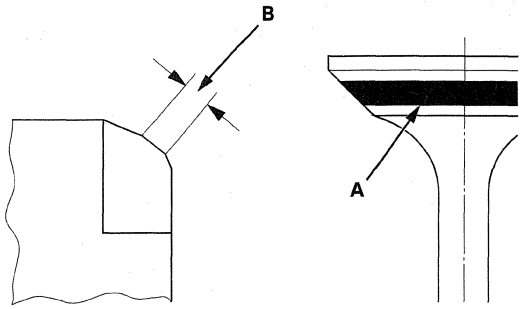


5. Make one more very light passes with the 45 ° cutter to remove any possible burrs caused by the other cutters.

Intake Valve Seat Width
Standard (New): 0.850—1.150 mm (0.03346—0.04528 in)
Service Limit: 1.60 mm (0.0630 in)

Exhaust Valve Seat Width
Standard (New): 1.250—1.550 mm (0.04921—0.06102 in)
Service Limit: 2.00 mm (0.0787 in)

6. After resurfacing the seat, inspect for even valve seating: Apply Prussian Blue compound (A) to the valve face. Insert the valve in its original location in the head, then lift it and snap it closed against the seat several times.



7. The actual valve seating surface (B), as shown by the blue compound, should be centered on the seat:
   - If it is too high (closer to the valve stem), you must make a second cut with the 67.5 ° cutter (intake seat) or 60 ° cutter (exhaust seat) to move it down, then one more cut with the 45 ° cutter to restore seat width.
   - If it is too low (close to the valve edge), you must make a second cut with the 30 ° cutter to move it up, then make one more cut with the 45 ° cutter to restore seat width.

   NOTE: The final cut should always be made with the 45 ° cutter.

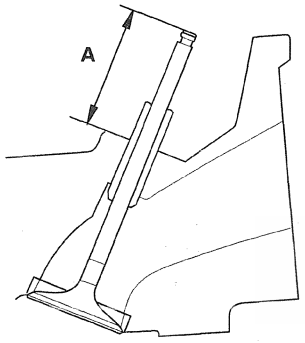
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Valve Seat Reconditioning (cont'd)

8. Insert the intake and exhaust valves in the head, and measure valve stem installed height (A).

   Intake Valve Stem Installed Height
   Standard (New): 46.1—46.5 mm (1.815—1.831 in)
   Service Limit: 46.8 mm (1.843 in)

   Exhaust Valve Stem Installed Height
   Standard (New): 46.2—46.6 mm (1.819—1.835 in)
   Service Limit: 46.9 mm (1.846 in)



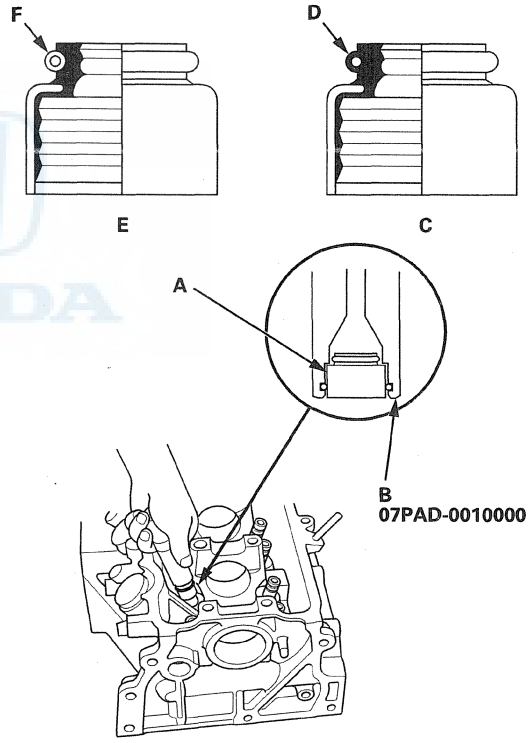
9. If valve stem installed height is over the service limit, replace the valve and recheck. If it is still over the service limit, replace the cylinder head; the valve seat in the head is too deep.

Valve, Spring, and Valve Seal Installation

Special Tools Required
- Stem Seal Driver 07PAD-0010000
- Valve Spring Compressor Attachment 07757-PJ1010A

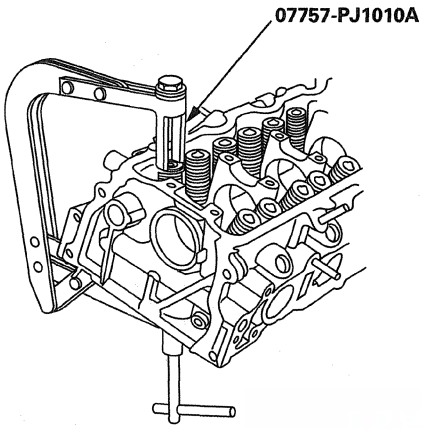
1. Coat the valve stems with new engine oil. Install the valves in the valve guides.
2. Check that the valves move up and down smoothly.
3. Install the spring seats on the cylinder head.
4. Install the new valve seals (A) using the 5.5 mm side of the stem seal driver (B).

   NOTE: The exhaust valve seal (C) has a black spring (D), and the intake valve seal (E) has a white or silver spring (F); they are not interchangeable.



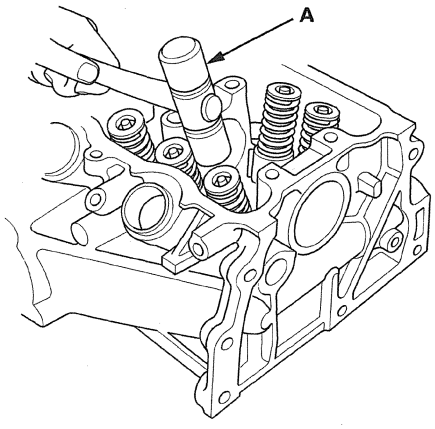
5. Install the valve spring and the spring retainer. Place the end of the valve spring with closely wound coils toward the cylinder head.

6. Install the valve spring compressor attachment and the valve spring compressor. Compress the valve spring and install the valve cotters.



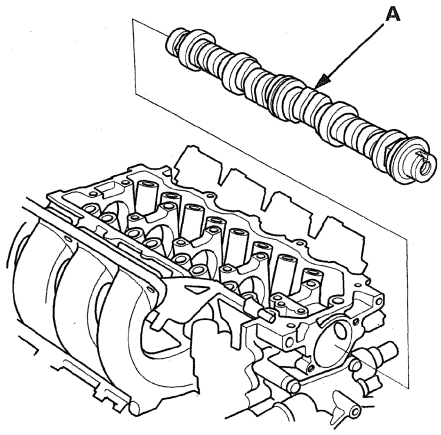
7. Remove the valve spring compressor and the valve spring compressor attachment.
8. Lightly tap the end of each valve stem two or three times with a plastic mallet (A) to ensure proper seating of the valve and the valve cotters. Tap the valve stem only along its axis so you do not bend the stem.

   NOTE: Be sure to raise the head off the work bench so the valve is not possibly damaged.



Camshaft Installation

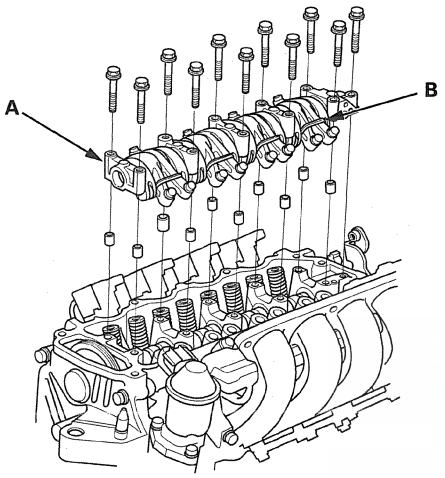
1. Install the camshaft (A).



2. Install the CMP pulse plate (see page 6-27).
3. Install the CMP sensor (see page 11-203).
4. Install the rocker arm assembly (see page 6-46).
5. Install the camshaft sprocket (see page 6-30).

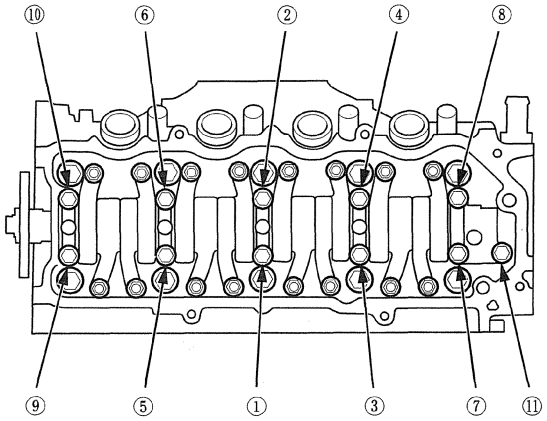
Rocker Arm Assembly Installation

1. If the rocker arm assembly is disassembled, reassemble the rocker arm assembly (see page 6-34).
2. Apply engine oil to the end of the valve stem.
3. Install the rocker arm assembly (A), then remove the rubber bands (B).



4. Tighten each bolt two turns at a time in sequence.

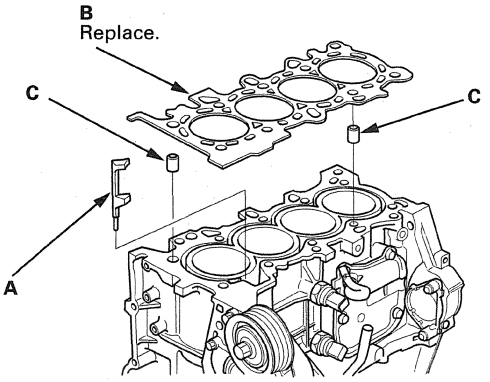
Specified Torque
6 x 1.0 mm
①—⑩: 15 N·m (1.5 kgf·m, 11 lbf·ft)
⑪: 10 N·m (1.0 kgf·m, 7 lbf·ft)



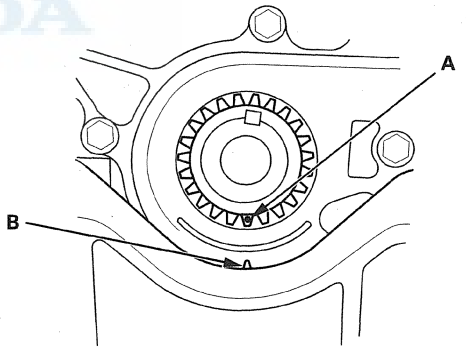
5. Adjust the valve clearance (see page 6-8).
6. Install the cylinder head cover (see page 6-22).

Cylinder Head Installation

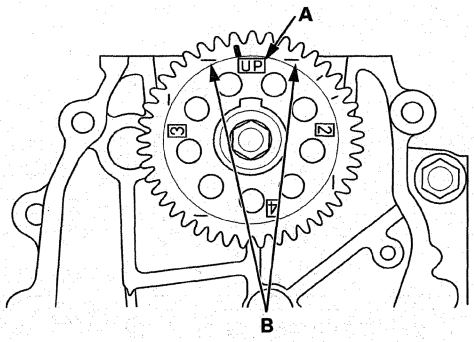
1. Clean the cylinder head and the engine block surface.
2. Install a new coolant separator (A) in the engine block whenever the engine block is replaced.



3. Install a new cylinder head gasket (B) and the dowel pins (C) on the engine block. Always use a new cylinder head gasket.
4. Set the crankshaft to top dead center (TDC). Align the TDC mark (A) on the crankshaft sprocket with the pointer (B) on the oil pump.



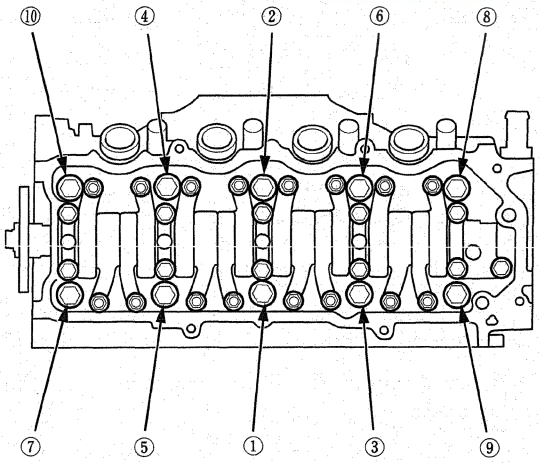
5. Set the camshaft TDC. The "UP" mark (A) on the camshaft sprocket should be at the top, and the TDC grooves (B) on the camshaft sprocket should line up with the top edge of the head.



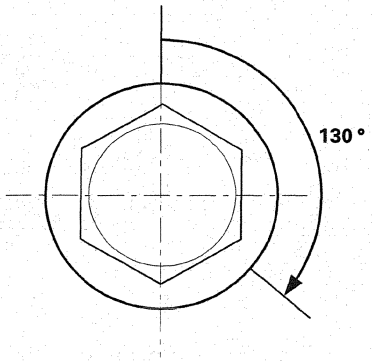
6. Install the cylinder head on the engine block.

7. Apply new engine oil to the threads and flange of all cylinder head bolts.

8. Torque the cylinder head bolts in sequence to 29 N·m (3.0 kgf·m, 22 lbf·ft) with a beam-type torque wrench if possible. When using a preset-click-type torque wrench, be sure to tighten slowly and do not overtighten. If a bolt makes any noise while you are torquing it, loosen the bolt and retighten it from the first step.



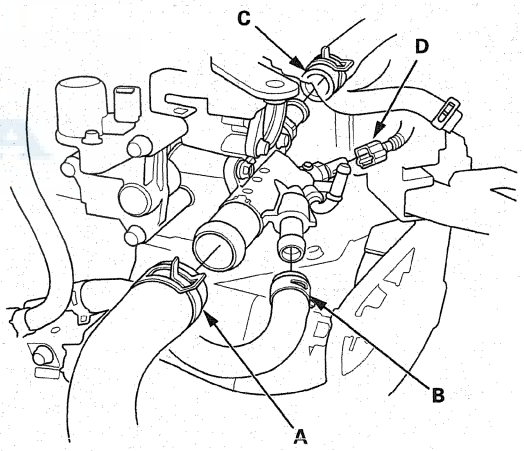
9. Tighten all cylinder head bolts an additional 130 °.



10. Install the cam chain (see page 6-14).

11. Install the cylinder head cover (see page 6-22).

12. Connect the upper radiator hose (A), the water bypass hose (B), and the heater hose (C).

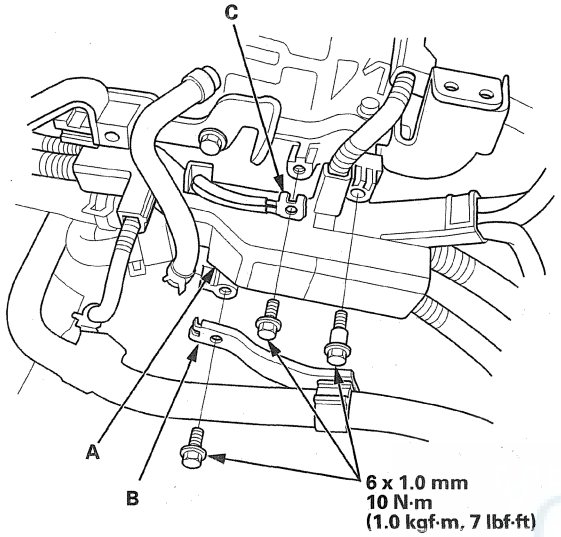


13. Connect the ECT sensor 1 connector (D).

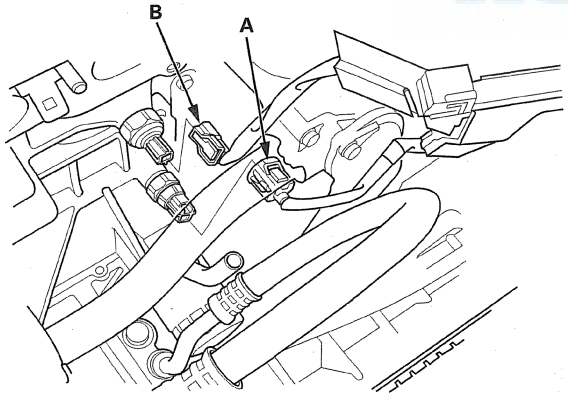
(cont'd)

Cylinder Head Installation (cont'd)

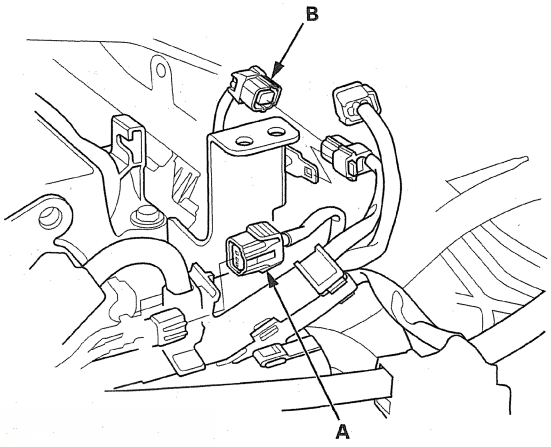
14. Install the harness holder (A).



15. Install the heater hose bracket (B) and the ground cable (C).
16. Connect the oil pressure switch connector (A) and the knock sensor connector (B).

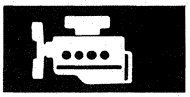


17. Connect the CMP sensor connector (A) and the secondary HO2S connector (B).



18. Install the warm-up TWC (see page 11-313).
19. Install the four ignition coils (see page 4-21).
20. Install the injectors (see page 11-200).
21. Install the intake manifold/chamber assembly (see page 9-14).
22. Install the throttle body (see page 11-248).
23. After installation, check that all tubes, hoses, and connectors are installed correctly.
24. Do the 12 volt battery installation procedure (see page 22-88).
25. Inspect for fuel leaks. Turn the ignition switch to ON (II) (do not operate the starter) so the fuel pump runs for about 2 seconds and pressurizes the fuel line. Repeat this operation three times, then check for fuel leakage at any point in the fuel line.
26. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
27. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
28. Inspect the idle speed (see page 11-273).
29. Inspect the ignition timing (see page 4-20).

Engine Mechanical



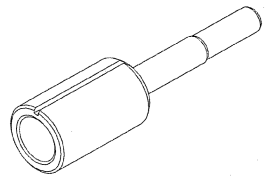
Engine Block

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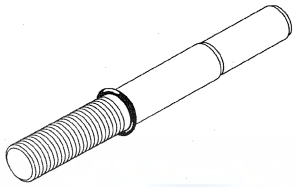
Engine Block

Special Tools

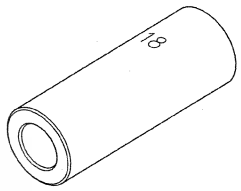
Ref.No.	Tool Number	Description	Qty
①	070AF-PWC0110	Pilot Pin	1
②	070AF-PWC0120	Insert Adjust	1
③	070AF-PWC0130	Pilot Collar, O.D. 18 mm	1
④	07749-0010000	Driver Handle, 15 x 135L	1
⑤	07973-6570500	Piston Base	1
⑥	07973-6570600	Piston Base Spring	1
⑦	07PAF-0010700	Insert Pin	1
⑧	07TGF-001000A	Piston Base Head	1
⑨	07ZAD-PNAA100	Oil Seal Driver Attachment, 96 mm	1



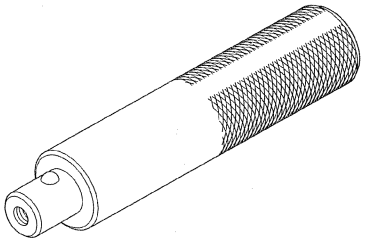
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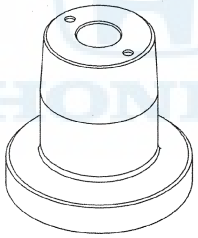
②



③



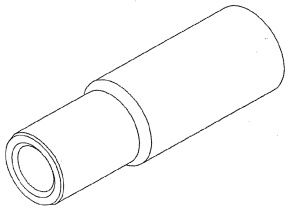
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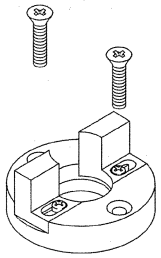
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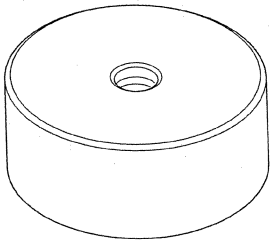
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⑦

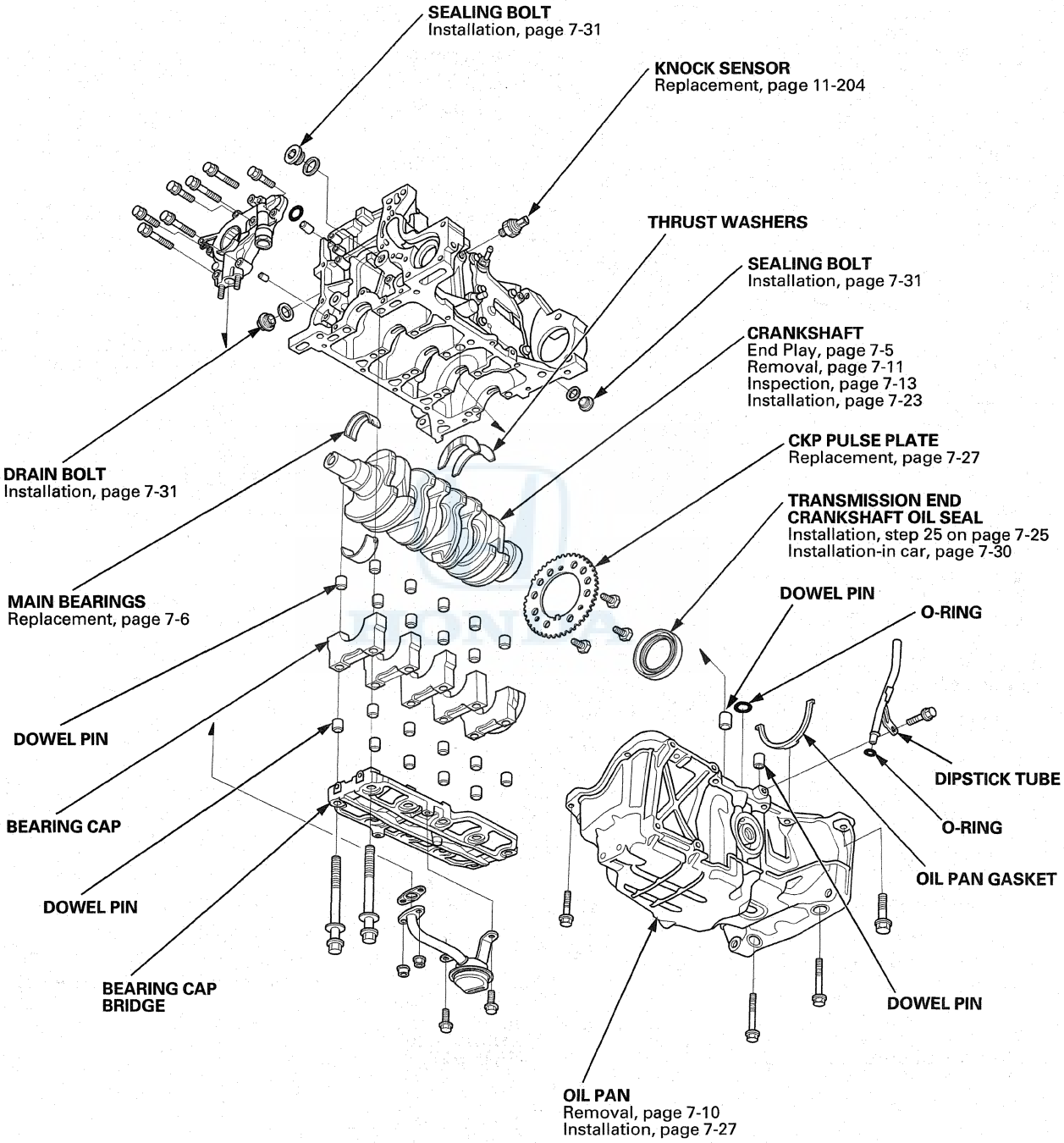


⑧



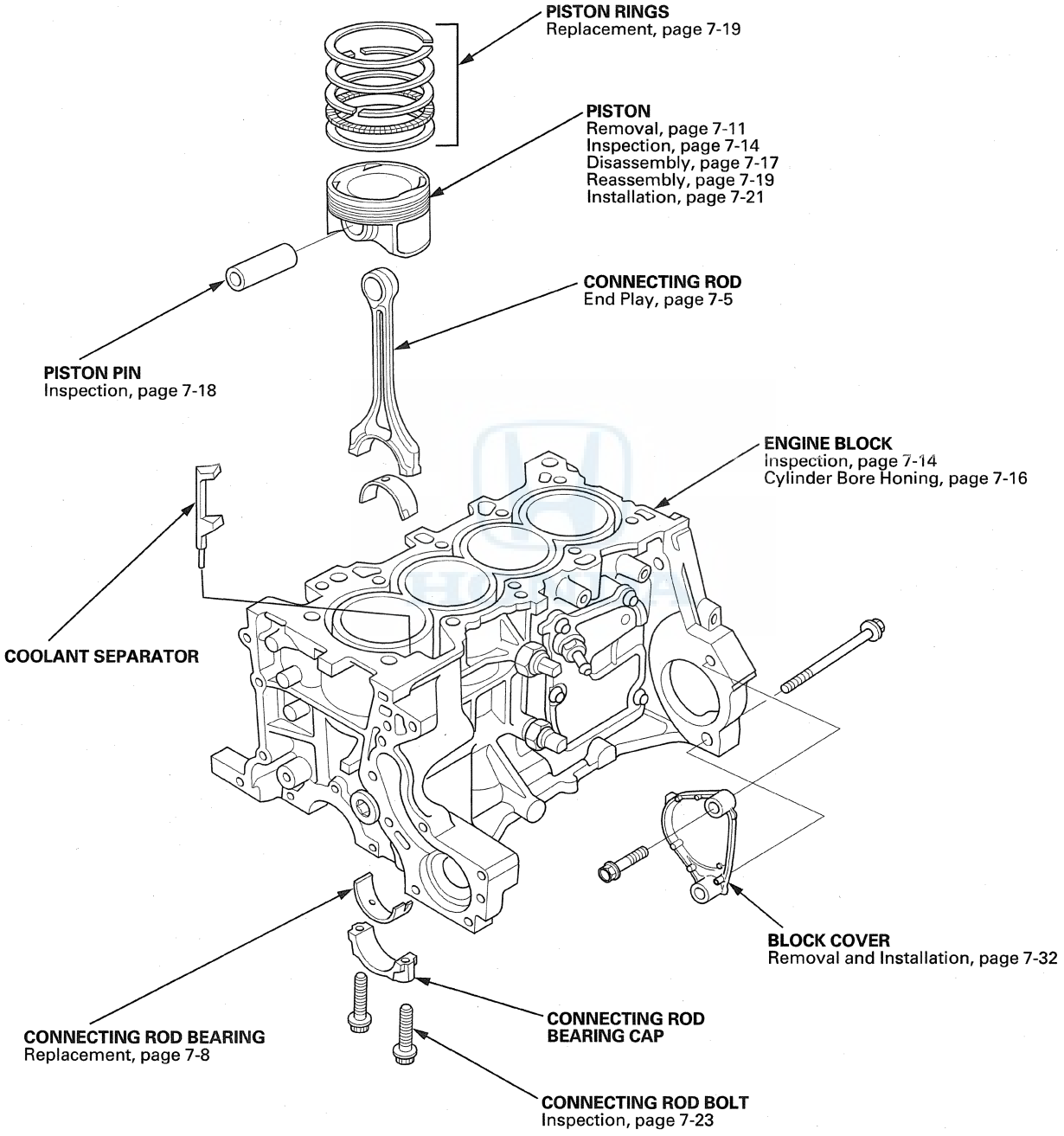
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Component Location Index



(cont'd)

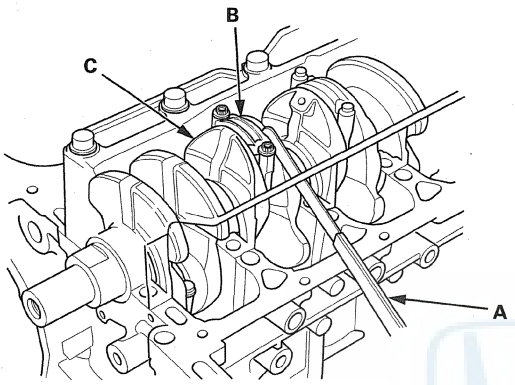
Component Location Index (cont'd)



Connecting Rod and Crankshaft End Play Inspection

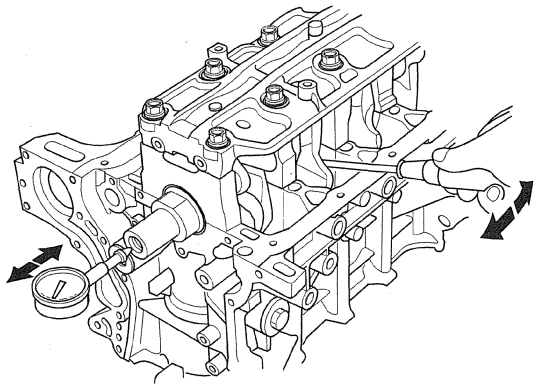
1. Remove the oil pump (see page 8-14).
2. Measure the connecting rod end play with a feeler gauge (A) between the connecting rod (B) and the crankshaft (C).

   Connecting Rod End Play
   Standard (New): 0.15—0.35 mm (0.006—0.013 in)
   Service Limit: 0.40 mm (0.015 in)



3. If the connecting rod end play is beyond the service limit, install a new connecting rod, and recheck. If it is still beyond the service limit, replace the crankshaft (see page 7-11).
4. To check crankshaft end play, push the crankshaft firmly away from the dial indicator by prying, and zero the dial against the end of the crankshaft. Then pull the crankshaft firmly back toward the indicator by prying; the dial reading should not exceed the service limit.

   Crankshaft End Play
   Standard (New): 0.10—0.35 mm (0.0039—0.0138 in)
   Service Limit: 0.45 mm (0.0177 in)



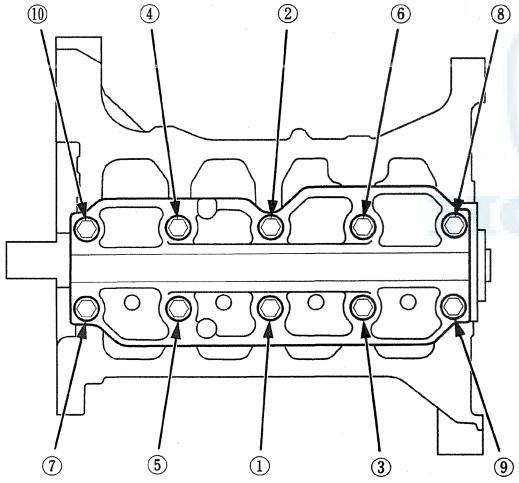
5. If the end play is beyond the service limit, replace the thrust washers, and recheck. If it is still beyond the service limit, replace the crankshaft (see page 7-11).

Crankshaft Main Bearing Replacement

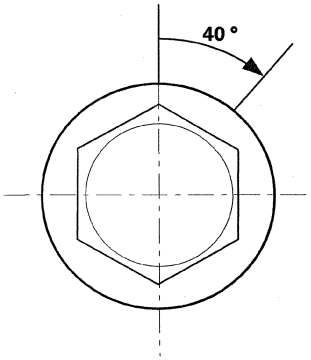
Main Bearing Clearance Inspection

1. Remove the bearing cap bridge, the main bearing caps, and the main bearing halves (see page 7-11).
2. Clean each main journal and main bearing half with a clean shop towel.
3. Place one strip of plastigage across each main journal.
4. Reinstall the main bearings, the main bearing caps, and bearing cap bridge, then torque the bearing cap bolts to 25 N·m (2.5 kgf·m, 18 lbf·ft) in the proper sequence.

   NOTE:
   - Apply new engine oil to the bolt threads and flanges.
   - Do not rotate the crankshaft during inspection.

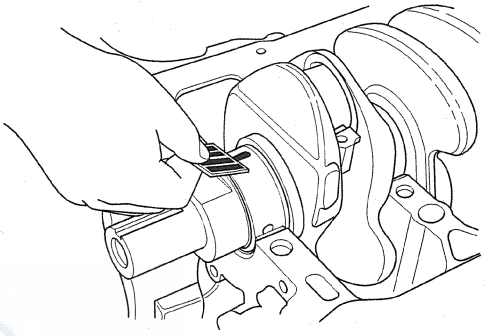


5. Tighten the bearing cap bolts an additional 40 °.



6. Remove the bearing cap bridge, the main bearing caps, and the main bearings haves, and measure the widest part of the plastigage.

   Main Bearing-to-Journal Oil Clearance
   Standard (New): 0.016—0.034 mm (0.00063—0.00134 in)
   Service Limit: 0.050 mm (0.00197 in)



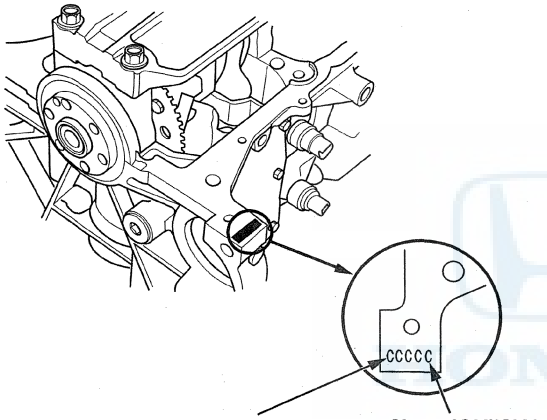
7. If the plastigage measures too wide or too narrow, remove the crankshaft, and remove the upper half of the main bearing. Install a new, complete main bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the main bearings or the main bearing caps to adjust clearance
8. If the plastigage shows the clearance is still incorrect, try the next larger or smaller main bearing (the color listed above or below that one), and check the clearance again. If the proper clearance cannot be obtained by using the appropriate larger or smaller main bearings, replace the crankshaft (see page 7-11) and start over.

Main Bearing Selection

Block Bore Code Location

Letters have been stamped on the end of the engine block as a code for the size of each of the five main journal bores.

Use them, and the numbers stamped on the crankshaft (codes for main journal size), to choose the correct main bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.



Bearing Identification → Larger block bore

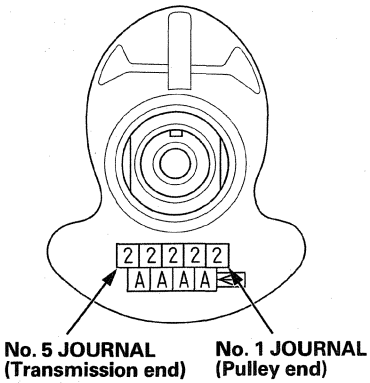
Color code is on the edge of the bearing → Smaller bearing (Thicker)

	A	B	C	D
1	Red	Pink	Yellow	Green
2	Pink	Yellow	Green	Brown
3	Yellow	Green	Brown	Black
4	Green	Brown	Black	Blue

Smaller main journal

Smaller bearing (Thicker)

Main Journal Code Location



Connecting Rod Bearing Replacement

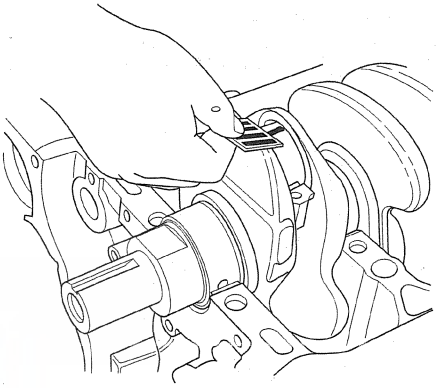
Connecting Rod Bearing Clearance Inspection

1. Remove the bearing cap bridge (see page 7-11).
2. Remove the connecting rod cap and the connecting rod bearing half.
3. Clean the connecting rod journal and the connecting rod bearing half with a clean shop towel.
4. Place one strip of plastigage across the connecting rod journal.
5. Reinstall the connecting rod bearing half and connecting rod cap, and torque the bolts to 10 N·m (1.0 kgf·m, 7 lbf·ft) +90 °.

   NOTE:
   - Apply new engine oil to the bolt threads and flanges.
   - Do not rotate the crankshaft during inspection.

6. Remove the connecting rod cap and the connecting rod bearing half, and measure the widest part of the plastigage.

   Connecting Rod Bearing-to-Journal Oil Clearance
   Standard (New): 0.020—0.038 mm (0.00079—0.00150 in)
   Service Limit: 0.050 mm (0.00197 in)



7. If the plastigage measures too wide or too narrow, remove the upper half of the connecting rod bearing, install a new, complete connecting rod bearing with the same color code, and recheck the clearance. Do not file, shim, or scrape the connecting rod bearings or the connecting rod caps to adjust clearance.
8. If the plastigage shows the clearance is still incorrect, try the next larger or smaller connecting rod bearing (the color listed above or below that one), and check clearance again. If the proper clearance cannot be obtained by using the appropriate larger or smaller connecting rod bearing, replace the crankshaft (see page 7-11) and start over.

Connecting Rod Bearing Selection

Each connecting rod falls into one of four tolerance ranges (from 0 to 0.024 mm (0.0009 in), in 0.006 mm (0.0002 in) increments) depending on the size of its big end bore.

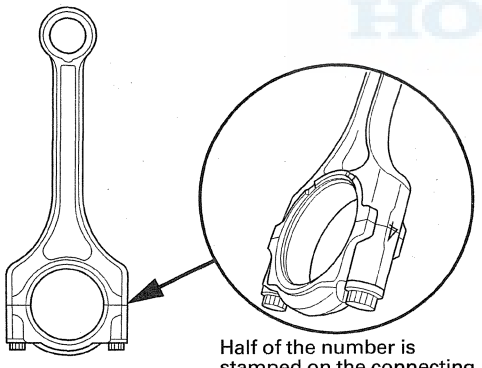
It's then stamped with a number (1, 2, 3, or 4) indicating the range. You may find any combination of 1, 2, 3, or 4 in any engine.

Big End Bore Size: 43.0 mm (1.693 in)

Inspect each connecting rod for cracks and heat damage.

Connecting Rod Big End Bore Code Locations

Numbers have been stamped on the side of each connecting rod as a code for the size of the big end. Use them, and the letters stamped on the crank (codes for connecting rod journal size), to choose the correct connecting rod bearings. If the codes are indecipherable because of an accumulation of dirt and dust, do not scrub them with a wire brush or scraper. Clean them only with solvent or detergent.



Half of the number is stamped on the connecting rod and the other half is stamped on the rod cap.

Bearing Identification → Larger big rod bore

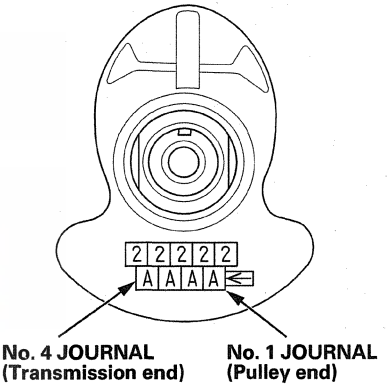
Color code is on the edge of the bearing → Smaller bearing (Thicker)

	1	2	3	4
A	Red	Pink	Yellow	Green
B	Pink	Yellow	Green	Brown
C	Yellow	Green	Brown	Black
D	Green	Brown	Black	Blue

Smaller rod journal

Smaller bearing (Thicker)

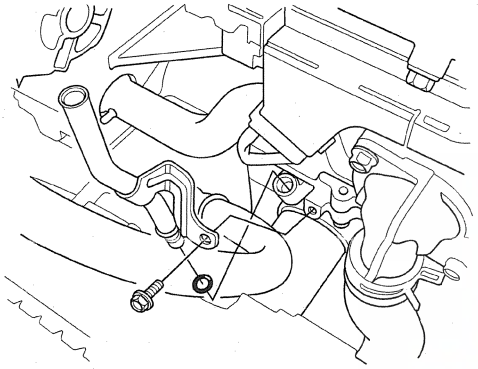
Connecting Rod Journal Code Location



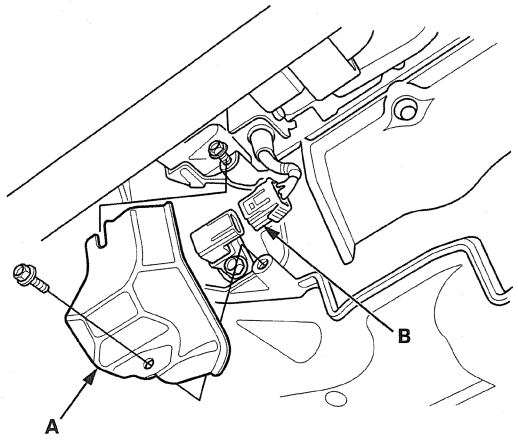
HONDA

Oil Pan Removal

1. If the engine is already out of the vehicle, go to step 7.
2. Remove the splash shield (see page 20-163).
3. Drain the engine oil (see page 8-10).
4. Remove the drive belt (see page 10-17).
5. Remove the A/C compressor without disconnecting the A/C hoses (see step 44 on page 5-6).
6. Remove the torque rod (see page 5-28).
7. Remove the dipstick, then remove the dipstick tube.



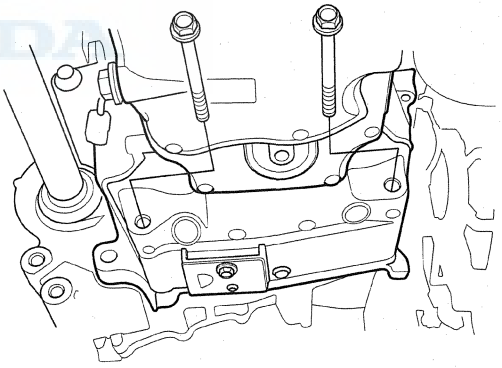
8. Remove the CKP sensor cover (A), then disconnect the CKP sensor connector (B).



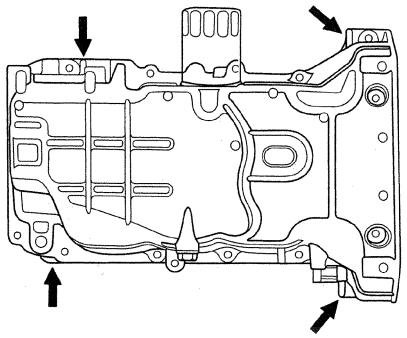
9. CVT model: Remove the driveshaft heat shield.



10. Remove the torque rod bracket (see page 5-35).
11. Remove the transmission mounting bolts.



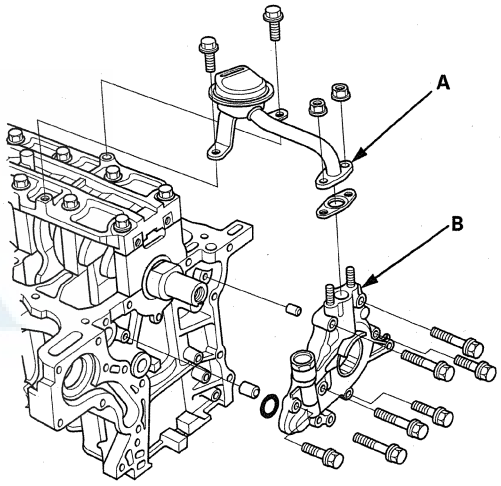
12. Remove the oil pan bolts.
13. Using a flat blade screwdriver, separate the oil pan from the engine block in the places shown.



14. Remove the oil pan.

NOTE: Lower the oil pan carefully so as not to damage the IMA motor (resolver stator).

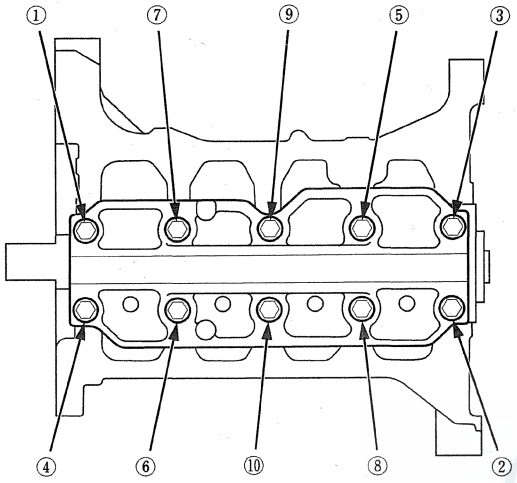
1. Remove the engine/IMA motor/transmission assembly (see page 5-3).
2. Remove the transmission:
   - M/T model (see page 13-43)
   - CVT model (see page 14-156)
3. Remove the IMA motor rotor (see page 12-224), the IMA motor housing (see page 12-227), and the IMA motor rotor position sensor (see page 12-228).
4. Remove the cylinder head (see page 6-24).
5. Remove the oil pan (see page 7-10).
6. Remove the oil screen (A), then remove the oil pump (B).



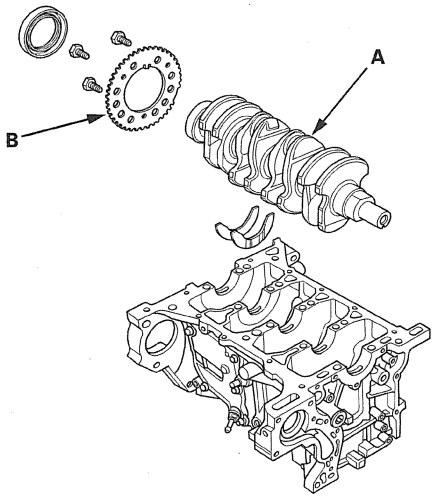
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Crankshaft and Piston Removal (cont'd)

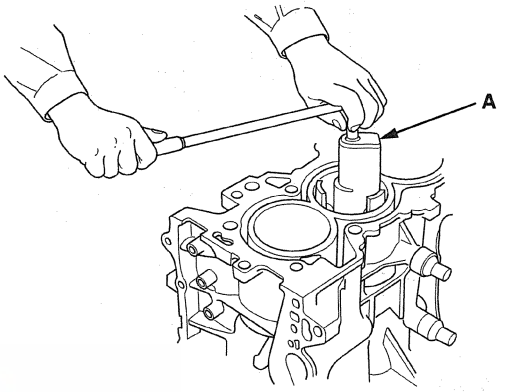
7. Remove the bearing cap bolts. To prevent warpage, loosen the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.



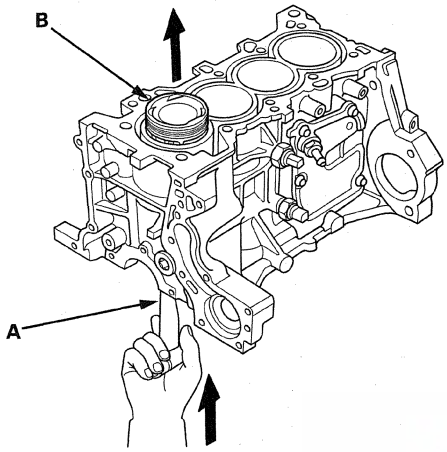
8. Remove the bearing cap bridge and the main bearing caps.
9. Remove the connecting rod caps/bearings. Keep all connecting rod caps/bearings in order.
10. Lift crankshaft (A) out of the engine block, being careful not to damage the journals and the CKP pulse plate (B).



11. Remove the CKP pulse plate.
12. Remove the upper connecting rod bearing halves from the connecting rods, and set them aside with their respective caps.
13. If you can feel a ridge of metal or hard carbon around the top of each cylinder, remove it with a ridge reamer (A). Follow the reamer manufacturer's instructions. If the ridge is not removed, it may damage the pistons as they are pushed out.



14. Use the wooden handle of a hammer (A) to drive out the piston/connecting rod assembly (B). Take care not to damage the cylinder with the connecting rod.



15. Reinstall the bearing cap bridge, the main bearing caps, and the main bearings on the engine block in the proper order.
16. Reinstall the connecting rod bearings and the connecting rod caps after removing each piston/connecting rod assembly.
17. Mark each piston/connecting rod assembly with its cylinder number to make sure they are reused in original order.

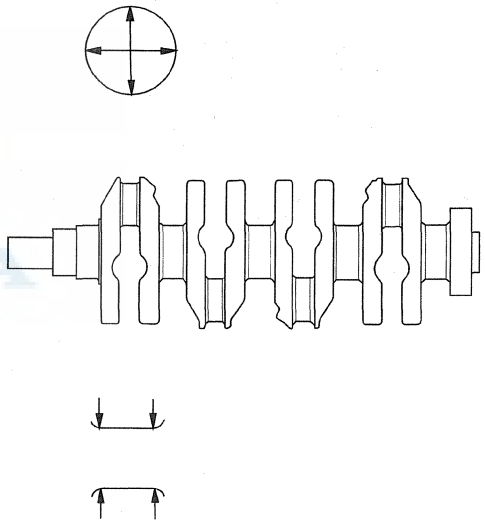
    NOTE: The existing number on the connecting rod does not indicate its position in the engine, it indicates the rod bore size.

Crankshaft Inspection

Out-of-Round and Taper

1. Remove the crankshaft from the engine block (see page 7-11).
2. Clean the crankshaft oil passages with pipe cleaners or a suitable brush.
3. Check the keyway slot and threaded holes for damage.
4. Measure the out-of-round at the middle of each connecting rod and the main journal in two places. The difference between measurements on each journal must not be more than the service limit.

   Journal Out-of-Round
   Standard (New): 0.005 mm (0.00020 in) max.
   Service Limit: 0.010 mm (0.00039 in)



5. Measure the taper at the edges of each connecting rod and the main journal. The difference between measurements on each journal must not be more than the service limit.

   Journal Taper
   Standard (New): 0.005 mm (0.00020 in) max.
   Service Limit: 0.010 mm (0.00039 in)

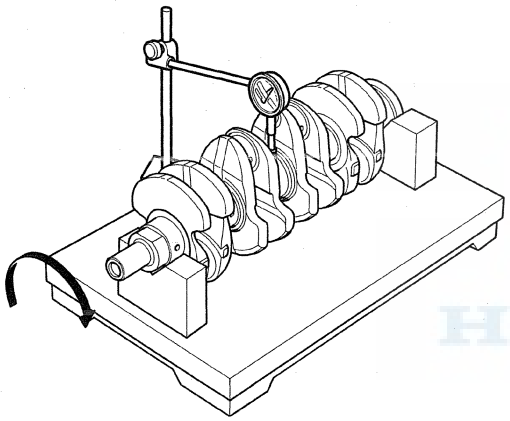
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Crankshaft Inspection (cont'd)

Straightness

6. Place the V-blocks on a flat surface.
7. Check the total runout with the crankshaft supported on V-blocks.
8. Measure the runout on all of the main journals. Rotate the crankshaft two complete revolutions. The difference between measurements on each main journal must not be more than the service limit.

Crankshaft Total Runout
Standard (New): 0.03 mm (0.0012 in) max.
Service Limit: 0.04 mm (0.0016 in)

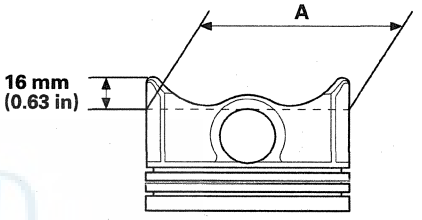


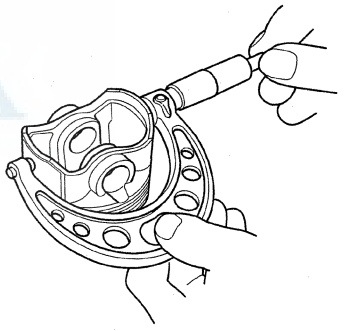
Block and Piston Inspection

1. Remove the crankshaft and the pistons (see page 7-11).
2. Check the piston for distortion or cracks.
3. Measure the piston skirt diameter (A) at a point 16 mm (0.63 in) from the bottom of the skirt.

Piston Diameter
Standard (New): 72.98—72.99 mm (2.8732—2.8736 in)
Service Limit: 72.97 mm (2.8728 in)

Oversize Piston Diameter
0.25: 73.23—73.24 mm (2.8831—2.8835 in)





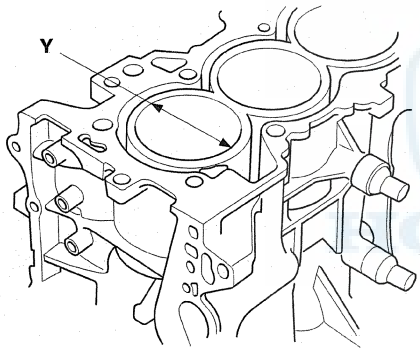
4. Measure wear and taper in direction Y at three levels in each cylinder as shown. If measurements in any cylinder are beyond the oversize bore service limit, replace the engine block. If the engine block is to be rebored, refer to step 7 after reboring.

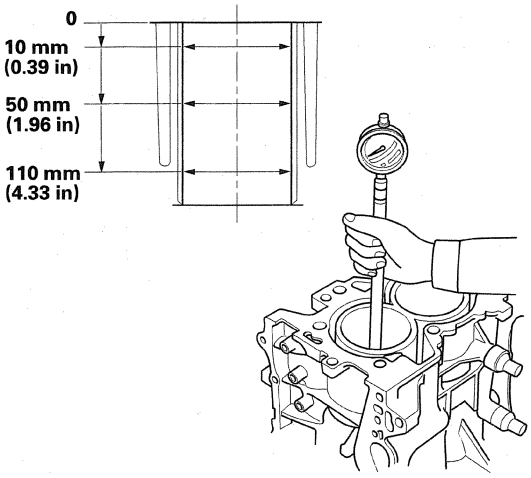
Cylinder Bore Size
Standard (New): 73.000—73.015 mm (2.87401—2.87460 in)
Service Limit: 73.065 mm (2.87657 in)

Oversize
0.25: 73.250—73.265 mm (2.8839—2.8844 in)

Reboring limit: 0.25 mm (0.0098 in) max.

Bore Taper
Limit: (Difference between first and third measurement) 0.05 mm (0.0020 in)

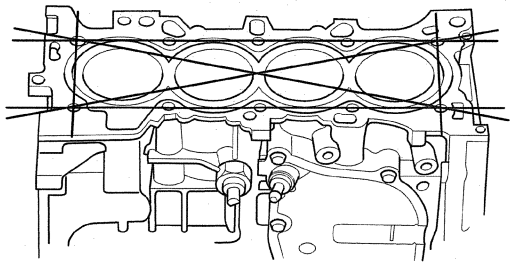


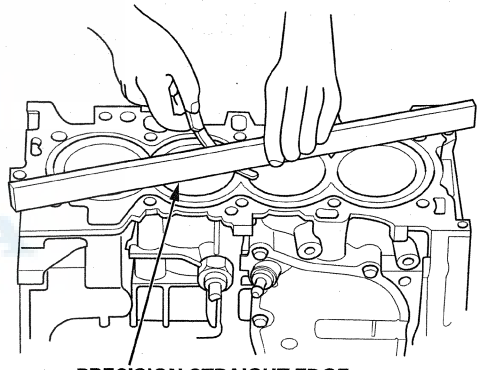


5. Scored or scratched cylinder bore must be honed.

6. Check the top of the engine block for warpage. Measure along the edges and across the center as shown.

Engine Block Warpage
Standard (New): 0.07 mm (0.002 in) max.



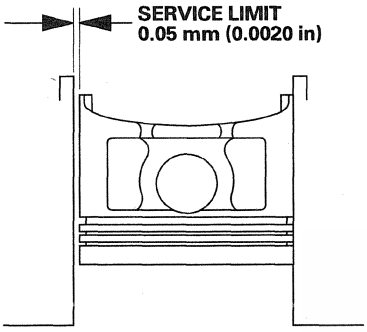


(cont'd)

Block and Piston Inspection (cont'd)

7. Calculate the difference between the cylinder bore diameter and the piston diameter. If the clearance is near or exceeds the service limit, inspect the piston and the engine block for excessive wear.

Piston-to-Cylinder Clearance
Standard (New): 0.010—0.035 mm (0.00039—0.00138 in)
Service Limit: 0.05 mm (0.0020 in)



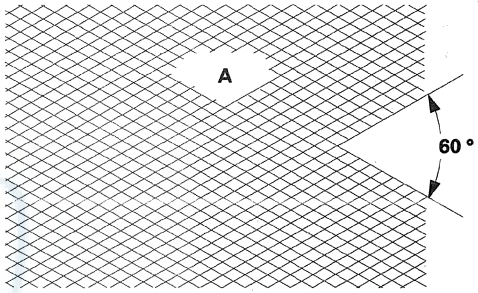
Cylinder Bore Honing

1. Measure the cylinder bores (see page 7-14).

   If the engine block is to be reused, hone the cylinders and remeasure the bores. Only scored or scratched cylinder bore must be honed.

2. Hone the cylinder bores with honing oil and a fine (400 grit) stone in a 60 degree cross-hatch pattern (A).

   NOTE:
   - Use only a rigid hone with 400 grit or finer stone such as Sunnen, Ammco, or equivalent.
   - Do not use stones that are worn or broken.



3. When honing is complete, thoroughly clean the engine block of all metal particles. Wash the cylinder bores with hot soapy water, then dry and oil them immediately to prevent rusting.

   NOTE: Never use solvent, it will only redistribute the grit on the cylinder walls.

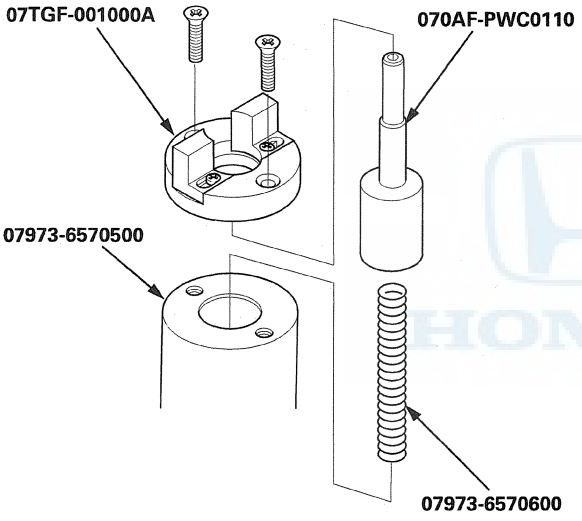
4. If scoring or scratches are still present in the cylinder bores after honing to the service limit, rebore the engine block. Some light vertical scoring and scratching is acceptable if it is not deep enough to catch your fingernail and does not run the full length of the bore.

Piston, Pin, and Connecting Rod Replacement

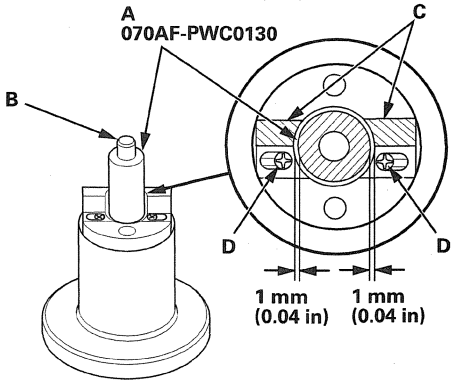
Special Tools Required
- Pilot Pin 070AF-PWC0110
- Piston Base 07973-6570500
- Piston Base Spring 07973-6570600
- Piston Base Head 07TGF-001000A
- Pilot Collar, O.D. 18 mm 070AF-PWC0130
- Insert Adjust 070AF-PWC0120
- Insert Pin 07PAF-0010700

Disassembly

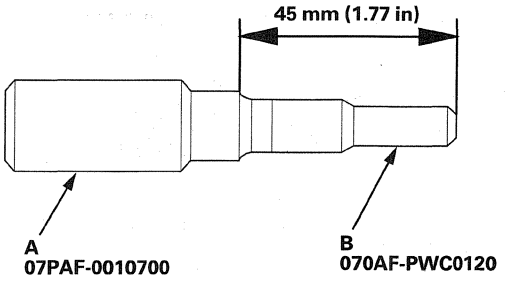
1. Remove the piston from the engine block (see page 7-11).
2. Assemble the special tool as shown.



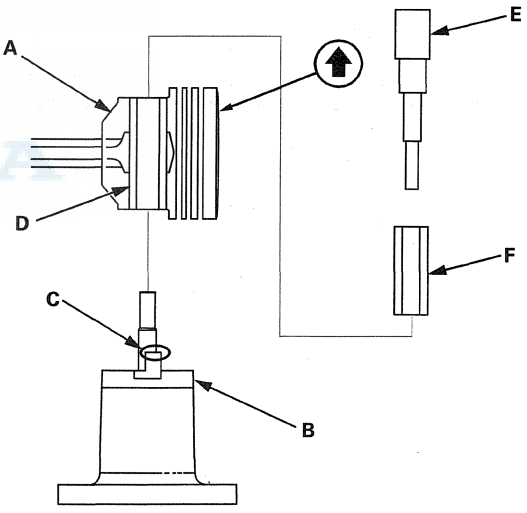
3. Temporarily install the pilot collar, O.D. 18 mm (A) over the pilot pin (B), and adjust the piston base head (C) as shown, then tighten the screws (D). Remove the pilot collar.



4. Assemble and adjust the length of the insert pin (A) and the insert adjust (B) to 45 mm (1.77 in).



5. With the arrow on top of the piston pointing up, place the piston assembly (A) on the piston base head (B). Be sure you position the recessed flat area of the piston against the area of the piston base head (C) as shown.



6. Press the piston pin (D) out with the insert pin and the insert adjust (E), the pilot collar (F), and a hydraulic press.

(cont'd)

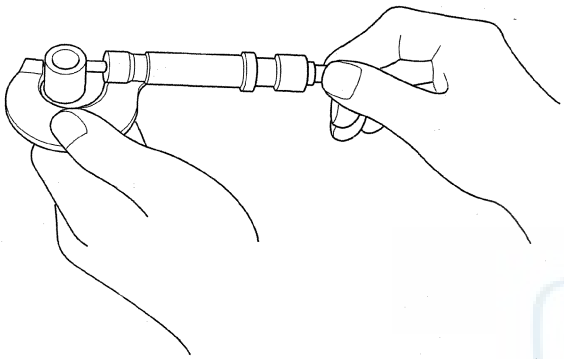
Piston, Pin, and Connecting Rod Replacement (cont'd)

Inspection

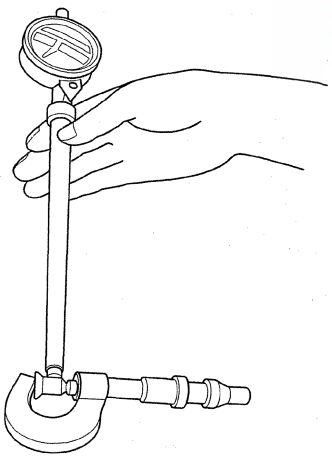
NOTE: Inspect the piston, the piston pin, and the connecting rod when they are at room temperature.

1. Measure the diameter of the piston pin.

Piston Pin Diameter
Standard (New): 17.996—18.000 mm
(0.70850—0.70866 in)

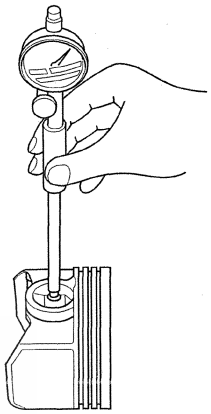


2. Zero the dial indicator to the piston pin diameter.



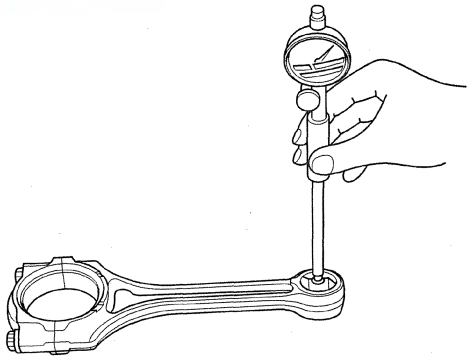
3. Check the difference between the piston pin diameter and the piston pin hole diameter in the piston.

Piston Pin-to-Piston Clearance
Standard (New): 0.010—0.017 mm
(0.00039—0.00067 in)



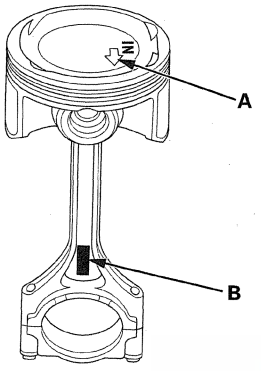
4. Measure the piston pin-to-connecting rod clearance.

Piston Pin-to-Connecting Rod Clearance
Standard (New): -0.036—-0.019 mm
(-0.00142—-0.00075 in)

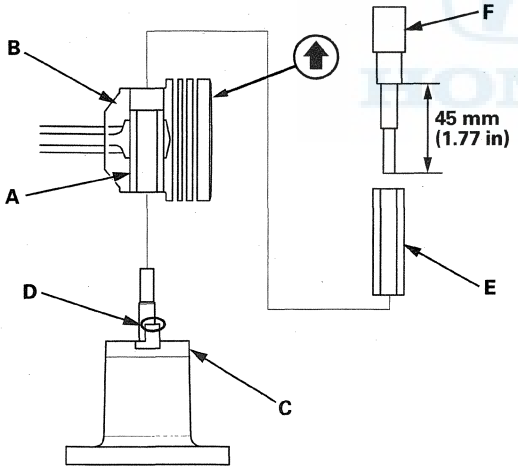


Reassembly

1. Assemble the piston and the connecting rod with the arrow (A) and the embossed mark (B) on the same side.



2. Insert the pilot collar (A) into the piston and the connecting rod.



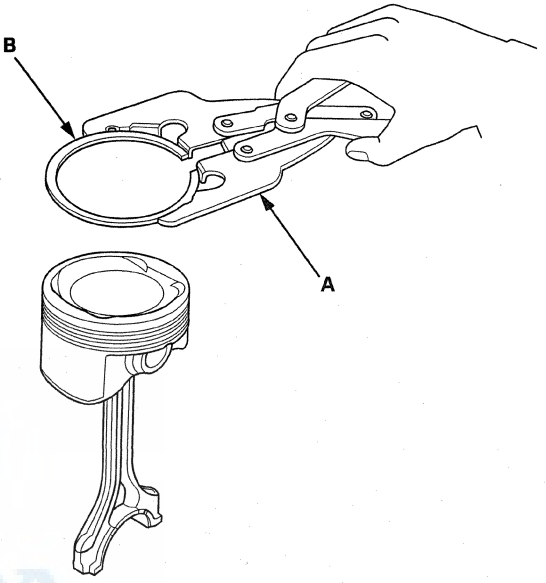
3. With the arrow on top of the piston and the embossed mark on the connecting rod facing up, place the piston assembly (B) on the piston base head (C). Be sure you position the recessed flat area of the piston against the area of the piston base head (D) as shown.

4. Press the piston pin (E) in with the insert pin and the insert adjust (F) and a hydraulic press.

Piston Ring Replacement

1. Remove the piston from the engine block (see page 7-11).

2. Using a ring expander (A), remove the old piston rings (B).



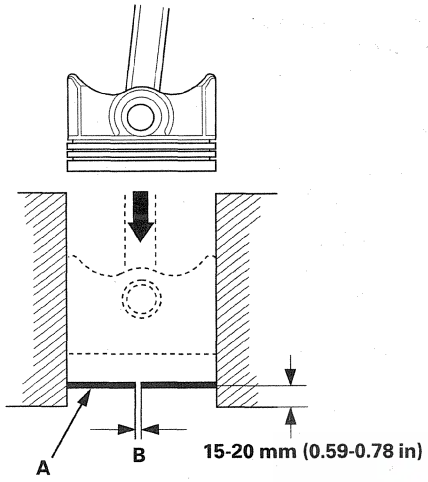
3. Clean all the ring grooves thoroughly with a squared-off broken ring, or a ring groove cleaner with a blade to fit the piston grooves. File down the blade, if necessary. The top and second ring grooves are 1.0 mm (0.039 in) wide, and the oil ring groove is 2.0 mm (0.079 in) wide. Do not use a wire brush to clean the ring grooves, or cut the ring grooves deeper with the cleaning tool.

   NOTE: If the piston is to be separated from the connecting rod, do not install new rings yet.

(cont'd)

Piston Ring Replacement (cont'd)

4. Using a piston, push a new ring (A) into the cylinder bore 15—20 mm (0.59—0.78 in) from the bottom.



5. Measure the piston ring end-gap (B) with a feeler gauge:
   - If the gap is too small, check to see if you have the proper rings for your engine.
   - If the gap is too large, recheck the cylinder bore diameter against the wear limits (see page 7-14).

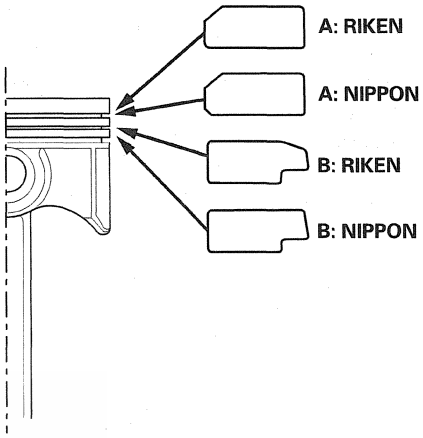
   If the bore is over the service limit, the engine block must be rebored.

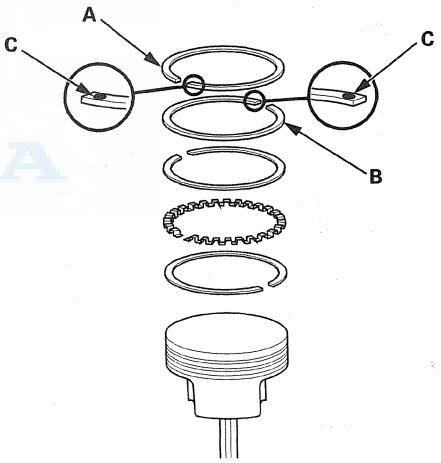
Piston Ring End-Gap
Top Ring:
Standard (New): 0.15—0.30 mm (0.006—0.011 in)
Service Limit: 0.60 mm (0.023 in)

Second Ring:
RIKEN
Standard (New): 0.30—0.42 mm (0.012—0.016 in)
Service Limit: 0.65 mm (0.025 in)
NIPPON
Standard (New): 0.35—0.50 mm (0.014—0.019 in)
Service Limit: 0.65 mm (0.025 in)

Oil Ring:
Standard (New): 0.20—0.70 mm (0.008—0.027 in)
Service Limit: 0.80 mm (0.031 in)

6. Install the rings as shown. The top ring (A) has a R or 1N mark, and the second ring (B) has a 2R or 2N mark. The manufacturing marks (C) must be facing upward.

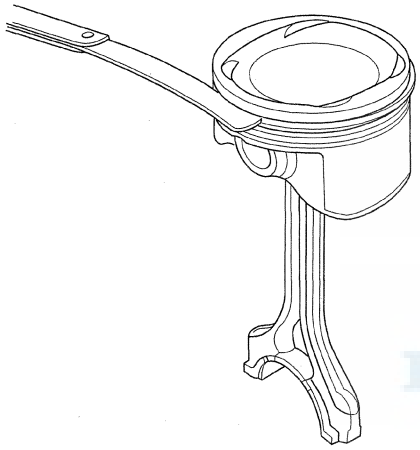




7. After installing a new set of rings, measure the ring-to-groove clearances:

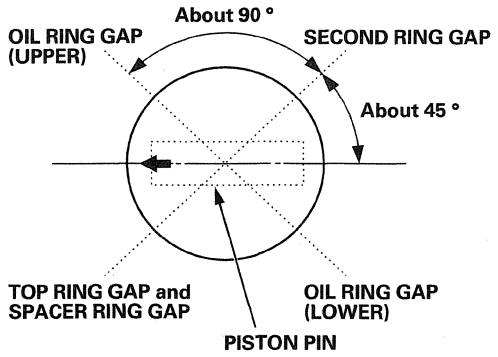
Top Ring Clearance
RIKEN
Standard (New): 0.065—0.090 mm (0.003—0.003 in)
Service Limit: 0.15 mm (0.005 in)
NIPPON
Standard (New): 0.061—0.090 mm (0.003—0.003 in)
Service Limit: 0.15 mm (0.005 in)

Second Ring Clearance
Standard (New): 0.030—0.055 mm (0.002—0.002 in)
Service Limit: 0.12 mm (0.004 in)



8. Rotate the rings in their grooves to make sure they do not bind.

9. Position the ring end gaps as shown:



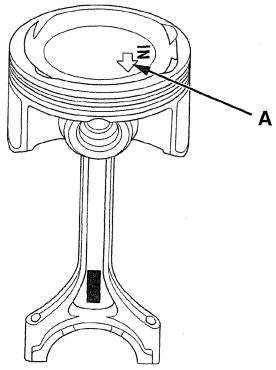
If the Crankshaft is Already Installed

1. Set the crankshaft to bottom dead center (BDC) for each cylinder as its piston is installed.

2. Remove the connecting rod caps, and check that the connecting rod bearing is securely in place.

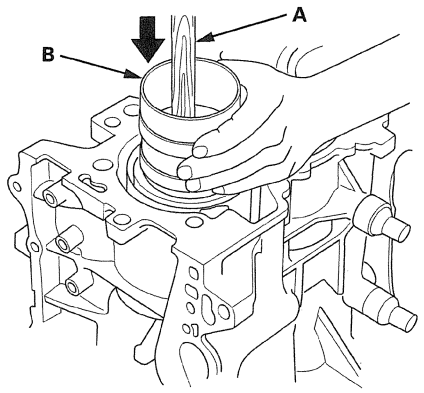
3. Apply new engine oil to the piston, inside of the ring compressor, and the cylinder bore, then attach the ring compressor to the piston/connecting rod assembly.

4. Position the piston/connecting rod assembly with the arrow (A) facing the cam chain side of the engine block.



5. Position the piston/connecting rod assembly in the cylinder, and tap it in using the wooden handle of a hammer (A).

Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.

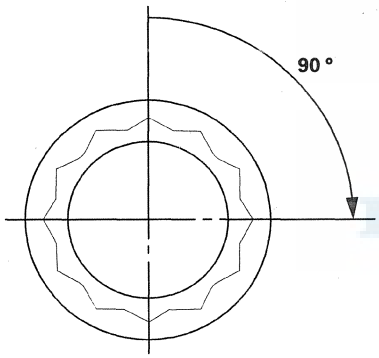


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Piston Installation (cont'd)

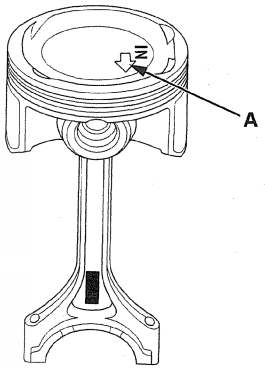
6. Stop after the ring compressor pops free, and check the connecting rod-to-rod journal alignment before pushing the piston into place.
7. Check the connecting rod bearing clearance with plastigage (see page 7-8).
8. Inspect the connecting rod bolts (see page 7-23).
9. Apply new engine oil to the connecting rod bolt threads, then install the connecting rod caps with the connecting rod bearings. Torque the bolts to 10 N·m (1.0 kgf·m, 7 lbf·ft).
10. Tighten the connecting rod bolts an additional 90 °.

    NOTE: Remove the connecting rod bolt if you tightened it beyond the specified angle, and go back to step 8 of the procedure. Do not loosen it back to the specified angle.



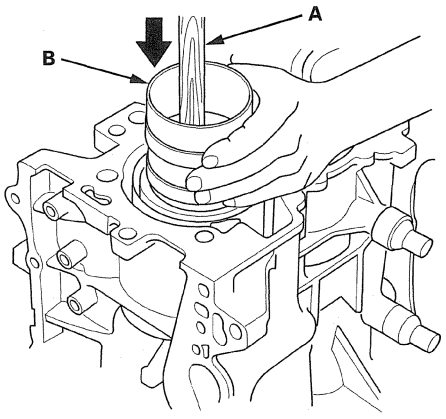
If the Crankshaft is Not Installed

1. Remove the connecting rod caps, and check that the connecting rod bearing is securely in place.
2. Apply new engine oil to the piston, inside of the ring compressor, and the cylinder bore, then attach the ring compressor to the piston/connecting rod assembly.
3. Position the piston/connecting rod assembly with the arrow (A) facing the cam chain side of the engine block.



4. Position the piston/connecting rod assembly in the cylinder, and tap it in using the wooden handle of a hammer (A).

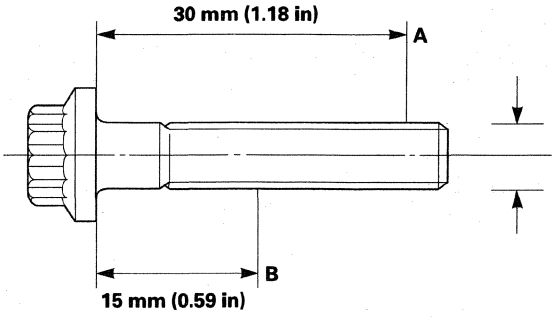
   Maintain downward force on the ring compressor (B) to prevent the rings from expanding before entering the cylinder bore.



5. Position all pistons at top dead center (TDC).

Connecting Rod Bolt Inspection

1. Measure the diameter of each connecting rod bolt at point A and point B with a micrometer.



2. Calculate the difference in diameter between point A and point B.

   Point A—Point B = Difference in Diameter

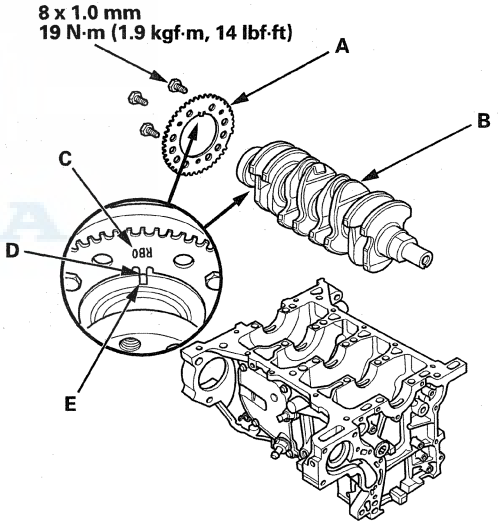
   Difference in Diameter
   Specification: 0—0.05 mm (0—0.0019 in)

3. If the difference in diameter is out of tolerance, replace the connecting rod bolt.

Crankshaft Installation

Special Tools Required
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 96 mm 07ZAD-PNAA100

1. Check the main bearing clearance with plastigage (see page 7-6).
2. Check the connecting rod bearing clearance with plastigage (see page 7-8).
3. Install the bearing halves in the engine block and the connecting rods.
4. Apply new engine oil to the inside of the main bearings and the connecting rod bearings.
5. Install the CKP pulse plate (A) on the crankshaft (B); face the marked side (C) toward the transmission, and align the tab (D) on the CKP pulse plate with the groove (E) on the crankshaft.

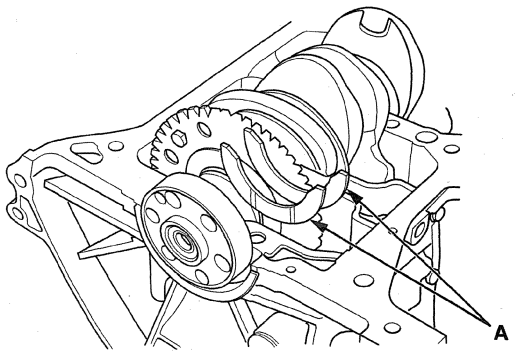


6. Hold the crankshaft so connecting rod journal No. 2 and connecting rod journal No. 3 are straight up, and lower the crankshaft into the engine block.

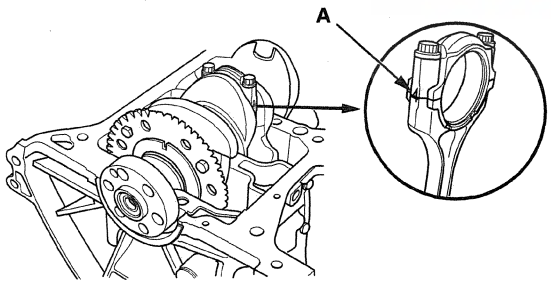
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Crankshaft Installation (cont'd)

7. Apply new engine oil to the side with the thrust washer groove. Install the thrust washers (A) in the No. 4 journal.

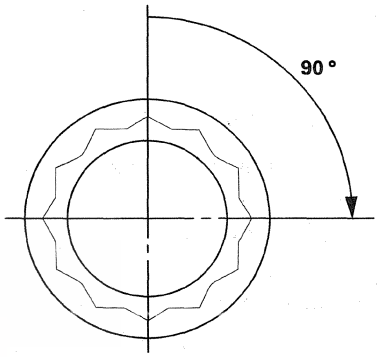


8. Inspect the connecting rod bolts (see page 7-23).
9. Apply new engine oil to the threads and flanges of the connecting rod bolts.
10. Seat the connecting rod journals into connecting rod No. 1 and connecting rod No. 4. Line up the mark (A) on the connecting rod and the connecting rod cap, then install the connecting rod caps and the connecting rod bolts finger-tight.

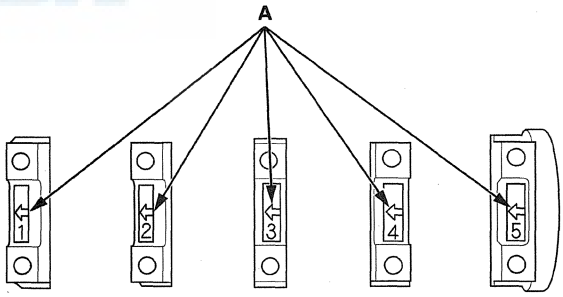


11. Rotate the crankshaft clockwise, and seat the connecting rod journals into connecting rod No. 2 and connecting rod No. 3. Line up the mark on the connecting rod and the connecting rod cap, then install the connecting rod caps and the connecting rod bolts finger-tight.
12. Torque the connecting rod bolts to 10 N·m (1.0 kgf·m, 7 lbf·ft).
13. Tighten the connecting rod bolts an additional 90 °.

    NOTE: Remove the connecting rod bolt if you tightened it beyond the specified angle, and go back to step 8 of the procedure. Do not loosen it back to the specified angle.



14. Install the main bearing caps with the arrows facing (A) the cam chain side on the bearing cap bridge.

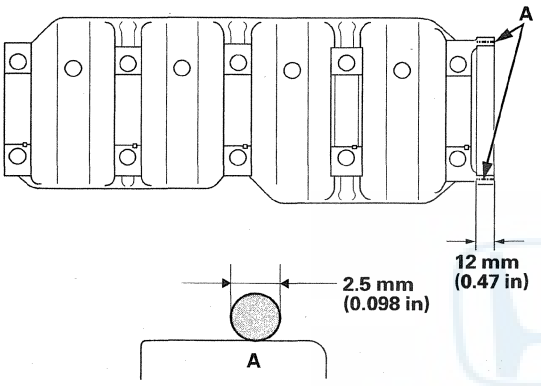


15. Remove old liquid gasket from the bearing cap bridge/No. 5 main bearing cap mating surfaces.
16. Clean and dry the bearing cap bridge/No. 5 main bearing cap mating surfaces.

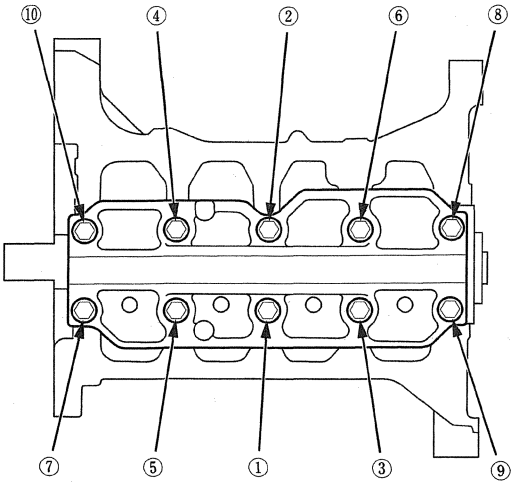
17. Apply liquid gasket (P/N 08718-0004) to the engine block mating surface of the bearing cap bridge/No. 5 main bearing cap. Install the component within 5 minutes of applying the liquid gasket.

NOTE:

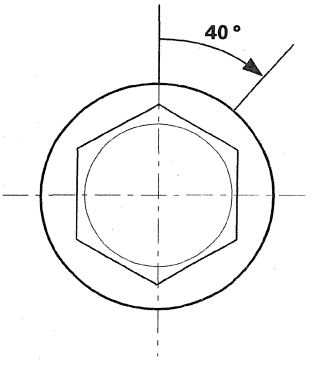
- Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



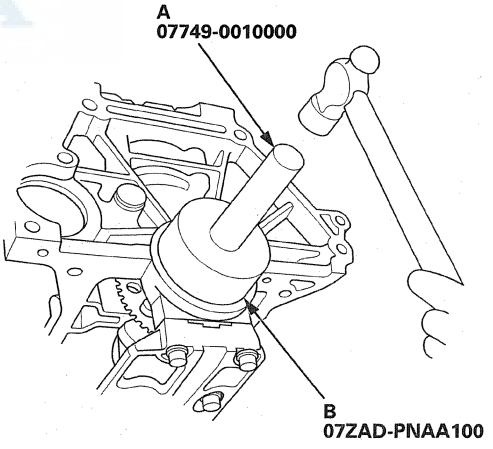
18. Put the bearing cap bridge on the engine block.
19. Apply new engine oil to the threads and flange of the bearing cap bolts.
20. Torque the bearing cap bolts in sequence to 25 N·m (2.5 kgf·m, 18 lbf·ft).



21. Tighten the bearing cap bolts an additional 40 °.



22. Clean the excess liquid gasket off the engine block.
23. Clean and dry the crankshaft oil seal housing.
24. Apply a light coat of new engine oil to the lip of the crankshaft oil seal.
25. Use the driver handle, 15 × 135 L (A), and the oil seal driver attachment, 96 mm (B), to drive a new crankshaft oil seal squarely into the block to the specified installed height.

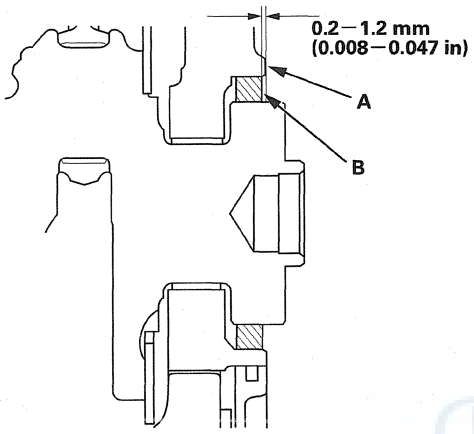


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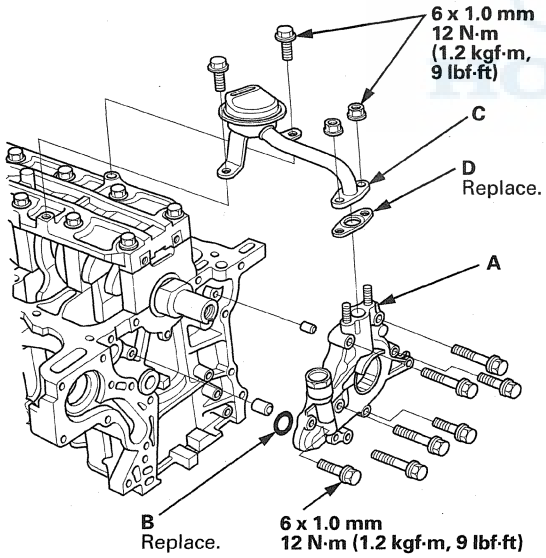
Crankshaft Installation (cont'd)

26. Measure the distance between the cylinder block (A) and the oil seal (B).

    Oil Seal Installed Height
    0.2—1.2 mm (0.008—0.047 in)



27. Install the oil pump (A) with a new O-ring (B).



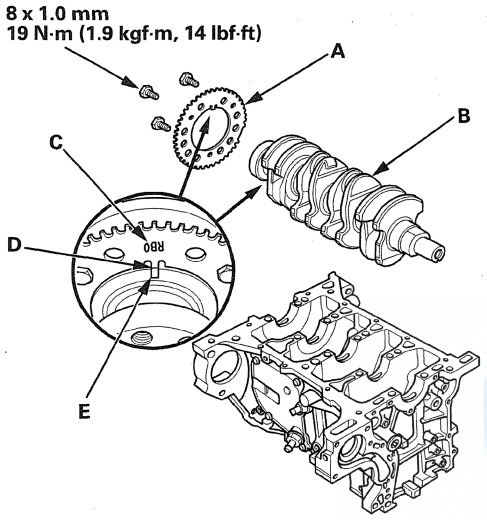
28. Install the oil screen (C) with a new gasket (D).
29. Install the oil pan (see page 7-27).
30. Install the cylinder head (see page 6-46).
31. Install the IMA motor rotor position sensor (see page 12-228), the IMA motor housing (see page 12-227), and the IMA motor rotor (see page 12-224).
32. Install the transmission:
    - M/T model (see page 13-49)
    - CVT model (see page 14-165)
33. Install the engine/IMA motor/transmission (see page 5-11).

    NOTE: When any crankshaft main or connecting rod bearing is replaced, run the engine at idle speed until it reaches normal operating temperature, then continue to run it for about 15 minutes.

CKP Pulse Plate Replacement

1. Remove the crankshaft from the engine block (see page 7-11).
2. Remove the CKP pulse plate (A).

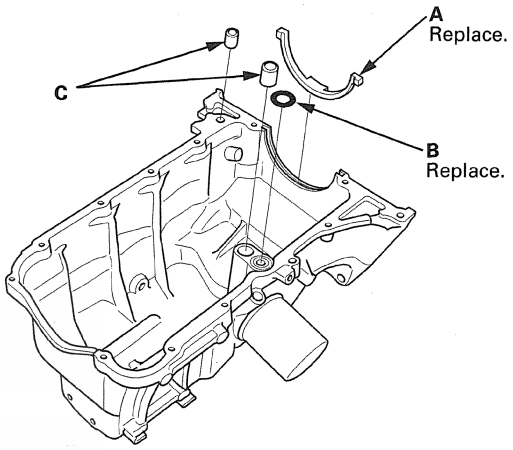
   NOTE: Be careful not to damage the journals and the CKP pulse plate.



3. Install the CKP pulse plate on the crankshaft (B); face the marked side (C) toward the transmission, and align the tab (D) on the CKP pulse plate with the groove (E) on the crankshaft.
4. Install the crankshaft on the engine block (see page 7-23).

Oil Pan Installation

1. Remove all of the old liquid gasket from the oil pan mating surfaces, the bolts, and the bolt holes.
2. Clean and dry the oil pan mating surfaces and the O-ring groove.
3. Install a new oil pan gasket (A), a new O-ring (B), and the dowel pins (C) on the oil pan.

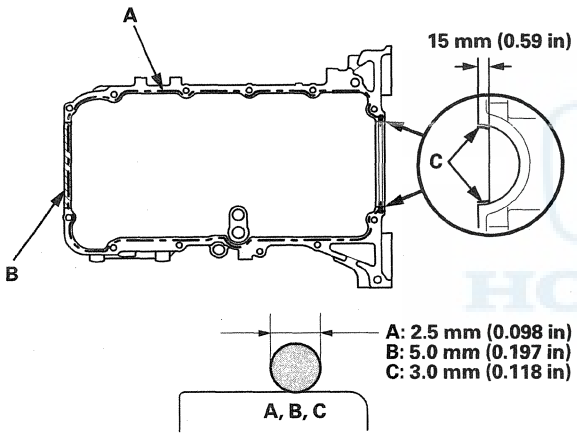


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Oil Pan Installation (cont'd)

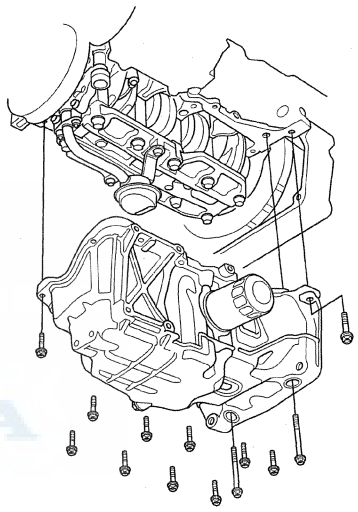
4. Apply liquid gasket (P/N 08718-0004) to the engine block mating surface of the oil pan and to the inside edge of the bolt holes. Install the component within 5 minutes of applying the liquid gasket.

   NOTE:
   - Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
   - Apply a 5.0 mm (0.197 in) diameter bead of liquid gasket to the shaded area (B).
   - Apply a 3.0 mm (0.118 in) diameter bead of liquid gasket along the broken line (C).
   - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



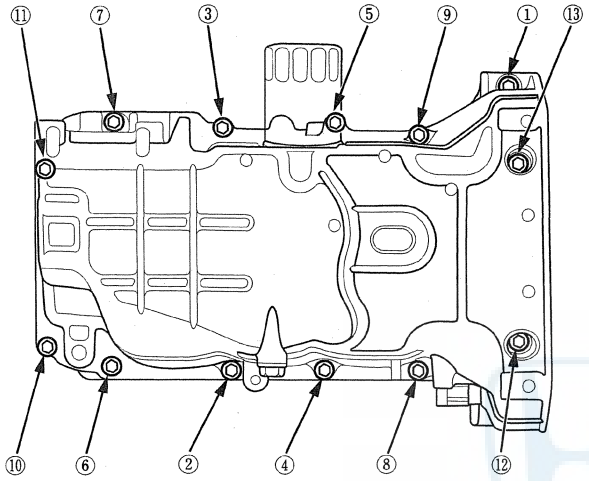
5. Install the oil pan.

   NOTE:
   - Raise the oil pan carefully not to damage IMA motor rotor position sensor.
   - Wait at least 30 minutes before filling the engine with oil.
   - Do not run the engine for at least 3 hours after installing the oil pan.
   - Make sure to install the bolts in the correct locations according to size.

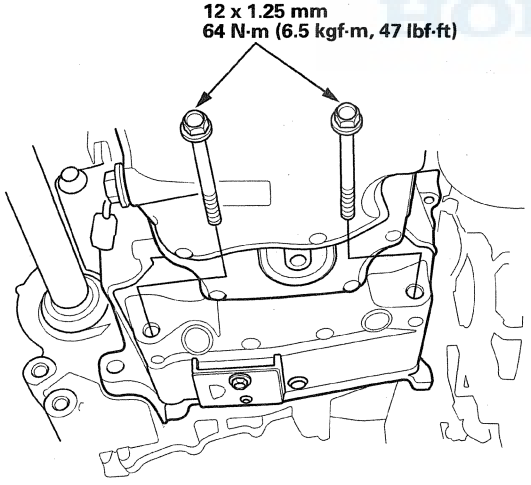


6. Tighten the bolts in three steps. Wipe off the excess liquid gasket from crankshaft pulley end and the drive plate end.

Specified torque
①: **24 N·m (2.4 kgf·m, 18 lbf·ft)**
②–⑬: **12 N·m (1.2 kgf·m, 9 lbf·ft)**

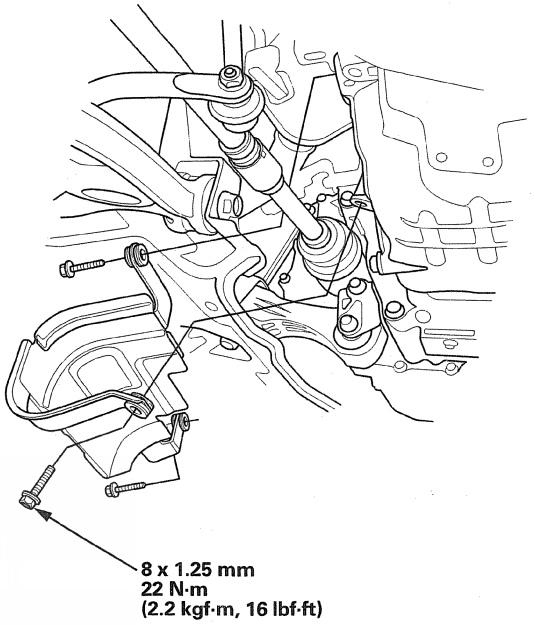


7. Install the transmission mounting bolts.

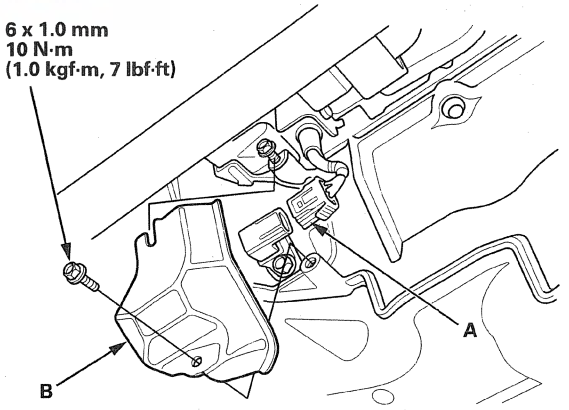


8. Install the torque rod bracket (see page 5-35).

9. CVT model: Install the driveshaft heat shield.



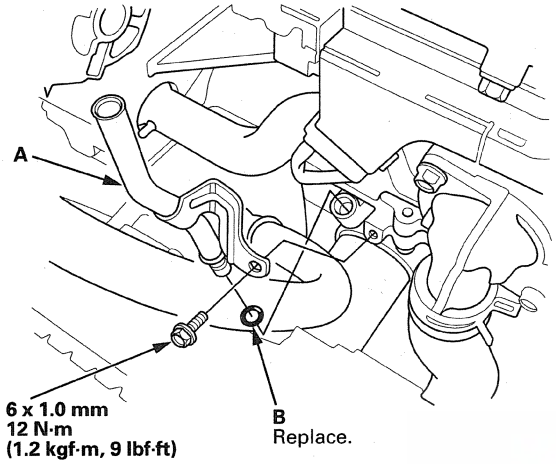
10. Connect the CKP sensor connector (A), then install the CKP sensor cover (B).



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Oil Pan Installation (cont'd)

11. Install the dipstick tube (A) with a new O-ring (B), then install the dipstick.

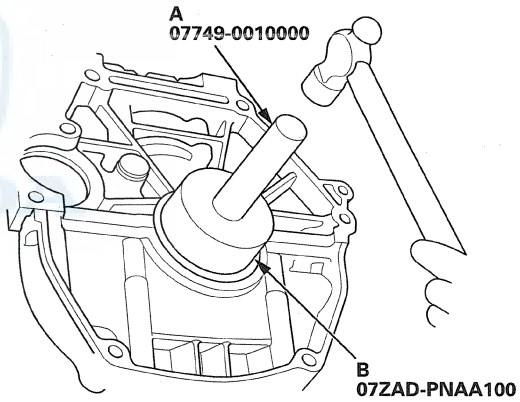


12. If the engine is still in the vehicle, do steps 14 through 17.
13. Install the torque rod (see page 5-28).
14. Install the A/C compressor (see step 24 on page 5-16).
15. Install the drive belt (see page 10-17).
16. Install the splash shield (see page 20-163).
17. Refill the engine with engine oil (see step 6 on page 8-10).

Transmission End Crankshaft Oil Seal Installation - In Car

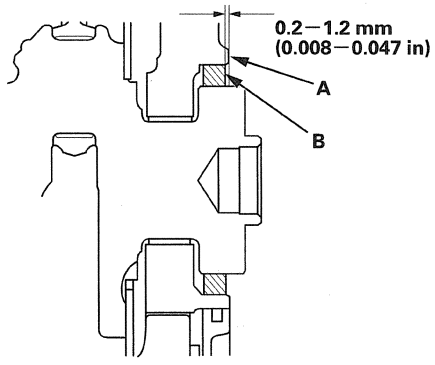
Special Tools Required
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 96 mm 07ZAD-PNAA100

1. Remove the transmission:
   - M/T model (see page 13-43)
   - CVT model (see page 14-156)
2. Remove the IMA motor rotor (see page 12-224), the IMA motor housing (see page 12-227), and the IMA motor rotor position sensor (see page 12-228).
3. Clean and dry the crankshaft oil seal housing.
4. Apply a light coat of new engine oil to the lip of the crankshaft oil seal.
5. Use the driver handle, 15 × 135 L (A), and the oil seal driver attachment, 96 mm (B), to drive a new crankshaft oil seal squarely into the block to the specified installed height.



6. Measure the distance between the cylinder block (A) and the oil seal (B).

Oil Seal Installed Height
0.2—1.2 mm (0.008—0.047 in)

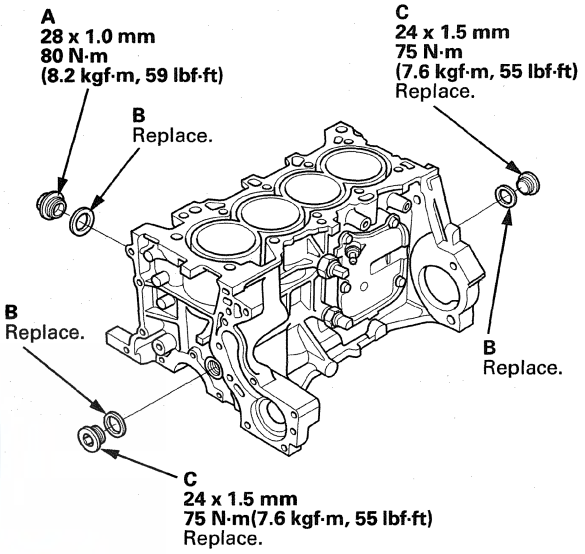


Drain Bolt/Sealing Bolt Installation

7. Install the IMA motor rotor position sensor (see page 12-228), the IMA motor housing (see page 12-227), and the IMA motor rotor (see page 12-224).
8. Install the transmission:
   - M/T model (see page 13-49)
   - CVT model (see page 14-165)

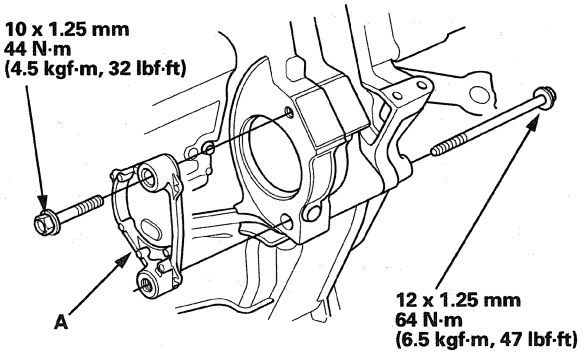
NOTE:

- When installing the drain bolt (A), always use a new washer (B).
- When installing the sealing bolt(s) (C), always use a new bolt(s) and washer(s).



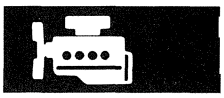
Block Cover Removal and Installation

1. Remove the block cover (A).



2. Install the block cover in the reverse order of removal.

Engine Mechanical



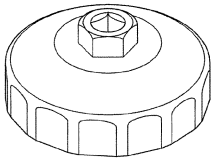
Engine Lubrication

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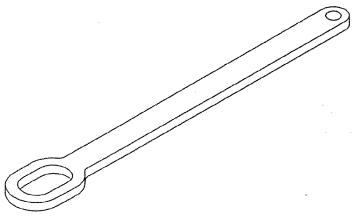
Engine Lubrication

Special Tools

Ref.No.	Tool Number	Description	Qty
①	07AAA-PLCA100	Oil Filter Wrench	1
②	07AAK-SNAA600	Support Eyelet	1

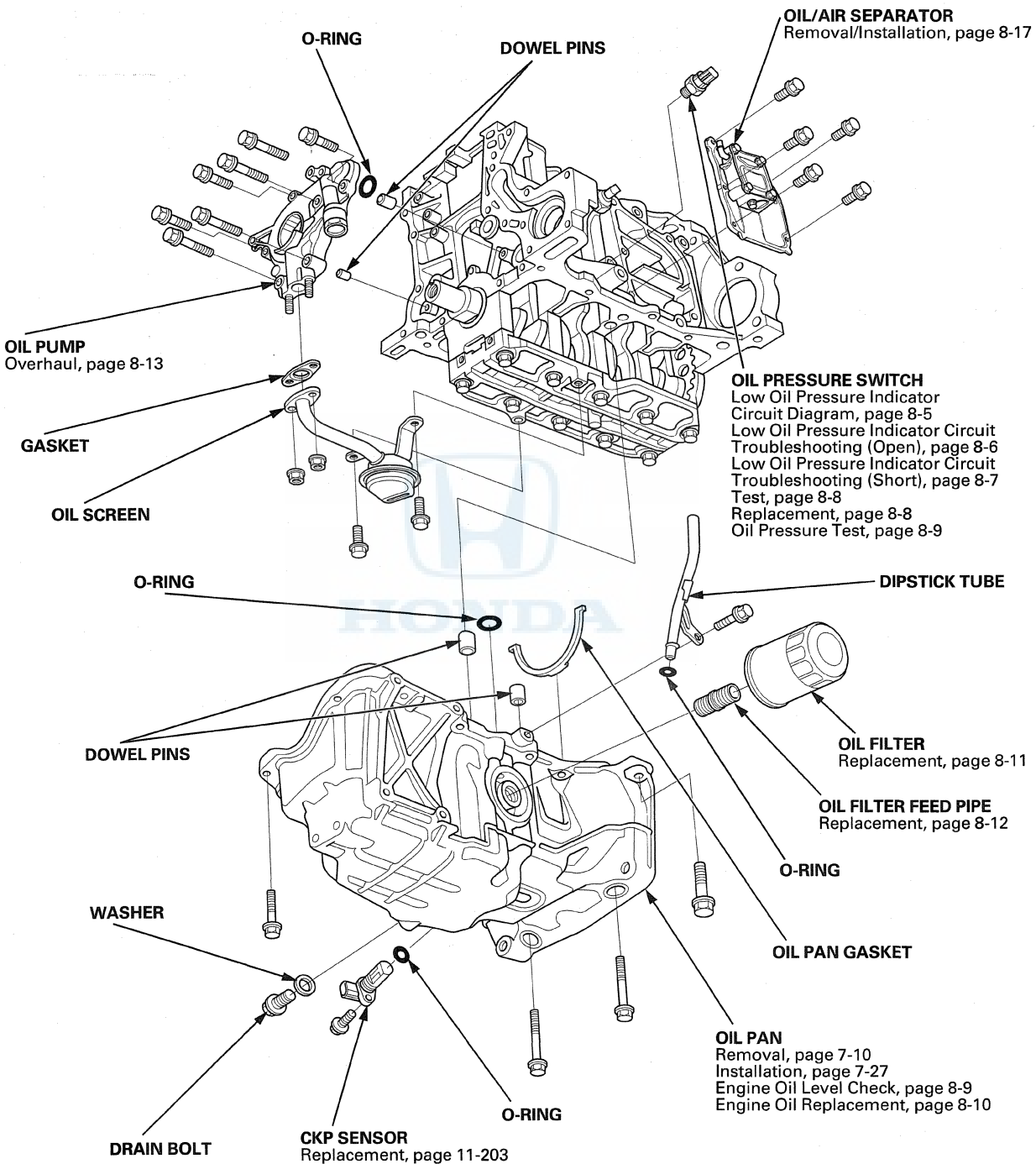


①



②

Component Location Index



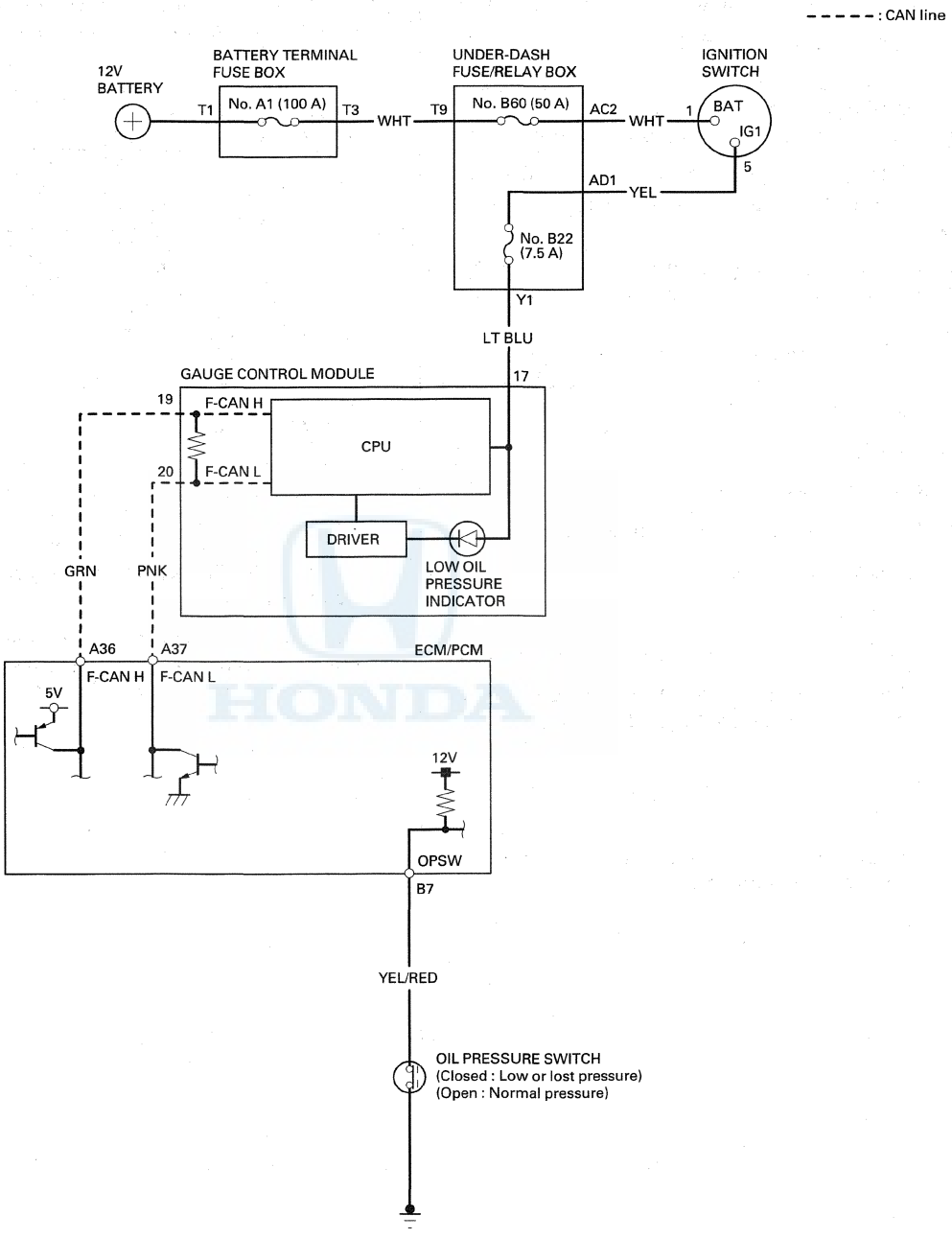
Engine Lubrication

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Excessive engine oil consumption	1. Check for oil leaks. 2. Check for worn valve guide(s) (see page 6-40) or worn valve stem seal(s) (see page 6-40). 3. Check for damaged or worn piston ring(s) (see page 7-19). 4. Check for damaged or worn engine internal parts (cylinder wall, pistons, etc.) (see page 7-14).	Check the maintenance records as engine oil that is worn out burns off at a higher rate
Low oil pressure indicator stays on	1. Check the engine oil level (see page 8-9). 2. Do the low oil pressure indicator circuit troubleshooting (Short) (see page 8-7).	A wire shorted to ground between the ECM/PCM and the oil pressure switch
Low oil pressure indicator does not come on with the ignition switch in ON (II)	1. Do the low oil pressure indicator circuit troubleshooting (Open) (see page 8-6). 2. Test the oil pressure switch (see page 8-8).	An open in the wire between the ECM/PCM and the oil pressure switch

HONDA

Low Oil Pressure Indicator Circuit Diagram



Low Oil Pressure Indicator Circuit Troubleshooting (Open)

1. Connect the HDS to the DLC (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
4. Check for DTCs (see page 11-3). If a DTC is present, diagnose, and repair the cause before continuing with this test.
5. Turn the ignition switch to ON (II), and check the OIL PRESSURE SWITCH in the DATA LIST with the HDS.

   Is ON indicated?

   YES–Replace the gauge control module (see page 22-354).■

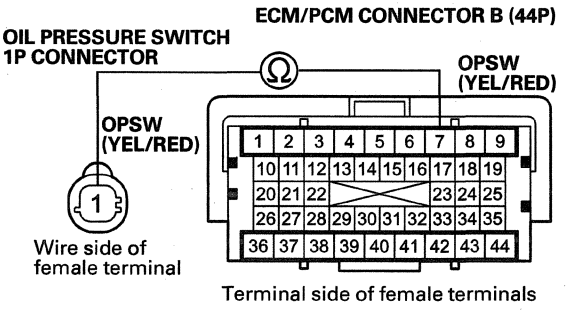
   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Check the oil pressure switch (see page 8-8).

   Is the oil pressure switch OK?

   YES–Go to step 8.

   NO–Replace the oil pressure switch (see page 8-8).■
8. Turn the ignition switch to ON (II), and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

   NOTE: This step must be done to protect the ECM/PCM from damage.
9. Disconnect ECM/PCM connector B (44P) and the oil pressure switch 1P connector.
10. Check for continuity between ECM/PCM connector terminal B7 and the oil pressure switch 1P connector terminal No. 1.



   Is there continuity?

   YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

   NO–Repair an open in the wire between ECM/PCM connector terminal B7 and oil pressure switch 1P connector terminal No. 1.■

Low Oil Pressure Indicator Circuit Troubleshooting (Short)

1. Connect the HDS to the DLC (see step 2 on page 11-3).
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
4. Check for DTCs (see page 11-3). If a DTC is present, diagnose, and repair the cause before continuing with this test.
5. Start the engine and check the OIL PRESSURE SWITCH in the DATA LIST with the HDS.

   Is OFF indicated?

   YES–Replace the gauge control module (see page 22-354).■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Check the oil pressure switch (see page 8-8).

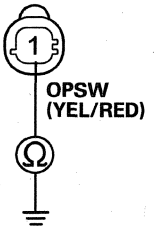
   Is the oil pressure switch OK?

   YES–Go to step 8.

   NO–Do the pressure test (see page 8-9). If the oil pressure is OK, replace the oil pressure switch (see page 8-8).■
8. Turn the ignition switch to ON (II), and jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

   NOTE: This step must be done to protect the ECM/PCM from damage.
9. Disconnect ECM/PCM connector B (44P) and the oil pressure switch 1P connector.
10. Check for continuity between oil pressure switch 1P connector terminal No. 1 and body ground.

OIL PRESSURE SWITCH 1P CONNECTOR



Wire side of female terminal

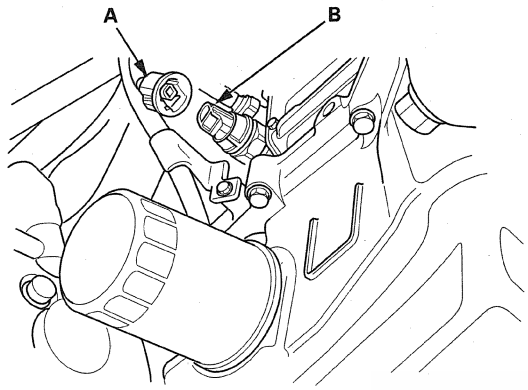
Is there continuity?

YES–Repair a short to ground in the wire between ECM/PCM connector terminal B7 and oil pressure switch 1P connector terminal No.1.■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

Oil Pressure Switch Test

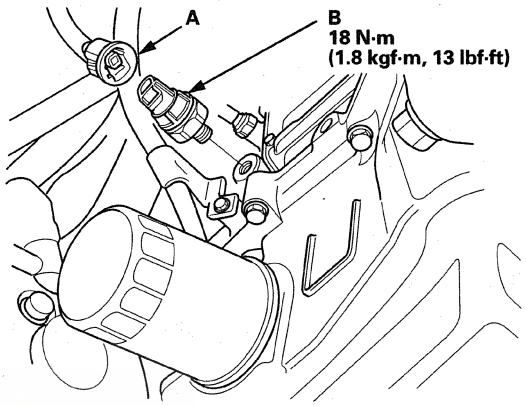
1. Remove the engine undercover (see page 20-163).
2. Disconnect the oil pressure switch connector (A) from the oil pressure switch (B).



3. Check for continuity between the oil pressure switch terminal and the engine (ground). There should be continuity with the engine stopped. There should be no continuity with the engine running.
4. Connect the oil pressure switch connector to the oil pressure switch.
5. Install the engine undercover (see page 20-163).

Oil Pressure Switch Replacement

1. Remove the engine undercover (see page 20-163).
2. Disconnect the oil pressure switch connector (A), then remove the oil pressure switch (B).



3. Remove all of the old liquid gasket from the oil pressure switch mounting hole.
4. Clean and dry the oil pressure switch mounting hole.
5. Apply liquid gasket (P/N 08718-0004) to the new oil pressure switch threads. Install the component within 5 minutes of applying the liquid gasket.

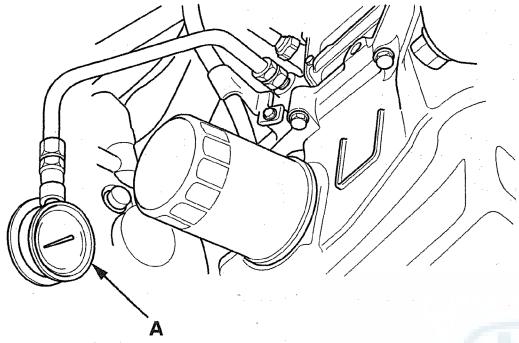
   NOTE:
   - Using too much liquid gasket may cause liquid gasket to enter the oil passage or the end of the oil pressure switch.
   - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply the new liquid gasket.

6. Install the oil pressure switch.
7. Connect the oil pressure switch connector.
8. Install the engine undercover (see page 20-163).

Oil Pressure Test

If the low oil pressure indicator stays on with the engine running, check the engine oil level (see page 8-9). If the oil level is correct:

1. Remove the oil pressure switch (see page 8-8), then install the oil pressure gauge (A).



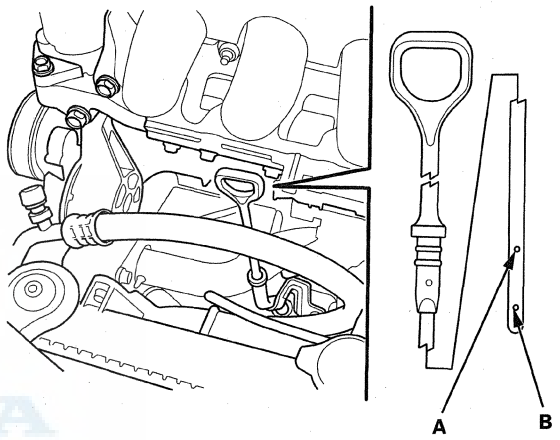
2. Start the engine. Shut it off immediately if the gauge registers no oil pressure. Repair the problem before continuing.
3. Allow the engine to reach operating temperature (fan comes on at least twice). The pressure should be:

   Engine Oil Temperature: 176 °F (80 °C)
   Engine Oil Pressure:
   At Idle: 69 kPa (0.70 kgf/cm², 10.0 psi) min.
   At 3,000 rpm: 343 kPa (3.50 kgf/cm², 49.8 psi) min.

4. If the oil pressure is not within specifications, inspect these items:
   - Blocking of oil filter.
   - Blocking of oil screen.
   - Inspect the oil pressure relief valve (see page 8-13).
   - Inspect the oil pump (see page 8-15).
5. Remove the oil pressure gauge and the oil pressure gauge attachment, then install the engine oil pressure switch (see page 8-8).

Engine Oil Level Check

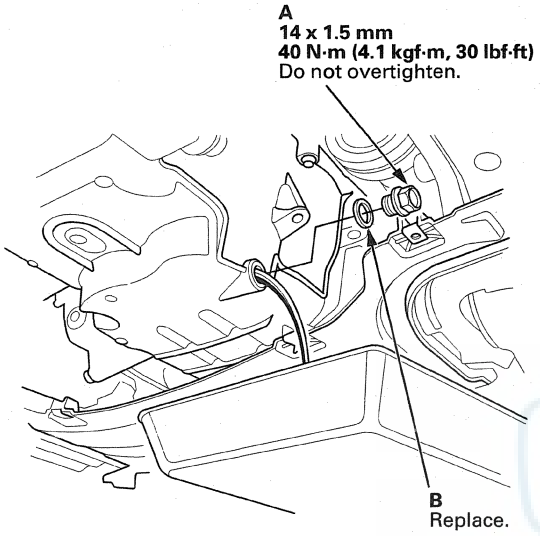
1. Park the vehicle on level ground, and start the engine. Hold the engine at 3,000 rpm with no load (M/T in neutral, A/T in P or N) until the radiator fan comes on, then turn off the engine, and wait a few minutes.
2. Remove the dipstick, and wipe off the dipstick, then reinstall the dipstick.
3. Remove the dipstick, and check the engine oil level. It should be between the upper mark (A) and lower mark (B).



4. If the engine oil level is near or below the lower mark, check for oil leakage, and add engine oil (see page 8-10) to bring it to the upper mark.

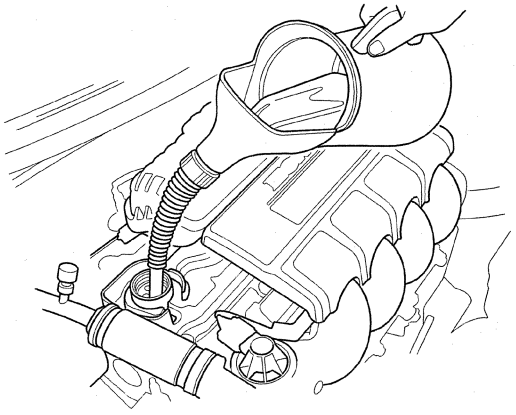
Engine Oil Replacement

1. Allow the engine to reach operating temperature (fan comes on at least twice).
2. Remove the splash shield (see page 20-163).
3. Remove the drain bolt (A), and drain the engine oil.



4. Reinstall the drain bolt with a new washer (B) and torque to specification.
5. Install the splash shield (see page 20-163).
6. Refill the engine with the recommended engine oil (see page 3-2).

Capacity	
At Oil Change:	**3.4 L (3.6 US qt)**
At Oil Change Including Filter:	**3.6 L (3.8 US qt)**
After Engine Overhaul:	**4.2 L (4.4 US qt)**

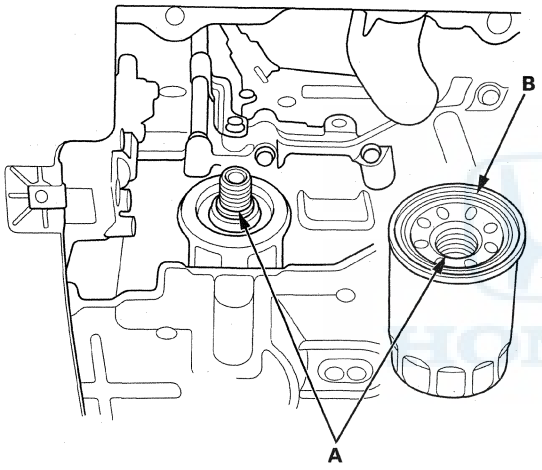


7. Run the engine for more than 3 minutes, then check the oil level (see page 8-9) and for any oil leakage.
8. If the Maintenance Minder required replacing the engine oil, reset the Maintenance Minder (see page 3-4), when this procedure is complete. If the Maintenance Minder did not require engine oil replacement, go to step 9.
9. Turn the ignition switch to LOCK.
10. Connect the HDS to the DLC (see step 2 on page 11-3).
11. Turn the ignition switch to ON (II).
12. Make sure the HDS communicates with the vehicle and ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
13. Select GAUGE in the BODY ELECTRICAL with the HDS.
14. Select ADJUSTMENT in GAUGES with the HDS.
15. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
16. Select RESET in the MAINTENANCE MINDER with the HDS.
17. Select RESETTING THE ENGINE OIL LIFE with the HDS.

Engine Oil Filter Replacement

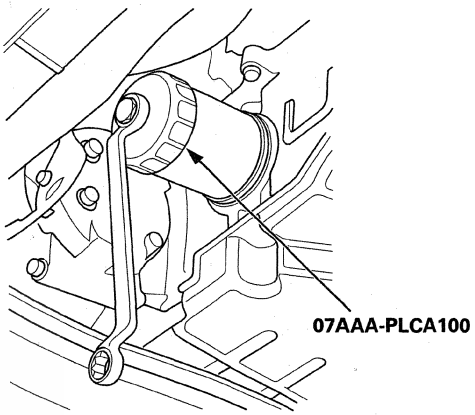
Special Tools Required
Oil Filter Wrench 07AAA-PLCA100

1. Drain the engine oil (see page 8-10).
2. Remove the oil filter with the oil filter wrench.
3. Inspect the filter to make sure the rubber seal is not stuck to the oil filter seating surface of the engine.
4. Inspect the threads (A) and the rubber seal (B) on the new filter. Clean the seat on the oil pan, then apply a light coat of new engine oil to the filter rubber seal. Use only filters with a built-in bypass system.



5. Install the oil filter by hand.
6. After the rubber seal seats, tighten the oil filter clockwise with the oil filter wrench to the specified torque.

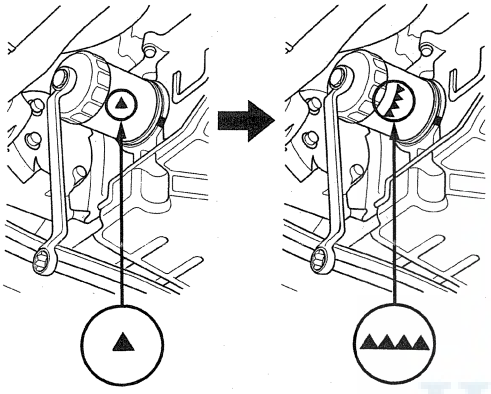
Tighten: 3/4 Turn Clockwise
Tightening Torque: 12 N·m (1.2 kgf·m, 9 lbf·ft)



(cont'd)

Engine Oil Filter Replacement (cont'd)

7. If four numbers or marks (1 to 4 or ▼ to ▼▼▼▼) are printed around the outside of the filter, you can use the following procedure to tighten the filter.
   - Spin the filter on until its seal lightly seats against the oil pan, and note which number or mark is at the bottom.
   - Tighten the filter by turning it clockwise three numbers or marks from the one you noted. For example, if mark ▼ is at the bottom when the seal is lightly seated, tighten the filter until the mark ▼▼▼▼ comes around the bottom.



Mark when rubber seal is seated.

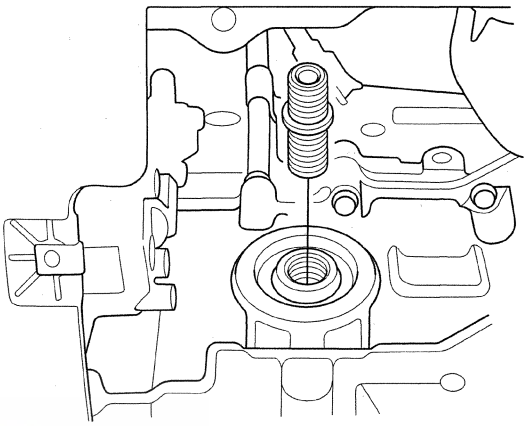
Mark after tightening.

Number or Mark when rubber seal is seated	1 or ▼	2 or ▼▼	3 or ▼▼▼	4 or ▼▼▼▼
Number or Mark after tightening	4 or ▼▼▼▼	1 or ▼	2 or ▼▼	3 or ▼▼▼

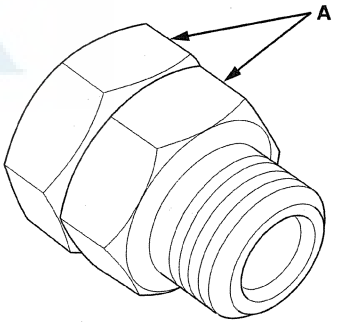
8. After installation, fill the engine with the engine oil up to the specified level (see page 8-9), run the engine for more than 3 minutes, then check for oil leakage.

Oil Filter Feed Pipe Replacement

1. Remove the oil filter (see page 8-11).
2. Remove the oil filter feed pipe.



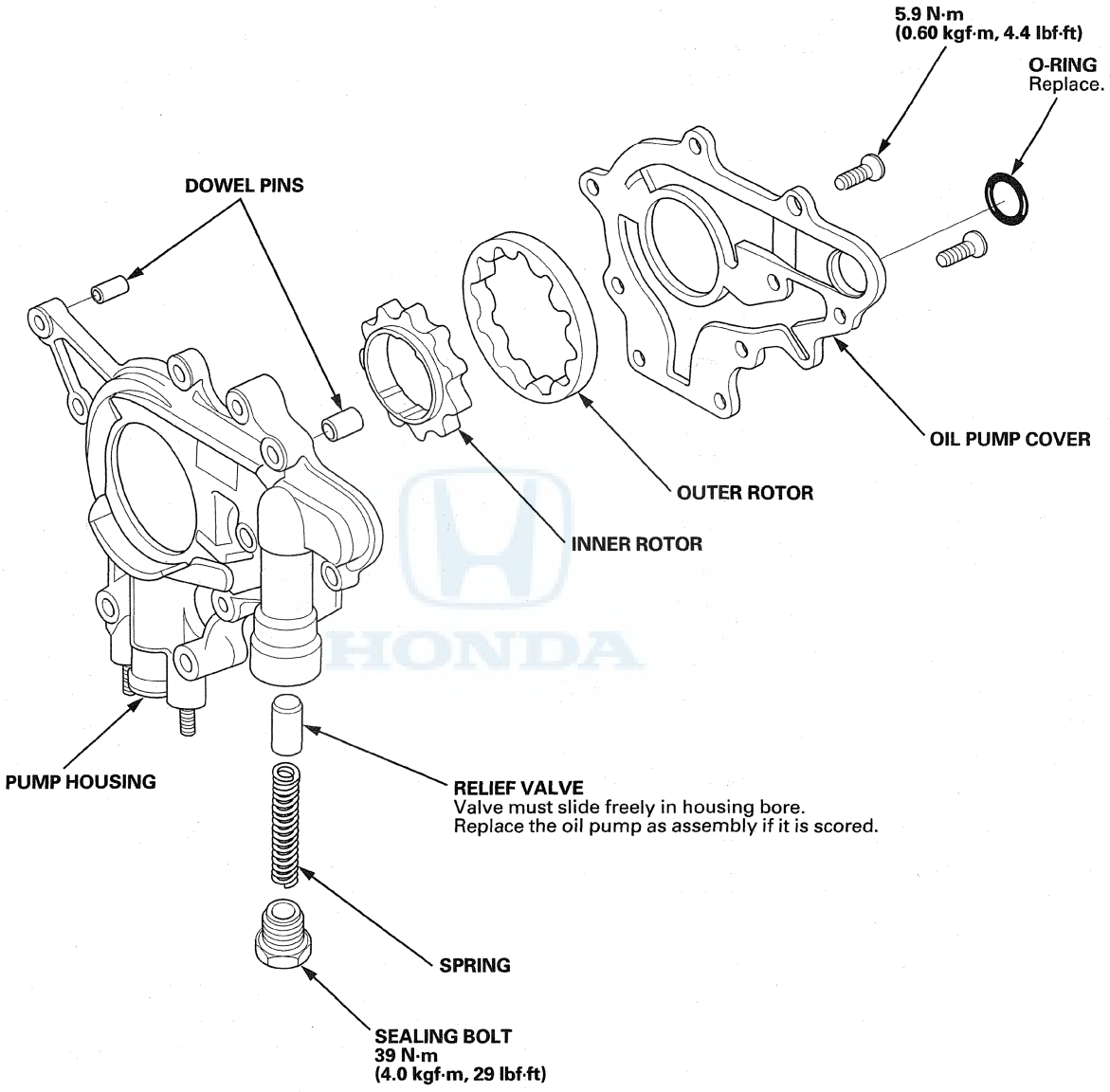
3. Install two 20 x 1.5 mm nuts (A) onto the new oil filter feed pipe, and hold one nut with a wrench, then tighten the other nut.



4. Apply new engine oil to the oil filter feed pipe threads, then torque the oil filter feed pipe to 40 N·m (4.1 kgf·m, 30 lbf·ft), then remove the nuts from the oil filter feed pipe.
5. Install the oil filter (see page 8-11).

Oil Pump Overhaul

Exploded View



(cont'd)

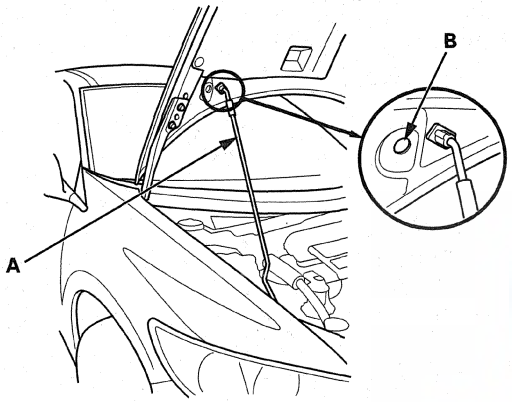
Oil Pump Overhaul (cont'd)

Special Tools Required
- Support Eyelet 07AAK-SNAA600
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*

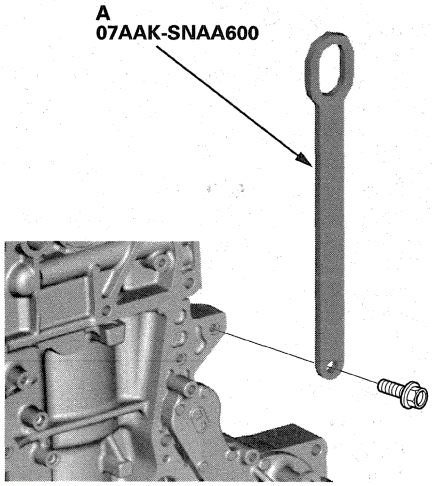
*Available through the Honda Tool and Equipment Program 888-424-6857

Removal

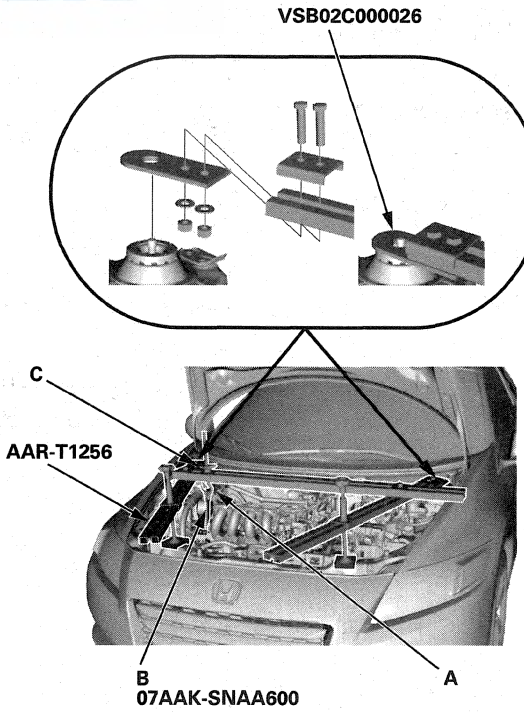
1. Open the hood, and secure it with the hood support rod (A) in the wide-open position (B).



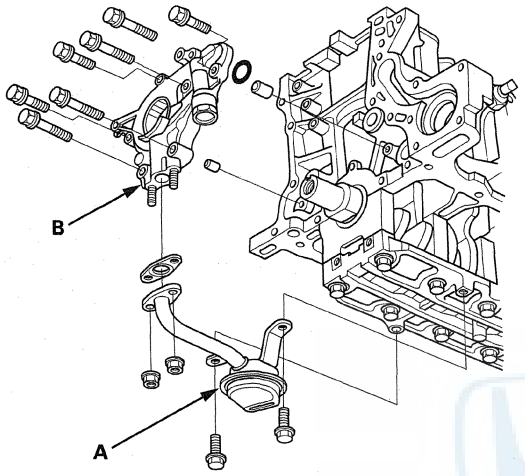
2. Drain the engine oil (see page 8-10).
3. Remove the cowl cover and the under-cowl panel (see page 20-153).
4. Support the engine with a jack and a wood block under the oil pan.
5. Remove the cam chain (see page 6-12).
6. Remove the drive belt auto-tensioner (see page 10-20).
7. Attach the support eyelet (A) to the cylinder block.



8. Install the engine hanger adapter (VSB02C000026) to the engine support hanger (AAR-T1256), then install the engine support hanger onto the vehicle, and attach the hook (A) to the support eyelet (B). Tighten the wing nut (C) by hand, and lift and support the engine/IMA motor/transmission.



9. Remove the jack and the wood block from under the oil pan.
10. Remove the oil pan (see page 7-10).
11. Remove the oil screen (A), then remove the oil pump (B).

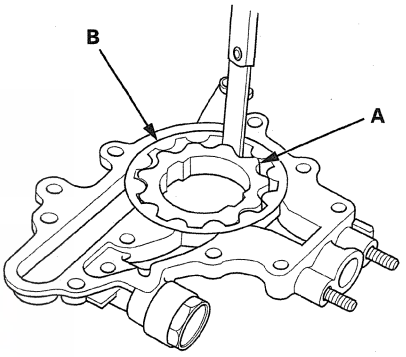


Inspection

NOTE: Refer to the Exploded View if needed during this procedure.

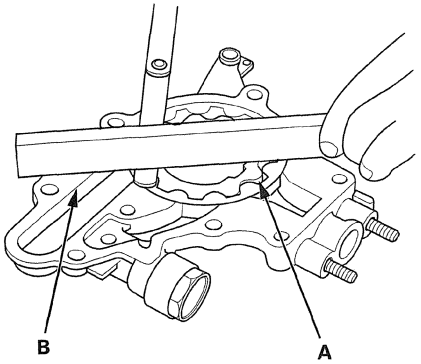
1. Remove the screws from the pump housing, then separate the housing and the cover.
2. Check the inner-to-outer rotor radial clearance between the inner rotor (A) and the outer rotor (B). If the inner-to-outer rotor radial clearance exceeds the service limit, replace the oil pump assembly.

Inner Rotor-to-Outer Rotor Radial Clearance
Standard (New): 0.06—0.16 mm (0.003—0.006 in)
Service Limit: 0.20 mm (0.007 in)



3. Check the pump housing-to-rotor axial clearance between the rotors (A) and the pump housing (B). If the pump housing-to-rotor axial clearance exceeds the service limit, replace the oil pump assembly.

Housing-to-Rotor Axial Clearance
Standard (New): 0.02—0.06 mm (0.001—0.002 in)
Service Limit: 0.15 mm (0.005 in)

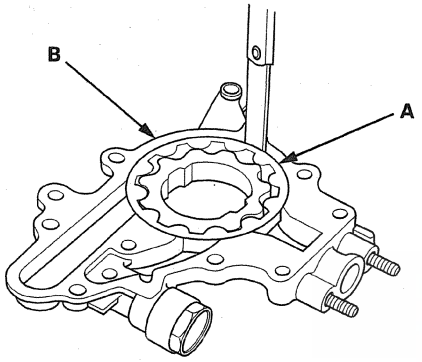


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Oil Pump Overhaul (cont'd)

4. Check the pump housing-to-outer rotor radial clearance between the outer rotor (A) and the pump housing (B). If the pump housing-to-outer rotor radial clearance exceeds the service limit, replace the oil pump assembly.

Pump Housing-to-Outer Rotor Radial Clearance
Standard (New): 0.100—0.175 mm (0.004—0.006 in)
Service Limit: 0.20 mm (0.007 in)



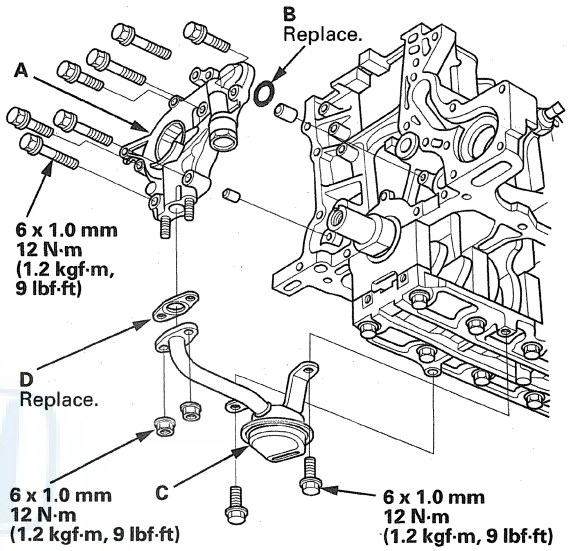
5. Inspect both rotors and the pump housing for scoring or other damage. Replace the oil pump assembly, if necessary.

6. Check that the oil pump turns freely.

Installation

1. Clean the O-ring groove and the mating surface of the engine block.

2. Install the oil pump (A) with a new O-ring (B).

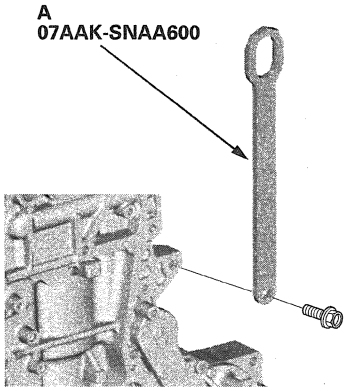


3. Install the oil screen (C) with a new gasket (D).

4. Install the oil pan (see page 7-27).

5. Support the engine with a jack and a wood block under the oil pan.

6. Remove the engine support hanger and the support eyelet (A) from the cylinder block.



7. Install the auto-tensioner (see page 10-20).

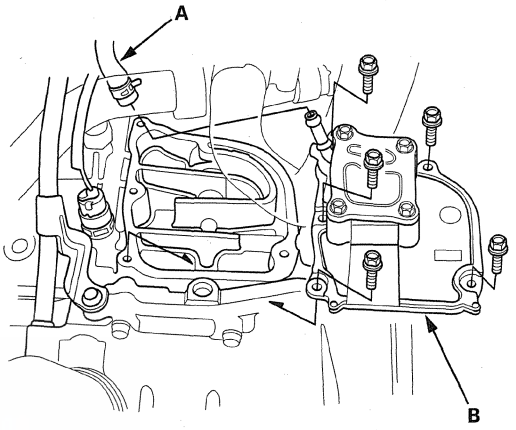
8. Install the cam chain (see page 6-14).

9. Remove the jack and the wood block from under the oil pan.

10. Install the cowl cover and the under-cowl panel (see page 20-153).
11. Refill the engine with engine oil (see step 6 on page 8-10).

Oil/Air Separator Removal/Installation

1. Raise the vehicle on the lift.
2. Remove the splash shield (see page 20-163).
3. Remove the thermostat housing (see page 10-11).
4. Disconnect the PCV hose (A).



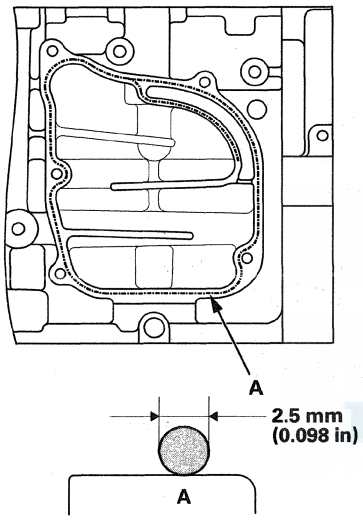
5. Remove the oil/air separator (B).
6. Remove all of the old liquid gasket from the oil/air separator mating surfaces, the bolts, and the bolt holes.
7. Clean and dry the oil/air separator mating surfaces.

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Oil/Air Separator Removal/Installation (cont'd)

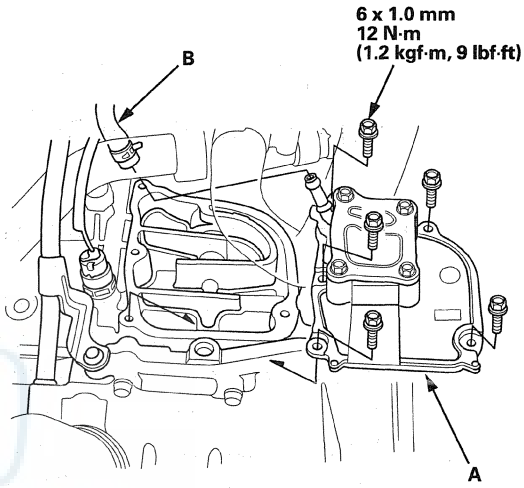
8. Apply liquid gasket (P/N 08718-0004) to the engine block mating surface of the oil/air separator and to the inside edge of the bolt holes. Install the component within 5 minutes of applying the liquid gasket.

   NOTE:
   - Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
   - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

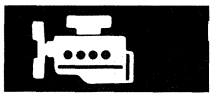


9. Install the oil/air separator (A).

   NOTE:
   - Wait at least 30 minutes before filling the engine with oil.
   - Do not run the engine for at least 3 hours after installing the oil/air separator.



10. Connect the PCV hose (B).
11. Install the thermostat housing (see page 10-12).
12. Install the splash shield (see page 20-163).
13. Lower the vehicle on the lift.



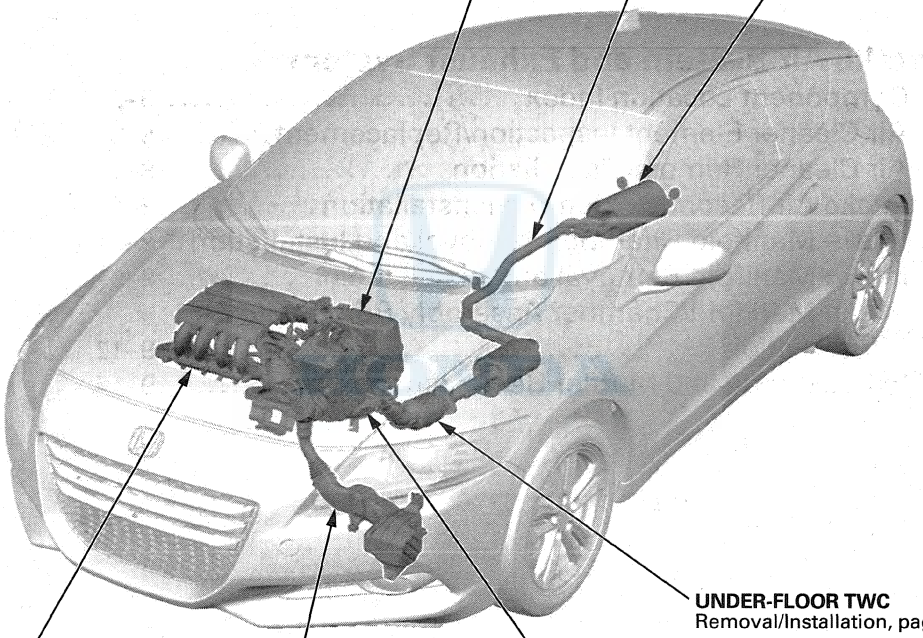
Engine Mechanical

Intake Air System and Exhaust System

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Intake Air System and Exhaust System

Component Location Index



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MUFFLER
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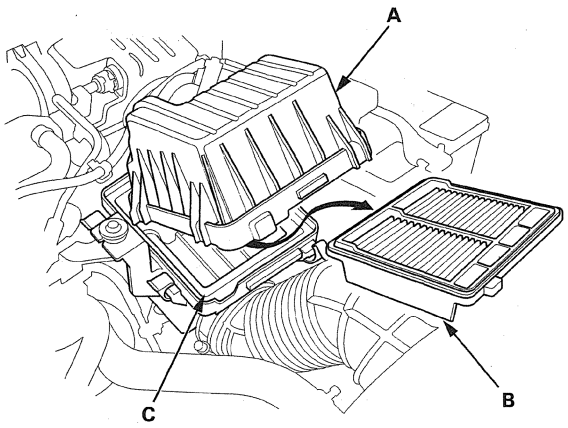
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INTAKE MANIFOLD
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Intake Manifold/Chamber Assembly Removal and Installation, page 9-12

Air Cleaner Element Inspection/Replacement

1. Open the air cleaner housing cover (A).



2. Remove the air cleaner element (B) from the air cleaner housing (C).
3. Check the air cleaner element for damaged, dirt, or clogging. If it is damaged or clogged, replace it.

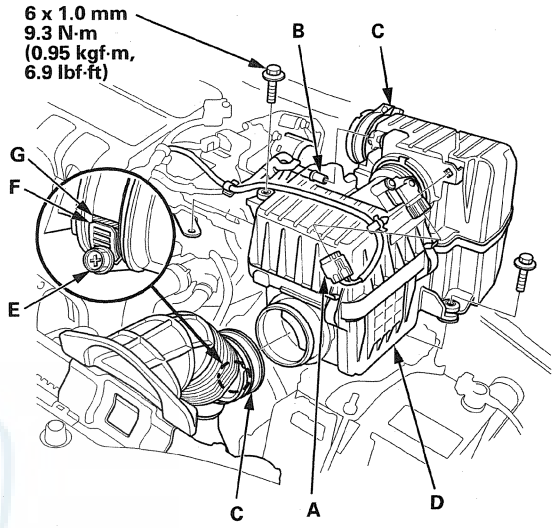
   NOTE: Do not use compressed air to clean the air cleaner element.
4. Clean and remove any debris from inside the air cleaner housing.
5. Install the parts in the reverse order of removal.

   If the idle speed fluctuates, do the idle speed inspection (see page 11-273).

Air Cleaner Removal/Installation

1. Disconnect the MAF sensor/IAT sensor connector (A), and remove the harness clips.

   NOTE: Be careful not to damage the MAF sensor/IAT sensor on the air cleaner cover.

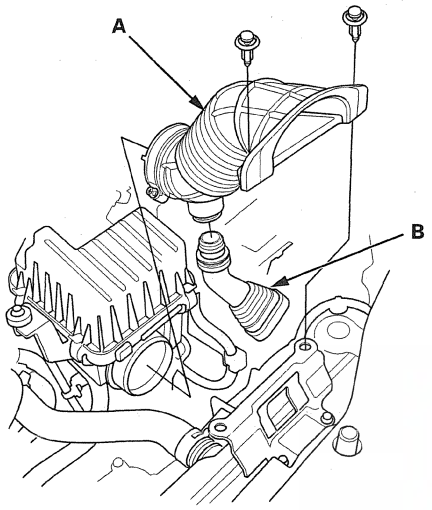


2. Disconnect the breather hose (B).
3. Loosen the hose bands (C) and remove the bolts, then remove the air cleaner (D) from the throttle body and the intake air tube.
4. Install the parts in the reverse order of removal.

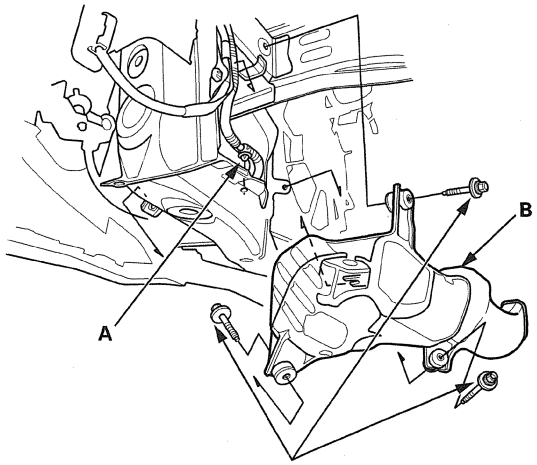
   NOTE: When tightening the screw (E) of the hose band, align the edge of the hose band (F) with the mark (G) painted on the hose band. If you tighten the screw over the mark, replace the hose band.

Intake Air Resonator Removal/Installation

1. Do the 12 volt battery removal procedure (see page 22-87).
2. Remove the intake air tube (A) and the resonator chamber joint (B).

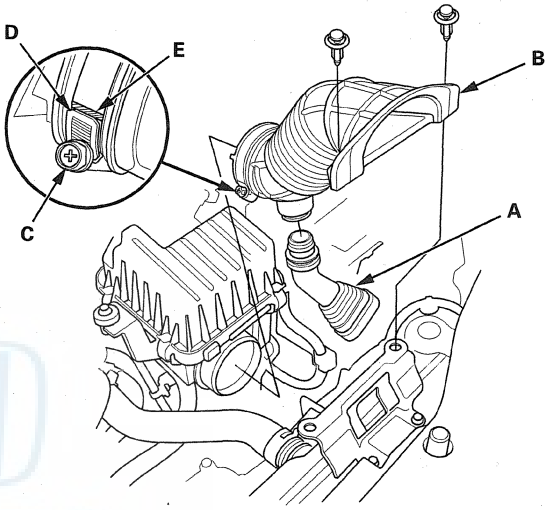


3. Remove the left side front inner fender (see page 20-162).
4. Remove the harness clamp (A) and the intake air resonator (B).



5. Install the intake air resonator and the harness clamp.
6. Install the left side front inner fender (see page 20-162).
7. Install the resonator chamber joint (A) and the intake air tube (B).

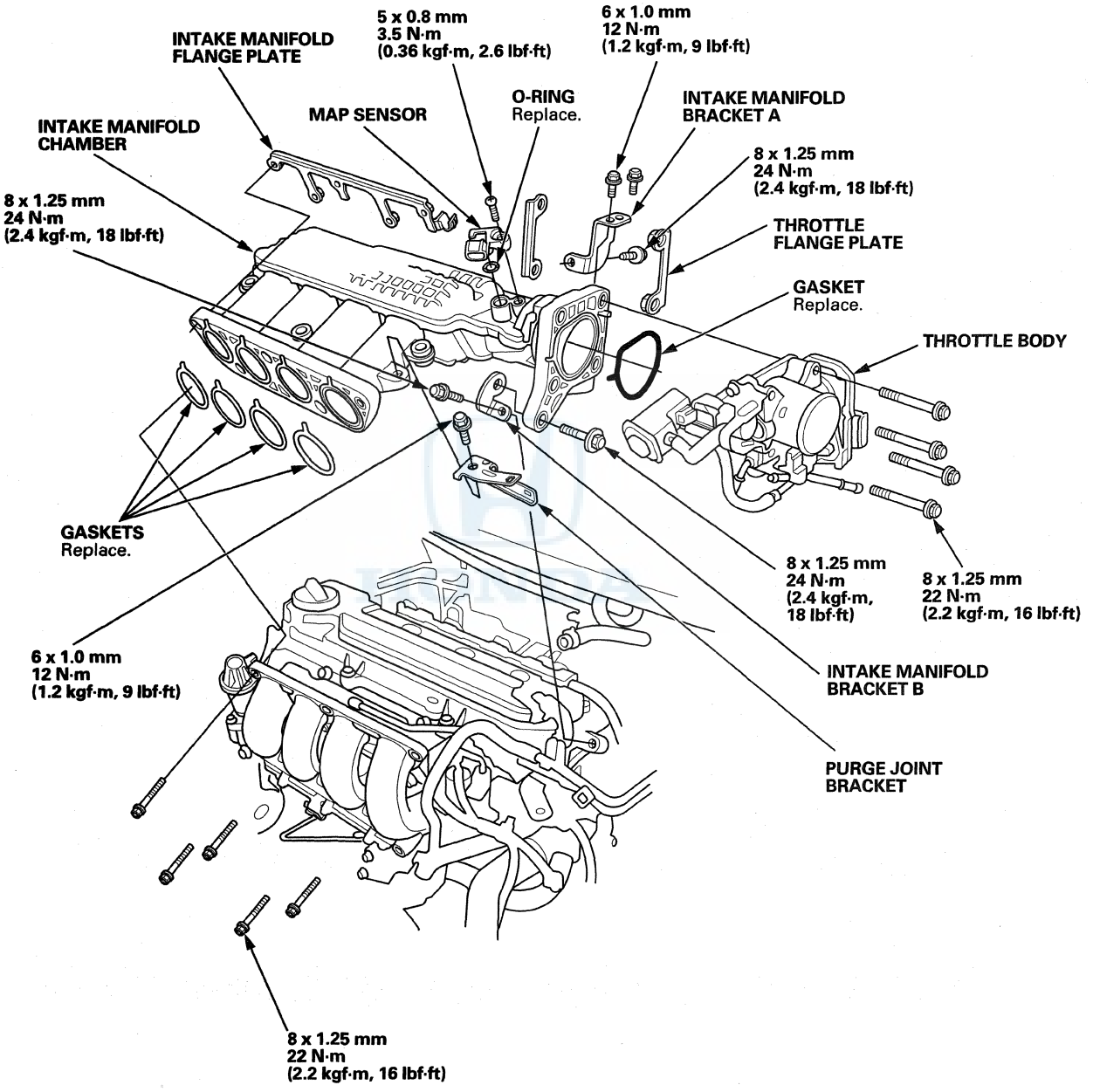
   NOTE: When tightening the screw (C) of the hose band, align the edge of the hose band (D) with the mark (E) painted on the hose band. If you tighten the screw over the mark, replace the hose band.



8. Do the 12 volt battery installation procedure (see page 22-87).

Intake Manifold Chamber Removal and Installation

Exploded View

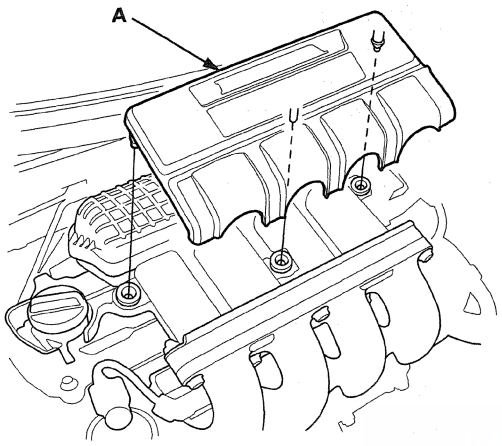


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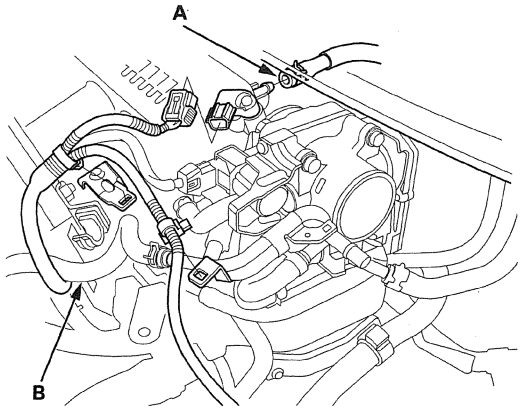
Intake Manifold Chamber Removal and Installation (cont'd)

Removal

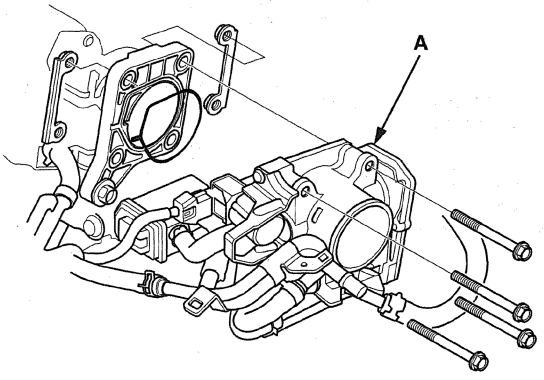
1. Remove the engine cover (A).



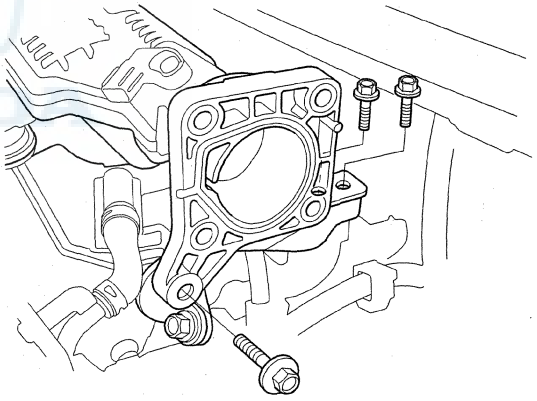
2. Remove the air cleaner (see page 9-3).
3. Disconnect the engine wire harness connectors, and remove the wire harness clamps from the intake manifold chamber:
   - Throttle actuator connector
   - MAP sensor connector
4. Disconnect the brake booster vacuum hose (A).



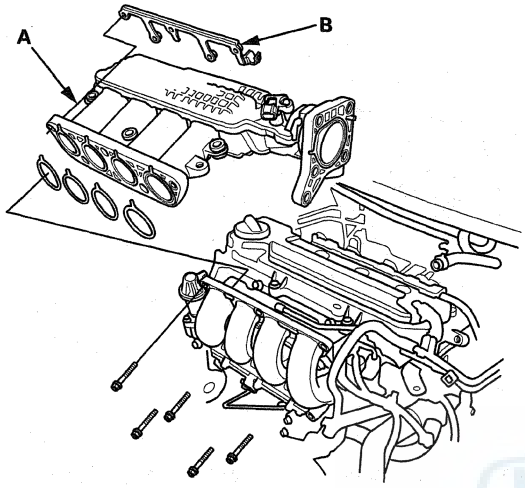
5. Remove the water bypass hose (B) from the clamp.
6. Remove the throttle body (A) without disconnecting the water bypass hoses.



7. Remove the intake manifold mounting bolts.



8. Remove the intake manifold chamber (A) and the intake manifold flange plate (B).



9. Disassemble the intake manifold chamber.

   NOTE: Refer to the Exploded View if needed during this procedure.

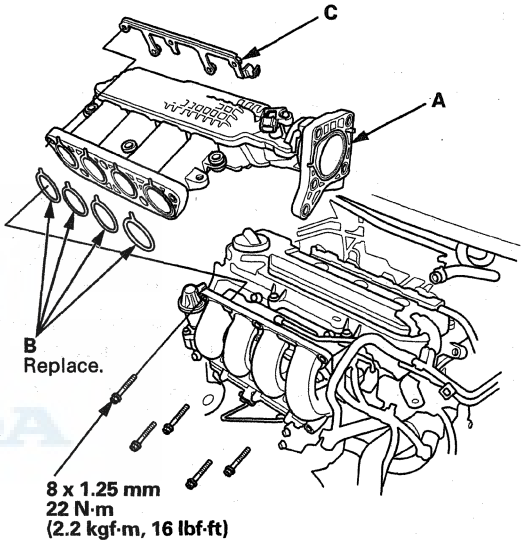
Installation

1. Reassemble the intake manifold chamber.

   NOTE: Refer to the Exploded View if needed during this procedure.

2. Install the intake manifold chamber (A) with new gaskets (B), and the intake manifold flange plate (C).

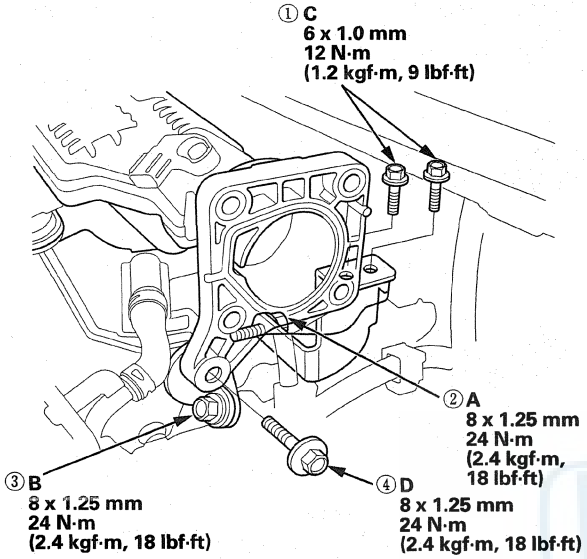
   NOTE: Tighten the bolts in a crisscross pattern in three steps, beginning with the inner bolt.



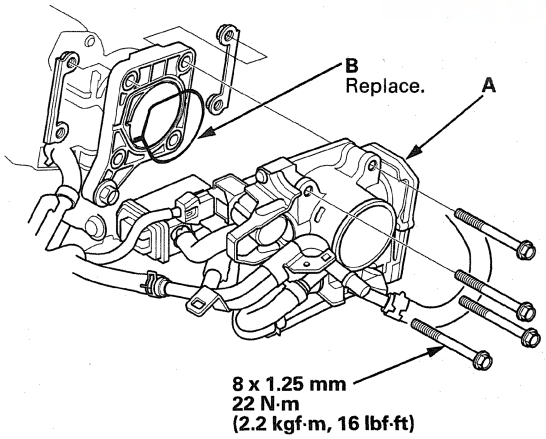
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Intake Manifold Chamber Removal and Installation (cont'd)

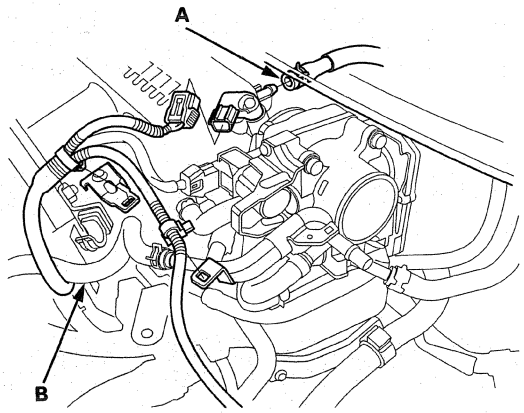
3. Loosen the intake manifold bracket mounting bolts (A, B), then loosely install the intake manifold mounting bolts (C, D).



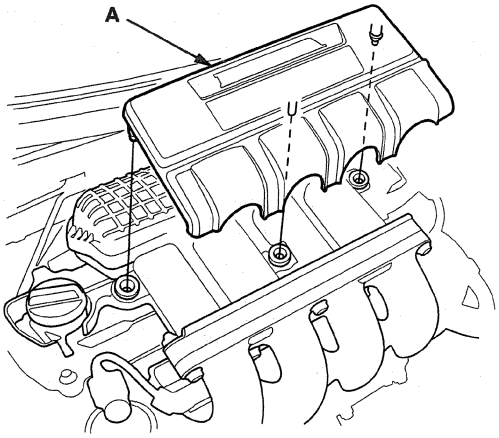
4. Tighten the bolts in the numbered sequence shown.
5. Install the throttle body (A) with a new gasket (B).



6. Connect the brake booster vacuum hose (A), and install the water bypass hose (B) to the clamp.

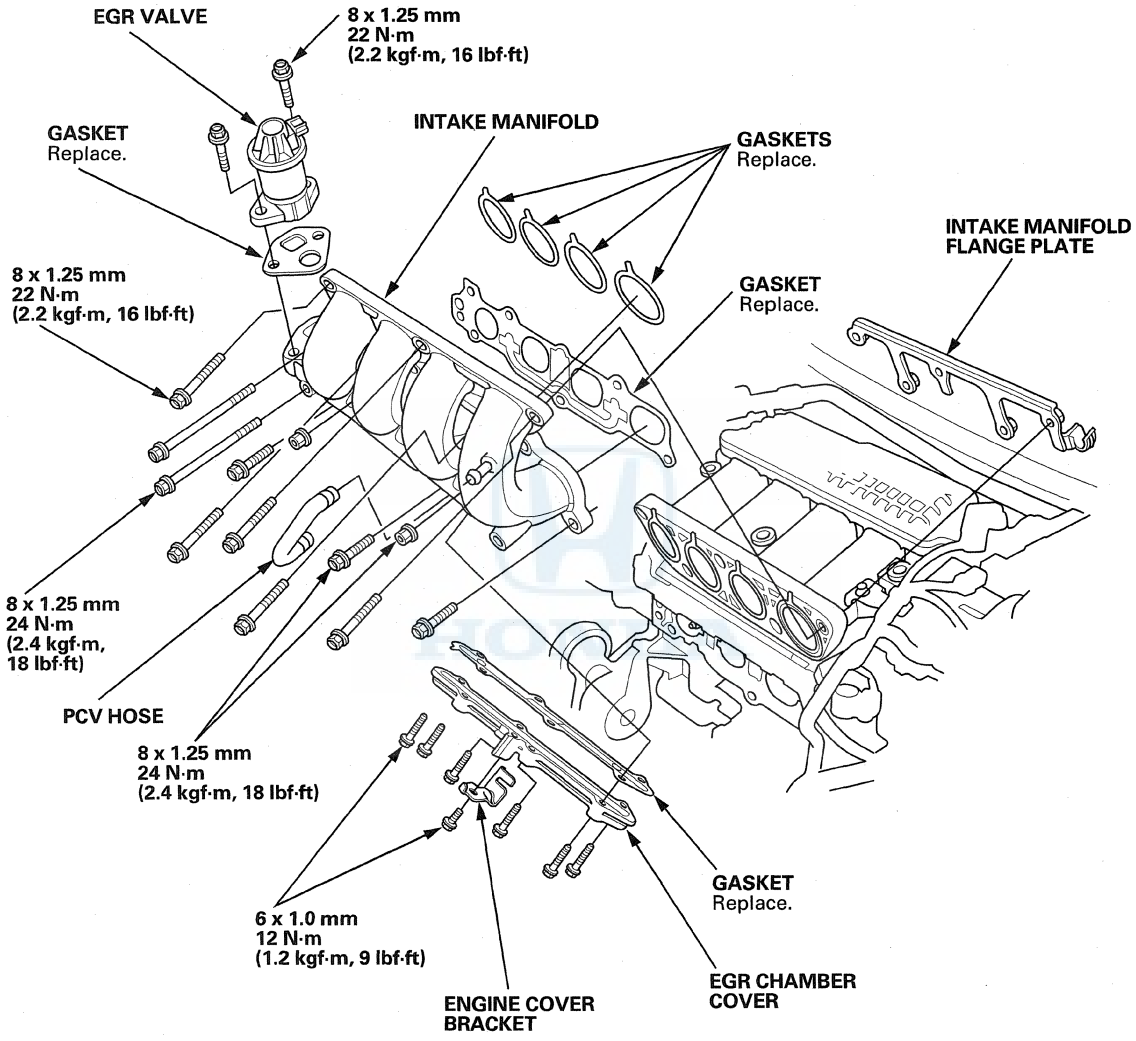


7. Connect the engine wire harness connectors, and install the wire harness clamps to the intake manifold chamber:
   - Throttle actuator connector
   - MAP sensor connector
8. Install the air cleaner (see page 9-3).
9. Install the engine cover (A).



Intake Manifold Removal and Installation

Exploded View

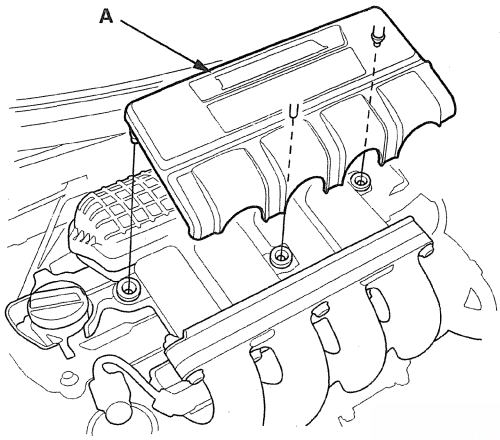


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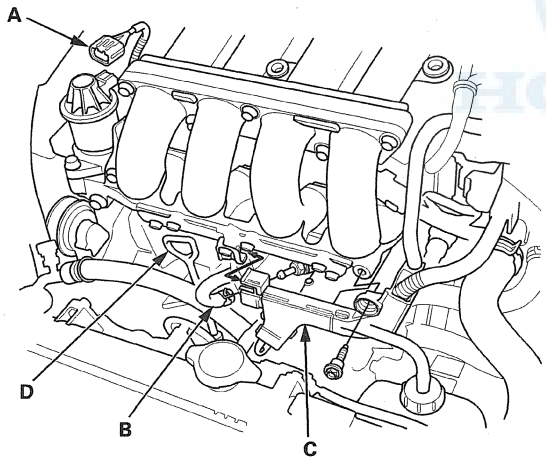
Intake Manifold Removal and Installation (cont'd)

Removal

1. Remove the engine cover (A).

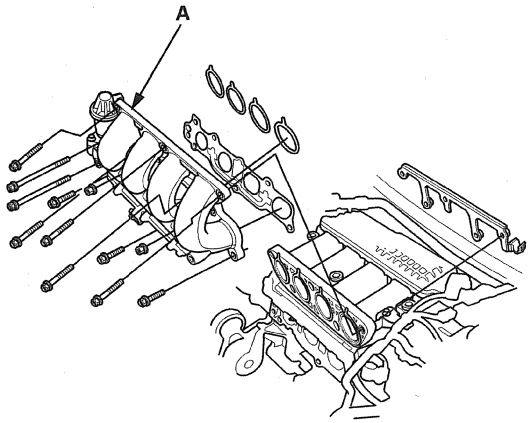


2. Disconnect the EGR valve connector (A) and the PCV hose (B).



3. Remove the engine wire harness holder (C) and the dipstick (D).

4. Remove the intake manifold (A).



5. Disassemble the intake manifold.

NOTE: Refer to the Exploded View if needed during this procedure.

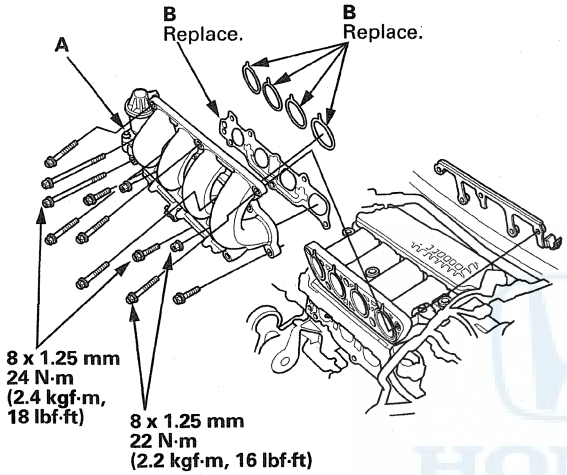
Installation

1. Reassemble the intake manifold.

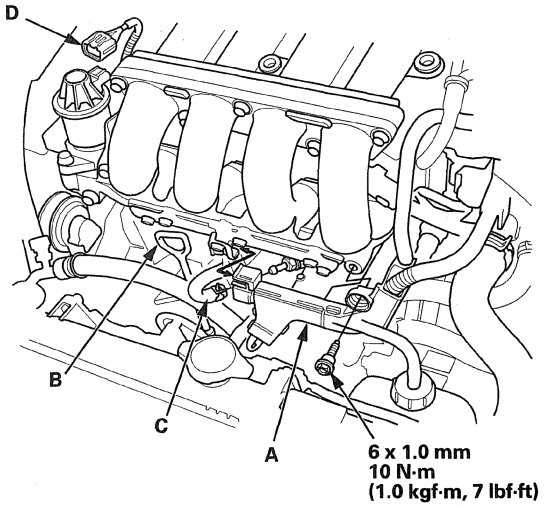
   NOTE: Refer to the Exploded View if needed during this procedure.

2. Install the intake manifold (A) with new gaskets (B).

   NOTE: Tighten the bolts and nuts in a crisscross pattern in three steps, beginning with the inner bolt.

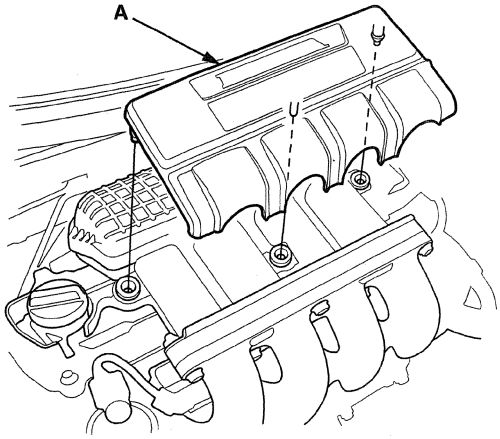


3. Install the engine wire harness holder (A) and the dipstick (B).



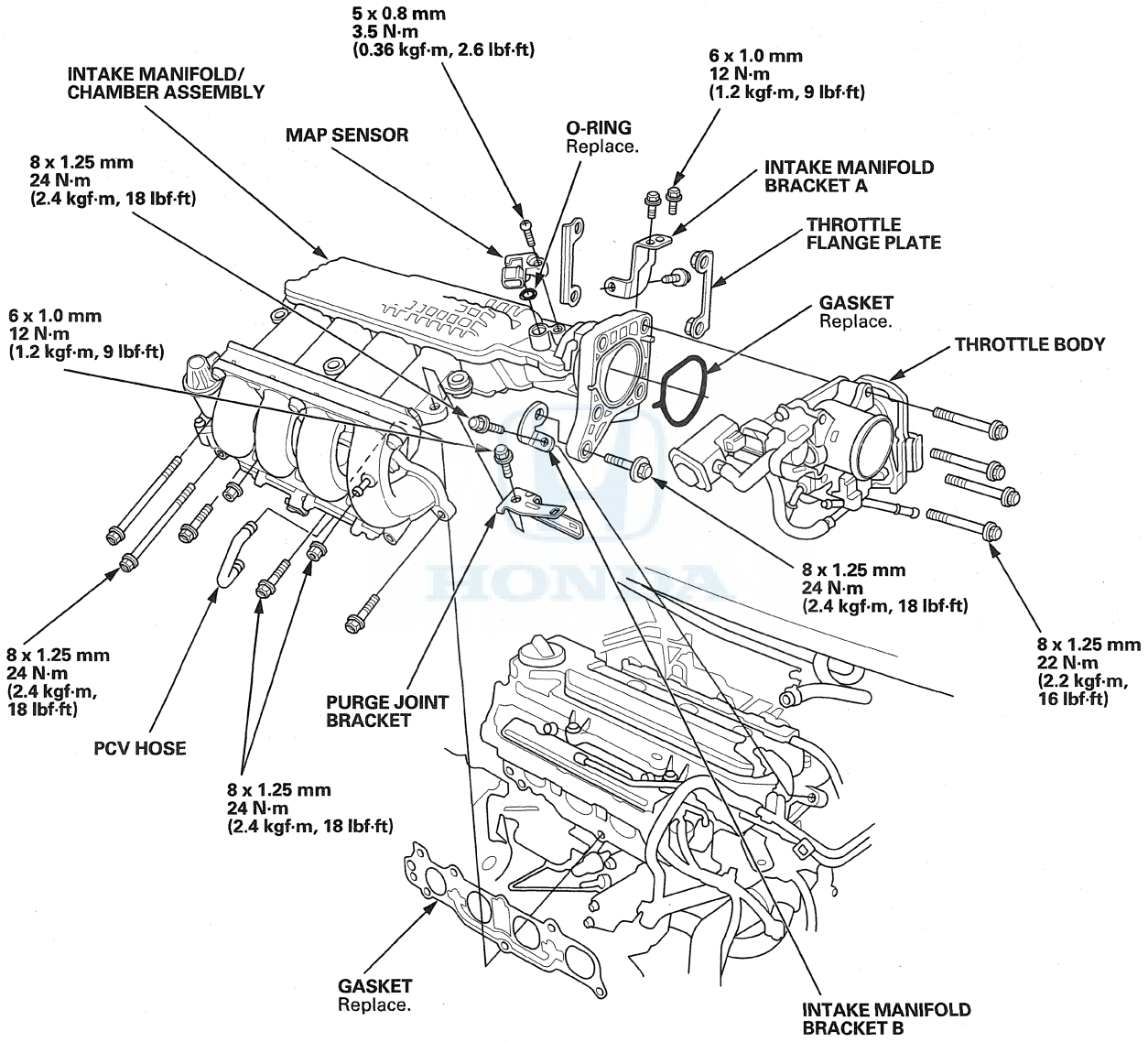
4. Connect the PCV hose (C) and the EGR valve connector (D).

5. Install the engine cover (A).



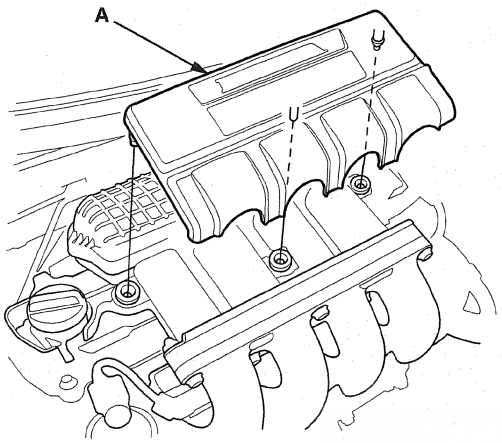
Intake Manifold/Chamber Assembly Removal and Installation

Exploded View

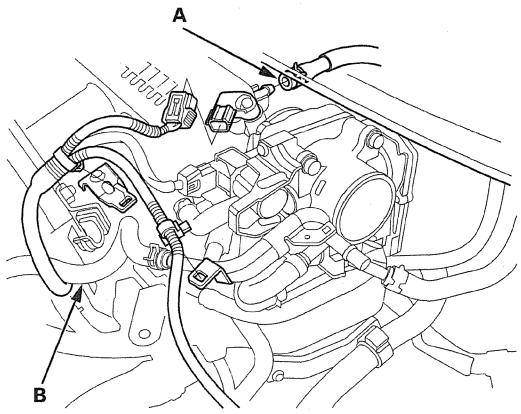


Removal

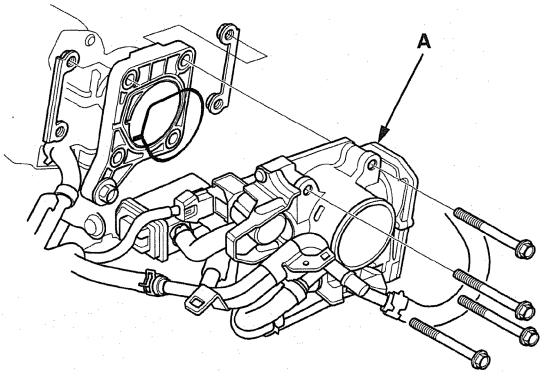
1. Remove the engine cover (A).



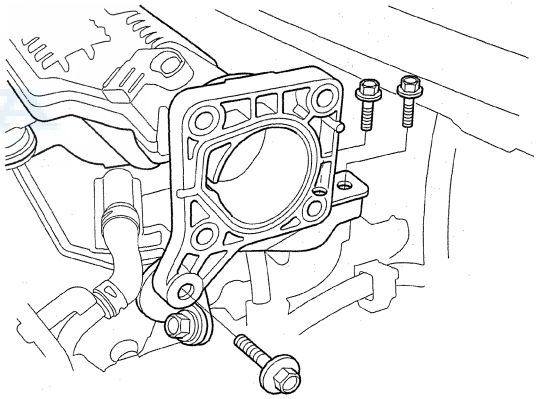
2. Remove the air cleaner (see page 9-3).
3. Disconnect the engine wire harness connectors, and remove the wire harness clamps from the intake manifold chamber:
   - Throttle actuator connector
   - MAP sensor connector
4. Disconnect the brake booster vacuum hose (A).



5. Remove the water bypass hose (B) from the clamp.
6. Remove the throttle body (A) without disconnecting the water bypass hoses.



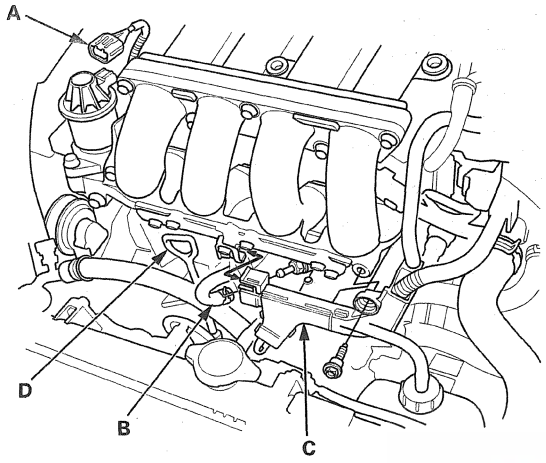
7. Remove the intake manifold mounting bolts.



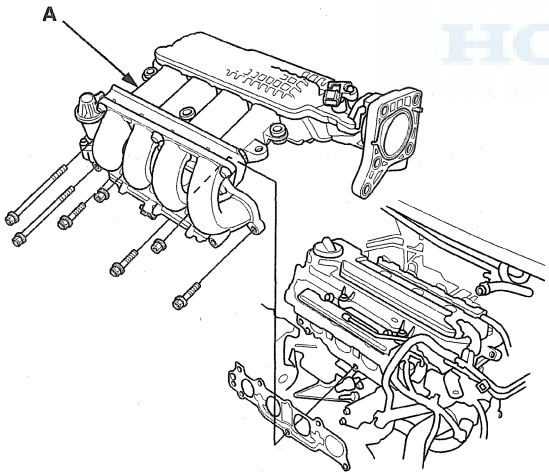
(cont'd)

Intake Manifold/Chamber Assembly Removal and Installation (cont'd)

8. Disconnect the EGR valve connector (A) and the PCV hose (B).



9. Remove the engine wire harness holder (C) and the dipstick (D).
10. Remove the intake manifold/chamber assembly (A) from the cylinder head.



11. Disassemble the intake manifold/chamber assembly.

    NOTE: Refer to the Exploded View if needed during this procedure.

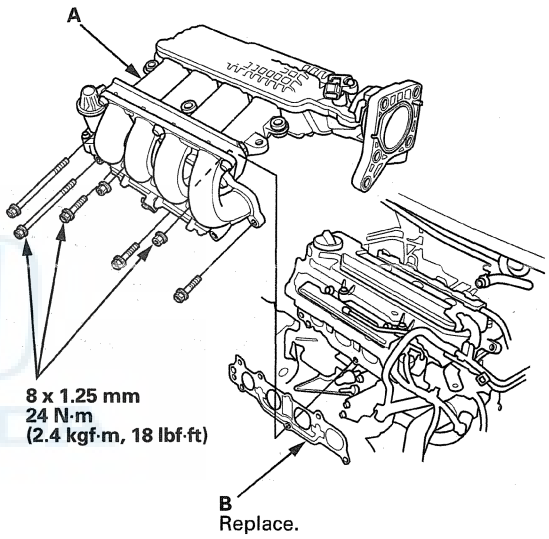
Installation

1. Reassemble the intake manifold/chamber assembly.

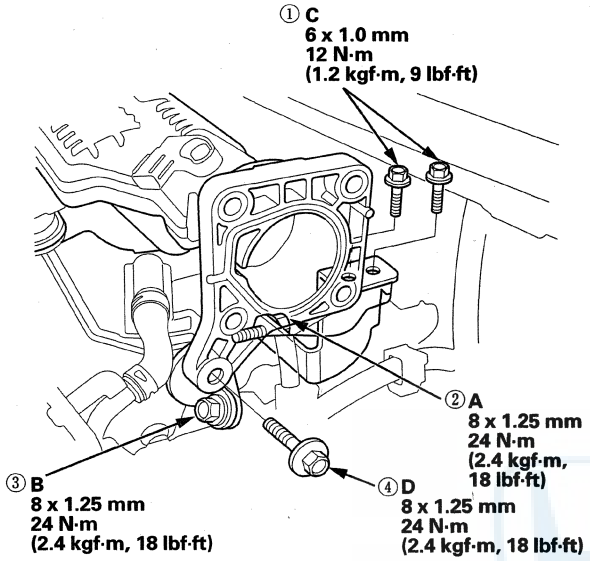
   NOTE: Refer to the Exploded View if needed during this procedure.

2. Install the intake manifold/chamber assembly (A) with a new gasket (B).

   NOTE: Tighten the bolts and nuts in a crisscross pattern in three steps, beginning with the inner bolt.

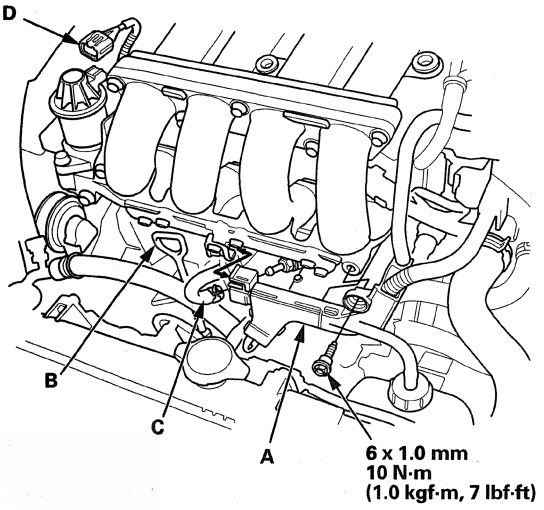


3. Loosen the intake manifold bracket mounting bolts (A, B), then loosely install the intake manifold mounting bolts (C, D).



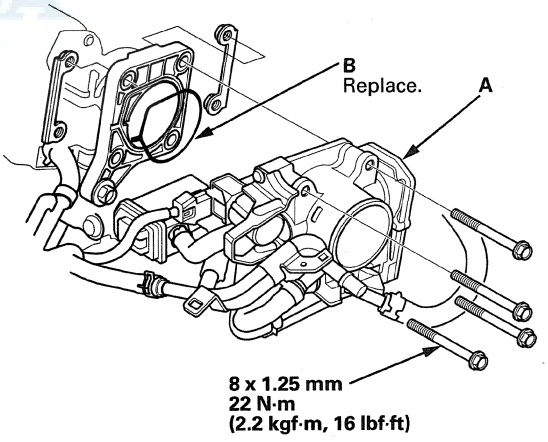
4. Tighten the bolts in the numbered sequence shown.

5. Install the engine wire harness holder (A) and the dipstick (B).



6. Connect the PCV hose (C) and the EGR valve connector (D).

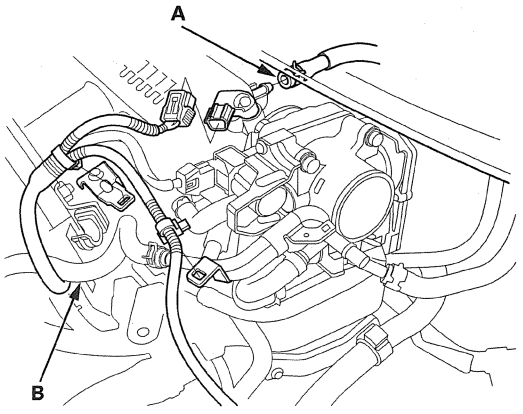
7. Install the throttle body (A) with a new gasket (B).



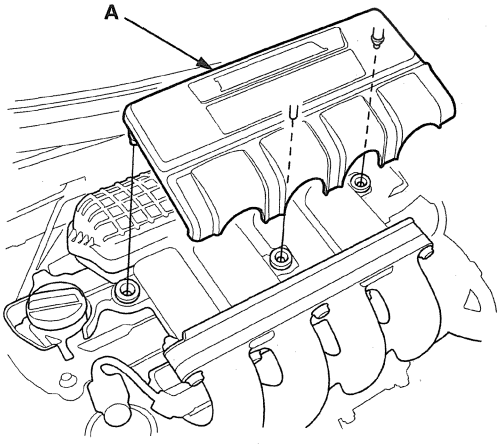
(cont'd)

Intake Manifold/Chamber Assembly Removal and Installation (cont'd)

8. Connect the brake booster vacuum hose (A), and install the water bypass hose (B) to the clamp.

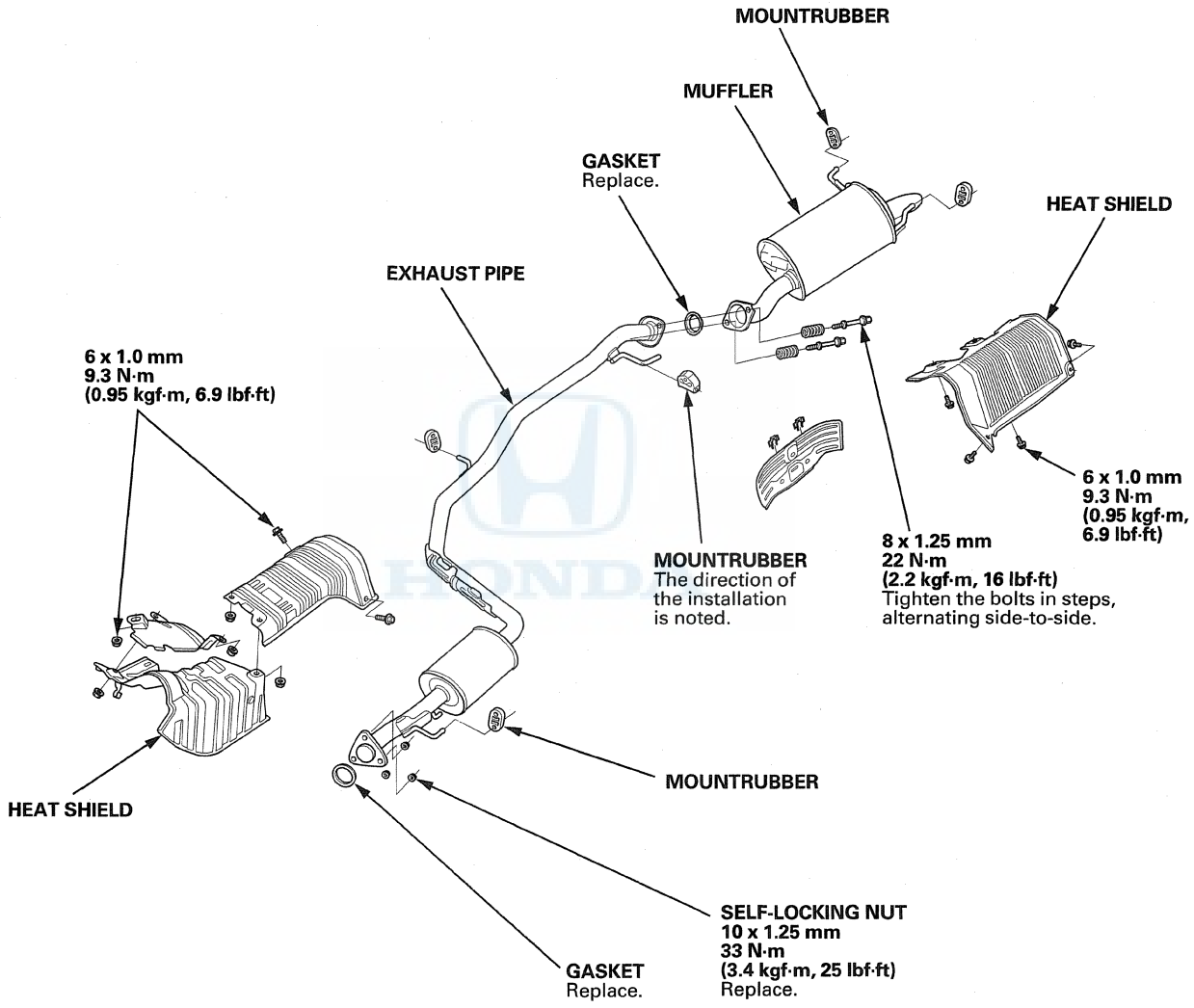


9. Connect the engine wire harness connectors, and install the wire harness clamps to the intake manifold chamber:
   - Throttle actuator connector
   - MAP sensor connector
10. Install the air cleaner (see page 9-3).
11. Install the engine cover (A).



Exhaust Pipe and Muffler Replacement

NOTE: Use new gaskets and self-locking nuts when reassembling.



Engine Cooling

Cooling System

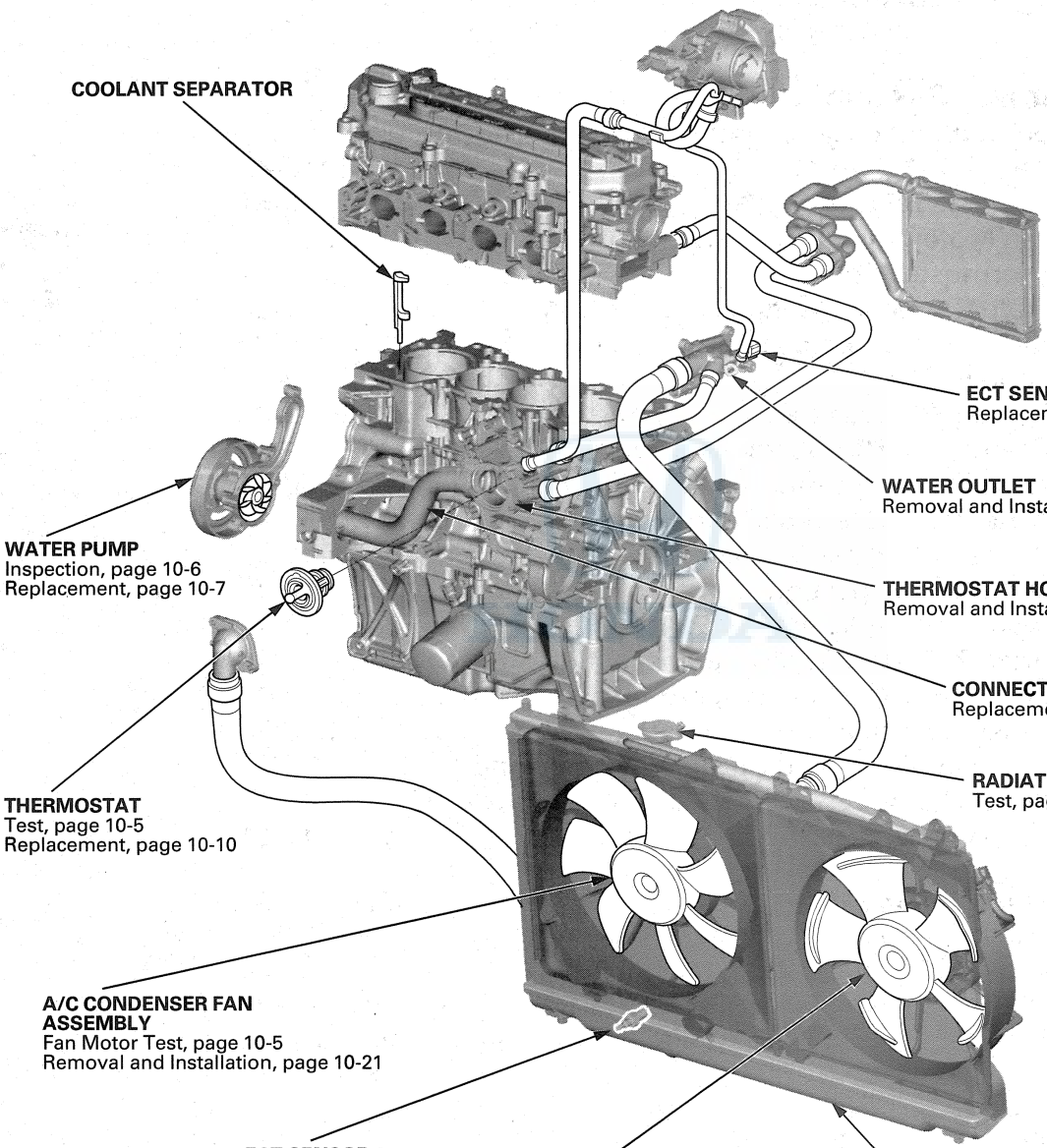
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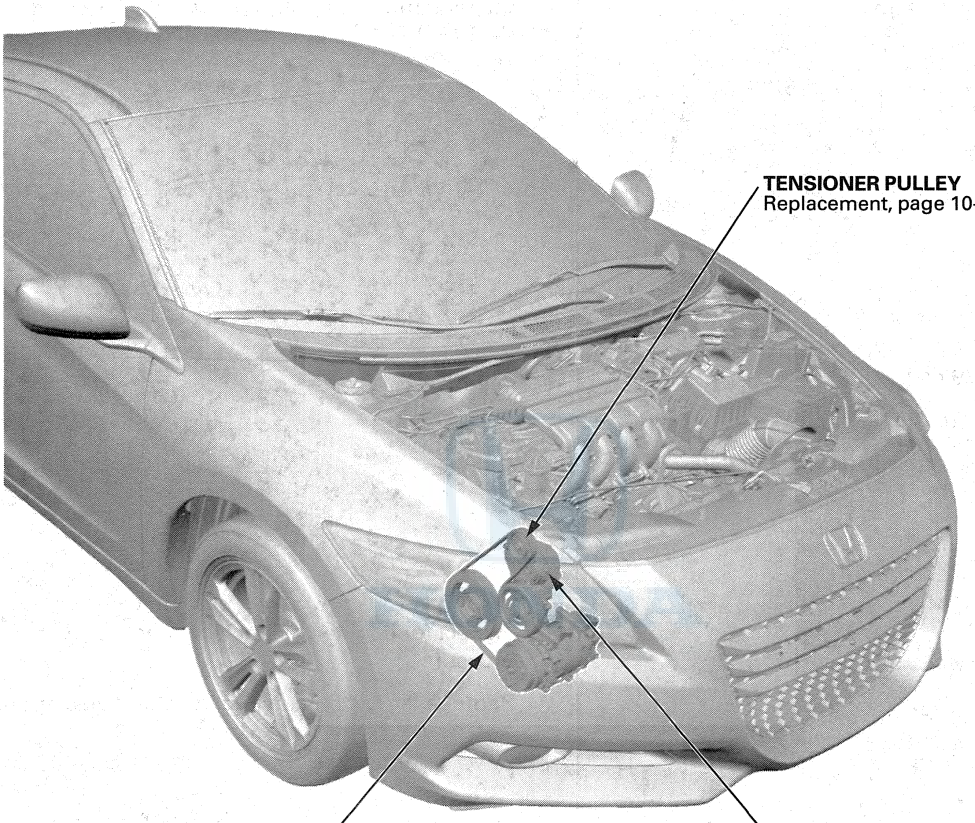
Fan Controls

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Cooling System

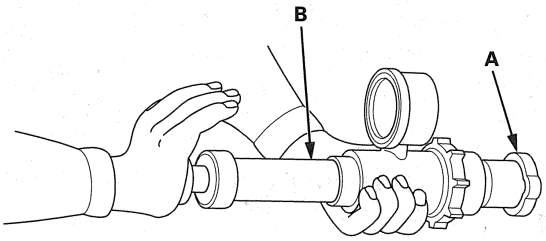
Component Location Index




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DRIVE BELT
Inspection, page 10-17
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DRIVE BELT AUTO-TENSIONER
Inspection, page 10-18
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Radiator Cap Test

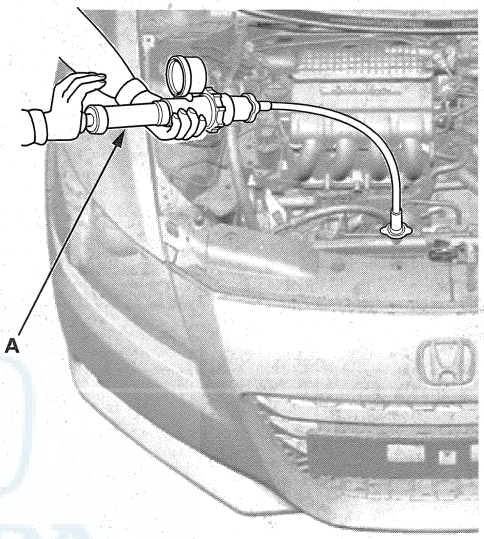
1. Wait until the engine is cool, then carefully remove the radiator cap (A). Wet the radiator cap seal with engine coolant, then install it on a commercially available pressure tester (B).



2. Apply a pressure of 93.3—122.7 kPa (0.951—1.251 kgf/cm², 13.53—17.79 psi).
3. Check for a drop in pressure.
4. If the pressure drops, replace the radiator cap.

Radiator Test

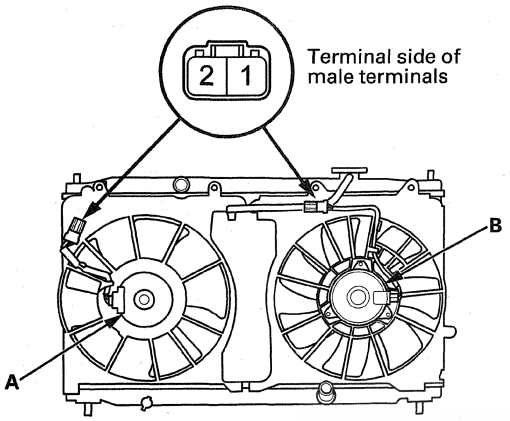
1. Wait until the engine is cool, then carefully remove the radiator cap, and fill the radiator with engine coolant to the base of the filler neck.
2. Attach a commercially available pressure tester (A) to the radiator, and apply a pressure of 93.3—122.7 kPa (0.951—1.251 kgf/cm², 13.53—17.79 psi).



3. Inspect for engine coolant leaks and a drop in pressure.
4. Remove the tester, and reinstall the radiator cap.

Fan Motor Test

1. Disconnect the 2P connectors from the radiator fan motor (A) and the A/C condenser fan motor (B).



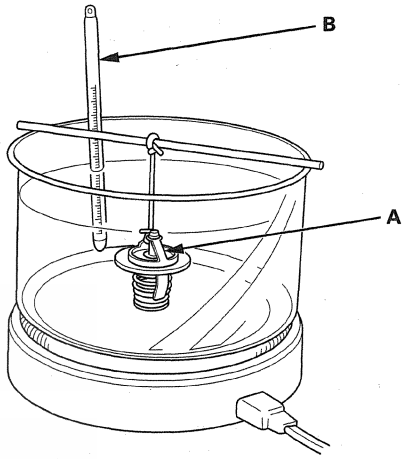
2. Test each motor by connecting battery power to terminal No. 1 and ground to terminal No. 2.
3. If either motor fails to run, or does not run smoothly, replace it (see page 10-21).

Thermostat Test

Replace the thermostat if it is stuck in the open position at room temperature.

To test a closed thermostat:

1. Suspend the thermostat (A) in a container of water. Do not let the thermostat and the thermometer (B) touch the bottom of the hot container.



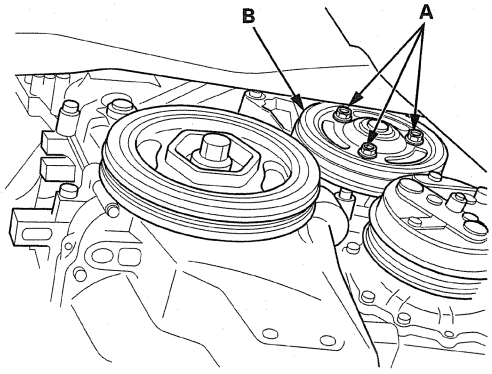
2. Heat the water, and check the temperature with a thermometer. Check the temperature at which the thermostat first opens, and at which it is fully open.
3. Measure the lift height of the thermostat when it is fully open.

Standard Thermostat

Lift Height:	**Above 8.0 mm (0.315 in)**
Starts Opening:	**169—176 °F (76—80 °C)**
Fully Open:	**194 °F (90 °C)**

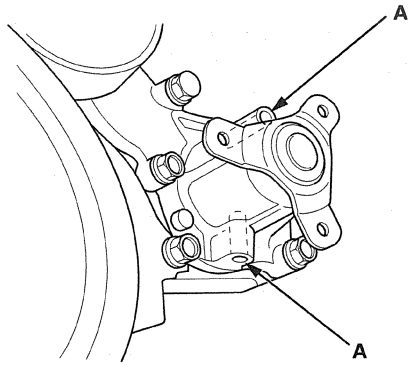
Water Pump Inspection

1. Remove the right front wheel.
2. Remove the splash shield (see page 20-163).
3. Loosen the water pump pulley mounting bolts (A).

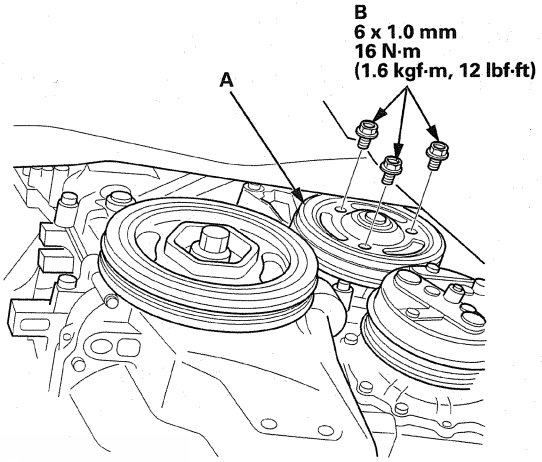


4. Remove the drive belt (see page 10-17).
5. Remove the water pump pulley (B).
6. Turn the water pump pulley counterclockwise, and check that it turns freely. If it does not turn freely, replace the water pump (see page 10-7).

   NOTE: When you check the water pump, you may see a small amount of "weeping" from the bleed holes (A). This is normal.



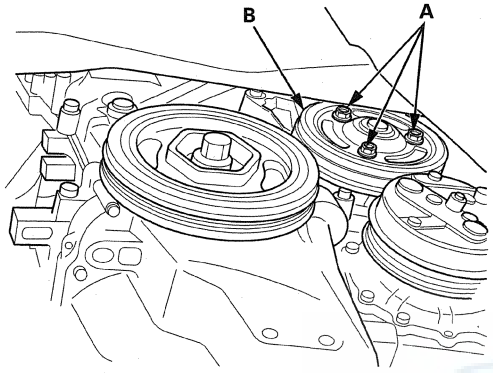
7. Install the water pump pulley (A), and loosely install the water pump pulley mounting bolts (B).



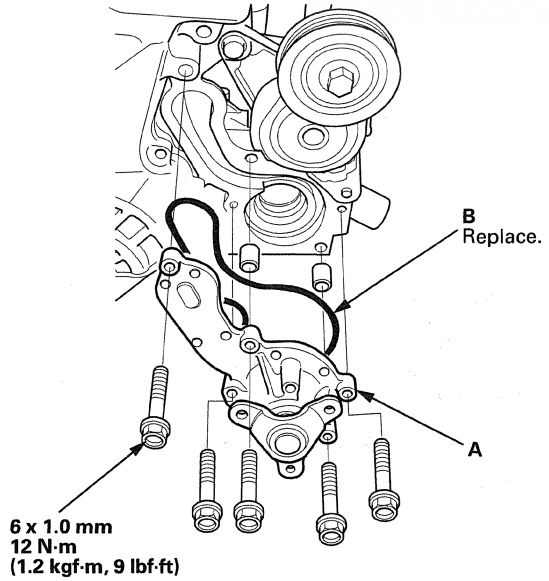
8. Install the drive belt (see page 10-17).
9. Tighten the water pump pulley mounting bolts.
10. Install the splash shield (see page 20-163).
11. Install the right front wheel.

Water Pump Replacement

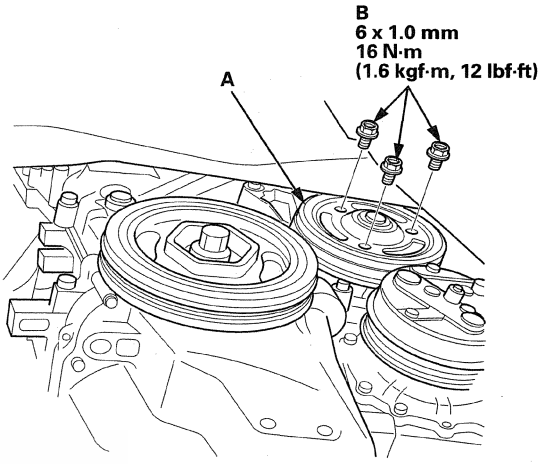
1. Remove the right front wheel.
2. Remove the splash shield (see page 20-163).
3. Drain the engine coolant (see page 10-8).
4. Loosen the water pump pulley mounting bolts (A).



5. Remove the drive belt (see page 10-17).
6. Remove the water pump pulley (B).
7. Remove the five bolts securing the water pump (A), then remove the water pump.



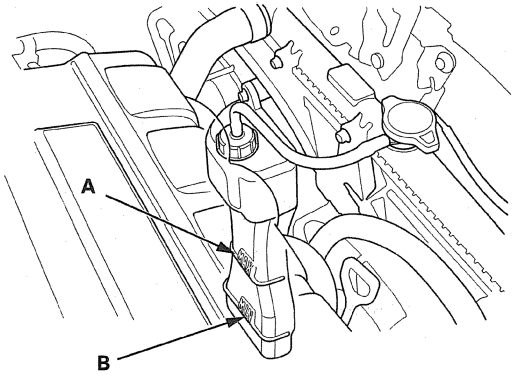
8. Inspect and clean the mating surface with the engine block.
9. Install the water pump with a new O-ring (B) in the reverse order of removal.
10. Install the water pump pulley (A), and loosely install the water pump pulley mounting bolts (B).



11. Install the drive belt (see page 10-17).
12. Tighten the water pump pulley mounting bolts.
13. Install the splash shield (see page 20-163).
14. Install the right front wheel.
15. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
16. Clean up any spilled engine coolant.

Coolant Check

1. Check the coolant level in the coolant reservoir. Make sure it is between the MAX mark (A) and the MIN mark (B).



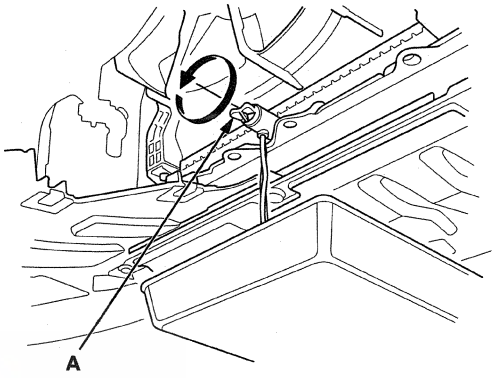
2. If the coolant level in the coolant reservoir is at or below the MIN mark, add coolant to bring it between the MIN and MAX marks, then inspect the cooling system for leaks.
3. Check the coolant level in the radiator, and add Honda Long Life Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck, if needed.

NOTE

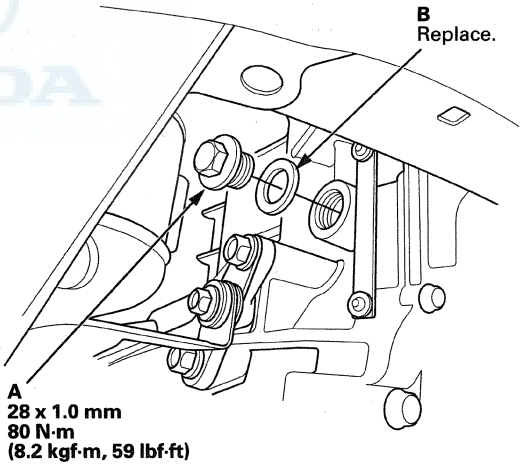
- Always use Honda Long Life Antifreeze/Coolant Type 2. Using a non-Honda coolant can result in corrosion, causing the cooling system to malfunction or fail.
- Honda Long Life Antifreeze/Coolant Type 2 is a mixture of 50 % antifreeze and 50 % water. Do not add water.

Coolant Replacement

1. Wait until the engine is cool, then carefully remove the radiator cap.
2. Remove the splash shield (see page 20-163).
3. Loosen the drain plug (A), and drain the coolant.

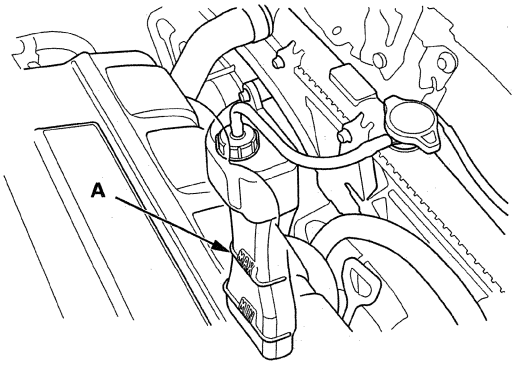


4. Remove the drain bolt (A) from the rear side of the engine block.



5. After the coolant has drained, reinstall the drain bolt with a new washer (B).
6. Tighten the radiator drain plug securely.
7. Remove, drain, and reinstall the coolant reservoir.

8. Fill the coolant reservoir to the MAX mark (A) with Honda Long Life Antifreeze/Coolant Type 2.

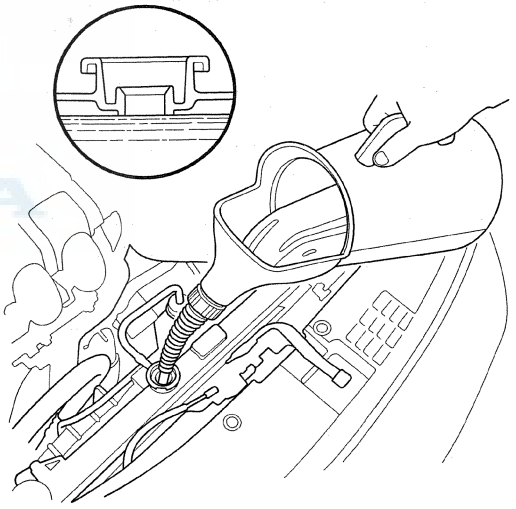


9. Pour Honda Long Life Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck.

NOTE:

- Always use Honda Long Life Antifreeze/Coolant Type 2. Using a non-Honda coolant can result in corrosion, causing the cooling system to malfunction or fail.
- Honda Long Life Antifreeze/Coolant Type 2 is a mixture of 50 % antifreeze and 50 % water. Do not add water.

Engine Coolant Refill Capacities (Including the coolant reservoir capacity of 0.44 L (0.116 US gal)):
M/T model:
At Coolant Change: 4.42 L (1.168 US gal)
After Engine Overhaul: 4.92 L (1.300 US gal)
CVT model:
At Coolant Change: 4.35 L (1.149 US gal)
After Engine Overhaul: 4.84 L (1.279 US gal)



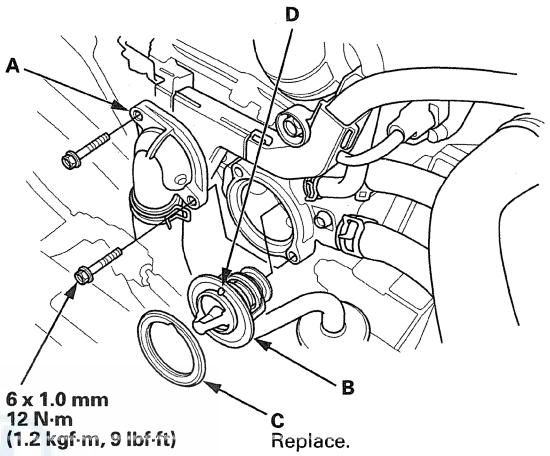
(cont'd)

Coolant Replacement (cont'd)

10. Loosely install the radiator cap.
11. Start the engine, and let it run until it warms up (the radiator fan comes on at least twice).
12. Turn off the engine. Check the level in the radiator, and add the recommended coolant, if needed.
13. Put the radiator cap on securely, then start the engine again, and check for leaks.
14. Clean up any spilled engine coolant.
15. If the Maintenance Minder required replacing the engine coolant, reset the Maintenance Minder (see page 3-4), and this procedure is complete. If the Maintenance Minder did not require engine coolant replacement, go to step 16.
16. Turn the ignition switch to LOCK (0).
17. Connect the HDS to the DLC (see step 2 on page 11-3).
18. Turn the ignition switch to ON (II).
19. Make sure the HDS communicates with the vehicle and ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
20. Select GAUGES in the BODY ELECTRICAL with the HDS.
21. Select ADJUSTMENT in the GAUGE with the HDS.
22. Select MAINTENANCE MINDER in the ADJUSTMENT with the HDS.
23. Select RESET in the MAINTENANCE MINDER with the HDS.
24. Select MAINTENANCE SUB ITEM 5 RESET with the HDS.
25. Install the splash shield (see page 20-163).

Thermostat Replacement

1. Drain the engine coolant (see page 10-8).
2. Remove the thermostat cover (A), then remove the thermostat (B).



3. Install a new thermostat with a new rubber seal (C), then install the thermostat cover.

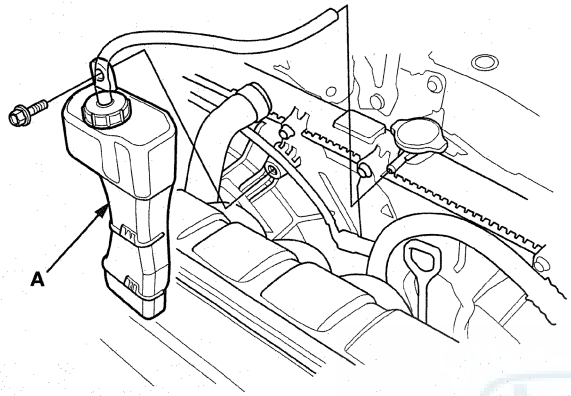
   NOTE: Install the thermostat with the pin (D) up.

4. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
5. Clean up any spilled engine coolant.

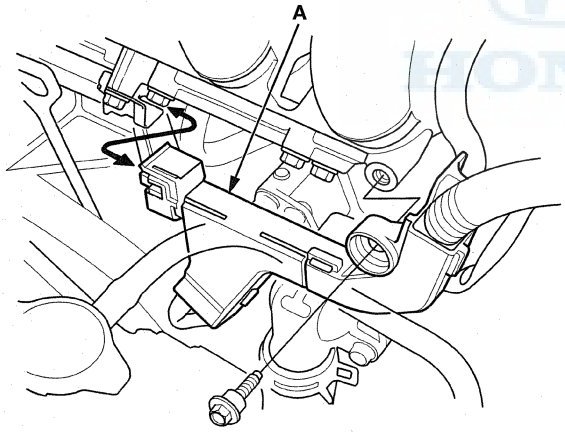
Thermostat Housing Removal and Installation

Removal

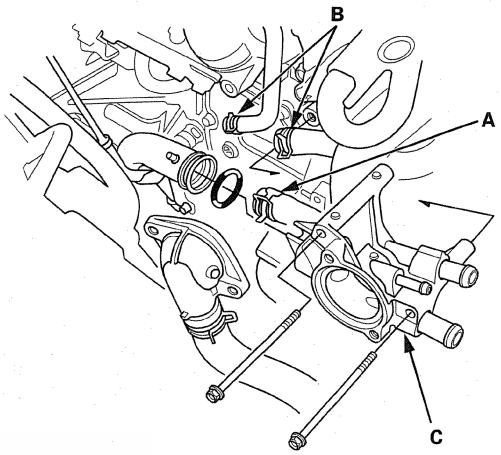
1. Drain the engine coolant (see page 10-8).
2. Remove the coolant reservoir (A).



3. Remove the harness holder (A).



4. Remove the thermostat (see page 10-10).
5. Disconnect the heater hose (A) and the water bypass hoses (B).



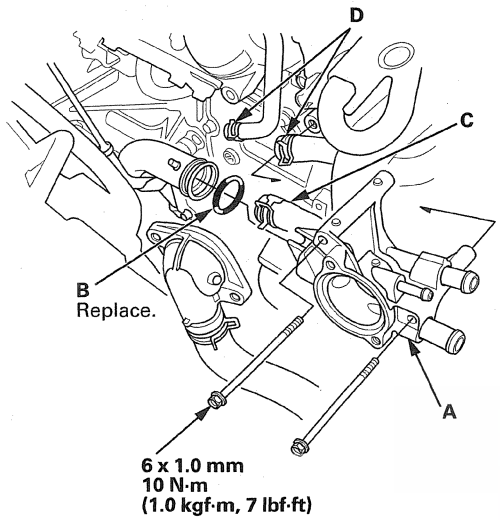
6. Remove the thermostat housing (C).

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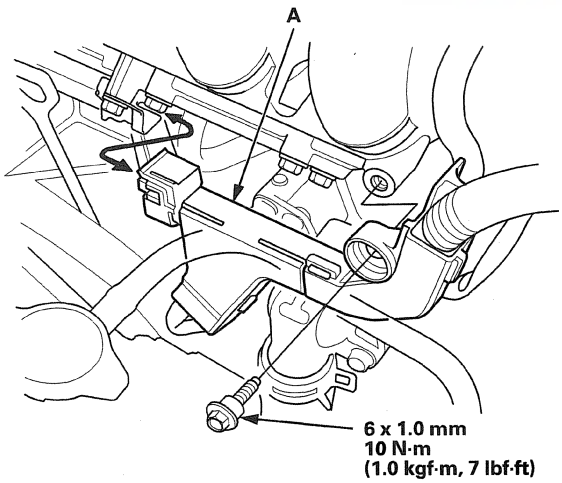
Thermostat Housing Removal and Installation (cont'd)

Installation

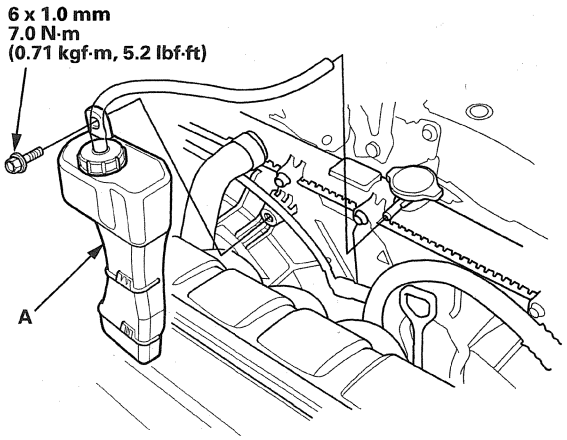
1. Install the thermostat housing (A) with a new connecting pipe O-ring (B).



2. Connect the heater hose (C) and the water bypass hoses (D).
3. Install the thermostat (see page 10-10).
4. Install the harness holder (A).



5. Install the coolant reservoir (A).

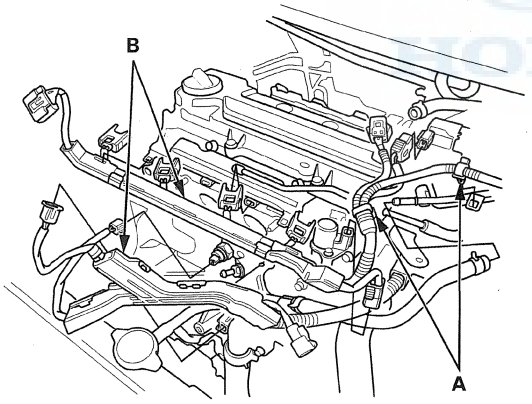


6. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
7. Clean up any spilled engine coolant.

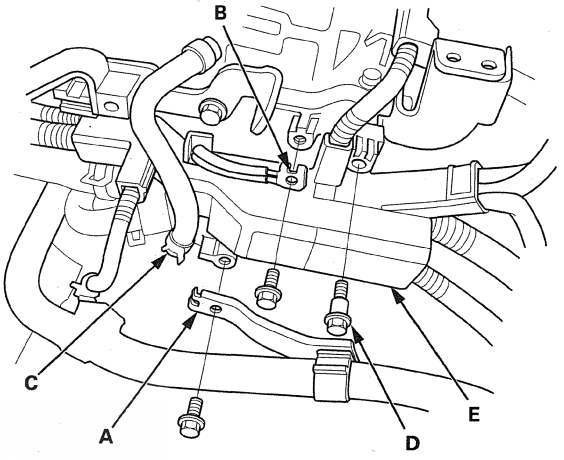
Water Outlet Removal and Installation

Removal

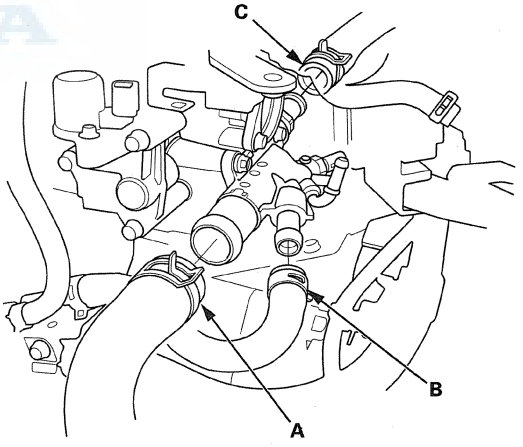
1. Drain the engine coolant (see page 10-8).
2. Remove the throttle body (see page 11-248).
3. Remove the intake manifold/chamber assembly (see page 9-13).
4. Disconnect the following engine wire harness connectors, and remove the wire harness clamps from the cylinder head:
   - Four injector connectors
   - Rocker arm oil control valve connector
   - Rocker arm oil pressure switch connector
   - ECT sensor 1 connector
   - CMP sensor connector
   - A/F sensor connector
   - Secondary HO2S connector
   - Oil pressure switch connector
   - Knock sensor connector
5. Remove the harness clamps (A) with the harness holders (B).



6. Remove the heater hose bracket (A) and the ground cable (B), then disconnect the water bypass hose (C) from the water outlet.



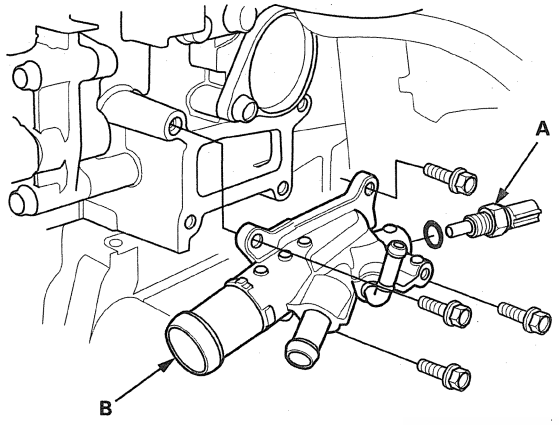
7. Remove the harness holder bolt (D), then remove the harness holder (E) from the bracket.
8. Disconnect the upper radiator hose (A), the water bypass hose (B), and the heater hose (C).



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Water Outlet Removal and Installation (cont'd)

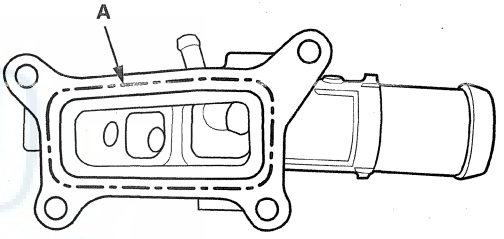
9. Remove ECT sensor 1 (A), then remove the water outlet (B).

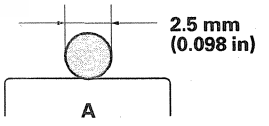


Installation

1. Remove all of the old liquid gasket from the water outlet mating surfaces, the bolts, and the bolt holes.
2. Clean and dry the water outlet mating surfaces.
3. Apply liquid gasket (P/N 08718-0004) to the cylinder head mating surface of the water outlet and to the inside edge of the bolt holes. Install the component within 5 minutes of applying the liquid gasket.

   NOTE:
   - Apply a 2.5 mm (0.098 in) diameter bead of liquid gasket along the broken line (A).
   - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

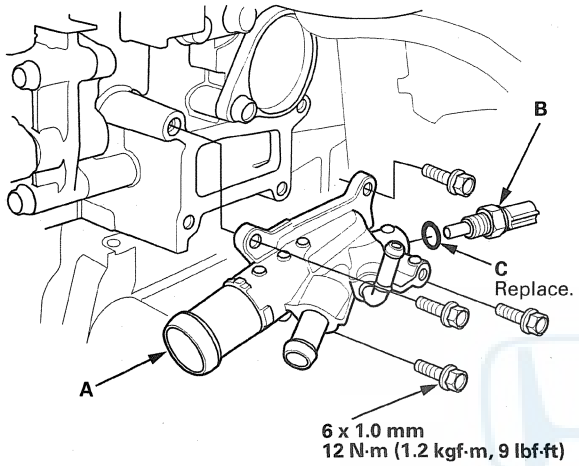




4. Install the water outlet (A).

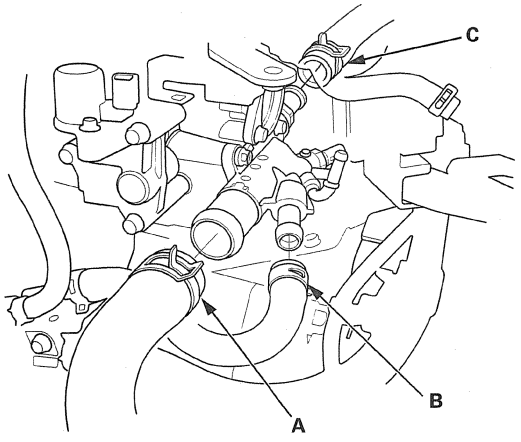
NOTE:

- After assembly, wait at least 30 minutes before filling the engine with coolant.
- Do not run the engine for at least 3 hours after installing the water outlet.

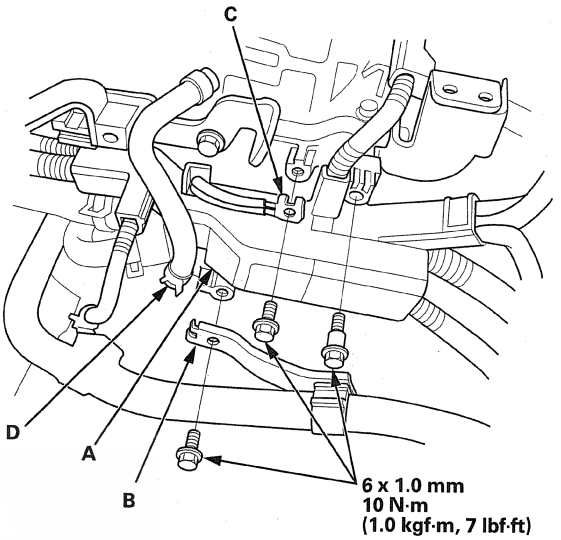


5. Install ECT sensor 1 (B) with a new O-ring (C) (see page 11-206).

6. Connect the upper radiator hose (A), the water bypass hose (B), and the heater hose (C).



7. Install the harness holder (A).

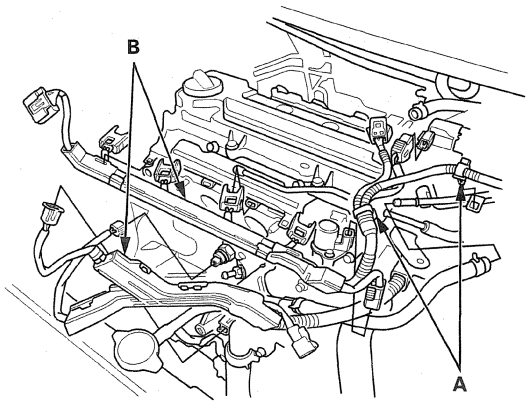


8. Install the heater hose bracket (B) and the ground cable (C), then connect the water bypass hose (D) to the water outlet.

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Water Outlet Removal and Installation (cont'd)

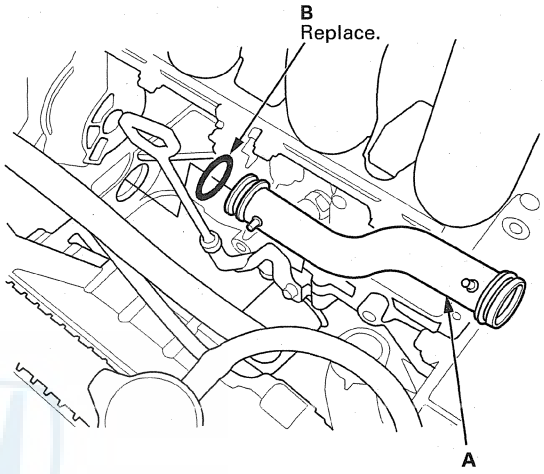
9. Install the harness clamps (A) with the harness holders (B).



10. Connect the following engine wire harness connectors, and install the wire harness clamps to the cylinder head:
    - Four injector connectors
    - Rocker arm oil control valve connector
    - Rocker arm oil pressure switch connector
    - ECT sensor 1 connector
    - CMP sensor connector
    - A/F sensor connector
    - Secondary HO2S connector
    - Oil pressure switch connector
    - Knock sensor connector
11. Install the intake manifold/chamber assembly (see page 9-14).
12. Install the throttle body (see page 11-248).
13. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
14. Clean up any spilled engine coolant.

Connecting Pipe Replacement

1. Drain the engine coolant (see page 10-8).
2. Remove the thermostat (see page 10-10).
3. Remove the thermostat housing (see page 10-11).
4. Remove the connecting pipe (A).



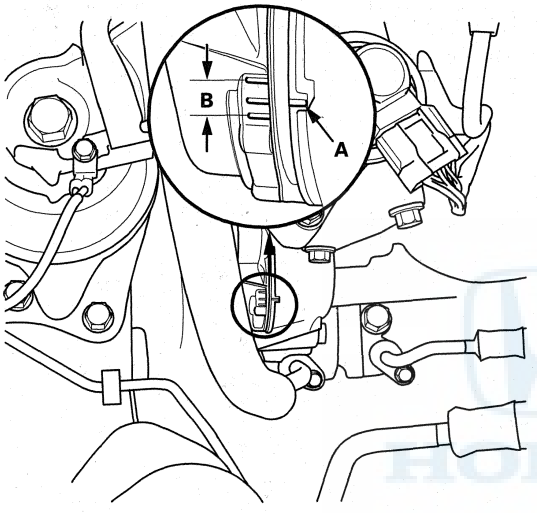
5. Install the connecting pipe with a new O-ring (B).
6. Install the thermostat housing (see page 10-12).
7. Install the thermostat (see page 10-10).
8. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
9. Clean up any spilled engine coolant.

Drive Belt Inspection

1. Inspect the belt for cracks or damage.

   NOTE: If the belt is cracked or damaged, replace it (see page 10-17).

2. Check the position of the drive belt auto-tensioner indicator (A) is within the standard range (B) as shown. If it is out of the standard range, replace the drive belt (see page 10-17), then check the drive belt auto-tensioner indicator position.



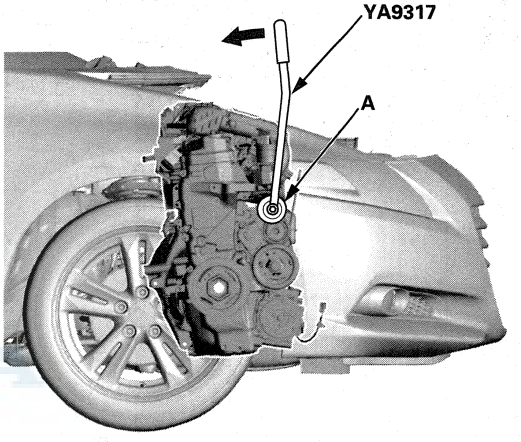
Drive Belt Replacement

Special Tools Required

Belt Tension Release Tool Snap-on YA9317*, commercially available

*: Available through the Honda Tool and Equipment Program 888-424-6857.

1. Move the drive belt auto-tensioner (A) using the belt tension release tool (YA9317) in the direction shown to relieve tension from the drive belt, then remove the drive belt.

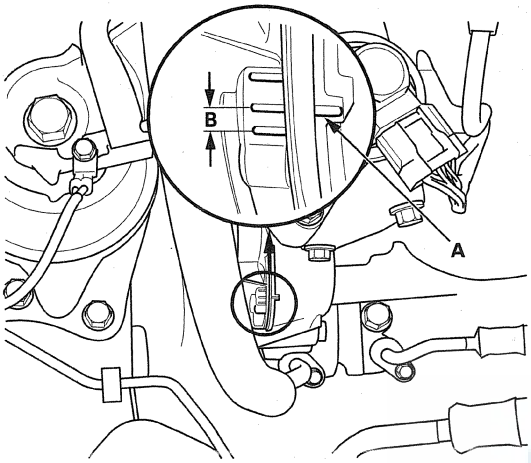


2. Install a new belt in the reverse order of removal.

(cont'd)

Drive Belt Replacement (cont'd)

3. Check the position of the drive belt auto-tensioner indicator (A) is within the standard range (B) as shown. If it is out of the standard range, check the drive belt auto-tensioner (see page 10-18).



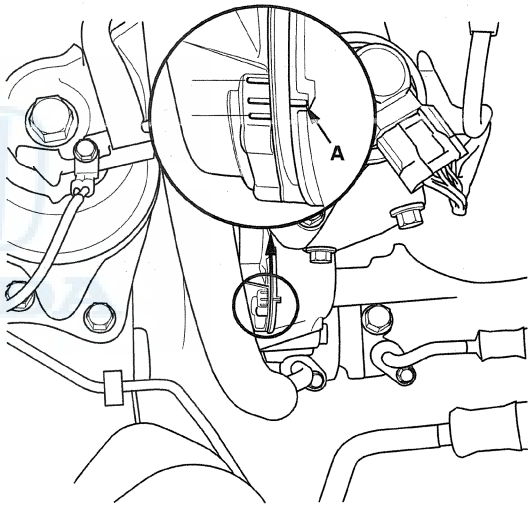
Drive Belt Auto-Tensioner Inspection

Special Tools Required

Belt Tension Release Tool Snap-on YA9317*, commercially available

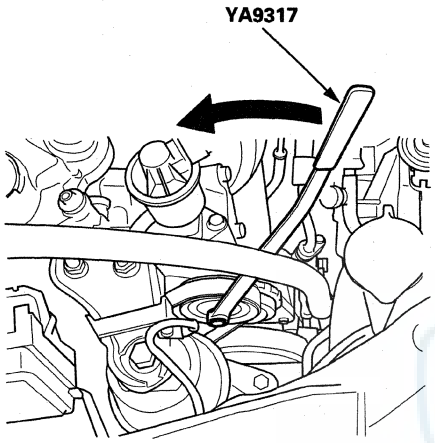
*: Available through the Honda Tool and Equipment Program 888-424-6857.

1. Turn the ignition switch to ON (II), and make sure to turn the A/C switch off. Turn the ignition switch to LOCK (0).
2. Check the position of the drive belt auto-tensioner indicator (A). Start the engine, then check the position again with the engine idling. If the position of the indicator moves or fluctuates very much, replace the drive belt auto-tensioner (see page 10-20).



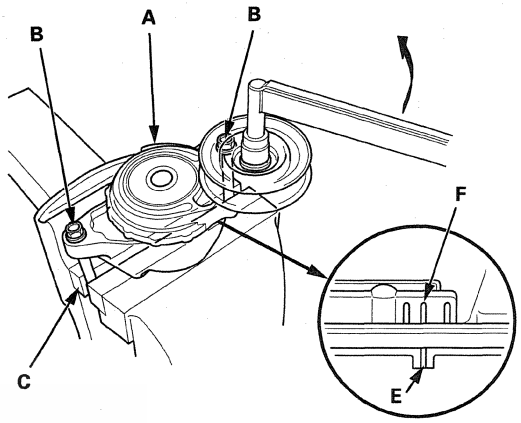
3. Check for abnormal noise from the tensioner pulley. If you hear abnormal noise, replace the tensioner pulley (see page 10-20).
4. Remove the drive belt (see page 10-17).

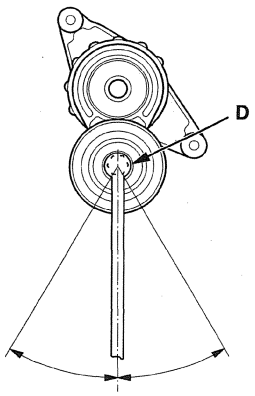
5. Move the drive belt auto-tensioner within its limit with the belt tension release tool (YA9317) in the direction shown. Check that the drive belt auto-tensioner moves smoothly and without any abnormal noise. If the drive belt auto-tensioner does not move smoothly or you hear abnormal noise, replace the drive belt auto-tensioner (see page 10-20).



6. Remove the drive belt auto-tensioner (see page 10-20).

7. Clamp the drive belt auto-tensioner (A) by using two 8 mm bolts (B) and a vise (C) as shown. Do not clamp the drive belt auto-tensioner itself.





8. Set the torque wrench (D) on the pulley bolt, and align it as shown.

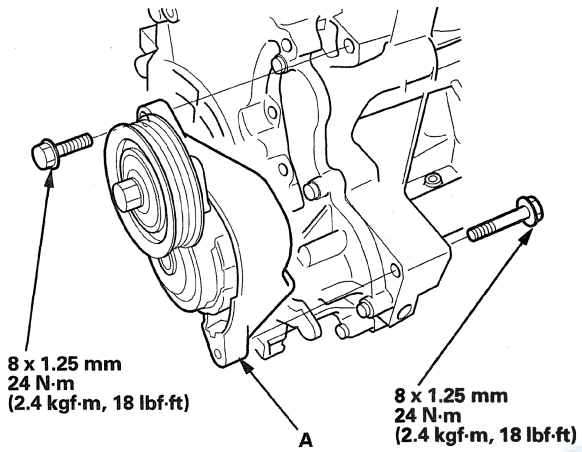
9. Align the indicator (E) on the tensioner base with belt position mark (F) on the tensioner arm by using the torque wrench, and measure the torque. If the torque value is out of specification, replace the drive belt auto-tensioner (see page 10-20).

   NOTE: If the indicator exceeds the belt position mark, recheck the torque.

   Auto-Tensioner Spring Torque
   17.6—22.8 N·m
   (1.79—2.32 kgf·m, 13.0—16.8 lbf·ft)

Drive Belt Auto-Tensioner Replacement

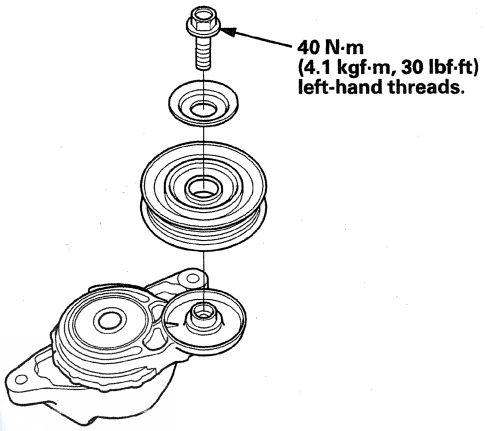
1. Remove the drive belt (see page 10-17).
2. Remove the drive belt auto-tensioner (A).



3. Install the drive belt auto-tensioner in the reverse order of removal.

Tensioner Pulley Replacement

1. Remove the drive belt auto-tensioner (see page 10-20).
2. Remove the tensioner pulley. The tensioner pulley bolt has left-hand threads.

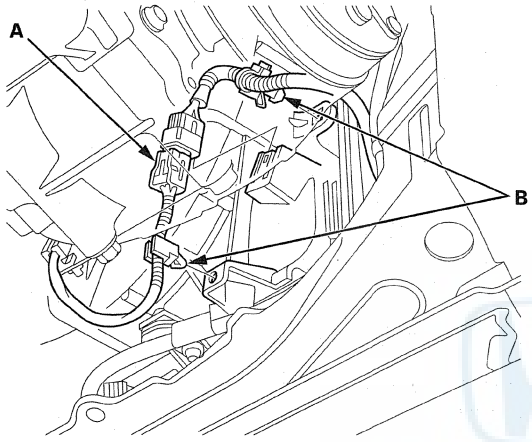


3. Install the tensioner pulley in the reverse order of removal.
4. Install the drive belt auto-tensioner (see page 10-20).

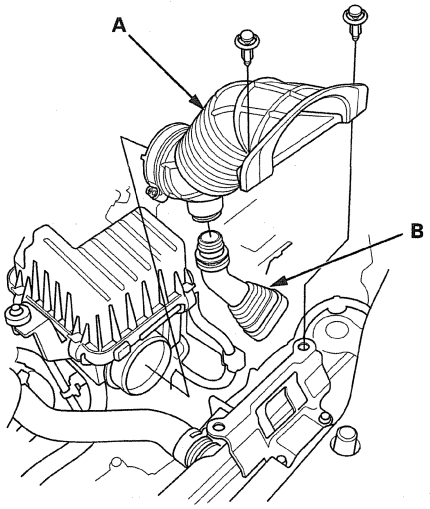
Fan, Fan Motor, and Shroud Removal and Installation

Removal

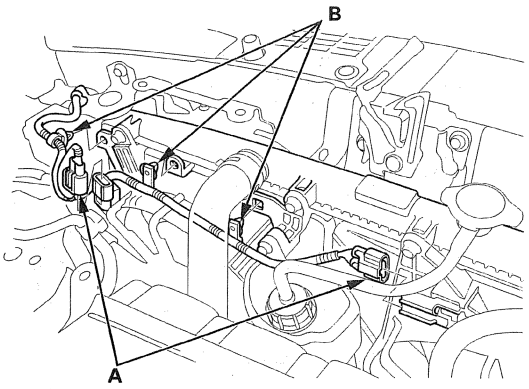
1. Raise the vehicle on the lift.
2. Remove the splash shield (see page 20-163).
3. Remove the A/C compressor clutch connector (A) from the clamp, then remove the harness clamps (B).



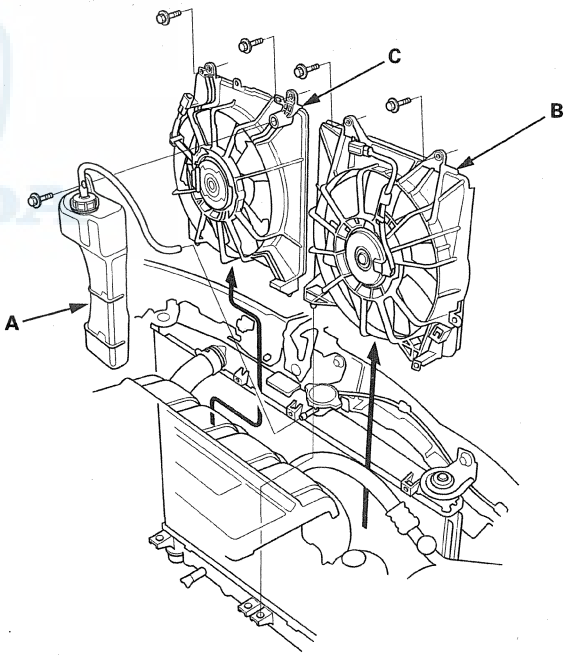
4. Lower the vehicle on the lift.
5. Remove the intake air tube (A) and the resonator chamber joint (B).



6. Disconnect the fan motor connectors (A), and remove the harness clamps (B).



7. Remove the coolant reservoir (A).

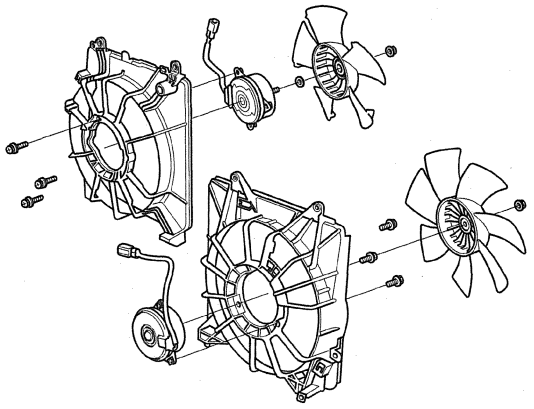


8. Remove the A/C condenser fan shroud assembly (B), then remove the radiator fan shroud assembly (C) from the A/C condenser fan shroud side.

(cont'd)

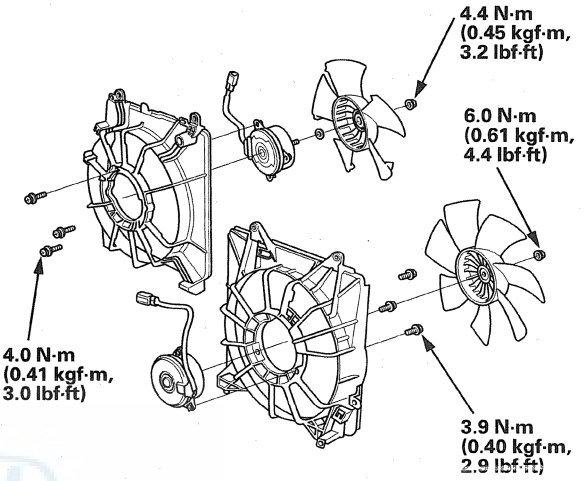
Fan, Fan Motor, and Shroud Removal and Installation (cont'd)

9. Disassemble the fan shrouds.

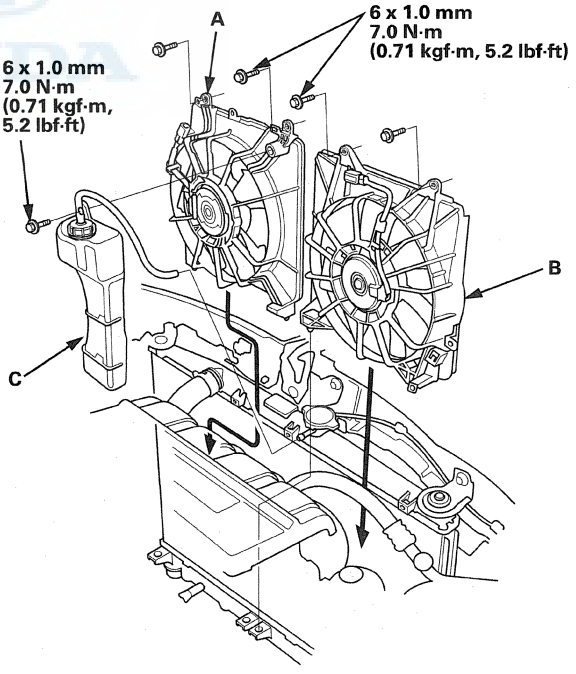


Installation

1. Assemble the fan shrouds.

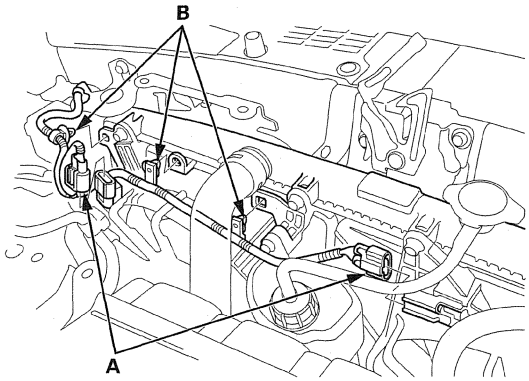


2. Install the radiator fan shroud assembly (A) onto the A/C condenser fan shroud side, then install the A/C condenser fan shroud assembly (B).



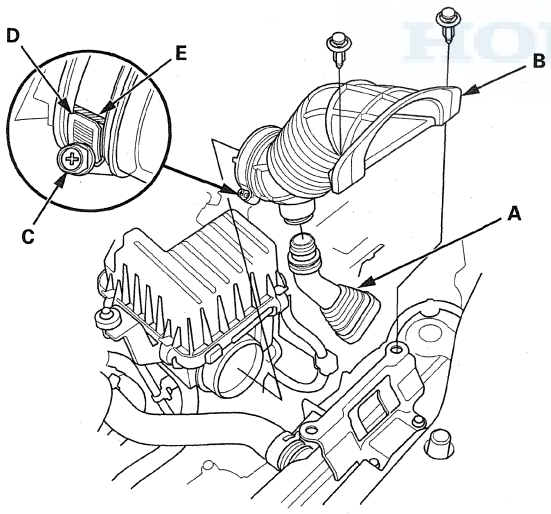
3. Install the coolant reservoir (C).

4. Connect the fan motor connectors (A), and install the harness clamps (B).



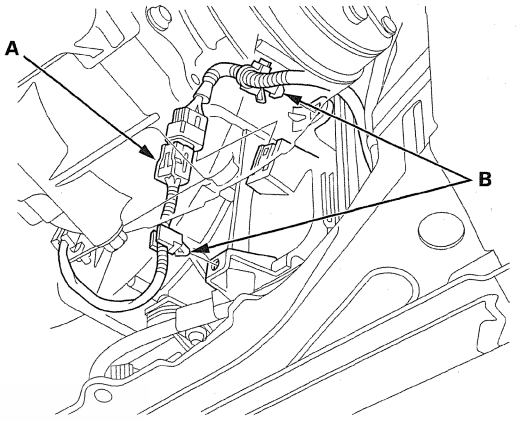
5. Install the resonator chamber joint (A) and the intake air tube (B).

NOTE: When tightening the screw (C) of the hose band, align the edge of the hose band (D) with the mark (E) painted on the hose band. If you tighten the screw over the mark, replace the hose band.



6. Raise the vehicle on the lift.

7. Install the A/C compressor clutch connector (A) to the clamp, then install the harness clamps (B).

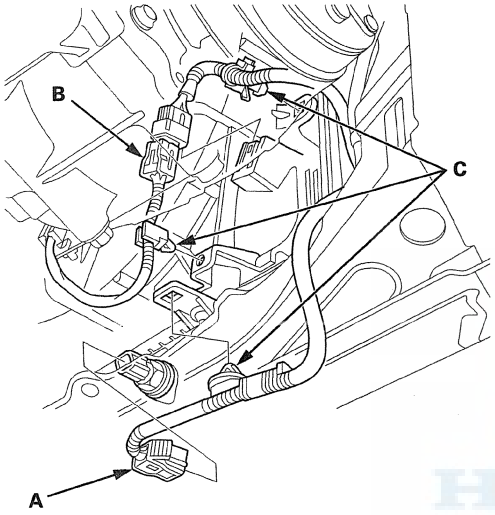


8. Install the splash shield (see page 20-163).

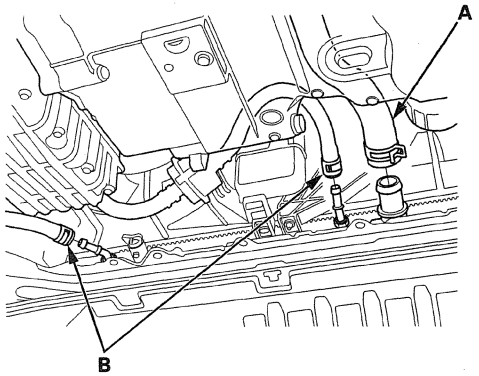
9. Lower the vehicle on the lift.

Radiator Replacement

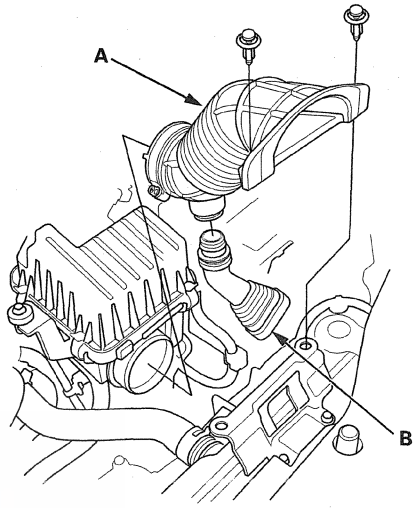
1. Raise the vehicle on the lift.
2. Drain the engine coolant (see page 10-8).
3. Remove the splash shield (see page 20-163).
4. Disconnect the ECT sensor 2 connector (A), and remove the A/C compressor clutch connector (B) from the clamp.



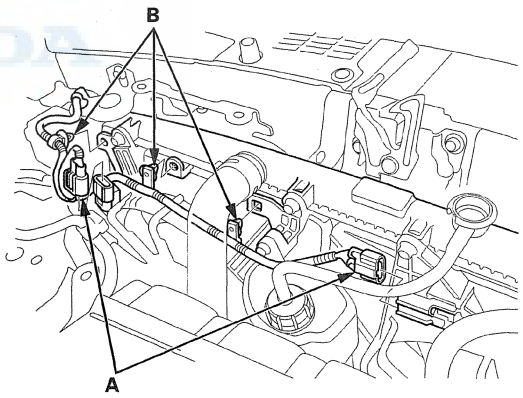
5. Remove the harness clamps (C).
6. Disconnect the lower radiator hose (A).



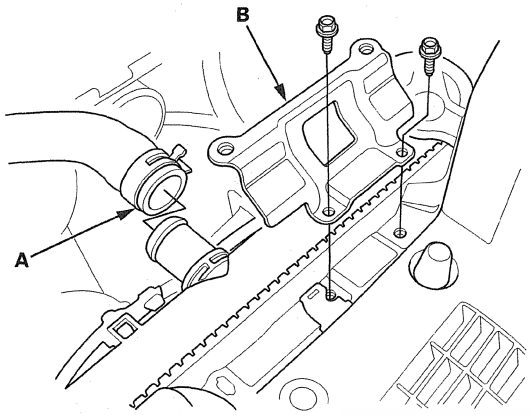
7. CVT model: Disconnect the CVTF cooler hoses (B), then plug the CVTF cooler hoses and lines.
8. Lower the vehicle on the lift.
9. Remove the intake air tube (A) and the resonator chamber joint (B).



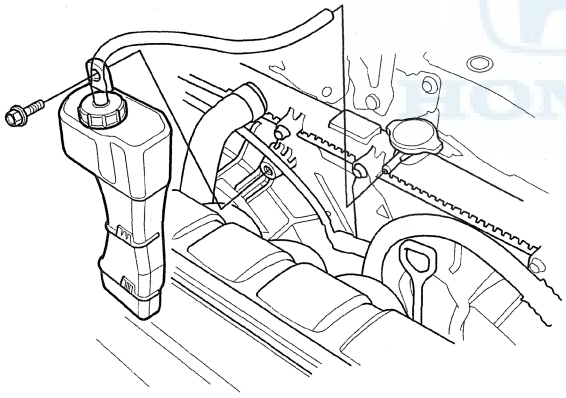
10. Disconnect the fan motor connectors (A), and remove the harness clamps (B).



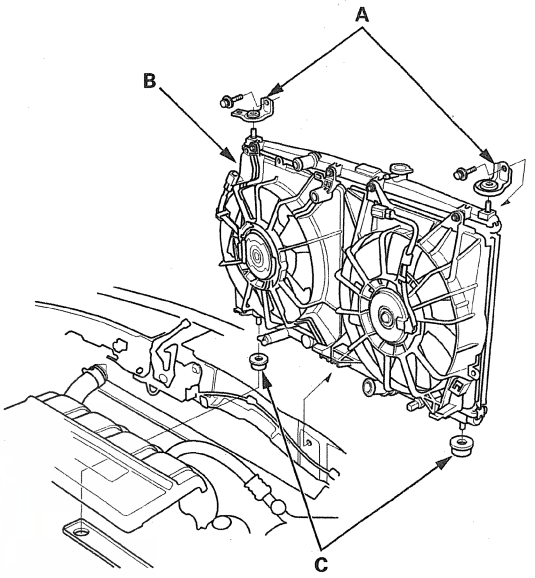
11. Disconnet the upper radiator hose (A), and remove the air intake tube bracket (B).



12. Remove the coolant reservoir.



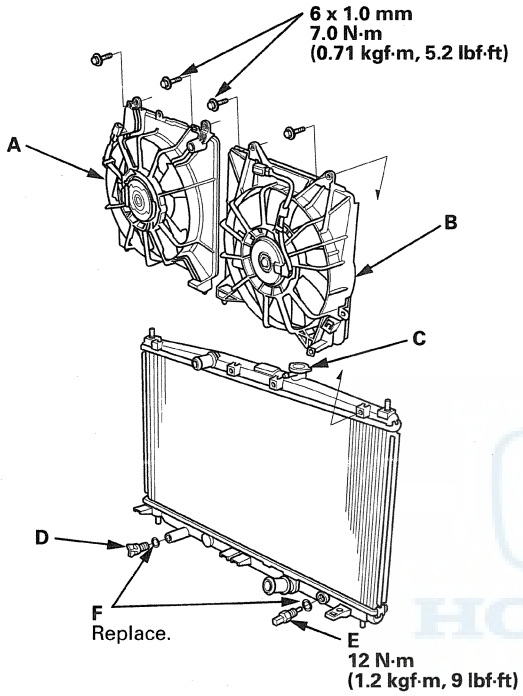
13. Remove the upper radiator brackets (A), then pull up the radiator assembly (B) with the lower cushions (C).



(cont'd)

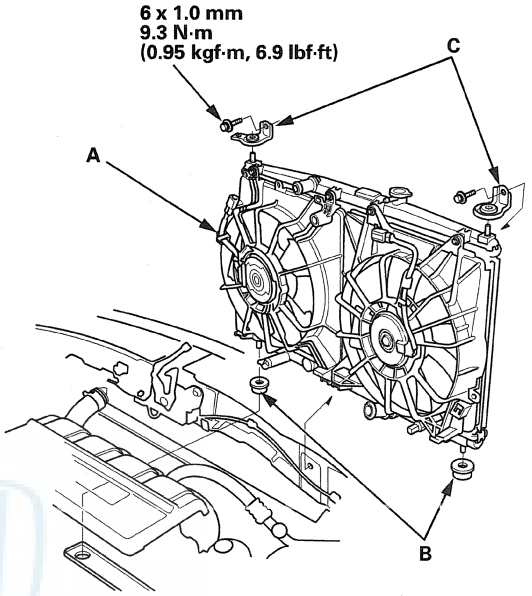
Radiator Replacement (cont'd)

14. Remove the radiator fan shroud assembly (A), the A/C condenser fan shroud assembly (B), the radiator cap (C), the drain plug (D) and ECT sensor 2 (E) (see page 11-206) from the radiator.



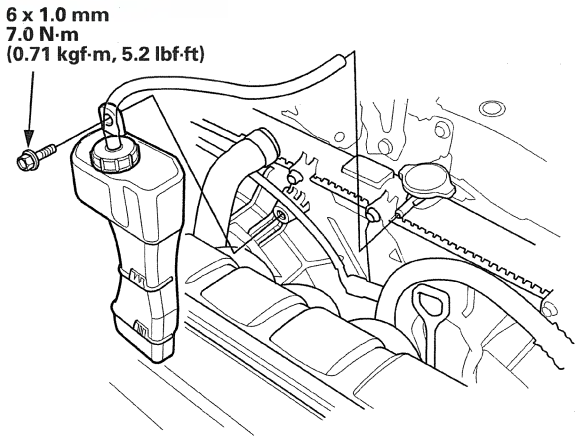
15. Reassemble the radiator with new O-rings (F).

16. Install the radiator assembly (A). Make sure the lower cushions (B) are set securely.

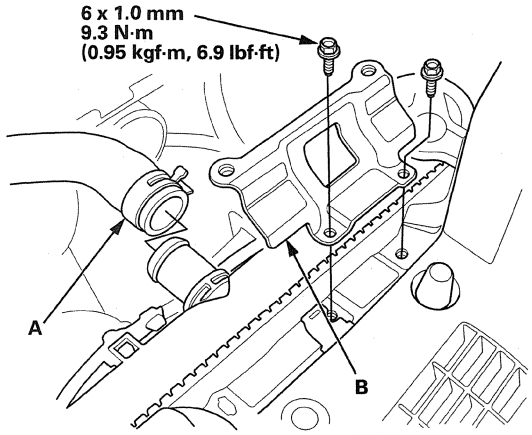


17. Install the upper radiator brackets (C).

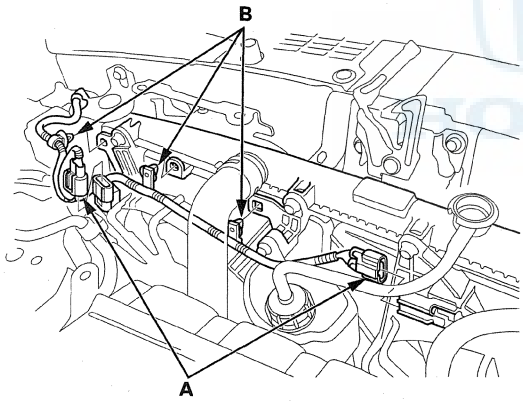
18. Install the coolant reservoir.



19. Connect the upper radiator hose (A), and install the air intake tube bracket (B).

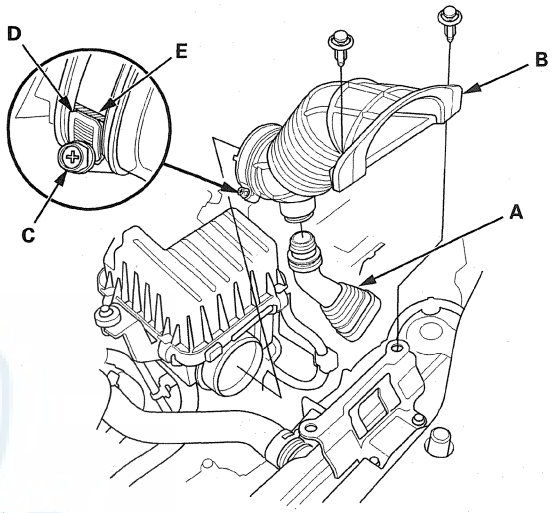


20. Connect the fan motor connectors (A), and install the harness clamps (B).



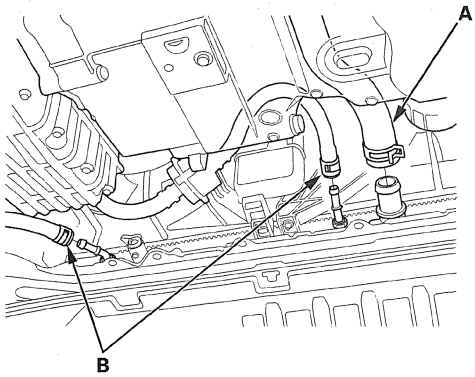
21. Install the resonator chamber joint (A) and the intake air tube (B).

NOTE: When tightening the screw (C) of the hose band, align the edge of the hose band (D) with the mark (E) painted on the hose band. If you tighten the screw over the mark, replace the hose band.



22. Raise the vehicle on the lift.

23. Connect the lower radiator hose (A).

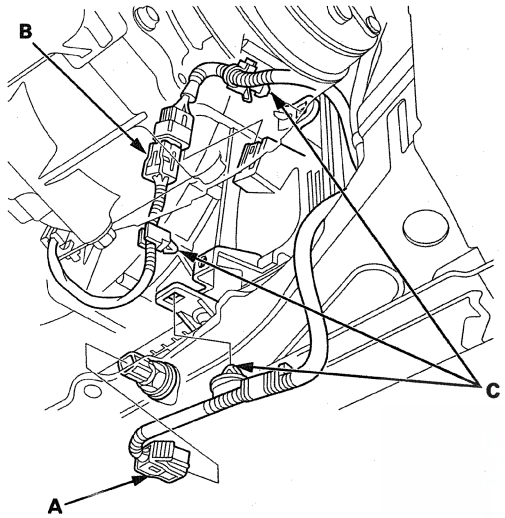


24. CVT model: Connect the CVTF cooler hoses (B).

(cont'd)

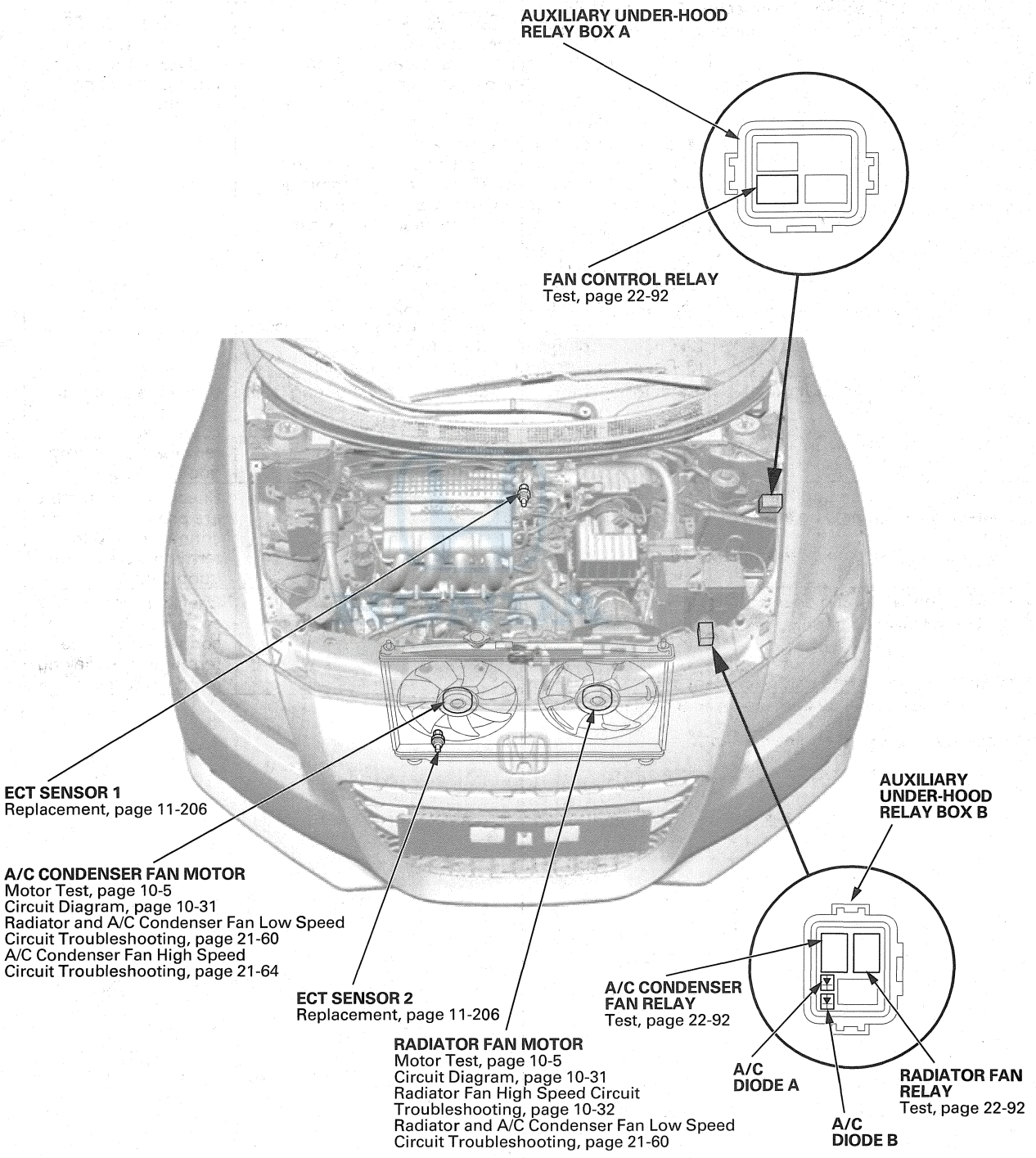
Radiator Replacement (cont'd)

25. Connect the ECT sensor 2 connector (A), and install the A/C compressor clutch connector (B) to the clamp.



26. Install the harness clamps (C).
27. Install the splash shield (see page 20-163).
28. Lower the vehicle on the lift.
29. CVT model: Refill the transmission with CVTF (see step 9 on page 14-155).
30. Refill the radiator with engine coolant, and bleed the air from the cooling system (see step 8 on page 10-9).
31. Clean up any spilled engine coolant.

Component Location Index

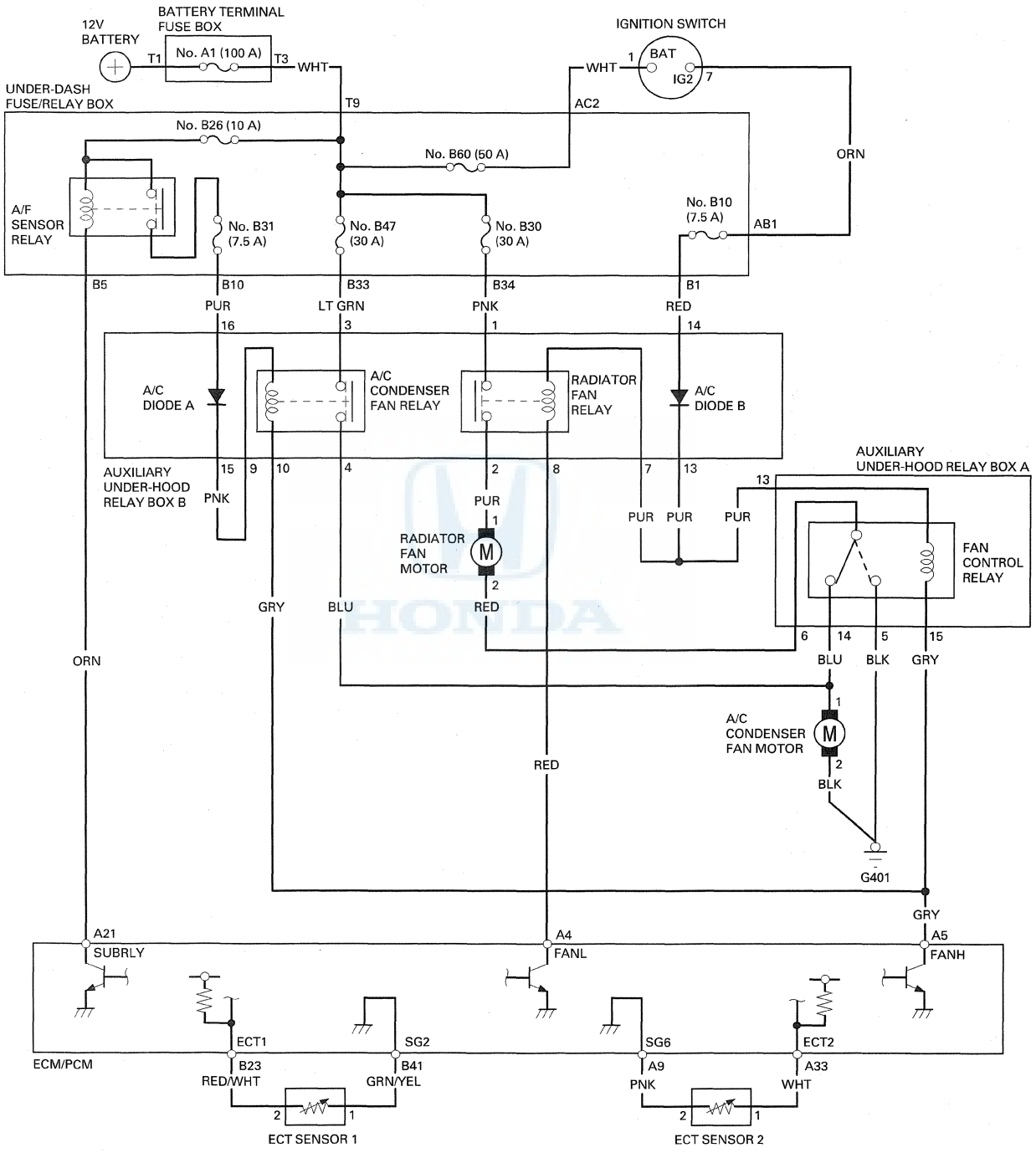


Fan Controls

Symptom Troubleshooting Index

Symptom	Diagnostic Procedure	Also check for
Engine overheats	1. Check the coolant level (see page 10-8). 2. Check for any engine coolant leakage (from gaskets, hoses, O-rings, etc.). 3. Check for dirt, leaves, or insects on radiator and A/C condenser. 4. Check for deteriorated coolant. 5. Check for a damaged or deformed fan shroud. 6. Check that the fan motors are operating properly (air should be blowing toward the engine). 7. Inspect the fan motors (see page 10-5) or fan relays (see page 22-92). 8. Check the radiator cap (see page 10-4). 9. Check the thermostat (see page 10-5). 10. Inspect the water pump (see page 10-6). 11. Check for plugged or deteriorated radiator hoses. 12. Check for plugged heater core or hoses. 13. Check for a damaged cylinder head gasket.	Check the radiator and A/C condenser fan are operating properly.
The radiator fan does not run at high speed	Radiator fan high speed circuit troubleshooting (see page 10-32).	Check the connectors are properly connected and the terminals are making good contact.
Both the radiator fan and the A/C condenser fan do not run at low speed	Radiator and A/C condenser fans low speed circuit troubleshooting (see page 21-60).	Check the connectors are properly connected and the terminals are making good contact.
The A/C condenser fan does not run at high speed	A/C condenser fan high speed circuit troubleshooting (see page 21-64).	Check the connectors are properly connected and the terminals are making good contact.

Circuit Diagram



Radiator Fan High Speed Circuit Troubleshooting

1. Check the No. B30 (30 A) fuse and the No. B10 (7.5 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 2.

   NO–Replace the fuse(s) and recheck. If the fuse(s) blow again, repair the short to ground the No. B30 (30 A) fuse, and the No. B10 (7.5 A) fuse circuit.■

2. Remove the radiator fan relay from auxiliary under-hood relay box B and the fan control relay from auxiliary under-hood relay box A, and test the (see page 22-92).

   Are the relays OK?

   YES–Go to step 3.

   NO–Replace the radiator fan relay and/or the fan control relay.■

3. Check the radiator fan motor (see page 10-5).

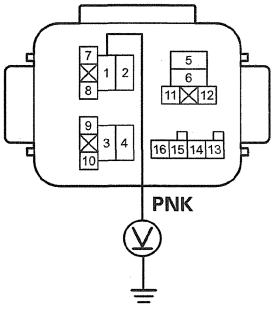
   Is the fan motor OK?

   YES–Go to step 4.

   NO–Replace the radiator fan motor (see page 10-21).

4. Measure the voltage between radiator fan relay socket terminal No. 1 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

Is there battery voltage?

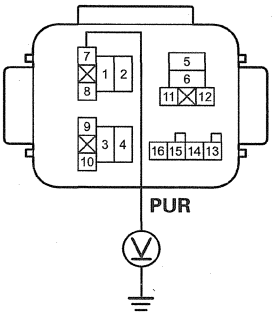
YES–Go to step 5.

NO–Repair an open in the wire between radiator fan relay socket terminal No. 1 and under-dash fuse/relay box connector B (36P) terminal No. 34. If the wire is OK, replace auxiliary under-hood relay box B.■

5. Turn the ignition switch to ON (II).

6. Measure the voltage between radiator fan relay socket terminal No. 7 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

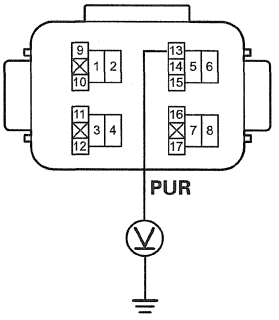
Is there battery voltage?

YES–Go to step 7.

NO–Repair an open in the wire between radiator fan relay socket terminal No. 7 and under-dash fuse/relay box connector B (36P) terminal No. 1. Check the A/C diode B. If the wire and A/C diode B is OK, replace auxiliary under-hood relay box B.■

7. Measure the voltage between fan control relay socket terminal No. 13 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

Is there battery voltage?

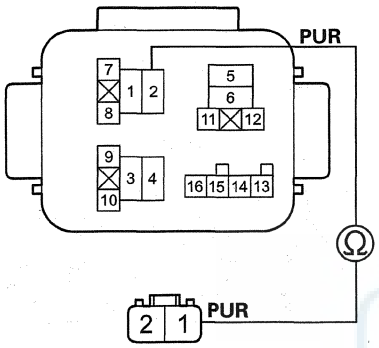
YES–Go to step 8.

NO–Repair an open in the wire between auxiliary under-hood relay box A fan control relay socket terminal No. 13 and auxiliary under-hood relay box B A/C diode B socket terminal No. 13. If the wire is OK, replace auxiliary under-hood relay box A.■

8. Turn the ignition switch to LOCK (0).
9. Disconnect the radiator fan motor 2P connector.
10. Check for continuity between radiator fan relay socket terminal No. 2 and radiator fan motor 2P connector terminal No. 1.

AUXILIARY UNDER-HOOD RELAY BOX B

Terminal side of female terminals



RADIATOR FAN MOTOR 2P CONNECTOR

Terminal side of female terminals

Is there continuity?

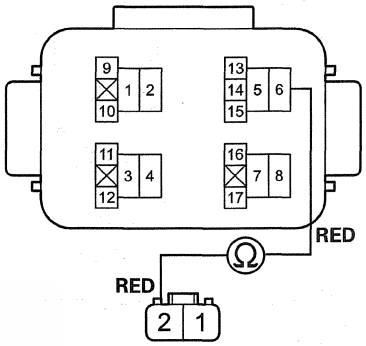
YES–Go to the step 11.

NO–Repair an open in the wire between radiator fan relay socket terminal No. 2 and radiator fan motor 2P connector terminal No. 1.■

11. Check for continuity between fan control relay socket terminal No. 6 and radiator fan motor 2P connector terminal No. 2.

AUXILIARY UNDER-HOOD RELAY BOX A

Terminal side of female terminals



RADIATOR FAN MOTOR 2P CONNECTOR

Terminal side of female terminals

Is there continuity?

YES–Go to the step 12.

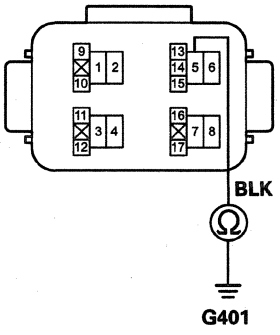
NO–Repair an open in the wire between fan control relay socket terminal No. 6 and radiator fan motor 2P connector terminal No. 2.■

(cont'd)

Radiator Fan High Speed Circuit Troubleshooting (cont'd)

12. Check for continuity between fan control relay socket terminal No. 5 and body ground G401.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

Is there continuity?

YES–Go to the step 13.

NO–Repair an open in the wire between fan control relay socket terminal No. 5 and body ground G401.■

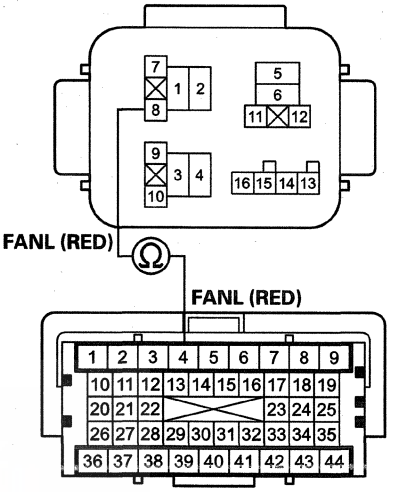
13. Connect the HDS to the DLC (see step 2 on page 11-3).
14. Turn the ignition switch to ON (II).
15. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
16. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

    NOTE: This step must be done to protect the ECM/PCM from damage.

17. Disconnect ECM/PCM connector A (44P).

18. Check for continuity between radiator fan relay socket terminal No. 8 and ECM/PCM connector terminal A4.

AUXILIARY UNDER-HOOD RELAY BOX B
Terminal side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

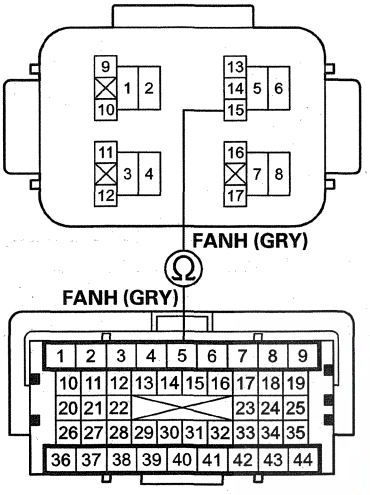
Is there continuity?

YES–Go to the step 19.

NO–Repair an open in the wire between radiator fan relay socket terminal No. 8 and ECM/PCM connector terminal A4.■

19. Check for continuity between fan control relay socket terminal No. 15 and ECM/PCM connector terminal A5.

AUXILIARY UNDER-HOOD RELAY BOX A
Terminal side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Update the ECM/PCM (see page 11-207) if it does not have the latest software, or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between fan control relay socket terminal No. 15 and ECM/PCM connector terminal A5.■

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If fuel and emissions maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).



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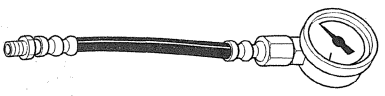
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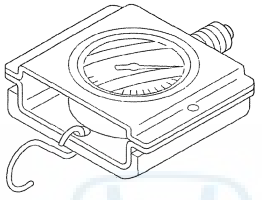
HONDA

Special Tools

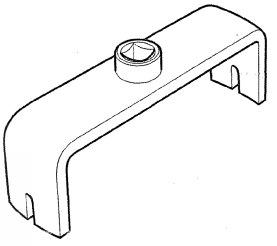
Ref.No.	Tool Number	Description	Qty
①	07406-004000B	Fuel Pressure Gauge	1
②	07406-0070301	A/T Low Pressure Gauge w/Panel	1
③	07AAA-SNAA100	Fuel Pump Module Locknut Wrench	1
④	07AAJ-PY4A100	AT Pressure Test Hose	1
⑤	07AAJ-S6MA150	Fuel Pressure Gauge Attachment Set	1
⑥	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 In.Hg,	1
⑦	07MAJ-PY40120	A/T Pressure Adapter	1
⑧	07NAJ-P07010A	Pressure Gauge Adapter	1
⑨	07ZAJ-S5A0200	Oil Pressure Hose	1



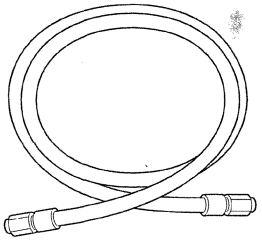
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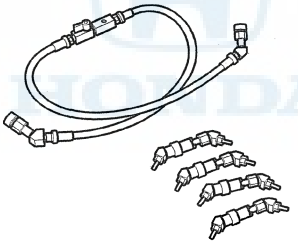
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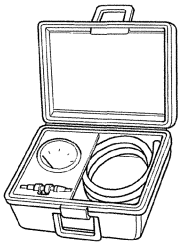
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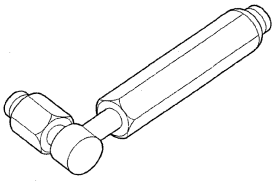
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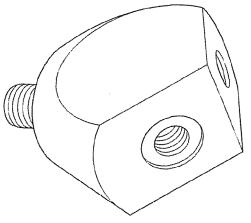
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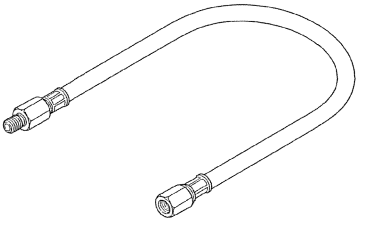
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⑦



⑧



⑨

General Troubleshooting Information

Intermittent Failures

The term intermittent failure means a system may have had a failure, but it checks OK now. If the malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose terminals at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

Service Information

Periodically, new engine control module/powertrain control module (ECM/PCM) software or new service procedures may become available. Always check online for the latest software or service information related to the DTCs or symptoms you are troubleshooting.

Opens and Shorts

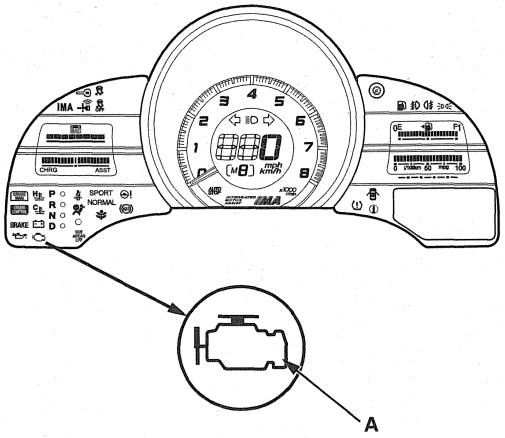
Open and short are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple terms, this usually means something won't work at all. With complex electronics (such as ECMs or PCMs) this can sometimes mean something works, but not the way it's supposed to.

How to Use the HDS (Honda Diagnostic System)

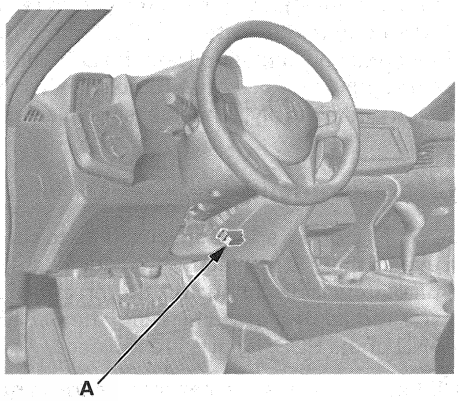
If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

   NOTE: If the ignition switch is turned to ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see page 11-79).



2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the ECM/PCM and all other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated DTC's troubleshooting, and begin the appropriate troubleshooting procedure.

   NOTE:
   - Freeze data indicates the engine conditions when the first system malfunction, misfire, or fuel trim malfunction that activated the MIL was detected.
   - The HDS can read the DTC, freeze data, on-board snapshot, current data, and other engine control module (ECM) or powertrain control module (PCM) data.
   - For specific operations, refer to the user's manual that came with the HDS.
6. If no DTCs are found, go to MIL troubleshooting (see page 11-187).

(cont'd)

General Troubleshooting Information (cont'd)

If the MIL did not stay on

If the MIL did not stay on but there is a drivability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the ECM/PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the DTC, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced ECM/PCM.

HDS Clear Command

The ECM/PCM stores various specific data to correct the system even if there is no electrical power, such as when the 12 volt battery is disconnected. Stored data based on failed parts should be cleared by using the CLEAR COMMAND of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, ECM/PCM reset, and CKP pattern clear. The DTC clear command erases all stored DTCs, freeze data, the on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting.
The ECM/PCM reset command erases all stored DTCs, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except CKP pattern. If the CKP pattern data in the ECM/PCM was cleared, you must do the CKP pattern learn procedure. The CKP pattern clear command erases only CKP pattern data. This command is for repair of a misfire or the CKP sensor.

Scan Tool Clear Command

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the ECM/PCM, and it clears all commands at the same time (CKP pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs). After you clear all commands, you then need to do these procedures, in this order: ECM/PCM idle learn procedure (see page 11-274); CKP pattern learn procedure; test-drive to set readiness codes to complete (see page 11-79).

DTC Clear

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch to LOCK (0).
3. Turn the ignition switch to ON (II), and wait 30 seconds.
4. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.

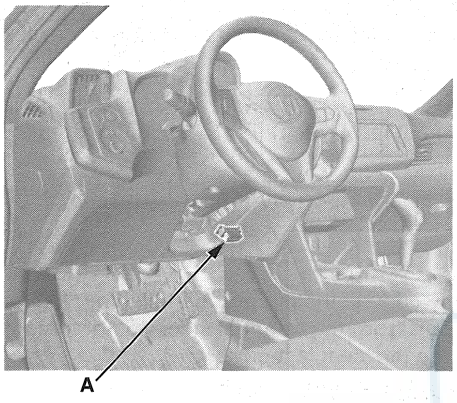
ECM/PCM Reset

1. Reset the ECM/PCM with the HDS while the engine is stopped.
2. Turn the ignition switch to LOCK (0).
3. Turn the ignition switch to ON (II), and wait 30 seconds.
4. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.
5. Do the ECM/PCM idle learn procedure (see page 11-274).

CKP Pattern Clear/CKP Pattern Learn

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM and all other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm down to 1,000 rpm, with the CVT in D, or the M/T in 2nd.
3. Repeat step 2 several times.
4. Turn the ignition switch to LOCK (0).
5. Turn the ignition switch to ON (II), and wait 30 seconds.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the ECM/PCM with the HDS.
2. Do the ECM/PCM idle learn procedure (see page 11-274).
3. Turn the ignition switch to LOCK (0).
4. Disconnect the HDS from the DLC.

NOTE: The ECM/PCM is part of the immobilizer system. If you replace the ECM/PCM you must use the HDS to instruct the new ECM/PCM and the immobilizer-keyless control unit to recognize each other's unique serial code.

(cont'd)

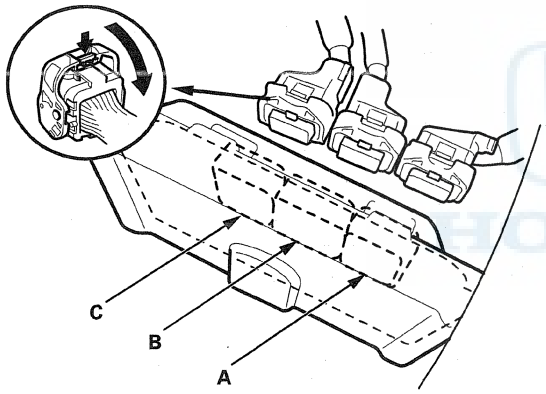
General Troubleshooting Information (cont'd)

How to Troubleshoot Circuits at the ECM/PCM Connectors

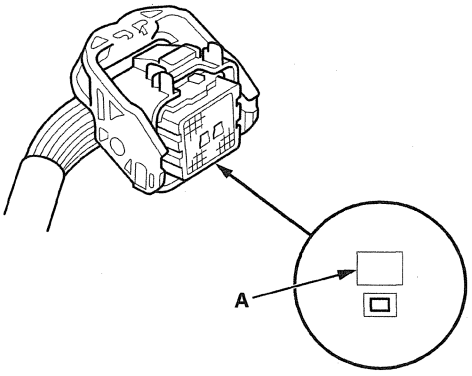
NOTE: The ECM/PCM overwrites data and monitors the EVAP system for up to an hour after the ignition switch is turned to ACCESSORY (I) or to LOCK (0). Jumping the SCS line after turning the ignition switch to ACCESSORY (I) or LOCK (0) cancels this function. Disconnecting the ECM/PCM during this function, without jumping the SCS line first, can damage the ECM/PCM.

1. Jump the SCS line with the HDS.
2. Disconnect ECM/PCM connectors A, B, and C.

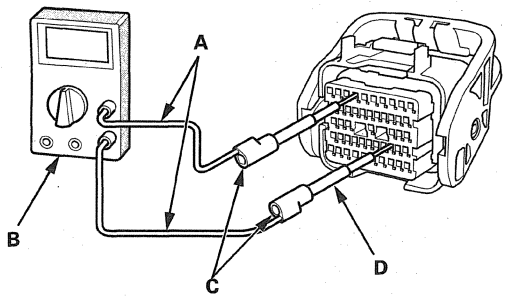
   NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.



3. When diagnosis/troubleshooting is done at an ECM/PCM connector, use the terminal test port (A) above the terminal you need to check.



4. Connect one side of the patch cord terminals (A) to a commercially available digital multimeter (B), and connect the other side of the patch cord terminals (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).



5. Gently contact the pin probe (male) into the terminal test port from the terminal side. Do not force the tips into the terminal test ports.

NOTICE

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes, as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

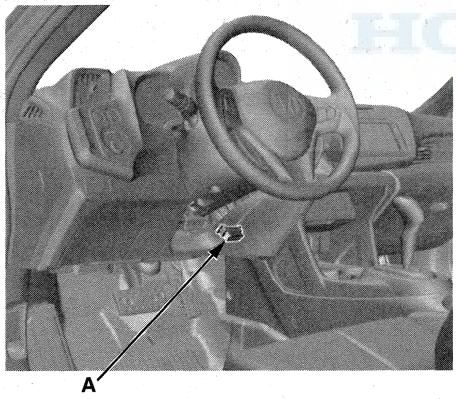
Substituting the ECM/PCM

Special Tools Required
- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

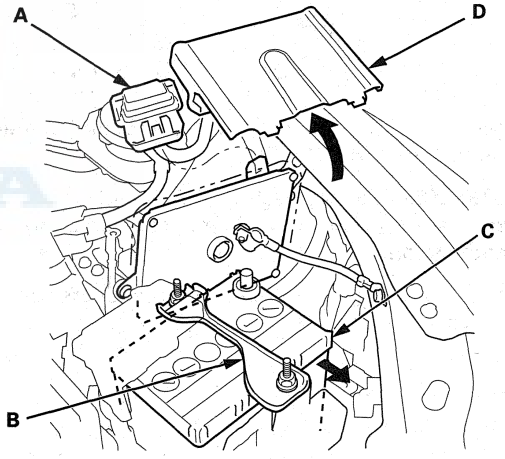
NOTE:
- Use this procedure when you have to substitute a known-good ECM/PCM during troubleshooting procedures.
- Make sure the HDS/iN workstation or the MVCI has the latest HDS software version.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM and all other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
   If you are returning from DLC circuit troubleshooting, skip steps 4 and 5, then the clean the throttle body after substituting the ECM/PCM.
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

   NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.
6. Jump the SCS line with the HDS.
7. Turn the ignition switch to LOCK (0).
8. Remove auxiliary under-hood fuse/relay box A.

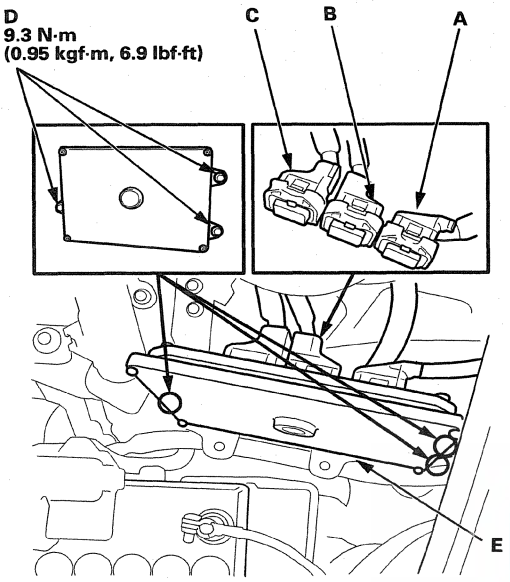


9. Remove the battery hold-down plate (B), then move the battery (C) forward.
10. Remove the ECM/PCM cover (D).

(cont'd)

General Troubleshooting Information (cont'd)

11. Remove the bolts (D).



12. Disconnect ECM/PCM connectors A, B, and C, then remove the ECM/PCM (E).

    NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.

13. Install a known-good ECM/PCM in the reverse order of removal.

14. Turn the ignition switch to ON (II).

    NOTE: DTC P0630 (VIN Not Programmed or Mismatch) may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.

15. Manually input the VIN to the ECM/PCM with the HDS.

16. Select the IMMOBI SYSTEM with the HDS.

17. Enter the immobilizer ECM/PCM code that you got from the iN, and use the ECM/PCM replacement procedure in the IMMOBI MENU of the HDS; it allows you to start the engine.

18. If the TP POSITION CHECK failed in step 5, clean the throttle body (see page 11-247).

19. Reset the ECM/PCM with the HDS.

20. Update the ECM/PCM if it does not have the latest software (see page 11-207).

21. Do the ECM/PCM idle learn procedure (see page 11-274).

    NOTE: If the IMA battery level gauge displays no segments, start the engine, and hold it between 3,500 −4,000 rpm without load (CVT in P or N, M/T in neutral) until the level gauge displays at least half of its segments.

22. Do the CKP pattern clear/CKP pattern learn procedure.

23. CVT: Do the start clutch control calibration procedure (see page 14-150).

OBD Status

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on board diagnosis is successfully finished.
- FAILED: The on board diagnosis has finished but failed.
- EXECUTING: The vehicle is in the enable criteria conditions of the DTC, and the on board diagnosis is running.
- NOT COMPLETED: The on board diagnosis was running but is out for the enable conditions for the DTC.
- OUT OF CONDITION: The vehicle has stayed out of the enable conditions of the DTC.

HONDA

DTC Troubleshooting Index

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
P0101 (50)	○	Mass Air Flow (MAF) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see page 11-85)
P0102 (50)	———	Mass Air Flow (MAF) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-86)
P0103 (50)	———	Mass Air Flow (MAF) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-88)
P0107 (3)	———	Manifold Absolute Pressure (MAP) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-90)
P0108 (3)	———	Manifold Absolute Pressure (MAP) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-92)
P0111 (10)	○	Intake Air Temperature (IAT) Sensor Circuit Range/Performance Problem	ON	DTC Troubleshooting (see page 11-94)
P0112 (10)	○	Intake Air Temperature (IAT) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-95)
P0113 (10)	○	Intake Air Temperature (IAT) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-97)
P0116 (86)	○	Engine Coolant Temperature (ECT) Sensor 1 Range/Performance Problem	ON	DTC Troubleshooting (see page 11-99)
P0117 (6)	———	Engine Coolant Temperature (ECT) Sensor 1 Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-100)
P0118 (6)	———	Engine Coolant Temperature (ECT) Sensor 1 Circuit High Voltage	ON	DTC Troubleshooting (see page 11-102)
P0122 (7)	———	Throttle Position (TP) Sensor A Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-214)
P0123 (7)	———	Throttle Position (TP) Sensor A Circuit High Voltage	ON	DTC Troubleshooting (see page 11-216)
P0125 (86)	○	Engine Coolant Temperature (ECT) Sensor 1 Malfunction/Slow Response	ON	DTC Troubleshooting (see page 11-104)
P0128 (87)	○	Cooling System Malfunction	ON	DTC Troubleshooting (see page 11-105)
P0133 (61)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Malfunction/Slow Response	ON	DTC Troubleshooting (see page 11-106)
P0134 (41)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Heater System Malfunction	ON	DTC Troubleshooting (see page 11-107)
P0135 (41)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Heater Circuit Malfunction	ON	DTC Troubleshooting (see page 11-108)
P0137 (63)	○	Secondary Heated Oxygen Sensor (Secondary HO2S (Sensor 2)) Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-112)
P0138 (63)	○	Secondary Heated Oxygen Sensor (Secondary HO2S (Sensor 2)) Circuit High Voltage	ON	DTC Troubleshooting (see page 11-114)
P0139 (63)	○	Secondary Heated Oxygen Sensor (Secondary HO2S (Sensor 2)) Slow Response	ON	DTC Troubleshooting (see page 11-116)
P0141 (65)	○	Secondary Heated Oxygen Sensor (Secondary HO2S (Sensor 2)) Heater Circuit Malfunction	ON	DTC Troubleshooting (see page 11-117)
P0171 (45)	○	Fuel System Too Lean	ON	DTC Troubleshooting (see page 11-120)
P0172 (45)	○	Fuel System Too Rich	ON	DTC Troubleshooting (see page 11-120)
P0201 (71)*4	———	No. 1 Cylinder Injector Circuit Malfunction	ON	DTC Troubleshooting (see page 11-121)
P0202 (72)*4	———	No. 2 Cylinder Injector Circuit Malfunction	ON	DTC Troubleshooting (see page 11-121)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
P0203 (73)*4	—	No. 3 Cylinder Injector Circuit Malfunction	ON	DTC Troubleshooting (see page 11-121)
P0204 (74)*4	—	No. 4 Cylinder Injector Circuit Malfunction	ON	DTC Troubleshooting (see page 11-121)
P0222 (7)	—	Throttle Position (TP) Sensor B Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-218)
P0223 (7)	—	Throttle Position (TP) Sensor B Circuit High Voltage	ON	DTC Troubleshooting (see page 11-220)
P0300 (75*5, 211*4) and any combination of the following: P0301 (71) P0302 (72) P0303 (73) P0304 (74)	○	Random Misfire Detected	ON	DTC Troubleshooting (see page 11-124)
P0301 (71)	○	No. 1 Cylinder Misfire Detected	ON	DTC Troubleshooting (see page 11-127)
P0302 (72)	○	No. 2 Cylinder Misfire Detected	ON	DTC Troubleshooting (see page 11-127)
P0303 (73)	○	No. 3 Cylinder Misfire Detected	ON	DTC Troubleshooting (see page 11-127)
P0304 (74)	○	No. 4 Cylinder Misfire Detected	ON	DTC Troubleshooting (see page 11-127)
P0325 (23)	○	Knock Sensor Circuit Malfunction	ON	DTC Troubleshooting (see page 11-136)
P0335 (4)	—	Crankshaft Position (CKP) Sensor No Signal	ON	DTC Troubleshooting (see page 11-138)
P0339 (4)	—	Crankshaft Position (CKP) Sensor Intermittent Interruption	ON	DTC Troubleshooting (see page 11-140)
P0351 (71)	—	No. 1 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see page 11-141)
P0352 (72)	—	No. 2 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see page 11-141)
P0353 (73)	—	No. 3 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see page 11-141)
P0354 (74)	—	No. 4 Cylinder Ignition Coil Circuit Malfunction	ON	DTC Troubleshooting (see page 11-141)
P0365 (8)	—	Camshaft Position (CMP) Sensor No Signal	ON	DTC Troubleshooting (see page 11-145)
P0369 (8)	—	Camshaft Position (CMP) Sensor Circuit Intermittent Interruption	ON	DTC Troubleshooting (see page 11-147)
P0400 (80)	○	Exhaust Gas Recirculation (EGR) System Leak Detected	ON	DTC Troubleshooting (see page 11-316)
P0401 (80)	○	Exhaust Gas Recirculation (EGR) Insufficient Flow	ON	DTC Troubleshooting (see page 11-317)
P0404 (12)	○	Exhaust Gas Recirculation (EGR) Valve Circuit Range/Performance Problem	ON	DTC Troubleshooting (see page 11-318)
P0406 (12)	○	Exhaust Gas Recirculation (EGR) Valve Position Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-321)
P0420 (67)	○	Catalyst System Efficiency Below Threshold	ON	DTC Troubleshooting (see page 11-312)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
P0443 (92)	○	Evaporative Emission (EVAP) Canister Purge Valve Circuit Malfunction	ON	DTC Troubleshooting (see page 11-333)
P0451 (91)	○	Fuel Tank Pressure (FTP) Sensor Range/Performance Problem	ON	DTC Troubleshooting (see page 11-336)
P0452 (91)	○	Fuel Tank Pressure (FTP) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-337)
P0453 (91)	○	Fuel Tank Pressure (FTP) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-340)
P0455 (90)	○	Evaporative Emission (EVAP) System Large Leak Detected	ON	DTC Troubleshooting (see page 11-343)
P0456 (90)	○	Evaporative Emission (EVAP) System Very Small Leak Detected	ON	DTC Troubleshooting (see page 11-343)
P0461	—	Fuel Level Sensor (Fuel Gauge Sending Unit) Range/Performance Problem	OFF	DTC Troubleshooting (see page 11-278)
P0462	○	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage	OFF	DTC Troubleshooting (see page 11-278)
P0463	○	Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage	OFF	DTC Troubleshooting (see page 11-280)
P0496 (92)	○	Evaporative Emission (EVAP) System High Purge Flow Detected	ON	DTC Troubleshooting (see page 11-346)
P0497 (90)	○	Evaporative Emission (EVAP) System Low Purge Flow Detected	ON	DTC Troubleshooting (see page 11-346)
P0498 (117)	○	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-349)
P0499 (117)	○	Evaporative Emission (EVAP) Canister Vent Shut Valve Circuit High Voltage	ON	DTC Troubleshooting (see page 11-352)
P0506 (14)	○	Idle Control System RPM Lower Than Expected	ON	DTC Troubleshooting (see page 11-264)
P0507 (14)	○	Idle Control System RPM Higher Than Expected	ON	DTC Troubleshooting (see page 11-265)
P050A (167)	○	Cold Start Idle Air Control System Performance Problem	ON	DTC Troubleshooting (see page 11-148)
P050B (167)	○	Cold Start Ignition Timing Control System Performance Problem	ON	DTC Troubleshooting (see page 11-149)
P0532	○	A/C Pressure Sensor Circuit Low Voltage	OFF	DTC Troubleshooting (see page 11-266)
P0533	○	A/C Pressure Sensor Circuit High Voltage	OFF	DTC Troubleshooting (see page 11-268)
P0563	○	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Source Circuit Unexpected Voltage	OFF	DTC Troubleshooting (see page 11-152)
P0602 (196)	—	Engine Control Module (ECM)/Powertrain Control Module (PCM) Programming Error	ON	DTC Troubleshooting (see page 11-154)
P0606 (—)	—	Engine Control Module (ECM)/Powertrain Control Module (PCM) Processor Malfunction	ON	DTC Troubleshooting (see page 11-154)
P060A (131)*3	—	Powertrain Control Module (PCM) (CVT System) Internal Control Module Malfunction	ON	DTC Troubleshooting (see page 11-155)
P062F (131)	—	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Control Module Keep Alive Memory (KAM) Error	ON	DTC Troubleshooting (see page 11-155)
P0630 (139)	—	VIN Not Programmed or Mismatch	ON	DTC Troubleshooting (see page 11-156)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
P0685 (135)	○	Engine Control Module (ECM)/Powertrain Control Module (PCM) Power Control Circuit/Internal Circuit Malfunction	ON	DTC Troubleshooting (see page 11-157)
P0720 (122)*2	○	Output Shaft (Countershaft) Speed Sensor Circuit Malfunction	ON	DTC Troubleshooting (see page 11-157)
P1109 (13)	○	Barometric Pressure (BARO) Sensor Circuit Out of Range High	ON	DTC Troubleshooting (see page 11-160)
P1116 (86)	○	Engine Coolant Temperature (ECT) Sensor 1 Range/Performance Problem	ON	DTC Troubleshooting (see page 11-160)
P1128 (5)	○	Manifold Absolute Pressure (MAP) Sensor Signal Lower Than Expected	ON	DTC Troubleshooting (see page 11-162)
P1129 (5)	○	Manifold Absolute Pressure (MAP) Sensor Signal Higher Than Expected	ON	DTC Troubleshooting (see page 11-163)
P1157 (48)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) AFS Circuit High Voltage	ON	DTC Troubleshooting (see page 11-164)
P1172 (61)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Circuit Out of Range High	ON	DTC Troubleshooting (see page 11-166)
P1297	○	Electrical Load Detector (ELD) Circuit Low Voltage	OFF	DTC Troubleshooting (see page 11-167)
P1298	○	Electrical Load Detector (ELD) Circuit High Voltage	OFF	DTC Troubleshooting (see page 11-169)
P1454 (91)	○	Fuel Tank Pressure (FTP) Sensor Range/ Performance Problem	ON	DTC Troubleshooting (see page 11-352)
P1458 (91)	○	Fuel Tank Pressure (FTP) Sensor Circuit Range/ Performance Problem	ON	DTC Troubleshooting (see page 11-354)
P145C (90)	○	Evaporative Emission (EVAP) System Purge Flow Malfunction	ON	DTC Troubleshooting (see page 11-357)
P1658 (40)	—	Electronic Throttle Control System (ETCS) Control Relay ON Malfunction	ON	DTC Troubleshooting (see page 11-222)
P1659 (40)	—	Electronic Throttle Control System (ETCS) Control Relay OFF Malfunction	ON	DTC Troubleshooting (see page 11-224)
P1683 (40)	—	Throttle Valve Default Position Spring Performance Problem	ON	DTC Troubleshooting (see page 11-227)
P1684 (40)	—	Throttle Valve Return Spring Performance Problem	ON	DTC Troubleshooting (see page 11-228)
P16D5 (132)*3	—	F-CAN Malfunction (Internal Malfunction)	ON	DTC Troubleshooting (see page 11-363)
P16D6 (132)*3	—	IMA-CAN Malfunction (Internal Malfunction)	ON	DTC Troubleshooting (see page 11-363)
P2101 (40)	—	Electronic Throttle Control System (ETCS) Malfunction	ON	DTC Troubleshooting (see page 11-229)
P2118 (40)	—	Throttle Actuator Current Range/Performance Problem	ON	DTC Troubleshooting (see page 11-231)
P2122 (37)	—	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-233)
P2123 (37)	—	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High Voltage	ON	DTC Troubleshooting (see page 11-236)
P2127 (37)	—	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-237)
P2128 (37)	—	Accelerator Pedal Position (APP) Sensor B (Throttle Position (TP) Sensor E) Circuit High Voltage	ON	DTC Troubleshooting (see page 11-240)
P2135 (7)	—	Throttle Position (TP) Sensor A/B Incorrect Voltage Correlation	ON	DTC Troubleshooting (see page 11-241)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
P2138 (37)	—	Accelerator Pedal Position (APP) Sensor A/B (Throttle Position (TP) Sensor D/E) Incorrect Voltage Correlation	ON	DTC Troubleshooting (see page 11-243)
P2176 (40)	—	Throttle Actuator Control System Idle Position Not Learned	ON	DTC Troubleshooting (see page 11-244)
P2183 (192)	○	Engine Coolant Temperature (ECT) Sensor 2 Range/ Performance Problem	ON	DTC Troubleshooting (see page 11-170)
P2184 (192)	○	Engine Coolant Temperature (ECT) Sensor 2 Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-172)
P2185 (192)	○	Engine Coolant Temperature (ECT) Sensor 2 Circuit High Voltage	ON	DTC Troubleshooting (see page 11-173)
P2195 (155)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Signal Stuck Lean	ON	DTC Troubleshooting (see page 11-176)
P219A (45)*4	○	Air-Fuel Ratio Variation of Cylinders	ON	DTC Troubleshooting (see page 11-177)
P2227 (13)	○	Barometric Pressure (BARO) Sensor Range/Performance Problem	ON	DTC Troubleshooting (see page 11-179)
P2228 (13)	○	Barometric Pressure (BARO) Sensor Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-181)
P2229 (13)	○	Barometric Pressure (BARO) Sensor Circuit High Voltage	ON	DTC Troubleshooting (see page 11-181)
P2238 (48)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) AFS + Line Low Voltage	ON	DTC Troubleshooting (see page 11-182)
P2252 (48)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) AFS − Line Low Voltage	ON	DTC Troubleshooting (see page 11-183)
P2413 (12)	○	Exhaust Gas Recirculation (EGR) System Malfunction	ON	DTC Troubleshooting (see page 11-322)
P2422 (117)	○	Evaporative Emission (EVAP) Canister Vent Shut Valve Stuck Closed Malfunction	ON	DTC Troubleshooting (see page 11-352)
P2610 (132)	—	Engine Control Module (ECM)/Powertrain Control Module (PCM) Ignition Off Internal Timer Malfunction	ON	DTC Troubleshooting (see page 11-185)
P2646 (22)	○	Rocker Arm Oil Pressure Switch Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-253)
P2647 (22)	○	Rocker Arm Oil Pressure Switch Circuit High Voltage	ON	DTC Troubleshooting (see page 11-255)
P2648 (21)	—	Rocker Arm Oil Control Solenoid Circuit Low Voltage	ON	DTC Troubleshooting (see page 11-257)
P2649 (21)	—	Rocker Arm Oil Control Solenoid Circuit High Voltage	ON	DTC Troubleshooting (see page 11-258)
P2A00 (61)	○	Air Fuel Ratio (A/F) Sensor (Sensor 1) Range/Performance Problem	ON	DTC Troubleshooting (see page 11-185)
U0029 (126)	—	F-CAN Malfunction (BUS-OFF (Engine Control Module (ECM)/Powertrain Control Module (PCM))	ON	DTC Troubleshooting (see page 11-364)
U0038 (112)	—	IMA-CAN Malfunction (BUS-OFF (Engine Control Module (ECM)/Powertrain Control Module (PCM))	ON	DTC Troubleshooting (see page 11-364)
U0110 (126)	—	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-Motor Control Module (MCM))	ON	DTC Troubleshooting (see page 11-369)
U0122	—	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-VSA Modulator-Control Unit)	OFF	DTC Troubleshooting (see page 11-372)
U0155 (126)	—	F-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-Gauge Control Module)	ON	DTC Troubleshooting (see page 11-374)
U0301 (131)*4	—	PGM-FI System Program Version Mismatch	ON	DTC Troubleshooting (see page 11-186)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

DTC (MIL indication*1)	Two Drive Cycle Detection	Detection Item	MIL	Note
U1205 (112)	——	IMA-CAN Malfunction (Engine Control Module (ECM)/Powertrain Control Module (PCM)-Motor Control Module (MCM))	ON	DTC Troubleshooting (see page 11-364)

NOTE: The above DTCs are indicated when the PGM-FI system is selected with the HDS.
Some automatic transmission DTCs cause the MIL to come on. If the MIL is on and no DTCs are indicated in the PGM-FI system, select the CVT system, and check for automatic transmission DTCs.
*1: These DTCs are indicated by a blinking MIL when the SCS line is jumped with the HDS. Some DTCs do not cause the MIL to blink when the SCS line is jumped; these DTCs are shown in the gauge display.
*2: M/T
*3: CVT
*4: '12 model
*5: '11 model

Symptom Troubleshooting Index

When the vehicle has one of these symptoms, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

Symptom	Diagnostic procedure	Also check for
Engine will not start (MIL works OK, no DTCs set, IMA motor works OK)	1. Test the 12 volt battery (see page 22-85). 2. Test the starter (see page 4-9). 3. Check the fuel pressure (see page 11-290). 4. Troubleshoot the fuel pump circuit (see page 11-283).	• Low compression • No ignition spark • Restricted exhaust system • Intake vacuum leaks • Locked up engine • Broken cam chain • Fuel contamination
Engine will not start, and HDS does not communicate with the ECM/PCM (MIL comes on and stays on)	Troubleshoot the ECM/PCM power and ground circuits (see page 11-190).	• No power to ECM/PCM • No ground to ECM/PCM • Short in reference voltage circuit
MIL comes on and stays on, or never comes on at all, no DTCs set	Troubleshoot the MIL circuit (see page 11-187).	
Engine will not start (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system (see page 22-196).	
Engine starts but stalls immediately (MIL works OK, no DTCs set, immobilizer indicator stays on or flashes)	Check the immobilizer system (see page 22-196).	• Low compression • Intake vacuum leak • Weak spark • Low fuel pressure
Engine is hard to start (MIL works OK, no DTCs set)	1. Test the 12 volt battery (see page 22-85). 2. Check the fuel pressure (see page 11-290). 3. Clean the throttle body (see page 11-247).	• Low compression • Intake vacuum leaks • Fuel contamination • Weak spark
Cold fast idle too low (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see page 11-274). 2. Check the idle speed (see page 11-273). 3. Clean the throttle body (see page 11-247).	• Incorrect valve adjustment • Fuel contamination
Cold fast idle too high (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see page 11-274). 2. Check the idle speed (see page 11-273). 3. Test the throttle body (see page 11-246).	• Intake vacuum leak • Incorrect valve adjustment
Idle speed fluctuates (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see page 11-274). 2. Check the idle speed (see page 11-273). 3. Test the throttle body (see page 11-246). 4. Troubleshoot the A/C signal circuit (see page 11-271).	• Incorrect valve timing or clearance adjustment • Intake vacuum leaks
After warming up, idle speed is below specifications without load (MIL works OK, no DTCs set)	Test the throttle body (see page 11-246).	
After warming up, idle speed is above specifications without load (MIL works OK, no DTCs set)	Inspect the APP sensor (see page 11-251).	

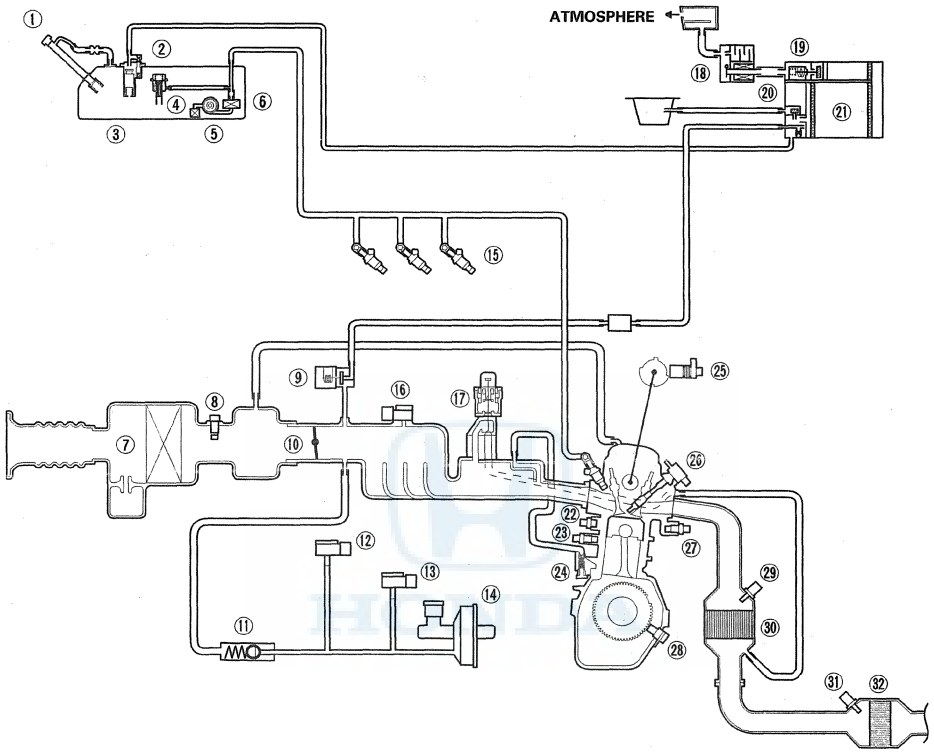
Symptom	Diagnostic procedure	Also check for
Low power (MIL works OK, no DTCs set)	Check the fuel pressure (see page 11-290).	• Low compression • Incorrect camshaft timing • Incorrect engine oil level • Exhaust restriction • Fuel contamination
Engine stalls (MIL works OK, no DTCs set)	1. Do the ECM/PCM idle learn procedure (see page 11-274). 2. Check the fuel pressure (see page 11-290). 3. Check the idle speed (see page 11-273). 4. Troubleshoot the brake pedal position switch signal circuit (see page 11-272).	• Intake vacuum leaks • Faulty harness and sensor connections • Fuel contamination
Difficult to refuel (MIL works OK, no DTCs set)	1. Check the fuel tank vapor control valve hose between the EVAP canister and the fuel tank. 2. Inspect the fuel filler neck for restrictions. 3. Replace the fuel tank unit (see page 11-301). 4. Replace the fuel tank (see page 11-306).	• Malfunctioning gas station filling nozzle • Faulty fuel tank vapor control valve
Fuel cap warning message stays on (MIL works OK, no DTCs set)	Troubleshoot the fuel cap warning message system (see page 11-357).	EVAP vacuum leak
SIL never comes on (M/T)	1. Troubleshoot the shift indicator lamp (see page 11-188). 2. Do the gauge control module self-diagnosis function (see page 22-325).	
SIL stays on (M/T)	1. Troubleshoot the shift indicator lamp (see page 11-188). 2. Do the gauge control module self-diagnosis function (see page 22-325).	
When the clutch pedal is pressed, the SIL is slow to go off (M/T)	Troubleshoot the shift indicator lamp (see page 11-188).	
SIL does not work sometimes (M/T)	Troubleshoot the shift indicator lamp (see page 11-188).	
HDS does not communicate with the ECM/PCM or the vehicle	Troubleshoot the DLC circuit (see page 11-383).	

Fuel and Emissions Systems

System Description

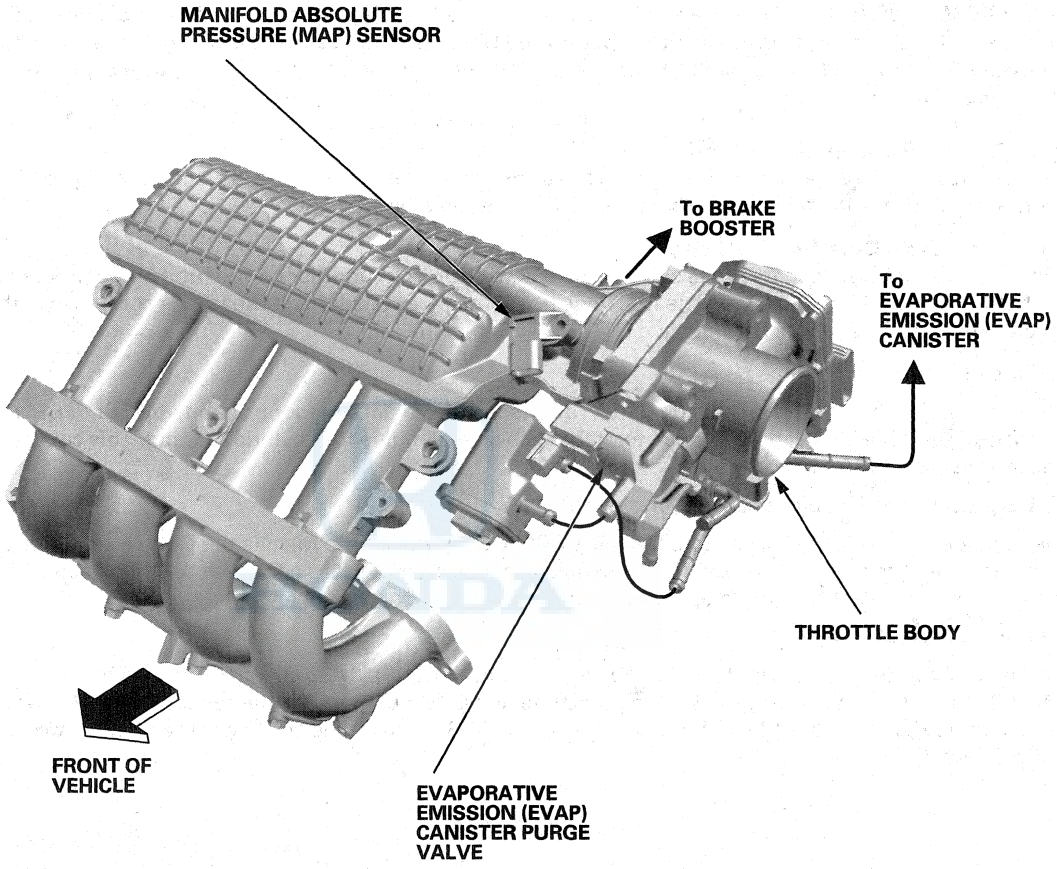
Fuel and Emissions System Diagram

System Diagram



① FUEL FILL CAP
② FUEL TANK VAPOR CONTROL VALVE
③ FUEL TANK
④ FUEL PRESSURE REGULATOR
⑤ FUEL PUMP
⑥ FUEL FILTER
⑦ AIR CLEANER
⑧ MASS AIR FLOW (MAF) SENSOR/ INTAKE AIR TEMPERATURE (IAT) SENSOR
⑨ EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE
⑩ THROTTLE BODY
⑪ CHECK VALVE
⑫ BRAKE BOOSTER PRESSURE SENSOR B
⑬ BRAKE BOOSTER PRESSURE SENSOR A
⑭ BRAKE BOOSTER
⑮ INJECTOR
⑯ MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
⑰ EXHAUST GAS RECIRCULATION (EGR) VALVE and POSITION SENSOR
⑱ EVAPORATIVE EMISSION (EVAP) CANISTER FILTER
⑲ EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE
⑳ FUEL TANK PRESSURE (FTP) SENSOR
㉑ EVAPORATIVE EMISSION (EVAP) CANISTER
㉒ KNOCK SENSOR
㉓ OIL PRESSURE SWITCH
㉔ POSITIVE CRANKCASE VENTILATION (PCV) VALVE
㉕ CAMSHAFT POSITION (CMP) SENSOR
㉖ IGNITION COIL
㉗ ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1
㉘ CRANKSHAFT POSITION (CKP) SENSOR
㉙ AIR FUEL RATIO (A/F) SENSOR (SENSOR 1)
㉚ WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC)
㉛ SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (SENSOR 2)
㉜ UNDER-FLOOR THREE WAY CATALYTIC CONVERTER (TWC)

Vacuum Hose Routing



(cont'd)

System Description (cont'd)

Electronic Control Systems

The functions of the fuel and emission control systems are managed by the engine control module (ECM) on vehicles with manual transmissions or the powertrain control module (PCM) on vehicles with automatic transmissions.

Self-diagnosis

The ECM/PCM detects the failure of a signal from a sensor or from another control unit and stores a Pending DTC or a Confirmed DTC. Depending on the failure, a Confirmed DTC is stored in either the first or the second drive cycle. When a Confirmed DTC is stored, the ECM/PCM turns on the malfunction indicator lamp (MIL) by a signal to the gauge control module via F-CAN.

- **One Drive Cycle Detection Method**
  When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM stores a Confirmed DTC for the failure and turns on the MIL immediately.
- **Two Drive Cycle Detection Method**
  When an abnormality occurs in the signal from a sensor or from another control unit in the first drive cycle, the ECM/PCM stores a Pending DTC. The MIL does not come on at this time. If the failure continues in the second drive cycle, the ECM/PCM stores a Confirmed DTC and turns on the MIL.

Fail-Safe Function

When an abnormality occurs in the signal from a sensor or from another control unit, the ECM/PCM ignores that signal and substitutes a pre-programmed value for it that allows the engine to continue running. This causes a Confirmed DTC to be stored and the MIL to come on.

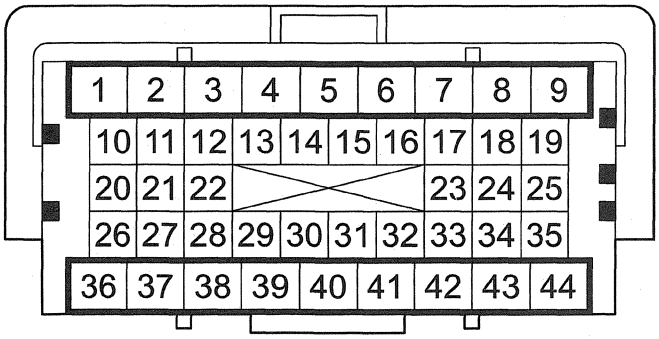
MIL Bulb Check and Readiness Code Condition

When the ignition switch is turned to ON (II), the ECM/PCM turns on the MIL via the F-CAN circuit for about 15 to 20 seconds to check the bulb condition. If any readiness codes are not set to complete, the MIL flashes five times. If all readiness codes are set to complete, the MIL goes off.

Self Shut Down (SSD) Mode

After the ignition switch is turned to ACCESSORY (I) or to LOCK (0), the ECM/PCM stays on for up to an hour. If an ECM/PCM connector is disconnected during this time, the ECM/PCM may be damaged. To cancel this mode, disconnect the negative cable from the 12 volt battery, or jump the SCS line with the HDS after the ignition switch is turned to ACCESSORY (I) or to LOCK (0).

ECM/PCM Inputs and Outputs at ECM/PCM Connector A (□) (44P)



Terminal side of female terminals

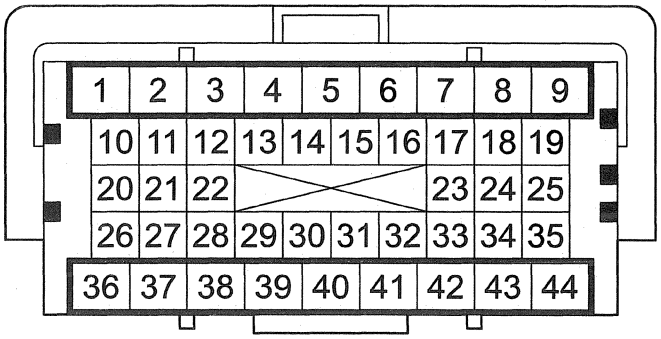
Terminal number	Wire color	Terminal name	Description	Signal
1*2	LT GRN	VBSOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valve	With ignition switch ON (II): battery voltage
2	GRN	MPMON1 (BRAKE BOOSTER PRESSURE MONITOR A)	Detects brake booster pressure sensor A signal	With ignition switch ON (II): about 3.0 V (with no vacuum in the brake booster) At idle : about 1.0 V (depending on engine speed)
3	Not used	Not used		
4	RED	FANL (RADIATOR FAN CONTROL)	Drives radiator fan relay	With radiator fan running: about 0 V With radiator fan stopped: battery voltage
5	GRY	FANH (RADIATOR FAN CONTROL)	Drives A/C condenser fan relay	With A/C condenser fan running at high speed: about 0 V With A/C condenser fan running at low speed or stopped: battery voltage
6	PUR	MRLY (PGM-FI MAIN RELAY 1)	Drives PGM-FI main relay 1	With ignition switch ON (II): about 0 V With ignition switch in LOCK (0): battery voltage
7	BLU	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal	With ignition switch in START (III): battery voltage With ignition switch in any position other than START (III): about 0 V
8	YEL	IGP1 (POWER SOURCE 1)	Power source for ECM/PCM circuit	With ignition switch ON (II): battery voltage
9	PNK	SG6 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
10	LT GRN	VSV (EVAPORATIVE EMISSION (EVAP) CANISTER VENT SHUT VALVE)	Drives EVAP canister vent shut valve	With ignition switch ON (II): battery voltage
11	Not used	Not used		
12	LT GRN	STC (STARTER CUT RELAY)	Drives starter cut relay	With ignition switch in START (III): battery voltage With ignition switch in any position other than START (III): about 0 V
13*1	BRN	BKSWNC (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	With ignition switch ON (II) and brake pedal released: battery voltage With ignition switch ON (II) and brake pedal pressed: about 0 V
13*2	BRN	BKSWNC (BRAKE PEDAL POSITION SWITCH (IDLE STOP SWITCH))	Detects idle stop switch signal	With ignition switch ON (II) and brake pedal released: battery voltage With ignition switch ON (II) and brake pedal pressed: about 0 V
14	GRY	ACC (A/C COMPRESSOR CLUTCH RELAY)	Drives A/C compressor clutch relay	With compressor ON: about 0 V With compressor OFF: battery voltage

*1: M/T
*2: CVT

(cont'd)

System Description (cont'd)

ECM/PCM Inputs and Outputs at ECM/PCM Connector A (□) (44P)

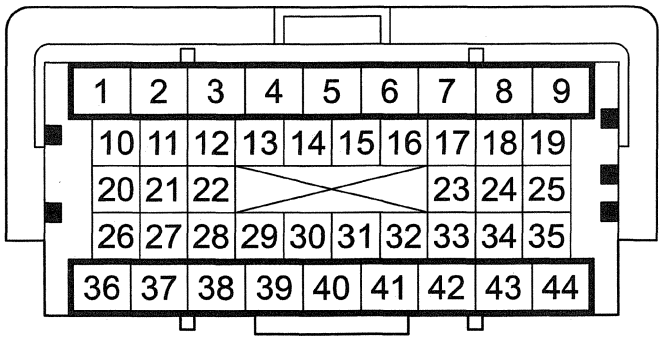


Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
15	GRN	IMOFPR (IMMOBILIZER FUEL PUMP RELAY)	Drives PGM-FI main relay 2	About 0 V for 2 seconds after turning ignition switch ON (II), then battery voltage With engine running: about 0 V
16	BLU	ACPD (A/C PRESSURE SENSOR)	Detects A/C pressure sensor signal	With A/C switch ON: about 1.4— 4.8 V (depending on A/C pressure)
17	YEL	APSA (ACCELERATOR PEDAL POSITION (APP) SENSOR A)	Detects APP sensor A signal	With ignition switch ON (II) and accelerator pedal pressed: about 4.7 V With ignition switch ON (II) and accelerator pedal released: about 1.0 V
18	PUR	APSB (ACCELERATOR PEDAL POSITION (APP) SENSOR B)	Detects APP sensor B signal	With ignition switch ON (II) and accelerator pedal pressed: about 2.4 V With ignition switch ON (II) and accelerator pedal released: about 0.5 V
19	YEL	VCC6 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
20	RED	ETCSRLY (ELECTRONIC THROTTLE CONTROL SYSTEM (ETCS) CONTROL RELAY)	Drives electronic throttle control system (ETCS) control relay	With ignition switch ON (II): about 0 V
21	ORN	SUBRLY (PGM-FI SUBRELAY)	Drives A/F sensor relay	With ignition switch ON (II): about 0 V
22	Not used	Not used		
23	PNK	ELD (ELECTRICAL LOAD DETECTOR (ELD))	Detects ELD signal	With ignition switch ON (II): about 0.1—4.8 V (depending on electrical load)
24	LT GRN	VCC5 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
25	BRN	VCC4 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
26	PUR	FTP (FUEL TANK PRESSURE (FTP) SENSOR)	Detects FTP sensor signal	With ignition switch ON (II) and fuel fill cap removed: about 2.5 V
27*1	PNK	RVSLCK (REVERSE LOCKOUT SOLENOID)	Drives reverse lockout solenoid	Vehicle speed is more than 12.4 mph (20 km/h): about 0 V Vehicle speed is less than 9.3 mph (15 km/h): battery voltage
27*2	GRY	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in P, brake pedal pressed, and accelerator released: about 0 V

*1: M/T
*2: CVT

ECM/PCM Inputs and Outputs at ECM/PCM Connector A (□) (44P)



Terminal side of female terminals

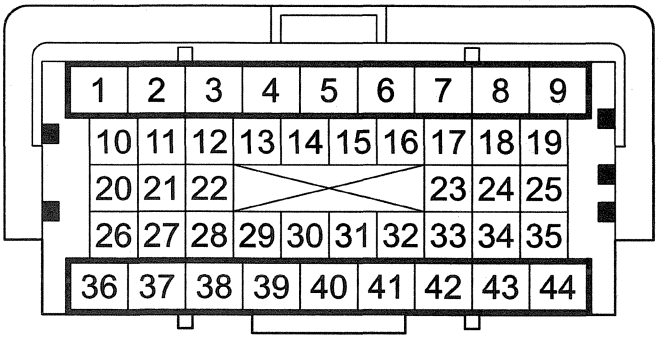
Terminal number	Wire color	Terminal name	Description	Signal
28	LT BLU	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse	With engine running: pulses
29	BLU	VSP (VEHICLE SPEED SIGNAL OUTPUT)	Sends vehicle speed signal	Depending on vehicle speed: pulses
30*2	YEL	SUPP (PADDLE SHIFTER + UPSHIFT SWITCH)	Detects paddle shifter + (upshift switch) signal	With ignition switch ON (II) and paddle shifter+ (upshift switch) pressed: about 0 V With ignition switch ON (II) and paddle shifter+ (upshift switch) released: battery voltage
31	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With service check signal shorted using the HDS: about 0 V With service check signal opened: about 5.0 V
32*1	LT GRN	RVSSW (REVERSE SWITCH)	Detects back-up light switch (reverse position) signal	With ignition switch ON (II) and transmission in R: battery voltage
32*2	LT GRN	SDNP (PADDLE SHIFTER − DOWNSHIFT SWITCH)	Detects paddle shifter − (downshift switch) signal	With ignition switch ON (II) and paddle shifter− (downshift switch) pressed: about 0 V With ignition switch ON (II) and paddle shifter− (downshift switch) released: battery voltage
33	WHT	ECT2 (ENGINE COOLANT TEMPERATURE (ECT) SENSOR 2)	Detects ECT sensor 2 signal	With ignition switch ON (II): about 0.1−4.8 V (depending on engine coolant temperature)
34	LT BLU	SG5 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
35	GRN	SG4 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
36	GRN	F-CAN H (CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II): pulses
37	PNK	F-CAN L (CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II): pulses

*1: M/T
*2: CVT

(cont'd)

System Description (cont'd)

ECM/PCM Inputs and Outputs at ECM/PCM Connector A (□) (44P)

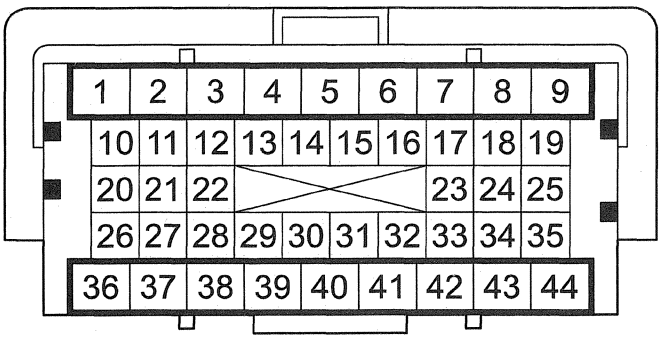


Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
38	WHT	IMA-CAN H (CAN COMMUNICATION SIGNAL HIGH)	Detects and receives communication signal to motor control module (MCM)	With ignition switch ON (II): pulses
39	RED	IMA-CAN L (CAN COMMUNICATION SIGNAL LOW)	Detects and receives communication signal to motor control module (MCM)	With ignition switch ON (II): pulses
40	WHT	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	Brake pedal released: about 0 V Brake pedal pressed: battery voltage
41*1	LT GRN	CRMTCLS (CRUISE CLUTCH PEDAL POSITION SWITCH	Detects clutch pedal position switch B signal	With ignition switch ON (II) and clutch pedal released: about 0 V With ignition switch ON (II) and clutch pedal pressed: battery voltage
42*3	ORN	WEN (WRITE ENABLE SIGNAL)	Detects write enable signal	With ignition switch ON (II): about 0 V
43	YEL	IGP2 (POWER SOURCE 2)	Power source for ECM/PCM circuit	With ignition switch ON (II): battery voltage
44	PNK	S-NET5V (SERIAL COMMUNICATION FOR IMMOBILIZER)	Sends serial communication signal	With ignition switch ON (II): pulses With key removed from ignition switch: 0—5.0 V

*1: M/T
*3: '11 model

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (△) (44P)



Terminal side of female terminals

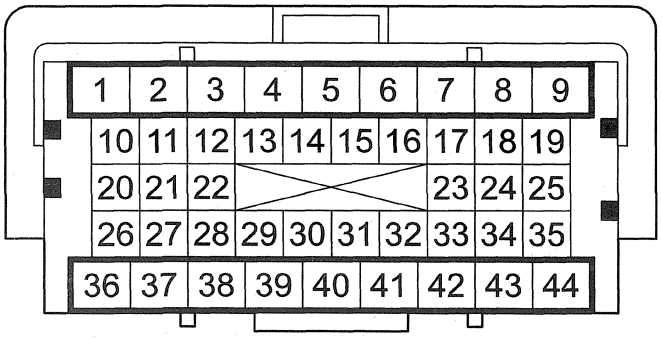
Terminal number	Wire color	Terminal name	Description	Signal
1	BRN	PG2 (POWER GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
2	BLU/RED	EGR (EXHAUST GAS RECIRCULATION (EGR) VALVE)	Drives EGR valve	With EGR operating: duty controlled With EGR not operating: about 0 V
3	YEL/BLU	PCS (EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE)	Drives EVAP canister purge valve	With engine running, engine coolant below 140 °F (60 °C): battery voltage With engine running, engine coolant above 140 °F (60 °C): duty controlled
4	RED	MPMON2 (BRAKE BOOSTER PRESSURE MONITOR B)	Detects brake booster pressure sensor B signal	With ignition switch ON (II): about 2.0 V At idle : about 1.0 V (depending on engine speed)
5	Not used	Not used		
6	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
7	YEL/RED	OPSW (OIL PRESSURE SWITCH)	Detects engine oil pressure signal	With engine running: battery voltage
8	Not used	Not used		
9	Not used	Not used		
10*2	GRN/BLK	INHSOL (INHIBITOR SOLENOID CONTROL)	Drives inhibitor solenoid	Until radiator fan comes on twice during idling in all positions : about 0V With reverse inhibitor control in R : battery voltage
11	Not used	Not used		
12*1	RED	CLSW (CLUTCH SWITCH)	Detects clutch pedal position switch A signal	With ignition switch ON (II) and clutch pedal released: about 5 V With ignition switch ON (II) and clutch pedal pressed: about 0 V
12*2	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH IN N)	Detects transmission range switch N position input signal	With ignition switch ON (II) in N: about 0 V With ignition switch ON (II) in any position other than N: about 5.0 V
13*1	RED/BLK	NSW (VCC)	Detects neutral position	With ignition switch ON (II) and transmission in neutral: about 0 V With ignition switch ON (II) and transmission in gear: about 5.0 V
13*2	BLU/BLK	ATPP (TRANSMISSION RANGE SWITCH IN P)	Detects transmission range switch P position input signal	With ignition switch ON (II) in P: about 0 V With ignition switch ON (II) in any position other than P: battery voltage
14*2	WHT	ATPR (TRANSMISSION RANGE SWITCH IN R)	Detects transmission range switch R position input signal	With ignition switch ON (II) in R: about 0 V With ignition switch ON (II) in any position other than R: battery voltage

*1: M/T
*2: CVT

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System Description (cont'd)

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (△) (44P)

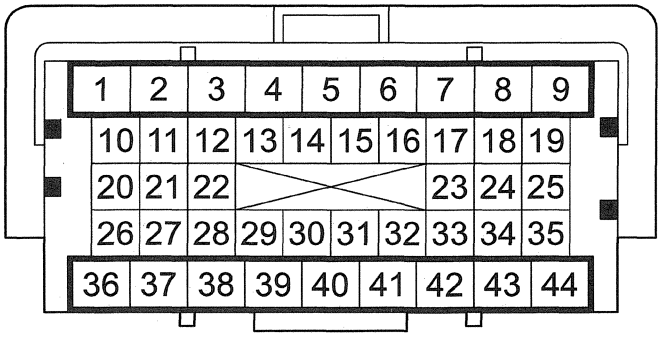


Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
15	Not used	Not used		
16	Not used	Not used		
17*2	WHT/RED	NDR (CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR)	Detects CVT input shaft (drive pulley) speed sensor signal	With ignition switch ON (II): about 0 V, or about 5.0 V With engine idling in N: pulses
18	Not used	Not used		
19*2	WHT/GRN	NDN (CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR)	Detects CVT output shaft (driven pulley) speed sensor signal	With ignition switch ON (II): about 0 V, or about 5.0 V With engine idling in N: pulses
20	Not used	Not used		
21*1	RED/BLK	NSW (IGP)	Neutral position switch power supply	With ignition switch ON (II) and transmission in neutral: about 0 V With ignition switch ON (II) and transmission in gear: battery voltage
21*2	PNK	ATPD (TRANSMISSION RANGE SWITCH IN D)	Detects transmission range switch D position input signal	With ignition switch ON (II) in D: about 0 V With ignition switch ON (II) in any position other than D: battery voltage
22	Not used	Not used		
23	RED/WHT	ECT1 (ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1)	Detects ECT sensor 1 signal	With ignition switch ON (II): about 0.1—4.8 V (depending on engine coolant temperature)
24	Not used	Not used		
25	Not used	Not used		
26	Not used	Not used		
27	Not used	Not used		
28*2	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH IN FWD)	Detects transmission range switch FWD position input signal	With ignition switch ON (II) in D: about 0 V With ignition switch ON (II) in any position other than D: battery voltage
29	WHT/BLK	EGRP (EXHAUST GAS RECIRCULATION (EGR) VALVE POSITION SENSOR)	Detects EGR valve position sensor signal	With engine running: about 1.2—3.0 V (depending on EGR valve lift)
30	RED/GRN	VG+ (MASS AIR FLOW (MAF) SENSOR +SIDE)	Detects MAF sensor signal	At idle with warmed up engine and no electrical load: about 1.2 V
31	RED/YEL	IAT (INTAKE AIR TEMPERATURE (IAT) SENSOR)	Detects IAT sensor signal	With ignition switch ON (II): about 0.1—4.0 V (about 2.6 V at normal operating temperature)
32	BLK/RED	VG− (MASS AIR FLOW (MAF) SENSOR −SIDE)	Ground for MAF sensor signal	Less than 0.2 V at all times
33	Not used	Not used		

*1: M/T
*2: CVT

ECM/PCM Inputs and Outputs at ECM/PCM Connector B (△) (44P)



Terminal side of female terminals

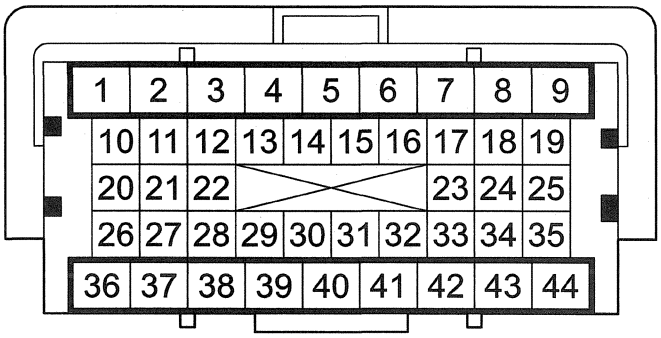
Terminal number	Wire color	Terminal name	Description	Signal
34*1	BLK/WHT	NC (COUNTERSHAFT SPEED SENSOR)	Detects output shaft (countershaft) speed sensor signal	Depending on vehicle speed: pulses With ignition switch ON (II) and vehicle stopped: about 0 V, or about 5 V
34*2	BLK/WHT	VEL (VEHICLE SPEED SENSOR)	Detects vehicle speed sensor	With ignition switch ON (II) and when vehicle is stopped: about 0 V or, about 5.0 V Depending on vehicle speed: pulses
35	Not used	Not used		
36	BLK	PG1 (POWER GROUND)	Ground circuit for ECM/PCM circuit	Less than 0.2 V at all times
37	Not used	Not used		
38	Not used	Not used		
39*1	GRN	CLSW2 (CLUTCH SWITCH 2)	Detects clutch pedal position switch C signal	With ignition switch ON (II) and clutch pedal released: about 5 V With ignition switch ON (II) and clutch pedal pressed: about 0 V
40	Not used	Not used		
41	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
42*2	YEL	SCLS (CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE)	Drives CVT clutch pressure control solenoid valve	With ignition switch ON (II): duty controlled
43*2	GRN/WHT	DNLS (CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE)	Drives CVT driven pulley pressure control solenoid valve	With ignition switch ON (II): duty controlled
44*2	BLU/WHT	DRLS (CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE)	Drives CVT drive pulley pressure control solenoid valve	With ignition switch ON (II): duty controlled

*1: M/T
*2: CVT

(cont'd)

System Description (cont'd)

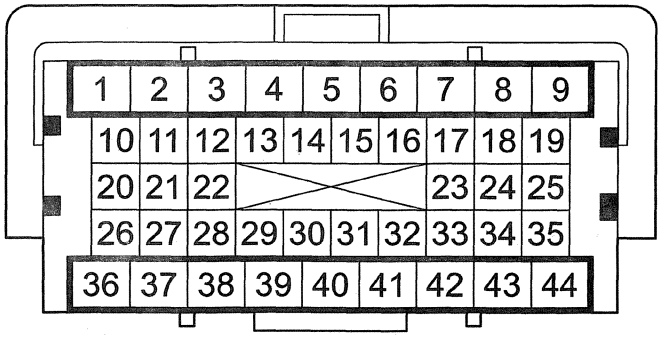
ECM/PCM Inputs and Outputs at ECM/PCM Connector C (○) (44P)



Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
1	WHT	IG1ETCS (IGNITION SIGNAL ETCS)	Detects ignition signal	With ignition switch ON (II): battery voltage
2	BLK	PGMETCS (POWER GROUND ETCS)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
3	YEL	ETCSM− (THROTTLE ACTUATOR −SIDE)	Ground for throttle actuator	With ignition switch ON (II) and accelerator pedal released: about 0 V
4	YEL/RED	ETCSM+ (THROTTLE ACTUATOR +SIDE)	Drives throttle actuator	About 1.5 V immediately after turning ignition switch ON (II), then about 0 V
5	BRN	INJ1 (No. 1 INJECTOR)	Drives No. 1 injector	At idle: duty controlled With ignition switch ON (II): battery voltage
6	RED	INJ2 (No. 2 INJECTOR)	Drives No. 2 injector	
7	BLU	INJ3 (No. 3 INJECTOR)	Drives No. 3 injector	
8	YEL	INJ4 (No. 4 INJECTOR)	Drives No. 4 injector	
9	GRN	AFSHTC (AIR FUEL RATIO (A/F) SENSOR (SENSOR 1) HEATER CONTROL)	Drives A/F sensor (sensor 1) heater	With ignition switch ON (II): battery voltage With warmed up engine running: duty controlled
10	Not used	Not used		
11	GRN/RED	MAP (MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR)	Detects MAP sensor signal	With ignition switch ON (II): about 3.0 V At idle: about 1.0 V (depending on engine speed)
12	BLU	VCC3 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
13	GRN	SG3 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
14	GRN/YEL	VTS (ROCKER ARM OIL CONTROL SOLENOID)	Drives rocker arm oil control solenoid	At idle: about 0 V
15	WHT	IGPLS1 (No. 1 IGNITION COIL PULSE)	Drives No. 1 ignition coil	With ignition switch ON (II): about 0 V With engine running: pulses
16	WHT/GRN	IGPLS2 (No. 2 IGNITION COIL PULSE)	Drives No. 2 ignition coil	
17	WHT/BLK	IGPLS3 (No. 3 IGNITION COIL PULSE)	Drives No. 3 ignition coil	
18	WHT/BLU	IGPLS4 (No. 4 IGNITION COIL PULSE)	Drives No. 4 ignition coil	
19	Not used	Not used		
20	RED/BLK	TPSA (THROTTLE POSITION (TP) SENSOR A)	Detects TP sensor A signal	With ignition switch ON (II) and accelerator pedal pressed: about 3.9 V With ignition switch ON (II) and accelerator pedal released: about 0.9 V

ECM/PCM Inputs and Outputs at ECM/PCM Connector C (○) (44P)



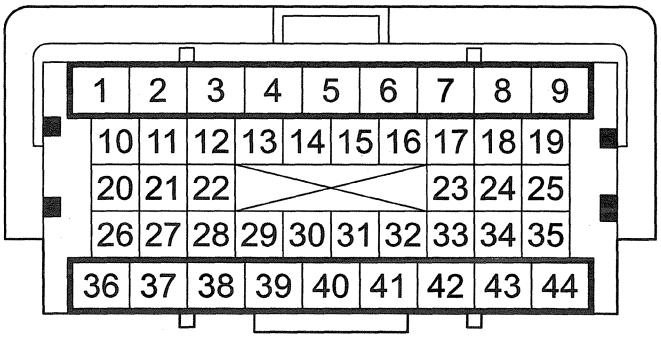
Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
21	RED	TPSB (THROTTLE POSITION (TP) SENSOR B)	Detects TP sensor B signal	With ignition switch ON (II) and accelerator pedal pressed: about 4.1 V With ignition switch ON (II) and accelerator pedal released: about 1.7 V
22	Not used	Not used		
23	Not used	Not used		
24	Not used	Not used		
25	Not used	Not used		
26	Not used	Not used		
27	WHT	SHO2S (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (SENSOR 2))	Detects secondary HO2S (sensor 2) signal	With throttle fully opened from idle and warmed up engine: about 0.8 V With throttle quickly closed: below 0.4 V
28	BLK/WHT	SO2SHTC (SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (SENSOR 2) HEATER)	Drives secondary HO2S (sensor 2) heater	With ignition switch ON (II): battery voltage With warmed up engine running: duty controlled
29	RED	AFS+ (AIR FUEL RATIO (A/F) SENSOR (SENSOR 1) +SIDE)	Detects A/F sensor (sensor 1) signal	At idle: about 2.2 V
30	RED/YEL	AFS− (AIR FUEL RATIO (A/F) SENSOR (SENSOR 1) −SIDE)	Detects A/F sensor (sensor 1) signal	At idle: about 1.8 V
31	GRN	CMP (CAMSHAFT POSITION (CMP) SENSOR)	Detects CMP sensor signal	With engine running: pulses
32	BLU	CKP (CRANKSHAFT POSITION (CKP) SENSOR)	Detects CKP sensor signal	With engine running: pulses

(cont'd)

System Description (cont'd)

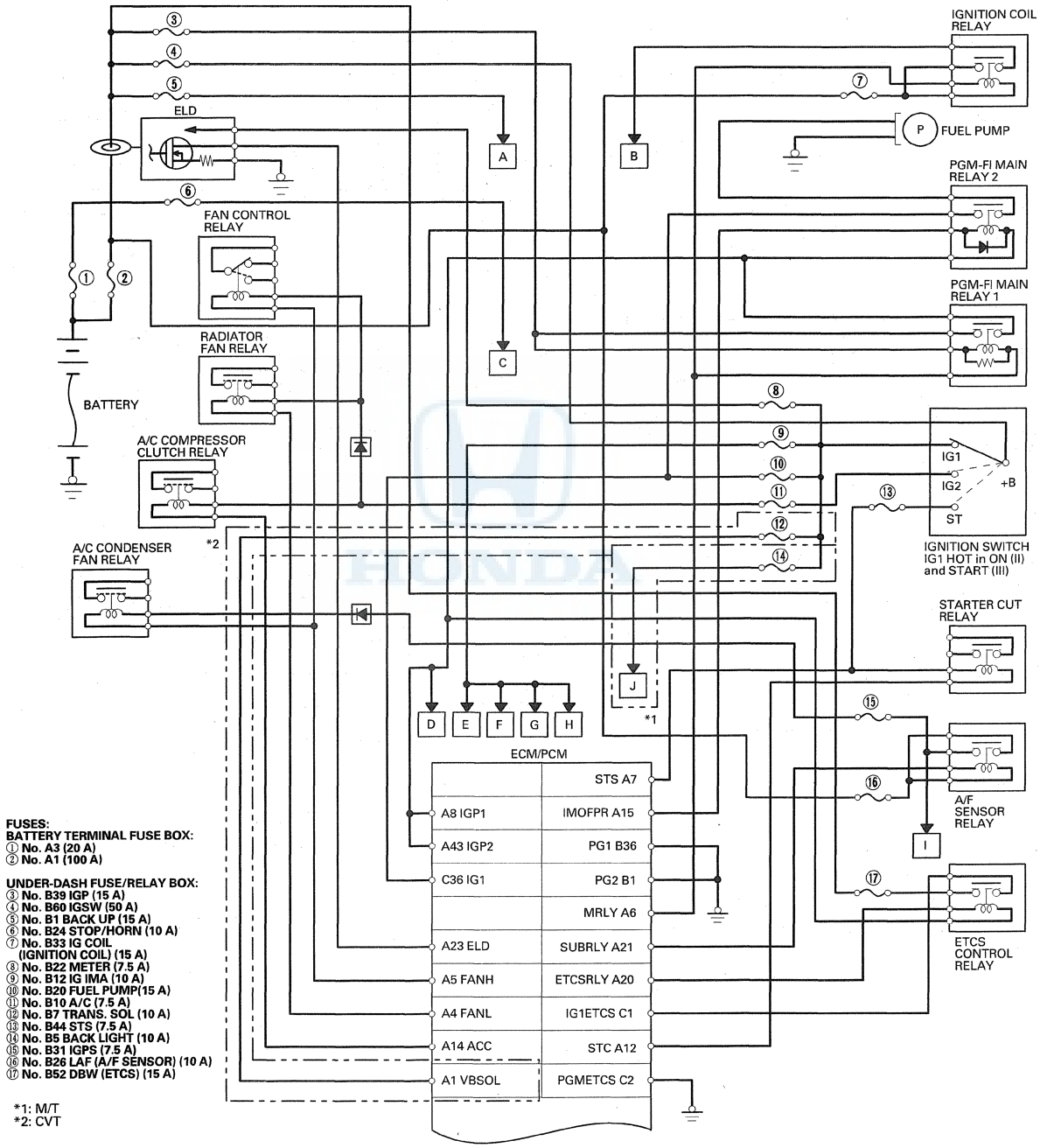
ECM/PCM Inputs and Outputs at ECM/PCM Connector C (○) (44P)



Terminal side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
33	BLU/BLK	VTPSW(ROCKER ARM OIL PRESSURE SWITCH)	Detects rocker arm oil pressure switch signal	At idle: about 0 V
34	Not used	Not used		
35	Not used	Not used		
36	BLK/RED	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II): battery voltage
37	Not used	Not used		
38	Not used	Not used		
39	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
40	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times
41	Not used	Not used		
42	RED/BLU	KS (KNOCK SENSOR)	Detects knock sensor signal	With engine knocking: pulses Without engine knocking: 0 V
43	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
44	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for ECM/PCM	Less than 0.2 V at all times

ECM/PCM Electrical Connections



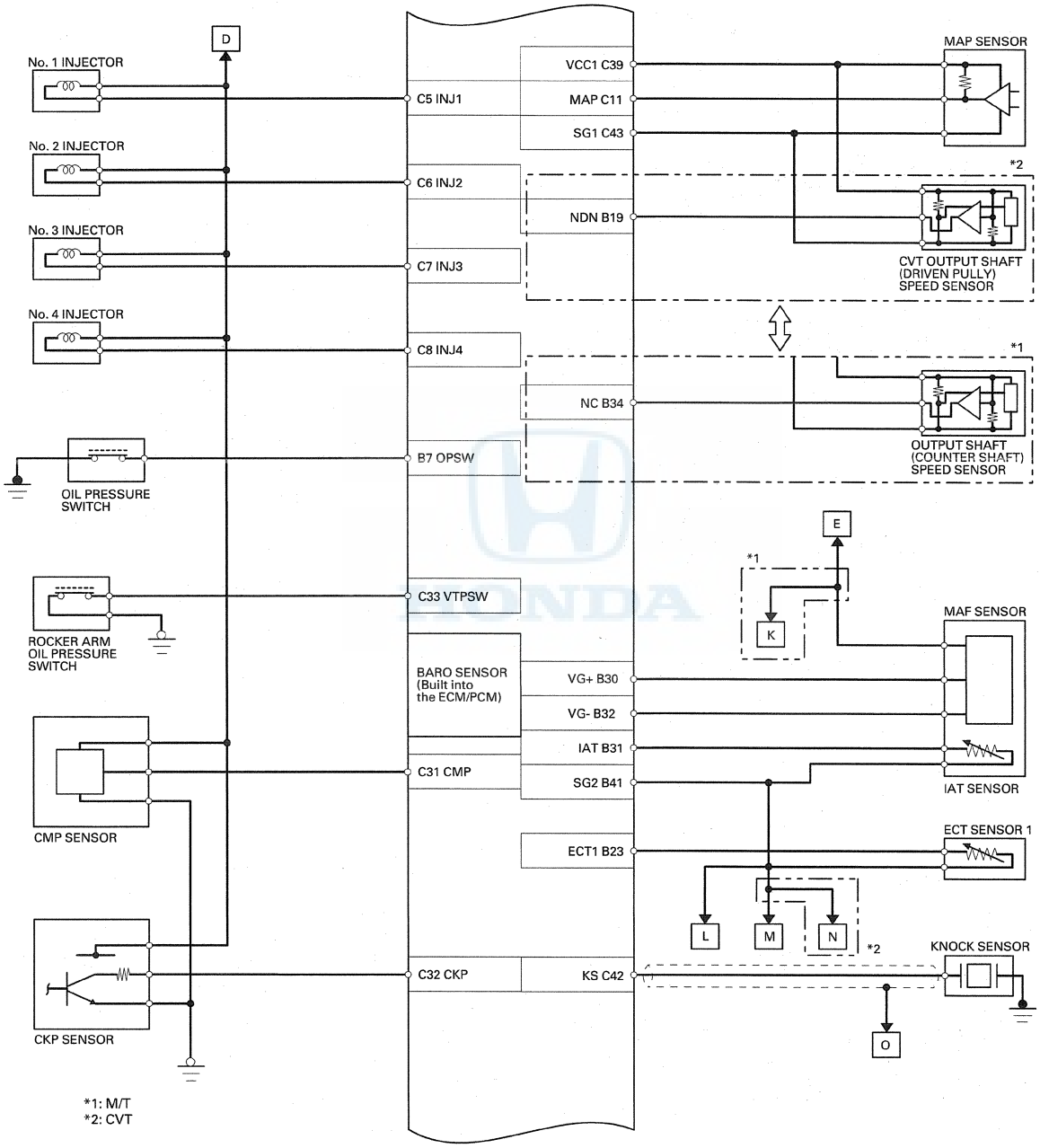
FUSES:
BATTERY TERMINAL FUSE BOX:
① No. A3 (20 A)
② No. A1 (100 A)

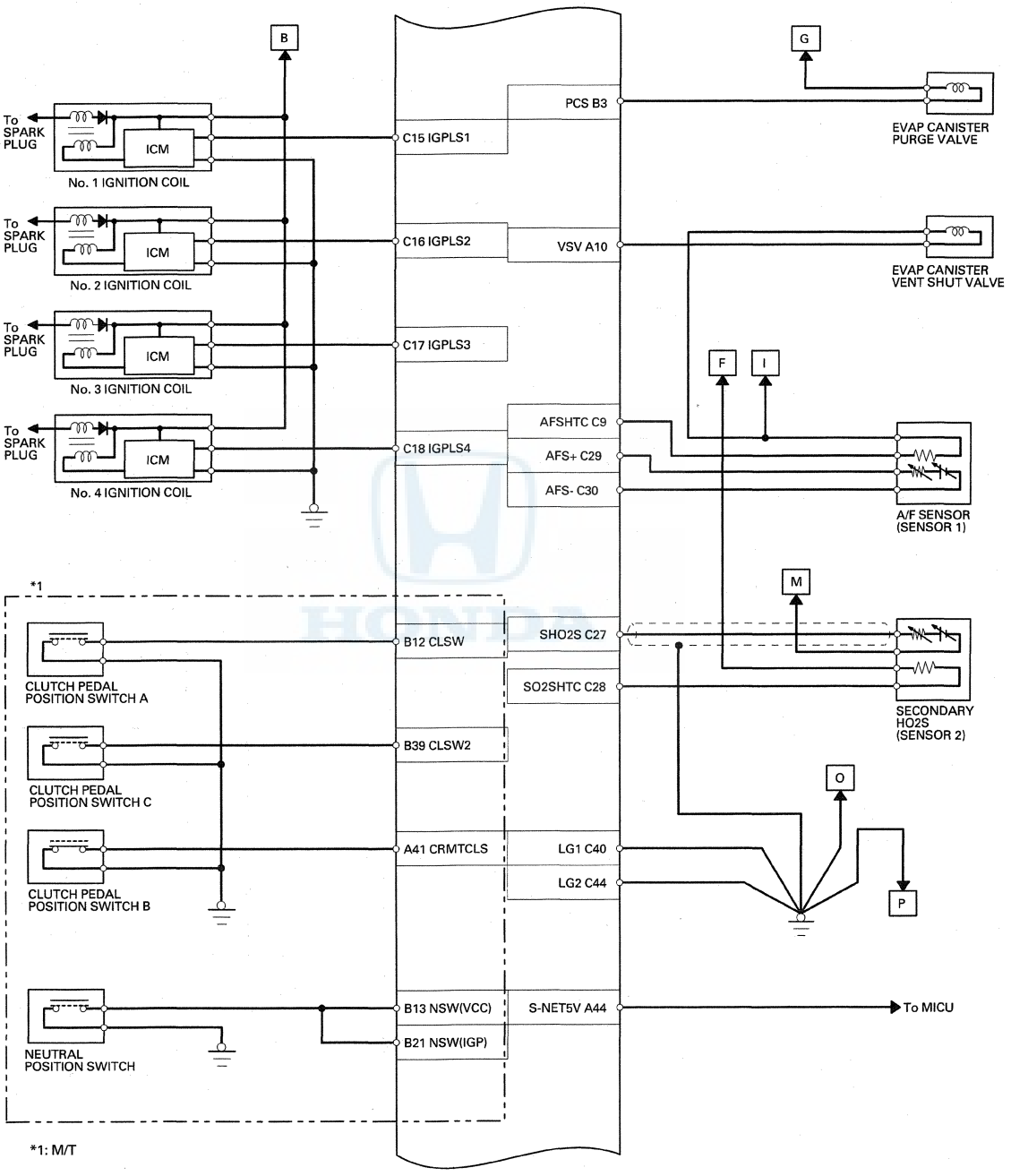
UNDER-DASH FUSE/RELAY BOX:
③ No. B39 IGP (15 A)
④ No. B60 IGSW (50 A)
⑤ No. B1 BACK UP (15 A)
⑥ No. B24 STOP/HORN (10 A)
⑦ No. B33 IG COIL (IGNITION COIL) (15 A)
⑧ No. B22 METER (7.5 A)
⑨ No. B12 IG IMA (10 A)
⑩ No. B20 FUEL PUMP(15 A)
⑪ No. B10 A/C (7.5 A)
⑫ No. B7 TRANS. SOL (10 A)
⑬ No. B44 STS (7.5 A)
⑭ No. B5 BACK LIGHT (10 A)
⑮ No. B31 IGPS (7.5 A)
⑯ No. B26 LAF (A/F SENSOR) (10 A)
⑰ No. B52 DBW (ETCS) (15 A)

*1: M/T
*2: CVT

(cont'd)

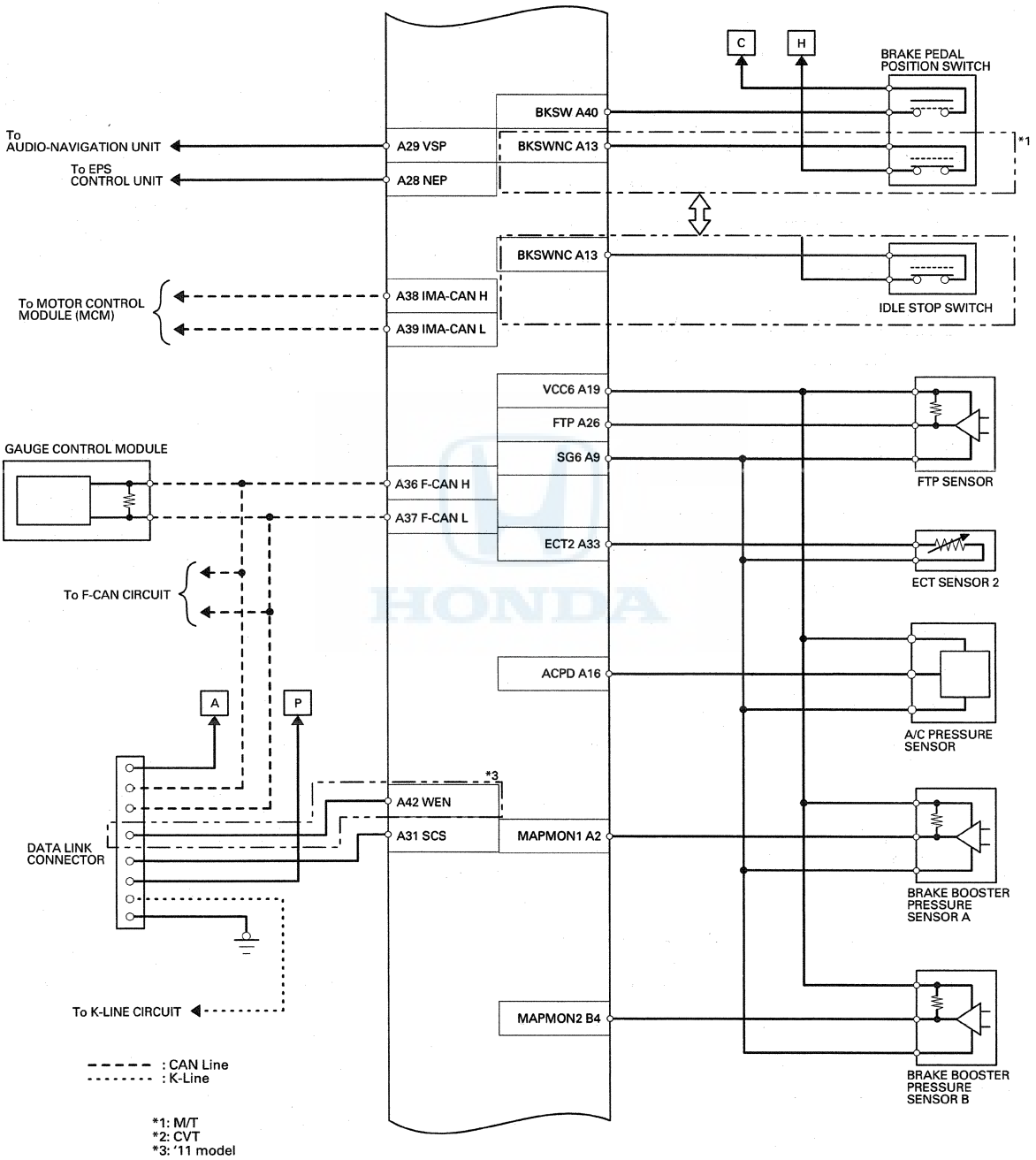
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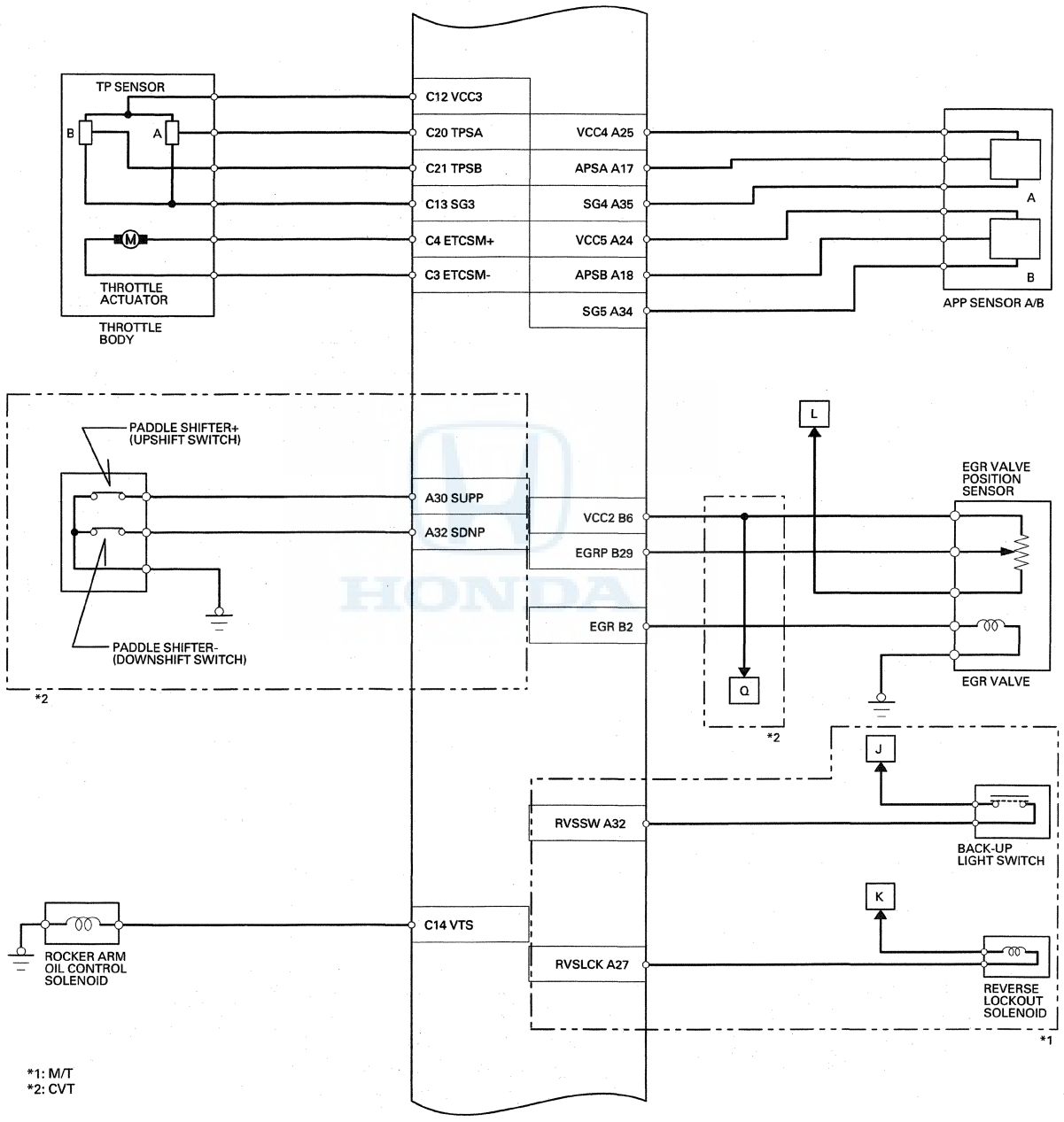



B
G
To SPARK PLUG
ICM
No. 1 IGNITION COIL
No. 2 IGNITION COIL
No. 3 IGNITION COIL
No. 4 IGNITION COIL
C15 IGPLS1
C16 IGPLS2
C17 IGPLS3
C18 IGPLS4
PCS B3
VSV A10
EVAP CANISTER PURGE VALVE
EVAP CANISTER VENT SHUT VALVE
F
I
AFSHTC C9
AFS+ C29
AFS- C30
A/F SENSOR (SENSOR 1)
M
*1
B12 CLSW
B39 CLSW2
A41 CRMTCLS
SHO2S C27
SO2SHTC C28
SECONDARY HO2S (SENSOR 2)
O
P
LG1 C40
LG2 C44
CLUTCH PEDAL POSITION SWITCH A
CLUTCH PEDAL POSITION SWITCH C
CLUTCH PEDAL POSITION SWITCH B
B13 NSW(VCC)
B21 NSW(IGP)
S-NET5V A44
To MICU
NEUTRAL POSITION SWITCH
*1: M/T

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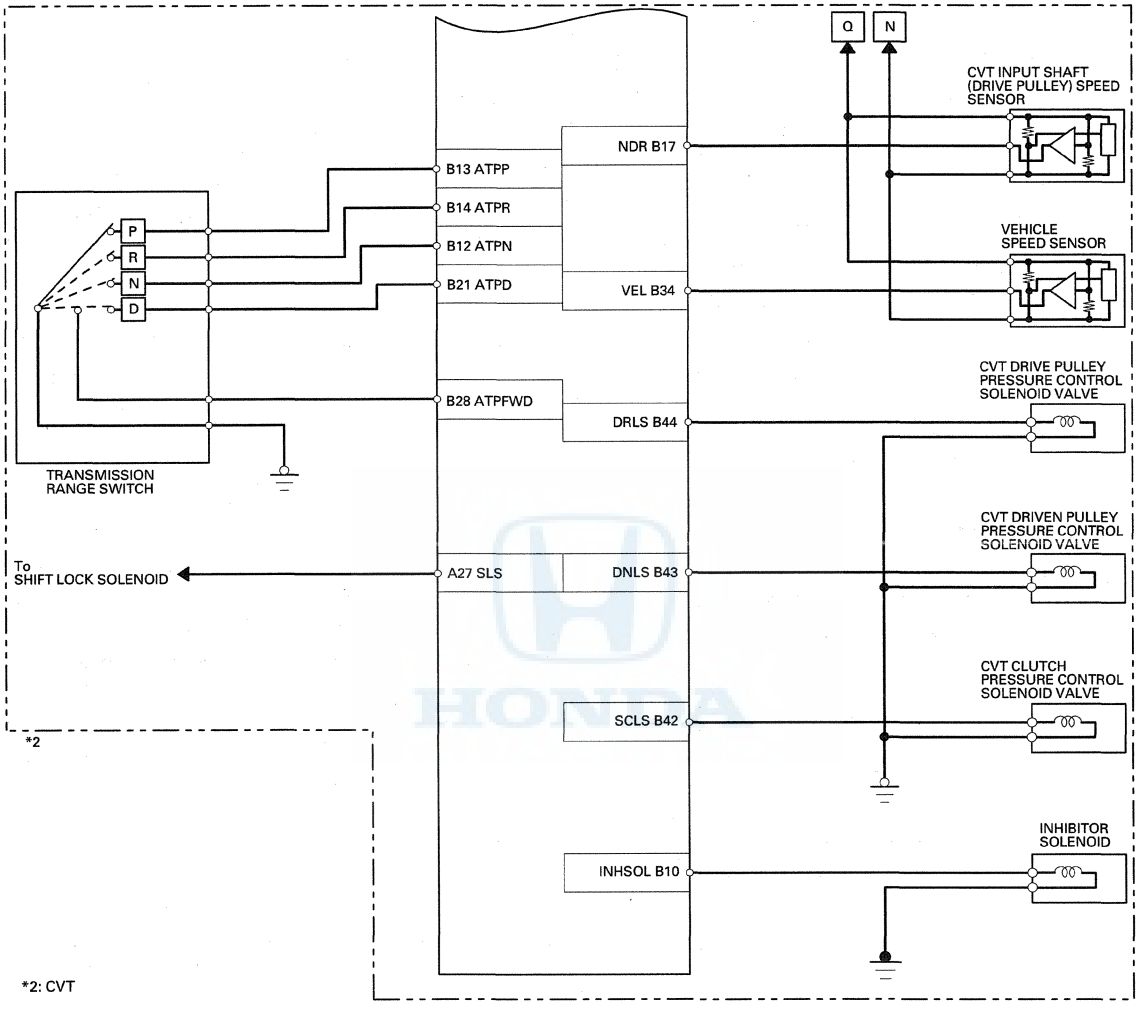
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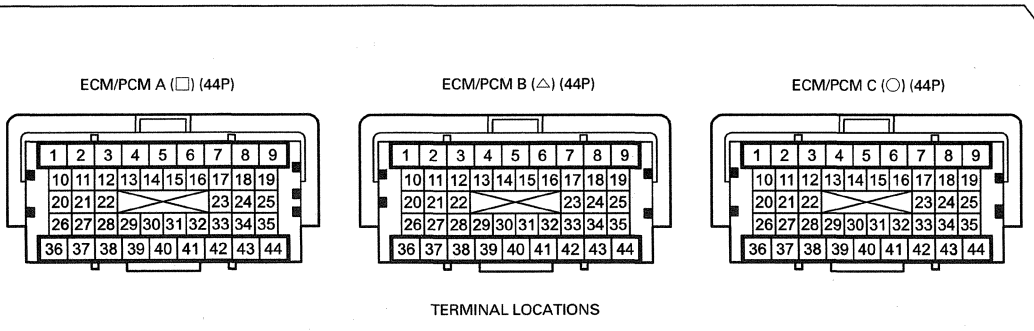



TP SENSOR
B
A
M
THROTTLE ACTUATOR
THROTTLE BODY
C12 VCC3
C20 TPSA
C21 TPSB
C13 SG3
C4 ETCSM+
C3 ETCSM-
VCC4 A25
APSA A17
SG4 A35
VCC5 A24
APSB A18
SG5 A34
A
B
APP SENSOR A/B
PADDLE SHIFTER+ (UPSHIFT SWITCH)
PADDLE SHIFTER- (DOWNSHIFT SWITCH)
A30 SUPP
A32 SDNP
*2
L
Q
*2
VCC2 B6
EGRP B29
EGR B2
EGR VALVE POSITION SENSOR
EGR VALVE
J
RVSSW A32
BACK-UP LIGHT SWITCH
K
RVSLCK A27
REVERSE LOCKOUT SOLENOID
*1
C14 VTS
ROCKER ARM OIL CONTROL SOLENOID
*1: M/T
*2: CVT

(cont'd)

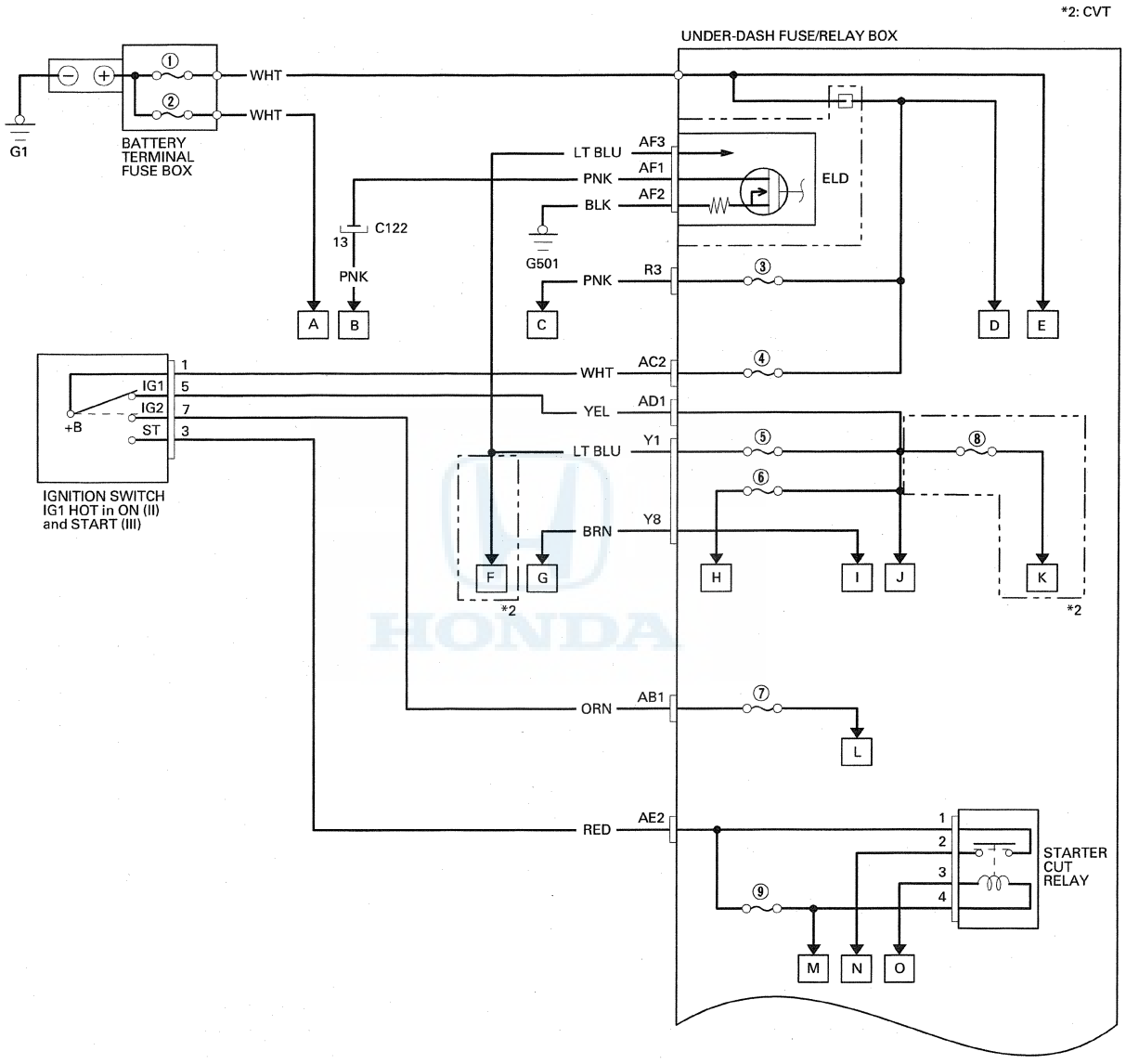
System Description (cont'd)





TERMINAL LOCATIONS

ECM/PCM Circuit Diagram

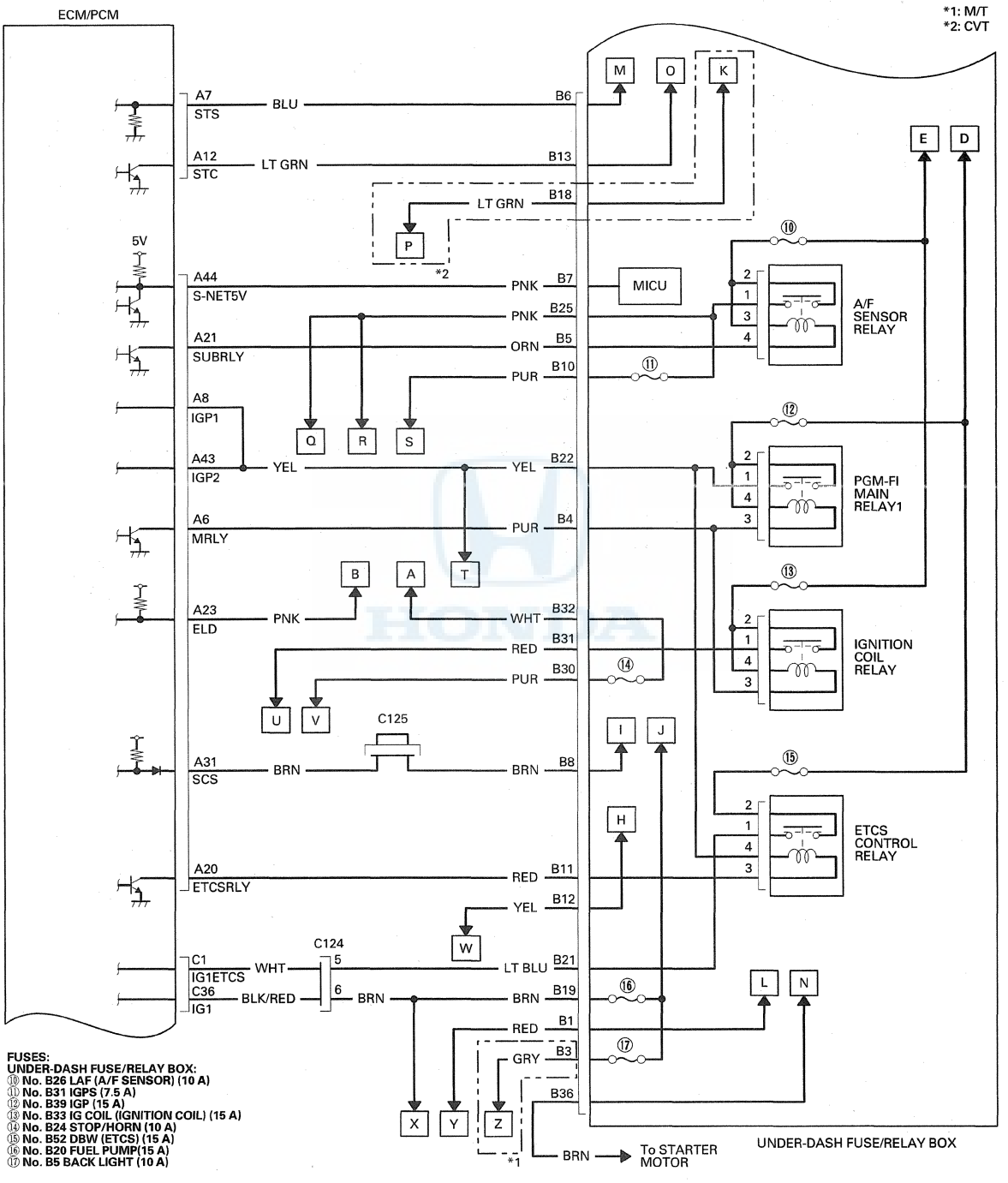


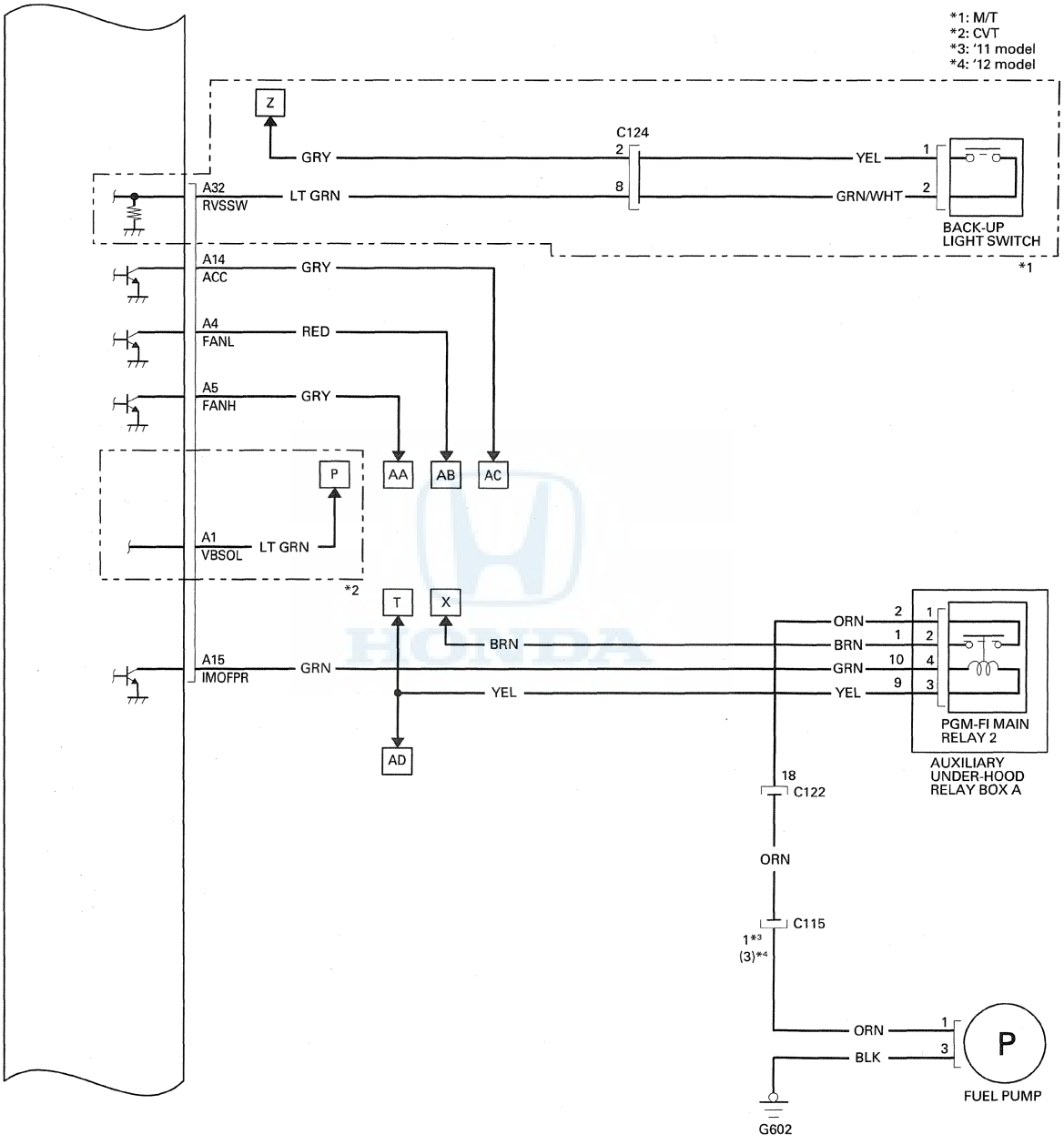
FUSES:
BATTERY TERMINAL FUSE BOX:
① No. A1 (100 A)
② No. A3 (20 A)

UNDER-DASH FUSE/RELAY BOX:
③ No. B1 BACK UP (15 A)
④ No. B60 IGSW (50 A)
⑤ No. B22 METER (7.5 A)
⑥ No. B12 IG IMA (10 A)
⑦ No. B10 A/C (7.5 A)
⑧ No. B7 TRANS. SOL (10 A)
⑨ No. B44 STS (7.5 A)

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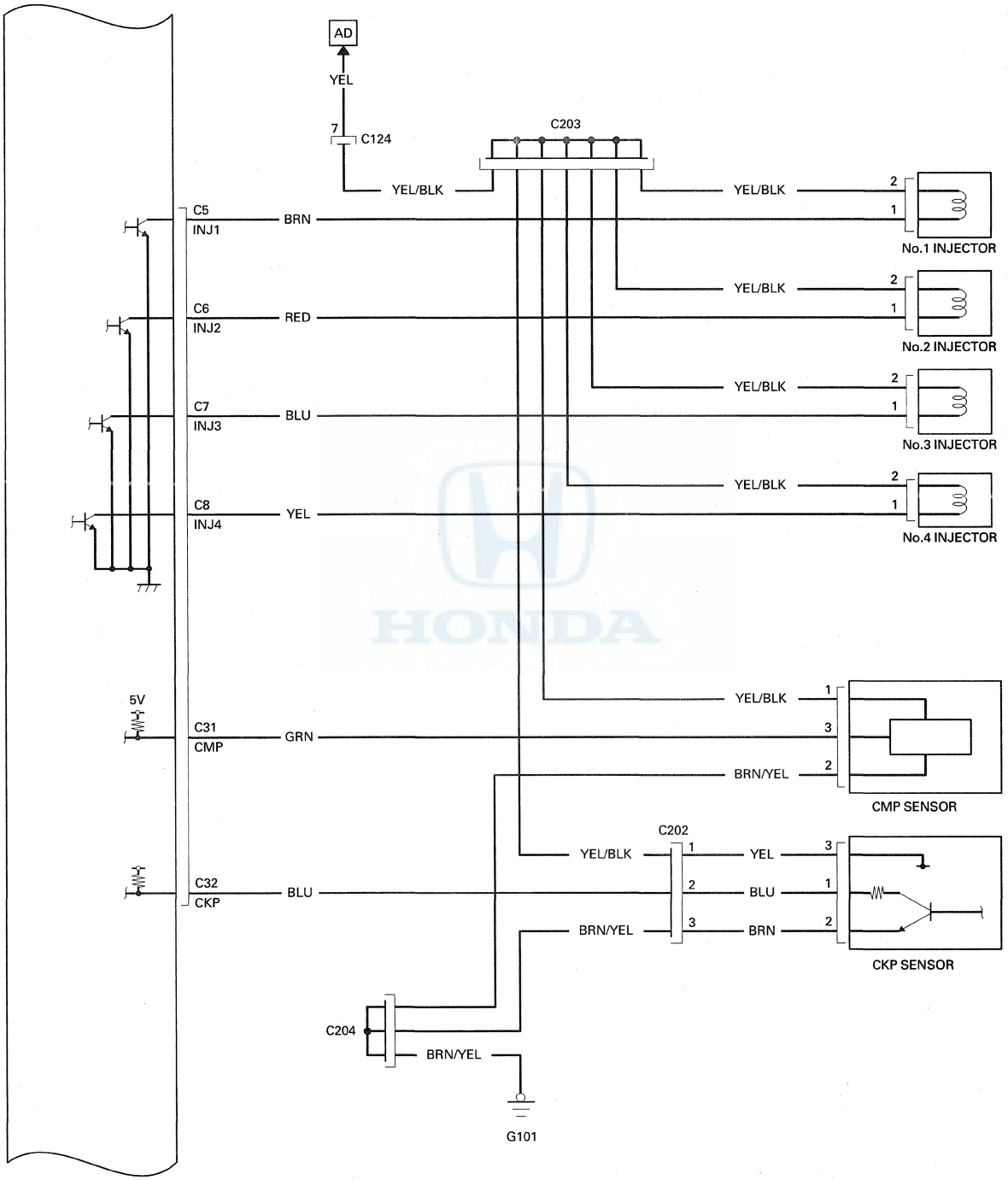
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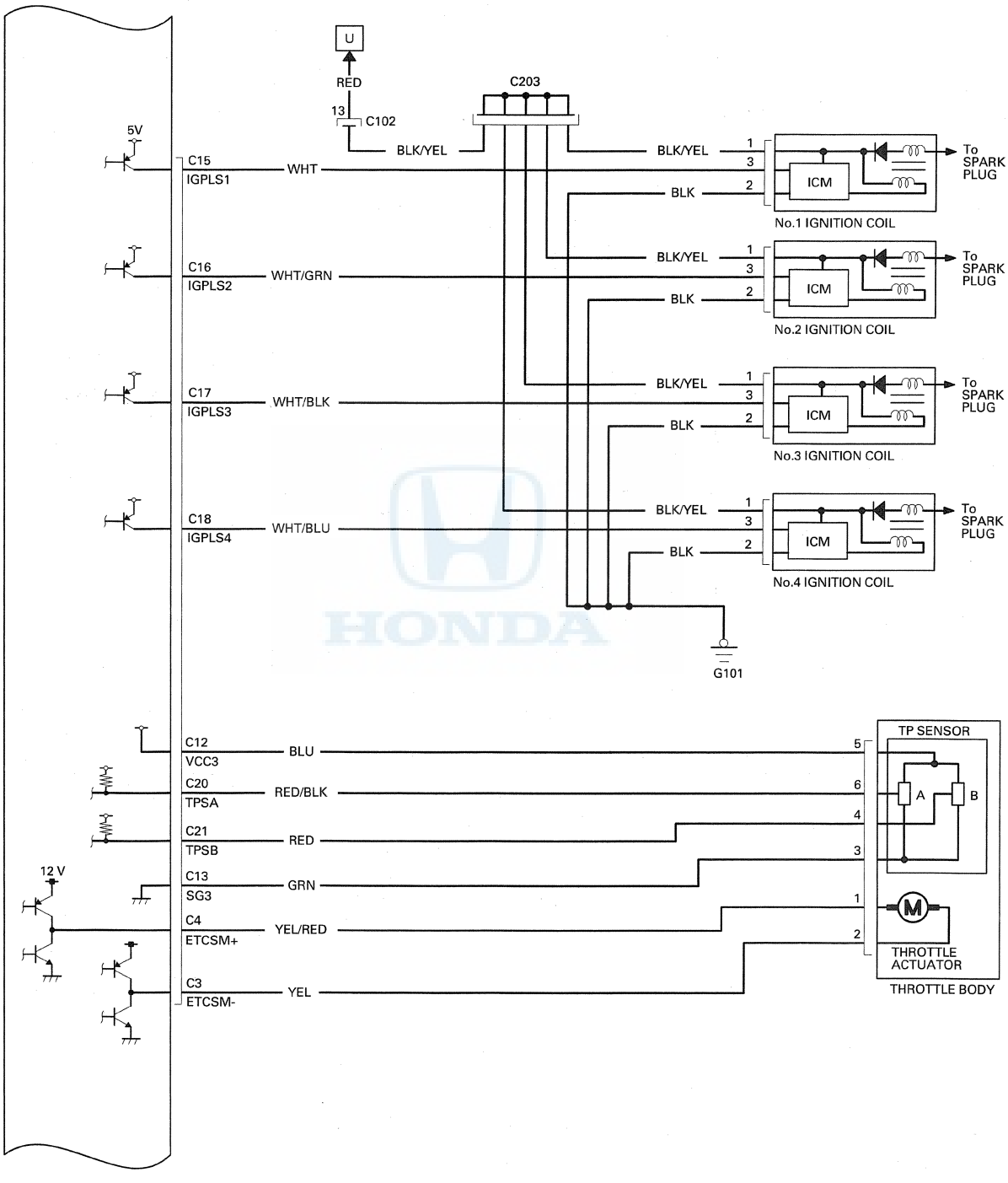



*1: M/T
*2: CVT
*3: '11 model
*4: '12 model
Z
GRY
C124
2
YEL
1
A32
RVSSW
LT GRN
8
GRN/WHT
2
BACK-UP
LIGHT SWITCH
*1
A14
ACC
GRY
A4
FANL
RED
A5
FANH
GRY
P
AA
AB
AC
A1
VBSOL
LT GRN
*2
T
X
BRN
ORN
2
1
BRN
1
2
GRN
10
4
YEL
9
3
A15
IMOFPR
GRN
YEL
PGM-FI MAIN
RELAY 2
AUXILIARY
UNDER-HOOD
RELAY BOX A
AD
18
C122
ORN
C115
1*3
(3)*4
ORN
1
BLK
3
P
FUEL PUMP
G602

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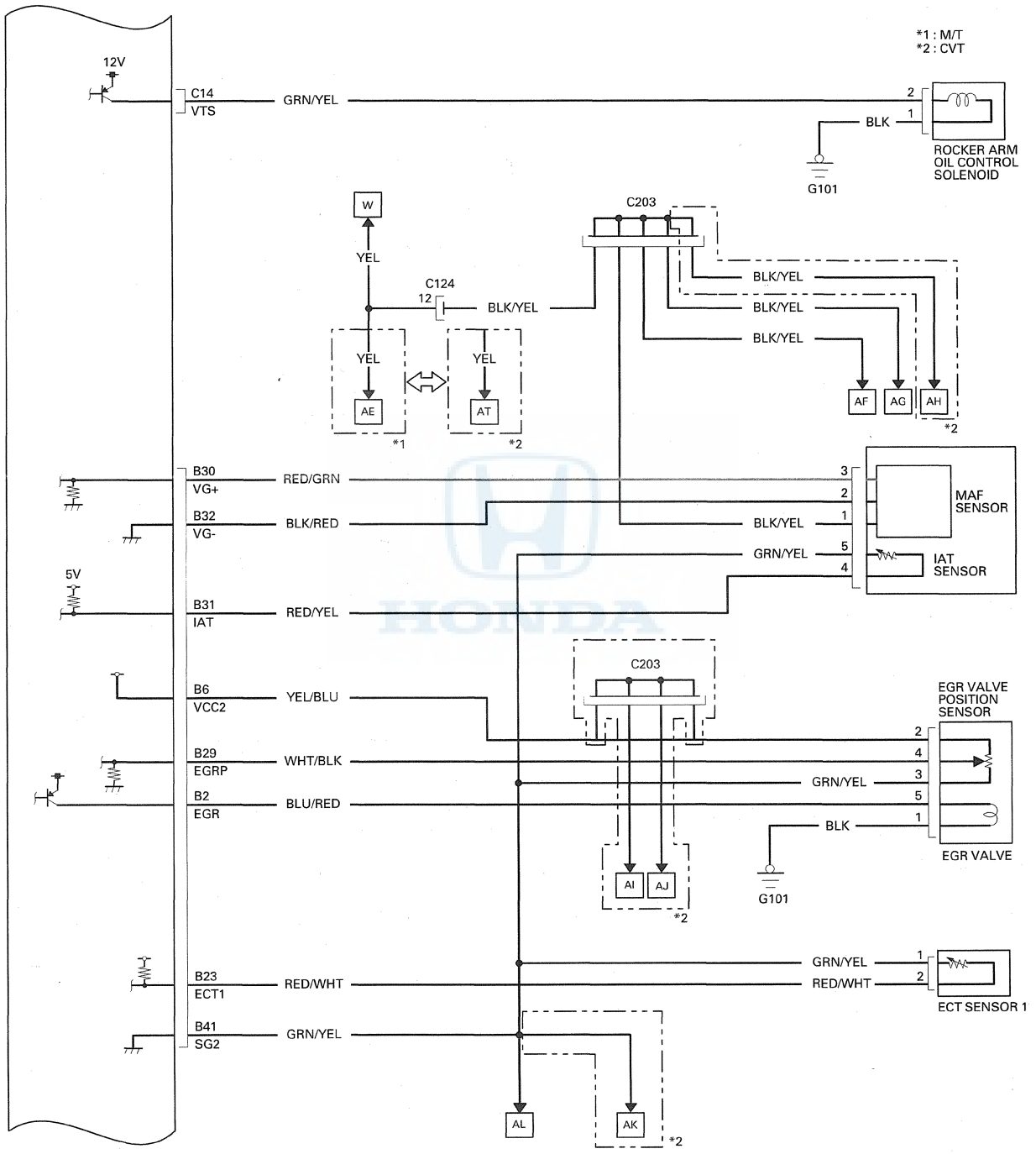
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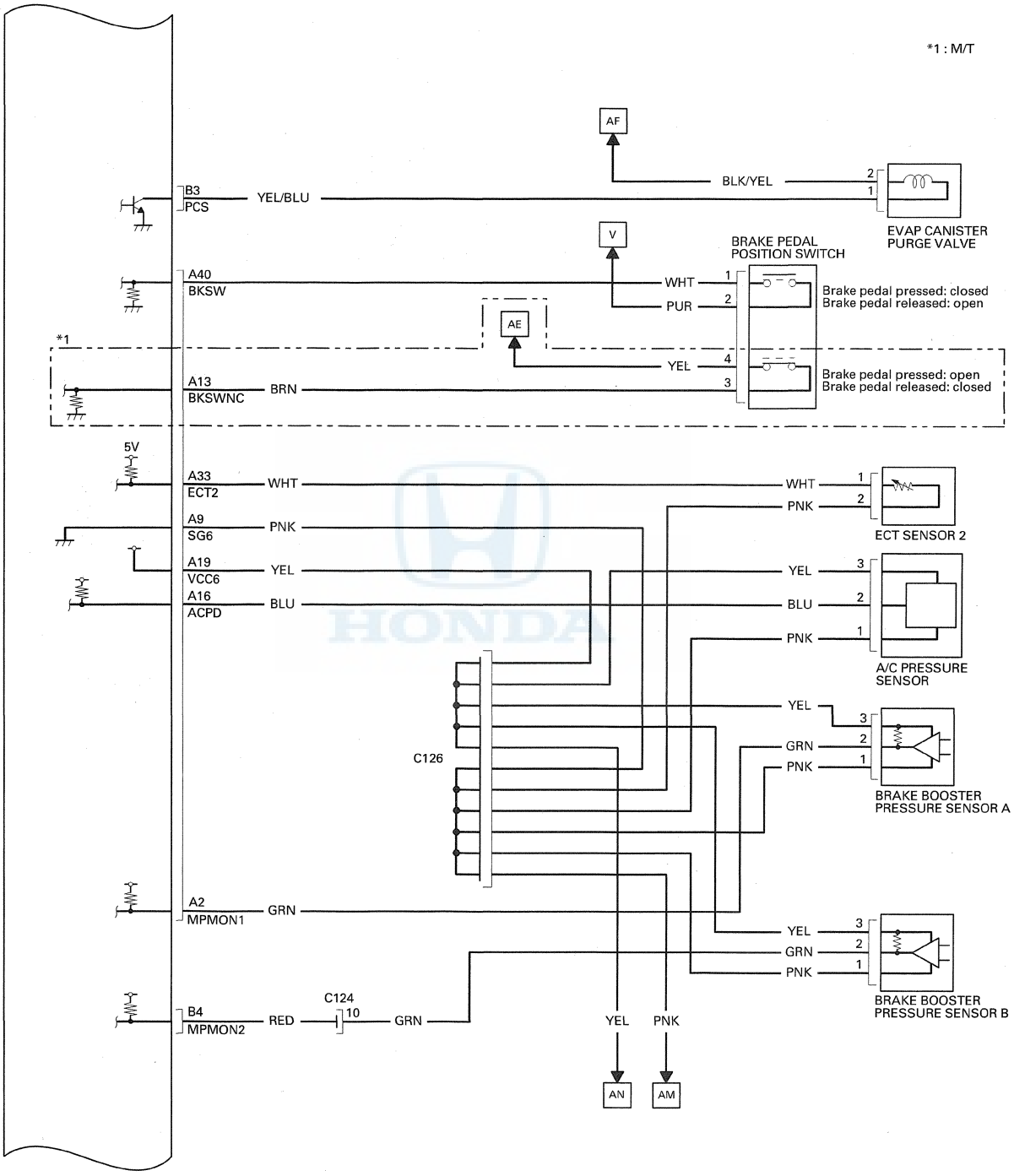



U
RED
13
C102
C203
BLK/YEL
5V
C15
IGPLS1
WHT
C16
IGPLS2
WHT/GRN
C17
IGPLS3
WHT/BLK
C18
IGPLS4
WHT/BLU
BLK/YEL
BLK
ICM
To SPARK PLUG
No.1 IGNITION COIL
No.2 IGNITION COIL
No.3 IGNITION COIL
No.4 IGNITION COIL
G101
12 V
C12
VCC3
BLU
C20
TPSA
RED/BLK
C21
TPSB
RED
C13
SG3
GRN
C4
ETCSM+
YEL/RED
C3
ETCSM-
YEL
TP SENSOR
A
B
M
THROTTLE ACTUATOR
THROTTLE BODY

(cont'd)

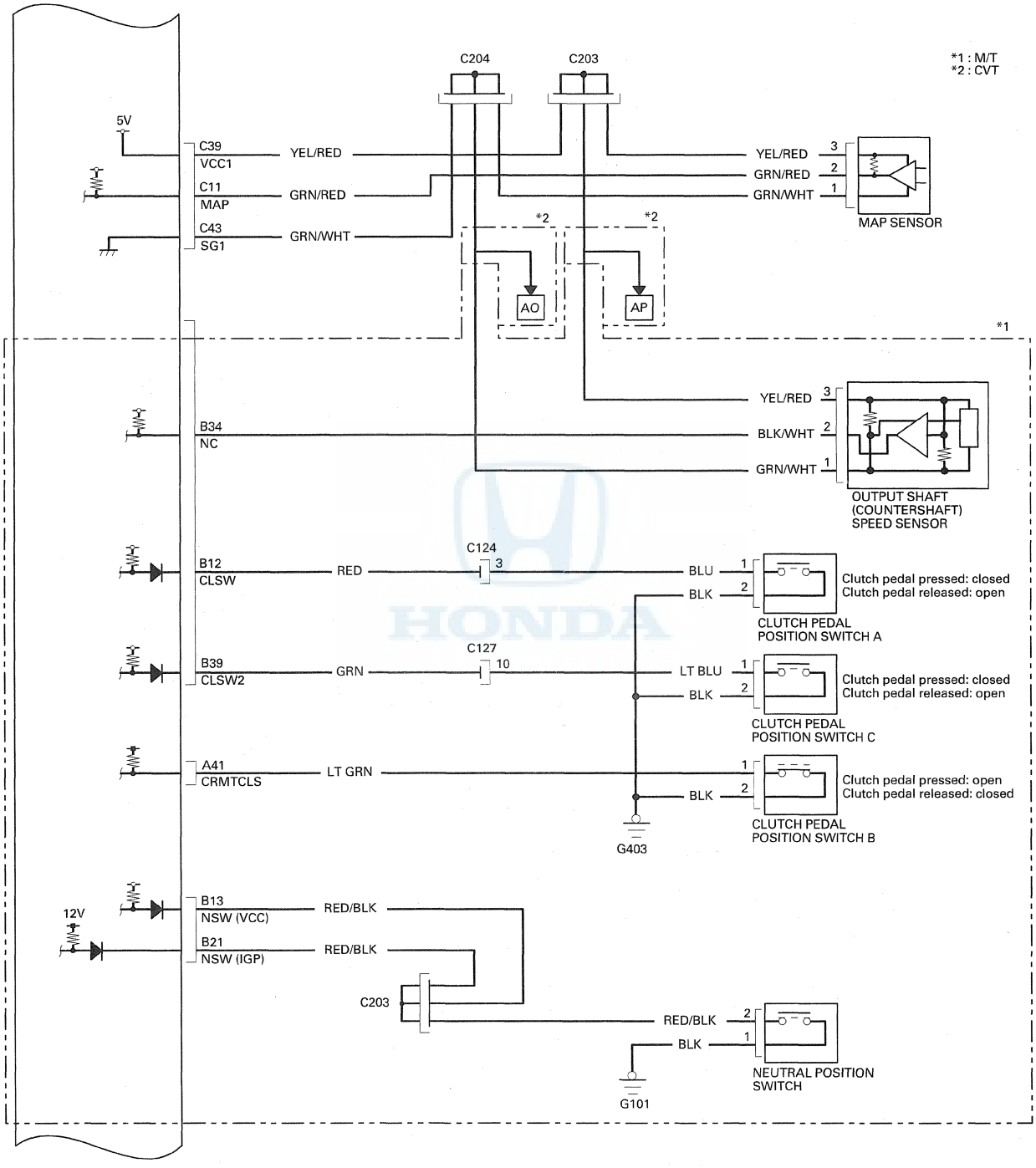
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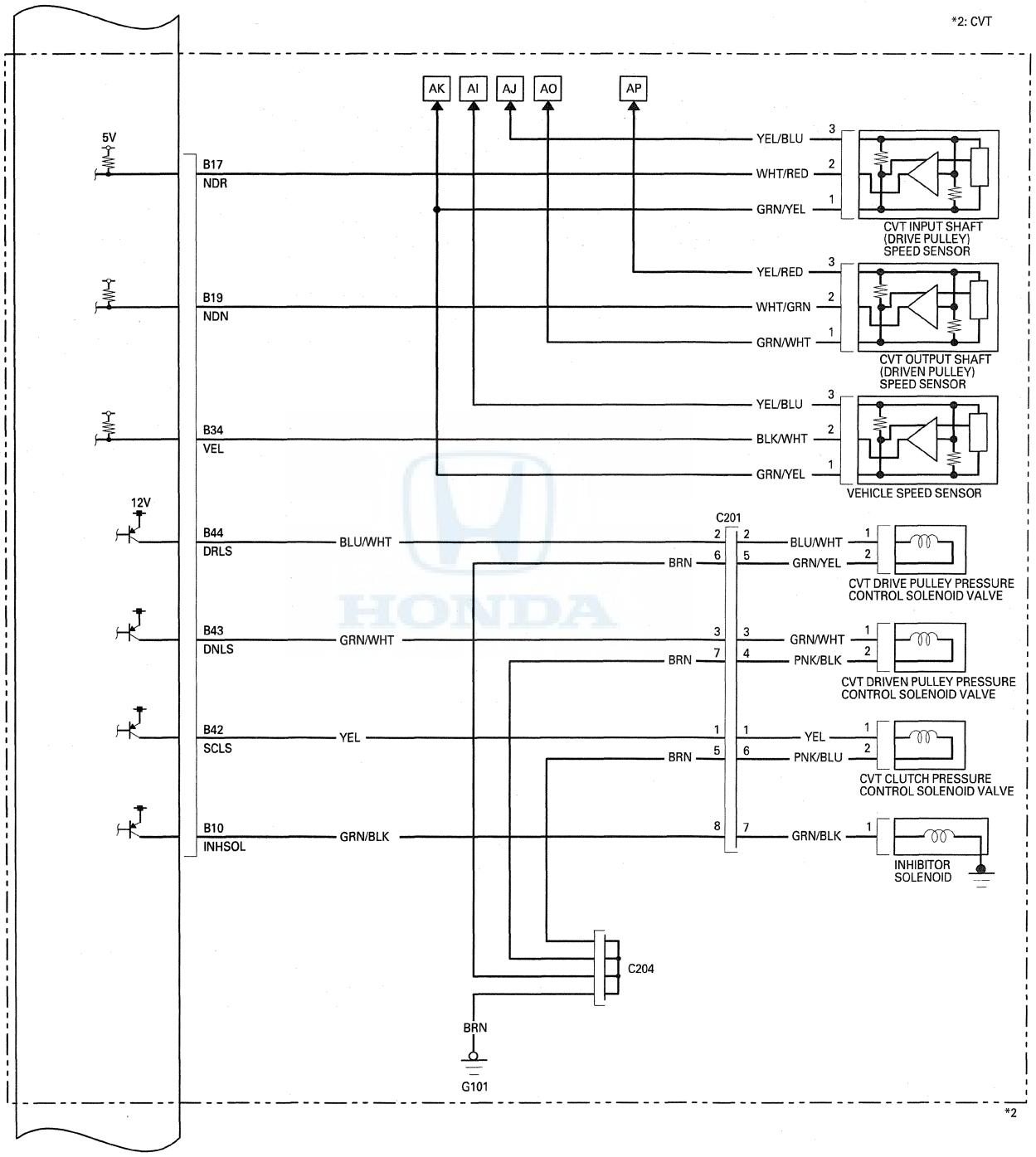



*1 : M/T
AF
BLK/YEL
2
1
EVAP CANISTER PURGE VALVE
B3
PCS
YEL/BLU
V
BRAKE PEDAL POSITION SWITCH
A40
BKSW
WHT
1
PUR
2
Brake pedal pressed: closed
Brake pedal released: open
AE
*1
YEL
4
A13
BKSWNC
BRN
3
Brake pedal pressed: open
Brake pedal released: closed
5V
A33
ECT2
WHT
WHT
1
PNK
2
ECT SENSOR 2
A9
SG6
PNK
A19
VCC6
YEL
YEL
3
A16
ACPD
BLU
BLU
2
PNK
1
A/C PRESSURE SENSOR
C126
YEL
3
GRN
2
PNK
1
BRAKE BOOSTER PRESSURE SENSOR A
A2
MPMON1
GRN
YEL
3
GRN
2
PNK
1
BRAKE BOOSTER PRESSURE SENSOR B
C124
B4
MPMON2
RED
10
GRN
YEL
PNK
AN
AM

(cont'd)

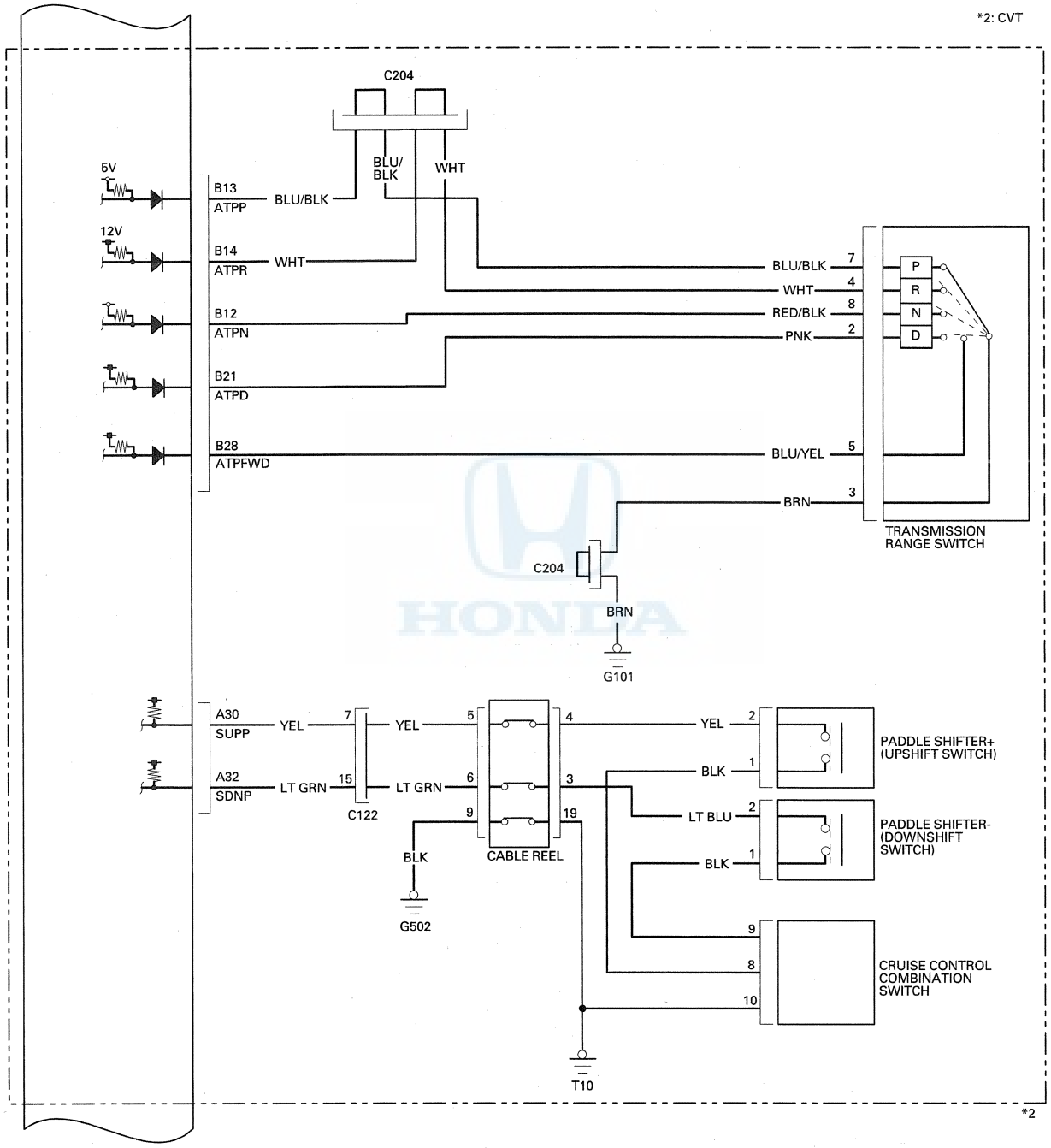
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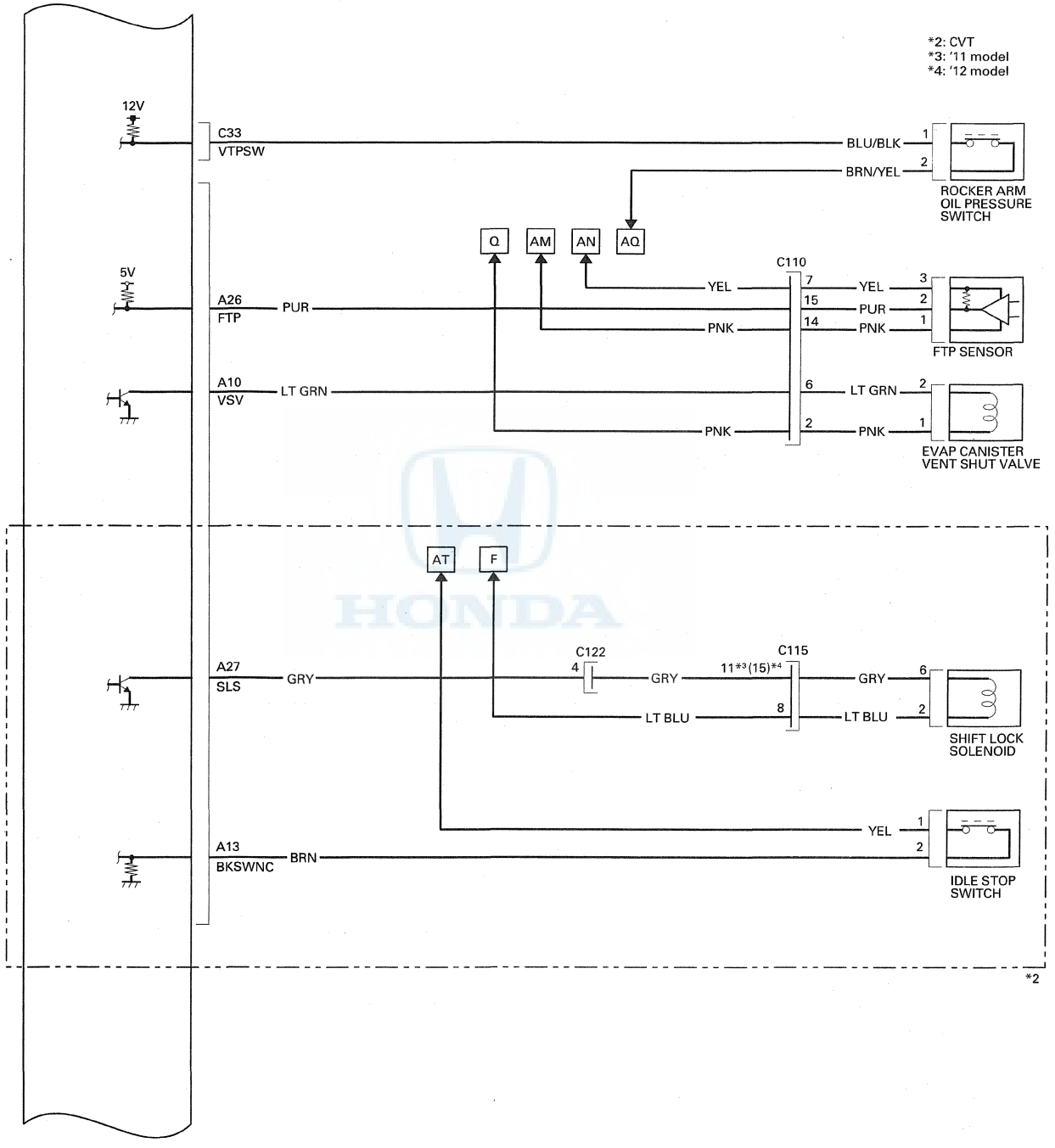



*2: CVT
AK
AI
AJ
AO
AP
5V
B17
NDR
YEL/BLU
WHT/RED
GRN/YEL
CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR
B19
NDN
YEL/RED
WHT/GRN
GRN/WHT
CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR
B34
VEL
YEL/BLU
BLK/WHT
GRN/YEL
VEHICLE SPEED SENSOR
12V
C201
B44
DRLS
BLU/WHT
BRN
BLU/WHT
GRN/YEL
CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE
B43
DNLS
GRN/WHT
BRN
GRN/WHT
PNK/BLK
CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE
B42
SCLS
YEL
BRN
YEL
PNK/BLU
CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE
B10
INHSOL
GRN/BLK
GRN/BLK
INHIBITOR SOLENOID
C204
BRN
G101
*2

(cont'd)

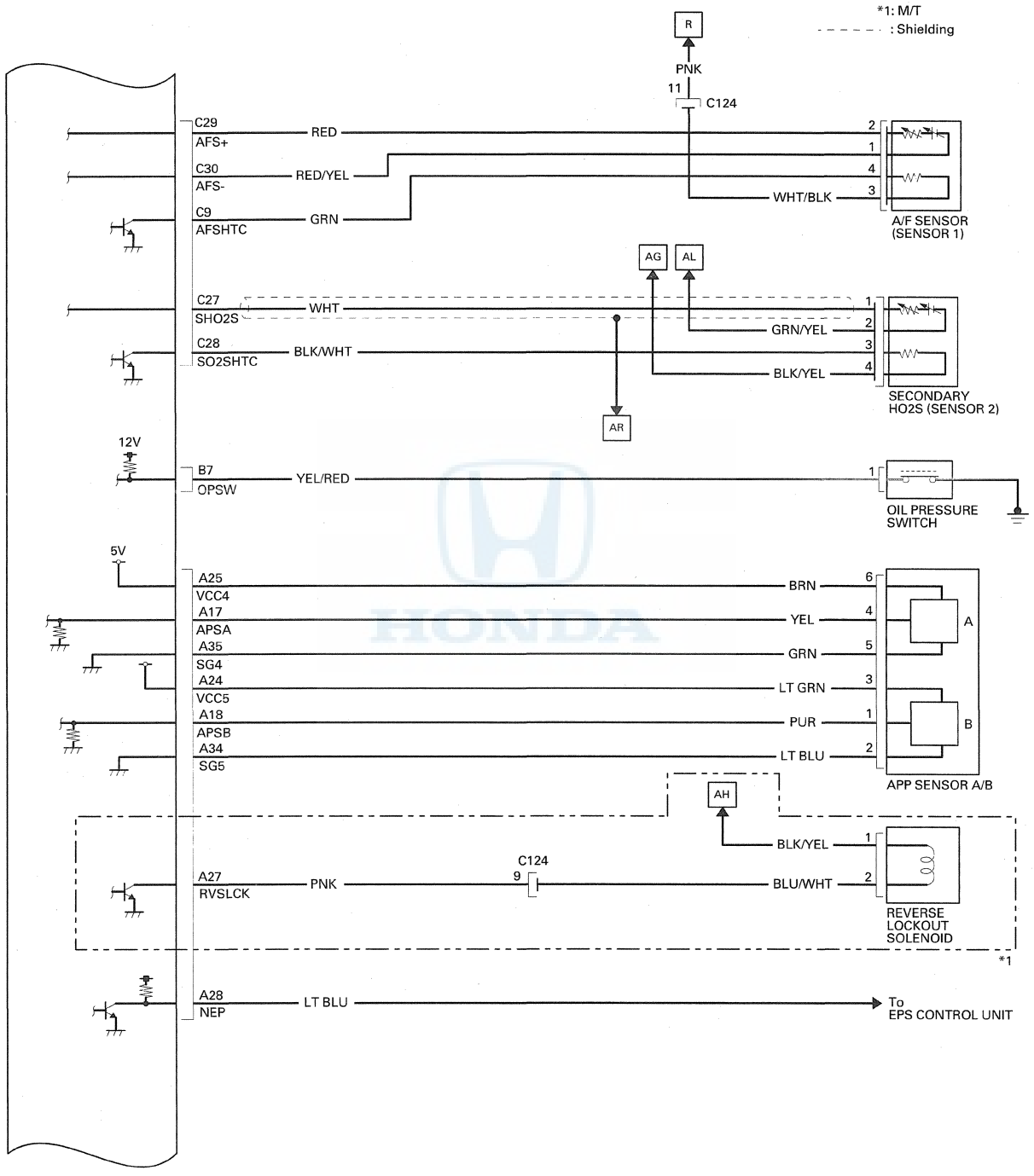
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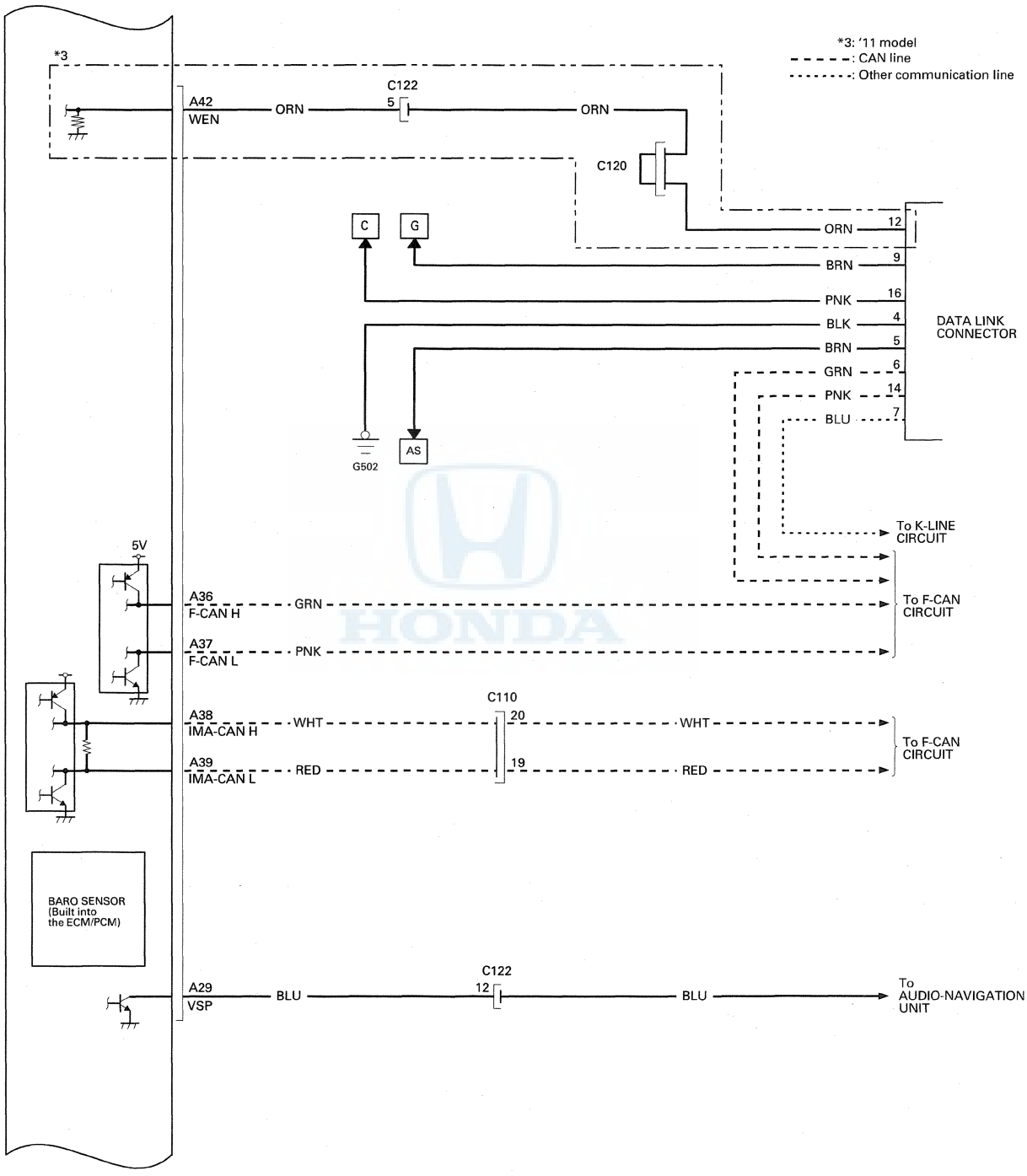



*2: CVT
*3: '11 model
*4: '12 model
12V
C33
VTPSW
BLU/BLK
BRN/YEL
ROCKER ARM OIL PRESSURE SWITCH
Q
AM
AN
AQ
C110
5V
A26
FTP
PUR
YEL
PNK
FTP SENSOR
A10
VSV
LT GRN
EVAP CANISTER VENT SHUT VALVE
AT
F
C122
C115
A27
SLS
GRY
LT BLU
SHIFT LOCK SOLENOID
A13
BKSWNC
BRN
IDLE STOP SWITCH
*2

(cont'd)

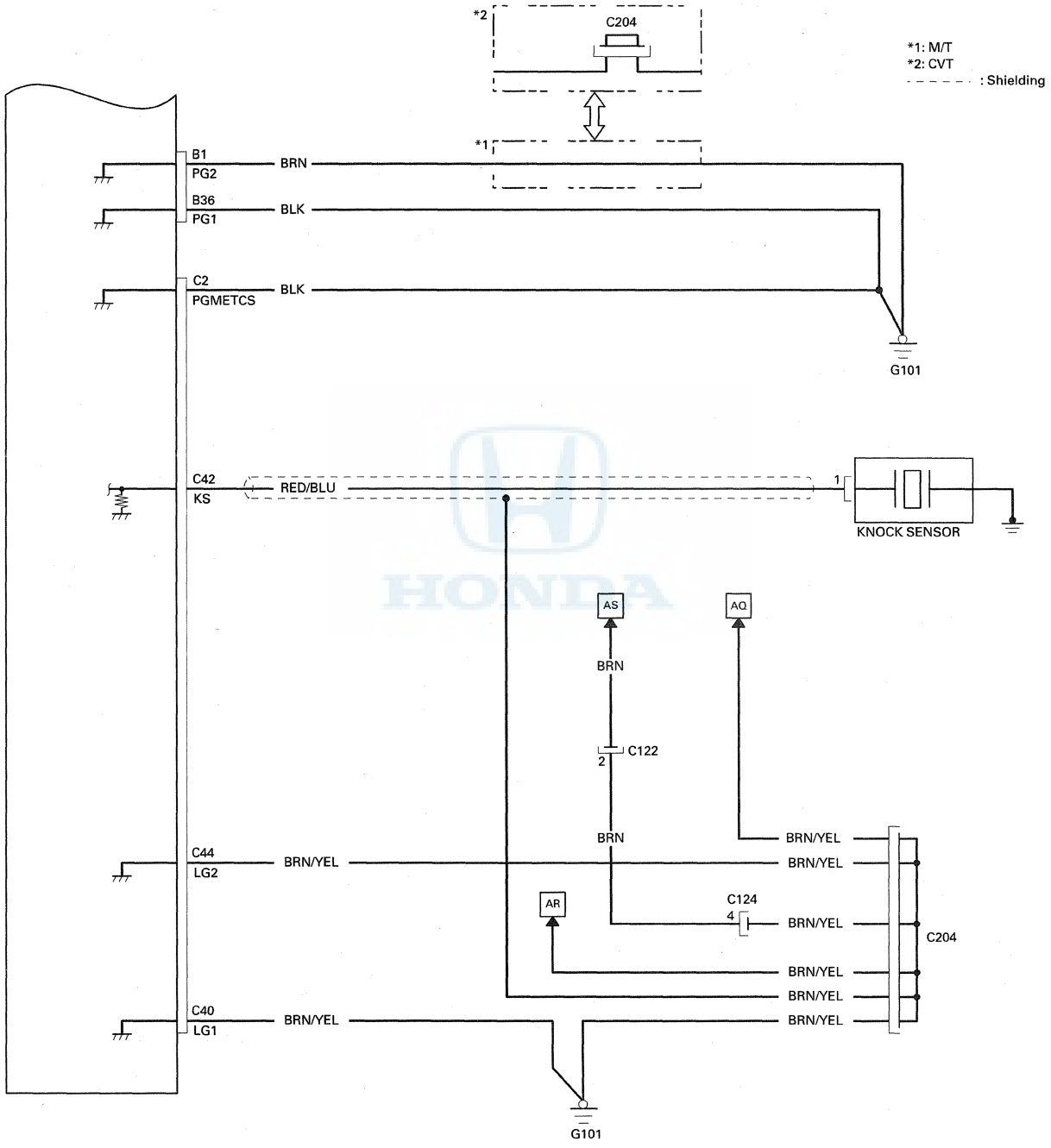
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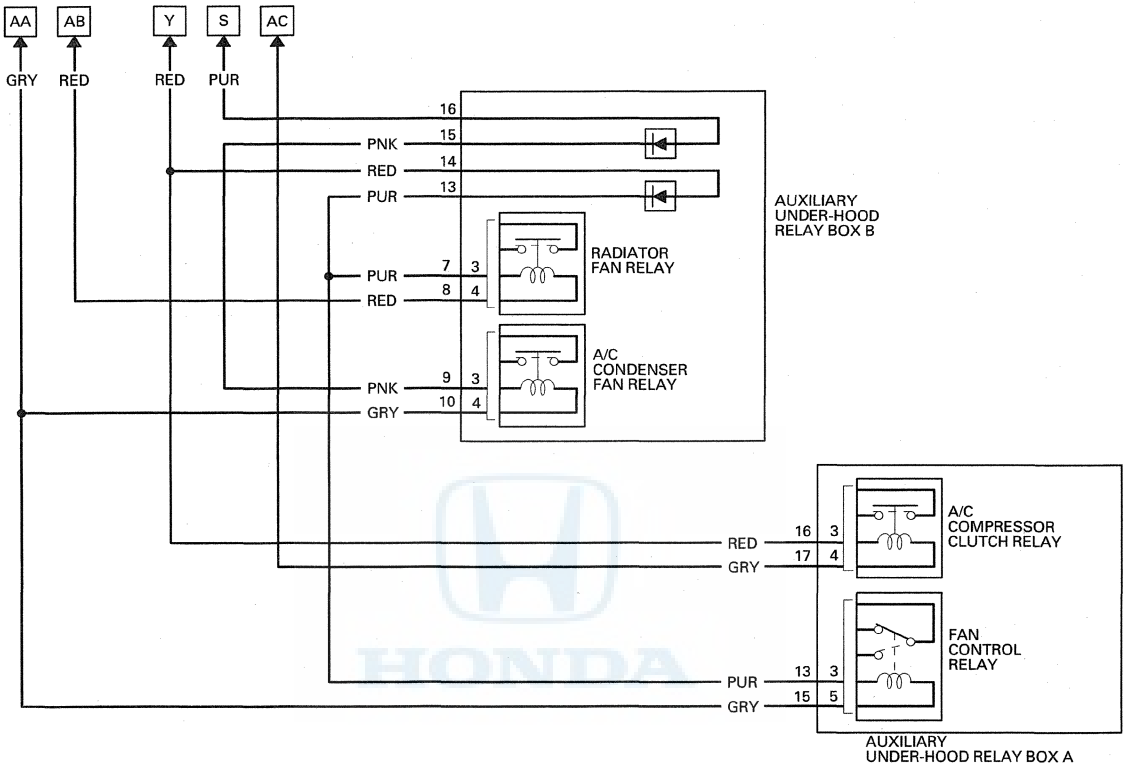



*3
*3: '11 model
: CAN line
: Other communication line
A42
WEN
ORN
C122
5
ORN
C120
C
G
ORN
12
BRN
9
PNK
16
BLK
4
BRN
5
GRN
6
PNK
14
BLU
7
DATA LINK CONNECTOR
G502
AS
To K-LINE CIRCUIT
5V
A36
F-CAN H
GRN
A37
F-CAN L
PNK
To F-CAN CIRCUIT
C110
A38
IMA-CAN H
WHT
20
WHT
A39
IMA-CAN L
RED
19
RED
To F-CAN CIRCUIT
BARO SENSOR
(Built into
the ECM/PCM)
C122
A29
VSP
BLU
12
BLU
To AUDIO-NAVIGATION UNIT

(cont'd)

System Description (cont'd)

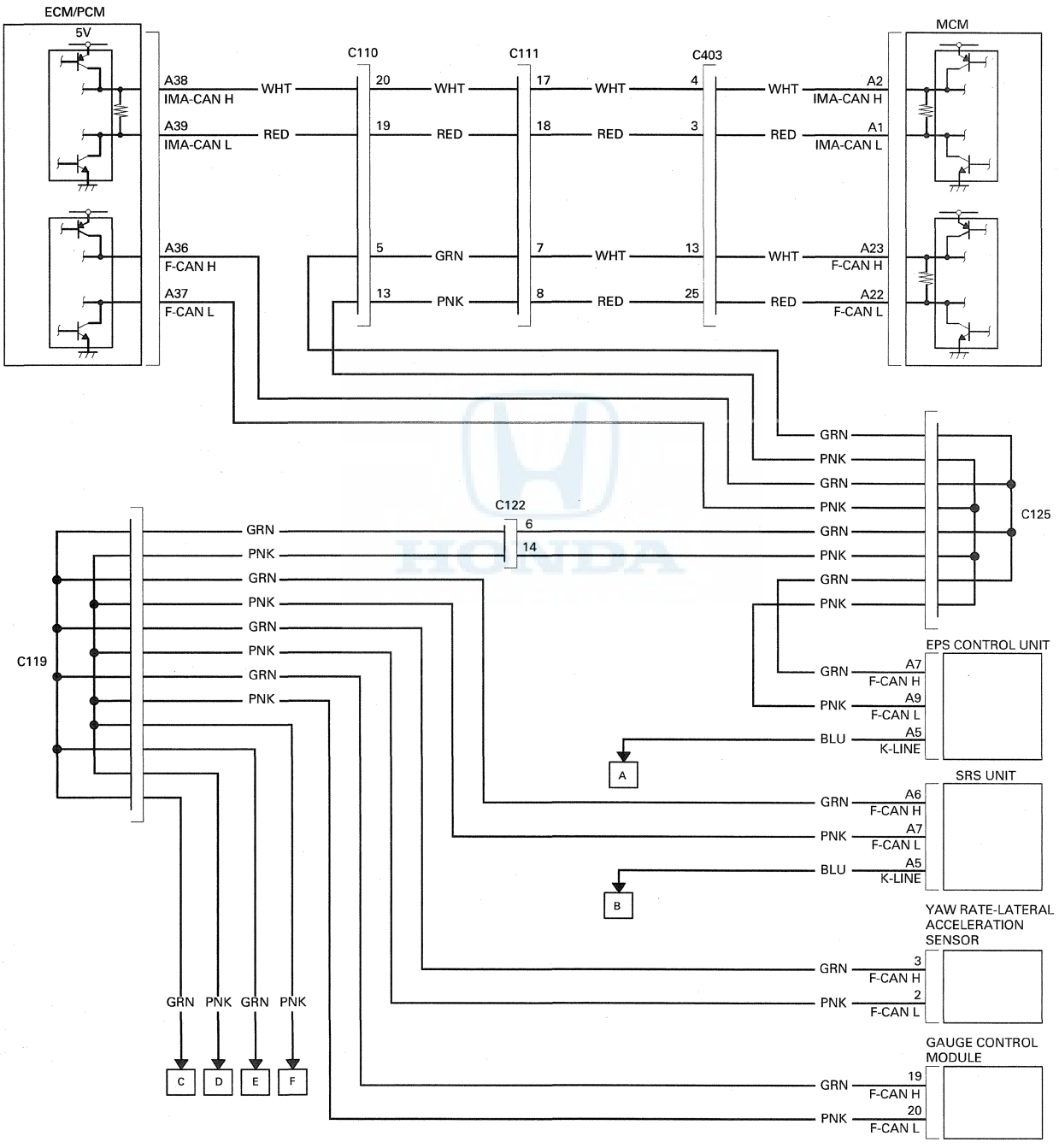


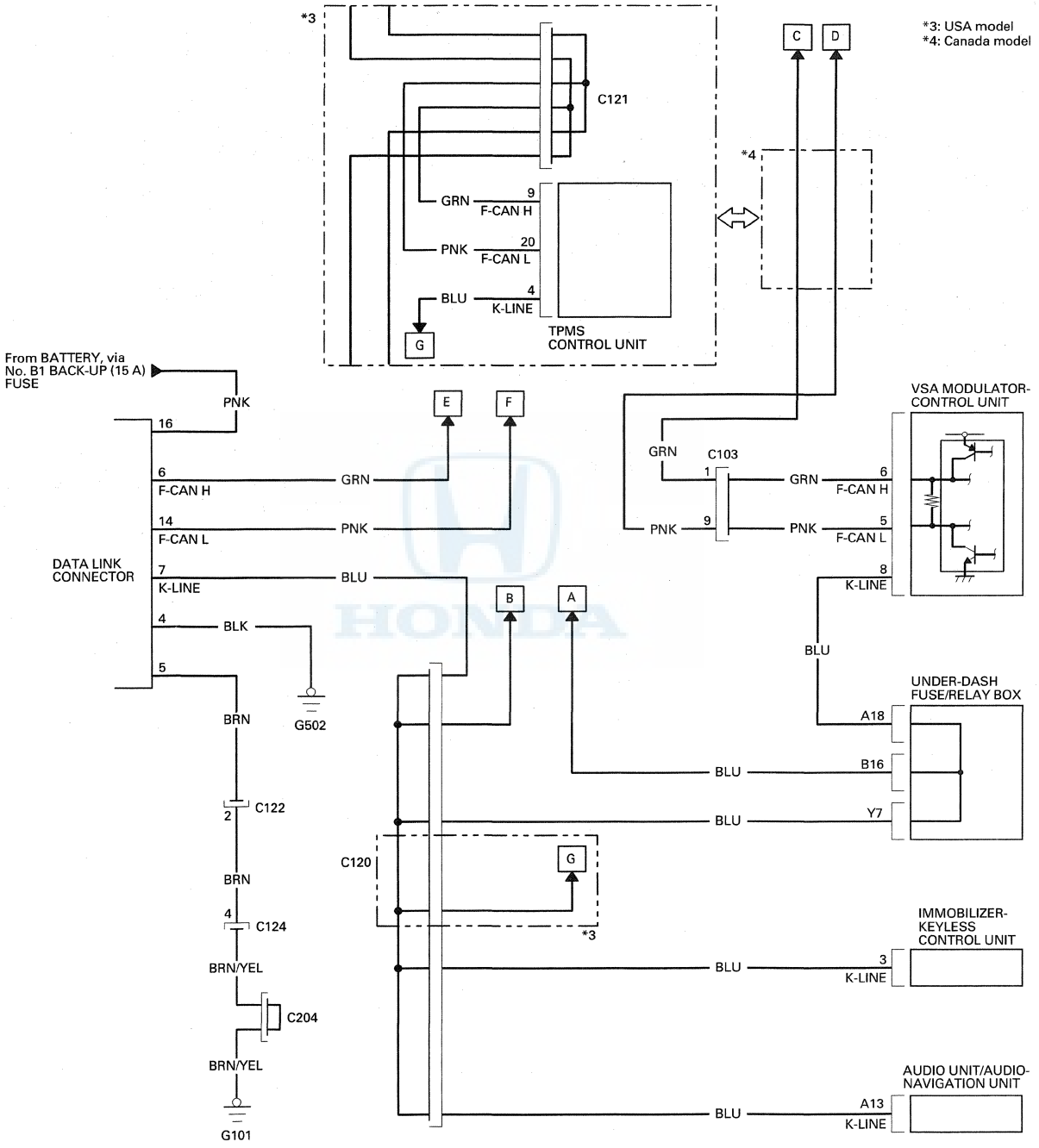

AA
AB
Y
S
AC
GRY
RED
RED
PUR
16
15
14
13
PNK
RED
PUR
AUXILIARY
UNDER-HOOD
RELAY BOX B
RADIATOR
FAN RELAY
7
3
8
4
PUR
RED
A/C
CONDENSER
FAN RELAY
9
3
10
4
PNK
GRY
A/C
COMPRESSOR
CLUTCH RELAY
16
3
17
4
RED
GRY
FAN
CONTROL
RELAY
13
3
15
5
PUR
GRY
AUXILIARY
UNDER-HOOD RELAY BOX A

(cont'd)

System Description (cont'd)

Communication Systems Circuit Diagram




*3
C121
GRN
9
F-CAN H
PNK
20
F-CAN L
BLU
4
K-LINE
G
TPMS
CONTROL UNIT
*4
C
D
*3: USA model
*4: Canada model
From BATTERY, via
No. B1 BACK-UP (15 A)
FUSE
PNK
16
E
F
6
F-CAN H
GRN
14
F-CAN L
PNK
DATA LINK
CONNECTOR
7
K-LINE
BLU
4
BLK
5
BRN
G502
C122
2
BRN
4
C124
BRN/YEL
C204
BRN/YEL
G101
B
A
C120
G
*3
GRN
C103
1
GRN
6
F-CAN H
PNK
9
PNK
5
F-CAN L
VSA MODULATOR-
CONTROL UNIT
8
K-LINE
BLU
UNDER-DASH
FUSE/RELAY BOX
A18
BLU
B16
BLU
Y7
IMMOBILIZER-
KEYLESS
CONTROL UNIT
BLU
3
K-LINE
AUDIO UNIT/AUDIO-
NAVIGATION UNIT
BLU
A13
K-LINE

(cont'd)

System Description (cont'd)

PGM-FI System

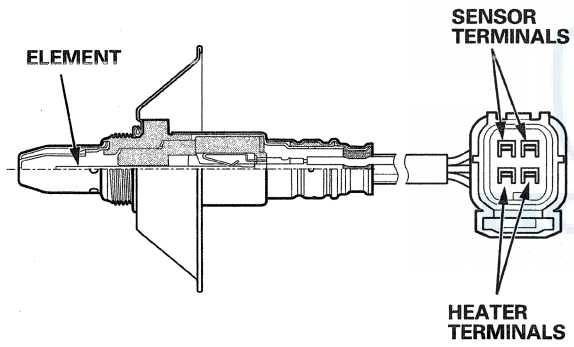
The programmed fuel injection (PGM-FI) system is a sequential multiport fuel injection system.

Air Conditioning (A/C) Compressor Clutch Relay

When the ECM/PCM receives a demand for cooling from the A/C system, it delays the compressor from being energized, and enriches the mixture to assure smooth transition to the A/C mode.

Air Fuel Ratio (A/F) Sensor

The A/F sensor operates over a wide air/fuel range. The A/F sensor is installed upstream of the warm up three way catalytic converter (WU-TWC), and sends signals to the ECM/PCM which varies the duration of fuel injection accordingly.

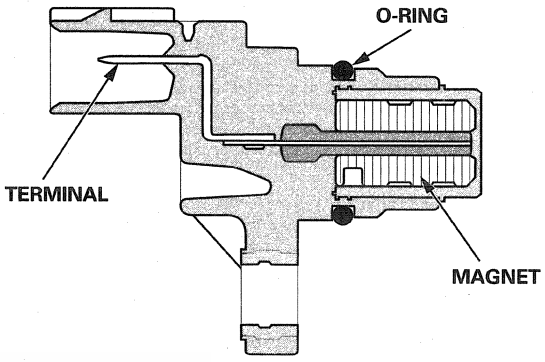


Barometric Pressure (BARO) Sensor

The BARO sensor is inside the ECM/PCM. It converts atmospheric pressure into a voltage signal that is used by the ECM/PCM to modify the basic duration of the fuel injection discharge.

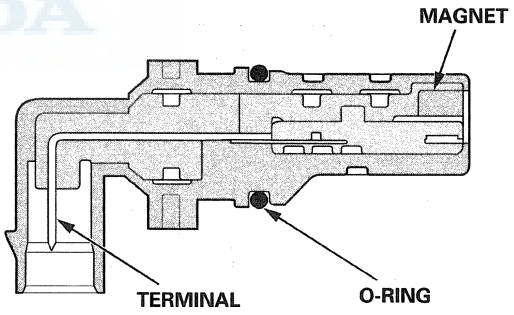
Camshaft Position (CMP) Sensor

The CMP sensor detects the position of the No. 1 cylinder as a reference for sequential fuel injection to each cylinder.



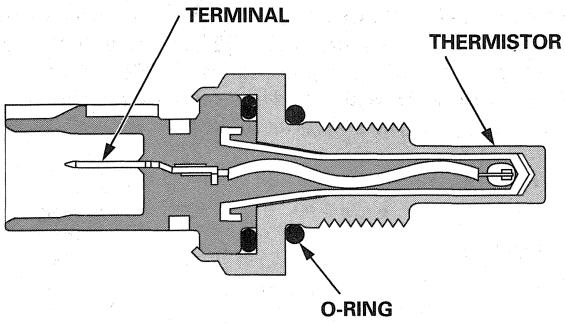
Crankshaft Position (CKP) Sensor

The CKP sensor detects crankshaft speed and is used by the ECM/PCM to determine ignition timing, timing for the fuel injection of each cylinder, and engine misfire detection.



Engine Coolant Temperature (ECT) Sensors 1 and 2

ECT sensors 1 and 2 are temperature dependent resistors (thermistors). The resistance decreases as the engine coolant temperature increases.



Ignition Timing Control

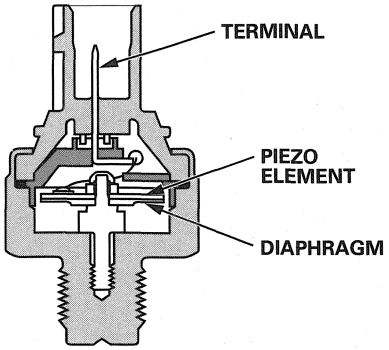
The ECM/PCM contains the memory for basic ignition timing at various engine speeds and manifold absolute pressures. It also adjusts the timing according to engine coolant temperature and intake air temperature.

Injector Timing and Duration

The ECM/PCM contains the memory for basic discharge duration at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by input from various sensors to obtain the final discharge duration.
By monitoring long term fuel trim, the ECM/PCM can detect long term malfunctions in the fuel system and set DTCs (diagnostic trouble codes) if needed.

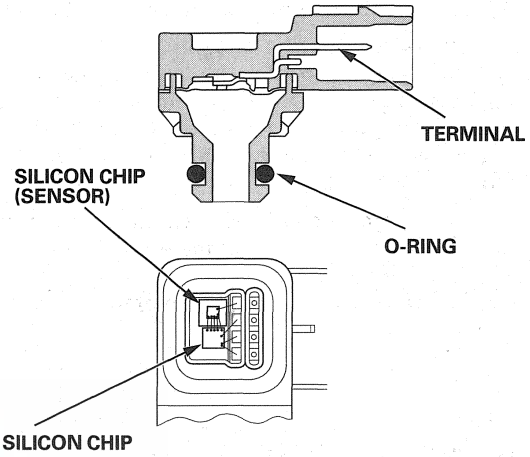
Knock Sensor

The knock control system adjusts the ignition timing to minimize knock.



Manifold Absolute Pressure (MAP) Sensor

The MAP sensor converts manifold absolute pressures into electrical signals to the ECM/PCM.



Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain readiness codes that are part of the on-board diagnostics for the emissions systems. If the vehicle's 12 volt battery has been disconnected or gone dead, if DTCs have been cleared, or if the ECM/PCM has been reset, these codes are reset. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the test, or the test cannot be finished.

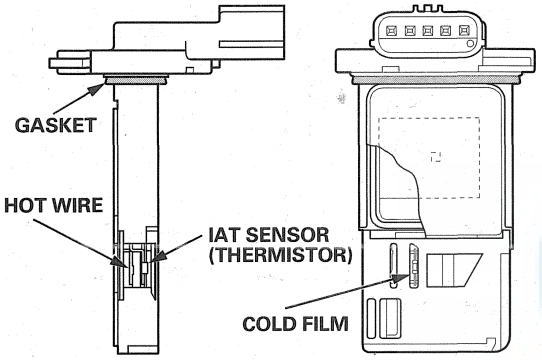
To check if the readiness codes are set to complete, turn the ignition switch to ON (II), but do not start the engine. The MIL will come on for 15—20 seconds. If it then goes off, the readiness codes are complete. If it flashes five times, one or more readiness codes are not complete. To set each code, drive the vehicle or run the engine as described in the procedures (see page 11-79).

(cont'd)

System Description (cont'd)

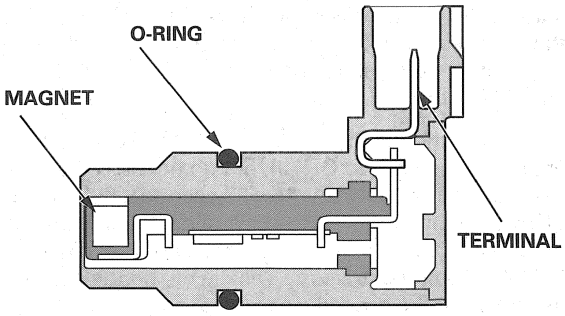
Mass Air Flow (MAF) Sensor/Intake Air Temperature (IAT) Sensor

The mass air flow (MAF) sensor/intake air temperature (IAT) sensor contains a hot wire, a cold film, and a thermistor. The sensor is in the intake air passage. The resistance of the hot wire, the cold film, and the thermistor changes due to intake air temperature and air flow. The control circuit in the MAF sensor controls the current to keep the hot wire at a set temperature. The current is converted to voltage in the control circuit, then output to the ECM/PCM.



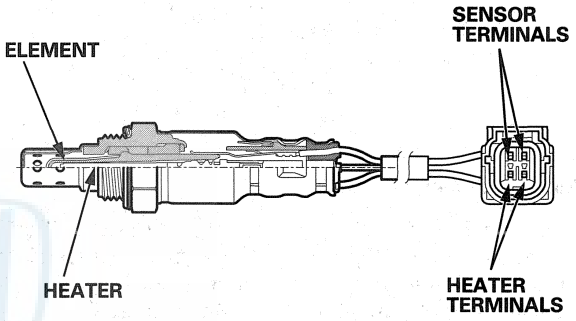
Output Shaft (Countershaft) Speed Sensor (M/T)

This sensor detects output shaft (countershaft) speed.



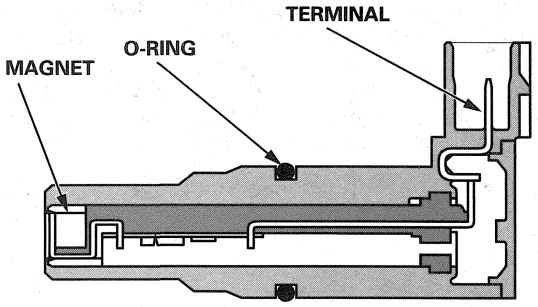
Secondary Heated Oxygen Sensor (Secondary HO2S)

The secondary HO2S detects the oxygen content in the exhaust gas downstream of the three way catalytic converter (TWC), and sends signals to the ECM/PCM which varies the duration of fuel injection accordingly. To stabilize its output, the sensor has an internal heater. The ECM/PCM compares the HO2S output with the A/F sensor output to determine catalyst efficiency. The secondary HO2S is installed upstream of the under-floor three way catalytic converter (TWC).



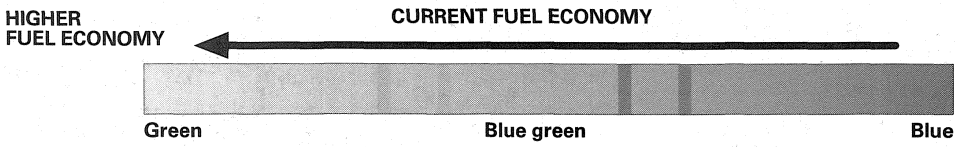
Vehicle Speed Sensor (CVT)

This sensor detects final drive shaft speed.

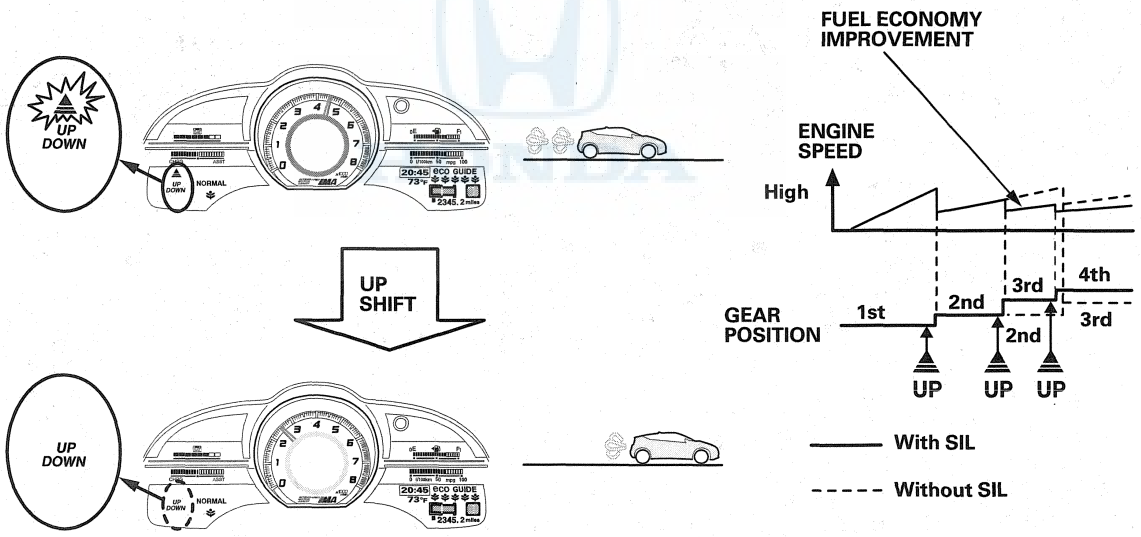


Shift Indicator Lamp (SIL) (M/T)

The shift indicator lamp (SIL) guides gear shift timing for more fuel-efficient driving. Higher fuel economy is obtained when gears are shifted as prompted by the SIL. When the SIL comes on, the Eco indicator goes off. If you shift gears when prompted by the SIL, the ambient meter color is green. If you do not shift gears when prompted by the SIL, the ambient meter color is blue.
When Sport Mode of the 3-mode drive system is selected, the SIL stays off.



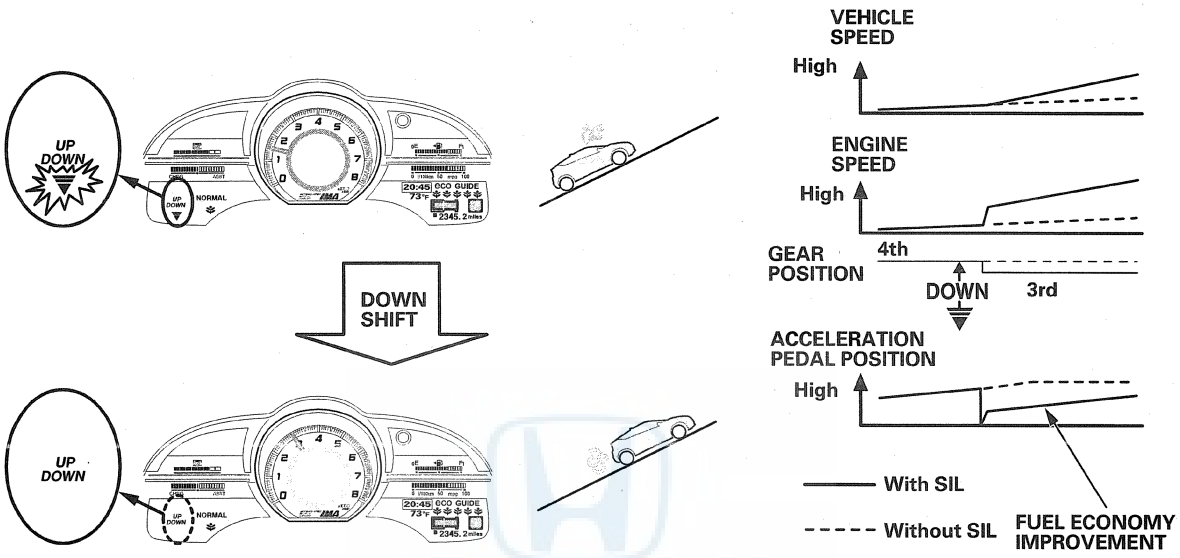
The up shift indicator prompts you when to shift to a higher gear, keeping the engine rpms as low as possible for the best fuel economy.



(cont'd)

System Description (cont'd)

The down shift indicator prompts you when to shift to a lower gear to prevent the engine rpm from being too low when the vehicle is climbing a hill, or for faster accelerating on a flat road. To avoid sudden engine braking, the SIL does not prompt downshifts to 1st gear.



Electronic Throttle Control System

The throttle is electronically controlled by the electronic throttle control system (ETCS). Refer to the system diagram to see a functional layout of the system.

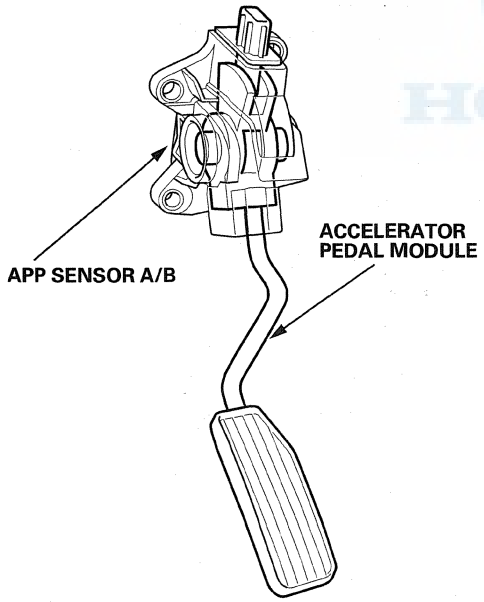
Idle control: When the engine is idling, the ECM/PCM controls the throttle actuator to maintain the proper idle speed according to engine loads.

Acceleration control: When the accelerator pedal is pressed, the ECM/PCM opens the throttle valve depending on the accelerator pedal position (APP) sensor signal.

Cruise control: The ECM/PCM controls the throttle actuator to maintain the set speed when cruise control is operating. The throttle actuator takes the place of the cruise control actuator.

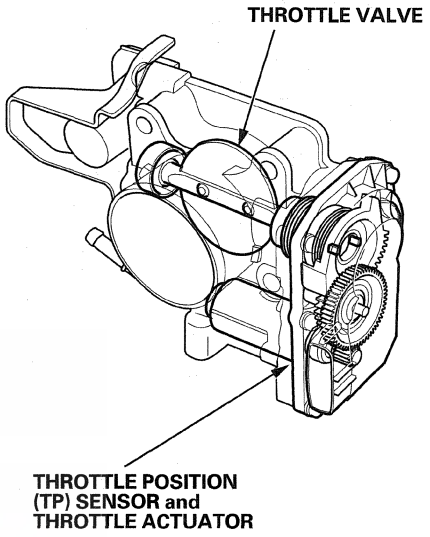
Accelerator Pedal Position (APP) Sensor

As the accelerator pedal position changes, the sensor varies the signal voltage to the ECM/PCM which then controls the throttle position.



Throttle Body

The throttle body is a single-barrel side draft type. To prevent icing of the throttle plate, the lower portion of the throttle valve is heated by engine coolant from the cylinder head.

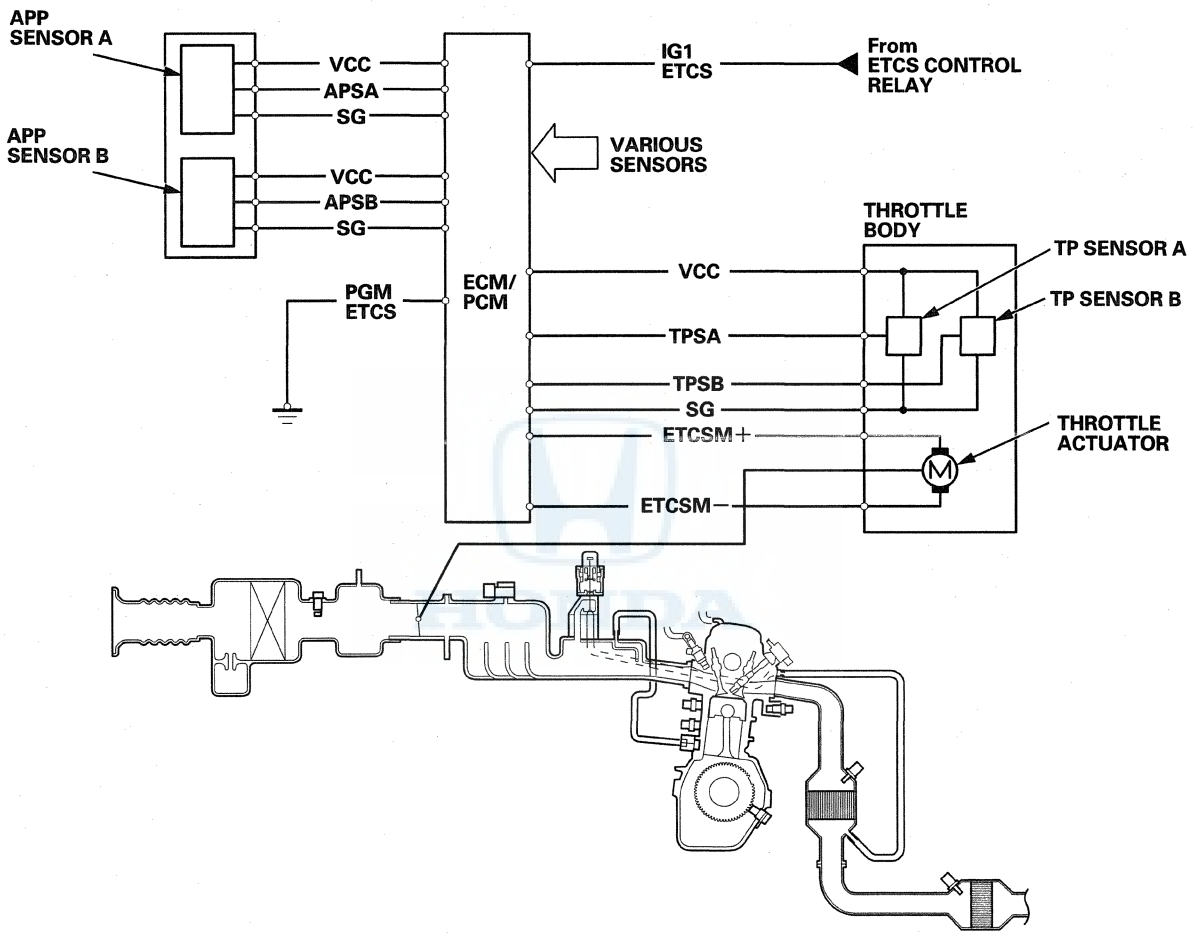


(cont'd)

System Description (cont'd)

Electronic Throttle Control System Diagram

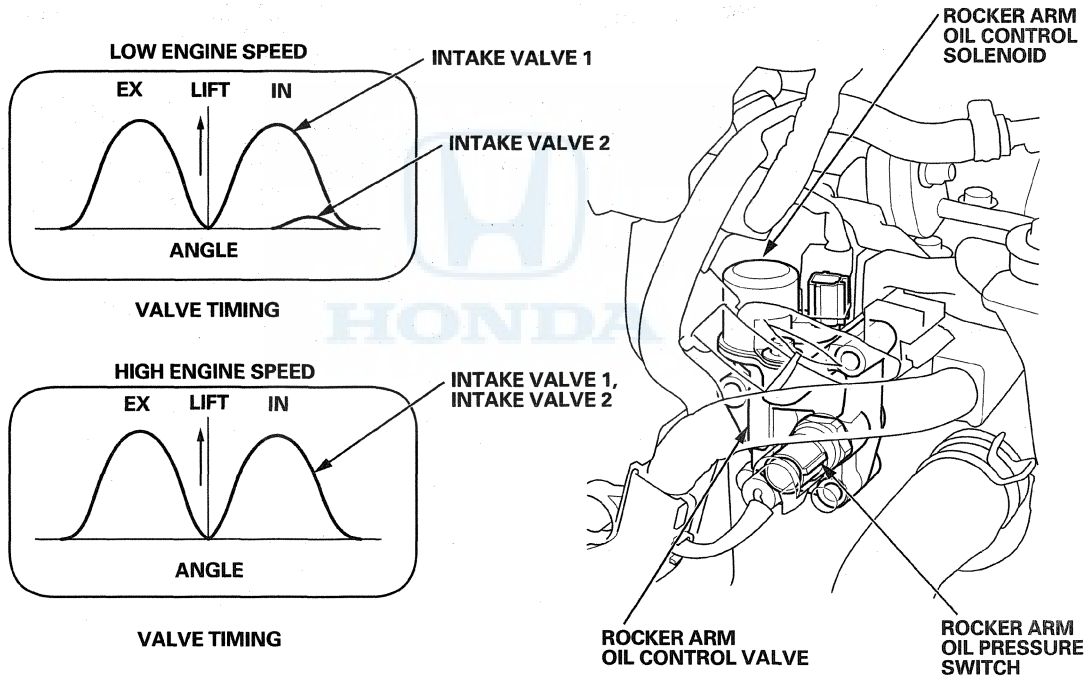
The electronic throttle control system consists of the throttle actuator, TP sensor A/B, the APP sensor A/B, the ETCS control relay, and the ECM/PCM.



VTEC

- This system improves fuel efficiency and reduces exhaust emissions at all levels of engine speed, vehicle speed, and engine load.
- The VTEC system changes the cam profile to correspond to engine speed. It maximizes torque at low engine speed and output at high engine speed.
- The valve pause cam (low lift cam) is used at low engine speeds, and the high lift cam is used at high engine speeds.
- The rocker arm oil control solenoid switches both intake rocker arms of the VTEC system on and off; the solenoid is controlled by the ECM/PCM.
- The rocker arm oil pressure switch detects VTEC system oil pressure and sends this information to the ECM/PCM.

ENGINE SPEED	ROCKER ARM OIL CONTROL SOLENOID	ROCKER ARM OIL PRESSURE SWITCH	INTAKE VALVE LIFT
LOW	OFF	ON	PAUSE (LOW)
HIGH	ON	OFF	HIGH



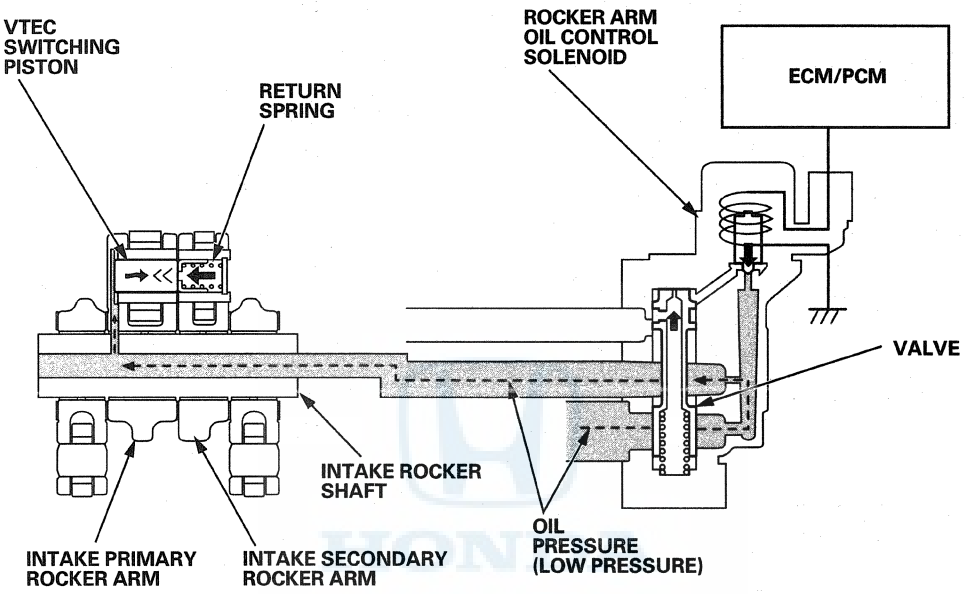
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System Description (cont'd)

Operation

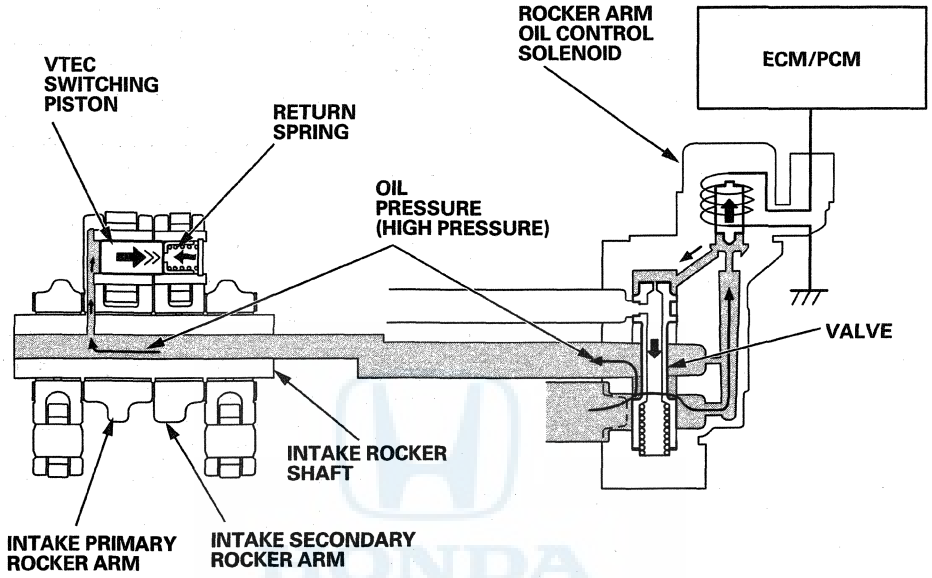
Low engine speed

At low engine speed, the rocker arm oil control solenoid is turned off by the ECM/PCM. Oil pressure from the rocker arm oil control valve does not enter the intake rocker shaft. Each intake rocker arm is separated by a return spring and the intake secondary rocker arm is lifted by the low lift cam lobe.



High engine speed

At high engine speed, the rocker arm oil control solenoid is turned on by the ECM/PCM. Oil pressure from the rocker arm control solenoid enters into the intake primary rocker arm via the rocker shaft, and it moves the VTEC switching piston in the rocker arm. This causes the VTEC switching piston to slide into the intake secondary rocker arm, locking the rocker arms together. Both intake rocker arms are lifted by the high lift cam lobe.



(cont'd)

System Description (cont'd)

Idle Control System

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is pressed, or the 12 volt battery is charging, the ECM/PCM sends signals to the throttle actuator to maintain the correct idle speed.

Brake Pedal Position Switch

The brake pedal position switch signals the ECM/PCM when the brake pedal is pressed.

Fuel Supply System

Fuel Cutoff Control

During deceleration with the throttle valve closed, current to the injectors is cut off to improve fuel economy at engine speeds over 850 rpm ('11 model (M/T)) ('11 model (CVT): 650 rpm, '12 model (M/T): 1,200 rpm, '12 model (CVT): 850 rpm). Fuel cutoff control also occurs when the engine speed exceeds 6,500 rpm, regardless of the position of the throttle valve, to protect the engine from over-revving. When the vehicle is stopped, the ECM/PCM cuts the fuel at engine speeds over 4,800 rpm (CVT: 4,500 rpm). On a cold engine, fuel cut occurs at a lower engine speed.

Fuel Pump Control

When the ignition switch is turned to ON (II), the ECM/PCM grounds PGM-FI main relay 2 which feeds current to the fuel pump for 2 seconds to pressurize the fuel system. With the engine running, the ECM/PCM grounds PGM-FI main relay 2 and feeds current to the fuel pump. When the engine is not running and the ignition is turned to ON (II), the ECM/PCM cuts ground to PGM-FI main relay 2 which cuts current to the fuel pump.

PGM-FI Main Relays 1 and 2

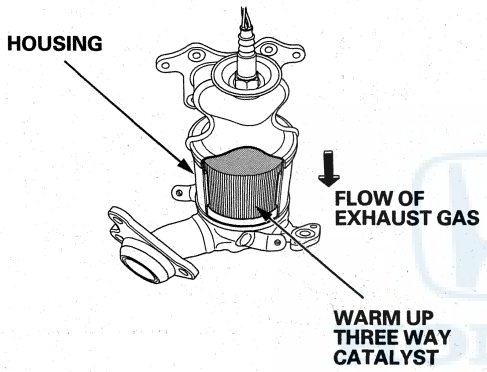
PGM-FI main relay 1 is energized whenever the ignition switch is turned to ON (II) to supply battery voltage to the ECM/PCM, to power the injectors, and to power PGM-FI main relay 2. PGM-FI main relay 2 is energized to supply power to the fuel pump for 2 seconds when the ignition switch is turned to ON (II) and when the engine is cranking or running.

Catalytic Converter System

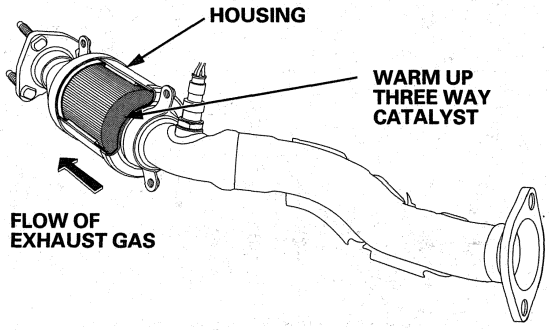
Warm Up Three Way Catalytic Converter (WU-TWC) and Under-Floor Three Way Catalytic Converter (Under-floor TWC)

The WU-TWC and the under-floor TWC convert hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NOx) in the exhaust gas to carbon dioxide (CO_2), nitrogen (N_2), and water vapor.

WU-TWC (ATTACHED TO THE CYLINDER HEAD)



UNDER-FLOOR TWC



(cont'd)

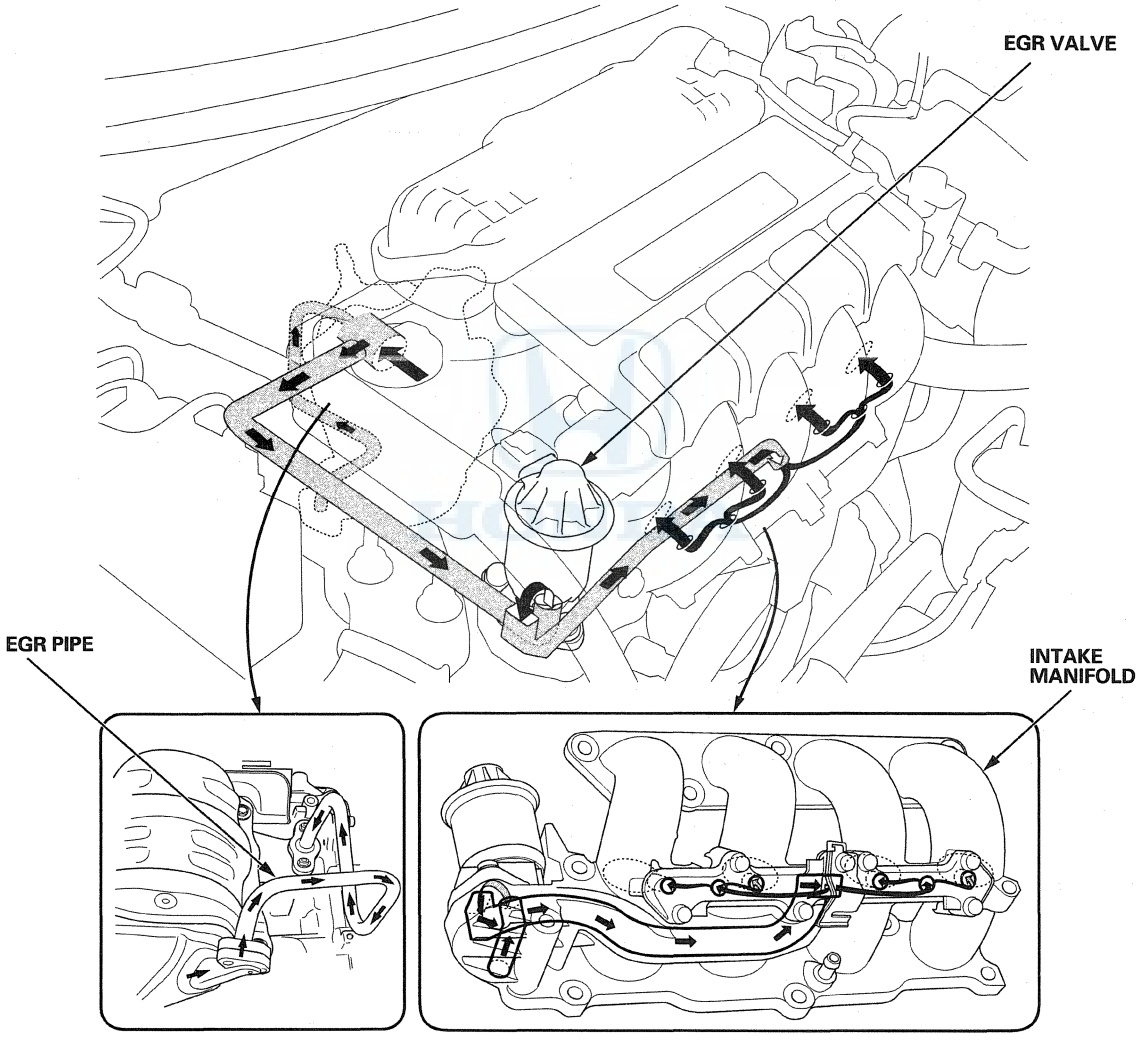
System Description (cont'd)

Exhaust Gas Recirculation (EGR) System

Refer to the system diagram to see a functional layout of the system.

EGR Valve

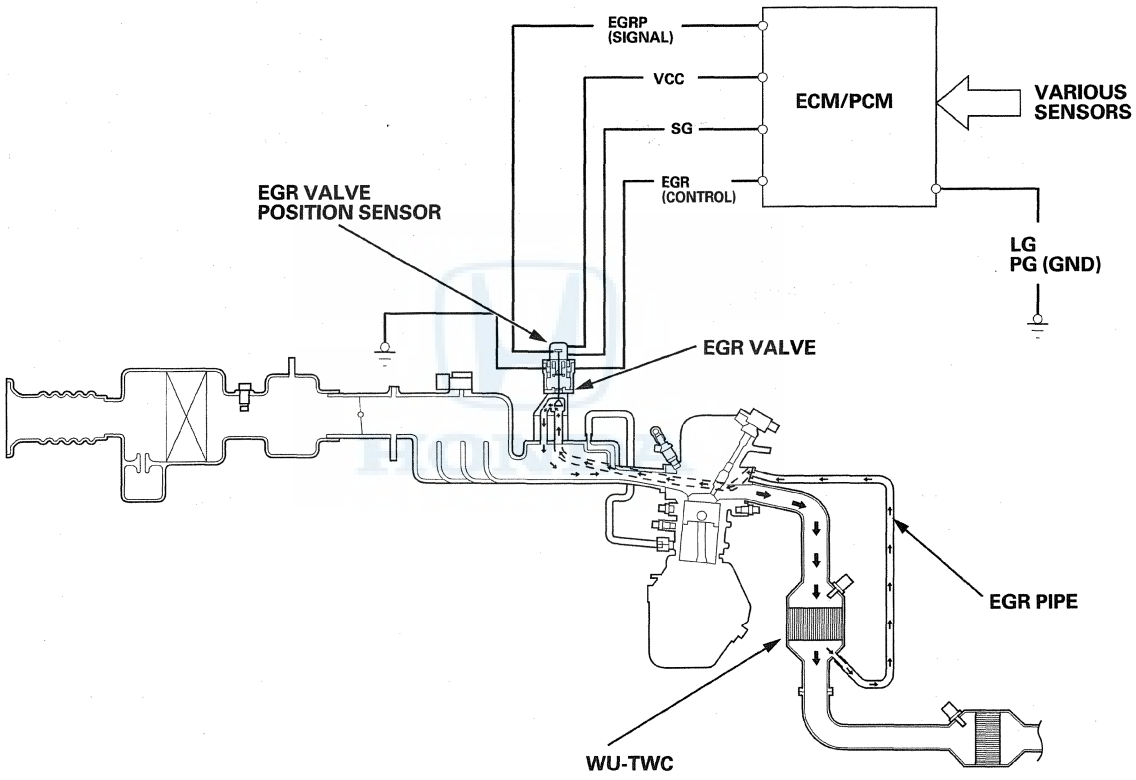
The EGR valve lowers peak combustion temperatures and reduces oxides of nitrogen emissions (NOx) by recirculating exhaust gas through the intake manifold and into the combustion chambers.



Exhaust Gas Recirculation (EGR) System Diagram

The EGR system reduces oxides of nitrogen (NOx) emissions by recirculating exhaust gas through the EGR pipe and the intake manifold, and into the combustion chambers. Routing the exhaust gas through the EGR pipe helps to prevent carbon deposits from forming in the intake manifold and the throttle body. The ECM/PCM memory contains the ideal EGR valve positions for various operating conditions.

The EGR valve position sensor detects the amount of EGR valve lift and sends it to the ECM/PCM. The ECM/PCM then compares it with the ideal lift in its memory (based on signals sent from other sensors). If there is any difference between the two, the ECM/PCM adjusts the current to the EGR valve.

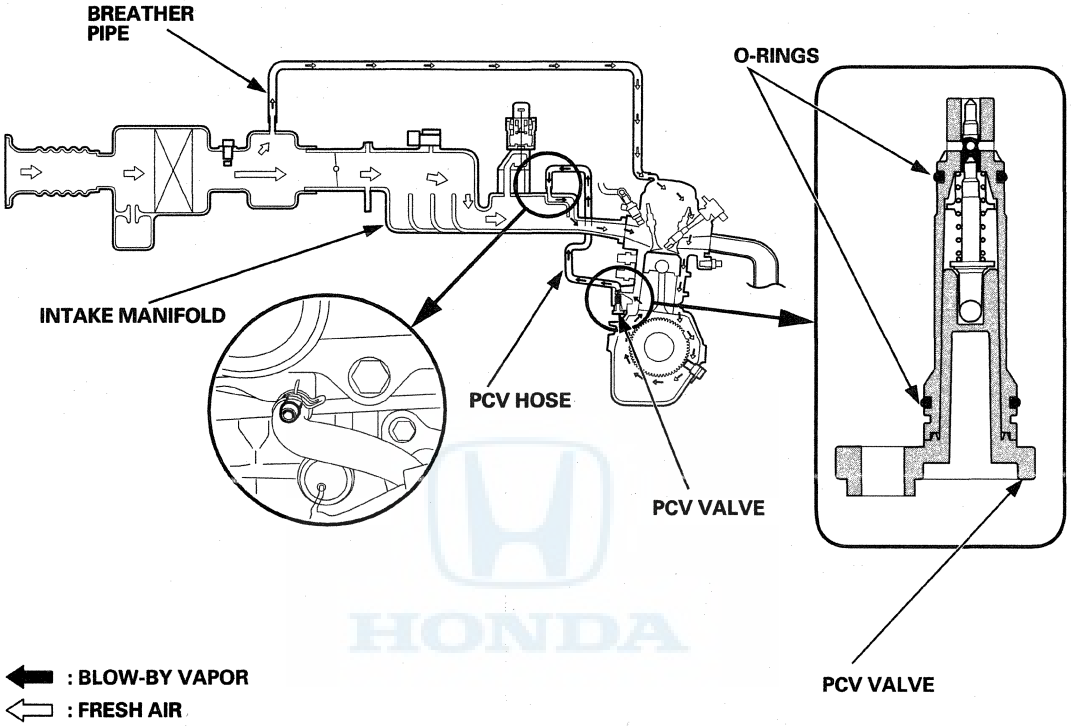


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System Description (cont'd)

Positive Crankcase Ventilation (PCV) System

The PCV valve prevents blow-by gases from escaping into the atmosphere by venting them into the intake manifold.



Evaporative Emission (EVAP) System

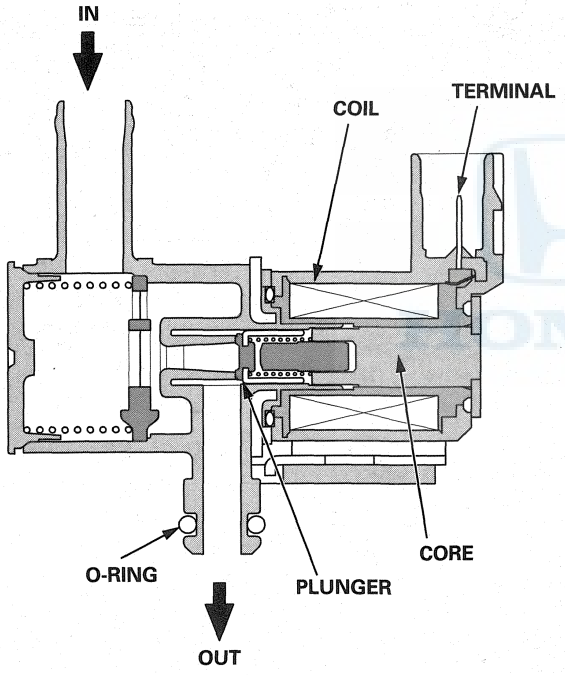
Refer to the system diagram to see a functional layout of the system.

EVAP Canister

The EVAP canister temporarily stores fuel vapor from the fuel tank until it can be purged back into the engine and burned.

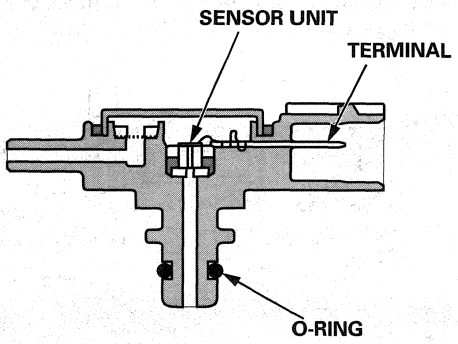
EVAP Canister Purge Valve

When the engine coolant temperature is below 140 °F (60 °C), the ECM/PCM turns off the EVAP canister purge valve, which prevents the purging of the EVAP canister.



Fuel Tank Pressure (FTP) Sensor

The FTP sensor converts fuel tank absolute pressure into an electrical input to the ECM/PCM.



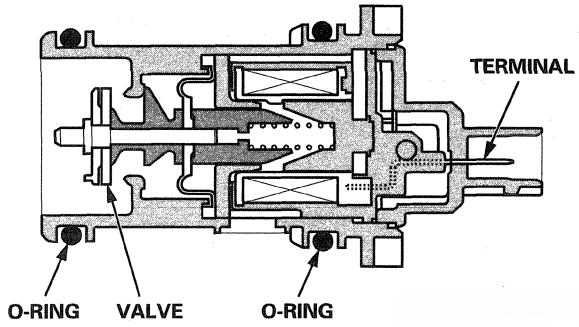
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System Description (cont'd)

EVAP Canister Vent Shut Valve

The EVAP canister vent shut valve is mounted in the EVAP canister.

The EVAP canister vent shut valve controls venting of the EVAP canister.

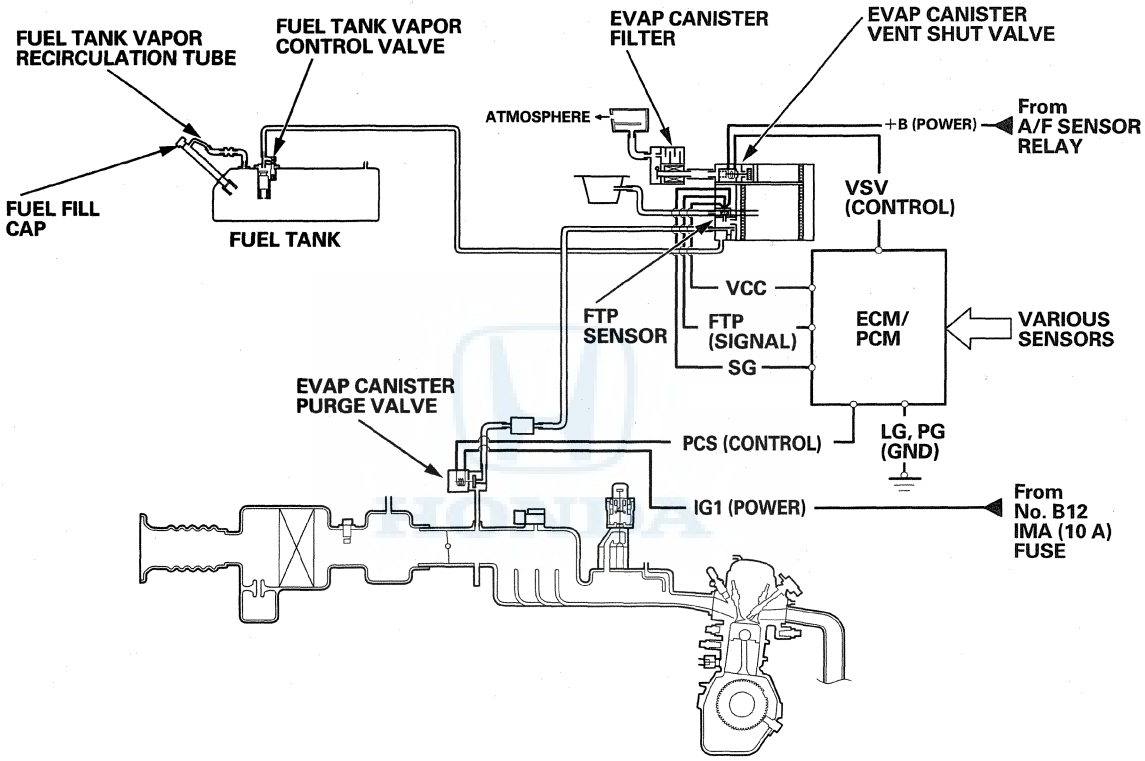


Evaporative Emission (EVAP) Control Diagram

The EVAP controls minimize the amount of fuel vapor escaping to the atmosphere. Vapor from the fuel tank is temporarily stored in the EVAP canister until it can be purged from the canister into the engine and burned.

The EVAP canister is purged by drawing fresh air through it and into a port on the intake manifold.

The purging vacuum is controlled by the EVAP canister purge valve, which operates whenever the engine coolant temperature is above 140 °F (60 °C).



(cont'd)

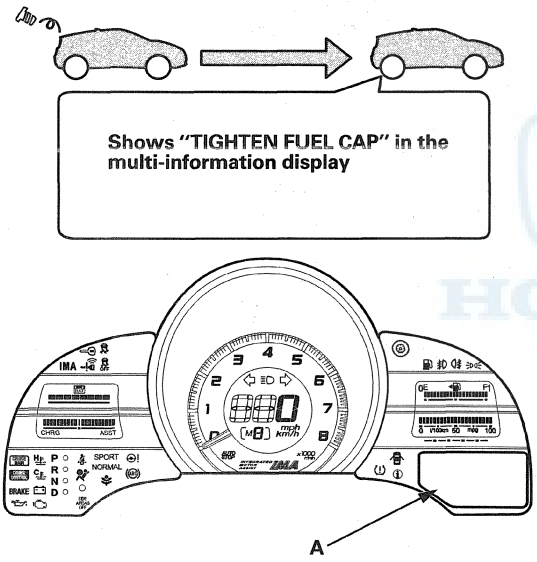
System Description (cont'd)

Fuel Cap Warning Message

The ECM/PCM detects a loose or missing fuel fill cap as an evaporative system leak and alerts the driver by showing a warning message on the multi-information display.

First drive cycle

The first time a leak is detected, a TIGHTEN FUEL CAP message appears on the multi-information display (A). To scroll to another message, press the select/reset button. The TIGHTEN FUEL CAP message appears each time you restart the engine until the system turns the message off.



How to clear the message with the HDS

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Clear the Pending DTC with the HDS.
3. Verify there is no leak by doing an EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

How to clear the message without the HDS

Procedure

1. Tighten the fuel fill cap until it clicks.
2. Start the engine, then turn the ignition switch to LOCK (0).
3. Repeat step 2 two more times.

3-Mode Drive System

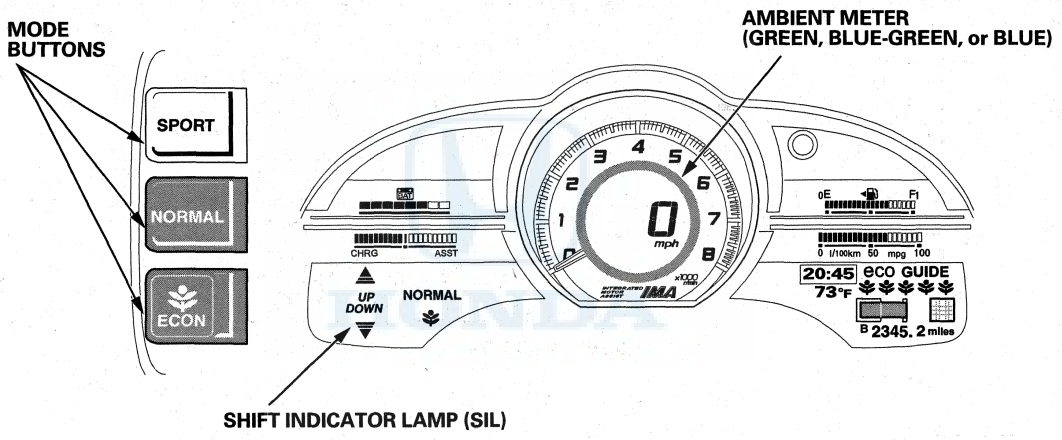
The 3-mode drive system consists of Normal mode, ECON mode, and Sport mode. The mode is changed by pressing one of the three mode buttons on the left side of the instrument panel.

Ambient Meter

The ambient meter is the ring of color around the speedometer. In Normal or ECON mode, it changes color based on data the ECM/PCM receives from various control units and sensors. The ECM/PCM calculates this data, forms an Eco drive profile, and then sends the profile to the gauge control module via F-CAN. When the gauge control module receives the Eco drive profile data, it responds by changing the background color of the speedometer. During low fuel economy, the ambient meter is blue; at medium fuel economy, the meter is blue-green; and at high fuel economy, it's green.

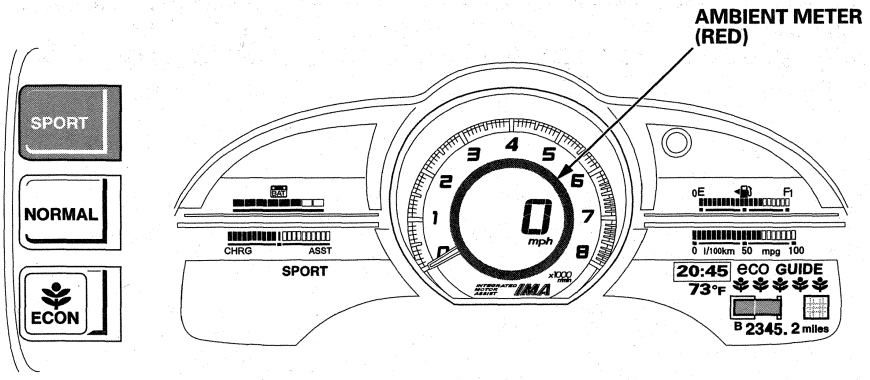
In Sport mode, the ambient meter color is red at all times, and the shift indicator lamp (SIL) stays off (M/T).

Normal Mode, ECON Mode



This illustration shows the M/T model.

Sport Mode



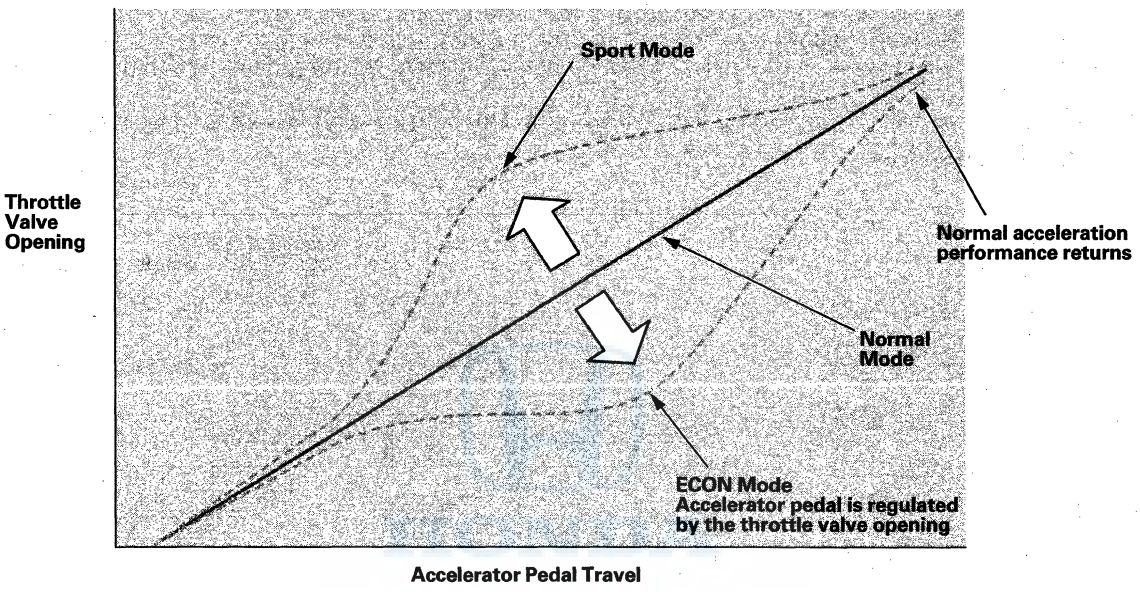
This illustration shows the M/T model.

(cont'd)

System Description (cont'd)

Normal Mode, ECON Mode, and Sport Mode

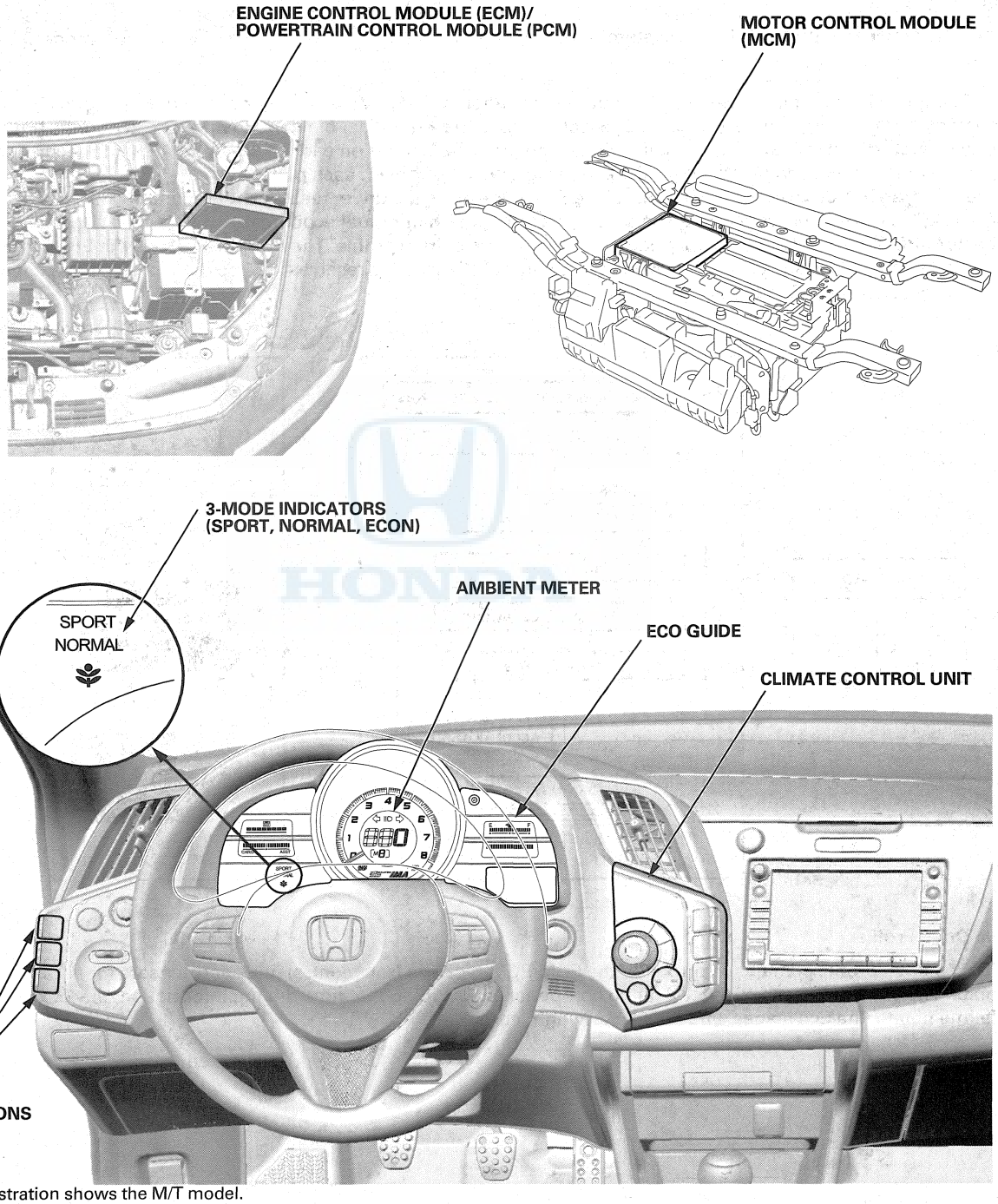
Normal mode: This mode is a balance between driving performance and fuel economy. When you start the engine, the vehicle is in Normal mode. ECON mode: This mode provides the best fuel economy. If the accelerator is pressed quickly, the ETCS (electronic throttle control system) keeps the throttle response steady and smooth. Sport mode: This mode offers increased accelerator response.



Conditions In ECON Mode

- Cruise control: To decrease fuel use when cruise control is on in ECON mode, the cruise acceleration and cruise speed responses are milder than normal. When the vehicle speed is reduced by extra load conditions, cruise control assumes its normal response to maintain vehicle speed.
- IMA (Integrated Motor Assist): In ECON mode, the conditions for auto idle stop are expanded, regenerative braking during deceleration is increased, and power to the IPU (intelligent power unit) fan is increased.
- Air conditioning: To decrease fuel use in ECON mode, the A/C switches to recirculation mode and the compressor operates less frequently.

Driver Feedback System



This illustration shows the M/T model.

(cont'd)

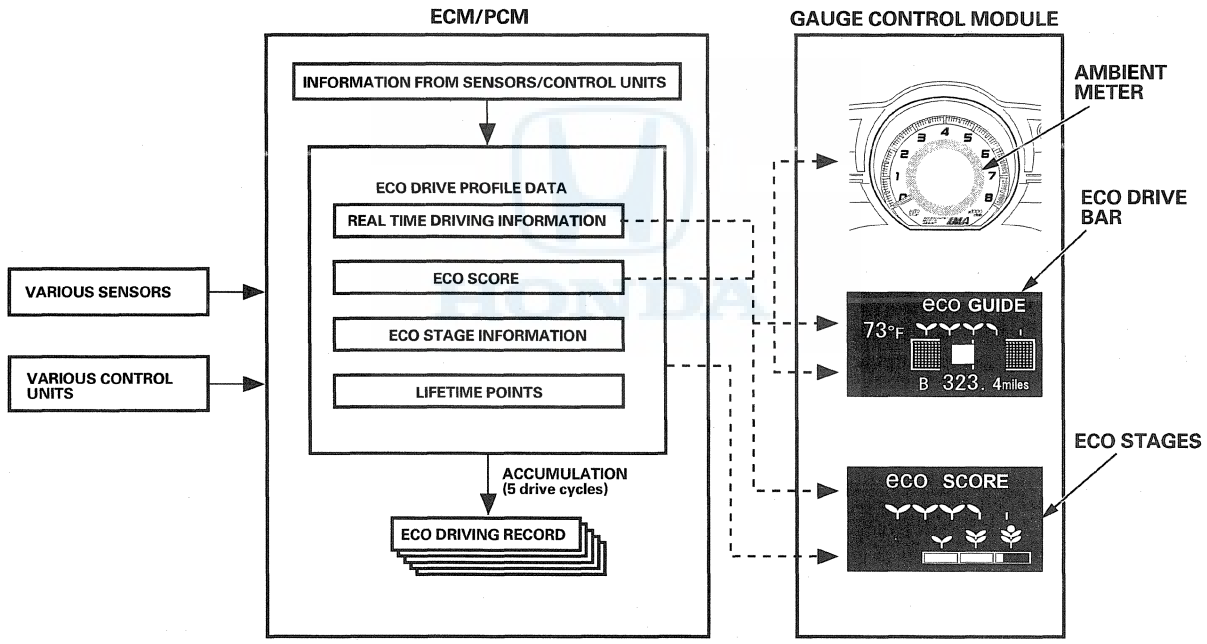
System Description (cont'd)

The driver feedback system provides real-time driving information, and gives drivers an interactive way to practice fuel-efficient driving. The driver feedback system includes two visual aids on the instrument panel: an ambient meter and an Eco guide.

Ambient Meter (see page 11-73)

Eco Guide

The Eco guide is one of the screens in the multi-information display (MID). It rewards continuous improvement in fuel economy by "growing" five plant icons, one leaf at a time, based on fuel-efficient driving. The Eco guide has three progressively difficult Eco stages: The first stage can grow two leaves on each of the five plants; the second stage can grow four leaves on each plant; the third stage can grow a blossom on each plant.
In addition, an Eco drive bar at the bottom of the Eco guide gives the driver real-time fuel economy information. A longer bar indicates lower fuel economy, and a shorter bar indicates higher fuel economy.
The ECM/PCM adds data to the Eco guide by forming an Eco drive profile. The ECM/PCM sends the Eco drive profile to the gauge control module via F-CAN. When the gauge control module receives the Eco drive profile data, it responds by adding the data to the Eco guide.

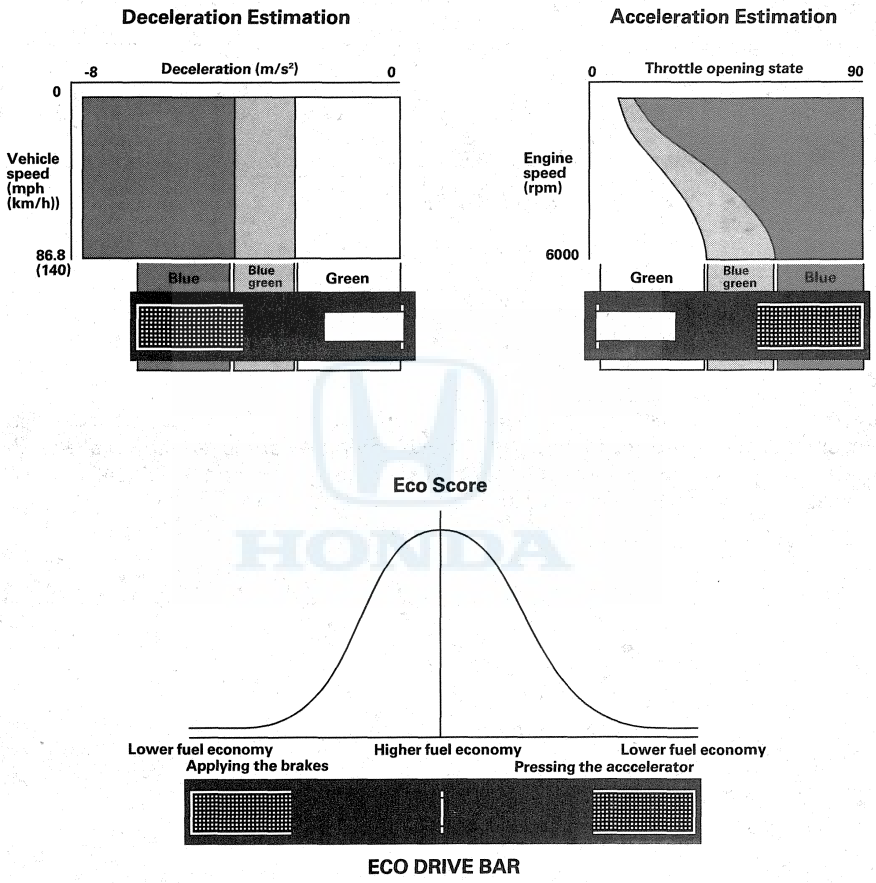


Eco Drive Profile

The Eco drive profile contains information the ECM/PCM receives from control units and sensors monitoring driving habits. The profile consists of several rating components, including real-time driving information, the Eco score, the lifetime points, the Eco stages, and the Eco driving record.

Real-Time Driving Information

Real-time driving information includes the driver's acceleration and braking habits, viewed from a fuel economy standpoint. Based on information received, the ambient meter changes color:
During low fuel economy, the ambient meter is blue; at medium fuel economy, the meter is blue-green; and at high fuel economy, it's green. In addition, the Eco drive bar on the MID changes from a long bar (during low fuel economy driving) to a short bar (during high fuel economy driving).



Eco Score

The Eco score is a fuel economy average calculated from real-time driving information, idle time evaluation, and the percentage of time the ECON button is on. The Eco score determines how many points (parts of the plant icon) are awarded on the Eco guide. Calculation of the Eco score begins when the ignition switch is turned to ON (II), and continues while the ignition switch is in ON (II). The Eco score begins to display on the Eco guide after 3 minutes of engine idling or 200 meters of driving. The calculation logic changes for each Eco stage, making it progressively harder to score points.

Lifetime Points

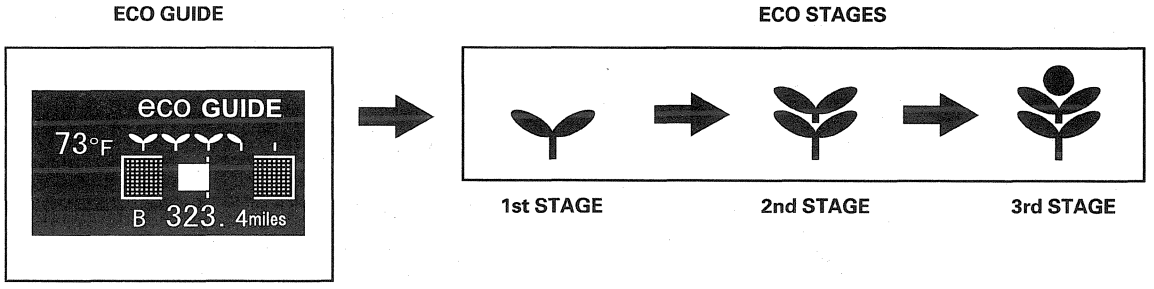
This is the accumulated point total for the lifetime of the vehicle. Lifetime points are used to determine which Eco stage has been achieved by the driver. Lifetime points are not deleted when the vehicle's 12 V battery is disconnected, after resetting the ECM/PCM, or after an ECM/PCM update. The lifetime points can be reset (see page 22-357).

(cont'd)

System Description (cont'd)

Eco Stages

These are the three stages that can be reached on the Eco guide by accumulating lifetime points. The first stage can grow two leaves on each of the five plant icons; the second stage can grow four leaves on each plant icon; the third stage can grow a blossom on each plant icon. Each stage is progressively more difficult to reach.



Eco Driving Record

When the ignition switch is turned to LOCK (0) after a drive, the driving record for the drive is stored in the ECM/PCM. Up to five of the most recent driving records can be stored. An Eco driving record is not stored after a short time drive or if the vehicle does not reach a certain speed. Eco driving records are deleted when the vehicle's 12 volt battery is disconnected, after resetting the ECM/PCM, or after an ECM/PCM update.

How to Set Readiness Codes

Malfunction Indicator Lamp (MIL) Indication (In relation to Readiness Codes)

The vehicle has certain readiness codes that are part of the on-board diagnostics for the emissions systems. If the vehicle's 12 volt battery has been disconnected or gone dead, if DTCs have been cleared, or if the ECM/PCM has been reset, these readiness codes are reset to incomplete. In some states, part of the emissions testing is to make sure these codes are set to complete. If all of them are not set to complete, the vehicle may fail the emission test, or the test cannot be finished.

To check if the readiness codes are set to complete, turn the ignition switch to ON (II), but do not start the engine. The MIL will come on for 15 to 20 seconds. If it then goes off, the readiness codes are set to complete. If it flashes five times, one or more readiness codes are not set to complete. To set readiness codes from incomplete to complete, do the procedure for the appropriate code.

To check the status of a specific DTC system, check the OBD status in the DTC MENU with the HDS (see page 11-9). This screen displays the code, the current data list of the enable criteria, and the status of the readiness testing.

Catalytic Converter Monitor and Readiness Code

NOTE:

- Do not turn the ignition switch to ACCESSORY (I) or to LOCK (0) during the procedure.
- All readiness codes are cleared when the 12 volt battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.
- Low ambient temperatures or excessive stop-and-go traffic may increase the drive time needed to switch the readiness code from incomplete to complete.
- The readiness code will not switch to complete until all the enable criteria are met.
- If a fault in the secondary HO2S system caused the MIL to come on, the readiness code cannot be set to complete until you correct the fault.

Enable Criteria

- ECT SENSOR 1 at 158 °F (70 °C) or more.
- IAT SENSOR at 20 °F (−7 °C) or more.
- VEHICLE SPEED above 25 mph (40 km/h).

Procedure

1. Connect the HDS to the vehicle's data link connector (DLC), and bring up the READINESS CODEs screen for Catalyst in the DTCs MENU.
2. Start the engine.
3. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. After about 5 miles (8 km), the readiness code should switch to complete.
4. If the readiness code is still not set to complete, check for a Pending DTC with the HDS. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

(cont'd)

How to Set Readiness Codes (cont'd)

Evaporative Emission (EVAP) Control System Monitor and Readiness Code

NOTE: All readiness codes are cleared when the 12 volt battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Enable Criteria

- 12 volt battery voltage is more than 10.5 V.
- Engine at idle.
- ECT SENSOR 1 and ECT SENSOR 2 between 176 °F (80 °C) and 212 °F (100 °C).
- MAP sensor less than 46.6 kPa (14 in.Hg, 350 mmHg).
- VEHICLE SPEED 0 mph (0 km/h).
- IAT SENSOR 1 between 32 °F (0 °C) and 212 °F (100 °C).

Procedure

1. Connect the HDS to the DLC.
2. Start the engine.
3. Select EVAP TEST in the INSPECTION MENU with the HDS, then select the FUNCTION TEST in the EVAP TEST MENU.
   - If the result is normal, readiness is complete.
   - If the result is not normal, go to the next step.
4. Check for a Pending DTC. If there is no DTC, one or more of the enable criteria were probably not met; repeat the procedure.

Air Fuel Ratio (A/F) Sensor Monitor and Readiness Code

NOTE:

- Do not turn the ignition switch to ACCESSORY (I) or to LOCK (0) during the procedure.
- All readiness codes are cleared when the 12 volt battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Enable Criteria

ECT SENSOR 1 at 140 °F (60 °C) or more.

Procedure

1. Start the engine.
2. Test-drive the vehicle under stop-and-go conditions with short periods of steady cruise. During the drive, decelerate (with the throttle fully closed) for 5 seconds. After about 3.5 miles (5.6 km), the readiness code should switch from incomplete to complete.
3. Check the readiness codes screen for the AIR FUEL RATIO (A/F) SENSOR in the DTCs MENU with the HDS.
   - If the HDS indicates complete, readiness is complete.
   - If the HDS indicates not complete, go to the next step.
4. Check for a Pending DTC. If there is no DTC, the enable criteria was probably not met. Select the DATA LIST MENU. Check ECT SENSOR 1 in the ALL DATA LIST with the HDS. If ECT SENSOR 1 is less than 140 °F (60 °C), run the engine until it is more than 140 °F (60 °C), then repeat the procedure.

Air Fuel Ratio (A/F) Sensor Heater Monitor Readiness Code

NOTE: All readiness codes are cleared when the 12 volt battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

Procedure

1. Start the engine, and let it idle for 1 minute. The readiness code should switch from incomplete to complete.
2. If the readiness code is still not set to complete, check for a Pending DTC. If there is no DTC, repeat the procedure.

Misfire Monitor and Readiness Code

- This readiness code is always set to available because misfiring is continuously monitored.
- Monitoring pauses, and the misfire counter resets, if the vehicle is driven over a rough road.
- Monitoring also pauses, and the misfire counter holds at its current value, if the throttle position changes more than a predetermined value, or if driving conditions fall outside the range of any related enable criteria.

Fuel System Monitor and Readiness Code

- This readiness code is always set to available because the fuel system is continuously monitored during closed loop operation.
- Monitoring pauses when the catalytic converter, the EVAP control system, and the A/F sensor monitors are active.
- Monitoring also pauses when any related enable criteria are not being met. Monitoring resumes when the enable criteria is again being met.

Comprehensive Component Monitor and Readiness Code

This readiness code is always set to available because the comprehensive component monitor is continuously running whenever the engine is cranking or running.

EGR Monitor and Readiness Code

NOTE:

- Do not turn the ignition switch to ACCESSORY (I) or to LOCK (0) during the procedure.
- All readiness codes are cleared when the 12 volt battery is disconnected, if DTCs have been cleared, or if the ECM/PCM is reset with the HDS.

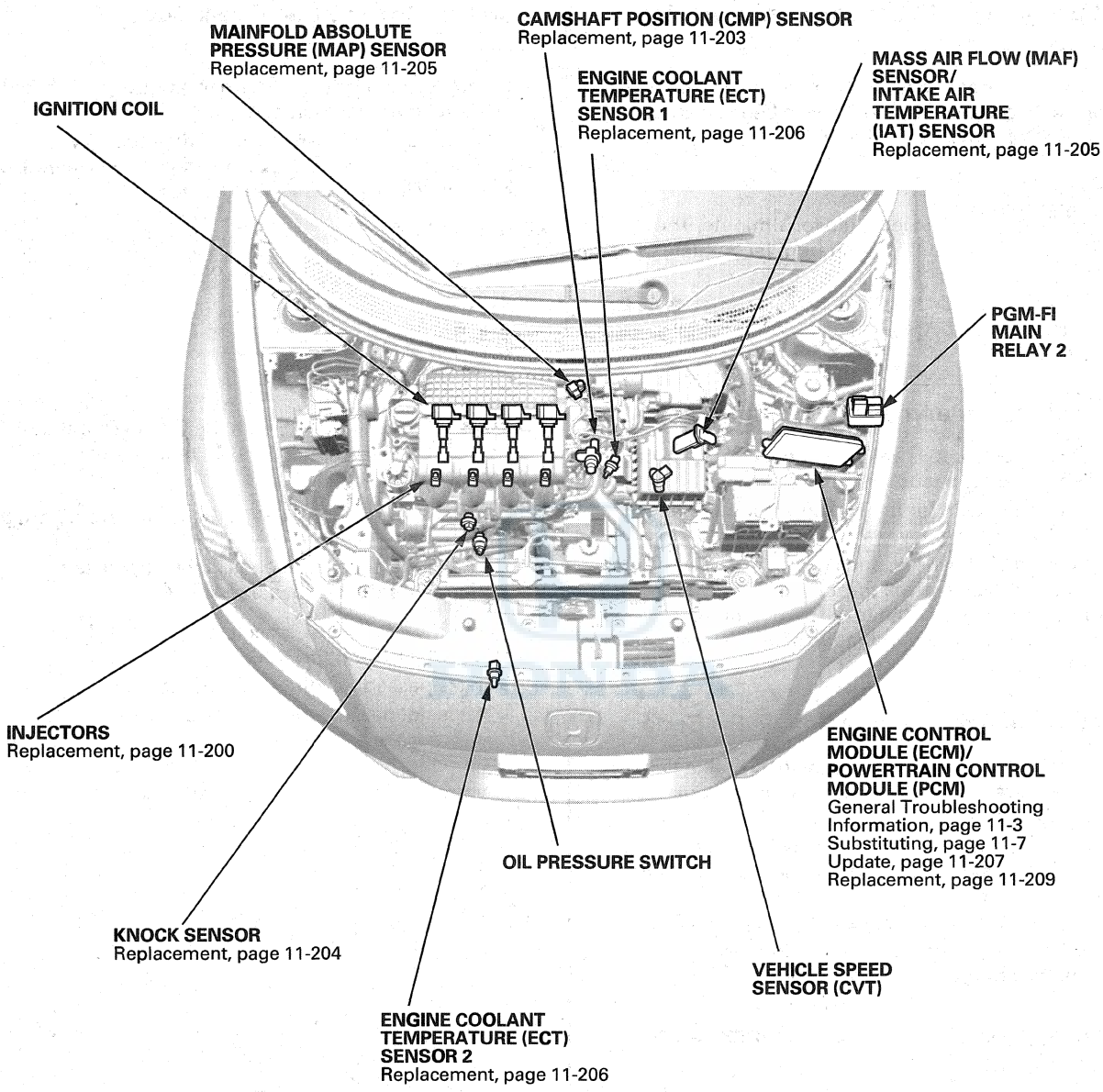
Enable Criteria

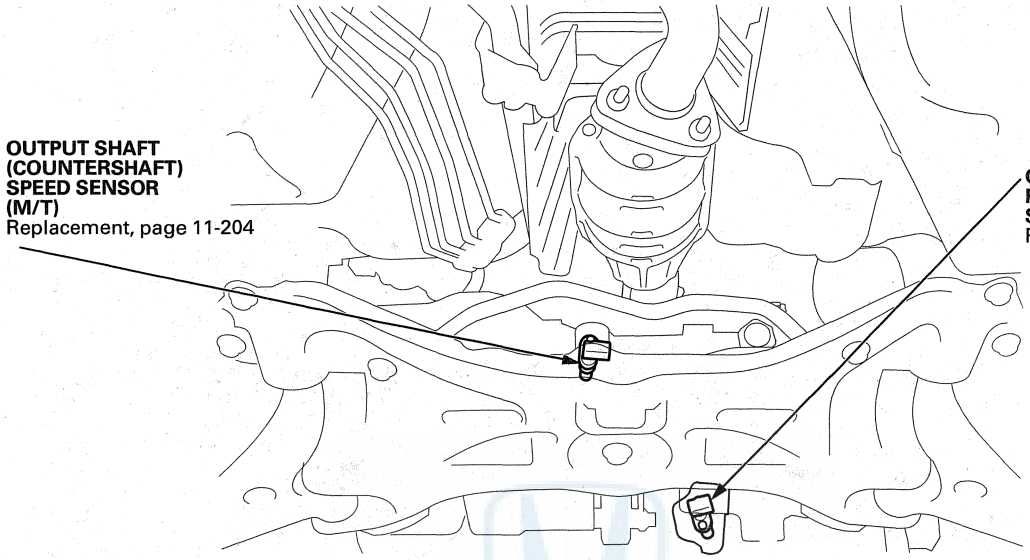
ECT SENSOR 1 at 176 °F (80 °C) or more.

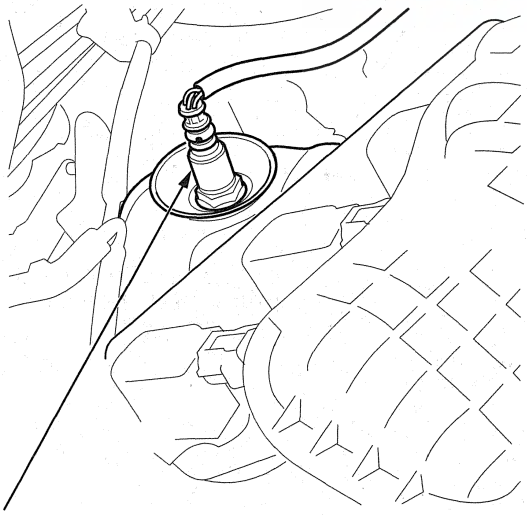
Procedure

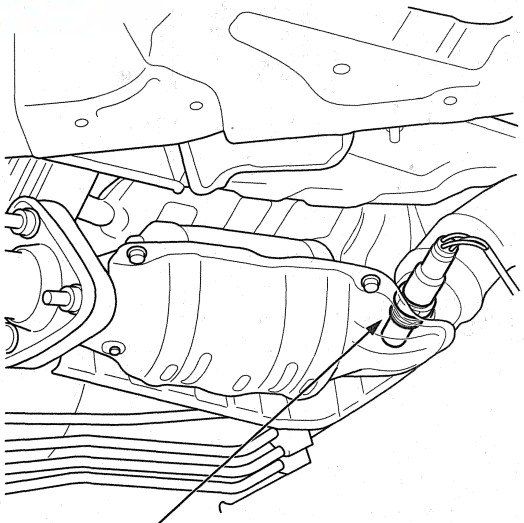
1. Connect the HDS to the DLC.
2. Start the engine.
3. Drive at a steady speed, with the CVT in D or the M/T in 4th, at 50—62 mph (80—100 km/h) or above for more than 10 seconds.
4. With the CVT in D or the M/T in 4th, decelerate from 62 mph (100 km/h) or above by completely releasing the throttle for at least 5 seconds. If the engine is stopped during this step, repeat step 3 and 4.
5. Check the OBD status screen for DTC P0401 in the DTC's MENU with the HDS.
   - If it is passed, readiness is complete.
   - If it is not passed, go to step 3 and retest.

Component Location Index



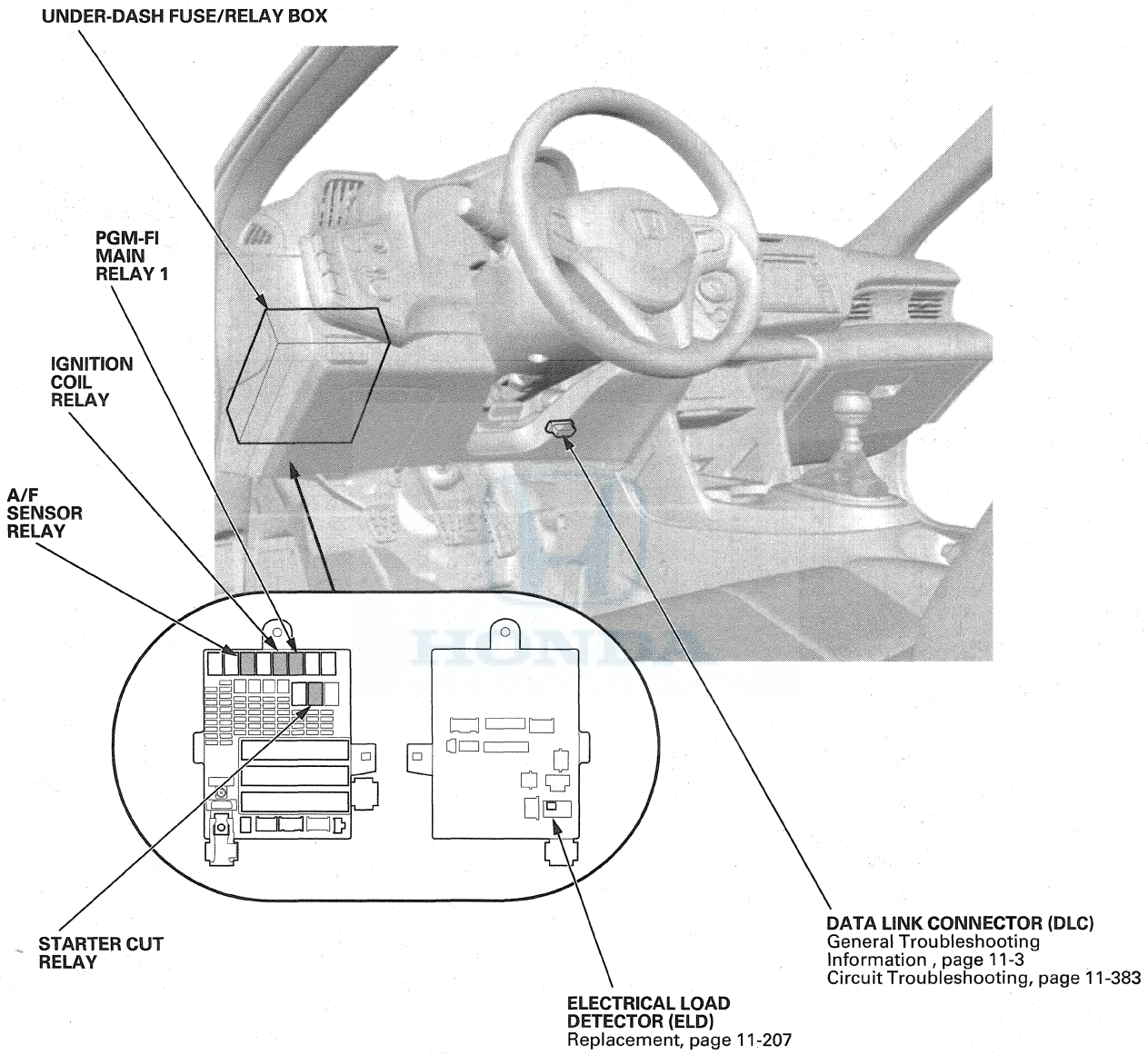

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR (M/T)
Replacement, page 11-204
CRANKSHAFT POSITION (CKP) SENSOR
Replacement, page 11-203


AIR FUEL RATIO (A/F) SENSOR (SENSOR 1)
Replacement, page 11-202


SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S) (SENSOR 2)
Replacement, page 11-202

(cont'd)

Component Location Index (cont'd)



DTC P0101: MAF Sensor Circuit Range/Performance Problem

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P1128, P1129, P2228, and/or P2229 are stored at the same time as DTC P0101, troubleshoot those DTCs first, then recheck for DTC P0101.

1. Check for poor connections or damage to these parts:
   - PCV hose
   - Intake air duct
   - Air cleaner
   - Purge (PCS) line
   - Brake booster
   - Brake booster hose

   Are the parts OK?

   YES–Go to step 2.

   NO–Repair or replace the damaged part(s), then go to step 15.
2. Check for a damaged or incorrectly installed air duct in the air cleaner.

   Is it OK?

   YES–Go to step 3.

   NO–Reconnect or replace the air cleaner air duct, then go to step 15.
3. Check for a dirty air cleaner element.

   Is it dirty?

   YES–Replace the air cleaner element (see page 9-3), then go to step 15.

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Turn the ignition switch to ON (II).
6. Check the MAF SENSOR in the DATA LIST with the HDS.

   Is there about 0.2 gm/s or 0.5 V?

   YES–Go to step 7.

   NO–Go to step 13.
7. Start the engine.
8. Vary the engine speed between 2,000 rpm and 3,000 rpm.
9. Check the MAF SENSOR in the DATA LIST with the HDS.

   Does the reading change?

   YES–Go to step 10.

   NO–Go to step 13.
10. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
11. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - MAP SENSOR
    - MAF SENSOR
12. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

    Does the HDS indicate FAILED?

    YES–Go to step 13.

    NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 11 and recheck.
13. Turn the ignition switch to LOCK (0).
14. Replace the MAF sensor/IAT sensor (see page 11-205).
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - MAP SENSOR
    - MAF SENSOR

(cont'd)

DTC Troubleshooting (cont'd)

19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0101 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Go to step 20.

20. Monitor the OBD STATUS for DTC P0101 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 19, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 18.

DTC P0102: MAF Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

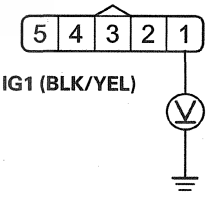
1. Turn the ignition switch to ON (II), and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

   Is about 0 gm/s, or 0.1 V or less indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between MAF sensor/IAT sensor 5P connector terminal No. 1 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Is there battery voltage?

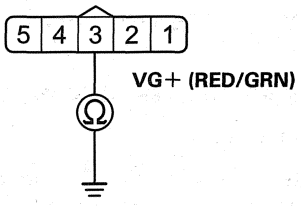
YES–Go to step 7.

NO–Repair an open in the wire between the No. B12 IG IMA (10 A) fuse in the under-dash fuse/relay box and the MAF sensor, then go to step 19.

7. Turn the ignition switch to LOCK (0).

8. Measure the resistance between MAF sensor/IAT sensor 5P connector terminal No. 3 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

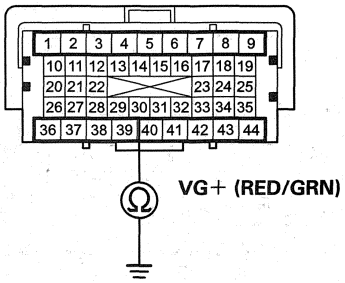
Is there 190—210 kΩ at room temperature (65 - 70 °F, 18 - 21 °C) ?

YES–Go to step 13.

NO–Go to step 9.

9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector B (44P).
11. Check for continuity between ECM/PCM connector terminal B30 and body ground.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

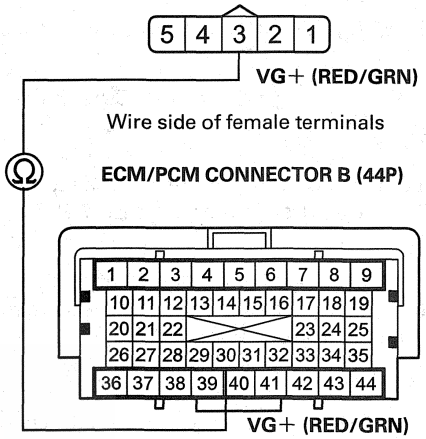
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B30) and the MAF sensor, then go to step 20.

NO–Go to step 12.

12. Check for continuity between ECM/PCM connector terminal B30 and MAF sensor/IAT sensor 5P connector terminal No. 3.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (B30) and the MAF sensor, then go to step 20.

13. Substitute a known-good MAF sensor/IAT sensor (see page 11-205).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Start the engine. Hold the engine speed at 2,000 rpm without load (CVT in P or N, M/T in neutral).
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0102 indicated?

YES–Reinstall the original MAF sensor/IAT sensor (see page 11-205), then go to step 26.

NO–Replace the original MAF sensor/IAT sensor (see page 11-205), then go to step 19.

(cont'd)

DTC Troubleshooting (cont'd)

19. Turn the ignition switch to LOCK (0).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0102 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0102 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0103: MAF Sensor Circuit High Voltage

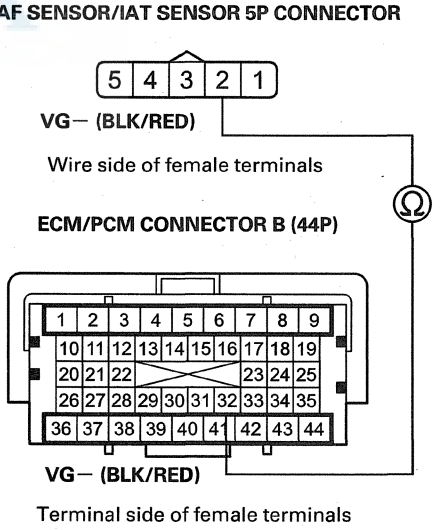
NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II), and wait 2 seconds.
2. Check the MAF SENSOR in the DATA LIST with the HDS.

   Is about 202 gm/s, or 4.89 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Jump the SCS line with the HDS.
5. Disconnect the MAF sensor/IAT sensor 5P connector.
6. Disconnect ECM/PCM connector B (44P).
7. Check for continuity between ECM/PCM connector terminal B32 and MAF sensor/IAT sensor 5P connector terminal No. 2.



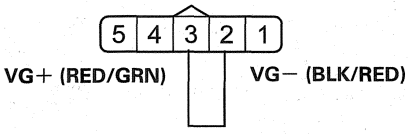
   Is there continuity?

   YES–Go to step 8.

   NO–Repair an open in the wire between the ECM/PCM (B32) and the MAF sensor, then go to step 15.
8. Reconnect ECM/PCM connector B (44P).

9. Connect MAF sensor/IAT sensor 5P connector terminals No. 2 and No. 3 with a jumper wire.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



JUMPER WIRE

Wire side of female terminals

10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS.
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES–Go to step 20.

    NO–Go to step 13.
13. Turn the ignition switch to LOCK (0).
14. Replace the MAF sensor/IAT sensor (see page 11-205).
15. Reconnect all connectors.
16. Turn the ignition switch to ON (II).
17. Reset the ECM/PCM with the HDS.
18. Do the ECM/PCM idle learn procedure (see page 11-274).
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
20. Turn the ignition switch to LOCK (0).
21. Reconnect all connectors.
22. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0103 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0107: MAP Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 3 kPa (1.0 in.Hg, 26 mmHg), or 0.23 V or less indicated?

   YES–Go to step 3.

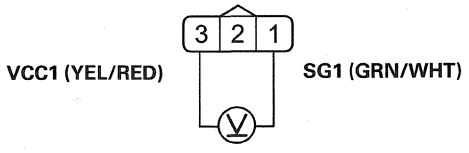
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAP sensor 3P connector.
5. Turn the ignition switch to ON (II).
6. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 3 kPa (1.0 in.Hg, 26 mmHg), or 0.23 V or less indicated?

   YES–Go to step 12.

   NO–Go to step 7.
7. Measure the voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

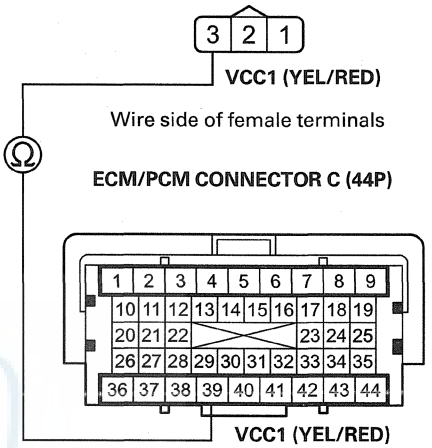
Is there about 5 V?

YES–Go to step 16.

NO–Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector C (44P).
11. Check for continuity between ECM/PCM connector terminal C39 and MAP sensor 3P connector terminal No. 3.

MAP SENSOR 3P CONNECTOR



Terminal side of female terminals

Is there continuity?

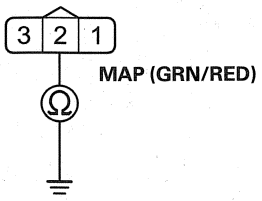
YES–Go to step 23.

NO–Repair an open in the wire between the ECM/PCM (C39) and the MAP sensor, then go to step 18.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (44P).

15. Check for continuity between MAP sensor 3P connector terminal No. 2 and body ground.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C11) and the MAP sensor, then go to step 18.

NO–Go to step 23.

16. Turn the ignition switch to LOCK (0).
17. Replace the MAP sensor (see page 11-205).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0107 indicated?

    YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0107 indicated?

    YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0108: MAP Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

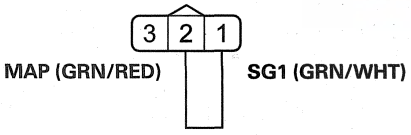
1. Turn the ignition switch to ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 160 kPa (47.1 in.Hg, 1,197 mmHg), or 4.49 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAP sensor 3P connector.
5. Connect MAP sensor 3P connector terminals No. 1 and No. 2 with a jumper wire.

MAP SENSOR 3P CONNECTOR



JUMPER WIRE

Wire side of female terminals

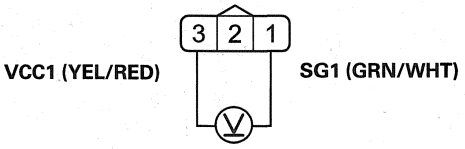
6. Turn the ignition switch to ON (II).
7. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is about 160 kPa (47.1 in.Hg, 1,197 mmHg), or 4.49 V or more indicated?

   YES–Go to step 8.

   NO–Go to step 20.
8. Turn the ignition switch to LOCK (0).
9. Remove the jumper wire from the MAP sensor 3P connector.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between MAP sensor 3P connector terminals No. 1 and No. 3.

MAP SENSOR 3P CONNECTOR



Wire side of female terminals

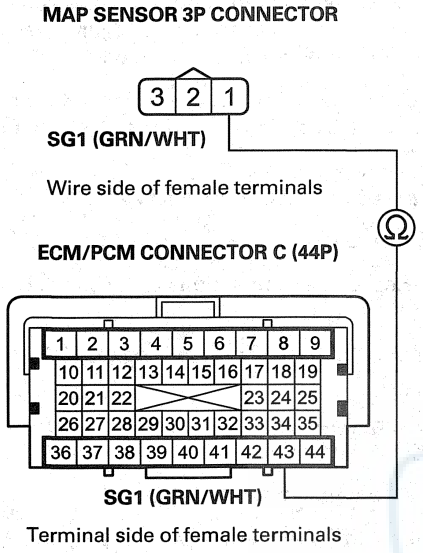
Is there about 5 V?

YES–Go to step 16.

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (44P).

15. Check for continuity between ECM/PCM connector terminal C43 and MAP sensor 3P connector terminal No. 1.

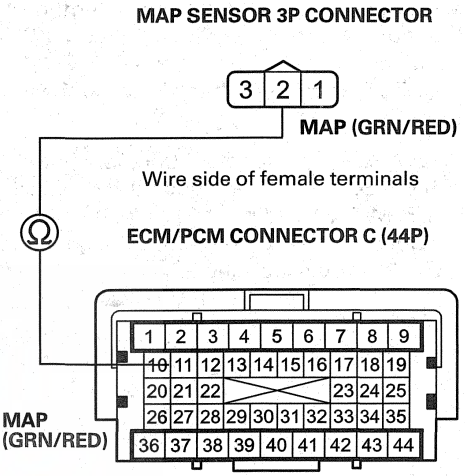


Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (C43) and the MAP sensor, then go to step 22.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector C (44P).
19. Check for continuity between ECM/PCM connector terminal C11 and MAP sensor 3P connector terminal No. 2.



Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (C11) and the MAP sensor, then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace the MAP sensor (see page 11-205).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0108 indicated?

YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0108 indicated?

    YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0111: IAT Sensor Circuit Range/Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the MAF sensor/IAT sensor.

   Are the connections and terminals OK?

   YES–Go to step 2.

   NO–Repair the connections or terminals, then go to step 15.
2. Remove the MAF sensor/IAT sensor (see page 11-205).
3. Allow the MAF sensor/IAT sensor to cool to the ambient temperature.
4. Note the ambient temperature.
5. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install it.
6. Turn the ignition switch to ON (II).
7. Quickly note the value of the IAT SENSOR (2) in the DATA LIST with the HDS.
8. Compare the value of the IAT SENSOR (2) and the ambient temperature.

   Does the value of the IAT SENSOR (2) differ 5.4 °F (3 °C) or more from the ambient temperature?

   YES–Go to step 13.

   NO–Go to step 9.
9. Disconnect the MAF sensor/IAT sensor from its 5P connector.
10. Using a heat gun, blow hot air on the MAF sensor/IAT sensor for a few seconds. Do not apply the heat longer than a few seconds or you will damage the sensor.
11. Connect the MAF sensor/IAT sensor to its 5P connector, but do not install it.

12. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

    Does the IAT SENSOR (2) change 72 °F (40 °C) or more?

    YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM.■

    NO–Go to step 13.

13. Turn the ignition switch to LOCK (0).
14. Replace the MAF sensor/IAT sensor (see page 11-205).
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0111 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0112: IAT Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

    Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

    YES–Go to step 3.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM.■

3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Turn the ignition switch to ON (II).
6. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

    Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

    YES–Go to step 7.

    NO–Go to step 11.

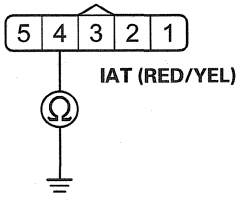
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (44P).

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between MAF sensor/IAT sensor 5P connector terminal No. 4 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the IAT sensor and the ECM/PCM (B31), then go to step 13.

NO–Go to step 18.

11. Turn the ignition switch to LOCK (0).
12. Replace the MAF sensor/IAT sensor (see page 11-205).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0112 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0112 indicated?

    YES–Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0113: IAT Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

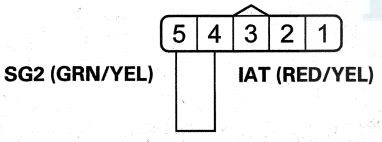
1. Turn the ignition switch to ON (II).
2. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IAT sensor and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the MAF sensor/IAT sensor 5P connector.
5. Connect MAF sensor/IAT sensor 5P connector terminals No. 4 and No. 5 with a jumper wire.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

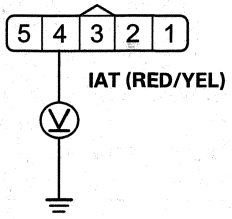
6. Turn the ignition switch to ON (II).
7. Check the IAT SENSOR (2) in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 8.

   NO–Go to step 20.
8. Turn the ignition switch to LOCK (0).
9. Remove the jumper wire from the MAF sensor/IAT sensor 5P connector.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between MAF sensor/IAT sensor 5P connector terminal No. 4 and body ground.

MAF SENSOR/IAT SENSOR 5P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Go to step 12.

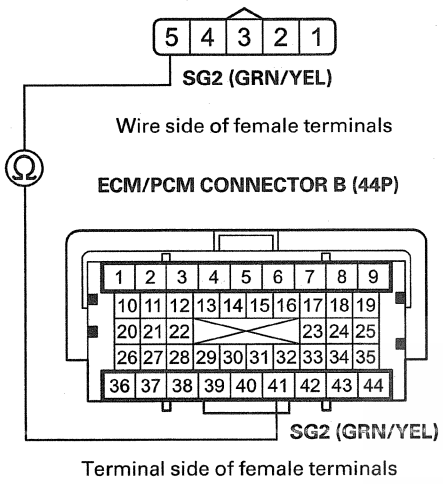
NO–Go to step 16.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (44P).

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DTC Troubleshooting (cont'd)

15. Check for continuity between ECM/PCM connector terminal B41 and MAF sensor/IAT sensor 5P connector terminal No. 5.

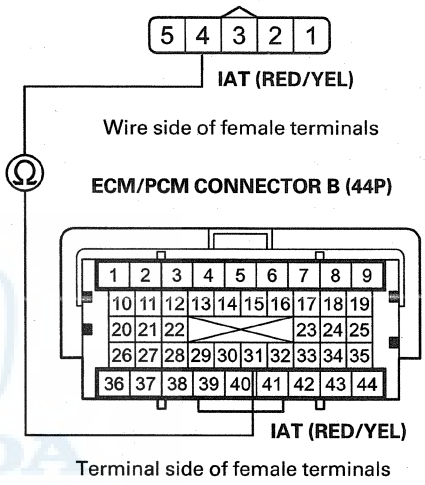


Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (B41) and the IAT sensor, then go to step 22.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector B (44P).
19. Check for continuity between ECM/PCM connector terminal B31 and MAF sensor/IAT sensor 5P connector terminal No. 4.



Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (B31) and the IAT sensor, then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace the MAF sensor/IAT sensor (see page 11-205).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0113 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0113 indicated?

    YES–Check for poor connections or loose terminals at the MAF sensor/IAT sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0116: ECT Sensor 1 Range/Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 176 °F (80 °C) or more, or 0.78 V or less indicated?

   YES–Go to step 6.

   NO–Go to step 3.
3. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Does ECT SENSOR 1 change 18 °F (10 °C) or more?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■

   NO–Go to step 11.
6. Note the value of ECT SENSOR 1 in the DATA LIST with the HDS.
7. Turn the ignition switch to LOCK (0).
8. Open the hood, and let the engine cool for 3 hours.
9. Turn the ignition switch to ON (II).
10. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Did ECT SENSOR 1 change 18 °F (10 °C) or more from the value in step 6?

    YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■

    NO–Go to step 11.

(cont'd)

DTC Troubleshooting (cont'd)

11. Turn the ignition switch to LOCK (0).
12. Replace ECT sensor 1 (see page 11-206).
13. Turn the ignition switch to ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see page 11-274).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0116 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0117: ECT Sensor 1 Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ECT sensor 1 2P connector.
5. Turn the ignition switch to ON (II).
6. Check ECT SENSOR 1 in the DATA LIST with the HDS.

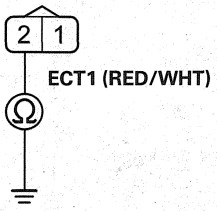
   Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

   YES–Go to step 7.

   NO–Go to step 11.
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (44P).

10. Check for continuity between ECT sensor 1 2P connector terminal No. 2 and body ground.

ECT SENSOR 1 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B23) and ECT sensor 1 , then go to step 13.

NO–Go to step 18.

11. Turn the ignition switch to LOCK (0).
12. Replace ECT sensor 1 (see page 11-206).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0117 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0117 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0118: ECT Sensor 1 Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

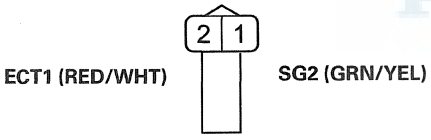
1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ECT sensor 1 2P connector.
5. Connect ECT sensor 1 2P connector terminals No. 1 and No. 2 with a jumper wire.

ECT SENSOR 1 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

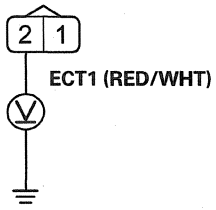
6. Turn the ignition switch to ON (II).
7. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 8.

   NO–Go to step 20.
8. Turn the ignition switch to LOCK (0).
9. Remove the jumper wire from the ECT sensor 1 2P connector.
10. Turn the ignition switch to ON (II).
11. Measure the voltage between ECT sensor 1 2P connector terminal No. 2 and body ground.

ECT SENSOR 1 2P CONNECTOR



Wire side of female terminals

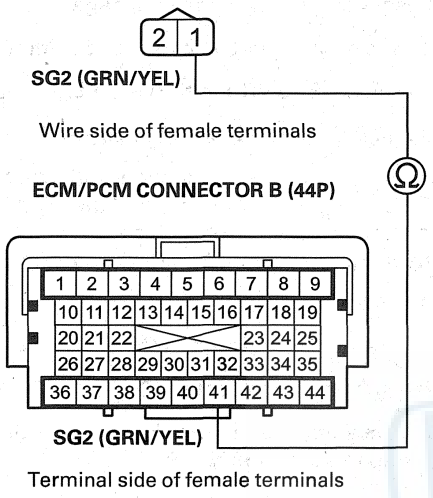
Is there about 5 V?

YES–Go to step 12.

NO–Go to step 16.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (44P).

15. Check for continuity between ECM/PCM connector terminal B41 and ECT sensor 1 2P connector terminal No. 1.

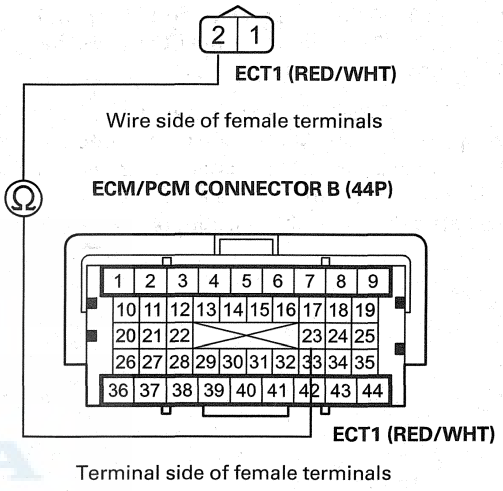


Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (B41) and ECT sensor 1, then go to step 22.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector B (44P).
19. Check for continuity between ECM/PCM connector terminal B23 and ECT sensor 1 2P connector terminal No. 2.



Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (B23) and ECT sensor 1, then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace ECT sensor 1 (see page 11-206).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0118 indicated?

YES–Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0118 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0125: ECT Sensor 1 Malfunction/Slow Response

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Start the engine, and let it idle for 5 minutes or more.
2. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 0 °F (−18 °C) or less indicated?

   YES–Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the connections and the terminals are OK, replace ECT sensor 1 (see page 11-206),then go to step 7.

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Allow the engine to cool to 104 °F (40 °C) or less.
5. Start the engine, and let it idle until ECT SENSOR 1 goes up to about 158 °F (70 °C).

   Does ECT sensor 2 also read about 158 °F (70 °C)?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■
6. Check the thermostat (see page 10-5).

   Is the thermostat OK?

   YES–Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the connections and the terminals are OK, replace ECT sensor 1 (see page 11-206), then go to step 7.

   NO–Replace the thermostat (see page 10-10), then go to step 7.
7. Turn the ignition switch to ON (II).
8. Reset the ECM/PCM with the HDS.
9. Turn the ignition switch to LOCK (0).
10. Allow the engine to cool to 104 °F (40 °C) or less.
11. Start the engine, and let it idle until ECT SENSOR 1 goes up to about 158 °F (70 °C).

    Does ECT sensor 2 also read about 158 °F (70 °C)?

    YES–Go to step 1 and recheck.

    NO–Troubleshooting is complete.■

DTC P0128: Cooling System Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Make sure the blower switch is off.
4. Check the FAN HIGH CTRL and FAN LOW CTRL in the DATA LIST with the HDS.

   Is it OFF?

   YES–Go to step 5.

   NO–Wait until the FAN HIGH CTRL and FAN LOW CTRL is off, then go to step 5.
5. Check the radiator fan operation.

   Does the radiator fan keep running?

   YES–Check the radiator fan circuit (see page 10-32) and the radiator fan relay (see page 22-92). If the circuit and the relay are OK, go to step 19.

   NO–Go to step 6.
6. Let the engine cool until the coolant temperature is 104 °F (40 °C) or less.
7. Note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
8. Start the engine, and let it idle.
9. Let the engine idle until ECT SENSOR 1 goes up 38 °F (21 °C) or more from the recorded temperature.
10. Check ECT SENSOR 2 in the DATA LIST with the HDS.
11. Compare the recorded value of ECT SENSOR 2 and the present value of ECT SENSOR 2.

    Did the temperature rise M/T: 18 °F (10 °C), CVT: 22 °F (12 °C), or more?

    YES–Test the thermostat (see page 10-5), then go to step 12.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Let the engine cool until the coolant temperature is between 19 °F (−7 °C) and 124 °F (51 °C).
15. Do the ECM/PCM idle learn procedure (see page 11-274).
16. Test-drive at a steady speed between 15−75 mph (24−120 km/h) for 10 minutes.
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0128 indicated?

    YES–Check the cooling the system, then go to step 19.

    NO–Go to step 18.
18. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check the cooling system (see page 10-2). If the cooling system is OK, go to step 19. If the HDS indicates NOT COMPLETED, go to step 14.
19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
20. Let the engine cool until the coolant temperature is between 19 °F (−7 °C) and 124 °F (51 °C).
21. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
22. Test-drive at a steady speed between 15−75 mph (24−120 km/h) for 10 minutes.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0128 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 20. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 24.

(cont'd)

DTC Troubleshooting (cont'd)

24. Monitor the OBD STATUS for DTC P0128 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 20. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.

DTC P0133: A/F Sensor (Sensor 1) Malfunction/Slow Response

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P0139 is stored at the same time as DTC P0133, troubleshoot DTC P0139 first, then recheck for DTC P0133.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 3rd or 4th
   - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed of 32 mph (52 km/h) or more with the engine speed between 1,250−3,000rpm
5. Monitor the OBD STATUS for DTC P0133 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Replace the A/F sensor (Sensor 1) (see page 11-202).
8. Turn the ignition switch to ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Drive the vehicle at 25 mph (40 km/h) or less for 5 minutes, then drive at a steady speed of 32 mph (52 km/h) or more with the engine speed between 1,250—3,000rpm
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0133 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for DTC P0133 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 11.

DTC P0134: A/F Sensor (Sensor 1) Heater System Malfunction

NOTE:
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If the vehicle was out of fuel and the engine stalled before this DTC was stored, refuel and clear the DTC with the HDS.
- If DTC P0135 is stored at the same time as DTC P0134, troubleshoot DTC P0135 first, then recheck for DTC P0134.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0134 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Replace the A/F sensor (Sensor 1) (see page 11-202).
7. Turn the ignition switch to ON (II).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see page 11-274).
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0134 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM, then go to step 1.

    NO–Go to step 11.

(cont'd)

DTC Troubleshooting (cont'd)

11. Monitor the OBD STATUS for DTC P0134 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 10, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0135: A/F Sensor (Sensor 1) Heater Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0135 indicated?

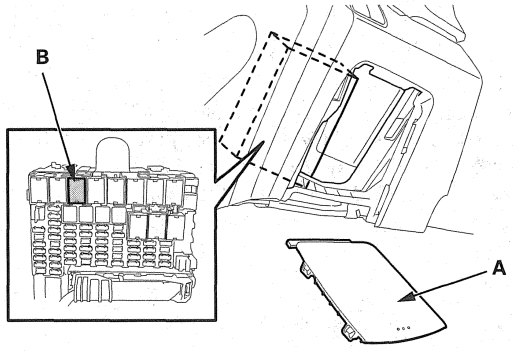
   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Check the No. B26 LAF (A/F SENSOR) (10A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 7.

   NO–Go to step 20.
7. Open the fuse lid panel (A), then remove the A/F sensor relay (B) from the under-dash fuse/relay box.



8. Test the A/F sensor relay (see page 22-92).

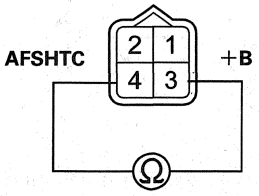
   Is the A/F sensor relay OK?

   YES–Go to step 9.

   NO–Replace the A/F sensor relay, then go to step 24.

9. Disconnect the A/F sensor (Sensor 1) 4P connector.
10. At the sensor side, measure the resistance between A/F sensor (Sensor 1) 4P connector terminals No. 3 and No. 4.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Terminal side of male terminals

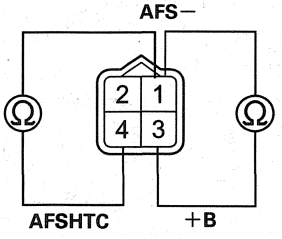
Is there 1.9—2.7 Ω at room temperature (65— 70°F, 18— 21°C)?

YES–Go to step 11.

NO–Go to step 23.

11. At the sensor side, check for continuity between A/F sensor (Sensor 1) 4P connector terminals No. 1 and No. 3, and between terminals No. 1 and No. 4 individually.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Terminal side of male terminals

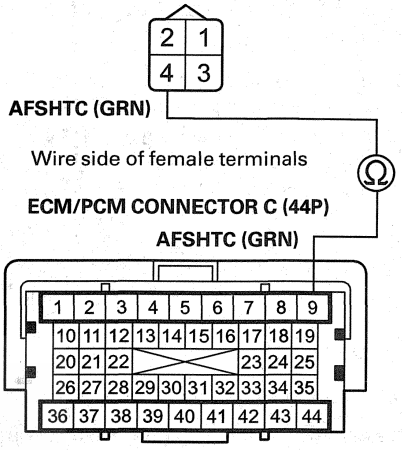
Is there continuity?

YES–Go to step 23.

NO–Go to step 12.

12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (44P).
14. Check for continuity between ECM/PCM connector terminal C9 and A/F sensor (Sensor 1) 4P connector terminal No. 4.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Terminal side of female terminals

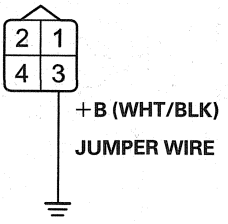
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between the ECM/PCM (C9) and the A/F sensor (Sensor 1), then go to step 24.

15. Connect A/F sensor (Sensor 1) 4P connector terminal No. 3 to body ground with a jumper wire.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



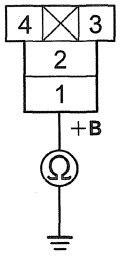
Wire side of female terminals

(cont'd)

DTC Troubleshooting (cont'd)

16. Check for continuity between A/F sensor relay 4P connector terminal No. 1 and body ground.

A/F SENSOR RELAY 4P CONNECTOR



Terminal side of female terminals

Is there continuity?

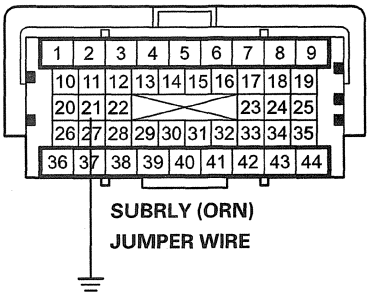
YES–Go to step 17.

NO–Repair an open in the wire between the A/F sensor (Sensor 1) and the A/F sensor relay, then go to step 24.

17. Disconnect ECM/PCM connector A (44P).

18. Connect ECM/PCM connector terminal A21 to body ground with a jumper wire.

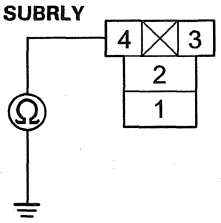
ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

19. Check for continuity between A/F sensor relay 4P connector terminal No. 4 and body ground.

A/F SENSOR RELAY 4P CONNECTOR



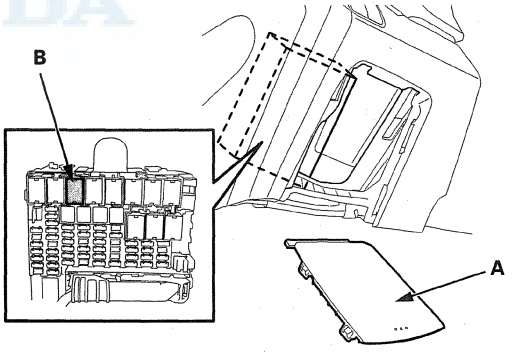
Terminal side of female terminals

Is there continuity?

YES–Go to step 30.

NO–Repair an open in the wire between the ECM/PCM (A21) and the A/F sensor relay, then go to step 24.

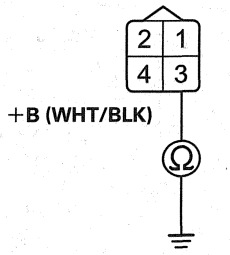
20. Open the fuse access panel (A), then remove the A/F sensor relay (B) from the under-dash fuse/relay box.



21. Disconnect the A/F sensor (Sensor 1) 4P connector and the EVAP canister vent shut valve 2P connector.

22. Check for continuity between A/F sensor (Sensor 1) 4P connector terminal No. 3 and body ground.

A/F SENSOR (SENSOR 1) 4P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the A/F sensor relay, the A/F sensor (Sensor 1), and the EVAP canister vent shut valve. Also replace the No. B26 LAF (A/F SENSOR) (10 A) fuse, then go to step 24.

NO–Replace the under-dash fuse/relay box, then go to step 24.

23. Replace the A/F sensor (Sensor 1) (see page 11-202).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0135 indicated?

YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM, then go to step 1.

NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P0135 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 27.

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Start the engine.
33. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0135 indicated?

YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1), the A/F sensor relay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1.

NO–Go to step 34.

34. Monitor the OBD STATUS for DTC P0135 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 33, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1), the PGM-FI subrelay, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0137: Secondary HO2S (Sensor 2) Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Check HO2S S2 in the DATA LIST with the HDS.

   Does the voltage stay at 0.05 V or less?

   YES–Go to step 5.

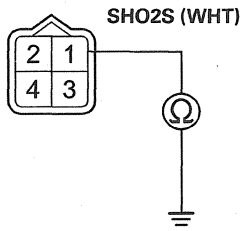
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the secondary HO2S (Sensor 2) 4P connector.
7. Turn the ignition switch to ON (II).
8. Check HO2S S2 in the DATA LIST with the HDS.

   Does the voltage stay at 0.05 V or less?

   YES–Go to step 9.

   NO–Go to step 14.
9. Turn the ignition switch to LOCK (0).
10. Remove the cowl cover and the under-cowl panel (see page 20-153).
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector C (44P).
13. Check for continuity between secondary HO2S (Sensor 2) 4P connector terminal No. 1 and body ground.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C27) and secondary HO2S (Sensor 2), then go to step 16.

NO–Go to step 24.

14. Turn the ignition switch to LOCK (0).
15. Replace secondary HO2S (Sensor 2) (see page 11-202).
16. Reconnect all connectors.
17. Turn the ignition switch to ON (II).
18. Reset the ECM/PCM with the HDS.
19. Do the ECM/PCM idle learn procedure (see page 11-274).
20. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
21. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Engine speed between 1,500—3,000 rpm
    - Drive 1 minute or more
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0137 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

    NO–Go to step 23.

23. Monitor the OBD STATUS for DTC P0137 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 22, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 20.

24. Reconnect all connectors.

25. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

26. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.

27. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Engine speed between 1,500—3,000 rpm
    - Drive 1 minute or more

28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0137 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 26. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P0137 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 26. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 26.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0138: Secondary HO2S (Sensor 2) Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

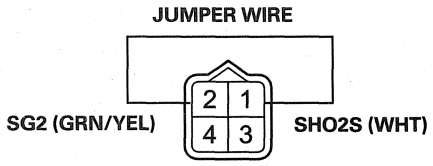
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Check HO2S S2 in the DATA LIST with the HDS.

   Does the voltage stay at 1.27 V or more?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Remove the cowl cover and the under-cowl panel (see page 20-153).
7. Disconnect the secondary HO2S (Sensor 2) 4P connector.
8. Connect secondary HO2S (Sensor 2) 4P connector terminals No. 1 and No. 2 with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

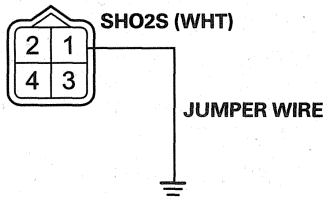
9. Turn the ignition switch to ON (II).
10. Check HO2S S2 in the DATA LIST with the HDS.

    Does the voltage stay at 1.27 V or more?

    YES–Go to step 11.

    NO–Go to step 20.
11. Turn the ignition switch to LOCK (0).
12. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
13. Connect secondary HO2S (Sensor 2) 4P connector terminal No. 1 to body ground with a jumper wire.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

14. Turn the ignition switch to ON (II).
15. Check HO2S S2 in the DATA LIST with the HDS.

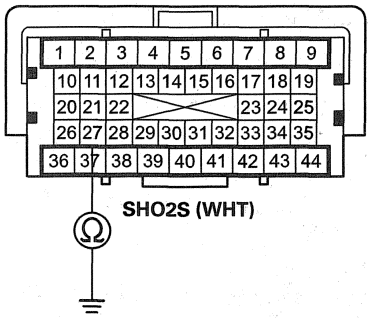
    Does the voltage stay at 1.27 V or more?

    YES–Go to step 16.

    NO–Repair an open in the wire between the ECM/PCM (C27) and secondary HO2S (Sensor 2), then go to step 22.
16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector C (44P).

19. Check for continuity between ECM/PCM connector terminal C27 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 30.

NO–Repair an open in the wire between the ECM/PCM (C27) and secondary HO2S (Sensor 2), then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace secondary HO2S (Sensor 2) (see page 11-202).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
27. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Engine speed between 1,500—3,000 rpm
    - Drive 1 minute or more
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0138 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

    NO–Go to step 29.
29. Monitor the OBD STATUS for DTC P0138 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 26.

(cont'd)

DTC Troubleshooting (cont'd)

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
33. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Engine speed between 1,500—3,000 rpm
    - Drive 1 minute or more
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0138 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 35.
35. Monitor the OBD STATUS for DTC P0138 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 32.

DTC P0139: Secondary HO2S (Sensor 2) Slow Response

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - Drive at a steady speed between 55—75 mph (88—120 km/h) for 1 minute, then decelerate (with the throttle fully closed) for 10 seconds
5. Monitor the OBD STATUS for DTC P0139 in the DTCs MENU with the HDS.

    Does the HDS indicate FAILED?

    YES–Go to step 6.

    NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 3 and recheck.

6. Turn the ignition switch to LOCK (0).
7. Replace secondary HO2S (Sensor 2) (see page 11-202).
8. Turn the ignition switch to ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - Drive at a steady speed between 55—75 mph (88—120 km/h) for 1 minute, then decelerate (with the throttle fully closed) for 10 seconds
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0139 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for DTC P0139 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 11.

DTC P0141: Secondary HO2S (Sensor 2) Heater Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0141 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Check the No. B12 IG IMA (10 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 7.

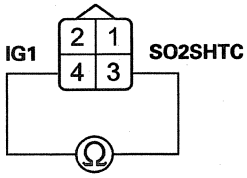
   NO–Repair a short in the wire between secondary HO2S (Sensor 2), the idle stop switch, the EVAP canister purge valve, the MAF sensor, and the No. B12 IG IMA (10 A) fuse. Also replace the No. B12 IG IMA (10 A) fuse, then go to step 23.
7. Remove the cowl cover and the under-cowl panel (see page 20-153).
8. Disconnect the secondary HO2S (Sensor 2) 4P connector.

(cont'd)

DTC Troubleshooting (cont'd)

9. At the secondary HO2S (Sensor 2) side, measure the resistance between secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Wire side of female terminals

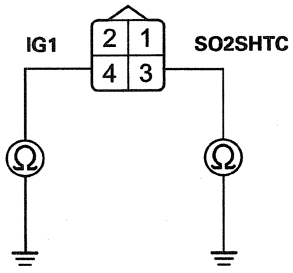
Is there 5.4—7.3 Ω at room temperature (65— 70°F, 18—21°C)?

YES–Go to step 10.

NO–Go to step 22.

10. At the secondary HO2S (Sensor 2) side, check for continuity between body ground and secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4 individually.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Wire side of female terminals

Is there continuity?

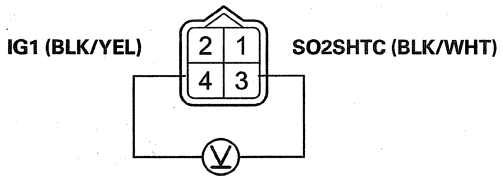
YES–Go to step 22.

NO–Go to step 11.

11. Turn the ignition switch to ON (II).

12. Measure the voltage between secondary HO2S (Sensor 2) 4P connector terminals No. 3 and No. 4.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

Is there battery voltage?

YES–Go to step 13.

NO–Go to step 17.

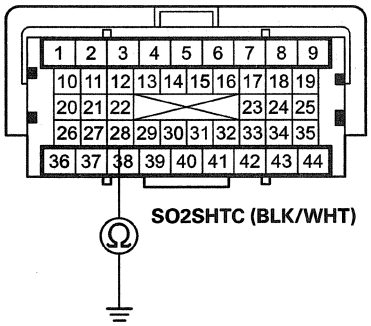
13. Turn the ignition switch to LOCK (0).

14. Jump the SCS line with the HDS.

15. Disconnect ECM/PCM connector C (44P).

16. Check for continuity between ECM/PCM connector terminal C28 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

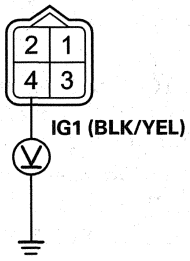
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C28) and secondary HO2S (Sensor 2), then go to step 23.

NO–Go to step 29.

17. Measure the voltage between secondary HO2S (Sensor 2) 4P connector terminal No. 4 and body ground.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of male terminals

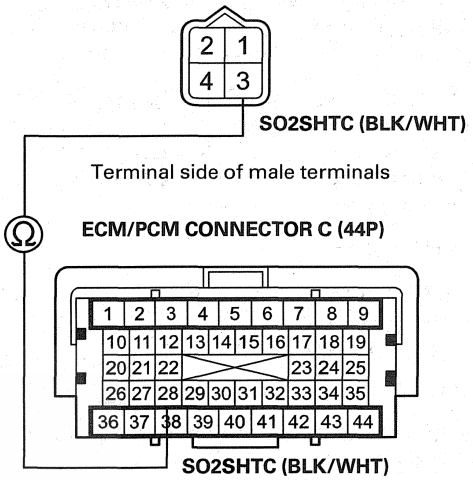
Is there battery voltage?

YES–Go to step 18.

NO–Repair an open in the wire between secondary HO2S (Sensor 2) and the No. B12 IMA (10 A) fuse, then go to step 23.

18. Turn the ignition switch to LOCK (0).
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector C (44P).
21. Check for continuity between ECM/PCM connector terminal C28 and secondary HO2S (Sensor 2) 4P connector terminal No. 3.

SECONDARY HO2S (SENSOR 2) 4P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 29.

NO–Repair an open in the wire between the ECM/PCM (C28) and secondary HO2S (Sensor 2), then go to step 23.

22. Replace secondary HO2S (Sensor 2) (see page 11-202).
23. Reconnect all connectors.
24. Turn the ignition switch to ON (II).
25. Reset the ECM/PCM with the HDS.
26. Do the ECM/PCM idle learn procedure (see page 11-274).
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0141 indicated?

YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1.

NO–Go to step 28.

(cont'd)

DTC Troubleshooting (cont'd)

28. Monitor the OBD STATUS for DTC P0141 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 27, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

29. Reconnect all connectors.

30. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

31. Start the engine, and let it idle.

32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0141 indicated?

    YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 31. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 33.

33. Monitor the OBD STATUS for DTC P0141 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 32, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 31. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0171: Fuel System Too Lean

DTC P0172: Fuel System Too Rich

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- Poor fuel quality can cause DTC P0171.
- If any of the DTCs listed below are indicated at the same time as DTC P0171 and/or P0172, troubleshoot those DTCs first, then recheck for P0171 and/or P0172.

  P0101, P0102, P0103: MAF sensor

  P0107, P0108, P1128, P1129: MAP sensor

  P0133, P1157, P1172, P2195, P2238, P2252, P2A00: A/F sensor (Sensor 1)

  P0134, P0135: A/F sensor (Sensor 1) heater

  P0137, P0138, P0139: Secondary HO2S (Sensor 2)

  P0141: Secondary HO2S (Sensor 2) heater

  P2646, P2647, P2648, P2649: VTEC system

  P0400, P0401, P0404, P0406, P2413: EGR system

  P0443, P0496: EVAP canister purge valve

1. Check the fuel pressure (see page 11-290).

   Is the fuel pressure OK?

   YES–

   - DTC P0171 indicated: Go to step 2.
   - DTC P0172 indicated: Go to step 3.

   NO–Check these items:

   - If the pressure is too high, replace the fuel pressure regulator (see page 11-304), then go to step 6.
   - If the pressure is too low, check for restrictions in the fuel pump, the fuel pressure regulator, the fuel filter, and the fuel line, then go to step 6.

2. Check for vacuum leaks at these parts:
   - PCV valve
   - PCV hose
   - EVAP canister purge valve
   - Throttle body
   - Intake manifold
   - Brake booster
   - Brake booster hose
   - Intake air duct

   Are the parts OK?

   YES–Go to step 3.

   NO–Repair or replace the leaking part(s), then go to step 6.

3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in P or N, M/T in neutral
   - All electrical loads off
5. Monitor the ENGINE SPEED in the DATA LIST with the HDS. Raise and hold the engine speed steady at 2,500 ±100 rpm. While holding the rpm steady, check the MAF SENSOR in the DATA LIST.

   Is there about 4.7—5.7 gm/s (CVT) or 4.5—5.5 gm/s (M/T)?

   YES–For DTC P0172, check the engine valve clearances, and adjust them if needed (see page 6-8). For DTC P0171, replace the injectors (see page 11-200), then go to step 6.

   NO–Replace the MAF sensor/IAT sensor (see page 11-205), then go to step 6.
6. Turn the ignition switch to ON (II).
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see page 11-274).
9. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Drive at a steady speed between 15—75 mph (24—120 km/h) for 15 minutes

    NOTE: DTC P0171 and/or P0172 may take up to 80 minutes of test driving to set. Using the HDS, monitor the short term fuel trim (ST FUEL TRIM). If the ST FUEL TRIM average stays within 0.8— 1.25, there is no problem at this time.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0171 or P0172 indicated?

    YES–Go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0201: No. 1 Cylinder Injector Circuit Malfunction

DTC P0202: No. 2 Cylinder Injector Circuit Malfunction

DTC P0203: No. 3 Cylinder Injector Circuit Malfunction

DTC P0204: No. 4 Cylinder Injector Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

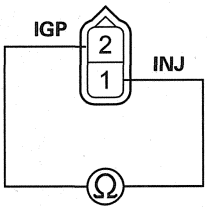
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 20 seconds.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0201, P0202, P0203, or P0204 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the injectors and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the injector 2P connector from problem cylinder.
7. At the injector side, measure the resistance between injector 2P connector terminals No. 1 and No. 2.

INJECTOR 2P CONNECTOR



Terminal side of male terminals

Is there 10—13 Ω?

YES–Go to step 8.

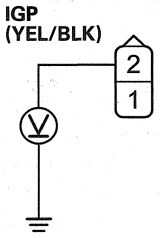
NO–Go to step 18.

(cont'd)

DTC Troubleshooting (cont'd)

8. Turn the ignition switch to ON (II).
9. Measure the voltage between injector 2P connector terminal No. 2 and body ground.

INJECTOR 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

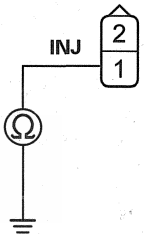
YES–Go to step 10.

NO–Repair an open in the wire between the injector and PGM-FI main relay 1, then go to step 19.

10. Turn the ignition switch to LOCK (0).
11. Check for continuity between problem cylinder injector 2P connector terminal No. 1 and body ground (see table).

PROBLEM CYLINDER	DTC	WIRE COLOR
No. 1	P0201	BRN
No. 2	P0202	RED
No. 3	P0203	BLU
No. 4	P0204	YEL

INJECTOR 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 12.

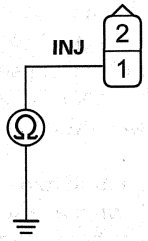
NO–Go to step 15.

12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (49P).

14. Check for continuity between problem cylinder injector 2P connector terminal No. 1 and body ground (see table).

PROBLEM CYLINDER	DTC	WIRE COLOR
No. 1	P0201	BRN
No. 2	P0202	RED
No. 3	P0203	BLU
No. 4	P0204	YEL

INJECTOR 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM and the injector, then go to step 19.

NO–Go to step 24.

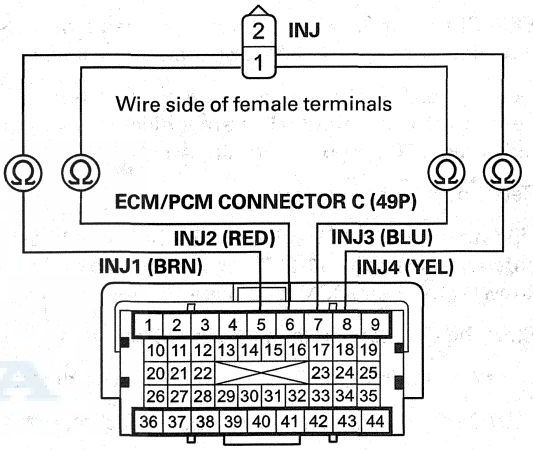
15. Jump the SCS line with the HDS.

16. Disconnect ECM/PCM connector C (49P).

17. Check for continuity between appropriate injector 2P connector terminal No. 1 and the appropriate ECM/PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0201	C5	BRN
No. 2	P0202	C6	RED
No. 3	P0203	C7	BLU
No. 4	P0204	C8	YEL

INJECTOR 2P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM and the injector, then go to step 19.

(cont'd)

DTC Troubleshooting (cont'd)

18. Replace the problem injector (see page 11-200).
19. Reconnect all connectors.
20. Turn the ignition switch to ON (II).
21. Reset the ECM/PCM with the HDS.
22. Do the ECM/PCM idle learn procedure (see page 11-274).
23. Start the engine, and let it idle for 20 seconds.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0201, P0202, P0203, or P0204 indicated?

    YES–Check for poor connections or loose terminals at the injector and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a knowngood ECM/PCM (see page 11-7).
27. Start the engine, and let it idle for 20 seconds.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0201, P0202, P0203, or P0204 indicated?

    YES–Check for poor connections or loose terminals at the injector and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 27. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0300: Random Misfire and Any Combination of the Following:

DTC P0301: No. 1 Cylinder Misfire Detected

DTC P0302: No. 2 Cylinder Misfire Detected

DTC P0303: No. 3 Cylinder Misfire Detected

DTC P0304: No. 4 Cylinder Misfire Detected

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If the misfire is frequent enough to trigger detection of increased emissions during two consecutive driving cycles, the MIL will come on, and DTC P0300 (and some combination of P0301 through P0304) will be stored.
- If the misfire is frequent enough to damage the catalyst, the MIL will flash whenever the misfire occurs, and DTC P0300 (and some combination of P0301 through P0304) will be stored. When the misfire stops, the MIL will remain on.
- Troubleshoot the following DTCs first, if any of them were stored along with the random misfire DTC(s) (because parts can sometimes fail without setting DTC's you should also do a physical inspection of the systems listed below):

  P0101, P0102, P0103: MAF sensor
  P0107, P0108, P1128, P1129: MAP sensor
  P0171, P0172: Fuel system
  P0335, P0339: CKP sensor
  P0365, P0369: CMP sensor
  P0351, P0352, P0353, P0354: No. 1 - No. 4 cylinder ignition coil(s)
  P0506, P0507: Idle control system
  P2646, P2647, P2648, P2649: VTEC system
  P0400, P0401, P0404, P0406, P2413: EGR system

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 5. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, wait for several minutes, then recheck.
5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Go to step 6.
6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - REL TP SENSOR
   - CLV (calculated load value)
   - APP SENSOR
   - ECT SENSOR 1
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 8. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 6 and recheck.
8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time.■
9. Turn the ignition switch to LOCK (0).
10. Check the fuel quality.

    Is the quality good?

    YES–Go to step 11.

    NO–Drain the tank, and fill it with a known-good fuel, then go to step 19.
11. Inspect the spark plugs (see page 4-21). If the spark plugs are fouled or worn, replace them.
12. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
13. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 14.

    NO–Go to step 19.
14. Check the fuel pressure (see page 11-290).

    Is the fuel pressure OK?

    YES–Go to step 15.

    NO–
    - If the fuel pressure is too high, replace the fuel pressure regulator (see page 11-304), then go to step 19.
    - If the pressure is too low, check for restrictions in the fuel pump, the fuel filter, and the fuel line for restrictions. If they are OK, replace the fuel pressure regulator (see page 11-304), then go to step 19.
15. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
16. Check under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176 °F (80 °C)
    - CVT in P or N, M/T in neutral
    - All electrical loads off

(cont'd)

DTC Troubleshooting (cont'd)

17. Monitor the ENGINE SPEED in the DATA LIST with the HDS. Raise and hold the engine speed steady at 2,500 ±100 rpm. While holding the rpm steady, check the MAF SENSOR in the DATA LIST.

    Is there about 4.7—5.7 gm/s (CVT) or 4.5—5.5 gm/s (M/T)?

    YES–Go to step 18.

    NO–Replace the MAF sensor/IAT sensor (see page 11-205), then go to step 19.

18. Do the VTEC rocker arm test (see page 6-7).

    Did the engine pass the test?

    YES–Go to step 19.

    NO–Repair the VTEC rocker arm (see page 6-34), then go to step 19.

19. Turn the ignition switch to ON (II).

20. Reset the ECM/PCM with the HDS.

21. Do the ECM/PCM idle learn procedure (see page 11-274).

22. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).

23. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1

24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0300, P0301, P0302, P0303, or P0304 indicated?

    YES–Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to the troubleshooting for DTC P0301, P0302, P0303, or P0304; '11 model (see page 11-127), '12 model (see page 11-132).

    NO–Go to step 25.

25. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1 and recheck. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 23.

DTC P0301: No. 1 Cylinder Misfire Detected ('11 model)

DTC P0302: No. 2 Cylinder Misfire Detected ('11 model)

DTC P0303: No. 3 Cylinder Misfire Detected ('11 model)

DTC P0304: No. 4 Cylinder Misfire Detected ('11 model)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 5. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, wait for several minutes, and recheck.
5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Go to step 6.
6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - REL TP SENSOR
   - CLV (calculated load value)
   - APP SENSOR
   - ECT SENSOR 1
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 8. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 6 and recheck.
8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals in the fuel system circuit.■

(cont'd)

DTC Troubleshooting (cont'd)

9. Turn the ignition switch to LOCK (0).
10. Exchange the ignition coil from the problem cylinder with one from another cylinder.
11. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
12. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 13.

    NO–Intermittent misfire due to poor contact at the ignition coil connector (no misfire at this time). Check for poor connections or loose terminals at the ignition coil.■
13. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the ignition coil was exchanged?

    YES–Replace the faulty ignition coil (see page 4-21), then go to step 37.

    NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).
15. Exchange the spark plug from the problem cylinder with one from another cylinder.
16. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
17. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 18.

    NO–Intermittent misfire due to spark plug fouling (no misfire at this time).■
18. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the spark plug was exchanged?

    YES–Replace the faulty spark plug, then go to step 37.

    NO–Go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Exchange the injector from the problem cylinder with one from the another cylinder.
21. Start the engine, and let it idle for 2 minutes.
22. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
23. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 24.

    NO–Intermittent misfire due to bad contact at the injector connector (no misfire at this time). Check for poor connections or loose terminals at the injector.■
24. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the injector was exchanged?

    YES–Replace the faulty injector (see page 11-200), then go to step 37.

    NO–Go to step 25.
25. Do an engine compression and a cylinder leakdown test (see page 6-6).

    Did the engine pass both tests?

    YES–Go to step 26.

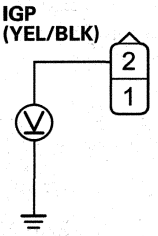
    NO–Repair the engine, then go to step 37.
26. Do the VTEC rocker arm test (see page 6-7).

    Did the engine pass the test?

    YES–Go to step 27.

    NO–Repair the VTEC rocker arm (see page 6-34), then go to step 37.
27. Turn the ignition switch to LOCK (0).
28. Disconnect the injector 2P connector from the problem cylinder (see page 11-200).
29. Turn the ignition switch to ON (II).
30. Measure the voltage between injector 2P connector terminal No. 2 and body ground.

INJECTOR 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 31.

NO–Repair open in the wire between the injector and PGM-FI main relay 1, then go to step 37.
31. Turn the ignition switch to LOCK (0).
32. Jump the SCS line with the HDS.
33. Disconnect ECM/PCM connector C (44P).

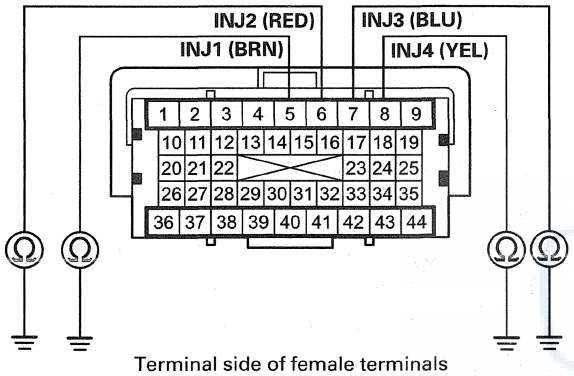
(cont'd)

DTC Troubleshooting (cont'd)

34. Check for continuity between body ground and the ECM/PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	C5	BRN
No. 2	P0302	C6	RED
No. 3	P0303	C7	BLU
No. 4	P0304	C8	YEL

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

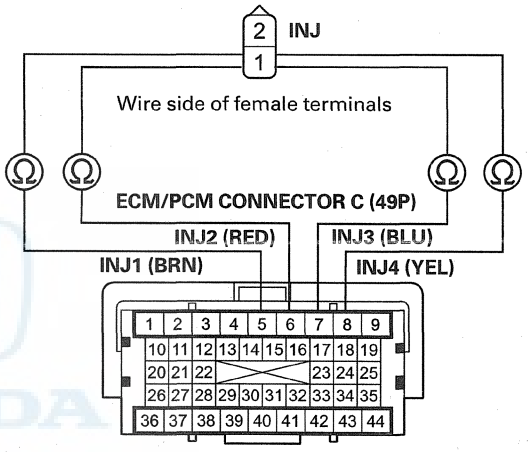
YES–Repair short in the wire between the ECM/PCM and the injector, then go to step 38.

NO–Go to step 35.

35. Check for continuity between appropriate injector 2P connector terminal No. 1 and the ECM/PCM connector terminal of the problem cylinder (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0301	C5	BRN
No. 2	P0302	C6	RED
No. 3	P0303	C7	BLU
No. 4	P0304	C8	YEL

INJECTOR 2P CONNECTOR



Terminal side of female terminals

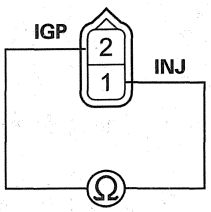
Is there continuity?

YES–Go to step 36.

NO–Repair open in the wire between the ECM/PCM and the injector, then go to step 38.

36. At the injector side, measure the resistance between injector 2P connector terminals No. 1 and No. 2.

INJECTOR 2P CONNECTOR



Terminal side of male terminals

Is there 10—13 Ω?

YES–Go to step 46.

NO–Replace the injector (see page 11-200), then go to step 38.

37. Turn the ignition switch to LOCK (0).
38. Reconnect all connectors, then install the parts in the reverse order of removal.
39. Turn the ignition switch to ON (II).
40. Reset the ECM/PCM with the HDS.
41. Do the ECM/PCM idle learn procedure (see page 11-274).
42. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
43. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
44. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0301, P0302, P0303, or P0304 indicated?

    YES–Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to the troubleshooting for DTC P0300, P0301, P0302, P0303, or P0304 (see page 11-124).

    NO–Go to step 45.

45. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 44, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 43.

46. Reconnect all connectors.
47. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
48. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
49. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0301, P0302, P0303, or P0304 indicated?

    YES–Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 48. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 50.

(cont'd)

DTC Troubleshooting (cont'd)

50. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 49, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 48. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 48.

DTC P0301: No. 1 Cylinder Misfire Detected ('12 model)

DTC P0302: No. 2 Cylinder Misfire Detected ('12 model)

DTC P0303: No. 3 Cylinder Misfire Detected ('12 model)

DTC P0304: No. 4 Cylinder Misfire Detected ('12 model)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral).
4. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 5. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, wait for several minutes, and recheck.

5. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Go to step 6.

6. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
   - REL TP SENSOR
   - CLV (calculated load value)
   - APP SENSOR
   - ECT SENSOR 1
7. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 9.

   NO–If the HDS indicates PASSED, go to step 8. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 6 and recheck.
8. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

   Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals in the fuel system circuit.■
9. Turn the ignition switch to LOCK (0).
10. Exchange the ignition coil from the problem cylinder with one from another cylinder.
11. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
12. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 13.

    NO–Intermittent misfire due to poor contact at the ignition coil connector (no misfire at this time). Check for poor connections or loose terminals at the ignition coil.■
13. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the ignition coil was exchanged?

    YES–Replace the faulty ignition coil (see page 4-21), then go to step 27.

    NO–Go to step 14.

(cont'd)

DTC Troubleshooting (cont'd)

14. Turn the ignition switch to LOCK (0).
15. Exchange the spark plug from the problem cylinder with one from another cylinder.
16. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
17. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 18.

    NO–Intermittent misfire due to spark plug fouling (no misfire at this time).■
18. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the spark plug was exchanged?

    YES–Replace the faulty spark plug, then go to step 27.

    NO–Go to step 19.
19. Turn the ignition switch to LOCK (0).
20. Exchange the injector from the problem cylinder with one from the another cylinder.
21. Start the engine, and let it idle for 2 minutes.
22. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1
23. Check the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE in the DATA LIST for 10 minutes with the HDS.

    Does the CYL1 MISFIRE, CYL2 MISFIRE, CYL3 MISFIRE, and/or CYL4 MISFIRE show misfire counts?

    YES–Go to step 24.

    NO–Intermittent misfire due to bad contact at the injector connector (no misfire at this time). Check for poor connections or loose terminals at the injector.■
24. Determine which cylinder had the misfire.

    Does the misfire occur in the cylinder where the injector was exchanged?

    YES–Replace the faulty injector (see page 11-200), then go to step 27.

    NO–Go to step 25.
25. Do an engine compression and a cylinder leakdown test (see page 6-6).

    Did the engine pass both tests?

    YES–Go to step 26.

    NO–Repair the engine, then go to step 27.

26. Do the VTEC rocker arm test (see page 6-7).

    Did the engine pass the test?

    YES–Check for wear or damage to these parts. If needed, repair or replace part(s), then go to step 27.
    - Cylinder head
    - Carbon in the intake manifold
    - Valve seal
    - Piston ring
    - Intake and exhaust valve
    - Cam chain
    - Valve guide
    - Piston

    NO–Repair the VTEC rocker arm (see page 6-32), then go to step 27.

27. Turn the ignition switch to LOCK (0).

28. Install the parts in the reverse order of removal.

29. Turn the ignition switch to ON (II).

30. Reset the ECM/PCM with the HDS.

31. Do the ECM/PCM idle learn procedure (see page 11-274).

32. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).

33. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - REL TP SENSOR
    - CLV (calculated load value)
    - APP SENSOR
    - ECT SENSOR 1

34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0301, P0302, P0303, or P0304 indicated?

    YES–Check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to the troubleshooting for DTC P0300, P0301, P0302, P0303, or P0304 (see page 11-124).

    NO–Go to step 35.

35. Monitor the OBD STATUS for DTC P0301, P0302, P0303, or P0304 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the ignition coils, the injectors, and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 33.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0325: Knock Sensor Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

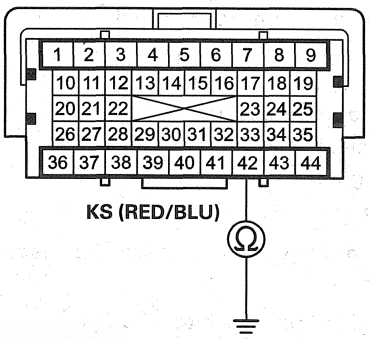
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Hold the engine speed between 3,000—4,000 rpm for at least 10 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0325 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the knock sensor and the ECM/PCM.■
6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect the knock sensor 1P connector (see page 11-204).
9. Disconnect ECM/PCM connector C (44P).
10. Check for continuity between ECM/PCM connector terminal C42 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

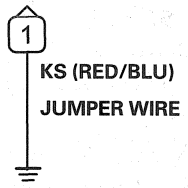
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C42) and the knock sensor, then go to step 14.

NO–Go to step 11.

11. Connect the knock sensor 1P connector terminal to body ground with a jumper wire.

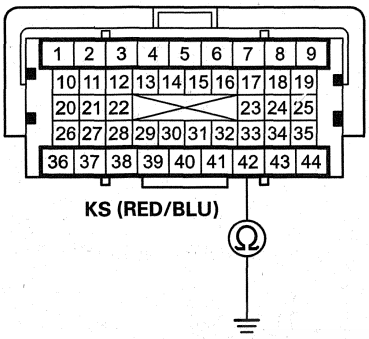
KNOCK SENSOR 1P CONNECTOR



Wire side of female terminals

12. Check for continuity between ECM/PCM connector terminal C42 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 13.

NO–Repair an open in the wire between the ECM/PCM (C42) and the knock sensor, then go to step 14.

13. Replace the knock sensor (see page 11-204).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Hold the engine speed between 3,000—4,000 rpm for at least 10 seconds.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0325 indicated?

    YES–Go to step 21.

    NO–Go to step 20.

20. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 19, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the knock sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 18 and recheck.

21. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
22. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
23. Hold the engine speed at 3,000—4,000 rpm for at least 10 seconds.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0325 indicated?

    YES–Check for poor connections or loose terminals at the knock sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 22. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 25.

25. Monitor the OBD STATUS for DTC P0325 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the knock sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 22. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0335: CKP Sensor No Signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

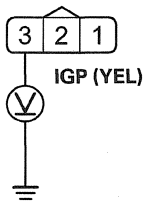
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0335 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the CKP sensor 3P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between CKP sensor 3P connector terminal No. 3 and body ground.

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

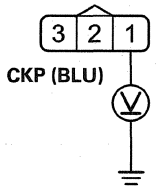
Is there battery voltage?

YES–Go to step 9.

NO–Repair an open in the wire between the CKP sensor and PGM-FI main relay 1, then go to step 19.

9. Measure the voltage between CKP sensor 3P connector terminal No. 1 and body ground.

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

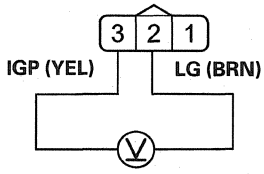
Is there about 5 V?

YES–Go to step 10.

NO–Go to step 11.

10. Measure the voltage between CKP sensor 3P connector terminals No. 2 and No. 3.

CKP SENSOR 3P CONNECTOR



Wire side of female terminals

Is there battery voltage?

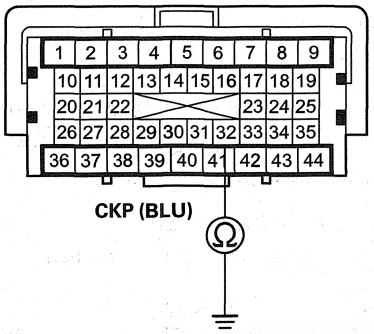
YES–Go to step 17.

NO–Repair an open in the wire between the CKP sensor and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 19.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (44P).

14. Check for continuity between ECM/PCM connector terminal C32 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

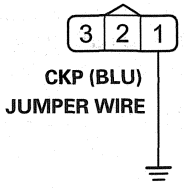
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C32) and the CKP sensor, then go to step 19.

NO–Go to step 15.

15. Connect CKP sensor 3P connector terminal No. 1 to body ground with a jumper wire.

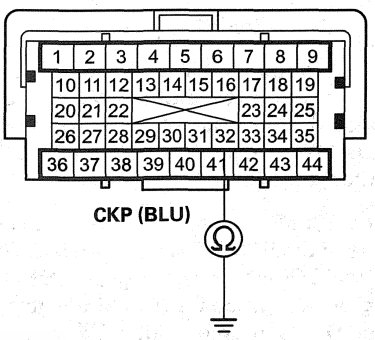
CKP SENSOR 3P CONNECTOR



Wire side of female terminals

16. Check for continuity between ECM/PCM connector terminal C32 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (C32) and the CKP sensor, then go to step 19.

17. Turn the ignition switch to LOCK (0).
18. Replace the CKP sensor (see page 11-203).
19. Reconnect all connectors.
20. Turn the ignition switch to ON (II).
21. Reset the ECM/PCM with the HDS.
22. Do the ECM/PCM idle learn procedure (see page 11-274).
23. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0335 indicated?

    YES–Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0335 indicated?

    YES–Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0339: CKP Sensor Intermittent Interruption

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.
4. Monitor the OBD STATUS for DTC P0339 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, go to step 5. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
6. Monitor the OBD STATUS for DTC P0339 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 5 and recheck.
7. Check for poor connections or loose terminals at these locations:
   - CKP sensor
   - ECM/PCM
   - Engine ground
   - Body ground

   Are the connections and terminals OK?

   YES–Go to step 8.

   NO–Repair the connections or terminals, then go to step 11.

8. Check for damage on the CKP sensor pulse plate (see page 7-27).

   Is the pulse plate damaged?

   YES–Replace the CKP sensor pulse plate (see page 7-27), then go to step 11.

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Replace the CKP sensor (see page 11-203).
11. Turn the ignition switch to ON (II).
12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see page 11-274).
14. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
15. Start the engine, and let it idle for 10 seconds.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0339 indicated?

    YES–Check for poor connections or loose terminals at the CKP sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0351: No. 1 Cylinder Ignition Coil Circuit Malfunction

DTC P0352: No. 2 Cylinder Ignition Coil Circuit Malfunction

DTC P0353: No. 3 Cylinder Ignition Coil Circuit Malfunction

DTC P0354: No. 4 Cylinder Ignition Coil Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0351, P0352, P0353, and/or P0354 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ignition coil, and the ECM/PCM.■

5. Turn the ignition switch to LOCK (0).
6. Exchange the ignition coil from the problem cylinder with one from another cylinder.
7. Start the engine.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is an ignition coil DTC indicated at the cylinder where the ignition coil was exchanged?

   YES–Replace the faulty ignition coil (see page 4-21), then go to step 26.

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Check the No. B33 IG COIL (IGNITION COIL) (15 A) fuse in the under-dash fuse/relay box.

    Is the fuse OK?

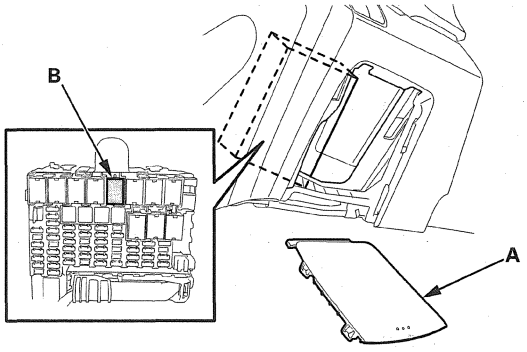
    YES–Go to step 11.

    NO–Go to step 13.

(cont'd)

DTC Troubleshooting (cont'd)

11. Open the fuse lid panel (A), then remove the ignition coil relay (B) from the under-dash fuse/relay box.



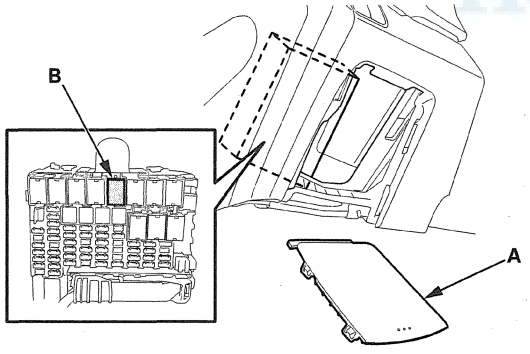
12. Test the ignition coil relay (see page 22-92).

    Is the ignition coil relay OK?

    YES–Go to step 16.

    NO–Replace the ignition coil relay, then go to step 27.

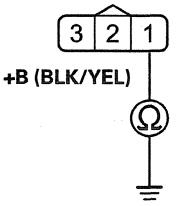
13. Open the fuse lid panel (A), then remove the ignition coil relay (B) from the under-dash fuse/relay box.



14. Disconnect all ignition coil 3P connectors.

15. Check for continuity between No. 1 ignition coil 3P connector terminal No. 1 and body ground.

No. 1 IGNITION COIL 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ignition coil relay and the ignition coils. Also replace the No. B33 IG COIL (IGNITION COIL) (15 A) fuse, then go to step 27.

NO–Replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83), then go to step 27.

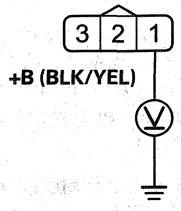
16. Reinstall the ignition coil relay.

17. Disconnect the ignition coil 3P connector from the problem cylinder.

18. Turn the ignition switch to ON (II).

19. Measure voltage between ignition coil 3P connector terminal No. 1 and body ground.

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

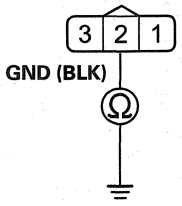
Is there battery voltage?

YES–Go to step 20.

NO–Repair an open in the wire between the ignition coil and the No. B33 IG COIL (IGNITION COIL) (15 A) fuse, then go to step 26.

20. Turn the ignition switch to LOCK (0).
21. Check for continuity between ignition coil 3P connector terminal No. 2 and body ground.

IGNITION COIL 3P CONNECTOR



Wire side of female terminals

Is there continuity?

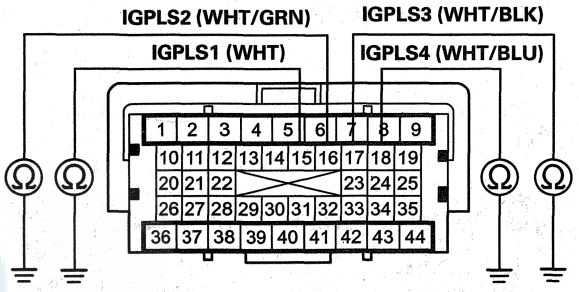
YES–Go to step 22.

NO–Repair an open in the wire between the ignition coil and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 27.

22. Jump the SCS line with the HDS.
23. Disconnect ECM/PCM connector C (44P).
24. Check for continuity between body ground and the ECM/PCM connector terminal of the problem ignition coil (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0351	C15	WHT
No. 2	P0352	C16	WHT/GRN
No. 3	P0353	C17	WHT/BLK
No. 4	P0354	C18	WHT/BLU

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM and the ignition coil, then go to step 27.

NO–Go to step 25.

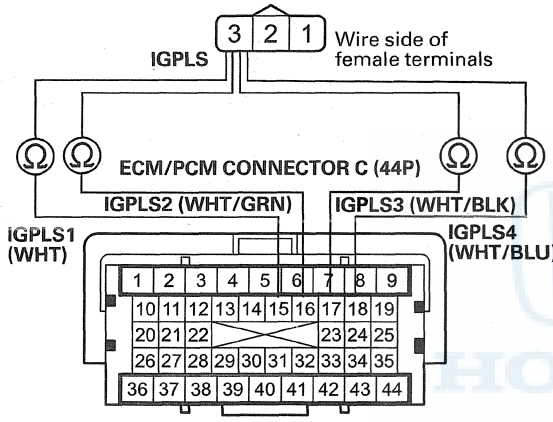
(cont'd)

DTC Troubleshooting (cont'd)

25. Check for continuity between appropriate ignition coil 3P connector terminal No. 3 and the ECM/PCM connector terminal of the problem ignition coil (see table).

PROBLEM CYLINDER	DTC	ECM/PCM TERMINAL	WIRE COLOR
No. 1	P0351	C15	WHT
No. 2	P0352	C16	WHT/GRN
No. 3	P0353	C17	WHT/BLK
No. 4	P0354	C18	WHT/BLU

IGNITION COIL 3P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 32.

NO–Repair an open in the wire between the ECM/PCM and the ignition coil, then go to step 27.

26. Turn the ignition switch to LOCK (0).
27. Reconnect all connectors.
28. Turn the ignition switch to ON (II).
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see page 11-274).
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0351, P0352, P0353, or P0354 indicated?

    YES–Check for poor connections or loose terminals at the ignition coil, and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0351, P0352, P0353, and/or P0354 indicated?

    YES–Check for poor connections or loose terminals at the ignition coil and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good PCM/PCM (see page 11-7), then recheck. If the ECM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0365: CMP Sensor No Signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

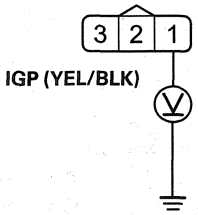
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0365 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the CMP sensor 3P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between CMP sensor 3P connector terminal No. 1 and body ground.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

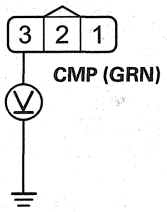
Is there battery voltage?

YES–Go to step 9.

NO–Repair an open in the wire between the CMP sensor and PGM-FI main relay 1, then go to step 18.

9. Measure the voltage between CMP sensor 3P connector terminal No. 3 and body ground.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

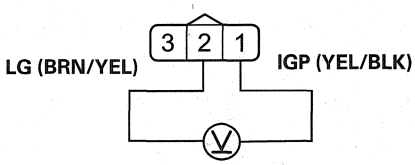
Is there about 5 V?

YES–Go to step 10.

NO–Go to step 11.

10. Measure the voltage between CMP sensor 3P connector terminals No. 1 and No. 2.

CMP SENSOR 3P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 16.

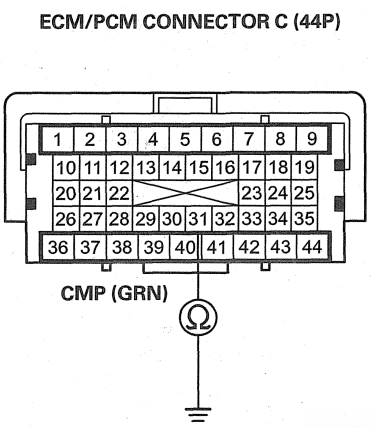
NO–Repair an open in the wire between the CMP sensor and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 18.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (44P).

(cont'd)

DTC Troubleshooting (cont'd)

14. Check for continuity between ECM/PCM connector terminal C31 and body ground.



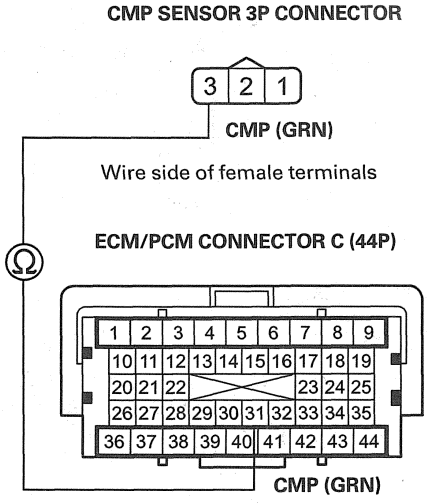
Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C31) and the CMP sensor, then go to step 18.

NO–Go to step 15.

15. Check for continuity between ECM/PCM connector terminal C31 and CMP sensor 3P connector terminal No. 3.



Terminal side of female terminals

Is there continuity?

YES–Go to step 23.

NO–Repair an open in the wire between the ECM/PCM (C31) and the CMP sensor, then go to step 18.

16. Turn the ignition switch to LOCK (0).
17. Replace the CMP sensor (see page 11-203).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0365 indicated?

    YES–Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0365 indicated?

    YES–Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0369: CMP Sensor Circuit Intermittent Interruption

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 10 seconds.
4. Monitor the OBD STATUS for DTC P0369 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, go to step 5. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
   - ENGINE SPEED
   - VEHICLE SPEED
6. Monitor the OBD STATUS for DTC P0369 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 5 and recheck.
7. Check for poor connections or loose terminals at these locations:
   - CMP sensor
   - ECM/PCM
   - Engine ground
   - Body ground

   Are the connections and terminals OK?

   YES–Go to step 8.

   NO–Repair the connections or terminals, then go to step 11.
8. Check for damage on the CMP sensor pulse plate (see page 6-26).

   Is the pulse plate damaged?

   YES–Replace the CMP sensor pulse plate (see page 6-26), then go to step 11.

   NO–Go to step 9.
9. Turn the ignition switch to LOCK (0).
10. Replace the CMP sensor (see page 11-203).
11. Turn the ignition switch to ON (II).
12. Reset the ECM/PCM with the HDS.
13. Do the ECM/PCM idle learn procedure (see page 11-274).
14. Start the engine, and let it idle for 10 seconds.
15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0369 indicated?

    YES–Check for poor connections or loose terminals at the CMP sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P050A: Cold Start Idle Air Control System Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any Pending or Confirmed DTCs other than P050A indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 3.
3. Check for a blocked or an incorrectly installed intake air duct.

   Is it OK?

   YES–Go to step 4.

   NO–Reconnect or repair the intake air duct, then go to step 19.
4. Check for damage at the air cleaner housing.

   Is it OK?

   YES–Go to step 5.

   NO–Replace the air cleaner housing (see page 9-3), then go to step 19.
5. Check for dirt or debris in the air cleaner element.

   Is it dirty?

   YES–Replace the air cleaner element or remove the debris (see page 9-3), then go to step 19.

   NO–Go to step 6.
6. Let the engine cool until the value of ECT SENSOR 1 is 122 °F (50 °C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.
9. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 10.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the ECM/PCM. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 6.
10. Do the ETCS TEST in the INSPECTION MENU with the HDS.

    Is the THROTTLE ACTUATOR CONTROL VALVE normal?

    YES–Go to step 11.

    NO–Replace the throttle body (see page 11-248), then go to step 19.
11. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. While holding the engine speed at 2,500 rpm for 30 seconds, check the MAF SENSOR in the DATA LIST with the HDS.

    Is there about 4.7—5.7 gm/s (CVT) or 4.5—5.5 gm/s (M/T)?

    YES–Go to step 13.

    NO–Replace the MAF sensor/IAT sensor (see page 11-205), then go to step 19.
13. Turn the ignition switch to LOCK (0).
14. Allow the engine to cool to the ambient temperature.
15. Note the ambient temperature.
16. Turn the ignition switch to ON (II).
17. Quickly note the value of the IAT SENSOR (2) in the DATA LIST with the HDS.

18. Compare the value of the IAT SENSOR (2) to the ambient temperature.

    Does the value of the IAT SENSOR (2) differ 5.4 °F (3 °C) or more from the ambient temperature?

    YES–Replace the MAF sensor/IAT sensor (see page 11-205), then go to step 19.

    NO–Check for dirt, carbon, or damage in the throttle bore. If there is dirt or carbon, clean the throttle body (see page 11-247), then go to step 19. If there is damage in the throttle bore, replace the throttle body (see page 11-248), then go to step 19.

19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Let the engine cool until the value of ECT SENSOR 1 is 122 °F (50 °C) or less.
23. Start the engine, and let it idle for 10 seconds or more.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P050A indicated?

    YES–Check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the ECM/PCM, then go to step 1.

    NO–Go to step 25.

25. Monitor the OBD STATUS for DTC P050A in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 24, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the throttle body, the MAF sensor/IAT sensor, and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 22.

DTC P050B: Cold Start Ignition Timing Control System Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

    Are any Pending or Confirmed DTCs other than P050B indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 3.

3. Check for a blocked or an incorrectly installed intake air duct.

    Is it OK?

    YES–Go to step 4.

    NO–Reconnect or repair the intake air duct, then go to step 21.

4. Check for damage at the air cleaner housing.

    Is it OK?

    YES–Go to step 5.

    NO–Replace the air cleaner housing (see page 9-3), then go to step 21.

5. Check for dirt or debris in the air cleaner element.

    Is it dirty?

    YES–Replace the air cleaner element or remove the debris (see page 9-3), then go to step 21.

    NO–Go to step 6.

6. Let the engine cool until the value of ECT SENSOR 1 is 122 °F (50 °C) or less.
7. Clear the DTC with the HDS.
8. Start the engine, and let it idle for 10 seconds or more.

(cont'd)

DTC Troubleshooting (cont'd)

9. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 10.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 6.

10. Inspect the ignition timing (see page 4-20).

    Is the ignition timing OK?

    YES–Go to step 12.

    NO–Go to step 11.

11. Check for damage at the CKP sensor (see page 11-203) and the CKP sensor pulse plate (see page 7-27).

    Is the CKP sensor or the CKP sensor pulse plate damaged?

    YES–Replace the CKP sensor (see page 11-203) and/or the CKP sensor pulse plate (see page 7-27), then go to step 21.

    NO–Go to step 28.

12. Do the ETCS TEST in the INSPECTION MENU with the HDS.

    Is the THROTTLE ACTUATOR CONTROL VALVE normal?

    YES–Go to step 13.

    NO–Replace the throttle body (see page 11-248), then go to step 21.

13. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

14. While holding the engine speed at 2,500 rpm for 30 seconds, check the MAF SENSOR in the DATA LIST with the HDS.

    Is there about 4.7—5.7 gm/s (CVT) or 4.5—5.5 gm/s (M/T)?

    YES–Go to step 15.

    NO–Replace the MAF sensor/IAT sensor (see page 11-205), then go to step 21.

15. Turn the ignition switch to LOCK (0).

16. Allow the ECT sensors to cool to the ambient temperature.

17. Note the ambient temperature.

18. Turn the ignition switch to ON (II).

19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.

20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4 °F (3 °C) from the ambient temperature?

    YES–Replace the sensor that differed more than 5.4 °F (3 °C) from the ambient temperature, then go to step 21.

    NO–Check and repair any problems with the following items. Repair or replace them if needed, then go to step 21.
    - Engine compression and cylinder leakdown
    - VTEC system
    - Engine oil
    - A/C system
    - Power steering

21. Turn the ignition switch to ON (II).

22. Reset the ECM/PCM with the HDS.

23. Do the ECM/PCM idle learn procedure (see page 11-274).

24. Let the engine cool until the value of ECT SENSOR 1 is 122 °F (50 °C) or less.

25. Start the engine, and let it idle for 10 seconds or more.

26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P050B indicated?

    YES–Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

    NO–Go to step 27.

27. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 24.

28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

29. Do the ECM/PCM idle learn procedure (see page 11-274).

30. Let the engine cool until the value of ECT SENSOR 1 is 122 °F (50 °C) or less.

31. Start the engine, and let it idle for 10 seconds or more.

32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P050B indicated?

    YES–Check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 30. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 33.

33. Monitor the OBD STATUS for DTC P050B in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 32, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the CKP sensor, the throttle body, the MAF sensor/IAT sensor, ECT sensor 1, ECT sensor 2, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 30. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 30.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0563: ECM/PCM Power Source Circuit Unexpected Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

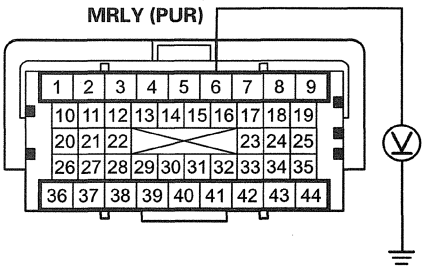
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Wait 10 seconds.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0563 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM.■
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).
10. Measure the voltage between ECM/PCM connector terminal A6 and body ground.

ECM/PCM CONNECTOR A (44P)



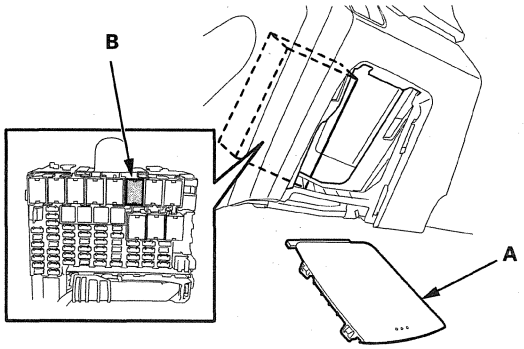
Terminal side of female terminals

Is there battery voltage?

YES–Go to step 13.

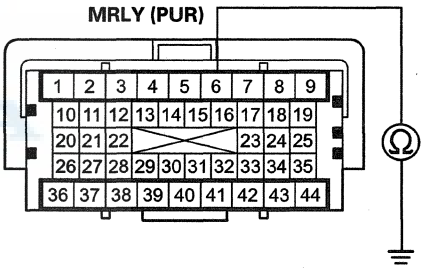
NO–Go to step 11.

11. Open the fuse access panel (A), then remove PGM-FI main relay 1 (B) from the under-dash fuse/relay box.



12. Check for continuity between ECM/PCM connector terminal A6 and body ground.

ECM/PCM CONNECTOR A (44P)



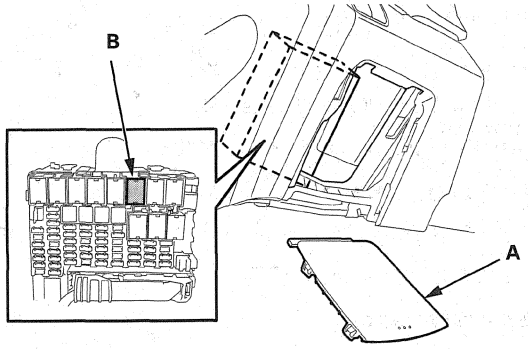
Terminal side of female terminals

Is there continuity?

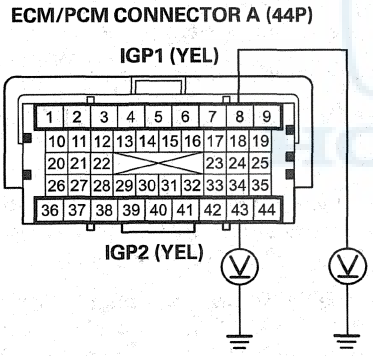
YES–Repair a short in the wire between the ECM/PCM (A6) and PGM-FI main relay 1, then go to step 16.

NO–Go to step 15.

13. Open the fuse access panel (A), then remove PGM-FI main relay 1 (B) from the under-dash fuse/relay box.



14. Measure the voltage between body ground and ECM/PCM connector terminals A8 and A43 individually.



Terminal side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the ECM/PCM (A8, A43) and PGM-FI main relay 1, then go to step 16.

NO–Go to step 15.

15. Test PGM-FI main relay 1 (see page 22-92).

Is PGM-FI main relay 1 OK?

YES–Go to step 23.

NO–Replace PGM-FI main relay 1, then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch to ON (II).
18. Reset the ECM/PCM with the HDS.
19. Do the ECM/PCM idle learn procedure (see page 11-274).
20. Turn the ignition switch to LOCK (0).
21. Wait 10 seconds.
22. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0563 indicated?

YES–Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0563 indicated?

YES–Check for poor connections or loose terminals at PGM-FI main relay 1 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 20. If the ECM/PCM was substituted, go to step 1.

NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0602: ECM/PCM Programming Error

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- This DTC is stored when an ECM/PCM update is not completed.
- Do not turn the ignition switch to ACCESSORY (I) or to LOCK (0) while updating the ECM/PCM. If you do, the ECM/PCM can be damaged.

1. Do the ECM/PCM update procedure (see page 11-207).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0602 indicated?

   YES–Replace the original ECM/PCM (see page 11-209).■

   NO–The update is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0606: ECM/PCM Processor Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Reset the ECM/PCM with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine, and let it idle for 40 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0606 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■

6. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
7. Turn the ignition switch to LOCK (0).
8. Start the engine, and let it idle for 40 seconds.
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0606 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 7. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P060A: ECM/PCM Internal Control Module Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P060A indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P060A indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P062F: ECM/PCM Internal Control Module Keep Alive Memory (KAM) Error

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P062F indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P062F indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0630: VIN Not Programmed or Mismatch

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- This DTC is stored only when the ECM/PCM does not have the VIN information of the vehicle. Use the HDS to input the missing VIN information.

1. Turn the ignition switch to ON (II).
2. Check the VIN with the HDS.

   Does the HDS show the vehicle's VIN?

   YES–Go to step 5.

   NO–Go to step 3.
3. Input the VIN to the ECM/PCM with the HDS.

   Does the HDS indicate COMPLETE?

   YES–Go to step 5.

   NO–Go to step 4.
4. Check for DTCs with the HDS.

   Is DTC P062F indicated?

   YES–Go to the DTC P062F troubleshooting (see page 11-155).■

   NO–Go to step 9.
5. Clear the DTC with the HDS.
6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II), and wait 5 seconds.
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0630 indicated?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time.■
9. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0630 indicated?

    YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0685: ECM/PCM Power Control Circuit/Internal Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If the problem doesn't return after you clear the DTC, or if this DTC is stored intermittently, check for loose terminals at the IGP line connectors before replacing the ECM/PCM.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 30 seconds.
4. Turn the ignition switch to LOCK (0).
5. Start the engine, and let it idle for 30 seconds.
6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0685 indicated?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time.■
9. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
10. Start the engine, and let it idle for 30 seconds.
11. Turn the ignition switch to LOCK (0).
12. Start the engine, and let it idle for 30 seconds.
13. Turn the ignition switch to LOCK (0).
14. Turn the ignition switch to ON (II).
15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0685 indicated?

    YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 10. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0720: Output Shaft (Countershaft) Speed Sensor Circuit Malfunction (M/T model)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

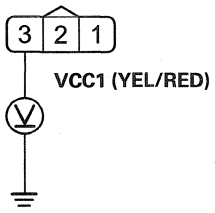
1. Start the engine. Hold the engine speed at 3,000 rpm without load (in neutral) until the radiator fan comes on, then let it idle.
2. Test-drive for several minutes.
3. Check the C SHAFT SPD in the DATA LIST with the HDS.

   Is any vehicle speed indicated?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Disconnect the output shaft (countershaft) speed sensor 3P connector.
6. Turn the ignition switch to ON (II).
7. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminal No. 3 and body ground.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Go to step 8.

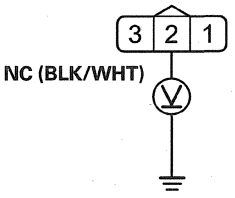
NO–Repair open in the wire between the ECM (C39) and the output shaft (countershaft) speed sensor, then go to step 18.

(cont'd)

DTC Troubleshooting (cont'd)

8. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminal No. 2 and body ground.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

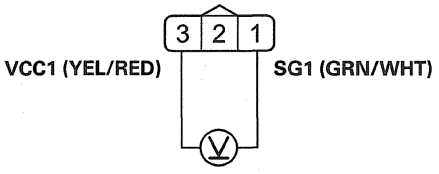
Is there about 5 V?

YES–Go to step 9.

NO–Go to step 10.

9. Measure the voltage between output shaft (countershaft) speed sensor 3P connector terminals No. 1 and No. 3.

OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

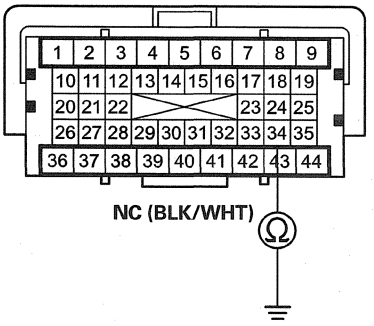
YES–Go to step 16.

NO–Repair open in the wire between the ECM (C43) and the output shaft (countershaft) speed sensor, then go to step 18.

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect ECM connector B (44P).

13. Check for continuity between ECM connector terminal B34 and body ground.

ECM CONNECTOR B (44P)



Terminal side of female terminals

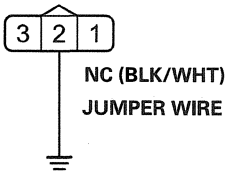
Is there continuity?

YES–Repair short in the wire between the ECM (B34) and the output shaft (countershaft) speed sensor, then go to step 18.

NO–Go to step 14.

14. Connect output shaft (countershaft) speed sensor 3P connector terminal No. 2 to body ground with a jumper wire.

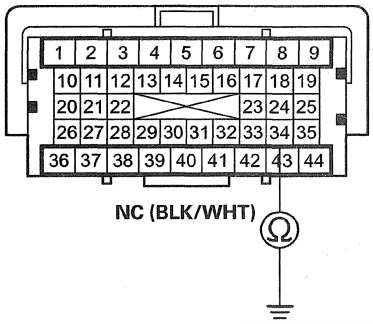
OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

15. Check for continuity between ECM connector terminal B34 and body ground.

ECM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 25.

NO–Repair open in the wire between the ECM (B34) and the output shaft (countershaft) speed sensor, then go to step 18.

16. Turn the ignition switch to LOCK (0).
17. Replace the output shaft (countershaft) speed sensor (see page 11-204).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM with the HDS.
21. Do the ECM idle learn procedure (see page 11-274).
22. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176 °F (80 °C)
    - Transmission in 3rd gear
    - Engine speed 4,000 rpm or more
    - Drive for several minutes, then decelerate (with the throttle fully closed) for 5 seconds
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0720 indicated?

    YES–Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM, then go to step 1.

    NO–Go to step 24.

24. Monitor the OBD STATUS for DTC P0720 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

25. Reconnect all connectors.
26. Update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7).
27. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 176 °F (80 °C)
    - Transmission in 3rd gear
    - Engine speed 4,000 rpm or more
    - Drive for several minutes, then decelerate (with the throttle fully closed) for 5 seconds
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0720 indicated?

    YES–Check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see page 11-7), then go to step 27. If the ECM was substituted, go to step 1.

    NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P0720 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM was updated, troubleshooting is complete. If the ECM was substituted, replace the original ECM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the output shaft (countershaft) speed sensor and the ECM. If the ECM was updated, substitute a known-good ECM (see page 11-7), then go to step 27. If the ECM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 27.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1109: BARO Sensor Circuit Out of Range High

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Reset the ECM/PCM with the HDS.
2. Start the engine.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1109 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1109 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P1116: ECT Sensor 1 Range/ Performance Problem

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P0111 is stored at the same time as DTC P1116, troubleshoot DTC P0111 first, then recheck for DTC P1116.

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

   Are the connections and terminals OK?

   YES–Go to step 2.

   NO–Repair the connections or terminals, then go to step 21.
2. Turn the ignition switch to ON (II).
3. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P1116 and P2183 indicated at the same time?

   YES–Go to step 12.

   NO–Go to step 4.
4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 1 in the DATA LIST with the HDS.

   Is about 104 °F (40 °C) or less indicated?

   YES–Replace ECT sensor 1 (see page 11-206), then go to step 21.

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Allow the ECT sensors to cool to the ambient temperature.
8. Note the ambient temperature.
9. Turn the ignition switch to ON (II).
10. Quickly note the value of ECT SENSOR 1 in the DATA LIST with the HDS.

11. Compare the value of ECT SENSOR 1 and the ambient temperature.

    Does the value of ECT SENSOR 1 differ 5.4 °F (3 °C) or more from the ambient temperature?

    YES–Replace ECT sensor 1 (see page 11-206), then go to step 21.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■

12. Start the engine, and let it idle for 10 minutes.
13. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Is about 104 °F (40 °C) or less indicated?

    YES–Replace ECT sensor 1 (see page 11-206), then go to step 21.

    NO–Go to step 14.

14. Check ECT SENSOR 2 in the DATA LIST with the HDS.

    Is about 126 °F (52 °C) or less indicated?

    YES–Replace ECT sensor 2 (see page 11-206), then go to step 21.

    NO–Go to step 15.

15. Turn the ignition switch to LOCK (0).
16. Allow the sensors to cool to the ambient temperature.
17. Note the ambient temperature.
18. Turn the ignition switch to ON (II).
19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4 °F (3 °C) from the ambient temperature?

    YES–Replace the sensor that differed more than 5.4 °F (3 °C) from the ambient temperature, then go to step 21.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■

21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1116 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1128: MAP Sensor Signal Lower Than Expected

NOTE:
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- Before you troubleshoot, check for poor connections or a blockage at the intake air duct.

1. Turn the ignition switch to ON (II).
2. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is less than 54.1 kPa (16.0 in Hg, 406 mmHg), or 1.61 V held for more than 5 seconds?

   YES–Go to step 7.

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - Engine speed between 1,400—5,400 rpm
   - CVT in D, M/T in 3rd
   - Vehicle speed accelerated from 16—31 mph (25— 50 km/h) under half throttle
6. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 4 and recheck.
7. Turn the ignition switch to LOCK (0).
8. Replace the MAP sensor (see page 11-205).
9. Turn the ignition switch to ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see page 11-274).
12. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
13. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - Engine speed between 1,400—5,400 rpm
    - CVT in D, M/T in 3rd
    - Vehicle speed accelerated from 16—31 mph (25— 50 km/h) under half throttle
14. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1128 indicated?

    YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

    NO–Go to step 15.
15. Monitor the OBD STATUS for DTC P1128 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 14, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 12.

DTC P1129: MAP Sensor Signal Higher Than Expected

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Check for vacuum leaks in these parts:
   - PCV valve
   - PCV hose
   - EVAP canister purge valve
   - Throttle body
   - Intake manifold
   - Brake booster
   - Brake booster hose

   Are there any vacuum leaks?

   YES–Repair or replace the part(s) with vacuum leaks, then go to step 9.

   NO–Go to step 2.

2. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

3. Check the MAP SENSOR in the DATA LIST with the HDS.

   Is more than 36.9 kPa (11.0 in.Hg, 277 mmHg), or 1.14 V held for more than for 5 seconds?

   YES–Go to step 7.

   NO–Go to step 4.

4. Clear the DTC with the HDS.

5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 5th
   - Drive at a steady speed between 55—75 mph (90—120 km/h) for 10 seconds
   - During the drive, decelerate (with the throttle fully closed) for at least 2 seconds

6. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, go to step 5 and recheck.

7. Turn the ignition switch to LOCK (0).

8. Replace the MAP sensor (see page 11-205).

9. Turn the ignition switch to ON (II).

10. Reset the ECM/PCM with the HDS.

11. Do the ECM/PCM idle learn procedure (see page 11-274).

12. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

13. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 5th
   - Drive at a steady speed between 55—75 mph (90—120 km/h) for 10 seconds
   - During the drive, decelerate (with the throttle fully closed) for at least 2 seconds

14. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1129 indicated?

   YES–Check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1.

   NO–Go to step 15.

(cont'd)

DTC Troubleshooting (cont'd)

15. Monitor the OBD STATUS for DTC P1129 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 14, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 12.

DTC P1157: A/F Sensor (Sensor 1) Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

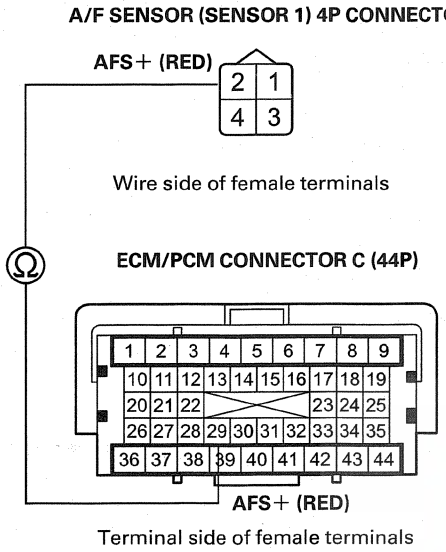
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and wait about 20 seconds.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1157 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Disconnect ECM/PCM connector C (44P).

9. Check for continuity between ECM/PCM connector terminal C29 and A/F sensor (Sensor 1) 4P connector terminal No. 2.

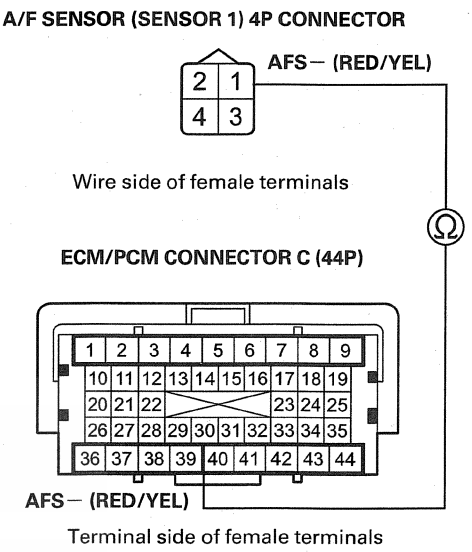


Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire between the ECM/PCM (C29) and the A/F sensor (Sensor 1), then go to step 12.

10. Check for continuity between ECM/PCM connector terminal C30 and A/F sensor (Sensor 1) 4P connector terminal No. 1.



Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the ECM/PCM (C30) and the A/F sensor (Sensor 1), then go to step 12.

11. Replace the A/F sensor (Sensor 1) (see page 11-202).
12. Reconnect all connectors.
13. Turn the ignition switch to ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see page 11-274).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1157 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the connections and the terminals are OK, go to step 18.

    NO–Go to step 17.

(cont'd)

DTC Troubleshooting (cont'd)

17. Monitor the OBD STATUS for DTC P1157 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

18. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

19. Start the engine, and let it idle.

20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1157 indicated?

    YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 19. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 21.

21. Monitor the OBD STATUS for DTC P1157 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 19. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P1172: A/F Sensor (Sensor 1) Circuit Out of Range High

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Monitor the OBD STATUS for DTC P1172 in the DTCs MENU with the HDS.

    Does the HDS indicate FAILED?

    YES–Go to step 5.

    NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 3 and recheck.

5. Turn the ignition switch to LOCK (0).
6. Replace the A/F sensor (Sensor 1) (see page 11-202).
7. Turn the ignition switch to ON (II).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see page 11-274).
10. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1172 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO–Go to step 12.

12. Monitor the OBD STATUS for DTC P1172 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated DTC's troubleshooting.

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 10.

DTC P1297: ELD Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check the ELD in the DATA LIST with the HDS.

   Is 72 A or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch to ON (II).
6. Check the ELD in the DATA LIST with the HDS.

   Is 72 A or more indicated?

   YES–Go to step 7.

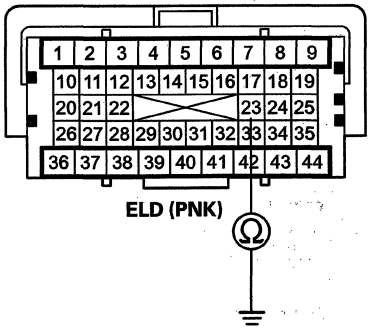
   NO–Go to step 11.
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between ECM/PCM connector terminal A23 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A23) and the ELD, then go to step 13.

NO–Go to step 20.

11. Turn the ignition switch to LOCK (0).
12. Replace the ELD (see page 11-207).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Start the engine.
18. Turn on the headlights.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1297 indicated?

    YES–Check for poor connections or loose terminals at the ELD and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

20. Reconnect all connectors.
21. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
22. Start the engine.
23. Turn on the headlights.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1297 indicated?

    YES–Check for poor connections or loose terminals at the ELD and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 22. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P1298: ELD Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

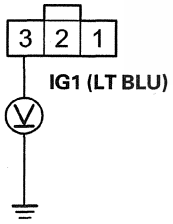
1. Turn the ignition switch to ON (II).
2. Check the ELD in the DATA LIST with the HDS.

   Is 0.2 A or less indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ELD and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ELD 3P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between ELD 3P connector terminal No. 3 and body ground.

ELD 3P CONNECTOR



Wire side of female terminals

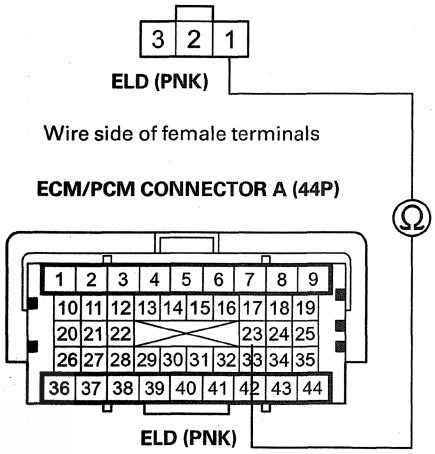
Is there battery voltage?

YES–Go to step 7.

NO–Check the No. B22 METER (7.5 A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair an open in the wire between the No. B22 METER (7.5 A) fuse and the ELD, then go to step 13.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).
10. Check for continuity between ECM/PCM connector terminal A23 and ELD 3P connector terminal No. 1.

ELD 3P CONNECTOR



Terminal side of female terminals

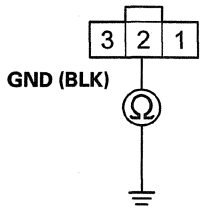
Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the ECM/PCM (A23) and the ELD, then go to step 13.

11. Check for continuity between ELD 3P connector terminal No. 2 and body ground.

ELD 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 12.

NO–Repair an open in the wire between the ELD and G501 (see page 22-40), then go to step 13.

(cont'd)

DTC Troubleshooting (cont'd)

12. Replace the ELD (see page 11-207).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1298 indicated?

    YES–Go to step 18.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
18. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1298 indicated?

    YES–Check for poor connections or loose terminals at the ELD and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2183: ECT Sensor 2 Range/ Performance Problem

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P0111 is stored at the same time as DTC P2183, troubleshoot DTC P0111 first, then recheck for DTC P2183.

1. Check for poor connections or loose terminals at ECT sensor 1 and ECT sensor 2.

   Are the connections and terminals OK ?

   YES–Go to step 2.

   NO–Repair the connections or terminals, then go to step 21.
2. Turn the ignition switch to ON (II).
3. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P1116 and P2183 indicated at the same time?

   YES–Go to step 12.

   NO–Go to step 4.
4. Start the engine, and let it idle for 10 minutes.
5. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about 126 °F (52 °C) or less indicated?

   YES–Replace ECT sensor 2 (see page 11-206), then go to step 21.

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Allow the ECT sensors to cool to the ambient temperature.
8. Note the ambient temperature.

9. Turn the ignition switch to ON (II).
10. Quickly note the value of ECT SENSOR 2 in the DATA LIST with the HDS.
11. Compare the value of ECT SENSOR 2 and the ambient temperature.

    Does ECT SENSOR 2 differ 5.4 °F (3 °C) or more from the ambient temperature?

    YES–Replace ECT sensor 2 (see page 11-206), then go to step 21.

    NO–Intermittent failure, the system is OK at this time. Reinstall ECT sensor 2 (see page 11-206). Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■
12. Start the engine, and let it idle for 10 minutes.
13. Check ECT SENSOR 1 in the DATA LIST with the HDS.

    Is about 104 °F (40 °C) or less indicated?

    YES–Replace ECT sensor 1 (see page 11-206), then go to step 21.

    NO–Go to step 14.
14. Check ECT SENSOR 2 in the DATA LIST with the HDS.

    Is about 126 °F (52 °C) or less indicated?

    YES–Replace ECT sensor 2 (see page 11-206), then go to step 21.

    NO–Go to step 15.
15. Turn the ignition switch to LOCK (0).
16. Allow the sensors to cool to the ambient temperature.
17. Note the ambient temperature.
18. Turn the ignition switch to ON (II).
19. Quickly note the value of ECT SENSOR 1 and ECT SENSOR 2 in the DATA LIST with the HDS.
20. Compare the value of ECT SENSOR 1 and the ambient temperature, and the value of ECT SENSOR 2 and the ambient temperature individually.

    Does either sensor differ more than 5.4 °F (3 °C) from the ambient temperature?

    YES–Replace the sensor that differed more than 5.4 °F (3 °C) from the ambient temperature, then go to step 21.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM.■
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2183 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 1, ECT sensor 2, and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P2184: ECT Sensor 2 Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

   YES–Go to step 3.

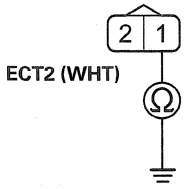
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ECT sensor 2 2P connector.
5. Turn the ignition switch to ON (II).
6. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about 356 °F (180 °C) or more, or 0.08 V or less indicated?

   YES–Go to step 7.

   NO–Go to step 11.
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).
10. Check for continuity between ECT sensor 2 2P connector terminal No. 1 and body ground.

ECT SENSOR 2 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A33) and ECT sensor 2, then go to step 13.

NO–Go to step 18.

11. Turn the ignition switch to LOCK (0).
12. Replace ECT sensor 2 (see page 11-206).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2184 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2184 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2185: ECT Sensor 2 Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

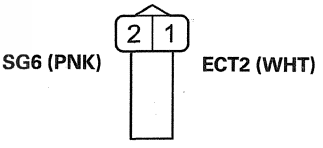
1. Turn the ignition switch to ON (II).
2. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the ECT sensor 2 2P connector.
5. Connect ECT sensor 2 2P connector terminals No. 1 and No. 2 with a jumper wire.

ECT SENSOR 2 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

6. Turn the ignition switch to ON (II).
7. Check ECT SENSOR 2 in the DATA LIST with the HDS.

   Is about −40 °F (−40 °C) or less, or 4.90 V or more indicated?

   YES–Go to step 8.

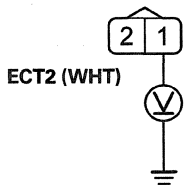
   NO–Go to step 20.
8. Turn the ignition switch to LOCK (0).
9. Remove the jumper wire from the ECT sensor 2 2P connector.
10. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure the voltage between ECT sensor 2 2P connector terminal No. 1 and body ground.

ECT SENSOR 2 2P CONNECTOR



Wire side of female terminals

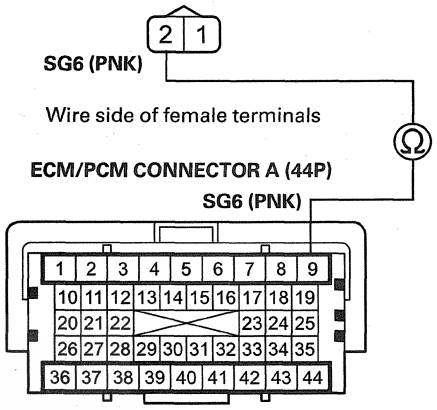
Is there about 5 V?

YES–Go to step 12.

NO–Go to step 16.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (44P).
15. Check for continuity between ECM/PCM connector terminal A9 and ECT sensor 2 2P connector terminal No. 2.

ECT SENSOR 2 2P CONNECTOR



Terminal side of female terminals

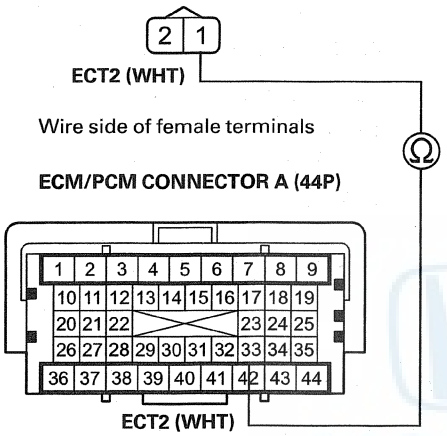
Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (A9) and ECT sensor 2, then go to step 22.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector A (44P).
19. Check for continuity between ECM/PCM connector terminal A33 and ECT sensor 2 2P connector terminal No. 1.

ECT SENSOR 2 2P CONNECTOR



Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the ECM/PCM (A33) and ECT sensor 2, then go to step 22.

20. Turn the ignition switch to LOCK (0).
21. Replace ECT sensor 2 (see page 11-206).
22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2185 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2185 indicated?

    YES–Check for poor connections or loose terminals at ECT sensor 2 and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P2195: A/F Sensor (Sensor 1) Signal Stuck Lean

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If the vehicle was out of fuel and the engine stalled before this DTC was stored, refuel and clear the DTC with the HDS.
- If DTC P2101, P2118, P2135, P2138, P2176, or a combination of P2122 and P2127, P2122, and P2138, or P2127 and P2138 is stored at the same time, troubleshoot them first, then recheck for DTC P2195.

1. Check for dirt or debris in the MAF sensor/IAT sensor.

   Is it dirty?

   YES–Remove the debris. If needed, replace the MAF sensor/IAT sensor (see page 11-205), then go to step 9.

   NO–Go to step 2.

2. Check the installation of the A/F sensor (Sensor 1).

   Is the A/F sensor loose or disconnected from the exhaust pipe?

   YES–Go to step 7.

   NO–Go to step 3.

3. Turn the ignition switch to ON (II).
4. Clear the DTC with the HDS.
5. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2195 indicated?

   YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 14.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

7. Turn the ignition switch to LOCK (0).
8. Reinstall the A/F sensor (Sensor 1) (see page 11-202).
9. Turn the ignition switch to ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see page 11-274).
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2195 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 13.

    NO–Go to step 13.

13. Monitor the OBD STATUS for DTC P2195 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

14. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
15. Start the engine, and let it idle without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2195 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM, then go to step 15. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 17.

17. Monitor the OBD STATUS for DTC P2195 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 15. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P219A: Air-Fuel Ratio Variation of Cylinders

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If any of the DTCs listed below are indicated at the same time as DTC P219A, troubleshoot those DTCs first, then recheck for P219A.

  P0133, P1157, P1172, P2195, P2238, P2252, P2A00: A/F sensor (Sensor 1)

  P0134, P0135:A/F sensor (Sensor 1) heater

  P0201, P0202, P0203, P0204: No. 1 - No. 4 cylinder injector(s)

  P0300: Random misfire

  P0301, P0302, P0303, P0304: No. 1, No. 2, No. 3, or No. 4 cylinder misfire detected

  P0351, P0352, P0353, P0354: No. 1 - No. 4 cylinder ignition coil(s)

  P0400, P0401, P0404, P0406, P2413: EGR system
- If the engine speed fluctuates at highway speeds, the EGR line may be blocked by carbon or sludge.

1. Turn the ignition switch to ON (II).
2. Record following HDS parameters (On-board snapshot):
   - VEHICLE SPEED
   - ENGINE SPEED
   - MAP SENSOR
   - ECT SENSOR 1
   - APP SENSOR
   - AF FB (ST FUEL TRIM)
   - EGR COMMAND
   - EGR LIFT
3. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check under these conditions:
   - A/C off
   - All electrical loads off
5. Do the Cylinder AF Test three times in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Go to step 6.

   NO–Go to step 9.
6. Clear the DTC with the HDS.

(cont'd)

DTC Troubleshooting (cont'd)

7. Test-drive the vehicle in the range of these recorded on-board snapshot parameters:
   - VEHICLE SPEED
   - ENGINE SPEED
   - MAP SENSOR
   - ECT SENSOR 1
   - APP SENSOR
   - AF FB (ST FUEL TRIM)
   - EGR COMMAND
   - EGR LIFT
8. Monitor the OBD STATUS for DTC P219A in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 20.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 7 and recheck.
9. Do a cylinder compression test (see page 6-6).

   Is the engine compression of the problem cylinder lower than the other cylinders?

   YES–Adjust the engine compression (see page 6-6), then go to step 23.

   NO–Go to step 10.
10. Inspect the valve clearances (see page 6-8).

    Are the valve clearances OK?

    YES–Go to step 11.

    NO–Adjust the valve clearances (see page 6-8), then go to step 11.
11. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Check under these conditions:
    - A/C off
    - All electrical loads off
13. Do the Cylinder AF Test three times in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES–Go to step 23.

    NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).
15. Exchange the injector from the problem cylinder with one from the another cylinder.
16. Recconect all connectors.
17. Start the engine, and let it idle for 10 minutes.
18. Check under these conditions:
    - A/C off
    - All electrical loads off
19. Do the Cylinder AF Test three times in the INSPECTION MENU with the HDS.

    Is an injector failure indicated at the cylinder where the injector was exchanged?

    YES–Replace the faulty injector (see page 11-200), then go to step 23.

    NO–Go to step 22.
20. Inspect the valve clearances (see page 6-8).

    Are the valve clearances OK?

    YES–Go to step 21.

    NO–Adjust the valve clearances (see page 6-8), then go to step 23 and recheck. If DTC P219A is indicated go to step 21. If DTC P219A is not indicated, troubleshooting is complete.
21. Check for carbon or sludge in the EGR line.

    Is there carbon or sludge?

    YES–Clean the intake manifold EGR port (see page 11-327) and the EGR pipe with throttle plate cleaner (see page 11-327). Also, clean the passage inside the EGR valve with throttle plate cleaner, then go to step 23.

    NO–Go to step 22.
22. Check for carbon build-up in the intake manifold (see page 9-9), and the exhaust line (see page 9-17).

    Is there carbon build-up in the intake manifold and/or the cylinder head?

    YES–Remove the carbon, then go to step 23.

    NO–Check the engine oil leak. If needed, repair the engine, then go to step 23.

NOTE: If engine oil burning occurs, this code can be stored.

23. Turn the ignition switch to ON (II).
24. Reset the ECM/PCM with the HDS.
25. Do the ECM/PCM idle learn procedure (see page 11-274).
26. Test-drive the vehicle in the range of these recorded on-board snapshot parameters:
    - VEHICLE SPEED
    - ENGINE SPEED
    - MAP SENSOR
    - ECT SENSOR 1
    - APP SENSOR
    - AF FB (ST FUEL TRIM)
    - EGR COMMAND
    - EGR LIFT
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P219A indicated?

    YES–Check for poor connections or loose terminals at the injectors and the ECM/PCM, then go to step 1.

    NO–Go to step 28.
28. Monitor the OBD STATUS for DTC P219A in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 27, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1 and recheck. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 26.

DTC P2227: BARO Sensor Range/ Performance Problem

NOTE:
- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P0107, P0108, P1128, and/or P1129 are stored at the same time as DTC P2227, troubleshoot those DTCs first, then recheck for DTC P2227.

1. Turn the ignition switch to ON (II), and wait 2 seconds.
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 101 kPa (29.9 in.Hg, 760 mmHg), or about 2.9 V at sea level indicated?

   YES–Go to step 3.

   NO–Go to step 15.
3. Clear the DTC with the HDS.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 4th
   - REL TP SENSOR between 14 deg and 28 deg for at least 3 seconds
6. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

   Does the HDS indicate F AILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for something that may have clogged the intake air system. If the HDS indicates NOT COMPLETED, go to step 4 and recheck.
7. Check the intake air system for clogging or restrictions (foreign material, dirty air cleaner element, etc.).

   Is the intake air system clogged or restricted?

   YES–Remove the clog or restriction, then go to step 8.

   NO–Go to step 15.

(cont'd)

DTC Troubleshooting (cont'd)

8. Turn the ignition switch to ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - in D, M/T in 4th
    - REL TP SENSOR between 14 deg and 28 deg for at least 3 seconds
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2227 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM, then go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.
15. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
16. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
17. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - REL TP SENSOR between 14 deg and 28 deg for at least 3 seconds
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2227 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-207), then go to step 16. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 19.
19. Monitor the OBD STATUS for DTC P2227 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 16. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 16.

DTC P2228: BARO Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 43 kPa (12.7 in.Hg, 323 mmHg), or 1.3 V or less indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time.■
3. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2228 indicated?

   YES–Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2229: BARO Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check the BARO SENSOR in the DATA LIST with the HDS.

   Is about 160 kPa (47.2 in.Hg, 1,200 mmHg), or 4.5 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time.■
3. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2229 indicated?

   YES–Check for poor connections or loose terminals at the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P2238: A/F Sensor (Sensor 1) AFS+ Line Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

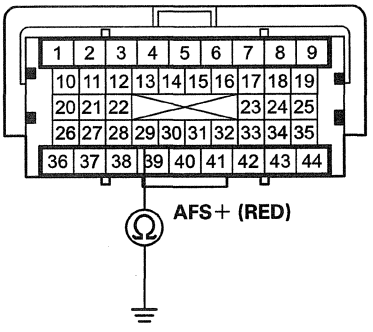
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until radiator fan comes on.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2238 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between ECM/PCM connector terminal C29 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C29) and the A/F sensor (Sensor 1), then go to step 11.

NO–Go to step 10.

10. Replace the A/F sensor (Sensor 1) (see page 11-202).
11. Reconnect all connectors.
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see page 11-274).
15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2238 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the connections and the terminals are OK, go to step 17.

    NO–Go to step 16.
16. Monitor the OBD STATUS for DTC P2238 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 15, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
17. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
18. Start the engine, and let it idle.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2238 indicated?

    YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 18. If the ECM was substituted, go to step 1.

    NO–Go to step 20.

20. Monitor the OBD STATUS for DTC P2238 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 19, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 18. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2252: A/F Sensor (Sensor 1) AFS– Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

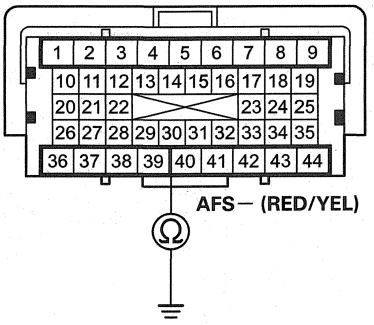
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2252 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect the A/F sensor (Sensor 1) 4P connector.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between ECM/PCM connector terminal C30 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C30) and the A/F sensor (Sensor 1), then go to step 11.

NO–Go to step 10.

(cont'd)

DTC Troubleshooting (cont'd)

10. Replace the A/F sensor (Sensor 1) (see page 11-202).
11. Reconnect all connectors.
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see page 11-274).
15. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2252 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the connector and the terminals are OK, go to step 17.

    NO–Go to step 16.
16. Monitor the OBD STATUS for DTC P2252 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 15, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
17. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
18. Start the engine, and let it idle.
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2252 indicated?

    YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 18. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 20.
20. Monitor the OBD STATUS for DTC P2252 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 19, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 18. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P2610: ECM/PCM Ignition Off Internal Timer Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2610 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2610 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2A00: A/F Sensor (Sensor 1) Range/Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 3rd or 4th
   - Vehicle speed between 25— 55 mph (40—88 km/h) for 5 minutes
   - Drive at a steady speed between 55—75 mph (88—120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 5 seconds
5. Monitor the OBD STATUS for DTC P2A00 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 3 and recheck.

(cont'd)

DTC Troubleshooting (cont'd)

6. Turn the ignition switch to LOCK (0).
7. Replace the A/F sensor (Sensor 1) (see page 11-202).
8. Turn the ignition switch to ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 3rd or 4th
    - Vehicle speed between 25—55 mph (40—88 km/h) for 5 minutes
    - Drive at a steady speed between 55—75 mph (88—120 km/h) for 10 seconds, then decelerate (with the throttle fully closed) for 5 seconds
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2A00 indicated?

    YES–Check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1.

    NO–Go to step 13.
13. Monitor the OBD STATUS for DTC P2A00 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the A/F sensor (Sensor 1) and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 11.

DTC U0301: PGM-FI System Program Version Mismatch

NOTE:
- NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- This DTC is indicated when a ECM/PCM update is not completed.
- Do not turn the ignition switch to ACC (I) or LOCK (0) while updating the ECM/PCM. If you do, the ECM/PCM can be damaged.

1. Do the ECM/PCM update procedure (see page 11-207).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0301 indicated?

   YES–Replace the original ECM/PCM (see page 11-209).■

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

MIL Circuit Troubleshooting

1. Turn the ignition switch to ON (II).
2. Do the gauge self-diagnostic function (see page 22-325).

   Does the MIL flash?

   YES–Go to step 3.

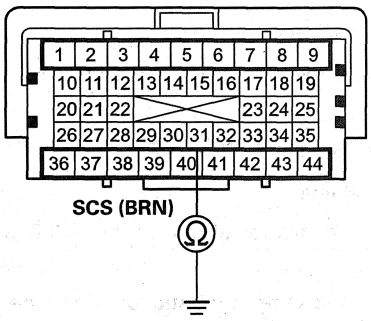
   NO–Substitute a known-good gauge control module (see page 22-354), then recheck. If the symptom/indication goes away with a known-good gauge control module, replace the original gauge control module (see page 22-354).■
3. Connect the HDS to the DLC (see page 11-3).
4. Check the SCS in the DATA LIST with the HDS.

   Is a short indicated?

   YES–Go to step 5.

   NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■
5. Turn the ignition switch to LOCK (0).
6. Disconnect ECM/PCM connector A (44P), then disconnect the HDS.
7. Check for continuity between ECM/PCM connector terminal A31 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A31) and the DLC.■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

Shift Indicator Lamp Troubleshooting

NOTE: Check for Pending or Confirmed DTCs with the HDS before doing this procedure. If any DTCs are stored, troubleshoot them first, then do this procedure.

1. Connect the HDS to the DLC (see page 11-3).
2. Start the engine.
3. Test-drive several minutes.
4. Check the C SHAFT SPD in the DATA LIST with the HDS.

   Is any vehicle speed indicated?

   YES–Go to step 5.

   NO–Go to the troubleshooting for P0720 (see page 11-157).
5. Do the gauge self-diagnostic function (see page 22-325).■

   Is the result OK?

   YES–Go to step 6.

   NO–Substitute a known-good gauge control module, and recheck. If the symptom/indication goes away with a known-good gauge control module, replace the original gauge control module (see page 22-354).
6. Do the APP sensor signal inspection (see page 11-251).■

   Is the result OK?

   YES–Go to step 7.

   NO–Depending on the result, repair or replace the appropriate part.■
7. Do the brake pedal position switch signal circuit troubleshooting (see page 11-272).■

   Is the result OK?

   YES–Go to step 8.

   NO–Depending on the result, repair or replace the appropriate part.■
8. Turn the ignition switch to LOCK (0).
9. Check the position of clutch pedal position switch C (see page 13-6).■

   Is the position correct?

   YES–Go to step 10.

   NO–Do the clutch pedal and clutch pedal position switch C adjustment (see page 13-6).■
10. Turn the ignition switch to ON (II).
11. Check the CLUTCH PEDAL POSITION SWITCH A (C) in the DATA LIST with the HDS.

    Is OPEN indicated?

    YES–Go to step 12.

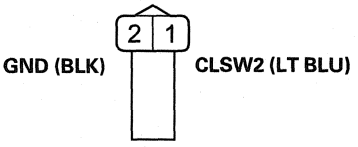
    NO–Go to step 28.
12. Press the clutch pedal.
13. Check the CLUTCH PEDAL POSITION SWITCH A (C) in the DATA LIST with the HDS.

    Is CLOSE indicated?

    YES–Intermittent failure, system is OK at this time. Check for poor connections or loose terminals at the gauge control module, clutch pedal position switch C, and the ECM.■

    NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).
15. Disconnect the clutch pedal position switch C 2P connector.
16. Connect clutch pedal position switch C 2P connector terminals No. 1 and No. 2 with a jumper wire.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

17. Turn the ignition switch to ON (II).
18. Check CLUTCH PEDAL POSITION SWITCH A (C) in the DATA LIST with the HDS.

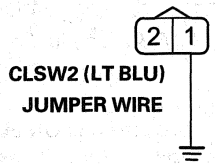
    Is OPEN indicated?

    YES–Go to step 19.

    NO–Replace clutch pedal position switch C (see page 13-9).■
19. Turn the ignition switch to LOCK (0).

20. Remove the jumper wire from the clutch pedal position switch C 2P connector.
21. Connect clutch pedal position switch C 2P connector terminal No. 1 to body ground with a jumper wire.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR



Wire side of female terminals

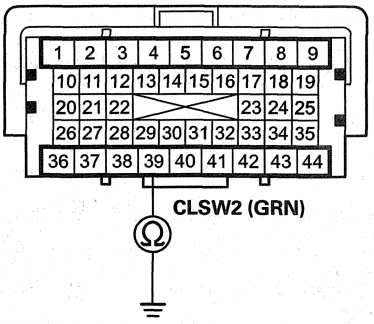
22. Turn the ignition switch to ON (II).
23. Check CLUTCH PEDAL POSITION SWITCH A (C) in the DATA LIST with the HDS.

    Is CLOSE indicated?

    YES–Go to step 24.

    NO–Repair an open in the wire between clutch pedal position switch C and body ground (G403 (see page 22-36)).■
24. Turn the ignition switch to LOCK (0).
25. Jump the SCS line with the HDS.
26. Disconnect ECM connector B (44P).
27. Check for continuity between ECM connector terminal B39 and body ground.

ECM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM, replace the original ECM (see page 11-209).■

NO–Repair an open in the wire between the ECM (B39) and the clutch pedal position switch C.■
28. Turn the ignition switch to LOCK (0).
29. Disconnect the clutch pedal position switch C 2P connector.
30. Turn the ignition switch to ON (II).
31. Check CLUTCH PEDAL POSITION SWITCH A (C) in the DATA LIST with the HDS.

    Is OPEN indicated?

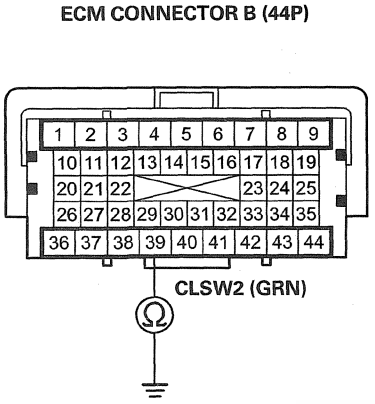
    YES–Replace clutch pedal position switch C (see page 13-9).■

    NO–Go to step 32.
32. Turn the ignition switch to LOCK (0).
33. Jump the SCS line with the HDS.
34. Disconnect ECM connector B (44P).

(cont'd)

Shift Indicator Lamp Troubleshooting (cont'd)

35. Check for continuity between ECM connector terminal B39 and body ground.



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM (B39) and clutch pedal position switch C.■

NO–Update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM, replace the original ECM (see page 11-209).■

ECM/PCM Power and Ground Circuit Troubleshooting

1. Check the No. B60 IGSW (50 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Repair an open in the wire between the No. B60 IGSW (50 A) fuse and the ignition switch. If the wire is OK, go to step 2.

   NO–Repair a short in the wire between the No. B60 IGSW (50 A) fuse and the under-dash fuse/relay box. Also replace the No. B60 IGSW (50 A) fuse.■

2. Inspect the No. B39 IGP (15 A) fuse in the under-dash fuse/relay box.

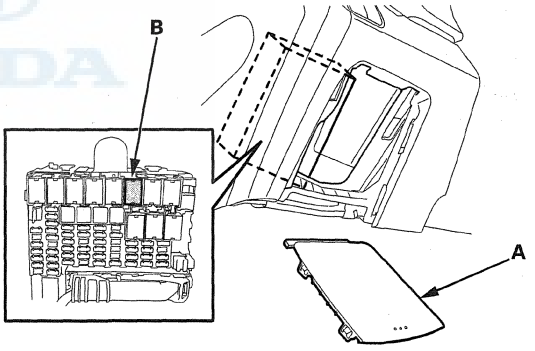
   Is the fuse OK?

   YES–Go to step 9.

   NO–Go to step 3.

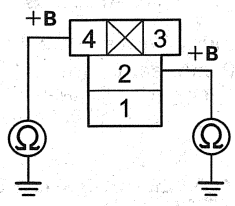
3. Remove the blown No. B39 IGP (15 A) fuse from the under-dash fuse/relay box.

4. Open the fuse lid panel (A), then remove PGM-FI main relay 1 (B) from the under-dash fuse/relay box.



5. Check for continuity between body ground and PGM-FI main relay 1 4P connector terminals No. 2 and No. 4 individually.

PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

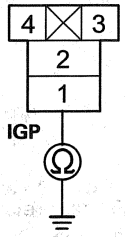
Is there continuity?

YES–Replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

NO–Go to step 6.

6. While disconnecting each of the parts or connectors below, one at a time, check for continuity between PGM-FI main relay 1 4P connector terminal No. 1 and body ground.
   - PGM-FI main relay 2
   - ECM/PCM connector A (44P)
   - Each injector 2P connector
   - CMP sensor 3P connector
   - CKP sensor 3P connector
   - Electronic throttle control system (ETCS) control relay

PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

Does continuity go away when one of the above parts or components is disconnected?

YES–Replace the part that made the short to body ground go away when disconnected. If the part is the ECM/PCM, update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209). Also replace the No. 39 IGP (15 A) fuse.■

NO–Go to step 7.

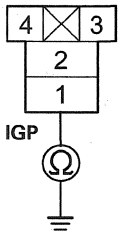
7. Disconnect the connectors from these parts:
   - PGM-FI main relay 2
   - ECM/PCM connector A (44P)
   - Injectors
   - CMP sensor
   - CKP sensor
   - Electronic throttle control system (ETCS) control relay

(cont'd)

ECM/PCM Power and Ground Circuit Troubleshooting (cont'd)

8. Check for continuity between PGM-FI main relay 1 4P connector terminal No. 1 and body ground.

PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PGM-FI main relay 1 and each part. Also replace the No. B39 IGP (15 A) fuse.■

NO–Replace PGM-FI main relay 1. Also replace the No. B39 IGP (15 A) fuse.■

9. Inspect the No. B20 FUEL PUMP (15 A) fuse in the under-dash fuse/relay box.

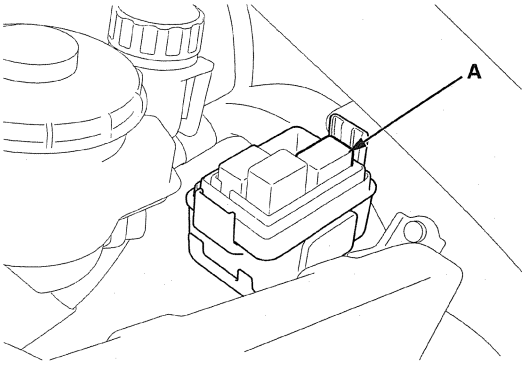
Is the fuse OK?

YES–Go to step 19.

NO–Go to step 10.

10. Remove the blown No. B20 FUEL PUMP (15 A) fuse from the under-dash fuse/relay box.

11. Remove PGM-FI main relay 2 (A) from auxiliary under-hood relay box A.



12. Test PGM-FI main relay 2 (see page 22-92).

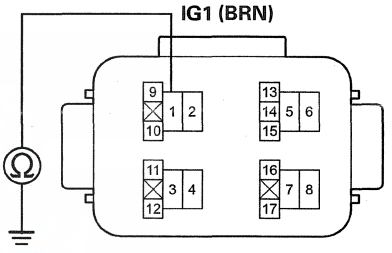
Is PGM-FI main relay 2 OK?

YES–Go to step 13.

NO–Replace PGM-FI main relay 2. Also replace the No. B20 FUEL PUMP (15 A) fuse.■

13. Check for continuity between auxiliary under-hood relay box A 17P connector terminal No. 1 (PGM-FI main relay 2) and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 14.

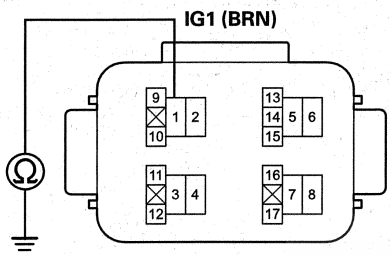
NO–Go to step 17.

14. Jump the SCS line with the HDS.

15. Disconnect ECM/PCM connector C (44P).

16. Check for continuity between auxiliary under-hood relay box A 17P connector terminal No. 1 (PGM-FI main relay 2) and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Terminal side of female terminals

Is there continuity?

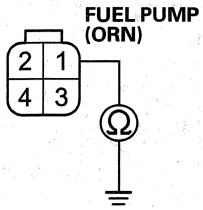
YES–Repair a short in the wire between the No. B20 FUEL PUMP (15 A) fuse and the ECM/PCM (C36), or PGM-FI main relay 2. Also replace the No. B20 FUEL PUMP (15 A) fuse.■

NO–Replace the No. B20 FUEL PUMP (15 A) fuse, and update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

17. Disconnect the fuel tank unit 4P connector (see page 11-301).

18. Check for continuity between fuel tank unit 4P connector terminal No. 1 and body ground.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the fuel pump and PGM-FI main relay 2. Also replace the No. B20 FUEL PUMP (15 A) fuse.■

NO–Check the fuel pump, and replace it if needed (see page 11-305). Also replace the No. B20 FUEL PUMP (15 A) fuse.■

19. Jump the SCS line with the HDS.

20. Disconnect ECM/PCM connectors A (44P) and C (44P).

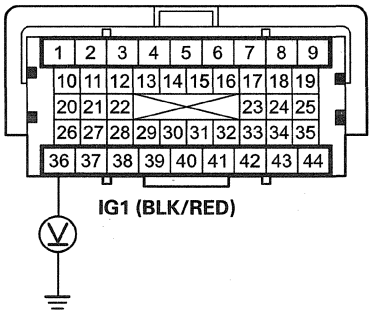
21. Turn the ignition switch to ON (II).

(cont'd)

ECM/PCM Power and Ground Circuit Troubleshooting (cont'd)

22. Measure the voltage between ECM/PCM connector terminal C36 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

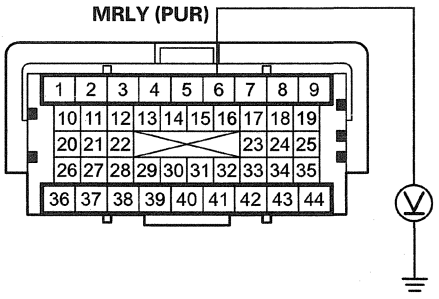
Is there battery voltage?

YES–Go to step 23.

NO–Repair an open in the wire between the No. B20 FUEL PUMP (15 A) fuse and the ECM/PCM (C36).■

23. Measure the voltage between ECM/PCM connector terminal A6 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

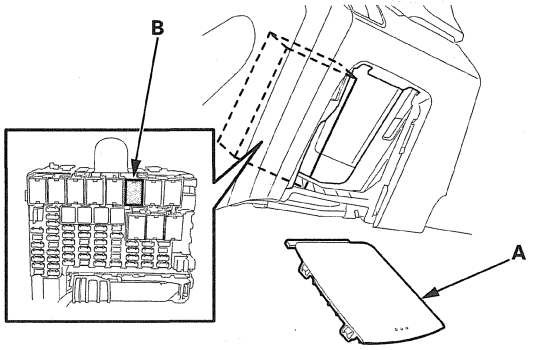
Is there battery voltage?

YES–Go to step 29.

NO–Go to step 24.

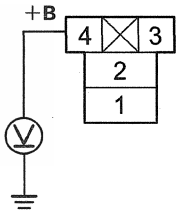
24. Turn the ignition switch to LOCK (0).

25. Open the fuse lid panel (A), then remove PGM-FI main relay 1 (B) from the under-dash fuse/relay box.



26. Measure the voltage between PGM-FI main relay 1 4P connector terminal No. 4 and body ground.

PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

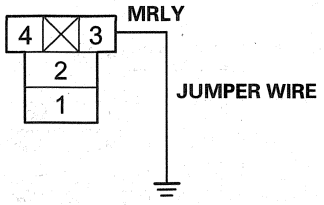
Is there battery voltage?

YES–Go to step 27.

NO–Replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

27. Connect PGM-FI main relay 1 4P connector terminal No. 3 to body ground with a jumper wire.

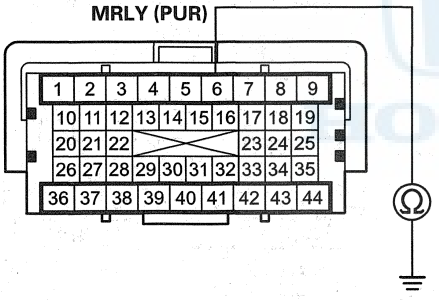
PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

28. Check for continuity between ECM/PCM connector terminal A6 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

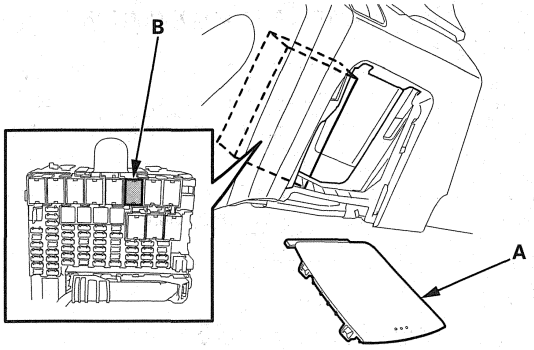
Is there continuity?

YES–Test PGM-FI main relay 1 (see page 22-92). If the relay is OK, update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM (A6) and PGM-FI main relay 1.■

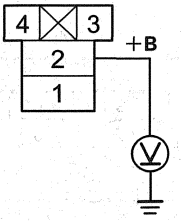
29. Turn the ignition switch to LOCK (0).

30. Open the fuse lid panel (A), then remove PGM-FI main relay 1 (B) from the under-dash fuse/relay box.



31. Measure the voltage between PGM-FI main relay 1 4P connector terminal No. 2 and body ground.

PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 32.

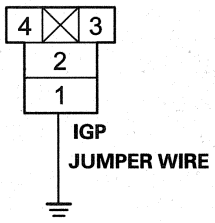
NO–Replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

(cont'd)

ECM/PCM Power and Ground Circuit Troubleshooting (cont'd)

32. Connect PGM-FI main relay 1 4P connector terminal No. 1 to body ground with a jumper wire.

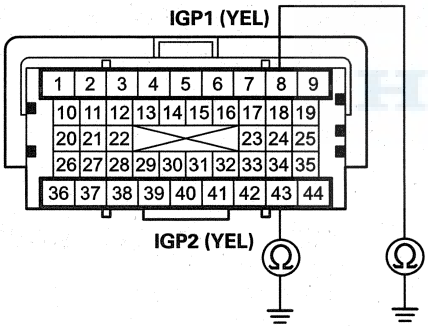
PGM-FI MAIN RELAY 1 4P CONNECTOR



Terminal side of female terminals

33. Check for continuity between body ground and ECM/PCM connector terminals A8 and A43 individually.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

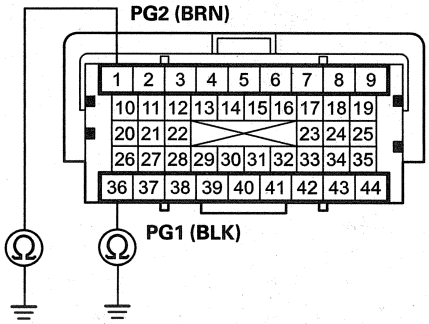
YES–Remove the jumper wire, then go to step 34.

NO–Repair an open in the wire between the ECM/PCM (A8, A43) and PGM-FI main relay 1.■

34. Disconnect ECM/PCM connector B (44P).

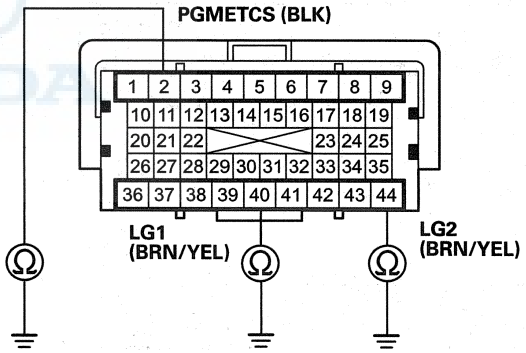
35. Check for continuity between body ground and ECM/PCM connector terminals B1, B36, C2, C40, and C44 individually.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

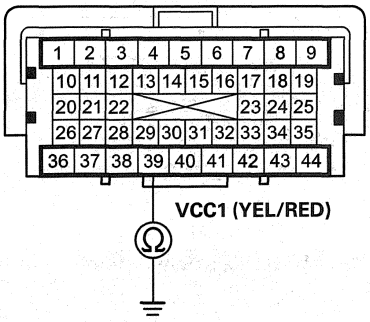
Is there continuity?

YES–Go to step 36.

NO–Repair an open in the wire between the ECM/PCM (B1, B36, C2, C40, C44) and G101; CVT (see page 22-26), M/T (see page 22-22).■

36. Check for continuity between ECM/PCM connector terminal C39 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 37.

NO–Go to step 38.

37. Continue to check for continuity between ECM/PCM connector terminal C39 and body ground, while disconnecting these connectors, one at a time:
    - MAP sensor 3P connector
    - Output shaft (countershaft) speed sensor 3P connector (M/T)
    - CVT output shaft (driven pulley) speed sensor 3P connector (CVT)

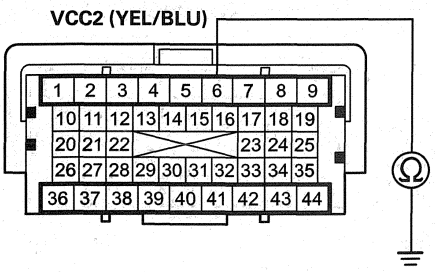
    Does continuity go away when one of the above connectors is disconnected?

    YES–Replace the part that made the short to body ground go away when disconnected.■

    NO–Repair a short in the wire between the ECM/PCM (C39) and the MAP sensor, the output shaft (countershaft) speed sensor (M/T), or the CVT output shaft (driven pulley) speed sensor (CVT).■

38. Check for continuity between ECM/PCM connector terminal B6 and body ground.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 39.

NO–Go to step 40.

39. Continue to check for continuity between ECM/PCM connector terminal C39 and body ground, while disconnecting these connectors, one at a time:
    - EGR valve 5P connector
    - CVT input shaft (drive pulley) speed sensor 3P connector (CVT)
    - Vehicle speed sensor 3P connector (CVT)

    Does continuity go away when one of the above connectors is disconnected?

    YES–Replace the part that made the short to body ground go away when disconnected.■

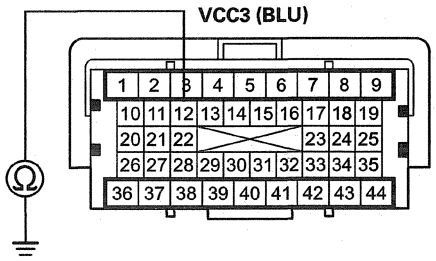
    NO–Repair a short in the wire between the ECM/PCM (B6) and the EGR valve, the CVT input shaft (drive pulley) speed sensor (CVT), or the vehicle speed sensor (CVT).■

(cont'd)

ECM/PCM Power and Ground Circuit Troubleshooting (cont'd)

40. Check for continuity between ECM/PCM connector terminal C12 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 41.

NO–Go to step 42.

41. Continue to check for continuity between ECM/PCM connector terminal C12 and body ground, while disconnecting the throttle body 6P connector.

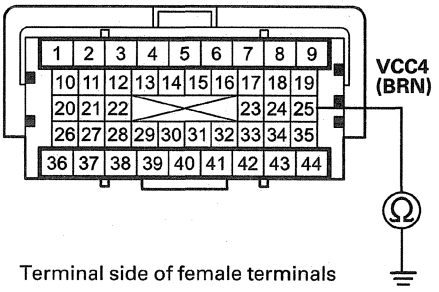
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C12) and the throttle body.■

NO–Replace the throttle body (see page 11-248).■

42. Check for continuity between ECM/PCM connector terminal A25 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 43.

NO–Go to step 44.

43. Continue to check for continuity between ECM/PCM connector terminal A25 and body ground, while disconnecting the APP sensor 6P connector.

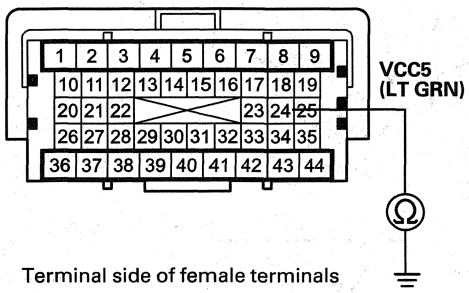
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A25) and APP sensor A.■

NO–Replace the accelerator pedal module (see page 11-251).■

44. Check for continuity between ECM/PCM connector terminal A24 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 45.

NO–Go to step 46.

45. Continue to check for continuity between ECM/PCM connector terminal A24 and body ground, while disconnecting the APP sensor 6P connector.

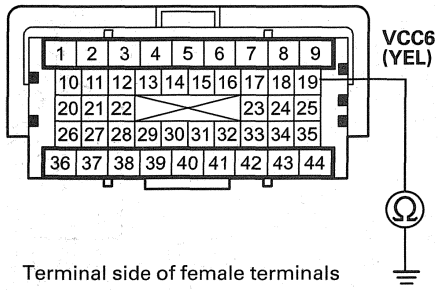
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A24) and APP sensor B.■

NO–Replace the accelerator pedal module (see page 11-251).■

46. Check for continuity between ECM/PCM connector terminal A19 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 47.

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

47. Continue to check for continuity between ECM/PCM connector terminal A19 and body ground, while disconnecting these connectors, one at a time:
- FTP sensor 3P connector
- A/C pressure 3P connector
- Brake booster pressure sensor A 3P connector
- Brake booster pressure sensor B 3P connector

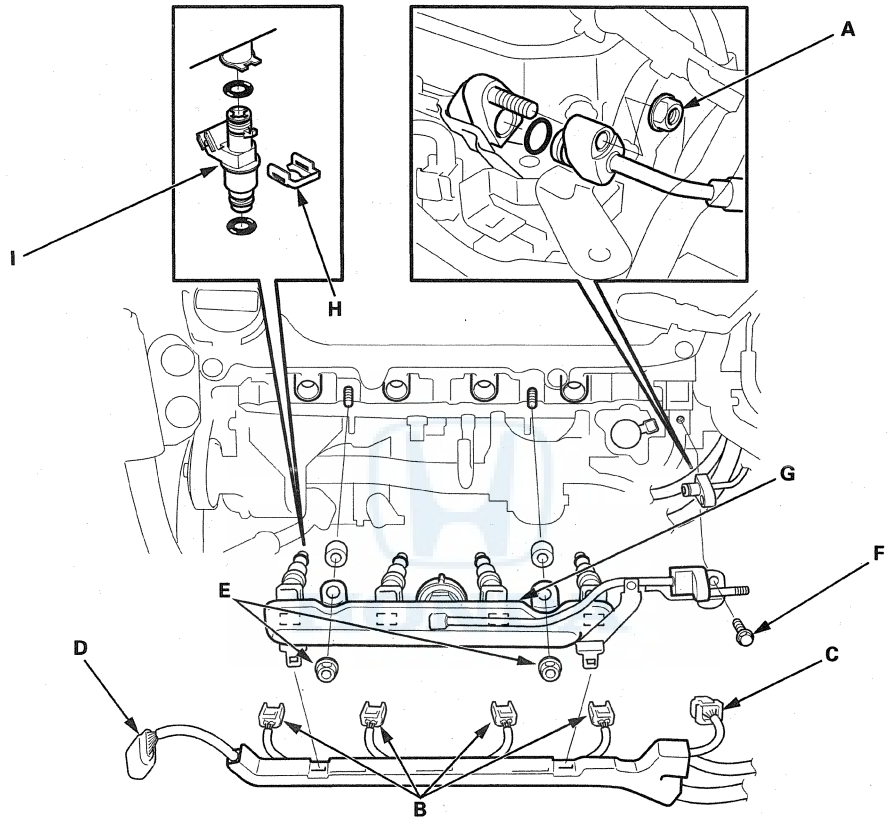
Does continuity go away when one of the above connectors is disconnected?

YES–Replace the part that made the short to body ground go away when disconnected.■

NO–Repair a short in the wire between the ECM/PCM (A19) and the FTP sensor, the A/C pressure sensor, brake booster pressure sensor A, or brake booster pressure sensor B.■

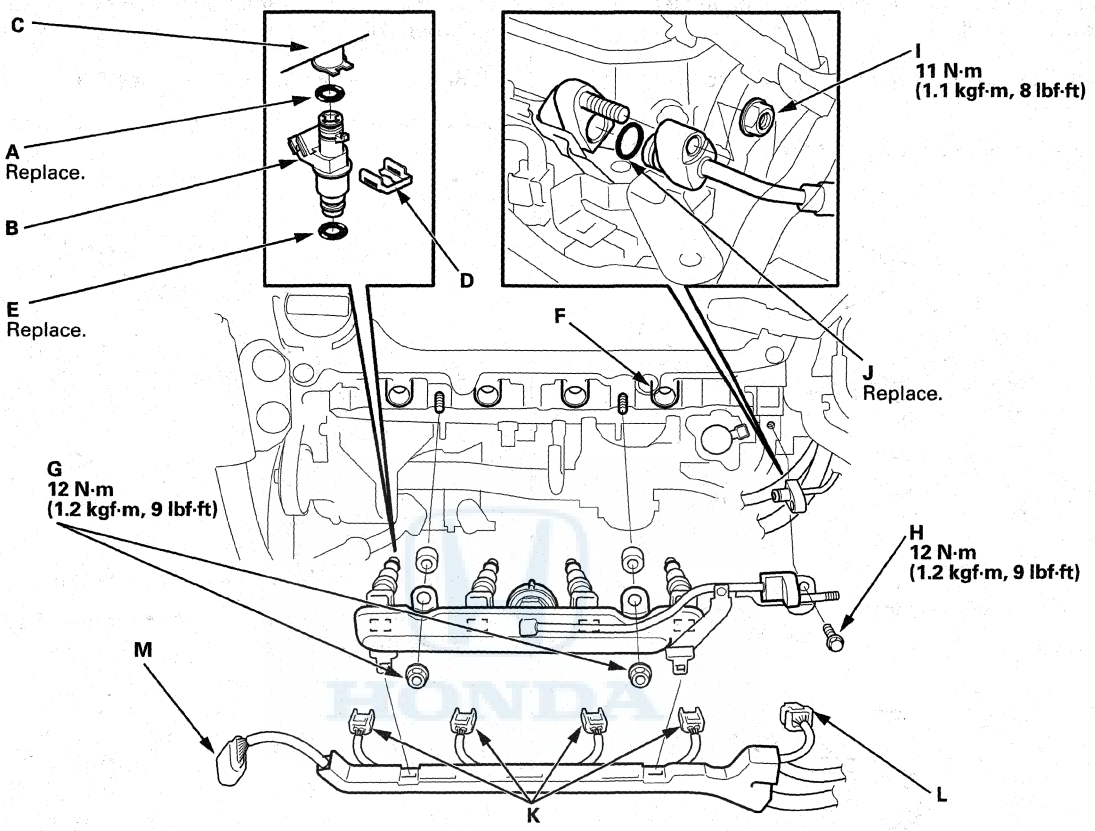
Injector Replacement

1. Relieve the fuel pressure (see page 11-287).
2. Remove the intake manifold/chamber assembly (see page 9-12).
3. Remove the nut (A).



4. Disconnect the injector connectors (B), the rocker arm oil control solenoid connector (C), and the EGR valve connector (D).
5. Remove the fuel rail mounting nuts (E) and the bolt (F) from the fuel rail (G), then remove the injectors and the fuel rail together.
6. Remove the injector clips (H) from the injectors (I).
7. Remove the injectors from the fuel rail.

8. Coat the new O-rings (black) (A) with clean engine oil, then insert the injectors (B) into the fuel rail (C).

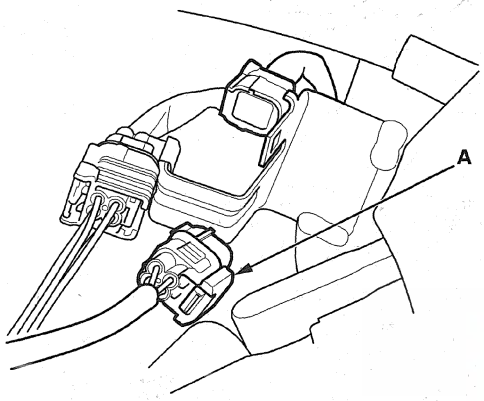


9. Install the injector clips (D).
10. Coat the injector O-rings (brown) (E) with clean engine oil.
11. Install the fuel rail and the injectors in the cylinder head (F).
12. Install the fuel rail mounting nuts (G) and the bolt (H).
13. Install the nut (I) with a new O-ring (J).
14. Connect the injector connectors (K), the rocker arm oil control solenoid connector (L), and the EGR valve connector (M).
15. Install the intake manifold/chamber assembly (see page 9-14).
16. Turn the ignition switch to ON (II), but do not operate the starter. After the fuel pump runs for about 2 seconds, the fuel rail is pressurized. Repeat this two or three times, then check for fuel leaks.

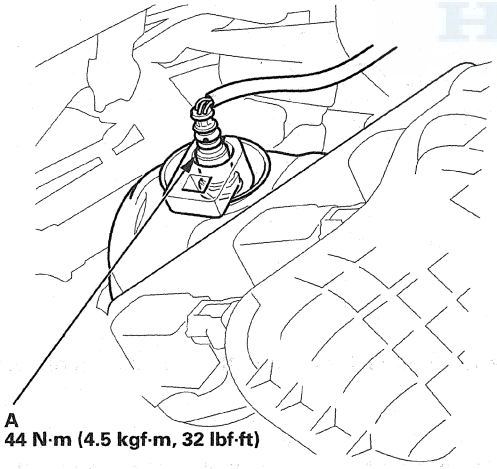
A/F Sensor Replacement

Special Tools Required
O2 Sensor Wrench, Snap-on S6176 or equivalent, commercially available

1. Remove the cowl cover and the under-cowl panel (see page 20-153).
2. Disconnect the A/F sensor connector (A).



3. Remove the A/F sensor (A).

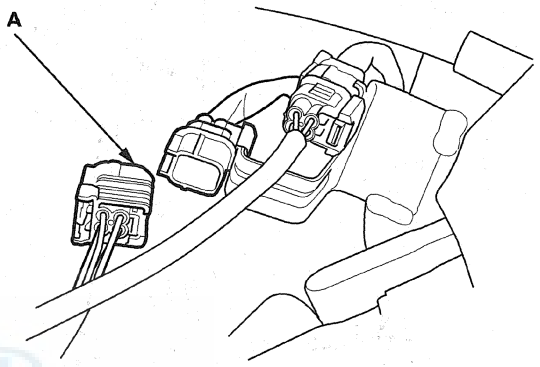


4. Install the parts in the reverse order of removal.

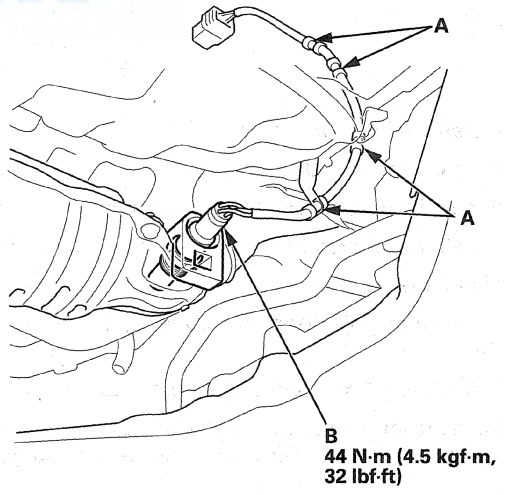
Secondary HO2S Replacement

Special Tools Required
O2 Sensor Wrench, Snap-on S6176 or equivalent, commercially available

1. Remove the air cleaner (see page 9-3).
2. Disconnect the secondary HO2S connector (A).



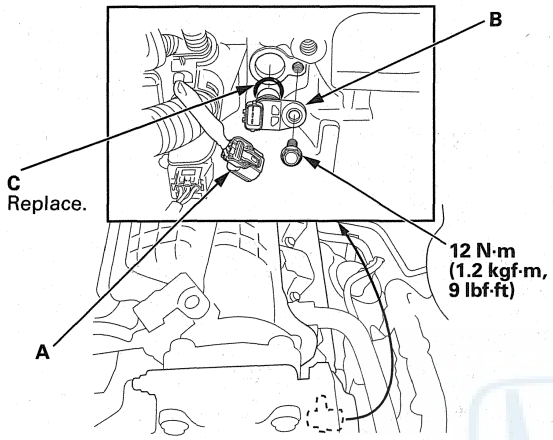
3. Raise the vehicle on a lift (see page 1-10).
4. Remove the wire clips (A), then remove the secondary HO2S (B).



5. Install the parts in the reverse order of removal.

CMP Sensor Replacement

1. Remove the air cleaner (see page 9-3).
2. Remove the cowl cover and the under-cowl panel (see page 20-153).
3. Disconnect the CMP sensor connector (A).

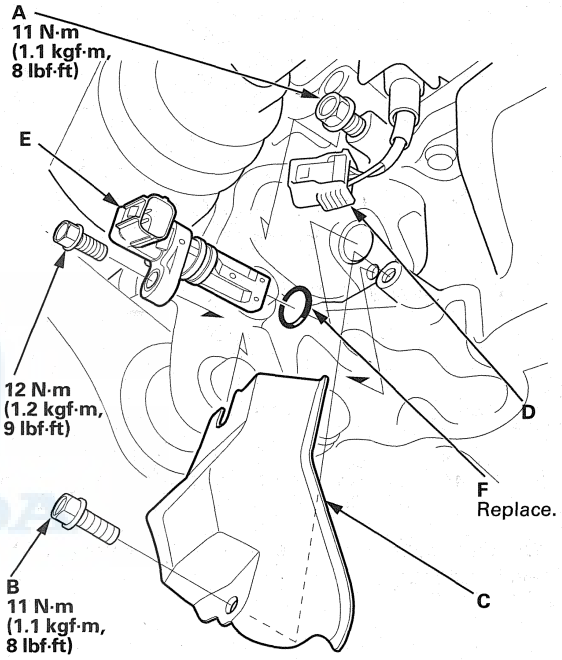


4. Remove the CMP sensor (B).
5. Install the sensor in the reverse order of removal with a new O-ring (C).

CKP Sensor Replacement

1. Raise the vehicle on a lift (see page 1-10).

   NOTE: Make sure the vehicle is level, because engine oil will drip out when you remove the sensor.
2. Remove the splash shield (see page 20-163).
3. Loosen the bolt (A). Remove the bolt (B) and the CKP sensor cover (C).

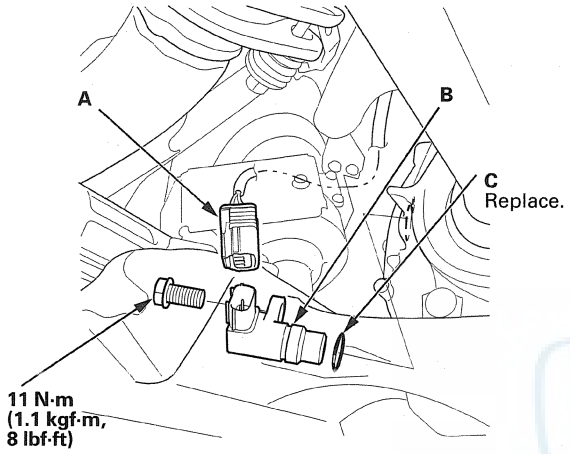


4. Disconnect the CKP sensor connector (D).
5. Remove the CKP sensor (E).
6. Install the parts in the reverse order of removal with a new O-ring (F).
7. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
8. Check the engine oil level, and add more oil if needed.

Output Shaft (Countershaft) Speed Sensor Replacement

M/T

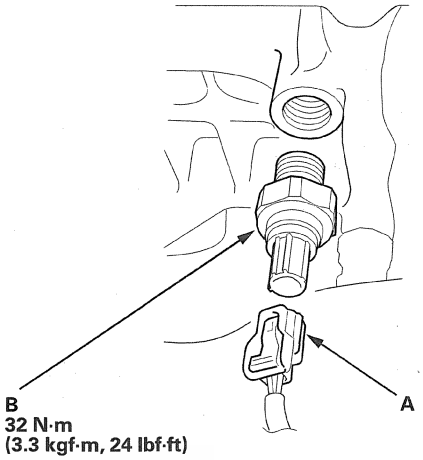
1. Raise the vehicle on a lift (see page 1-10).
2. Remove the splash shield (see page 20-163).
3. Disconnect the output shaft (countershaft) speed sensor connector (A).



4. Remove the output shaft (countershaft) speed sensor (B).
5. Install the parts in the reverse order of removal with a new O-ring (C).

Knock Sensor Replacement

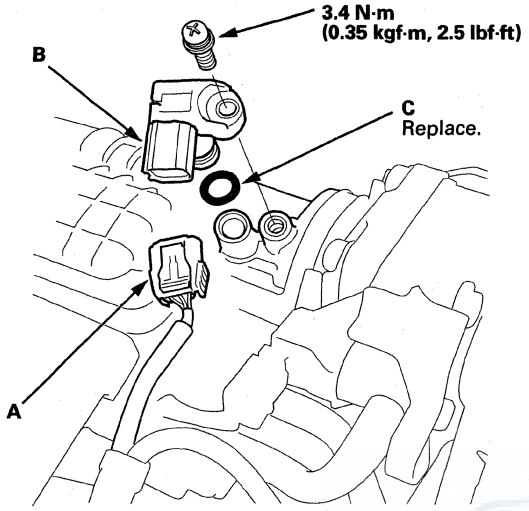
1. Disconnect the knock sensor connector (A).



2. Remove the knock sensor (B).
3. Install the parts in the reverse order of removal.

MAP Sensor Replacement

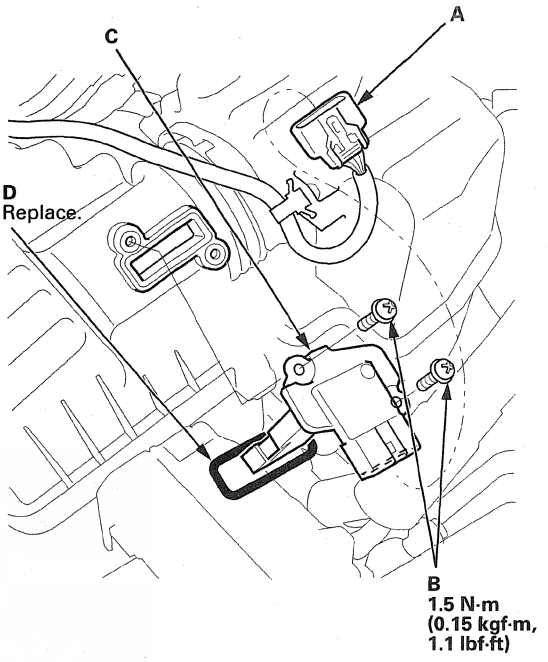
1. Disconnect the MAP sensor connector (A).



2. Remove the MAP sensor (B).
3. Install the parts in the reverse order of removal with a new O-ring (C).

MAF Sensor/IAT Sensor Replacement

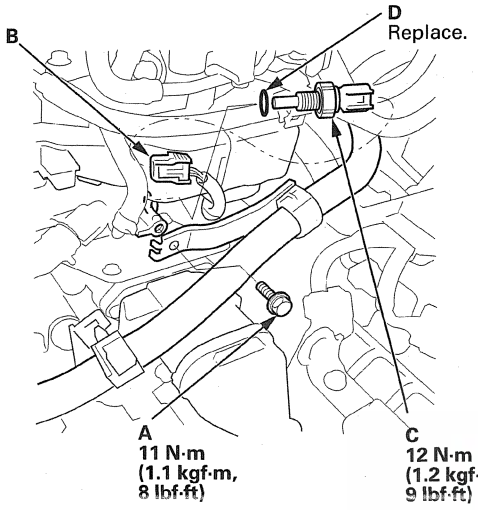
1. Disconnect the MAF sensor/IAT sensor connector (A).



2. Remove the screws (B).
3. Remove the MAF sensor/IAT sensor (C).
4. Install the parts in the reverse order of removal with a new gasket (D).

ECT Sensor 1 Replacement

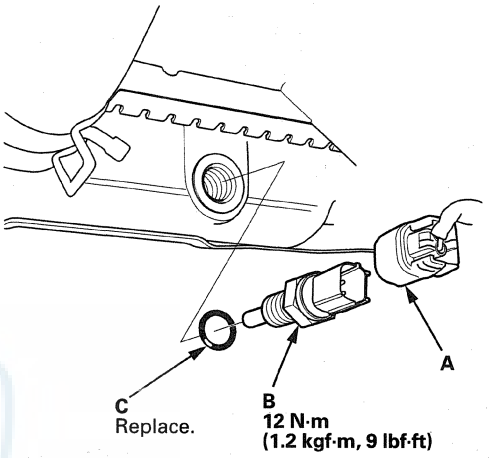
1. Remove the air cleaner (see page 9-3).
2. Remove the bolt (A).



3. Disconnect the ECT sensor 1 connector (B).
4. Remove ECT sensor 1 (C).
5. Install the parts in the reverse order of removal with a new O-ring (D), then refill the radiator with engine coolant (see page 10-8).

ECT Sensor 2 Replacement

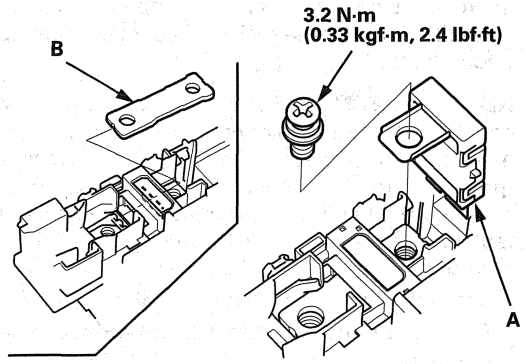
1. Drain the engine coolant (see page 10-8).
2. Raise the vehicle on a lift (see page 1-10).
3. Remove the splash shield (see page 20-163).
4. Disconnect the ECT sensor 2 connector (A), then remove ECT sensor 2 (B).



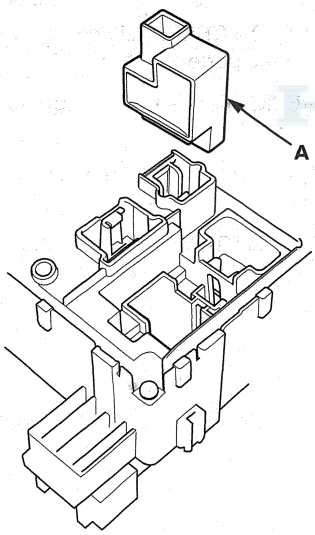
5. Install the parts in the reverse order of removal with a new O-ring (C), then refill the radiator with engine coolant (see page 10-8).

ELD Replacement

1. Remove the under-dash fuse/relay box (see page 22-82).
2. Remove the fuse (A).



3. Remove the joint bar (B).
4. Turn over the under-dash fuse/relay box, then remove the ELD (A).



5. Install the parts in the reverse order of removal.

ECM/PCM Update

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

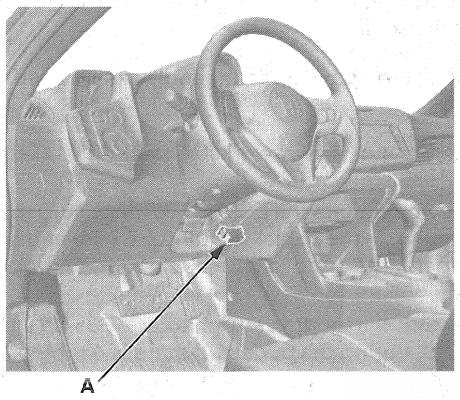
NOTE:

- Make sure the HDS/iN workstation or the MVCI has the latest HDS software version.
- Before you update the ECM/PCM, make sure the 12 volt battery in the vehicle is fully charged, and connect a jumper battery (not a battery charger) to maintain system voltage.
- Never turn the ignition switch to ACCESSORY (I) or to LOCK (0) during the update. If there is a problem with the update, leave the ignition switch turned to ON (II).
- To prevent ECM/PCM damage, do not operate anything electrical (headlights, navigation, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do a ECM/PCM update whenever the ECM/PCM is substituted or replaced.
- You cannot update an ECM/PCM with a program it already has. It will only accept a new program.
- High temperature in the engine compartment might cause the ECM/PCM to become too hot to run the update. If the engine was running before the update, open the hood and cool the engine compartment.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) when you disconnect the HIM from the data link connector (DLC). This will prevent damage to the ECM/PCM.

(cont'd)

ECM/PCM Update (cont'd)

1. Turn the ignition switch to ON (II), but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Make sure the HDS communicates with the ECM/PCM and all other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383). If you are returning from the DLC circuit troubleshooting, skip step 4 and 5, then clean the throttle body after updating the ECM/PCM.
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the HDS screen prompts.

   NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS diagnostic system, then select the update mode, and follow the screen prompts to update the ECM/PCM.
7. If the software in the ECM/PCM is the latest, disconnect the updating tool from the DLC, then go back to the procedure that you were doing. If the software in the ECM/PCM is not the latest, follow the instructions on the screen. If prompted to choose the PGM-FI system or the CVT system, make sure you update both.

   NOTE: If the ECM/PCM update system requires you to cool the ECM/PCM, follow the instructions on screen. If you have a problem during the update procedure (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.), follow these steps to minimize the chance of damaging the ECM/PCM.
   - Leave the ignition switch in ON (II).
   - Connect a jumper battery (do not connect a battery charger).
   - Shut down the updating tool.
   - Disconnect the updating tool from the DLC.
   - Reboot the updating tool.
   - Reconnect the updating tool to the DLC, and try the update procedure again.
8. If the TP POSITION CHECK failed in step 5, clean the throttle body (see page 11-247).
9. Do the ECM/PCM idle learn procedure (see page 11-274).
10. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
11. Select the CVT SYSTEM, then reset the PCM with the HDS.

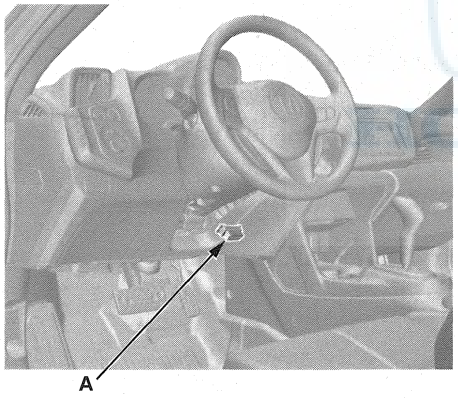
ECM/PCM Replacement

Special Tools Required
- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:
- Make sure the HDS/iN workstation or the MVCI has the latest HDS software version.
- The lifetime points of the Eco guide cannot be carried over to the replacement ECM/PCM.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM and all other vehicle systems. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383). If you are returning from the DLC circuit troubleshooting, skip steps 4 through 7, 18 through 20, and 23 through 24, and do these procedures after replacing the ECM/PCM:
   - Replace the engine oil and the engine oil filter (see page 8-11).
   - Clean the throttle body (see page 11-247).
4. Select the PGM-FI system with the HDS.
5. Select the INSPECTION MENU with the HDS.
6. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts.

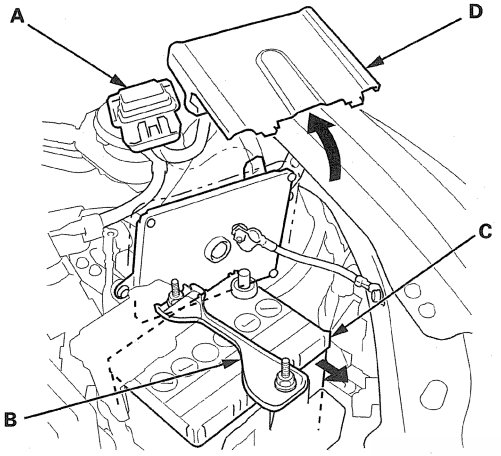
   NOTE: If the TP POSITION CHECK indicates FAILED, continue with this procedure.
7. Select the REPLACE ECM/PCM MENU, then select READ DATA, and follow the screen prompts.

   NOTE:
   - Doing this step copies (READS) the engine oil life data from the original ECM/PCM so you can later download (WRITES) it into the new ECM/PCM.
   - If the READ DATA indicates FAILED, continue with this procedure.
8. Jump the SCS line with the HDS.
9. Turn the ignition switch to LOCK (0).

(cont'd)

ECM/PCM Replacement (cont'd)

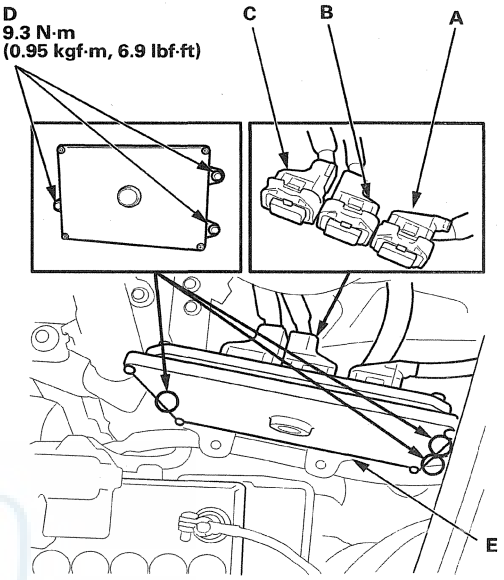
10. Remove auxiliary under-hood fuse/relay box A.



11. Remove the battery hold-down plate (B), then move the battery (C) forward.

12. Remove the ECM/PCM cover (D).

13. Remove the bolts (D).



14. Disconnect ECM/PCM connectors A, B, and C, then remove the ECM/PCM (E).

NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.

15. Install all parts in the reverse order of removal.
16. Turn the ignition switch to ON (II).
17. Manually input the VIN to the ECM/PCM with the HDS.

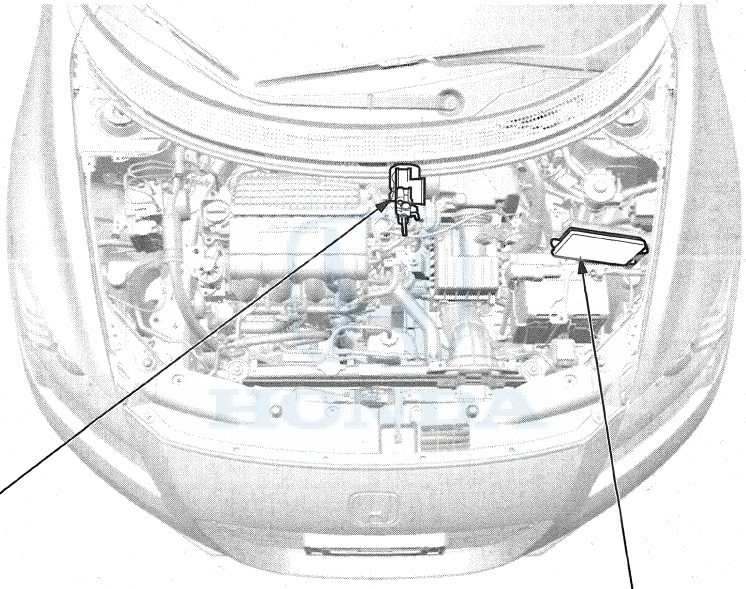
    NOTE: DTC P0630 VIN Not Programmed or Mismatch may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.
18. If the READ DATA (engine oil life) failed in step 7, go to step 21. Otherwise, go to step 19.
19. Select the PGM-FI system with the HDS.
20. Select the REPLACE ECM/PCM MENU, then select WRITE DATA, and follow the screen prompts.

    NOTE: If the WRITE DATA indicates FAILED, continue with this procedure.
21. Select the IMMOBI system with the HDS.
22. Enter the immobilizer ECM/PCM code that you got from the iN, and use the ECM/PCM replacement procedure in the IMMOBI MENU of the HDS; it allows you to start the engine.
23. If the TP POSITION CHECK failed in step 6, clean the throttle body (see page 11-247), then go to step 24.
24. If the READ DATA failed in step 7 or the WRITE DATA failed in step 20, replace the engine oil (see page 8-10), and the engine oil filter (see page 8-11), then go to step 25.
25. Select the PGM-FI system, and reset the ECM/PCM with the HDS.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207).
27. Do the ECM/PCM idle learn procedure (see page 11-274).

    NOTE: If the IMA battery level gauge displays no segments, start the engine, and hold it between 3,500 −4,000 rpm without load (CVT in P or N, M/T in neutral) until the level gauge displays at least half of its segments.
28. Do the CKP pattern clear/CKP pattern learn procedure (see page 11-5).
29. CVT: Do the start clutch control calibration procedure (see page 14-150).

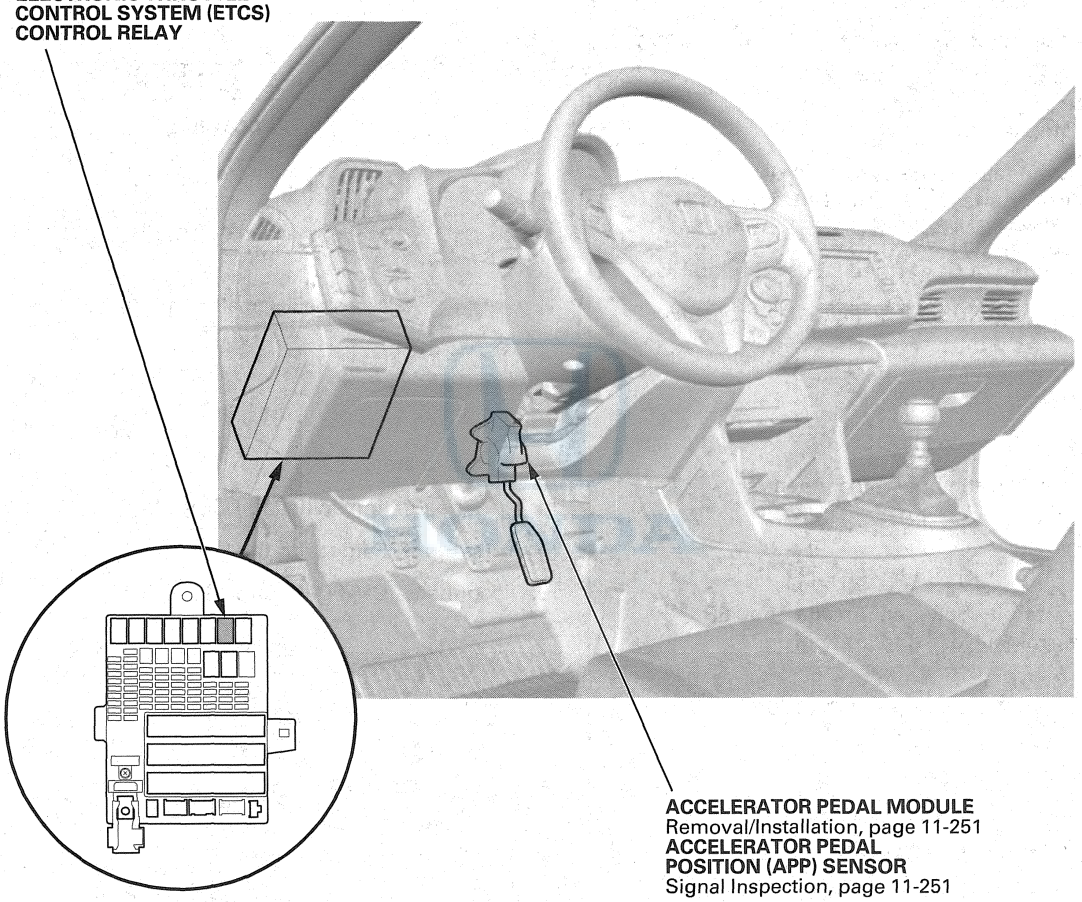
Electronic Throttle Control System

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DTC Troubleshooting

DTC P0122: TP Sensor A Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

   Is there about 0.3 V or less?

   YES–Go to step 4.

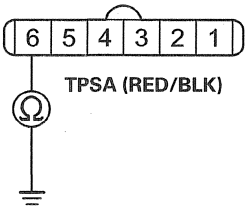
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at TP sensor A and the ECM/PCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0122 and P0222 indicated at the same time?

   YES–Go to step 10.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the throttle body 6P connector.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between throttle body 6P connector terminal No. 6 and body ground.

THROTTLE BODY 6P CONNECTOR



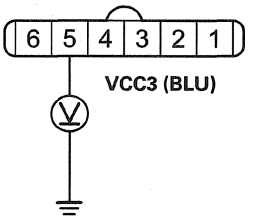
Wire side of female terminals

   Is there continuity?

   YES–Repair a short in the wire between the ECM/PCM (C20) and TP sensor A, then go to step 20.

   NO–Go to step 25.
10. Turn the ignition switch to LOCK (0).
11. Disconnect the throttle body 6P connector.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between throttle body 6P connector terminal No. 5 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

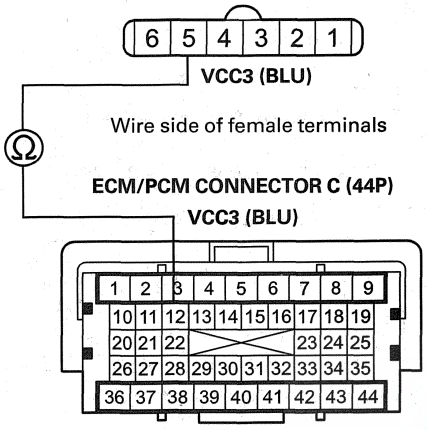
   Is there about 5 V?

   YES–Go to step 18.

   NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector C (44P).

17. Check for continuity between ECM/PCM connector terminal C12 and throttle body 6P connector terminal No. 5.

THROTTLE BODY 6P CONNECTOR



Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (C12) and TP sensor A, then go to step 20.

18. Turn the ignition switch to LOCK (0).
19. Replace the throttle body (see page 11-248).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0122 indicated?

    YES–Check for poor connections or loose terminals at TP sensor A and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0122 indicated?

    YES–Check for poor connections or loose terminals at TP sensor A and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0123: TP Sensor A Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR A in the DATA LIST with the HDS.

   Is there about 4.8 V or more?

   YES–Go to step 4.

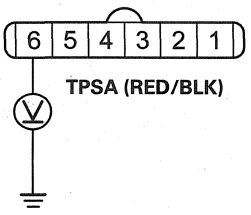
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at TP sensor A and the ECM/PCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0123 and P0223 indicated at the same time?

   YES–Go to step 13.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between throttle body 6P connector terminal No. 6 and body ground.

THROTTLE BODY 6P CONNECTOR



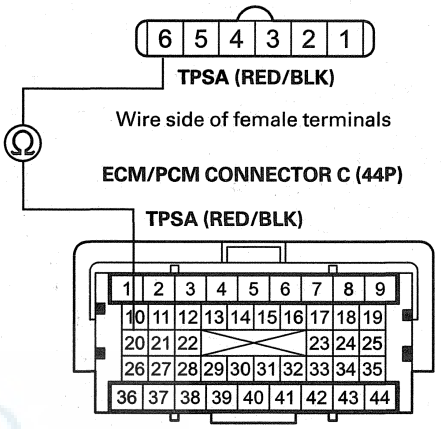
Wire side of female terminals

   Is there about 5 V?

   YES–Go to step 18.

   NO–Go to step 9.
9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector C (44P).
12. Check for continuity between ECM/PCM connector terminal C20 and throttle body 6P connector terminal No. 6.

THROTTLE BODY 6P CONNECTOR



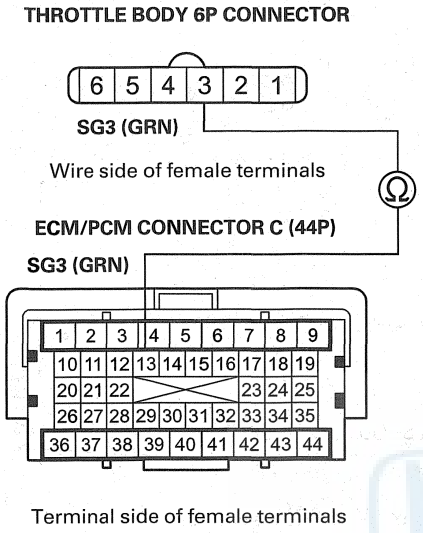
Terminal side of female terminals

   Is there continuity?

   YES–Go to step 25.

   NO–Repair an open in the wire between the ECM/PCM (C20) and TP sensor A, then go to step 20.
13. Turn the ignition switch to LOCK (0).
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector C (44P).

17. Check for continuity between ECM/PCM connector terminal C13 and throttle body 6P connector terminal No. 3.



Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (C13) and TP sensor A, then go to step 20.

18. Turn the ignition switch to LOCK (0).
19. Replace the throttle body (see page 11-248).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0123 indicated?

    YES–Check for poor connections or loose terminals at TP sensor A and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0123 indicated?

    YES–Check for poor connections or loose terminals at TP sensor A and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0222: TP Sensor B Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

   Is there about 0.3 V or less?

   YES–Go to step 4.

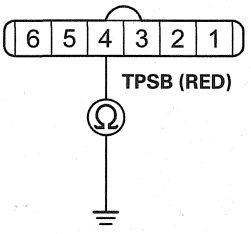
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at TP sensor B and the ECM/PCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0122 and P0222 indicated at the same time?

   YES–Go to step 10.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the throttle body 6P connector.
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between throttle body 6P connector terminal No. 4 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

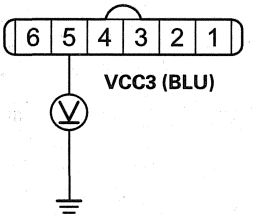
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C21) and TP sensor B, then go to step 18.

NO–Go to step 23.

10. Measure the voltage between throttle body 6P connector terminal No. 5 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

Is there about 5 V?

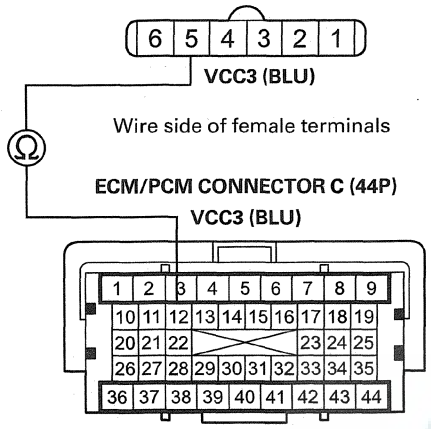
YES–Go to step 16.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (44P).
14. Disconnect the throttle body 6P connector.

15. Check for continuity between ECM/PCM connector terminal C12 and throttle body 6P connector terminal No. 5.

THROTTLE BODY 6P CONNECTOR



Is there continuity?

YES–Go to step 23.

NO–Repair an open in the wire between the ECM/PCM (C12) and TP sensor B, then go to step 18.

16. Turn the ignition switch to LOCK (0).
17. Replace the throttle body (see page 11-248).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0222 indicated?

    YES–Check for poor connections or loose terminals at TP sensor B and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0222 indicated?

    YES–Check for poor connections or loose terminals at TP sensor B and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0223: TP Sensor B Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check TP SENSOR B in the DATA LIST with the HDS.

   Is there about 4.8 V or more?

   YES–Go to step 4.

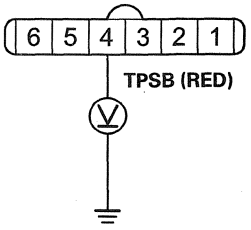
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at TP sensor B and the ECM/PCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0123 and P0223 indicated at the same time?

   YES–Go to step 13.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the throttle body 6P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between throttle body 6P connector terminal No. 4 and body ground.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

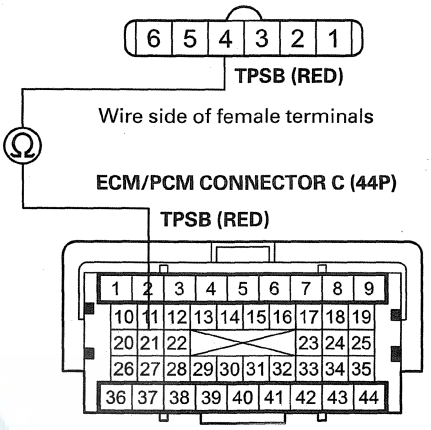
Is there about 5 V?

YES–Go to step 18.

NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector C (44P).
12. Check for continuity between ECM/PCM connector terminal C21 and throttle body 6P connector terminal No. 4.

THROTTLE BODY 6P CONNECTOR



Terminal side of female terminals

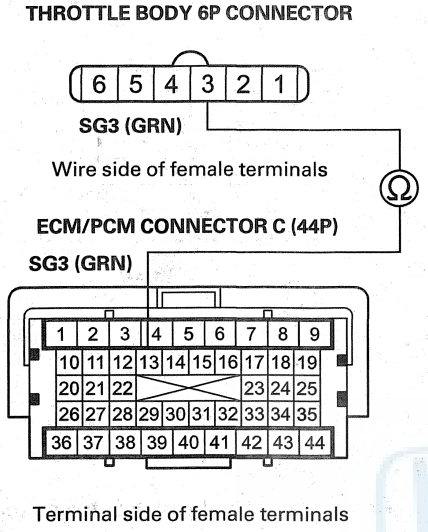
Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (C21) and TP sensor B, then go to step 20.

13. Turn the ignition switch to LOCK (0).
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector C (44P).

17. Check for continuity between ECM/PCM connector terminal C13 and throttle body 6P connector terminal No. 3.



Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (C13) and TP sensor B, then go to step 20.

18. Turn the ignition switch to LOCK (0).
19. Replace the throttle body (see page 11-248).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0223 indicated?

    YES–Check for poor connections or loose terminals at TP sensor B and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0223 indicated?

    YES–Check for poor connections or loose terminals at TP sensor B and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1658: ETCS Control Relay ON Malfunction

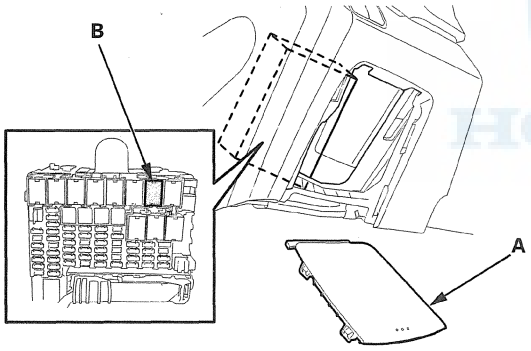
NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Do the ETCS TEST in the INSPECTION MENU with the HDS.

   Is the RELAY circuit OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Open the fuse access panel (A), then remove the ETCS control relay (B) from the under-dash fuse/relay box.



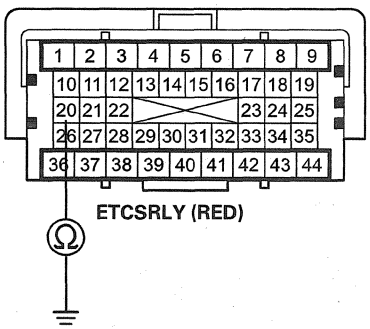
5. Test the ETCS control relay (see page 22-92).

   Is the ETCS control relay OK?

   YES–Go to step 6.

   NO–Replace the ETCS control relay, then go to step 13.
6. Jump the SCS line with the HDS.
7. Disconnect ECM/PCM connector A (44P).
8. Check for continuity between ECM/PCM connector terminal A20 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

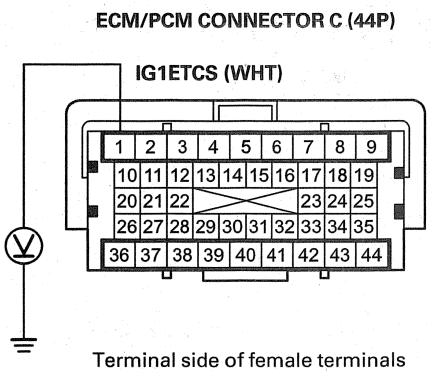
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A20) and the ETCS control relay, then go to step 13.

NO–Go to step 9.

9. Disconnect ECM/PCM connector C (44P).
10. Turn the ignition switch to ON (II).

11. Measure the voltage between ECM/PCM connector terminal C1 and body ground.



Terminal side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the ECM/PCM (C1) and the ETCS control relay, then go to step 12.

NO–Go to step 18.

12. Turn the ignition switch to LOCK (0).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1658 indicated?

    YES–Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

18. Turn the ignition switch to LOCK (0).
19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1658 indicated?

    YES–Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1659: ETCS Control Relay OFF Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1659 indicated?

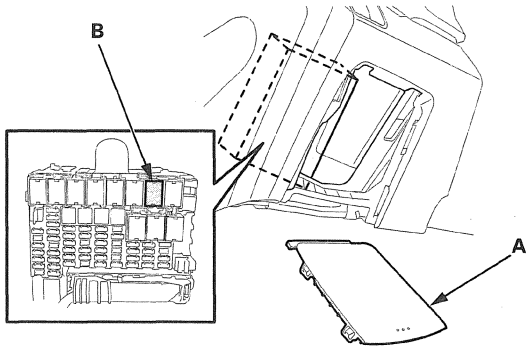
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM.■
4. Turn the ignition switch to LOCK (0).
5. Check the No. B52 DBW (ETCS) (15 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 6.

   NO–Go to step 19.
6. Open the fuse access panel (A), then remove the ETCS control relay (B) from the under-dash fuse/relay box.



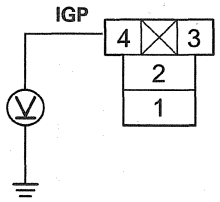
7. Test the ETCS control relay (see page 22-92).

   Is the ETCS control relay OK?

   YES–Go to step 8.

   NO–Replace the ETCS control relay, then go to step 25.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between ETCS control relay 4P connector terminal No. 4 and body ground.

ETCS CONTROL RELAY 4P CONNECTOR



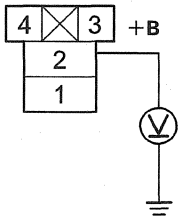
Terminal side of female terminals

   Is there battery voltage?

   YES–Go to step 10.

   NO–Replace the under-dash fuse/relay box, then go to step 24.
10. Measure the voltage between ETCS control relay 4P connector terminal No. 2 and body ground.

ETCS CONTROL RELAY 4P CONNECTOR



Terminal side of female terminals

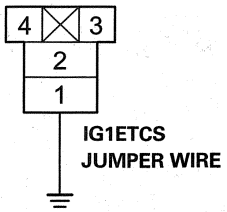
   Is there battery voltage?

   YES–Go to step 11.

   NO–Replace the under-dash fuse/relay box, then go to step 24.
11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector C (44P).

14. Connect ETCS control relay 4P connector terminal No. 1 to body ground with a jumper wire.

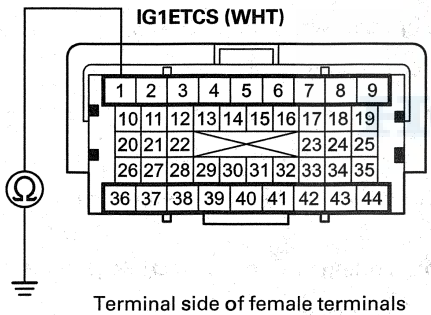
ETCS CONTROL RELAY 4P CONNECTOR



Terminal side of female terminals

15. Check for continuity between ECM/PCM connector terminal C1 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

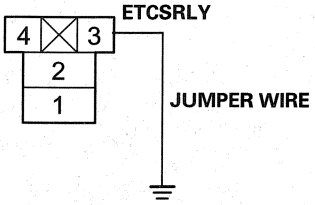
YES–Go to step 16.

NO–Repair an open in the wire between the ECM/PCM (C1) and the ETCS control relay, then go to step 25.

16. Disconnect ECM/PCM connector A (44P).

17. Connect ETCS control relay 4P connector terminal No. 3 to body ground with the jumper wire.

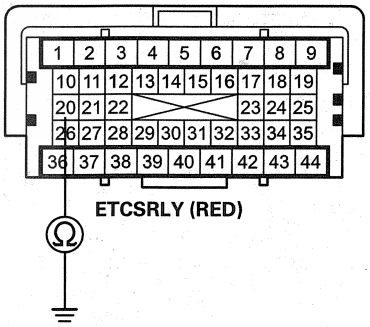
ETCS CONTROL RELAY 4P CONNECTOR



Terminal side of female terminals

18. Check for continuity between ECM/PCM connector terminal A20 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

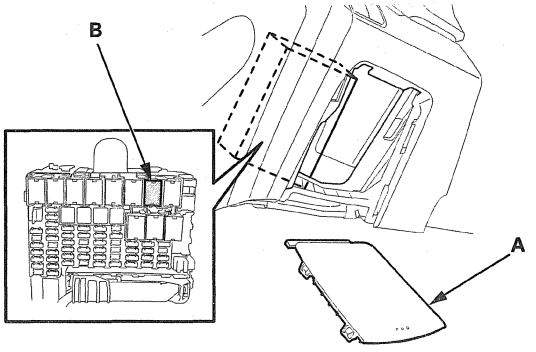
YES–Go to step 30.

NO–Repair an open in the wire between the ECM/PCM (A20) and the ETCS control relay, then go to step 25.

(cont'd)

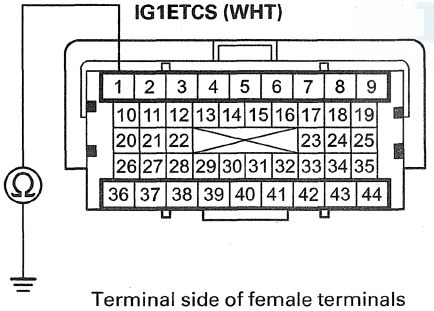
DTC Troubleshooting (cont'd)

19. Open the fuse access panel (A), then remove the ETCS control relay (B) from the under-dash fuse/relay box.



20. Jump the SCS line with the HDS.
21. Disconnect ECM/PCM connector C (44P).
22. Check for continuity between ECM/PCM connector terminal C1 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

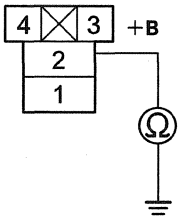
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C1) and the ETCS control relay. Also replace the No. B52 DBW (ETCS) (15 A) fuse, then go to step 25.

NO–Go to step 23.

23. Check for continuity between ETCS control relay 4P connector terminal No. 2 and body ground.

ETCS CONTROL RELAY 4P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Replace the under-dash fuse/relay box, then go to step 25.

NO–Go to step 30.

24. Turn the ignition switch to LOCK (0).
25. Reconnect all connectors.
26. Turn the ignition switch to ON (II).
27. Reset the ECM/PCM with the HDS.
28. Do the ECM/PCM idle learn procedure (see page 11-274).
29. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1659 indicated?

YES–Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1659 indicated?

    YES–Check for poor connections or loose terminals at the ETCS control relay and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P1683: Throttle Valve Default Position Spring Performance Problem

⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch to LOCK (0), and wait 10 seconds.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1683 indicated?

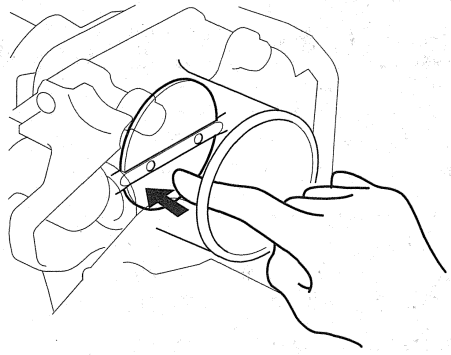
   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM.■
7. Turn the ignition switch to LOCK (0).
8. Remove the air cleaner from the throttle body (see page 9-3).

(cont'd)

DTC Troubleshooting (cont'd)

9. Push the throttle valve closed as shown.



10. Release the throttle valve.

    Does the throttle valve return?

    YES–Clean the throttle body (see page 11-247), then go to step 12.

    NO–Go to step 11.

11. Replace the throttle body (see page 11-248).
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see page 11-274).
15. Turn the ignition switch to LOCK (0), and wait 10 seconds.
16. Turn the ignition switch to ON (II).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1683 indicated?

    YES–If the throttle body was cleaned, go to step 11. If the throttle body was replaced, check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P1684: Throttle Valve Return Spring Performance Problem

⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Turn the ignition switch to LOCK (0), and wait 10 seconds.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

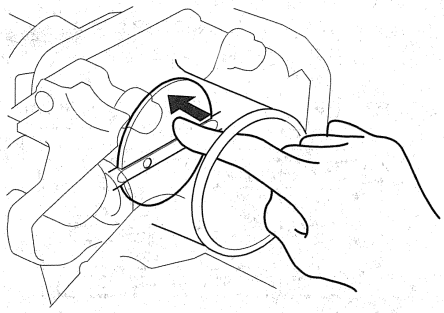
   Is DTC P1684 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM.■

7. Turn the ignition switch to LOCK (0).
8. Remove the air cleaner from the throttle body (see page 9-3).

9. Push the throttle valve open as shown.



10. Release the throttle valve.

    Does the throttle valve return?

    YES–Clean the throttle body (see page 11-247), then go to step 12.

    NO–Go to step 11.

11. Replace the throttle body (see page 11-248).
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see page 11-274).
15. Turn the ignition switch to LOCK (0), and wait 10 seconds.
16. Turn the ignition switch to ON (II).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1684 indicated?

    YES–If the throttle body was cleaned, go to step 11. If the throttle body was replaced, check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2101: ETCS Malfunction

⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Reset the ECM with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES–Go to step 7.

    NO–Go to step 5.

5. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - APP SENSOR A
6. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES–Go to step 7.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see page 11-247).■

(cont'd)

DTC Troubleshooting (cont'd)

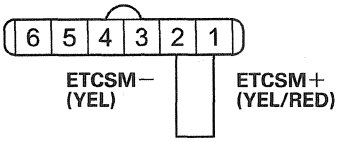
7. Turn the ignition switch to LOCK (0).
8. Remove the air cleaner (see page 9-3).
9. Turn the ignition switch to ON (II).
10. Clear the DTC with the HDS.
11. Do the ETCS TEST in the INSPECTION MENU with the HDS.
12. Visually check the throttle valve operation.

    Does the throttle valve operate smoothly?

    YES–Clean the throttle body (see page 11-247), then go to step 22 and recheck. If DTC P2101 is indicated, go to step 19.

    NO–Go to step 13.
13. Turn the ignition switch to LOCK (0).
14. Disconnect the throttle body 6P connector.
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector C (44P).
17. Connect throttle body 6P connector terminals No. 1 and No. 2 with a jumper wire.

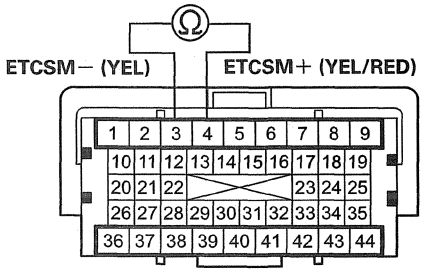
THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

18. Check for continuity between ECM/PCM connector terminals C3 and C4.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wires between the ECM/PCM (C3, C4) and the throttle body, then go to step 21.

19. Turn the ignition switch to LOCK (0).
20. Replace the throttle body (see page 11-248).
21. Reconnect all connectors.
22. Turn the ignition switch to ON (II).
23. Reset the ECM/PCM with the HDS.
24. Do the ECM/PCM idle learn procedure (see page 11-274).
25. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - APP SENSOR A
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see page 11-247), and go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Test-drive the vehicle for several minutes in the range of these recorded freeze data parameters:
    - ENGINE SPEED
    - VEHICLE SPEED
    - APP SENSOR A
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2101 indicated?

    YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 28. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2118: Throttle Actuator Current Range/Performance Problem

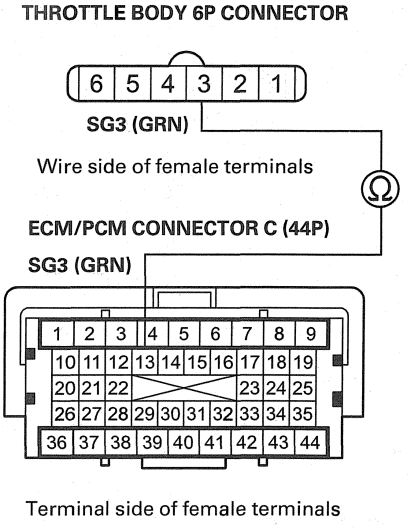
NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Slowly press the accelerator pedal to the floor.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2118 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect the throttle body 6P connector.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between ECM/PCM connector terminal C13 and throttle body 6P connector terminal No. 3.



Is there continuity?

YES–Go to step 10.

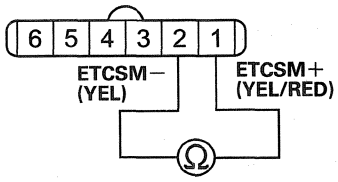
NO–Repair an open in the wire between the ECM/PCM (C13) and the throttle body, then go to step 14.

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between throttle body 6P connector terminals No. 1 and No. 2.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

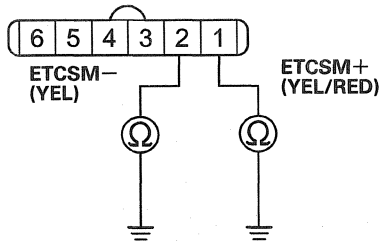
Is there continuity?

YES–Repair a short in the wires between throttle body 6P connector terminals No. 2 (ETCSM– line) and No. 1 (ETCSM+ line), then go to step 14.

NO–Go to step 11.

11. Check for continuity between body ground and throttle body 6P connector terminals No. 1 and No. 2 individually.

THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

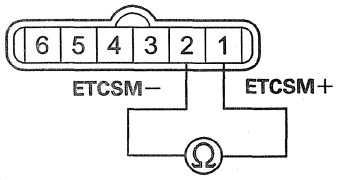
Is there continuity?

YES–Repair a short in the wire between the throttle body 6P connector and body ground, then go to step 14.

NO–Go to step 12.

12. At the throttle body side, measure the resistance between throttle body 6P connector terminals No. 1 and No. 2 with the throttle fully closed.

THROTTLE BODY 6P CONNECTOR



Terminal side of male terminals

Is there about 1.0 Ω or less?

YES–Go to step 13.

NO–Go to step 22.

13. Replace the throttle body (see page 11-248).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Turn the ignition switch to LOCK (0).
19. Turn the ignition switch to ON (II).
20. Slowly press the accelerator pedal to the floor.
21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2118 indicated?

YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

22. Reconnect all connectors.
23. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
24. Turn the ignition switch to LOCK (0).
25. Turn the ignition switch to ON (II).
26. Slowly press the accelerator pedal to the floor.
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2118 indicated?

    YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 24. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2122: APP Sensor A (TP Sensor D) Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

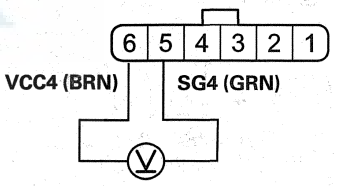
1. Turn the ignition switch to ON (II).
2. Check APP SENSOR A in the DATA LIST with the HDS.

   Is there about 0.2 V or less?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor A and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between APP sensor 6P connector terminals No. 5 and No. 6.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Go to step 7.

NO–Go to step 17.

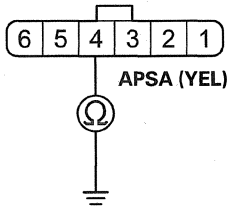
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between APP sensor 6P connector terminal No. 4 and body ground.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

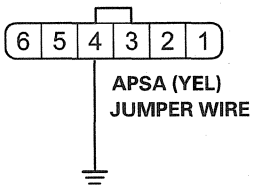
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A17) and APP sensor A, then go to step 24.

NO–Go to step 11.

11. Connect APP sensor 6P connector terminal No. 4 to body ground with a jumper wire.

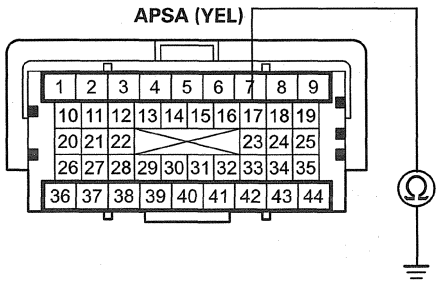
APP SENSOR 6P CONNECTOR



Wire side of female terminals

12. Check for continuity between ECM/PCM connector terminal A17 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

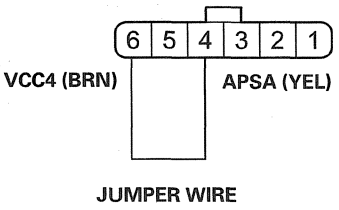
YES–Go to step 13.

NO–Repair an open in the wire between the ECM/PCM (A17) and APP sensor A, then go to step 24.

13. Reconnect ECM/PCM connector A (44P).

14. Connect APP sensor 6P connector terminals No. 4 and No. 6 with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

15. Turn the ignition switch to ON (II).

16. Check APP SENSOR A in the DATA LIST with the HDS.

Is there about 0.2 V or less?

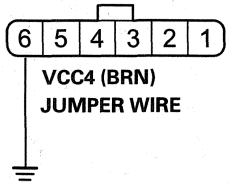
YES–Go to step 29.

NO–Go to step 22.

17. Turn the ignition switch to LOCK (0).

18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector A (44P).
20. Connect APP sensor 6P connector terminal No. 6 to body ground with a jumper wire.

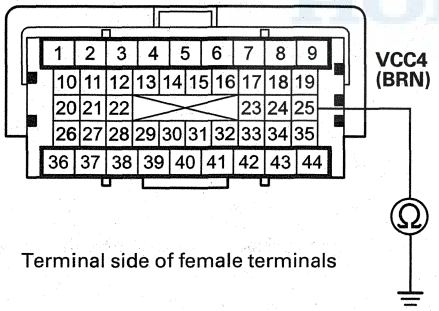
APP SENSOR 6P CONNECTOR



Wire side of female terminals

21. Check for continuity between ECM/PCM connector terminal A25 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 29.

NO–Repair an open in the wire between the ECM/PCM (A25) and APP sensor A, then go to step 24.

22. Turn the ignition switch to LOCK (0).
23. Replace the accelerator pedal module (see page 11-251).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2122 indicated?

    YES–Check for poor connections or loose terminals at APP sensor A and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
29. Turn the ignition switch to LOCK (0).
30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2122 indicated?

    YES–Check for poor connections or loose terminals at APP sensor A and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P2123: APP Sensor A (TP Sensor D) Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

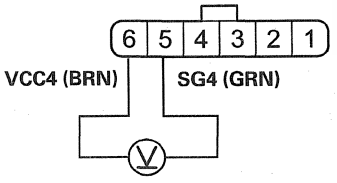
1. Turn the ignition switch to ON (II).
2. Check APP SENSOR A in the DATA LIST with the HDS.

   Is there about 4.9 V or more?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor A and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between APP sensor 6P connector terminals No. 5 and No. 6.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

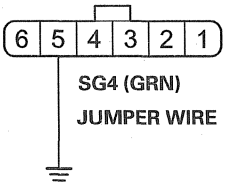
Is there about 5 V?

YES–Go to step 12.

NO–Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).
10. Connect APP sensor 6P connector terminal No. 5 to body ground with a jumper wire.

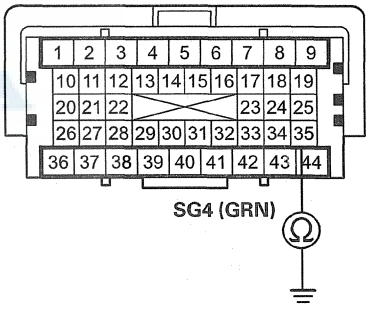
APP SENSOR 6P CONNECTOR



Wire side of female terminals

11. Check for continuity between ECM/PCM connector terminal A35 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the ECM/PCM (A35) and APP sensor A, then go to step 14.

12. Turn the ignition switch to LOCK (0).
13. Replace the accelerator pedal module (see page 11-251).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2123 indicated?

    YES–Check for poor connections or loose terminals at APP sensor A and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2123 indicated?

    YES–Check for poor connections or loose terminals at APP sensor A and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2127: APP Sensor B (TP Sensor E) Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

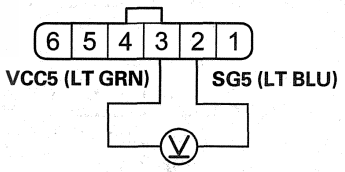
1. Turn the ignition switch to ON (II).
2. Check APP SENSOR B in the DATA LIST with the HDS.

   Is there about 0.2 V or less?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor B and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between APP sensor 6P connector terminals No. 2 and No. 3.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Go to step 7.

NO–Go to step 17.

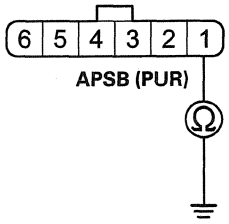
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between APP sensor 6P connector terminal No. 1 and body ground.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

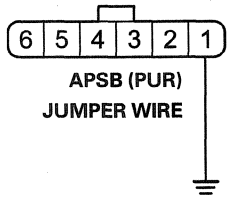
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A18) and APP sensor B, then go to step 24.

NO–Go to step 11.

11. Connect APP sensor 6P connector terminal No. 1 to body ground with a jumper wire.

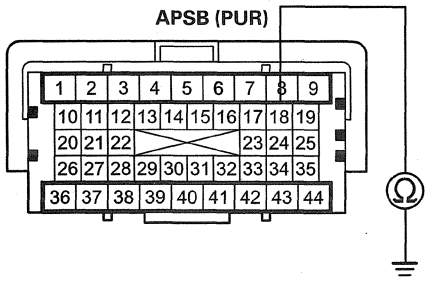
APP SENSOR 6P CONNECTOR



Wire side of female terminals

12. Check for continuity between ECM/PCM connector terminal A18 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

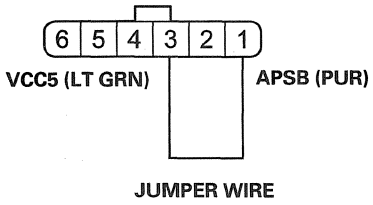
YES–Go to step 13.

NO–Repair an open in the wire between the ECM/PCM (A18) and APP sensor B, then go to step 24.

13. Reconnect ECM/PCM connector A (44P).

14. Connect APP sensor 6P connector terminals No. 1 and No. 3 with a jumper wire.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

15. Turn the ignition switch to ON (II).

16. Check APP SENSOR B in the DATA LIST with the HDS.

Is there about 0.2 V or less?

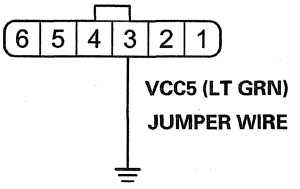
YES–Go to step 29.

NO–Go to step 22.

17. Turn the ignition switch to LOCK (0).

18. Jump the SCS line with the HDS.
19. Disconnect ECM/PCM connector A (44P).
20. Connect APP sensor 6P connector terminal No. 3 to body ground with a jumper wire.

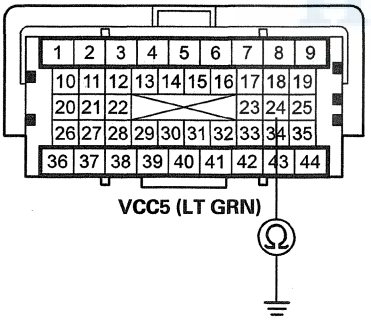
APP SENSOR 6P CONNECTOR



Wire side of female terminals

21. Check for continuity between ECM/PCM connector terminal A24 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 30.

NO–Repair an open in the wire between the ECM/PCM (A24) and APP sensor B, then go to step 24.

22. Turn the ignition switch to LOCK (0).
23. Replace the accelerator pedal module (see page 11-251).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2127 indicated?

    YES–Check for poor connections or loose terminals at APP sensor B and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
29. Turn the ignition switch to LOCK (0).
30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2127 indicated?

    YES–Check for poor connections or loose terminals at APP sensor B and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P2128: APP Sensor B (TP Sensor E) Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

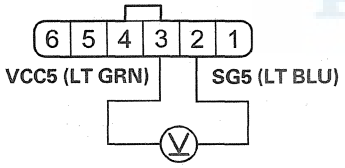
1. Turn the ignition switch to ON (II).
2. Check APP SENSOR B in the DATA LIST with the HDS.

   Is there about 4.0 V or more?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at APP sensor B and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the APP sensor 6P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between APP sensor 6P connector terminals No. 2 and No. 3.

APP SENSOR 6P CONNECTOR



Wire side of female terminals

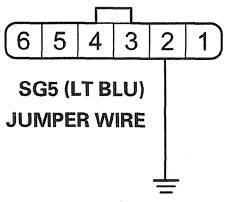
Is there about 5 V?

YES–Go to step 12.

NO–Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).
10. Connect APP sensor 6P connector terminal No. 2 to body ground with a jumper wire.

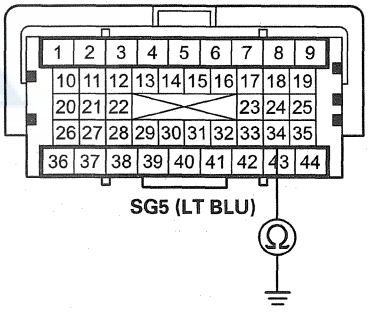
APP SENSOR 6P CONNECTOR



Wire side of female terminals

11. Check for continuity between ECM/PCM connector terminal A34 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the ECM/PCM (A34) and APP sensor B, then go to step 14.

12. Turn the ignition switch to LOCK (0).
13. Replace the accelerator pedal module (see page 11-251).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2128 indicated?

    YES–Check for poor connections or loose terminals at APP sensor B and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
19. Reconnect all connectors.
20. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2128 indicated?

    YES–Check for poor connections or loose terminals at APP sensor B and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2135: TP Sensor A/B Incorrect Voltage Correlation

⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Do the ETCS TEST in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2135 indicated?

    YES–Go to step 5.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Remove the air cleaner from the throttle body (see page 9-3).
7. Turn the ignition switch to ON (II).
8. Clear the DTC with the HDS.
9. Visually check the throttle valve operation.

    Does the valve temporarily move to its fully closed position?

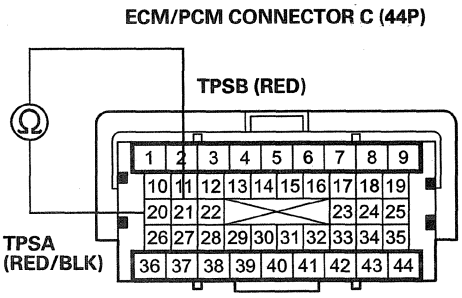
    YES–Go to step 16.

    NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector C (44P).

(cont'd)

DTC Troubleshooting (cont'd)

13. Check for continuity between ECM/PCM connector terminals C20 and C21.



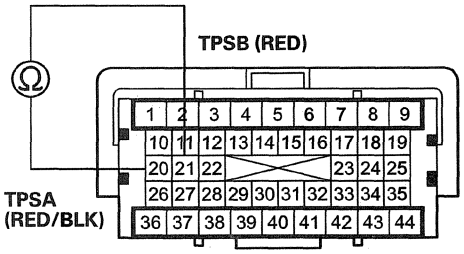
Terminal side of female terminals

Is there continuity?

YES–Go to step 14.

NO–Go to step 23.

14. Disconnect the throttle body 6P connector.
15. Check for continuity between ECM/PCM connector terminals C20 and C21.



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM connector terminals C20 (TPSA line) and C21 (TPSB line), then go to step 18.

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Replace the throttle body (see page 11-248).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2135 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and the throttle body, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2135 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and the throttle body. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2138: APP Sensor A/B (TP Sensor D/E) Incorrect Voltage Correlation

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Press the accelerator pedal to the floor.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2138 indicated?

   YES–Go to step 5.

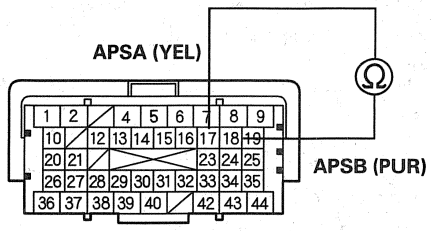
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the APP sensor and the ECM/PCM.■
5. Check APP SENSOR A and APP SENSOR B in the DATA LIST with the HDS.

   Are they the same voltage?

   YES–Go to step 6.

   NO–Go to step 12.
6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (44P).
9. Check for continuity between ECM/PCM connector terminals A17 and A18.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

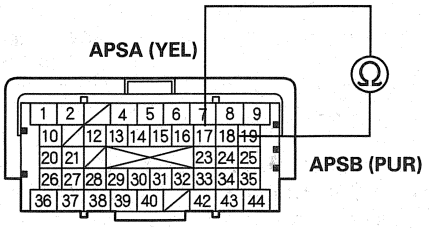
Is there continuity?

YES–Go to step 10.

NO–Go to step 22.

10. Disconnect the APP sensor 6P connector.
11. Check for continuity between ECM/PCM connector terminals A17 and A18.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wires between ECM/PCM connector terminals A17 (APSA line) and A18 (APSB line), then go to step 14.

NO–Go to step 13.

(cont'd)

DTC Troubleshooting (cont'd)

12. Turn the ignition switch to LOCK (0).
13. Replace the accelerator pedal module (see page 11-251).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Reset the ECM/PCM with the HDS.
17. Do the ECM/PCM idle learn procedure (see page 11-274).
18. Turn the ignition switch to LOCK (0).
19. Turn the ignition switch to ON (II).
20. Press the accelerator pedal to the floor.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2138 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and APP sensor A/B, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
22. Reconnect all connectors.
23. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
24. Turn the ignition switch to LOCK (0).
25. Turn the ignition switch to ON (II).
26. Press the accelerator pedal to the floor.
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2138 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and APP sensor A/B. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 23. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2176: Throttle Actuator Control System Idle Position Not Learned

⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P2135 is stored at the same time as DTC P2176, troubleshoot DTC P2135 first, then recheck for DTC P2176.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II), and wait 10 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P2176 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see page 11-247).■
6. Turn the ignition switch to LOCK (0).
7. Remove the air cleaner from the throttle body (see page 9-3).
8. Turn the ignition switch to ON (II).
9. Clear the DTC with the HDS.
10. Visually check the throttle valve operation while doing the ETCS TEST in the INSPECTION MENU with the HDS.

    Does the throttle valve move to its fully closed position?

    YES–Go to step 11.

    NO–Go to step 12.

11. Check for sludge or carbon on the throttle valve.

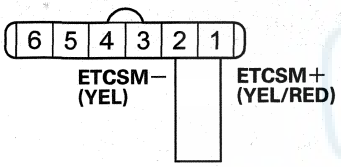
Is there sludge or carbon on the throttle valve?

YES–Clean the throttle body (see page 11-247), then go to step 21.

NO–Go to step 18.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the throttle body 6P connector.
14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector C (44P).
16. Connect throttle body 6P connector terminals No. 1 and No. 2 with a jumper wire.

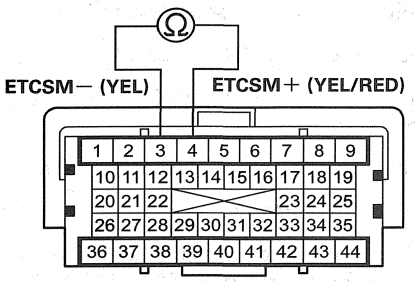
THROTTLE BODY 6P CONNECTOR



Wire side of female terminals

17. Check for continuity between ECM/PCM connector terminals C3 and C4.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wires between the ECM/PCM (C3, C4) and the throttle body, then go to step 20.

18. Turn the ignition switch to LOCK (0).
19. Replace the throttle body (see page 11-248).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Turn the ignition switch to LOCK (0).
25. Turn the ignition switch to ON (II), and wait 10 seconds.
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2176 indicated?

YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then clean the throttle body (see page 11-247), and go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

27. Reconnect all connectors.
28. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
29. Turn the ignition switch to LOCK (0).
30. Turn the ignition switch to ON (II), and wait 10 seconds.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2176 indicated?

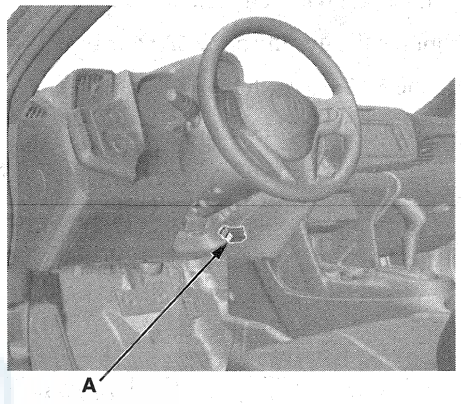
    YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

Throttle Body Test

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check the REL TP SENSOR in the DATA LIST with the HDS. The reading should be below 2.46 deg. If it is not, clean the throttle body (see page 11-247).

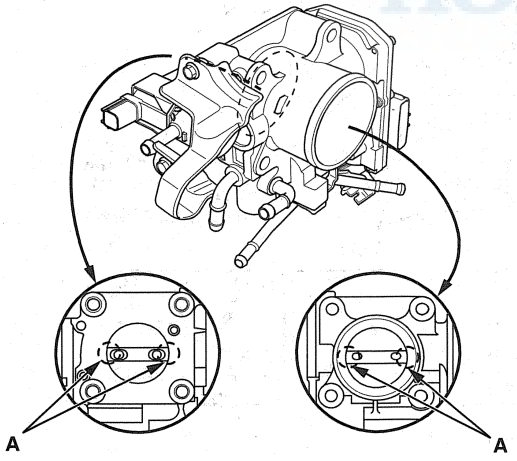
Throttle Body Cleaning

⚠CAUTION

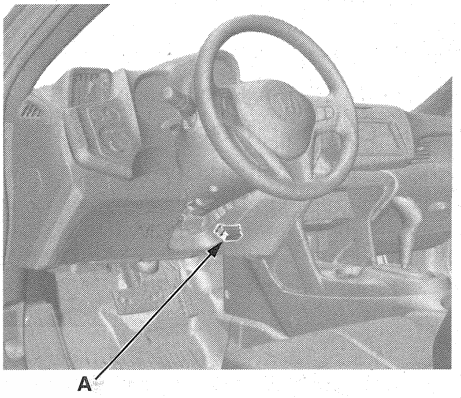
Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

1. Make sure the ignition switch is turned to LOCK (0).
2. Check for damage to the air cleaner. If the air cleaner is damaged, replace it (see page 9-3).
3. Remove the throttle body (see page 11-248).
4. Clean off the carbon from the throttle valve and inside the throttle body with a paper towel soaked in throttle plate cleaner.

   NOTE:
   - Always remove the throttle body to clean it.
   - Be careful not to pinch your fingers.
   - To avoid removing the molybdenum coating, do not clean the bearing area of the throttle shaft (A).
   - Do not spray throttle plate cleaner directly on the throttle body.
   - Use Honda genuine throttle plate cleaner.



5. Install the throttle body (see page 11-248).
6. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



7. Turn the ignition switch to ON (II).
8. Reset the ECM/PCM with the HDS.
9. Select the ETCS TEST in the INSPECTION MENU with the HDS.
10. Select TP POSITION CHECK, then clear the throttle position (TP) learned value.
11. Turn the ignition switch to LOCK (0).
12. Turn the ignition switch to ON (II), and wait 2 seconds without pressing the accelerator pedal.
13. Do the ECM/PCM idle learn procedure (see page 11-274).

Electronic Throttle Control System

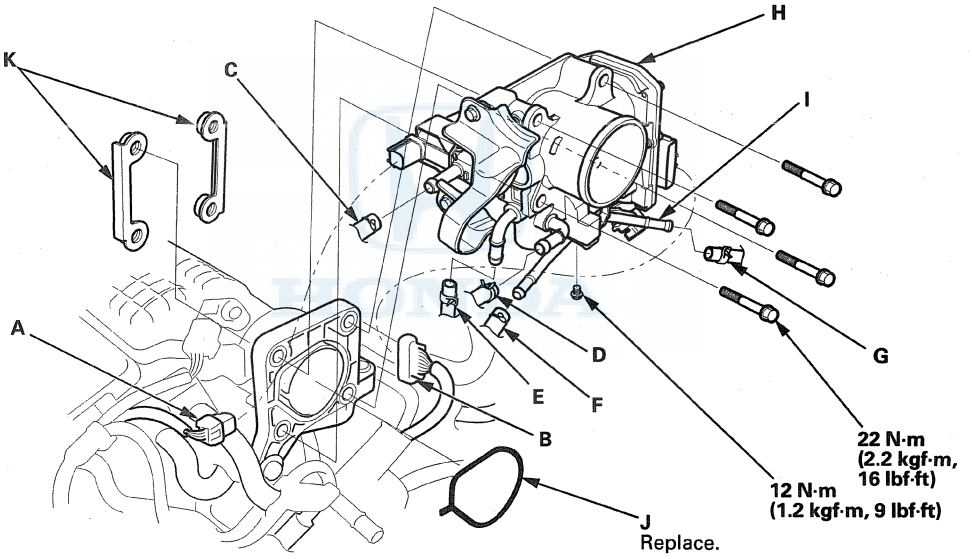
Throttle Body Removal/Installation

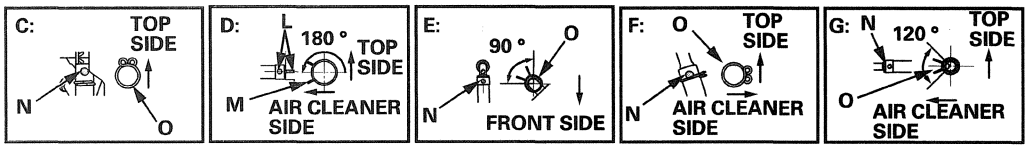
⚠CAUTION

Do not insert your fingers into the installed throttle body when you turn the ignition switch to ON (II) or while the ignition switch is in ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: If you are replacing or cleaning the throttle body, start at step 1. If you are removing the throttle body temporarily, begin at step 4.

1. Connect the HDS to the DLC while the engine is stopped.
2. Select the INSPECTION MENU on the HDS.
3. Do the TP POSITION CHECK in the ETCS TEST.
4. Turn the ignition switch to LOCK (0).
5. Remove the air cleaner (see page 9-3).
6. Disconnect the EVAP canister purge valve connector (A).

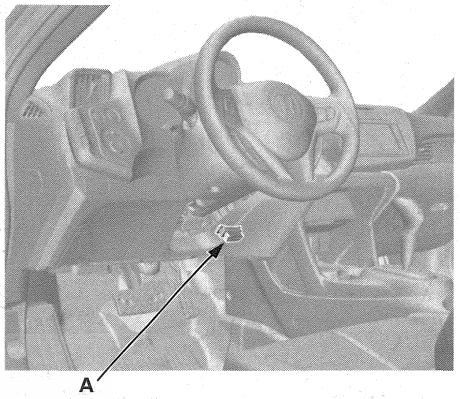




7. Disconnect the throttle body connector (B), then disconnect the EVAP canister purge valve hose (C).
8. Disconnect and plug the water bypass hoses (D, E).
9. Disconnect the purge hoses (F, G).
10. Remove the throttle body (H).
11. Remove the purge pipe (I).
12. Install the parts in the reverse order of removal with a new gasket (J), then refill the radiator with engine coolant (see page 10-8).

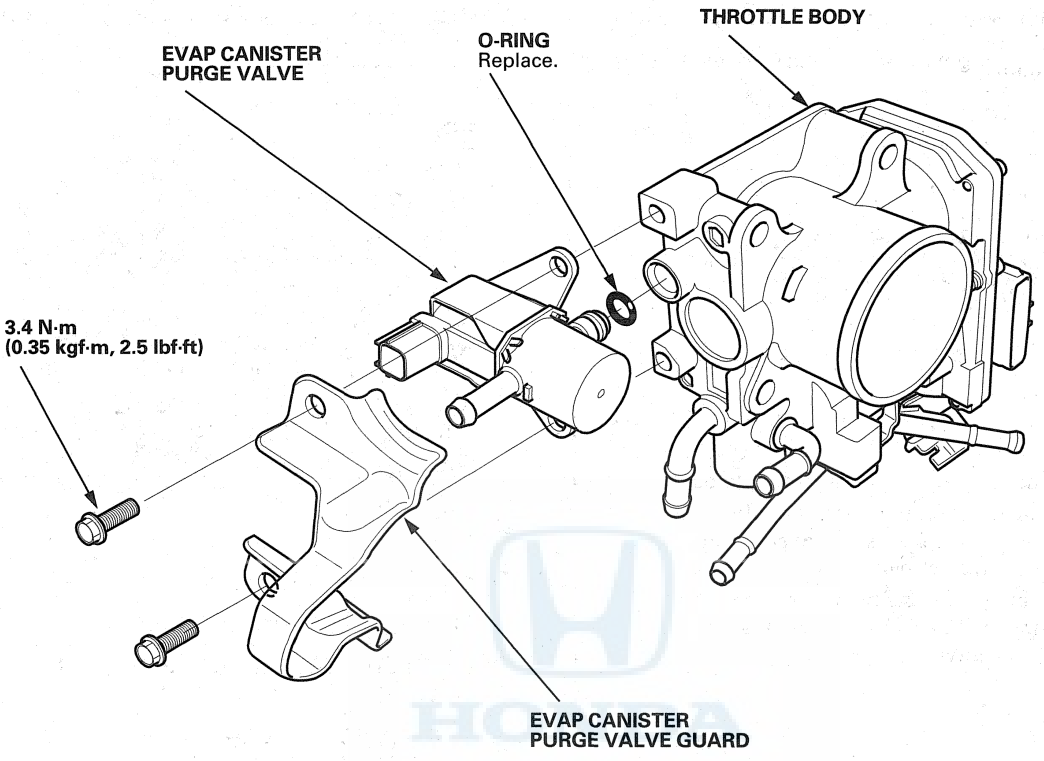
    NOTE:
    - If you replace or clean the throttle body, go to step 13.
    - If you did not replace or clean the throttle body, this procedure is complete.
    - Be careful not to drop or damage the plates (K).
    - Align the marks (L) on the hoses and the throttle body, then insert the hoses. Make sure the clamp (M) is positioned as shown.
    - Align the mark (N) on the hoses as shown, then insert the hoses. Make sure the clamps (O) are positioned as shown.

13. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Select the ETCS TEST in the INSPECTION MENU with the HDS.
17. Select the TP POSITION CHECK, then clear the throttle position (TP) learned value.
18. Turn the ignition switch to LOCK (0).
19. Turn the ignition switch to ON (II), and wait 2 seconds without pressing the accelerator pedal.
20. Do the ECM/PCM idle learn procedure (see page 11-274).

Throttle Body Disassembly/Reassembly

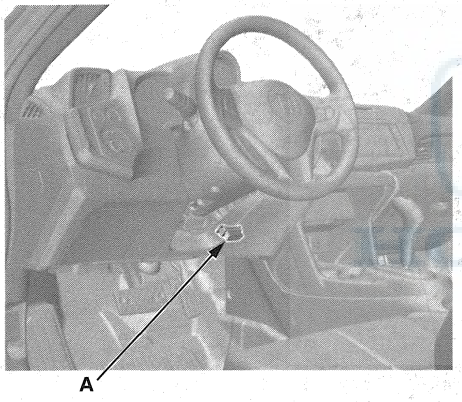


APP Sensor Signal Inspection

NOTE:

- This procedure checks the APP sensor in its fully closed position. In any other position, the APP sensor stores DTCs which are covered in other troubleshooting procedures.
- Check for Pending or Confirmed DTCs with the HDS before doing this procedure. If any DTCs are stored, troubleshoot them first, then do this procedure.
- Press the accelerator pedal several times to check its operation. If it does not operate smoothly, check the pedal. If you find a problem, replace the accelerator pedal module (see page 11-251).

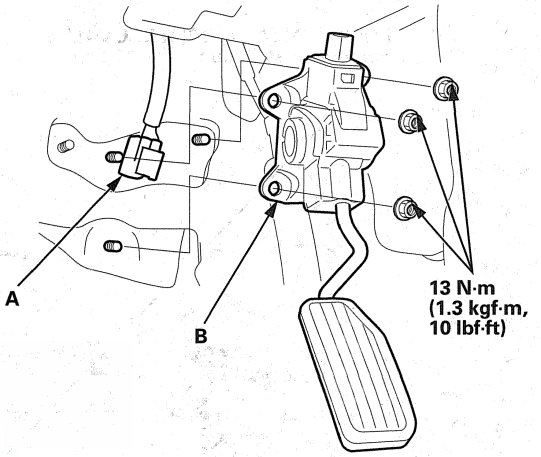
1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
4. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.
   - If it is 0 %, the APP sensor is OK.
   - If it is not 0 %, replace the accelerator pedal module (see page 11-251), then go to step 5.
5. Make sure the accelerator pedal is not pressed, then check the APP SENSOR in the DATA LIST with the HDS.
   - If it is 0 %, the APP sensor is OK.
   - If it is not 0 %, update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then go to step 1.

Accelerator Pedal Module Removal/Installation

1. Remove the driver's dashboard lower cover (see page 20-85).
2. Disconnect the APP sensor connector (A).

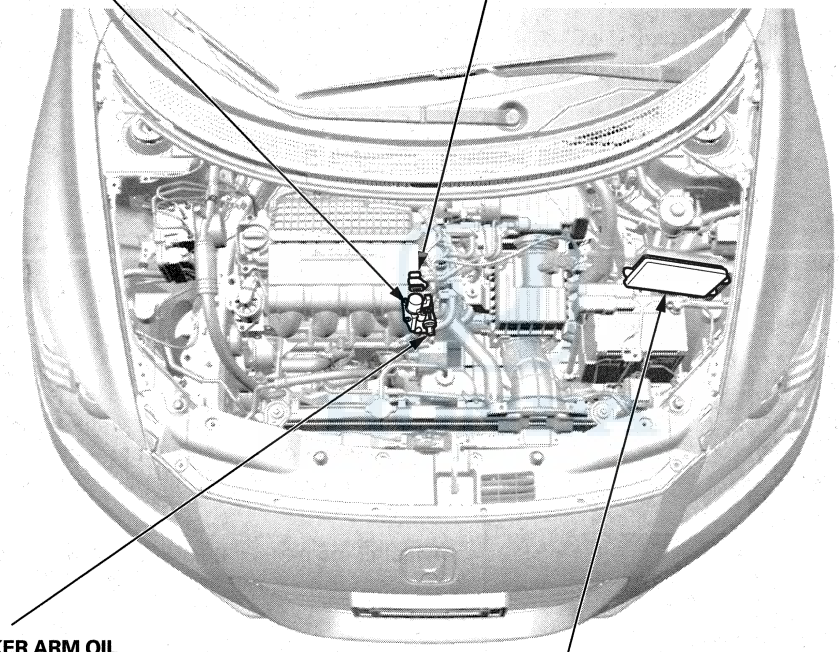


3. Remove the accelerator pedal module (B).

   NOTE:
   - The APP sensor is not available separately. Do not disassemble the accelerator pedal module.
   - If the accelerator pedal module is dropped, replace it.

4. Install the parts in the reverse order of removal.

Component Location Index



ROCKER ARM OIL CONTROL VALVE FILTER

ROCKER ARM OIL CONTROL VALVE
Removal/Installation, page 11-260

ROCKER ARM OIL PRESSURE SWITCH
Removal/Installation, page 11-261

ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)
General Troubleshooting Information, page 11-3
Substituting, page 11-7
Update, page 11-207
Replacement, page 11-209

DTC P2646: Rocker Arm Oil Pressure Switch Circuit Low Voltage

Special Tools Required
- AT Pressure Test Hose 07AAJ-PY4A100
- A/T Pressure Adapter 07MAJ-PY40120
- Pressure Gauge Adapter 07NAJ-P07010A
- Oil Pressure Hose 07ZAJ-S5A0200
- A/T Low Pressure Gauge w/Panel 07406-0070301

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Check the engine oil level.

   Is the level OK?

   YES–Go to step 2.

   NO–Adjust the engine oil to the proper level, then go to step 20.

2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM.■

   NO–Go to step 5.

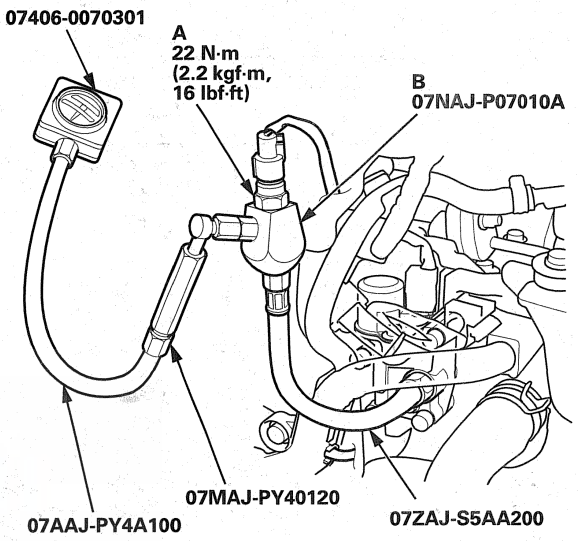
5. Turn the ignition switch to LOCK (0).
6. Disconnect the rocker arm oil pressure switch 2P connector.
7. Turn the ignition switch to ON (II).
8. Check the VTEC PRES SW in the DATA LIST with the HDS.

   Is SWITCH ON indicated?

   YES–Go to step 15.

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Remove the rocker arm oil pressure switch (A), and attach the special tools as shown, then attach the rocker arm oil pressure switch to the oil pressure gauge adapter (B).



11. Reconnect the rocker arm oil pressure switch 2P connector.
12. Start the engine.
13. Do the VTEC TEST in the INSPECTION MENU with the HDS.
14. Check the oil pressure.

    Is the oil pressure at least 392 kPa (4.0 kgf/cm², 56.9 psi)?

    YES–Replace the rocker arm oil pressure switch (see page 11-261), then go to step 19.

    NO–Check the engine oil pressure (see page 8-9). If the pressure is OK, inspect the VTEC system. If it is OK, replace the rocker arm oil control valve (see page 11-260), then go to step 19.

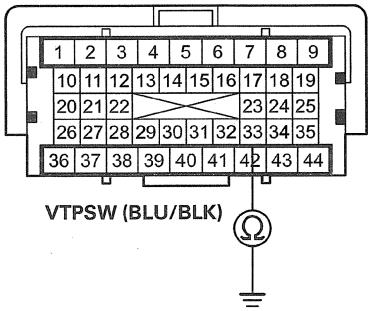
15. Turn the ignition switch to LOCK (0).
16. Jump the SCS line with the HDS.
17. Disconnect ECM/PCM connector C (44P).

(cont'd)

DTC Troubleshooting (cont'd)

18. Check for continuity between ECM/PCM connector terminal C33 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C33) and the rocker arm oil pressure switch, then go to step 19.

NO–Go to step 25.

19. Reconnect all connectors.
20. Turn the ignition switch to ON (II).
21. Reset the ECM/PCM with the HDS.
22. Do the ECM/PCM idle learn procedure (see page 11-274).
23. Do the VTEC TEST in the INSPECTION MENU with the HDS.
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2646 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM, then go step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Do the VTEC TEST in the INSPECTION MENU with the HDS.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2646 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 27. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2647: Rocker Arm Oil Pressure Switch Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Check the engine oil level.

   Is the level OK?

   YES–Go to step 2.

   NO–Adjust the engine oil to the proper level, then go to step 19.

2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Do the VTEC TEST in the INSPECTION MENU with the HDS.

   NOTE: If a DTC was stored during the VTEC TEST, check the DTCs MENU. If DTC P2647 is indicated, go to step 6. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM.■

   NO–Go to step 5.

5. Check the result of step 4.
   - VTEC Switch Failure
   - VTEC Switch Open
   - VTEC Switch SIG Line Open
   - VTEC Switch GND Line Open

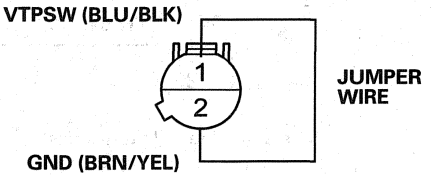
   Is the test result any of those above?

   YES–Go to step 6.

   NO–Check for poor connections or loose terminals at the rocker arm oil pressure switch. If it is OK, replace the rocker arm oil control valve (see page 11-260), then, go to step 17.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the rocker arm oil pressure switch 2P connector.
8. Connect rocker arm oil pressure switch 2P connector terminals No. 1 and No. 2 with a jumper wire.

ROCKER ARM OIL PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

9. Turn the ignition switch to ON (II).
10. Check the rocker arm oil pressure switch in the DATA LIST with the HDS.

    Does the HDS indicate ON?

    YES–Replace the rocker arm oil pressure switch (see page 11-261), then go to step 17.

    NO–Go to step 11.

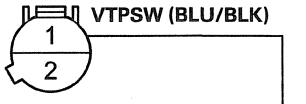
11. Turn the ignition switch to LOCK (0).
12. Remove the jumper wire from the rocker arm oil pressure switch 2P connector.
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector C (49P).

(cont'd)

DTC Troubleshooting (cont'd)

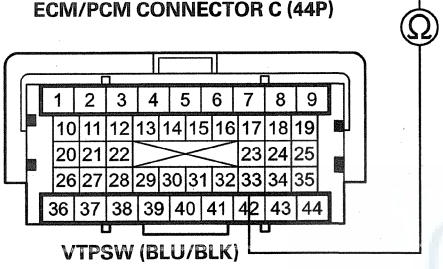
15. Check for continuity between ECM/PCM connector terminal C33 and rocker arm oil pressure switch 2P connector terminal No. 1.

ROCKER ARM OIL PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

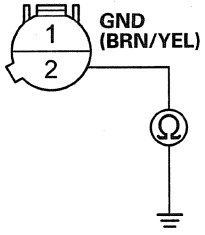
Is there continuity?

YES–Go to step 16.

NO–Repair an open in the wire between the ECM/PCM (C33) and the rocker arm oil pressure switch, then go to step 18.

16. Check for continuity between the rocker arm oil pressure switch 2P connector terminal No. 2 and body ground.

ROCKER ARM OIL PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 23.

NO–Repair an open in the wire between the rocker arm oil pressure switch and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 18.

17. Turn the ignition switch to LOCK (0).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2647 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
23. Reconnect all connectors.
24. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
25. Start the engine, and let it idle.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2647 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil pressure switch, the rocker arm oil control solenoid, and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 25. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2648: Rocker Arm Oil Control Solenoid Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

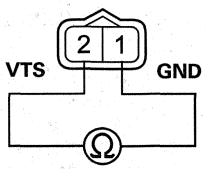
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Do the VTEC TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Disconnect the rocker arm oil control solenoid 2P connector.
6. At the solenoid side, measure the resistance between rocker arm oil control solenoid 2P connector terminals No. 1 and No. 2.

ROCKER ARM OIL CONTROL SOLENOID 2P CONNECTOR



Terminal side of male terminals

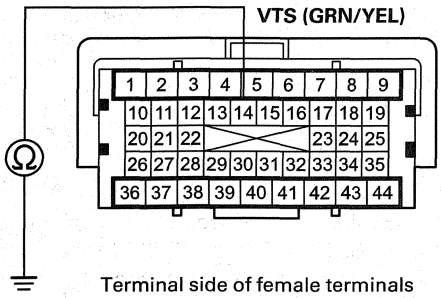
Is there 14—30 Ω at room temperature (65— 70°F, 18—21°C)?

YES–Go to step 7.

NO–Go to step 10.

7. Jump the SCS line with the HDS.
8. Disconnect ECM/PCM connector C (44P).
9. Check for continuity between ECM/PCM connector terminal C14 and body ground.

ECM/PCM CONNECTOR C (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (C14) and the rocker arm oil control solenoid, then go to step 11.

NO–Go to step 18.

10. Replace the rocker arm oil control valve (see page 11-260).
11. Reconnect all connectors.
12. Turn the ignition switch to ON (II).
13. Reset the ECM/PCM with the HDS.
14. Do the ECM/PCM idle learn procedure (see page 11-274).
15. Do the VTEC TEST in the INSPECTION MENU with the HDS.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2648 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM, then go to step 1.

    NO–Go to step 17.

(cont'd)

DTC Troubleshooting (cont'd)

17. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1 and recheck. If the HDS indicates NOT COMPLETED, go to step 15.

18. Reconnect all connectors.

19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

20. Do the VTEC TEST in the INSPECTION MENU with the HDS.

21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2648 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 20. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 22.

22. Monitor the OBD STATUS for DTC P2648 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 20. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.

DTC P2649: Rocker Arm Oil Control Solenoid Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

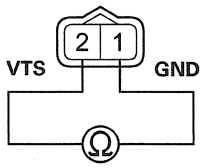
   Is DTC P2649 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM.■

5. Turn the ignition switch to LOCK (0).
6. Disconnect the rocker arm oil control solenoid 2P connector.
7. At the solenoid side, measure the resistance between rocker arm oil control solenoid 2P connector terminals No. 1 and No. 2.

ROCKER ARM OIL CONTROL SOLENOID 2P CONNECTOR



Terminal side of male terminals

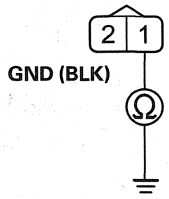
Is there 14—30 Ω at room temperature (65— 70°F, 18—21°C)?

YES–Go to step 8.

NO–Go to step 12.

8. Check for continuity between rocker arm oil control solenoid 2P connector terminal No. 1 and body ground.

ROCKER ARM OIL CONTROL SOLENOID 2P CONNECTOR



Wire side of female terminals

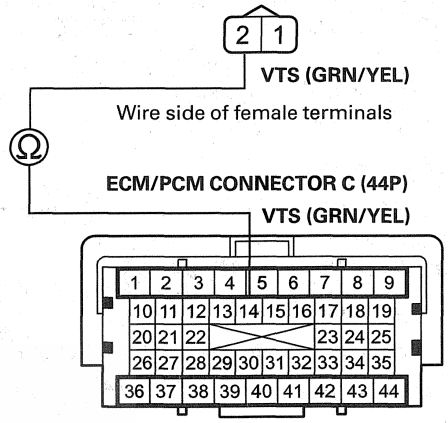
Is there continuity?

YES–Go to step 9.

NO–Repair an open in the wire between the rocker arm oil control solenoid and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 13.

9. Jump the SCS line with the HDS.
10. Disconnect ECM/PCM connector C (44P).
11. Check for continuity between ECM/PCM connector terminal C14 and rocker arm oil control solenoid 2P connector terminal No. 2.

ROCKER ARM OIL CONTROL SOLENOID A 2P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the ECM/PCM (C14) and the rocker arm oil control solenoid, then go to step 13.

12. Replace the rocker arm oil control valve (see page 11-260).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P2649 indicated?

YES–Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM, then go to step 1.

NO–Go to step 18.

(cont'd)

DTC Troubleshooting (cont'd)

18. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1 and recheck. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

19. Reconnect all connectors.

20. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

21. Start the engine, and let it idle.

22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2649 indicated?

    YES–Check for poor connections or loose terminals at the rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 21. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 23.

23. Monitor the OBD STATUS for DTC P2649 in the DTCs MENU with the HDS.

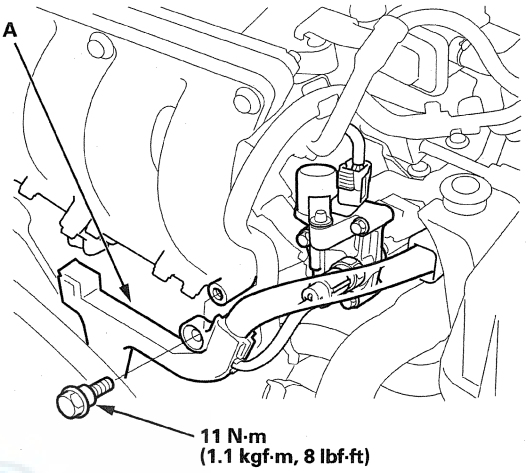
    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 22, go to the indicated DTC's troubleshooting.■

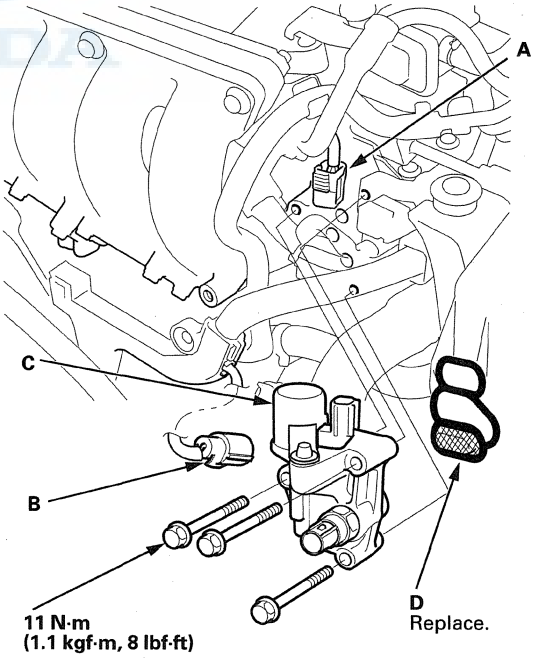
    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at rocker arm oil control solenoid and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 21. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 21.

Rocker Arm Oil Control Valve Removal/Installation

1. Remove the harness holder (A).



2. Disconnect the rocker arm oil control solenoid connector (A) and the rocker arm oil pressure switch connector (B).

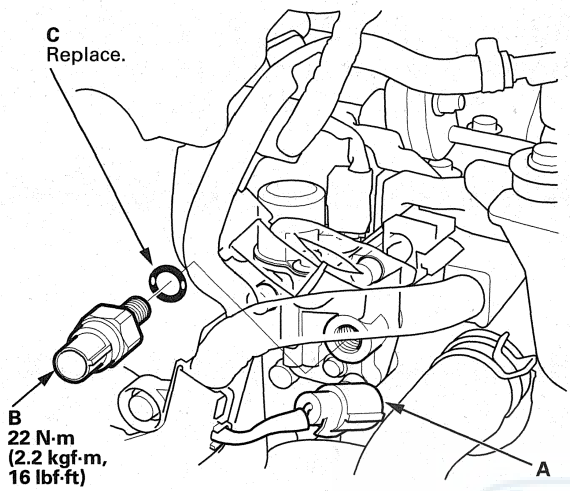


3. Remove the rocker arm oil control valve assembly (C) and the rocker arm oil control valve filter (D).

4. Install the parts in the reverse order of removal with a new rocker arm oil control valve filter.

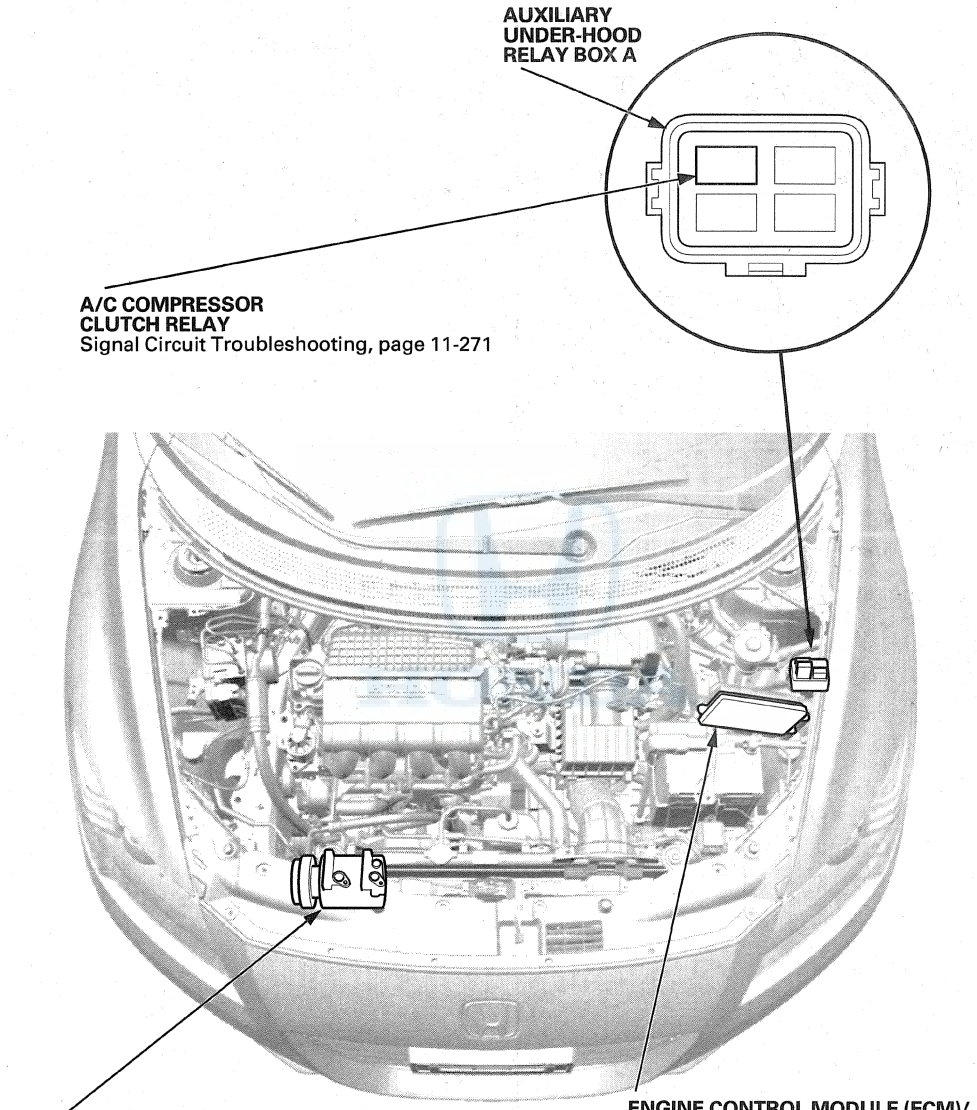
Rocker Arm Oil Pressure Switch Removal/Installation

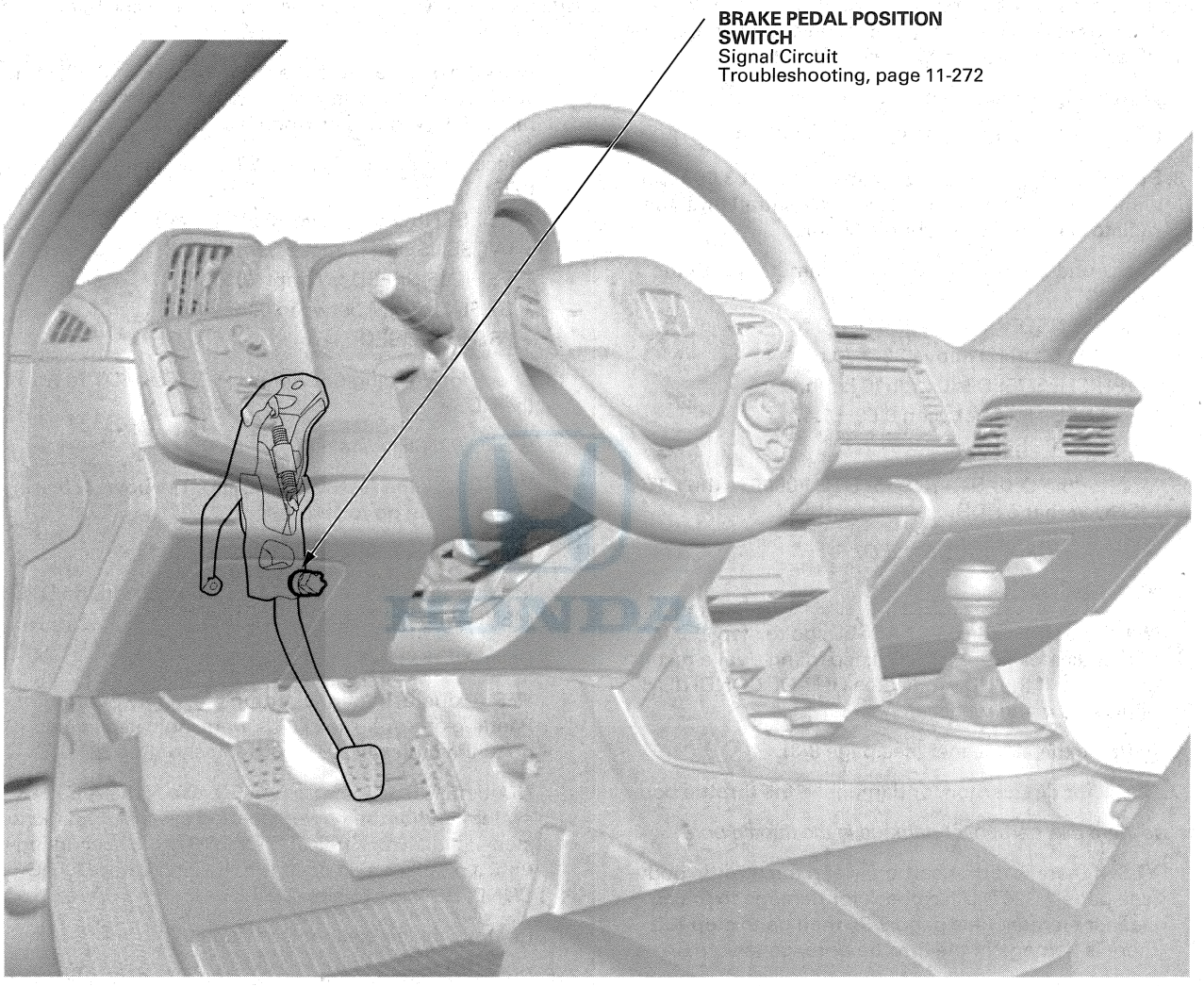
1. Disconnect the rocker arm oil pressure switch connector (A).



2. Remove the rocker arm oil pressure switch (B).
3. Install the parts in the reverse order of removal with a new O-ring (C).

Component Location Index




BRAKE PEDAL POSITION SWITCH
Signal Circuit
Troubleshooting, page 11-272

DTC Troubleshooting

DTC P0506: Idle Control System RPM Lower Than Expected

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check under these DATA LIST parameters with the HDS:
   - ECT SENSOR 1 above 156 °F (70 °C)
   - IAT SENSOR (2) above 32 °F (0 °C)
   - VEHICLE SPEED is 0 mph (0 km/h)
   - ST FUEL TRIM between 0.69—1.47
   - FSS is CLOSED
5. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, go to step 15. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 4 and recheck.
6. Remove the air cleaner (see page 9-3).
7. Check for dirt, carbon, or damage in the throttle bore.

   Is there dirt, carbon, or damage in the throttle bore?

   YES–If there is dirt or carbon, clean the throttle body (see page 11-247). Also check for damage to the air cleaner element (see page 9-3), then go to step 9. If there is damage in the throttle bore, go to step 8.

   NO–Check the A/C system and the power steering system, then go to step 17.
8. Replace the throttle body (see page 11-248).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Check under these DATA LIST parameters with the HDS:
    - ECT SENSOR 1 above 156 °F (70 °C)
    - IAT SENSOR (2) above 32 °F (0 °C)
    - VEHICLE SPEED is 0 mph (0 km/h)
    - ST FUEL TRIM between 0.69—1.47
    - FSS is CLOSED
13. Check for Pending or Confirmed DTCs or DTCs with the HDS.

    Is DTC P0506 indicated?

    YES–Check the A/C system and/or the power steering system, then go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check the A/C system and/or the power steering system, then go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 11.
15. Remove the air cleaner (see page 9-3).
16. Check for dirt, carbon, or damage in the throttle bore.

    Is there dirt, carbon, or damage in the throttle bore?

    YES–If there is dirt or carbon, clean the throttle body (see page 11-247). Also check for damage to the air cleaner element (see page 9-3), then go to step 9. If there is damage in the throttle bore, go to step 8.

    NO–Go to step 17.

17. Recheck with different load conditions (turn on the headlights, the blower motor, the rear window defogger, the A/C, and/or the power steering system, change the gear position, etc.).
18. Monitor the OBD STATUS for DTC P0506 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Intermittent failure, the system is OK at this time.■

    NO–If the HDS indicates FAILED, check the A/C system and/or the power steering system, then go to step 1 and recheck. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 11.

DTC P0507: Idle Control System RPM Higher Than Expected

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for at least 20 seconds.
4. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

    Does the HDS indicate FAILED?

    YES–Go to step 5.

    NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, recheck with different load conditions (electrical, A/C, gear position, etc.), then go to step 3.

5. Check for vacuum leaks at these parts:
    - PCV valve
    - PCV hose
    - EVAP canister purge valve
    - Throttle body
    - Intake manifold
    - Brake booster hose
    - Brake booster

    Are there any leaks?

    YES–Repair or replace the leaking part(s), then go to step 6.

    NO–Go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Turn the ignition switch to ON (II).
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see page 11-274).
9. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for at least 20 seconds.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0507 indicated?

    YES–Check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1.

    NO–Go to step 11.
11. Monitor the OBD STATUS for DTC P0507 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 10, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the throttle body and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep idling until a result comes on. If the HDS indicates OUT OF CONDITION, recheck with different load conditions (turn on the headlights, the blower motor, or the A/C; change the gear position, etc.), then go to step 9.

DTC P0532: A/C Pressure Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Start the engine, and let it idle.
2. Turn the blower switch on.
3. Turn the A/C switch on.
4. Check the A/C PRESSURE SENSOR in the DATA LIST with the HDS.

    Is there about 0.3 V or less?

    YES–Go to step 5.

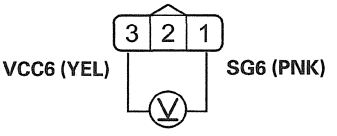
    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the A/C pressure sensor 3P connector.
7. Turn the ignition switch to ON (II).
8. Check the A/C PRESSURE SENSOR in the DATA LIST with the HDS.

    Is there about 0.3 V or less?

    YES–Go to step 10.

    NO–Go to step 9.
9. Measure the voltage between A/C pressure sensor 3P connector terminals No. 1 and No. 3.

A/C PRESSURE SENSOR 3P CONNECTOR



Wire side of female terminals

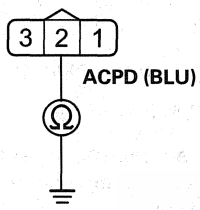
Is there about 5 V?

YES–Go to step 18.

NO–Go to step 14.

10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector A (44P).
13. Check for continuity between A/C pressure sensor 3P connector terminal No. 2 and body ground.

A/C PRESSURE SENSOR 3P CONNECTOR



Wire side of female terminals

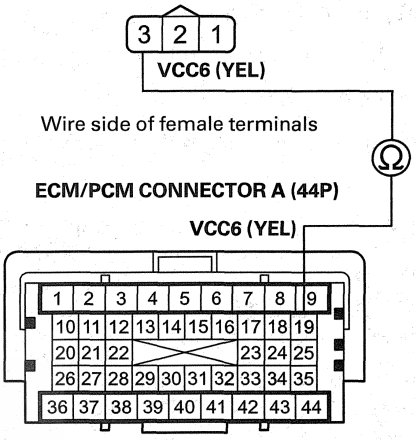
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A16) and the A/C pressure sensor, then go to step 20.

NO–Go to step 28.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector A (44P).
17. Check for continuity between ECM/PCM connector terminal A19 and A/C pressure sensor 3P connector terminal No. 3.

A/C PRESSURE SENSOR 3P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

NO–Repair an open in the wire between the ECM/PCM (A19) and the A/C pressure sensor, then go to step 20.

18. Turn the ignition switch to LOCK (0).
19. Replace the A/C pressure sensor (see page 21-98).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the ECM/PCM with the HDS.
23. Do the ECM/PCM idle learn procedure (see page 11-274).
24. Start the engine, and let it idle.
25. Turn the blower switch on.
26. Turn the A/C switch on.
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0532 indicated?

YES–Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM, then go to step 3.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

28. Reconnect all connectors.
29. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
30. Start the engine, and let it idle.
31. Turn the blower switch on.
32. Turn the A/C switch on.
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0532 indicated?

    YES–Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 30. If the ECM/PCM was substituted, go to step 3.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0533: A/C Pressure Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

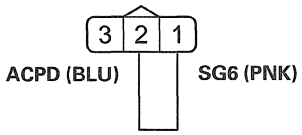
1. Start the engine, and let it idle.
2. Turn the blower switch on.
3. Turn the A/C switch on.
4. Check the A/C PRESSURE SENSOR in the DATA LIST with the HDS.

    Is there about 4.75 V or more?

    YES–Go to step 5.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the A/C pressure sensor 3P connector.
7. Connect A/C pressure sensor 3P connector terminals No. 1 and No. 2 with a jumper wire.

A/C PRESSURE SENSOR 3P CONNECTOR



JUMPER WIRE

Wire side of female terminals

8. Turn the ignition switch to ON (II).
9. Check the A/C PRESSURE SENSOR in the DATA LIST with the HDS.

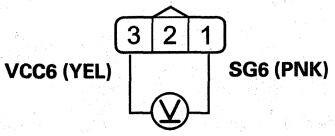
    Is there about 4.75 V or more?

    YES–Go to step 10.

    NO–Go to step 22.
10. Turn the ignition switch to LOCK (0).
11. Remove the jumper wire from the A/C pressure sensor 3P connector.

12. Turn the ignition switch to ON (II).
13. Measure the voltage between A/C pressure sensor 3P connector terminals No. 1 and No. 3.

A/C PRESSURE SENSOR 3P CONNECTOR



Wire side of female terminals

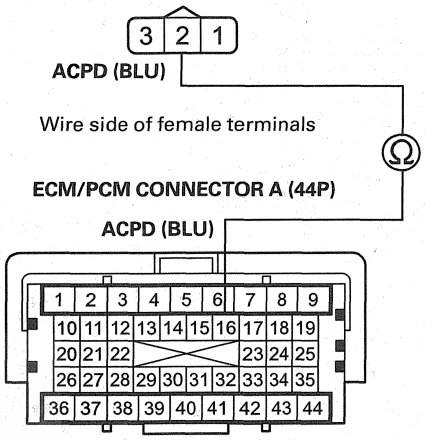
Is there about 5 V?

YES–Go to step 14.

NO–Go to step 18.

14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect ECM/PCM connector A (44P).
17. Check for continuity between ECM/PCM connector terminal A16 and A/C pressure sensor 3P connector terminal No. 2 .

A/C PRESSURE SENSOR 3P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 32.

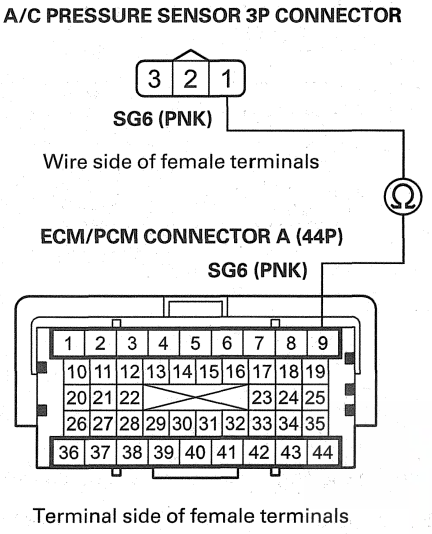
NO–Repair an open in the wire between the ECM/PCM (A16) and the A/C pressure sensor, then go to step 24.

18. Turn the ignition switch to LOCK (0).
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector A (44P).

(cont'd)

DTC Troubleshooting (cont'd)

21. Check for continuity between ECM/PCM connector terminal A9 and A/C pressure sensor 3P connector terminal No. 1.



Is there continuity?

YES–Go to step 32.

NO–Repair an open in the wire between the ECM/PCM (A9) and the A/C pressure sensor, then go to step 24.

22. Turn the ignition switch to LOCK (0).
23. Replace the A/C pressure sensor (see page 21-98).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Start the engine, and let it idle.
29. Turn the blower switch on.
30. Turn the A/C switch on.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0533 indicated?

    YES–Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
34. Start the engine, and let it idle.
35. Turn the blower switch on.
36. Turn the A/C switch on.
37. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0533 indicated?

    YES–Check for poor connections or loose terminals at the A/C pressure sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

A/C Signal Circuit Troubleshooting

1. Start the engine, and let it idle.
2. Turn the blower switch on.
3. Turn the A/C switch on.
4. Check the A/C CLUTCH in the DATA LIST with the HDS.

   Does it indicate ON?

   YES–Go to step 5.

   NO–Do the A/C system test (see page 21-86).■
5. Check the A/C system.

   Does the A/C system operate?

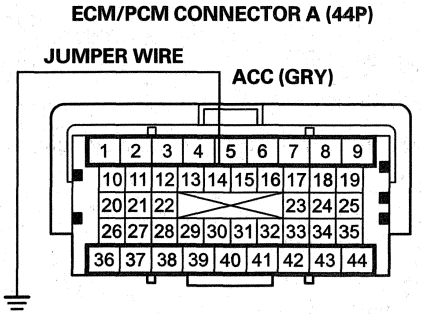
   YES–The A/C signal circuit is OK.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II).
8. Activate the A/C CLUTCH in the INSPECTION MENU with the HDS.

   Is there a clicking noise from the A/C compressor clutch?

   YES–Do the A/C system test (see page 21-86).■

   NO–Go to step 9.
9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect ECM/PCM connector A (44P).
12. Turn the ignition switch to ON (II).
13. Momentarily connect ECM/PCM connector terminal A14 to body ground with a jumper wire several times.



Terminal side of female terminals

Is there a clicking noise from the A/C compressor clutch?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Check for poor connections or loose terminals at the A/C compressor clutch relay and the ECM/PCM. If the connections and the terminals are OK, check the A/C compressor clutch relay (see page 22-92). If needed, repair an open in the wire between the ECM/PCM (A14) and the A/C compressor clutch relay, or in other A/C parts.■

Brake Pedal Position Switch Signal Circuit Troubleshooting

1. Turn the ignition switch to ON (II).
2. Check the BRAKE SWITCH in the DATA LIST with the HDS.

   Does it indicate OFF?

   YES–Go to step 3.

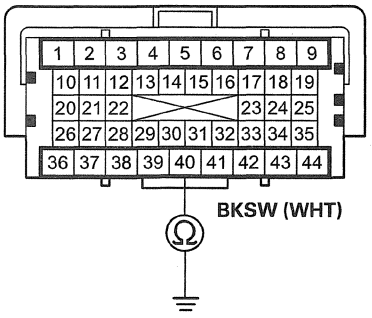
   NO–Inspect the brake pedal position switch (see page 19-6).■
3. Press the brake pedal, and check the BRAKE SWITCH in the DATA LIST with the HDS.

   Does it change to ON?

   YES–The brake pedal position switch signal circuit (BKSW line) is OK.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Jump the SCS line with the HDS.
6. Disconnect the brake pedal position switch 4P connector.
7. Disconnect ECM/PCM connector A (44P).
8. Check for continuity between ECM/PCM connector terminal A40 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

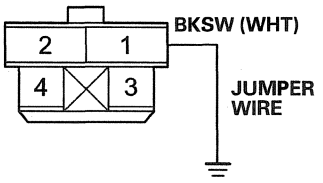
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A40) and the brake pedal position switch. Also, replace the No. B24 STOP/HORN (10 A) fuse.■

NO–Go to step 9.

9. Connect brake pedal position switch 4P connector terminal No. 1 to body ground with a jumper wire.

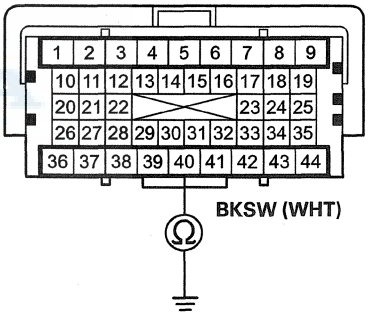
BRAKE PEDAL POSITION SWITCH 4P CONNECTOR



Wire side of female terminals

10. Check for continuity between ECM/PCM connector terminal A40 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair an open or short in the wire between the brake pedal position switch and the No. B24 STOP/HORN (10 A) fuse. Also, inspect the brake pedal position switch (see page 19-6).■

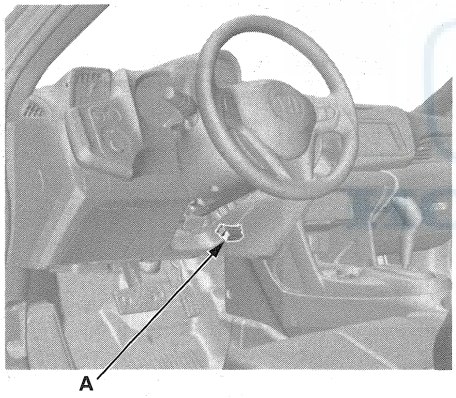
NO–Repair an open in the wire between the ECM/PCM (A40) and the brake pedal position switch.■

Idle Speed Inspection

NOTE:

- Before checking the idle speed, check these items:
  - The malfunction indicator lamp (MIL) has not been reported on, and there are no DTCs.
  - Ignition timing
  - Spark plugs
  - Air cleaner
  - PCV system
- Apply the parking brake, and make sure the headlights are off.

1. Disconnect the evaporative emission (EVAP) canister purge valve connector (see step 1 on page 11-362).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
5. Check the idle speed under no load conditions: headlights, blower fan, radiator fan, audio system, and A/C off.

   Idle speed should be:

CVT	**750 ± 50 rpm (in P or N)**
M/T	**750 ± 50 rpm**

   NOTE: Check the state-of-charge (SOC) in the IMA system DATA LIST with the HDS. If the IMA battery charge level is less than 40%, start the engine, and hold it between 3,500−4,000 rpm without load (CVT in P or N, M/T in neutral) until the SOC indicator displays at least half of its segments.
6. Let the engine idle for 1 minute with high electric load (A/C switch on, temperature set to max cool, blower fan on high, and headlights on high beam).

   Idle speed should be:

CVT	**750 ± 50 rpm (in P or N)**
M/T	**750 ± 50 rpm**

   NOTE:
   - Check the state-of-charge (SOC) in the IMA system DATA LIST with the HDS. If the IMA battery charge level is less than 40%, start the engine, and hold it between 3,500−4,000 rpm without load (CVT in P or N, M/T in neutral) until the SOC indicator displays at least half of its segments.
   - If the idle speed is not within specification, do the ECM/PCM idle learn procedure (see page 11-274). If the idle speed is still not within specification, go to the Symptom Troubleshooting Index (see page 11-16).
7. Reconnect the EVAP canister purge valve connector.

ECM/PCM Idle Learn Procedure

The idle learn procedure must be done so the ECM/PCM can learn the engine idle characteristics.

Do the idle learn procedure whenever you do any of these actions:

- Replace the ECM/PCM.
- Reset the ECM/PCM.
- Update the ECM/PCM.
- Replace or clean the throttle body.
- Disassemble the engine or the transmission.

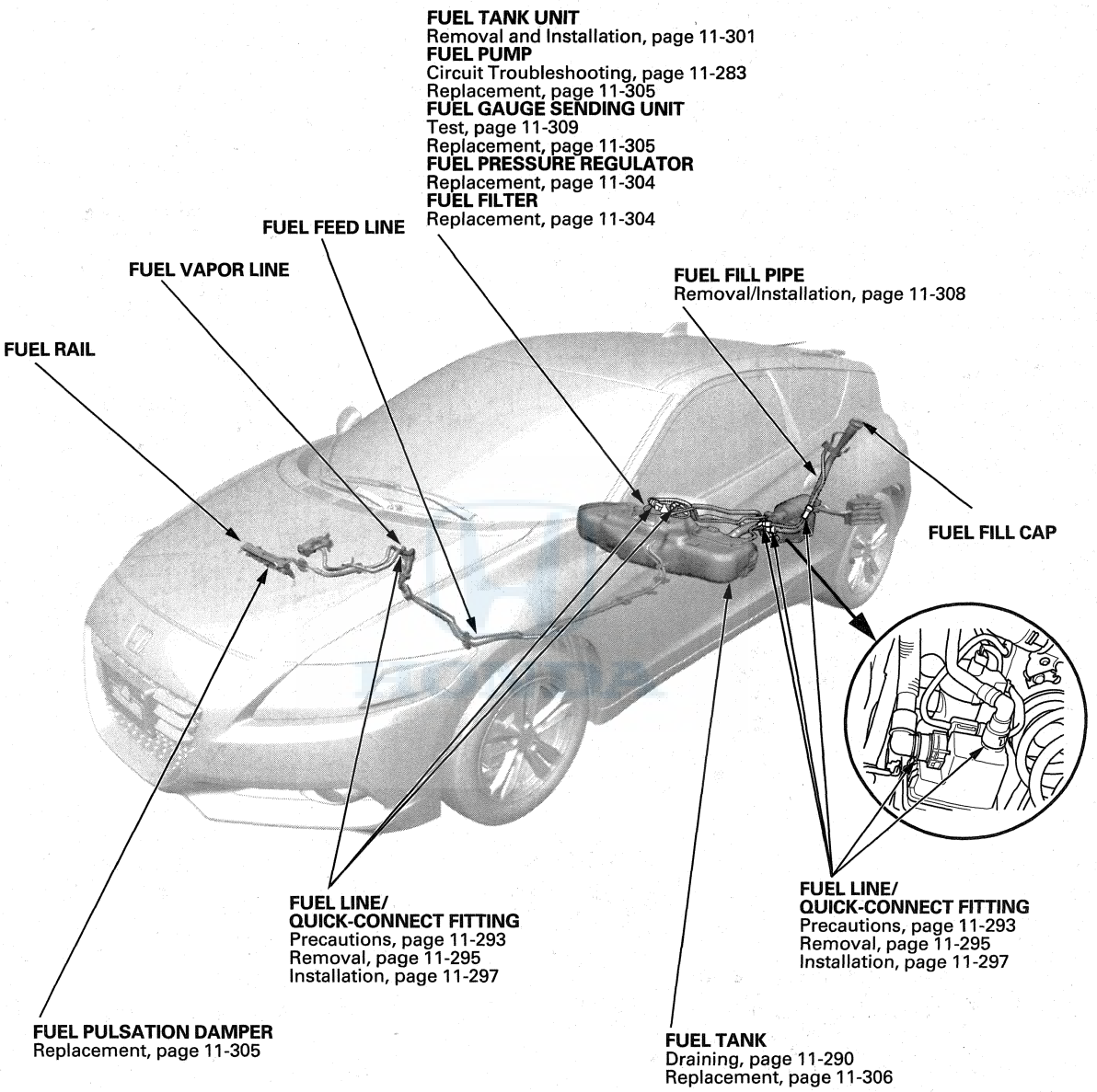
NOTE: Clearing DTCs with the HDS does not require you to do the idle learn procedure.

Procedure

1. Make sure all electrical items (A/C, navigation, lights, etc.) are off.
2. Reset the ECM/PCM with the HDS.
3. Turn the ignition switch to ON (II), and wait 2 seconds.
4. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, or until the engine coolant temperature reaches 194 °F (90 °C).
5. Let the engine idle for about 5 minutes with the throttle fully closed.

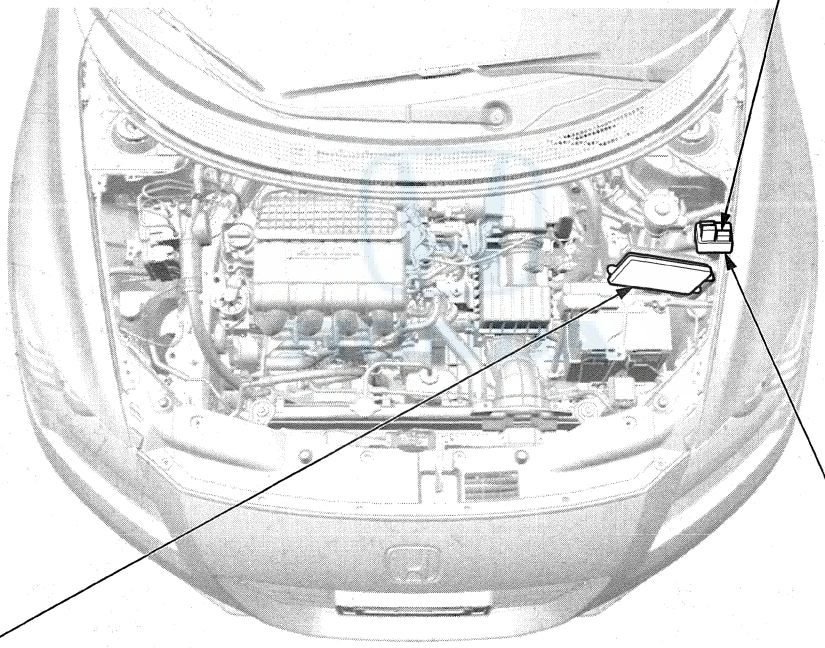
   NOTE: If the radiator fan comes on, do not include its running time in the 5 minutes.

Component Location Index

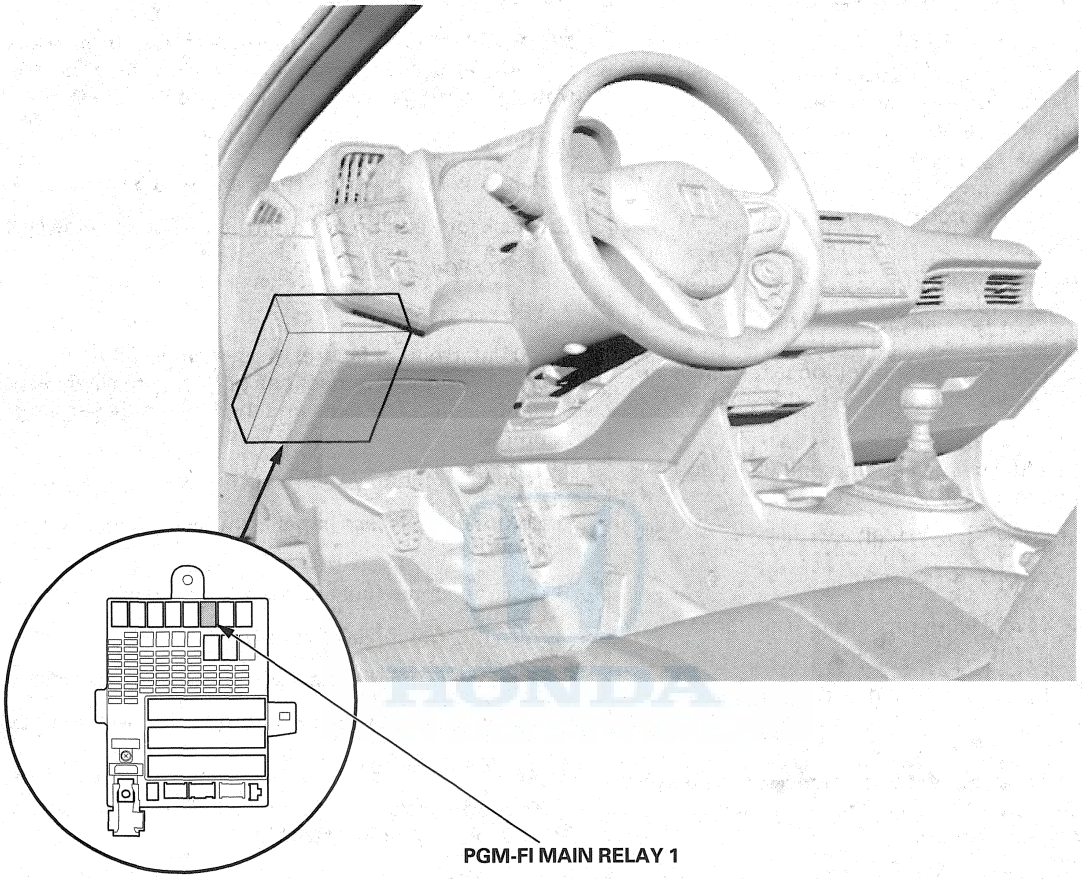


(cont'd)

Component Location Index (cont'd)



ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)
General Troubleshooting Information, page 11-3
Substituting, page 11-7
Update, page 11-207
Replacement, page 11-209


PGM-FI MAIN RELAY 1

DTC Troubleshooting

DTC P0461: Fuel Level Sensor (Fuel Gauge Sending Unit) Range/Performance Problem

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- Because it requires 124 miles (200 km) of driving without refueling to complete this diagnosis, DTC P0461 cannot be duplicated during this troubleshooting.

1. Test the fuel gauge sending unit (see page 11-309).

   Is the fuel gauge sending unit OK?

   YES–Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module.■

   NO–Replace the fuel gauge sending unit (see page 11-305), then go to step 2.

2. Turn the ignition switch to ON (II).
3. Reset the ECM/PCM with the HDS.
4. Do the ECM/PCM idle learn procedure (see page 11-274).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0461 indicated?

   YES–Check for poor connections or loose terminals at the fuel gauge sending unit and the gauge control module, then go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0462: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0462 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit.■

4. Turn the ignition switch to LOCK (0).
5. Remove the access panel from the floor (see page 11-301).
6. Disconnect the fuel tank unit 4P connector.
7. Turn the ignition switch to ON (II).
8. Clear the DTC with the HDS, and wait 5 seconds.
9. Check for Pending or Confirmed DTCs with the HDS.

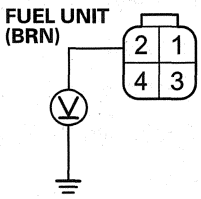
   Is DTC P0463 indicated?

   YES–Replace the fuel gauge sending unit (see page 11-305), then go to step 22.

   NO–Go to step 10.

10. Measure the voltage between fuel tank unit 4P connector terminal No. 2 and body ground.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

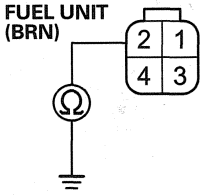
Is there battery voltage?

YES–Go to step 15.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Remove the gauge control module (see page 22-354).
13. Disconnect the gauge control module 32P connector.
14. Check for continuity between fuel tank unit 4P connector terminal No. 2 and body ground.

FUEL TANK UNIT 4P CONNECTOR



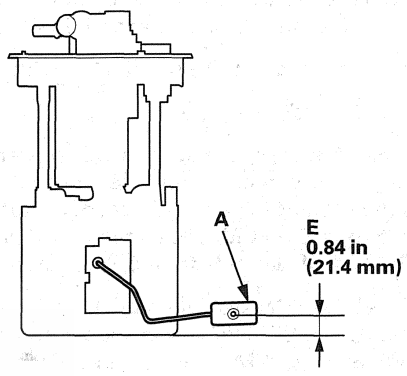
Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 24.

NO–Replace the gauge control module (see page 22-354), then go to step 24.

15. Turn the ignition switch to LOCK (0).
16. Remove the fuel tank unit (see page 11-301).
17. Connect the fuel tank unit 4P connector.
18. Turn the ignition switch to ON (II).
19. Clear the DTC with the HDS.
20. Set the float (A) to the E position.



21. Check the fuel gauge.

Does the gauge move to the empty position?

YES–Go to step 29.

NO–Replace the gauge control module (see page 22-354), then go to step 22.

22. Turn the ignition switch to LOCK (0).
23. Reinstall all removed parts in the reverse order of removal.
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0462 indicated?

YES–Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

29. Turn the ignition switch to LOCK (0).
30. Reinstall all removed parts in the reverse order of removal.
31. Reconnect all connectors.
32. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0462 indicated?

    YES–Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0463: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit High Voltage

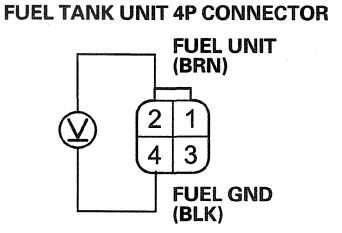
NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS, and wait 5 seconds.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0463 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit.■
4. Turn the ignition switch to LOCK (0).
5. Remove the access panel from the floor (see page 11-301).
6. Disconnect the fuel tank unit 4P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between fuel tank unit 4P connector terminals No. 2 and No. 4.



Wire side of female terminals

Is there battery voltage?

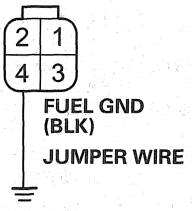
YES–Go to step 16.

NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).

10. Connect fuel tank unit 4P connector terminal No. 4 to body ground with a jumper wire.

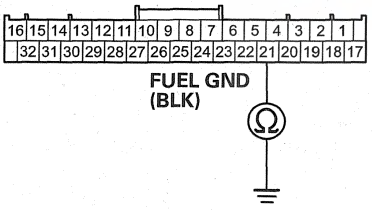
FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

11. Remove the gauge control module (see page 22-354).
12. Disconnect the gauge control module 32P connector.
13. Check for continuity between gauge control module 32P connector terminal No. 21 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

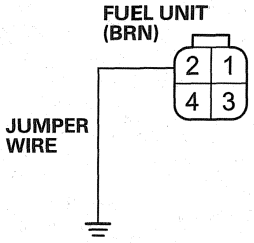
Is there continuity?

YES–Go to step 14.

NO–Repair an open in the wire between the gauge control module (GND line) and the fuel gauge sending unit, then go to step 26.

14. Connect fuel tank unit 4P connector terminal No. 2 to body ground with a jumper wire.

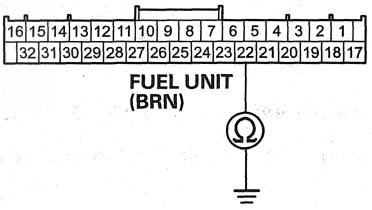
FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

15. Check for continuity between gauge control module 32P connector terminal No. 22 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the gauge control module (see page 22-354), then go to step 26.

NO–Repair an open in the wire between the gauge control module (signal line) and the fuel gauge sending unit, then go to step 26.

16. Turn the ignition switch to LOCK (0).
17. Remove the fuel tank unit (see page 11-301).
18. Test the fuel gauge sending unit (see page 11-309).

Is the fuel gauge sending unit OK?

YES–Go to step 19.

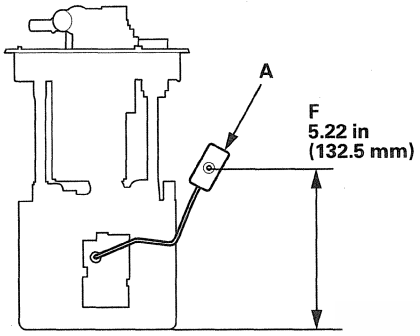
NO–Replace the fuel gauge sending unit (see page 11-305), then go to step 26.

19. Connect the fuel tank unit 4P connector.

(cont'd)

DTC Troubleshooting (cont'd)

20. Reconnect the gauge control module 32P connector.
21. Turn the ignition switch to ON (II).
22. Clear the DTC with the HDS.
23. Set the float (A) to the F position.



24. Check the fuel gauge.

    Does the gauge move to the full position?

    YES–Go to step 32.

    NO–Replace the gauge control module (see page 22-354), then go to step 25.

25. Turn the ignition switch to LOCK (0).
26. Reinstall all removed parts in the reverse order of removal.
27. Reconnect all connectors.
28. Turn the ignition switch to ON (II).
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see page 11-274).
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

    YES–Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

32. Turn the ignition switch to LOCK (0).
33. Reinstall all removed parts in the reverse order of removal.
34. Reconnect all connectors.
35. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0463 indicated?

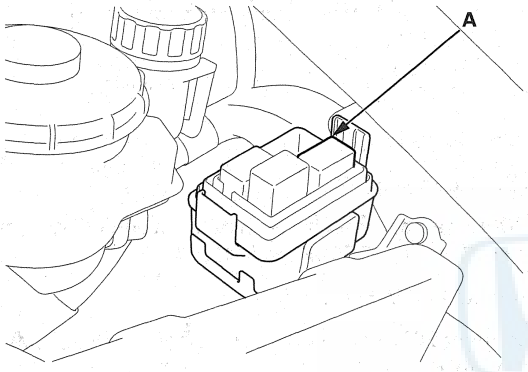
    YES–Check for poor connections or loose terminals at the gauge control module and the fuel gauge sending unit. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

Fuel Pump Circuit Troubleshooting

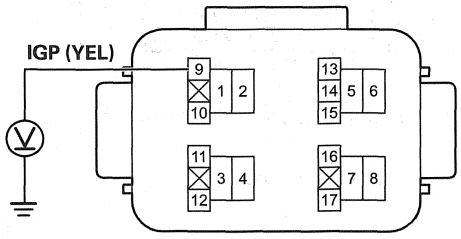
If you suspect a problem with the fuel pump, check that the fuel pump actually runs; when it is on, you will hear some noise if you listen to the fuel fill port with the fuel fill cap removed. The fuel pump should run for 2 seconds when the ignition switch is turned to ON (II). If the fuel pump does not make noise, check as follows:

1. Turn the ignition switch to LOCK (0).
2. Remove PGM-FI main relay 2 (A) from auxiliary under-hood relay box A.



3. Turn the ignition switch to ON (II).
4. Measure the voltage between auxiliary under-hood relay box A 17P connector terminal No. 9 (PGM-FI main relay 2) and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Terminal side of female terminals

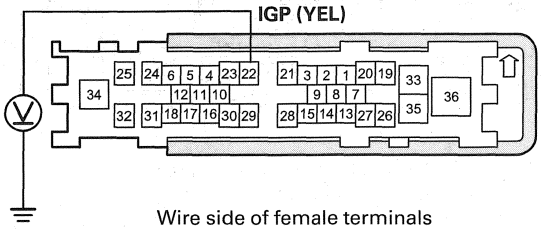
Is there battery voltage?

YES–Go to step 10.

NO–Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Remove the fuse lid panel (see page 20-85).
7. Remove the cover from under-dash fuse/relay box connector B (36P).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between under-dash fuse/relay box connector B (36P) terminal No. 22 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)



Wire side of female terminals

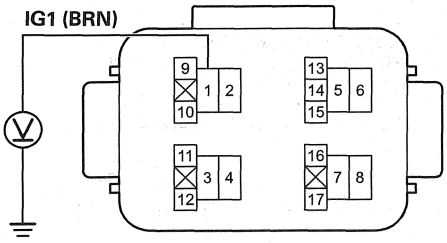
Is there battery voltage?

YES–Repair an open in the wire between PGM-FI main relay 2 and the under-dash fuse/relay box .■

NO–Replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

10. Measure the voltage between auxiliary under-hood relay box A 17P connector terminal No. 1 (PGM-FI main relay 2) and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 12

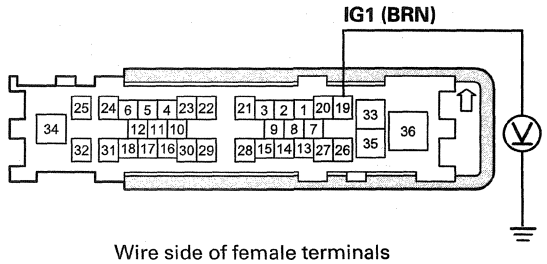
NO–Go to step 11.

(cont'd)

Fuel Pump Circuit Troubleshooting (cont'd)

11. Measure the voltage between under-dash fuse/relay box connector B (36P) terminal No. 19 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)



Wire side of female terminals

Is there battery voltage?

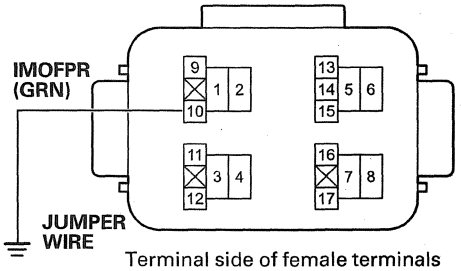
YES–Repair an open in the wire between PGM-FI main relay 2 and the under-dash fuse/relay box .■

NO–

- Check the No. B20 FUEL PUMP (15 A) fuse in the under dash fuse/relay box.■
- If the fuse is OK, replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

12. Turn the ignition switch to LOCK (0).
13. Connect auxiliary under-hood relay box A 17P connector terminal No. 10 to body ground with a jumper wire.

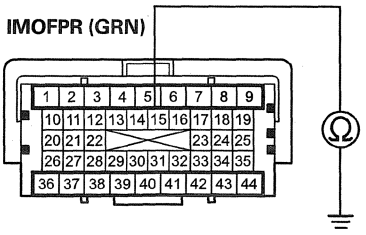
AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Terminal side of female terminals

14. Jump the SCS line with the HDS.
15. Disconnect ECM/PCM connector A (44P).
16. Check for continuity between ECM/PCM connector terminal A15 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

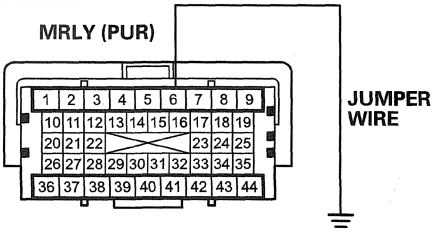
Is there continuity?

YES–Go to step 17.

NO–Repair an open in the wire between PGM-FI main relay 2 and the ECM/PCM (A15).■

17. Reinstall PGM-FI main relay 2.
18. Connect ECM/PCM connector terminal A6 to body ground with a jumper wire.

ECM/PCM CONNECTOR A (44P)

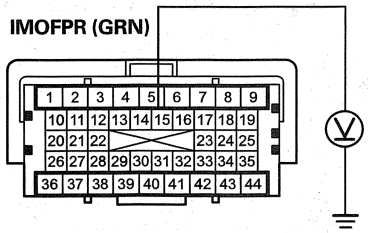


Terminal side of female terminals

19. Turn the ignition switch to ON (II).

20. Measure the voltage between ECM/PCM connector terminal A15 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

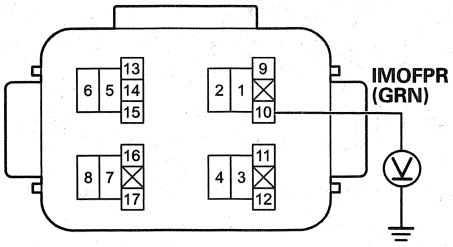
Is there battery voltage?

YES–Go to step 21.

NO–Replace PGM-FI main relay 2.■

21. Turn the ignition switch to LOCK (0).
22. Reconnect ECM/PCM connector A (44P).
23. Remove the cover from the bottom of auxiliary under-hood relay box A. Turn the ignition switch to ON (II), and measure the voltage between auxiliary under-hood relay box A 17P connector terminal No. 10 (PGM-FI main relay 2) and body ground within 2 seconds.

AUXILIARY UNDER-HOOD RELAY BOX A 17P CONNECTOR



Wire side of female terminals

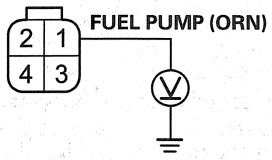
Is there battery voltage?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Go to step 24.

24. Turn the ignition switch to LOCK (0).
25. Remove the rear tray (see step 1 on page 20-62).
26. Remove the access panel from the floor (see step 3 on page 11-301).
27. Disconnect the fuel tank unit 4P connector.
28. Turn the ignition switch to ON (II), and measure the voltage between fuel tank unit 4P connector terminal No. 1 and body ground within 2 seconds.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

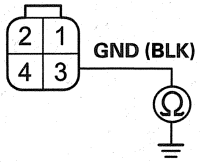
Is there battery voltage?

YES–Go to step 29.

NO–Go to step 31.

29. Turn the ignition switch to LOCK (0).
30. Check for continuity between fuel tank unit 4P connector terminal No. 3 and body ground .

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the fuel pump (see page 11-305).■

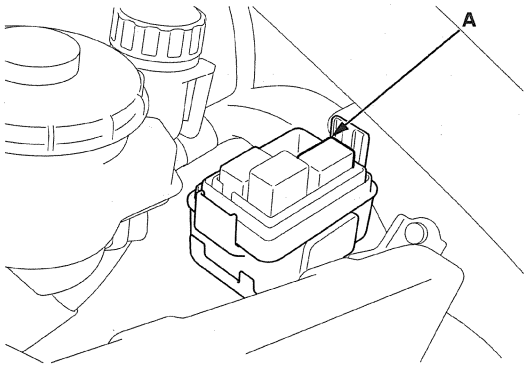
NO–Repair an open in the wire between the fuel tank unit and G602 (see page 22-48).■

31. Turn the ignition switch to LOCK (0).

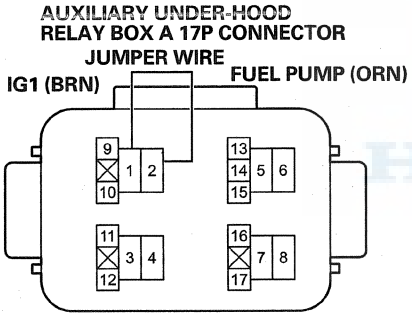
(cont'd)

Fuel Pump Circuit Troubleshooting (cont'd)

32. Remove PGM-FI main relay 2 (A) from auxiliary under-hood relay box A.



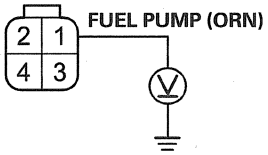
33. Connect auxiliary under-hood relay box A 17P connector terminals No. 1 and No. 2 (PGM-FI main relay 2) with a jumper wire.



Terminal side of female terminals

34. Turn the ignition switch to ON (II), and measure the voltage between fuel tank unit 4P connector terminal No. 1 and body ground.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Replace PGM-FI main relay 2.■

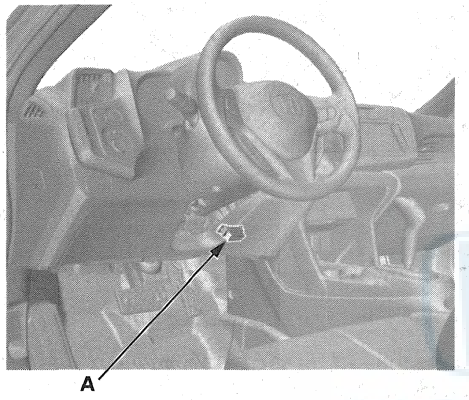
NO–Repair an open in the wire between PGM-FI main relay 2 and the fuel tank unit 4P connector. If the wire is OK, replace the under-dash fuse/relay box; USA models (see page 22-82), Canada models (see page 22-83).■

Fuel Pressure Relieving

Before disconnecting fuel lines or hoses, relieve pressure from the system by disabling the fuel pump and disconnecting the fuel line/quick connect fitting in the engine compartment.

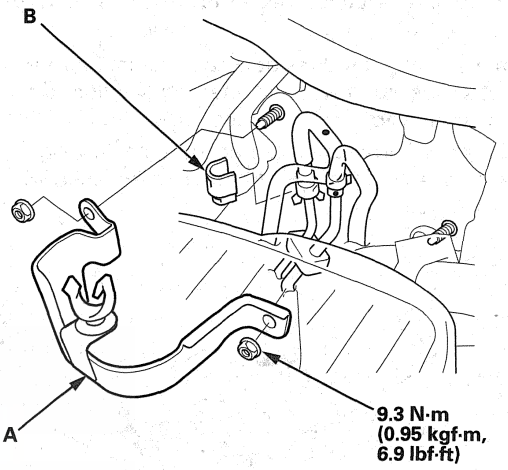
With the HDS

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

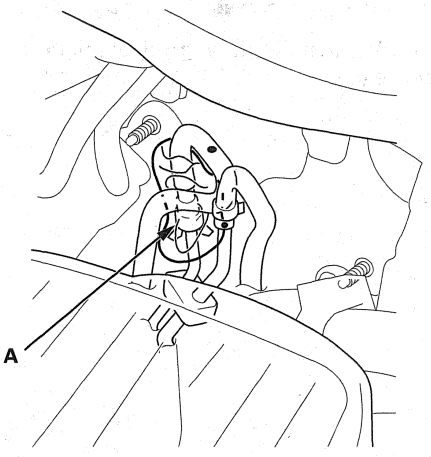


2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see page 11-383).
4. Turn the ignition switch to LOCK (0).
5. Remove the fuel fill cap to relieve the pressure in the fuel tank.
6. Turn the ignition switch to ON (II).
7. From the INSPECTION MENU of the HDS, select Fuel Pump OFF, then start the engine, and let it idle until it stalls.

   NOTE:
   - Do not allow the engine to idle above 1,000 rpm or the ECM/PCM will continue to operate the fuel pump.
   - A Confirmed or Pending DTC may be set during this procedure. Check for DTCs, and clear them as needed.
8. Turn the ignition switch to LOCK (0).
9. Do the 12V battery battery terminal disconnection procedure (see page 22-86).
10. Remove the cowl cover and the under-cowl panel (see page 20-153).
11. Remove the bracket (A) and the quick-connect fitting cover (B).



12. Check the fuel quick-connect fitting for dirt, and clean it if needed.
13. Place a rag or shop towel over the quick-connect fitting (A).

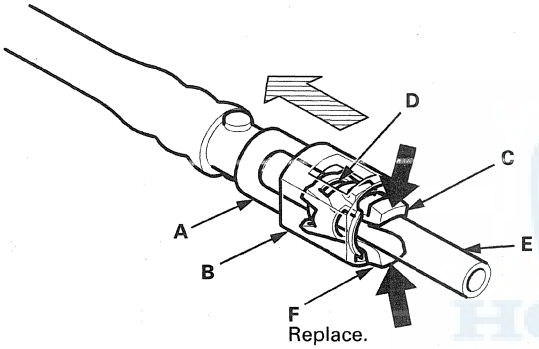


(cont'd)

Fuel Pressure Relieving (cont'd)

14. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

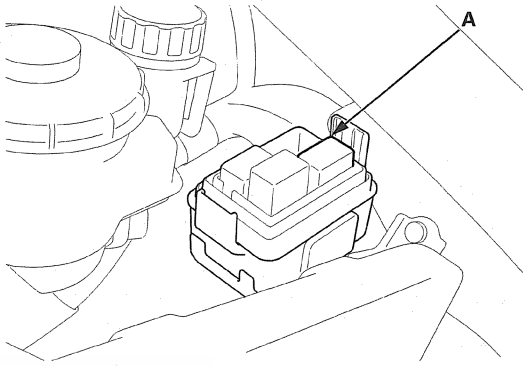
    NOTE:
    - Be careful not to damage the line (E) or other parts.
    - Do not use tools.
    - If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.
    - Do not remove the retainer from the line; once removed, the retainer (F) must be replaced with a new one.



15. After disconnecting the quick-connect fitting, check it for dirt or damage (see step 4 on page 11-296).
16. Do the 12V battery battery terminal reconnection procedure (see page 22-86).

Without HDS

1. Remove PGM-FI main relay 2 (A) from auxiliary under-hood relay box A.

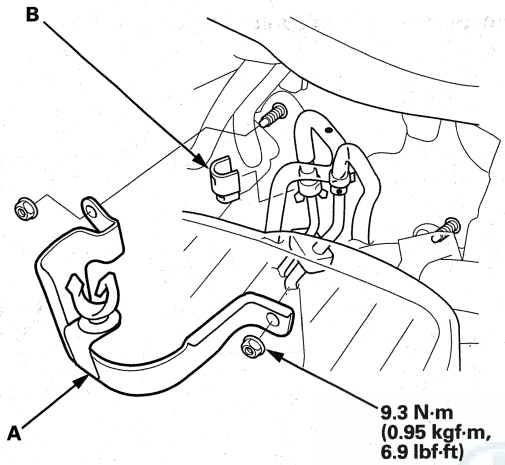


2. Start the engine, and let it idle until it stalls.

    NOTE: If any DTCs are stored, clear and ignore them.

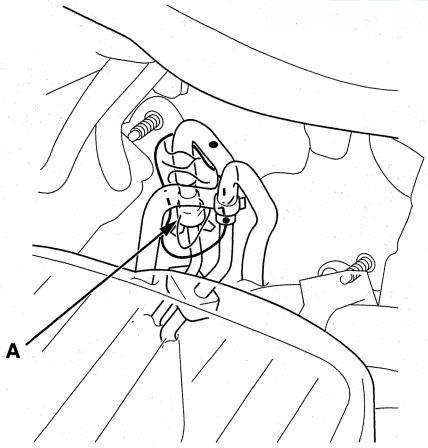
3. Turn the ignition switch to LOCK (0).
4. Remove the fuel fill cap to relieve the pressure in the fuel tank.
5. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
6. Remove the cowl cover and the under-cowl panel (see page 20-153).

7. Remove the bracket (A) and the quick-connect fitting cover (B).



8. Check the fuel quick-connect fitting for dirt, and clean it if needed.

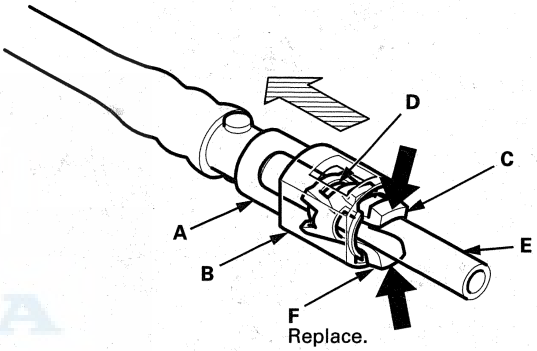
9. Place a rag or shop towel over the quick-connect fitting (A).



10. Disconnect the quick-connect fitting (A): Hold the connector (B) with one hand, and squeeze the retainer tabs (C) with the other hand to release them from the locking tabs (D). Pull the connector off.

NOTE:

- Be careful not to damage the line (E) or other parts.
- Do not use tools.
- If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.
- Do not remove the retainer from the line; once removed, the retainer (F) must be replaced with a new one.



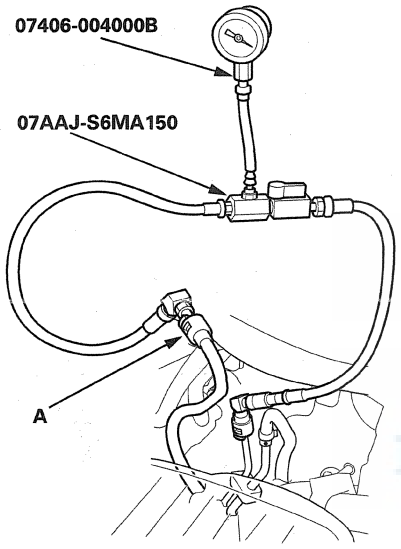
11. After disconnecting the quick-connect fitting, check it for dirt or damage (see step 4 on page 11-296).

12. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Fuel Pressure Test

Special Tools Required
- Fuel Pressure Gauge 07406-004000B
- Fuel Pressure Gauge Attachment Set 07AAJ-S6MA150

1. Relieve the fuel pressure (see page 11-287).
2. Remove the cowl cover and the under-cowl panel (see page 20-153).
3. Disconnect the quick-connect fitting (A). Attach the fuel pressure gauge set and the fuel gauge.



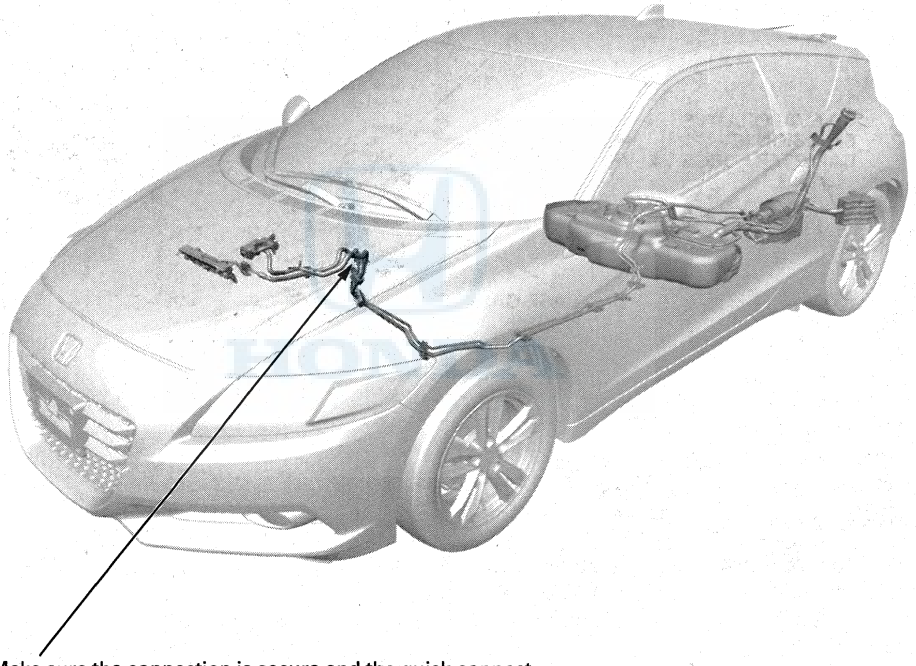
4. Start the engine, and let it idle.
   - If the engine starts, go to step 6.
   - If the engine does not start, go to step 5.
5. Check to see if the fuel pump is running: Listen to the fuel filler port with the fuel fill cap removed. The fuel pump should run for 2 seconds when the ignition switch is first turned to ON (II).
   - If the pump runs, go to step 6.
   - If the pump does not run, do the fuel pump circuit troubleshooting (see page 11-283).
6. Read the fuel pressure gauge. The pressure should be 320—370 kPa (3.3—3.8 kgf/cm^2, 47—54 psi).
   - If the pressure is OK, the test is complete.
   - If the pressure is out of specification, replace the fuel pressure regulator (see page 11-304) and the fuel filter (see page 11-304), then recheck the fuel pressure.

Fuel Tank Draining

1. Remove the fuel tank unit (see page 11-301).
2. Using a hand pump, a hose, and a container suitable for fuel, draw the fuel from the fuel tank.
3. Reinstall the fuel tank unit (see page 11-302).

Fuel Line Inspection

Check the fuel system lines and hoses for damage, leaks, and deterioration. Replace any damaged parts.

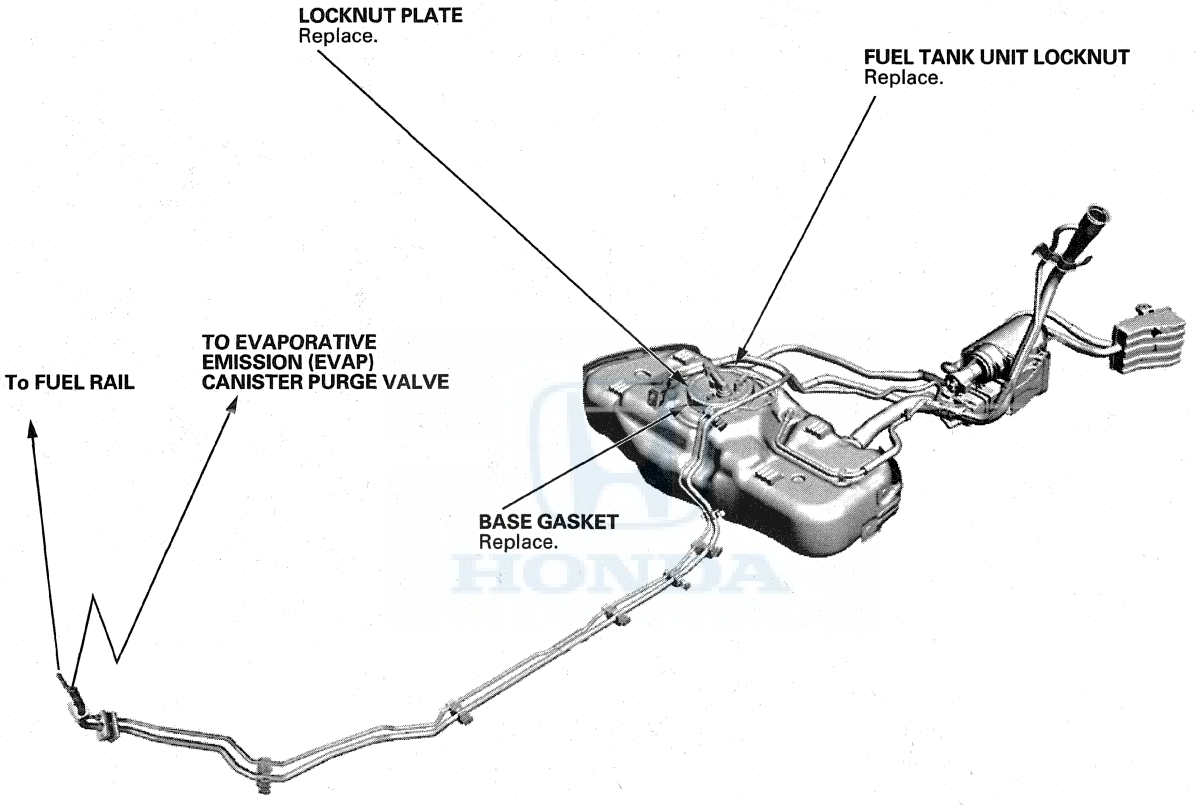


Make sure the connection is secure and the quick-connect fitting covers are firmly locked in place.

(cont'd)

Fuel Line Inspection (cont'd)

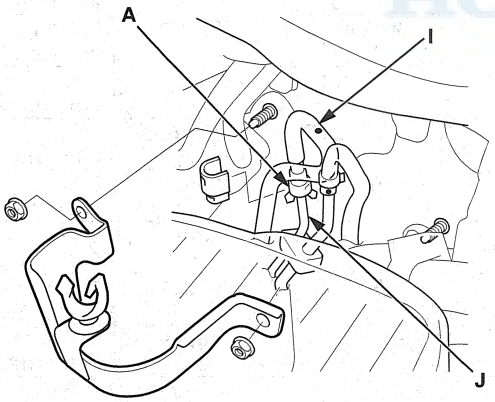
Check all quick -connect fittings, and make sure they are properly positioned and tightened.

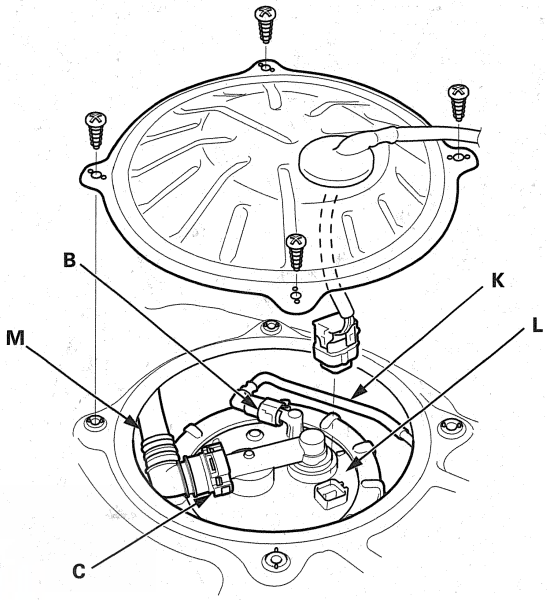


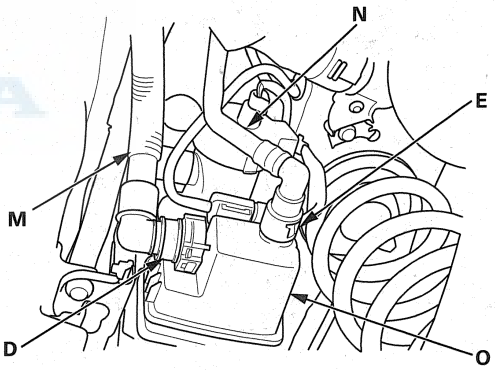
Fuel Line/Quick-Connect Fitting Precautions

The fuel line/quick-connect fittings (A, B, C, D, E, F, G and H) connect the fuel feed hose (I) to fuel feed line (J), the fuel line (K) to the fuel tank unit (L), the fuel vent tube (M) to the fuel tank unit, the fuel purge line (N) to the EVAP canister (O), the fuel vent tube to the EVAP canister, the fuel tank vapor recirculation tube (P) to the vapor control valve tube (Q), the fuel fill neck tube (R) to the fuel fill pipe (S), the vapor control valve tube to the fuel fill neck tube, and when removing or installing the fuel feed hose, the fuel tank unit, or the fuel tank, or when disconnecting/connecting the quick-connect fittings, pay attention to the following:

- The fuel feed hose, the fuel line and the quick-connect fittings are not heat-resistant; be careful not to damage them during welding or other heat-generating procedures.
- The fuel feed hose, the fuel line and the quick-connect fittings are not acid-proof; do not touch them with a shop towel which was used for wiping battery electrolyte. Replace them if they came into contact with electrolyte or something similar.
- When connecting or disconnecting the fuel feed hose, the fuel line and the quick-connect fittings, be careful not to bend or twist them excessively. Replace them if they are damaged.

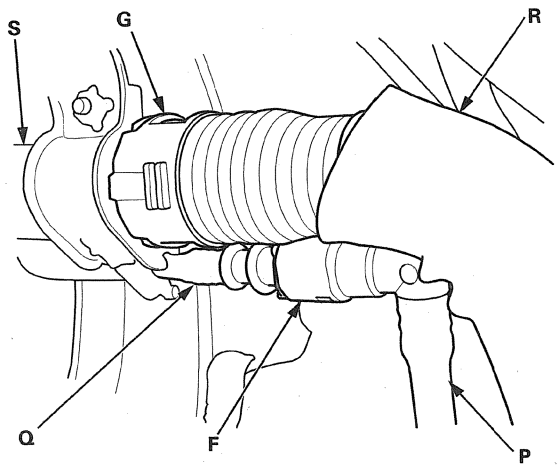


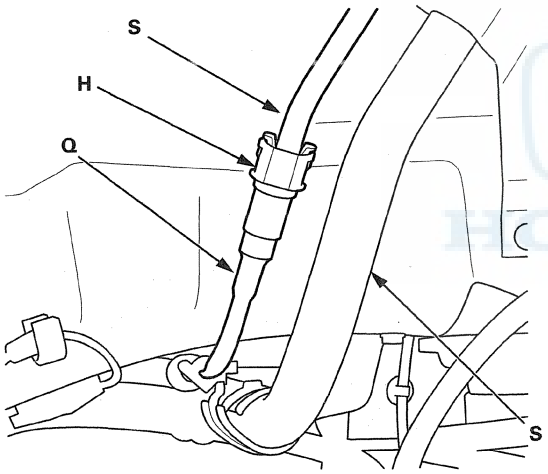




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Fuel Line/Quick-Connect Fitting Precautions (cont'd)





A disconnected quick-connect fitting can be reconnected, but the retainer on the mating line cannot be reused once it has been removed from the line. Replace the retainer when:

- replacing the fuel rail.
- replacing the fuel feed line.
- replacing the fuel pump.
- replacing the fuel filter.
- replacing the fuel gauge sending unit.
- replacing the EVAP purge line.
- replacing the EVAP canister.
- replacing the fuel fill pipe.
- replacing the fuel tank.
- it has been removed from the fuel line.
- it is damaged.

NOTE:

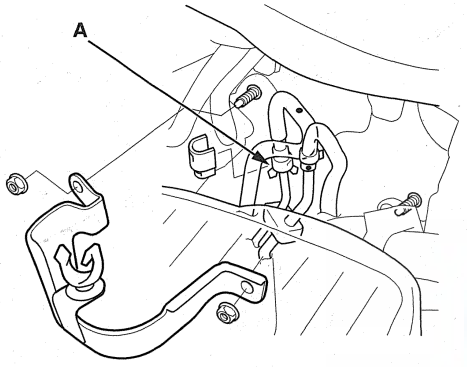
- When you replace a retainer, use the same size and manufacturer as the original retainer.
- The fuel line/quick-connect fittings retainer (C, D) can be reused once.

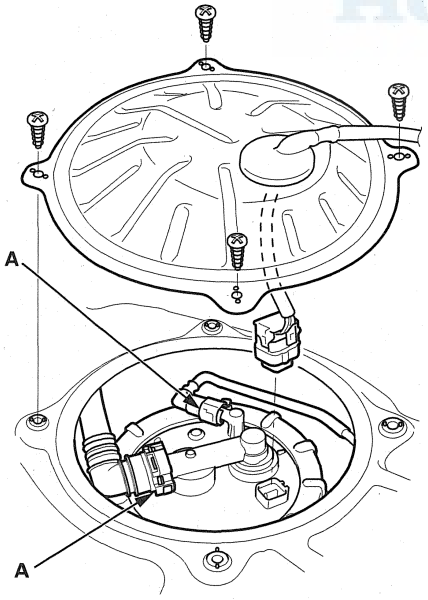
Location	Manufacturer	Retainer color	Line diameter
A	Tokai DTR	Green	0.248 in (6.3 mm)
B	Sanoh	White	0.374 in (9.5 mm)
C	Tokai DTR	Green	0.75 in (19 mm)
D	Tokai DTR	Green	0.75 in (19 mm)
E	Sanoh	White	0.47 in (12 mm)
F	Sanoh	White	0.47 in (12 mm)
G	Tokai DTR	Green	1.126 in (28.6 mm)
H	Tokai	Natural	0.47 in (12 mm)

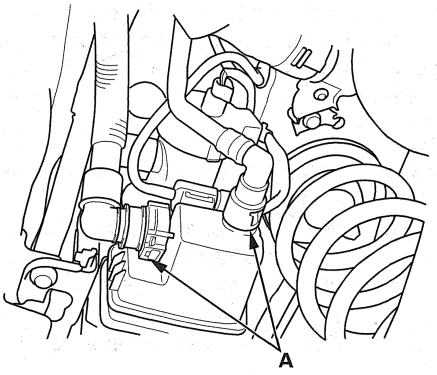
Fuel Line/Quick-Connect Fitting Removal

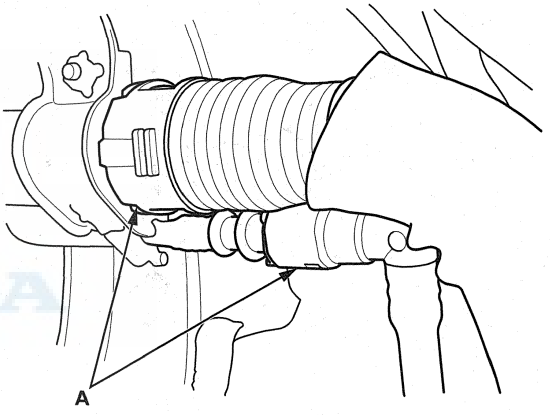
NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions (see page 11-293).

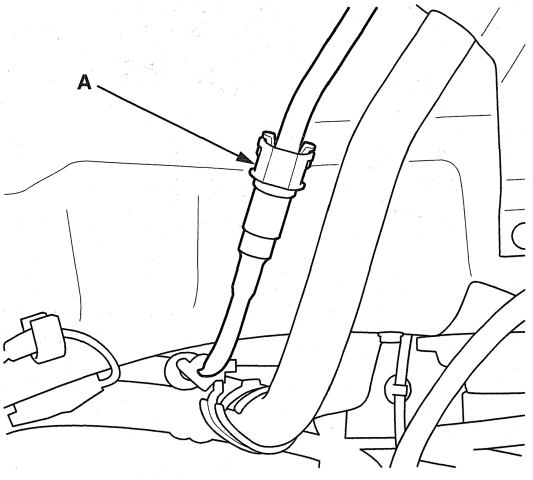
1. Relieve the fuel pressure (see page 11-287), but keep the 12 volt battery connected.
2. Check the fuel quick-connect fittings (A) for dirt, and clean them if needed.









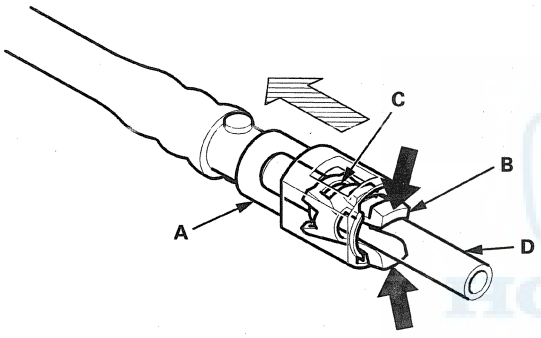


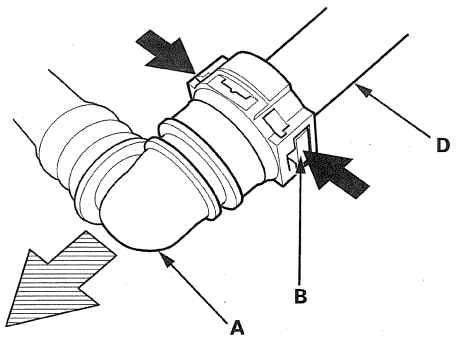
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Fuel Line/Quick-Connect Fitting Removal (cont'd)

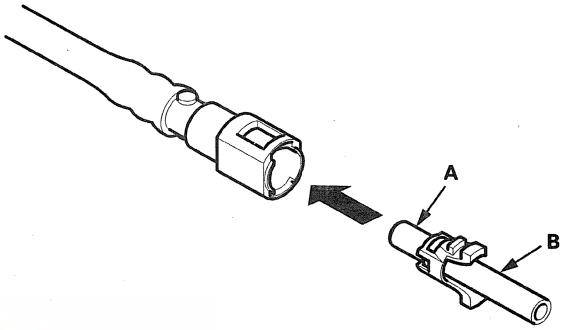
3. Place a rag or shop towel over the quick-connect fitting. Hold the connector (A) with one hand, and squeeze the retainer tabs (B) with the other hand to release them from the locking tabs (C). Pull the connector off.

   NOTE:
   - Be careful not to damage the line (D) or other parts. Do not use tools.
   - If the connector does not move, keep the retainer tabs pressed down, and alternately pull and push the connector until it comes off easily.
   - Do not remove the retainer from the line; once removed, the retainer must be replaced with a new one.





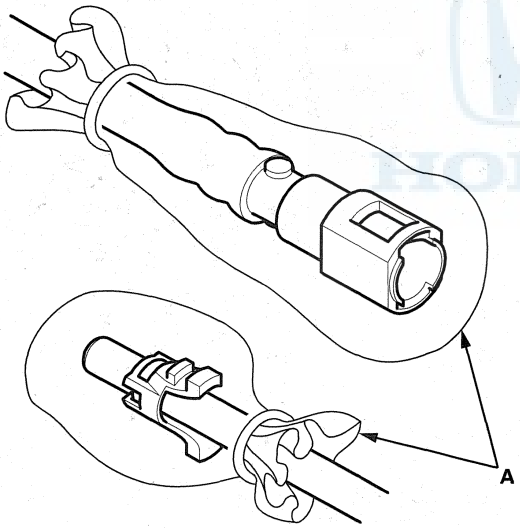
4. Check the contact area (A) of the line (B) for dirt or damage.
   - If it is dirty, clean the connector, and dry it with compressed air.
   - If it is damaged, replace the fuel filter, or the fuel feed line.



5. To prevent damage and keep foreign matter out, cover the disconnected connector and line ends with plastic bags (A).

   NOTE: The retainer cannot be reused once it has been removed from the line.

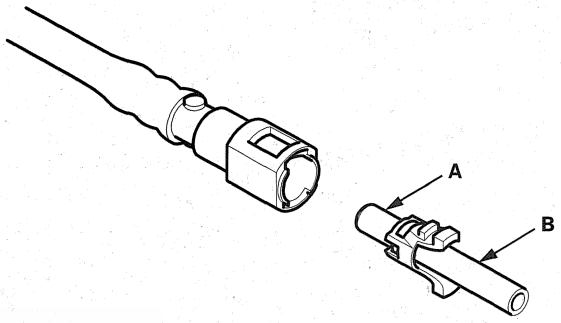
   Replace the retainer when:
   - replacing the fuel rail.
   - replacing the fuel feed line.
   - replacing the fuel pump.
   - replacing the fuel filter.
   - replacing the fuel gauge sending unit.
   - replacing the EVAP purge line.
   - replacing the EVAP canister.
   - replacing the fuel fill pipe.
   - replacing the fuel tank.
   - it has been removed from the fuel line.
   - it is damaged.



Fuel Line/Quick-Connect Fitting Installation

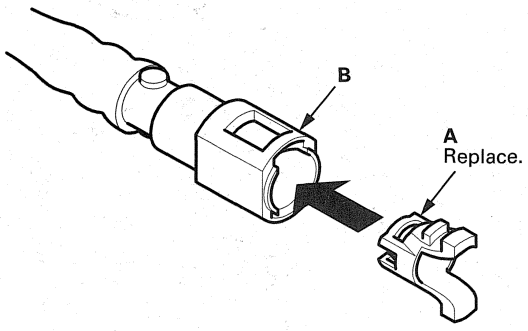
NOTE: Before you work on the fuel lines and fittings, read the Fuel Line/Quick-Connect Fitting Precautions (see page 11-293).

1. Check the contact area (A) of the line (B) for dirt or damage, and clean it if needed.



2. Insert a new retainer (A) into the connector (B) if the retainer is damaged, or after:
   - replacing the fuel rail.
   - replacing the fuel feed line.
   - replacing the fuel pump.
   - replacing the fuel filter.
   - replacing the fuel gauge sending unit.
   - replacing the EVAP purge line.
   - replacing the EVAP canister.
   - replacing the fuel fill pipe.
   - replacing the fuel tank.
   - removing the retainer from the fuel line.

   NOTE: When you replace a retainer, use the same size and manufacturer as the original retainer (see page 11-293).

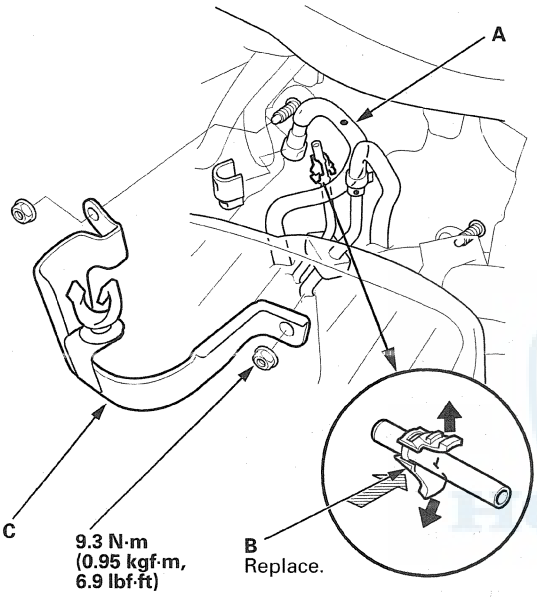


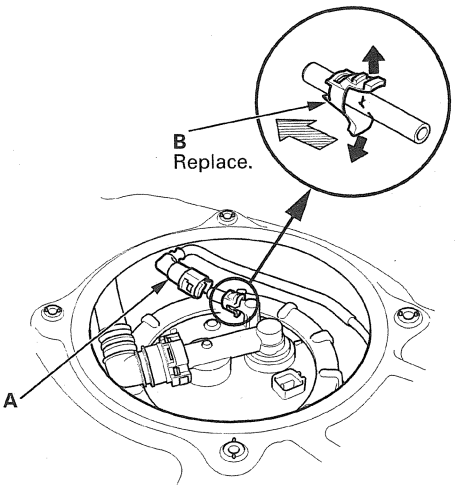
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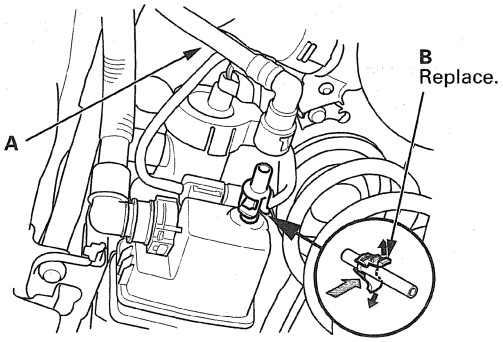
Fuel Line/Quick-Connect Fitting Installation (cont'd)

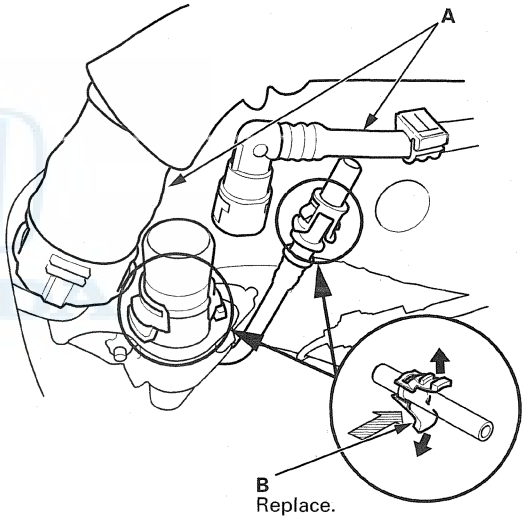
3. Before connecting a new fuel tube/quick-connect fitting assembly (A), remove the old retainer (B) from the mating line.

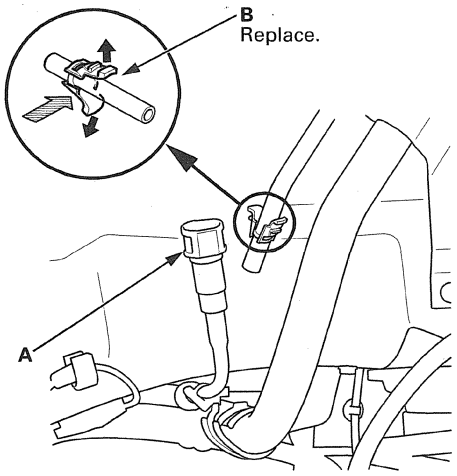
   NOTE: When replacing the fuel tube/quick-connect fitting assembly in the engine compartment, remove the cowl cover and under-cowl panel (see page 20-153), and the bracket (C).







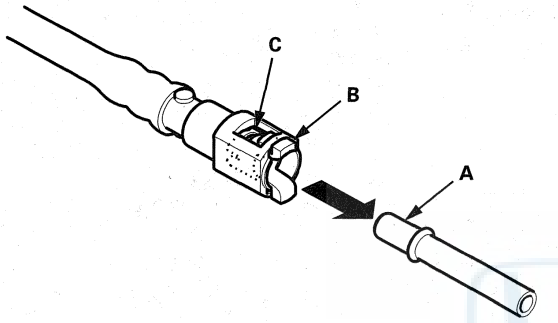


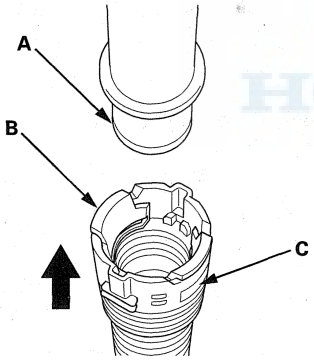


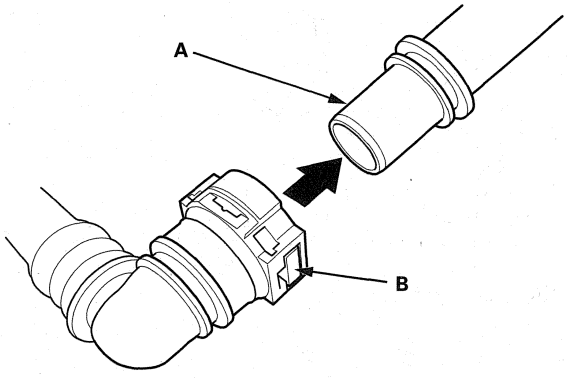
4. Align the quick-connect fittings with the line (A), and align the retainer locking tabs (B) with the connector grooves (C). Then press the quick-connect fittings onto the line until both retainer tabs lock with a clicking sound.

   NOTE: If it is hard to connect, put a small amount of new engine oil on the line end.

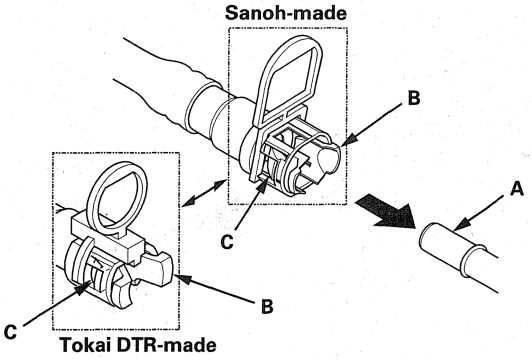
Connection with new retainer



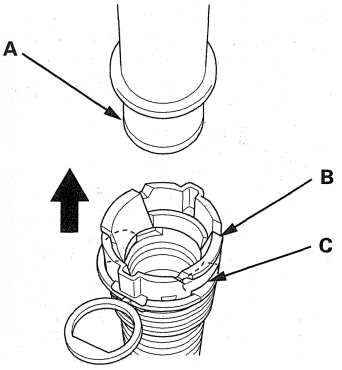




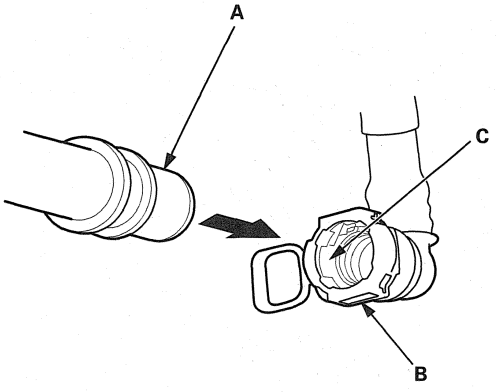
Connection to new fuel line



Connection to new fuel line: Fuel fill neck tube



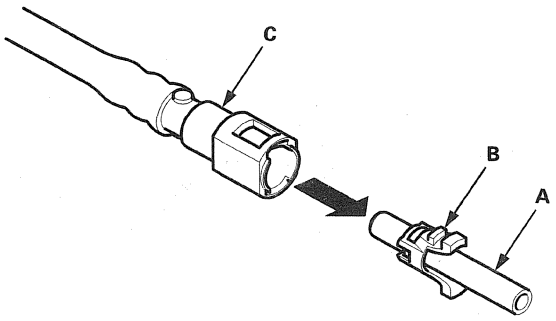
Connection to new fuel line: Fuel vent tube



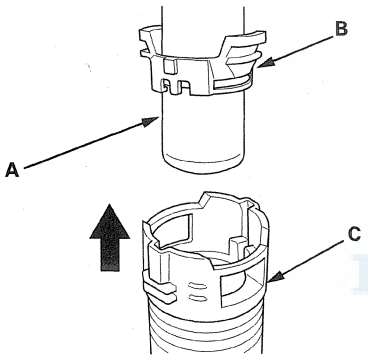
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Fuel Line/Quick-Connect Fitting Installation (cont'd)

Reconnection to existing retainer



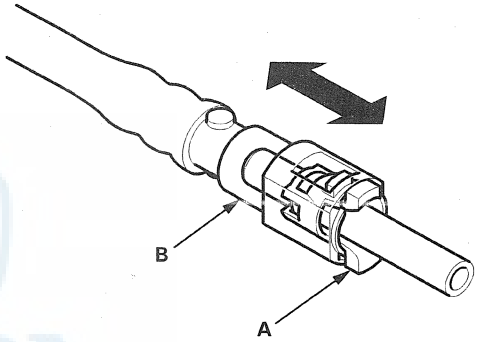
Reconnection to existing retainer: Fuel fill neck tube



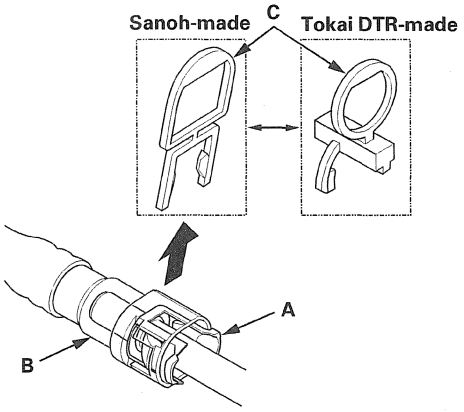
5. When you are reconnecting the connector with the old retainer, make sure the connection is secure and the tabs (A) are firmly locked into place; check visually and also by pulling the connector (B). When you replacing the fuel line with a new one, make sure you remove the ring pull (C) upwards after you confirm the connection is secure.

   NOTE: Before you remove the ring pull, make sure the fuel line connection is secure. If the connection is not secure, the ring pull could break when you try to remove it.

Reconnection to existing retainer



Connection to new fuel line



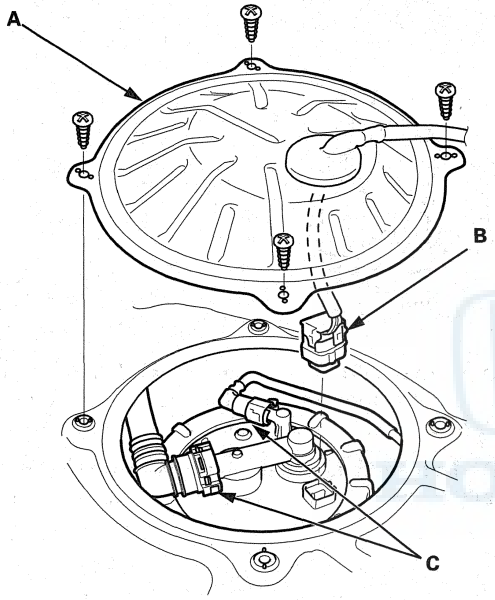
6. Turn the ignition switch to ON (II). The fuel pump will run for about 2 seconds, and the fuel pressure will rise. Repeat this two or three times, then make sure there are no fuel leaks.

Fuel Tank Unit Removal and Installation

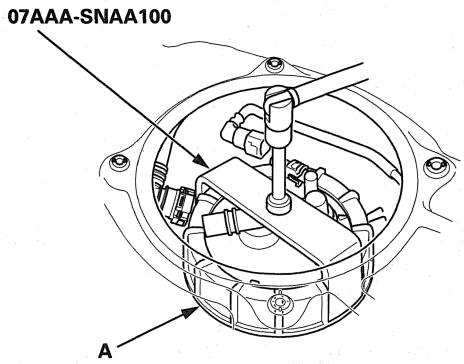
Special Tools Required
Fuel Pump Module Locknut Wrench 07AAA-SNAA100

Removal

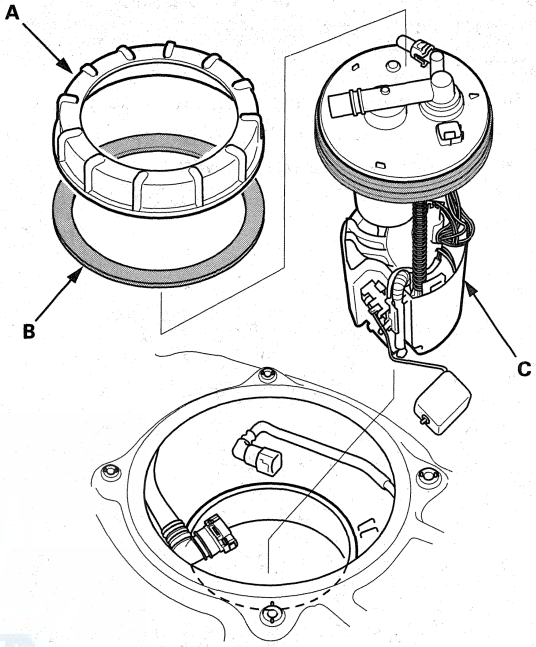
1. Relieve the fuel pressure (see page 11-287).
2. Remove the rear tray (see step 1 on page 20-62).
3. Remove the access panel (A) from the floor.



4. Disconnect the fuel tank unit 4P connector (B).
5. Disconnect the quick-connect fittings (C) from the fuel tank unit (see page 11-295).
6. Using the special tool, loosen the locknut (A).



7. Remove the locknut (A), the locknut plate (B), and the fuel tank unit (C).



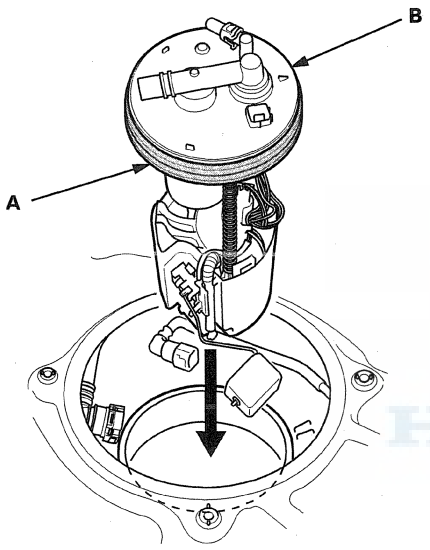
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Fuel Tank Unit Removal and Installation (cont'd)

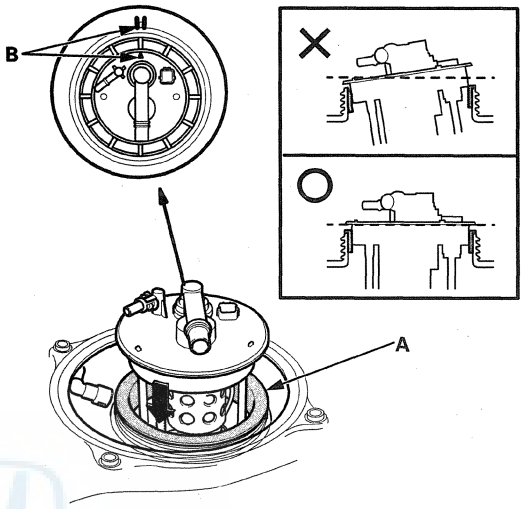
Installation

1. Temporarily attach a new base gasket (A) to the fuel tank unit (B), then insert the fuel tank unit partially into the fuel tank.

   NOTE:
   - Be careful not to damage the new base gasket.
   - Be careful not to bend the fuel gauge sending unit.
   - Do not coat the base gasket with oil.



2. Transfer the base gasket (A) from the fuel tank unit to the fuel tank.

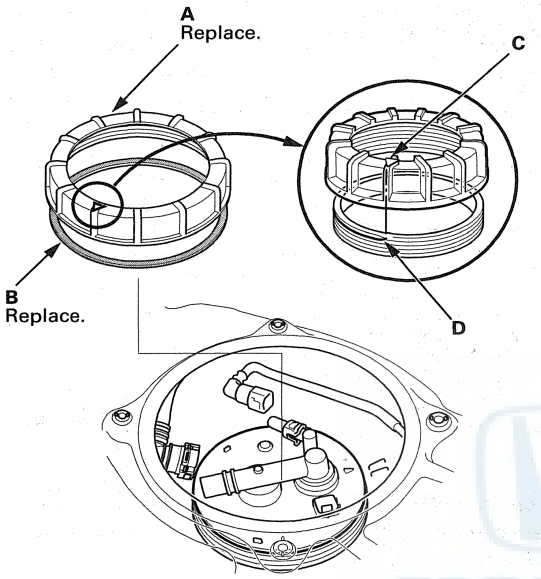


3. Align the marks (B) on the fuel tank and fuel tank unit, then insert the fuel tank unit into the fuel tank until the fuel tank unit rests on top of the base gasket.

   NOTE: To avoid a fuel leak, check the base gasket, visually or by hand, to make sure it is not pinched.

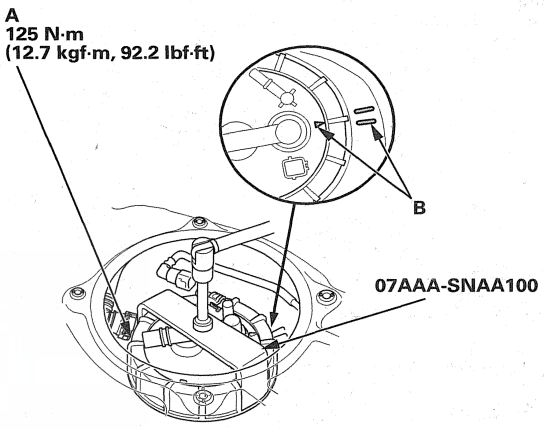
4. Tighten a new locknut (A) by hand with a new locknut plate (B).

   NOTE: Before tightening, align the mark (C) on the locknut plate to the start of the thread (D).



5. Using the special tool, tighten the locknut (A) to the specified torque.

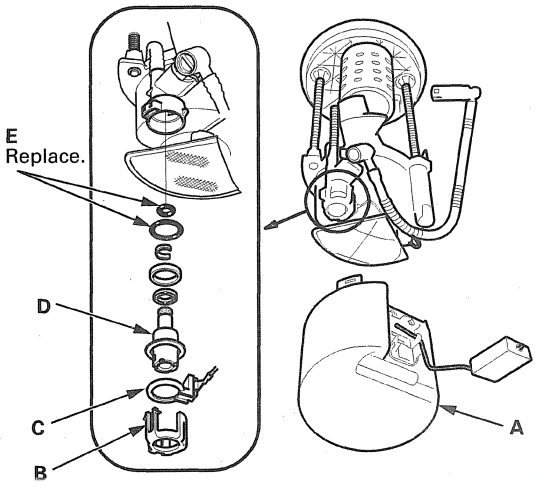
   NOTE:
   - After tightening, make sure the marks (B) are still aligned.
   - After installation, check the base gasket, visually or by hand, to make sure it is not pinched.



6. Connect the fuel tank unit 4P connector, then connect the quick-connect fitting (see page 11-297).
7. Reconnect the negative cable to the 12 volt battery, and turn the ignition switch to ON (II). The fuel pump will run for about 2 seconds, and fuel pressure will rise. Repeat this two or three times, then make sure there are no fuel leaks.
8. Install the access panel.
9. Install the rear tray (see step 1 on page 20-62).
10. Install the fuel fill cap.

Fuel Pressure Regulator Replacement

1. Remove the fuel tank unit (see page 11-301).
2. Remove the reservoir (A).



3. Remove the bracket (B).
4. Remove the ground ring (C).
5. Remove the fuel pressure regulator (D).
6. Install the parts in the reverse order of removal with new O-rings (E) and a new bracket. When installing the fuel tank unit, align the marks on the unit and the fuel tank (see page 11-302).

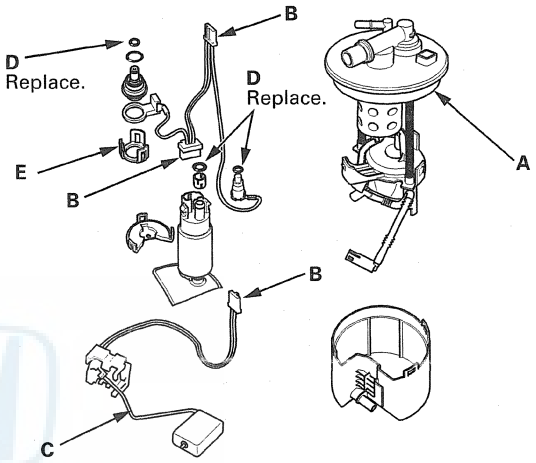
NOTE:

- Coat the O-rings with clean engine oil; do not use any other oils or fluids.
- Do not pinch the O-rings during installation.
- Use all the new parts supplied in the pressure regulator replacement kit.

Fuel Filter Replacement

The fuel filter should be replaced whenever the fuel pressure drops below the specified value (see page 11-290), after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Remove the fuel tank unit (see page 11-301).
2. Remove the fuel filter set (A).



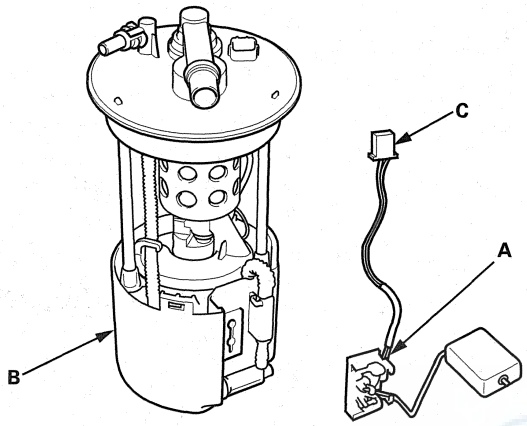
3. Check these items before installing the fuel tank unit:
   - When connecting the wire harness (B), make sure the connection is secure and the connectors are firmly locked into place.
   - When installing the fuel gauge sending unit (C), make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal with new O-rings (D) and a new bracket (E). When installing the fuel tank unit, align the marks on the unit and the fuel tank (see page 11-302).

NOTE:

- Coat the O-rings with clean engine oil; do not use any other oils or fluids.
- Do not pinch the O-rings during installation.
- Use all the new parts supplied in the fuel filter replacement kit.

Fuel Pump/Fuel Gauge Sending Unit Replacement

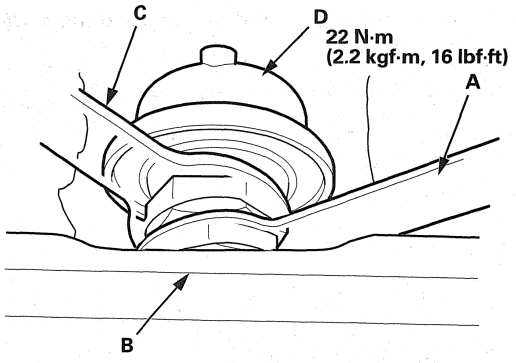
1. Remove the fuel tank unit (see page 11-301).
2. Remove the fuel level sensor (fuel gauge sending unit) (A) from the fuel tank unit (B).



3. Check these items before installing the fuel tank unit:
   - When connecting the wire harness, make sure the connection is secure and the connector (C) is firmly locked into place.
   - When installing the fuel gauge sending unit, make sure the connection is secure. Be careful not to bend or twist it excessively.
4. Install the parts in the reverse order of removal. When installing the fuel tank unit, align the marks on the unit and the fuel tank (see page 11-302).

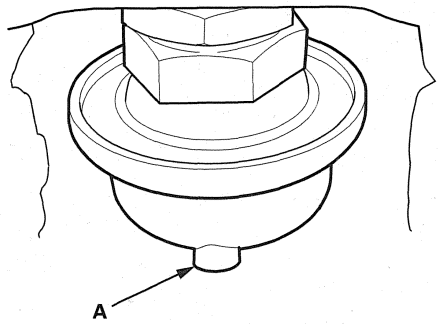
Fuel Pulsation Damper Replacement

1. Remove the fuel rail (see page 11-200).
2. Place a wrench (A) on the fuel rail (B).



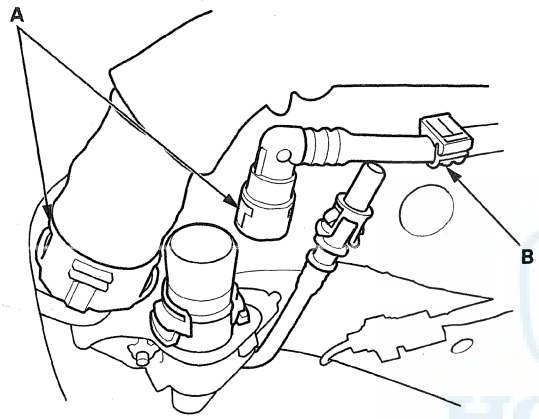
3. Place a second wrench (C) on the fuel pulsation damper (D).
4. Remove the pulsation damper by holding the first wrench while turning the second wrench.
5. Install the fuel pulsation damper in the reverse order of removal with new washers.

   NOTE:
   - Replace all washers whenever the fuel pulsation damper is loosened or removed.
   - If the drain hole (A) of the fuel pulsation damper cover does not face down, reinstall it as shown.



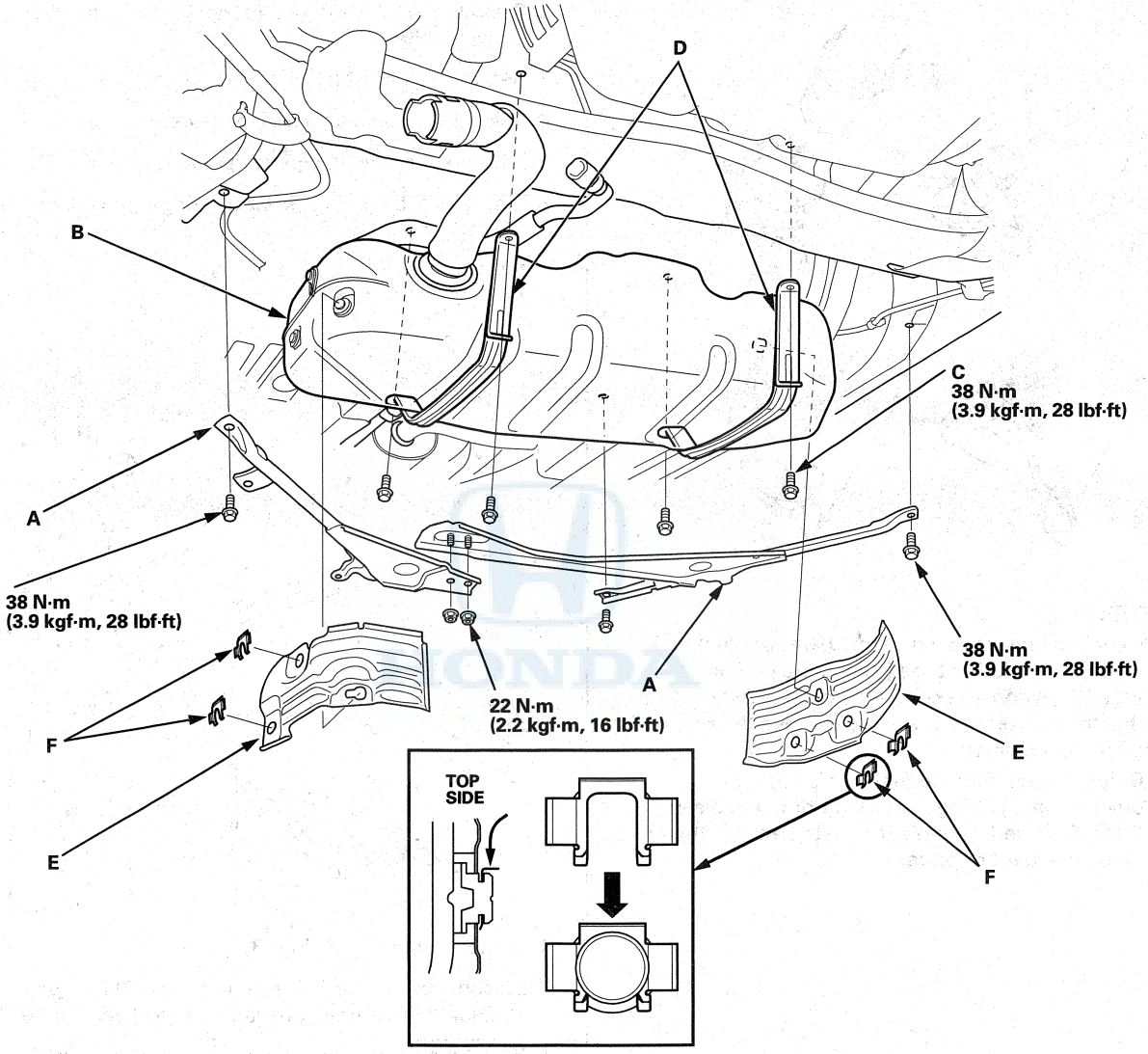
Fuel Tank Replacement

1. Drain the fuel tank until it is less than half full (see page 11-290).
2. Reinstall the fuel tank unit without connecting the fuel tank unit 4P connector, and the quick-connect fittings (see page 11-301).
3. Raise the vehicle on a lift (see page 1-10).
4. Disconnect the quick-connect fittings (A) (see page 11-295), and open the clamp (B).



5. Remove the middle floor undercover (see page 20-166).

6. Remove the trailing arm braces (A).



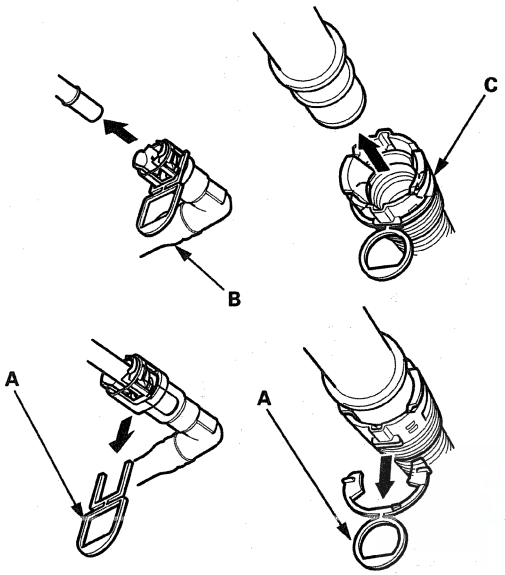
7. Place a jack or other support under the fuel tank (B).
8. Remove the strap bolts (C) and the straps (D).
9. Remove the fuel tank.
10. Remove the fuel tank protectors (E).

NOTE: When installing the fuel tank protectors, make sure to insert the clips in the direction shown (F).

(cont'd)

Fuel Tank Replacement (cont'd)

11. Install the parts in the reverse order of removal.

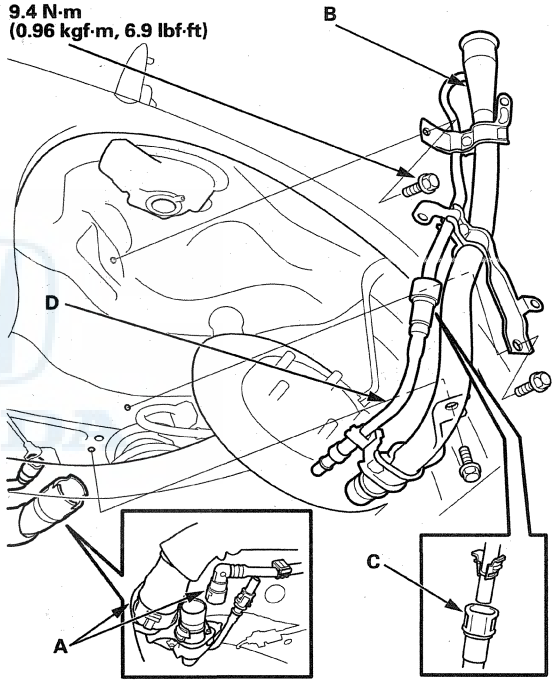


NOTE:

- New fuel tank have a ring pull (A) at the fuel tank vapor recirculation tube (B) and the fuel fill neck tube (C). When you connect the hose and confirm that the connection is secure, remove the ring pull by pulling it down.
- Before connecting the fuel fill pipe and the quick-connect fittings, check for dirt, and clean them if needed, taking care not to damage the fuel fill pipe and other parts.

Fuel Fill Pipe Removal/Installation

1. Relieve the fuel pressure (see page 11-287).
2. Drain the fuel tank until it is less than half full (see page 11-290).
3. Remove the fuel fill cap.
4. Raise the vehicle on a lift (see page 1-10).
5. Remove the fuel fill pipe cover (see page 20-167).
6. Disconnect the quick-connect fittings (A) (see page 11-295).



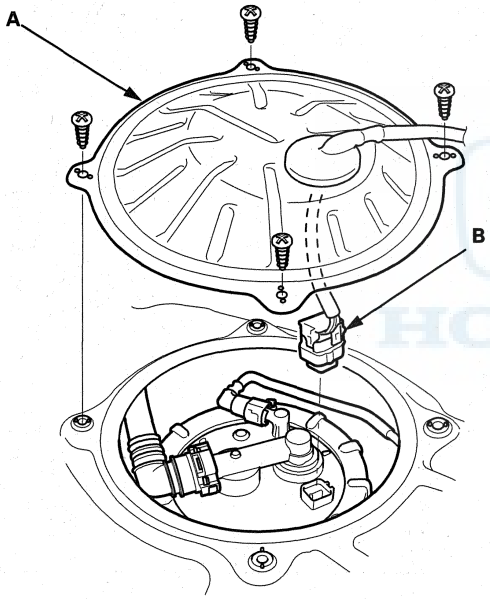
7. Remove the fuel fill pipe (B).
8. Disconnect the quick-connect fittings (C) (see page 11-295), then remove the vapor control valve tube (D).
9. Install the parts in the reverse order of removal.

   NOTE: Before connecting the fuel fill pipe and the quick-connect fitting, check for dirt, and clean it if needed, taking care not to damage the fuel fill pipe and other parts.

Fuel Gauge Sending Unit Test

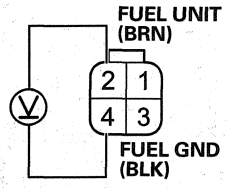
NOTE: For the fuel gauge system circuit diagram, refer to the Gauges Circuit Diagram (see page 22-328).

1. Check the B22 METER (7.5 A) fuse in the under- dash fuse/relay box, and replace it if needed.
2. Check for body electrical system DTCs.
   - If no DTCs are found, go to step 3.
   - If DTC B1175 or B1176 is indicated, go to the indicated DTC's troubleshooting.
3. Turn the ignition switch to LOCK (0).
4. Remove the rear tray (see step 1 on page 20-62).
5. Remove the access panel (A) from the floor.



6. Disconnect the fuel tank unit 4P connector (B).
7. Measure the voltage between fuel tank unit 4P connector terminals No. 2 and No. 4 with the ignition switch turned to ON (II). There should be 12V battery voltage.
   - If the voltage is OK, go to step 8.
   - If the voltage is not as specified, check for:
     - a short in the BRN wire to ground.
     - an open in the BRN or BLK wire.

FUEL TANK UNIT 4P CONNECTOR



Wire side of female terminals

8. Turn the ignition switch to LOCK (0).
9. Remove the fuel tank unit from the fuel tank (see page 11-301).

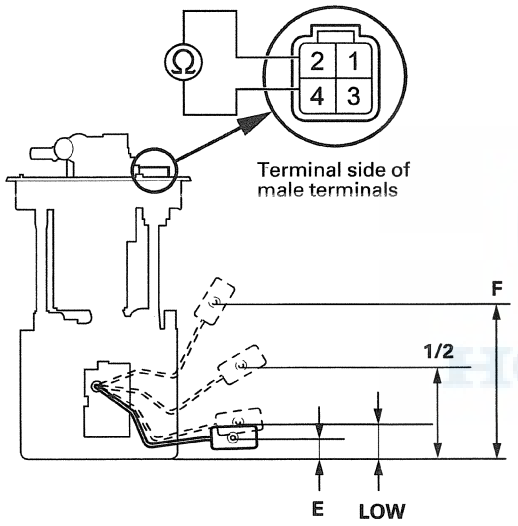
(cont'd)

Fuel Gauge Sending Unit Test (cont'd)

10. Measure the resistance between fuel tank unit 4P connector terminals No. 2 and No. 4 with the float at E (EMPTY), LOW (LOW FUEL INDICATOR), 1/2 (HALF FULL), and F (FULL) positions.

    If you do not get the following readings, replace the fuel gauge sending unit (see page 11-305).

Float Position	F	1/2	LOW	E
	5.366 in (136.3 mm)	3.094 in (78.6 mm)	1.185 in (30.1 mm)	0.646 in (16.4 mm)
Resistance (Ω)	19 to 21	197.3 to 207.3	489.6 to 639.6	772 to 788



11. Reconnect the fuel tank unit 4P connector.
12. Remove the No. B1 BACK UP (15 A) fuse from the under-dash fuse/relay box for at least 10 seconds, then reinstall it.
13. Turn the ignition switch to ON (II).
14. Check that the fuel gauge indicates F with the float at F.
    - If the fuel gauge does not indicate F, replace the gauge control module.
    - If the gauge is OK, the test is complete.

    NOTE: Remove the No. B1 BACK UP (15 A) fuse from the under-dash fuse/relay box for at least 10 seconds after completing the test, otherwise it may take up to 20 minutes for the fuel gauge to indicate the correct fuel level.

Low Fuel Indicator Test

1. Do the gauge self-diagnostic function (see page 22-325).
   - If the low fuel indicator flashes, go to step 2.
   - If the low fuel indicator does not flash, replace the gauge control module (see page 22-354).
2. Check for body electrical system DTCs.
   - If any DTCs are indicated, do the indicated DTC's troubleshooting.
   - If no DTCs are indicated, go to step 3.
3. Do the fuel gauge sending unit test (see page 11-309).

Catalytic Converter System

Component Location Index



UNDER-FLOOR THREE WAY CATALYTIC CONVERTER (TWC)
Removal/Installation, page 11-314

WARM UP THREE WAY CATALYTIC CONVERTER (WU-TWC)
Removal/Installation, page 11-313

ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)
General Troubleshooting Information, page 11-3
Substituting, page 11-7
Update, page 11-207
Replacement, page 11-209

DTC Troubleshooting

DTC P0420: Catalyst System Efficiency Below Threshold

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If some of the DTCs listed below are stored at the same time as DTC P0420, troubleshoot them first, then recheck for DTC P0420.

  P0137, P0138: Secondary HO2S (Sensor 2)

  P0141: Secondary HO2S (Sensor 2) heater

  P0300: Random misfire

  P0301—P0304: No. 1, No. 2, No. 3, or No. 4 cylinder misfire detected
- Poor quality fuel may cause this DTC.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - A/T in D, M/T in 4th or 5th
   - Vehicle speed between 45—75 mph (70—120 km/h) for 5 minutes or more with cruise control set
   - Vehicle speed between 55—75 mph (90—120 km/h) for 10 seconds, then decelerate (with the throttle fully closed). Repeat this at least three times.
   - Maintain the vehicle speed at 55 mph (88 km/h) for 5 minutes or more with cruise control set
5. Monitor the OBD STATUS for DTC P0420 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 4 and recheck.
6. Turn the ignition switch to LOCK (0).
7. Replace the WU-TWC (see page 11-313).
8. Turn the ignition switch to ON (II).
9. Reset the ECM/PCM with the HDS.
10. Do the ECM/PCM idle learn procedure (see page 11-274).
11. Start the engine. Hold the engine speed at 3,000 rpm without load (A/T in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
12. Test-drive for about 10 minutes, varying the vehicle speed.
13. Check the CATALYST MONITOR CONDITION in the DATA LIST with the HDS.

    Does the HDS indicate OK?

    YES–Go to step 14.

    NO–Go to step 11, and recheck.
14. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - Vehicle speed at 55 mph (88 km/h) for 5 minutes or more with cruise control set
15. Monitor the OBD STATUS for DTC P0420 in the DTCs MENU with the HDS.

    Does the HDS indicate OUT OF CONDITION?

    YES–Go to step 12 and recheck.

    NO–Go to step 16.
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0420 indicated?

    YES–Check the fuel quality, then go to step 1.

    NO–Go to step 17.
17. Monitor the OBD STATUS for DTC P0420 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

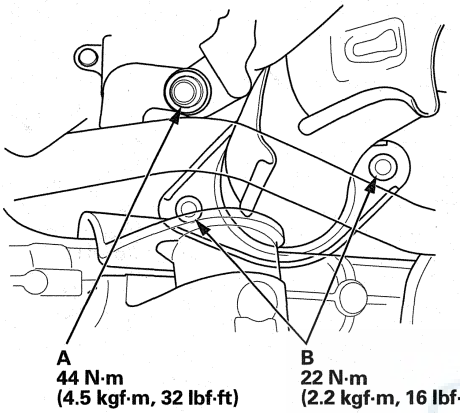
    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check the fuel quality, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on.

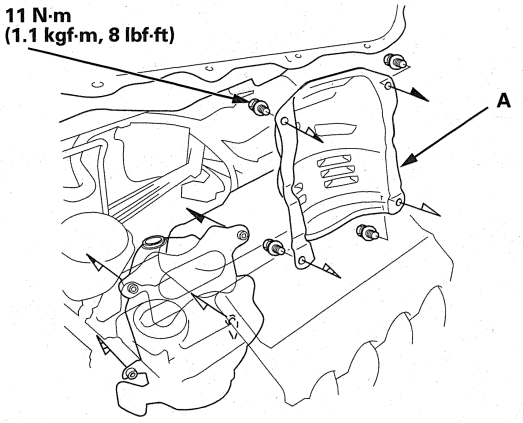
Warm Up TWC Removal/Installation

NOTE: If the warm up TWC is damaged internally, inspect the under-floor TWC for debris.

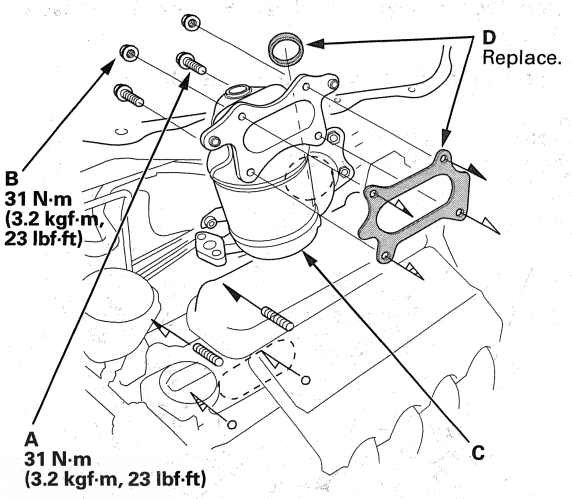
1. Raise the vehicle on a lift (see page 1-10).
2. Remove the bolts (A, B).



3. Remove the cowl cover and the under-cowl panel (see page 20-153).
4. Remove the EGR pipe (see page 11-327).
5. Remove the A/F sensor (Sensor 1) (see page 11-202).
6. Remove the cover (A).



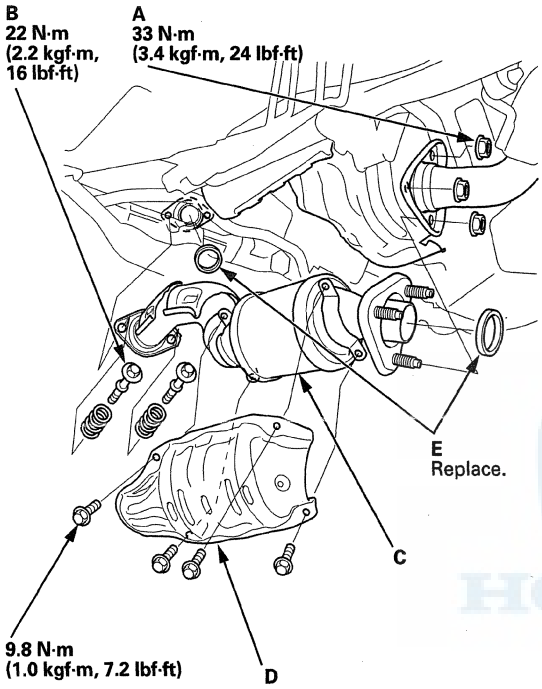
7. Remove the bolts (A) and the nuts (B).



8. Remove the WU-TWC (C).
9. Install the parts in the reverse order of removal with new gaskets (D).

Under-Floor TWC Removal/Installation

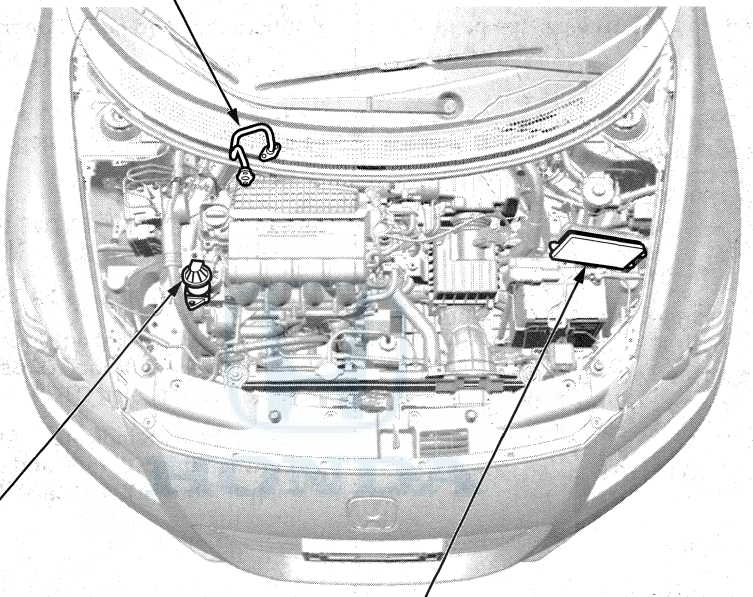
1. Raise the vehicle on a lift (see page 1-10).
2. Remove the secondary HO2S (Sensor 2) (see page 11-202).
3. Remove the nuts (A) and the bolts (B).



4. Remove the under-floor TWC (C).
5. Remove the cover (D).
6. Install the parts in the reverse order of removal with new gaskets (E).

Component Location Index

EXHAUST GAS RECIRCULATION (EGR) PIPE
Removal/Installation, page 11-327



EXHAUST GAS RECIRCULATION (EGR) VALVE
Replacement, page 11-327

ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)
General Troubleshooting Information, page 11-3
Substituting, page 11-7
Update, page 11-207
Replacement, page 11-209

DTC Troubleshooting

DTC P0400: EGR System Leak Detected

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Check for a loose or damaged EGR pipe.

   Is the EGR pipe OK?

   YES–Go to step 2.

   NO–Reconnect or replace the EGR pipe (see page 11-327), then go to step 7.

2. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.

3. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 4th
   - Vehicle speed at 25 mph (40 km/h) for 5 minutes or more
   - Maintain the vehicle speed at 25 mph (40 km/h) and the engine speed between 1,350–3,000 rpm for 9 seconds or more with cruise control set

4. Monitor the OBD STATUS for DTC P0400 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for an exhaust gas leak between the EGR pipe and the EGR valve. If the HDS indicates NOT COMPLETED, go to step 3 and recheck.

5. Turn the ignition switch to LOCK (0).

6. Replace the EGR valve (see page 11-327).

7. Turn the ignition switch to ON (II).

8. Reset the ECM/PCM with the HDS.

9. Do the ECM/PCM idle learn procedure (see page 11-274).

10. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - Vehicle speed at 25 mph (40 km/h) for 5 minutes or more
    - Maintain the vehicle speed at 25 mph (40 km/h) and the engine speed between 1,350–3,000 rpm for 9 seconds or more with cruise control set

11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0400 indicated?

    YES–Check for a leak between the EGR pipe and the EGR valve, then go to step 1.

    NO–Go to step 12.

12. Monitor the OBD STATUS for DTC P0400 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for a leak between the EGR pipe and the EGR valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 10.

DTC P0401: EGR Insufficient Flow

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Go to step 5.

   NO–Go to step 7.
5. Test-drive under these conditions:
   - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
   - CVT in D, M/T in 4th
   - Drive at a steady speed between 55–75 mph (88–120 km/h) for at least 10 seconds
   - During the drive, decelerate (with the throttle fully closed) for at least 4 seconds
6. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Clean the intake manifold EGR port and the EGR pipe with throttle plate cleaner (see page 11-327). Also, clean the passage inside the EGR valve with throttle plate cleaner (see page 11-327), then go to step 9.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 5 and recheck.
7. Turn the ignition switch to LOCK (0).
8. Replace the EGR valve (see page 11-327).
9. Turn the ignition switch to ON (II).
10. Reset the ECM/PCM with the HDS.
11. Do the ECM/PCM idle learn procedure (see page 11-274).
12. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - Drive at a steady speed between 55–75 mph (88–120 km/h) for at least 10 seconds
    - During the drive, decelerate (with the throttle fully closed) for at least 4 seconds
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0401 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the connections and the terminals are OK, go to step 15.

    NO–Go to step 14.
14. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 12.
15. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
16. Test-drive under these conditions:
    - Engine coolant temperature (ECT SENSOR 1) above 158 °F (70 °C)
    - CVT in D, M/T in 4th
    - Drive at a steady speed between 55–75 mph (88–120 km/h) for at least 10 seconds
    - During the drive, decelerate (with the throttle fully closed) for at least 4 seconds
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0401 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 16. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 18.

(cont'd)

DTC Troubleshooting (cont'd)

18. Monitor the OBD STATUS for DTC P0401 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 16. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, keep driving until a result comes on. If the HDS indicates OUT OF CONDITION, go to step 16.

DTC P0404: EGR Control Circuit Range/ Performance Problem

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

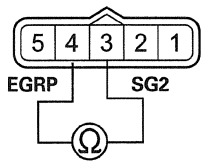
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Clean any carbon build-up on the EGR valve with throttle plate cleaner.■

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the EGR valve 5P connector.
7. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 3 and No. 4.

EGR VALVE 5P CONNECTOR



Terminal side of male terminals

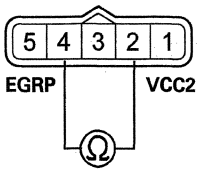
Is there 100 kΩ or more?

YES–Go to step 23.

NO–Go to step 8.

8. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 4.

EGR VALVE 5P CONNECTOR



Terminal side of male terminals

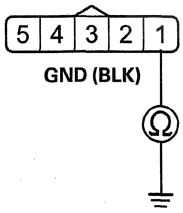
Is there 100 kΩ or more?

YES–Go to step 23.

NO–Go to step 9.

9. Check for continuity between EGR valve 5P connector terminal No. 1 and body ground.

EGR VALVE 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 10.

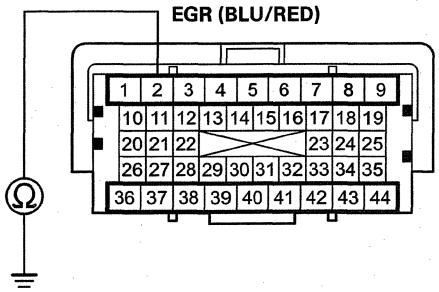
NO–Repair an open in the wire between the EGR valve and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 24.

10. Jump the SCS line with the HDS.

11. Disconnect ECM/PCM connector B (44P).

12. Check for continuity between ECM/PCM connector terminal B2 and body ground.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

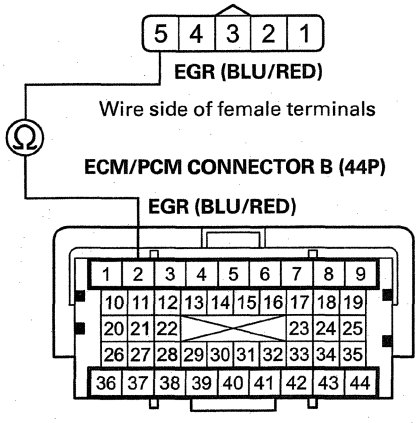
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B2) and the EGR valve, then go to step 24.

NO–Go to step 13.

13. Check for continuity between ECM/PCM connector terminal B2 and EGR valve 5P connector terminal No. 5.

EGR VALVE 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 14.

NO–Repair an open in the wire between the ECM/PCM (B2) and the EGR valve, then go to step 24.

(cont'd)

DTC Troubleshooting (cont'd)

14. Remove the EGR valve (see page 11-327).
15. Clean any carbon build-up on the EGR valve with throttle plate cleaner.
16. Install the EGR valve (see page 11-327).
17. Reconnect all connectors.
18. Reset the ECM/PCM with the HDS.
19. Do the ECM/PCM idle learn procedure (see page 11-274).
20. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
21. Do the EGR TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES–Go to step 30.

    NO–Go to step 22.
22. Turn the ignition switch to LOCK (0).
23. Replace the EGR valve (see page 11-327).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
29. Do the EGR TEST in the INSPECTION MENU with the HDS.
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0404 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1. If the connections and terminals are OK, go to step 31.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
33. Do the EGR TEST in the INSPECTION MENU with the HDS.
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0404 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 33. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0406: EGR Valve Position Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

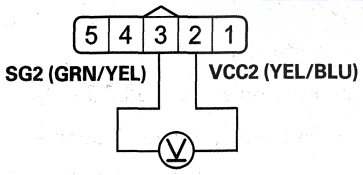
1. Turn the ignition switch to ON (II).
2. Check the EGR VLS in the DATA LIST with the HDS.

   Is 4.88 V or more indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect the EGR valve 5P connector.
5. Turn the ignition switch to ON (II).
6. Measure the voltage between EGR valve 5P connector terminals No. 2 and No. 3.

EGR VALVE 5P CONNECTOR



Wire side of female terminals

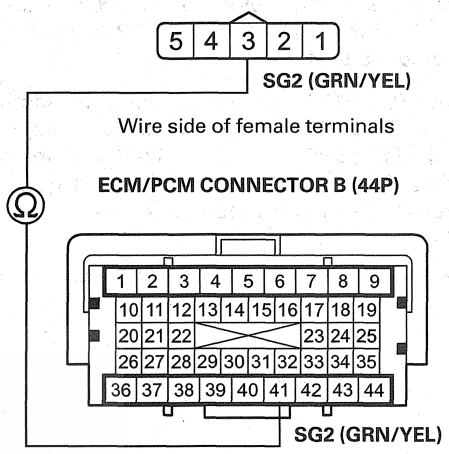
Is there about 5 V?

YES–Go to step 11.

NO–Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (44P).
10. Check for continuity between ECM/PCM connector terminal B41 and EGR valve 5P connector terminal No. 3.

EGR VALVE 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 18.

NO–Repair an open in the wire between the EGR valve and the ECM/PCM (B41), then go to step 13.

11. Turn the ignition switch to LOCK (0).
12. Replace the EGR valve (see page 11-327).
13. Reconnect all connectors.
14. Turn the ignition switch to ON (II).
15. Reset the ECM/PCM with the HDS.
16. Do the ECM/PCM idle learn procedure (see page 11-274).
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0406 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
18. Reconnect all connectors.
19. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).

(cont'd)

DTC Troubleshooting (cont'd)

20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0406 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P2413: EGR System Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Do the EGR TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EGR valve and the ECM/PCM.■

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the ignition switch to ON (II).
7. Check the EGR VLS in the DATA LIST with the HDS.

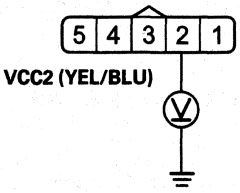
   Is about 0 V indicated?

   YES–Go to step 8.

   NO–Go to step 21.
8. Turn the ignition switch to LOCK (0).
9. Disconnect the EGR valve 5P connector.
10. Turn the ignition switch to ON (II).

11. Measure the voltage between EGR valve 5P connector terminal No. 2 and body ground.

EGR VALVE 5P CONNECTOR



Wire side of female terminals

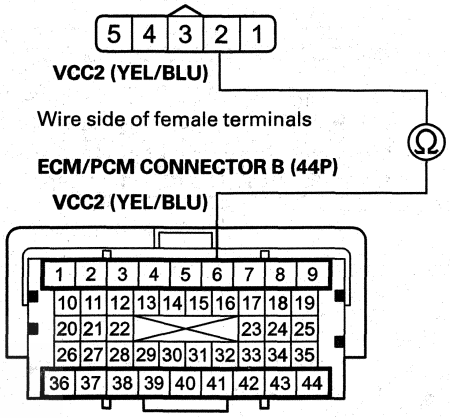
Is there about 5 V?

YES–Go to step 16.

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Jump the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (44P).
15. Check for continuity between ECM/PCM connector terminal B6 and EGR valve 5P connector terminal No. 2.

EGR VALVE 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 51.

NO–Repair an open in the wire between the ECM/PCM (B6) and the EGR valve, then go to step 44.

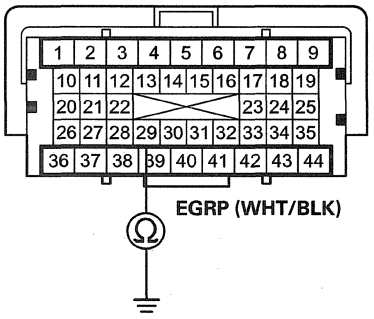
16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector B (44P).

(cont'd)

DTC Troubleshooting (cont'd)

19. Check for continuity between ECM/PCM connector terminal B29 and body ground.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

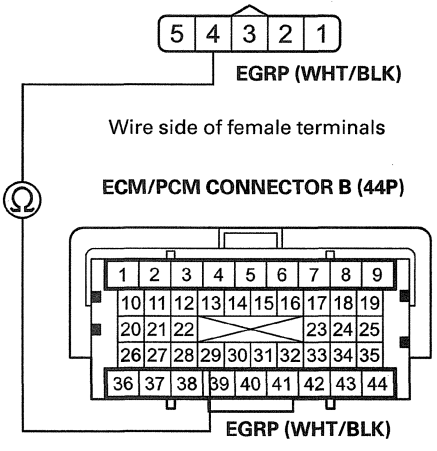
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B29) and the EGR valve, then go to step 44.

NO–Go to step 20.

20. Check for continuity between ECM/PCM connector terminal B29 and EGR valve 5P connector terminal No. 4.

EGR VALVE 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Go to step 23.

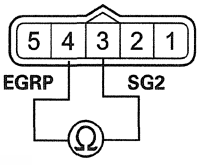
NO–Repair an open in the wire between the ECM/PCM (B29) and the EGR valve, then go to step 44.

21. If not already done, turn the ignition switch to LOCK (0).

22. If not already done, disconnect the EGR valve 5P connector.

23. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 3 and No. 4.

EGR VALVE 5P CONNECTOR



Terminal side of male terminals

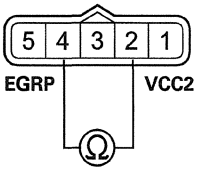
Is there 100 kΩ or more?

YES–Go to step 43.

NO–Go to step 24.

24. At the EGR valve side, measure the resistance between EGR valve 5P connector terminals No. 2 and No. 4.

EGR VALVE 5P CONNECTOR



Terminal side of male terminals

Is there 100 kΩ or more?

YES–Go to step 43.

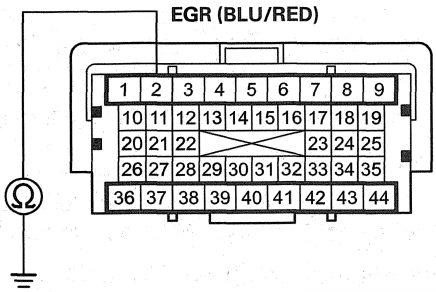
NO–Go to step 25.

25. If not already done, jump the SCS line with the HDS.

26. If not already done, disconnect ECM connector B (44P).

27. Check for continuity between ECM/PCM connector terminal B2 and body ground.

ECM/PCM CONNECTOR B (44P)



Terminal side of female terminals

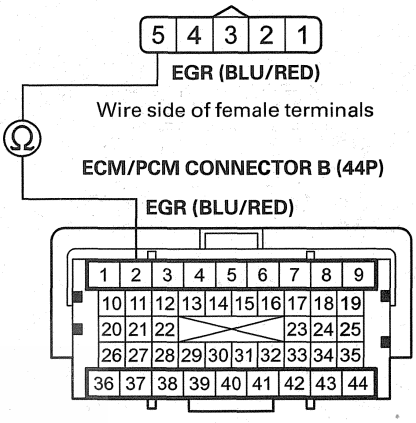
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B2) and the EGR valve, then go to step 44.

NO–Go to step 28.

28. Check for continuity between ECM/PCM connector terminal B2 and EGR valve 5P connector terminal No. 5.

EGR VALVE 5P CONNECTOR



Terminal side of female terminals

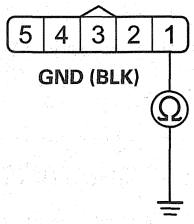
Is there continuity?

YES–Go to step 29.

NO–Repair an open in the wire between the ECM/PCM (B2) and the EGR valve, then go to step 44.

29. Check for continuity between EGR valve 5P connector terminal No. 1 and body ground.

EGR VALVE 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 30.

NO–Repair an open in the wire between the EGR valve and G101; CVT (see page 22-26), M/T (see page 22-22), then go to step 44.

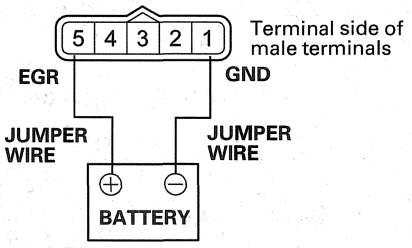
30. Reconnect ECM/PCM connector B (44P).

(cont'd)

DTC Troubleshooting (cont'd)

31. At the EGR valve side, connect the 12 volt battery positive terminal to EGR valve 5P connector terminal No. 5 with a jumper wire.

EGR VALVE 5P CONNECTOR



32. Start the engine, and let it idle. Then connect the 12 volt battery negative terminal to EGR valve 5P connector terminal No. 1 with a jumper wire.

    Does the engine stall or run roughly?

    YES–Go to step 50.

    NO–Go to step 33.

33. Turn the ignition switch to LOCK (0).
34. Remove the EGR valve (see page 11-327).
35. Clean the intake manifold EGR port and the EGR pipe (see page 11-327) with throttle plate cleaner. Also, clean the passage inside the EGR valve with throttle plate cleaner.
36. Install the EGR valve (see page 11-327).
37. Reconnect all connectors.
38. Turn the ignition switch to ON (II).
39. Reset the ECM/PCM with the HDS.
40. Do the ECM/PCM idle learn procedure (see page 11-274).
41. Do the EGR TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES–Go to step 49.

    NO–Go to step 42.

42. Turn the ignition switch to LOCK (0).
43. Replace the EGR valve (see page 11-327).
44. Reconnect all connectors.
45. Turn the ignition switch to ON (II).
46. Reset the ECM/PCM with the HDS.
47. Do the ECM/PCM idle learn procedure (see page 11-274).
48. Do the EGR TEST in the INSPECTION MENU with the HDS.
49. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P2413 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

50. Turn the ignition switch to LOCK (0).
51. Reconnect all connectors.
52. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
53. Do the EGR TEST in the INSPECTION MENU with the HDS.
54. Check for Pending or Confirmed DTCs with the HDS.

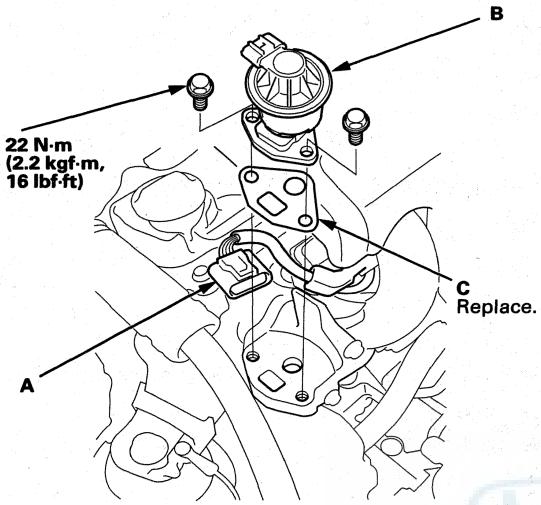
    Is DTC P2413 indicated?

    YES–Check for poor connections or loose terminals at the EGR valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 53. If the ECM/PCM was substituted, go to step 1.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

EGR Valve Replacement

1. Disconnect the EGR valve 5P connector (A).

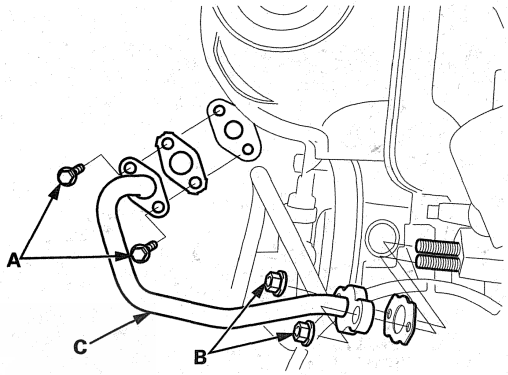


2. Remove the EGR valve (B).
3. Install the parts in the reverse order of removal with a new gasket (C).

EGR Pipe Removal and Installation

Removal

1. Remove the cowl cover and the under-cowl panel (see page 20-153).
2. Remove the bolts (A) and the nuts (B).



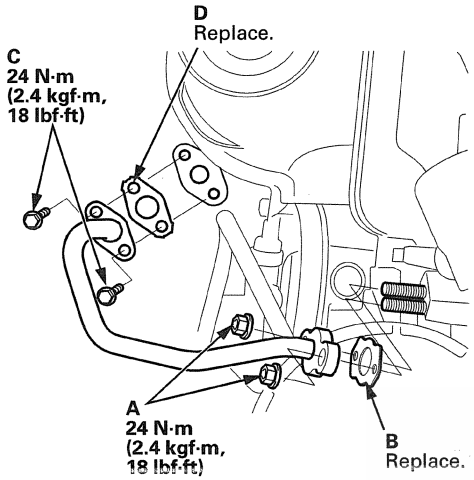
3. Remove the EGR pipe (C).

(cont'd)

EGR Pipe Removal and Installation (cont'd)

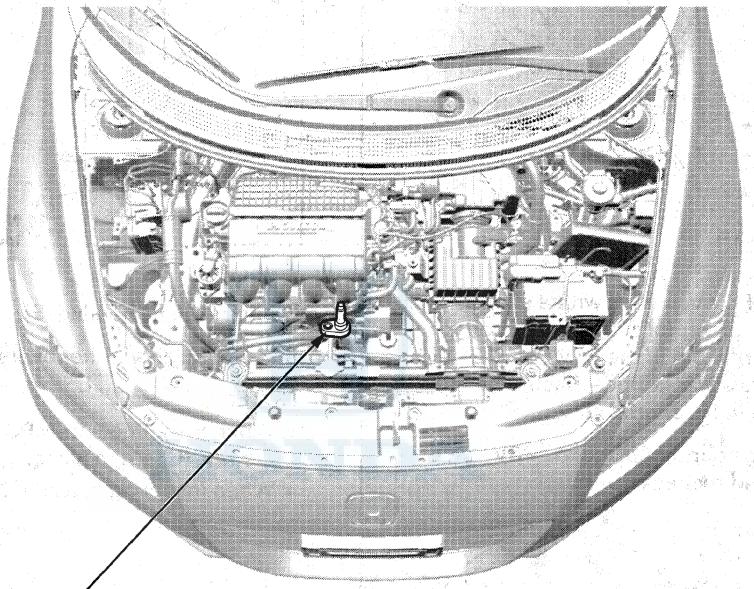
Installation

1. Install the EGR pipe to the water passage side, then tighten the nuts (A) by hand with a new gasket (B).



2. Install the EGR pipe to the TWC side, tighten the bolts (C) by hand with a new gasket (D), then torque the bolts.
3. Torque the nuts on the water passage side.
4. Install the cowl cover and the under-cowl panel (see page 20-153).

Component Location Index

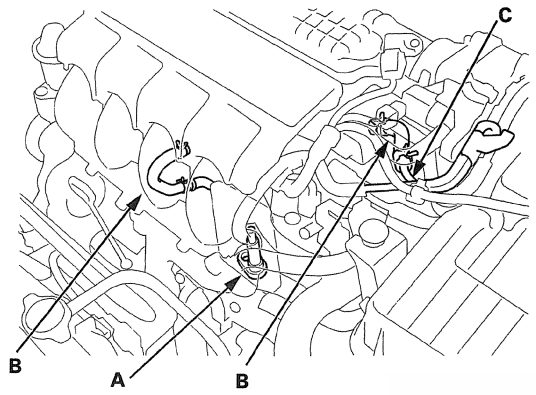


PCV VALVE
Inspection, page 11-330
Replacement, page 11-330

PCV System

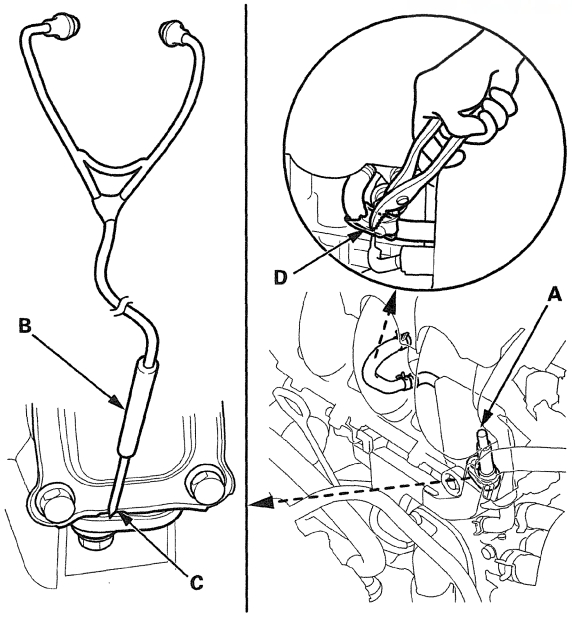
PCV Valve Inspection

1. Check the PCV valve (A), the hoses (B), the pipe (C), and the connections for leaks or restrictions.



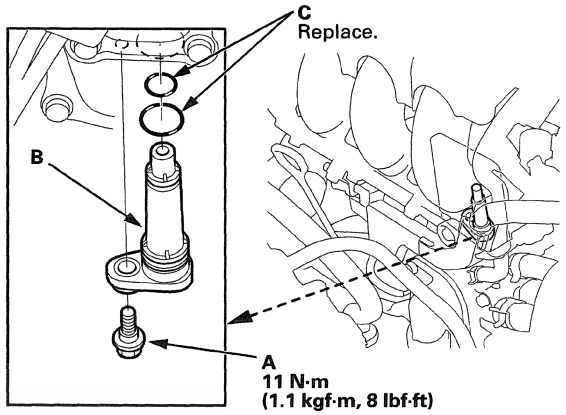
2. At idle, listen to the PCV valve (A) with a stethoscope (B) or a flat-tip screwdriver (at the breather cover notch (C)) as you lightly pinch the PCV hose (D) with your fingers or pliers several times. Each time the hose is pinched, the valve should click.

   If there is no clicking sound, replace the PCV valve (see page 11-330) and recheck.



PCV Valve Replacement

1. Remove the splash shield (see page 20-163).
2. Remove the bolt (A).

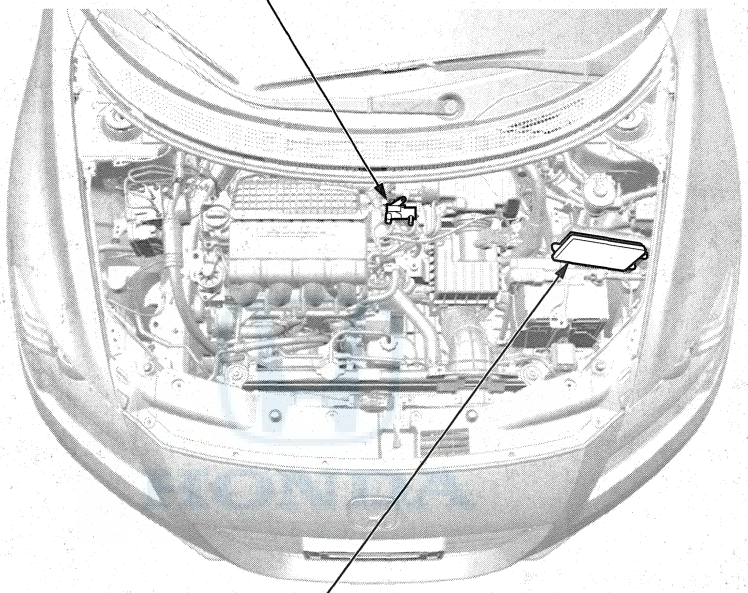


3. Remove the PCV valve (B).
4. Install the parts in the reverse order of removal.

   NOTE:
   - When installing a new PCV valve, make sure the O-rings (C) are in place.
   - When installing a used PCV valve, use new O-rings.

Component Location Index

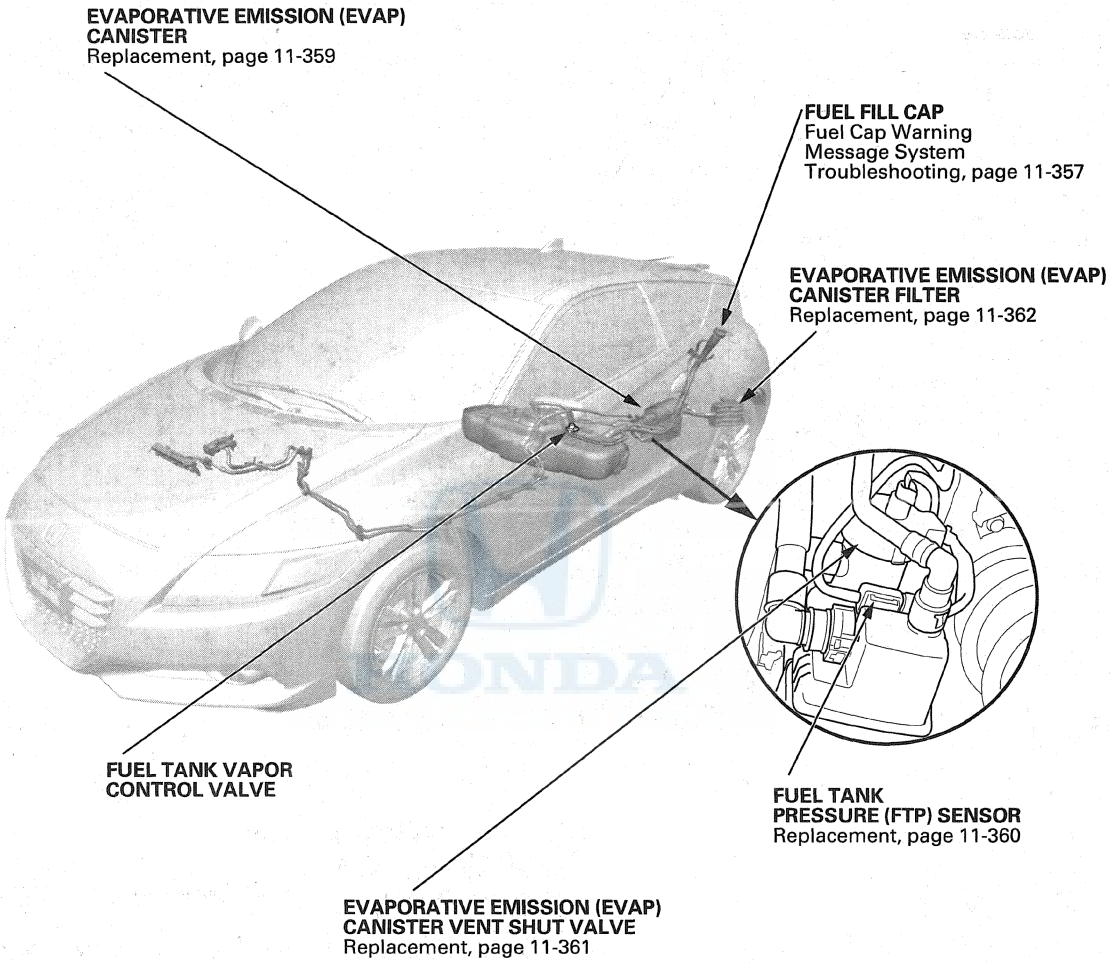
EVAPORATIVE EMISSION (EVAP) CANISTER PURGE VALVE
Replacement, page 11-362



ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)
General Troubleshooting Information, page 11-3
Substituting, page 11-7
Update, page 11-207
Replacement, page 11-209

(cont'd)

Component Location Index (cont'd)



DTC Troubleshooting

DTC P0443: EVAP Canister Purge Valve Circuit Malfunction

Special Tools Required

Vacuum Pump/Gauge, 0—30 In.Hg, Snap-on YA4000A or equivalent, commercially available

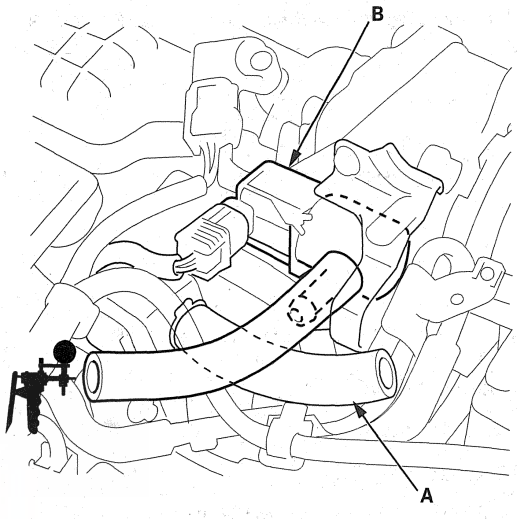
NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0443 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM.■
5. Turn the ignition switch to LOCK (0), and allow the engine to cool to below 140 °F (60 °C).
6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B), and connect a vacuum pump/gauge, 0—30 in.Hg, to the hose.



7. Start the engine, and let it idle.

   Is there vacuum?

   YES–Go to step 8.

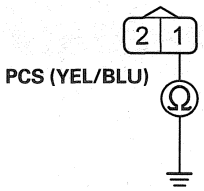
   NO–Go to step 14.
8. Turn the ignition switch to LOCK (0).
9. Disconnect the EVAP canister purge valve 2P connector.

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between EVAP canister purge valve 2P connector terminal No. 1 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

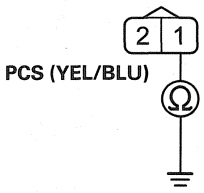
Is there continuity?

YES–Go to step 11.

NO–Go to step 23.

11. Jump the SCS line with the HDS.
12. Disconnect ECM/PCM connector B (44P).
13. Check for continuity between EVAP canister purge valve 2P connector terminal No. 1 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

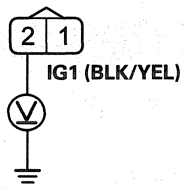
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (B3) and the EVAP canister purge valve, then go to step 24.

NO–Go to step 30.

14. Turn the ignition switch to LOCK (0).
15. Disconnect the EVAP canister purge valve 2P connector.
16. Turn the ignition switch to ON (II).
17. Measure the voltage between EVAP canister purge valve 2P connector terminal No. 2 and body ground.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

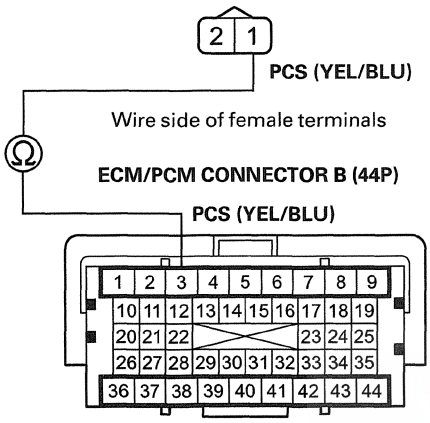
YES–Go to step 18.

NO–Repair an open in the wire between the EVAP canister purge valve and the No. B12 IG IMA (10 A) fuse in the under-dash fuse/relay box, then go to step 24.

18. Turn the ignition switch to LOCK (0).
19. Jump the SCS line with the HDS.
20. Disconnect ECM/PCM connector B (44P).

21. Check for continuity between ECM/PCM connector terminal B3 and EVAP canister purge valve 2P connector terminal No. 1.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



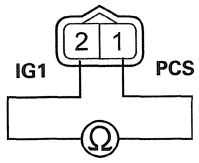
Is there continuity?

YES–Go to step 22.

NO–Repair an open in the wire between the ECM/PCM (B3) and the EVAP canister purge valve, then go to step 24.

22. At the valve side, measure the resistance between EVAP canister purge valve 2P connector terminals No. 1 and No. 2.

EVAP CANISTER PURGE VALVE 2P CONNECTOR



Is there about 23–26 Ω at room temperature (18–21°C, 65–70°F)?

YES–Go to step 30.

NO–Go to step 23.

23. Replace the EVAP canister purge valve (see page 11-362).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the ECM/PCM with the HDS.
27. Do the ECM/PCM idle learn procedure (see page 11-274).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0443 indicated?

    YES–Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1.

    NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM, then go to step 1. If the HDS indicates EXECUTING, or OUT OF CONDITION, keep idling until a result comes on.

30. Reconnect all connectors.
31. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
32. Start the engine, and let it idle.
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0443 indicated?

    YES–Check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 34.

(cont'd)

DTC Troubleshooting (cont'd)

34. Monitor the OBD STATUS for DTC P0443 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 33, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EVAP canister purge valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 32. If the ECM/PCM was substituted, go to step 1. If the HDS indicates EXECUTING, or OUT OF CONDITION, keep idling until a result comes on.

DTC P0451: FTP Sensor Range/Performance Problem

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P2422 is stored at the same time as DTC P0451, troubleshoot DTC P2422 first, then recheck for DTC P0451.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for 1 minute.
4. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

5. Turn the ignition switch to LOCK (0).
6. Replace the FTP sensor (see page 11-360).
7. Turn the ignition switch to ON (II).
8. Reset the ECM/PCM with the HDS.
9. Do the ECM/PCM idle learn procedure (see page 11-274).
10. Start the engine, and let it idle for 1 minute.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0451 indicated?

    YES–Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. Also check the FTP vent for restrictions, then go to step 1.

    NO–Go to step 12.

12. Monitor the OBD STATUS for DTC P0451 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0452: FTP Sensor Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Remove the fuel fill cap.
5. Turn the ignition switch to ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is about −7.3 kPa (−2.16 in.Hg, −55 mmHg), or 0.3 V or less indicated?

   YES–Go to step 10.

   NO–Go to step 7.
7. Reinstall the fuel fill cap.
8. Start the engine, and let it idle.
9. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 10.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
10. Turn the ignition switch to LOCK (0).
11. Disconnect the FTP sensor 3P connector.
12. Turn the ignition switch to ON (II).
13. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is about −7.3 kPa (−2.16 in.Hg, −55 mmHg), or 0.3 V or less indicated?

    YES–Go to step 20.

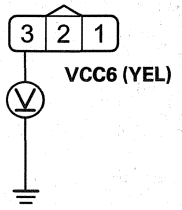
    NO–Go to step 14.

(cont'd)

DTC Troubleshooting (cont'd)

14. Measure the voltage between FTP sensor 3P connector terminal No. 3 and body ground.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

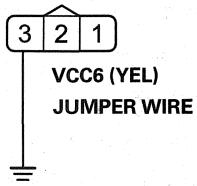
Is there about 5 V?

YES–Go to step 24.

NO–Go to step 15.

15. Turn the ignition switch to LOCK (0).
16. Jump the SCS line with the HDS.
17. Disconnect ECM/PCM connector A (44P).
18. Connect FTP sensor 3P connector terminal No. 3 to body ground with a jumper wire.

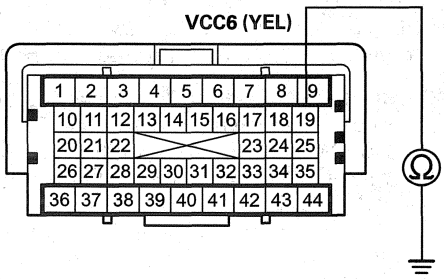
FTP SENSOR 3P CONNECTOR



Wire side of female terminals

19. Check for continuity between ECM/PCM connector terminal A19 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

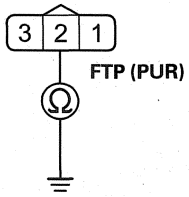
Is there continuity?

YES–Go to step 32.

NO–Repair an open in the wire between the ECM/PCM (A19) and the FTP sensor, then go to step 26.

20. Turn the ignition switch to LOCK (0).
21. Jump the SCS line with the HDS.
22. Disconnect ECM/PCM connector A (44P).
23. Check for continuity between FTP sensor 3P connector terminal No. 2 and body ground.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A26) and the FTP sensor, then go to step 26.

NO–Go to step 32.

24. Turn the ignition switch to LOCK (0).
25. Replace the FTP sensor (see page 11-360).
26. Reconnect all connectors.
27. Turn the ignition switch to ON (II).
28. Reset the ECM/PCM with the HDS.
29. Do the ECM/PCM idle learn procedure (see page 11-274).
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0452 indicated?

    YES–Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

    NO–Go to step 31.
31. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
32. Reconnect all connectors.
33. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
34. Start the engine, and let it idle.
35. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0452 indicated?

    YES–Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 34. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 36.
36. Monitor the OBD STATUS for DTC P0452 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 35, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 34. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0453: FTP Sensor Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Remove the fuel fill cap.
5. Turn the ignition switch to ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?

   YES–Go to step 10.

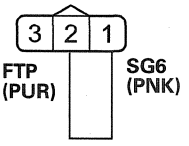
   NO–Go to step 7.
7. Reinstall the fuel fill cap.
8. Start the engine, and let it idle.
9. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 10.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
10. Turn the ignition switch to LOCK (0).
11. Disconnect the FTP sensor 3P connector.
12. Connect FTP sensor 3P connector terminals No. 1 and No. 2 with a jumper wire.

FTP SENSOR 3P CONNECTOR



JUMPER WIRE

Wire side of female terminals

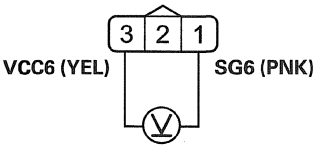
13. Turn the ignition switch to ON (II).
14. Check the FTP SENSOR in the DATA LIST with the HDS.

    Is about 7.3 kPa (2.16 in.Hg, 55 mmHg), or 4.7 V or more indicated?

    YES–Remove the jumper wire, then go to step 15.

    NO–Go to step 26.
15. Measure the voltage between FTP sensor 3P connector terminals No. 1 and No. 3.

FTP SENSOR 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

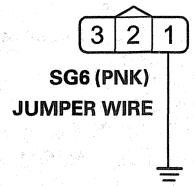
YES–Go to step 21.

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect ECM/PCM connector A (44P).

19. Connect FTP sensor 3P connector terminal No. 1 to body ground with a jumper wire.

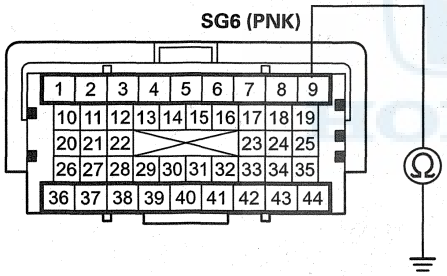
FTP SENSOR 3P CONNECTOR



Wire side of female terminals

20. Check for continuity between ECM/PCM connector terminal A9 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

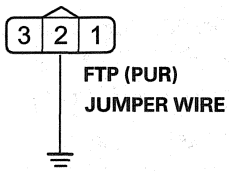
YES–Go to step 34.

NO–Repair an open in the wire between the ECM/PCM (A9) and the FTP sensor, then go to step 28.

21. Turn the ignition switch to LOCK (0).
22. Jump the SCS line with the HDS.
23. Disconnect ECM/PCM connector A (44P).

24. Connect FTP sensor 3P connector terminal No. 2 to body ground with a jumper wire.

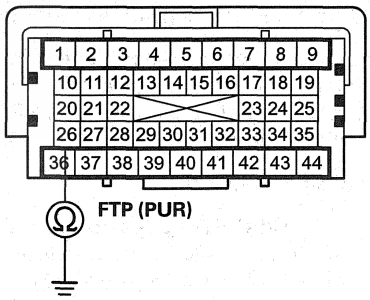
FTP SENSOR 3P CONNECTOR



Wire side of female terminals

25. Check for continuity between ECM/PCM connector terminal A26 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 34.

NO–Repair an open in the wire between the ECM/PCM (A26) and the FTP sensor, then go to step 28.

(cont'd)

DTC Troubleshooting (cont'd)

26. Turn the ignition switch to LOCK (0).
27. Replace the FTP sensor (see page 11-360).
28. Reconnect all connectors.
29. Turn the ignition switch to ON (II).
30. Reset the ECM/PCM with the HDS.
31. Do the ECM/PCM idle learn procedure (see page 11-274).
32. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0453 indicated?

    YES–Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1.

    NO–Go to step 33.
33. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 32, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
34. Reconnect all connectors.
35. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
36. Start the engine, and let it idle.
37. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0453 indicated?

    YES–Check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 36. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 38.
38. Monitor the OBD STATUS for DTC P0453 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 37, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 36. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

DTC P0455: EVAP System Large Leak Detected

DTC P0456: EVAP System Very Small Leak Detected

NOTICE

The fuel system is designed to allow specified maximum vacuum and pressure conditions. Do not deviate from the vacuum and pressure tests in these procedures. Excessive pressure/vacuum will damage the EVAP components or eventually cause fuel tank failure.

Special Tools Required

- Vacuum/Pressure Gauge, 0—4 In.Hg, 07JAZ-001000B
- Vacuum Pump/Gauge, 0—30 In.Hg, Snap-on YA4000A or equivalent, commercially available

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- Fresh fuel has a higher volatility that creates greater pressure/vacuum. The best condition for testing is less than a full tank of fresh fuel. If possible, to assist in leak detection, add 1 gallon of fresh fuel to the tank (as long as it will not fill the tank), just before starting these procedures.

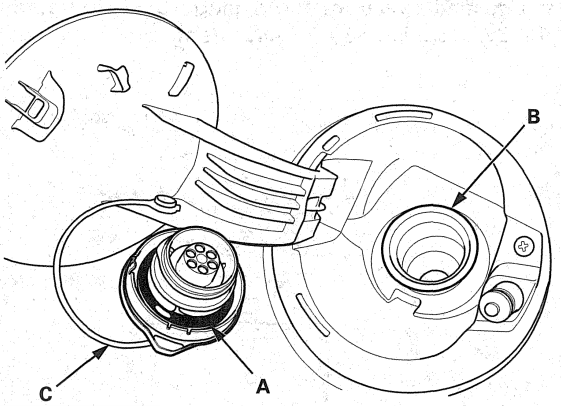
1. Check the fuel fill cap (the cap must say TIGHTEN TO CLICK). It should turn 1/4 turn after it's tight, then it clicks.

   Is the correct fuel fill cap installed and properly tightened?

   YES–Go to step 2.

   NO–Replace or tighten the cap, then go to step 24.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Make sure the fuel fill cap tether cord (C) is not caught under the cap.



   Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

   YES–Replace the fuel fill cap or the fuel fill pipe, then go to step 24.

   NO–Go to step 3.

3. Turn the ignition switch to ON (II).
4. Clear the DTC with the HDS.
5. Turn the ignition switch to LOCK (0).
6. Check for a poor connection or damage at the fuel tank vapor recirculation tube.

   Is the tube OK?

   YES–Go to step 7.

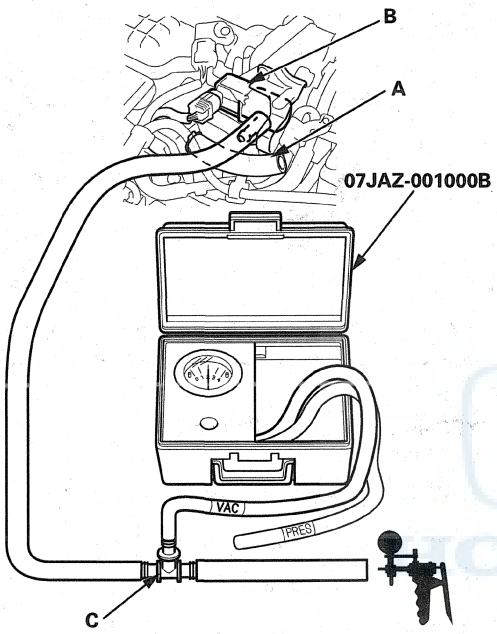
   NO–

   - Reconnect or replace the fuel tank vapor recirculation tube, then go to step 26.
   - If needed, replace the fuel tank (see page 11-306), then go to step 26.

(cont'd)

DTC Troubleshooting (cont'd)

7. Disconnect the vacuum hose (purge line) (A) from the EVAP canister purge valve (B) in the engine compartment, then connect a T-fitting (C), a vacuum gauge, and a vacuum pump/gauge, 0—30 in.Hg, to the EVAP canister purge valve as shown.



8. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

   Does it hold vacuum for 1 minute?

   YES–Go to step 9.

   NO–Replace the EVAP canister purge valve, then go to step 25.

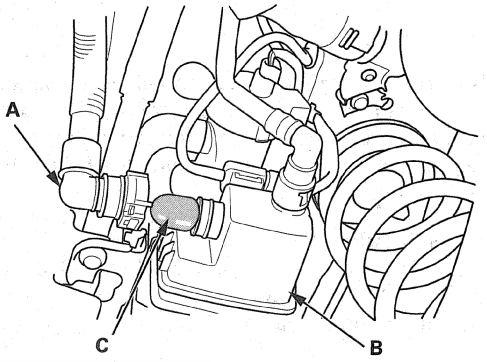
9. Turn the ignition switch to ON (II).
10. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

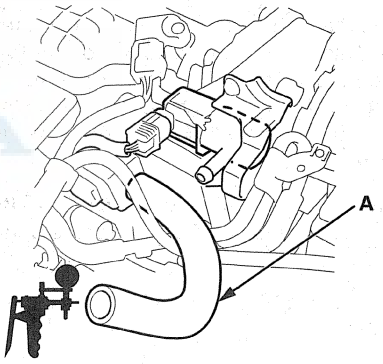
    YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM.■

    NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Disconnect the fuel tank vapor recirculation tube (A) from the EVAP canister (B), and plug the EVAP canister port (C).



13. Remove the vacuum gauge, then connect the vacuum pump/gauge to the vacuum hose (A) as shown.



14. Turn the ignition switch to ON (II).
15. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
16. Apply vacuum to the hose until the FTP reads 1.90 V (—0.59 in.Hg, —15.1 mmHg).

    NOTE: Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

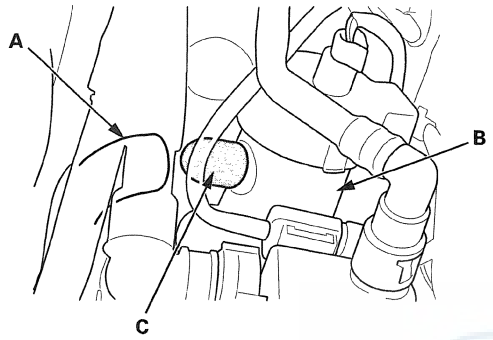
17. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

    Does the voltage increase more than 0.2 V (0.1 in.Hg, 0.5 mmHg)?

    YES–Go to step 18.

    NO–Go to step 23.

18. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
19. Disconnect the fresh air hose (A) from the EVAP canister (B), and plug the EVAP canister vent shut valve port (C).



20. Apply vacuum to the EVAP system until the FTP reads 1.90 V (−0.59 in.Hg, −15.1 mmHg).

    NOTE: Be careful not to exceed the vacuum. If you do, the FTP sensor can be damaged.

21. Monitor the FTP SENSOR in the DATA LIST for 1 minute with the HDS.

    Does the voltage increase more than 0.2 V (0.1 in.Hg, 2.5 mmHg)?

    YES–Go to step 22.

    NO–Replace the EVAP canister vent shut valve, then go to step 25.

22. Check for a loose or damaged EVAP canister purge line between the EVAP canister and the EVAP canister purge valve.

    Is the line OK?

    YES–Replace these parts, then go to step 25:
    - FTP sensor O-ring
    - EVAP canister vent shut valve O-ring
    - EVAP canister

    NO–Reconnect or repair the EVAP canister purge hose, then go to step 25.

23. Select EVAP CVS OFF in the INSPECTION MENU with the HDS.
24. Check these parts for looseness or damage:
    - Fuel fill pipe
    - Fuel vapor return pipe

    Are the parts OK?

    YES–Check the fuel tank unit base gasket (see page 11-301), and check the fuel tank, then go to step 25.

    NO–Repair or replace the damaged parts, then go to step 25.

25. Reconnect all hoses and connectors.
26. Turn the ignition switch to ON (II).
27. Reset the ECM/PCM with the HDS.
28. Do the ECM/PCM idle learn procedure (see page 11-274).
29. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK ?

    YES–Troubleshooting is complete.■

    NO–Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0496: EVAP System High Purge Flow Detected

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM.■

   NO–If the EVAP FUNCTION TEST did not finish because of a DTC, do the indicated DTC's troubleshooting. Go to step 4.
4. Turn the ignition switch to LOCK(0).
5. Replace the EVAP canister purge valve (see page 11-362).
6. Turn the ignition switch to ON (II).
7. Reset the ECM/PCM with the HDS.
8. Do the ECM/PCM idle learn procedure (see page 11-274).
9. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Troubleshooting is complete.■

   NO–Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P0497: EVAP System Low Purge Flow Detected

Special Tools Required
- Vacuum/Pressure Gauge, 0—4 In.Hg, 07JAZ-001000B
- Vacuum Pump/Gauge, 0—30 In.Hg, Snap-on YA4000A or equivalent, commercially available
- Fuel Pressure Gauge Attachment Set 07AAJ-S6MA150

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

   Is the result OK?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM.■

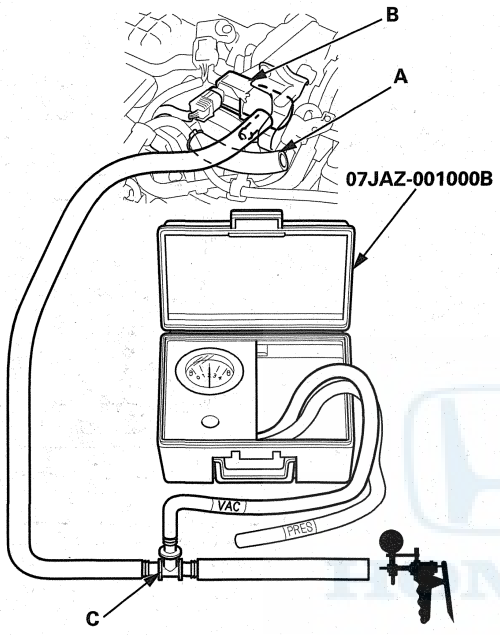
   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Check for a loose or damaged EVAP canister purge line between the intake manifold and the EVAP canister purge valve.

   Is the line OK?

   YES–Go to step 6.

   NO–Reconnect or repair the EVAP canister purge line, then go to step 24.

6. Disconnect the vacuum hose (A) from the EVAP canister purge valve (B) in the engine compartment, then connect a T-fitting (C), a vacuum gauge, and a vacuum pump/gauge to the vacuum hose as shown.

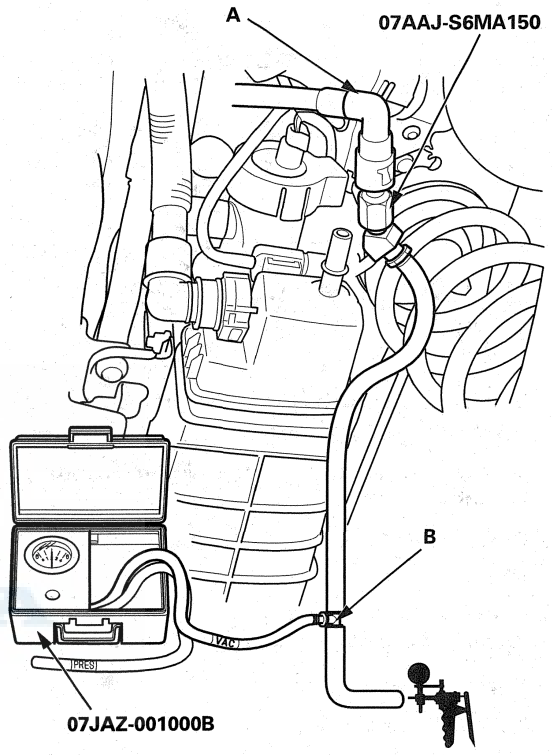


7. Turn the ignition switch to ON (II).
8. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
9. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

   Does it hold vacuum?

   YES–Replace the EVAP canister purge valve, then go to step 23.

   NO–Go to step 10.
10. Reconnect the vacuum hose to the EVAP canister purge valve.
11. Disconnect the vacuum hose (A) from the purge line (at the EVAP canister side), then connect a T-fitting (B), the vacuum gauge, and the vacuum pump/gauge to the hose as shown.



12. Select EVAP PCS ON in the INSPECTION MENU with the HDS.
13. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

    Does it hold vacuum?

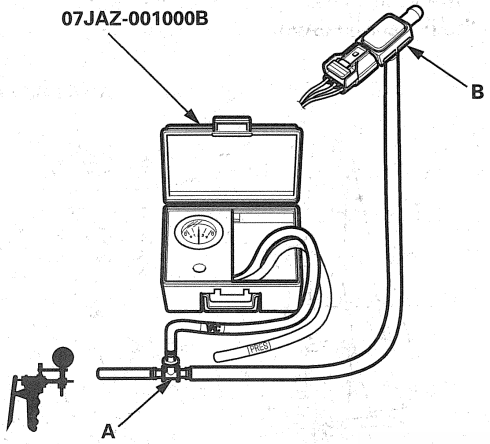
    YES–Check for a restricted EVAP canister purge line between the EVAP canister purge valve and the EVAP canister, then go to step 23.

    NO–Go to step 14.
14. Remove the FTP sensor with its connector connected (see page 11-360).

(cont'd)

DTC Troubleshooting (cont'd)

15. Connect a T-fitting (A), the vacuum pump/gauge, and the vacuum pump to the FTP sensor (B) as shown.

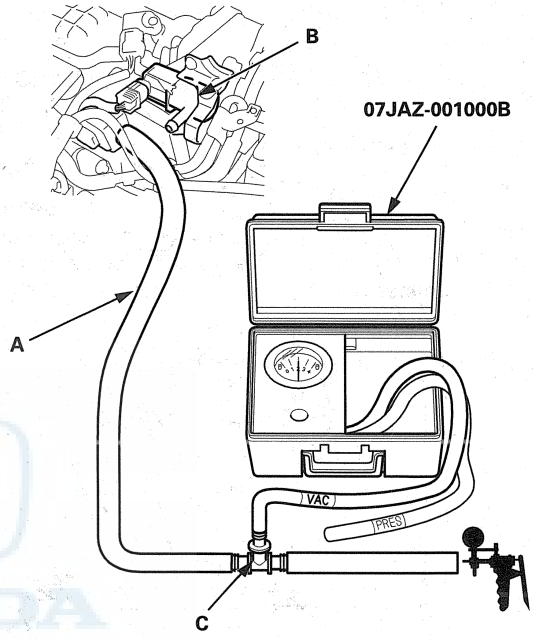


16. Check and record the FTP SENSOR reading in the DATA LIST with the HDS.
17. Slowly apply about 1.3 kPa (0.4 in.Hg, 10 mmHg) of vacuum to the hose.
18. Check the FTP SENSOR in the DATA LIST with the HDS.

    Does the reading change more than 1.1 kPa (0.31 in.Hg, 8 mmHg) before and after applying vacuum?

    YES–Go to step 19.

    NO–Replace the FTP sensor (see page 11-360), then go to step 23.
19. Reconnect the vacuum hoses to the EVAP canister purge line (EVAP canister side), and reinstall the FTP sensor.
20. Disconnect the vacuum hose (purge line) (A) from the EVAP canister purge valve (B), then connect a T-fitting (C), the vacuum gauge, and the vacuum pump/gauge to the hose as shown.



21. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
22. Slowly apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

    Does the hose hold vacuum?

    YES–Check for a blockage at the EVAP canister port, then go to step 23.

    NO–Replace the EVAP canister vent shut valve (see page 11-361), then go to step 23.

23. Reconnect all hoses.
24. Turn the ignition switch to ON (II).
25. Reset the ECM/PCM with the HDS.
26. Do the ECM/PCM idle learn procedure (see page 11-274).
27. Do the EVAP FUNCTION TEST in the INSPECTION MENU with the HDS.

    Is the result OK?

    YES–Troubleshooting is complete.■

    NO–Check for poor connections or loose terminals at the FTP sensor, the EVAP canister purge valve, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P0498: EVAP Canister Vent Shut Valve Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0498 indicated?

   YES–Go to step 6.

   NO–Go to step 4.
4. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0498 indicated?

   YES–Go to step 6.

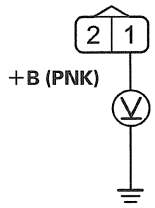
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.■
6. Turn the ignition switch to LOCK (0).
7. Disconnect the EVAP canister vent shut valve 2P connector.
8. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

9. Measure the voltage between EVAP canister vent shut valve 2P connector terminal No. 1 and body ground.

EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Wire side of female terminals

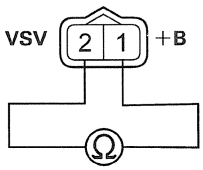
Is there battery voltage?

YES–Go to step 10.

NO–Repair an open in the wire between the EVAP canister vent shut valve and the A/F sensor relay, then go to step 18.

10. Turn the ignition switch to LOCK (0).
11. At the valve side, measure the resistance between EVAP canister vent shut valve 2P connector terminals No. 1 and No. 2.

EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Terminal side of male terminals

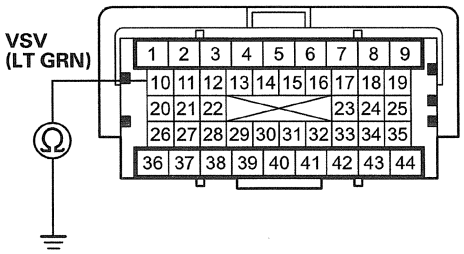
Is there about 25—30 Ω at room temperature (18—21°C, 65—70°F)?

YES–Go to step 12.

NO–Go to step 17.

12. Jump the SCS line with the HDS.
13. Disconnect ECM/PCM connector A (44P).
14. Check for continuity between ECM/PCM connector terminal A10 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

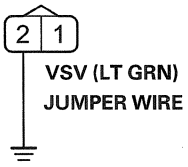
Is there continuity?

YES–Repair a short in the wire between the ECM/PCM (A10) and the EVAP canister vent shut valve, then go to step 18.

NO–Go to step 15.

15. Connect EVAP canister vent shut valve 2P connector terminal No. 2 to body ground with a jumper wire.

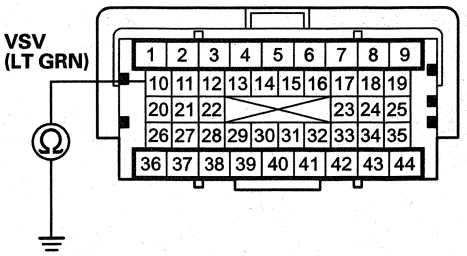
EVAP CANISTER VENT SHUT VALVE 2P CONNECTOR



Wire side of female terminals

16. Check for continuity between ECM/PCM connector terminal A10 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire between the ECM/PCM (A10) and the EVAP canister vent shut valve, then go to step 18.

17. Replace the EVAP canister vent shut valve (see page 11-361).
18. Reconnect all connectors.
19. Turn the ignition switch to ON (II).
20. Reset the ECM/PCM with the HDS.
21. Do the ECM/PCM idle learn procedure (see page 11-274).
22. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0498 indicated?

    YES–Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1.

    NO–Go to step 24.

24. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

25. Reconnect all connectors.
26. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
27. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0498 indicated?

    YES–Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM, then go to step 27. If the ECM/PCM was substituted, go to step 1.

    NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P0498 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 27. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 27.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0499: EVAP Canister Vent Shut Valve Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0499 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM.■
5. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
6. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0499 indicated?

   YES–Check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 6. If the ECM/PCM was substituted, go to step 1.

   NO–Go to step 8.
8. Monitor the OBD STATUS for DTC P0499 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the EVAP canister vent shut valve and the ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then go to step 6. If the ECM/PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 6.

DTC P1454: FTP Sensor Range/ Performance Problem

DTC P2422: EVAP Canister Vent Shut Valve Stuck Closed Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Remove the fuel fill cap, and wait 1 minute.
5. Turn the ignition switch to ON (II).
6. Check the FTP SENSOR in the DATA LIST with the HDS.

   Is it between −0.67 and 0.67 kPa (−0.2 and 0.2 in.Hg, −5 and 5 mmHg), or 2.4 and 2.6 V?

   YES–Go to step 7.

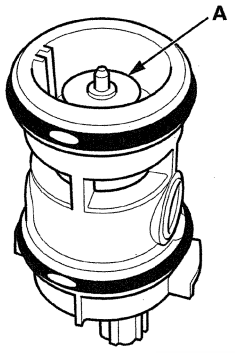
   NO–Go to step 18.
7. Install the fuel fill cap.
8. Clear the DTC with the HDS.
9. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
10. Monitor the OBD STATUS for DTC P1454 in the DTCs MENU with the HDS.

    Does the HDS indicate FAILED?

    YES–Go to step 11.

    NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the vent hoses and the drain joint. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.
11. Clear the DTC with the HDS.
12. Turn the ignition switch to LOCK (0).
13. Remove the EVAP canister vent shut valve from the EVAP canister (see page 11-361).
14. Connect the 2P connector to the EVAP canister vent shut valve.
15. Turn the ignition switch to ON (II).

16. Select EVAP CVS ON in the INSPECTION MENU with the HDS.
17. Check the EVAP canister vent shut valve (A) operation.

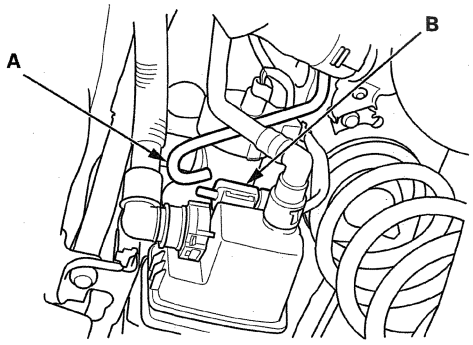


Does the valve operate?

YES–Check for a blockage in the EVAP canister, the vent hoses, and the EVAP canister filter, then install the EVAP canister vent shut valve, and go to step 24.

NO–Replace the EVAP canister vent shut valve (see page 11-361), then go to step 24.

18. Disconnect the vent hose (A) from the FTP sensor (B).



19. Check the FTP SENSOR in the DATA LIST with the HDS.

Is it between −0.67 and 0.67 kPa (−0.2 and 0.2 in.Hg, −5 and 5 mmHg), or 2.4 and 2.6 V?

YES–Check for a blockage in the FTP sensor vent hose or the vent, then go to step 24.

NO–Go to step 20.

20. Turn the ignition switch to LOCK (0).
21. Remove the FTP sensor from the EVAP canister with its connector connected (see page 11-360).
22. Turn the ignition switch to ON (II).
23. Check the FTP SENSOR in the DATA LIST with the HDS.

Is it between −0.67 kPa and 0.67 kPa (−0.2 and 0.2 in. Hg, −5 and 5 mmHg), or 2.4 and 2.6 V?

YES–Check for debris or clogging at the EVAP canister and the FTP sensor port, then go to step 24.

NO–Replace the FTP sensor (see page 11-360), then go to step 24.

24. Turn the ignition switch to ON (II).
25. Reset the ECM/PCM with the HDS.
26. Do the ECM/PCM idle learn procedure (see page 11-274).
27. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle.
28. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1454 and/or P2422 indicated?

YES–Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

NO–Go to step 29.

29. Monitor the OBD STATUS for DTC P1454 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep idling until a result comes on.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1458: FTP Sensor Circuit Range/Performance Problem

Special Tools Required

Vacuum Pump/Gauge, 0—30 inHg Snap-on YA4000A or equivalent, commercially available

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If any of DTCs listed below are indicated at the same time as DTC P1458, troubleshoot those DTCs first, then recheck for P1458.

  P0451, P0452, P0453, P1454: FTP sensor

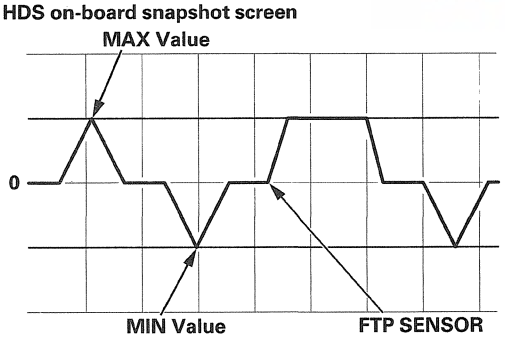
  P2422: EVAP canister vent shut valve
- Do not start the engine during this troubleshooting.

1. Turn the ignition switch to ON (II).
2. Note the recorded on-board snapshot parameters with the HDS:

   Max Value of FTP SENSOR

   Min Value of FTP SENSOR

   FUEL LEVEL



3. Check the FUEL LEVEL in the DATA LIST with the HDS.

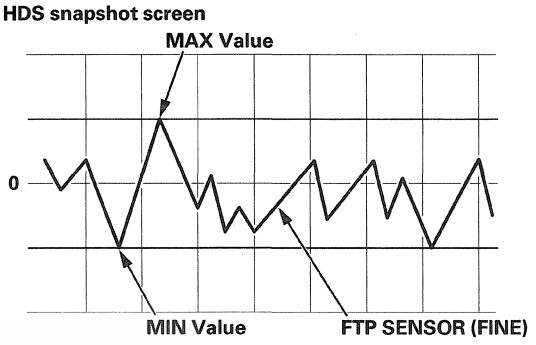
   Is the FUEL LEVEL less than it is on the on- board snapshot?

   YES–Go to step 4.

   NO–Drain the fuel until the FUEL LEVEL is less than it is on the on-board snapshot, then go to step 4.
4. Take a snapshot with the HDS for 3 minutes without starting the engine.
5. Check the recorded snapshot parameters with the HDS:

   Max Value of FTP SENSOR (FINE)

   Min Value of FTP SENSOR (FINE)



   Is the difference between the MAX and MIN values of the FTP SENSOR (FINE) about 0.67 kPa (0.2 inHg, 5 mmHg) or less?

   YES–Go to step 6.

   NO–Go to step 12.
6. Check the FTP SENSOR (FINE) in the recorded snapshot with the HDS.

   Does it vary 0.067 kPa (0.02 inHg, 0.5 mmHg) or more for 3 seconds?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the EVAP vent hose. ■

7. Turn the ignition switch to LOCK (0).
8. Remove the FTP sensor (see page 11-360).
9. Reconnect the FTP sensor 2P connecter.
10. Turn the ignition switch to ON (II).
11. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    Does it vary 0.067 kPa (0.02 inHg, 0.5 mmHg) or more for 3 seconds?

    YES–Replace the FTP sensor (see page 11-360), then go to step 28.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM. Also check for a blockage in the EVAP vent hose.■
12. Remove the fuel fill cap.
13. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    Is the value about 0.67 kPa (0.2 inHg, 5 mmHg) or more, or about −0.67 kPa (−0.2 inHg, −5 mmHg) or less?

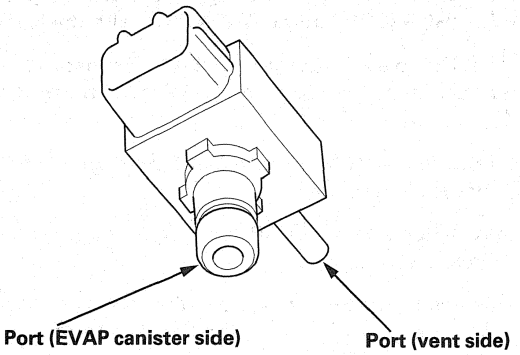
    YES–Reinstall the fuel fill cap, then go to step 22.

    NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).
15. Remove the FTP sensor (see page 11-360).
16. Reconnect the FTP sensor 2P connecter.
17. Turn the ignition switch to ON (II).
18. Check the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    Is the value about 0.67 kPa (0.2 inHg, 5 mmHg) or more, or about −0.67 kPa (−0.2 inHg, −5 mmHg) or less?

    YES–Remove the blockage in the EVAP vent hose. Replace the hose if needed.■

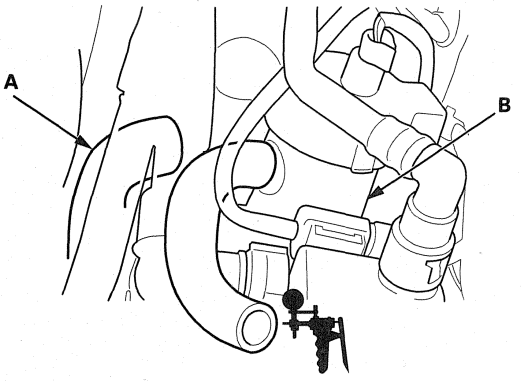
    NO–Go to step 19.
19. Turn the ignition switch to LOCK (0).
20. Disconnect the FTP sensor 2P connector.
21. Check for a blockage or damage at the FTP sensor ports (EVAP canister side and vent side).



    Is there any blockage or damage?

    YES–Remove the blockage, and replace the FTP sensor (see page 11-360) if needed, then go to step 28.

    NO–Replace the FTP sensor (see page 11-360), then go to step 28.
22. Turn the ignition switch to LOCK (0).
23. Disconnect the fresh air hose (A) from the EVAP canister (B), then connect a vacuum pump/gauge, 0–30 inHg, to the EVAP vent shut valve as shown.



(cont'd)

DTC Troubleshooting (cont'd)

24. Turn the ignition switch to ON (II).
25. Try to apply vacuum to the hose valve (not more than 5.3 kPa (1.6 inHg, 40 mmHg)) while checking the FTP SENSOR (FINE) in the DATA LIST with the HDS.

    NOTE: To avoid damaging the FTP sensor, do not apply more than 5.3 kPa (1.6 inHg, 40 mmHg) of vacuum.

    Does the valve hold more than 1.3 kPa (0.4 inHg, 10 mmHg) of vacuum?

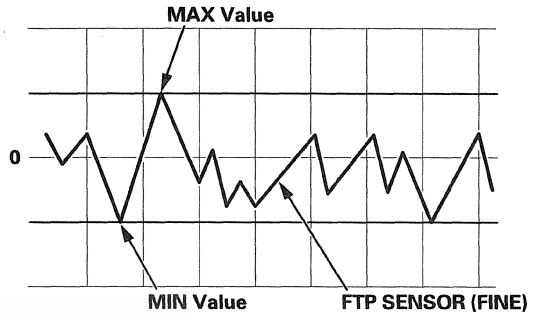
    YES–Replace the EVAP canister vent shut valve, then go to step 26.

    NO–Remove the blockage in the fresh air hose. Replace hose if needed, then go to step 26.
26. Turn the ignition switch to LOCK (0).
27. Reconnect all connecters and the fresh air hose.
28. Turn the ignition switch to ON (II).
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see page 11-274).
31. Take a snapshot with the HDS for 3 minutes without starting the engine.
32. Check the recorded snapshot parameters with the HDS:

    Max Value of FTP SENSOR (FINE)

    Min Value of FTP SENSOR (FINE)

HDS snapshot screen



Is the difference between the MAX and MIN values of the FTP SENSOR (FINE) about 0.67 kPa (0.2 inHg, 5 mmHg) or less?

YES–Troubleshooting is complete.■

NO–Check for poor connections or loose terminals at the FTP sensor, the EVAP canister vent shut valve, and the ECM/PCM, then go to step 1.

DTC P145C: EVAP System Purge Flow Malfunction

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC P145C is indicated alone, do the troubleshooting for DTC P0496 and P0497 using the freeze data for P145C.
- If DTC P0497 and P145C are stored at the same time, check for a poor connection, a blockage, or damage at the EVAP canister purge line between the EVAP canister purge valve and the EVAP canister. Also check for a stuck closed EVAP canister purge valve.
- If any of DTCs listed below are indicated at the same time as DTC P145C, troubleshoot those DTCs first, then recheck for P145C.

P0496, P0497: EVAP system purge flow

Fuel Cap Warning Message System Troubleshooting

Special Tools Required

- Vacuum/Pressure Gauge, 0—4 In.Hg, 07JAZ-001000B
- Vacuum Pump/Gauge, 0—30 In.Hg, Snap-on YA4000A or equivalent, commercially available

Do this procedure if the fuel cap warning message comes on frequently, or if the message does not go off after the fuel fill cap is tightened and the vehicle is driven several days.

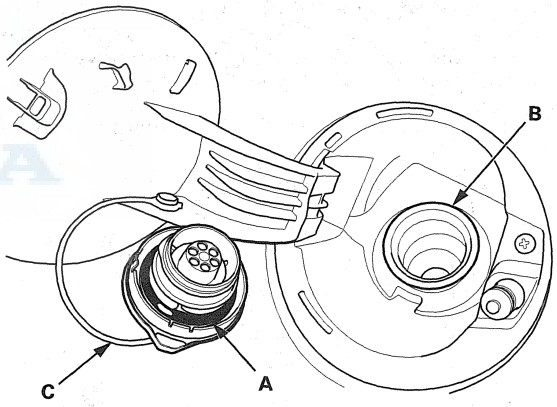
1. Check the fuel fill cap (the cap must say TIGHTEN TO CLICK). It should turn 1/4 after it's tight, then it clicks.

   Is the correct fuel fill cap installed and properly tightened?

   YES–Go to step 2.

   NO–Replace or tighten the cap, then go to step 13.

2. Check the fuel fill cap seal (A) and the fuel fill pipe mating surface (B). Make sure the fuel fill cap tether cord (C) is not caught under the cap.



   Is the fuel fill cap seal missing or damaged, is the fuel fill pipe damaged, or is the tether cord caught under the cap?

   YES–Replace the fuel fill cap or the fuel fill pipe, then go to step 13.

   NO–Go to step 3.

3. Reinstall and tighten the fuel fill cap.
4. Clear the DTC with the HDS.
5. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until the radiator fan comes on, then let it idle for 1 minute.

(cont'd)

Fuel Cap Warning Message System Troubleshooting (cont'd)

6. Test drive at 45 mph (72 km/h) for 1 minute or more.

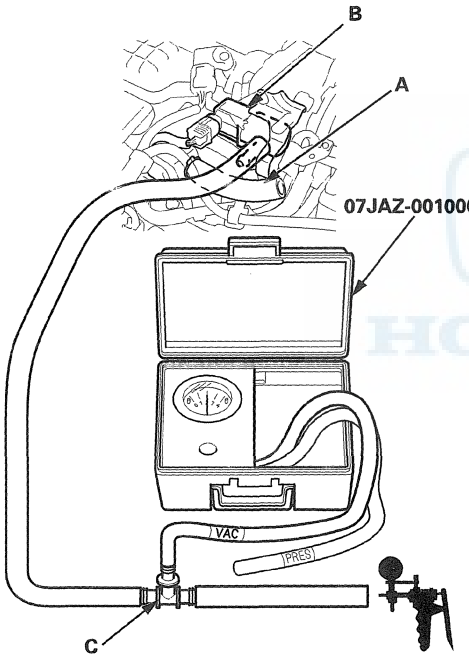
   Does the fuel fill cap warning message come on?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■

7. Turn the ignition switch to LOCK (0).

8. Disconnect the vacuum hose (purge line) (A) from the EVAP canister purge valve (B) in the engine compartment, then connect a T-fitting (C), a vacuum gauge, and a vacuum pump/gauge, 0—30 in.Hg, to the EVAP canister purge valve as shown.



9. Turn the ignition switch to ON (II).

10. Apply about 2 kPa (0.6 in.Hg, 15 mmHg) of vacuum to the hose.

11. Select EVAP PCS ON in the INSPECTION MENU with the HDS.

    Does the vacuum release immediately?

    YES–Check for a blockage at the EVAP canister purge line between the EVAP canister purge valve and the EVAP canister, then go to step 14.

    NO–Replace the EVAP canister purge valve (see page 11-362), then go to step 14.

12. Reconnect all hoses.

13. Turn the ignition switch to ON (II).

14. Reset the ECM/PCM with the HDS.

15. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in neutral) until a radiator fan comes on, then let it idle for 1 minute.

16. Test-drive at 45 mph (72 km/h) for 1 minute or more.

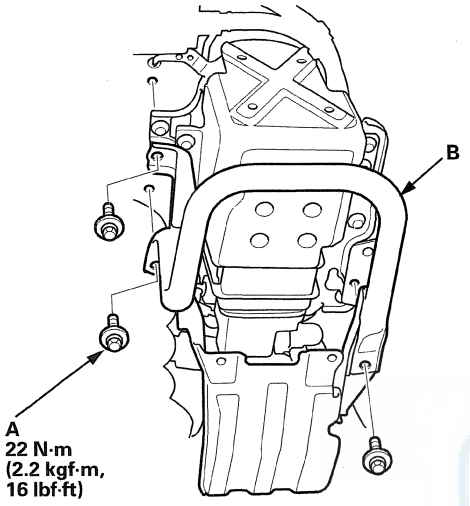
    Does the fuel cap warning message come on?

    YES–Go to step 1, and recheck.

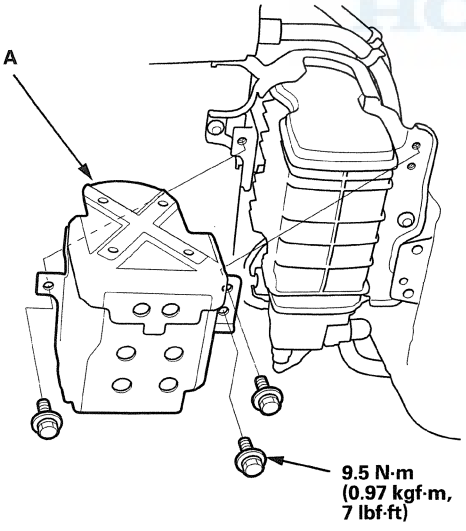
    NO–Troubleshooting is complete. ■

EVAP Canister Replacement

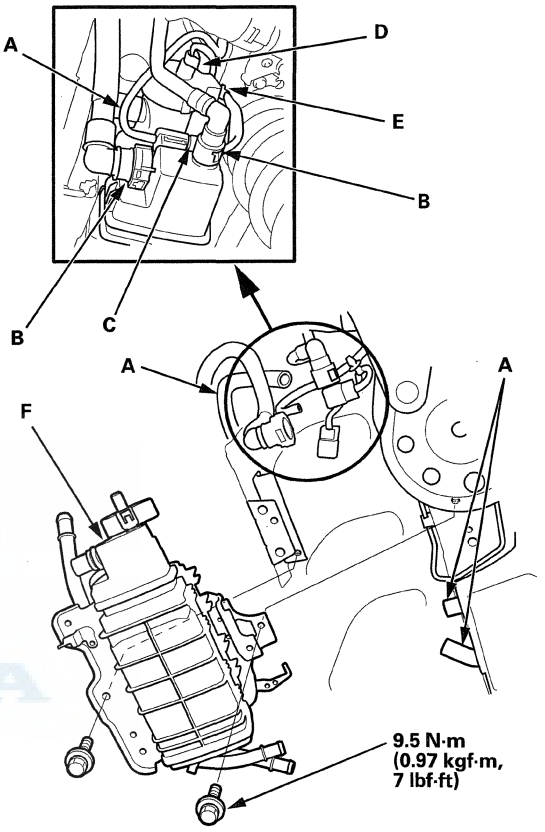
1. Raise the vehicle on a lift (see page 1-10).
2. Remove the bolts (A), then remove the EVAP canister guard (B).



3. Remove the EVAP canister cover (A).



4. Disconnect the hoses (A).

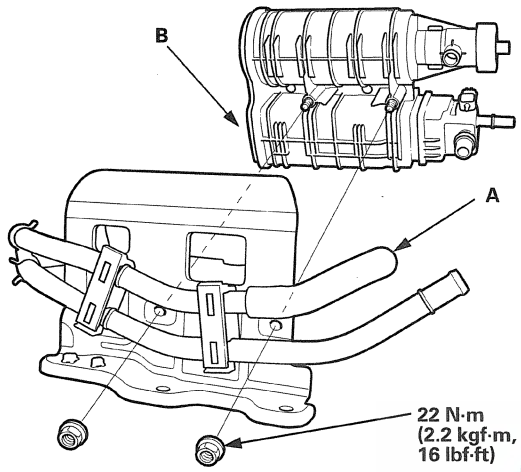


5. Disconnect the quick-connect fittings (B) from the EVAP canister (see page 11-295).
6. Disconnect the FTP sensor 3P connector (C) and the EVAP canister vent shut valve 2P connector (D), then remove the harness clip (E).
7. Remove the bolts, then remove the EVAP canister assembly (F).

(cont'd)

EVAP Canister Replacement (cont'd)

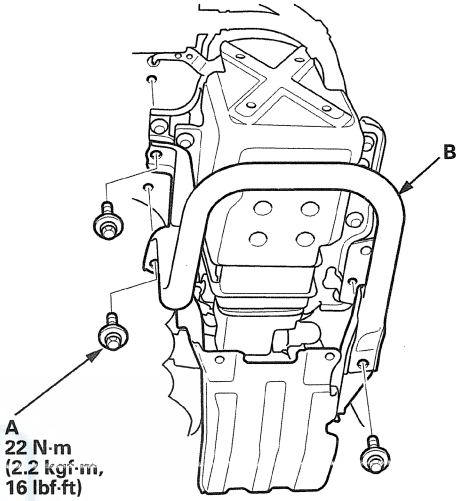
8. Disconnect the drain tube (A), then remove the EVAP canister (B) from the EVAP canister bracket.



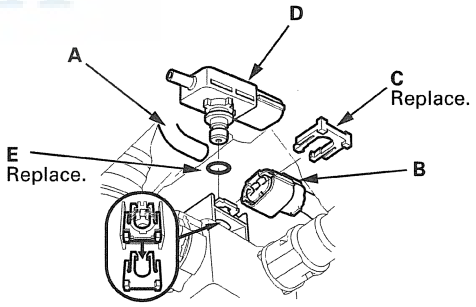
9. Remove the FTP sensor (see page 11-360).
10. Remove the EVAP canister vent shut valve (see page 11-361).
11. Install the parts in the reverse order of removal.

FTP Sensor Replacement

1. Raise the vehicle on a lift (see page 1-10).
2. Remove the bolts (A), then remove the EVAP canister guard (B).



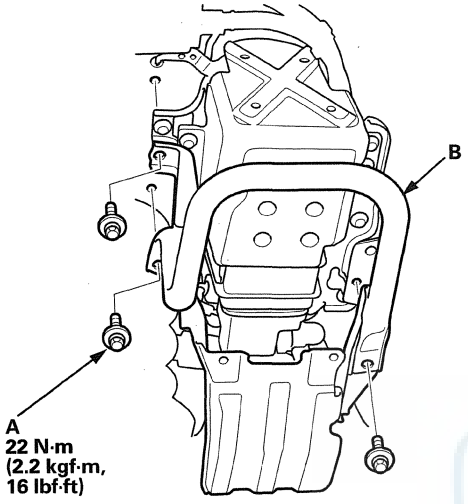
3. Disconnect the hose (A) and the FTP sensor connector (B).



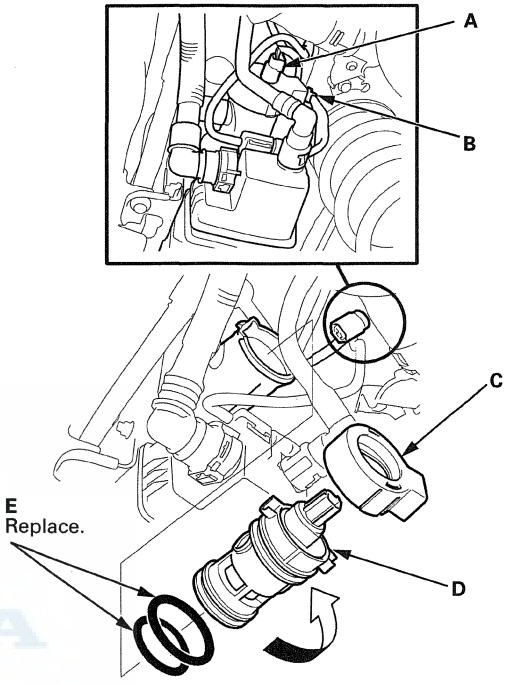
4. Remove the retainer (C), then remove the FTP sensor (D).
5. Install the parts in the reverse order of removal with a new O-ring (E) and a new retainer.

EVAP Canister Vent Shut Valve Replacement

1. Raise the vehicle on a lift (see page 1-10).
2. Remove the bolts (A), then remove the canister guard (B).



3. Disconnect the EVAP canister vent shut valve connector (A), then remove the harness clip (B).



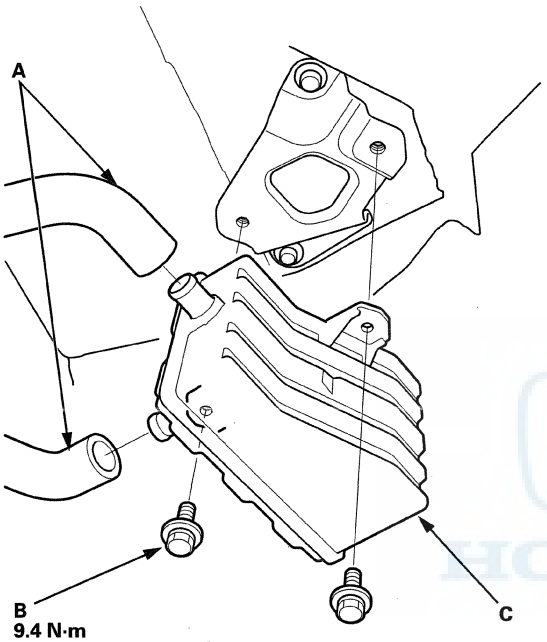
4. Remove the cap (C).
5. Remove the EVAP canister vent shut valve (D).
6. Install the parts in the reverse order of removal with new O-rings (E) and a new cap.

   NOTE: Do not coat the O-rings with engine oil.

HONDA

EVAP Canister Filter Replacement

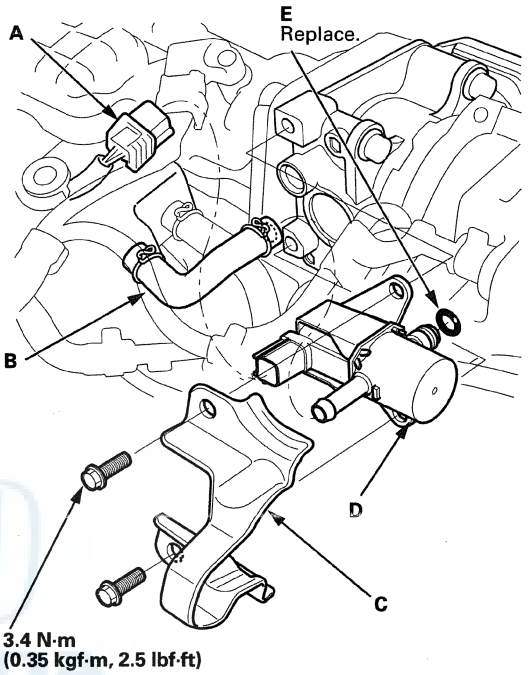
1. Raise the vehicle on a lift (see page 1-10).
2. Remove the left side rear fender cover (see page 20-168).
3. Disconnect the hoses (A).



4. Remove the bolts (B), then remove the EVAP canister filter (C).
5. Install the parts in the reverse order of removal.

EVAP Canister Purge Valve Replacement

1. Disconnect the EVAP canister purge valve connector (A).



2. Disconnect the hose (B), then remove the EVAP canister purge guard (C), and the EVAP canister purge valve (D).
3. Install the parts in the reverse order of removal with a new O-ring (E).



DTC Troubleshooting

DTC P16D5: F-CAN Malfunction (Internal Malfunction)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16D5 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with HDS.

   Is DTC P16D5 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P16D6: IMA-CAN Malfunction (Internal Malfunction)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16D6 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with HDS.

   Is DTC P16D6 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC U0029: F-CAN Malfunction (BUS-OFF (ECM/PCM))

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0029 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0029 indicated?

   YES–If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

   NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0038: IMA-CAN Malfunction (BUS-OFF)

DTC U1205: IMA-CAN Malfunction (ECM/PCM-Motor Control Module (MCM))

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).
- If DTC U0110 is stored at the same time as DTC U0038/U1205, troubleshoot that DTC first, then recheck for DTC U0038/U1205.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0038 or U1205 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the motor control module (MCM) and the ECM/PCM.■
6. Check for DTCs in the IMA system with the HDS.

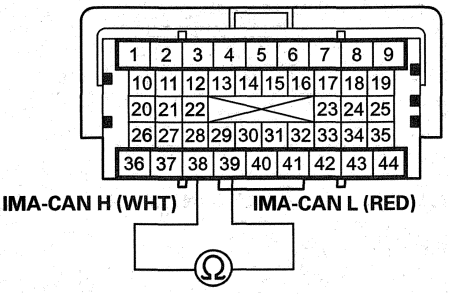
   Is DTC U0038 or U1205 indicated?

   YES–Go to step 7.

   NO–Go to step 38.
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P).

10. Measure the resistance between ECM/PCM connector terminals A38 and A39.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 108—132 Ω?

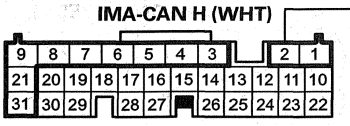
YES–Go to step 22.

NO–

- More than 132 Ω: Go to step 11.
- Less than 108 Ω: Go to step 17.

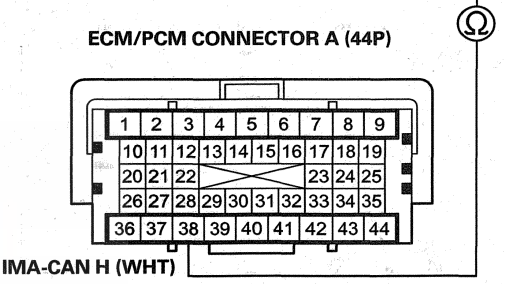
11. Turn the battery module switch OFF.
12. Remove the IPU cover (see page 12-210).
13. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
14. Disconnect motor control module (MCM) connector A (31P).
15. Measure the resistance between ECM/PCM connector terminals A38 and motor control module (MCM) connector terminal A2.

MOTOR CONTROL MODULE (MCM) CONNECTOR A (31P)



Wire side of female terminals

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 1.0 Ω or less ?

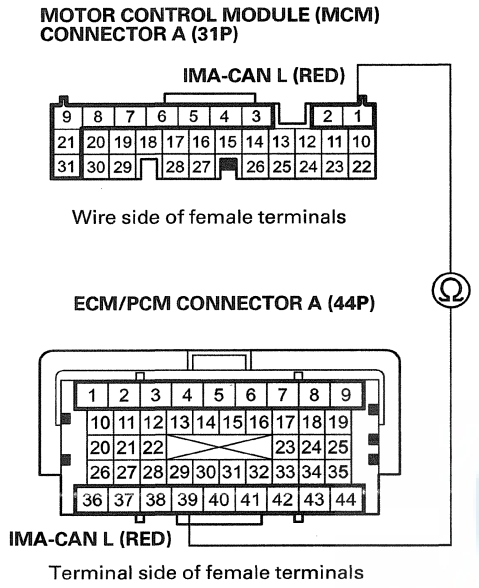
YES–Go to step 16.

NO–Repair an open in the wire between the ECM/PCM (A38) and the motor control module (MCM) (A2) , then go to step 33.

(cont'd)

DTC Troubleshooting (cont'd)

16. Measure the resistance between ECM/PCM connector terminals A39 and motor control module (MCM) connector terminal A1.

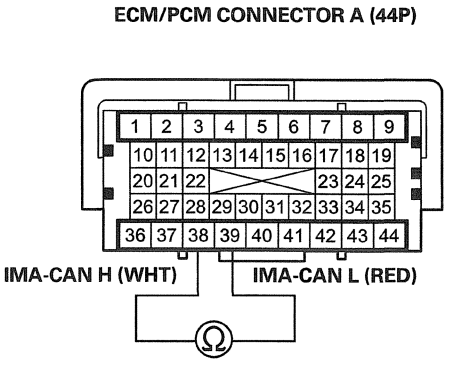


Is there about 1.0 Ω or less ?

YES–Replace the motor control module (MCM) (see page 12-212), then go to step 33.

NO–Repair an open in the wire between the ECM/PCM (A39) and the motor control module (MCM) (A1), then go to step 33.

17. Turn the battery module switch OFF.
18. Remove the IPU cover (see page 12-210).
19. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
20. Disconnect motor control module (MCM) connector A (31P).
21. Measure the resistance between ECM/PCM connector terminals A38 and A39.



Is there about 1.0 Ω or more ?

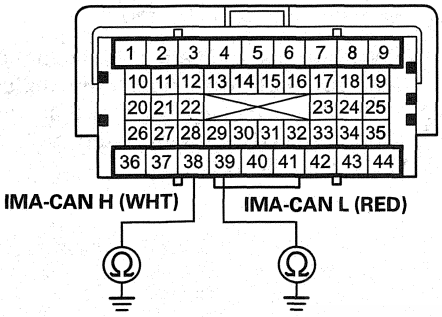
YES–Replace the motor control module (see page 12-212), then go to step 33.

NO–Repair a short in the wires between the ECM/PCM (A38) (IMA-CAN H line) and the ECM/PCM (A39) (IMA-CAN L line), then go to step 33.

22. Turn the battery module switch OFF.
23. Remove the IPU cover (see page 12-210).
24. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
25. Disconnect motor control module (MCM) connector A (31P).

26. Measure the resistance between body ground and ECM/PCM connector terminals A38 and A39 individually.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 1.0 Ω or more ?.

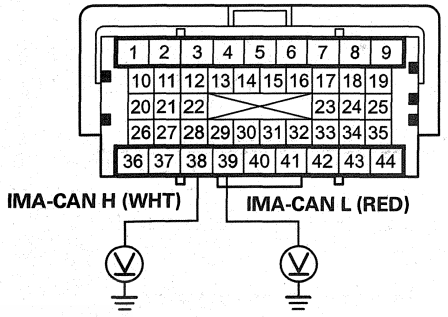
YES–Go to step 27.

NO–Repair a short to ground in the wire between the ECM/PCM (A38) and the motor control module (MCM) (A2) or between the ECM/PCM (A39) the and the motor control module (MCM) (A1), then go to step 33.

27. Turn the ignition switch to ON (II).

28. Measure the voltage between body ground and ECM/PCM connector terminals A38 and A39 individually.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there voltage?

YES–Repair a short to power in the wire between the ECM/PCM (A38) and the motor control module (MCM) (A2) or between the ECM/PCM (A39) and the motor control module (MCM) (A1), then go to step 32.

NO–Go to step 29.

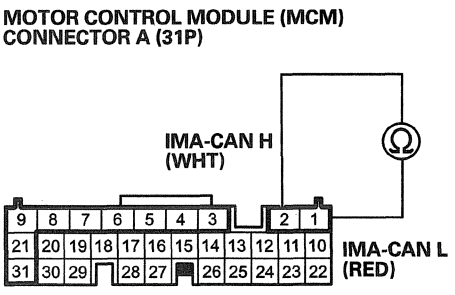
29. Turn the ignition switch to LOCK (0).

30. Reconnect ECM/PCM connector A (44P).

(cont'd)

DTC Troubleshooting (cont'd)

31. Measure the resistance between motor control module (MCM) connector terminals A1 and A2.



Wire side of female terminals

Is there about 108—132 Ω ?

YES–Go to step 36.

NO–Replace the ECM/PCM (see page 11-209), then go to step 33.

32. Turn the ignition switch to LOCK (0).
33. Reconnect all connectors.
34. Turn the ignition switch to ON (II).
35. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0038 or DTC U1205 indicated?

YES–Check for poor connections or loose terminals at the motor control module (MCM) and the ECM/PCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

36. Reconnect all connectors.
37. Turn the ignition switch to ON (II).
38. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
39. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0038 or DTC U1205 indicated?

YES–Check for poor connections or loose terminals at the motor control module (MCM), and ECM/PCM. If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then recheck. If the ECM/PCM was substituted, go to step 1.

NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0110: F-CAN Malfunction (ECM/PCM-MCM)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC U0029 and U0110 indicated at the same time?

   YES–Go to the troubleshooting for DTC U0029 (see page 11-364).■

   NO–Go to step 4.
4. Clear the DTC with the HDS.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0110 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the motor control module (MCM) and the ECM/PCM.■
6. Check for Pending or Confirmed DTCs with the HDS again.

   Are DTC U0110 and U1205 indicated at the same time?

   YES–Go to step 7.

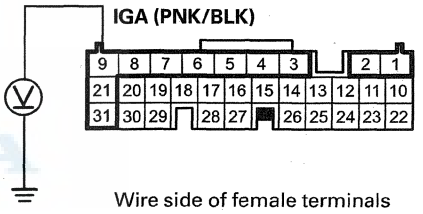
   NO–Update the motor control module (MCM) if it does not have the latest software (see page 12-211), or substitute a known-good motor control module (MCM) (see page 12-8), then go to step 27 and recheck. If DTC U0110 is not indicated with a known-good motor control module (MCM), replace the original motor control module (MCM) (see page 12-212), then go to step 27.
7. Turn the ignition switch to LOCK (0).
8. Turn the battery module switch OFF.
9. Remove the IPU cover (see page 12-210).
10. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
11. Check for poor connections or loose terminals at motor control module (MCM) connector A (31P).

    Are the connections and the terminals OK?

    YES–Go to step 12.

    NO–Repair the connections or the terminals, then go to step 24.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between motor control module (MCM) connector terminal A9 and body ground within 1 second.

MOTOR CONTROL MODULE (MCM) CONNECTOR A (31P)



Wire side of female terminals

Is there 12V battery voltage?

YES–Go to step 14.

NO–Go to step 16.

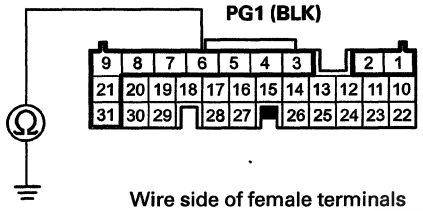
14. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

15. Check for continuity between motor control module (MCM) connector terminal A6 and body ground.

MOTOR CONTROL MODULE (MCM) CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES–Update the motor control module (MCM) if it does not have the latest software (see page 12-211), or substitute a known-good motor control module (MCM) (see page 12-8), then go to step 24 and recheck. If DTC U0110 is not indicated with a known-good motor control module (MCM), replace the original motor control module (MCM) (see page 12-212), then go to step 24.

NO–Repair an open in the wire between the motor control module (MCM) (A6) and G901 (see page 22-54), then go to step 24.

16. Turn the ignition switch to LOCK (0).
17. Remove the motor control module (MCM) relay 1.
18. Test motor control module (MCM) relay 1 (see page 22-92).

Is the relay OK?

YES–Go to step 19.

NO–Replace motor control module (MCM) relay 1, then go to step 24.

19. Check the No. B42 IMA1 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

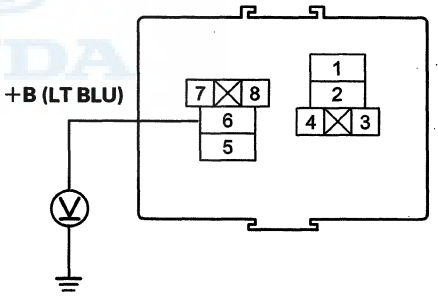
YES–Go to step 20.

NO–

- Repair a short in the wire between the No. B42 IMA1 (7.5 A) fuse and motor control module (MCM) relay 1. Also replace the No. B42 IMA1 (7.5 A) fuse, then go to step 24.
- Repair a short in the wire between the motor control module (MCM) relay 1 and the motor control module (MCM). Also replace the No. B42 IMA1 (7.5 A) fuse, then go to step 24.

20. Measure the voltage between rear relay block 8P connector (motor control module (MCM) relay 1) terminal No. 6 and body ground.

REAR RELAY BLOCK 8P CONNECTOR



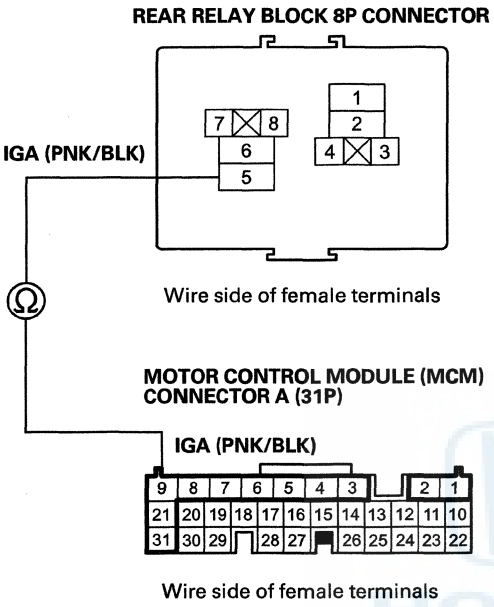
Wire side of female terminals

Is there battery voltage?

YES–Go to step 21.

NO–Repair an open in the wire between the No. B42 IMA1 (7.5 A) fuse and motor control module (MCM) relay 1, then go to step 23.

21. Check for continuity between rear relay block 8P connector (motor control module (MCM) relay 1) terminal No. 5 and motor control module (MCM) connector terminal A9.

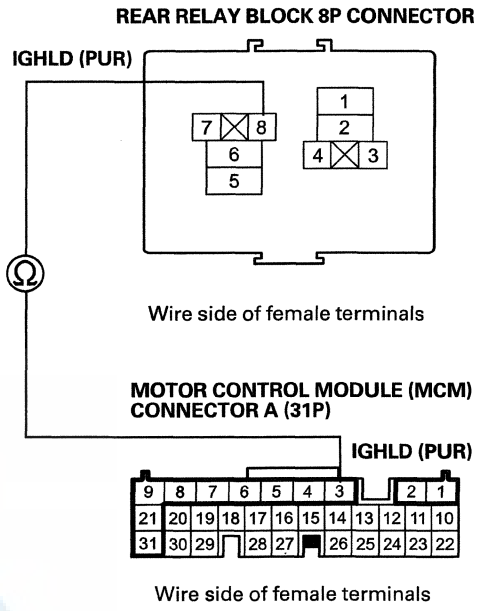


Is there continuity?

YES–Go to step 22.

NO–Repair an open in the wire between the motor control module (MCM) (A9) and motor control module (MCM) relay 1, then go to step 24.

22. Check for continuity between rear relay block 8P connector (motor control module (MCM) relay 1) terminal No. 8 and motor control module (MCM) connector terminal A3.



Is there continuity?

YES–Update the motor control module (MCM) if it does not have the latest software (see page 12-211), or substitute a known-good motor control module (MCM) (see page 12-8), then go to step 24 and recheck. If DTC U0110 is not indicated with a known-good motor control module (MCM), replace the original motor control module (MCM) (see page 12-212), then go to step 24.

NO–Repair an open in the wire between the motor control module (MCM) (A3) and motor control module (MCM) relay 1, then go to step 24.

23. Turn the ignition switch to LOCK (0).
24. Reconnect all connectors.
25. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
26. Reinstall the IPU cover (see page 12-210).
27. Turn the battery module switch ON (see page 12-4).
28. Turn the ignition switch to ON (II).
29. Reset the ECM/PCM with the HDS.
30. Do the ECM/PCM idle learn procedure (see page 11-274).

(cont'd)

DTC Troubleshooting (cont'd)

31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U0110 indicated?

    YES–Check for poor connections or loose terminals at the motor control module (MCM), and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0122: F-CAN Malfunction (ECM/PCM-VSA Modulator-Control Unit)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC U0029 and U0122 indicated at the same time?

   YES–Go to the troubleshooting for DTC U0029 (see page 11-364).■

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0122 indicated?

   YES–Go to step 5.

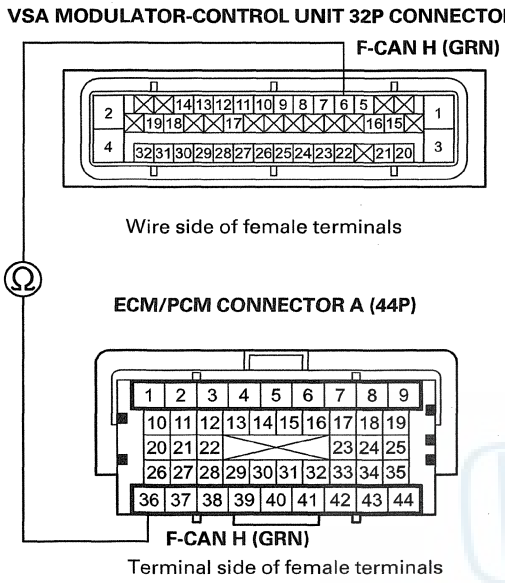
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module, the VSA modulator-control unit, and the ECM/PCM.■
5. Check for communication to the VSA system with the HDS.

   Does the HDS communicate with the VSA modulator-control unit?

   YES–Go to step 6.

   NO–Go to the symptom troubleshooting for ABS indicator, brake system indicator, and VSA indicator do not go off (see page 19-118).■
6. Turn the ignition switch to LOCK (0).
7. Jump the SCS line with the HDS.
8. Disconnect the VSA modulator-control unit 32P connector.
9. Disconnect ECM/PCM connector A (44P).

10. Check for continuity between ECM/PCM connector terminal A36 and VSA modulator-control unit 32P connector terminal No. 6.

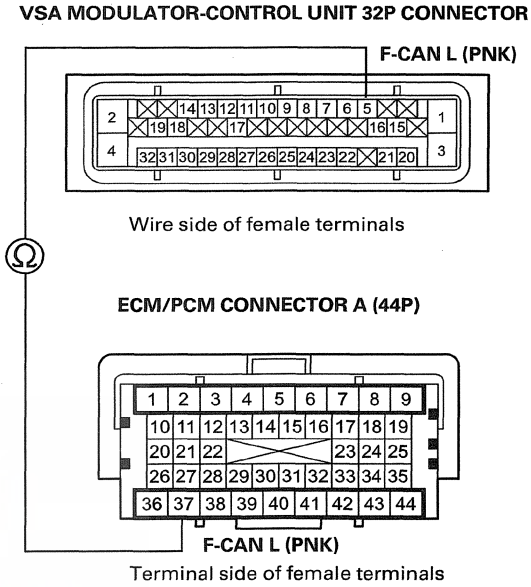


Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the ECM/PCM (A36) and the VSA modulator-control unit, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A37 and VSA modulator-control unit 32P connector terminal No. 5.



Is there continuity?

YES–Update the VSA modulator-control unit if it does not have the latest software (see page 19-124), or substitute a known-good VSA modulator-control unit (see page 19-125), then go to step 12 and recheck. If DTC U0122 is not indicated after substitution, replace the original VSA modulator-control unit (see page 19-125), then go to step 12.

NO–Repair an open in the wire between the ECM/PCM (A37) and the VSA modulator-control unit, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see page 11-274).

(cont'd)

DTC Troubleshooting (cont'd)

16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U0122 indicated?

    YES–Check for poor connections or loose terminals at the gauge control module, the VSA modulator-control unit, and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0155: F-CAN Malfunction (ECM/PCM-Gauge Control Module)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0155 indicated?

   YES–Go to step 4.

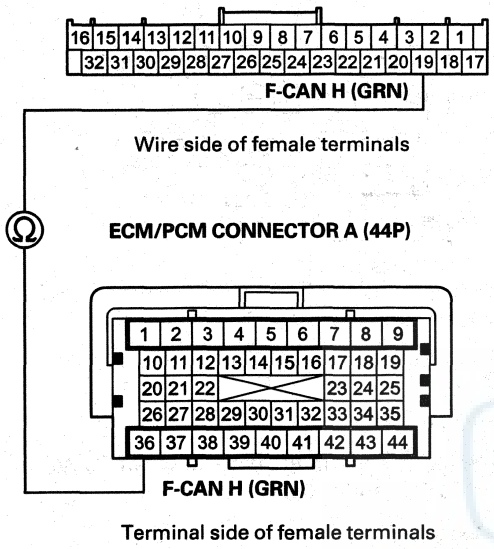
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the gauge control module and the ECM/PCM.■
4. Check for body electrical DTCs in the DTCs MENU with the HDS.

   Is DTC B1168, B1169, and/or B1178 indicated?

   YES–Go to step 5.

   NO–Do the gauge control module input test (see page 22-347).■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Remove the gauge control module (see page 22-354).
8. Disconnect the gauge control module 32P connector.
9. Disconnect ECM/PCM connector A (44P).

10. Check for continuity between ECM/PCM connector terminal A36 and gauge control module 32P connector terminal No. 19.

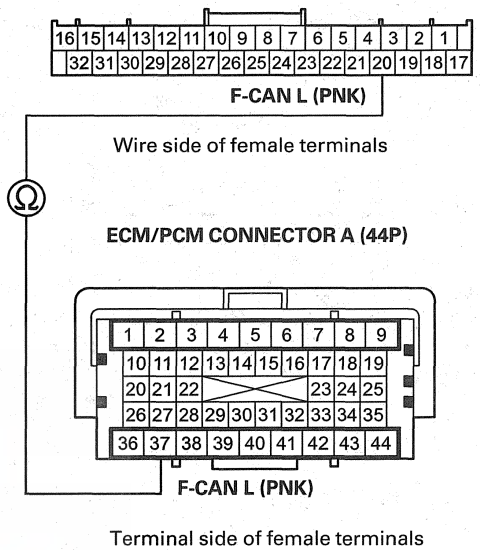


Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the ECM/PCM (A36) and the gauge control module, then go to step 12.

11. Check for continuity between ECM/PCM connector terminal A37 and gauge control module 32P connector terminal No. 20.



Is there continuity?

YES–Substitute a known-good gauge control module (see page 22-354), then go to step 12 and recheck. If DTC U0155 is not indicated after substitution, replace the original gauge control module, then go to step 12.

NO–Repair an open in the wire between the ECM/PCM (A37) and the gauge control module, then go to step 12.

12. Reconnect all connectors.
13. Turn the ignition switch to ON (II).
14. Reset the ECM/PCM with the HDS.
15. Do the ECM/PCM idle learn procedure (see page 11-274).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U0155 indicated?

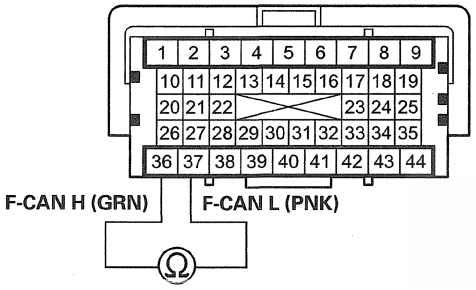
    YES–Check for poor connections or loose terminals at the gauge control module and the ECM/PCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

F-CAN Circuit Troubleshooting

1. Turn the ignition switch to LOCK (0).
2. Jump the SCS line with the HDS.
3. Disconnect ECM/PCM connector A (44P), then disconnect the HDS.
4. Measure the resistance between ECM/PCM connector terminals A36 and A37.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 48—59 Ω?

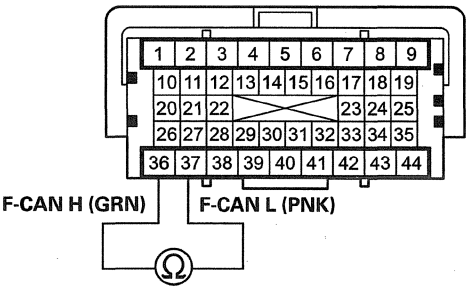
YES–Go to step 18.

NO–Go to step 5.

5. Disconnect these connectors:
   - Gauge control module 32P (see page 22-354)
   - VSA modulator-control unit 32P (see page 19-125)
   - Yaw rate-acceleration sensor 4P (see page 19-122)
   - EPS control unit A (11P) (see page 17-80)
   - SRS unit A (39P) (see page 24-185)
   - TPMS control unit 20P (see page 18-68)
   - Motor control module (MCM) A (31P) (see page 12-212)

6. Check for continuity between ECM/PCM connector terminals A36 and A37.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

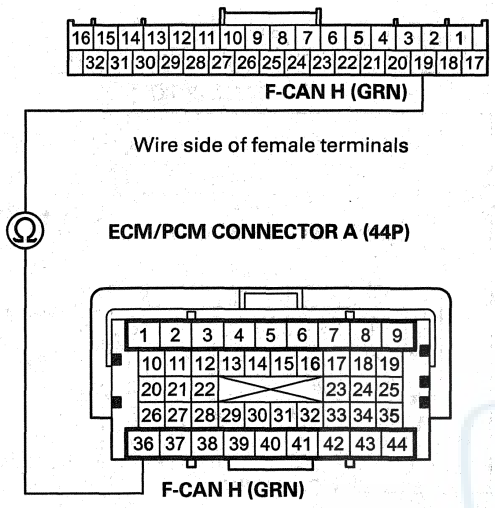
Is there continuity?

YES–Repair a short in the wire between ECM/PCM terminals A36 and A37.■

NO–Go to step 7.

7. Check for continuity between ECM/PCM connector terminal A36 and gauge control module 32P connector terminal No. 19.

GAUGE CONTROL MODULE 32P CONNECTOR



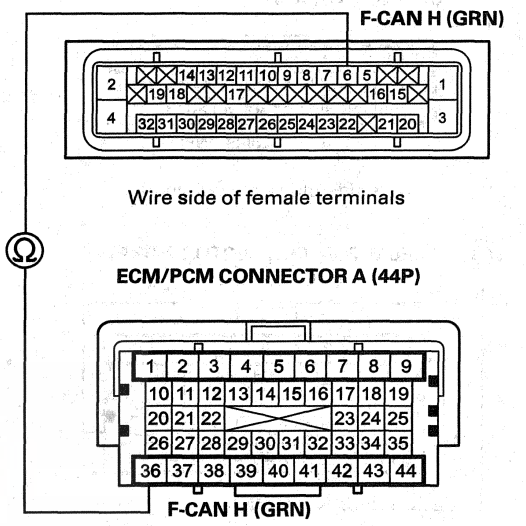
Is there continuity?

YES–Go to step 8.

NO–Repair an open in the wire between the ECM/PCM (A36) and the gauge control module.■

8. Check for continuity between ECM/PCM connector terminal A36 and VSA modulator-control unit 32P connector terminal No. 6.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Is there continuity?

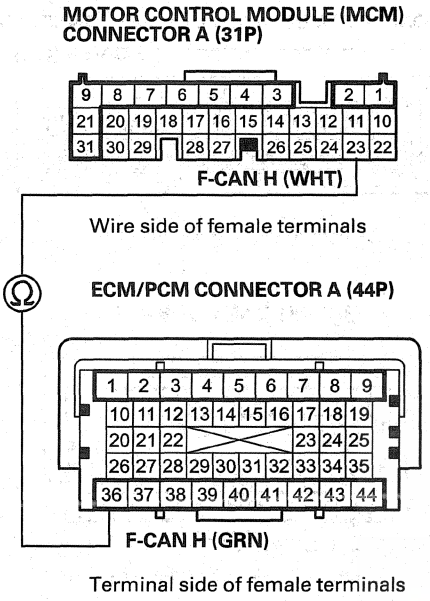
YES–Go to step 9.

NO–Repair an open in the wire between the ECM/PCM (A36) and the VSA modulator-control unit.■

(cont'd)

F-CAN Circuit Troubleshooting (cont'd)

9. Check for continuity between ECM/PCM connector terminal A36 and motor control module (MCM) connector terminal A23.

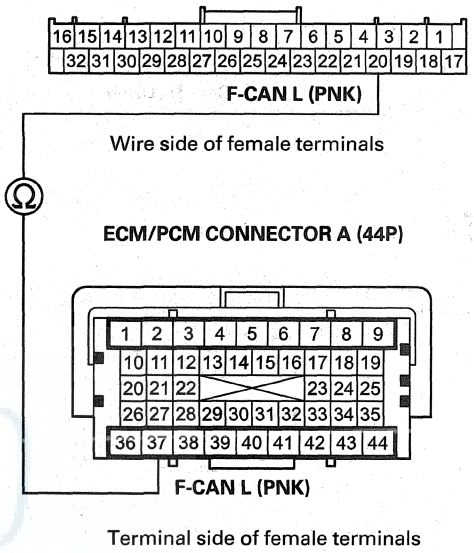


Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire between the ECM/PCM (A36) and the motor control module (MCM).■

10. Check for continuity between ECM/PCM connector terminal A37 and gauge control module 32P connector terminal No. 20.



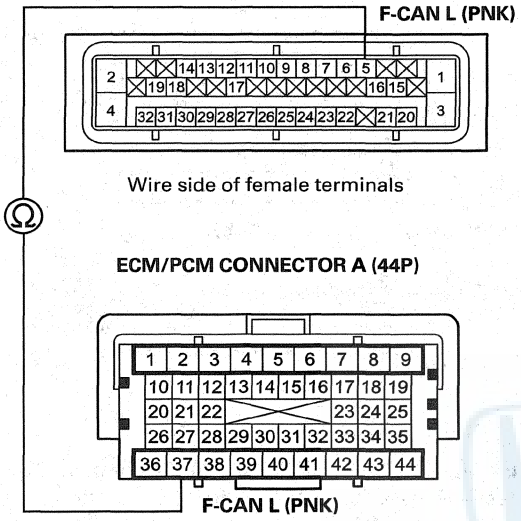
Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the ECM/PCM (A37) and the gauge control module.■

11. Check for continuity between ECM/PCM connector terminal A37 and VSA modulator-control unit 32P connector terminal No. 5.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



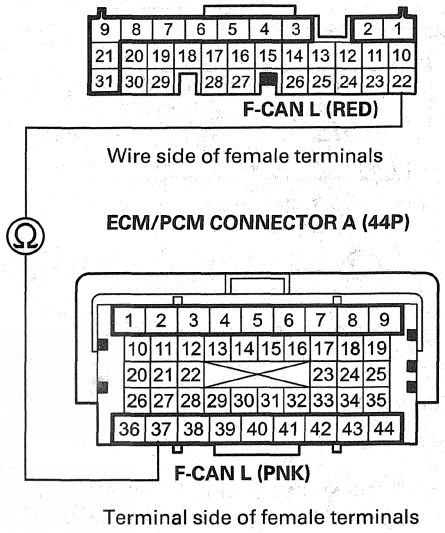
Is there continuity?

YES–Go to step 12.

NO–Repair an open in the wire between the ECM/PCM (A37) and the VSA modulator-control unit.■

12. Check for continuity between ECM/PCM connector terminal A37 and motor control module (MCM) connector terminal A22.

MOTOR CONTROL MODULE (MCM) CONNECTOR A (31P)



Is there continuity?

YES–Go to step 13.

NO–Repair an open in the wire between the ECM/PCM (A37) and the motor control module (MCM).■

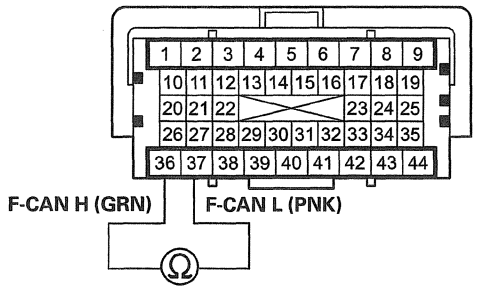
13. Reconnect the VSA modulator-control unit 32P connector.

(cont'd)

F-CAN Circuit Troubleshooting (cont'd)

14. Measure the resistance between ECM/PCM connector terminals A36 and A37.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

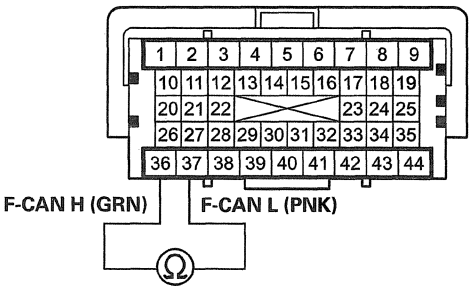
Is there about 108—132 Ω?

YES–Go to step 15.

NO–Substitute a known-good VSA modulator-control unit (see page 19-125), then reconnect ECM/PCM connector A (44P). If the HDS identifies the vehicle, replace the original VSA modulator-control unit (see page 19-125).■

15. Disconnect the VSA modulator-control unit 32P connector.
16. Reconnect motor control module (MCM) connector A (31P).
17. Measure the resistance between ECM/PCM connector terminals A36 and A37.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there about 108—132 Ω?

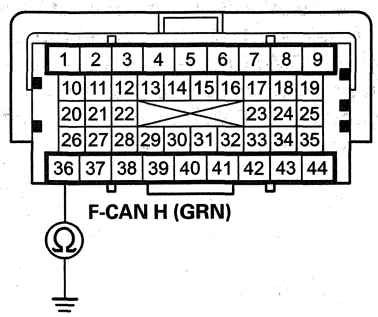
YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the HDS identifies the vehicle and the ECM/PCM was updated, troubleshooting is complete. If the HDS identifies the vehicle and the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209).■

NO–Substitute a known-good motor control module (MCM) (see page 12-8), then reconnect ECM/PCM connector A (44P). If the HDS identifies the vehicle, replace the original motor control module (MCM) (see page 12-212).■

18. Disconnect these connectors:
    - Gauge control module 32P (see page 22-354)
    - VSA modulator-control unit 32P (see page 19-125)
    - Yaw rate-acceleration sensor 4P (see page 19-122)
    - EPS control unit A (11P) (see page 17-80)
    - SRS unit A (39P) (see page 24-185)
    - TPMS control unit 20P (see page 18-68)
    - Motor control module (MCM) (31P) (see page 12-212)

19. Check for continuity between ECM/PCM connector terminal A36 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

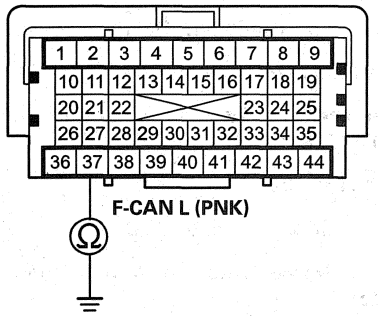
Is there continuity?

YES–Repair a short in the wire between ECM/PCM terminal A36 and the gauge control module, the VSA modulator-control unit, the yaw rate-acceleration sensor, the EPS control unit, the SRS unit, the TPMS control unit, the motor control module (MCM), or the DLC.■

NO–Go to step 20.

20. Check for continuity between ECM/PCM connector terminal A37 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between ECM/PCM terminal A37 and the gauge control module, the VSA modulator-control unit, the yaw rate-acceleration sensor, the EPS control unit, the SRS unit, the TPMS control unit, the motor control module (MCM), or the DLC.■

NO–Go to step 21.

21. Reconnect all connectors.
22. Connect the HDS to the DLC (see page 11-3).
23. Disconnect the gauge control module 32P connector.
24. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the gauge control module (see page 22-354).■

    NO–Go to step 25.
25. Turn the ignition switch to LOCK (0).
26. Reconnect the gauge control module 32P connector.
27. Disconnect the VSA modulator-control unit 32P connector.
28. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the VSA modulator-control unit (see page 19-125).■

    NO–Go to step 29.

(cont'd)

F-CAN Circuit Troubleshooting (cont'd)

29. Turn the ignition switch to LOCK (0).
30. Reconnect the VSA modulator-control unit 32P connector.
31. Disconnect the yaw rate-acceleration sensor 4P connector.
32. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the yaw rate-acceleration sensor (see page 19-122).■

    NO–Go to step 33.
33. Turn the ignition switch to LOCK (0).
34. Reconnect the yaw rate-acceleration sensor 4P connector.
35. Disconnect EPS control unit connector A (11P).
36. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the EPS control unit (see page 17-80).■

    NO–Go to step 37.
37. Turn the ignition switch to LOCK (0).
38. Reconnect EPS control unit connector A (11P).
39. Disconnect SRS unit connector A (39P).
40. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the SRS unit (see page 24-185).■

    NO–Go to step 41.
41. Turn the ignition switch to LOCK (0).
42. Reconnect SRS unit connector A (39P).
43. Disconnect the TPMS control unit 20P connector.
44. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the TPMS control unit (see page 18-68).■

    NO–Go to step 45.
45. Turn the ignition switch to LOCK (0).
46. Reconnect the TPMS control unit 20P connector.
47. Disconnect motor control module (MCM) connector A (31P).
48. Turn the ignition switch to ON (II), and read the HDS.

    Does the HDS identify the vehicle?

    YES–Replace the motor control module (MCM) (see page 12-212).■

    NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

DLC Circuit Troubleshooting

NOTE: If you suspect the HDS or the HDS DLC cable may be the source of the communication problem, verify that they are working properly by connecting them to a known-good, like vehicle and system, and checking for communication problems.

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the DLC (see page 11-3).
3. Turn the ignition switch to ON (II), and read the HDS.

   Does the HDS identify the vehicle?

   YES–Go to step 5.

   NO–Go to step 4.
4. Try to start the engine.

   Does the engine start and idle smoothly?

   YES–Go to step 24.

   NO–Go to the ECM/PCM power and ground circuit troubleshooting (see page 11-190).■
5. Check for Pending or Confirmed DTCs in the PGM-FI system with the HDS.

   Are any Pending or Confirmed DTCs indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–

   - If the HDS does not communicate with the SRS, go to step 6.
   - If the HDS does not communicate with the VSA system, go to step 8.
   - If the HDS does not communicate with the EPS system, go to step 10.
   - If the HDS does not communicate with the TPMS, go to step 12.
   - If the HDS does not communicate with the IMMOBI (immobilizer) system, go to step 14.
   - If the HDS does not communicate with the BODY ELECTRICAL system, go to step 16.
6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II), and watch the SRS indicator.

   Does the SRS indicator come on and go off?

   YES–Go to step 18.

   NO–Go to the SRS general troubleshooting information (see page 24-23).■
8. Turn the ignition switch to LOCK (0).
9. Turn the ignition switch to ON (II), and watch the VSA indicator.

   Does the VSA indicator come on and go off?

   YES–Go to step 18.

   NO–Go to the VSA symptom troubleshooting for ABS indicator, brake system indicator, and VSA indicator do not go off (see page 19-118).■
10. Turn the ignition switch to LOCK (0).
11. Start the engine, and watch the EPS indicator.

    Does the EPS indicator come on and go off?

    YES–Go to step 18.

    NO–Go to the EPS symptom troubleshooting for EPS indicator does not go off, and no DTCs are stored (see page 17-60).■
12. Turn the ignition switch to LOCK (0).
13. Start the engine, and watch the TPMS indicator.

    Does the TPMS indicator come on and go off?

    YES–Go to step 18.

    NO–Go to the TPMS symptom troubleshooting for TPMS indicator does not go off, and no DTCs are stored (see page 18-64).■
14. Turn the ignition switch to LOCK (0).
15. Turn the ignition switch to ON (II), and watch the immobilizer indicator.

    Does the immobilizer indicator stay on or flash?

    YES–Go to the immobilizer system's troubleshooting (see page 22-191).■

    NO–Go to step 18.
16. Do the gauge self-diagnostic function (see page 22-325).
17. Check the gauge display.

    Is Error 2 indicated?

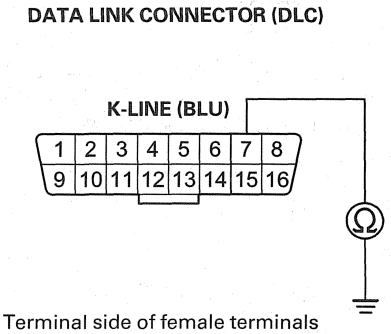
    YES–Check for B-CAN system DTCs.■

    NO–Go to step 18.
18. Turn the ignition switch to LOCK (0), then do the 12 volt battery terminal disconnection procedure (see page 22-86), and wait at least 3 minutes before continuing.
19. Disconnect the HDS from the DLC.

(cont'd)

DLC Circuit Troubleshooting (cont'd)

20. Check for continuity between DLC terminal No. 7 and body ground.



Is there continuity?

YES–Go to step 21.

NO–Go to step 22.

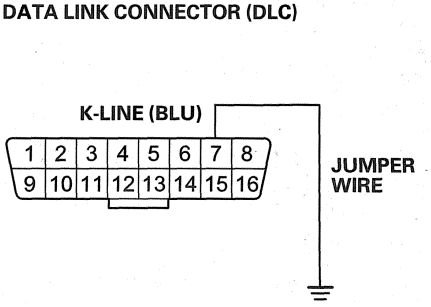
21. Continue to check for continuity between DLC terminal No. 7 and body ground, while disconnecting these connectors, one at a time:
    - SRS unit connector A (39P)
    - VSA modulator-control unit 32P connector
    - EPS control unit connector A (11P)
    - TPMS control unit 20P connector
    - Immobilizer-keyless control unit 7P connector
    - Audio-navigation unit connector A (24P) (with navigation)
    - Audio unit connector A (24P) (without navigation)
    - Under-dash fuse/relay box connector Y (16P)

    Does continuity go away when one of the above connectors is disconnected?

    YES–Replace the part that caused continuity go away when it was disconnected.■

    NO–Repair a short in the wire between the DLC (K-line) and the VSA modulator-control unit, the SRS unit, the EPS control unit, the TPMS control unit, the immobilizer-keyless control unit, the audio-navigation unit (with navigation), the audio unit (without navigation), or the under-dash fuse/relay box.■

22. Connect DLC terminal No. 7 to body ground with a jumper wire.



23. Check for continuity between body ground and these connector terminals:

Connector	Terminal
SRS unit A (39P)	No. 5 (BLU)
VSA modulator-control unit 32P	No. 8 (BLU)
EPS control unit A (11P)	No. 5 (BLU)
TPMS control unit 20P	No. 4 (BLU)
Immobilizer-keyless control unit 7P	No. 3 (BLU)
Audio-navigation unit A (24P) (with navigation)	No. 13 (BLU)
Audio unit A (24P) (without navigation)	No. 13 (BLU)
Under-dash fuse/relay box Y (16P)	No. 7 (BLU)

Is there continuity between body ground and each of the terminals in the chart?

YES–Replace the part that does not communicate with the HDS.■

NO–Repair an open in the wire between the DLC (K-line) and the appropriate connector.■

24. Check for B-CAN system DTCs without the HDS (see page 22-102).

    Is DTC U0029 and/or U0100 indicated?

    YES–Go to the F-CAN circuit troubleshooting (see page 11-376).■

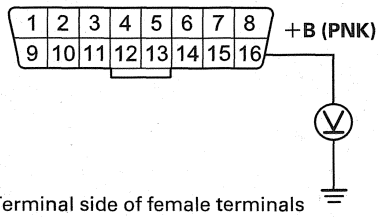
    NO–Go to step 25.

25. Turn the ignition switch to LOCK (0).

26. Disconnect the HDS from the DLC.

27. Measure the voltage between DLC terminal No. 16 and body ground.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

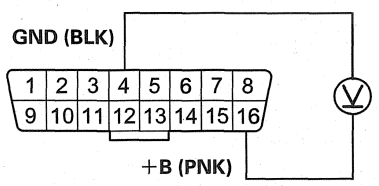
Is there battery voltage?

YES–Go to step 28.

NO–Repair an open in the wire between DLC terminal No. 16 and the No. B1 BACK UP (15 A) fuse in the under-dash fuse/relay box.■

28. Measure the voltage between DLC terminals No. 4 and No. 16.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Is there battery voltage?

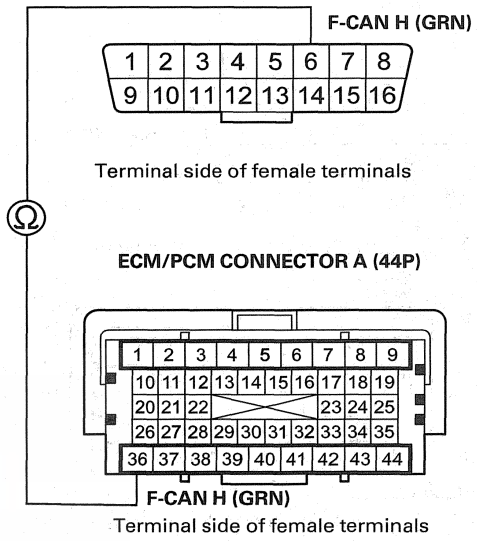
YES–Go to step 29.

NO–Repair an open in the wire between DLC terminal No. 4 and body ground (G502 (see page 22-44)).■

29. Connect the HDS to the DLC (see page 11-3).
30. Jump the SCS line with the HDS.
31. Disconnect ECM/PCM connector A (44P).
32. Disconnect the HDS from the DLC.

33. Check for continuity between ECM/PCM connector terminal A36 and DLC terminal No. 6.

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

Is there continuity?

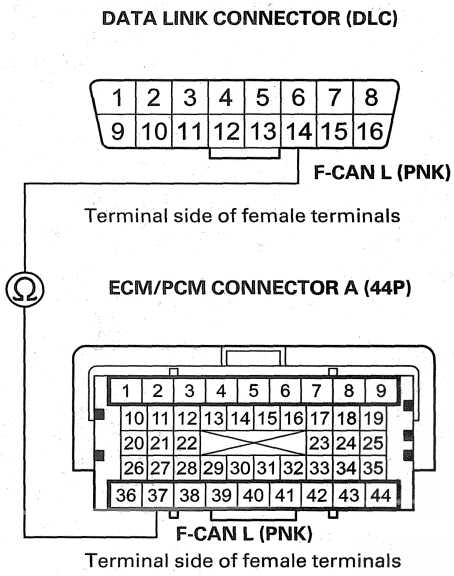
YES–Go to step 34.

NO–Repair an open in the wire between the ECM/PCM (A36) and DLC terminal No. 6.■

(cont'd)

DLC Circuit Troubleshooting (cont'd)

34. Check for continuity between ECM/PCM connector terminal A37 and DLC terminal No. 14.



Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away and the ECM/PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM (A37) and DLC terminal No. 14.■

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If engine maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

IMA System

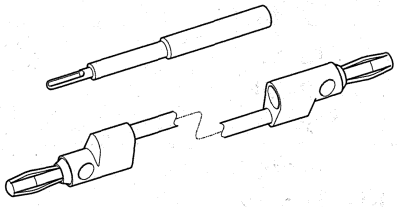
IMA System

Special Tools 12–2
Service Precautions 12–3
General Troubleshooting Information 12–5
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Symptom Troubleshooting Index 12–14
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Motor Power Inverter (MPI) Module Removal/Installation 12–214
IPU Case Removal/Installation 12–215
Battery Module Removal/Installation 12–217
IPU Module Fan Replacement 12–220
IPU Module Air Duct Removal/Installation 12–220
IMA Motor Power Cable Removal/Installation 12–221
IMA Motor Rotor Removal/Installation 12–224
Drain Cover Removal/Installation 12–227
IMA Motor Housing Removal/Installation 12–227
IMA Motor Rotor Position Sensor Removal/Installation 12–228
IMA Motor Power Cable Terminal Removal/Installation 12–228
Idle Stop Switch Replacement 12–229

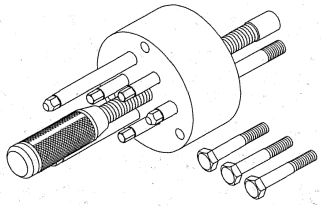


Special Tools

Ref.No.	Tool Number	Description	Qty
①	07SAZ-001000A	Backprobe Set	2
②	07YAC-PHM010C	Rotor Puller	1



①



②

Service Precautions

IMA System

- The IMA (integrated motor assisted) system uses high voltage (100 V) circuits. Be sure to shut off the electrical circuits and isolate the IMA system and related parts before servicing the IMA system.
- The high voltage cables and their covers are identified by orange coloring. The caution labels are attached to high voltage and other related parts (see page 1-7). When the system is energized, be careful not to touch these cables and parts without adequate protective gear.

  The front floor under-cover protecting the high voltage cables is marked ⚠.
- If the 12 V battery is discharged, its cables have been disconnected, or the MCM (Motor Control Module) has been reset, the IMA battery level indicator does not display the state-of-charge (SOC) when the engine is first started. To display the level in the indicator, start the engine, and hold the engine speed between 3,500 and 4,000 rpm without load (in P or N (CVT model)) or (in neutral (M/T model) until the level in the indicator is half full.
- Observe the following instructions when inspecting or servicing the IMA system:
  - When the system is energized, servicing, disassembling, or replacing items marked with ⚠ in each procedure requires insulated tools.
  - When the IMA system indicator is on, do the IMA system troubleshooting first (see page 12-5).
  - Wear insulated gloves whenever you inspect or service the IMA system. Be sure to check the gloves for pin holes, tears, or other damage.
  - To make sure the system is not energized, turn the battery module switch OFF, and secure the switch in the OFF position with the locking cover before servicing the IMA system (see Turning off and on power to the high voltage circuit).
  - Wait at least 5 minutes after turning off the battery module switch, then disconnect the negative cable from the 12 V battery (it takes about 5 minutes for the PDU capacitor to discharge).
  - Before disconnecting the high voltage cable terminals, use a voltmeter to make sure that the voltage between the terminals is below 30 V.
- When the system is energized and you are servicing parts without an insulated sheath, be sure to use insulated tools to prevent short circuiting.
- The rotor assembly contains very strong magnets and should be handled with special care. People with pacemakers or other magnetically sensitive medical devices should not handle the rotor assembly.
- Use the special tool (rotor puller) to remove or install the rotor assembly.

⚠WARNING

If the rotor is installed by hand, it may suddenly be pulled toward the stator with great force, causing serious hand or finger injury. Always use the special tool (rotor puller) to remove or install the rotor assembly.

- Keep the rotor assembly away from magnetically sensitive devices.
- After disconnecting the high voltage terminals, busbars, etc., insulate the parts with insulated tape.
- As a safety warning, attach a sign saying, WORKING ON HIGH VOLTAGE PARTS. DO NOT TOUCH! to the steering wheel.

(cont'd)

Service Precautions (cont'd)

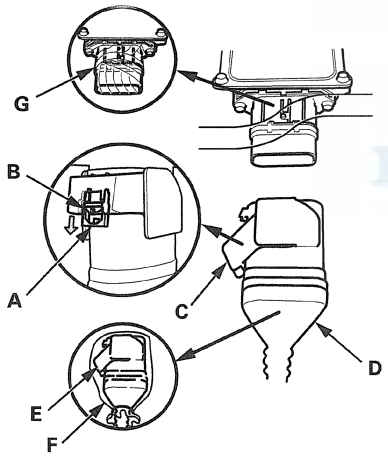
Disconnecting the IMA Motor Power Cable Connector From the Motor Stator

Turn the ignition switch to LOCK (0). Turn the battery module switch OFF.

Slide the protector (A) in the direction of the arrow. Push the tab (B), then raise the lever (C). Remove the IMA motor power cable (D) from the motor stator.

NOTE:

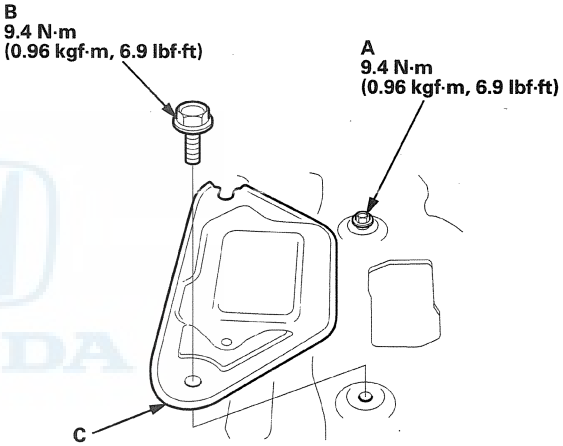
- Turn the battery module switch OFF before disconnecting the motor power cable.
- If the outside of the IMA motor power cable connector is dirty, clean it before you disconnect it.
- Cover the disconnected connector (E) with a plastic bag (F), and wrap the IMA motor power cable terminals with insulating tape (G).
- If the IMA motor power cable is wet, dry it with a clean shop towel. Do not use compressed air.



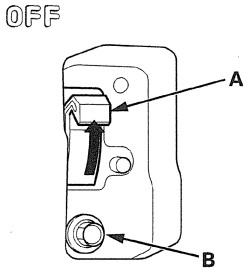
Turning Off and On Power to the High Voltage Circuit

The following procedure should be done before you work on or near any energized high voltage components. Follow the procedure exactly. Otherwise, you may be injured or may damage equipment.

1. Turn the ignition switch to LOCK (0), then remove the key from the ignition switch.
2. Remove the cargo floor lid, the cargo floor box, and the spare tire (see page 20-64).
3. Loosen the bolt (A), and remove the bolt (B).

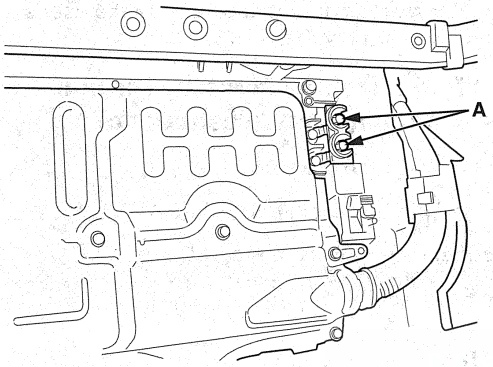


4. Remove the battery module switch lid (C) from the IPU cover.
5. Turn the battery module switch (A) OFF, then check that the bolt (B) is showing.

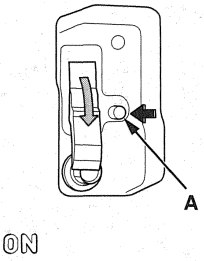


6. Wait at least 5 minutes to allow the PDU capacitors to discharge.
7. Remove the IPU cover (see page 12-210).

8. Measure the voltage at the IMA battery module terminals (A). There should be less than 30 V. If the voltage is more than 30 V, there is a problem in the system; check for IMA DTCs before continuing, and replace the DC-DC converter (see page 12-213).



9. After service or repairs are completed:
   - Make sure all high voltage circuits are connected properly.
   - Install the IPU cover (see page 12-210).
10. Push the button (A), and turn the battery module switch ON.



11. Reinstall all remaining removed parts.

General Troubleshooting Information

Intermittent Failures

The term intermittent failure means a system may have had a failure, but it is OK now. If the IMA system indicator on the instrument panel does not come on, check for poor connections or loose terminals at all connectors related to the circuit you are troubleshooting. If the IMA system indicator was on but then went off, the original problem may have been intermittent.

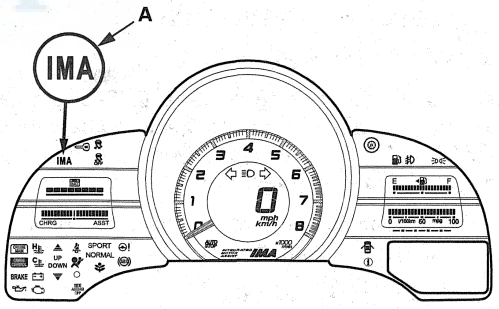
Opens and Shorts

Open and short are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics such as the MCM, this can mean something works, but not the way it's supposed to.

How to Use the HDS (Honda Diagnostic System) to Check for DTCs

If the IMA system indicator stays on

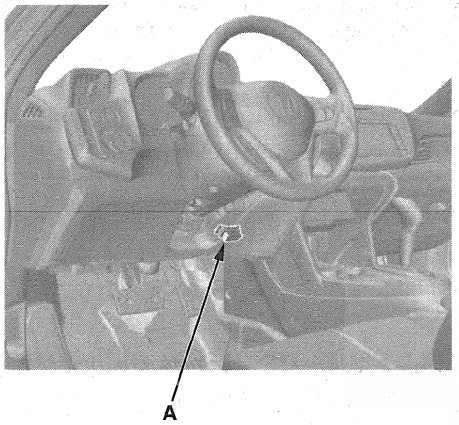
1. Start the engine, and check the IMA system indicator (A).



(cont'd)

General Troubleshooting Information (cont'd)

2. If the IMA system indicator stays on, turn the ignition switch to LOCK (0), then connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the MCM (IMA system). If it doesn't, troubleshoot the DLC circuit (see page 12-202).
5. Select IMA SYSTEM on the HDS.
6. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and the on-board snapshot. Refer to the DTC troubleshooting, and do the appropriate troubleshooting procedure.

   NOTE: For specific operations, refer to the user's manual that came with the HDS.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the MCM, and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the DTC, do not continue the procedure. To do so will only result in confusion and, possibly, needlessly replaced parts.

DTC Clear

1. Turn the ignition switch to ON (II). Do not start the engine.
2. Use the HDS to clear the DTC.

   NOTE: For specific operations, refer to the user's manual that came with the HDS.

How to End a Troubleshooting Session (required after any troubleshooting)

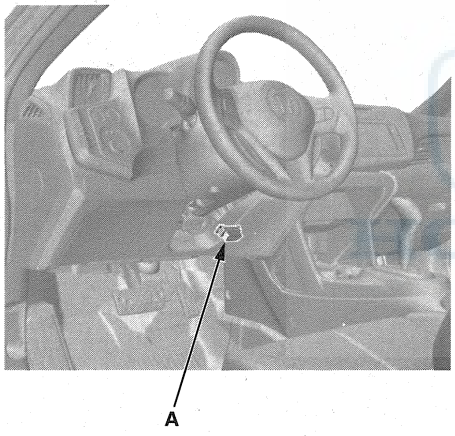
1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0).
3. Disconnect the HDS from the DLC.

IMA Motor Rotor Position Calibration

Do the IMA motor rotor position calibration whenever any of these actions are done:

- The MCM is replaced.
- The IMA motor rotor position sensor is replaced or removed during service.
- The IMA motor is replaced or removed during service.
- The engine assembly is replaced or removed during service.
- The transmission is replaced or removed during service.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the MCM (IMA system). If it doesn't, troubleshoot the DLC circuit (see page 12-202).
4. Select IMA SYSTEM on the HDS.
5. Select the MOTOR ROTOR POSITION CALIBRATION in the ADJUSTMENT MENU of the HDS.
6. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.

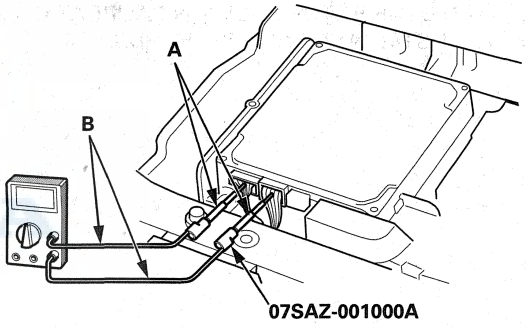
Troubleshooting Circuits at the MCM Connectors

Special Tools Required

- Digital Multimeter KS-AHM-32-003*
- Backprobe Set 07SAZ-001000A (2)

*Available through the Honda Tool and Equipment Program 888-424-6857

1. Remove the IPU cover (see page 12-210).
2. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
3. Connect the backprope adapters (A) to the stacking patch cords (B), and connect the cords to a digital multimeter.



(cont'd)

General Troubleshooting Information (cont'd)

Substituting the MCM

Special Tools Required
- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

Use this procedure when you have to substitute a known-good MCM during a troubleshooting procedure.

1. Remove the MCM (see page 12-212).
2. Install a known-good MCM.
3. Do the MOTOR ROTOR POSITION CALIBRATION in the ADJUSTMENT MENU with the HDS.

OBD Status

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully finished. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on-board diagnosis is successfully finished.
- FAILED: The on-board diagnosis has finished but failed.
- NOT COMPLETED: The on-board diagnosis was running, but it is out of the enable conditions of the DTC.

DTC Troubleshooting Index

DTC (IMA System Indicator*1)	Two Drive Cycle Detection	IMA			Detection Item	Page
P0562 (15)	—	○	○	—	Motor Control Module (MCM) Power Source Circuit Unexpected Voltage	DTC Troubleshooting (see page 12-72)
P0562 (94)	—	○	○	—	Motor Control Module (MCM) System Low Voltage	DTC Troubleshooting (see page 12-72)
P0602 (91)	—	○	○	○	Motor Control Module (MCM) Programming Error	DTC Troubleshooting (see page 12-74)
P0602 (92)	—	○	○	○	Motor Control Module (MCM) Program Not Installed (Battery Condition Monitor Program)	DTC Troubleshooting (see page 12-74)
P062F (60)	—	○	○	○	Motor Control Module (MCM) Internal Circuit EEPROM Error	DTC Troubleshooting (see page 12-74)
P062F (61)	—	○	○	—	Battery Control Module (BCM) Internal Circuit EEPROM Error	DTC Troubleshooting (see page 12-74)
P06B1 (79)	—	○	○	○	IMA Battery Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-75)
P0A1B (84)	—	○	○	○	Motor Control Module (MCM) Internal Circuit Malfunction	DTC Troubleshooting (see page 12-79)
P0A27 (46)	—	○	—	—	High Voltage Contactor/Bypass Contactor Stays Activated	DTC Troubleshooting (see page 12-79)
P0A3C (39)	—	○	○	○	Motor Power Inverter (MPI) Module Overheating	DTC Troubleshooting (see page 12-81)
P0A3F (89)	—	○	○	○	Motor Rotor Position Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-82)
P0A5E (24)	—	○	○	○	U Phase Motor Current Sensor Circuit Low Voltage	DTC Troubleshooting (see page 12-85)
P0A5F (25)	—	○	○	○	U Phase Motor Current Sensor Circuit High Voltage	DTC Troubleshooting (see page 12-89)
P0A61 (26)	—	○	○	○	V Phase Motor Current Sensor Circuit Low Voltage	DTC Troubleshooting (see page 12-93)
P0A62 (27)	—	○	○	○	V Phase Motor Current Sensor Circuit High Voltage	DTC Troubleshooting (see page 12-97)

*1: These DTCs are indicated by a blinking IMA system indicator when the SCS line is jumped with the HDS.
*2: M/T model
*3: CVT model
*4: '12 model

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC (IMA System Indicator*1)	Two Drive Cycle Detection	IMA			Detection Item	Page
P0A64 (28)	—	○	○	○	W Phase Motor Current Sensor Circuit Low Voltage	DTC Troubleshooting (see page 12-100)
P0A65 (29)	—	○	○	○	W Phase Motor Current Sensor Circuit High Voltage	DTC Troubleshooting (see page 12-104)
P0A78 (32)	—	○	○	○	Motor Power Inverter (MPI) Module Internal Circuit Malfunction	DTC Troubleshooting (see page 12-108)
P0A7E (72)	—	○	○	○	Battery Module Overheating	DTC Troubleshooting (see page 12-108)
P0A7F (78)	○	○	○	—	Battery Module Deterioration	DTC Troubleshooting (see page 12-109)
P0A94 (48)	—	—	—	○	DC-DC Converter Output Low Voltage	DTC Troubleshooting (see page 12-109)
P0A9D (49)	○	○	○	—	Battery Module Temperature Sensor 1 Circuit Low Voltage	DTC Troubleshooting (see page 12-112)
P0A9E (50)	○	○	○	—	Battery Module Temperature Sensor 1 Circuit High Voltage	DTC Troubleshooting (see page 12-113)
P0AA6 (59)	—	○	—	—	High Voltage Circuit Isolation Problem	DTC Troubleshooting (see page 12-116)
P0AA7 (76)	—	○	—	—	Motor Control Module (MCM) Internal Circuit Malfunction	DTC Troubleshooting (see page 12-120)
P0AC0 (65)	—	○	○	○	Battery Current Sensor 1 Circuit Malfunction	DTC Troubleshooting (see page 12-121)
P0AC1 (115)	—	○	○	○	Battery Current Sensor 1 Circuit Low Voltage	DTC Troubleshooting (see page 12-121)
P0AC2 (114)	—	○	○	○	Battery Current Sensor 1 Circuit High Voltage	DTC Troubleshooting (see page 12-124)
P0AC7 (51)	○	○	○	—	Battery Module Temperature Sensor 2 Circuit Low Voltage	DTC Troubleshooting (see page 12-127)
P0AC8 (52)	○	○	○	—	Battery Module Temperature Sensor 2 Circuit High Voltage	DTC Troubleshooting (see page 12-128)
P0ACC (53)	○	○	○	—	Battery Module Temperature Sensor 3 Circuit Low Voltage	DTC Troubleshooting (see page 12-131)

*1: These DTCs are indicated by a blinking IMA system indicator when the SCS line is jumped with the HDS.
*2: M/T model
*3: CVT model
*4: '12 model

DTC (IMA System Indicator*1)	Two Drive Cycle Detection	IMA			Detection Item	Page
P0ACD (54)	○	○	○	—	Battery Module Temperature Sensor 3 Circuit High Voltage	DTC Troubleshooting (see page 12-132)
P0AE1 (62)	—	○	○	○	Bypass Contactor Malfunction	DTC Troubleshooting (see page 12-135)
P0AEE (109)*4	○	○	○	—	Motor Control Module (MCM) Internal Circuit Malfunction	DTC Troubleshooting (see page 12-139)
P0B0F (113)	—	○	○	○	Battery Current Sensor 2 Circuit Malfunction	DTC Troubleshooting (see page 12-140)
P0B10 (117)	—	○	○	○	Battery Current Sensor 2 Circuit Low Voltage	DTC Troubleshooting (see page 12-140)
P0B11 (116)	—	○	○	○	Battery Current Sensor 2 Circuit High Voltage	DTC Troubleshooting (see page 12-143)
P0BE6 (86)	—	○	○	○	U Phase Motor Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-145)
P0BEA (87)	—	○	○	○	V Phase Motor Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-145)
P0BEE (88)	—	○	○	○	W Phase Motor Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-146)
P0BFD (30)	—	○	○	○	Motor Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-146)
P1437 (41)	—	○	○	○	Motor Power Inverter (MPI) Module Short Circuit	DTC Troubleshooting (see page 12-147)
P1440 (57)	—	○	○	○	Motor Power Inverter (MPI) Module Output Circuit Malfunction	DTC Troubleshooting (see page 12-148)
P1446 (74)	○	○	○	—	Battery Module Individual Voltage Input Deviation	DTC Troubleshooting (see page 12-152)
P1448 (63)	○	○	○	—	Intelligent Power Unit (IPU) Module Fan Problem	DTC Troubleshooting (see page 12-154)
P1570 (66)	—	○	○	○	Battery Module Individual Voltage Problem	DTC Troubleshooting (see page 12-158)
P1574 (68)	○	○	○	—	Battery Module Temperature Signal Circuit Malfunction	DTC Troubleshooting (see page 12-160)

*1: These DTCs are indicated by a blinking IMA system indicator when the SCS line is jumped with the HDS.
*2: M/T model
*3: CVT model
*4: '12 model

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC (IMA System Indicator*1)	Two Drive Cycle Detection	IMA			Detection Item	Page
P1575 (12)	—	○	○	○	Motor Power Inverter (MPI) Module Voltage Malfunction	DTC Troubleshooting (see page 12-161)
P1586 (23)	—	○	○	○	Battery Current Sensor Signal Malfunction	DTC Troubleshooting (see page 12-165)
P15A5 (85)	—	○	○	○	Motor Current Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-166)
P15AA (93)	○	○	—	—	Motor Rotor Position Not Learned	DTC Troubleshooting (see page 12-169)
P15C4 (118)*2	○	○	—	—	Auto Idle Stop System Malfunction (M/T model)	DTC Troubleshooting (see page 12-170)
P15C4 (118)*3	○	○	—	—	Auto Idle Stop System Malfunction (CVT model)	DTC Troubleshooting (see page 12-177)
P1634 (47)	—	○	○	○	Motor Power Inverter (MPI) Module Signal Circuit Malfunction	DTC Troubleshooting (see page 12-178)
P1673 (22)	—	○	—	—	Motor Control Module (MCM) Relay Stays Activated	DTC Troubleshooting (see page 12-183)
P16C3 (31)	—	○	—	—	DC-DC Converter Temperature Sensor Circuit Malfunction	DTC Troubleshooting (see page 12-185)
U0029 (107)	○	○	○	—	F-CAN Malfunction (BUS-OFF (Motor Control Module (MCM)))	DTC Troubleshooting (see page 12-185)
U0029 (108)	○	○	○	—	F-CAN Malfunction (BUS-OFF (Motor Control Module (MCM)))	DTC Troubleshooting (see page 12-185)
U0038 (99)	—	○	○	○	IMA-CAN Malfunction (BUS-OFF (Motor Control Module (MCM)))	DTC Troubleshooting (see page 12-186)
U0100 (102)	○	○	○	—	F-CAN Malfunction (Powertrain Control Module (PCM) - Motor Control Module (MCM))	DTC Troubleshooting (see page 12-190)
U0100 (103)	○	○	○	—	F-CAN Malfunction (Powertrain Control Module (PCM) - Motor Control Module (MCM))	DTC Troubleshooting (see page 12-190)
U0155 (106)	○	○	—	—	F-CAN Malfunction (Gauge Control Module - Motor Control Module (MCM))	DTC Troubleshooting (see page 12-190)

*1: These DTCs are indicated by a blinking IMA system indicator when the SCS line is jumped with the HDS.
*2: M/T model
*3: CVT model
*4: '12 model

DTC (IMA System Indicator*1)	Two Drive Cycle Detection	IMA			Detection Item	Page
U0311 (123)*4	——	○	○	○	MCM and BCM Program Version Mismatch	DTC Troubleshooting (see page 12-192)
U0312 (124)*4	——	○	○	○	BCM, MCM and PGM-FI System Program Version Mismatch	DTC Troubleshooting (see page 12-193)
U1204 (55)	——	○	○	○	IMA-CAN Malfunction (Powertrain Control Module (PCM) - Motor Control Module (MCM))	DTC Troubleshooting (see page 12-186)
U1220 (34)	○	○	○	——	DC-DC Converter Lost Communication With Motor Control Module (MCM)	DTC Troubleshooting (see page 12-193)
U1221 (35)	○	○	○	○	Motor Control Module (MCM) Lost Communication with DC-DC Converter	DTC Troubleshooting (see page 12-196)

*1: These DTCs are indicated by a blinking IMA system indicator when the SCS line is jumped with the HDS.
*2: M/T model
*3: CVT model
*4: '12 model

HONDA

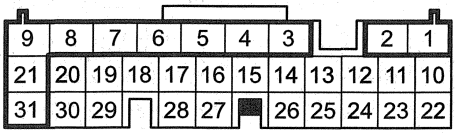
Symptom Troubleshooting Index

If the vehicle has one of the symptoms below, check for a diagnostic trouble code (DTC) with the HDS. If there is no DTC, do the diagnostic procedure for the symptom.

Symptom	Diagnostic procedure
IMA system indicator stays on, no DTCs set	Troubleshoot the IMA system indicator circuit (see page 12-199).
IMA system indicator never comes on, no DTCs set	Troubleshoot the IMA system indicator circuit (see page 12-199).
Charging system indicator stays on, no DTCs set	Troubleshoot the charging system indicator circuit (see page 12-200).
Charging system indicator flickers, no DTCs set	Troubleshoot the charging system indicator circuit (see page 12-201).
Charging system indicator never comes on, no DTCs set	Troubleshoot the charging system indicator circuit (see page 12-201).
HDS does not communicate with the MCM or other vehicle systems	Troubleshoot the DLC circuit (see page 12-202).
Auto idle stop system does not operate	Troubleshoot the auto idle stop system • M/T model (see page 12-207) • CVT model (see page 12-209)

System Description

MCM Inputs and Outputs at Connector A (31P)



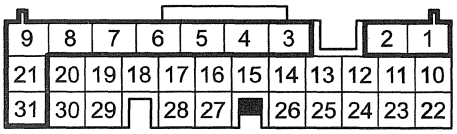
Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
1	RED	IMA-CAN L (IMA CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II): pulses
2	WHT	IMA-CAN H (IMA CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II): pulses
3	PUR	IGHLD (IGNITION HOLD)	Drives MCM relay 1	With ignition switch turned from ON (II) to LOCK (0): about 0 V for several seconds, then battery voltage
4	LT GRN	IGHLD2 (IGNITION HOLD 2)	Drives MCM relay 2	With ignition switch turned from ON (II) to LOCK (0): about 1 V for several seconds
5	Not used	Not used		
6	BLK	PG (POWER GROUND)	Ground for MCM	Less than 0.2 V at all times
7	PNK	IG1	Detects ignition switch signal	With ignition switch ON (II): battery voltage With ignition switch turned from ON (II) to LOCK (0): about 0 V
8	BRN	+B BACK UP (VOLTAGE BACK UP)	Power source for MCM circuit Power source for DTC memory	Battery voltage at all times
9	PNK/BLK	IGA (IGNITION FOR ASSIST SYSTEM)	Power source for MCM control circuit	With ignition switch ON (II): battery voltage With ignition switch turned from ON (II) to LOCK (0): battery voltage for about 15 seconds, then about 0 V
10	Not used	Not used		
11	Not used	Not used		
12	Not used	Not used		
13	Not used	Not used		
14	Not used	Not used		
15	Not used	Not used		

(cont'd)

System Description (cont'd)

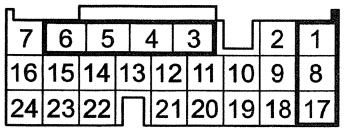
MCM Inputs and Outputs at Connector A (31P)



Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
16	Not used	Not used		
17	Not used	Not used		
18	Not used	Not used		
19	Not used	Not used		
20	Not used	Not used		
21	Not used	Not used		
22	RED	F-CAN L (F-CAN COMMUNICATION SIGNAL LOW	Sends and receives communication signal	With ignition switch ON (II): pulses
23	WHT	F-CAN H (F-CAN COMMUNICATION SIGNAL HIGH	Sends and receives communication signal	With ignition switch ON (II): pulses
24	Not used	Not used		
25	LT BLU	FANCTL (FAN CONTROL)	IPU module fan speed control signal output	IPU module fan OFF: battery voltage IPU module fan ON: duty controlled
26	Not used	Not used		
27	GRN	SCIMD (SERIAL OUTPUT FOR DC-DC CONVERTER	Sends communication signal	With ignition switch ON (II): pulses
28	GRY	SCIDM (SERIAL INPUT FOR DC-DC CONVERTER	Detects communication signal	With ignition switch ON (II): pulses
29	Not used	Not used		
30	Not used	Not used		
31	Not used	Not used		

MCM Inputs and Outputs at Connector B (24P)



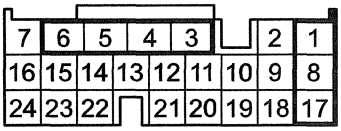
Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
1	BLU/BLK	NFAN (FAN CONTROL)	IPU module fan signal input	With ignition switch ON (II): about 5.0 V IPU module fan ON: duty controlled
2	RED/YEL	PRE (PRE CHARGE CONTACTOR)	Drives bypass contactor	With ignition switch ON (II): about 0 V
3	PUR/WHT	ISOC (I.STATE OF CHARGE NORMAL RANGE)	Battery current sensor signal input	With engine running: about 0.5 - 4.5 V
4	Not used	Not used		
5	Not used	Not used		
6	RED	R2 (MOTOR ROTOR POSITION SENSOR R2 SIGNAL)	Motor rotor position sensor R2 signal input	With engine running: pulses
7	BRN	R1 (MOTOR ROTOR POSITION SENSOR R1 SIGNAL)	Motor rotor position sensor R1 signal input	With engine running: pulses
8	Not used	Not used		
9	GRY	CNTPG (CONTCTOR POWER GROUND)	Ground for high voltage contactor	Less than 0.2 V at all times
10	BLK	CNT (CONTACTOR)	Drives high voltage contactor	With ignition switch ON (II): battery voltage
11	BLU/YEL	TBATT2 (BATTERY 2 TEMPERATURE)	Battery module TBATT2 temperature signal 2 input	With ignition switch ON (II): about 0.5 - 4.5 V (depending on battery module temperature)
12	BLK/WHT	ISOCF (I. STATE OF CHARGE FINE RANGE)	Battery current sensor signal input	With engine running: about 0.5 - 4.5 V
13	Not used	Not used		
14	GRN/YEL	SGISOC (I. STATE OF CHARGE SENSOR GROUND)	Battery current sensor ground	Less than 0.2 V at all times
15	WHT	S3 (MOTOR ROTOR POSITION SENSOR S3 SIGNAL)	Motor rotor position sensor S3 signal input	With engine running: pulses

(cont'd)

System Description (cont'd)

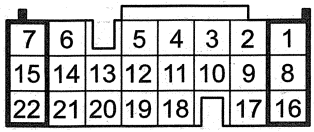
MCM Inputs and Outputs at Connector B (24P)



Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
16	GRN	S1 (MOTOR ROTOR POSITION SENSOR S1 SIGNAL)	Motor rotor position sensor S1 signal input	With engine running: pulses
17	YEL/RED	VCCISOC (I. STATE OF CHARGE SENSOR VOLTAGE)	Battery current sensor power	With ignition switch ON (II): about 5.0 V With ignition switch turned from ON (II) to LOCK (0): about 5.0 V for about 10 seconds, then about 0 V
18	Not used	Not used		
19	Not used	Not used		
20	WHT/GRN	TBATT3 (BATTERY 3 TEMPERATURE)	Battery module TBATT3 temperature signal 3 input	With ignition switch ON (II): about 0.5 - 4.5 V (depending on battery module temperature)
21	YEL/GRN	TBATT1 (BATTERY 1 TEMPERATURE)	Battery module TBATT1 temperature signal 1 input	With ignition switch ON (II): about 0.5 - 4.5 V (depending on battery module temperature)
22	GRN/BLK	SGTB (BATTERY TEMPERATURE SENSOR GROUND)	Battery module (temperature sensor) ground	Less than 0.2 V at all times
23	YEL	S4 (MOTOR ROTOR POSITION SENSOR S4 SIGNAL)	Motor rotor position sensor S4 signal input	With engine running: pulses
24	BLU	S2 (MOTOR ROTOR POSITION SENSOR S2 SIGNAL)	Motor rotor position sensor S2 signal input	With engine running: pulses

MCM Inputs and Outputs at Connector C (22P)



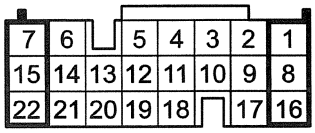
Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
1	WHT	VH (V PHASE HIGH SIDE)	V phase high side inverter gate drive signal output	With engine running: pulses
2	YEL/BLU	WH (V PHASE HIGH SIDE)	W phase high side inverter gate drive signal output	With engine running: pulses
3	Not used	Not used		
4	Not used	Not used		
5	BLU	SGIU (U PHASE MOTOR CURRENT SENSOR GROUND)	U phase motor current sensor ground	Less than 0.2 V at all times
6	WHT/BLK	IUPH (I. U. PHASE)	U phase motor current sensor signal input	With ignition switch ON (II) and engine stopped: about 2.5 V
7	GRN/ YEL	VCCIU (U PHASE MOTOR CURRENT SENSOR VOLTAGE)	U phase motor current sensor power	With ignition switch ON (II): about 5.0 V With ignition switch turned from ON (II) to LOCK (0): about 5.0 V for about 10 seconds, then about 0 V
8	RED/YEL	UL (U PHASE LOW SIDE)	U phase low side inverter gate drive signal output	With engine running: pulses
9	RED/ BLU	WL (W PHASE LOW SIDE)	W phase low side inverter gate drive signal output	With engine running: pulses
10	Not used	Not used		
11	Not used	Not used		

(cont'd)

System Description (cont'd)

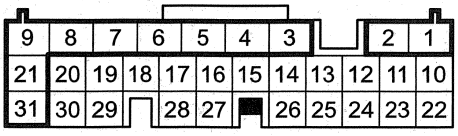
MCM Inputs and Outputs at Connector C (22P)



Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
12	GRN	SGIV (V PHASE MOTOR CURRENT SENSOR GROUND)	V phase motor current sensor ground	Less than 0.2 V at all times
13	Not used	Not used		
14	RED	IVPH (I. V. PHASE)	V phase motor current sensor signal input	With ignition switch ON (II) and engine stopped: about 2.5 V
15	BLU/YEL	VCCIV (V PHASE MOTOR CURRENT SENSOR VOLTAGE)	V phase motor current sensor power	With ignition switch ON (II): about 5.0 V With ignition switch turned from ON (II) to LOCK (0): about 5.0 V for about 10 seconds, then about 0 V
16	BLU/BLK	UH (U PHASE HIGH SIDE)	U phase high side inverter gate drive signal output	With engine running: pulses
17	YEL/RED	VL (V PHASE LOW SIDE)	V phase low side inverter gate drive signal output	With engine running: pulses
18	BLU/RED	IPUA (INTELLIGENT POWER UNIT A)	IPU serial signal input	With engine running: pulses
19	BRN	SGIW (W PHASE MOTOR CURRENT SENSOR GROUND)	W phase motor current sensor ground	Less than 0.2 V at all times
20	Not used	Not used		
21	GRN/RED	IWPH (I. W. PHASE)	W phase motor current sensor signal input	With ignition switch ON (II) and engine stopped: about 2.5 V
22	YEL	VCCIW (W PHASE MOTOR CURRENT SENSOR VOLTAGE)	W phase motor current sensor power	With ignition switch ON (II): about 5.0 V With ignition switch turned from ON (II) to LOCK (0): about 5.0 V for about 10 seconds, then about 0 V

MCM Inputs and Outputs at Connector E (31P)



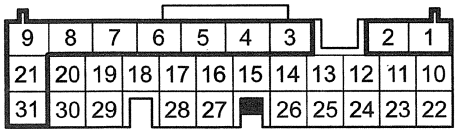
Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
1	WHT	VHB8 (HIGH VOLTAGE BATTERY 8 VOLTAGE	Battery module No. 8 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB7 and VHB8)
2	BLU	VHB7 (HIGH VOLTAGE BATTERY 7 VOLTAGE	Battery module No. 7 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB7 and VHB8)
3	Not used	Not used		
4	Not used	Not used		
5	Not used	Not used		
6	Not used	Not used		
7	Not used	Not used		
8	GRN/RED	VHB4 (HIGH VOLTAGE BATTERY 4 VOLTAGE	Battery module No. 4 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB3 and VHB4)
9	GRN	VHB3 (HIGH VOLTAGE BATTERY 3 VOLTAGE	Battery module No. 3 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB2 and VHB3)
10	Not used	Not used		
11	Not used	Not used		
12	YEL	VHB6 (HIGH VOLTAGE BATTERY 6 VOLTAGE	Battery module No. 6 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB6 and VHB7)
13	GRN/BLK	VHB5 (HIGH VOLTAGE BATTERY 5 VOLTAGE	Battery module No. 5 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB5 and VHB6)
14	Not used	Not used		
15	Not used	Not used		

(cont'd)

System Description (cont'd)

MCM Inputs and Outputs at Connector E (31P)



Wire side of female terminals

Terminal number	Wire color	Terminal name	Description	Signal
16	Not used	Not used		
17	Not used	Not used		
18	Not used	Not used		
19	Not used	Not used		
20	BLK	VHB2 (HIGH VOLTAGE BATTERY 2 VOLTAGE	Battery module No. 2 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB1 and VHB2)
21	GRN/YEL	VHB1 (HIGH VOLTAGE BATTERY 1 VOLTAGE	Battery module No. 1 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB0 and VHB1)
22	Not used	Not used		
23	Not used	Not used		
24	Not used	Not used		
25	Not used	Not used		
26	Not used	Not used		
27	Not used	Not used		
28	Not used	Not used		
29	Not used	Not used		
30	Not used	Not used		
31	RED	VHB0 (HIGH VOLTAGE BATTERY 0 VOLTAGE	Battery module No. 0 terminal voltage input	With battery module switch ON: about 16.5 V (between VHB0 and VHB1)

IMA System

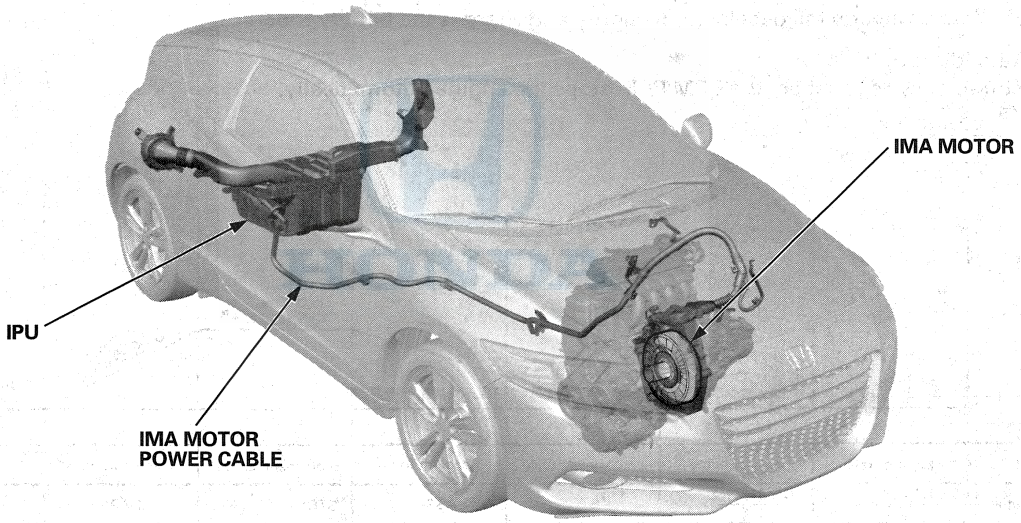
The IMA (integrated motor assisted) system is a highly-efficient parallel hybrid drive system with a main power unit (gasoline engine) and an assist unit (electric motor).

The engine is an in-line 4-cylinder 16-valve power plant with a displacement of 91 cu. in (1.5 liters). To reduce fuel use, the engine is equipped with an auto idle stop system and i-VTEC.

The IMA motor, directly connected to the engine crankshaft, functions as a generator during deceleration, an engine starter, and a motor to assist the engine.

The IMA system contains a 100 V DC battery, an IMA motor, an intelligent power unit (IPU), an IMA motor power cable, a control system, and related parts. The IPU contains a battery module, a motor control module (MCM), a DC-DC converter, and a motor power inverter.

The IMA system improves fuel economy by capturing energy with the electric motor during deceleration, and using that energy to charge the IMA battery.

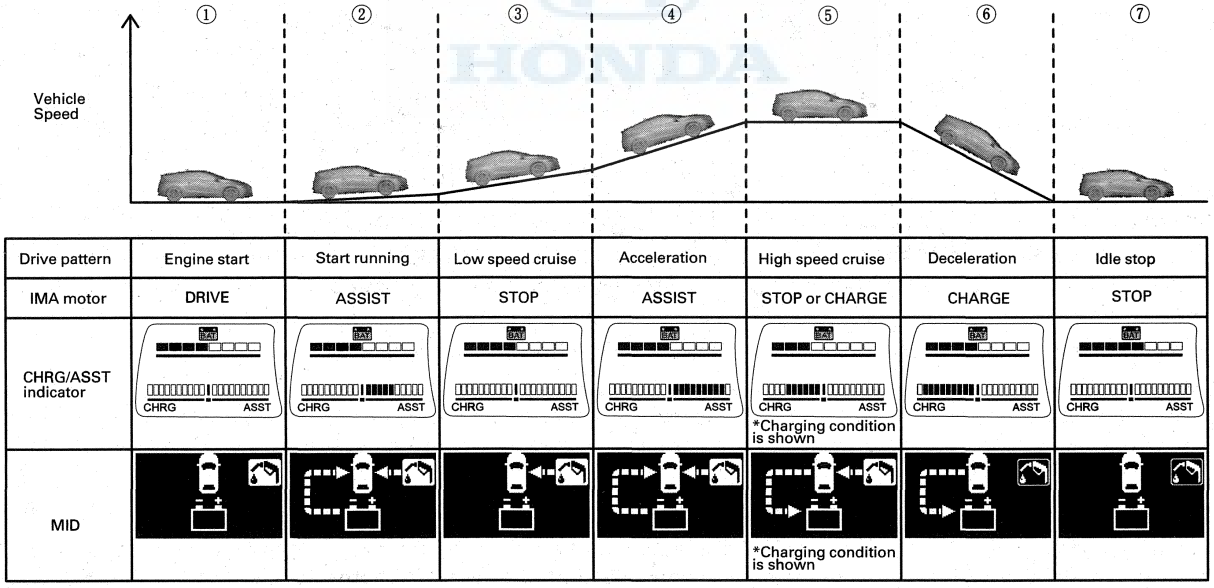


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System Description (cont'd)

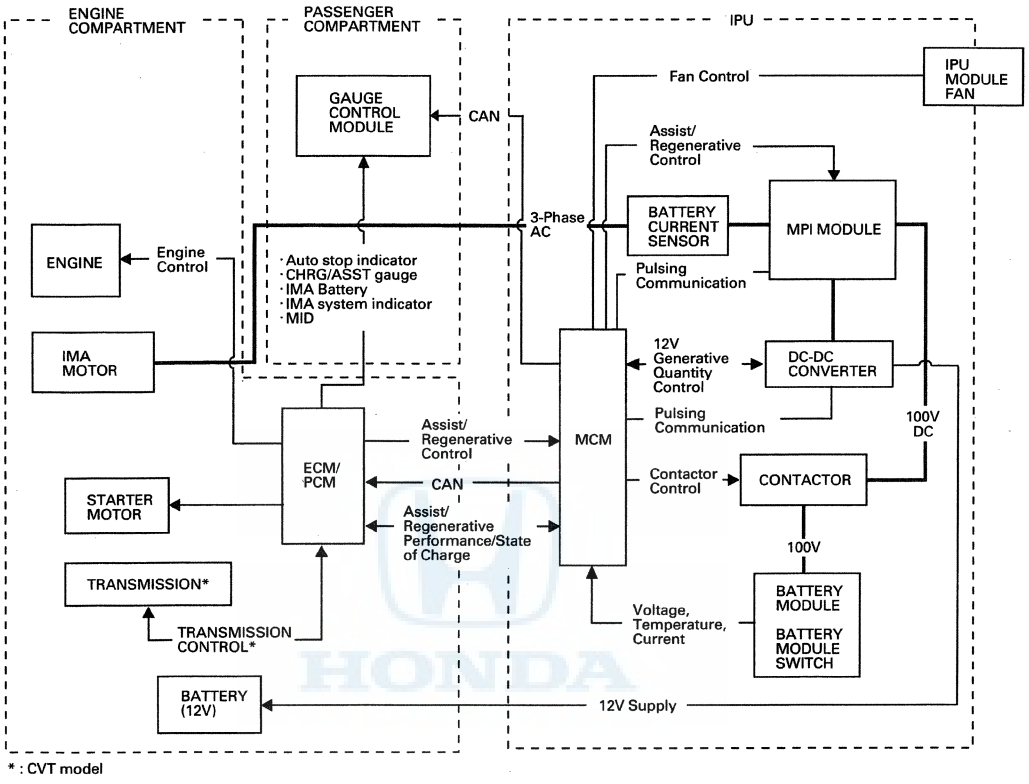
Operating Conditions

1. Engine start:
   The IMA system drives the IMA motor and starts the engine during normal starts and when re-starting from an idle stop. The IMA motor is mounted directly to the engine crankshaft.
2. Start running (Engine operation and motor assist):
   The IMA motor assists the engine.
3. Slow acceleration (Engine-only operation):
   Runs only with the engine.
4. Acceleration (Engine operation and motor assist):
   The IMA motor assists the engine.
5. High speed cruise (Engine-only operation):
   Runs only with the engine. When the state of charge (SOC) drops, the IMA motor begins to charge the battery module.
6. Deceleration (Battery module charging):
   The IMA motor converts the deceleration energy and charges the battery module.
7. Stop (Auto idle stop):
   When conditions are satisfied, the ECM/PCM stops the engine automatically.



Drive pattern	Engine start	Start running	Low speed cruise	Acceleration	High speed cruise	Deceleration	Idle stop
IMA motor	DRIVE	ASSIST	STOP	ASSIST	STOP or CHARGE	CHARGE	STOP
CHRG/ASST indicator							
MID							

System Diagram



When the battery module state-of-charge (SOC) is at or above the specified value

When the SOC of the battery module is at or above the specified value, the generation amount is restricted to prevent overcharging. Since regenerative braking force is insufficient at this time, the ECM/PCM increases engine braking power.

When the battery module state-of-charge (SOC) is at or below the specified value

When the SOC of the battery module drops, idle speed is increased to charge the battery module.
CVT model: When the battery module SOC value is low, selecting the L range mode gives priority to battery module charging by lowering the IMA motor assist level, increasing the idle speed, and increasing the regeneration amount (see page 14-37). Charge priority control is canceled when the battery module SOC reaches about 40%.

When the engine cannot be started with the IMA motor

Based on signals from the MCM, when the SOC value drops, when temperature is low, or when there is trouble with the IMA system, the ECM/PCM judges that the engine cannot be started by the IMA motor, so it is started by the 12V starter motor.

3-Mode drive system

M/T model: When the SPORT mode is selected, the MCM increases the IMA motor assist amount more than in NORMAL and/or ECON mode to improve acceleration.

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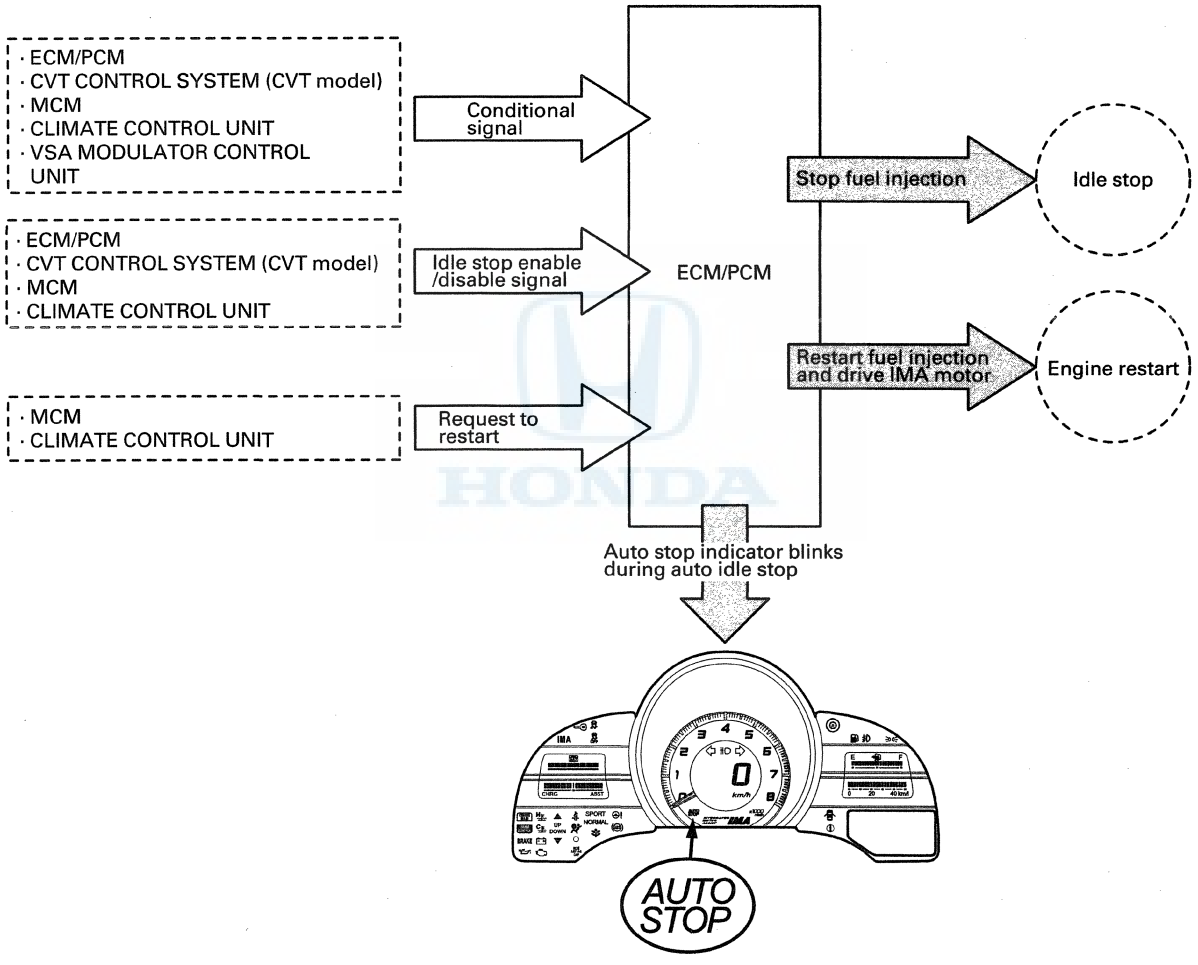
System Description (cont'd)

Auto Idle Stop System

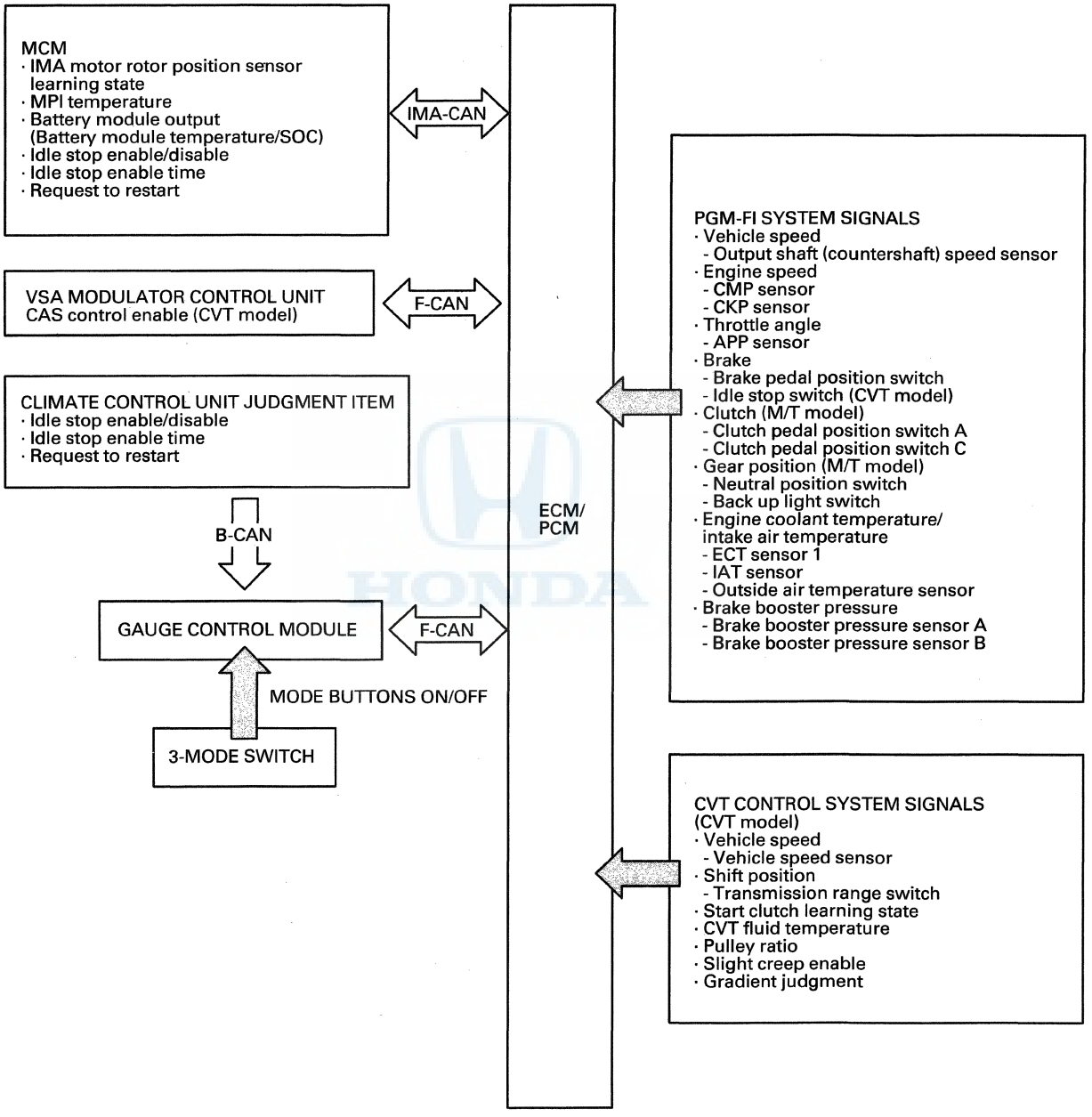
To reduce fuel use and to minimize tailpipe emissions, the auto idle stop system shuts off the engine by cutting the fuel injection.

Based on inputs from various sensors and control units, the ECM/PCM may or may not allow auto idle stop under similar operating conditions.

When auto idle stop is operating, the auto stop indicator blinks. If the driver's door is opened during auto idle stop, the auto stop indicator blinks and a warning buzzer sounds to remind the driver that auto idle stop is in operation.



Systems and functions affecting auto idle stop



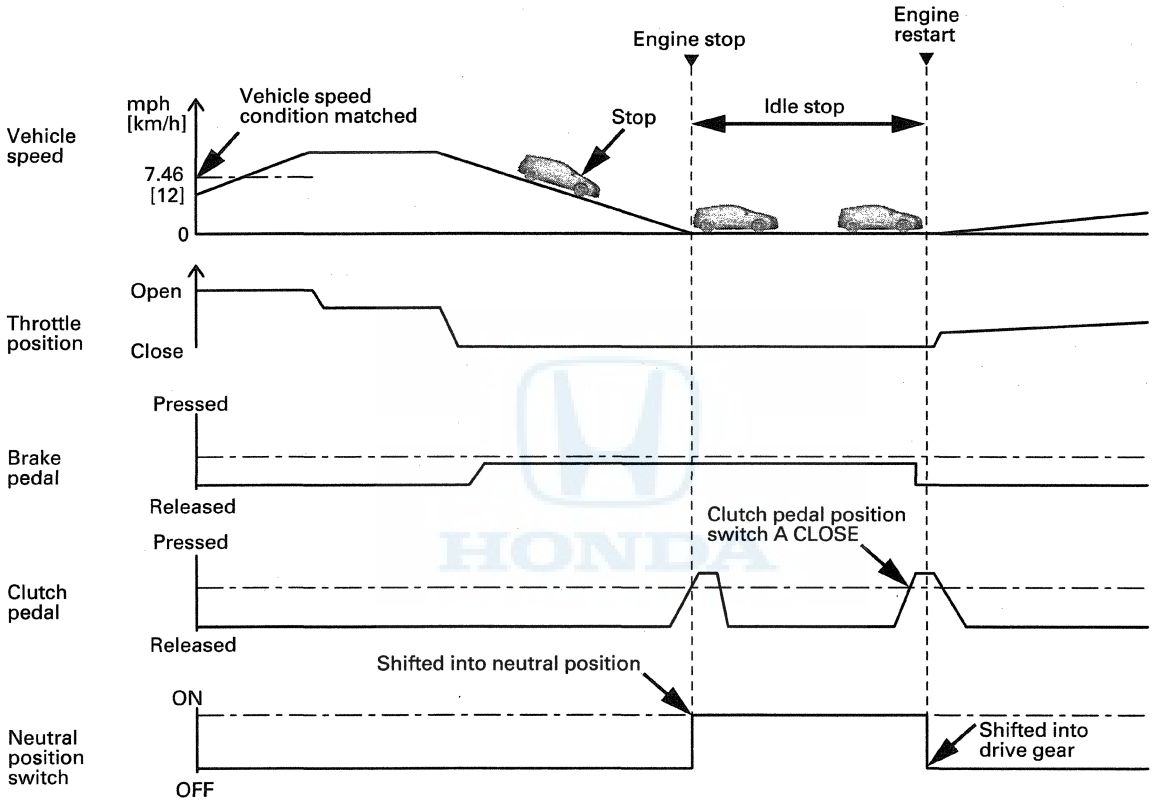
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System Description (cont'd)

Auto Idle Stop Conditions

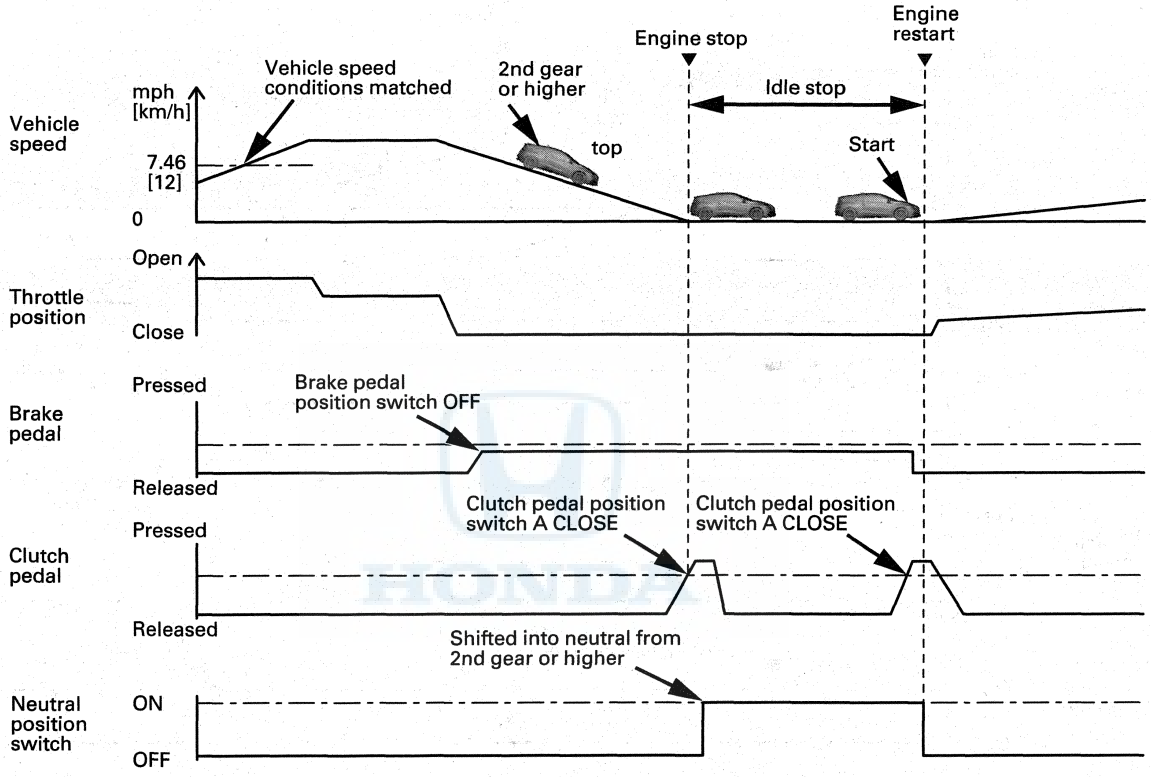
1-Vehicle is stopping or is stopped (M/T model)

When the vehicle is stopped after driving at or above the specified speed, the engine stops when you fully press the clutch pedal and shift to neutral.
Shifting to any gear with the clutch pedal fully pressed restarts the engine.



2-Vehicle is stopping or is stopped (M/T model)

When the vehicle is stopped after driving at or above the specified speed in 2nd gear or higher, the engine stops when you fully press the clutch pedal and shift to neutral.
Shifting to any gear with the clutch pedal fully pressed restarts the engine.

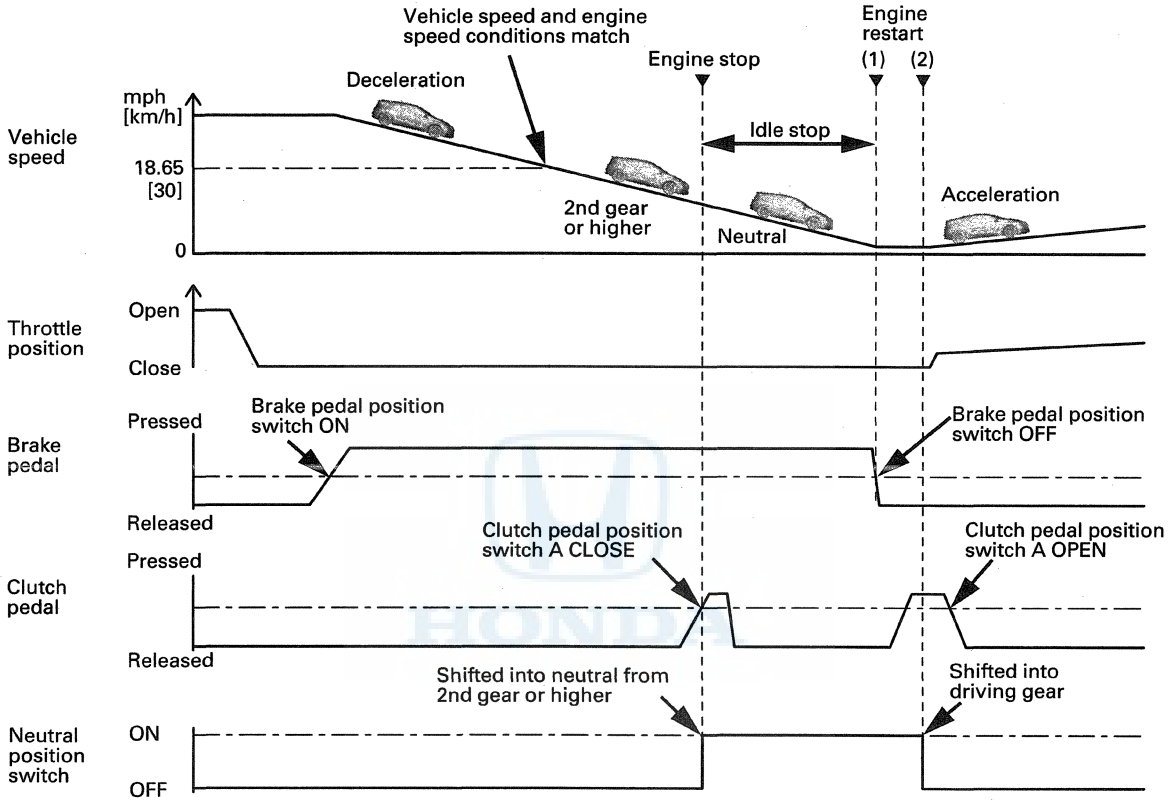


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System Description (cont'd)

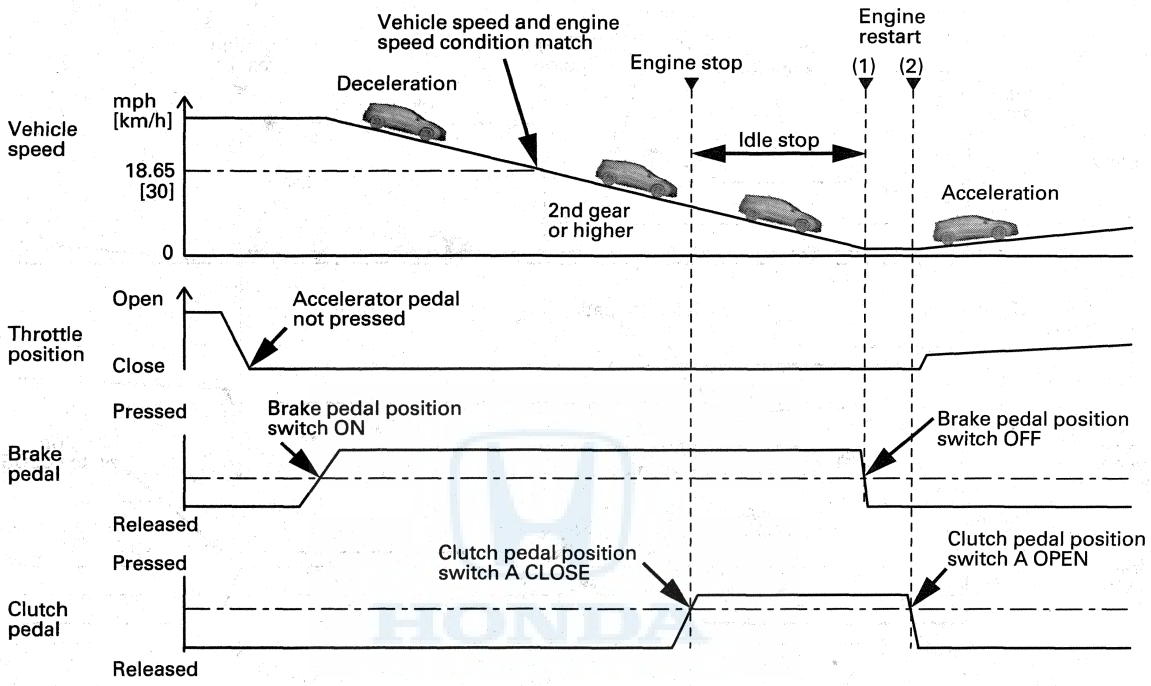
1-Vehicle is decelerating (M/T model)

During deceleration, shifting to neutral from 2nd gear or higher enables auto idle stop. Releasing the brake pedal (1) or shifting into any gear (2) disables auto idle stop and restarts the engine.



2-Vehicle is decelerating (M/T model)

During deceleration, pressing the clutch pedal fully in 2nd gear or higher enables auto idle stop. Releasing the brake pedal (1) or releasing the clutch pedal (2) disables auto idle stop and restarts the engine.

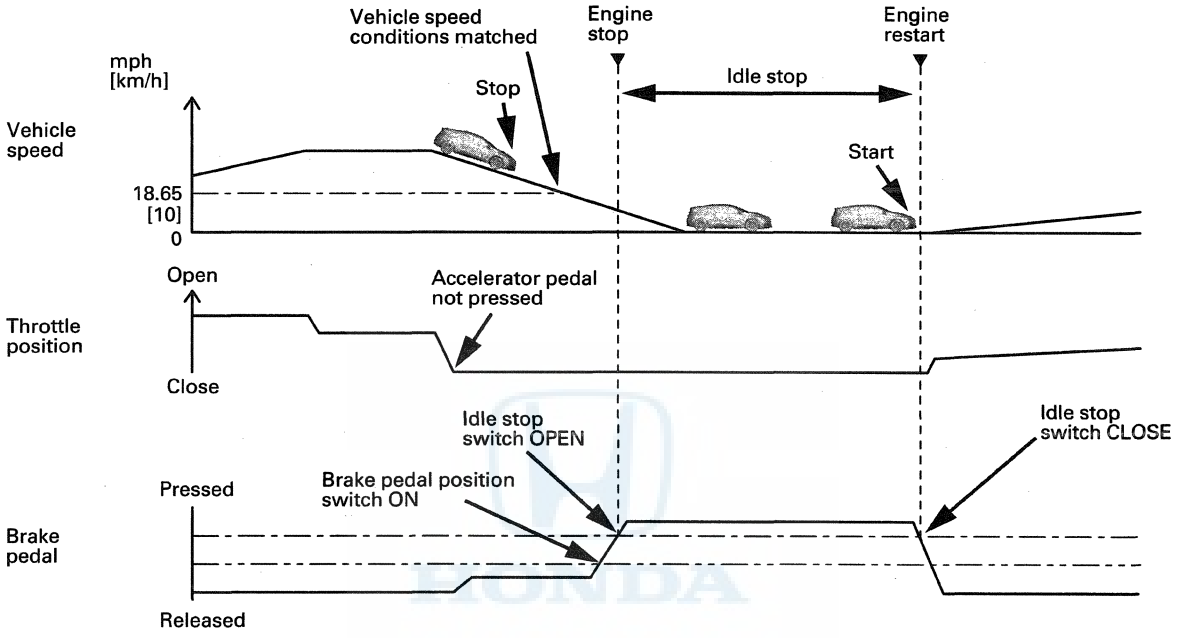


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System Description (cont'd)

Vehicle is stopping or is stopped (CVT model)

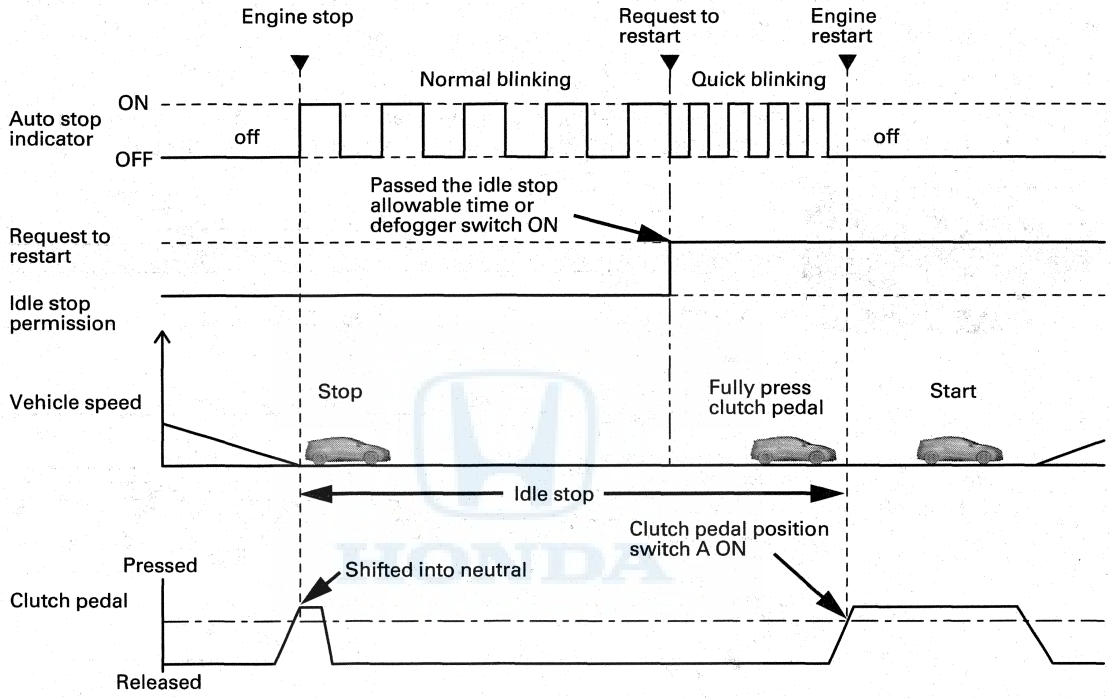
When the vehicle is stopped after driving at or above the specified speed, and the transmission is in D or N, the engine stops when you press the brake pedal.
Releasing the brake pedal disables auto idle stop and restarts the engine.



Restart by Climate Control Unit

M/T model

The ECM restarts the engine from auto idle stop if it is requested by the climate control unit. The restart happens after you press the clutch pedal and shift out of neutral.
When a request to restart is received, the auto stop indicator blinks more quickly than normal.



CVT model

The PCM restarts the engine from auto idle stop if it is requested by the climate control unit.

(cont'd)

System Description (cont'd)

System Indicators

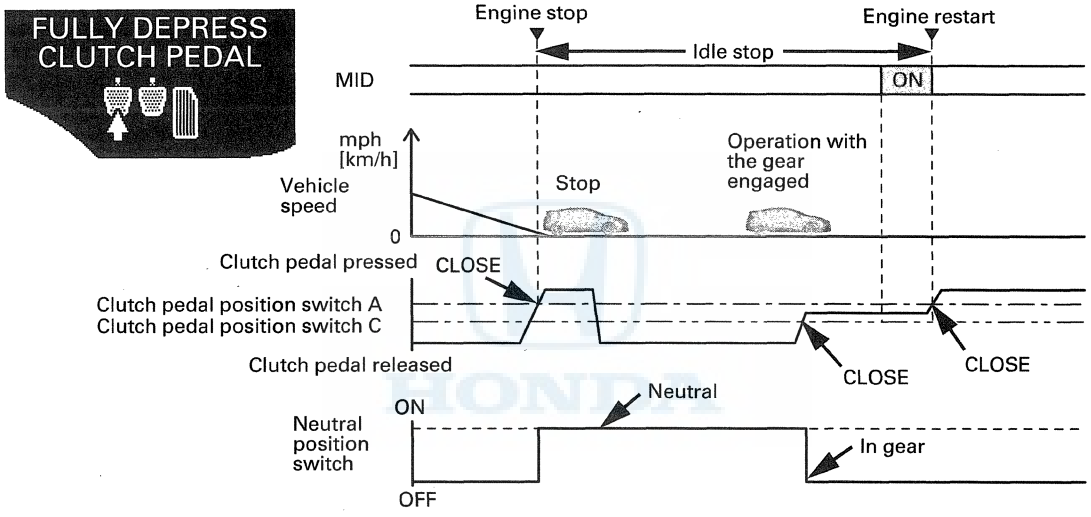
If there is an operation error or a system failure during auto idle stop, the error information is shown on the multi-information display (MID), the indicator in the gauge control module blinks, and the system buzzer sounds.

Opening the driver's door

If the driver's door is opened during auto idle stop, the auto stop indicator blinks and the system buzzer sounds to remind you that auto stop is in operation.

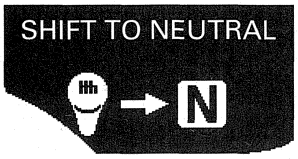
Clutch pedal is not fully pressed (M/T model)

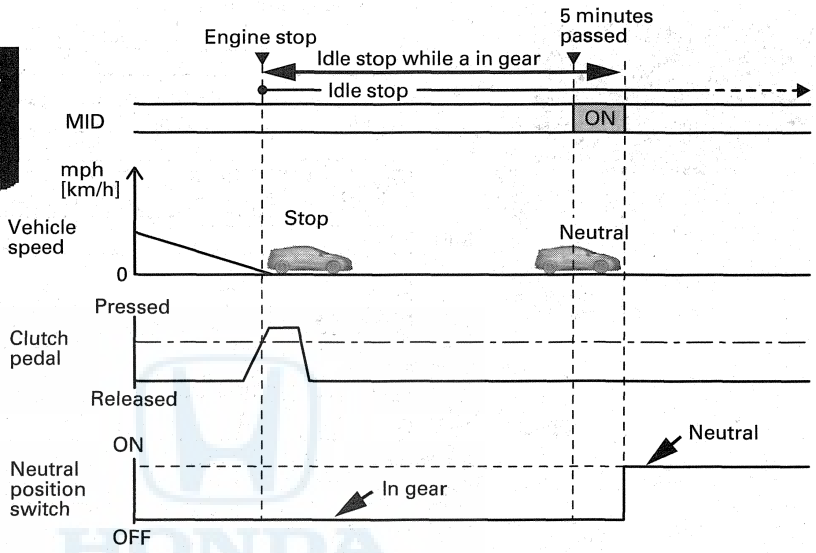
If the clutch pedal is not fully pressed during auto idle stop, the engine does not restart because the system knows the transmission is in gear. If this happens, a message to fully press the clutch pedal appears on the MID.



Vehicle stopped for 5 minutes while in gear (M/T model)

During auto idle stop, if the transmission is in gear with the vehicle stopped for 5 minutes, a message to shift into neutral appears on the MID.
Shifting into neutral and then back into a gear resets the timer another 5 minutes. To restart the engine when this message appears, press the clutch pedal while the transmission is in gear.



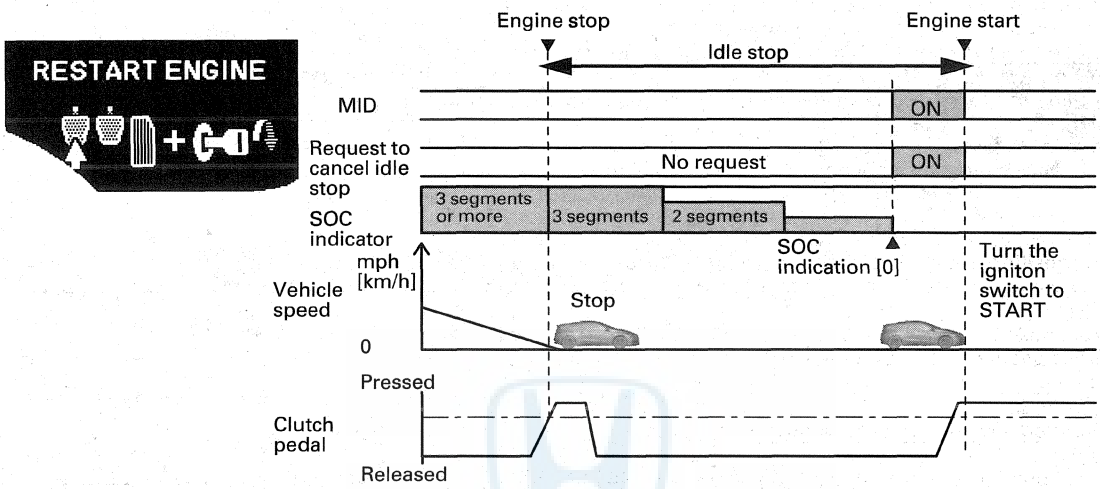


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System Description (cont'd)

Engine restart (M/T model)

If the system cannot restart the engine because of a battery module problem (low SOC, battery failure), a message on the MID tells you to restart with the ignition switch.
Even if the RESTART ENGINE message appears, you may still be able to start the engine with the IMA system by pressing the clutch pedal.



Disable Conditions for Auto Idle Stop (M/T model)

When any of the following conditions are met, auto idle stop is disabled.

Idle Stop Disable Conditions	Parameter (HDS)
Vehicle Speed • 19 mph (30 km/h) or more. • More than 0 mph (0 km/h) with brake pedal fully released (brake pedal position switch OFF). • Does not exceed 7 mph (12 km/h) in forward gears. • Does not exceed 19 mph (30 km/h) in reverse.	VEHICLE SPEED
Transmission • Clutch pedal is pressed during a momentary stop, and 1st gear is the probable gear selection. • Shifter is in reverse. • Neutral position switch signal does not turn ON/OFF after exceeding 3 mph (5 km/h). NOTE: • Estimation of gear selection is calculated from a engine speed and output shaft (countershaft) speed within the ECM. • Reverse position is detected by back up light switch input signal (ON in reverse). • Neutral position is detected by neutral position switch input signal (ON in neutral).	• BACK UP LIGHT SWITCH • NP SWITCH • GEAR POSITION • AUTO IDLE STOP DOES NOT OCCUR (NP SWITCH)
Brake Pedal Brake pedal position switch signal does not turn ON/OFF after exceeding 3 mph (5 km/h). NOTE: Brake pedal pressing is detected by brake pedal position switch input signal (ON with pedal pressed).	BRAKE SWITCH
Accelerator Pedal Accelerator pedal is pressed (APP sensor is at least 20%).	APP SENSOR
Clutch Pedal Clutch pedal position switches A and C do not switch to OPEN/CLOSED after exceeding 3 mph (5 km/h). NOTE: Clutch pedal position switches A and C are two input signals that detect clutch pedal pressing. (Switches are CLOSED when clutch pedal is pressed.)	• CLUTCH PEDAL POSITION SWITCH A • CLUTCH PEDAL POSITION SWITCH A (C) • AUTO IDLE STOP DOES NOT OCCUR (CLUTCH PEDAL POSITION SWITCH)
Engine Coolant Temperature and Outside Air Temperature Engine coolant temperature does not exceed specified value, depending on outside air temperature, A/C system use, and if ECON mode is on or off.	• ENGINE COOLANT TEMPERATURE • IAT SENSOR

(cont'd)

System Description (cont'd)

Idle Stop Disable Conditions	Parameter (HDS)
ECM • A related DTC is stored. • Communication problem with any control unit related to auto idle stop. • 50 seconds after starting engine.	
IMA System • Battery module state-of-charge (SOC) is 38.5% ('12 model: 41.5%) or less (battery module SOC indicator shows one segment or less). • Motor power inverter (MPI) temperature is 203 °F [95 °C] or more. • Battery module power is regulated to 7.0 kW or less. • IMA motor rotor calibration is not completed. • A related DTC is stored	• SOC • MPI TEMPERATURE • MOTOR ASSIST LIMIT CMD • ASSIST POWER LIMIT OF IMA BATTERY BY TEMPERATURE • ASSIST POWER LIMIT OF IMA BATTERY BY VOLTAGE • MOTOR ROTOR POSITION CALIBRATION STATE
Brake Booster Pressure • Brake booster pressure is not within 310-350 mmHg at 0 mph (0 km/h) (threshold depends on vehicle speed and atmospheric pressure). • A related DTC is stored.	• BRAKE BOOSTER PRESSURE SENSOR (S) A+B • AUTO IDLE STOP DOES NOT OCCUR (BRAKE)
Climate Control System • Defogger switch is ON. • Temperature setting is MAX COOL or MAX HOT, and ECON mode is off. • Blower motor voltage is 8 V or more (fan speed indicator shows five segments or more), and ECON mode is off. • Outside air temperature is −4 °F [−20 °C] or less. • Windshield fogging is detected (based on outside air temperature, humidity, and other conditions), and ECON mode is off. • Selected system temperature is colder or warmer than the outside air temperature, and ECON mode is off. • A related DTC is stored. • System calculation for auto idle stop is 10 seconds or less.	• IDLE STOP PERMIT TIME (A/C) • IDLE STOP RELEASE COUNTER • AUTO IDLE STOP DOES NOT OCCUR (A/C)

Disable Conditions for Auto Idle Stop (CVT model)

When any of the following conditions are met, auto idle stop is disabled.

Idle Stop Disable Conditions	Parameter (HDS)
Vehicle Speed • 6 mph (10 km/h) or more. • More than 0 mph (0 km/h) with brake pedal fully released (brake pedal position switch OFF). • Does not exceed 7 mph (12 km/h) in forward gears. • Does not exceed 7 mph (12 km/h) in reverse.	VEHICLE SPEED
Transmission • Shift position is not D or N. • Start clutch calibration is not complete. • CVT fluid temperature is not over definite value. • Pulley ratio is less than 2.1. • Uphill judgment. • Slight creep disable. • Shift position is not judged.	• A/T D SWITCH • A/T N SWITCH • LEARN CONDITION • PULLEY RATIO
VSA CAS control disabled.	
Brake Pedal • Brake pedal not pressed (idle stop switch CLOSE, brake pedal position switch OFF). • Sudden braking. • Idle stop switch signal does not indicate OPEN/CLOSE after exceeding 11 mph (18 km/h). • Brake pedal position switch signal does not indicate ON/OFF after exceeding 11 mph (18 km/h). NOTE: • Brake pedal pressing is detected by brake pedal position switch input signal (ON with pedal pressed). • Brake pedal pressing is detected by idle stop switch input signal (OPEN with pedal pressed).	• IDLE STOP SW • BRAKE SWITCH • AUTO IDLE STOP DOES NOT OCCUR(IDLE STOP SW)
Accelerator Pedal Accelerator pedal is pressed (APP sensor is at least 20%).	APP SENSOR
Engine Coolant Temperature and Outside Air Temperature Engine coolant temperature does not exceed specified value, depending on outside air temperature, A/C system use, and if ECON mode is on or off.	• ENGINE COOLANT TEMPERATURE • IAT SENSOR

(cont'd)

System Description (cont'd)

Idle Stop Disable Conditions	Parameter (HDS)
PCM • A related DTC is stored. • Communication problem with any control unit related to auto idle stop. • 50 seconds after starting engine.	
IMA System • Battery module state-of-charge (SOC) is 38.5% ('12 model: 41.5%) or less (battery module SOC indicator shows one segment or less). • Motor power inverter (MPI) temperature is 203 °F [95 °C] or more. • Battery module power is regulated to 7.0 kW or less. • IMA motor rotor calibration is not completed. • A related DTC is stored	• SOC • MPI TEMPERATURE • MOTOR ASSIST LIMIT CMD • ASSIST POWER LIMIT OF IMA BATTERY BY TEMPERATURE • ASSIST POWER LIMIT OF IMA BATTERY BY VOLTAGE • MOTOR ROTOR POSITION CALIBRATION STATE
Brake Booster Pressure • Brake booster pressure is not within 310-350 mmHg at 0 mph (0 km/h) (threshold depends on vehicle speed and atmospheric pressure). • A related DTC is stored.	• BRAKE BOOSTER PRESSURE SENSOR (S) A+B • AUTO IDLE STOP DOES NOT OCCUR (BRAKE)
Climate Control System • Defogger switch is ON. • Temperature setting is MAX COOL or MAX HOT, and ECON mode is off. • Blower motor voltage is 8 V or more (fan speed indicator shows five segments or more), and ECON mode is off. • Outside air temperature is −4 °F [−20 °C] or less. • Windshield fogging is detected (based on outside air temperature, humidity, and other conditions), and ECON mode is off. • Selected system temperature is colder or warmer than the outside air temperature, and ECON mode is off. • A related DTC is stored. • System calculation for auto idle stop is 10 seconds or less.	• IDLE STOP PERMIT TIME (A/C) • IDLE STOP RELEASE COUNTER • AUTO IDLE STOP DOES NOT OCCUR (A/C)

Engine Restart Conditions After Auto Idle Stop (M/T model)

When any of the following conditions are met, the engine restarts after idle stop.

Engine Restart Conditions	Parameter (HDS)
Engine Start Switch Clutch pedal pressed, and the ignition switch to START (III).	STARTER SWITCH
Vehicle Speed Clutch pedal is released at 3 mph (5 km/h) or more.	• VEHICLE SPEED • CLUTCH PEDAL POSITION SWITCH A • CLUTCH PEDAL POSITION SWITCH A (C)
Transmission Clutch pedal is pressed, and shifter is moved into a gear.	NP SWITCH
Brake System Pedal is released while decelerating during idle stop.	BRAKE SWITCH
Accelerator Pedal Accelerator pedal is pressed (APP sensor is at least 20%). NOTE: To restart, press clutch pedal with shifter in neutral.	APP SENSOR
Clutch Pedal Clutch pedal is released, and shifter is moved into a gear while decelerating during idle stop.	• CLUTCH PEDAL POSITION SWITCH A • CLUTCH PEDAL POSITION SWITCH A (C)
IMA System SOC is 37% ('12 model: 40%) or less (battery module SOC indicator shows one segment or less). NOTE: To restart, press clutch pedal with shifter in neutral.	SOC
Brake Booster Pressure Brake booster pressure is not within 310-350 mmHg at 0 mph (0 km/h) (threshold depends on vehicle speed and atmospheric pressure). NOTE: To restart, press clutch pedal with shifter in neutral.	BRAKE BOOSTER PRESSURE SENSOR (S) A+B
Climate Control System • Defogger switch is ON. NOTE: To restart, press clutch pedal with shifter in neutral. • Idle stop cancellation counter reaches zero.	• IDLE STOP PERMIT TIME (A/C) • IDLE STOP RELEASE COUNTER

(cont'd)

System Description (cont'd)

Engine Restart Conditions After Auto Idle Stop (CVT model)

When any of the following conditions are met, the engine restarts after idle stop.

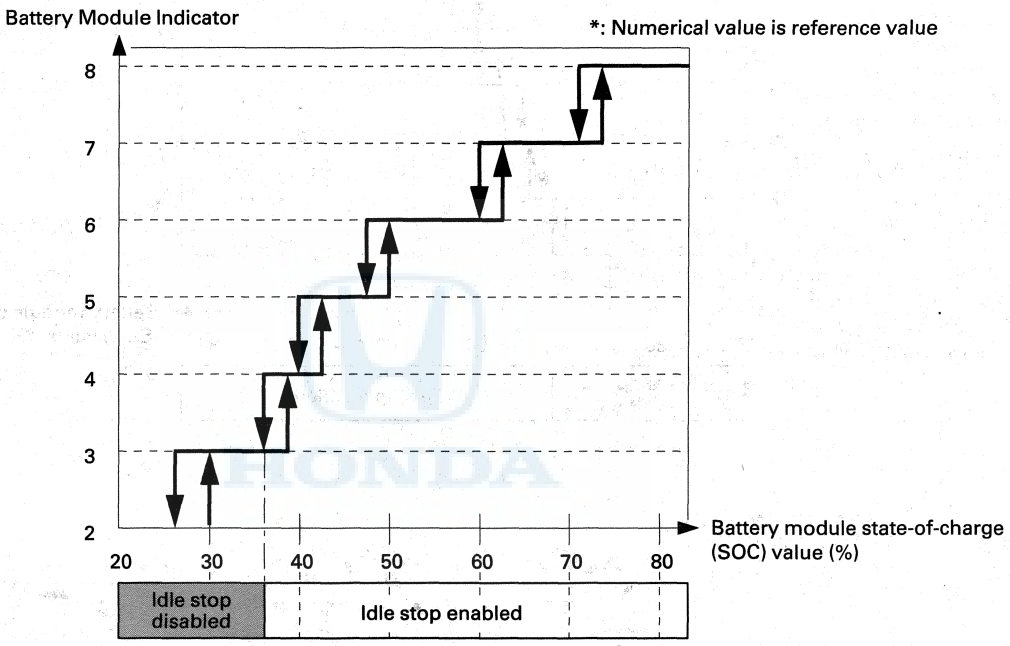
Engine Restart Conditions	Parameter (HDS)
Engine Start Switch Shift position is in N, and ignition switch is turned to START (III).	STARTER SWITCH
Vehicle Speed • Acceleration exceeds 12 mph (20 km/h). • Vehicle speed pulse generated during idle stop.	VEHICLE SPEED
Transmission Shift position is P or R.	• A/T P SWITCH • A/T R SWITCH
Brake System Pedal is released.	BRAKE SWITCH
Accelerator Pedal Accelerator pedal is pressed (APP sensor is 0.2%).	APP SENSOR
IMA System SOC is 37% ('12 model: 40%) or less (battery module SOC indicator shows one segment or less).	SOC
Brake Booster Pressure Brake booster pressure is not within 310-350 mmHg at 0 mph (0 km/h). (Threshold depends on vehicle speed and atmospheric pressure.)	BRAKE BOOSTER PRESSURE SENSOR (S) A+B
Climate Control System • Defogger switch is ON. • Idle stop cancellation counter reaches zero.	• IDLE STOP PERMIT TIME (A/C) • IDLE STOP RELEASE COUNTER

Auto Idle Stop Conditions

Battery module SOC

When the MCM determines that the remaining battery module state-of-charge (SOC) is within the idle stop enable area, it allows auto idle stop. When the battery module SOC goes below the idle stop enable area during idle stop, the MCM requests an engine restart from the ECM/PCM. To confirm the battery module SOC, use the HDS data list. An approximate SOC can also be determined by counting the segments in the battery module SOC indicator.

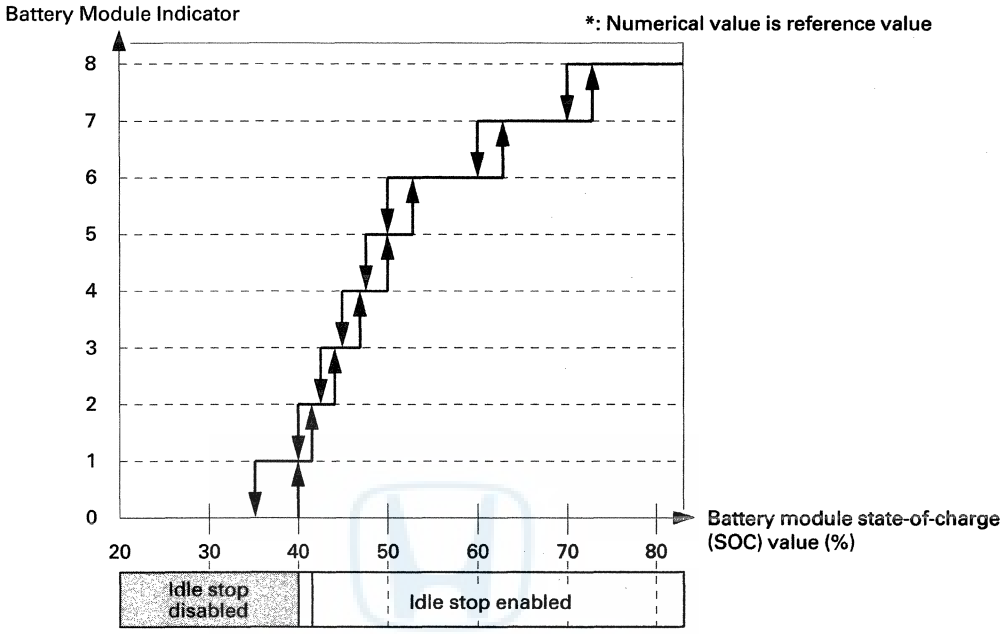
'11 model:

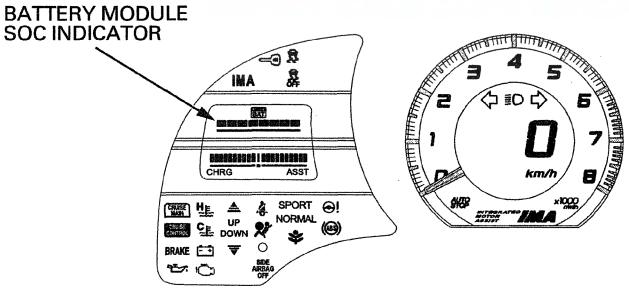


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System Description (cont'd)

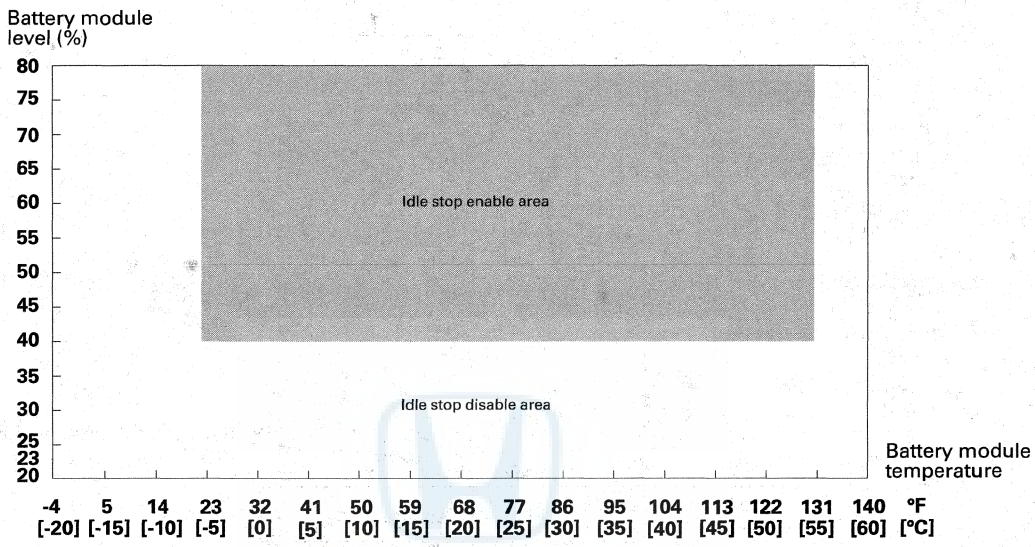
'12 model:





Battery module output

The MCM monitors the temperature of the battery module with the battery module temperature sensors. If the output of the battery module is within the idle stop enable area, the MCM allows auto idle stop. If the battery module enters the idle stop disable area, the MCM disables auto idle stop.

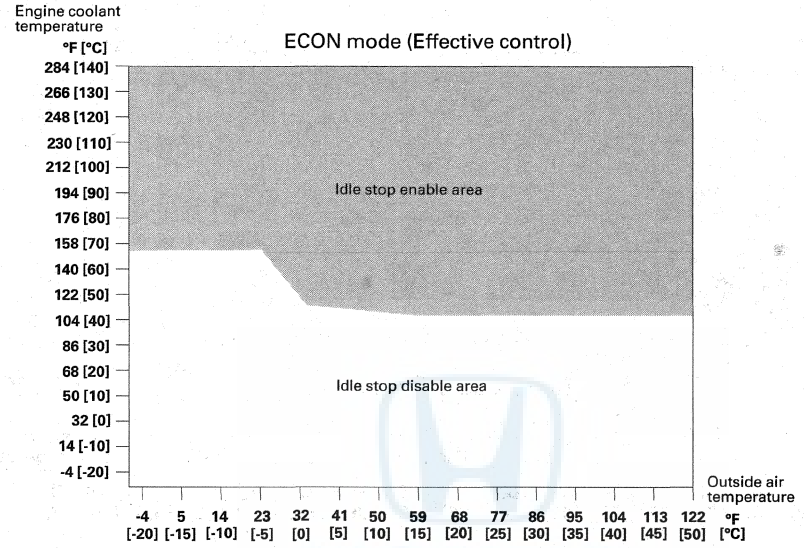


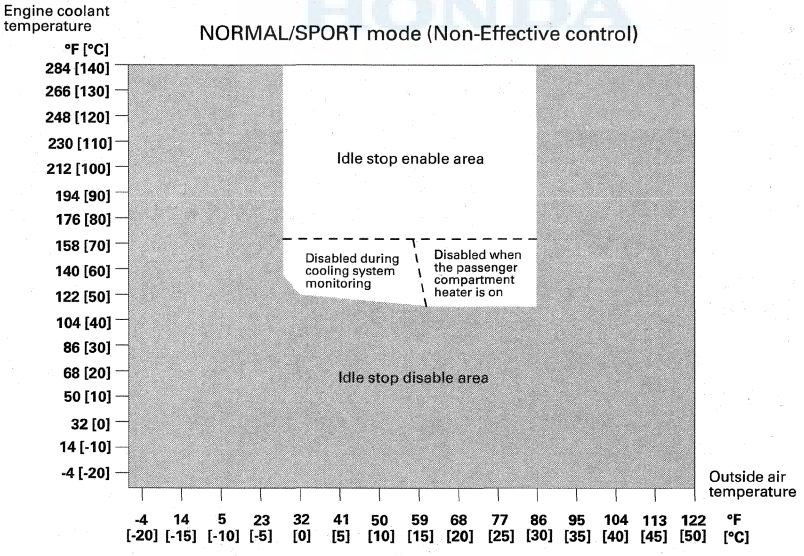
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System Description (cont'd)

Outside air temperature and engine coolant temperature

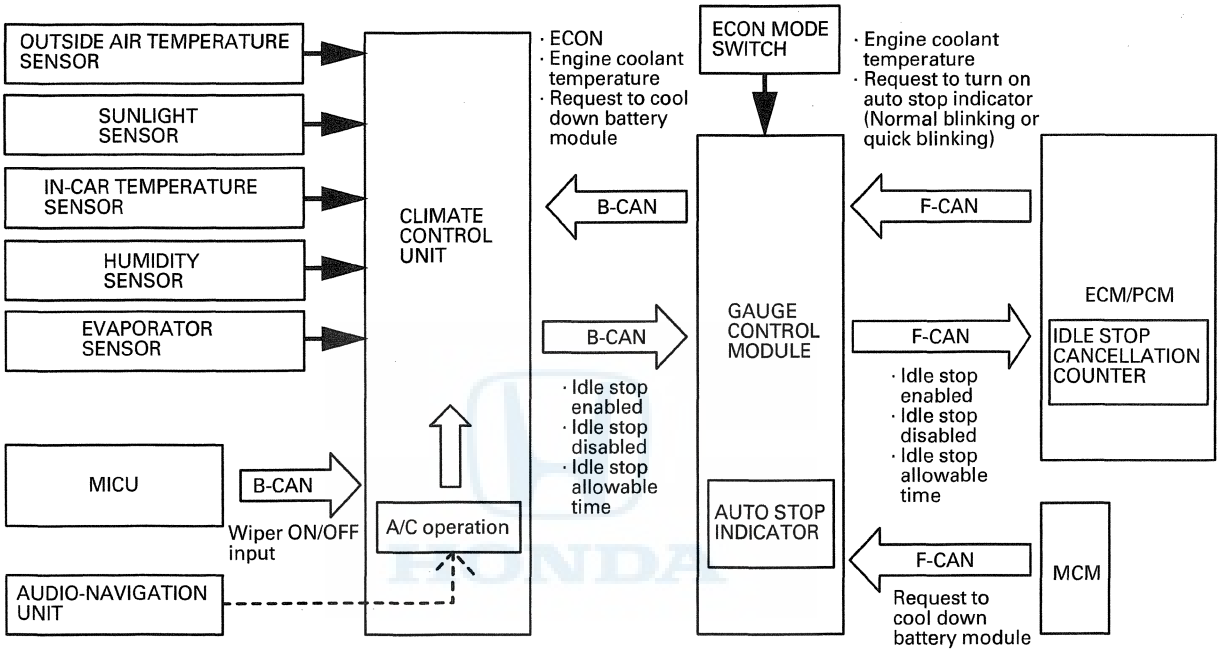
The outside air and engine coolant temperatures affecting auto idle stop vary, depending on the A/C system mode and if ECON mode is on or off. When both the outside air and the engine coolant temperatures are within the idle stop enable area, the ECM/PCM allows auto idle stop. When the temperatures are within the idle stop disable area, the ECM/PCM prevents auto idle stop.





Auto Idle Stop Control by the Climate Control System

When you operate the climate control unit (except the OFF and RECIRCULATION functions), auto idle stop is managed by the climate control system. The climate control unit calculates the enabling/disabling and the allowable time for auto idle stop. This is based on the ECON mode, the battery module temperature, and signals transmitted from several sensors.



When idle stop is enabled, the ECM/PCM sets the allowable time in the idle stop cancellation counter. When the counter reaches zero, the engine restarts.
Turning on the defogger switch or selecting DEF on the mode switch causes the climate control unit to request an engine restart from the ECM/PCM.

(cont'd)

System Description (cont'd)

Climate control unit decision criteria for auto idle stop

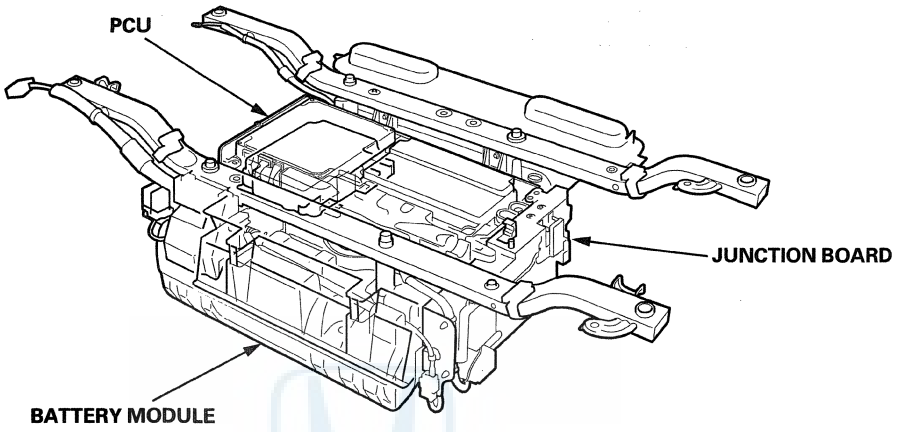
The decision criteria is based on which driving mode is selected, NORMAL, SPORT, or ECON. In ECON mode, the enabling of auto idle stop has a higher priority than in NORMAL or SPORT mode.
If the climate control unit calculates any time less than 10 seconds, auto idle stop is not enabled (see page 21-25).

Request by the MCM to increase air volume of blower motor

When the temperature of battery module is high, the MCM signals the climate control unit for an increase in air volume from the blower motor. The climate control unit then increases the blower motor speed.

Intelligent Power Unit (IPU)

The IPU consists of the power control unit (PCU), the battery module, and the junction board. The IPU is located under the cargo area compartment to lower the center of gravity of the vehicle and to increase space in the vehicle interior.



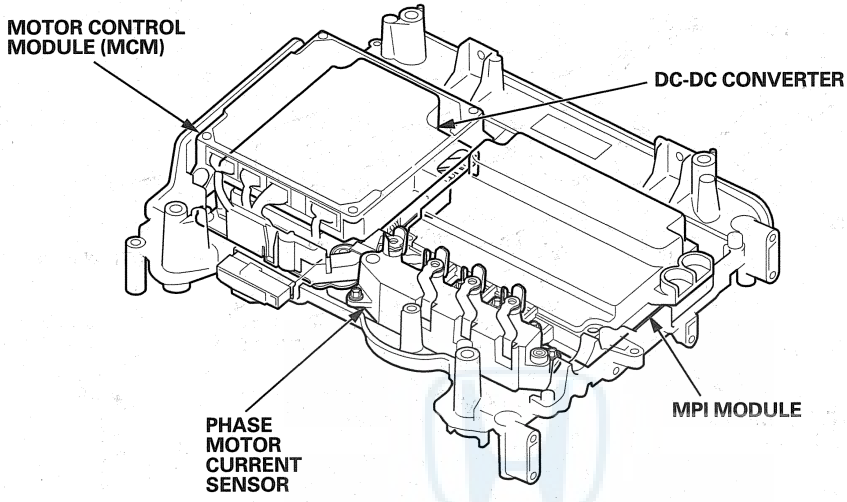
(cont'd)

System Description (cont'd)

Power Control Unit (PCU)

The PCU consists of the motor control module (MCM), the DC-DC converter, the motor power inverter (MPI) module, and the phase motor current sensor.

The MCM controls the IMA motor and monitors the condition of the battery module.

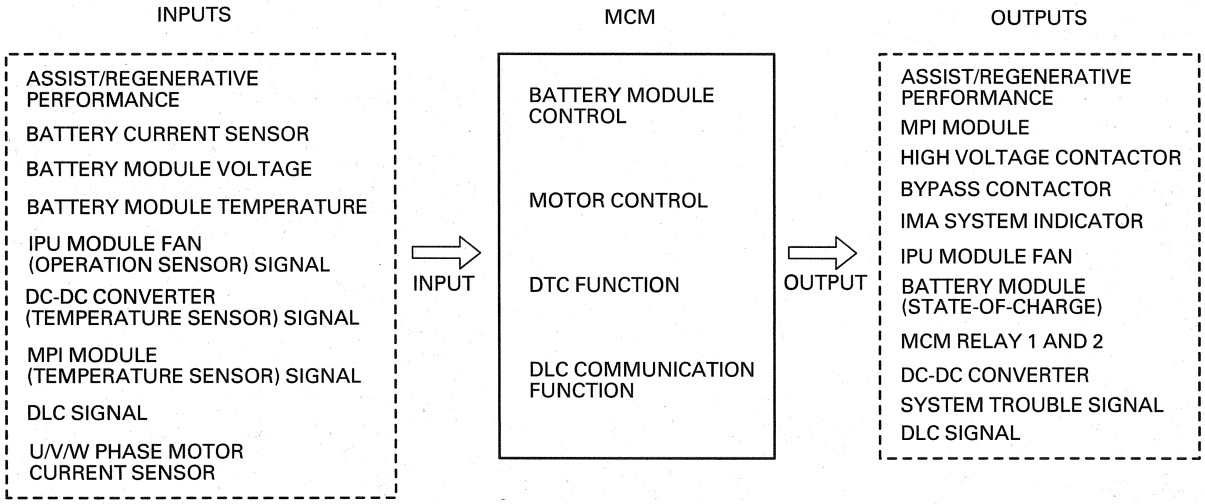


Motor Control Module (MCM)

The MCM calculates the battery module SOC and controls the IPU module fan. The SOC is calculated using voltage, temperature, input current, and output current readings from the battery module.

The MCM controls the DC/AC conversion between the battery module 100 V to the 3-phase AC IMA motor.

The MCM also controls the IMA motor assist and regeneration.

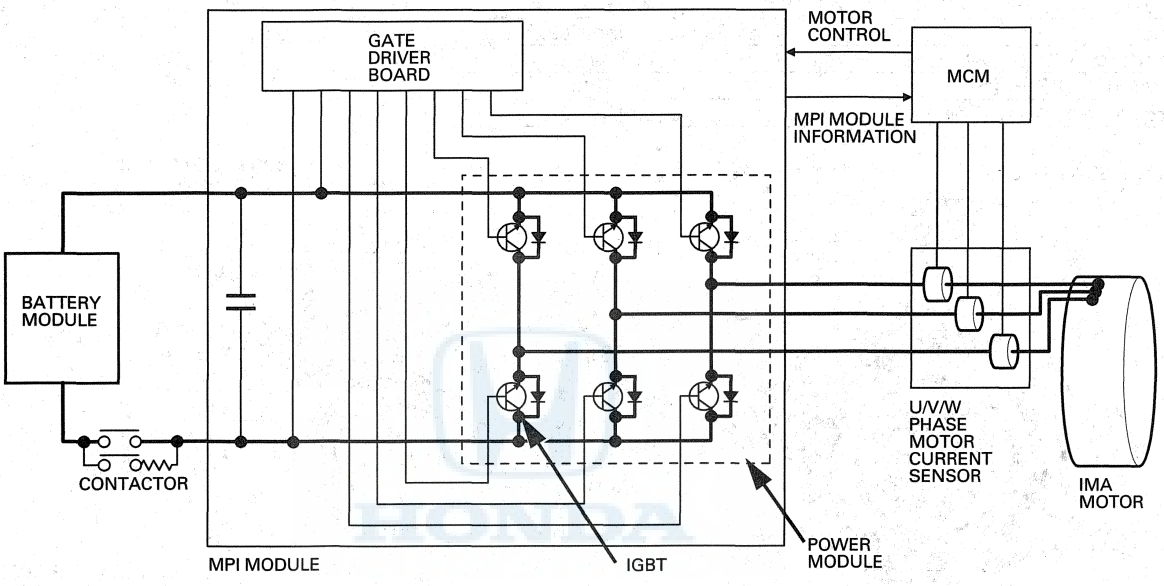


Motor Power Inverter (MPI) Module

The MPI module converts 100 V DC into 3-phase AC to run the electric motor during assist.

During regeneration, the MPI module converts AC voltage to DC.

The MPI module is air cooled. The heat from the heat sink is exhausted to the cargo area by the IPU module fan.



DC-DC Converter

Instead of using an alternator to maintain the 12 volt battery, the electrical system uses a DC-DC converter. The converter converts high voltage direct current into low voltage direct current with little energy loss.

If a problem is detected in the 12 volt charging system, the DC-DC converter turns on the charging system indicator by sending a signal to the gauge control module via the MCM.

The DC-DC converter has a built-in temperature sensor and temperature information is sent to the MCM. When DC-DC converter temperature rises, the MCM drives the IPU module fan. If the DC-DC converter temperature rises abnormally, DC-DC converter output is limited. If the temperature continues to rise, the DC-DC converter output is stopped.

Heat generated by the DC-DC converter is exhausted to the cargo area by the IPU module fan.

(cont'd)

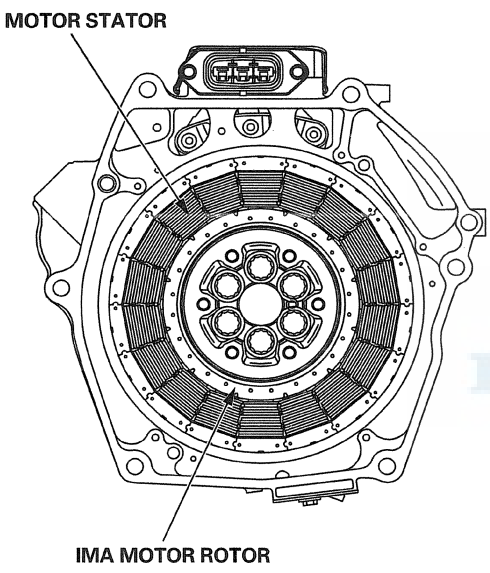
System Description (cont'd)

IMA Motor

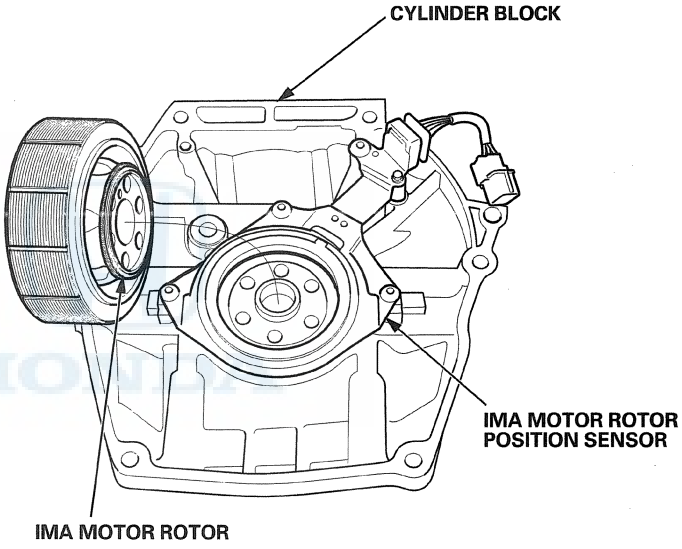
The IMA motor assists the engine during acceleration, runs the vehicle during low speed cruise, starts the engine, and charges the battery module.

The IMA motor is located between the engine and the transmission. It consists of a 3-phase coil stator and a permanent magnet rotor that is directly connected to the engine crankshaft. An IMA motor rotor position sensor is mounted on the back of the engine block to detect the position of the rotor.

Model	MF6
Type	Brushless DC Electrical Motor
Standard Voltage (V)	100
Power (kW [PS]/rpm)	10 [14]/1500
Torque (N·m [kg·m]/rpm)	78 [8.0]/1000



Transmission side after transmission removal



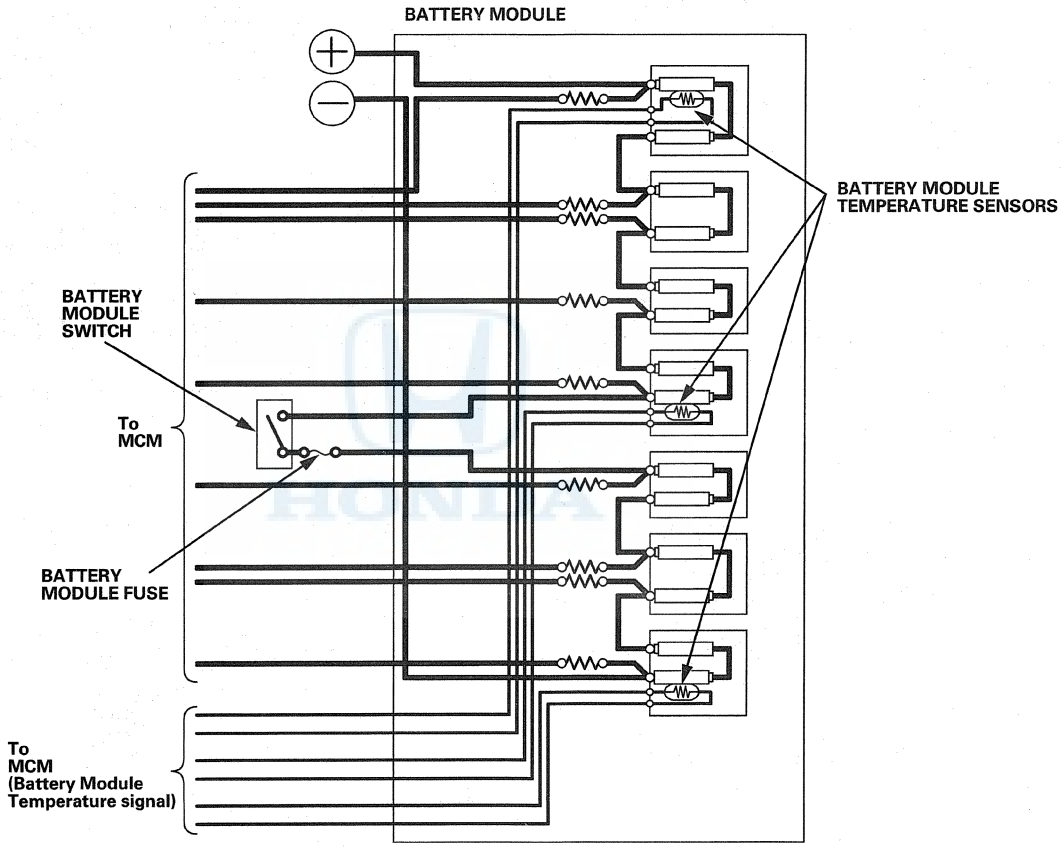
Transmission side after transmission, IMA motor housing, and IMA motor rotor removal

Battery Module

A light-weight and compact Ni-MH (nickel-metal hydride) battery supplies energy to the IMA system.

The battery module has seven blocks that are connected in series. Each block generates 14.4 V. The total battery voltage is a nominal 100 V.

The battery module has three built-in thermistor temperature sensors to monitor battery temperature.

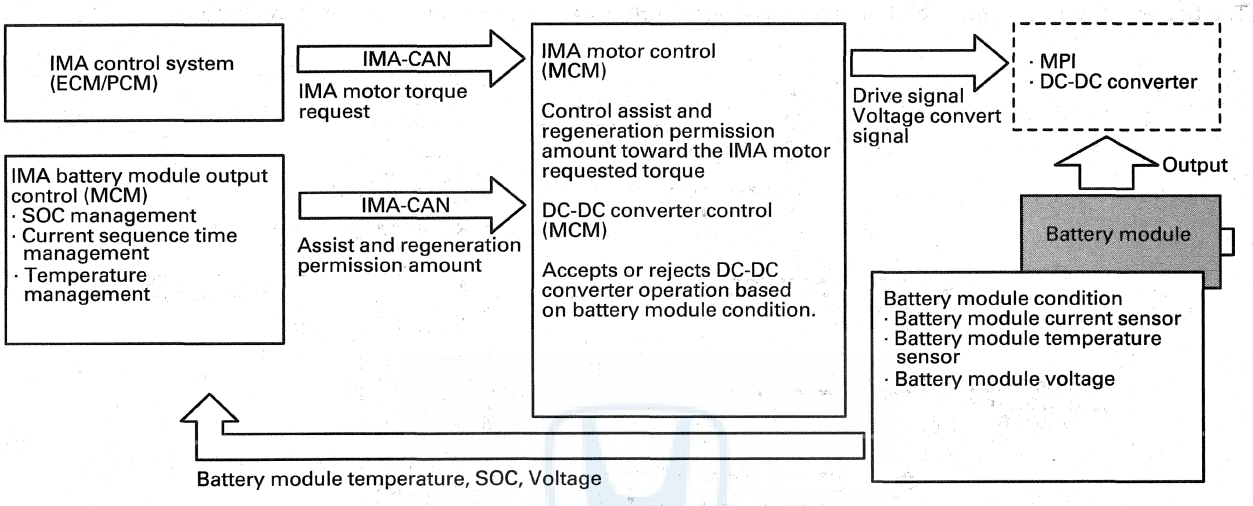


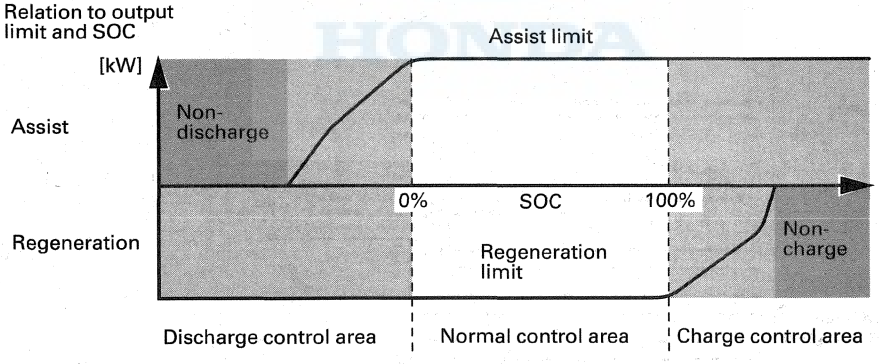
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System Description (cont'd)

Battery module output control

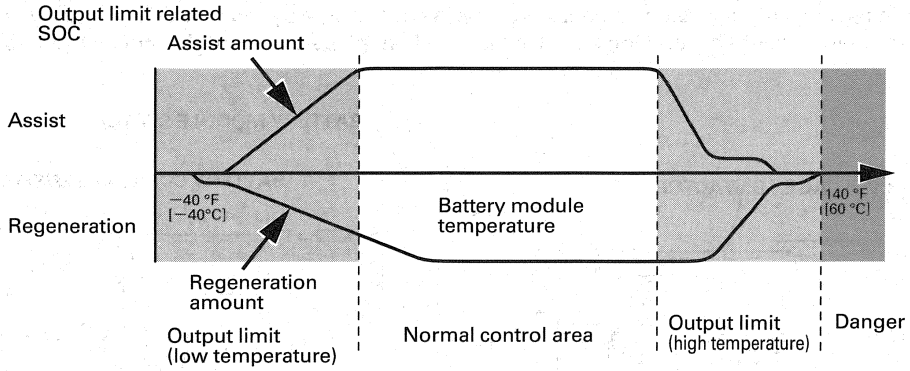
The battery module output control maintains the battery module SOC and temperature. It also prolongs battery life by setting the correct limits for battery output to the IMA motor and battery input from charging. Without this control, the battery module would quickly deteriorate.





HDS Parameter	Normal Control Area
SOC	25 - 75 %
SOC POWER SAVE (PSSOC)	ON/OFF

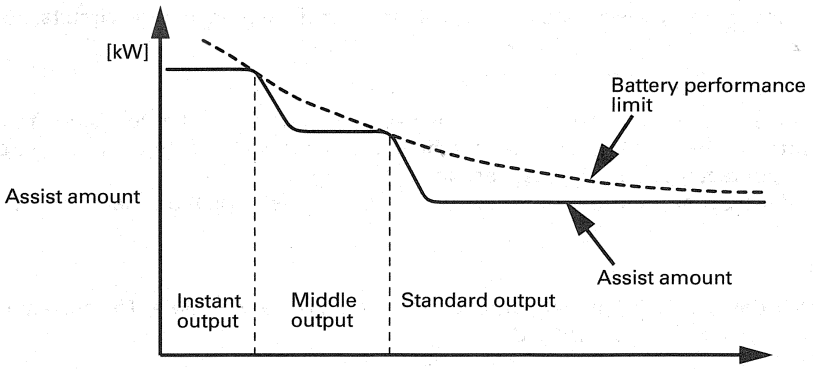
Temperature control



HDS Parameter	Normal Control Area
BATTERY MODULE TEMPERATURE SENSOR 1 (TBATT1)	Depend on outside air temperature
BATTERY MODULE TEMPERATURE SENSOR 2 (TBATT2)	Depend on outside air temperature
BATTERY MODULE TEMPERATURE SENSOR 3 (TBATT3)	Depend on outside air temperature
BATTERY MODULE TEMPERATURE POWER SAVE (PSTBATT)	ON/OFF

Consecutive output control

To prevent battery module overheating and deterioration, the battery module output control manages the consecutive outputs of battery assist and sets an allowable amount.

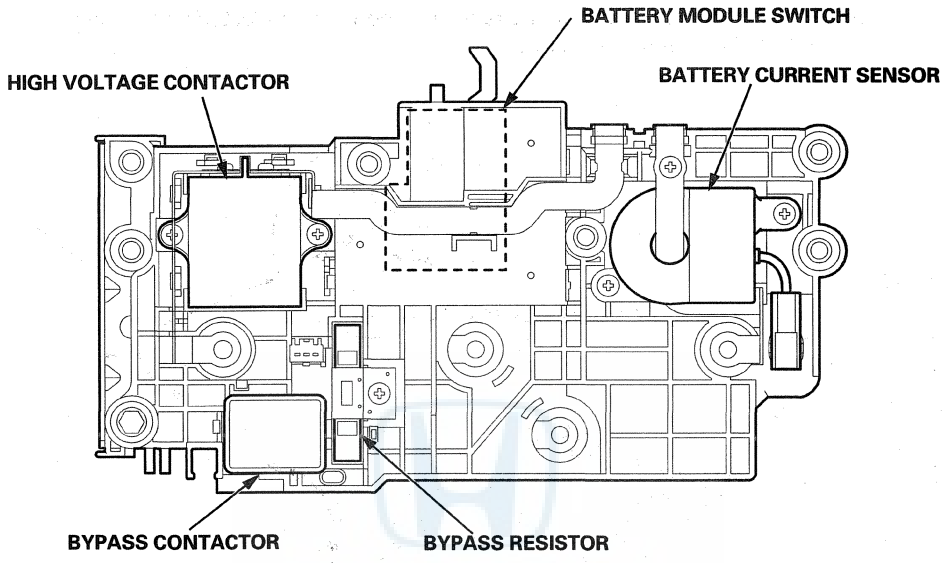


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System Description (cont'd)

Junction board

The junction board consists of a high-voltage contactor, a bypass contactor, a bypass resistor, a battery current sensor, a fuse, and a battery module switch. The junction board is mounted on the battery module, and distributes high voltage.



Battery Module Switch

The battery module switch is connected in series with the battery module fuse. Always turn the battery module switch to the OFF position whenever service or checks are required on or around the high voltage circuits. Follow the service precautions (see page 12-3).

Contactors

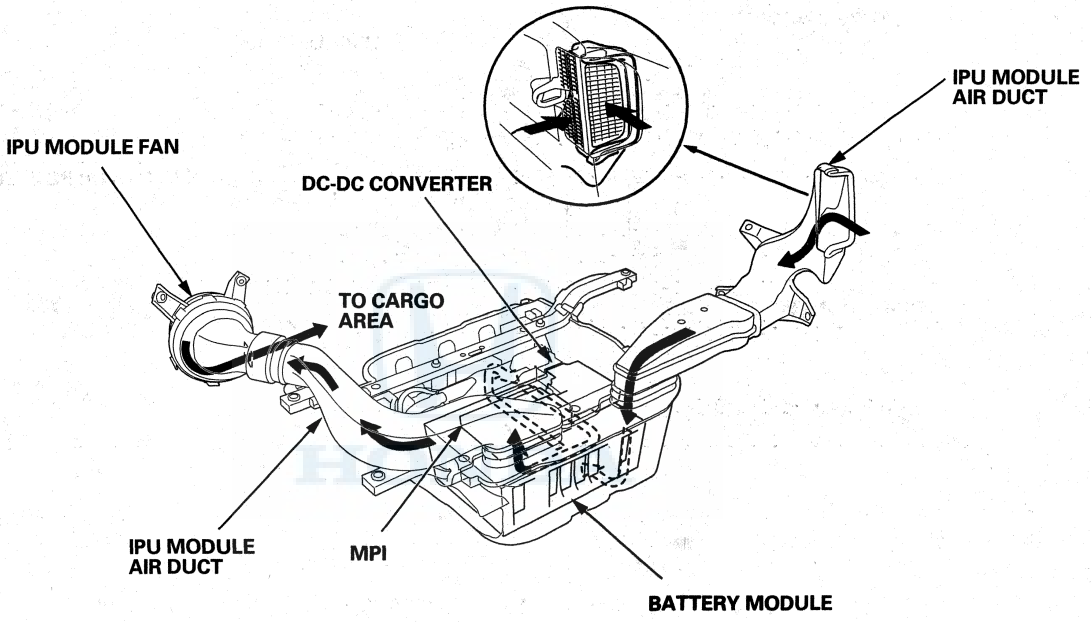
The high voltage contactor and bypass contactor are connected at the positive (+) output side of the battery module. These contactors are controlled by the MCM, connecting the battery module to the high voltage circuits. The current flows through the bypass contactor and the bypass resistor at start-up.
The bypass contactor and the bypass resistor are used during start up to charge the capacitors in the PDU, limiting the initial current.

Battery Current Sensor

The battery current sensor detects the input and output current of the battery module. The current detected by the sensor is used to compute the battery module SOC.

IPU Module Fan

The battery module, the MPI module, and the DC-DC converter generate heat during charge/discharge. The IPU is equipped with a fan to cool these parts, to assure proper battery performance, and to protect the system. The fan has a control circuit and a rotation sensor that are controlled by the MCM. When the temperature of the battery module, the MPI module, or the DC-DC converter exceeds a specified value, the MCM operates the IPU module fan. The cooling air is drawn into the battery module from the left side of the rear seat, then it is exhausted into the cargo area through the MPI module heat sink and the DC-DC converter heat sink.

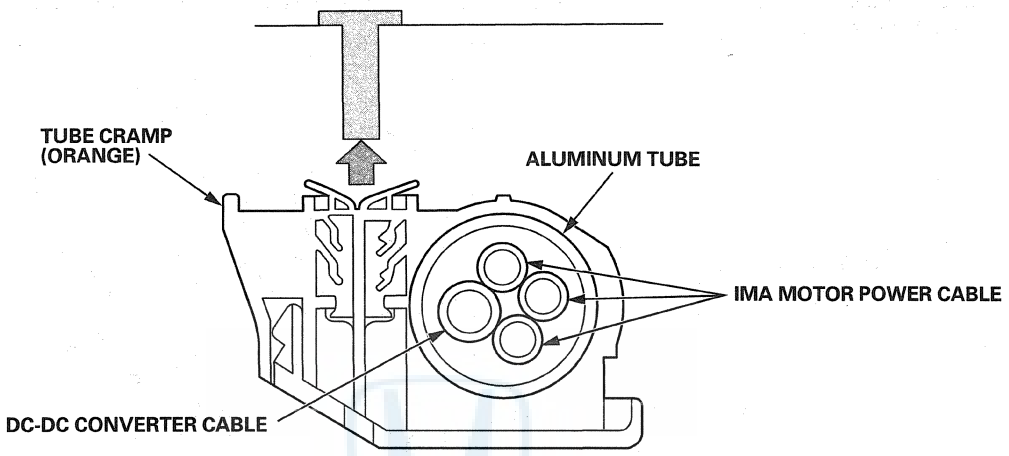


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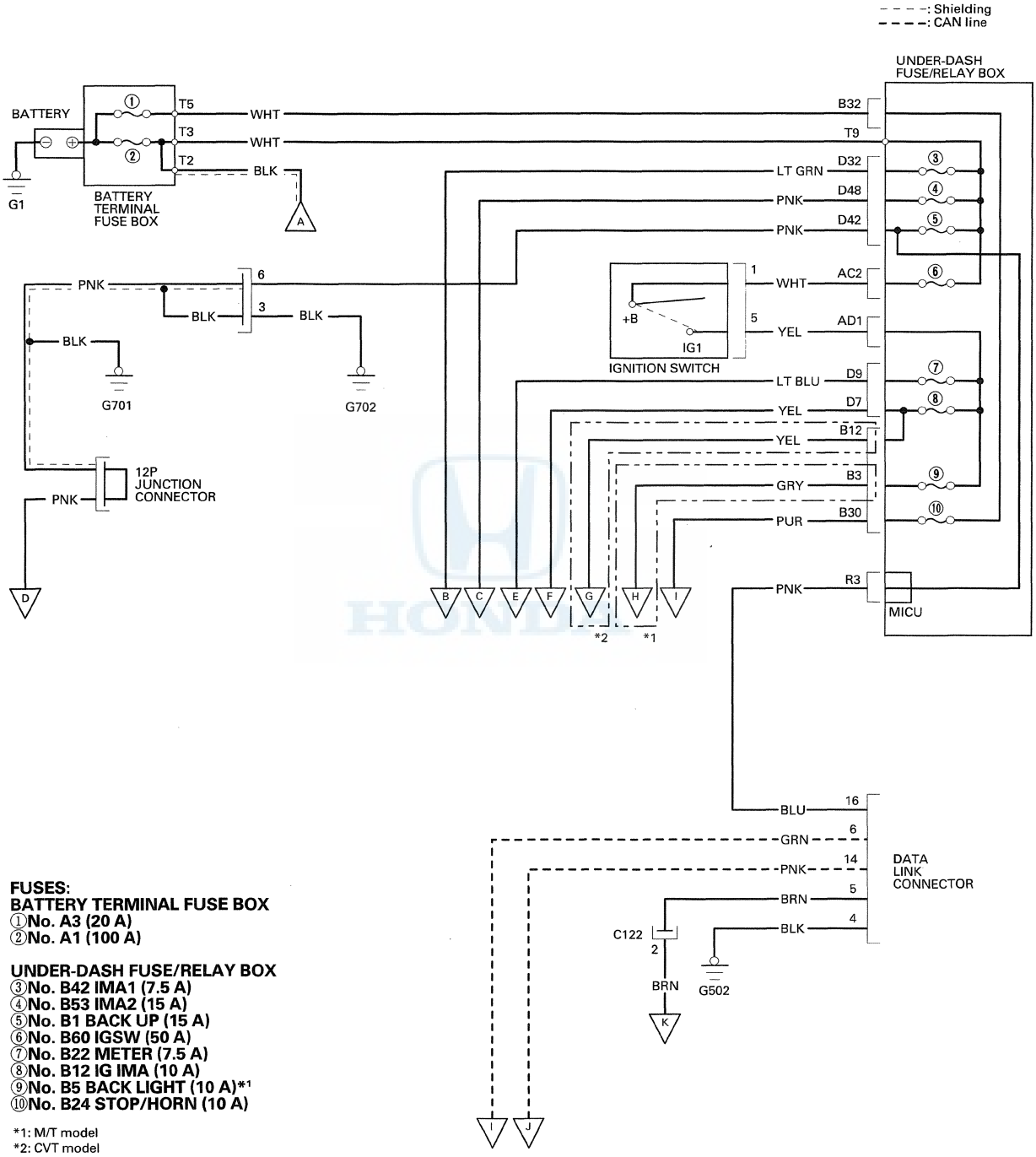
System Description (cont'd)

Power Cables

The IMA motor power cable connects the IMA motor and the MPI module. The cable feeds through an aluminum tube for damage protection and to prevent electrical noise. The 12 volt power cable from the DC-DC converter goes through the same aluminum tube. This tube is attached to the underside of the vehicle by orange-colored tube clamps.



Circuit Diagram



FUSES:
BATTERY TERMINAL FUSE BOX
①No. A3 (20 A)
②No. A1 (100 A)

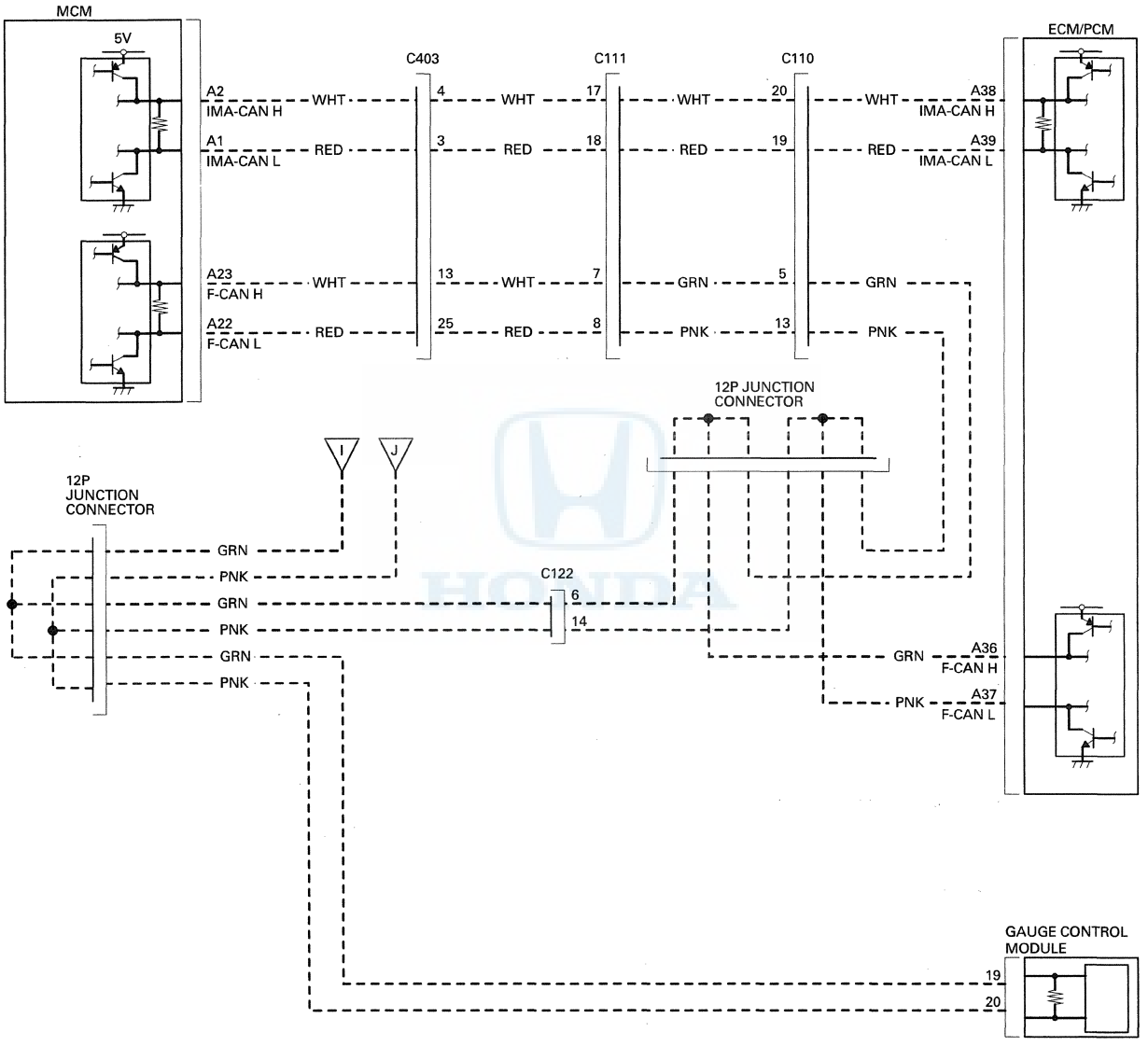
UNDER-DASH FUSE/RELAY BOX
③No. B42 IMA1 (7.5 A)
④No. B53 IMA2 (15 A)
⑤No. B1 BACK UP (15 A)
⑥No. B60 IGSW (50 A)
⑦No. B22 METER (7.5 A)
⑧No. B12 IG IMA (10 A)
⑨No. B5 BACK LIGHT (10 A)*1
⑩No. B24 STOP/HORN (10 A)

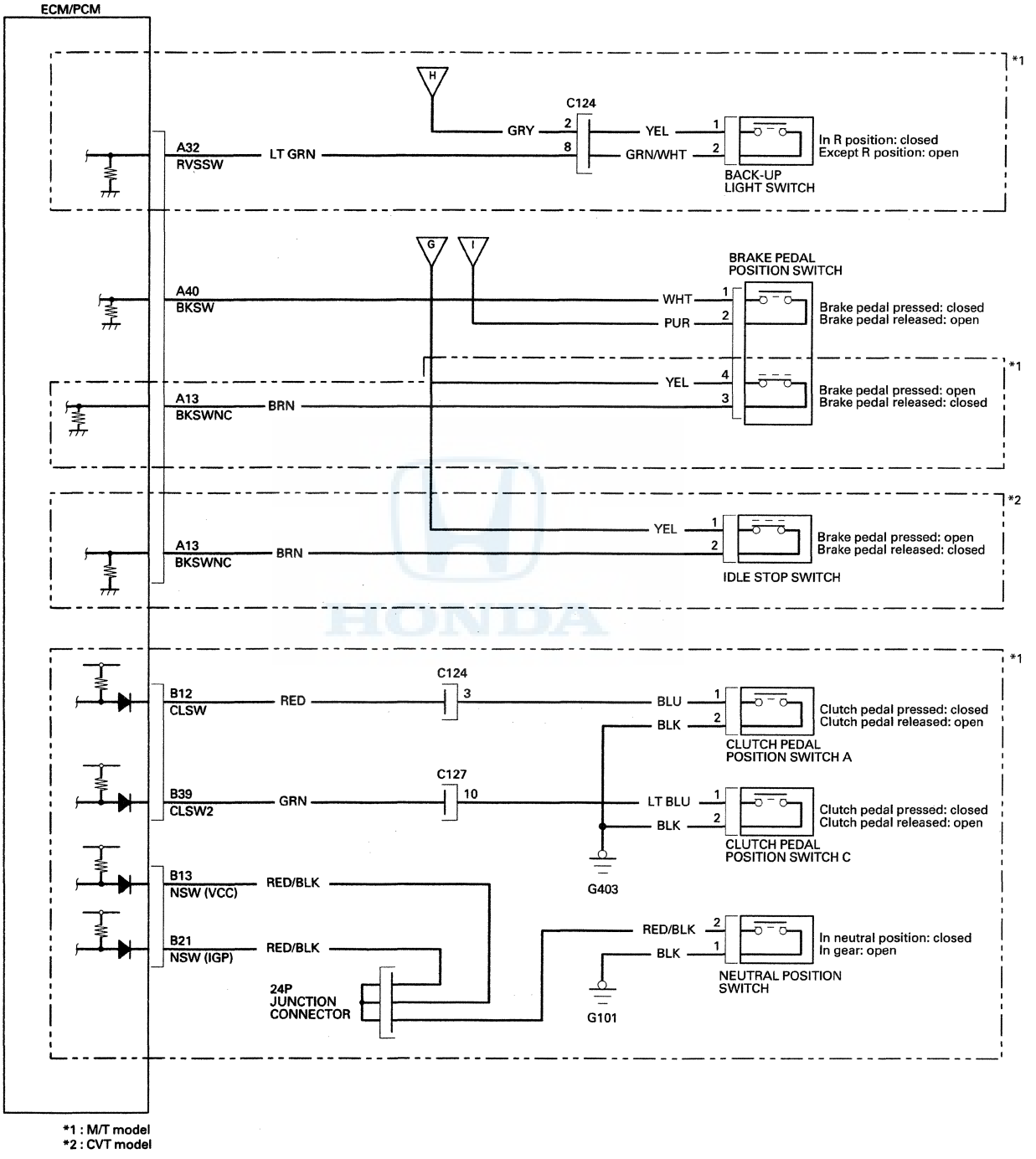
*1: M/T model
*2: CVT model

(cont'd)

Circuit Diagram (cont'd)

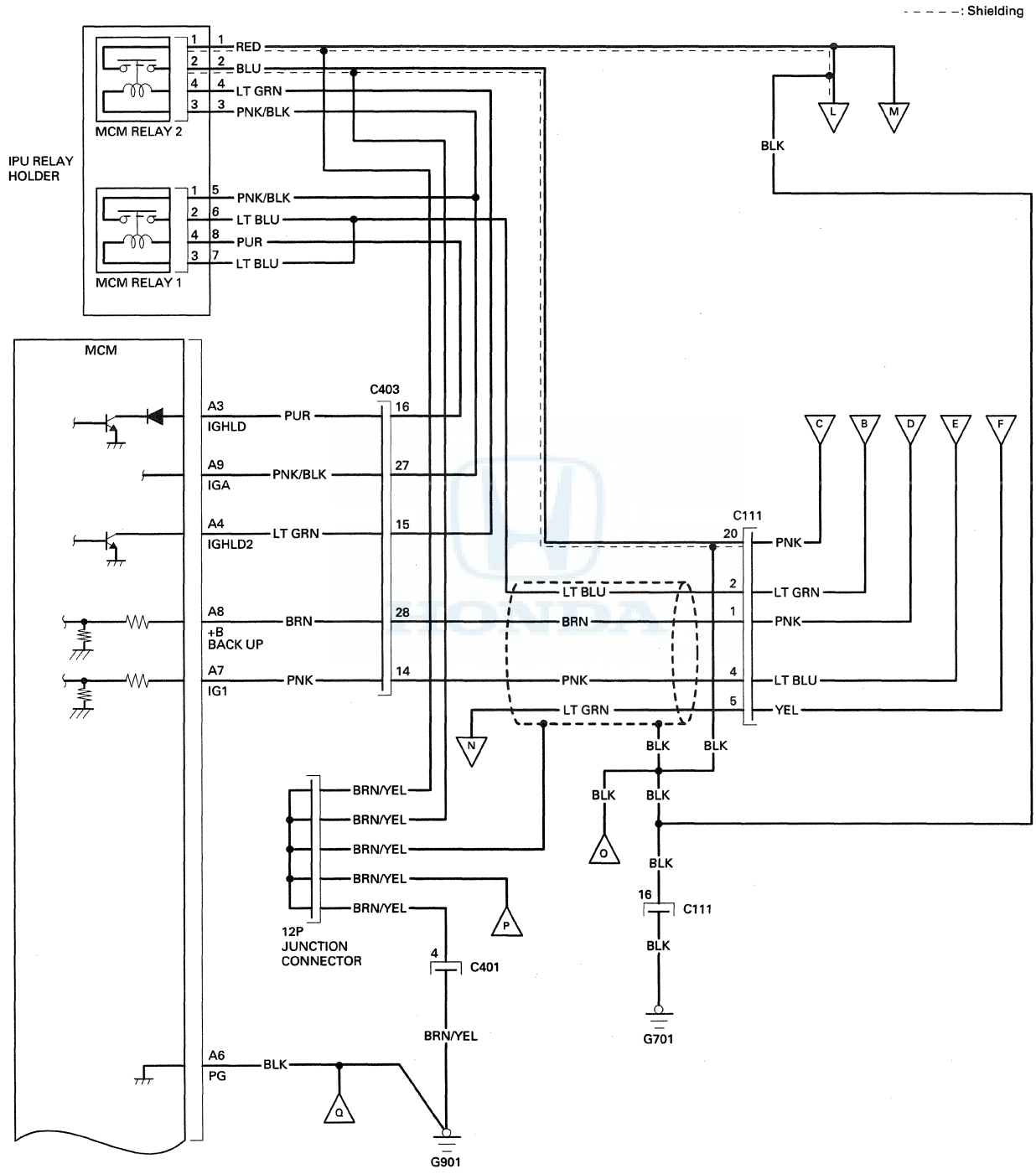
- - - - -: CAN line

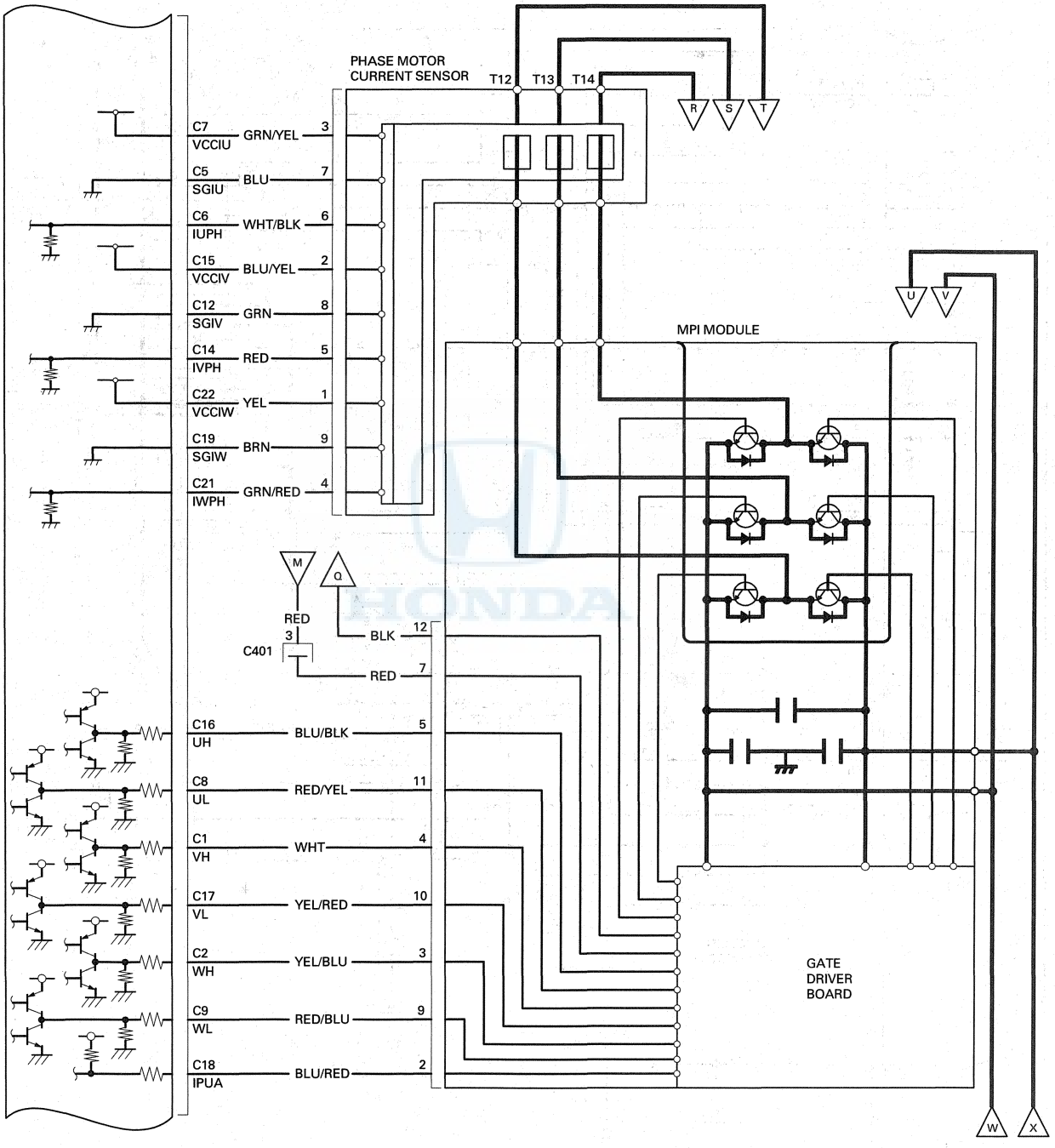



ECM/PCM
*1
H
C124
GRY
2
8
YEL
GRN/WHT
1
2
In R position: closed
Except R position: open
BACK-UP
LIGHT SWITCH
A32
RVSSW
LT GRN
G
I
BRAKE PEDAL
POSITION SWITCH
A40
BKSW
WHT
PUR
Brake pedal pressed: closed
Brake pedal released: open
YEL
4
3
Brake pedal pressed: open
Brake pedal released: closed
A13
BKSWNC
BRN
*2
IDLE STOP SWITCH
C124
3
B12
CLSW
RED
BLU
BLK
Clutch pedal pressed: closed
Clutch pedal released: open
CLUTCH PEDAL
POSITION SWITCH A
C127
10
B39
CLSW2
GRN
LT BLU
CLUTCH PEDAL
POSITION SWITCH C
G403
B13
NSW (VCC)
RED/BLK
B21
NSW (IGP)
24P
JUNCTION
CONNECTOR
In neutral position: closed
In gear: open
NEUTRAL POSITION
SWITCH
G101
*1 : M/T model
*2 : CVT model

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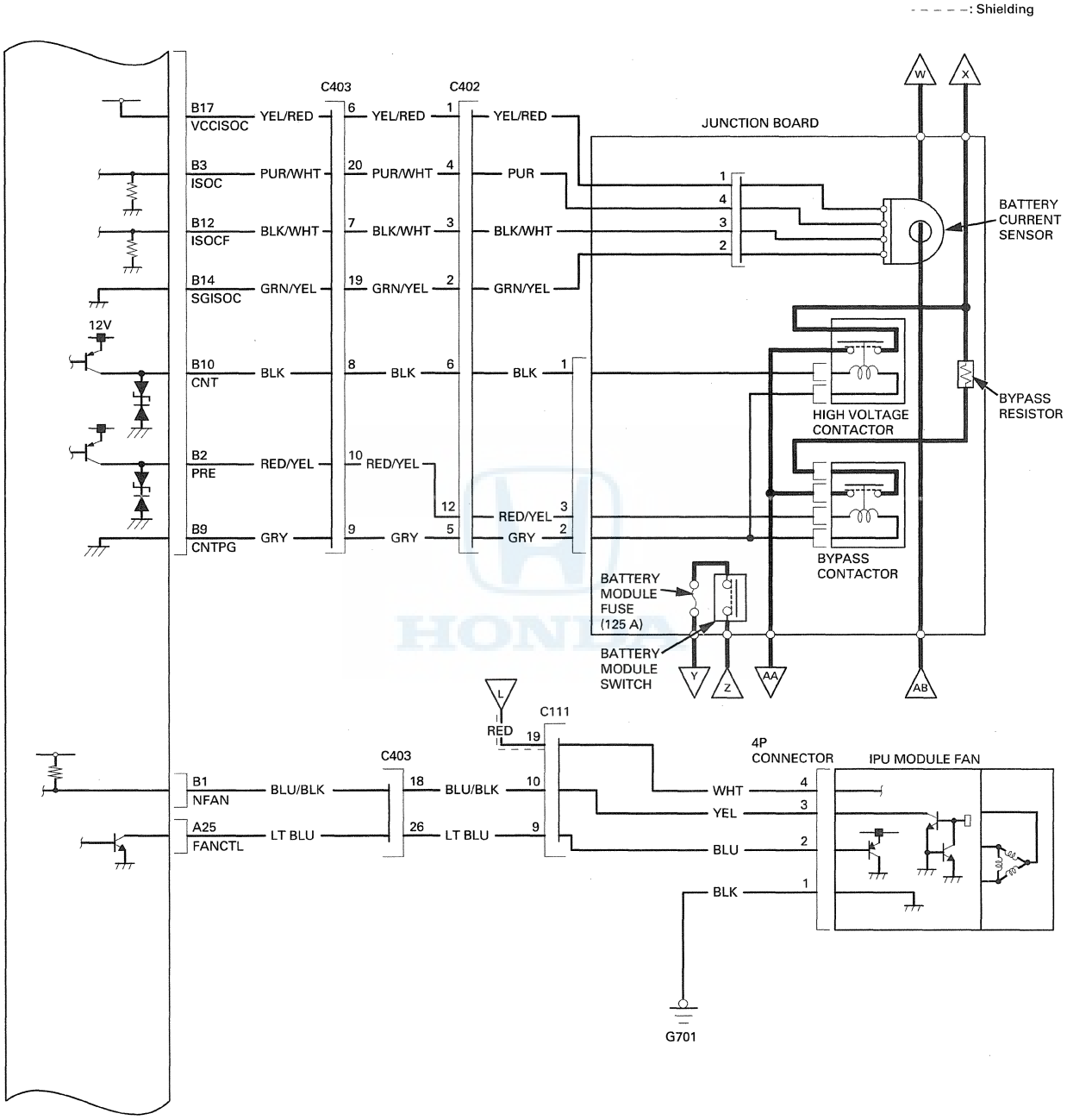
Circuit Diagram (cont'd)

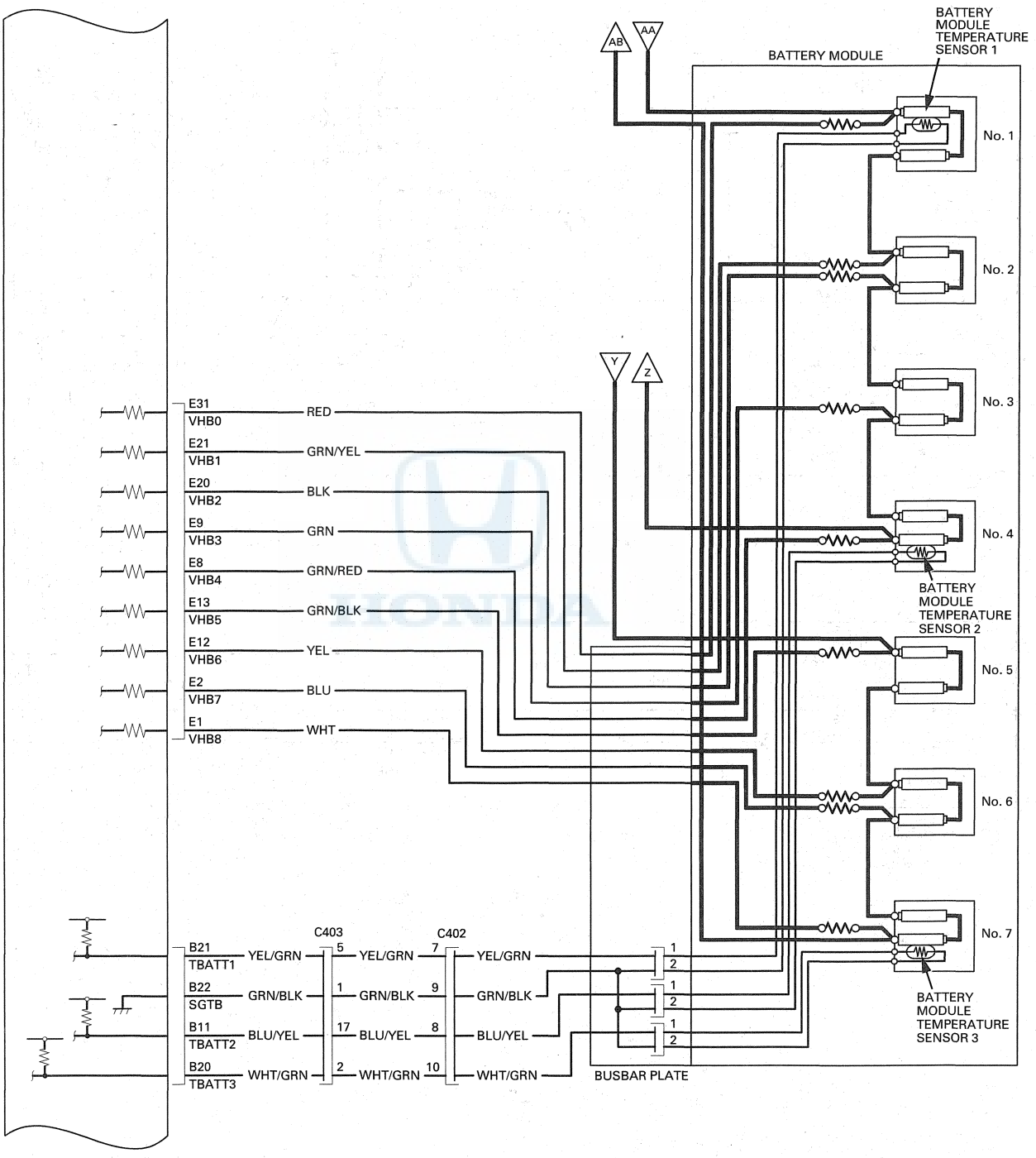



PHASE MOTOR
CURRENT SENSOR
T12
T13
T14
R
S
T
C7
VCCIU
GRN/YEL
3
C5
SGIU
BLU
7
C6
IUPH
WHT/BLK
6
C15
VCCIV
BLU/YEL
2
C12
SGIV
GRN
8
C14
IVPH
RED
5
C22
VCCIW
YEL
1
C19
SGIW
BRN
9
C21
IWPH
GRN/RED
4
U
V
MPI MODULE
M
Q
RED
3
C401
BLK
12
RED
7
C16
UH
BLU/BLK
5
C8
UL
RED/YEL
11
C1
VH
WHT
4
C17
VL
YEL/RED
10
C2
WH
YEL/BLU
3
C9
WL
RED/BLU
9
C18
IPUA
BLU/RED
2
GATE
DRIVER
BOARD
W
X

(cont'd)

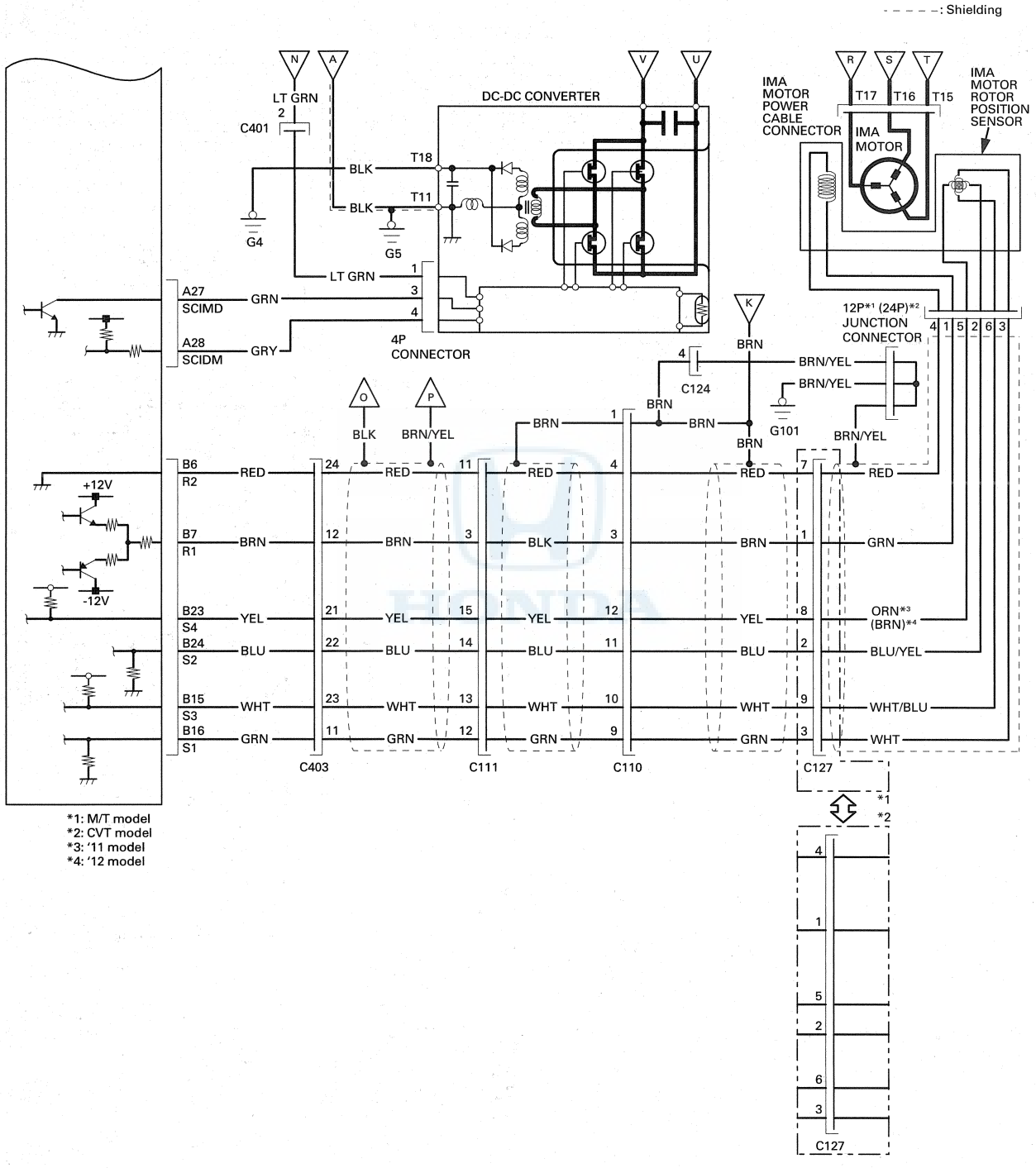
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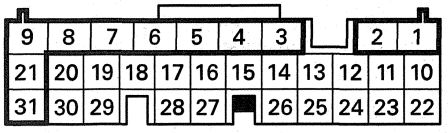

BATTERY MODULE TEMPERATURE SENSOR 1
BATTERY MODULE
AB
AA
Y
Z
No. 1
No. 2
No. 3
No. 4
No. 5
No. 6
No. 7
BATTERY MODULE TEMPERATURE SENSOR 2
BATTERY MODULE TEMPERATURE SENSOR 3
BUSBAR PLATE
E31 VHB0 RED
E21 VHB1 GRN/YEL
E20 VHB2 BLK
E9 VHB3 GRN
E8 VHB4 GRN/RED
E13 VHB5 GRN/BLK
E12 VHB6 YEL
E2 VHB7 BLU
E1 VHB8 WHT
B21 TBATT1 YEL/GRN
B22 SGTB GRN/BLK
B11 TBATT2 BLU/YEL
B20 TBATT3 WHT/GRN
C403
C402
5 YEL/GRN 7 YEL/GRN
1 GRN/BLK 9 GRN/BLK
17 BLU/YEL 8 BLU/YEL
2 WHT/GRN 10 WHT/GRN

(cont'd)

Circuit Diagram (cont'd)

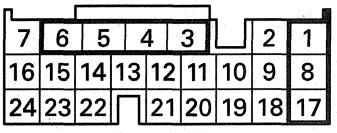


MCM A (31P)



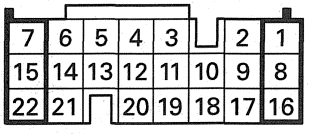
Wire side of female terminals

MCM B (24P)



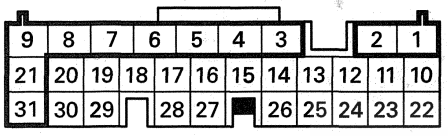
Wire side of female terminals

MCM C (22P)



Wire side of female terminals

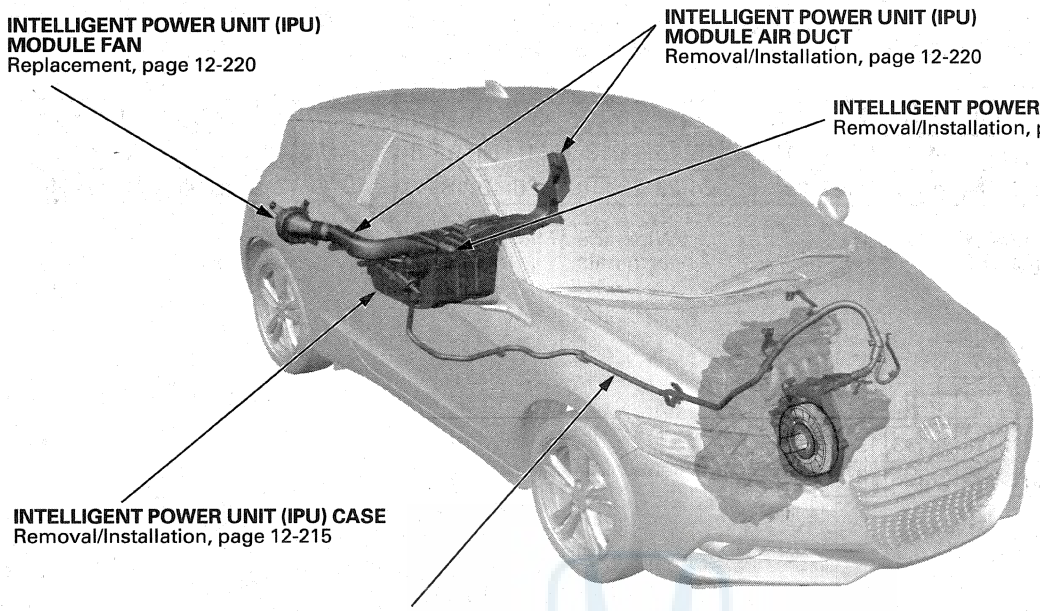
MCM E (31P)

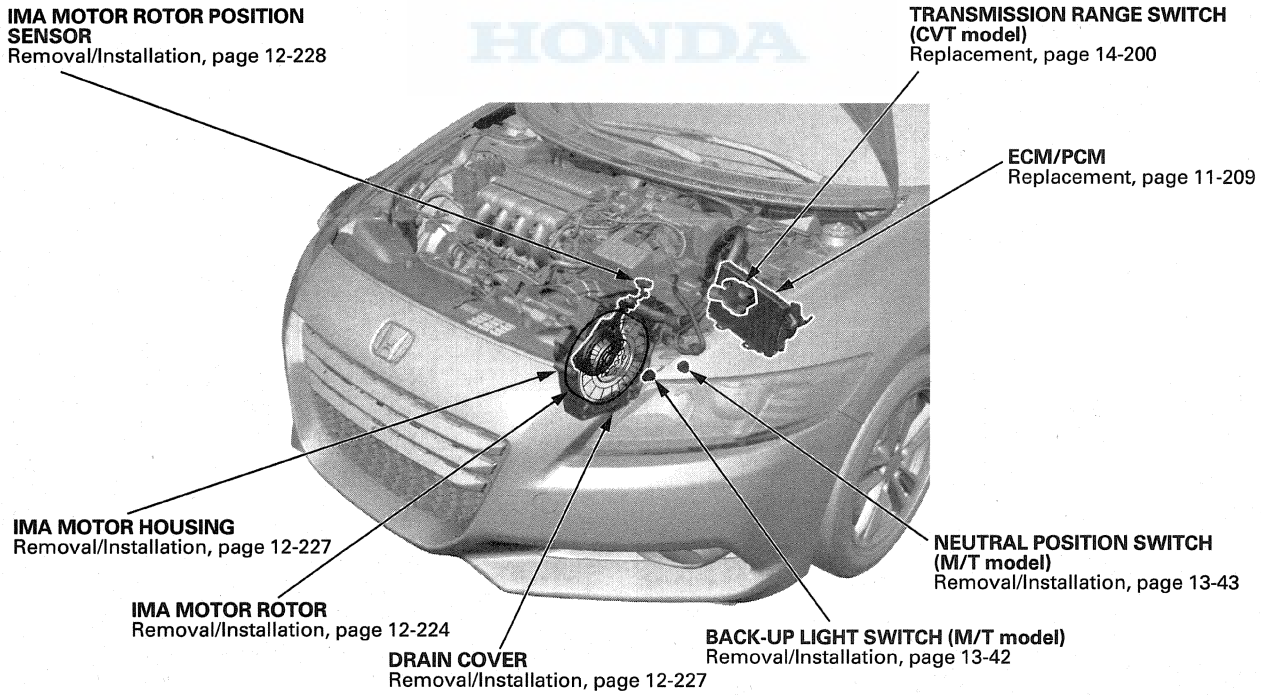


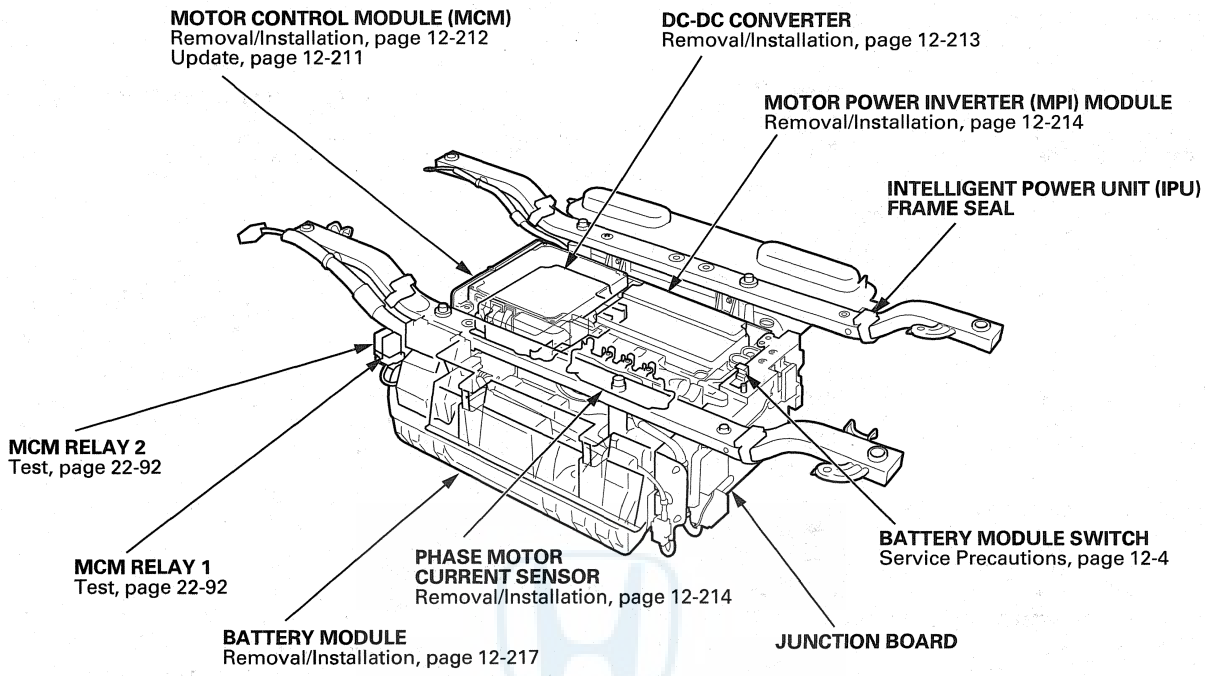
Wire side of female terminals

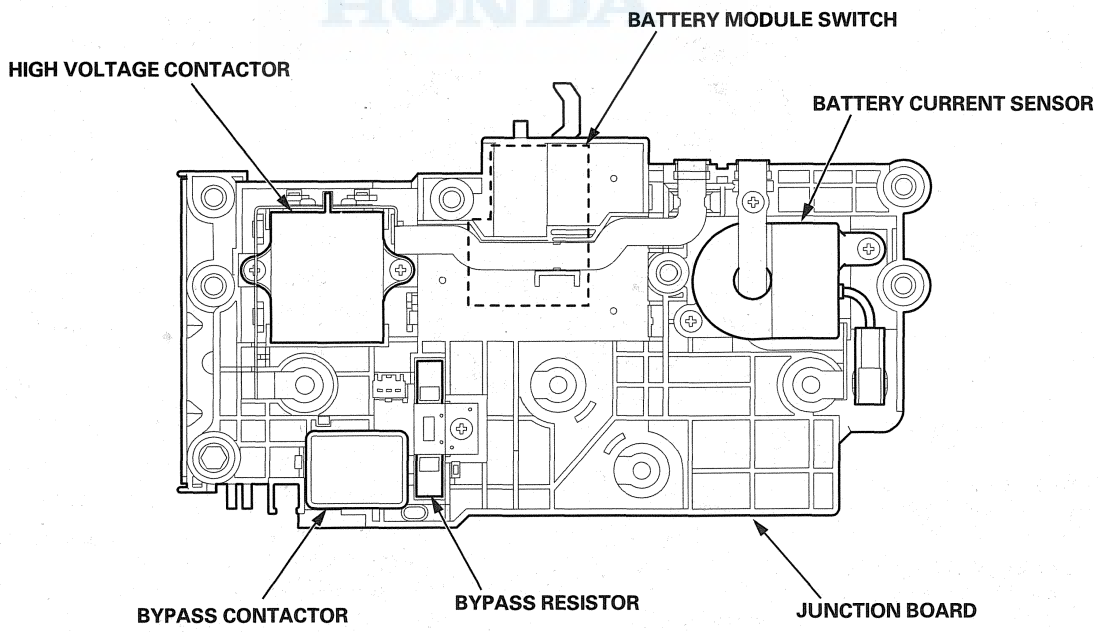
TERMINAL LOCATIONS

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BATTERY MODULE
Removal/Installation, page 12-217
JUNCTION BOARD


BATTERY MODULE SWITCH
HIGH VOLTAGE CONTACTOR
BATTERY CURRENT SENSOR
BYPASS CONTACTOR
BYPASS RESISTOR
JUNCTION BOARD

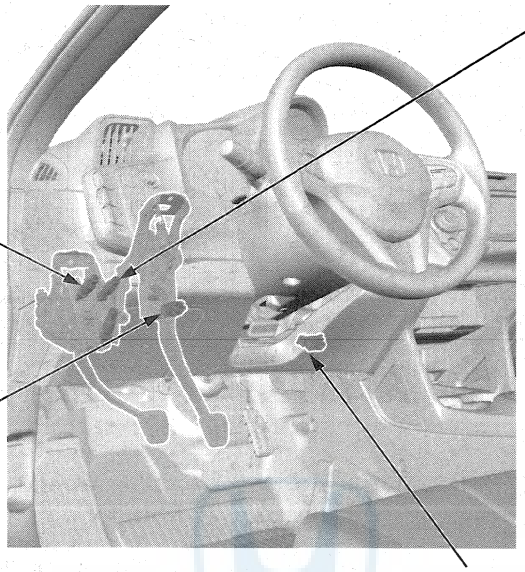
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CLUTCH PEDAL POSITION SWITCH A
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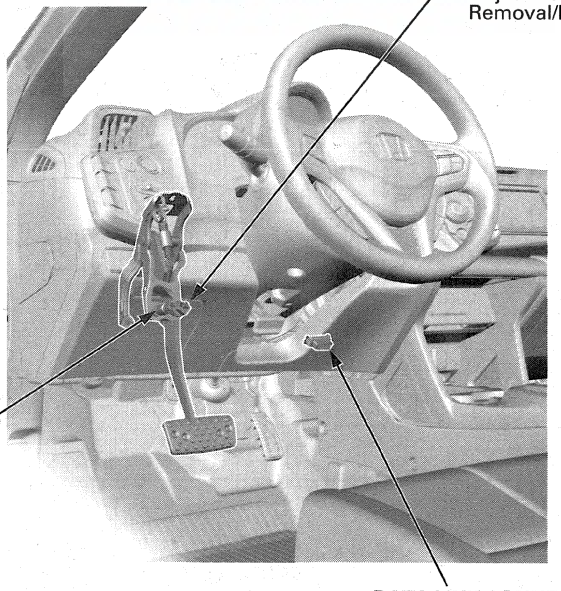


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DATA LINK CONNECTOR (DLC)
General Troubleshooting Information, page 12-5

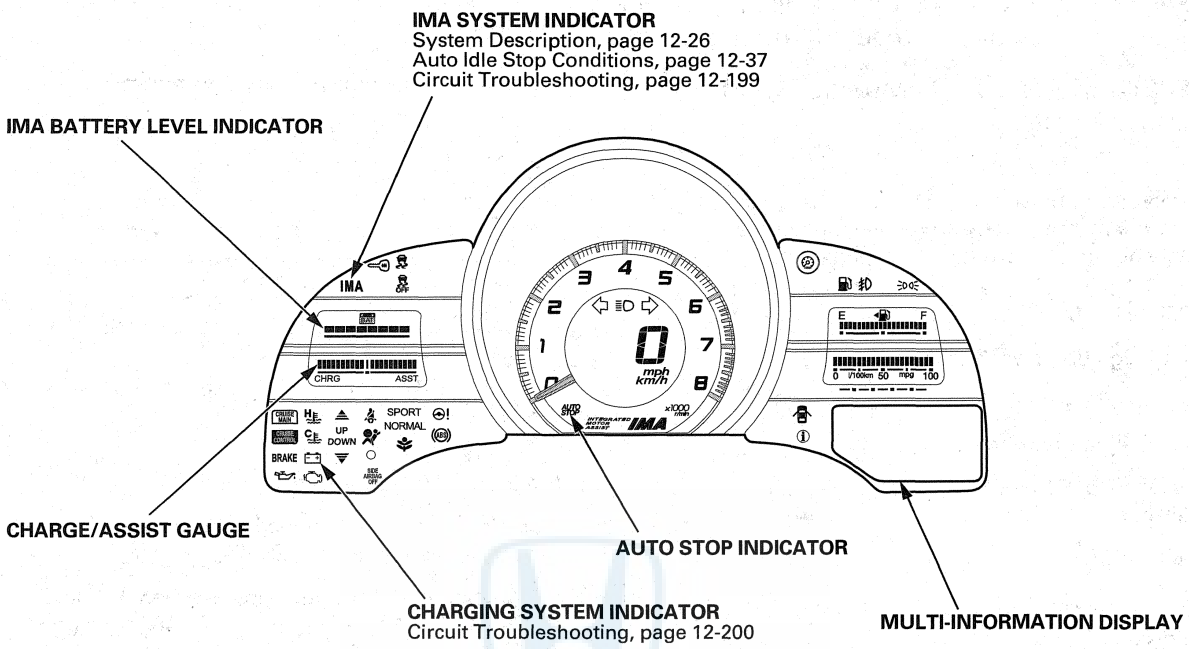
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IMA BATTERY LEVEL INDICATOR
CHARGE/ASSIST GAUGE
AUTO STOP INDICATOR
CHARGING SYSTEM INDICATOR
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MULTI-INFORMATION DISPLAY
IMA
CHRG
ASST
SPORT
NORMAL
UP
DOWN
BRAKE
mph
km/h
E
F

DTC Troubleshooting

DTC P0562: Motor Control Module (MCM) Power Source Circuit Unexpected Voltage

DTC P0562: Motor Control Module (MCM) System Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0).
4. Check the No. B1 BACK UP (15 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 5.

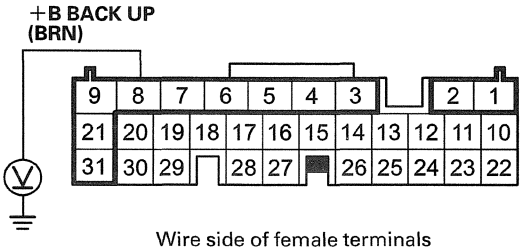
   NO–Go to step 13.
5. Turn the ignition switch to ON (II).
6. Check the MCM BACKUP SOURCE VOLTAGE in the DATA LIST with the HDS.

   Is there 12 V battery voltage?

   YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the No. B1 +B BACK UP (15 A) fuse and the MCM.■

   NO–Go to step 7.
7. Turn the ignition switch to LOCK (0).
8. Turn the battery module switch OFF (see page 12-4).
9. Remove the IPU cover (see page 12-210).
10. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
11. Disconnect MCM connector A (31P).
12. Measure the voltage between MCM connector terminal A8 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there 12 V battery voltage?

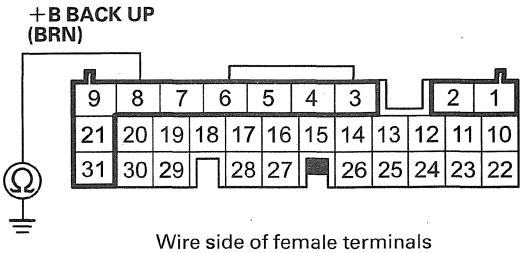
YES–Check for poor connections or loose terminals at the MCM, then go to step 25.

NO–Repair an open in the wire between the No. B1 BACK UP (15 A) fuse and the MCM (A8), then go to step 18.

13. Turn the battery module switch OFF (see page 12-4).
14. Remove the IPU cover (see page 12-210).
15. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
16. Disconnect MCM connector A (31P).

17. Check for continuity between MCM connector terminal A8 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the No. B1 BACK UP (15 A) fuse and the MCM (A8), then replace the No. B1 BACK UP (15 A) fuse, and go to step 18.

NO–Go to step 25.

18. Reconnect all connectors.
19. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
20. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
21. Turn the ignition switch to ON (II).
22. Clear the DTC with the HDS (see page 12-6).
23. Turn the ignition switch to LOCK (0), and wait 15 seconds, then turn the ignition switch to ON (II).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0562 indicated?

    YES–Check for poor connections or loose terminals at the No. B1 BACK UP (15 A) fuse and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

25. Reconnect all connectors.
26. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
27. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
28. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
29. Turn the ignition switch to LOCK (0), and wait 15 seconds, then turn the ignition switch to ON (II).
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0562 indicated?

    YES–Check for poor connections or loose terminals at the No. B1 BACK UP (15 A) fuse and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0602: Motor Control Module (MCM) Programming Error

DTC P0602: Motor Control Module (MCM) Program Not Installed (Battery Condition Monitor Program)

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- This DTC is indicated when an MCM update is not completed.
- Do not turn the ignition switch to ACCESSORY (I) or to LOCK (0) while updating the MCM. If you do, the MCM can be damaged.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Do the MCM update procedure (see page 12-211).
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0602 indicated?

   YES–Replace the original MCM (see page 12-212), then go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P062F: Motor Control Module (MCM) Internal Circuit EEPROM Error

DTC P062F: Battery Control Module (BCM) Internal Circuit EEPROM Error

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0), and wait 10 seconds, then turn the ignition switch to ON (II).
4. Monitor the OBD STATUS for DTC P062F in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, check for poor connections or loose terminals at the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
5. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
6. Turn the ignition switch to ON (II).
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P062F indicated?

   YES–Check for poor connections or loose terminals at the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

   NO–Go to step 8.

8. Monitor the OBD STATUS for P062F in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P06B1: IMA Battery Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

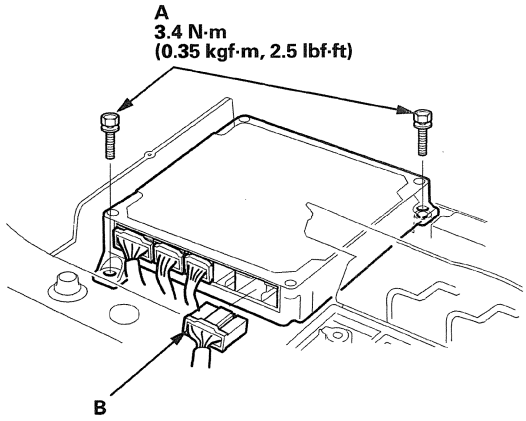
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■

4. Turn the ignition switch to LOCK (0).
5. Turn the battery module switch OFF (see page 12-4).
6. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

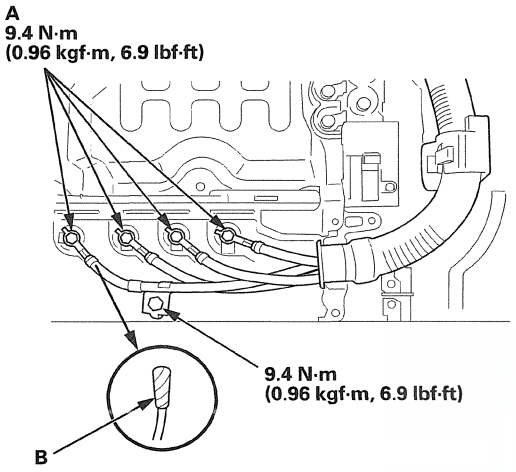


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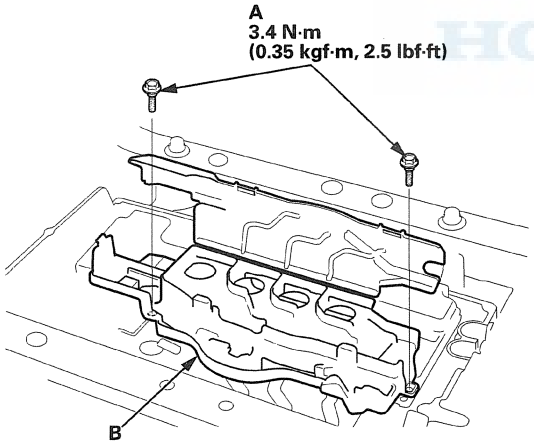
DTC Troubleshooting (cont'd)

10. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

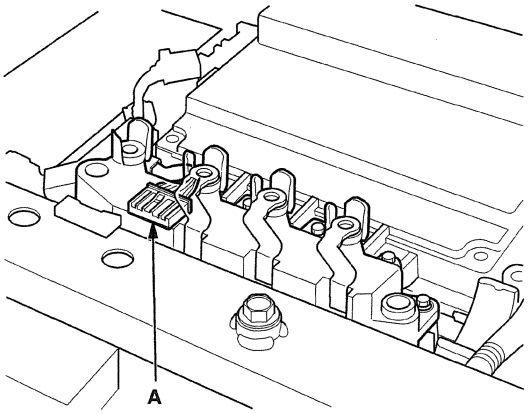
    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



11. Remove the bolts (A) and the terminal cover (B).



12. Disconnect the phase motor current sensor 9P connector (A).



13. Reconnect MCM connector E (31P).
14. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
15. Clear the DTC with the HDS (see page 12-6).
16. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P06B1 indicated?

    YES–Go to step 17.

    NO–Replace the phase motor current sensor (see page 12-214), then go to step 27.

17. Disconnect MCM connector C (22P).
18. Clear the DTC with the HDS (see page 12-6).
19. Check for Pending or Confirmed DTCs with the HDS.

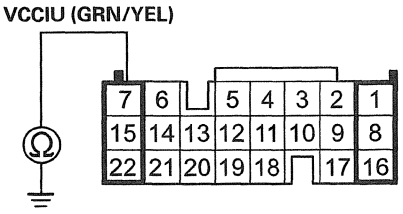
    Is DTC P06B1 indicated?

    YES–Go to step 22.

    NO–Go to step 20.

20. Check for continuity between MCM connector terminal C7 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

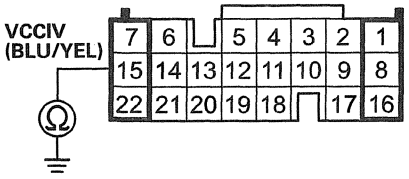
Is there continuity?

YES–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C7), then go to step 27.

NO–Go to step 21.

21. Check for continuity between MCM connector terminal C15 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C15), then go to step 27.

NO–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C22), then go to step 27.

22. Disconnect MCM connector B (24P).

23. Clear the DTC with the HDS (see page 12-6).

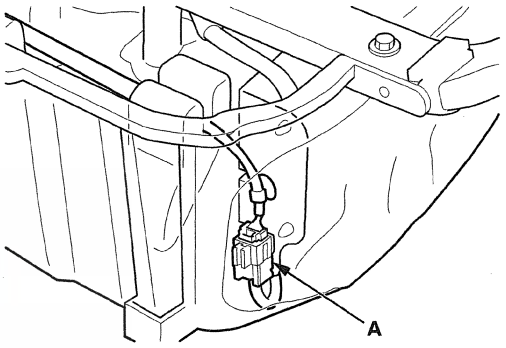
24. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P06B1 indicated?

YES–Go to step 37.

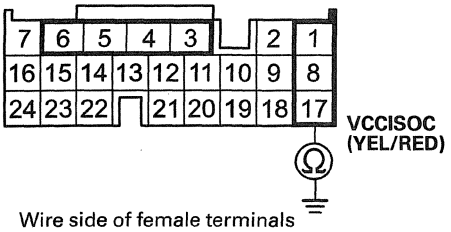
NO–Go to step 25.

25. Disconnect the junction board 12P connector (A).



26. Check for continuity between MCM connector terminal B17 and body ground.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the junction board 12P connector and the MCM (B17), then go to step 27.

NO–Replace the battery module (see page 12-217), then go to step 27.

27. Reconnect all connectors.

28. Reinstall the terminal cover.

(cont'd)

DTC Troubleshooting (cont'd)

29. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.

30. Reinstall the MCM (see page 12-212).
31. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
32. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
34. Turn the ignition switch to ON (II).
35. Clear the DTC with the HDS (see page 12-6).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P06B1 indicated?

    YES–Check for poor connections or loose terminals at the MCM, the phase motor current sensor, and the battery current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

37. Reconnect all connectors.
38. Reinstall the terminal cover.
39. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.

40. Reinstall the MCM (see page 12-212).
41. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
42. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
43. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
44. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
45. Turn the ignition switch to ON (II).
46. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P06B1 indicated?

    YES–Check for poor connections or loose terminals at the MCM, the phase motor current sensor, and the battery current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A1B: Motor Control Module (MCM) Internal Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0), and wait 1 minute.
4. Turn the ignition switch to ON (II).
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A1B indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
7. Turn the ignition switch to LOCK (0), and wait 1 minute.
8. Turn the ignition switch to ON (II).
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A1B indicated?

   YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

   NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A27: High Voltage Contactor/Bypass Contactor Stays Activated

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0), and wait 30 seconds.
4. Turn the ignition switch to ON (II).
5. Monitor the OBD STATUS for P0A27 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the junction board and the MCM. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1634 indicated?

   YES–Do the troubleshooting for DTC P1634 (see page 12-178).

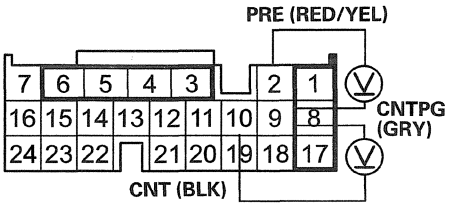
   NO–Go to step 7.
7. Turn the ignition switch to LOCK (0).
8. Turn the battery module switch OFF (see page 12-4).
9. Remove the IPU cover (see page 12-210).
10. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
11. Turn the battery module switch ON (see page 12-4).

(cont'd)

DTC Troubleshooting (cont'd)

12. Turn the ignition switch to ON (II), and then turn it to LOCK (0). Wait 1 minute, then measure the voltage between these MCM connector terminals individually:
    - B2 and B9
    - B10 and B9

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there battery voltage between either of the terminals?

YES–Go to step 23.

NO–Replace the battery module (see page 12-217), then go to step 13.

13. Turn the battery module switch OFF (see page 12-4).
14. Reconnect all connectors.
15. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
16. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
17. Turn the ignition switch to ON (II).
18. Clear the DTC with the HDS (see page 12-6).
19. Turn the ignition switch to LOCK (0), and wait 30 seconds.
20. Turn the ignition switch to ON (II).
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A27 indicated?

    YES–Check for poor connections or loose terminals at the junction board and the MCM, then go to step 1.

    NO–Go to step 22.

22. Monitor the OBD STATUS for P0A27 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the junction board and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

23. Reconnect all connectors.
24. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
25. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
26. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
27. Turn the ignition switch to LOCK (0), and wait 30 seconds.
28. Turn the ignition switch to ON (II).
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A27 indicated?

    YES–Check for poor connections or loose terminals at the high voltage contactor, the bypass contactor, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–Go to step 30.

30. Monitor the OBD STATUS for P0A27 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 29, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the high voltage contactor, the bypass contactor, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0A3C: Motor Power Inverter (MPI) Module Overheating

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the IPU module fan duct is blocked, DTC P0A3C may be detected.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1448 or P1634 indicated?

   YES–Do the troubleshooting for DTC P1448 (see page 12-154) or P1634 (see page 12-178).

   NO–Go to step 4.

4. Check the MPI TEMPERATURE in the DATA LIST with the HDS.

   Is it higher than 237 °F (114 °C)?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for a blocked at the IPU module fan inlet duct.■

5. Check the IPU module air duct and the IPU module fan for disconnections, damage, or obstructions. Also check the IPU cover installation.

   Are the IPU module air duct, the IPU module fan, and the IPU cover OK?

   YES–Replace the MPI module (see page 12-214), then go to step 6.

   NO–Repair or replace the IPU module air duct, the IPU module fan, or the IPU cover as needed, then go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS (see page 12-6).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A3C indicated?

   YES–Check for poor connections or loose terminals at the MCM, the MPI module, and the IPU module fan, then go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0A3F: Motor Rotor Position Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Monitor the OBD STATUS for P0A3F in the DTCs MENU with the HDS.

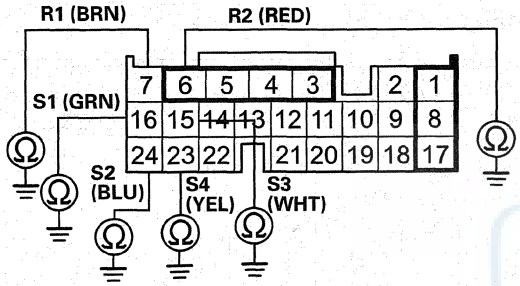
   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the IMA motor rotor position sensor and the MCM. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Disconnect MCM connector B (24P).

10. Check for continuity between these MCM connector B (24P) terminals individually:
    - B6 and body ground
    - B7 and body ground
    - B15 and body ground
    - B16 and body ground
    - B23 and body ground
    - B24 and body ground

MCM CONNECTOR B (24P)



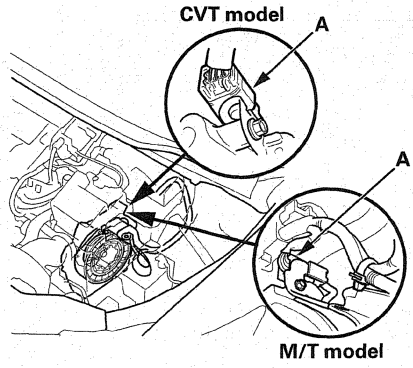
Wire side of female terminals

Is there continuity between all the connectors and body ground?

YES–Go to step 11.

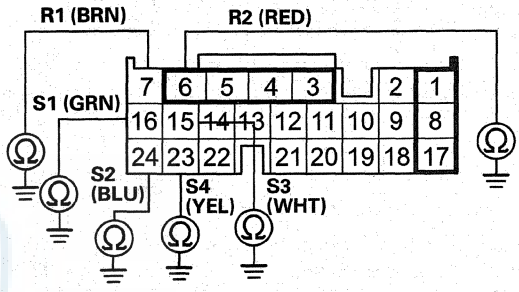
NO–Go to step 13.

11. Disconnect the IMA motor rotor position sensor 6P connector (A).



12. Check for continuity between these MCM connector B (24P) terminals individually:
    - B6 and body ground
    - B7 and body ground
    - B15 and body ground
    - B16 and body ground
    - B23 and body ground
    - B24 and body ground

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there continuity between all the connectors and body ground?

YES–Repair a short to ground in the wire between the IMA motor rotor position sensor and the MCM (B6, B7, B15, B16, B23, B24), then go to step 16.

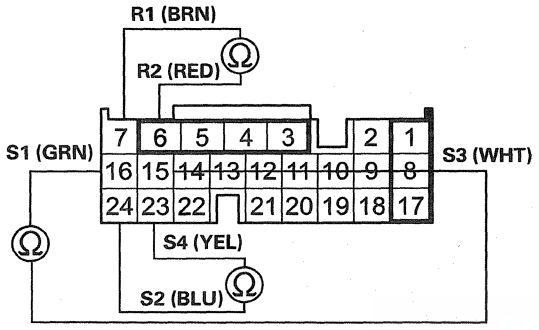
NO–Replace the IMA motor rotor position sensor (see page 12-228), then go to step 16.

(cont'd)

DTC Troubleshooting (cont'd)

13. Measure the resistance between these MCM connector B (24P) terminals individually:
    - B6 and B7
    - B15 and B16
    - B23 and B24

MCM CONNECTOR B (24P)



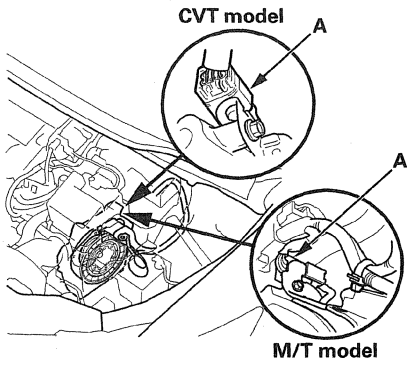
Wire side of female terminals

Is there 11.0—17.4 Ω between B6 and B7, 21.6— 34.4 Ω between B15 and B16, and 19.9—31.7 Ω between B23 and B24?

YES–Check for poor connections or loose terminals at the MCM, then go to step 23.

NO–Go to step 14.

14. Disconnect the IMA motor rotor position sensor 6P connector (A).

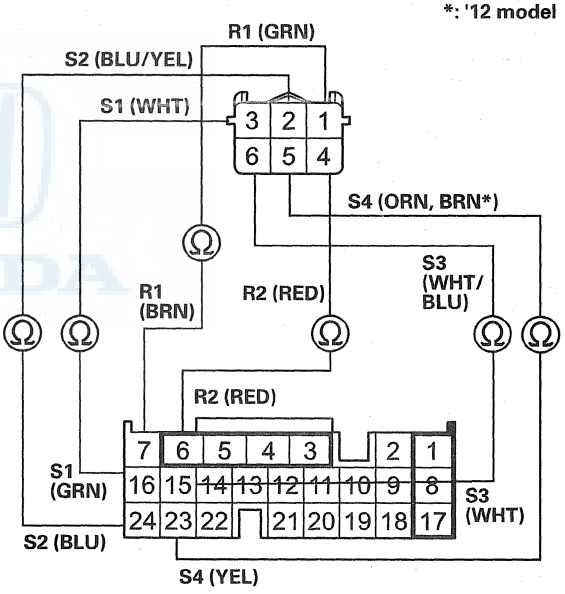


15. Check for continuity between these terminals:
    - MCM connector terminal B6 and IMA motor rotor position sensor 6P terminal No. 4
    - MCM connector terminal B7 and IMA motor rotor position sensor 6P terminal No. 1
    - MCM connector terminal B15 and IMA motor rotor position sensor 6P terminal No. 6
    - MCM connector terminal B16 and IMA motor rotor position sensor 6P terminal No. 3
    - MCM connector terminal B23 and IMA motor rotor position sensor 6P terminal No. 5
    - MCM connector terminal B24 and IMA motor rotor position sensor 6P terminal No. 2

IMA MOTOR ROTOR POSITION SENSOR 6P CONNECTOR

Wire side of female terminals

*: '12 model



MCM CONNECTOR B (24P)

Wire side of female terminals

Is there continuity between all of the terminals?

YES–Replace the IMA motor rotor position sensor (see page 12-228), then go to step 16.

NO–Repair an open in the wire between the IMA motor rotor position sensor and the MCM (B6, B7, B15, B16, B23, B24), then go to step 16.

16. Reconnect all connectors.
17. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
18. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
19. Turn the ignition switch to ON (II).
20. Clear the DTC with the HDS (see page 12-6).
21. Start the engine.
22. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A3F indicated?

    YES–Check for poor connections or loose terminals at the IMA motor rotor position sensor and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
23. Reconnect all connectors.
24. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
25. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
26. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
27. Start the engine.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A3F indicated?

    YES–Check for poor connections or loose terminals at the IMA motor rotor position sensor and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A5E: U Phase Motor Current Sensor Circuit Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A5E indicated?

    YES–Go to step 4.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
4. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P06B1 indicated?

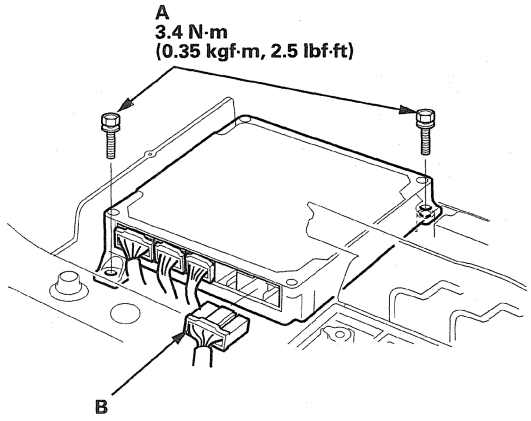
    YES–Do the troubleshooting for DTC P06B1 (see page 12-75).

    NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

(cont'd)

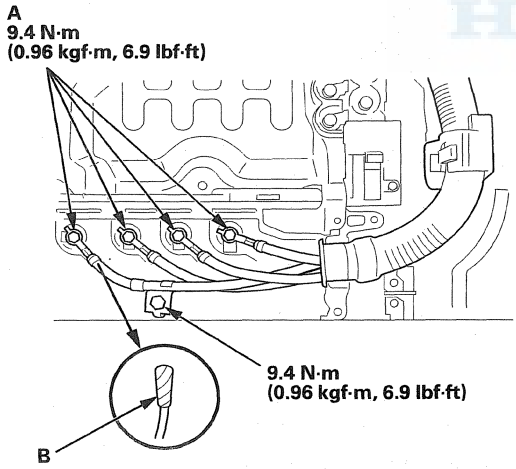
DTC Troubleshooting (cont'd)

10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

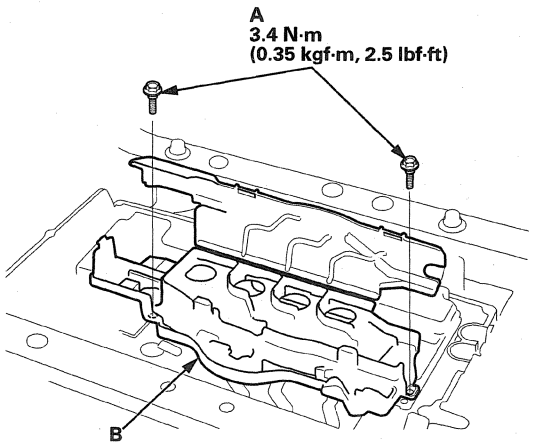


11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

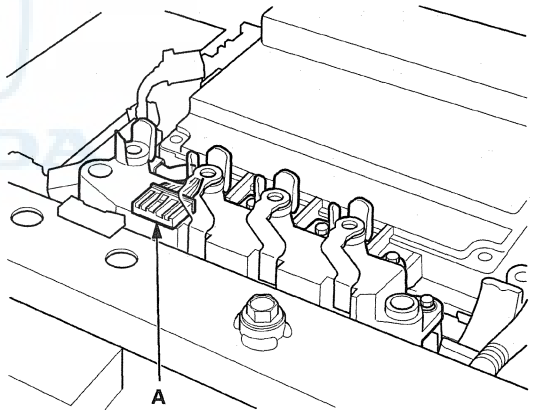
NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



12. Remove the bolts (A) and the terminal cover (B).

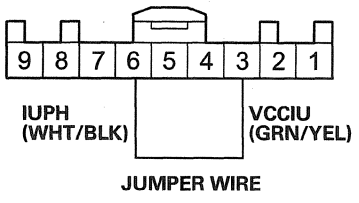


13. Disconnect the phase motor current sensor 9P connector (A).



14. Connect phase motor current sensor 9P connector terminals No. 3 and No. 6 with a jumper wire.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



JUMPER WIRE

Wire side of female terminals

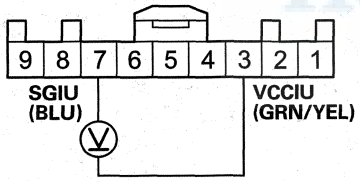
15. Reconnect MCM connector E (31P).
16. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
17. Turn the ignition switch to ON (II).
18. Check the U PHASE MOTOR CURRENT SENSOR and the U PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is there 4.5 V and 370 A or more indicated?

    YES–Replace the phase motor current sensor (see page 12-214), then go to step 30.

    NO–Go to step 19.
19. Turn the ignition switch to LOCK (0).
20. Disconnect the jumper wire from the phase motor current sensor 9P connector.
21. Turn the ignition switch to ON (II).
22. Measure the voltage between phase motor current sensor 9P connector terminals No. 3 and No. 7.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

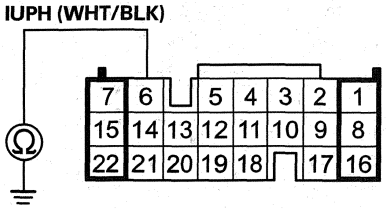
Is there about 5 V?

YES–Go to step 23.

NO–Go to step 27.

23. Turn the ignition switch to LOCK (0).
24. Disconnect MCM connector C (22P).
25. Check for continuity between MCM connector terminal C6 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

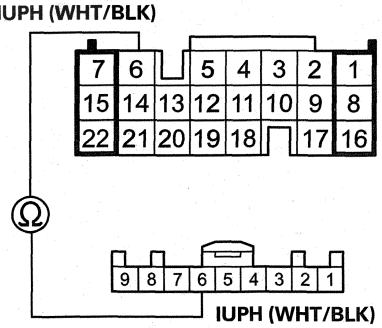
Is there continuity?

YES–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C6), then go to step 30.

NO–Go to step 26.

26. Check for continuity between phase motor current sensor 9P connector terminal No. 6 and MCM connector terminal C6.

MCM CONNECTOR C (22P)
Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 41.

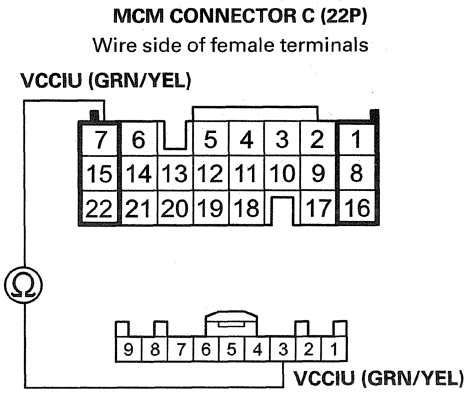
NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C6), then go to step 30.

27. Turn the ignition switch to LOCK (0).
28. Disconnect MCM connector C (22P).

(cont'd)

DTC Troubleshooting (cont'd)

29. Check for continuity between phase motor current sensor 9P connector terminal No. 3 and MCM connector terminal C7.



Is there continuity?

YES–Go to step 41.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C7), then go to step 30.

30. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
31. Reconnect all connectors.
32. Reinstall the terminal cover.
33. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
34. Reinstall the MCM (see page 12-212).
35. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
36. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
37. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
38. Turn the ignition switch to ON (II).
39. Clear the DTC with the HDS (see page 12-6).
40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A5E indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

41. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
42. Reconnect all connectors.
43. Reinstall the terminal cover.
44. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
45. Reinstall the MCM (see page 12-212).
46. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
47. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
48. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
49. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
50. Turn the ignition switch to ON (II).
51. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A5E indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A5F: U Phase Motor Current Sensor Circuit High Voltage

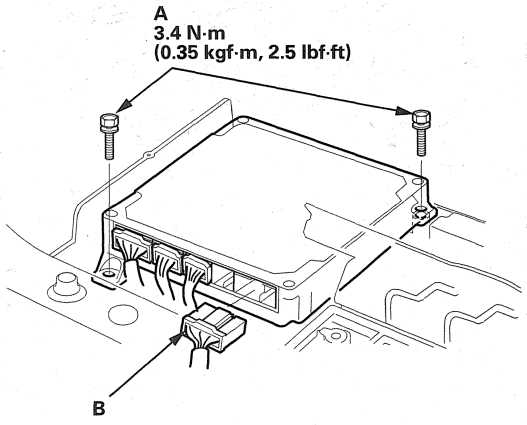
NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A5F indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

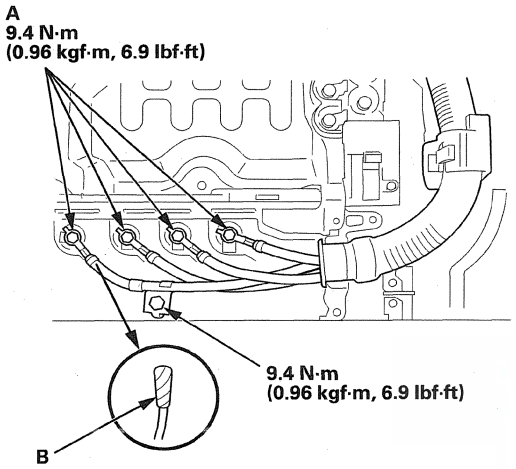


(cont'd)

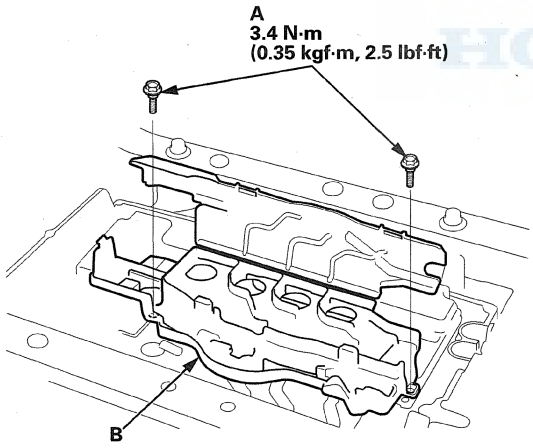
DTC Troubleshooting (cont'd)

11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

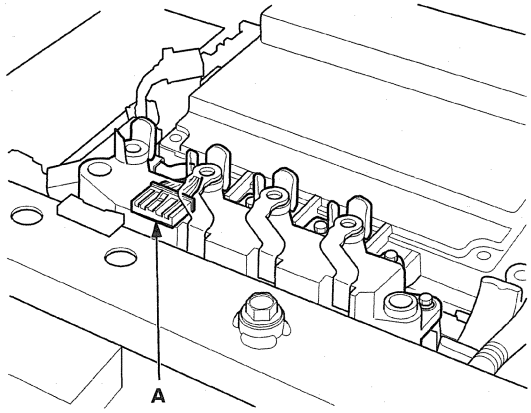
    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



12. Remove the bolts (A) and the terminal cover (B).



13. Disconnect the phase motor current sensor 9P connector (A).



14. Reconnect MCM connector E (31P).
15. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
16. Turn the ignition switch to ON (II).
17. Check the U PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is 4.75 V or more indicated?

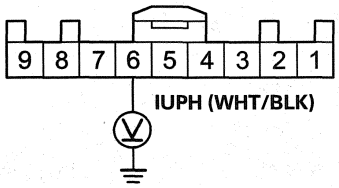
    YES–Go to step 18.

    NO–Go to step 22.

18. Turn the ignition switch to LOCK (0).
19. Disconnect MCM connector C (22P).
20. Turn the ignition switch to ON (II).

21. Measure the voltage between phase motor current sensor 9P connector terminal No. 6 and body ground.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there 4.75 V or more?

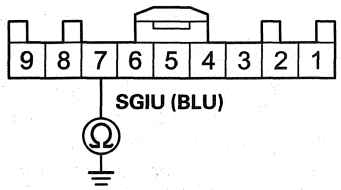
YES–Repair a short to power in the wire between the phase motor current sensor 9P connector and the MCM (C6), then go to step 26.

NO–Go to step 37.

22. Turn the ignition switch to LOCK (0).

23. Check for continuity between phase motor current sensor 9P connector terminal No. 7 and body ground.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there continuity?

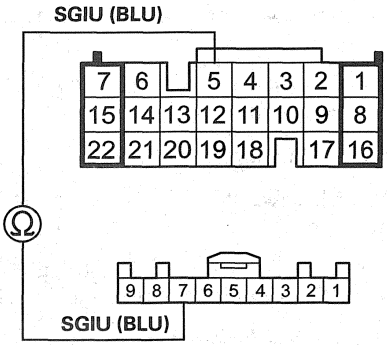
YES–Replace the phase motor current sensor (see page 12-214), then go to step 26.

NO–Go to step 24.

24. Disconnect MCM connector C (22P).

25. Check for continuity between phase motor current sensor 9P connector terminal No. 7 and MCM connector terminal C5.

MCM CONNECTOR C (22P)
Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 37.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C5), then go to step 26.

(cont'd)

DTC Troubleshooting (cont'd)

26. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
27. Reconnect all connectors.
28. Reinstall the terminal cover.
29. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
30. Reinstall the MCM (see page 12-212).
31. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
32. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
34. Turn the ignition switch to ON (II).
35. Clear the DTC with the HDS (see page 12-6).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A5F indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

37. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
38. Reconnect all connectors.
39. Reinstall the terminal cover.
40. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
41. Reinstall the MCM (see page 12-212).
42. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
43. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
44. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
45. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
46. Turn the ignition switch to ON (II).
47. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A5F indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A61: V Phase Motor Current Sensor Circuit Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A61 indicated?

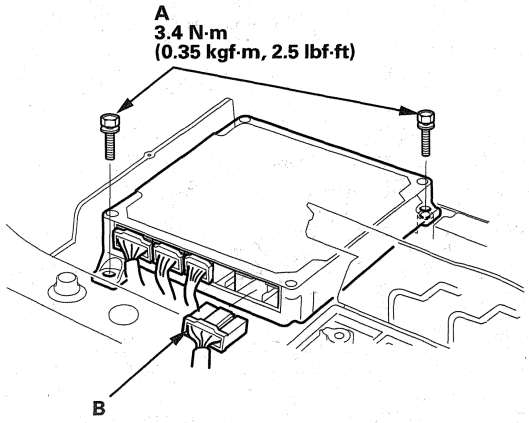
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1 indicated?

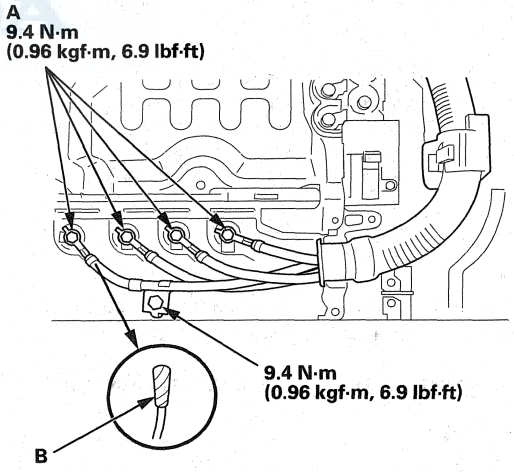
   YES–Do the troubleshooting for DTC P06B1 (see page 12-75).

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.



11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

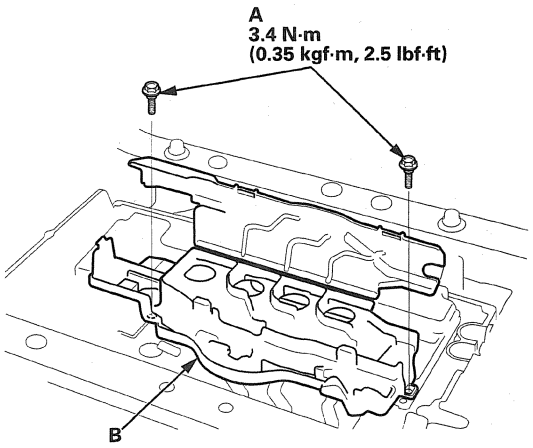
    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



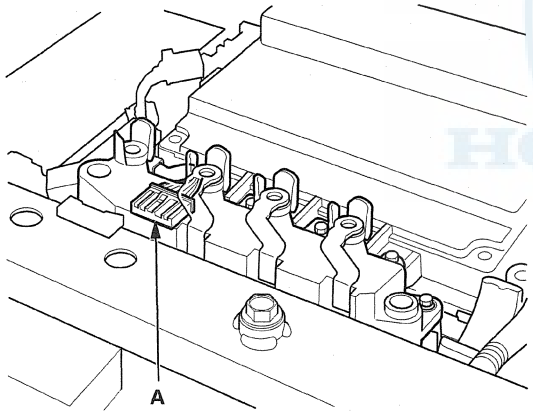
(cont'd)

DTC Troubleshooting (cont'd)

12. Remove the bolts (A) and the terminal cover (B).

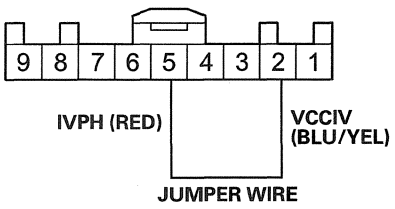


13. Disconnect the phase motor current sensor 9P connector (A).



14. Connect phase motor current sensor 9P connector terminals No. 2 and No. 5 with a jumper wire.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

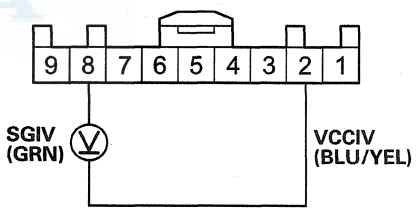
15. Reconnect MCM connector E (31P).
16. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
17. Turn the ignition switch to ON (II).
18. Check the V PHASE MOTOR CURRENT SENSOR and the V PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is there 4.5 V and 370 A or more indicated?

    YES–Replace the phase motor current sensor (see page 12-214), then go to step 30.

    NO–Go to step 19.
19. Turn the ignition switch to LOCK (0).
20. Disconnect the jumper wire from the phase motor current sensor 9P connector.
21. Turn the ignition switch to ON (II).
22. Measure the voltage between phase motor current sensor 9P connector terminals No. 2 and No. 8.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there about 5 V?

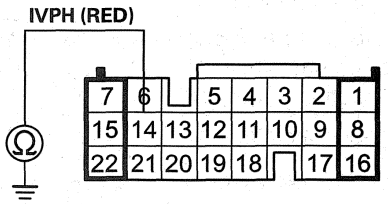
YES–Go to step 23.

NO–Go to step 27.

23. Turn the ignition switch to LOCK (0).
24. Disconnect MCM connector C (22P).

25. Check for continuity between MCM connector terminal C14 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

Is there continuity?

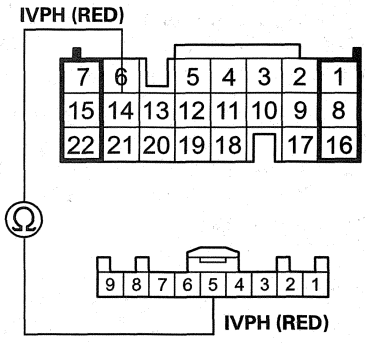
YES–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C14), then go to step 30.

NO–Go to step 26.

26. Check for continuity between phase motor current sensor 9P connector terminal No. 5 and MCM connector terminal C14.

MCM CONNECTOR C (22P)

Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 41.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C14), then go to step 30.

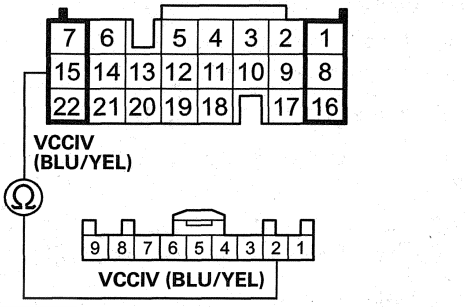
27. Turn the ignition switch to LOCK (0).

28. Disconnect MCM connector C (22P).

29. Check for continuity between phase motor current sensor 9P connector terminal No. 2 and MCM connector terminal C15.

MCM CONNECTOR C (22P)

Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 41.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C15), then go to step 30.

(cont'd)

DTC Troubleshooting (cont'd)

30. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
31. Reconnect all connectors.
32. Reinstall the terminal cover.
33. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
34. Reinstall the MCM (see page 12-212).
35. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
36. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
37. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
38. Turn the ignition switch to ON (II).
39. Clear the DTC with the HDS (see page 12-6).
40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A61 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
41. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
42. Reconnect all connectors.
43. Reinstall the terminal cover.
44. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
45. Reinstall the MCM (see page 12-212).
46. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
47. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
48. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
49. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
50. Turn the ignition switch to ON (II).
51. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A61 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A62: V Phase Motor Current Sensor Circuit High Voltage

NOTE:

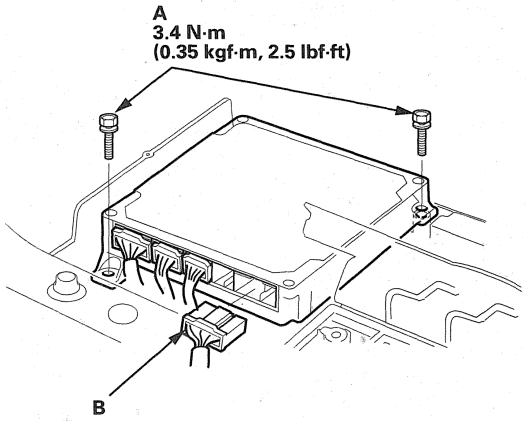
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A62 indicated?

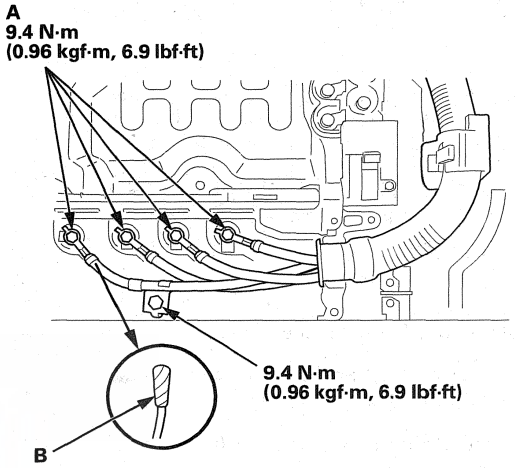
   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

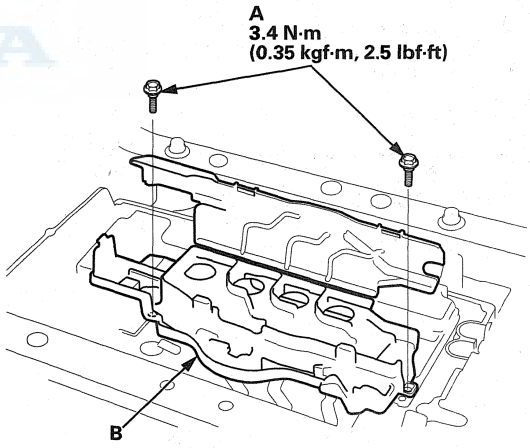


11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



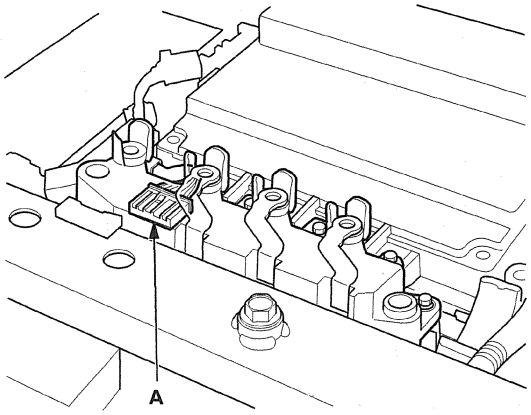
12. Remove the bolts (A) and the terminal cover (B).



(cont'd)

DTC Troubleshooting (cont'd)

13. Disconnect the phase motor current sensor 9P connector (A).



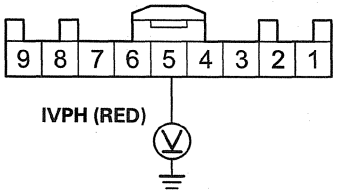
14. Reconnect MCM connector E (31P).
15. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
16. Turn the ignition switch to ON (II).
17. Check the V PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is 4.75 V or more indicated?

    YES–Go to step 18.

    NO–Go to step 22.
18. Turn the ignition switch to LOCK (0).
19. Disconnect MCM connector C (22P).
20. Turn the ignition switch to ON (II).
21. Measure the voltage between phase motor current sensor 9P connector terminal No. 5 and body ground.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

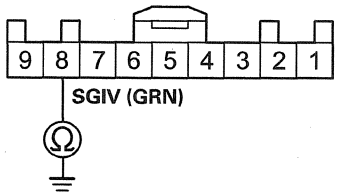
Is there 4.75 V or more?

YES–Repair a short to power in the wire between the phase motor current sensor 9P connector and the MCM (C14), then go to step 26.

NO–Go to step 37.

22. Turn the ignition switch to LOCK (0).
23. Check for continuity between phase motor current sensor 9P connector terminal No. 8 and body ground.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there continuity?

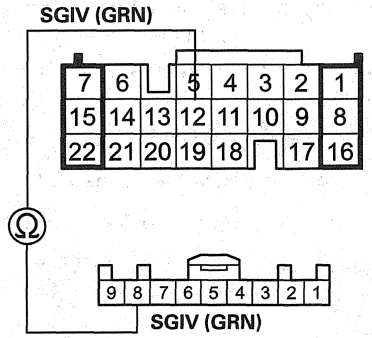
YES–Replace the phase motor current sensor (see page 12-214), then go to step 26.

NO–Go to step 24.

24. Disconnect MCM connector C (22P).

25. Check for continuity between phase motor current sensor 9P connector terminal No. 8 and MCM connector terminal C12.

MCM CONNECTOR C (22P)
Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 37.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C12), then go to step 26.

26. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
27. Reconnect all connectors.
28. Reinstall the terminal cover.
29. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
30. Reinstall the MCM (see page 12-212).
31. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
32. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
34. Turn the ignition switch to ON (II).
35. Clear the DTC with the HDS (see page 12-6).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A62 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

37. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
38. Reconnect all connectors.
39. Reinstall the terminal cover.
40. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
41. Reinstall the MCM (see page 12-212).
42. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
43. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
44. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
45. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
46. Turn the ignition switch to ON (II).
47. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A62 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A64: W Phase Motor Current Sensor Circuit Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A64 indicated?

   YES–Go to step 4.

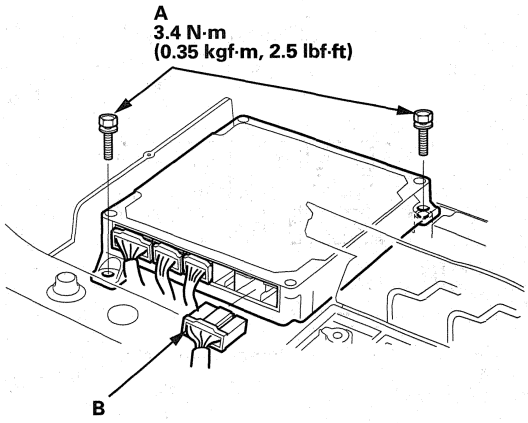
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1 indicated?

   YES–Do the troubleshooting for DTC P06B1 (see page 12-75).

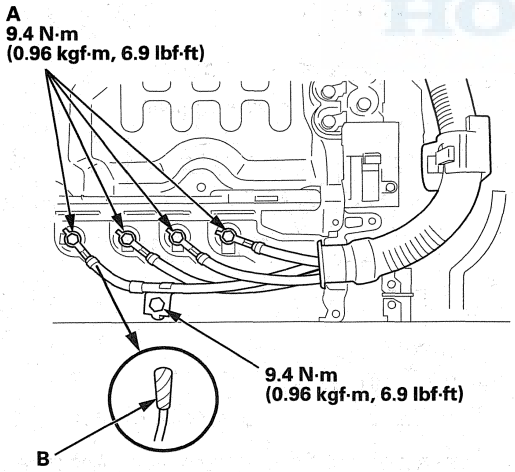
   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

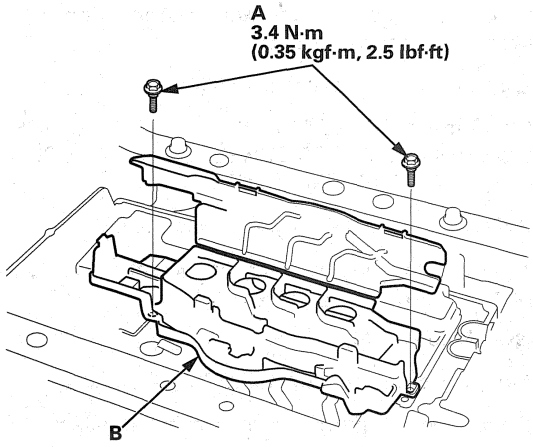


11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

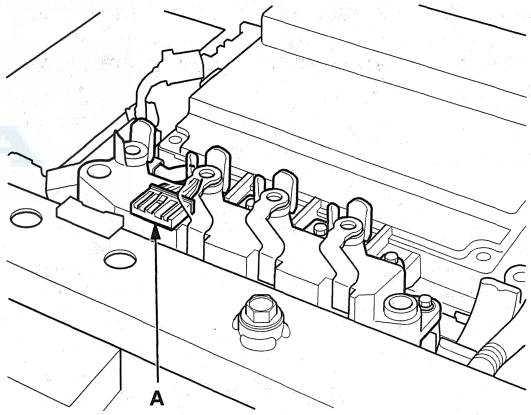
NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



12. Remove the bolts (A) and the terminal cover (B).

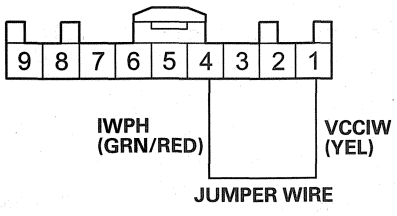


13. Disconnect the phase motor current sensor 9P connector (A).



14. Connect phase motor current sensor 9 P connector terminals No. 1 and No. 4 with a jumper wire.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

(cont'd)

DTC Troubleshooting (cont'd)

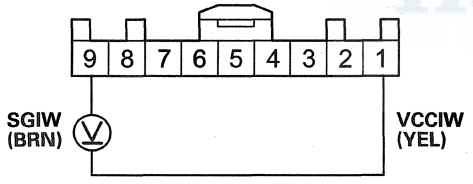
15. Reconnect MCM connector E (31P).
16. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
17. Turn the ignition switch to ON (II).
18. Check the W PHASE MOTOR CURRENT SENSOR and the W PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is there 4.5 V and 370 A or more indicated?

    YES–Replace the phase motor current sensor (see page 12-214), then go to step 30.

    NO–Go to step 19.
19. Turn the ignition switch to LOCK (0).
20. Disconnect the jumper wire from the phase motor current sensor 9P connector.
21. Turn the ignition switch to ON (II).
22. Measure the voltage between phase motor current sensor 9P connector terminals No. 1 and No. 9.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

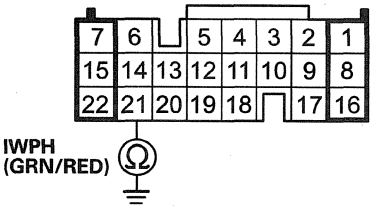
Is there about 5 V?

YES–Go to step 23.

NO–Go to step 27.

23. Turn the ignition switch to LOCK (0).
24. Disconnect MCM connector C (22P).
25. Check for continuity between MCM connector terminal C21 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

Is there continuity?

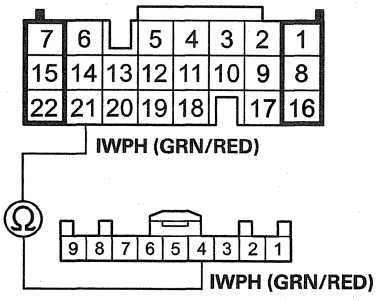
YES–Repair a short in the wire between the phase motor current sensor 9P connector and the MCM (C21), then go to step 30.

NO–Go to step 26.

26. Check for continuity between phase motor current sensor 9P connector terminal No. 4 and MCM connector terminal C21.

MCM CONNECTOR C (22P)

Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 41.

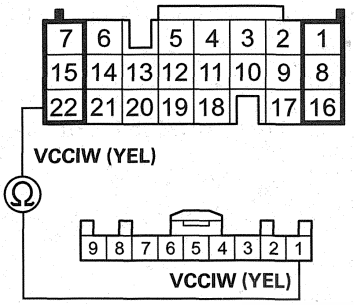
NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C21), then go to step 30.

27. Turn the ignition switch to LOCK (0).
28. Disconnect MCM connector C (22P).

29. Check for continuity between phase motor current sensor 9P connector terminal No. 1 and MCM connector terminal C22.

MCM CONNECTOR C (22P)

Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 41.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C22), then go to step 30.

30. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
31. Reconnect all connectors.
32. Reinstall the terminal cover.
33. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
34. Reinstall the MCM (see page 12-212).
35. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
36. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
37. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
38. Turn the ignition switch to ON (II).
39. Clear the DTC with the HDS (see page 12-6).
40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A64 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

41. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
42. Reconnect all connectors.
43. Reinstall the terminal cover.
44. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
45. Reinstall the MCM (see page 12-212).
46. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
47. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
48. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
49. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
50. Turn the ignition switch to ON (II).
51. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A64 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A65: W Phase Motor Current Sensor Circuit High Voltage

NOTE:

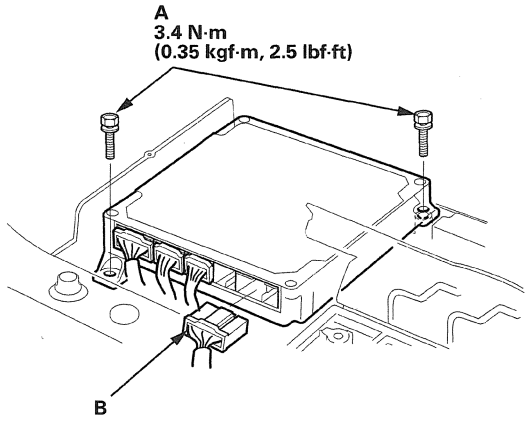
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A65 indicated?

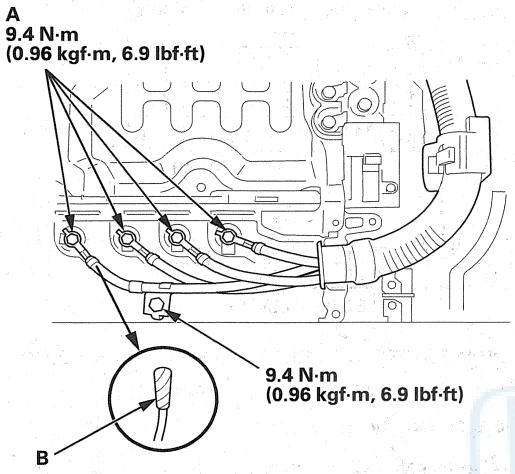
   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the phase motor current sensor.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
10. Remove the bolts (A), and disconnect the MCM connector E (B), then move the MCM aside.

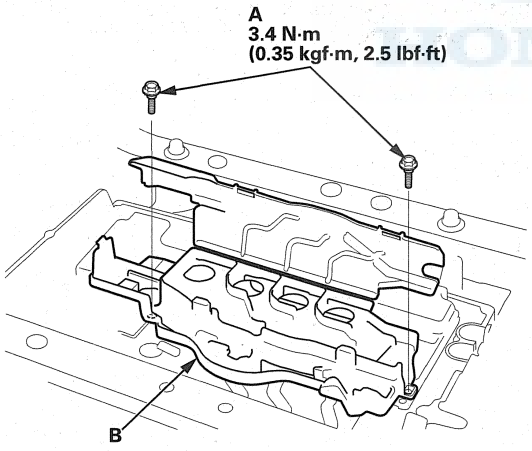


11. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

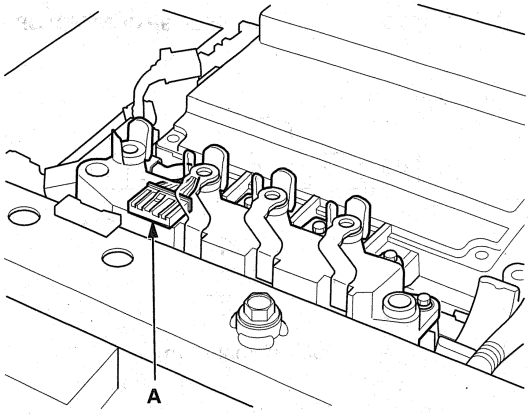
    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



12. Remove the bolts (A) and the terminal cover (B).



13. Disconnect the phase motor current sensor 9P connector (A).



14. Reconnect MCM connector E (31P).
15. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
16. Turn the ignition switch to ON (II).
17. Check the W PHASE MOTOR CURRENT SENSOR VOLTAGE in the DATA LIST with the HDS.

    Is 4.75 V or more indicated?

    YES–Go to step 18.

    NO–Go to step 22.

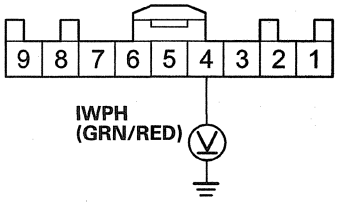
18. Turn the ignition switch to LOCK (0).
19. Disconnect MCM connector C (22P).
20. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

21. Measure the voltage between body ground and phase motor current sensor 9P connector terminal No. 4.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there 4.75 V or more?

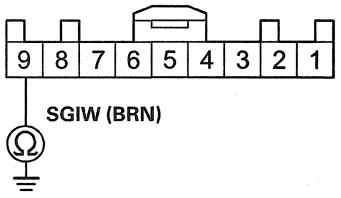
YES–Repair a short to power in the wire between the phase motor current sensor 9P connector and the MCM (C21), then go to step 26.

NO–Go to step 37.

22. Turn the ignition switch to LOCK (0).

23. Check for continuity between body ground and phase motor current sensor 9P connector terminal No. 9.

PHASE MOTOR CURRENT SENSOR 9P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the phase motor current sensor (see page 12-214), then go to step 26.

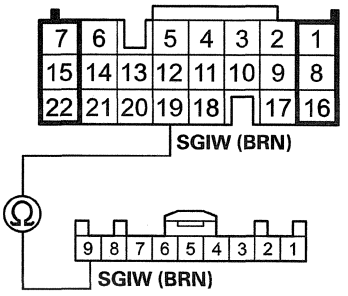
NO–Go to step 24.

24. Disconnect MCM connector C (22P).

25. Check for continuity between phase motor current sensor 9P connector terminal No. 9 and MCM connector terminal C19.

MCM CONNECTOR C (22P)

Wire side of female terminals



PHASE MOTOR CURRENT SENSOR 9P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 37.

NO–Repair an open in the wire between the phase motor current sensor 9P connector and the MCM (C19), then go to step 26.

26. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
27. Reconnect all connectors.
28. Reinstall the terminal cover.
29. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
30. Reinstall the MCM (see page 12-212).
31. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
32. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
34. Turn the ignition switch to ON (II).
35. Clear the DTC with the HDS (see page 12-6).
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A65 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
37. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
38. Reconnect all connectors.
39. Reinstall the terminal cover.
40. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.
41. Reinstall the MCM (see page 12-212).
42. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
43. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
44. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
45. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
46. Turn the ignition switch to ON (II).
47. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A65 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the phase motor current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0A78: Motor Power Inverter (MPI) Module Internal Circuit Malfunction

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1437 indicated?

   YES–Do the troubleshooting for DTC P1437 (see page 12-147).

   NO–Go to step 4.
4. Start the engine.
5. Monitor the OBD STATUS for P0A78 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Replace the MPI module (see page 12-214), then go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
6. Turn the ignition switch to ON (II).
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A78 indicated?

   YES–Check for poor connections or loose terminals at the MPI module, then go to step 1.

   NO–Go to step 8.
8. Monitor the OBD STATUS for DTC P0A78 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0A7E: Battery Module Overheating

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Are any DTCs except DTC P0A7E indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Check the IPU module air duct and the IPU module fan for disconnections, damage, or obstructions.

   Are the IPU module air duct and the IPU module fan OK?

   YES–Replace the battery module (see page 12-217), then go to step 6.

   NO–Repair or replace the IPU module air duct or the IPU module fan as needed, then go to step 6.
6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS (see page 12-6).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A7E indicated?

   YES–Go to step 1.

   NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A7F: Battery Module Deterioration

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check the SOC in the DATA LIST with the HDS.
5. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 25%.
6. Test drive at 25 mph (40 km/h).
7. Press the brake pedal, and stop the vehicle slowly.
8. Monitor the OBD STATUS for P1586 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Replace the battery module (see page 12-217), then go to step 10.

   NO–If the HDS indicates FAILED, go to step 9. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
9. Check for poor connections or loose terminals at the battery current sensor and the MCM.

   Are the connections and the terminals OK?

   YES–Replace the battery module (see page 12-217), then go to step 10.

   NO–Repair the connections or the terminals, then go to step 10.
10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS (see page 12-6).
12. Check for Pending or Confirmed DTCs with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Troubleshooting is complete.■

DTC P0A94: DC-DC Converter Output Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine, and let it idle for 2 minutes under these conditions:
   - Headlights on high beam
   - Blower fan at maximum speed
   - Rear window defogger on
4. Monitor the OBD STATUS for P0A94 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections, loose terminals, or damaged insulation at the DC-DC converter (+B BACK UP line), the +B terminal (on the battery terminal fuse box), the MCM (+B BACK UP line), the No. B1 BACK UP (15A) fuse in the under-dash fuse/relay box, and DC-DC converter ground cable (G4) (see page 22-54). If the HDS indicates NOT COMPLETED, go to step 3.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U1221 or P0562 indicated?

   YES–Do the troubleshooting for DTC U1221 (see page 12-196), or DTC P0562 (see page 12-72).

   NO–Go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Check the DC-DC CONVERTER INFORMATION in the DATA LIST with the HDS.

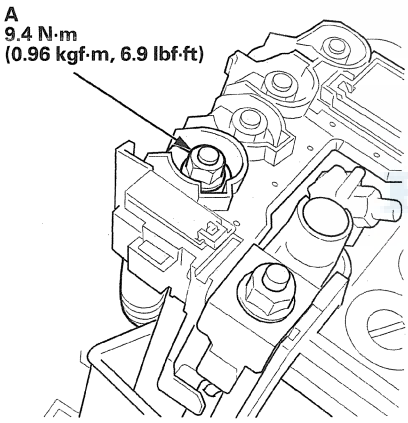
   Does the HDS indicate NORMAL?

   YES–Go to step 7.

   NO–Check for poor connections, loose terminals, or damaged insulation at the DC-DC converter (+B BACK UP line), the +B terminal (on the battery terminal fuse box), the MCM (+B BACK UP line), the No. B1 BACK UP (15A) in the under-dash fuse/relay box, and DC-DC converter ground cable (G4) (see page 22-54). If the connections, the terminals, and the insulation are OK, replace the DC-DC converter (see page 12-213), then go to step 18.

7. Turn the ignition switch to LOCK (0).

8. Check the battery terminal fuse box +B terminal (A) (BLK wire) connection.



   Is the connection OK?

   YES–Go to step 9.

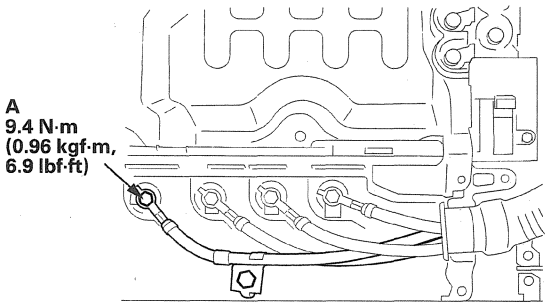
   NO–Repair the +B terminal connection, then go to step 18.

9. Turn the battery module switch OFF (see page 12-4).

10. Remove the IPU cover (see page 12-210).

11. Remove the PCU lid (see page 12-212).

12. Check the 12 volt power cable connection (A) on the phase motor current sensor.



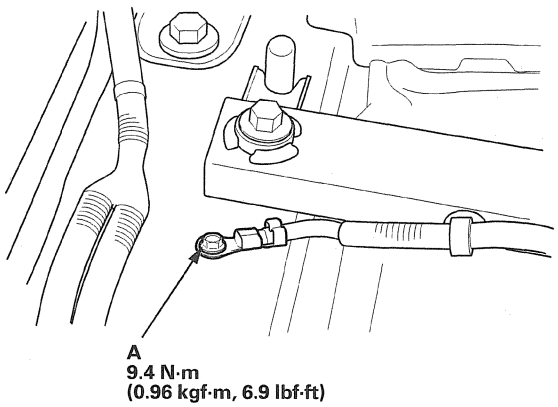
   Is the connection OK ?

   YES–Go to step 13.

   NO–Repair the connection, then go to step 18.

13. Remove the left cargo area side trim panel (see page 20-64).

14. Check the body side DC-DC converter ground cable (G4) terminal connection (A).



   Is the connection OK?

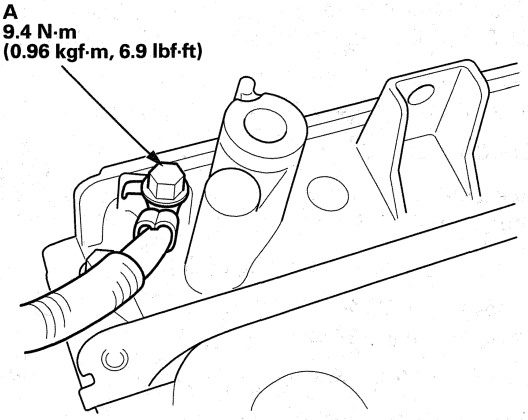
   YES–Go to step 15.

   NO–Repair the connection, then go to step 18.

15. Remove the IPU case (see page 12-215).

16. Remove the front side IPU frame (see page 12-217).

17. Check the PCU case side DC-DC converter ground cable terminal connection (A).



Is the connection OK?

YES–Replace the DC-DC converter (see page 12-213), then go to step 18.

NO–Repair the connection, then go to step 18.

18. Reconnect all connectors.
19. If removed, reinstall the front side IPU frame (see page 12-217).
20. If removed, reinstall the IPU case (see page 12-215).
21. If removed, reinstall the PCU lid (see page 12-212).
22. If removed, reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
23. If removed, reinstall the left cargo area side trim panel (see page 20-64).
24. Turn the ignition switch to ON (II).
25. Clear the DTC with the HDS (see page 12-6).
26. Start the engine, and let it idle for 2 minutes under these conditions:
    - Headlights on high beam
    - Blower fan at maximum speed
    - Rear window defogger on
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A94 indicated?

    YES–Check for poor connections or loose terminals at the DC-DC converter (+B BACK UP line), the +B terminal (on the battery terminal fuse box), the MCM (+B BACK UP line), and the No. B1 BACK UP (15A) fuse in the under-dash fuse/relay box, then go to step 1.

    NO–Go to step 28.

28. Monitor the OBD STATUS for P0A94 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 27, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the DC-DC converter (+B BACK UP line), the +B terminal (on the battery terminal fuse box), the MCM (+B BACK UP line), the No. B1 BACK UP (15A) fuse in the under-dash fuse/relay box, and the DC-DC converter ground cable (G4) (see page 22-54), then go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0A9D: Battery Module Temperature Sensor 1 Circuit Low Voltage

NOTE:

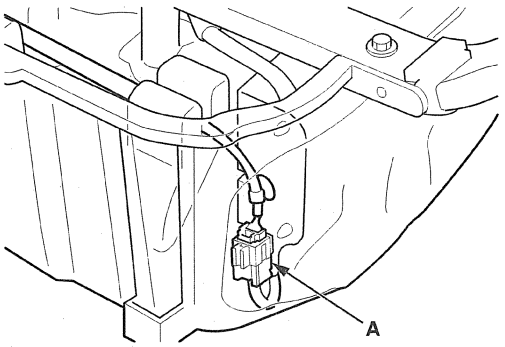
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Turn the ignition switch to LOCK (0).
5. Turn the battery module switch OFF (see page 12-4).
6. Remove the IPU cover (see page 12-210).
7. Disconnect the junction board 12P connector (A).

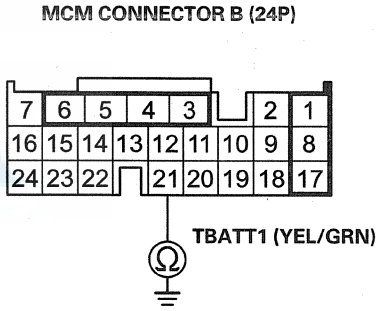


8. Turn the ignition switch to ON (II).
9. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 10.

   NO–Replace the battery module (see page 12-217), then go to step 14.
10. Turn the ignition switch to LOCK (0).
11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
12. Disconnect MCM connector B (24P).
13. Check for continuity between MCM connector terminal B21 and body ground.



Is there continuity?

YES–Repair a short to ground in the wire between the junction board 12P connector and the MCM (B21), then go to step 14.

NO–Go to step 21.

14. Turn the ignition switch to LOCK (0).
15. Reconnect all connectors.
16. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
17. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
18. Turn the ignition switch to ON (II).
19. Clear the DTC with the HDS (see page 12-6).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is the DTC P0A9D indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
21. Reconnect all connectors.
22. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
23. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
24. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
25. Turn the ignition switch to ON (II).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A9D indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0A9E: Battery Module Temperature Sensor 1 Circuit High Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1) in the DATA LIST with the HDS.

   Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

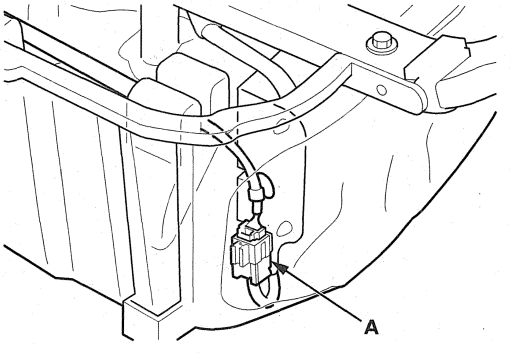
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0A9E, P0AC8, and P0ACD indicated at the same time?

   YES–Go to step 20.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Disconnect the junction board 12P connector (A).

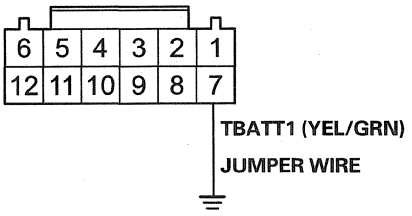


(cont'd)

DTC Troubleshooting (cont'd)

9. Connect junction board 12P connector terminal No. 7 to body ground with a jumper wire.

JUNCTION BOARD 12P CONNECTOR



Wire side of female terminals

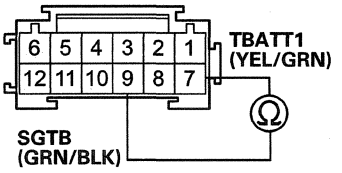
10. Turn the ignition switch to ON (II).
11. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1) in the DATA LIST with the HDS.

    Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

    YES–Go to step 15.

    NO–Go to step 12.
12. Turn the ignition switch to LOCK (0).
13. Disconnect the jumper wire from the junction board 12P connector.
14. Check for continuity between junction board 12P connector terminals No. 7 and No. 9.

JUNCTION BOARD 12P CONNECTOR



Terminal side of male terminals

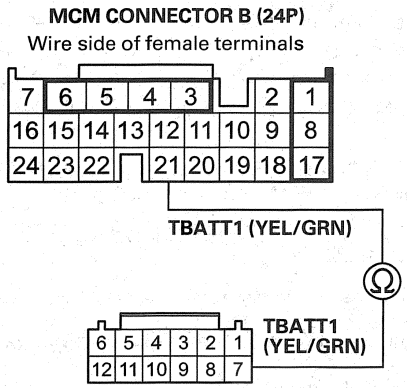
Is there continuity?

YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

NO–Replace the battery module (see page 12-217), then go to step 32.

15. Turn the ignition switch to LOCK (0).
16. Disconnect the jumper wire from the junction board 12P connector.
17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
18. Disconnect MCM connector B (24P).

19. Check for continuity between MCM connector terminal B21 and junction board 12P connector terminal No. 7.

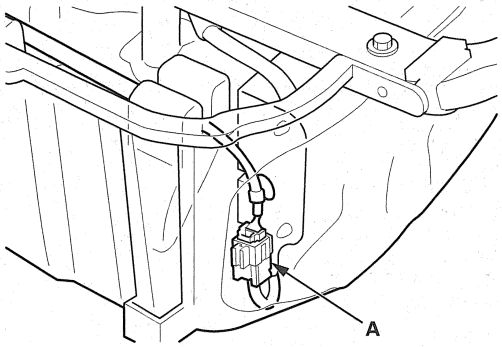


Is there continuity?

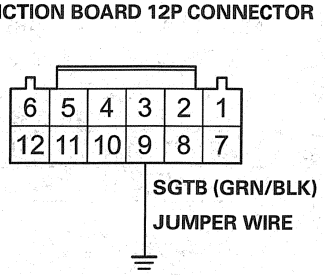
YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

NO–Repair an open in the wire between the junction board 12P connector and the MCM (B21), then go to step 32.

20. Turn the ignition switch to LOCK (0).
21. Turn the battery module switch OFF (see page 12-4).
22. Remove the IPU cover (see page 12-210).
23. Disconnect the junction board 12P connector (A).



24. Connect junction board 12P connector terminal No. 9 to body ground with a jumper wire.



25. Reconnect the junction board 12P connector.
26. Turn the ignition switch to ON (II).
27. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1), the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2), and the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

Do all sensors indicate 4.95 V or more (−40 °F (−40 °C) or less)?

YES–Replace the battery module (see page 12-217), then go to step 32.

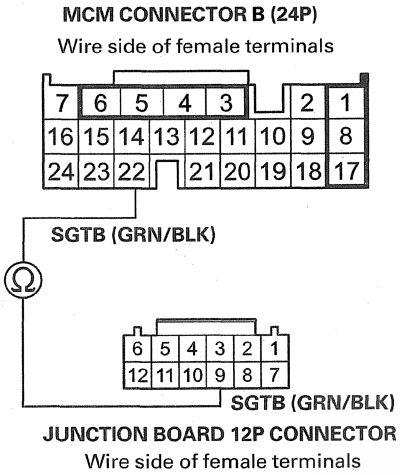
NO–Go to step 28.

28. Turn the ignition switch to LOCK (0).
29. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
30. Disconnect MCM connector B (24P).

(cont'd)

DTC Troubleshooting (cont'd)

31. Check for continuity between MCM connector terminal B22 and junction board 12P connector terminal No. 9.



Is there continuity?

YES–Check for poor connections or loose terminals at the junction board 12P connector and the MCM, then go to step 32.

NO–Repair an open in the wire between the junction board 12P connector and the MCM (B22), then go to step 32.

32. Turn the ignition switch to LOCK (0).
33. Reconnect all connectors.
34. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
35. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
36. Turn the ignition switch to ON (II).
37. Clear the DTC with the HDS (see page 12-6).
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0A9E indicated?

    YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0AA6: High Voltage Circuit Isolation Problem

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- Use the 250 V range of your insulated resistance tester.
- Wear insulated gloves and use insulated tools to protect yourself from electrical shock.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine, and wait 1 minute.
4. Check the INSULATION RESISTANCE OF HIGH VOLTAGE CIRCUIT in the DATA LIST with the HDS.

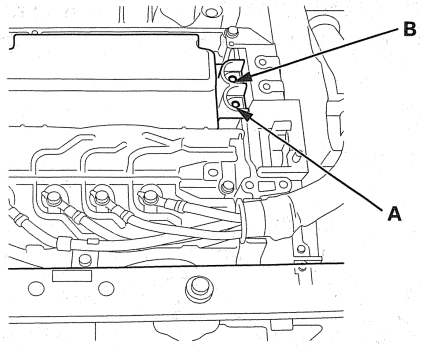
   Is 194 kΩ or more indicated?

   YES–Intermittent failure, the system is OK at this time. Check the drain cover for damage or obstructions.■

   NO–Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

9. Measure the resistance between body ground and the MPI module terminals (A, B) individually.



Is there 194 kΩ or more?

YES–Go to step 10.

NO–Go to step 13.

10. Remove the IPU case (see page 12-215).
11. Check the battery module, the junction board, the wire harness on the battery module, and the junction board for damaged insulation.

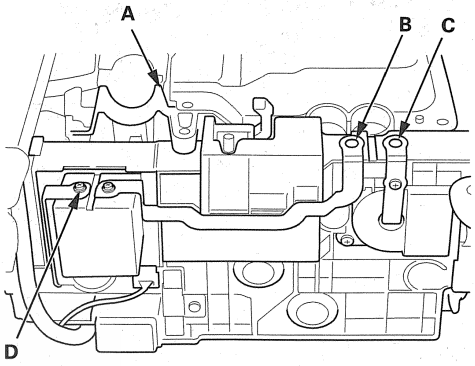
Is the insulation OK?

YES–Go to step 12.

NO–Repair or replace parts as needed, then go to step 25.

12. Measure the resistance between the PCU case (A) and the junction board + terminal (B), the − terminal (C), and the high voltage contactor terminal (D) individually.

NOTE: Use the 250 V range of your insulated resistance tester, and wear insulated gloves.

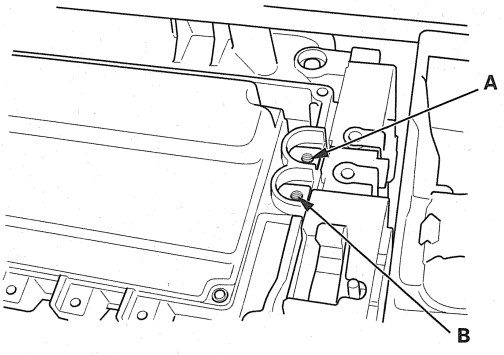


Is there 389 kΩ or more?

YES–Go to step 15.

NO–Replace the battery module (see page 12-217), then go to step 24.

13. Remove the DC-DC converter (see page 12-213).
14. Measure the resistance between body ground and the MPI module terminals (A, B) individually.



Is there 389 kΩ or more?

YES–Replace the DC-DC converter (see page 12-213), then go to step 24.

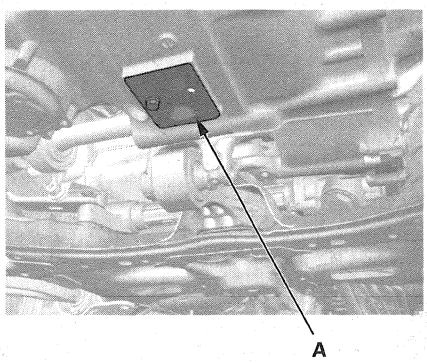
NO–Replace the MPI module (see page 12-214), then go to step 24.

15. Remove the splash shield (see page 20-163).

(cont'd)

DTC Troubleshooting (cont'd)

16. Check the drain cover (A) for damage or an obstruction.



Is the drain cover OK?

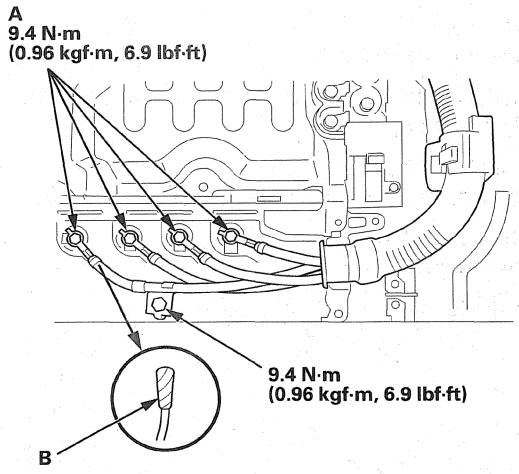
YES–Go to step 17.

NO–Replace the drain cover (see page 12-227), then go to step 24.

17. Do the 12 volt battery terminal disconnection procedure (see page 22-86).

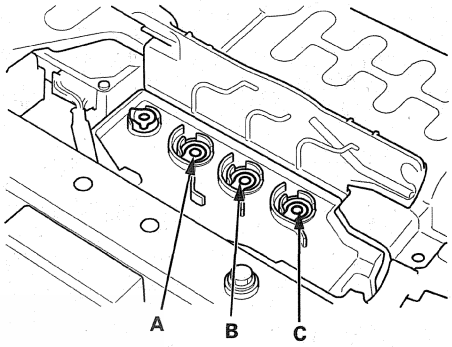
18. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



19. Measure the resistance between body ground and the phase motor current sensor terminals (A, B, and C) individually.

NOTE: Use the 250 V range of your insulated resistance tester, and wear insulated gloves.



Is there 389 kΩ or more?

YES–Go to step 20.

NO–Go to step 22.

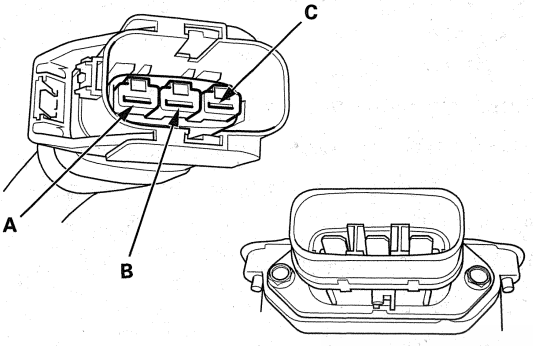
20. Disconnect the IMA motor power cable.

NOTE:

- Refer to Disconnecting the IMA Motor Power Cable Connector From the Motor Stator (see page 12-4).
- If the IMA motor power cable terminals are wet, dry them with a clean shop towel. Do not use compressed air.

21. Measure the resistance between body ground and the IMA motor power cable terminals (A, B, and C) individually.

    NOTE: Use the 250 V range of your insulated resistance tester, and wear insulated gloves.



    Is there 389 kΩ or more?

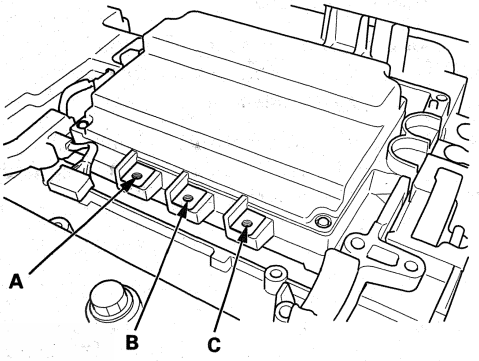
    YES–Replace the IMA motor housing (see page 12-227), then go to step 24.

    NO–Replace the IMA motor power cable (see page 12-221), then go to step 24.

22. Remove the phase current motor sensor (see page 12-214).

23. Measure the resistance between body ground and the MPI module terminals (A, B, and C) individually.

    NOTE: Use the 250 V range of your insulated resistance tester, and wear insulated gloves.



    Is there 389 kΩ or more?

    YES–Replace the phase motor current sensor (see page 12-214), then go to step 24.

    NO–Replace the MPI module (see page 12-214), then go to step 24.

24. Reconnect all connectors.

25. Reinstall the IPU case (see page 12-215).

26. Reconnect the four IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.

27. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).

28. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).

29. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

30. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

31. Clear the DTC with the HDS (see page 12-6).
32. Turn the ignition switch to LOCK (0).
33. Start the engine, and wait 1 minute.
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AA6 indicated?

    YES–Check for poor connections or loose terminals at the MCM, the IMA motor power cable, and the MPI module, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0AA7: Motor Control Module (MCM) Internal Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Monitor the OBD STATUS for P0AA7 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 4.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
4. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AA7 indicated?

   YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

   NO–Go to step 7.
7. Monitor the OBD STATUS for P0AA7 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 6, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0AC0: Battery Current Sensor 1 Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AC1, P0AC2, P0B10, or P0B11 indicated?

   YES–Do the troubleshooting for DTC P0AC1 (see page 12-121), P0AC2 (see page 12-124), P0B10 (see page 12-140), or P0B11 (see page 12-143).■

   NO–Replace the battery module (see page 12-217), then go to step 4.
4. Turn the ignition switch to ON (II).
5. Clear the DTC with the HDS (see page 12-6).
6. Turn the ignition switch to LOCK (0), and wait 1 minute.
7. Turn the ignition switch to ON (II).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AC0 indicated?

   YES–Check for poor connections or loose terminals at the battery current sensor and the MCM, then go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0AC1: Battery Current Sensor 1 Circuit Low Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AC1 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the battery current sensor.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1 indicated?

   YES–Do the troubleshooting for DTC P06B1 (see page 12-75).

   NO–Go to step 5.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0B10 indicated?

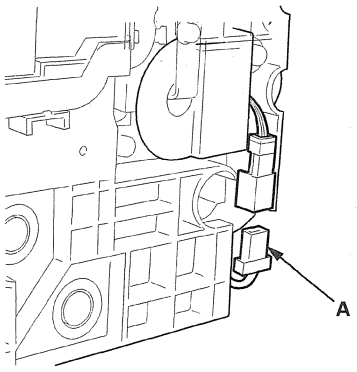
   YES–Go to step 6.

   NO–Go to step 13.
6. Turn the ignition switch to LOCK (0).
7. Turn the battery module switch OFF (see page 12-4).
8. Remove the IPU case (see page 12-215).
9. Remove the PCU busplate and the PCU cover (see page 12-212).
10. Disconnect MCM connector B (24P).

(cont'd)

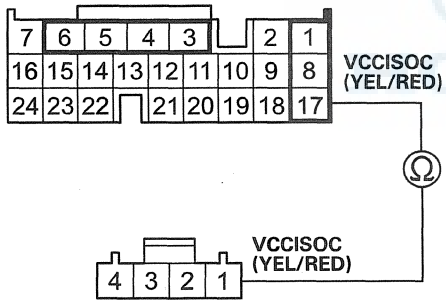
DTC Troubleshooting (cont'd)

11. Disconnect the battery current sensor 4P connector (A).



12. Check for continuity between battery current sensor 4P connector terminal No. 1 and MCM connector terminal B17.

MCM CONNECTOR B (24P)
Wire side of female terminals



BATTERY CURRENT SENSOR 4P CONNECTOR
Wire side of female terminals

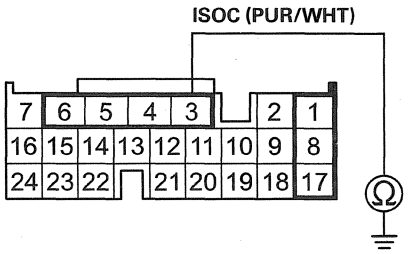
Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 32.

NO–Repair an open in the wire between the battery current sensor and the MCM (B17), then go to step 32.

13. Turn the ignition switch to LOCK (0).
14. Turn the battery module switch OFF (see page 12-4).
15. Remove the IPU cover (see page 12-210).
16. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
17. Disconnect MCM connector B (24P).
18. Check for continuity between MCM connector terminal B3 and body ground.

MCM CONNECTOR B (24P)



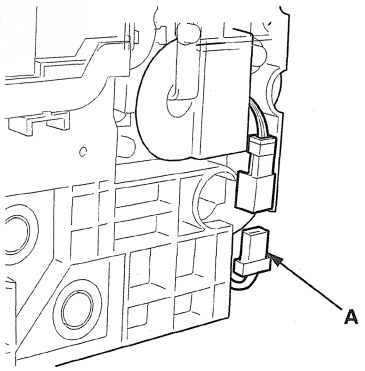
Wire side of female terminals

Is there continuity?

YES–Go to step 19.

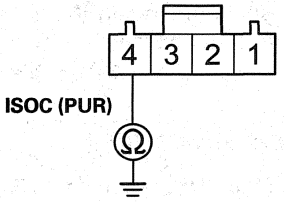
NO–Go to step 22.

19. Remove the IPU case (see page 12-215).
20. Disconnect the battery current sensor 4P connector (A).



21. Check for continuity between battery current sensor 4P connector terminal No. 4 and body ground.

BATTERY CURRENT SENSOR 4P CONNECTOR



Wire side of female terminals

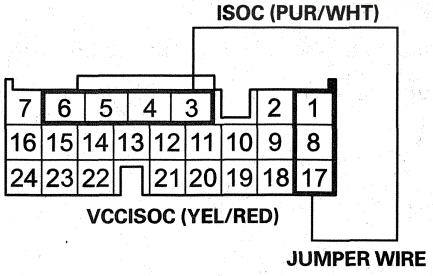
Is there continuity?

YES–Repair a short in the wire between the battery current sensor and the MCM (B3), then go to step 32.

NO–Replace the battery module (see page 12-217), then go to step 32.

22. Reconnect MCM connector B (24P).
23. Connect MCM connector terminals B3 and B17 with a jumper wire.

MCM CONNECTOR B (24P)



Wire side of female terminals

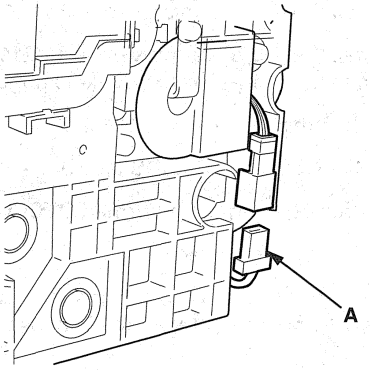
24. Turn the ignition switch to ON (II).
25. Clear the DTC with the HDS (see page 12-6).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0AC2 indicated?

YES–Go to step 27.

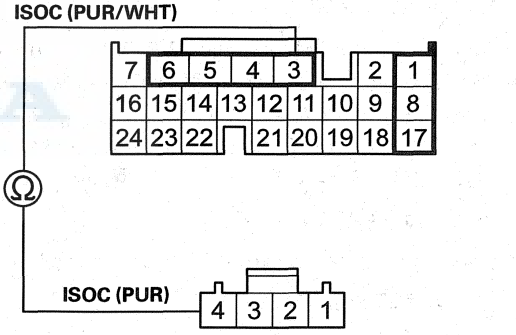
NO–Go to step 39.

27. Turn the ignition switch to LOCK (0).
28. Remove the IPU case (see page 12-215).
29. Disconnect MCM connector B (24P).
30. Disconnect the battery current sensor 4P connector (A).



31. Check for continuity between battery current sensor 4P connector terminal No. 4 and MCM connector terminal B3.

MCM CONNECTOR B (24P)
Wire side of female terminals



BATTERY CURRENT SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 32.

NO–Repair an open in the wire between the battery current sensor and the MCM (B3), then go to step 32.

(cont'd)

DTC Troubleshooting (cont'd)

32. Reconnect all connectors.
33. Reinstall the IPU case (see page 12-215).
34. Reinstall the PCU busplate (see page 12-212).
35. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
36. Turn the ignition switch to ON (II).
37. Clear the DTC with the HDS (see page 12-6).
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC1 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
39. Reconnect all connectors.
40. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
41. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
42. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
43. Turn the ignition switch to ON (II).
44. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC1 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0AC2: Battery Current Sensor 1 Circuit High Voltage

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

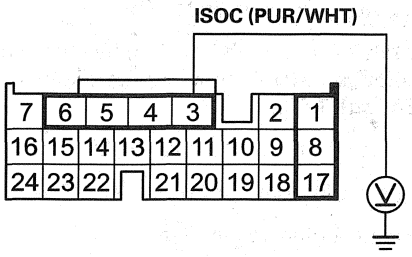
   Is DTC P0AC2 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the battery current sensor.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Disconnect MCM connector B (24P).
10. Turn the ignition switch to ON (II).

11. Measure the voltage between MCM connector terminal B3 and body ground.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there 4.5 V or more?

YES–Repair a short to power in the wire between the battery current sensor and the MCM (B3), then go to step 20.

NO–Go to step 12.

12. Clear the DTC with the HDS (see page 12-6).
13. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0AC2 indicated?

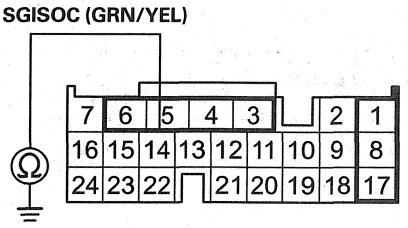
YES–Go to step 26.

NO–Go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Reconnect MCM connector B (24P).

16. Check for continuity between MCM connector terminal B14 and body ground.

MCM CONNECTOR B (24P)



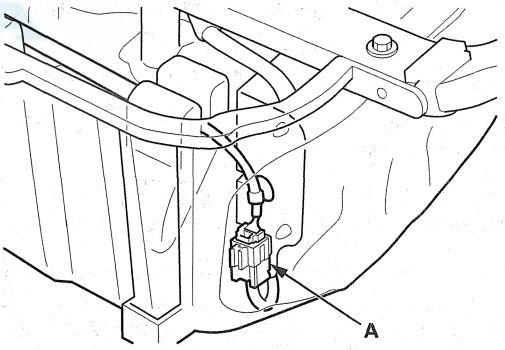
Wire side of female terminals

Is there continuity?

YES–Go to step 17.

NO–Go to step 26.

17. Disconnect MCM connector B (24P).
18. Disconnect the junction board 12P connector (A).

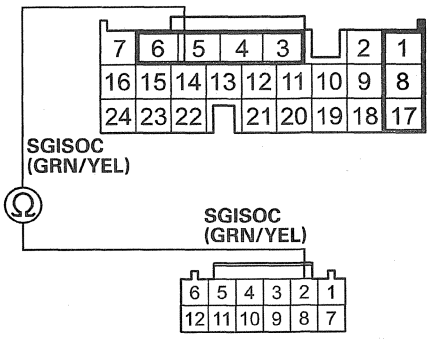


(cont'd)

DTC Troubleshooting (cont'd)

19. Check for continuity between junction board 12P connector terminal No. 2 and MCM connector terminal B14.

MCM CONNECTOR B (24P)
Wire side of female terminals



JUNCTION BOARD 12P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 20.

NO–Repair an open in the wire between the junction board 12P connector and the MCM (B14), then go to step 20.

20. Reconnect all connectors.
21. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
22. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS (see page 12-6).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC2 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

26. Reconnect all connectors.
27. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
28. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON.
29. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
30. Turn the ignition switch to ON (II).
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC2 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0AC7: Battery Module Temperature Sensor 2 Circuit Low Voltage

NOTE:

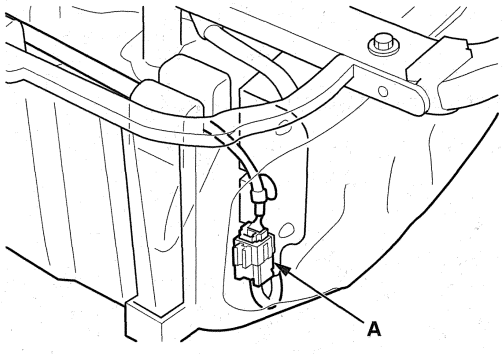
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Turn the ignition switch to LOCK (0).
5. Turn the battery module switch OFF (see page 12-4).
6. Remove the IPU cover (see page 12-210).
7. Disconnect the junction board 12P connector (A).

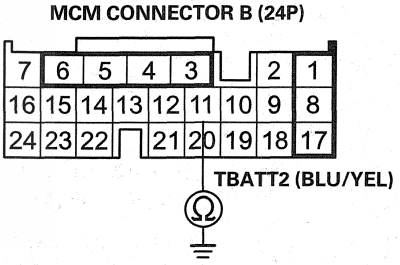


8. Turn the ignition switch to ON (II).
9. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 10.

   NO–Replace the battery module (see page 12-217), then go to step 14.
10. Turn the ignition switch to LOCK (0).
11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
12. Disconnect MCM connector B (24P).
13. Check for continuity between MCM connector terminal B11 and body ground.



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire between the junction board 12P connector and the MCM (B11), then go to step 14.

NO–Go to step 21.

(cont'd)

DTC Troubleshooting (cont'd)

14. Turn the ignition switch to LOCK (0).
15. Reconnect all connectors.
16. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
17. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
18. Turn the ignition switch to ON (II).
19. Clear the DTC with the HDS (see page 12-6).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC7 indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
21. Reconnect all connectors.
22. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
23. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
24. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
25. Turn the ignition switch to ON (II).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC7 indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0AC8: Battery Module Temperature Sensor 2 Circuit High Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2) in the DATA LIST with the HDS.

   Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

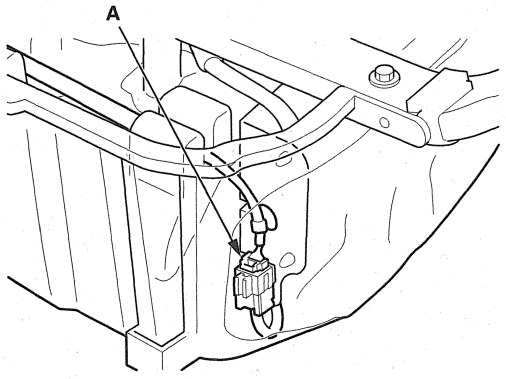
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0A9E, P0AC8, and P0ACD indicated at the same time?

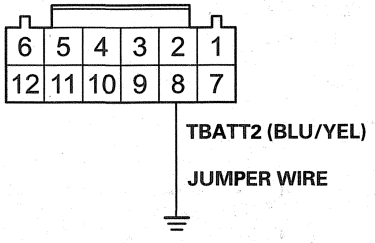
   YES–Go to step 20.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Disconnect the junction board 12P connector (A).



9. Connect junction board 12P connector terminal No. 8 to body ground with a jumper wire.

JUNCTION BOARD 12P CONNECTOR



Wire side of female terminals

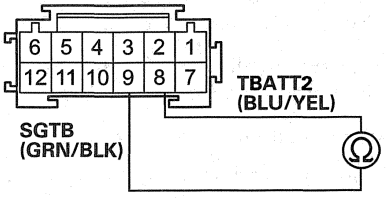
10. Turn the ignition switch to ON (II).
11. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2) in the DATA LIST with the HDS.

    Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

    YES–Go to step 15.

    NO–Go to step 12.
12. Turn the ignition switch to LOCK (0).
13. Disconnect the jumper wire from the junction board 12P connector.
14. Check for continuity between junction board 12P connector terminals No. 8 and No. 9.

JUNCTION BOARD 12P CONNECTOR



Terminal side of male terminals

Is there continuity?

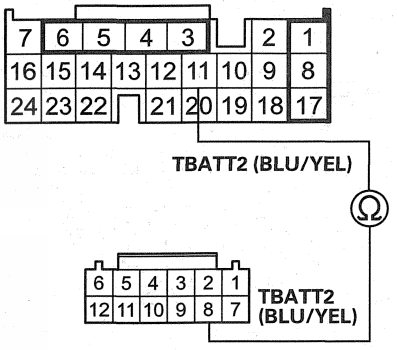
YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

NO–Replace the battery module (see page 12-217), then go to step 32.

15. Turn the ignition switch to LOCK (0).
16. Disconnect the jumper wire from the junction board 12P connector.
17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
18. Disconnect MCM connector B (24P).
19. Check for continuity between MCM connector terminal B11 and junction board 12P connector terminal No. 8.

MCM CONNECTOR B (24P)

Wire side of female terminals



JUNCTION BOARD 12P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

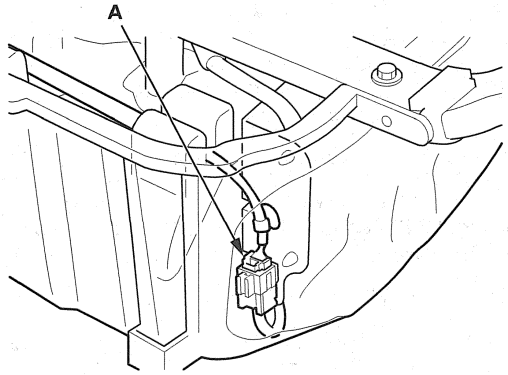
NO–Repair an open in the wire between the junction board 12P connector and the MCM (B11), then go to step 32.

20. Turn the ignition switch to LOCK (0).
21. Turn the battery module switch OFF (see page 12-4).
22. Remove the IPU cover (see page 12-210).

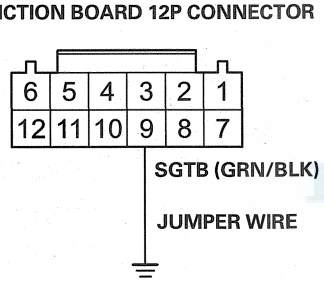
(cont'd)

DTC Troubleshooting (cont'd)

23. Disconnect the junction board 12P connector (A).



24. Connect junction board 12P connector terminal No. 9 to body ground with a jumper wire.



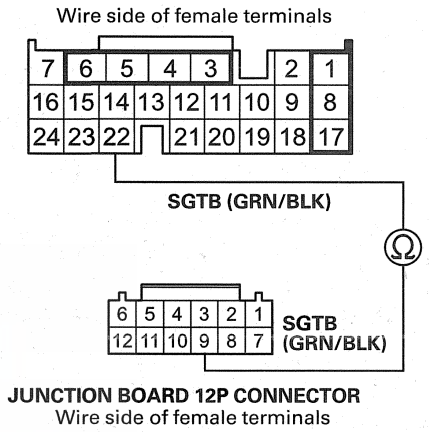
25. Reconnect the junction board 12P connector.
26. Turn the ignition switch to ON (II).
27. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1), the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2), and the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

    Do all sensors indicate 4.95 V or more (−40 °F (−40 °C) or less)?

    YES–Replace the battery module (see page 12-217), then go to step 32.

    NO–Go to step 28.

28. Turn the ignition switch to LOCK (0).
29. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
30. Disconnect MCM connector B (24P).
31. Check for continuity between MCM connector terminal B22 and junction board 12P connector terminal No. 9.



    Is there continuity?

    YES–Check for poor connections or loose terminals at the junction board 12P connector and the MCM, then go to step 32.

    NO–Repair an open in the wire between the junction board 12P connector and the MCM (B22), then go to step 32.

32. Turn the ignition switch to LOCK (0).
33. Reconnect all connectors.
34. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
35. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
36. Turn the ignition switch to ON (II).
37. Clear the DTC with the HDS (see page 12-6).
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AC8 indicated?

    YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0ACC: Battery Module Temperature Sensor 3 Circuit Low Voltage

NOTE:

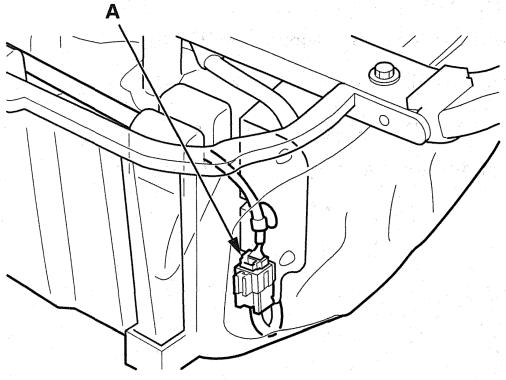
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Turn the ignition switch to LOCK (0).
5. Turn the battery module switch OFF (see page 12-4).
6. Remove the IPU cover (see page 12-210).
7. Disconnect the junction board 12P connector (A).

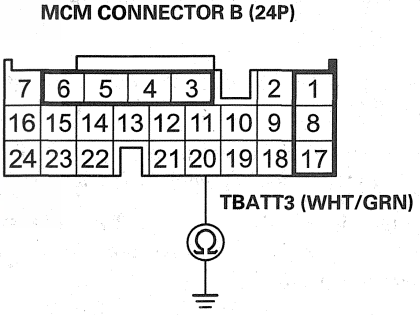


8. Turn the ignition switch to ON (II).
9. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

   Is 0.05 V or less (194 °F (90 °C) or more) indicated?

   YES–Go to step 10.

   NO–Replace the battery module (see page 12-217), then go to step 14.
10. Turn the ignition switch to LOCK (0).
11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
12. Disconnect MCM connector B (24P).
13. Check for continuity between MCM connector terminal B20 and body ground.



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire between the junction board 12P connector and the MCM (B20), then go to step 14.

NO–Go to step 21.

(cont'd)

DTC Troubleshooting (cont'd)

14. Turn the ignition switch to LOCK (0).
15. Reconnect all connectors.
16. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
17. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
18. Turn the ignition switch to ON (II).
19. Clear the DTC with the HDS (see page 12-6).
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0ACC indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
21. Reconnect all connectors.
22. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
23. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
24. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
25. Turn the ignition switch to ON (II).
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0ACC indicated?

    YES–Check for poor connections, loose terminals, or damaged insulation at the battery module and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0ACD: Battery Module Temperature Sensor 3 Circuit High Voltage

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

   Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

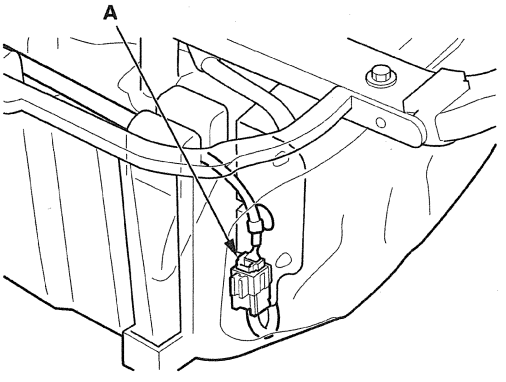
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0A9E, P0AC8, and P0ACD indicated at the same time?

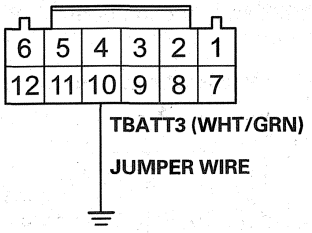
   YES–Go to step 20.

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Disconnect the junction board 12P connector (A).



9. Connect junction board 12P connector terminal No. 10 to body ground with a jumper wire.

JUNCTION BOARD 12P CONNECTOR



Wire side of female terminals

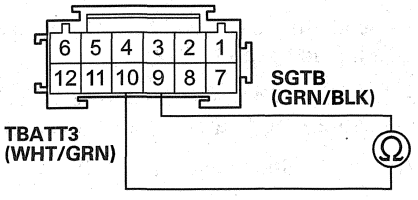
10. Turn the ignition switch to ON (II).
11. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

    Is 4.95 V or more (−40 °F (−40 °C) or less) indicated?

    YES–Go to step 15.

    NO–Go to step 12.
12. Turn the ignition switch to LOCK (0).
13. Disconnect the jumper wire from the junction board 12P connector.
14. Check for continuity between junction board 12P connector terminals No. 9 and No. 10.

JUNCTION BOARD 12P CONNECTOR



Terminal side of male terminals

Is there continuity?

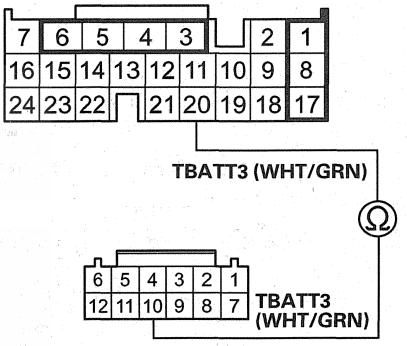
YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

NO–Replace the battery module (see page 12-217), then go to step 32.

15. Turn the ignition switch to LOCK (0).
16. Disconnect the jumper wire from the junction board 12P connector.
17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
18. Disconnect MCM connector B (24P).
19. Check for continuity between MCM connector terminal B20 and junction board 12P connector terminal No. 10.

MCM CONNECTOR B (24P)

Wire side of female terminals



JUNCTION BOARD 12P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 32.

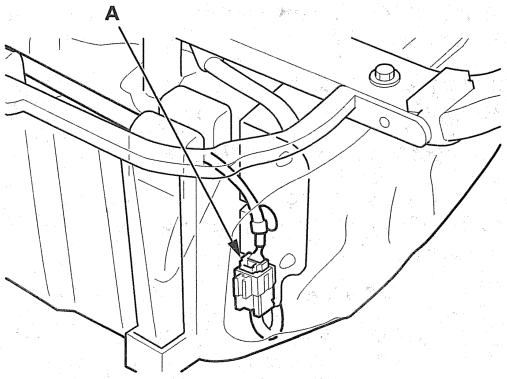
NO–Repair an open in the wire between the junction board 12P connector and the MCM (B20), then go to step 32.

20. Turn the ignition switch to LOCK (0).
21. Turn the battery module switch OFF (see page 12-4).
22. Remove the IPU cover (see page 12-210).

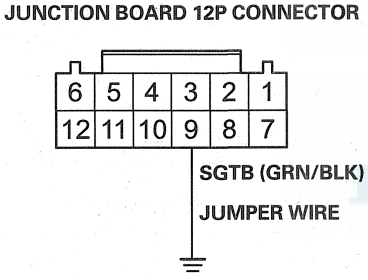
(cont'd)

DTC Troubleshooting (cont'd)

23. Disconnect the junction board 12P connector (A).



24. Connect junction board 12P connector terminal No. 9 to body ground with a jumper wire.



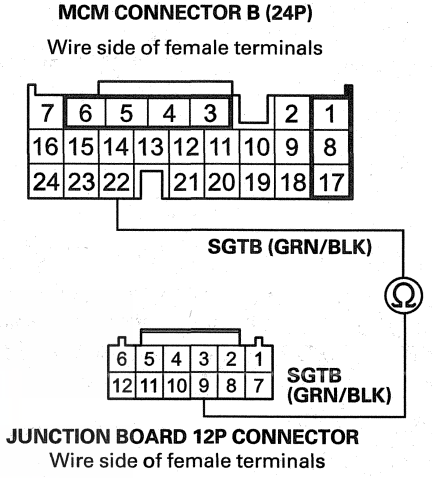
25. Reconnect the junction board 12P connector.
26. Turn the ignition switch to ON (II).
27. Check the IMA BATTERY MODULE TEMPERATURE SENSOR 1 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 1), the IMA BATTERY MODULE TEMPERATURE SENSOR 2 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 2), and the IMA BATTERY MODULE TEMPERATURE SENSOR 3 VOLTAGE (IMA BATTERY MODULE TEMPERATURE SENSOR 3) in the DATA LIST with the HDS.

    Do all sensors indicate 4.95 V or more (−40 °F (−40 °C) or less)?

    YES–Replace the battery module (see page 12-217), then go to step 32.

    NO–Go to step 28.

28. Turn the ignition switch to LOCK (0).
29. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
30. Disconnect MCM connector B (24P).
31. Check for continuity between MCM connector terminal B22 and junction board 12P connector terminal No. 9.



    Is there continuity?

    YES–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the junction board 12P connector and the MCM, then go to step 32.

    NO–Repair an open in the wire between the junction board 12P connector and the MCM (B22), then go to step 32.

32. Turn the ignition switch to LOCK (0).
33. Reconnect all connectors.
34. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
35. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
36. Turn the ignition switch to ON (II).
37. Clear the DTC with the HDS (see page 12-6).
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0ACD indicated?

    YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P0AE1: Bypass Contactor Malfunction

⚠ WARNING

This procedure includes high voltage measurements with the IMA system turned on. To avoid serious injury from electrical shocks while testing the high voltage cable, use insulated gloves, select a DC range of 150 V or more on your digital multimeter, and do not touch metal surface.

NOTE:

- Before you troubleshoot, record all freeze data, and review the general troubleshooting information (see page 12-5).
- If the ignition switch is turned to ON (II) when the battery module switch is OFF, DTC P0AE1 is stored.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check the SOC in the DATA LIST with the HDS.
5. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 70%. If the SOC does not increase at all, go to step 8.
6. Monitor the OBD STATUS for P0A78, P1570, P1634, and U1220 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Go to step 7.

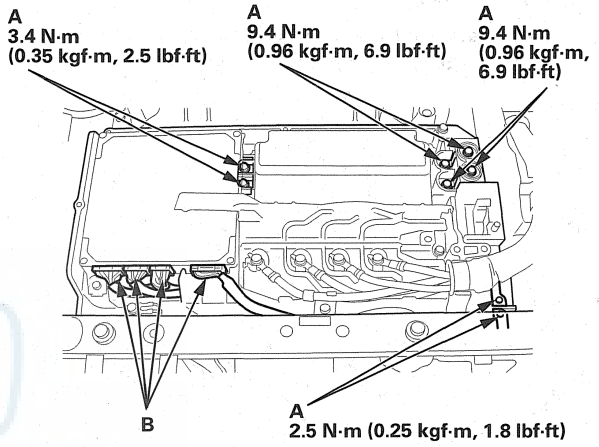
   NO–

   - If the HDS indicates FAILED: Go to the indicated DTC's troubleshooting. ■
   - If the HDS indicates NOT COMPLETED: Keep the ignition switch ON (II) until a result is indicated. ■
7. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AE1 indicated?

   YES–Go to step 8.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the junction board, the DC-DC converter, the MPI module, and the MCM. ■
8. Turn the ignition switch to LOCK (0).
9. Turn the battery module switch OFF (see page 12-4).
10. Remove the IPU cover (see page 12-210).
11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
12. Reinstall the PCU busplate (see page 12-212).
13. Check for poor connections, loose terminals, or damage at the busbars (A) and the MCM connectors (B).



Are the connections and the terminals OK?

YES–Go to step 14.

NO–Repair the connections or the terminals, then go to step 42.

14. Clear the DTC with the HDS (see page 12-6).
15. Turn the ignition switch to ON (II), and listen for a clicking sound from the contactor in the junction board.

    Is there a clicking sound?

    YES–Go to step 16.

    NO–If you never hear the sound, go to step 26. If you hear the sound only once, after clearing the DTC, go to step 16.
16. Clear the DTC with the HDS (see page 12-6).
17. Turn the ignition switch to LOCK (0).
18. Turn the battery module switch ON (see page 12-4).

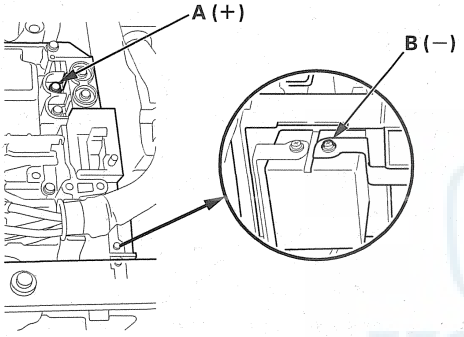
    NOTE: Wear insulated gloves to protect yourself from electrical shock.

(cont'd)

DTC Troubleshooting (cont'd)

19. Quickly measure the voltage between the high voltage terminals (A, B) when the ignition switch is turned to ON (II).

    NOTE:
    - Use a DC range of 150 V or more on your digital multimeter.
    - Always measure the voltage on the indicated position; measuring on the adjacent terminals may cause a short.
    - It's normal to read 0 V as soon as 0.21 seconds after measuring the voltage.



Is there a momentary voltage reading?

YES–Go to step 20.

NO–Replace the battery module (see page 12-217), then go to step 42.

20. Turn the ignition switch to LOCK (0).
21. Turn the battery module switch OFF (see page 12-4).
22. Remove the DC-DC converter (see page 12-213).
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS (see page 12-6).
25. Check for Pending or Confirmed DTCs with the HDS.

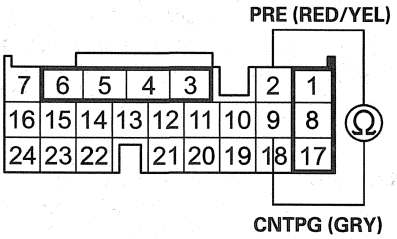
    Is DTC P0AE1 indicated?

    YES–Go to step 37.

    NO–Replace the DC-DC converter (see page 12-213), then go to step 42.

26. Turn the battery module switch OFF (see page 12-4).
27. Turn the ignition switch to LOCK (0).
28. Disconnect MCM connector B (24P).
29. Measure the resistance between MCM connector terminals B2 and B9.

MCM CONNECTOR B (24P)



Wire side of female terminals

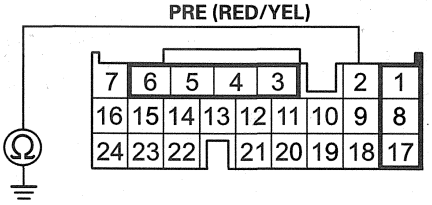
Is there 92.7—113.3 Ω?

YES–Go to step 30.

NO–
- If the resistance is too high, go to step 33.
- If the resistance is too low, go to step 35.

30. Check for continuity between MCM connector terminal B2 and body ground.

MCM CONNECTOR B (24P)



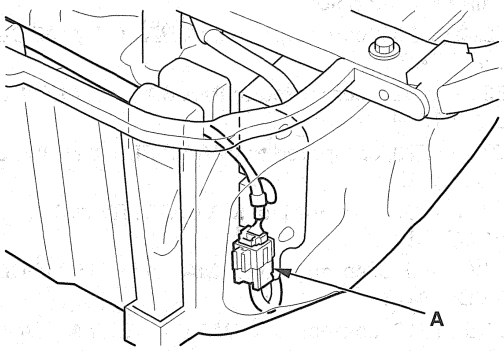
Wire side of female terminals

Is there continuity?

YES–Go to step 31.

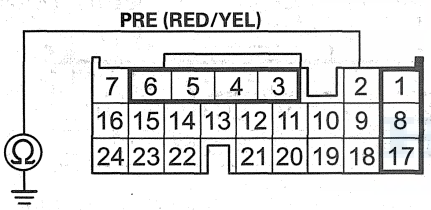
NO–Replace the battery module (see page 12-217), then go to step 42.

31. Disconnect the junction board 12P connector (A).



32. Check for continuity between MCM connector terminal B2 and body ground.

MCM CONNECTOR B (24P)



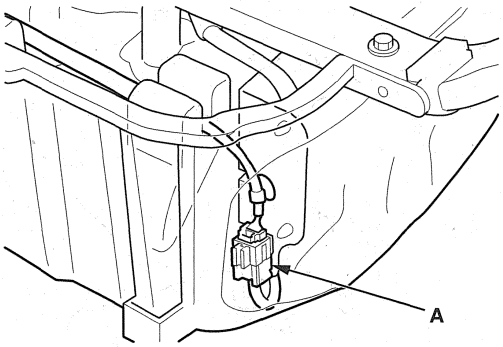
Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the junction board 12P connector and the MCM (B2), then go to step 42.

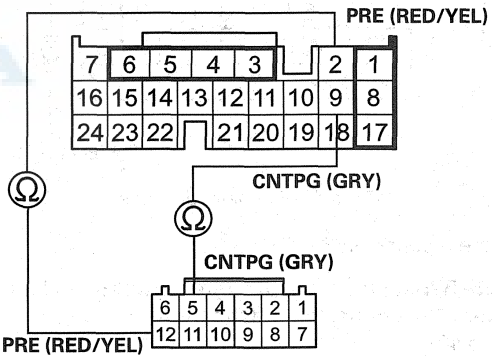
NO–Replace the battery module (see page 12-217), then go to step 42.

33. Disconnect the junction board 12P connector (A).



34. Check for continuity between these terminals:
- MCM connector terminal B2 and junction board 12P connector terminal No. 12.
- MCM connector terminal B9 and junction board 12P connector terminal No. 5.

MCM CONNECTOR B (24P)
Wire side of female terminals



JUNCTION BOARD 12P CONNECTOR
Wire side of female terminals

Is there continuity?

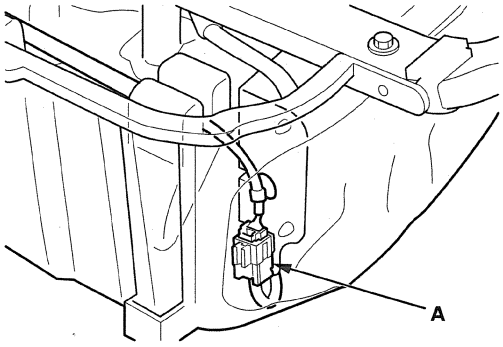
YES–Replace the battery module (see page 12-217), then go to step 42.

NO–Repair an open in the wire between the junction board 12P connector and the MCM (B2, B9), then go to step 42.

(cont'd)

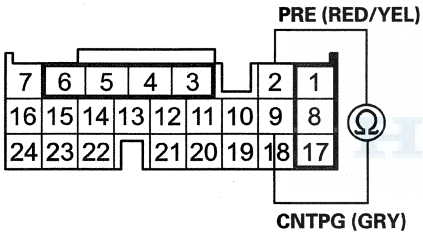
DTC Troubleshooting (cont'd)

35. Disconnect the junction board 12P connector (A).



36. Check for continuity between MCM connector terminals B2 and B9.

MCM CONNECTOR B (24P)



Wire side of female terminals

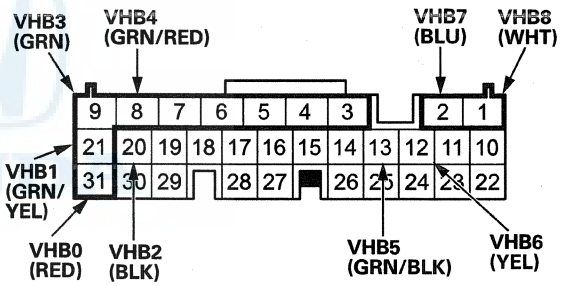
Is there continuity?

YES–Repair a short in the wire between the junction board 12P connector and the MCM (B2, B9), then go to step 42.

NO–Replace the battery module (see page 12-217), then go to step 42.

37. Turn the ignition switch to ON (II).
38. Record the value of the IMA BATTERY MODULE 1 VOLTAGE through IMA BATTERY MODULE 7 VOLTAGE in the DATA LIST with the HDS.
39. Turn the ignition switch to LOCK (0).
40. Disconnect MCM connector E (31P).
41. Compare the voltages you recorded in step 38 with the voltages you record between the MCM connector terminals listed below.
    - E21 and E31, compared to IMA BATTERY MODULE 1 VOLTAGE
    - E20 and E21, compared to IMA BATTERY MODULE 2 VOLTAGE
    - E9 and E20, compared to IMA BATTERY MODULE 3 VOLTAGE
    - E8 and E9, compared to IMA BATTERY MODULE 4 VOLTAGE
    - E12 and E13, compared to IMA BATTERY MODULE 5 VOLTAGE
    - E2 and E12, compared to IMA BATTERY MODULE 6 VOLTAGE
    - E1 and E2, compared to IMA BATTERY MODULE 7 VOLTAGE

MCM CONNECTOR E (31P)



Wire side of female terminals

Is there more than 1 V difference between the MCM readings and the readings from step 38?

YES–Go to step 49.

NO–Go to step 42.

42. Turn the ignition switch to LOCK (0).
43. Reconnect all connectors.
44. Reinstall the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
45. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
46. Turn the ignition switch to ON (II).
47. Clear the DTC with the HDS (see page 12-6).
48. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AE1 indicated?

    YES–Check for poor connections or loose terminals at the junction board, the DC-DC converter, the MPI module, and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
49. Reconnect all connectors.
50. Reinstall the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
51. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
52. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
53. Turn the ignition switch to ON (II).
54. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0AE1 indicated?

    YES–Check for poor connections or loose terminals at the junction board, the DC-DC converter, the MPI module, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0AEE: Motor Control Module (MCM) Internal Circuit Malfunction

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the IPU module fan duct is blocked, DTC P0AEE may be detected.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check and record the MPI TEMPERATURE in the DATA LIST with the HDS.

   Is less than 221 °F (105 °C) indicated?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.
4. Start the engine, and wait 10 minutes.
5. Check the MPI TEMPERATURE in the DATA LIST with the HDS, and compare that temperature with the temperature recorded in step 3.

   Is there more than 39 °F (4 °C) indicated?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Replace the MPI module (see page 12-214), then go to step 6.
6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS (see page 12-6).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AEE indicated?

   YES–Go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0B0F: Battery Current Sensor 2 Circuit Malfunction

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AC1, P0AC2, P0B10, or P0B11 indicated?

   YES–Do the troubleshooting for DTC P0AC1 (see page 12-121), P0AC2 (see page 12-124), P0B10 (see page 12-140), or P0B11 (see page 12-143).■

   NO–Replace the battery module (see page 12-217), then go to step 4.
4. Turn the ignition switch to ON (II).
5. Clear the DTC with the HDS (see page 12-6).
6. Turn the ignition switch to LOCK (0), and wait 1 minute.
7. Turn the ignition switch to ON (II).
8. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0B0F indicated?

   YES–Check for poor connections or loose terminals at the battery current sensor and the MCM, then go to step 1.

   NO–Go to step 9.
9. Monitor the OBD STATUS for DTC P0B0F in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 8, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the battery current sensor and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0B10: Battery Current Sensor 2 Circuit Low Voltage

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0B10 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the battery current sensor.■
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1 indicated?

   YES–Do the troubleshooting for DTC P06B1 (see page 12-75).

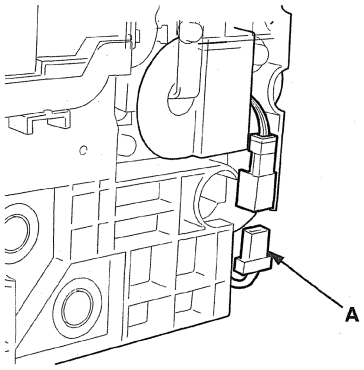
   NO–Go to step 5.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AC1 indicated?

   YES–Go to step 6.

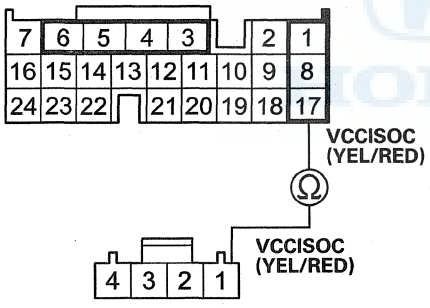
   NO–Go to step 13.
6. Turn the ignition switch to LOCK (0).
7. Turn the battery module switch OFF (see page 12-4).
8. Remove the IPU case (see page 12-215).
9. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
10. Disconnect MCM connector B (24P).

11. Disconnect the battery current sensor 4P connector (A).



12. Check for continuity between battery current sensor 4P connector terminal No. 1 and MCM connector terminal B17.

MCM CONNECTOR B (24P)
Wire side of female terminals



BATTERY CURRENT SENSOR 4P CONNECTOR
Wire side of female terminals

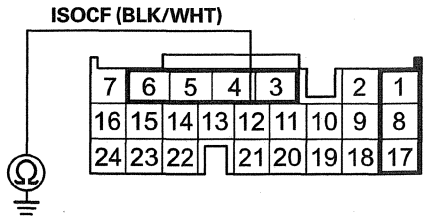
Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 32.

NO–Repair an open in the wire between the battery current sensor and the MCM (B17), then go to step 32.

13. Turn the ignition switch to LOCK (0).
14. Turn the battery module switch OFF (see page 12-4).
15. Remove the IPU cover (see page 12-210).
16. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
17. Disconnect MCM connector B (24P).
18. Check for continuity between body ground and MCM connector terminal B12.

MCM CONNECTOR B (24P)



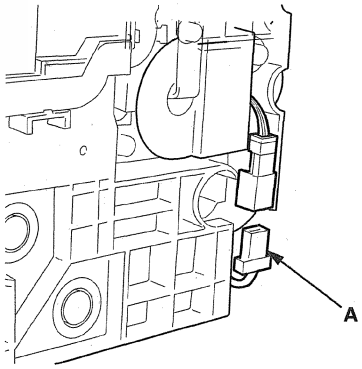
Wire side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Go to step 22.

19. Remove the IPU case (see page 12-215).
20. Disconnect the battery current sensor 4P connector (A).

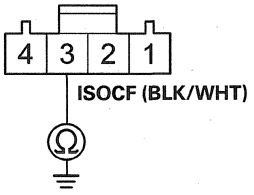


(cont'd)

DTC Troubleshooting (cont'd)

21. Check for continuity between battery current sensor 4P connector terminal No. 3 and body ground.

BATTERY CURRENT SENSOR 4P CONNECTOR



Wire side of female terminals

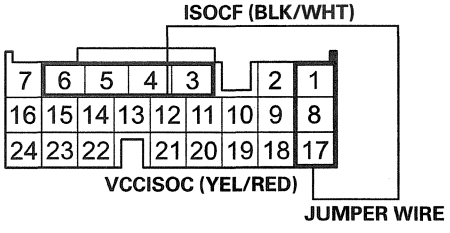
Is there continuity?

YES–Repair a short in the wire between the battery current sensor and the MCM (B12), then go to step 32.

NO–Replace the battery module (see page 12-217), then go to step 32.

22. Reconnect MCM connector B (24P).
23. Connect MCM connector terminals B12 and B17 with a jumper wire.

MCM CONNECTOR B (24P)



Wire side of female terminals

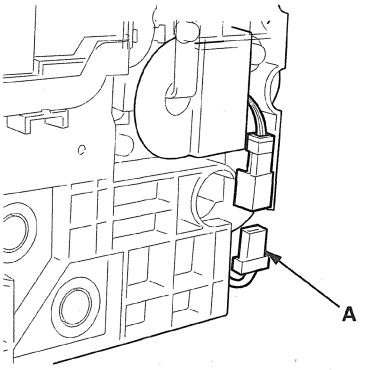
24. Turn the ignition switch to ON (II).
25. Clear the DTC with the HDS (see page 12-6).
26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0B11 indicated?

YES–Go to step 27.

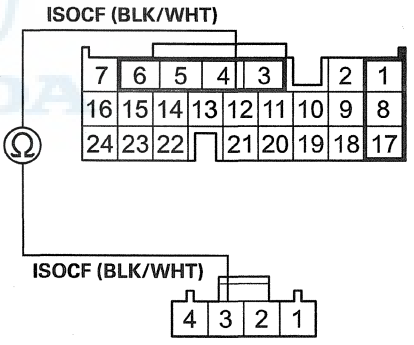
NO–Go to step 39.

27. Turn the ignition switch to LOCK (0).
28. Remove the IPU case (see page 12-215).
29. Disconnect MCM connector B (24P).
30. Disconnect the battery current sensor 4P connector (A).



31. Check for continuity between battery current sensor 4P connector terminal No. 3 and MCM connector terminal B12.

MCM CONNECTOR B (24P)
Wire side of female terminals



BATTERY CURRENT SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 32.

NO–Repair an open in the wire between the battery current sensor and the MCM (B12), then go to step 32.

32. Reconnect all connectors.
33. Reinstall the IPU case (see page 12-215).
34. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
35. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
36. Turn the ignition switch to ON (II).

37. Clear the DTC with the HDS (see page 12-6).
38. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B10 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
39. Reconnect all connectors.
40. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
41. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
42. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
43. Turn the ignition switch to ON (II).
44. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B10 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0B11: Battery Current Sensor 2 Circuit High Voltage

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B11 indicated?

    YES–Go to step 5.

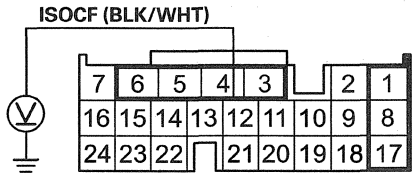
    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the battery current sensor.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Disconnect MCM connector B (24P).
10. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure the voltage between MCM connector terminal B12 and body ground.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there 4.95 V or more?

YES–Repair a short to power in the wire between the battery current sensor and the MCM (B12), then go to step 14.

NO–Go to step 12.

12. Clear the DTC with the HDS (see page 12-6).
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B11 indicated?

    YES–Go to step 20.

    NO–Replace the battery module (see page 12-217), then go to step 14.

14. Reconnect all connectors.
15. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
16. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
17. Turn the ignition switch to ON (II).
18. Clear the DTC with the HDS (see page 12-6).
19. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B11 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the battery current sensor then, go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

20. Reconnect all connectors.
21. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
22. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
23. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
24. Turn the ignition switch to ON (II).
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0B11 indicated?

    YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P0BE6: U Phase Motor Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Monitor the OBD STATUS for P0BE6 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 4.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, go to step 1.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A5E and/or P0A5F indicated?

   YES–Do the troubleshooting for DTC P0A5E (see page 12-85) and/or DTC P0A5F (see page 12-89).

   NO–Replace the phase motor current sensor (see page 12-214), then go to step 5.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0BE6 indicated?

   YES–Go to step 1.

   NO–Go to step 7.
7. Monitor the OBD STATUS for P0BE6 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 6, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0BEA: V Phase Motor Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Monitor the OBD STATUS for P0BEA in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 4.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, go to step 1.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A61 and/or P0A62 indicated?

   YES–Do the troubleshooting for DTC P0A61 (see page 12-93) and/or DTC P0A62 (see page 12-97).

   NO–Replace the phase motor current sensor (see page 12-214), then go to step 5.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0BEA indicated?

   YES–Go to step 1.

   NO–Go to step 7.
7. Monitor the OBD STATUS for P0BEA in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 6, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0BEE: W Phase Motor Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Monitor the OBD STATUS for P0BEE in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 4.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, go to step 1.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A64 and/or P0A65 indicated?

   YES–Do the troubleshooting for DTC P0A64 (see page 12-100) and/or DTC P0A65 (see page 12-104).

   NO–Replace the phase motor current sensor (see page 12-214), then go to step 5.
5. Turn the ignition switch to ON (II).
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0BEE indicated?

   YES–Go to step 1.

   NO–Go to step 7.
7. Monitor the OBD STATUS for P0BEE in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 6, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

DTC P0BFD: Motor Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0BFD indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A5E, P0A5F, P0A61, P0A62, P0A64, or P0A65 indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Replace the phase motor current sensor (see page 12-214), then go to step 8.
6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS (see page 12-6).
8. Start the engine.
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0BFD indicated?

   YES–Go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P1437: Motor Power Inverter (MPI) Module Short Circuit

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0), and wait 1 minute.
4. Start the engine, and let it idle for 1 minute under these conditions:
   - Headlights on high beam
   - Blower fan at maximum speed
   - Rear window defogger on
5. Monitor the OBD STATUS for P1437 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. If the HDS indicates NOT COMPLETED, go to step 1.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P06B1, P0AA6, P1440, P15A5, or P1634 indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Replace the MPI module (see page 12-214), then go to step 7.
7. Turn the ignition switch to ON (II).
8. Clear the DTC with the HDS (see page 12-6).
9. Turn the ignition switch to LOCK (0), and wait 1 minute.
10. Start the engine, and let it idle for 1 minute under these conditions:
    - Headlights on high beam
    - Blower fan at maximum speed
    - Rear window defogger on
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1437 indicated?

    YES–Check for poor connections or loose terminals at the MPI module, then go to step 1.

    NO–Go to step 12.
12. Monitor the OBD STATUS for P1437 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 11, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the DC-DC converter and the MPI module, then go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1440: Motor Power Inverter (MPI) Module Output Circuit Malfunction

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine, and let it idle for 1 minute under these conditions:
   - Headlights on high beam
   - Blower fan at maximum speed
   - Rear window defogger on
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A3F, P0A5E, P0A5F, P0A61, P0A62, P0A64, P0A65, P0BE6, P0BEA, P0BEE, or P0BFD indicated?

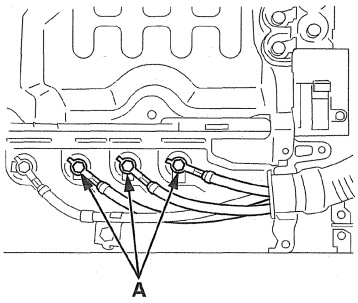
   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 5.
5. Monitor the OBD STATUS for P1440 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Intermittent failure, the system is OK at this time.■

   NO–If the HDS indicates FAILED, go to step 6. If the HDS indicates NOT COMPLETED, go to step 3.
6. Turn the ignition switch to LOCK (0).
7. Turn the battery module switch OFF (see page 12-4).
8. Remove the IPU cover (see page 12-210).
9. Remove the PCU lid (see page 12-212).
10. Check the connections at the IMA motor power cables (A).



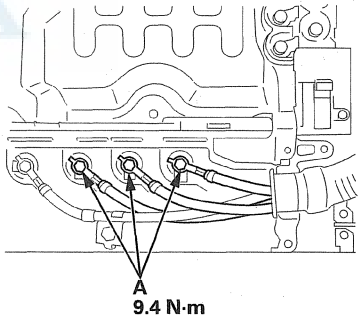
Are the connections OK?

YES–Go to step 11.

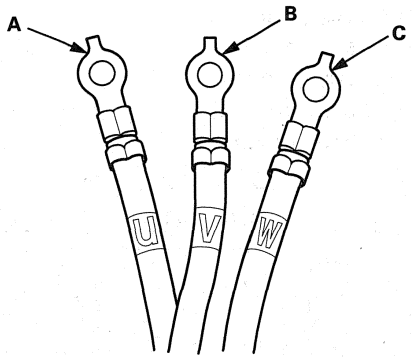
NO–Repair the connections, then go to step 23.

11. Remove the IMA motor power cables (A) from the phase motor current sensor.

    NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



12. Check for continuity between IMA motor power cables A and B, and then between cables A and C.



Is there continuity?

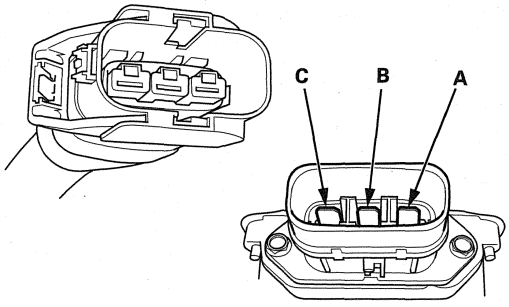
YES–Go to step 15.

NO–Go to step 13.

13. Disconnect the IMA motor power cable connector.

NOTE:
- Refer to Disconnecting the IMA Motor Power Cable Connector From the Motor Stator (see page 12-4).
- If the IMA motor power cable terminals are wet, dry them with a clean shop towel. Do not use compressed air.

14. Check for continuity between IMA motor power cable terminals A and B, and then between terminals A and C.



Is there continuity?

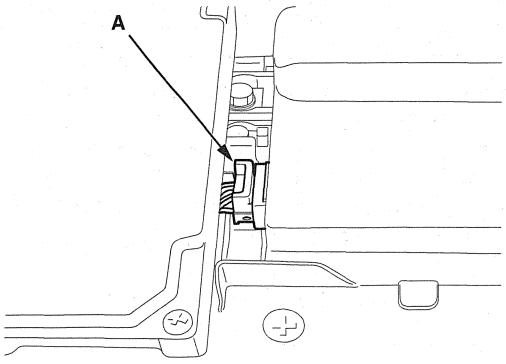
YES–Replace the IMA motor power cables (see page 12-221), then go to step 23.

NO–Replace the IMA motor housing (see page 12-227), then go to step 23.

15. Reconnect the IMA motor power cable connector.

16. Remove the PCU busplate and the PCU cover (see page 12-212).

17. Disconnect the MPI module 12P connector (A).

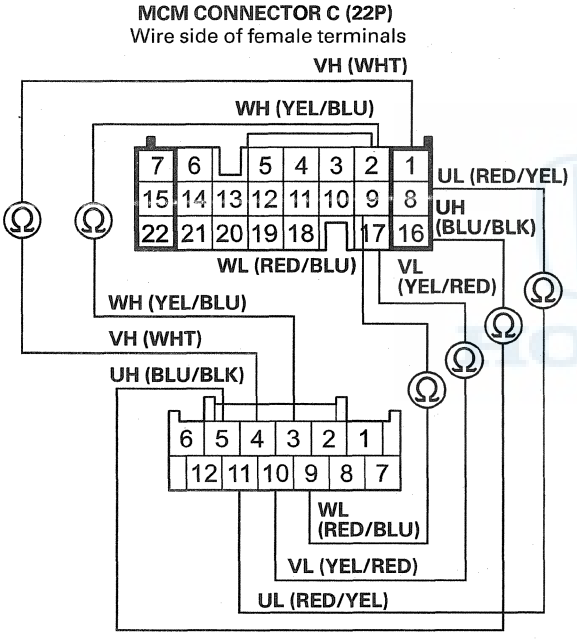


18. Disconnect MCM connector C (22P).

(cont'd)

DTC Troubleshooting (cont'd)

19. Check for continuity between these terminals:
    - MCM connector terminal C8 and MPI module 12P connector terminal No. 11.
    - MCM connector terminal C16 and MPI module 12P connector terminal No. 5.
    - MCM connector terminal C17 and MPI module 12P connector terminal No. 10.
    - MCM connector terminal C1 and MPI module 12P connector terminal No. 4.
    - MCM connector terminal C9 and MPI module 12P connector terminal No. 9.
    - MCM connector terminal C2 and MPI module 12P connector terminal No. 3.

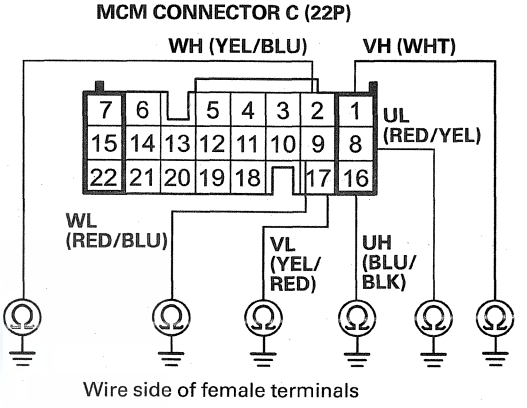


Is there continuity between all of the terminals?

YES–Go to step 20.

NO–Repair an open in the wire between the MPI module 12P connector and the MCM (C1, C2, C8, C9, C16, C17), then go to step 23.

20. Check for continuity between these MCM connector C (22P) terminals and body ground individually:
    - C1 and body ground
    - C2 and body ground
    - C8 and body ground
    - C9 and body ground
    - C16 and body ground
    - C17 and body ground



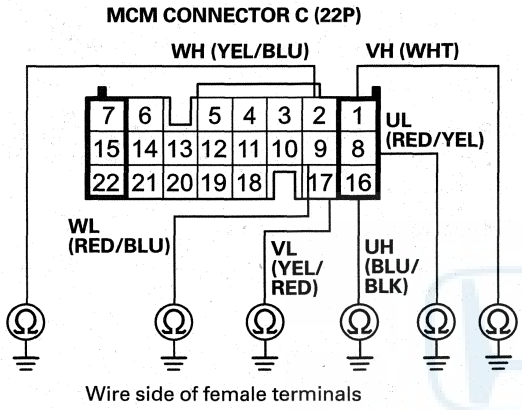
Is there continuity between each terminal and body ground?

YES–Repair a short in the wire between the MPI module 12P connector and the MCM (C1, C2, C8, C9, C16, C17), then go to step 23.

NO–Go to step 21.

21. Reconnect MCM connector C (22P).

22. Measure the resistance between these MCM connector C (22P) terminals and body ground individually:
    - C1 and body ground
    - C2 and body ground
    - C8 and body ground
    - C9 and body ground
    - C16 and body ground
    - C17 and body ground



Wire side of female terminals

Is there about 10 kΩ between each terminal and body ground?

YES–Replace the MPI module (see page 12-214), then go to step 23.

NO–Go to step 31.

23. Reconnect all connectors.
24. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
25. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
26. Turn the ignition switch to ON (II).
27. Clear the DTC with the HDS (see page 12-6).
28. Start the engine, and let it idle for 1 minute under these conditions:
    - Headlights on high beam
    - Blower fan at maximum speed
    - Rear window defogger on
29. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1440 indicated?

    YES–Check for poor connections or loose terminals at the MPI module, the IMA motor power cable, and the MCM, then go to step 1.

    NO–Go to step 30.
30. Monitor the OBD STATUS for P1440 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 29, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MPI module, the IMA motor power cable, and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 28.
31. Reconnect all connectors.

(cont'd)

DTC Troubleshooting (cont'd)

32. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
33. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
34. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
35. Start the engine, and let it idle for 1 minute under these conditions:
    - Headlights on high beam
    - Blower fan at maximum speed
    - Rear window defogger on
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1440 indicated?

    YES–Check for poor connections or loose terminals at the MPI module, the IMA motor power cable, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–Go to step 37.
37. Monitor the OBD STATUS for P1440 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 36, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MPI module, the IMA motor power cable, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 35.

DTC P1446: Battery Module Individual Voltage Input Deviation

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0).
4. Remove the No. B1 BACK UP (15A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
5. Turn the ignition switch to ON (II).
6. Make sure all electrical items (A/C, audio, lights, etc.) are off.
7. Start the engine.
8. Check the SOC in the DATA LIST with the HDS.
9. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
10. Let the engine idle for 3 minutes.
11. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1446 indicated?

    YES–Go to step 12.

    NO–Intermittent failure, the system is OK at this time.■
12. Check for Pending or Confirmed DTCs with the HDS.

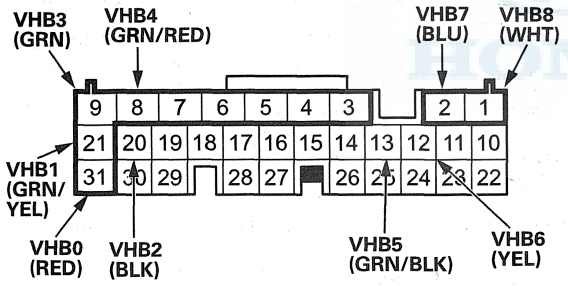
    Is DTC P1570 indicated?

    YES–Do the troubleshooting for DTC P1570 (see page 12-158).■

    NO–Go to step 13.
13. Record the value of the IMA BATTERY MODULE 1 VOLTAGE through IMA BATTERY MODULE 7 VOLTAGE in the DATA LIST with the HDS.
14. Turn the ignition switch to LOCK (0).
15. Turn the battery module switch OFF (see page 12-4).
16. Remove the IPU cover (see page 12-210).

17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
18. Disconnect MCM connector E (31P).
19. Compare the voltages you recorded in step 13 with the voltages you record between the MCM connector terminals listed below.
    - E21 and E31, compared to IMA BATTERY MODULE 1 VOLTAGE
    - E20 and E21, compared to IMA BATTERY MODULE 2 VOLTAGE
    - E9 and E20, compared to IMA BATTERY MODULE 3 VOLTAGE
    - E8 and E9, compared to IMA BATTERY MODULE 4 VOLTAGE
    - E12 and E13, compared to IMA BATTERY MODULE 5 VOLTAGE
    - E2 and E12, compared to IMA BATTERY MODULE 6 VOLTAGE
    - E1 and E2, compared to IMA BATTERY MODULE 7 VOLTAGE

MCM CONNECTOR E (31P)



Wire side of female terminals

Is there more than a 1.2 V difference between the MCM readings, and the readings from step 13?

YES–Go to step 35.

NO–Replace the battery module (see page 12-217), then go to step 20.

20. Reconnect all connectors.
21. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
22. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS (see page 12-6).
25. Turn the ignition switch to LOCK (0).
26. Remove the B1 BACK UP (15A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
27. Turn the ignition switch to ON (II).
28. Make sure all electrical items (A/C, audio, lights, etc.) are off.
29. Start the engine.
30. Check the SOC in the DATA LIST with the HDS.
31. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
32. Let the engine idle for 3 minutes.
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1446 indicated?

    YES–Go to step 1.

    NO–Go to step 34.
34. Monitor the OBD STATUS for P1446 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 33, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 4. If the HDS indicates NOT COMPLETED, go to step 25.

(cont'd)

DTC Troubleshooting (cont'd)

35. Reconnect all connectors.
36. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
37. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
38. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
39. Turn the ignition switch to LOCK (0).
40. Remove the B1 BACK UP (15A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
41. Turn the ignition switch to ON (II).
42. Make sure all electrical items (A/C, audio, lights, etc.) are off.
43. Start the engine.
44. Check the SOC in the DATA LIST with the HDS.
45. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
46. Let the engine idle for 3 minutes.
47. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1446 indicated?

    YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–Go to step 48.

48. Monitor the OBD STATUS for P1446 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 47, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MPI module, the IMA motor power cable, and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 39.

DTC P1448: Intelligent Power Unit (IPU) Module Fan Problem

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Do the IPU MODULE FAN DRIVE in the INSPECTION MENU with the HDS.

   Is the IPU module fan OK?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.

4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1634 indicated?

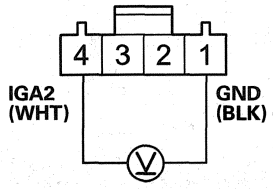
   YES–Do the troubleshooting for DTC P1634 (see page 12-178).

   NO–Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Remove the right cargo area side trim panel (see page 20-64).
7. Disconnect the IPU module fan 4P connector.
8. Turn the ignition switch to ON (II).

9. Measure the voltage between IPU module fan 4P connector terminals No. 1 and No. 4.

IPU MODULE FAN 4P CONNECTOR



Wire side of female terminals

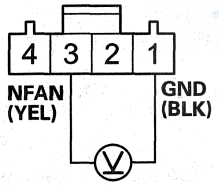
Is there battery voltage?

YES–Go to step 10.

NO–Go to step 21.

10. Measure the voltage between IPU module fan 4P connector terminals No. 1 and No. 3.

IPU MODULE FAN 4P CONNECTOR



Wire side of female terminals

Is there about 5 V?

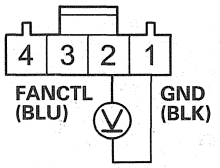
YES–Go to step 11.

NO–Go to step 22.

11. Reconnect the IPU module fan 4P connector.

12. Measure the voltage between IPU module fan 4P connector terminals No. 1 and No. 2.

IPU MODULE FAN 4P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 13.

NO–Replace the IPU module fan (see page 12-220), then go to step 29.

13. Turn the ignition switch to LOCK (0).

14. Disconnect the IPU module fan 4P connector.

15. Turn the battery module switch OFF (see page 12-4).

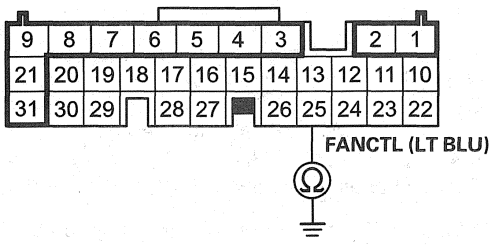
16. Remove the IPU cover (see page 12-210).

17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

18. Disconnect MCM connector A (31P).

19. Check for continuity between MCM connector terminal A25 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the IPU module fan and the MCM (A25), then go to step 29.

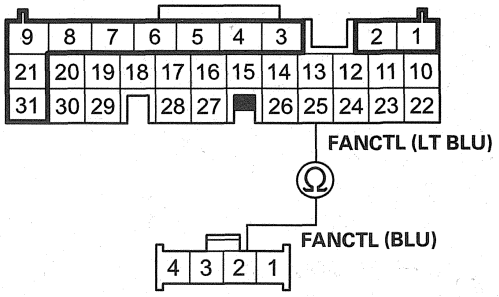
NO–Go to step 20.

(cont'd)

DTC Troubleshooting (cont'd)

20. Check for continuity between IPU module fan 4P connector terminal No. 2 and MCM connector terminal A25.

MCM CONNECTOR A (31P)
Wire side of female terminals



IPU MODULE FAN 4P CONNECTOR
Wire side of female terminals

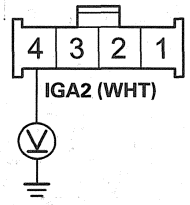
Is there continuity?

YES–Go to step 38.

NO–Repair an open in the wire between the IPU module fan and the MCM (A25), then go to step 29.

21. Measure the voltage between IPU module fan 4P connector terminal No. 4 and body ground.

IPU MODULE FAN 4P CONNECTOR



Wire side of female terminals

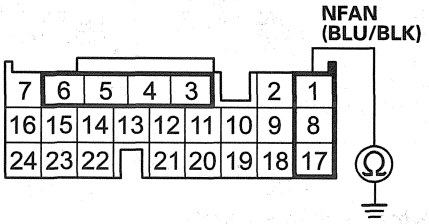
Is there battery voltage?

YES–Repair an open in the wire between the IPU module fan and G701 (see page 22-50), then go to step 29.

NO–Repair an open in the wire between the IPU module fan and MCM relay 2, then go to step 29.

22. Turn the ignition switch to LOCK (0).
23. Turn the battery module switch OFF (see page 12-4).
24. Remove the IPU cover (see page 12-210).
25. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
26. Disconnect MCM connector B (24P).
27. Check for continuity between MCM connector terminal B1 and body ground.

MCM CONNECTOR B (24P)



Wire side of female terminals

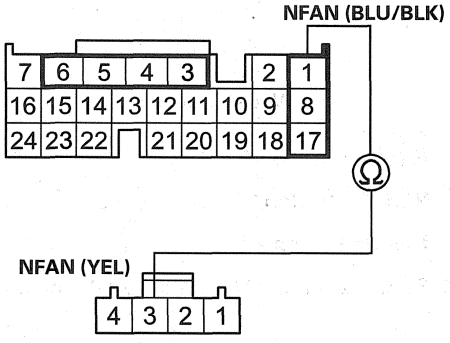
Is there continuity?

YES–Repair a short in the wire between the IPU module fan and the MCM (B1), then go to step 29.

NO–Go to step 28.

28. Check for continuity between MCM connector terminal B1 and IPU module fan 4P connector terminal No. 3.

MCM CONNECTOR B (24P)
Wire side of female terminals



IPU MODULE FAN 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 38.

NO–Repair an open in the wire between the IPU module fan and the MCM (B1), then go to step 29.

29. Turn the ignition switch to LOCK (0).
30. Reconnect all connectors.
31. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
32. If removed, reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. If removed, reinstall the right cargo area side trim panel (see page 20-64).
34. Turn the ignition switch to ON (II).
35. Clear the DTC with the HDS (see page 12-6).
36. Do the IPU MODULE FAN DRIVE in the INSPECTION MENU with the HDS.
37. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1448 indicated?

    YES–Check for poor connections or loose terminals at the IPU module fan and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

38. Turn the ignition switch to LOCK (0).
39. Reconnect all connectors.
40. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
41. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
42. Reinstall the right cargo area side trim panel (see page 20-64).
43. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
44. Turn the ignition switch to ON (II).
45. Do the IPU MODULE FAN DRIVE in the INSPECTION MENU with the HDS.
46. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1448 indicated?

    YES–Check for poor connections or loose terminals at the IPU module fan and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1570: Battery Module Individual Voltage Problem

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

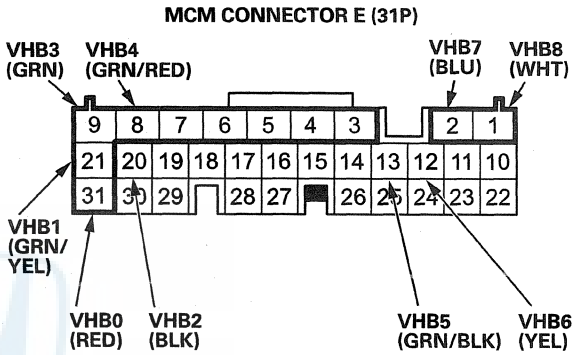
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0).
4. Remove the No. B1 BACK UP (15 A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
5. Start the engine.
6. Make sure all electrical items (A/C, audio, lights, etc.) are off.
7. Check the SOC in the DATA LIST with the HDS.
8. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
9. Let the engine idle for 3 minutes.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1570 indicated?

    YES–Go to step 11.

    NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM.■

11. Turn the ignition switch to LOCK (0).
12. Turn the battery module switch OFF (see page 12-4).
13. Remove the IPU cover (see page 12-210).
14. Remove the PCU lid (see page 12-212).
15. Disconnect MCM connector E (31P).
16. Measure the voltage between these MCM connector terminals:
    - E21 and E31
    - E20 and E21
    - E9 and E20
    - E8 and E9
    - E12 and E13
    - E2 and E12
    - E1 and E2



Wire side of female terminals

Is the difference between the maximum and the minimum values 3 V or more?

YES–Replace the battery module (see page 12-217), then go to step 17.

NO–Go to step 30.

17. Turn the ignition switch to LOCK (0).
18. Reconnect all connectors.
19. Reinstall the PCU lid (see page 12-212).
20. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
21. Turn the ignition switch to ON (II).
22. Clear the DTC with the HDS (see page 12-6).
23. Turn the ignition switch to LOCK (0).
24. Remove the No. B1 BACK UP (15 A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
25. Start the engine.
26. Check the SOC in the DATA LIST with the HDS.
27. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1570 indicated?

    YES–Check for poor connections or loose terminals at the battery module and the MCM, then go to step 1.

    NO–Go to step 29.
29. Monitor the OBD STATUS for P1570 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 28, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the battery module and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 23.
30. Reconnect all connectors.
31. Reinstall the PCU lid (see page 12-212).
32. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
34. Clear the DTC with the HDS (see page 12-6).
35. Turn the ignition switch to LOCK (0).
36. Remove the No. B1 BACK UP (15 A) fuse from the under-dash fuse/relay box for at least 30 seconds, then reinstall it.
37. Start the engine.
38. Check the SOC in the DATA LIST with the HDS.
39. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 75%.
40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1570 indicated?

    YES–Check for poor connections or loose terminals at the battery module and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–Go to step 41.
41. Monitor the OBD STATUS for P1570 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 40, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the battery module and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 35.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1574: Battery Module Temperature Signal Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the IPU module fan duct is blocked, DTC P1574 may be detected.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A9D, P0A9E, P0AC7, P0AC8, P0ACC, or P0ACD indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 4.
4. Do the IPU MODULE FAN DRIVE in the INSPECTION MENU with the HDS.

   Is the IPU module fan OK?

   YES–Do the troubleshooting for DTC P1448 (see page 12-154).

   NO–Go to step 5.
5. Check IMA BATTERY TEMPERATURE SENSOR 1, IMA BATTERY TEMPERATURE SENSOR 2, and IMA BATTERY TEMPERATURE SENSOR 3 in the DATA LIST with the HDS.

   NOTE: If the vehicle is left outside for an extended time with the temperature at 5 °F (−15 °C) or less bring it indoors overnight, where the temperature is 32 °F (0 °C) or more. Then continue with your troubleshooting.

   Are any of the values more than 131 °F (55 °C), or less than 3.6 °F (−15.8 °C) indicated?

   YES–Replace the battery module (see page 12-217), then go to step 7.

   NO–Go to step 6.
6. Check the IPU module air duct and the IPU module fan for disconnections, damage, or obstructions.

   Are the IPU module air duct and the IPU module fan OK?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Repair or replace the IPU module air duct or the IPU module fan as needed, then go to step 7.
7. Turn the ignition switch to ON (II).
8. Clear the DTC with the HDS (see page 12-6).
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1574 indicated?

   YES–Go to step 1.

   NO–Go to step 10.
10. Start the engine.
11. Check the SOC in the DATA LIST with the HDS.
12. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to the maximum.
13. Monitor the OBD STATUS for P1574 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 9, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, go to step 1. If the HDS indicates NOT COMPLETED, , go to step 12.■

DTC P1575: Motor Power Inverter (MPI) Module Voltage Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the battery module switch is turned OFF while the ignition switch is ON (II), DTC P1575 may be stored.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0AE1 indicated?

   YES–Do the troubleshooting for DTC P0AE1 (see page 12-135).

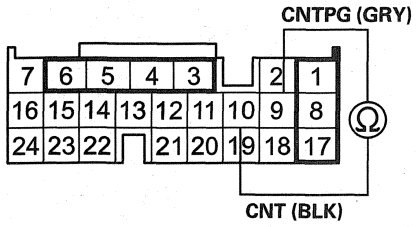
   NO–Go to step 4.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1575 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the junction board, the MCM, and the MPI module.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Disconnect MCM connector B (24P).
10. Measure the resistance between MCM connector terminals B9 and B10.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there 23.4—28.6 Ω?

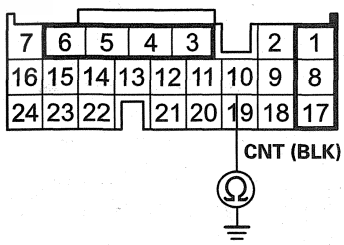
YES–Go to step 11.

NO–

- If the resistance is too high, go to step 17.
- If the resistance is too low, go to step 19.

11. Check for continuity between MCM connector terminal B10 and body ground.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

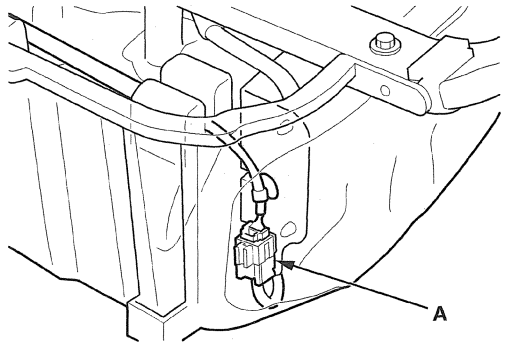
YES–Go to step 12.

NO–Go to step 14.

(cont'd)

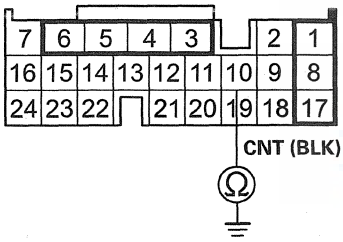
DTC Troubleshooting (cont'd)

12. Disconnect the junction board 12P connector (A).



13. Check for continuity between MCM connector terminal B10 and body ground.

MCM CONNECTOR B (24P)



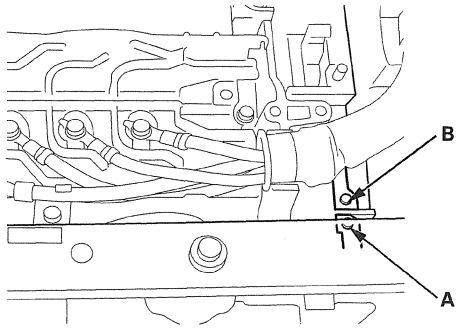
Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the junction board 12P connector and the MCM (B10), then go to step 28.

NO–Replace the battery module (see page 12-217), then go to step 28.

14. Make sure the battery module switch is turned OFF.
15. Connect MCM connector terminal B10 to 12 V battery power, and connect MCM connector terminal B9 to body ground.
16. Check for continuity between the high voltage contactor terminals (A, B).

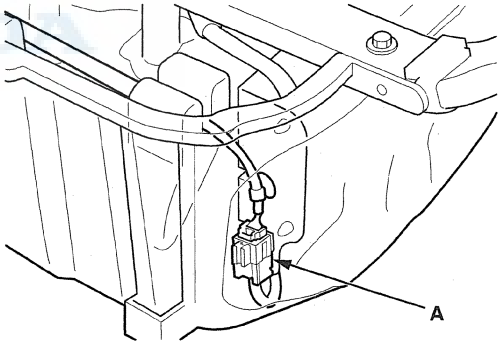


Is there continuity?

YES–Go to step 21.

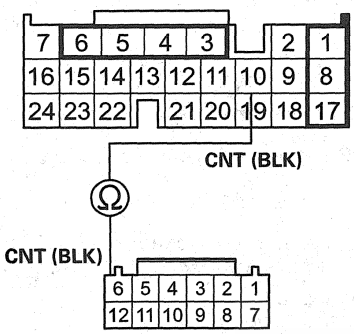
NO–Replace the battery module (see page 12-217), then go to step 28.

17. Disconnect the junction board 12P connector (A).



18. Check for continuity between MCM connector terminal B10 and junction board 12P connector terminal No. 6.

MCM CONNECTOR B (24P)
Wire side of female terminals



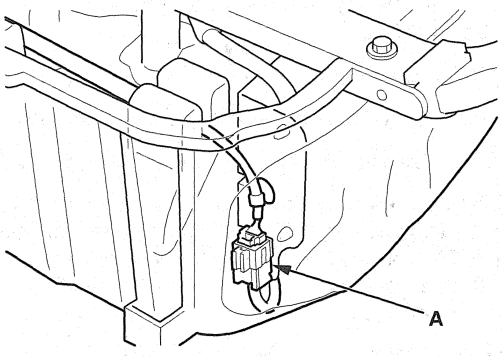
JUNCTION BOARD 12P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the battery module (see page 12-217), then go to step 28.

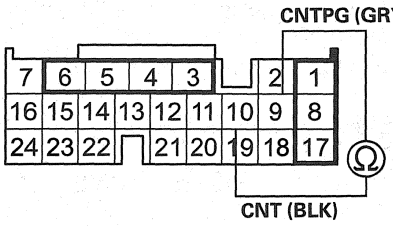
NO–Repair an open in the wire between the junction board 12P connector and the MCM (B10), then go to step 28.

19. Disconnect the junction board 12P connector (A).



20. Check for continuity between MCM connector terminals B9 and B10.

MCM CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the junction board 12P connector and the MCM (B9, B10), then go to step 28.

NO–Replace the battery module (see page 12-217), then go to step 28.

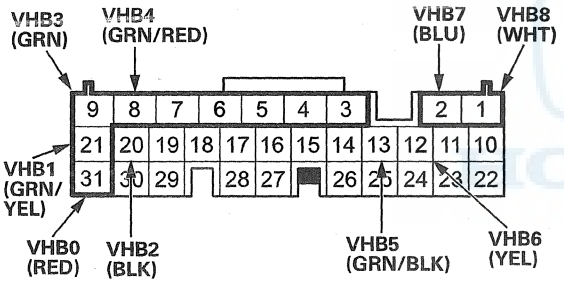
21. Reconnect MCM connector B (24P).
22. Turn the ignition switch to ON (II).
23. Record the value of the IMA BATTERY MODULE 1 VOLTAGE through IMA BATTERY MODULE 7 VOLTAGE in the DATA LIST with the HDS.
24. Turn the ignition switch to LOCK (0).
25. Disconnect MCM connector E (31P).

(cont'd)

DTC Troubleshooting (cont'd)

26. Compare the voltages you recorded in step 23 with the voltages you record between the MCM connector terminals listed below.
    - E21 and E31, compared to IMA BATTERY MODULE 1 VOLTAGE
    - E20 and E21, compared to IMA BATTERY MODULE 2 VOLTAGE
    - E9 and E20, compared to IMA BATTERY MODULE 3 VOLTAGE
    - E8 and E9, compared to IMA BATTERY MODULE 4 VOLTAGE
    - E12 and E13, compared to IMA BATTERY MODULE 5 VOLTAGE
    - E2 and E12, compared to IMA BATTERY MODULE 6 VOLTAGE
    - E1 and E2, compared to IMA BATTERY MODULE 7 VOLTAGE

MCM CONNECTOR E (31P)



Wire side of female terminals

Is there more than a 1 V difference between the MCM readings, and the readings from step 23?

YES–Go to step 34.

NO–Replace the MPI module (see page 12-214), then go to step 27.

27. Turn the ignition switch to LOCK (0).
28. Reconnect all connectors.
29. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
30. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
31. Turn the ignition switch to ON (II).
32. Clear the DTC with the HDS (see page 12-6).
33. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1575 indicated?

    YES–Check for poor connections or loose terminals at the junction board, the MCM, and the MPI module, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
34. Turn the ignition switch to LOCK (0).
35. Reconnect all connectors.
36. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
37. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
38. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
39. Turn the ignition switch to ON (II).
40. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1575 indicated?

    YES–Check for poor connections or loose terminals at the junction board, the MCM, and the MPI module. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P1586: Battery Current Sensor Signal Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Check the SOC in the DATA LIST with the HDS.

   Is the SOC 25% or more ?

   YES–Go to step 6.

   NO–Go to step 5.
5. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 25%.
6. Test drive at 25 mph (40 km/h) in D (CVT model) or in 3rd gear or higher (M/T model).
7. Press the brake pedal, and stop the vehicle slowly.
8. Monitor the OBD STATUS for P0A3F, P0A5E, P0A5F, P0A61, P0A62, P0A64, P0A65, P0A78, P0AC0, P0AC1, P0AC2, P0B0F, P0B10, P0B11, P0BE6, P0BEA, P0BEE, P0BFD, P1440, P15A5, and P15AA in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–Go to step 9.

   NO–

   - If the HDS indicates FAILED: Go to the indicated DTC's troubleshooting.■
   - If the HDS indicates NOT COMPLETED: Keep the ignition switch ON (II) until a result is indicated.■
9. Monitor the OBD STATUS for P1586 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Check for poor connections or loose terminals at the battery current sensor and the MCM. If the connections and the terminals are OK, replace the battery module (see page 12-217), then go to step 10.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the battery current sensor and the MCM. If the HDS indicates NOT COMPLETED, go to step 4.
10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS (see page 12-6).
12. Start the engine.
13. Check the SOC in the DATA LIST with the HDS.

    Is the SOC 25% or more?

    YES–Go to step 15.

    NO–Go to step 14.
14. Hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to 25%.
15. Test drive at 25 mph (40 km/h) in D (CVT model) or in 3rd gear or higher (M/T model).
16. Press the brake pedal, and stop the vehicle slowly.
17. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1586 indicated?

    YES–Check for poor connections or loose terminals at the battery current sensor and the MCM, then go to step 1.

    NO–Go to step 18.
18. Monitor the OBD STATUS for P1586 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 17, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the battery current sensor and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 13.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P15A5: Motor Current Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine, and let it idle 1 minute under these conditions:
   - Headlights on high beam
   - Blower fan at maximum speed
   - Rear window defogger on
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0A3F, P0A5E, P0A5F, P0A61, P0A62, P0A64, P0A65, P0BE6, P0BEA, P0BEE, P0BFD, P1437, and/or P1440 indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 5.
5. Test-drive the vehicle using wide open throttle for at least 2 seconds, then decelerate while lightly braking.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P15A5 indicated?

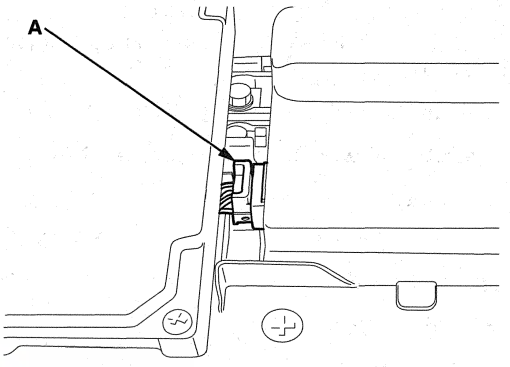
   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the phase motor current sensor and the IMA motor power cable.■
7. At idle, individually check the amperage of the U PHASE MOTOR CURRENT SENSOR, the V PHASE MOTOR CURRENT SENSOR, and the W PHASE MOTOR CURRENT SENSOR in the DATA LIST with the HDS.

   Do the values vary from 0 A?

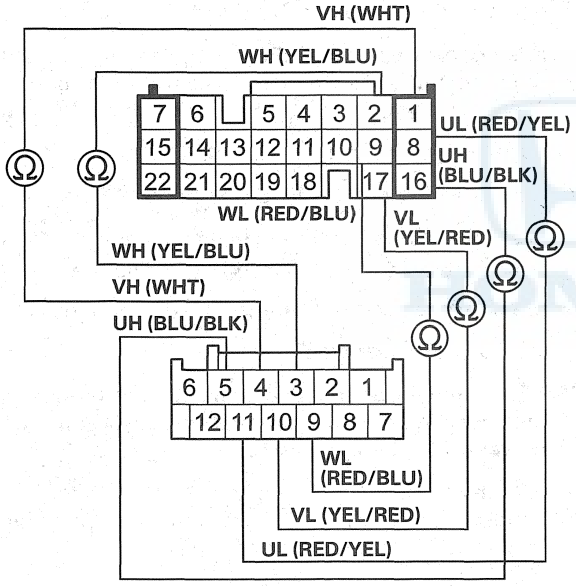
   YES–Replace the phase motor current sensor (see page 12-214), then go to step 28.

   NO–Go to step 8.
8. Turn the ignition switch to LOCK (0).
9. Turn the battery module switch OFF (see page 12-4).
10. Remove the IPU cover (see page 12-210).
11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
12. Disconnect MCM connector C (22P).
13. Disconnect the MPI module 12P connector (A).



14. Check for continuity between these terminals:
    - MCM connector terminal C8 and MPI module 12P connector terminal No. 11.
    - MCM connector terminal C16 and MPI module 12P connector terminal No. 5.
    - MCM connector terminal C17 and MPI module 12P connector terminal No. 10.
    - MCM connector terminal C1 and MPI module 12P connector terminal No. 4.
    - MCM connector terminal C9 and MPI module 12P connector terminal No. 9.
    - MCM connector terminal C2 and MPI module 12P connector terminal No. 3.

MCM CONNECTOR C (22P)
Wire side of female terminals



MPI MODULE 12P CONNECTOR
Wire side of female terminals

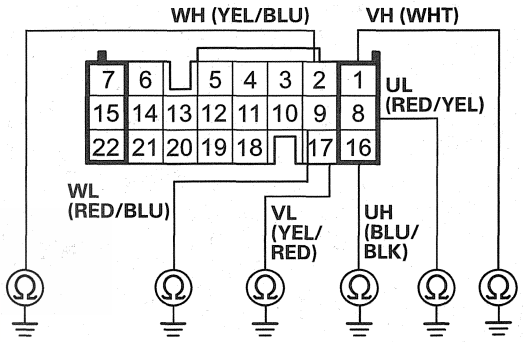
Is there continuity between all of the terminals?

YES–Go to step 15.

NO–Repair an open in the wire between the MPI module 12P connector and the MCM (C1, C2, C8, C9, C16, C17), then go to step 28.

15. Check for continuity between these MCM connector C (22P) terminals and body ground individually:
    - C1 and body ground
    - C2 and body ground
    - C8 and body ground
    - C9 and body ground
    - C16 and body ground
    - C17 and body ground

MCM CONNECTOR C (22P)



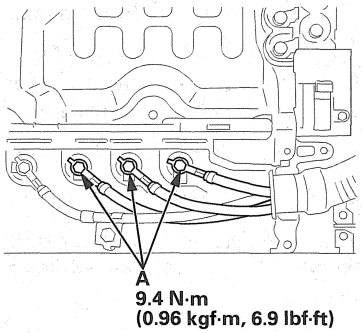
Wire side of female terminals

Is there continuity between each terminal and body ground?

YES–Repair a short in the wire between the MPI module 12P connector and the MCM (C1, C2, C8, C9, C16, C17), then go to step 28.

NO–Go to step 16.

16. Remove the IMA motor power cables (A) from the phase motor current sensor.



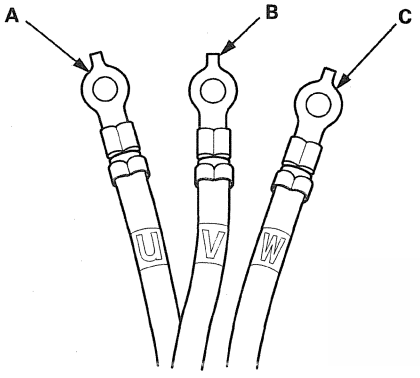
(cont'd)

DTC Troubleshooting (cont'd)

17. Disconnect the IMA motor power cable connector from the motor stator (see page 12-4).

    NOTE: If the IMA motor power cable terminals are wet, dry them with a clean shop towel. Do not use compressed air.

18. Check for continuity between IMA motor power cable terminals A and B, B and C, and C and A individually.



    Is there continuity?

    YES–Replace the IMA motor power cable (see page 12-221), then go to step 28.

    NO–Go to step 19.

19. Substitute a known-good MPI module (see page 12-8).
20. Turn the ignition switch to LOCK (0).
21. Reconnect the IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.

22. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
23. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-5).
24. Turn the ignition switch to ON (II).
25. Clear the DTC with the HDS (see page 12-6).
26. Test-drive the vehicle using wide open throttle for at least 2 seconds, then decelerate while lightly braking.
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15A5 indicated?

    YES–Go to step 37.

    NO–Replace the MPI module (see page 12-214), then go to step 28.

28. Turn the ignition switch to LOCK (0).
29. Reconnect all connectors.
30. If removed, reconnect the IMA motor power cables to the phase motor current sensor.

    NOTE: Make sure the cables are correctly positioned before you reconnect them.

31. If removed, reinstall the PCU cover, the PCU busplate and the PCU lid (see page 12-212).
32. If removed, reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
33. Turn the ignition switch to ON (II).
34. Clear the DTC with the HDS (see page 12-6).
35. Test-drive the vehicle using wide open throttle for at least 2 seconds, then decelerate while lightly braking.
36. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15A5 indicated?

    YES–Check for poor connections or loose terminals at the phase motor current sensor and the IMA motor power cable, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

37. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
38. Test-drive the vehicle using wide open throttle for at least 2 seconds, then decelerate while lightly braking.
39. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15A5 indicated?

    YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, replace the IMA motor housing (see page 12-227), then go to step 28.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P15AA: Motor Rotor Position Not Learned

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the IMA motor rotor position sensor and the IMA motor rotor are installed incorrectly, DTC P15AA may be detected.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine, and let it idle 1 minute.
4. Turn the ignition switch to LOCK (0), then turn it to ON (II).
5. Check for Pending or Confirmed DTCs with the HDS.

   Are any DTC(s) except P15AA indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 6.
6. Clear the DTC with the HDS (see page 12-6).
7. Start the engine, and hold the engine speed between 3,500 rpm and 4,000 rpm without load (in P or N (CVT model)) (in neutral (M/T model)) until the SOC increases to above 70%.
8. Do the MOTOR ROTOR POSITION CALIBRATION in the IMA ADJUSTMENT MENU with the HDS.

   Does the HDS indicate COMPLETE?

   YES–Troubleshooting is complete.■

   NO–Check the installation of the IMA motor rotor position sensor and the MCM. If needed, reinstall the parts, then go to step 9.

(cont'd)

DTC Troubleshooting (cont'd)

9. Turn the ignition switch to ON (II).
10. Clear the DTC with the HDS (see page 12-6).
11. Start the engine, and let it idle 1 minute.
12. Turn the ignition switch to LOCK (0), then turn it to ON (II).
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15AA indicated?

    YES–Check for poor connections or loose terminals at the IMA motor rotor position sensor and the MCM, then go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for P15AA in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the motor rotor position sensor and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.

DTC P15C4: Auto Idle Stop System Malfunction (M/T model)

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.
- This DTC is stored when the auto idle stop is prohibited due to failure.

1. Check the AUTO IDLE STOP DOES NOT OCCUR (BRAKE) in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to the brake booster pressure monitoring system's general troubleshooting information (see page 19-46). When the brake booster pressure monitoring system troubleshooting is completed, reset the ECM (see page 11-4) then clear the DTC in the IMA system (see page 12-6).■

   NO–Go to step 2.
2. Check the AUTO IDLE STOP DOES NOT OCCUR (A/C) in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to the climate control system's general troubleshooting information (see page 21-8). When the climate control system troubleshooting is completed, reset the ECM (see page 11-4) then clear the DTC in the IMA system (see page 12-6).■

   NO–Go to step 3.
3. Check the AUTO IDLE STOP DOES NOT OCCUR (NP SWITCH) in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to step 5.

   NO–Go to step 4.
4. Check the AUTO IDLE STOP DOES NOT OCCUR (CLUTCH PEDAL POSITION SWITCH) in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to step 26.

   NO–Intermittent failure, the system is OK at this time. Reset the ECM (see page 11-4), then clear the DTC in the IMA system (see page 12-6).■

5. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

   Does the HDS indicate ON when you move the shift lever to neutral, and does it indicate OFF when you move the shift lever to 1st or 2nd gear?

   YES–Intermittent failure, the neutral position switch is OK at this time. Reset the ECM (see page 11-4), and clear the DTC in the IMA system (see page 12-6).

   NO–

   - If the neutral position switch stays ON, go to step 6.
   - If the neutral position switch stays OFF, go to step 13.
   - If the indication is unstable, check the neutral position switch and the shift arm condition (see page 13-63), then go to step 67.

6. Turn the ignition switch to LOCK (0).
7. Disconnect the neutral position switch 2P connector.
8. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS with the shift lever in neutral.

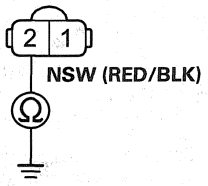
   Does the NP SWITCH indicate OFF?

   YES–Replace the neutral position switch (see page 13-43), then go to step 67.

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect ECM connector B (44P).
12. Check for continuity between neutral position switch 2P connector terminal No. 2 and body ground.

NEUTRAL POSITION SWITCH 2P CONNECTOR



Wire side of female terminals

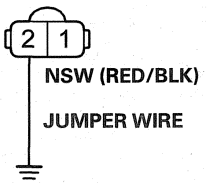
Is there continuity?

YES–Repair a short in the wire between the ECM (B13 and B21) and the neutral position switch, then go to step 67.

NO–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

13. Turn the ignition switch to ON (II).
14. Disconnect the neutral position switch 2P connector.
15. Connect neutral position switch 2P connector terminal No. 2 to body ground with a jumper wire.

NEUTRAL POSITION SWITCH 2P CONNECTOR



Wire side of female terminals

16. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

    Does the HDS indicate ON?

    YES–Go to step 17.

    NO–Go to step 21.

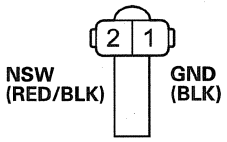
17. Disconnect the jumper wire from the neutral position switch 2P connector.
18. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

19. Connect neutral position switch 2P connector terminals No. 1 and No. 2 with a jumper wire.

NEUTRAL POSITION SWITCH 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

20. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS with the shift lever in neutral.

Does the HDS indicate OFF?

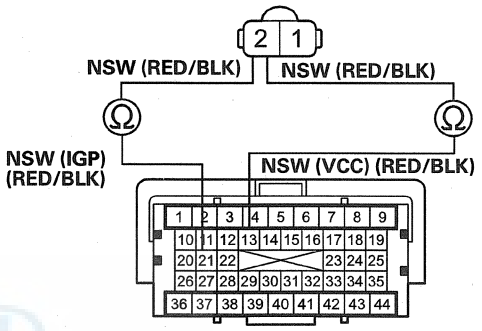
YES–Repair an open in the wire between the neutral position switch and G101 (see page 22-26), then go to step 67.

NO–Replace the neutral position switch (see page 13-43), then go to step 67.

21. Disconnect the jumper wire from the neutral position switch 2P connector.
22. Turn the ignition switch to LOCK (0).
23. Jump the SCS line with the HDS.
24. Disconnect ECM connector B (44P).
25. Check for continuity between these terminals:
    - ECM connector terminal B13 and neutral position switch 2P connector terminal No. 2.
    - ECM connector terminal B21 and neutral position switch 2P connector terminal No. 2.

NEUTRAL POSITION SWITCH 2P CONNECTOR

Wire side of female terminals



ECM CONNECTOR B (44P)

Terminal side of female terminals

Is there continuity?

YES–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

NO–Repair an open in the wire between the neutral position switch and the ECM (B13 or B21), then go to step 67.

26. Check CLUTCH PEDAL POSITION SWITCH A and CLUTCH PEDAL POSITION SWITCH A (C) in the PGM-FI DATA LIST with the HDS.

    Do the HDS indicate CLOSE when the clutch pedal is pressed and OPEN when the clutch pedal is released?

    YES–Intermittent failure, the system is OK at this time. Reset the ECM (see page 11-4), and clear the DTC in the IMA system (see page 12-6).■

    NO–

    - If clutch pedal position switch A CLOSE stays on, go to step 27.
    - If clutch pedal position switch A OPEN stays on, go to step 34.
    - If clutch pedal position switch C CLOSE stays on, go to step 47.
    - If clutch pedal position switch C OPEN stays on, go to step 54.
    - If clutch pedal position switch A and clutch pedal position switch C OPEN stays on, repair an open in the wire between clutch pedal position switch A and C and G403 (see page 22-36), then go to step 67.

27. Turn the ignition switch to LOCK (0).

28. Disconnect the clutch pedal position switch A 2P connector.

29. Check CLUTCH PEDAL POSITION SWITCH A in the PGM-FI DATA LIST with the HDS.

    Does the HDS indicate OPEN?

    YES–Replace clutch pedal position switch A (see page 13-9), then go to step 67.

    NO–Go to step 30.

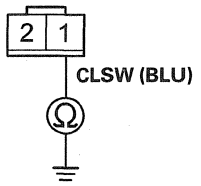
30. Turn the ignition switch to LOCK (0).

31. Jump the SCS line with the HDS.

32. Disconnect ECM connector B (44P).

33. Check for continuity between clutch pedal position switch A 2P connector terminal No. 1 and body ground.

CLUTCH PEDAL POSITION SWITCH A 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM (B12) and clutch pedal position switch A, then go to step 67.

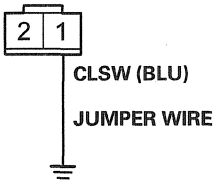
NO–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

34. Turn the ignition switch to LOCK (0).

35. Disconnect clutch pedal position switch A 2P connector.

36. Connect clutch pedal position switch A 2P connector terminal No. 1 to body ground with jumper wire.

CLUTCH PEDAL POSITION SWITCH A 2P CONNECTOR



Wire side of female terminals

37. Check CLUTCH PEDAL POSITION SWITCH A in the PGM-FI DATA LIST with the HDS.

    Does the HDS indicate CLOSE?

    YES–Go to step 38.

    NO–Go to step 42.

38. Disconnect the jumper wire from the clutch pedal position switch A 2P connector.

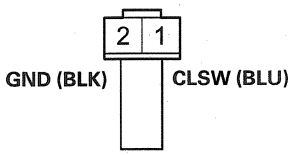
39. Turn the ignition switch to LOCK (0).

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DTC Troubleshooting (cont'd)

40. Connect clutch pedal position switch A 2P connector terminals No. 1 and No. 2 with a jumper wire.

CLUTCH PEDAL POSITION SWITCH A 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

41. Check CLUTCH PEDAL POSITION SWITCH A in the PGM-FI DATA LIST with the HDS.

Does the HDS indicate OPEN?

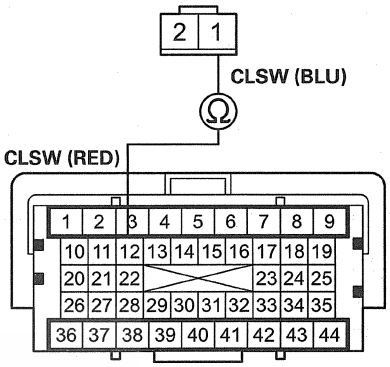
YES–Repair an open in the wire between clutch pedal position switch A and G403 (see page 22-36), then go to step 67.

NO–Replace clutch pedal position switch A (see page 13-9), then go to step 67.

42. Disconnect the jumper wire from the clutch pedal position switch A 2P connector.
43. Turn the ignition switch to LOCK (0).
44. Jump the SCS line with the HDS.
45. Disconnect ECM connector B (44P).
46. Check for continuity between clutch pedal position switch A 2P connector terminal No. 1 and ECM connector terminal B12.

CLUTCH PEDAL POSITION SWITCH A 2P CONNECTOR

Wire side of female terminals



ECM CONNECTOR B (44P)

Terminal side of female terminals

Is there continuity?

YES–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

NO–Repair an open in the wire between clutch pedal position switch A and the ECM (B12), then go to step 67.

47. Turn the ignition switch to LOCK (0).
48. Disconnect the clutch pedal position switch C 2P connector.
49. Check CLUTCH PEDAL POSITION SWITCH A (C) in the PGM-FI DATA LIST with the HDS.

Does the HDS indicate OPEN?

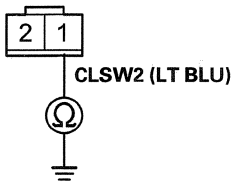
YES–Replace clutch pedal position switch C (see page 13-9), then go to step 67.

NO–Go to step 50.

50. Turn the ignition switch to LOCK (0).
51. Jump the SCS line with the HDS.
52. Disconnect ECM connector B (44P).

53. Check for continuity between clutch pedal position switch C 2P connector terminal No. 1 and body ground.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM (B39) and clutch pedal position switch C, then go to step 67.

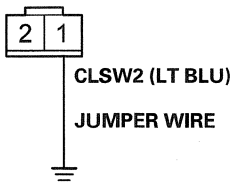
NO–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

54. Turn the ignition switch to LOCK (0).

55. Disconnect the clutch pedal position switch C 2P connector.

56. Connect clutch pedal position switch C 2P connector terminal No. 1 to body ground with a jumper wire.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR



Wire side of female terminals

57. Check CLUTCH PEDAL POSITION SWITCH A (C) in the PGM-FI DATA LIST with the HDS.

Does the HDS indicate CLOSE?

YES–Go to step 58.

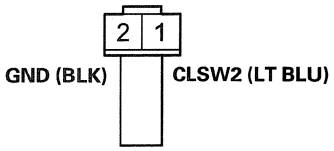
NO–Go to step 62.

58. Disconnect the jumper wire from the clutch pedal position switch C 2P connector.

59. Turn the ignition switch to LOCK (0).

60. Connect clutch pedal position switch C 2P connector terminals No. 1 and No. 2 with a jumper wire.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

61. Check CLUTCH PEDAL POSITION SWITCH A (C) in the PGM-FI DATA LIST with the HDS.

Does the HDS indicate OPEN?

YES–Repair an open in the wire between clutch pedal position switch C and G403 (see page 22-36), then go to step 67.

NO–Replace clutch pedal position switch C (see page 13-9), then go to step 67.

62. Disconnect the jumper wire from the clutch pedal position switch C 2P connector.

63. Turn the ignition switch to LOCK (0).

64. Jump the SCS line with the HDS.

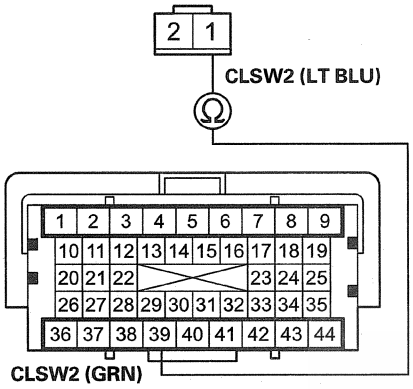
65. Disconnect ECM connector B (44P).

(cont'd)

DTC Troubleshooting (cont'd)

66. Check for continuity between clutch pedal position switch C 2P connector terminal No. 1 and ECM connector terminal B39.

CLUTCH PEDAL POSITION SWITCH C 2P CONNECTOR
Wire side of female terminals



ECM CONNECTOR B (44P)
Terminal side of female terminals

Is there continuity?

YES–Update the ECM if it does not have the latest software (see page 11-207), then recheck. If the ECM was updated, replace the original ECM (see page 11-209), then recheck.■

NO–Repair an open in the wire between the clutch pedal position switch C and the ECM (B39), then go to step 67.

67. Turn the ignition switch to LOCK (0).
68. Reconnect all connectors.
69. Turn the ignition switch to ON (II).
70. Reset the ECM with the HDS (see page 11-4).

    NOTE: If the ECM is not reset, DTC P15C4 is stored again.

71. Clear the DTC with the HDS (see page 12-6).
72. Do the auto idle stop system inspection (see page 12-207).
73. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15C4 indicated?

    YES–Check for poor connections or loose terminals at the ECM and clutch pedal position switches A and C. Also check for brake system and climate control system DTCs, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC P15C4: Auto Idle Stop System Malfunction (CVT model)

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.
- This DTC is stored when the auto idle stop is prohibited due to failure.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0102 indicated?

   YES–Do the troubleshooting for DTC P0102 (see page 11-86), then reset the PCM with the HDS (see page 11-4).■

   NO–Go to step 4.

4. Check the AUTO IDLE STOP DOES NOT OCCUR (BRAKE) in the PGM-FI SYSTEM with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to the brake booster pressure monitoring system's general troubleshooting information (see page 19-46). When the brake booster pressure monitoring system troubleshooting is completed, clear the DTC (see page 12-6).■

   NO–Go to step 5.

5. Check the AUTO IDLE STOP DOES NOT OCCUR (A/C) in the PGM-FI SYSTEM with the HDS.

   Does the HDS indicate EXIST?

   YES–Go to the climate control system's general troubleshooting information (see page 21-8). When the climate control system troubleshooting is completed, clear the DTC (see page 12-6).■

   NO–Go to step 6.

6. Check the IDLE STOP SW in the PGM-FI DATA LIST with the HDS.

   Does it indicate OPEN when the brake pedal is pressed and CLOSE when the brake pedal is released?

   YES–The system is OK at this time. Go to step 20.

   NO–

   - If CLOSE stays on, go to step 7.
   - If OPEN stays on, go to step 10.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the idle stop switch 2P connector.
9. Check the IDLE STOP SW in the PGM-FI DATA LIST with the HDS.

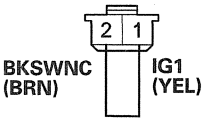
   Does the HDS indicate OPEN?

   YES–Replace the idle stop switch (see page 12-229), then go to step 19.

   NO–Repair a short to power in the wire between the idle stop switch 2P connector and the PCM (A13), then go to step 19.

10. Turn the ignition switch to LOCK (0).
11. Disconnect the idle stop switch 2P connector.
12. Connect idle stop switch 2P connector terminals No. 1 and No. 2 with a jumper wire.

IDLE STOP SWITCH 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

13. Turn the ignition switch to ON (II).
14. Check the IDLE STOP SW in the PGM-FI DATA LIST with the HDS.

    Does the HDS indicate CLOSE?

    YES–Replace the idle stop switch (see page 12-229), then go to step 19.

    NO–Go to step 15.

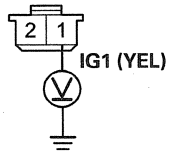
15. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

16. Disconnect the jumper wire from the idle stop switch 2P connector.
17. Turn the ignition switch to ON (II).
18. Measure the voltage between body ground and idle stop switch 2P connector terminal No. 1.

IDLE STOP SWITCH 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair an open in the wire between the idle stop switch 2P connector and the PCM (A13), then go to step 19.

NO–Repair an open in the wire between the No. B12 IG IMA (10 A) fuse and the idle stop switch 2P connector, then go to step 19.

19. Turn the ignition switch to LOCK (0).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Reset the PCM with the HDS (see page 11-4).

    NOTE: If the PCM is not reset, DTC P15C4 can return.

23. Clear the DTC with the HDS (see page 12-6).
24. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P15C4 indicated?

    YES–Check for poor connections or loose terminals at the PCM and the idle stop switch. Also check for brake system and climate control system DTCs, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P1634: Motor Power Inverter (MPI) Module Signal Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1634 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the MCM and the MPI module.■

4. Do the IPU MODULE FAN DRIVE in the INSPECTION MENU with the HDS.

   Does the HDS indicate OUT OF RANGE?

   YES–Go to step 5.

   NO–If the HDS indicates CONDITION IS NORMAL, go to step 15.

5. Check the No. B53 + B IMA 2 (15 A) fuse in the under-dash fuse/relay box.

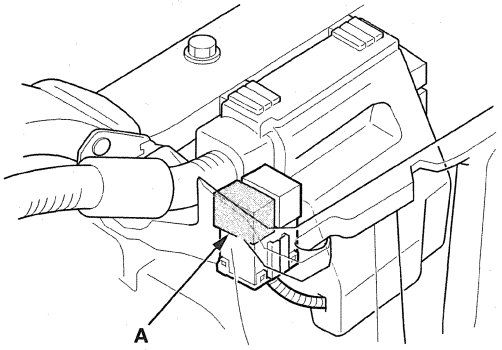
   Is the fuse OK?

   YES–Go to step 6.

   NO–Repair a short to ground in the wire between the IPU module fan or the MPI module and the No. B53 IMA 2 (15 A) fuse. Also replace the No. B53 IMA 2 (15 A) fuse, then go to step 39.

6. Turn the ignition switch to LOCK (0).
7. Turn the battery module switch OFF (see page 12-4).
8. Remove the IPU cover (see page 12-210).

9. Turn the ignition switch to ON (II), and listen for a clicking sound from MCM relay 2 (A).

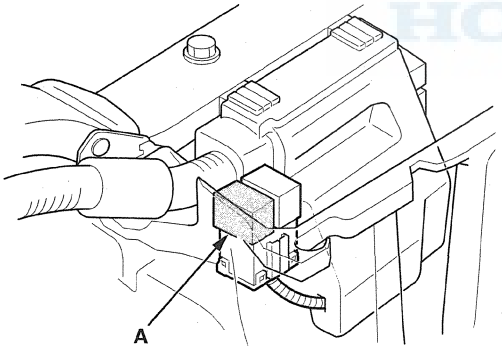


Is there a clicking sound?

YES–Go to step 10.

NO–Go to step 27.

10. Turn the ignition switch to LOCK (0).
11. Remove MCM relay 2 (A).



12. Test MCM relay 2 (see page 22-92).

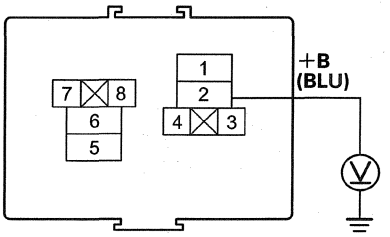
Is the relay OK?

YES–Go to step 13.

NO–Replace MCM relay 2, then go to step 39.

13. Turn the ignition switch to ON (II).
14. Measure the voltage between IPU relay holder (MCM relay 2) 8P connector terminal No. 2 and body ground.

IPU RELAY HOLDER 8P CONNECTOR



Wire side of female terminals

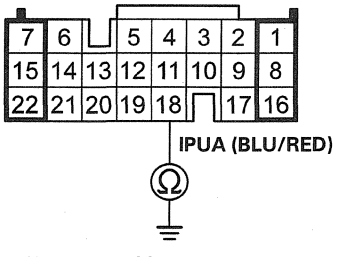
Is there battery voltage?

YES–Repair an open in the wire between MCM relay 2 and MPI module 12P connector terminal No. 7, then go to step 39.

NO–Repair an open in the wire between the No. B53 +B IMA 2 (15 A) fuse and MCM relay 2, then go to step 39.

15. Turn the ignition switch to LOCK (0).
16. Turn the battery module switch OFF (see page 12-4).
17. Remove the IPU cover (see page 12-210).
18. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
19. Disconnect MCM connector C (22P).
20. Measure the resistance between MCM connector terminal C18 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

Is there 1 MΩ or more?

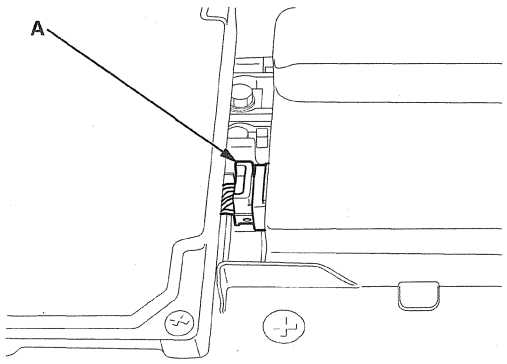
YES–Go to step 21.

NO–Go to step 36.

(cont'd)

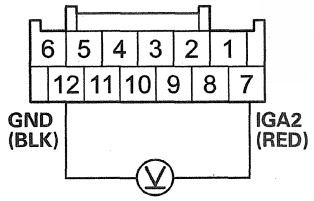
DTC Troubleshooting (cont'd)

21. Disconnect the MPI module 12P connector (A).



22. Reconnect MCM connector C (22P).
23. Turn the ignition switch to ON (II).
24. Measure the voltage between MPI module 12P connector terminals No. 7 and No. 12.

MPI MODULE 12P CONNECTOR



Wire side of female terminals

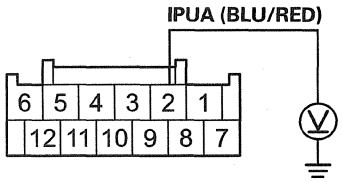
Is there about 12 V?

YES–Go to step 25.

NO–Go to step 38.

25. Measure the voltage between MPI module 12P connector terminal No. 2 and body ground.

MPI MODULE 12P CONNECTOR



Wire side of female terminals

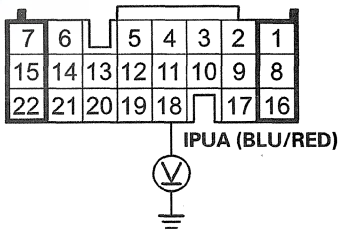
Is there about 5.0 V?

YES–Replace the MPI module (see page 12-214), then go to step 39.

NO–Go to step 26.

26. Measure the voltage between MCM connector terminal C18 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

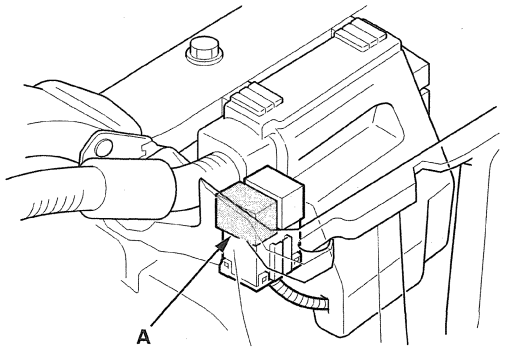
Is there about 5.0 V?

YES–Repair an open in the wire between the MPI module 12P connector and the MCM (C18), then go to step 39.

NO–Go to step 45.

27. Turn the ignition switch to LOCK (0).

28. Remove MCM relay 2 (A).



29. Test MCM relay 2 (see page 22-92).

Is the relay OK?

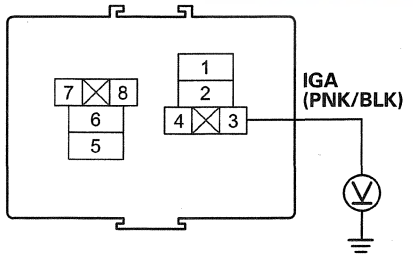
YES–Go to step 30.

NO–Replace MCM relay 2, then go to step 39.

30. Turn the ignition switch to ON (II).

31. Measure the voltage between IPU relay holder (MCM relay 2) 8P connector terminal No. 3 and body ground.

IPU RELAY HOLDER 8P CONNECTOR



Wire side of female terminals

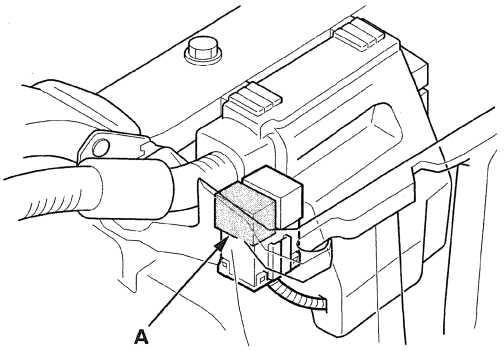
Is there about 12 V?

YES–Go to step 32.

NO–Repair an open in the wire between MCM relay 1 and MCM relay 2, then go to step 39.

32. Turn the ignition switch to LOCK (0).

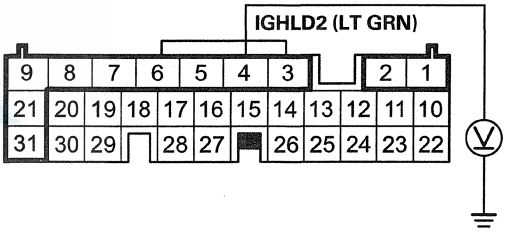
33. Reinstall MCM relay 2 (A).



34. Turn the ignition switch to ON (II).

35. Measure the voltage between MCM connector terminal A4 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there about 12 V?

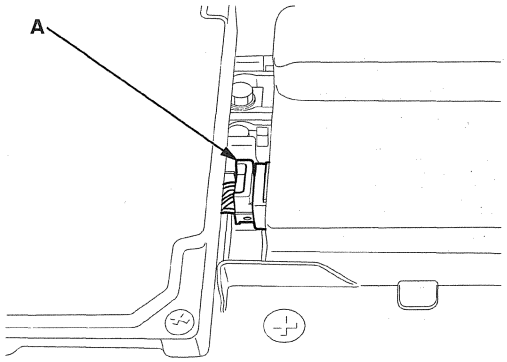
YES–Go to step 45.

NO–Repair an open in the wire between MCM relay 2 and the MCM (A4), then go to step 39.

(cont'd)

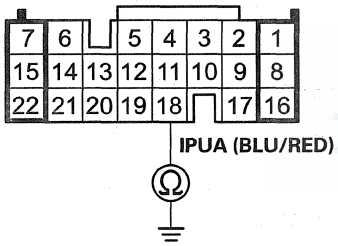
DTC Troubleshooting (cont'd)

36. Disconnect the MPI module 12P connector (A).



37. Check for continuity between MCM connector terminal C18 and body ground.

MCM CONNECTOR C (22P)



Wire side of female terminals

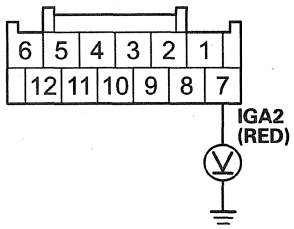
Is there continuity?

YES–Repair a short in the wire between the MPI module 12P connector and the MCM (C18), then go to step 39.

NO–Replace the MPI module (see page 12-214), then go to step 39.

38. Measure the voltage between MPI module 12P connector terminal No. 7 and body ground.

MPI MODULE 12P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair an open in the wire between MPI module 12P connector terminal No. 12 and G901 (see page 22-54), then go to step 39.

NO–Repair an open in the wire between MCM relay 2 and MPI module 12P connector terminal No. 7, then go to step 39.

39. Reconnect all connectors.

40. If removed, reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).

41. If removed, reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).

42. Turn the ignition switch to ON (II).

43. Clear the DTC with the HDS (see page 12-6).

44. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1634 indicated?

YES–Check for poor connections or loose terminals at the MCM and the MPI module, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

45. Reconnect all connectors.

46. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).

47. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).

48. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).

49. Turn the ignition switch to ON (II).
50. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1634 indicated?

YES–Check for poor connections or loose terminals at the MCM and the MPI module. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P1673: Motor Control Module (MCM) Relay Stays Activated

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.
- If DTC P1673 is stored, 12 V battery may be discharged.

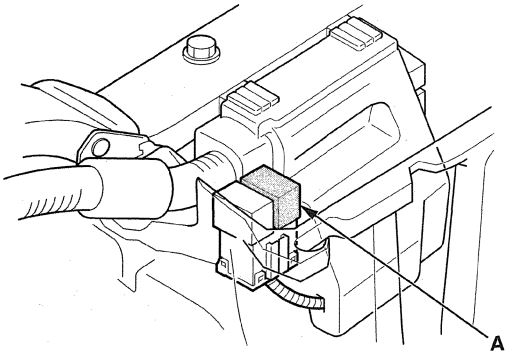
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0), and wait at least 40 seconds. Turn the ignition switch to ON (II) again.
4. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1673 indicated?

YES–Go to step 5.

NO–Intermittent failure, the system is OK at this time.■

5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove MCM relay 1 (A).

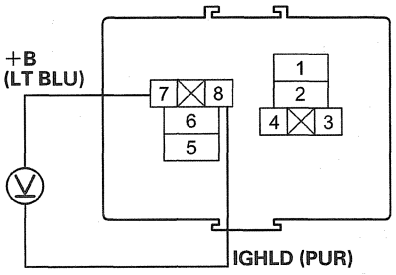


(cont'd)

DTC Troubleshooting (cont'd)

9. Measure the voltage between IPU relay holder (MCM relay 1) 8P connector terminals No. 7 and No. 8.

IPU RELAY HOLDER 8P CONNECTOR



Wire side of female terminals

When turning the ignition switch from ON (II) to LOCK (0), does the voltage change from 10 V to 0 V?

YES–Go to step 10.

NO–Go to step 11.

10. Test MCM relay 1 (see page 22-92).

Is the relay OK?

YES–Repair a short to power in the wire between MCM relay 1 and the MCM (A9), then go to step 14.

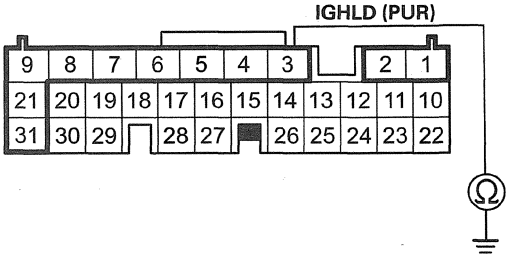
NO–Replace MCM relay 1, then go to step 14.

11. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

12. Disconnect MCM connector A (31P).

13. Check for continuity between MCM connector terminal A3 and body ground.

MCM ECU CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire between MCM relay 1 and the MCM (A3), then go to step 14.

NO–Go to step 21.

14. Reconnect all connectors.

15. If removed, reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).

16. If removed, reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).

17. Turn the ignition switch to ON (II).

18. Clear the DTC with the HDS (see page 12-6).

19. Turn the ignition switch to LOCK (0), and wait at least 40 seconds. Turn the ignition switch to ON (II) again.

20. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1673 indicated?

YES–Check for poor connections or loose terminals at MCM relay 1 and the MCM, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

21. Reconnect all connectors.

22. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).

23. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).

24. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).

25. Turn the ignition switch to ON (II), and then to LOCK (0). Wait at least 40 seconds, then turn the ignition switch to ON (II) again.

26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P1673 indicated?

YES–If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

DTC P16C3: DC-DC Converter Temperature Sensor Circuit Malfunction

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the IPU module fan duct is blocked, DTC P16C3 may be stored.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U1448, U1220, or U1221 indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 4.
4. Check the DC-DC CONVERTER TEMPERATURE in the DATA LIST with the HDS.

   Is more than 259 °F (126 °C), or less than −42 °F (−41 °C) indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check the IPU module air duct and the IPU module fan for disconnections, damage, or obstructions.■
5. Turn the ignition switch to LOCK (0).
6. Check the IPU module air duct and the IPU module fan for disconnections, damage, or obstructions.

   Are the IPU module air duct and the IPU module fan OK?

   YES–Replace the DC-DC converter (see page 12-213), then go to step 7.

   NO–Repair or replace the IPU module air duct or the IPU module fan as needed, then go to step 7.
7. Turn the ignition switch to ON (II).
8. Clear the DTC with the HDS (see page 12-6).
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16C3 indicated?

   YES–Check for poor connections or loose terminals at the DC-DC converter and the MCM, then go to step 1.

   NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0029: F-CAN Malfunction (BUS-OFF (Motor Control Module (MCM)))

NOTE:

- To verify this is the appropriate troubleshooting procedure, jump the SCS with the HDS and read the flash code, or change the HDS setup to show Honda codes, and read the Honda code.
- If DTC U0029 is indicated on the HDS, intermittent failure, the system is OK at this time.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

Do the DLC circuit troubleshooting (see page 12-202).

(cont'd)

DTC Troubleshooting (cont'd)

DTC U0038: IMA-CAN Malfunction (BUS-OFF (Motor Control Module (MCM)))

DTC U1204: IMA-CAN Malfunction (Powertrain Control Module (PCM) - Motor Control Module (MCM))

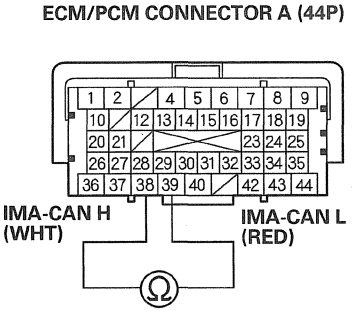
NOTE: Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).

1. Turn the ignition switch to ON (II).
2. Check for ENGINE COOLANT TEMPERATURE in the IMA DATA LIST with the HDS.

   Is 419 °F (215 °C) indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the ECM/PCM and the MCM.■
3. Jump the SCS line with the HDS.
4. Turn the ignition switch to LOCK (0).
5. Disconnect ECM/PCM connector A (44P).
6. Measure the resistance between ECM/PCM connector terminals A38 and A39.



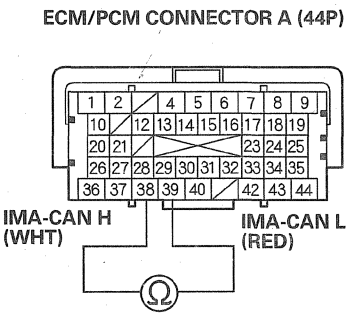
Terminal side of female terminals

Is there about 120 Ω?

YES–Go to step 19.

NO–Go to step 7.

7. Measure the resistance between ECM/PCM connector terminals A38 and A39.



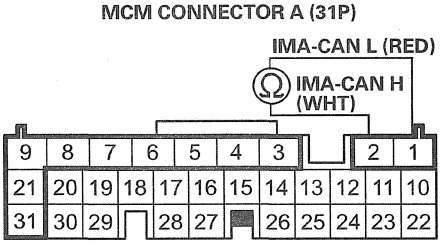
Terminal side of female terminals

Is there about 0 Ω?

YES–Go to step 8.

NO–Go to step 13.

8. Turn the battery module switch OFF (see page 12-4).
9. Remove the IPU cover (see page 12-210).
10. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
11. Disconnect MCM connector A (31P).
12. Check for continuity between MCM connector terminals A1 and A2.



Wire side of female terminals

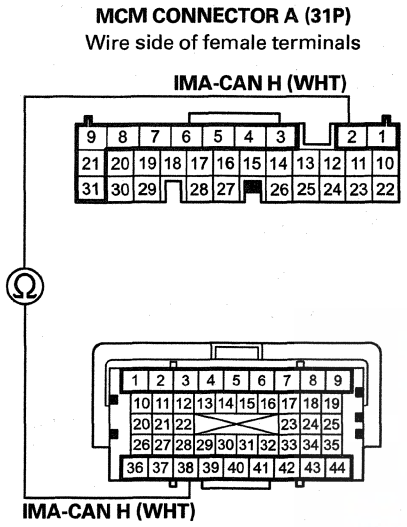
Is there continuity?

YES–Repair a short in the wire between MCM connector terminals A1 and A2, then go to step 32.

NO–Go to step 38.

13. Turn the battery module switch OFF (see page 12-4).
14. Remove the IPU cover (see page 12-210).

15. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
16. Disconnect MCM connector A (31P).
17. Check for continuity between MCM connector terminal A2 and ECM/PCM connector terminal A38.

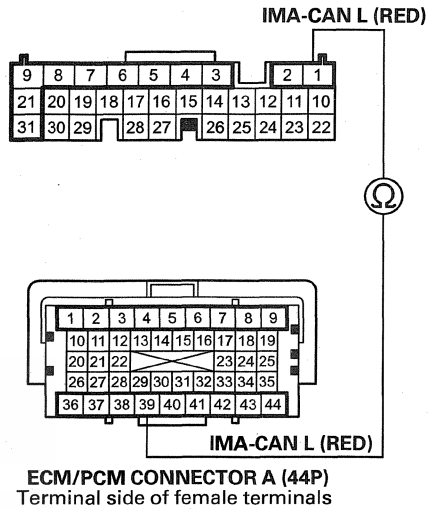


Is there continuity?

YES–Go to step 18.

NO–Repair an open in the wire between the ECM/PCM (A38) and the MCM (A2), then go to step 32.

18. Check for continuity between MCM connector terminal A1 and ECM/PCM connector terminal A39.



Is there continuity?

YES–Go to step 38.

NO–Repair an open in the wire between the ECM/PCM (A39) and the MCM (A1), then go to step 32.

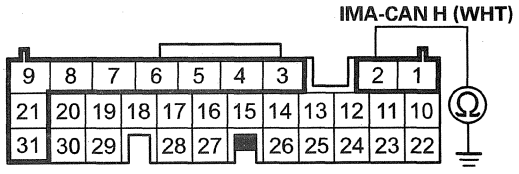
19. Turn the ignition switch to LOCK (0).
20. Turn the battery module switch OFF (see page 12-4).
21. Remove the IPU cover (see page 12-210).
22. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
23. Disconnect MCM connector A (31P).

(cont'd)

DTC Troubleshooting (cont'd)

24. Check for continuity between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

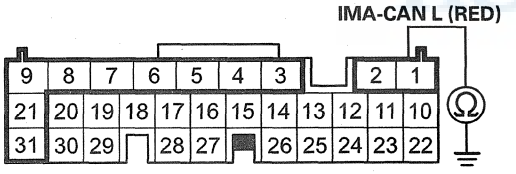
Is there continuity?

YES–Repair a short to ground in the wire between the ECM/PCM (A38) and the MCM (A2), then go to step 32.

NO–Go to step 25.

25. Check for continuity between MCM connector terminal A1 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

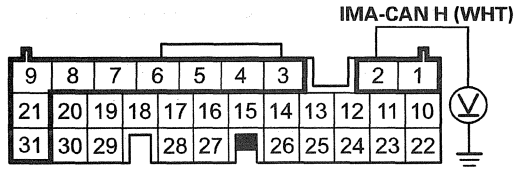
YES–Repair a short to ground in the wire between the ECM/PCM (A39) and the MCM (A1), then go to step 32.

NO–Go to step 26.

26. Turn the ignition switch to ON (II).

27. Measure the voltage between MCM connector terminal A2 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

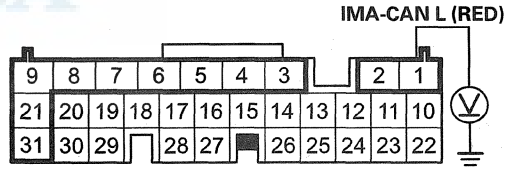
Is there about 5—12 V?

YES–Repair a short to power in the wire between the ECM/PCM (A38) and the MCM (A2), then go to step 32.

NO–Go to step 28.

28. Measure the voltage between MCM connector terminal A1 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there about 5—12 V?

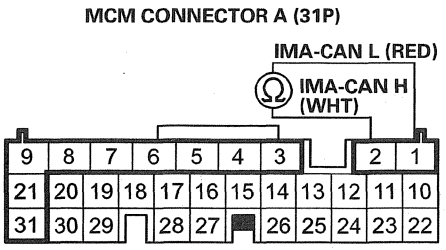
YES–Repair a short to power in the wire between the ECM/PCM (A39) and the MCM (A1), then go to step 32.

NO–Go to step 29.

29. Turn the ignition switch to LOCK (0).

30. Reconnect ECM/PCM connector A (44P).

31. Measure the resistance between MCM connector terminals A1 and A2.



Wire side of female terminals

Is there about 120 Ω?

YES–Go to step 38.

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209), then go to step 32.

32. Reconnect all connectors.
33. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
34. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
35. Turn the ignition switch to ON (II).
36. Clear the DTC with the HDS (see page 12-6).
37. Check for Pending or Confirmed DTCs in the IMA SYSTEM with the HDS.

    Is DTC U0038 or U1204 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and the MCM, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

38. Reconnect all connectors.
39. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
40. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
41. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
42. Turn the ignition switch to ON (II).
43. Check for Pending or Confirmed DTCs with the HDS in the IMA SYSTEM.

    Is DTC U0038 or U1204 indicated?

    YES–Check for poor connections or loose terminals at the ECM/PCM and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC U0100: F-CAN Malfunction (Powertrain Control Module (PCM)-Motor Control Module (MCM))

NOTE:

- To verify this is the appropriate troubleshooting procedure, jump the SCS with the HDS and read the flash code, or change the HDS setup to show Honda codes, and read the Honda code.
- If DTC U0100 is indicated on the HDS, intermittent failure, this system is OK at this time.
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

Check for poor connections or loose terminals at the ECM/PCM and the MCM.

DTC U0155: F-CAN Malfunction (Gauge Control Module-Motor Control Module (MCM))

NOTE:

- If DTC U0155 is indicated on the HDS, the sends and receives communication function of the MCM is OK.
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II), and wait 4 seconds.
5. Turn the ignition switch to LOCK (0), then turn the ignition switch to ON (II) again, and wait 4 seconds.
6. Check for Pending or Confirmed DTCs in the IMA SYSTEM with the HDS.

   Is DTC U0155 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Turn the ignition switch to ON (II), and watch the instrument panel indicators.

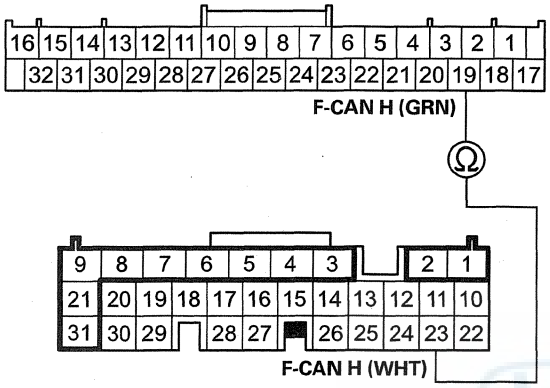
   Do any indicators come on?

   YES–Go to step 9.

   NO–Go to step 17.
9. Turn the ignition switch to LOCK (0).
10. Turn the battery module switch OFF (see page 12-4).
11. Remove the IPU cover (see page 12-210).
12. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
13. Disconnect the gauge control module 32P connector.
14. Disconnect MCM connector A (31P).

15. Check for continuity between gauge control module 32P connector terminal No. 19 and MCM connector terminal A23.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



MCM CONNECTOR A (31P)
Wire side of female terminals

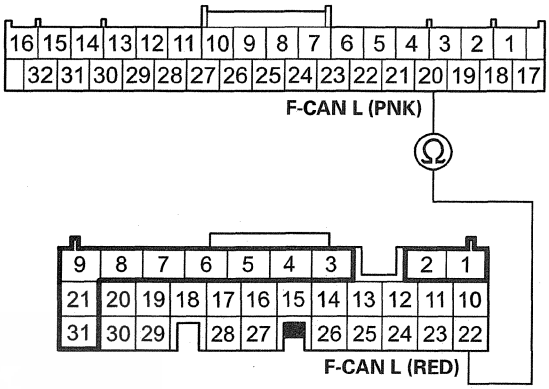
Is there continuity?

YES–Go to step 16.

NO–Repair an open in the wire between the gauge control module 32P connector and the MCM (A23), then go to step 22.

16. Check for continuity between gauge control module 32P connector terminal No. 20 and MCM connector terminal A22.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



MCM CONNECTOR A (31P)
Wire side of female terminals

Is there continuity?

YES–Replace the gauge control module (see page 22-354).

NO–Repair an open in the wire between the gauge control module 32P connector and the MCM (A22), then go to step 22.

17. Turn the ignition switch to LOCK (0).
18. Check the No. B22 METER (7.5 A) fuse in the under-dash fuse/relay box.

    Is the fuse OK?

    YES–Go to step 19.

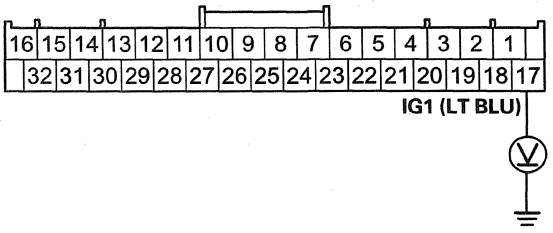
    NO–Repair a short in the wire between the No. B22 METER (7.5 A) fuse and gauge control module 32P connector terminal No. 17. Also replace the No. B22 METER (7.5 A) fuse, then go to step 22.
19. Disconnect the gauge control module 32P connector.
20. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

21. Measure the voltage between gauge control module 32P connector terminal No. 17 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair an open in the ground wire (G501) (see page 22-40), then go to step 22.

NO–Repair an open in the wire between the No. B22 METER (7.5 A) fuse and the gauge control module 32P connector, then go to step 22.

22. Reconnect all connectors.
23. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
24. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
25. Turn the ignition switch to ON (II).
26. Clear the DTC with the HDS (see page 12-6).
27. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0155 indicated?

YES–Check for poor connections or loose terminals at the MCM and the gauge control module, then go to step 1.

NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0311: MCM and BCM Program Version Mismatch

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- This DTC is indicated when a MCM update is not completed.
- Do not turn the ignition switch to LOCK (0) while updating the MCM. If you do, the MCM can be damaged.

1. Do the MCM (IMA Motor) update procedure (see page 12-211).
2. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U0311 indicated?

YES–Replace the original MCM (see page 12-212).■

NO–Update is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U0312: BCM, MCM and PGM-FI System Program Version Mismatch

NOTE:

- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- This DTC is indicated when a MCM update is not completed.
- Do not turn the ignition switch to LOCK (0) while updating the MCM. If you do, the MCM can be damaged.

1. Do the MCM (IMA Battery) update procedure (see page 12-211).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0312 indicated?

   YES–Replace the original MCM (see page 12-212).■

   NO–Update is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■

DTC U1220: DC-DC Converter Lost Communication with Motor Control Module (MCM)

NOTE:

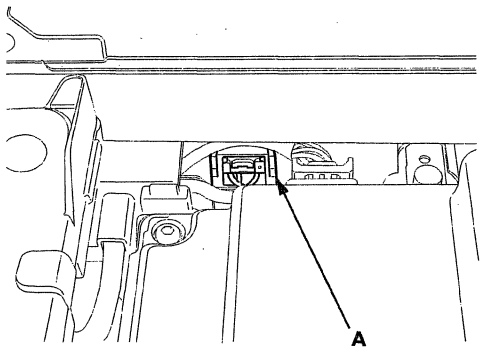
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Start the engine.
4. Monitor the OBD STATUS for U1220 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 5.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the DC-DC converter and the MCM. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the MCM (see page 12-212).
9. Disconnect the DC-DC converter 4P connector (A).

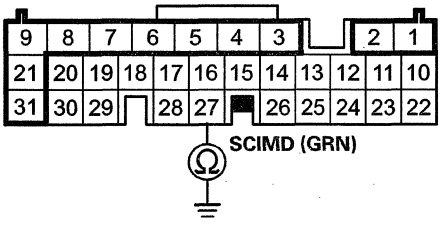


(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between MCM connector terminal A27 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

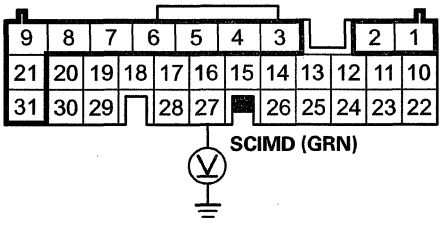
Is there continuity?

YES–Repair a short in the wire between the MCM (A27) and the DC-DC converter, then go to step 22.

NO–Go to step 11.

11. Reconnect the DC-DC converter 4P connector.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between MCM connector terminal A27 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

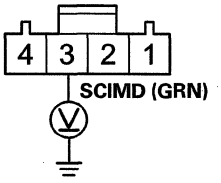
Is there about 8—12 V?

YES–Go to step 29.

NO–Go to step 14.

14. Measure the voltage between DC-DC converter 4P connector terminal No. 3 and body ground.

DC-DC CONVERTER 4P CONNECTOR



Wire side of female terminals

Is there 8—12 V?

YES–Repair an open in the wire between the MCM (A27) and the DC-DC converter, then go to step 22.

NO–Go to step 15.

15. Substitute a known-good DC-DC converter (see page 12-213).
16. Reconnect all connectors.
17. Reinstall the MCM (see page 12-212).
18. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
19. Turn the ignition switch to ON (II).
20. Clear the DTC with the HDS (see page 12-6).
21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC U1220 indicated?

YES–Go to step 32.

NO–Replace the original DC-DC converter (see page 12-213), then go to step 22.

22. Reconnect all connectors.
23. Reinstall the MCM (see page 12-212).
24. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
25. Turn the ignition switch to ON (II).
26. Clear the DTC with the HDS (see page 12-6).
27. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U1220 indicated?

    YES–Check for poor connections or loose terminals at the DC-DC converter and the MCM, then go to step 1.

    NO–Go to step 28.
28. Monitor the OBD STATUS for U1220 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 27, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the DC-DC converter and the MCM, then go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■
29. Reconnect all connectors.
30. Reinstall the MCM (see page 12-212).
31. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
32. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
33. Turn the ignition switch to ON (II).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U1220 indicated?

    YES–Check for poor connections or loose terminals at the DC-DC converter and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–Go to step 35.
35. Monitor the OBD STATUS for U1220 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated in step 34, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the DC-DC converter and the MCM. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, keep the ignition switch ON (II) until a result comes on.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC U1221: Motor Control Module (MCM) Lost Communication with DC-DC Converter

NOTE:
- Before you troubleshoot, record all freeze data, and any on-board snapshot, and review the general troubleshooting information (see page 12-5).
- If the DTC cannot be cleared, do the troubleshooting for DTC U1204.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS (see page 12-6).
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U1221 indicated?

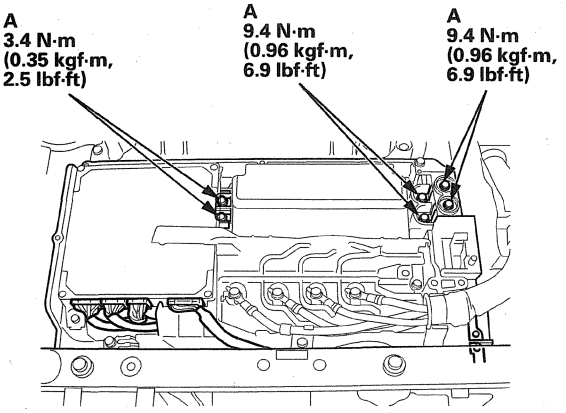
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the DC-DC converter and the MCM.■
4. Check the No. B12 IG IMA (10 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 5.

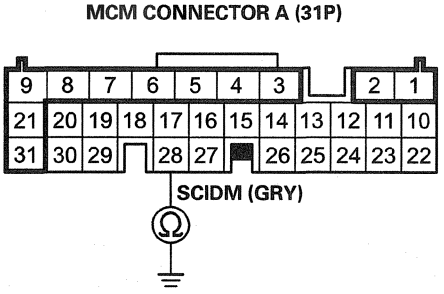
   NO–Repair a short to ground in the wire between the DC-DC converter 4P connector and the No. B12 IG IMA (10 A) fuse. Also replace the No. B12 IG IMA (10 A) fuse, then go to step 23.
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
9. Reinstall the PCU busplate (see page 12-212).
10. Check for poor connections, loose bolts, and damage at the busbars (A).



   Are the busbar connections OK?

   YES–Go to step 11.

   NO–Repair the busbar connections, then go to step 23.
11. Disconnect MCM connector A (31P).
12. Measure the resistance between MCM connector terminal A28 and body ground.



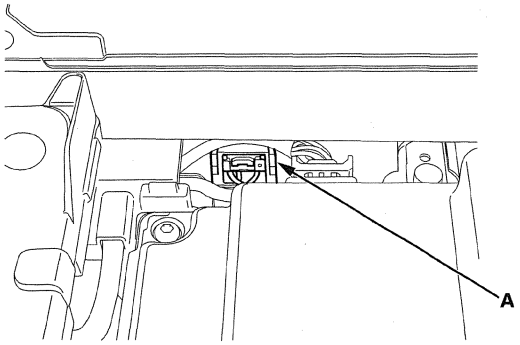
Wire side of female terminals

   Is there 1 MΩ or more?

   YES–Go to step 13.

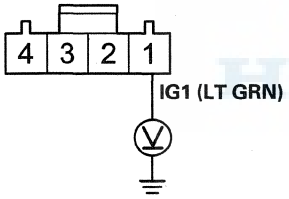
   NO–Go to step 21.

13. Disconnect the DC-DC converter 4P connector (A).



14. Turn the ignition switch to ON (II).
15. Measure the voltage between DC-DC converter 4P connector terminal No. 1 and body ground.

DC-DC CONVERTER 4P CONNECTOR



Wire side of female terminals

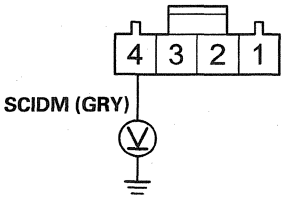
Is there battery voltage?

YES–Go to step 16.

NO–Repair an open in the wire between the DC-DC converter 4P connector and the No. B12 IG IMA (10 A) fuse, then go to step 23.

16. Turn the ignition switch to LOCK (0).
17. Reconnect MCM connector A (31P).
18. Turn the ignition switch to ON (II).
19. Measure the voltage between DC-DC converter 4P connector terminal No. 4 and body ground.

DC-DC CONVERTER 4P CONNECTOR



Wire side of female terminals

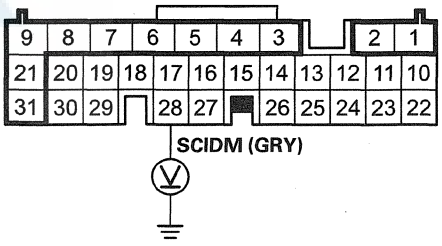
Is there about 12 V?

YES–Replace the DC-DC converter (see page 12-213), then go to step 23.

NO–Go to step 20.

20. Measure the voltage between MCM connector terminal A28 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there about 12 V?

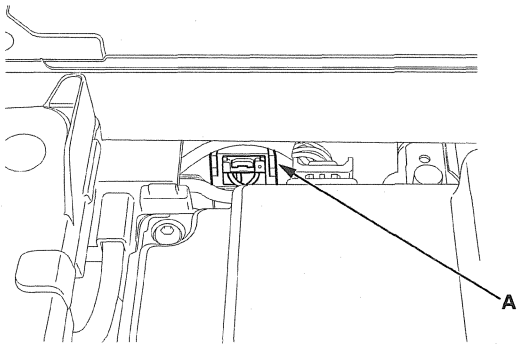
YES–Repair an open in the wire between the DC-DC converter 4P connector and the MCM (A28), then go to step 23.

NO–Go to step 29.

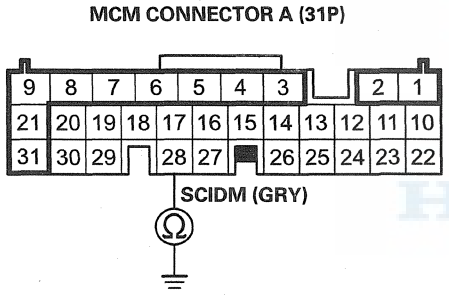
(cont'd)

DTC Troubleshooting (cont'd)

21. Disconnect the DC-DC converter 4P connector (A).



22. Measure the resistance between MCM connector terminal A28 and body ground.



Wire side of female terminals

Is there 1MΩ or more?

YES–Replace the DC-DC converter (see page 12-213), then go to step 23.

NO–Repair a short in the wire between the DC-DC converter 4P connector and the MCM (A28), then go to step 23.

23. Reconnect all connectors.
24. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
25. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
26. Turn the ignition switch to ON (II).
27. Clear the DTC with the HDS (see page 12-6).
28. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U1221 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the DC-DC converter, then go to step 1.

    NO–Troubleshooting is complete. If any other Pending or Confirmed DTCs are indicated, go to the indicated DTC's troubleshooting.■
29. Reconnect all connectors.
30. Reinstall the PCU cover, the PCU busplate, and the PCU lid (see page 12-212).
31. Reinstall the IPU cover (see page 12-210), then turn the battery module switch ON (see page 12-4).
32. Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8).
33. Turn the ignition switch to ON (II).
34. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC U1221 indicated?

    YES–Check for poor connections or loose terminals at the MCM and the DC-DC converter. If the MCM was updated, substitute a known-good MCM (see page 12-8), then recheck. If the MCM was substituted, go to step 1.

    NO–If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM (see page 12-212). If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

IMA System Indicator Circuit Troubleshooting

IMA system indicator stays on, no DTCs set

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the DLC (see page 12-5).
3. Turn the ignition switch to ON (II), and select the IMA SYSTEM.

   Does the HDS communicate with the IMA system?

   YES–Go to step 4.

   NO–Do the DLC circuit troubleshooting (see page 12-202).■
4. Do the gauge self-diagnostic function (see page 22-325).

   Does the IMA system indicator flash?

   YES–The system is OK at this time.■

   NO–Replace the gauge control module (see page 22-354).■

IMA system indicator never comes on, no DTCs set

1. Turn the ignition switch to LOCK (0).
2. Do the gauge self-diagnostic function (see page 22-325).

   Does the IMA system indicator flash?

   YES–The system is OK at this time.■

   NO–Replace the gauge control module (see page 22-354).■

HONDA

Charging System Indicator Circuit Troubleshooting

Charging system indicator stays on, no DTCs set

NOTE: If the 12 V battery voltage is too low to operate the starter motor, the charging system indicator may come on.

1. Turn the ignition switch to ON (II).
2. Check the DC-DC CONVERTER TEMPERATURE in the DATA LIST with the HDS.

   Is 201—257 °F (94—125 °C) indicated?

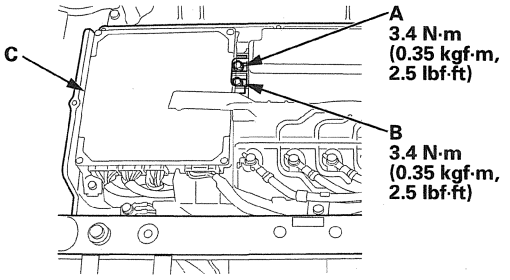
   YES–The system is OK at this time. The charging system indicator will go off when the DC-DC converter temperature decreases. If the temperature does not decrease even though time has passed, replace the DC-DC converter (see page 12-213).■

   NO–Go to step 3.
3. Do the gauge self-diagnostic function (see page 22-325).

   Does the charging system indicator flash?

   YES–Go to step 4.

   NO–Replace the gauge control module (see page 22-354).■
4. Turn the ignition switch to LOCK (0).
5. Turn the battery module switch OFF (see page 12-4).
6. Remove the IPU cover (see page 12-210).
7. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
8. Check the connections at the high voltage terminals (A, B) on the DC-DC converter (C).



Are the connections OK?

YES–Replace the DC-DC converter (see page 12-213).■

NO–Repair the connections.■

Charging system indicator flickers, no DTCs set

This indicator may blink after you start the engine in extremely cold weather (−22 °F (−30 °C) or below). It stops blinking when the battery module warms up.

Charging system indicator never comes on, no DTCs set

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the DLC.
3. Turn the ignition switch to ON (II), and select the IMA SYSTEM.

   Does the HDS communicate with the IMA system?

   YES–Go to step 4.

   NO–Do the DLC circuit troubleshooting (see page 12-202).■
4. Do the gauge self-diagnostic function (see page 22-325).

   Does the charging system indicator flash?

   YES–The system is OK at this time.■

   NO–Replace the gauge control module (see page 22-354).■

HONDA

DLC Circuit Troubleshooting

NOTE: Make sure the HDS and its DLC cable are working properly.

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the DLC (see page 12-5).
3. Turn the ignition switch to ON (II), and read the HDS.

   Does the HDS identify the vehicle?

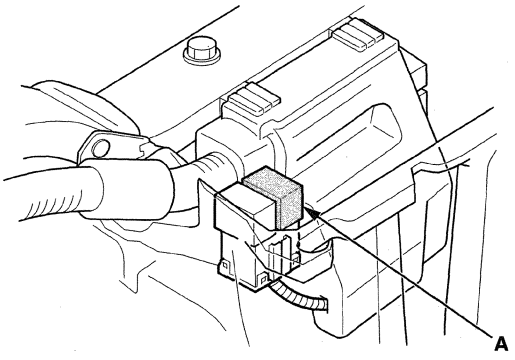
   YES–Go to step 4.

   NO–Do the DLC circuit troubleshooting (see page 11-383).
4. Check the No. B42 IMA 1 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 5.

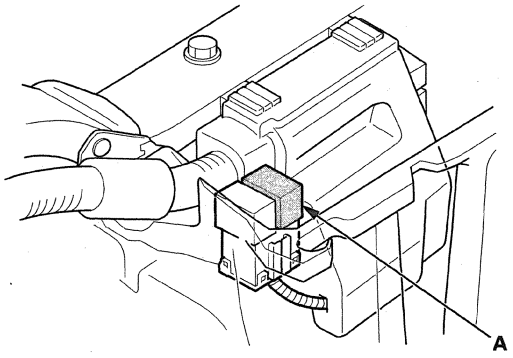
   NO–Repair a short in the wire between the No. B42 IMA 1 (7.5 A) fuse and the MCM (A9). Also replace the No. B42 IMA 1 (7.5 A) fuse.■
5. Turn the ignition switch to LOCK (0).
6. Turn the battery module switch OFF (see page 12-4).
7. Remove the IPU cover (see page 12-210).
8. Turn the battery module switch ON (see page 12-4).
9. Turn the ignition switch to ON (II), and listen for a clicking sound from MCM relay 1 (A).



   Is there a clicking sound?

   YES–Go to step 10.

   NO–Go to step 25.
10. Turn the ignition switch to LOCK (0).
11. Remove MCM relay 1 (A).



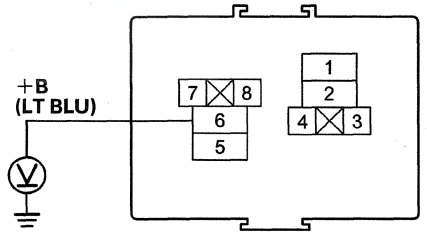
12. Test MCM relay 1 (see page 22-92).

    Is the relay OK?

    YES–Go to step 13.

    NO–Replace MCM relay 1.■
13. Turn the ignition switch to ON (II).
14. Measure the voltage between IPU relay holder (MCM relay 1) 8P connector terminal No. 6 and body ground.

IPU RELAY HOLDER 8P CONNECTOR



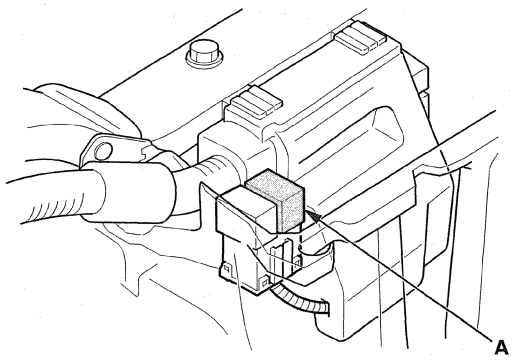
Wire side of female terminals

    Is there battery voltage?

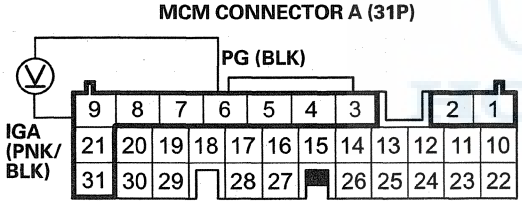
    YES–Go to step 15.

    NO–Repair an open in the wire between the No.B42 IMA 1 (7.5 A) fuse and MCM relay 1.■
15. Turn the ignition switch to LOCK (0).

16. Reinstall MCM relay 1 (A).



17. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).
18. Turn the ignition switch to ON (II).
19. Measure the voltage between MCM connector terminals A6 and A9.



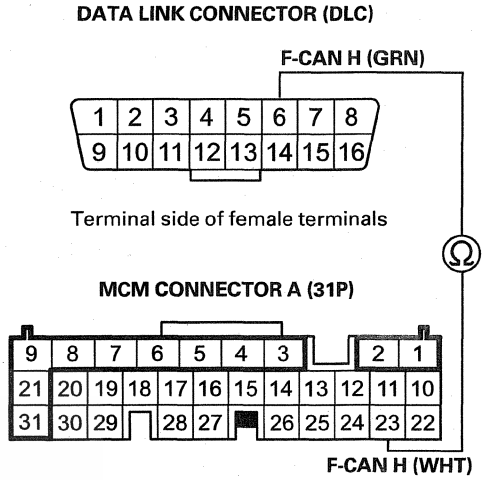
Wire side of female terminals

Is there battery voltage?

YES–Go to step 20.

NO–Go to step 24.

20. Turn the ignition switch to LOCK (0).
21. Disconnect MCM connector A (31P).
22. Check for continuity between MCM connector terminal A23 and DLC terminal No. 6.



Wire side of female terminals

Is there continuity?

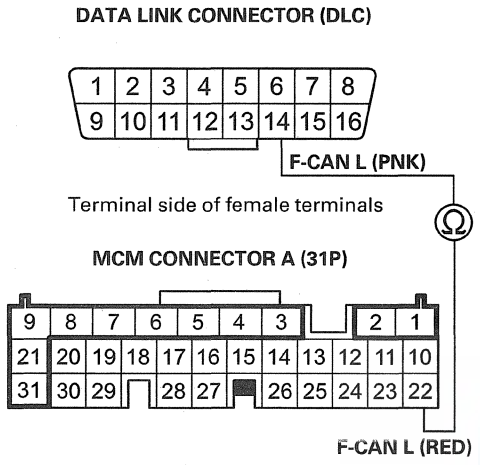
YES–Go to step 23.

NO–Repair an open in the wire between DLC terminal No. 6 and the MCM (A23).■

(cont'd)

DLC Circuit Troubleshooting (cont'd)

23. Check for continuity between MCM connector terminal A22 and DLC terminal No. 14.

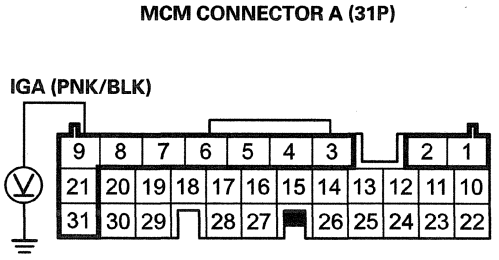


Is there continuity?

YES–Update the MCM if it does not have the latest software (see page 12-211), or substitute a known-good MCM (see page 12-8), then recheck. If the symptom goes away with a known-good MCM, replace the original MCM (see page 12-212).■

NO–Repair an open in the wire between DLC terminal No. 14 and the MCM (A22).■

24. Measure the voltage between MCM connector terminal No. 9 and body ground.



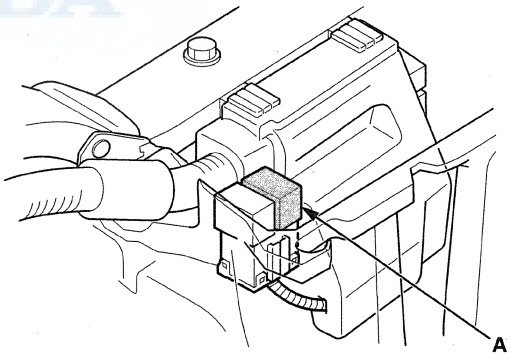
Is there battery voltage?

YES–Repair an open in the wire between the MCM (A6) and G901 (see page 22-54).■

NO–Repair an open in the wire between the MCM (A9) and MCM relay 1.■

25. Turn the ignition switch to LOCK (0).

26. Remove MCM relay 1 (A).



27. Test MCM relay 1 (see page 22-92).

Is the relay OK?

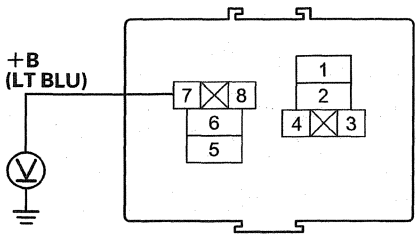
YES–Go to step 28.

NO–Replace MCM relay 1.■

28. Turn the ignition switch to ON (II).

29. Measure the voltage between IPU relay holder (MCM relay 1) 8P connector terminal No. 7 and body ground.

IPU RELAY HOLDER 8P CONNECTOR



Wire side of female terminals

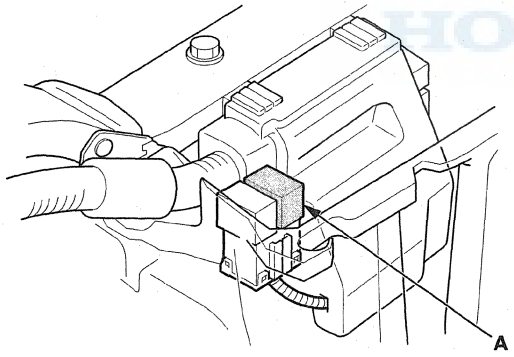
Is there battery voltage?

YES–Go to step 30.

NO–Repair an open in the wire between the No. B42 IMA 1 (7.5 A) fuse and MCM relay 1.■

30. Turn the ignition switch to LOCK (0).

31. Reinstall MCM relay 1 (A).

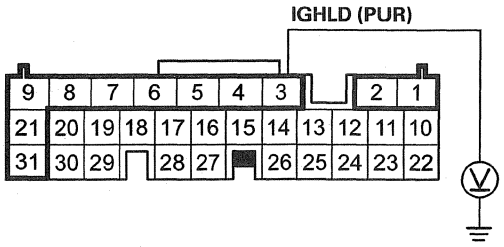


32. Remove the PCU lid, the PCU busplate, and the PCU cover (see page 12-212).

33. Turn the ignition switch to ON (II).

34. Measure the voltage between MCM connector terminal A3 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there battery voltage?

YES–Go to step 35.

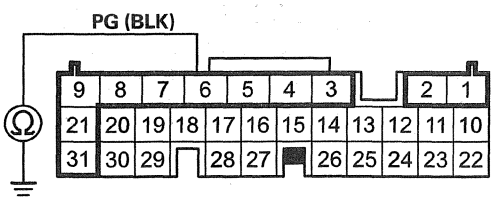
NO–Repair an open in the wire between MCM relay 1 and the MCM (A3).■

35. Turn the ignition switch to LOCK (0).

36. Disconnect MCM connector A (31P).

37. Check for continuity between MCM connector terminal A6 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there continuity?

YES–Go to step 38.

NO–Repair an open in the wire between the MCM (A6) and G901 (see page 22-54).■

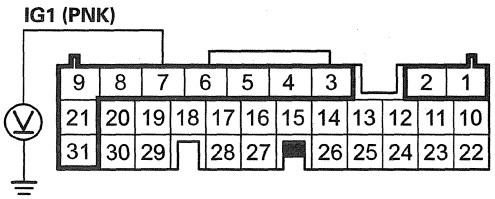
38. Turn the ignition switch to ON (II).

(cont'd)

DLC Circuit Troubleshooting (cont'd)

39. Measure the voltage between MCM connector terminal A7 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

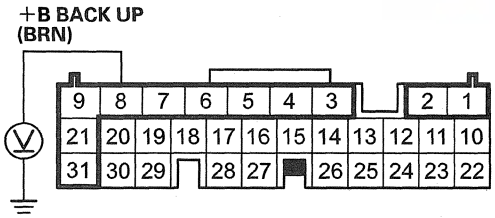
Is there battery voltage?

YES–Go to step 40.

NO–Repair an open in the wire between the No. B22 METER (7.5 A) fuse and the MCM (A7).■

40. Measure the voltage between MCM connector terminal A8 and body ground.

MCM CONNECTOR A (31P)



Wire side of female terminals

Is there battery voltage?

YES–Replace the original MCM (see page 12-212).■

NO–Repair an open in the wire between the No. B1 +B BACK UP (15 A) fuse and the MCM (A8).■

Auto Idle Stop System Inspection

M/T model

1. Check under these conditions:
   - Altitude 2,500 m (8,200 ft) or lower (At higher altitudes, auto idle stop is often prevented because of the lack of vacuum in the brake booster).
   - The low temperature indicator does not come on.
   - The IMA battery level gauge displays at least half of its scale.
   - All electrical items (headlights, blower fan, radiator fan, rear window defogger, A/C, etc.) are off.
   - Any indicator does not come on.
   - No heavy load in the vehicle (A heavy load prevents auto idle stop because the system "thinks" the vehicle is going uphill).
   - Drive the vehicle on a flat road or downhill.
2. Start the engine.
3. Test-drive under these conditions:
   - Drive the vehicle at 25 mph (40 km/h), then press the clutch pedal fully, and stop the vehicle within 5 —15 seconds.
   - Press and hold the brake pedal until the vehicle stops (do not pump the brake pedal).
   - Keep the brake pedal pressed after the vehicle stops.

   NOTE: The clutch pedal must be fully pressed when the vehicle is stopped for auto idle stop to work.
4. Repeat step 3 several times, then check the auto idle stop system.

   NOTE: During auto idle stop, the engine restarts when the clutch pedal is fully pressed and the shift lever is moved to 1st gear.

   Is auto idle stop working?

   YES–The system is OK at this time. If needed, refer to idle stop conditions (see page 12-37).■

   NO–Go to the auto idle stop system troubleshooting (see page 12-207).■

CVT model

1. Check under these conditions:
   - At 2,500 m (8,200 ft) or lower (At higher altitudes, auto idle stop is often prevented because of the lack of vacuum in the brake booster).
   - The low temperature indicator does not come on.
   - The IMA battery level gauge displays at least half of its scale.
   - All electrical items (headlights, blower fan, radiator fan, rear window defogger, A/C, etc.) are off.
   - The transmission is in D.
   - The D indicator is not flashing.
   - Any indicator does not come on.
   - No heavy load in the vehicle (A heavy load prevents auto idle stop because the system "thinks" the vehicle is going uphill).
   - Drive the vehicle on a flat road or downhill.
2. Start the engine.
3. Test-drive under these conditions:
   - Drive the vehicle at 25 mph (40 km/h) in D, then stop it within 5—15 seconds.
   - Press and hold the brake pedal until the vehicle stops (do not pump the brake pedal).
   - Keep the brake pedal pressed after the vehicle stops.
4. Repeat step 3 several times, then check the auto idle stop system.

   Is auto idle stop working?

   YES–The system is OK at this time. If needed, refer to Auto Idle Stop Conditions (see page 12-39).■

   NO–Go to the auto idle stop system troubleshooting (see page 12-209).■

Auto Idle Stop System Troubleshooting

M/T model

1. Do the auto idle stop system inspection (see page 12-206).

   Is auto idle stop working?

   YES–The system is OK at this time. If needed, refer to Auto Idle Stop Conditions (see page 12-37).■

   NO–Go to step 2.
2. Start the engine, and watch the gauge control module.

   Do any indicators come on or blink?

   YES–Do the troubleshooting for the system indicator that comes on or blinks.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II).
5. Do the All Systems DTC check with the HDS.

   Are any DTCs indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 6.
6. Check the BRAKE SWITCH in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does it indicate ON when the brake pedal is pressed and OFF when the brake pedal is released?

   YES–Go to step 7.

   NO–Do the brake pedal position switch test (see page 22-246).■
7. Do the brake booster vacuum leak test (see page 19-24).

   Is the brake booster vacuum OK?

   YES–Go to step 8.

   NO–Replace any leaking part(s) as needed.
8. Turn the ignition switch to ON (II).
9. Press the brake pedal several times.
10. Start the engine.

(cont'd)

Auto Idle Stop System Troubleshooting (cont'd)

11. Check BRAKE BOOSTER PRESSURE SENSOR (A) and BRAKE BOOSTER PRESSURE SENSOR (B) in the EVPS DATA LIST with the HDS.

    Does the brake booster pressure change from air pressure to vacuum pressure?

    YES–Go to step 12.

    NO–Check for an obstruction in the brake booster pressure sensor vacuum line.■

12. Turn the ignition switch to LOCK (0).
13. Turn the ignition switch to ON (II).
14. Check for DTCs in the WIPER SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 15.

15. Check that HDS communicates with the GAUGES SYSTEM and the CLIMATE CONTROL SYSTEM.

    Does the HDS communicate with the GAUGES SYSTEM and the CLIMATE CONTROL SYSTEM?

    YES–Go to step 16.

    NO–Go to the DLC circuit troubleshooting (see page 12-202).■

16. Check for DTCs in the GAUGE SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 17.

17. Check for DTCs in the CLIMATE CONTROL SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 18.

18. Turn the ignition switch to LOCK (0).
19. Turn the ignition switch to ON (II), select the ECO screen on the MID.



Is the outside air temperature reading (A) accurate?

YES–The system is OK at this time.■

NO–

- If the outside air temperature is not indicated, substitute a known-good climate control unit (see page 21-112), then recheck. If the auto idle stop system is OK, replace the original climate control unit (see page 21-112).■
- If the outside air temperature reading is not accurate, check the outside air temperature sensor (see page 21-73).■

CVT model

1. Do the auto idle stop system inspection (see page 12-207).

   Is auto idle stop working?

   YES–The system is OK at this time. If needed, refer to the auto idle stop conditions (see page 12-39).■

   NO–Go to step 2.

2. Start the engine, and watch the gauge control module.

   Do any indicators come on or blink?

   YES–Do the troubleshooting for the system indicator that comes on or blinks.■

   NO–Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II).
5. Do the All Systems DTC check with the HDS.

   Are any DTCs indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 6.

6. Check the BRAKE SWITCH in the PGM-FI SYSTEM DATA LIST with the HDS.

   Does it indicate ON when the brake pedal is pressed and OFF when the brake pedal is released?

   YES–Go to step 7.

   NO–Do the brake pedal position switch test (see page 22-246).■

7. Do the brake booster vacuum leak test (see page 19-25).

   Is the brake booster vacuum OK?

   YES–Go to step 8.

   NO–Replace any leaking part(s) as needed.■

8. Turn the ignition switch to ON (II).
9. Press the brake pedal several times.
10. Start the engine.
11. Check BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

    Does the brake booster pressure change from air pressure to vacuum pressure?

    YES–Go to step 12.

    NO–Check for an obstruction in the brake booster pressure sensor vacuum line.■

12. Turn the ignition switch to LOCK (0).
13. Turn the ignition switch to ON (II).
14. Move the shift lever to D from N.

    When the shift lever is in D, does the D indicator come on?

    YES–Go to step 15.

    NO–

    - Check the A/T gear position indicator drive circuit (see page 22-326).■
    - Adjust the shift cable (see page 14-193).■
    - Inspect the transmission range switch (see page 14-199).■

15. Check for DTCs in the WIPER SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 16.

16. Check that the HDS communicates with the GAUGES SYSTEM and the CLIMATE CONTROL SYSTEM.

    Does the HDS communicate with the GAUGES SYSTEM and the CLIMATE CONTROL SYSTEM?

    YES–Go to step 17.

    NO–Go to the DLC circuit troubleshooting (see page 12-202).■

17. Check for DTCs in the GAUGE SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 18.

18. Check for DTCs in the CLIMATE CONTROL SYSTEM with the HDS.

    Are any DTCs indicated?

    YES–Go to the indicated DTC's troubleshooting.■

    NO–Go to step 19.

(cont'd)

Auto Idle Stop System Troubleshooting (cont'd)

19. Turn the ignition switch to LOCK (0).
20. Turn the ignition switch to ON (II), and select the ECO screen on the MID.



Is the outside temperature reading (A) accurate?

YES–The system is OK at this time.■

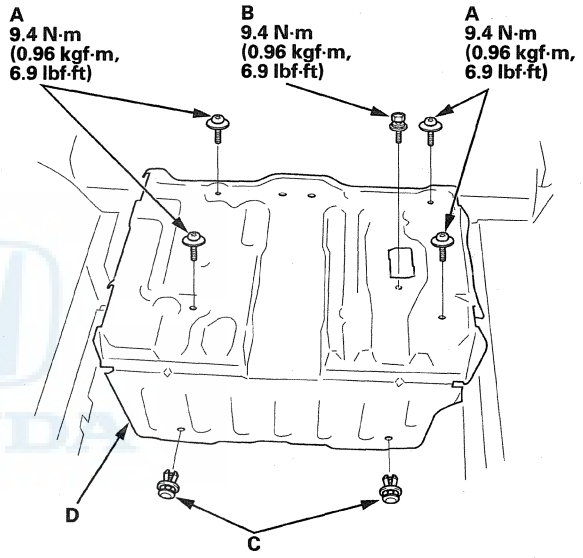
NO–

- If the outside air temperature is not indicated, substitute a known-good climate control unit (see page 21-112), then recheck. If the auto idle stop system is OK, replace the original climate control unit (see page 21-112).■
- If the outside temperature reading is not accurate, check the outside air temperature sensor (see page 21-73).■

IPU Cover Removal/Installation

IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

1. Remove the cargo floor lid, the IPU duct cover, and the spare tire beam (see page 20-64).
2. Turn the battery module switch OFF (see page 12-4).
3. Remove the bolts (A, B), the clips (C), and the IPU cover (D).



4. Install the IPU cover, the clips, and the bolts.
5. Turn the battery module switch ON (see page 12-4).
6. Install the spare tire beam, the IPU duct cover, and the cargo floor lid (see page 20-64).

Motor Control Module (MCM) Update

Special Tools Required
- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

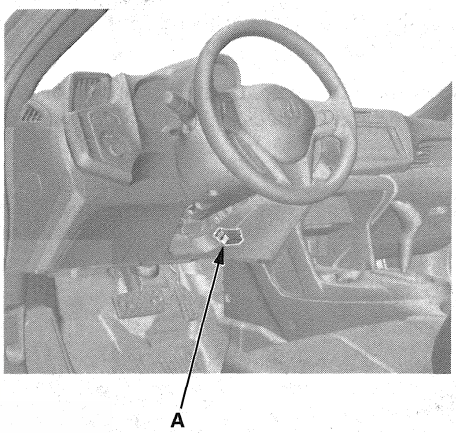
Any one of the above updating tools can be used.

IMA Motor/IMA Battery Update

The MCM contains the software programs for the IMA motor control and the battery module condition monitor.

NOTE:
- Make sure the HDS/iN workstation or the MVCI has the latest HDS software version.
- To ensure the latest programs are installed, do an MCM update whenever the MCM is substituted or replaced.
- If you are using the HIM, select the IMA motor and/or the battery module in the HIM MCM update menu.
- You can not update an MCM with the program it already has. It will only accept a new program.
- Before you update the MCM, make sure the vehicle's 12 V battery is fully charged.
- Never turn the ignition switch to ACCESSORY (I) or LOCK (0) during the update. If there is a problem with the update, leave the ignition switch turned ON (II).
- To prevent MCM damage, do not operate anything electrical (audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) when you disconnect the HIM from the data link connector (DLC). This prevents damage to the MCM.

1. Turn the ignition switch to ON (II). Do not start the engine.
2. Connect the updating tool to the data link connector (DLC) (A) located under the driver's side of the dashboard.



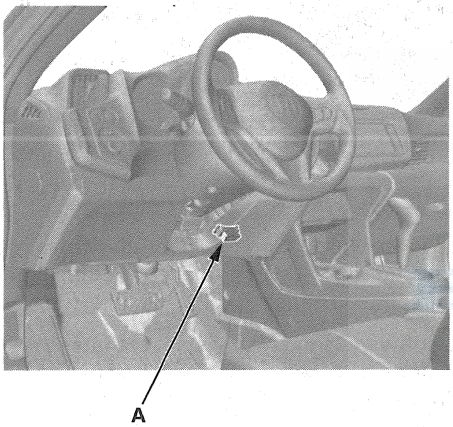
3. Make sure the updating tool communicates with the vehicle and the MCM. If it doesn't, troubleshoot the DLC circuit (see page 12-202).
4. If the software is the MCM is not the latest, do the MCM update procedure as described on the HIM label and in the MCM update system.

Motor Control Module (MCM) Removal/Installation

NOTE:
- Wear insulated gloves and use insulated tools to protect you from electrical shock.
- When removing or installing items marked with ⚠, never fail to use insulated tools.

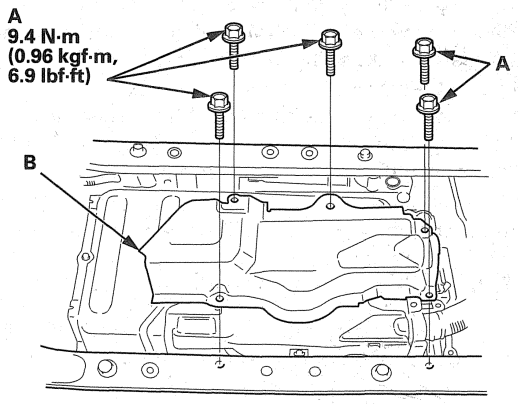
IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

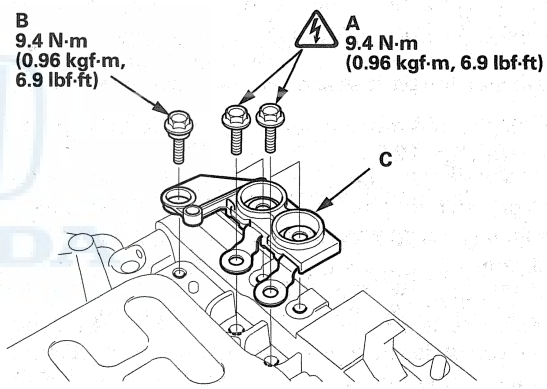


2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the MCM. If it doesn't, troubleshoot the DLC circuit (see page 12-202).
4. Select the IMA SYSTEM with the HDS.
5. Select the REPLACEMENT MCM MENU, then select READ DATA, and follow the HDS prompts.

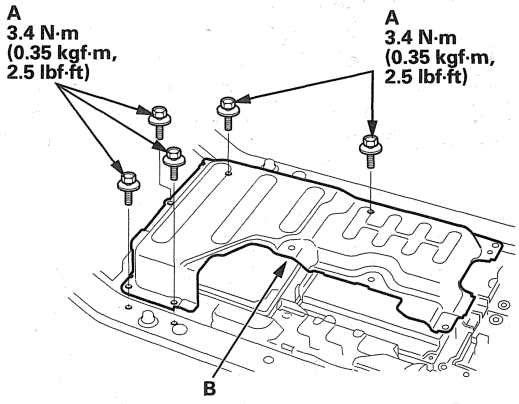
   NOTE: If the READ DATA indicates FAILED, continue this procedure.
6. Make sure the ignition switch to LOCK (0).
7. Remove the IPU cover (see page 12-210).
8. Remove the bolts (A) and the PCU lid (B).



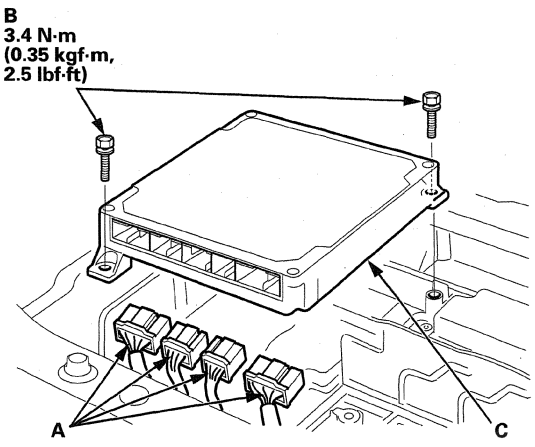
9. Remove the bolts (A, B) and the PCU busplate (C).



10. Remove the bolts (A) and the PCU cover (B).



11. Disconnect the MCM connectors (A).



12. Remove the bolts (B) and the MCM (C).
13. Install the parts in the reverse order of removal.
14. Do the IMA motor rotor position calibration procedure (see page 12-7).
15. Turn the ignition switch to ON (II).
16. Select the IMA SYSTEM with the HDS.
17. Select the REPLACEMENT MCM MENU, then select WRITE DATA, and follow the HDS prompts.

    NOTE: If the WRITE DATA indicates FAILED, continue this procedure.

DC-DC Converter Removal/Installation

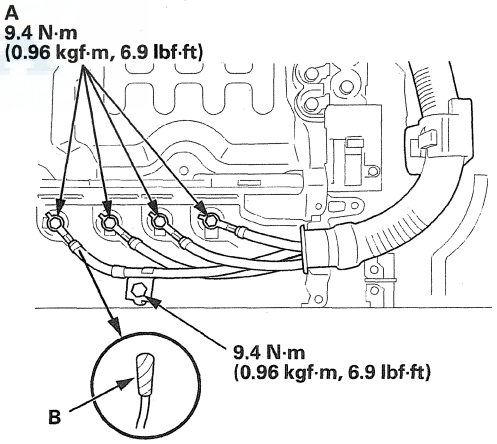
⚠ WARNING

The IMA motor power cables carry high voltage when the engine is running or the IMA system is energized. To avoid serious injury from electrical shock, do not start the engine with the IMA motor power cables disconnected.

IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

1. Make sure the ignition switch is in LOCK (0).
2. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
3. Remove the MCM (see page 12-212).
4. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

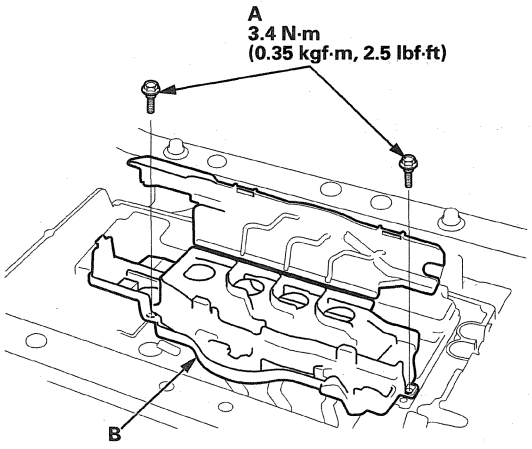
   NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



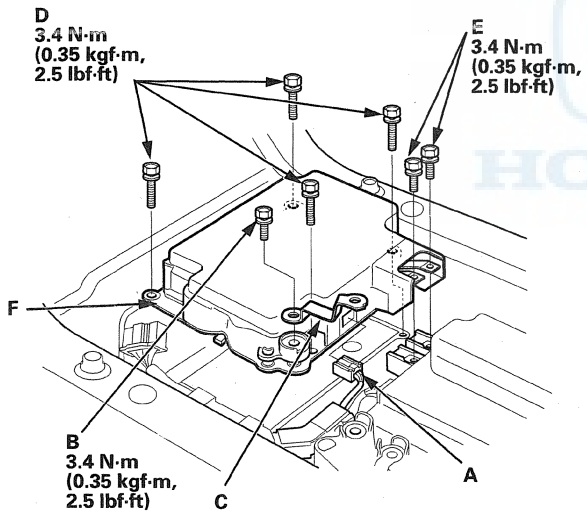
(cont'd)

DC-DC Converter Removal/Installation (cont'd)

5. Remove the bolts (A) and the terminal cover (B).



6. Disconnect the DC-DC converter connector (A).



7. Remove the bolt (B) and the busbar (C).
8. Remove the bolts (D, E) and the DC-DC converter (F).
9. Install the parts in the reverse order of removal.

   NOTE: Make sure the IMA motor power cables are correctly positioned before you reconnect them.

10. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

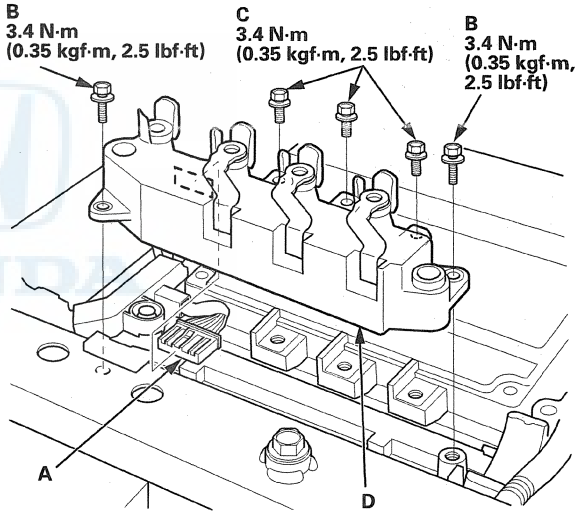
Motor Power Inverter (MPI) Module Removal/Installation

⚠ WARNING

The IMA motor power cables carry high voltage when the engine is running or the IMA system is energized. To avoid serious injury from electrical shock, do not start the engine with the IMA motor power cables disconnected.

IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

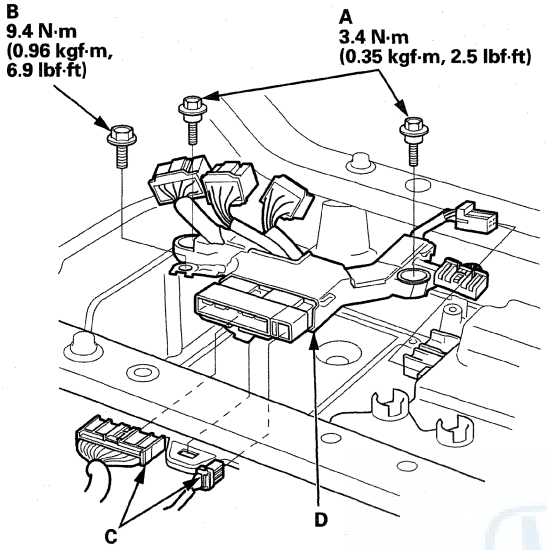
1. Remove the DC-DC converter (see page 12-213).
2. Disconnect the phase motor current sensor connector (A).



3. Remove the bolts (B, C) and the phase motor current sensor (D).

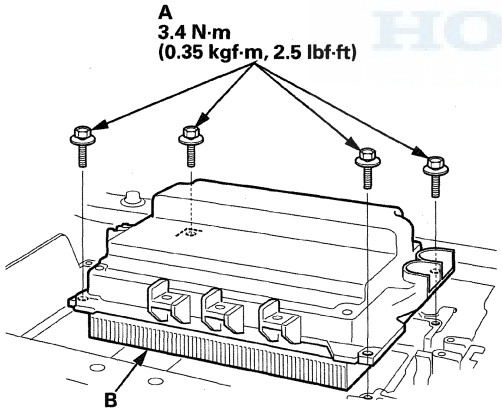
IPU Case Removal/Installation

4. Remove the bolts (A, B).



5. Disconnect the connectors (C), then remove the PCU wire harness (D).

6. Remove the bolts (A) and the MPI module (B).



7. Install the parts in the reverse order of removal.

8. Do the IMA motor rotor position calibration procedure (see page 12-7).

IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

1. Make sure the ignition switch to LOCK (0).

2. Do the 12 volt battery terminal disconnection procedure (see page 22-86).

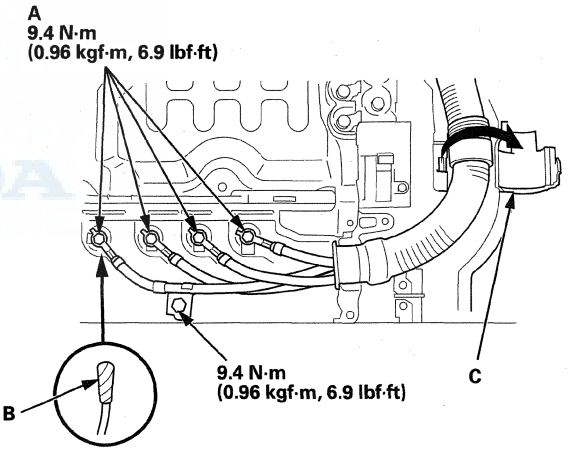
3. Remove the IPU module air duct (see page 12-220).

4. Remove the IPU cover (see page 12-210).

5. Remove the PCU lid (see step 8 on page 12-212).

6. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

   NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.

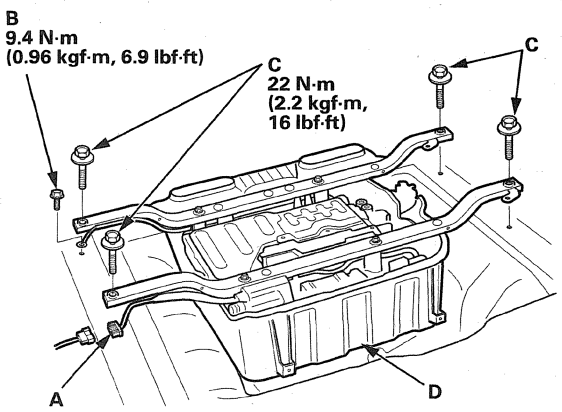


7. Open the clamp (C).

(cont'd)

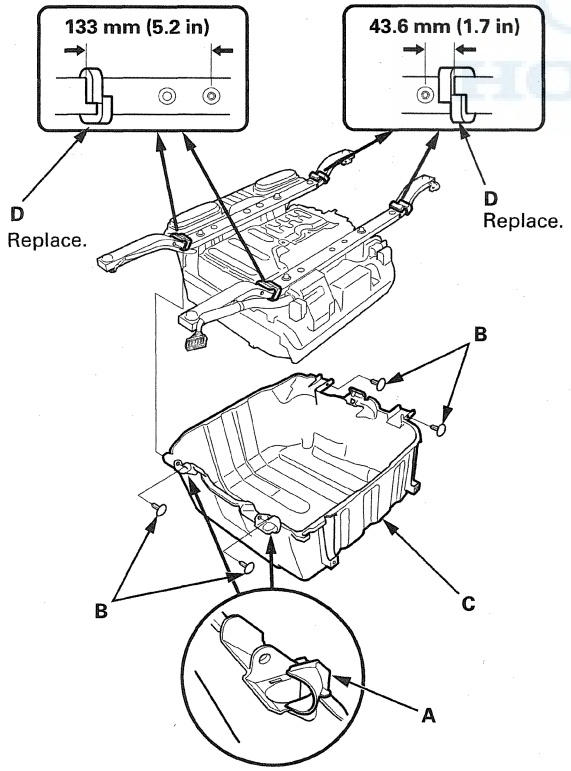
IPU Case Removal/Installation (cont'd)

8. Disconnect the connector (A).



9. Remove the bolts (B, C), then remove the IPU assembly (D).
10. Remove the harness clamp (A), the clips (B), and the IPU case (C).

    NOTE: The IPU frame seals (D) must be replaced with new ones when the IPU case is removed.



11. Install the parts in the reverse order of removal.

    NOTE: Make sure the IMA motor power cables are correctly positioned before you reconnect them.

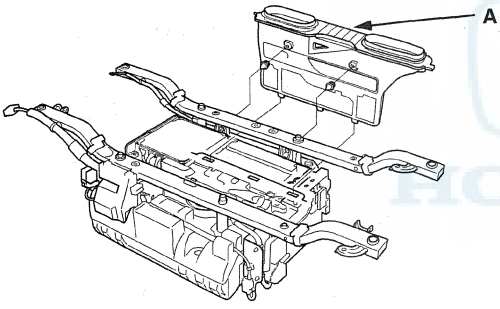
12. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Battery Module Removal/Installation

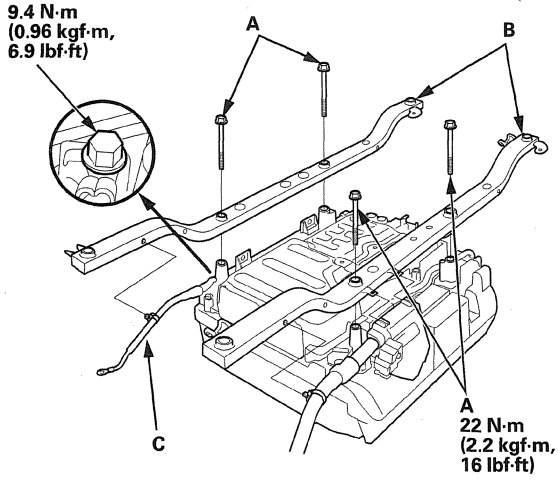
NOTE:
- Wear insulated gloves and use insulated tools to protect you from electrical shock.
- When removing or installing items marked with ⚠, never fail to use insulated tools.

IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

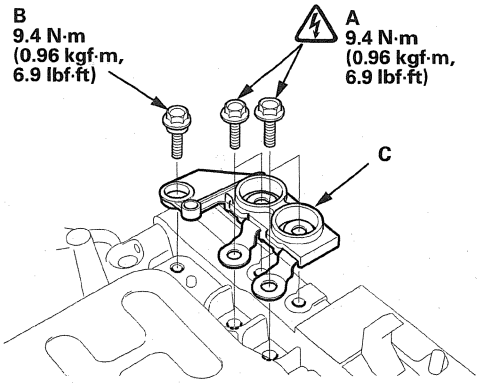
1. Make sure the ignition switch is in LOCK (0).
2. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
3. Remove the IPU case (see page 12-215).
4. Remove the IPU module front air duct (A).



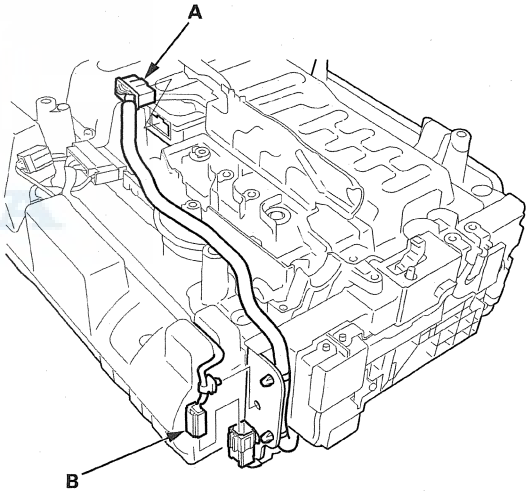
5. Remove the bolts (A), the IPU frames (B), and the ground cable (C).



6. Remove the bolts (A, B) and the PCU busplate (C).



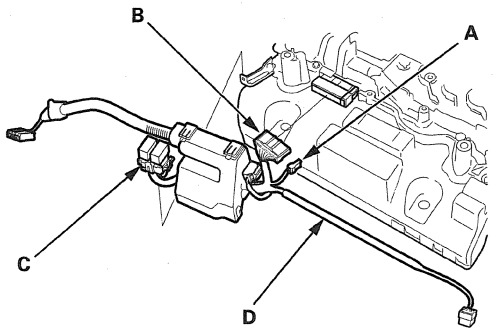
7. Disconnect the MCM connector (A) and the harness clamp (B).



(cont'd)

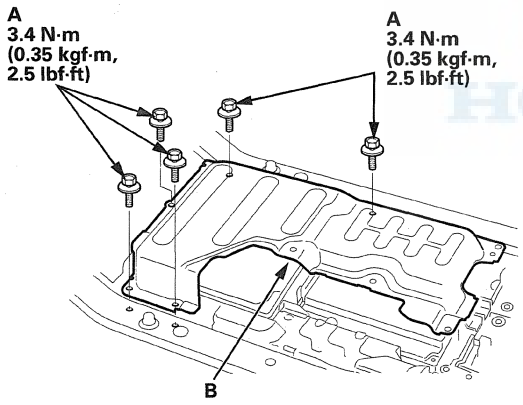
Battery Module Removal/Installation (cont'd)

8. Disconnect the connectors (A, B) and the IPU relay holder (C).

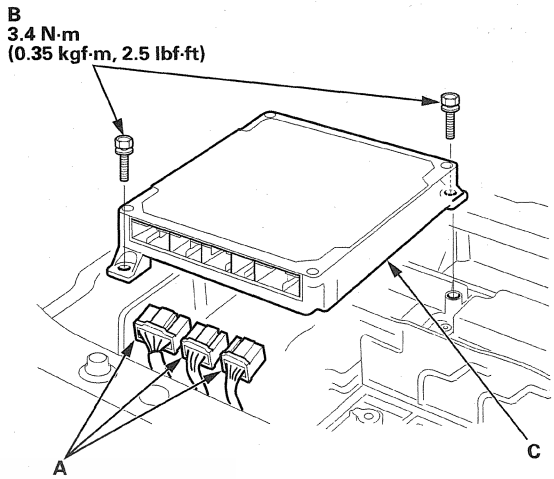


9. Remove the IPU wire harness (D).

10. Remove the bolts (A) and the PCU cover (B).

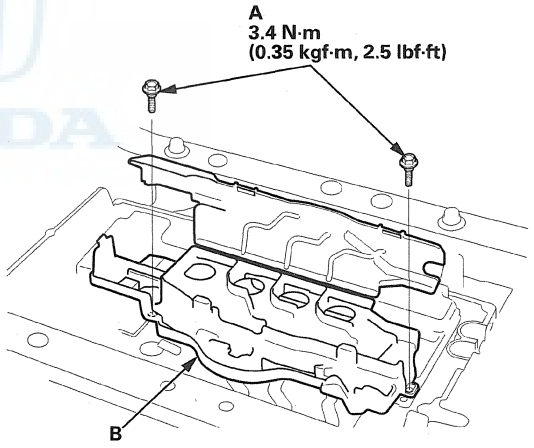


11. Disconnect the MCM connectors (A).

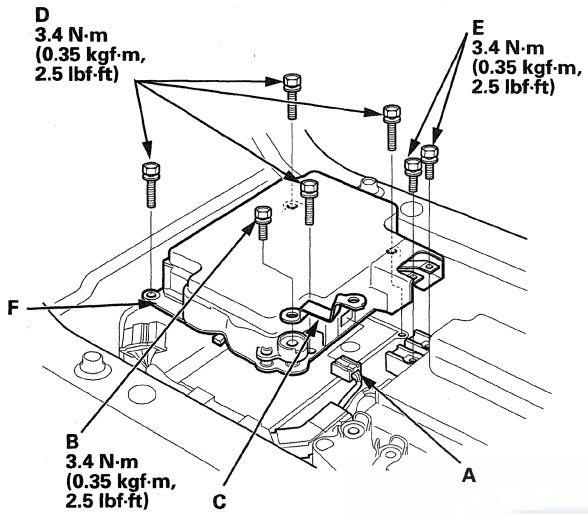


12. Remove the bolts (B) and the MCM (C).

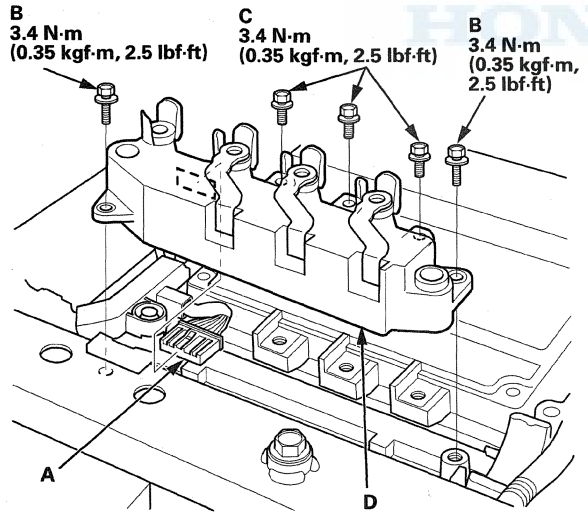
13. Remove the bolts (A) and the terminal cover (B).



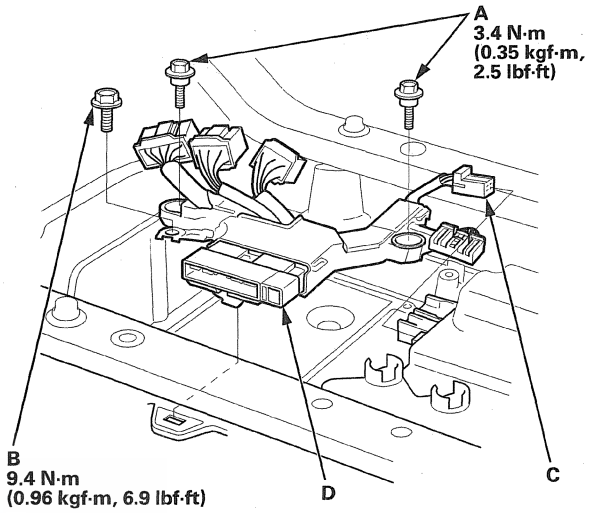
14. Disconnect the DC-DC converter connector (A).



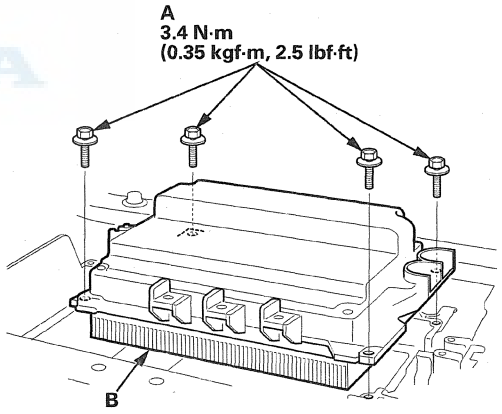
15. Remove the bolt (B) and the busbar (C).
16. Remove the bolts (D, E) and the DC-DC converter (F).
17. Disconnect the phase motor current sensor connector (A).



18. Remove the bolts (B, C) and the phase motor current sensor (D).
19. Remove the bolts (A, B).



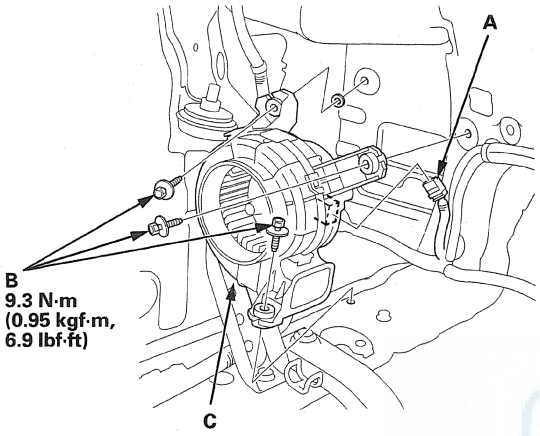
20. Disconnect the connector (C), then remove the PCU wire harness (D).
21. Remove the bolts (A) and the MPI module (B).



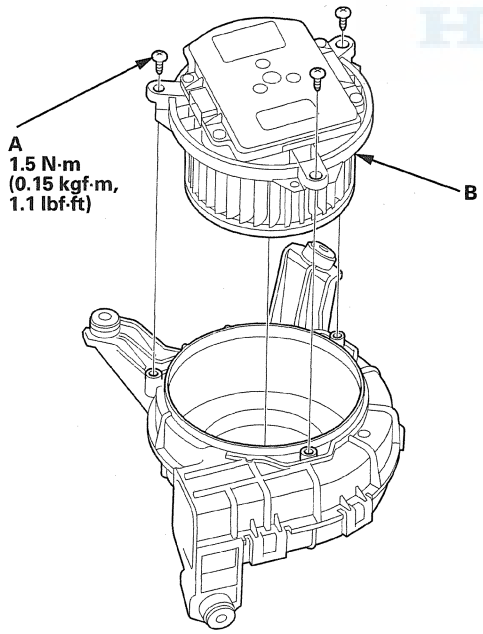
22. Install the parts in the reverse order of removal.
23. Do the 12 volt battery terminal reconnection procedure (see page 22-86).
24. If a replacement battery module was installed, select the IMA SYSTEM on HDS, then select the REPLACEMENT BATTERY MODULE, and follow the HDS prompts.

IPU Module Fan Replacement

1. Remove the right cargo area side trim panel (see page 20-64).
2. Remove the IPU module air duct (see page 12-220).
3. Disconnect the IPU module fan connector (A).



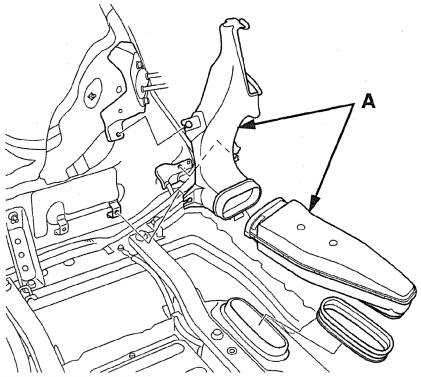
4. Remove the bolts (B) and the IPU module fan (C).
5. Remove the screws (A) and the IPU module fan (B).

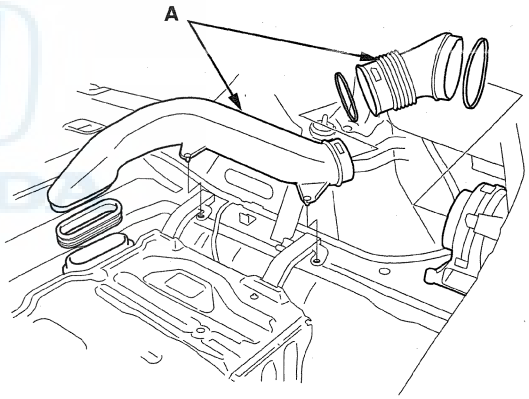


6. Install the parts in the reverse order of removal.

IPU Module Air Duct Removal/Installation

1. Remove the cargo floor lid, the IPU duct cover, and the cargo area side trim panel (see page 20-64).
2. Remove the IPU module air ducts (A).





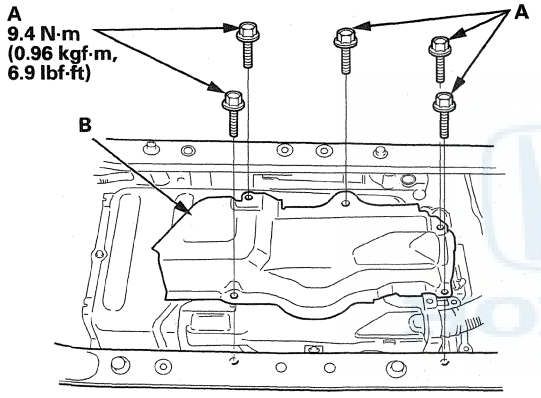
3. Install the parts in the reverse order of removal.

IMA Motor Power Cable Removal/Installation

NOTE: Take care not to scratch the surface of IMA motor power cable.

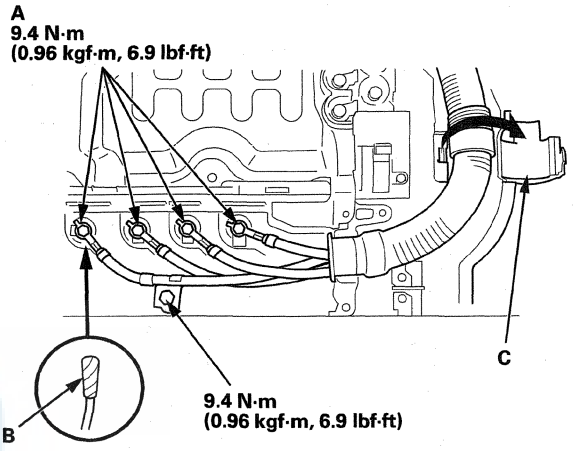
IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precautions before doing repairs or service (see page 12-3).

1. Make sure the ignition switch is in LOCK (0).
2. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
3. Remove the IPU cover (see page 12-210).
4. Remove the bolts (A) and the PCU lid (B).



5. Disconnect the four IMA motor power cables (A) from the phase motor current sensor, then wrap the end of the 12 volt power cable (B) with insulating tape.

   NOTE: Check the position of the U phase, the V phase, and the W phase cables before disconnecting them.



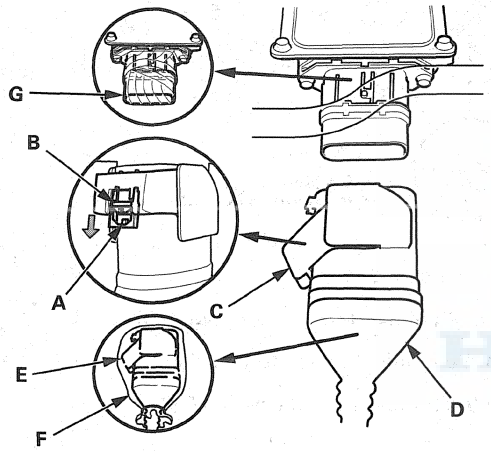
6. Open the clamp (C).
7. Remove the air cleaner (see page 9-3).
8. Turn the ignition switch to LOCK (0).
9. Turn the battery module switch OFF.

(cont'd)

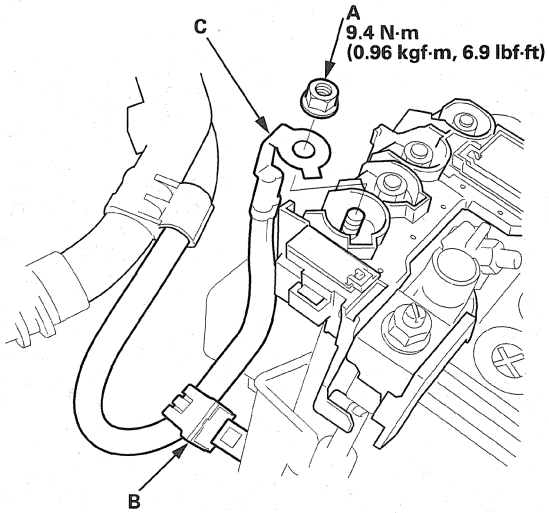
IMA Motor Power Cable Removal/Installation (cont'd)

10. Slide the protector (A) in the direction of the arrow. Push the tab (B), then raise the lever (C). Remove the IMA motor power cable (D) from the motor stator.

    NOTE:
    - If the outside of the IMA motor power cable connector is dirty, clean it before you disconnect it.
    - Cover the disconnected connector (E) with a plastic bag (F), and wrap the IMA motor power cable terminals with tape (G).
    - If the IMA motor power cable terminals are wet, dry them with a clean shop towel. Do not use compressed air.

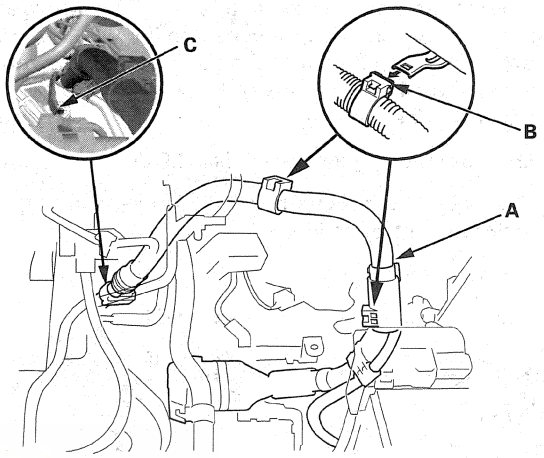


11. Remove the nut (A), the clamp (B), and the 12 V power cable (C) from the battery terminal fuse box.

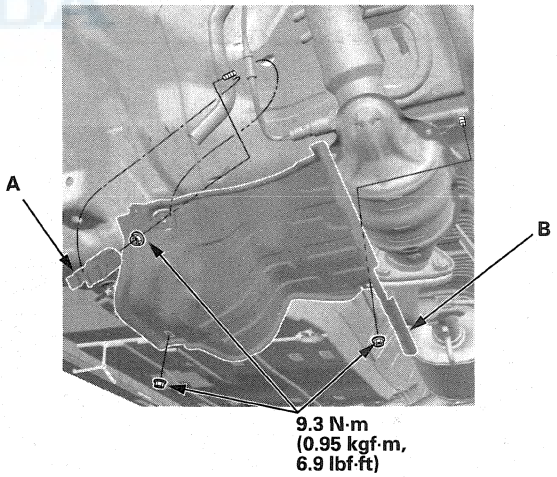


12. Remove the cowl cover and the under-cowl panel (see page 20-153).

13. Remove the IMA motor power cable (A) from the brackets (B).

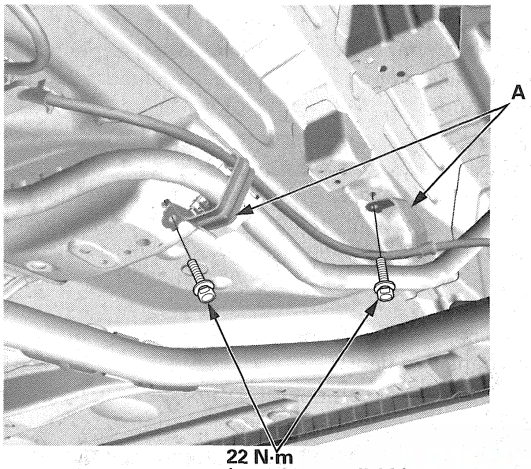


14. Remove the clamp (C).
15. Remove the fuel tank (see page 11-306).
16. Remove the front subframe (see page 20-173).
17. Remove the clip (A).



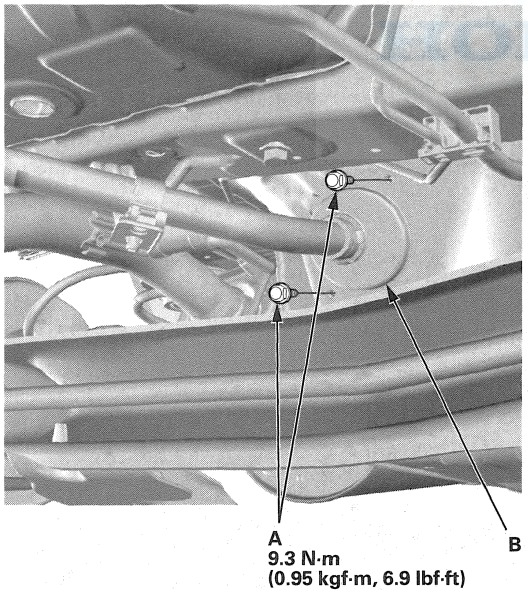
18. Remove the heat shield (B).

19. Remove the parking brake cable brackets (A).



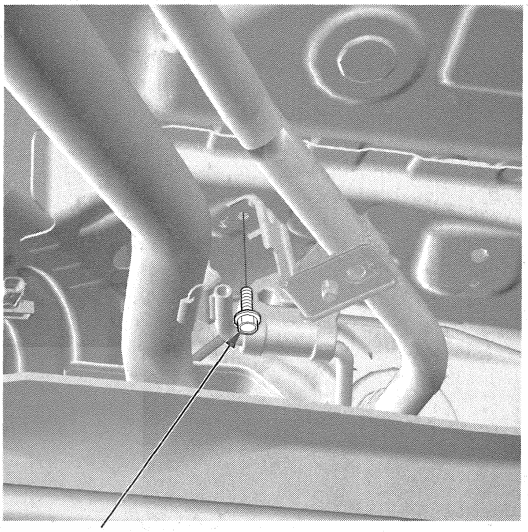
20. Wrap the IMA power cable with protective tape to avoid damaging the cable tube.

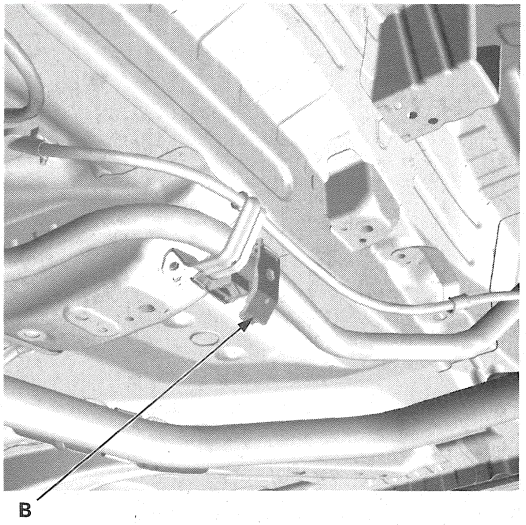
21. Remove the bolts (A) and the cover (B).



22. Remove the bolt (A) and the clamp (B).

NOTE: The clamp cannot be reused; replace it with a new one.

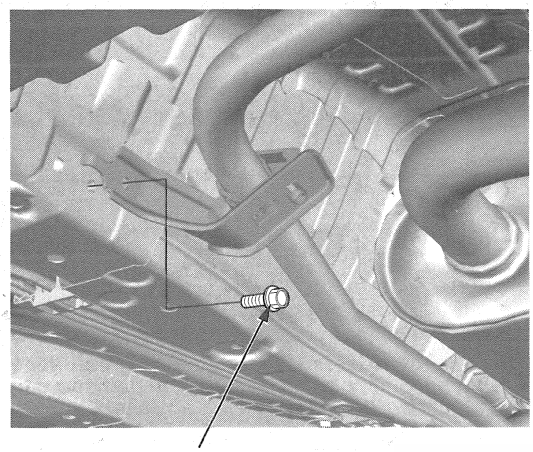




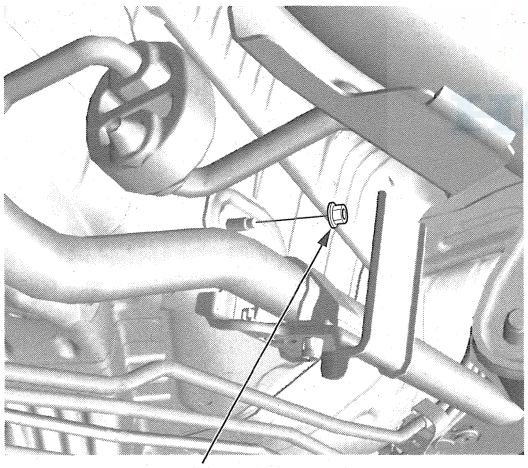
(cont'd)

IMA Motor Power Cable Removal/Installation (cont'd)

23. Remove the bolt (A) and the nut (B).



A
9.3 N·m
(0.95 kgf·m, 6.9 lbf·ft)



B
9.3 N·m
(0.95 kgf·m, 6.9 lbf·ft)

24. Pull out the IMA motor power cable from the body.
25. Install the parts in the reverse order of removal.

    NOTE: Make sure the IMA motor power cables are correctly positioned before you reconnect them.

26. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

IMA Motor Rotor Removal/Installation

Special Tools Required

Rotor Puller 07YAC-PHM010C

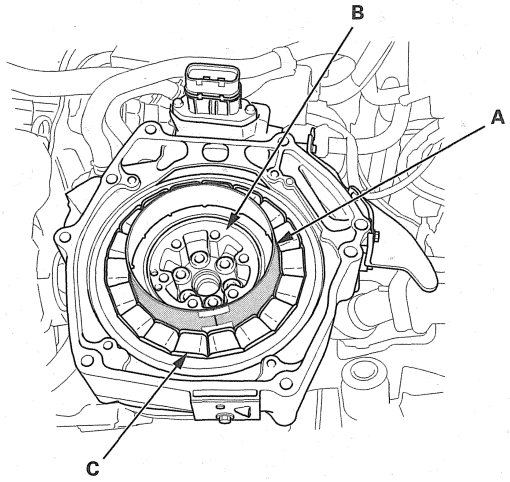
The motor rotor contains very strong magnets and should be handled with special care. People with pacemakers or other sensitive medical devices should not handle the IMA motor rotor.

⚠WARNING

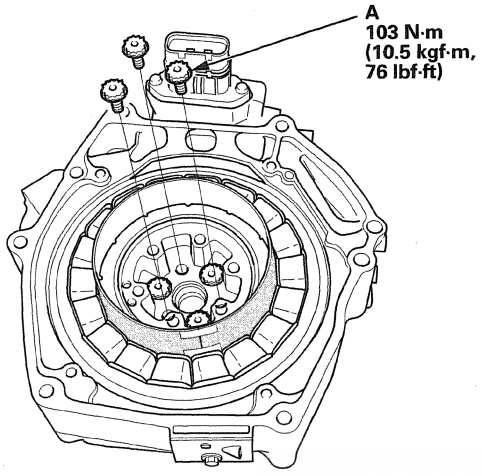
If the rotor is installed by hand, it may suddenly be pulled toward the stator with great force, causing serious hand or finger injury. Always use the special tool (rotor puller) to remove or install the rotor assembly.

- Keep the motor rotor away from magnetically sensitive devices.
- Do not blow air near the rotor, as metal particles may get on the magnets.
- Store the rotor in the designated storage box, and keep it away from sensitive devices during storage.

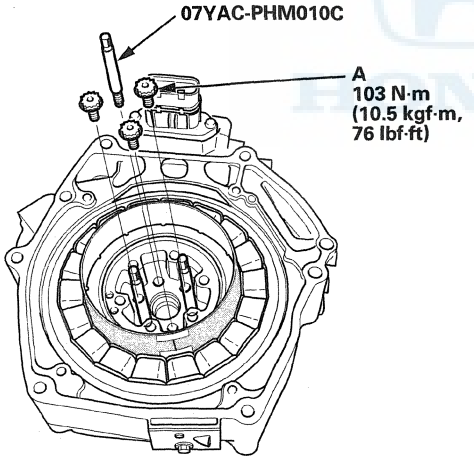
1. Remove the transmission.
   - M/T model (see page 13-43)
   - CVT model (see page 14-156)
2. M/T model: Remove the clutch (see page 13-17).
3. M/T model: Remove the flywheel (see page 13-17).
4. CVT model: Remove the drive plate (see page 14-165).
5. Install a plastic film (A) between the IMA motor rotor (B) and the motor stator (C).



6. Remove three of the six bolts (A) as shown.

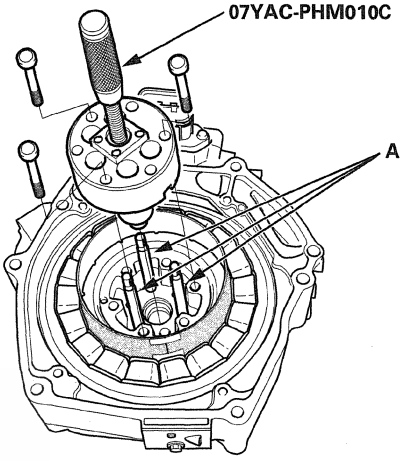


7. Install the three rotor puller guide pins, then remove the remaining three bolts (A).

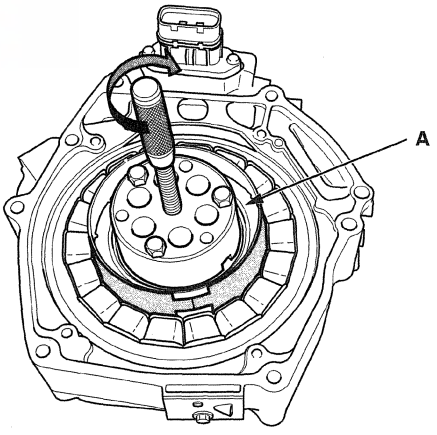


8. Attach the rotor puller with its supplied bolts.

NOTE: When installing the rotor puller, position the puller to fit over the guide pins (A).



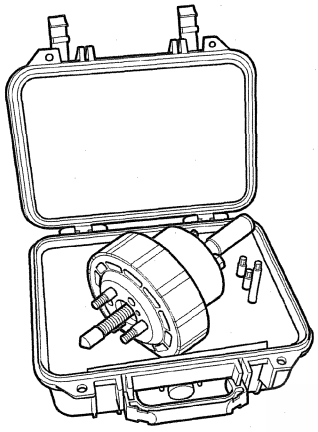
9. Turn the handle of rotor puller, and remove the IMA motor rotor (A).



(cont'd)

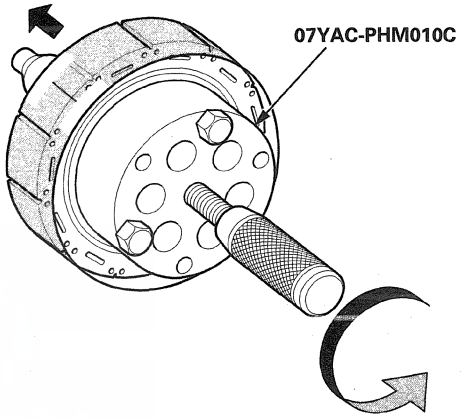
IMA Motor Rotor Removal/Installation (cont'd)

10. To prevent damage to the rotor magnets while working on the stator, place the rotor, with puller attached, into the puller case.



11. Install the parts in the reverse order of removal.

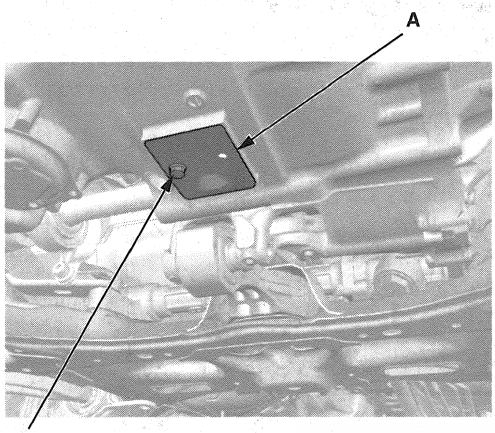
    NOTE:
    - When installing the rotor, make sure the special tool is attached with its handle turned out several threads.
    - Turn the handle of the special tool slowly when inserting the rotor into the stator. The rotor is drawn into the stator by magnetic force.



12. Remove the plastic film.
13. CVT model: Install the drive plate (see page 14-165).
14. M/T model: Install the flywheel (see page 13-17).
15. M/T model: Install the clutch (see page 13-17).
16. Install the transmission.
    - M/T model (see page 13-49)
    - CVT model (see page 14-165)
17. Do the IMA motor rotor position calibration procedure (see page 12-7).

Drain Cover Removal/Installation

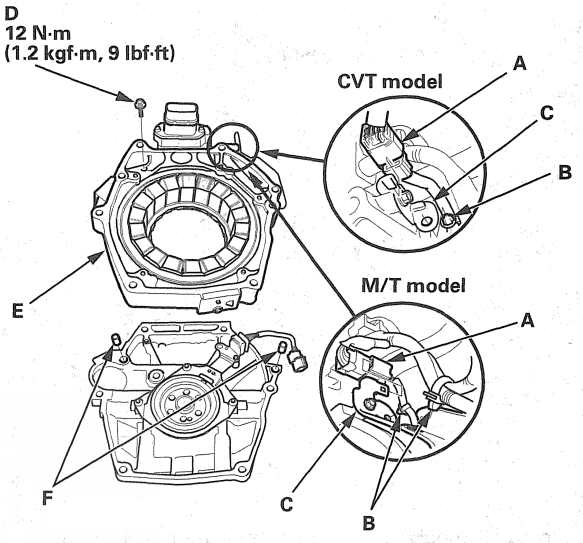
1. Remove the splash shield (see page 20-163).
2. Remove the drain cover (A).



3. Install the parts in the reverse order of removal.

IMA Motor Housing Removal/Installation

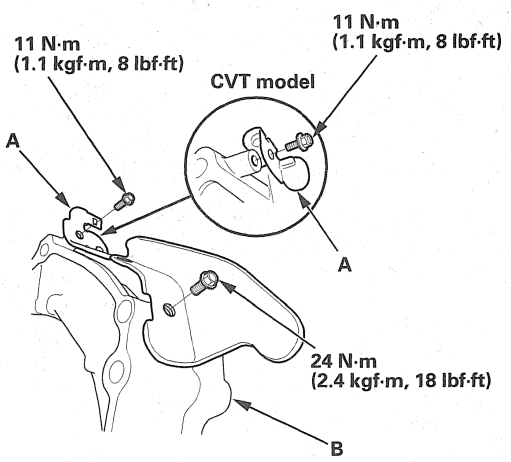
1. Remove the IMA motor rotor (see page 12-224).
2. Remove the connector (A) and the harness clamps (B) from the bracket (C).



3. Remove the bolt (D) and the IMA motor housing (E).

   NOTE: Set the dowel pins (F) in the IMA motor housing before installing the motor stator on the engine.

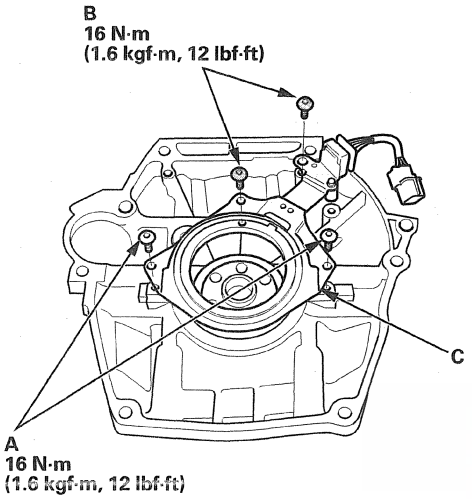
4. Remove the bracket (A) from the IMA motor housing (B).



5. Install the parts in the reverse order of removal.
6. Install the IMA motor rotor (see page 12-224).
7. Do the IMA motor rotor position calibration procedure (see page 12-7).

IMA Motor Rotor Position Sensor Removal/Installation

1. Remove the IMA motor housing (see page 12-227).
2. Remove the bolts (A, B) and the IMA motor rotor position sensor (C).



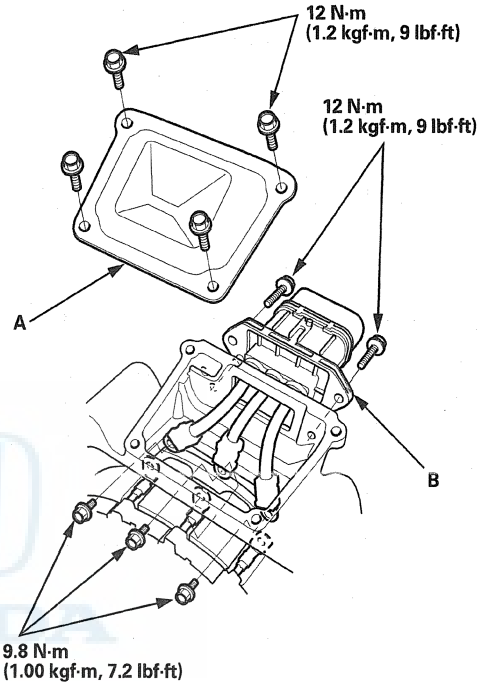
3. Install the parts in the reverse order of removal.

   NOTE: Tighten the side bolts (A) first, then tighten the upper bolts (B).

4. Do the IMA motor rotor position calibration procedure (see page 12-7).

IMA Motor Power Cable Terminal Removal/Installation

1. Remove the IMA motor housing (see page 12-227).
2. Remove the terminal cover (A) and the IMA motor power cable terminal (B).

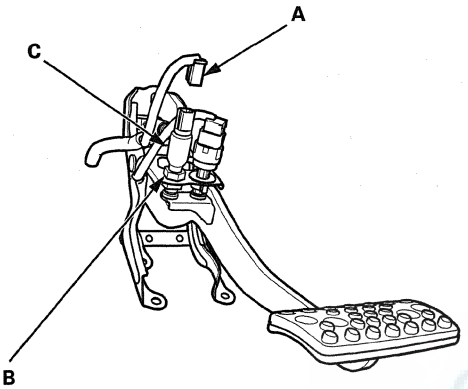


3. Install the parts in the reverse order of removal.
4. Do the IMA motor rotor position calibration procedure (see page 12-7).

Idle Stop Switch Replacement

CVT model

1. Remove the driver's dashboard undercover (see page 20-86).
2. Disconnect the idle stop switch connector (A).



3. Loosen the locknut (B), and remove the idle stop switch (C).
4. Install the parts in the reverse order of removal.
5. Adjust the idle stop switch (see page 19-6).

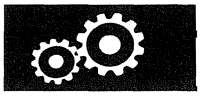
Transaxle

Clutch 13–1

Manual Transmission 13–25

CVT 14–1

Driveline/Axle 16–1



SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If clutch maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If clutch maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

Transaxle

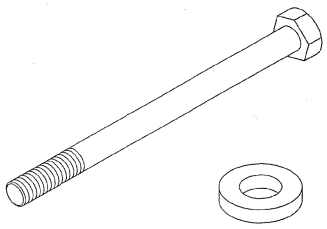
Clutch

Special Tools 13–2
Component Location Index 13–3
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Clutch Pedal Assembly Replacement 13–8
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Clutch Master Cylinder Replacement 13–10
Slave Cylinder Replacement 13–14
Clutch Hose Replacement 13–15
Clutch Pedal Pad Cover Replacement 13–16
Clutch Replacement 13–17

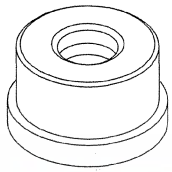


Special Tools

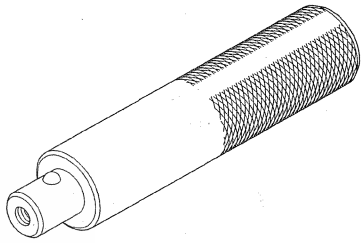
Ref.No.	Tool Number	Description	Qty
①	070AB-SZT0100	Ring Gear Bolt Set 150 mm	1
②	07746-001A800	Attachment, 22 x 24 mm	1
③	07749-0010000	Driver Handle, 15 x 135L	1
④	07936-3710100	Remover Handle	1
⑤	07936-371020A	Slide Hammer	1
⑥	07936-KC10500	Bearing Remover Shaft Set, 15 mm	1
⑦	07AAG-SNAA100	Clutch Alignment Shaft	1
⑧	07JAF-PM7011A	Clutch Alignment Disc	1
⑨	07LAB-PV00100	Ring Gear Holder	1



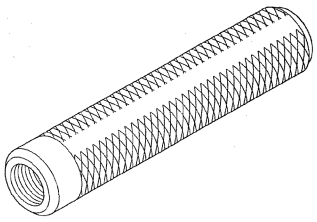
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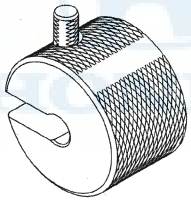
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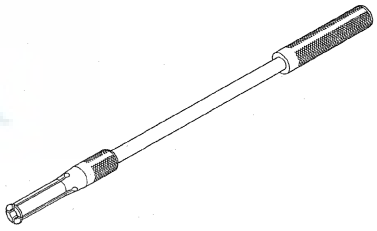
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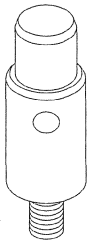
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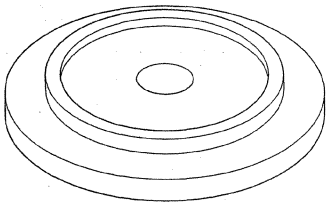
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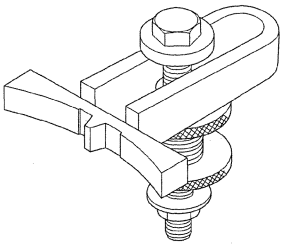
⑥



⑦

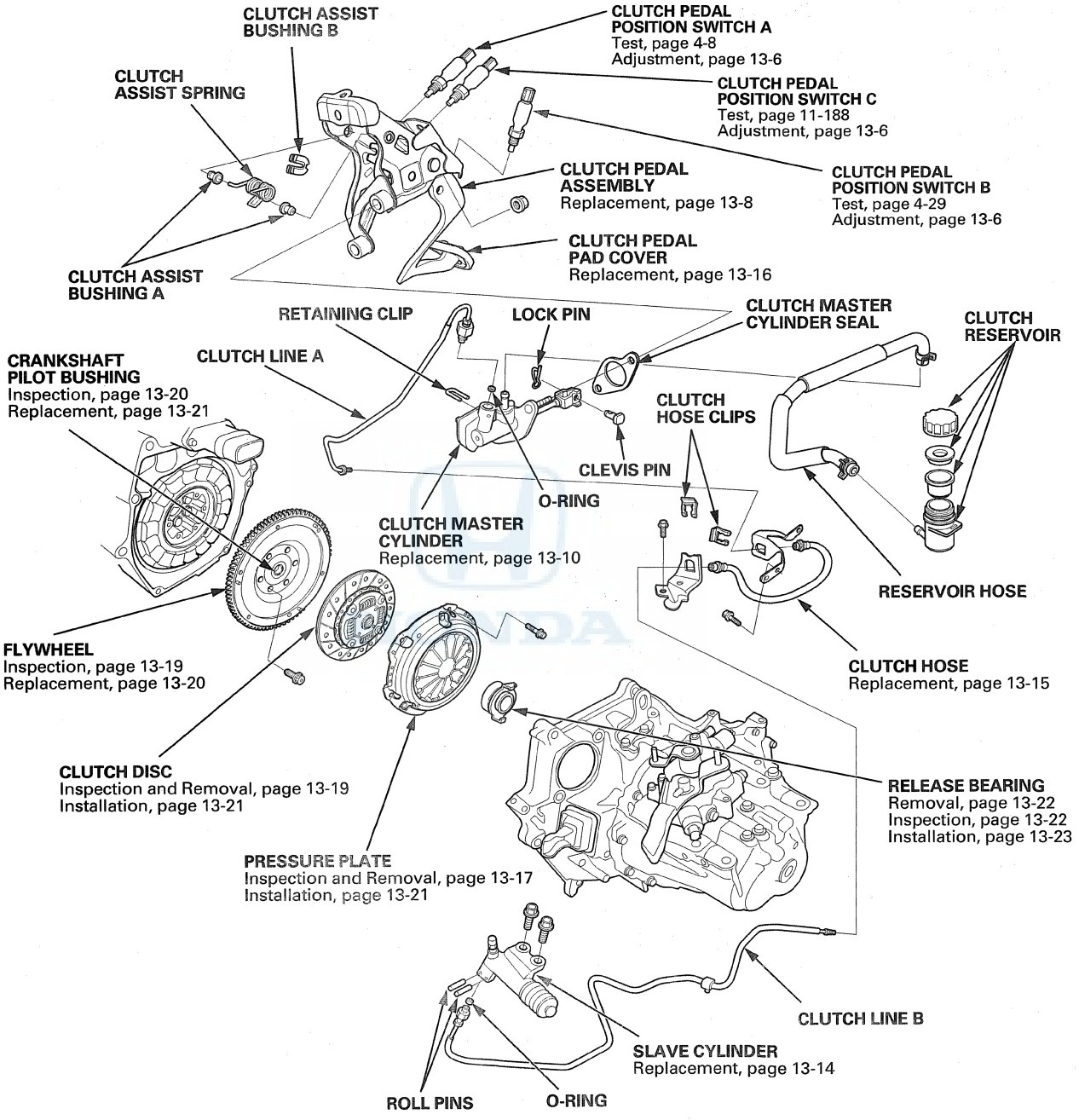


⑧



⑨

Component Location Index

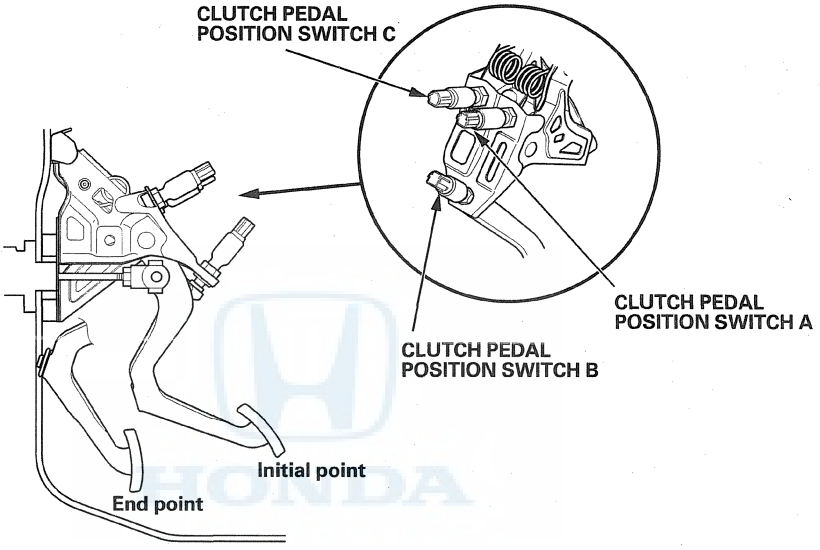


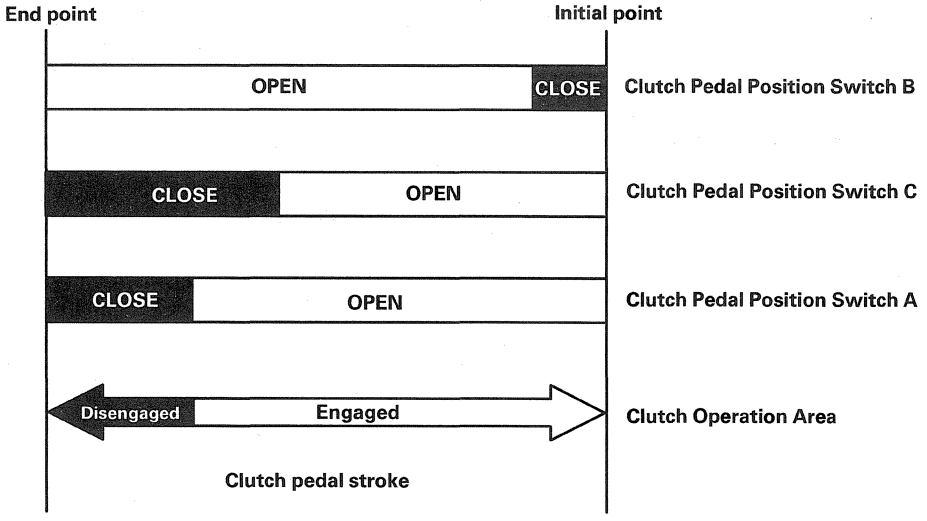
System Description

Clutch Pedal Position Switch

The clutch pedal has clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C installed.

- Clutch Pedal Position Switch A (clutch interlock operation): Turned ON (CLOSE) when the pedal position is within the area where clutch is disengaged.
- Clutch Pedal Position Switch B (cruise control): Turned OFF (OPEN) when the clutch pedal is pushed down.
- Clutch Pedal Position Switch C (shift indicator operation): Turned ON (CLOSE) when the clutch pedal is about to be halfway through its stroke.





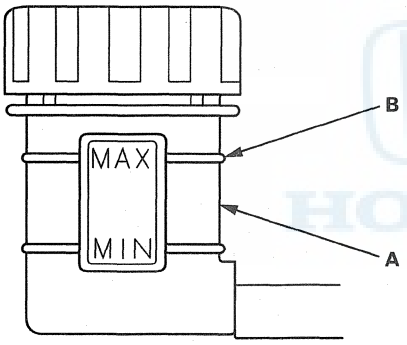
NOTE: The illustration shows the HDS screen indication.

Clutch Hydraulic System Bleeding

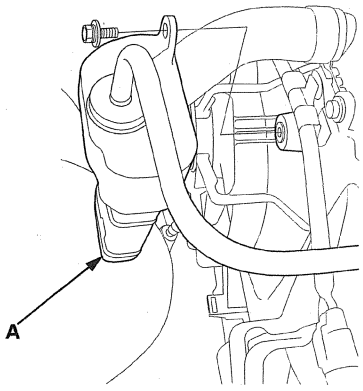
NOTE:

- Do not reuse the drained fluid. Use Honda DOT 3 Brake Fluid from an unopened container. Using a non-Honda brake fluid can cause corrosion and shorten the life of the system.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.
- It may be necessary to limit the movement of the release fork with a block of wood to remove all the air from the system.
- Use fender covers to avoid damaging painted surfaces.

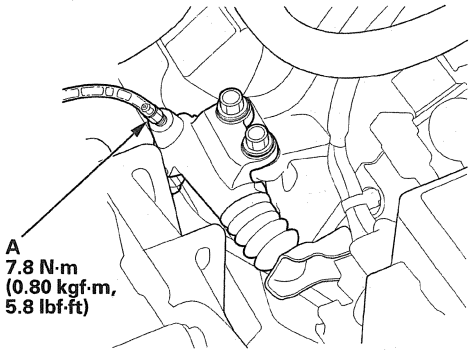
1. Make sure the brake fluid level in the clutch reservoir (A) is at the MAX (upper) level line (B).



2. Remove the coolant reservoir (A).



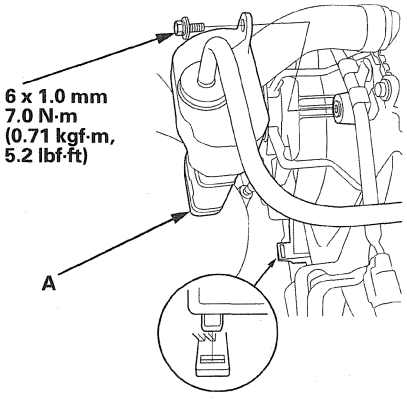
3. Attach one end of a clear tube to the bleeder screw (A), and put the other end into a container. Loosen the bleeder screw to allow air to escape from the system.



4. Make sure there is an adequate supply of fluid in the reservoir, then slowly push the clutch pedal all the way down. Before releasing the pedal, have an assistant temporarily tighten the bleeder screw. Loosen the bleeder screw, and push the clutch pedal down again. Repeat this step until no more bubbles appear at the clear tube.

   NOTE: Make sure the fluid level on the reservoir does not go below MIN.

5. Tighten the bleeder screw securely.
6. Refill the brake fluid in the reservoir to the MAX (upper) level line.
7. Install the coolant reservoir (A).



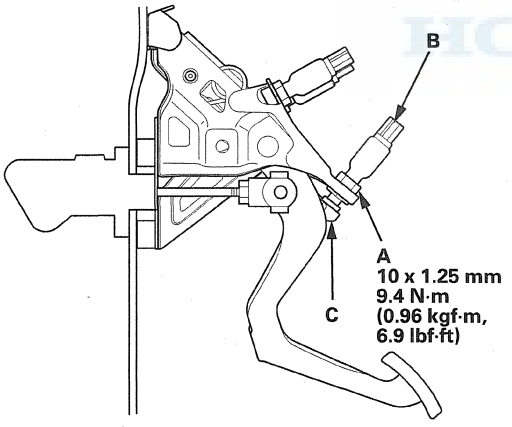
8. Check the clutch operation, and check for leaks.

Clutch Pedal and Clutch Pedal Position Switch Adjustment

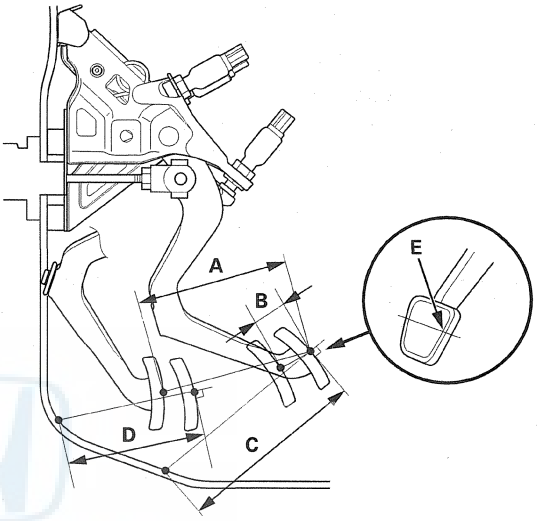
NOTE:

- For a shift indicator operation problem, check clutch pedal position switch C (see page 11-188).
- For a cruise control problem, check clutch pedal position switch B (see page 4-29).
- For a clutch interlock operation problem, check clutch pedal position switch A (see page 4-8).
- If there is no clearance between the master cylinder piston and the push rod, the release bearing will be held against the diaphragm spring, which can result in clutch slippage or other clutch problems.
- Before adjusting the clutch pedal and the clutch pedal position switch, check the clutch pedal and the clutch master cylinder are installed correctly and not damaged.

1. Remove the driver's dashboard undercover (see page 20-86).
2. Disconnect the clutch pedal position switch B connector.
3. Loosen the locknut (A) of clutch pedal position switch B, and back off clutch pedal position switch B until it no longer touches the clutch pedal (C).



4. Pull the clutch pedal by hand, then turn clutch pedal position switch B until it contacts the clutch pedal.
5. Turn in clutch pedal position switch B an additional 3/4 to 1 turn. Make sure the clutch pedal height did not change.
6. While holding clutch pedal position switch B, tighten the locknut.
7. Connect the clutch pedal position switch B connector.
8. Measure the clutch pedal stroke (A).
   - If the clutch pedal stroke is within the standard, go to step 10.
   - If the clutch pedal stroke is not within the standard, go to step 9.



(A) Clutch Pedal Stroke:
120—130 mm (4.72—5.12 in)
(B) Clutch Pedal Free Play (Reference):
4.5—18.5 mm (0.177—0.728 in)
(C) Clutch Pedal Height (Reference)*:

With clutch pedal pad cover	**203.3 mm (8.004 in)**
Without clutch pedal pad cover	**201.5 mm (7.933 in)**

(D) Clutch Pedal Disengagement Height (Minimum to the floor) (Reference)*:

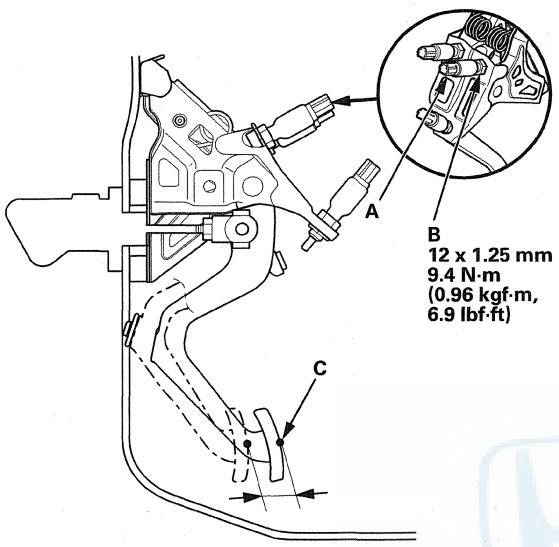
With clutch pedal pad cover	**117.5mm (4.626 in)**
Without clutch pedal pad cover	**115.7mm (4.555 in)**

*: Measure the clutch pedal height from right side middle of the clutch pedal cover or the clutch pedal pad cover (E) to the floor without the insulation.

9. Inspect the length of the clutch master cylinder push rod (see page 13-10).

   If the clutch master cylinder push rod was adjusted, go to step 2.

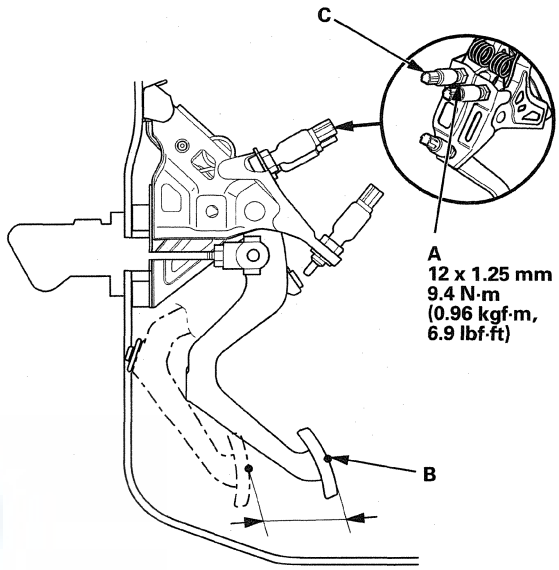
10. Loosen the locknut (B) of clutch pedal position switch A.



11. Connect the Honda diagnostic system (HDS) to the data link connector (DLC) (see step 10 on page 13-41).
12. Turn the ignition switch to ON (II).
13. Make sure the HDS communicates with the vehicle. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
14. Fully press the clutch pedal to the floor, then release the clutch pedal 15—20 mm (0.59—0.79 in) and hold it there.

    NOTE: Measure the clutch pedal height from middle of the clutch pedal cover or the clutch pedal pad cover (C).
15. Check the CLUTCH PEDAL POSITION SWITCH A in the PGM-FI DATA LIST with the HDS.
16. Adjust clutch pedal position switch A when the HDS screen indicates CLOSE to OPEN.

    NOTE: Be careful not to twist the wire.
17. While holding clutch pedal position switch A, tighten the locknut.
18. Loosen the locknut (A) of clutch pedal position switch C.



19. Fully press the clutch pedal to the floor, then release the clutch pedal 48—53 mm (1.89—2.09 in) and hold it there.

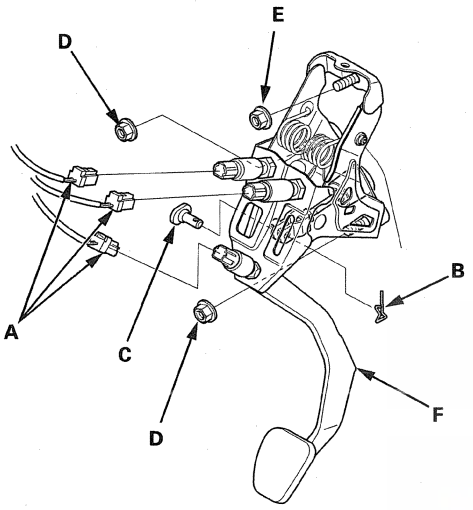
    NOTE: Measure the clutch pedal height from middle of the clutch pedal cover or the clutch pedal pad cover (B).
20. Check the CLUTCH PEDAL POSITION SWITCH A (C) in the PGM-FI DATA LIST with the HDS.
21. Adjust clutch pedal position switch C when the HDS screen indicates CLOSE to OPEN.

    NOTE: Be careful not to twist the wire.
22. While holding clutch pedal position switch C, tighten the locknut.
23. Check the clutch pedal does not contact to clutch pedal position switch A body and the clutch pedal position switch C body when fully pressing the clutch pedal to the floor.
24. Check the clutch operation.
25. Check the shift indicator operation and the clutch interlock operation.
26. Check the auto idle stop system (see page 12-206).
27. Install the driver's dashboard undercover (see page 20-86).

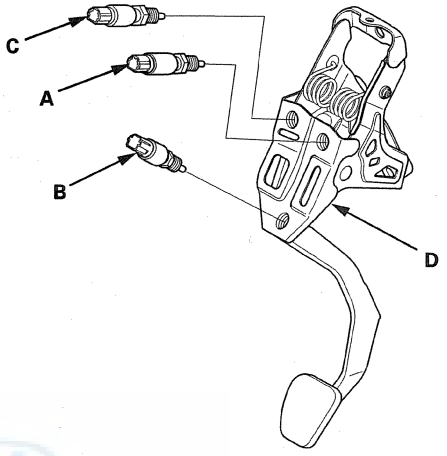
Clutch Pedal Assembly Replacement

NOTE: Put on gloves to protect your hands.

1. Remove the driver's dashboard undercover (see page 20-86).
2. Disconnect the clutch pedal position switch connectors (A).

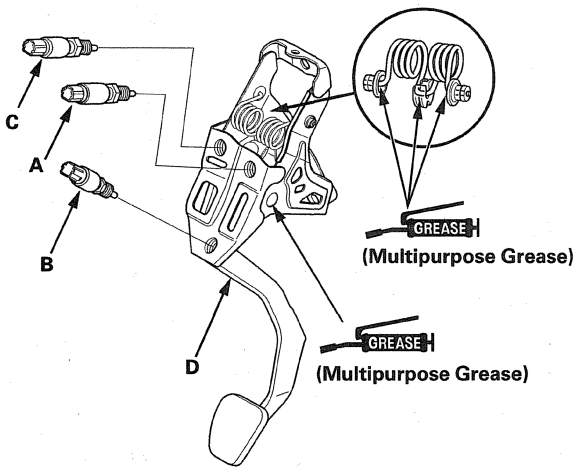


3. Pry out the lock pin (B), and pull the clevis pin (C) out of the clevis.
4. Remove the master cylinder mounting nuts (D) and clutch pedal mounting nut (E).
5. Remove the clutch pedal assembly (F).
6. Remove clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C from the clutch pedal assembly (D).



7. Loosely install clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C to the clutch pedal assembly (D).

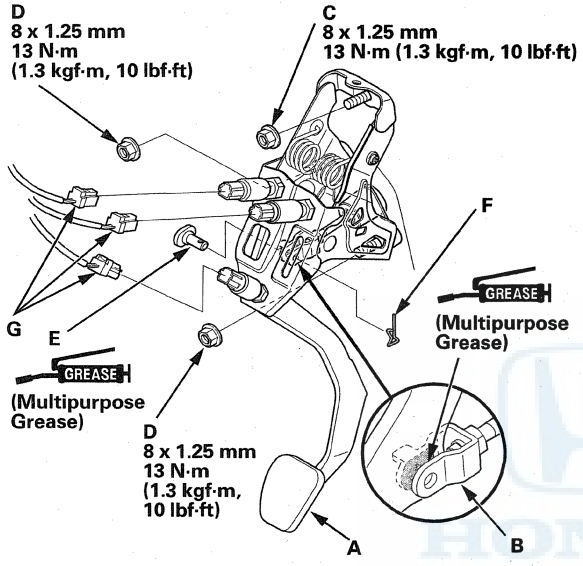
   NOTE:
   - Do not let the clutch pedal position switch contact the clutch pedal.
   - Make sure the installation position of each clutch pedal position switch is correct.



8. Install the clutch pedal assembly (A).

NOTE:

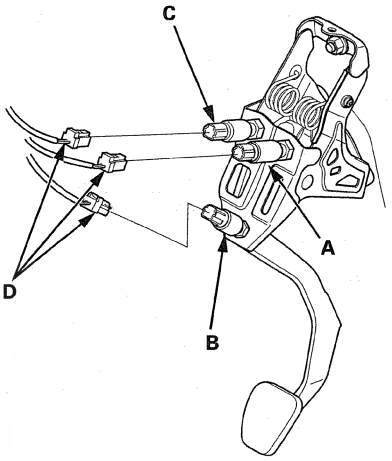
- Connect the clevis (B) to the clutch pedal, then apply multipurpose grease between the clutch pedal and the clevis.
- Wipe off any excess grease.



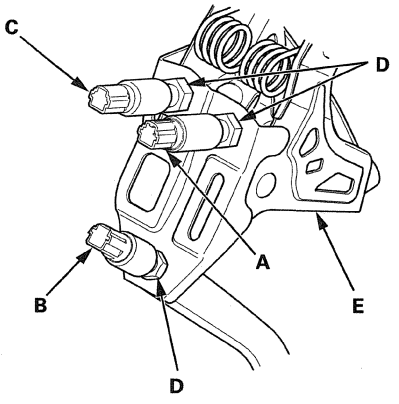
9. Install the clutch pedal mounting nut (C) and master cylinder mounting nuts (D).
10. Apply multipurpose grease to the clevis pin (E). Slide the clevis pin into the clevis, then install a lock pin (F).
11. Connect the clutch pedal position switch connectors (G).
12. Adjust the clutch pedal, clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C (see page 13-6).
13. Check the clutch operation.
14. Install the driver's dashboard undercover (see page 20-86).

Clutch Pedal Position Switch Replacement

1. Remove the driver's dashboard undercover (see page 20-86).
2. Disconnect clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C connectors (D).



3. Loosen the locknuts (D), then remove clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C from the clutch pedal assembly (E).



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Clutch Pedal Position Switch Replacement (cont'd)

4. Loosely install clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C to the clutch pedal assembly in the reverse order of removal.

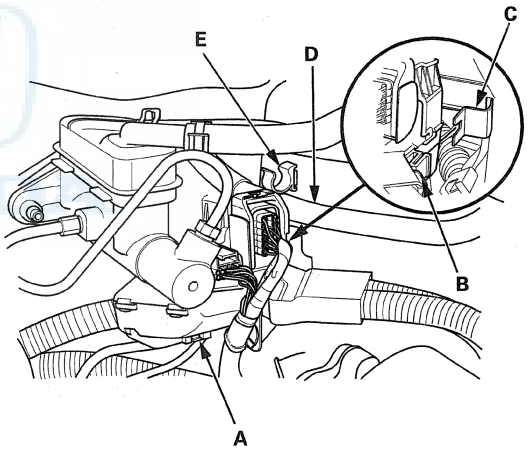
   NOTE:
   - Do not let the clutch pedal position switch contact the clutch pedal.
   - Make sure the installation position of each clutch position switch is correct.

5. Connect clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C connectors.
6. Adjust the clutch pedal, clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C (see page 13-6).
7. Check the clutch operation.
8. Install the driver's dashboard undercover (see page 20-86).

Clutch Master Cylinder Replacement

NOTE:
- Use fender covers to avoid damaging painted surfaces.
- Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.
- Plug the ends of the hoses and joints to prevent spilling brake fluid.
- Put on gloves to protect your hands.

1. Secure the hood in the wide open position (support rod in the lower hole).
2. Remove and discard the brake fluid from the clutch reservoir with a syringe or other suitable device.
3. Remove the air cleaner (see page 9-3).
4. Remove the harness clamp (A), then remove the harness holder (B) from the bracket (C).

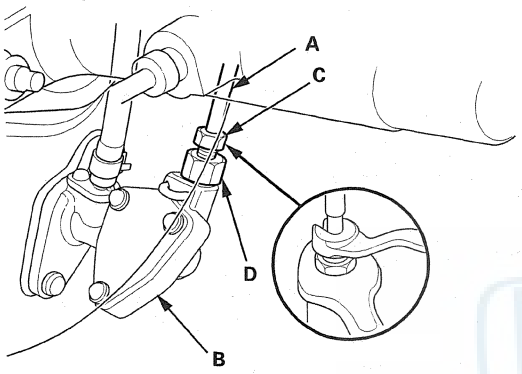


5. Remove the reservoir hose (D) from the reservoir hose clip (E).

6. Disconnect clutch line A from the clutch master cylinder (B).

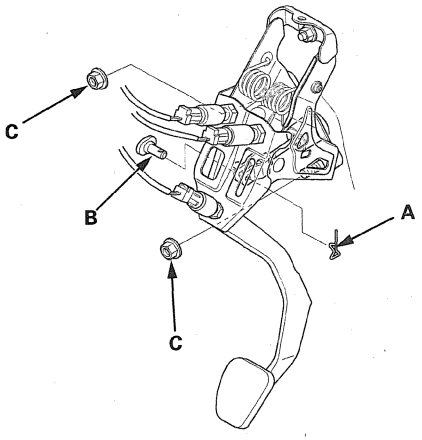
NOTE:

- To prevent spills, cover the line joint with rags or shop towels.
- Loosen the flare nut (C) while holding the clutch line connector (D) using a wrench.

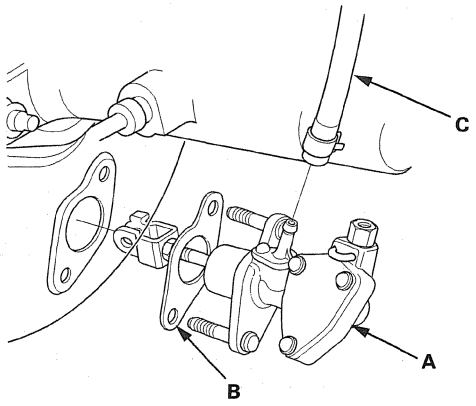


7. Remove the driver's dashboard undercover (see page 20-86).

8. Pry out the lock pin (A), and pull the clevis pin (B) out of the clevis. Remove the master cylinder mounting nuts (C).



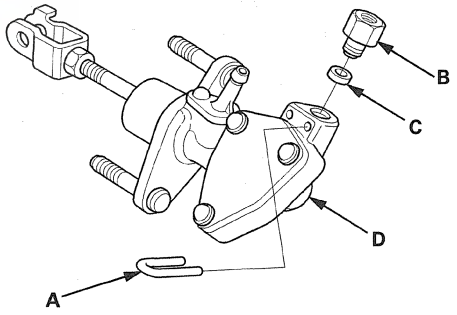
9. Remove the clutch master cylinder (A) and the clutch master cylinder seal (B) from the body.



10. Disconnect the reservoir hose (C).

NOTE: Inspect the hose. If the hose has damage, leaks, interference, or twisting, replace it.

11. Remove the retaining clip (A), then remove the clutch line connector (B) and the O-ring (C) from the master cylinder (D).

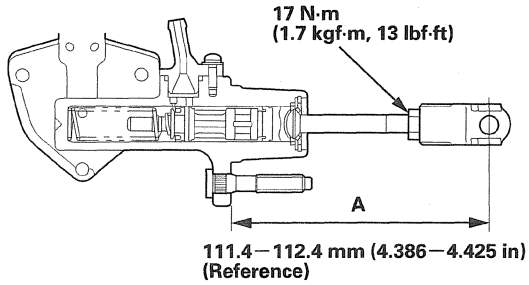


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Clutch Master Cylinder Replacement (cont'd)

12. Inspect the length (A) of the clutch master cylinder push rod to the figure as shown.

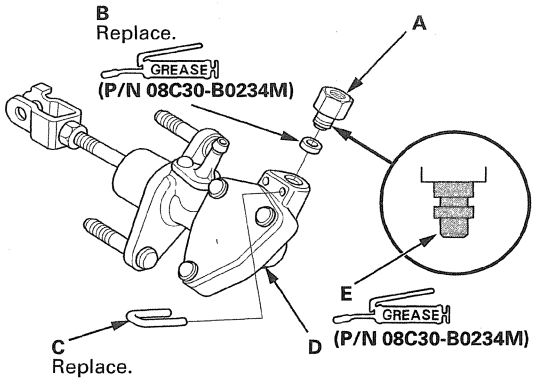
    NOTE: When installing the used clutch master cylinder only.



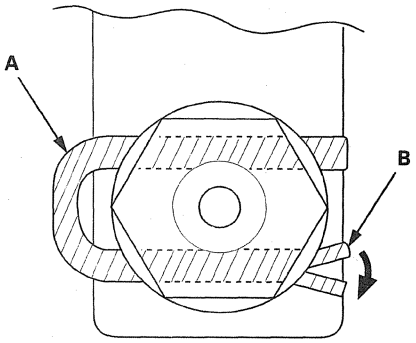
13. Install the clutch line connector (A) with a new O-ring (B), then set in a new retaining clip (C) to the master cylinder (D).

    NOTE:

    - Apply the silicone grease (P/N 08C30-B0234M) on the O-ring and the joint part (E) of the clutch line connector.
    - Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

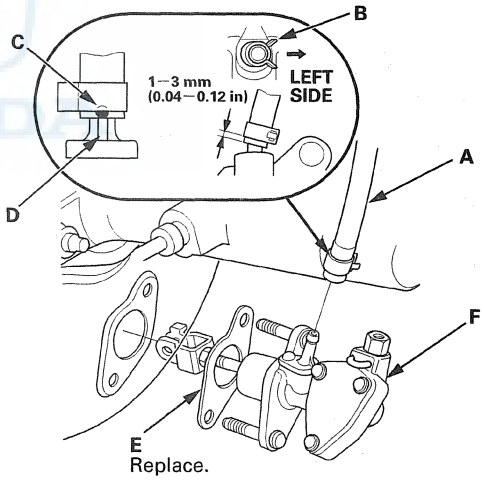


14. To prevent the retaining clip (A) from coming off, pry apart the tip (B) of the clip with a flat-tipped screwdriver.



15. Install the reservoir hose (A) and adjust the hose clamp (B) positions and its direction.

    NOTE: When attaching the reservoir hose, align the blue mark (C) on the hose to the rib (D).

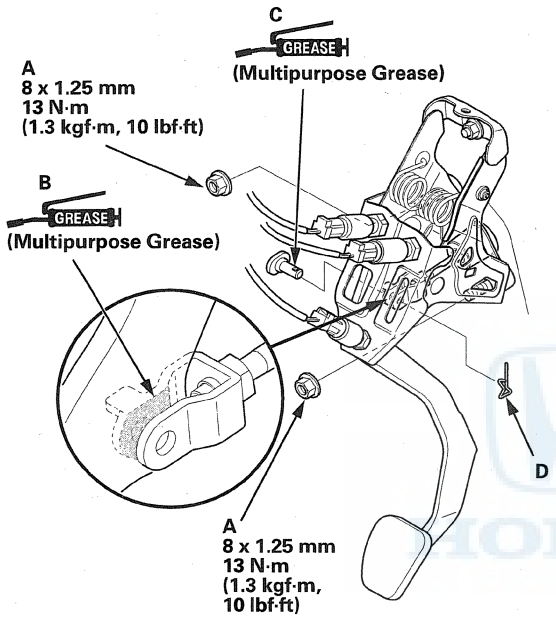


16. Install a new master cylinder seal (E) and the clutch master cylinder (F) to the body.

17. Install the master cylinder mounting nuts (A).

NOTE:

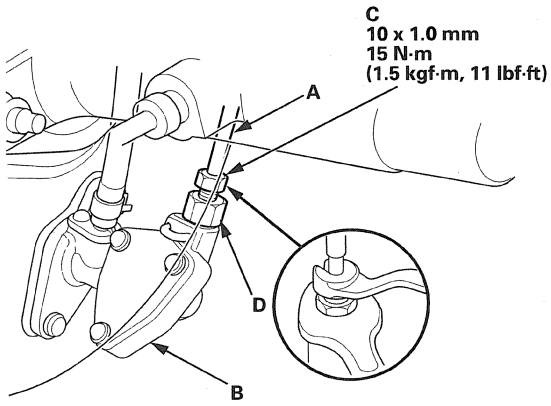
- Connect the clevis (B) to the clutch pedal, then apply multipurpose grease between the clutch pedal and the clevis.
- Wipe off any excess grease.



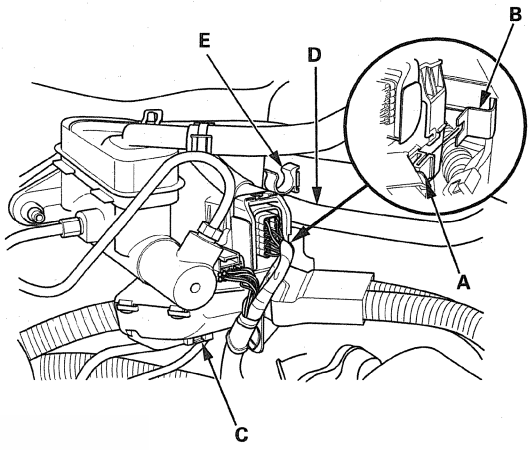
18. Apply multipurpose grease to the clevis pin (C). Slide the clevis pin into the clevis, then install a lock pin (D).

19. Connect clutch line A to the clutch master cylinder (B).

NOTE: Tighten the flare nut (C) while holding the clutch line connector (D) using a wrench.



20. Install the harness holder (A) to the bracket (B), then install the harness clamp (C).



21. Install the reservoir hose (D) to the reservoir hose clip (E).

22. Install the air cleaner (see page 9-3).

23. Bleed the clutch hydraulic system (see page 13-5).

24. Adjust the clutch pedal, clutch pedal position switch A, clutch pedal position switch B, and clutch pedal position switch C (see page 13-6).

25. Check the clutch operation, and check for leaks.

26. Install the driver's dashboard undercover (see page 20-86).

27. Test-drive the vehicle.

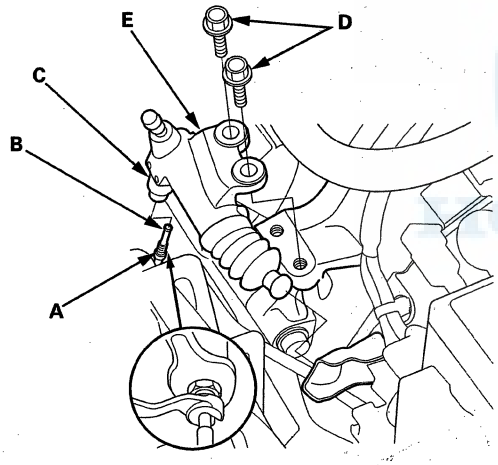
Slave Cylinder Replacement

NOTE:
- Use fender covers to avoid damaging painted surfaces.
- Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately with water.
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

Removal/Installation

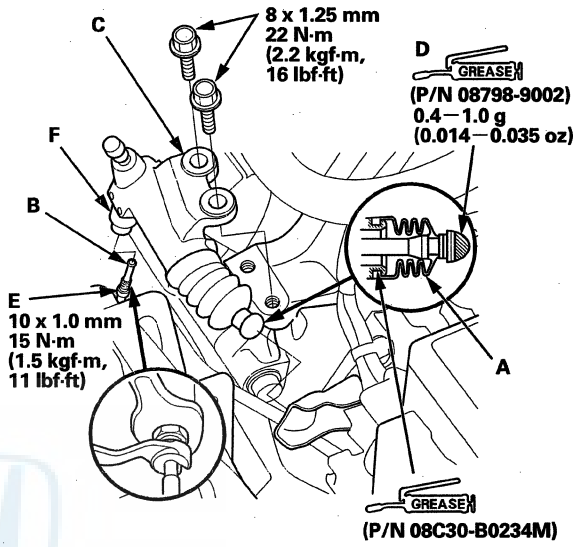
1. Disconnect clutch line B. Plug the end of clutch line B with a shop towel to prevent brake fluid from coming out.

   NOTE: Loosen the flare nut (A) while holding the clutch line connector (C) with a wrench.



2. Remove the mounting bolts (D), then remove the slave cylinder (E).

3. Pull back the boot (A), and apply silicone grease (P/N 08C30-B0234M) to the boot and the slave cylinder (C). Reinstall the boot.



4. Apply a light coat of super high temp urea grease (P/N 08798-9002) to the push rod (D) of the slave cylinder.

5. Connect clutch line B to the slave cylinder, and loosely tighten the flare nut (E).

6. Install the slave cylinder to the transmission housing, then tighten the clutch line flare nut to the specified torque.

   NOTE: Tighten the flare nut while holding the clutch line connector (F) with a wrench.

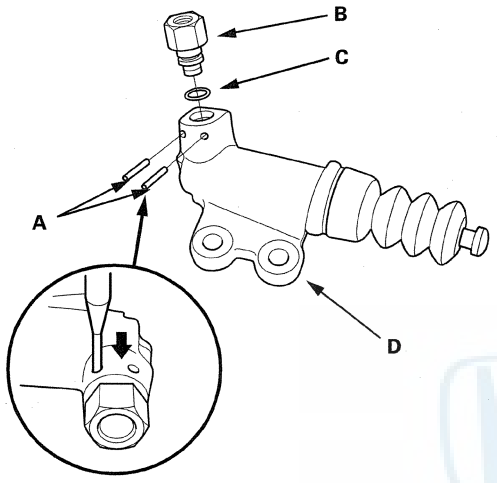
7. Bleed the clutch hydraulic system (see page 13-5).

8. Check the clutch operation, and check for leaks.

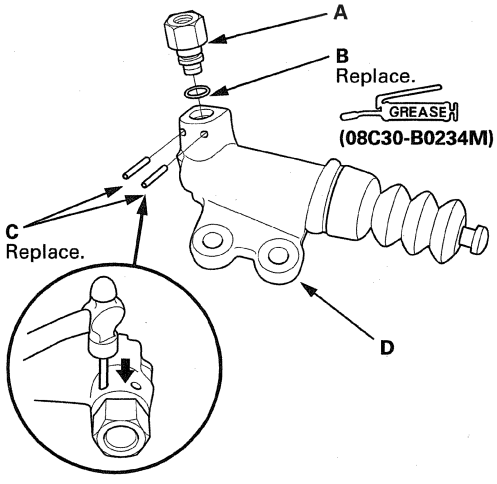
9. Test-drive the vehicle.

O-ring Replacement

1. Remove the slave cylinder.
2. Remove the roll pins (A), then remove the clutch line connector (B) and the O-ring (C) from the slave cylinder (D).



3. Install the clutch line connector (A) with a new O-ring (B), then set in new roll pins (C) to the slave cylinder (D).



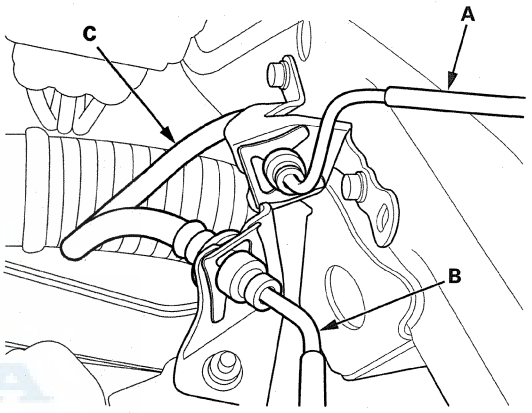
4. Install the slave cylinder.

Clutch Hose Replacement

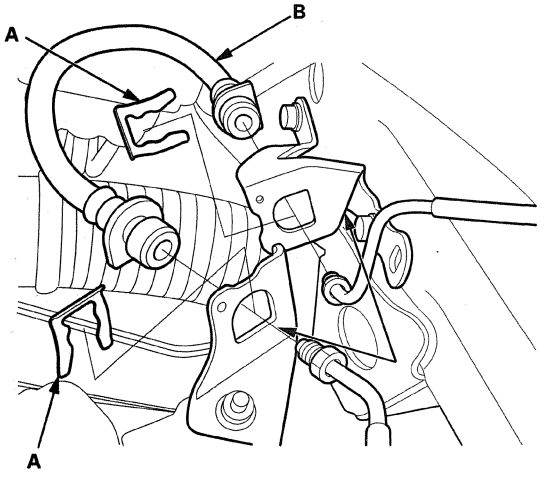
NOTE:

- Replace the clutch hose if it is twisted or cracked, or if it leaks.
- Use fender covers to avoid damaging painted surfaces.
- Do not spill brake fluid on the vehicle; it may damage the paint or plastic. If brake fluid does contact the paint or plastic, wash it off immediately water.

1. Remove the air cleaner (see page 9-3).
2. Disconnect the clutch hose (C) from clutch line A and clutch line B.



3. Remove and discard the clutch hose clips (A) from the clutch hose (B).

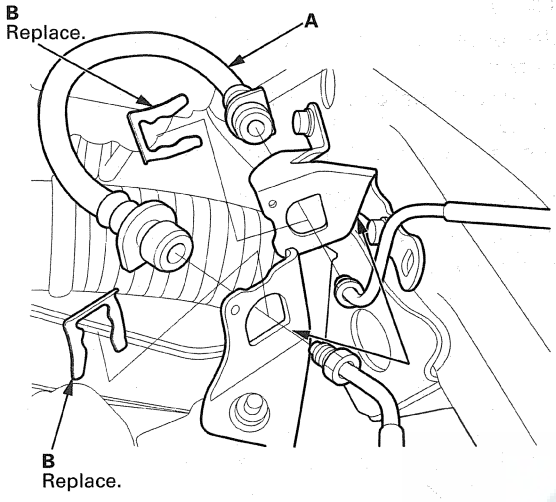


4. Remove the clutch hose from clutch hose brackets.

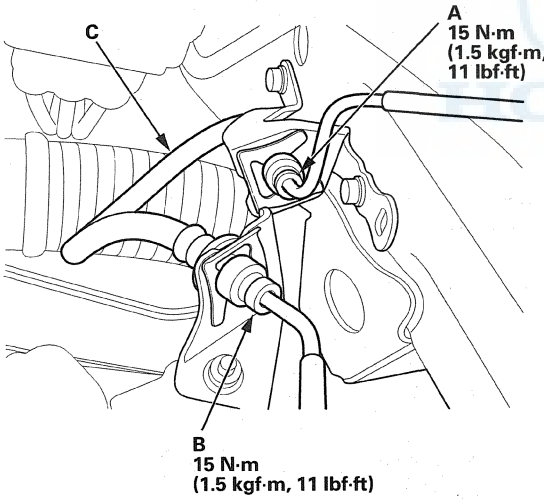
(cont'd)

Clutch Hose Replacement (cont'd)

5. Install the clutch hose (A) with the new clutch hose clips (B).



6. Connect clutch line A and clutch line B to the clutch hose (C).



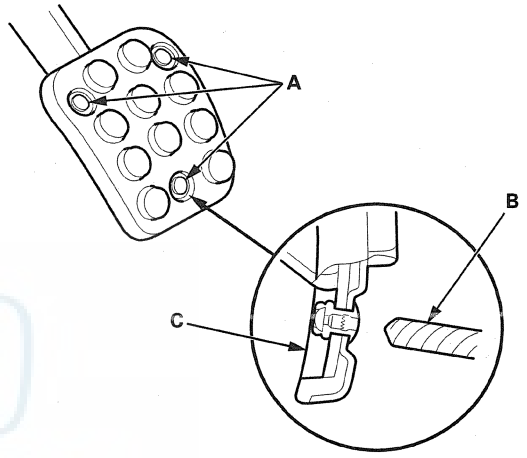
7. Bleed the clutch hydraulic system (see page 13-5).
8. Do the following checks:
   - Check the clutch hose and line joint for leaks, and tighten if necessary.
   - Check the clutch hose for interference and twisting.
   - Check the clutch operation.
9. Install the air cleaner (see page 9-3).
10. Test-drive the vehicle.

Clutch Pedal Pad Cover Replacement

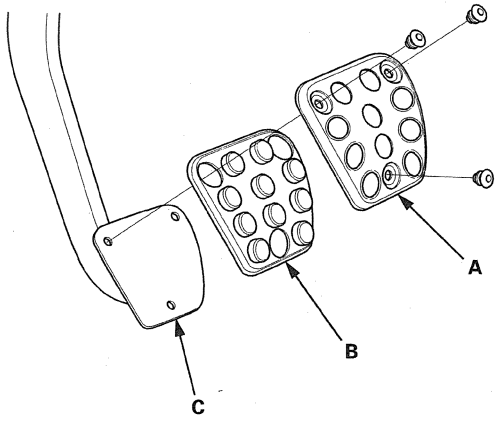
NOTE: This procedure is for models equipped with a clutch pedal pad cover.

1. Cover the carpet under the clutch pedal to prevent metal shavings from getting on the carpet.
2. Center-punch each of the rivets (A), and drill their heads off with a 3 mm (0.12 in) drill bit (B).

   NOTE: Do not drill the clutch pedal pad (C).

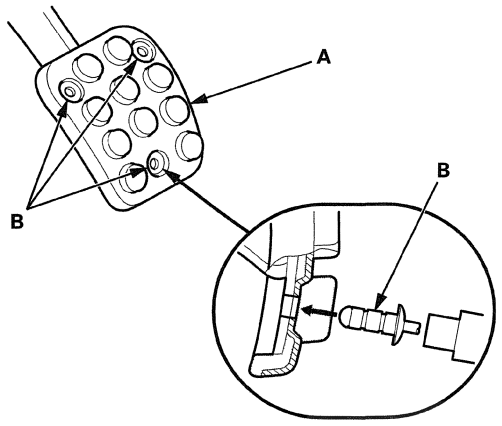


3. Remove the clutch pedal pad cover (A) and the clutch pedal cover (B) from the clutch pedal pad (C).



4. Set the clutch pedal cover to the clutch pedal pad cover.

5. Install the clutch pedal pad cover (A) with the rivets (B) firmly.



6. Using your hand, make sure the clutch pedal cover is firmly fastened to the pedal.
7. Check the clutch pedal height (see page 13-6).

Special Tools Required

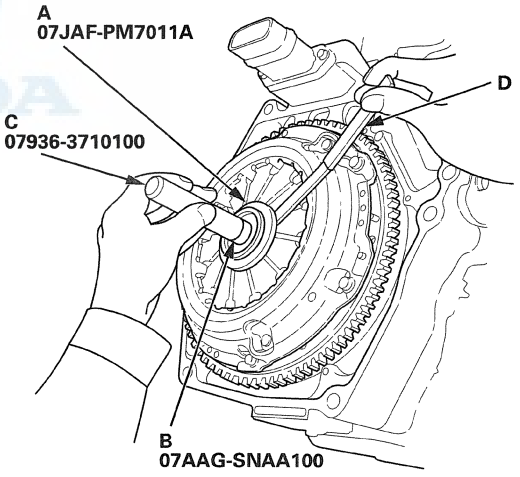
- Clutch Alignment Shaft 07AAG-SNAA100
- Clutch Alignment Disc 07JAF-PM7011A
- Ring Gear Holder 07LAB-PV00100
- Ring Gear Bolt Set 150 mm 070AB-SZT0100
- Attachment, 22 x 24 mm 07746-001A800
- Driver Handle, 15 x 135L 07749-0010000
- Bearing Remover Shaft Set, 15 mm 07936-KC10500
- Remover Handle 07936-3710100
- Slide Hammer 07936-371020A

Engine Side

Pressure Plate Inspection and Removal

1. Remove the transmission (see page 13-43).
2. Check the evenness of the height of the diaphragm spring fingers using the clutch alignment disc (A), the clutch alignment shaft (B), the remover handle (C), and a feeler gauge (D). If the height difference is more than the service limit, replace the pressure plate.

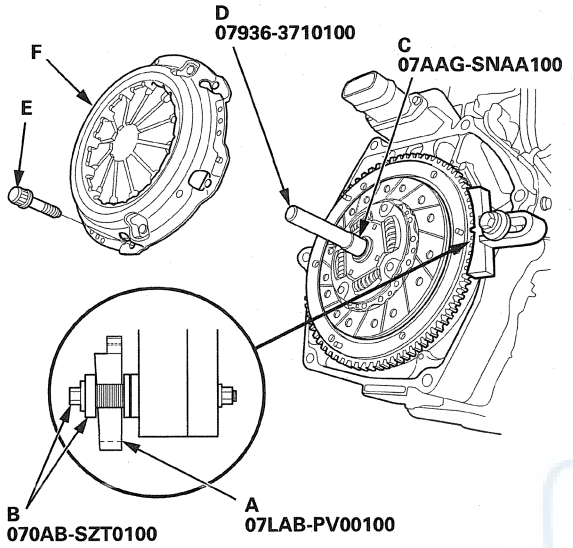
Standard (New): 0.6 mm (0.024 in) max.
Service Limit: 0.8 mm (0.031 in)



(cont'd)

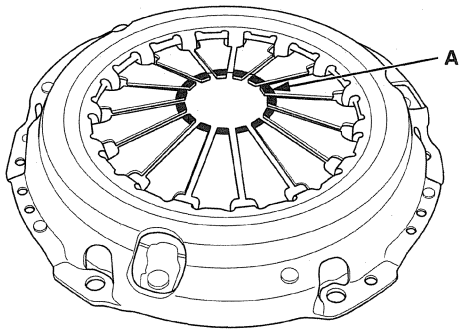
Clutch Replacement (cont'd)

3. Install the ring gear holder (A), the 150 mm ring gear bolt set (B), the clutch alignment shaft (C), and the remover handle (D).

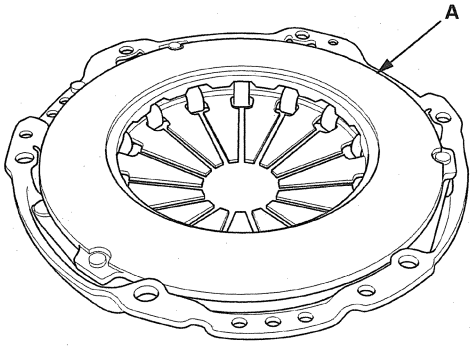


4. To prevent warping, unscrew the pressure plate mounting bolts (E) in a crisscross pattern in several steps, then remove the pressure plate (F).

5. Inspect the fingers of the diaphragm spring (A) for wear at the release bearing contact area.

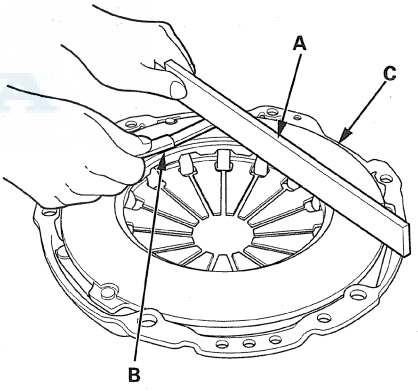


6. Inspect the pressure plate (A) surface for wear, cracks, and burning.



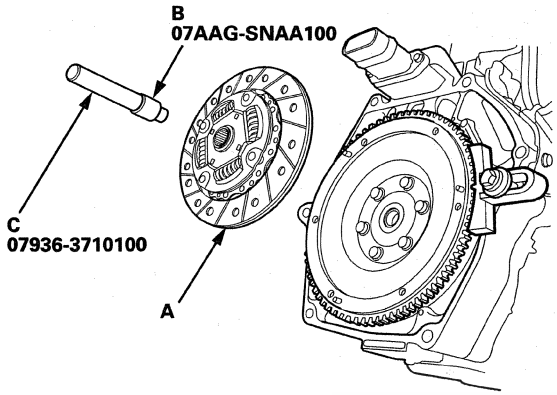
7. Inspect for warpage using a precision straight edge (A) and feeler gauge (B). Measure across the pressure plate (C). If the most measurement difference is more than the service limit, replace the pressure plate.

Standard (New): 0.03 mm (0.001 in) max.
Service Limit: 0.15 mm (0.005 in)



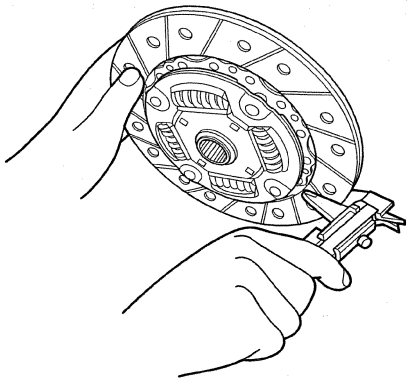
Clutch Disc Inspection and Removal

8. Remove the clutch disc (A), the clutch alignment shaft (B), and the remover handle (C).



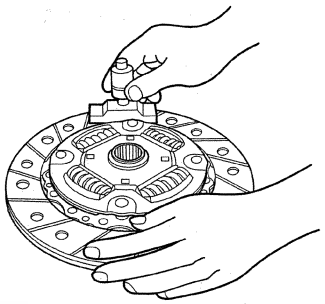
9. Inspect the lining of the clutch disc for signs of slippage or oil. If the clutch disc looks burnt or is oil soaked, replace the clutch disc. If the clutch disc is oil soaked, find and repair the source of the oil leak.
10. Measure the clutch disc thickness. If the measurement is less than the service limit, replace the clutch disc.

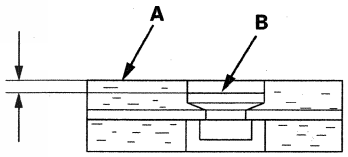
Standard (New): **8.3—9.0 mm (0.327—0.354 in)**
Service Limit: **6.5 mm (0.256 in)**



11. Measure the depth of the rivet from the clutch disc lining surface (A) to the rivets (B) on both sides. If the measurement is less than the service limit, replace the clutch disc.

Standard (New): **1.2—1.7 mm (0.047—0.067 in)**
Service Limit: **0.4 mm (0.016 in)**





Flywheel Inspection

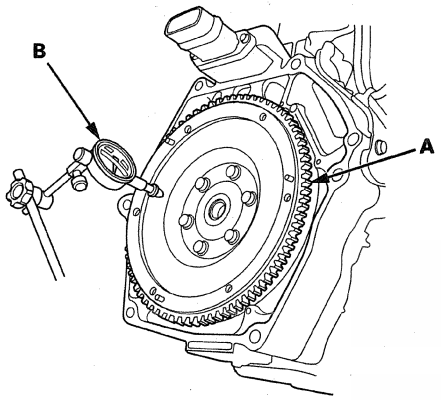
12. Remove the ring gear holder.
13. Inspect the ring gear teeth for wear and damage.
14. Inspect the clutch disc mating surface on the flywheel for wear, cracks, and burning.

(cont'd)

Clutch Replacement (cont'd)

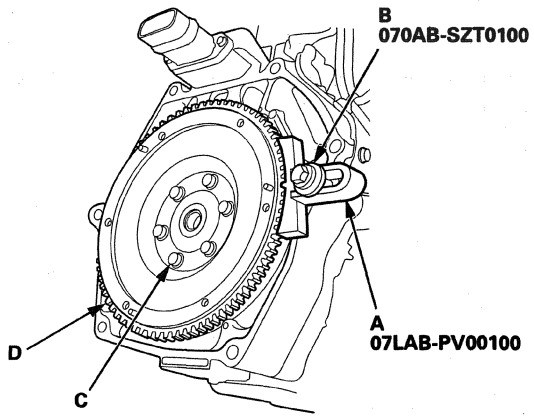
15. Measure the flywheel (A) runout using a dial indicator (B). Through at least two full turns with pushing against the flywheel each time you turn it to take up the crankshaft thrust washer clearance. If the measurement is not within the standard, replace the flywheel, and recheck the runout. Go to step 16.

Standard (New): 0.05 mm (0.0020 in) max.
Service Limit: 0.15 mm (0.0059 in)



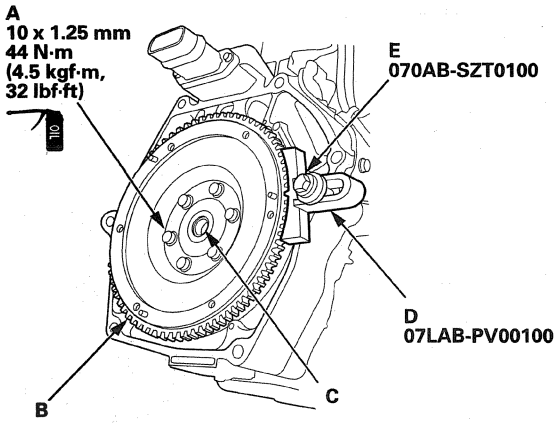
Flywheel Replacement

16. Install the ring gear holder (A) and the 150 mm ring gear bolt set (B).



17. Loosen the flywheel mounting bolts (C) in a crisscross pattern in several steps. Remove the bolts, then remove the flywheel (D) and the ring gear holder.

18. Apply a small amount of engine oil to the seating surface of the flywheel mounting bolts (A).



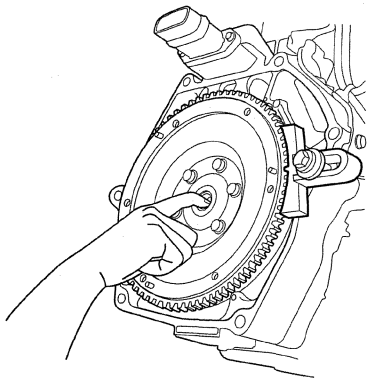
19. Install the flywheel (B) on the crankshaft (C), and install the mounting bolts finger-tight.

20. Install the ring gear holder (D) and the 150 mm ring gear bolt set (E), then torque the flywheel mounting bolts in a crisscross pattern in several steps.

Crankshaft Pilot Bushing Inspection

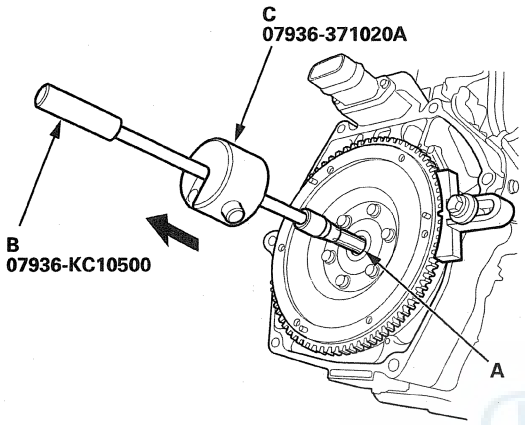
21. Inspect the crankshaft pilot bushing for wear and damage.

22. Inspect the inside surface of the crankshaft pilot bushing with your finger. If the crankshaft pilot bushing is not smooth, replace it; go to step 23.

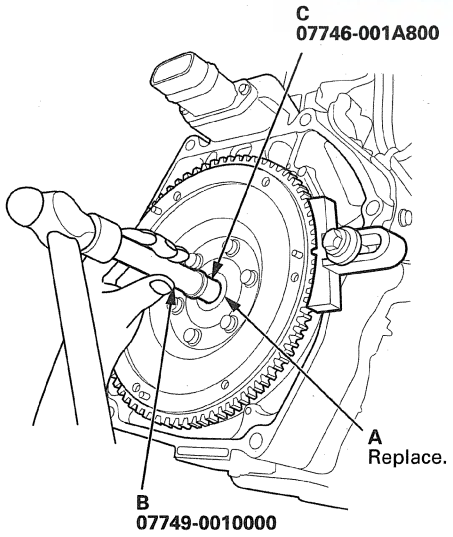


Crankshaft Pilot Bushing Replacement

23. Remove the crankshaft pilot bushing (A) using the 15 mm bearing remover shaft set (B) and the slide hammer (C).



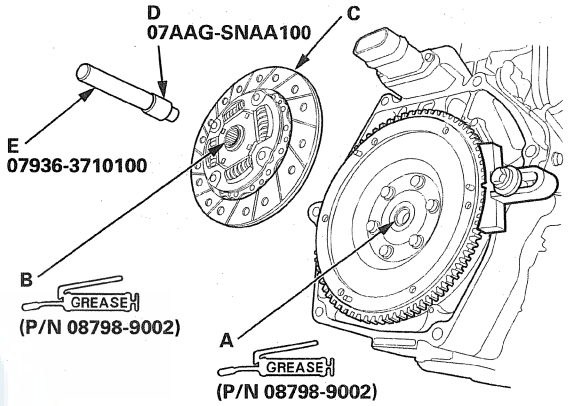
24. Install a new crankshaft pilot bushing (A) into the crankshaft using the 15 x 135L driver handle (B) and the 22 x 24 mm attachment (C).



Clutch Disc and Pressure Plate Installation

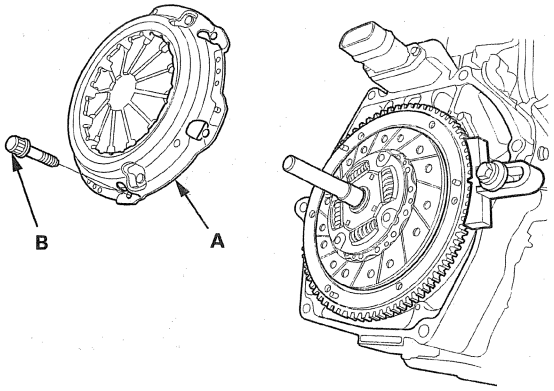
25. Temporarily install the clutch disc onto the splines of the transmission mainshaft. Make sure the clutch disc slides freely on the mainshaft.

26. Apply a light coat of super high temp urea grease (P/N 08798-9002) to the crankshaft pilot bushing (A).



27. Apply super high temp urea grease (P/N 08798-9002) to the splines (B) of the clutch disc (C), then install the clutch disc using the clutch alignment shaft (D) and the remover handle (E).

28. Install the pressure plate (A) and the mounting bolts (B) finger-tight.

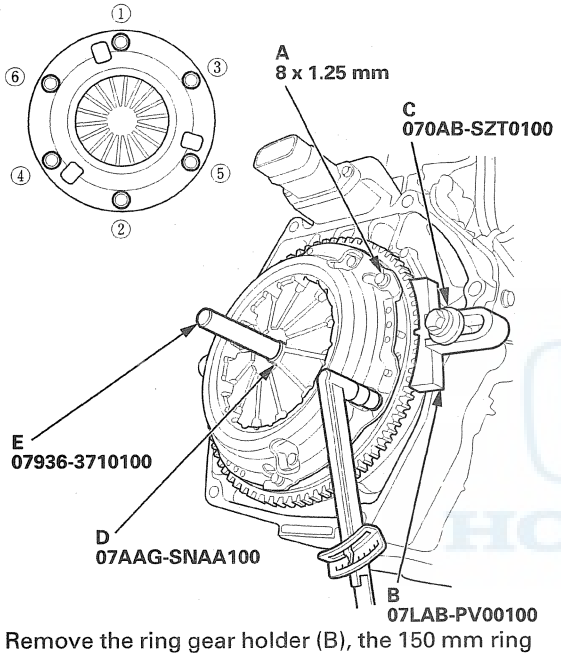


(cont'd)

Clutch Replacement (cont'd)

29. Torque the mounting bolts (A) in a crisscross pattern. Tighten the bolts in several steps to prevent warping the diaphragm spring. Make sure that there is not clearance between the pressure plate and the flywheel.

    Specified Torque:
    25 N·m (2.5 kgf·m, 18 lbf·ft)

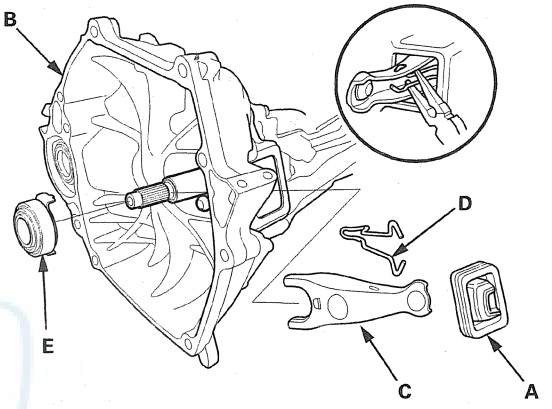


30. Remove the ring gear holder (B), the 150 mm ring gear bolt set (C), the clutch alignment shaft (D), and the remover handle (E).
31. Make sure the diaphragm spring fingers are all the same height.
32. Do the release bearing inspection, and replace it if necessary.
33. Install the transmission (see page 13-49).

Transmission Side

Release Bearing Removal

1. Remove the transmission (see page 13-43).
2. Remove the release fork boot (A) from the clutch housing (B).

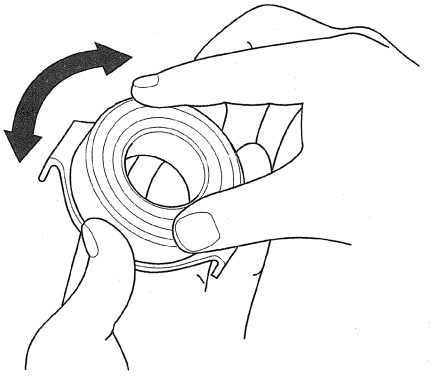


3. Remove the release fork (C) from the clutch housing by squeezing the release fork set spring (D). Remove the release bearing (E).

Release Bearing Inspection

4. Check the play of the release bearing by hand. If there is excessive play or noise, replace the release bearing.

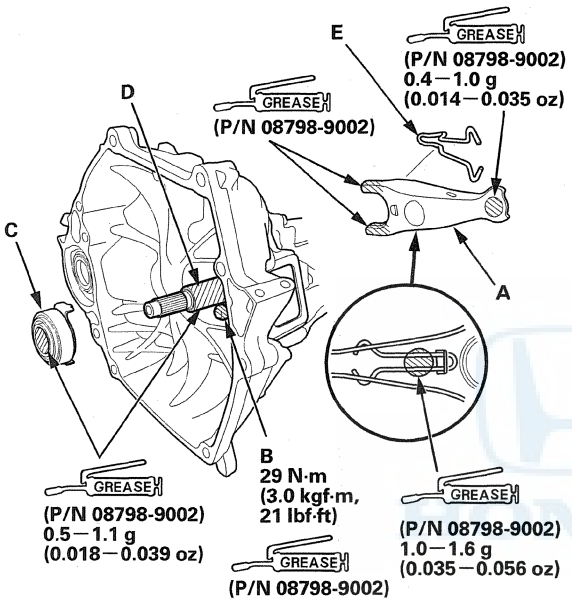
   NOTE: The release bearing is packed with grease. Do not wash it in solvent.



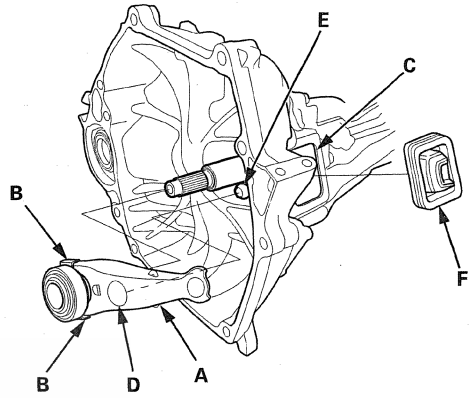
Release Bearing Installation

5. Apply high temp urea grease (P/N 08798-9002) to the release fork (A), the release fork bolt (B), the release bearing (C), and the release bearing guide (D) in the shaded areas, then set the release fork set spring (E).

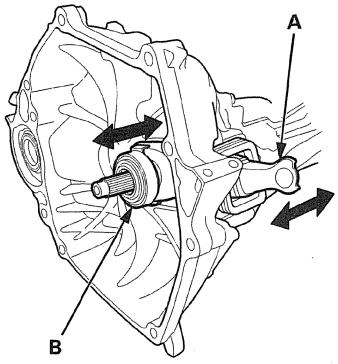
   NOTE: Replace the release fork bolt if necessary.



6. With the release fork (A) slid between the release bearing pawls (B), install the release bearing on the mainshaft while inserting the release fork through the hole (C) in the clutch housing.



7. Align the detent (D) of the release fork with the release fork bolt (E), then press the detent of the release fork over the release fork bolt squarely.
8. Install the release fork boot (F). Make sure the boot seals around the release fork and clutch housing.
9. Move the release fork (A) right and left to make sure that it fits properly against the release bearing (B), and that the release bearing slides smoothly. Wipe off any excess grease.



10. Install the transmission (see page 13-49).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If manual transmission maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If manual transmission maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

Transaxle

Manual Transmission

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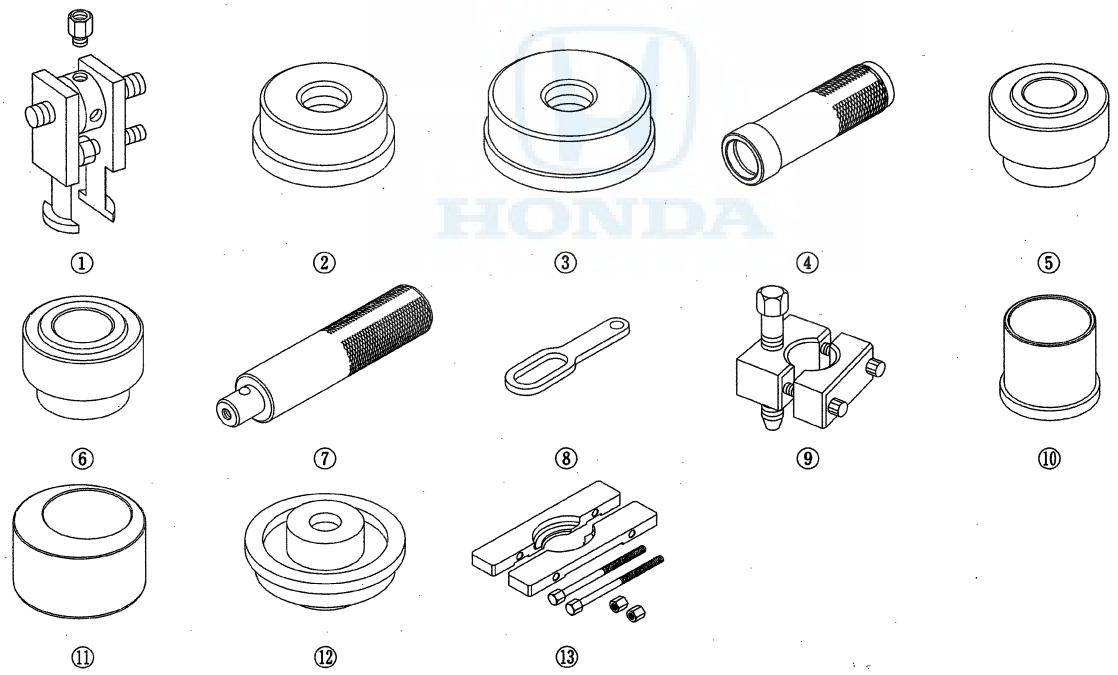
M/T Differential

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Special Tools

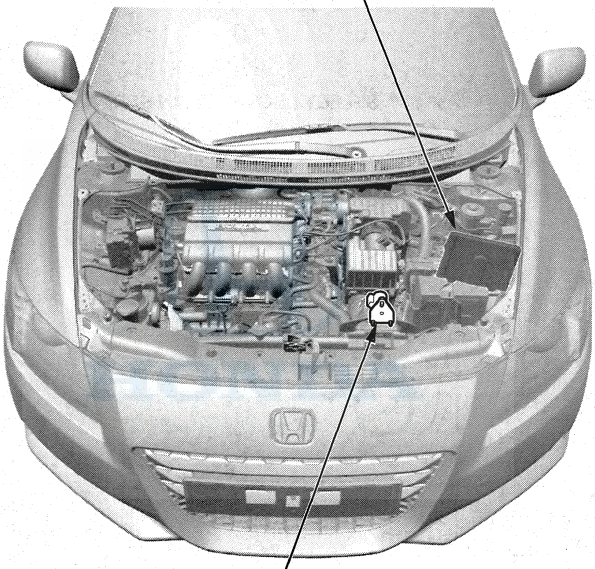
Ref.No.	Tool Number	Description	Qty
**①	07736-A01000B	Adjustable Bearing Puller, 25—40 mm	1
②	07746-0010300	Bearing Driver Attachment, 42 x 47 mm	1
③	07746-0010400	Bearing Driver Attachment, 52 x 55 mm	1
④	07746-0030100	Driver Handle, 40 mm I.D.	1
⑤	07746-0030200	Attachment, 25 mm I.D.	1
⑥	07746-0030300	Bearing Driver Attachment, 30 mm	1
⑦	07749-0010000	Driver Handle, 15 x 135L	1
⑧	07AAK-SNAA120	Universal Lifting Eyelet	1
*⑨	07GAJ-PG20110	Mainshaft Holder	1
⑩	07GAJ-PG20120	Collar	1
*⑪	07GAJ-PG20130	Mainshaft Base	1
⑫	07JAD-PN00100	Oil Seal Driver Attachment, 64 x 72 mm	1
⑬	07KAF-PS30200	Bearing Separator	1

*: Part of Mainshaft Inspection Tool Set, 07GAJ-PG20102.
**: Must be used with commercially available 3/8"-16 UNF Slide Hammer.



Component Location Index

ENGINE CONTROL MODULE (ECM)
General Troubleshooting Information, page 11-3



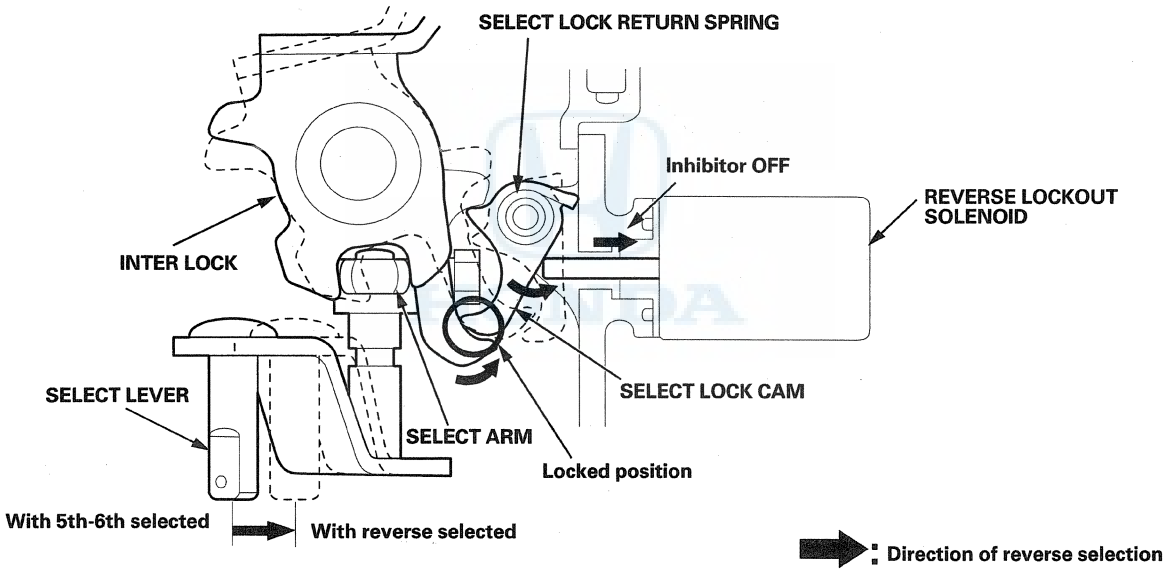
REVERSE LOCKOUT SOLENOID
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Reverse Lockout System

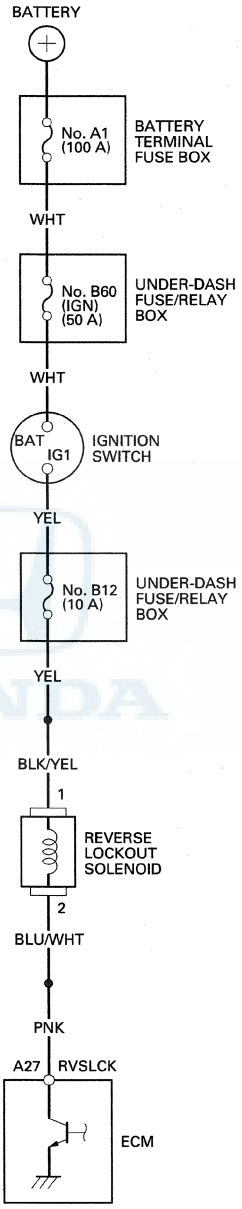
System Description

At vehicle speeds of 12 mph (20 km/h) or more, the ECM, which monitors the signals from the output shaft (countershaft) speed sensor, activates the reverse lockout solenoid, which pushes the select lock cam into the locked position. As a result, the select lever cannot rotate to the reverse select position, making it impossible to engage reverse gear. As the vehicle speed drops to 9 mph (15 km/h) or less, the ECM turns off the reverse lockout solenoid. The select lock return spring pulls back the select lock cam, enabling the select lever to move freely so reverse gear can be selected.

Vehicle speed	Inhibitor	Reverse selection
Above 12 mph (20 km/h)	ON	Not allowed
Below 9 mph (15 km/h)	OFF	Allowed
Ignition switch LOCK (0)	OFF	Allowed



Circuit Diagram



Symptom Troubleshooting

Driver can select reverse gear when vehicle speed is 12 mph (20 km/h) or more

NOTE:

- When checking if the transmission will shift to reverse while the wheels are being driven forward, raise the vehicle on a lift, make sure it is securely supported, and allow the front wheels to rotate freely.
- Do not release the clutch pedal if you can select reverse gear while the wheels are driven forward.
- When the vehicle is on a lift, and you make the wheels rotate, turn off the VSA system by the VSA OFF switch.
- Refer to How to Troubleshoot Circuits at the ECM connectors in the Fuel and Emissions Systems section before troubleshooting this circuit (see page 11-6).

1. Turn the ignition switch to LOCK (0).
2. Check the No. B12 (10 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Reinstall the fuse, then go to step 3.

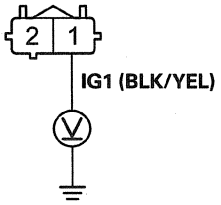
   NO–Install a new No. B12 (10 A) fuse, and recheck. If the fuse continues to blow, check for short to body ground on the No. B12 (10 A) fuse circuit.■
3. Test-drive the vehicle.
4. Check for fuel and emissions system's DTCs with the HDS.

   Are there any DTCs stored in the ECM?

   YES–Go to the indicated ECM DTC's troubleshooting.■

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the reverse lockout solenoid 2P connector.
7. Turn the ignition switch to ON (II).
8. Measure the voltage between reverse lockout solenoid 2P connector terminal No. 1 and body ground.

REVERSE LOCKOUT SOLENOID 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 9.

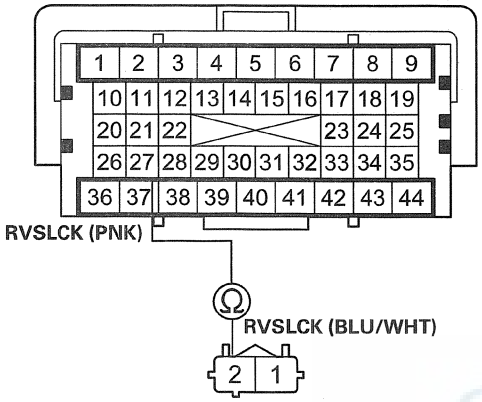
NO–Repair an open in the wire between No. B12 (10 A) fuse in the under-dash fuse/relay box and the reverse lockout solenoid.■

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect ECM connector A (44P).

12. Check for continuity between reverse lockout solenoid 2P connector terminal No. 2 and ECM connector A (44P) terminal No. 27.

ECM CONNECTOR A (44P)

Terminal side of female terminals



REVERSE LOCKOUT SOLENOID 2P CONNECTOR

Wire side of female terminals

Is the continuity?

YES–Go to step 13.

NO–Repair an open in the wire between the reverse lockout solenoid and the ECM.■

13. Do the reverse lockout solenoid test (see page 13-32).

Is the reverse lockout solenoid OK?

YES–Check for loose terminals or poor connections at the ECM. If necessary, update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom goes away with a known-good ECM, replace the original ECM (see page 11-209).■

NO–Repair or replace the reverse lockout solenoid (see page 13-33).■

Driver cannot select reverse gear when vehicle speed is 9 mph (15 km/h) or less

NOTE:

- When checking if the transmission will shift to reverse while the wheels are being driven forward, raise the vehicle on a lift, make sure it is securely supported, and allow the front wheels to rotate freely.
- Do not release the clutch pedal if you can select reverse gear while the wheels are driven forward.
- When the vehicle is on a lift, and you make the wheels rotate, turn off the VSA system by the VSA OFF switch.
- Refer to How to Troubleshoot Circuits at the ECM connectors in the Fuel and Emissions Systems section before troubleshooting this circuit (see page 11-6).

1. Turn the ignition switch to LOCK (0).
2. Try to shift the transmission into reverse.

   Can you shift the transmission into the reverse?

   YES–Go to step 4.

   NO–Go to step 3.
3. Do the reverse lockout solenoid test (see page 13-32).

   Is the reverse lockout solenoid OK?

   YES–Check the change lever assembly (see page 13-63), if necessary inspect the internal transmission.■

   NO–Repair or replace the reverse lockout solenoid (see page 13-33).■
4. Start the engine, and try to shift the transmission into reverse.

   Can you shift the transmission into the reverse?

   YES–Intermittent failure, the system is OK at this time.■

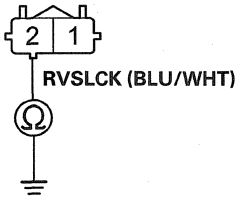
   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect ECM connector A (44P).
8. Disconnect the reverse lockout solenoid 2P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

9. Check for continuity between reverse lockout solenoid 2P connector terminal No. 2 and body ground.

REVERSE LOCKOUT SOLENOID 2P CONNECTOR



Wire side of female terminals

Is there continuity?

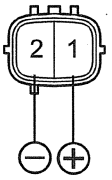
YES–Repair a short to body ground in the wire between the reverse lockout solenoid and the ECM.■

NO–Check for loose terminals or poor connections at the ECM. If necessary, update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom goes away with a known-good ECM, replace the original ECM (see page 11-209).■

Reverse Lockout Solenoid Test

1. Remove the reverse lockout solenoid (see page 13-33).
2. Connect jumper wires from the 12 volt battery positive terminal to reverse lockout solenoid 2P connector terminal No. 1, and from the 12 volt battery negative terminal to reverse lockout solenoid 2P connector terminal No. 2.

REVERSE LOCKOUT SOLENOID 2P CONNECTOR



Terminal side of male terminals

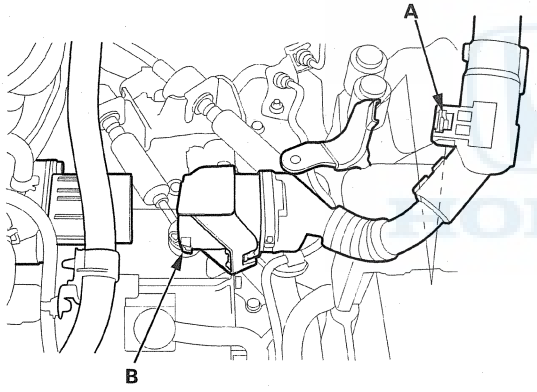
3. Make sure the reverse lockout solenoid works. If the reverse lockout solenoid does not work, replace it (see page 13-33).

   NOTE: The inhibitor should be pushed out when applying battery voltage to the solenoid, and the inhibitor should be released when there is no battery voltage at the solenoid.

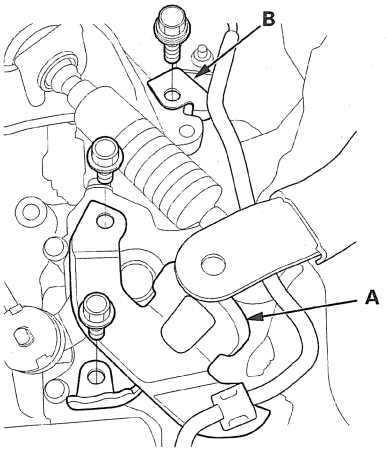
Reverse Lockout Solenoid Disassembly/Reassembly

1. Turn the ignition switch to LOCK (0), then turn the battery module switch OFF, and measure the voltage at the IMA battery module terminals (see page 12-4).
2. Remove the air cleaner (see page 9-3).
3. Remove the harness clamp (A), then disconnect the IMA motor power cable connector (B).

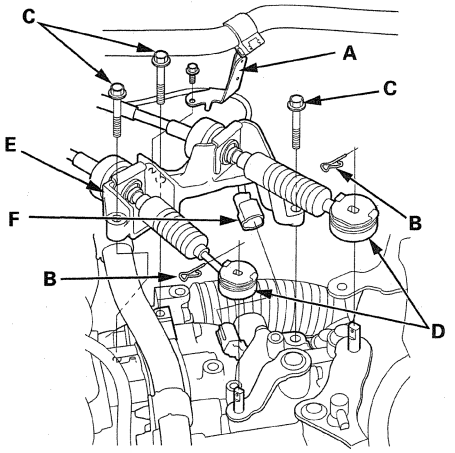
   NOTE:
   - Make sure you have read the IMA system service precautions (see page 12-3).
   - If the IMA motor power cable connector is dirty, clean it before removal.
   - Cover the disconnected connector with plastic bag, and wrap the IMA motor power cable terminal with tape.
   - If the IMA motor power cable is wet, wait until it is dry.



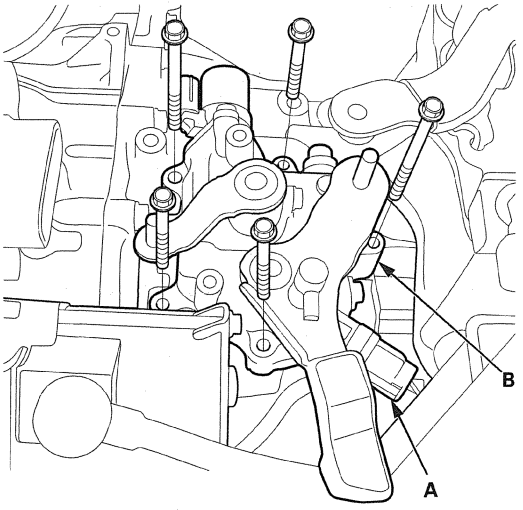
4. Remove the cable guard bracket (A) and the clutch line bracket (B).



5. Remove the harness bracket (A).



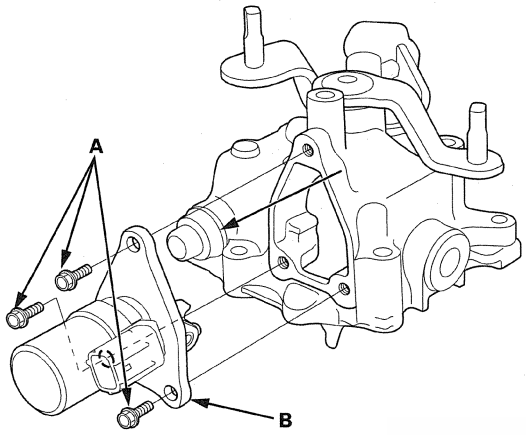
6. Remove the lock pins (B) and the shift cable bracket bolts (C), then carefully remove both cables (D) and the shift cable bracket (E) together out of the way to avoid bending the cables.
7. Disconnect the reverse lockout solenoid 2P connector (F).
8. Disconnect the neutral position switch 2P connector (A), then remove the change lever assembly (B).



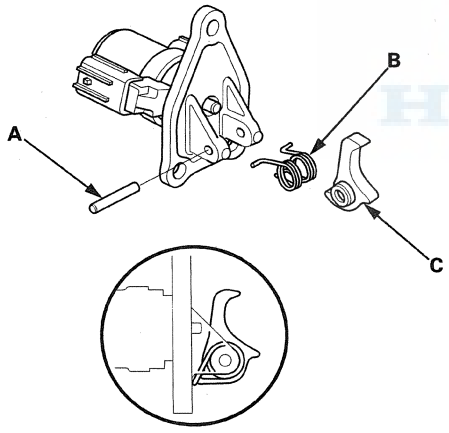
(cont'd)

Reverse Lockout Solenoid Disassembly/Reassembly (cont'd)

9. Remove the three bolts (A) and the reverse lockout solenoid (B).

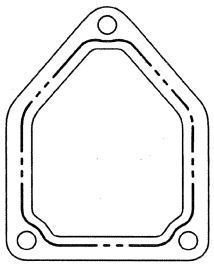


10. Remove the roller (A), the select lock return spring (B), and the select lock cam (C).



11. Install the components of the reverse lockout solenoid in the reverse order of removal.

12. Clean any dirt and oil from the reverse lockout solenoid sealing surface.

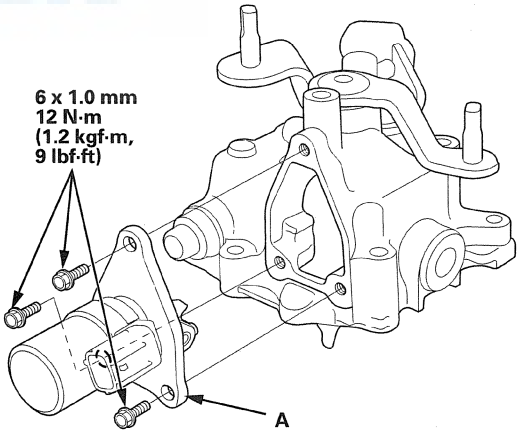


— - - — - - — - Liquid gasket

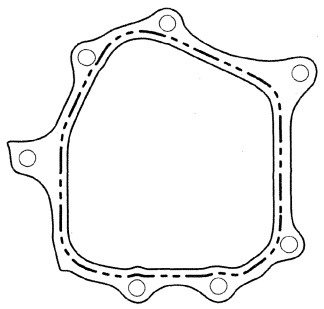
13. Apply liquid gasket (P/N 08718-0001, 08718-0003, or 08718-0004) evenly to the change lever assembly mating surface of the reverse lockout solenoid. Install the component within 5 minutes of applying the liquid gasket.

    NOTE: If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

14. Install the reverse lockout solenoid (A).



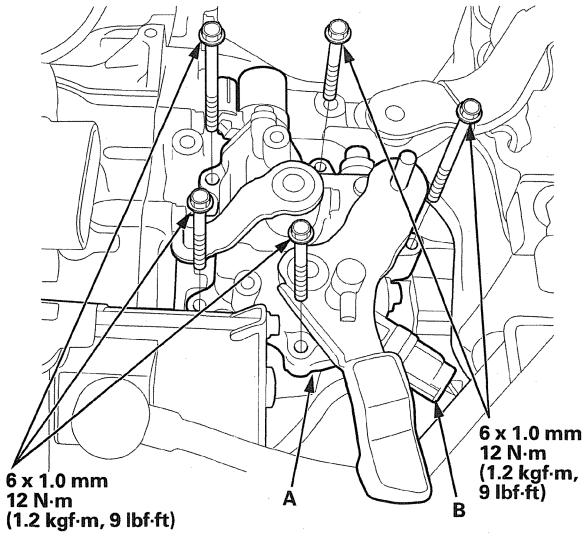
15. Clean any dirt or oil from the change lever assembly sealing surface.



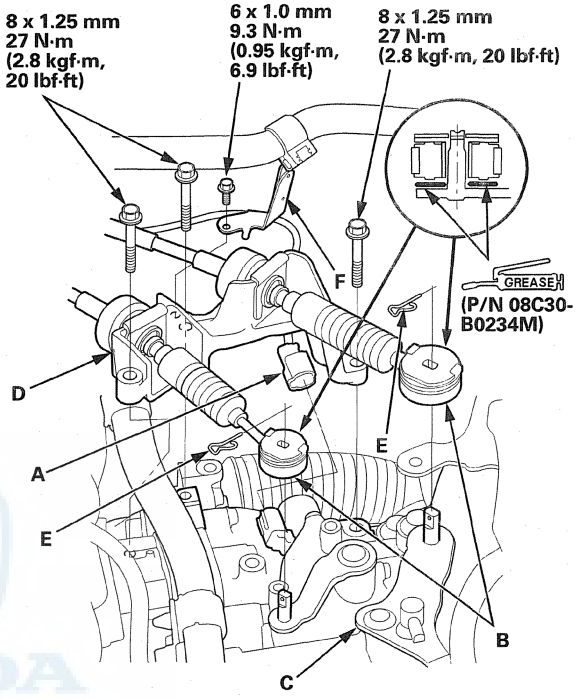
16. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009) evenly to the mating surface of the charge lever assembly and the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

    NOTE:
    - If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
    - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

17. Install the change lever assembly (A), and connect the neutral position switch 2P connector (B).



18. Connect the reverse lockout solenoid 2P connector (A).



19. Apply a light coat of silicone grease (P/N 08C30-B0234M) to the cable ends (B), and connect the cable ends to the change lever assembly (C), then install the shift cable bracket (D) and the lock pins (E). Do not bend or damage the shift cables.

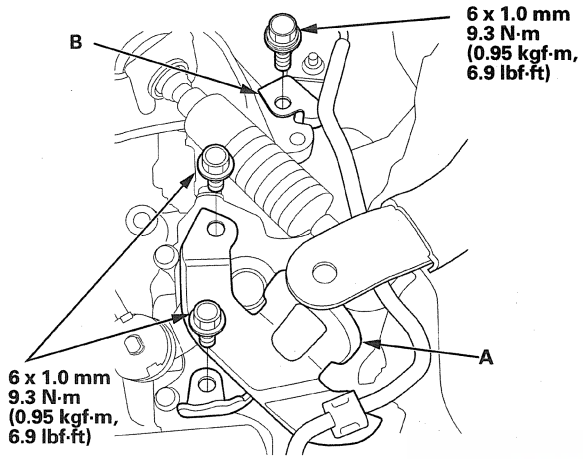
    NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

20. Install the harness bracket (F).

(cont'd)

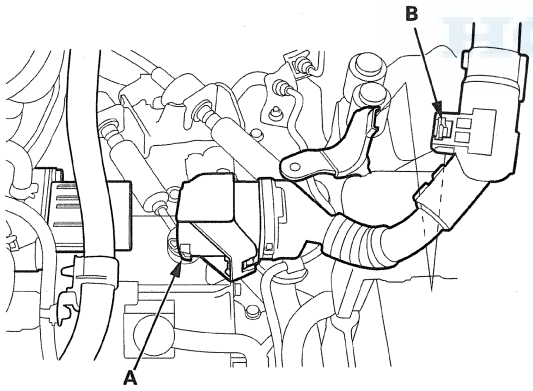
Reverse Lockout Solenoid Disassembly/Reassembly (cont'd)

21. Install the cable guard bracket (A) and the clutch line bracket (B).



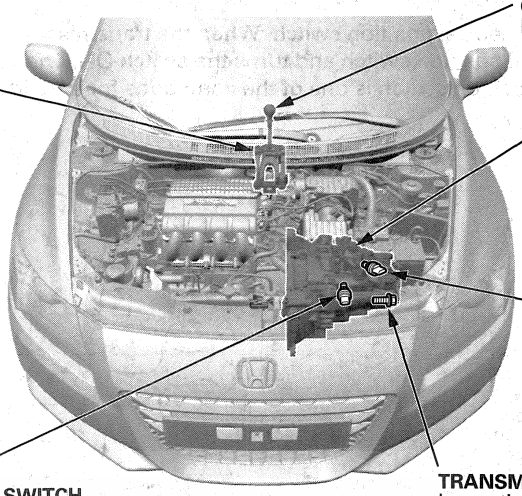
22. Connect the IMA motor power cable connector (A), then install the harness clamp (B).

    NOTE: Make sure you have read the IMA system service precautions (see page 12-3).



23. Install the air cleaner (see page 9-3).
24. Turn the battery module switch ON (see page 12-4).
25. Test-drive the vehicle.

Component Location Index



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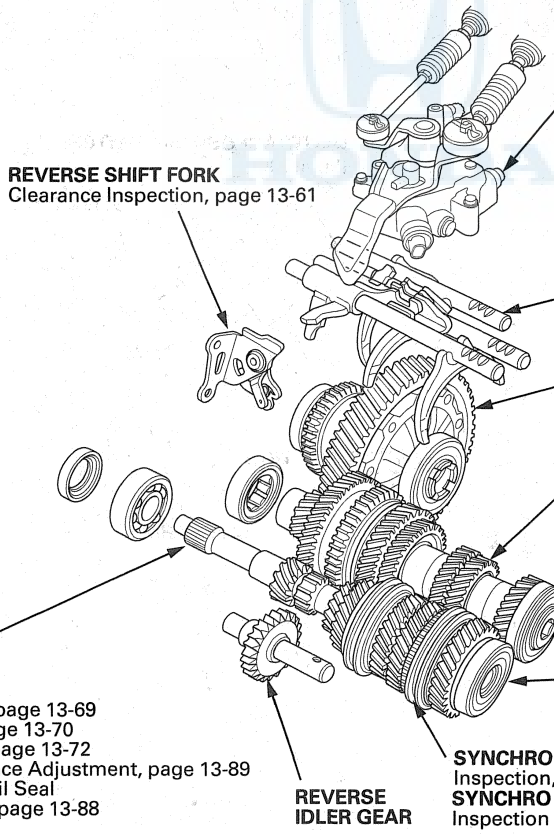
GEARSHIFT MECHANISM
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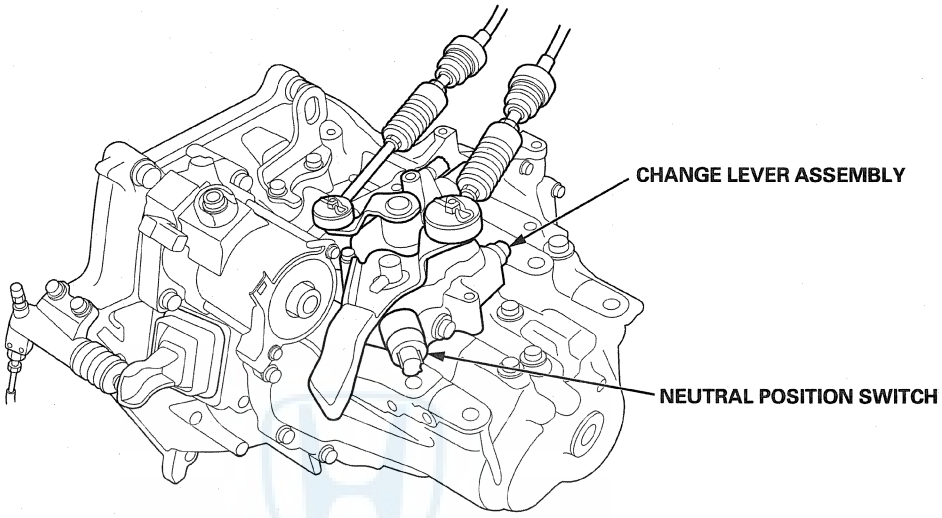
REVERSE IDLER GEAR

SYNCHRO RING and GEAR
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SYNCHRO SLEEVE and HUB
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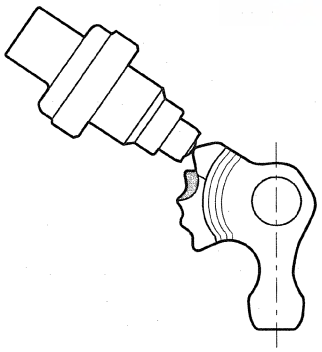
System Description

Neutral Position Switch

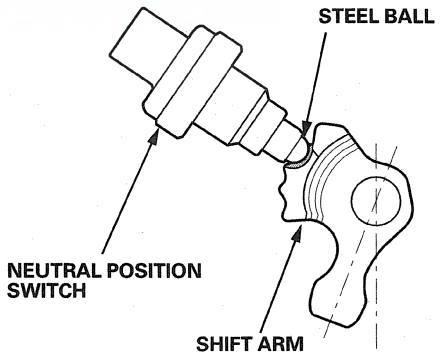
The change lever assembly has a neutral position switch. When the transmission is shifted to neutral, the shift arm pushes the steel ball of the neutral position switch and turns the switch ON. The vehicle has an Auto Idle Stop system, and the signal from the neutral position switch is one of the conditions for auto idle stop.



NEUTRAL POSITION SWITCH: ON
(In neutral)

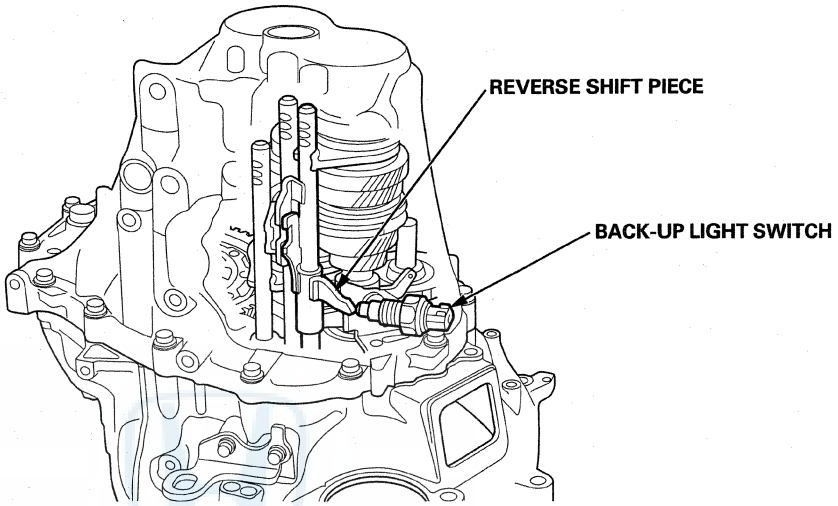


NEUTRAL POSITION SWITCH: OFF
(In gear)

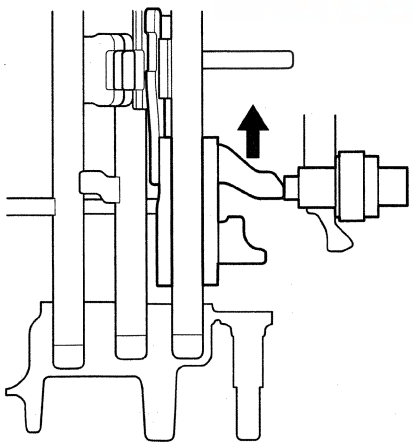


Back-Up Light Switch

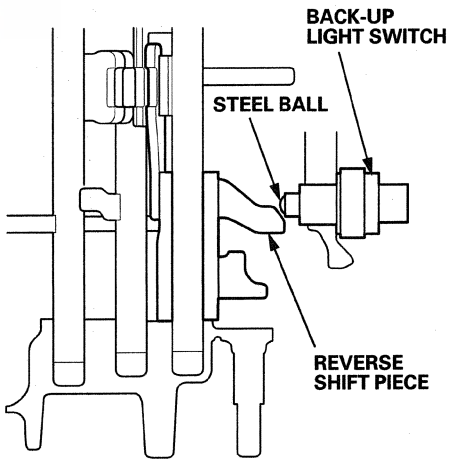
When the transmission is in reverse, the reverse shift piece pushes the steel ball of the back-up light switch and turns the switch ON. The vehicle has an Auto Idle Stop system, and the signal from the back-up light switch is one of the conditions for auto idle stop.



BACK-UP LIGHT SWITCH: ON



BACK-UP LIGHT SWITCH: OFF

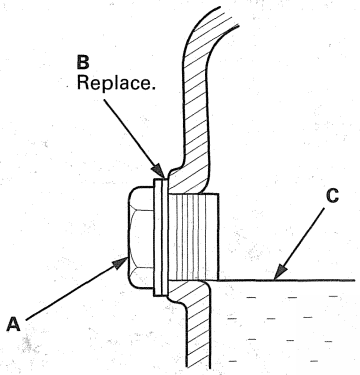


Symptom Troubleshooting Index

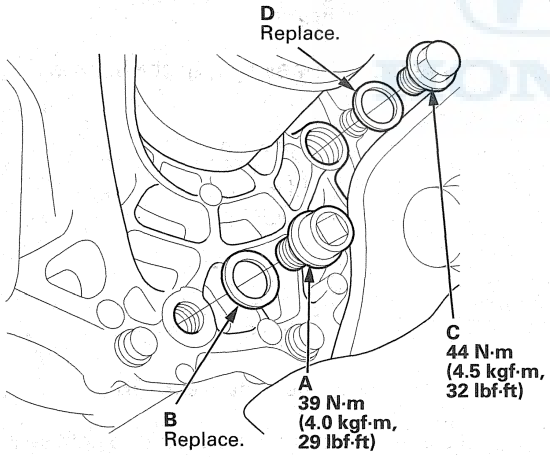
Symptom	Diagnostic procedure
Hard to shift into 1st gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the clutch (see page 13-17). 3. Check the change lever assembly (see page 13-63). 4. Check the 1st synchro ring and 1st gear (see page 13-86). 5. Check the 1st/2nd synchro sleeve and hub (see page 13-85).
Hard to shift into 2nd gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the change lever assembly (see page 13-63). 3. Check the 2nd synchro ring and 2nd gear (see page 13-86). 4. Check the 1st/2nd synchro sleeve and hub (see page 13-85).
Hard to shift into 3rd gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the change lever assembly (see page 13-63). 3. Check the 3rd synchro ring and 3rd gear (see page 13-86). 4. Check the 3rd/4th synchro sleeve and hub (see page 13-85).
Hard to shift into 4th gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the change lever assembly (see page 13-63). 3. Check the 4th synchro ring and 4th gear (see page 13-86). 4. Check the 3rd/4th synchro sleeve and hub (see page 13-85).
Hard to shift into 5th gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the change lever assembly (see page 13-63). 3. Check the 5th synchro ring and 5th gear (see page 13-86). 4. Check the 5th/6th synchro sleeve and hub (see page 13-85).
Hard to shift into 6th gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the change lever assembly (see page 13-63). 3. Check the 6th synchro ring and 6th gear (see page 13-86). 4. Check the 5th/6th synchro sleeve and hub (see page 13-85).
Hard to shift into reverse	1. Check and/or replace the MTF (see page 13-41). 2. Check the clutch (see page 13-17). 3. Check the change lever assembly (see page 13-63). 4. Check the reverse shift fork and the reverse idler gear (see page 13-61). 5. Check reverse gear.
HDS does not communicate with the ECM or the vehicle	Troubleshoot the DLC circuit (see page 11-383).
Driver can select reverse gear when vehicle speed is 12 mph (20 km/h) or more	Do the symptom troubleshooting (see page 13-30).
Driver cannot select reverse gear when vehicle speed is 9 mph (15 km/h) or less	Do the symptom troubleshooting (see page 13-31).
Noise from the transmission	1. Check and/or replace the MTF (see page 13-41). 2. Check the MTF level (underfilled or overfilled) (see page 13-41). 3. Check the transmission gears. 4. Check the transmission bearings. 5. Check the differential carrier, the final driven gear, and the carrier bearings.
Shift lever does not operate smoothly	1. Check and/or replace the MTF (see page 13-41). 2. Check the shift cables and their joints (see page 13-96). 3. Check the shift lever housing and the shift lever shaft. 4. Check the change lever assembly (see page 13-63).
Transmission jumps out of gear	1. Check and/or replace the MTF (see page 13-41). 2. Check the detent ball and spring for proper size and or damage (see page 13-57). 3. Check the teeth of the synchro rings and the gears (see page 13-86). 4. Check for bent, deformed, or damaged shift forks.

Transmission Fluid Inspection and Replacement

1. Raise the vehicle on a lift, and make sure it is securely supported.
2. Remove the splash shield (see page 20-163).
3. Remove the filler plug (A) and the sealing washer (B), check the condition of the MTF, and make sure it is at the proper level (C).



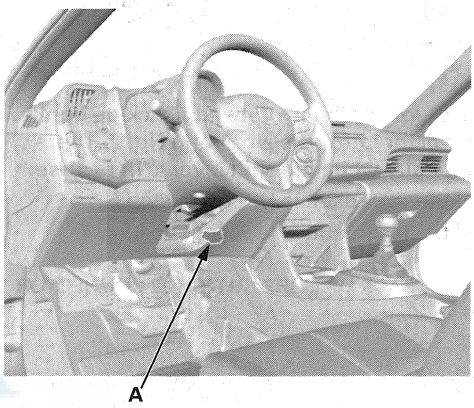
4. If the fluid is dirty, remove the drain plug (A) and the sealing washer (B), and drain the MTF.



5. Install the drain plug with a new sealing washer, and refill the transmission with MTF to the proper level. Always use Honda Manual Transmission Fluid (MTF).

   Fluid Capacity:
   1.4 L (1.5 US qt) at fluid change
   1.6 L (1.7 US qt) at overhaul

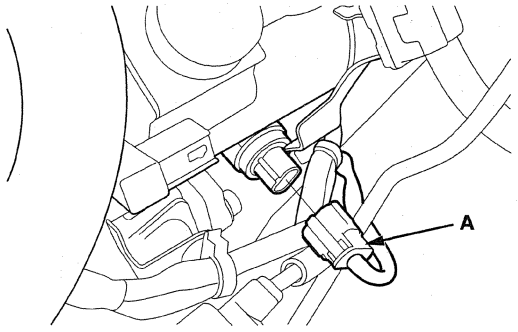
6. Install the filler plug (C) with a new sealing washer (D).
7. Install the splash shield (see page 20-163).
8. Lower the vehicle on the lift.
9. If the Maintenance Minder required replacing the MTF, reset the Maintenance Minder (see page 3-4). Even if the Maintenance Minder did not require you to replace the MTF, go to step 10.
10. With the ignition switch in LOCK (0), connect the Honda Diagnostic System (HDS) to the data link connector (DLC) (A) located under the driver's side of the dashboard.



11. Go to the Individual Maintenance Items Reset (see page 3-6), and do the MAINTENANCE SUB ITEM 3 RESET with the HDS.

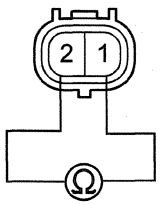
Back-Up Light Switch Test/Replacement

1. Remove the air cleaner (see page 9-3).
2. Disconnect the back-up light switch 2P connector (A).



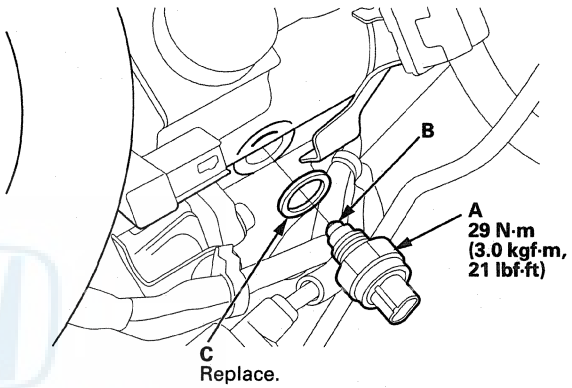
3. Check for continuity between back-up light switch 2P connector terminals No. 1 and No. 2. There should be continuity when the shift lever is in reverse.
   - If the test result is OK, go to step 6.
   - If the test result is faulty, go to step 4.

BACK-UP LIGHT SWITCH 2P CONNECTOR

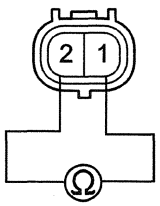


Terminal side of male terminals

4. Remove the back-up light switch (A). Check for continuity between back-up light switch 2P connector terminals No. 1 and No. 2. There should be continuity when the switch end (B) is pressed, and no continuity when the switch end is released.
   - If the test result is OK, check the reverse shift mechanism in the transmission.
   - If the test result is faulty, replace the back-up light switch.



BACK-UP LIGHT SWITCH 2P CONNECTOR

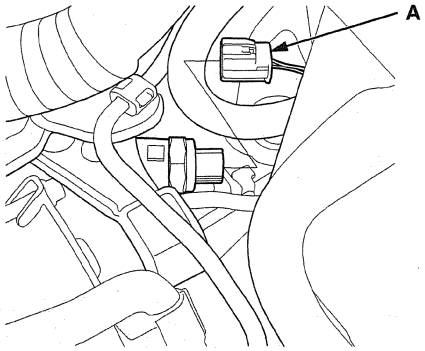


Terminal side of male terminals

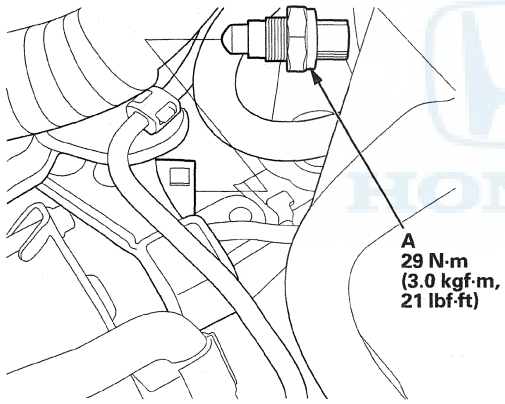
5. Install the removed or the new back-up light switch with a new washer (C).
6. Connect the back-up light switch 2P connector.
7. Install the air cleaner (see page 9-3).

Neutral Position Switch Replacement

1. Remove the air cleaner (see page 9-3).
2. Disconnect the neutral position switch 2P connector (A).



3. Remove the neutral position switch (A).



4. Apply liquid gasket (P/N 08718-0001, 08718-0003, or 08718-0004) evenly to the threads of the neutral position switch, and install it on the change lever assembly. Install the component within 5 minutes of applying the liquid gasket.

   NOTE: If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

5. Connect the neutral position switch 2P connector.
6. Install the air cleaner (see page 9-3).

Transmission Removal

Special Tools Required

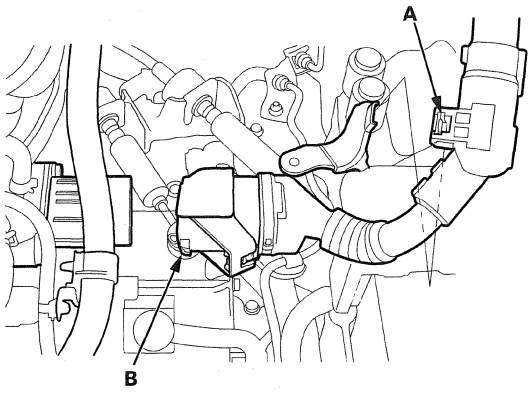
- Universal Lifting Eyelet 07AAK-SNAA120
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*

*: Available through the Honda Tool and Equipment Program 888-424-6857.

NOTE: Use fender covers to avoid damaging painted surfaces.

1. Turn the ignition switch to LOCK (0), then turn the battery module switch OFF, and measure the voltage at the IMA battery module terminals (see page 12-4).
2. Secure the hood in the wide open position with the support strut.
3. Remove the front bumper center upper beam (see page 20-149).
4. Do the 12 volt battery removal procedure (see page 22-87).
5. Remove the air cleaner (see page 9-3).
6. Remove the harness clamp (A), then disconnect the IMA motor power cable connector (B).

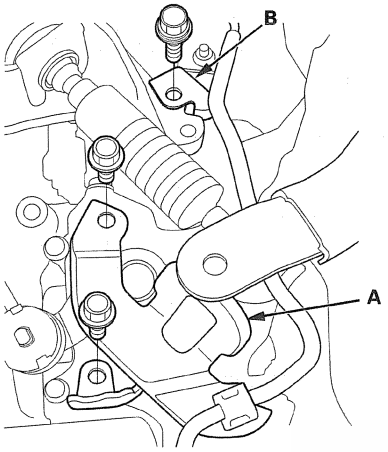
   NOTE:
   - Make sure you have read the IMA system service precautions (see page 12-3).
   - If the IMA motor power cable connector is dirty, clean it before removal.
   - Cover the disconnected connector with plastic bag, and wrap IMA motor power cable terminal with tape.
   - If the IMA motor power cable is wet, wait until it is dry.



(cont'd)

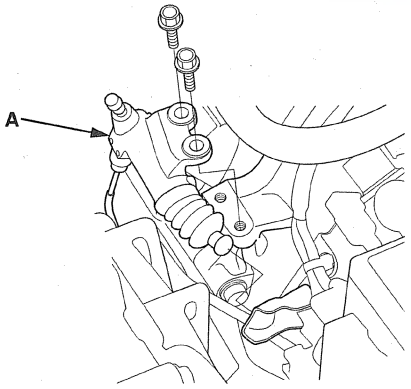
Transmission Removal (cont'd)

7. Remove the cable guard bracket (A) and the clutch line bracket (B).

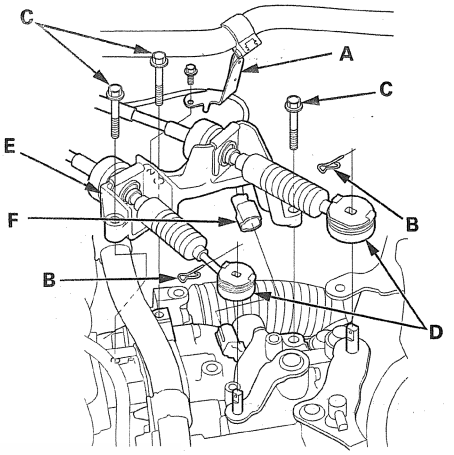


8. Remove the slave cylinder (A), then carefully move the slave cylinder out of the way to avoid bending the clutch line.

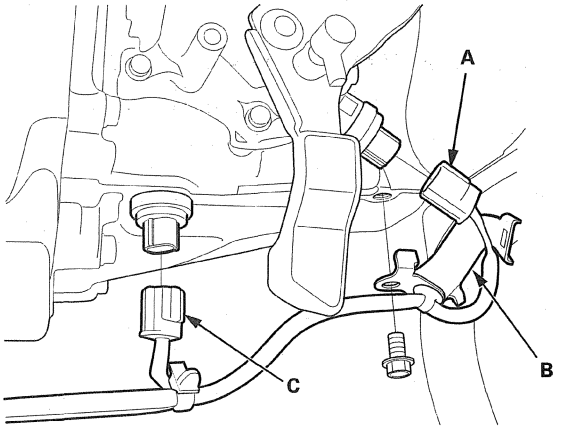
NOTE:
- Do not disconnect the clutch line joints.
- Do not press the clutch pedal after the slave cylinder has been removed.



9. Remove the harness bracket (A).

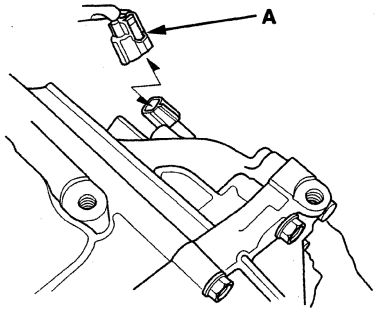


10. Remove the lock pins (B) and the shift cable bracket bolts (C), then carefully remove both cables (D) and the shift cable bracket (E) together out of the way to avoid bending the cables.
11. Disconnect the reverse lockout solenoid 2P connector (F).
12. Remove the starter (see page 4-10).
13. Disconnect the neutral position switch 2P connector (A) and the harness bracket (B).

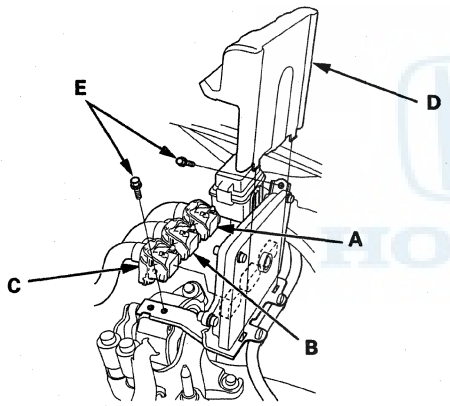


14. Disconnect the back-up light switch 2P connector (C).

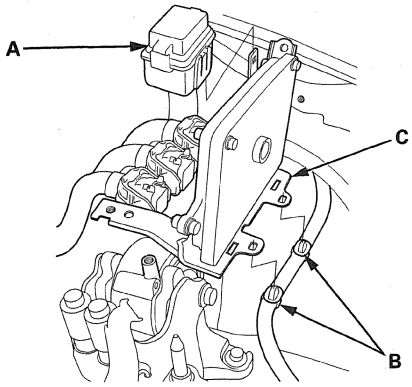
15. Disconnect the output shaft (countershaft) speed sensor 3P connector (A).



16. Remove the ECM cover (D).

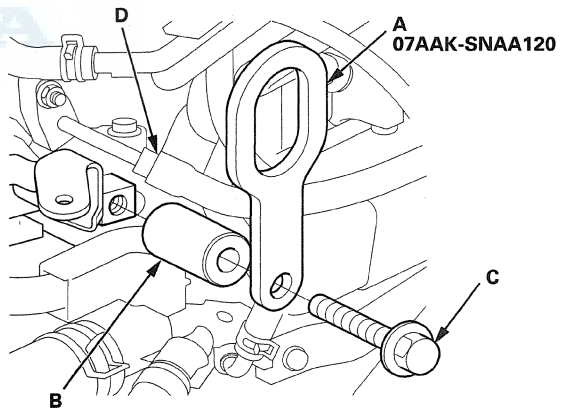


17. Disconnect ECM connectors A, B, and C.
18. Remove the ECM bracket mount bolts (E).
19. Remove auxiliary under-hood relay box A and the harness clips (B) from the ECM bracket (C).



20. Remove the ECM bracket with the ECM from the body.
21. Attach the universal lifting eyelet (A) to the cylinder head with a spacer (B) and an 8 x 1.25 mm bolt (C).

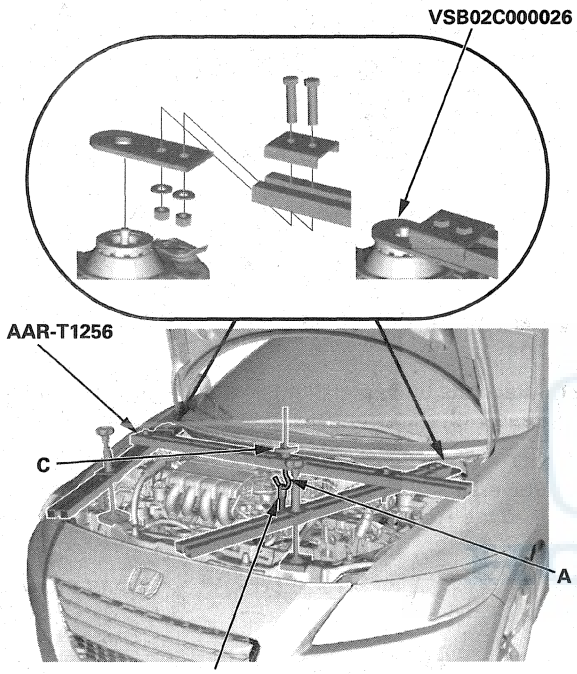
    NOTE: Select a spacer that is long enough that the universal lifting eyelet does not interfere with the fuel feed tube (D).



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Transmission Removal (cont'd)

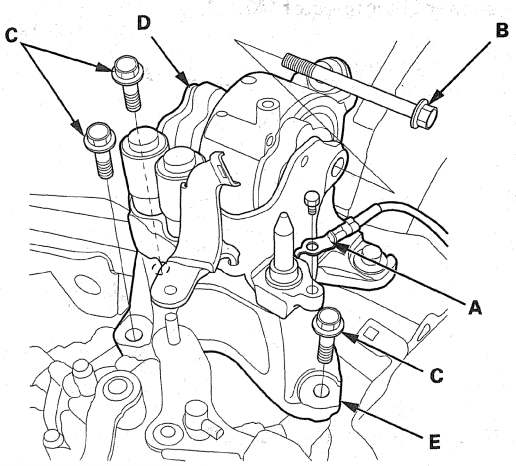
22. Install the engine hanger adapter (VSB02C000026) to the engine support hanger (AAR-T1256), then install the engine support hanger onto the vehicle, and attach the hook (A) to the universal lifting eyelet (B). Tighten the wing nut (C) by hand, and lift and support the engine/IMA motor/transmission.



23. Hold the steering wheel. Remove the steering joint cover, then disconnect the steering joint from the steering gearbox pinion shaft (see page 17-64).

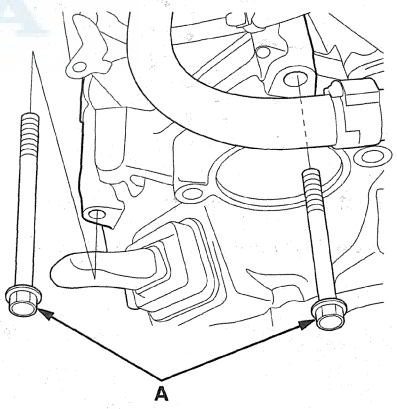
    NOTE: Hold the splined shaft on the column with a piece of wire between the joint yoke of the splined shaft and joint yoke of the splined tube to prevent the splined shaft from pulling out.

24. Remove the ground cable (A).



25. Remove the transmission mount bolt (B) and the transmission mount bracket base bolts (C), then remove the transmission mount bracket (D) with the transmission mount bracket base (E).

26. Remove the upper transmission housing mounting bolts (A).



27. Raise the vehicle on a lift, and make sure it is securely supported.

28. Remove the splash shield (see page 20-163).

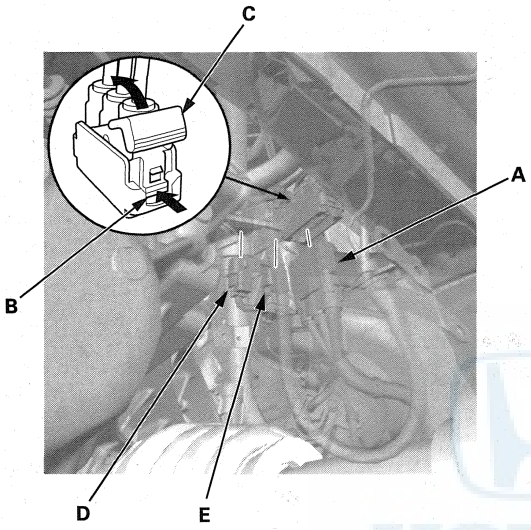
29. Drain the transmission fluid. Reinstall the drain plug using a new sealing washer (see page 13-41).

30. Disconnect the stabilizer links from the stabilizer bar (see page 18-20).

31. Disconnect the tie-rod end ball joints from the knuckles (see step 11 on page 17-65).

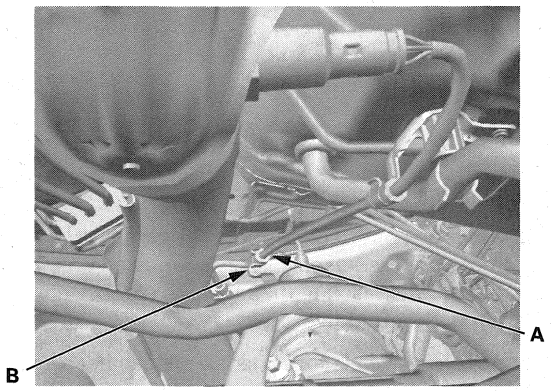
32. Disconnect the lower arm ball joints from the knuckles (see step 13 on page 17-66).

33. Disconnect the EPS motor 3P connector (A) by pushing the lock (B) and pulling up the lever (C), then disconnect the torque sensor 6P connector (D) and EPS motor angle sensor 8P connector (E) from the steering gearbox.



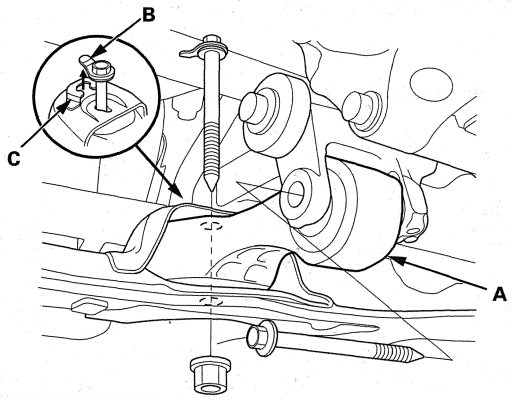
34. Remove the secondary HO2S wire (A) from the clamp (B).

NOTE: Do not disconnect the secondary HO2S 4P connector and secondary HO2S.

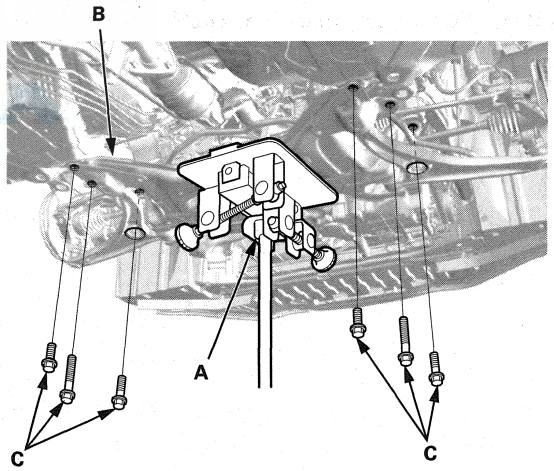


35. Remove the torque rod (A).

NOTE: Make sure the tab (B) on the bolt head aligned with the guide (C) on the front subframe.



36. Secure the transmission jack (A) to center of the front subframe (B), and support the front subframe securely by raising the transmission jack.



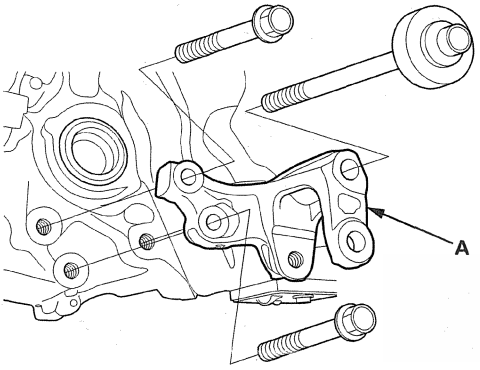
37. Remove the front subframe mounting bolts (C).

38. Lower the front subframe and steering gearbox as an assembly by lowering the transmission jack slowly.

(cont'd)

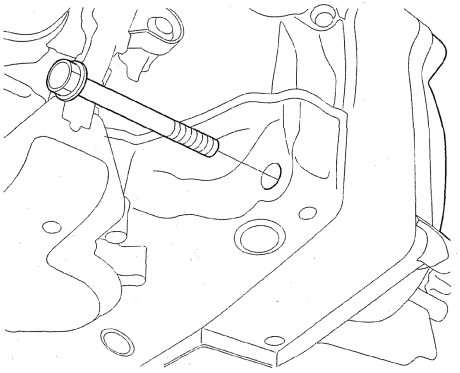
Transmission Removal (cont'd)

39. Separate the left driveshaft inboard joint from the differential (see step 8 on page 16-5).
40. Separate the right driveshaft inboard joint from the intermediate shaft (see step 9 on page 16-6).
41. Remove the intermediate shaft (see page 16-22).
42. Remove the torque rod bracket (A).

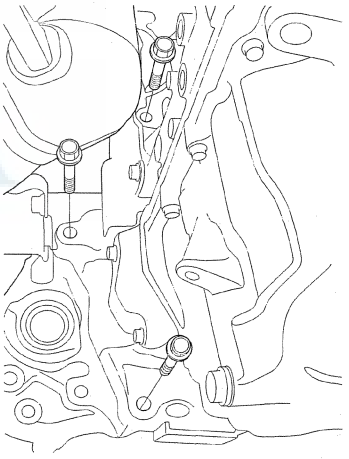


43. Securely support the transmission with a transmission jack.
44. Remove the lower transmission housing mounting bolts.

Front side



Rear side



45. Pull the transmission away from the IMA motor housing until the transmission mainshaft clears the clutch pressure plate.
46. Slowly lower the transmission. Check once again that all hoses and harnesses are disconnected and free from the transmission, then lower it completely. Remove the two dowel pins.
47. Remove the release fork and the release bearing from the clutch housing (see page 13-22).

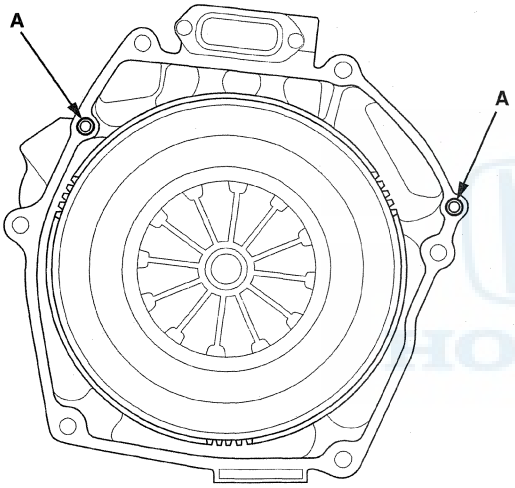
Transmission Installation

Special Tools Required
- Universal Lifting Eyelet 07AAK-SNAA120
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*

*: Available through the Honda Tool and Equipment Program 888-424-6857.

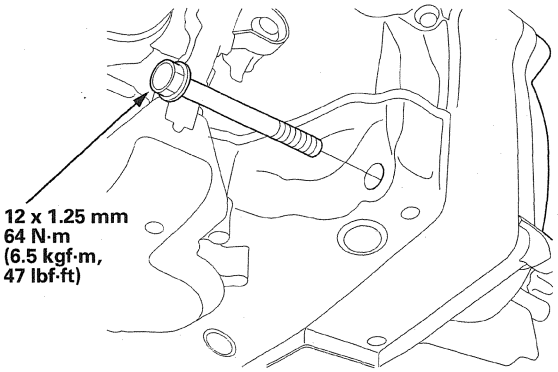
NOTE: Use fender covers to avoid damaging painted surfaces.

1. Make sure the two dowel pins (A) are undamaged and installed in prescribed holes on the engine block as shown. Replace the dowel pins if they are damaged.

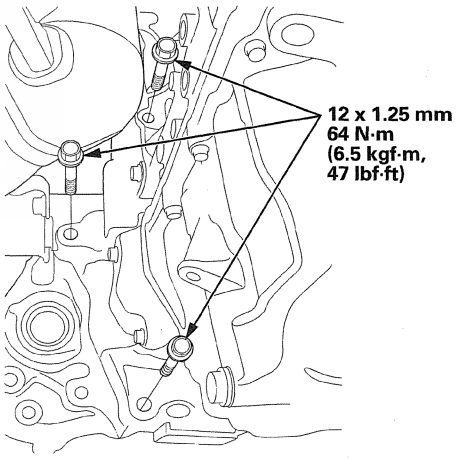


2. Check the release bearing (see page 13-22), and reinstall the release bearing and the release fork with specified grease (see page 13-23).
3. Place the transmission on the transmission jack, and raise it to the engine level.
4. Align the transmission mainshaft and the clutch pressure plate, then move the transmission inward until there is no gap between the transmission housing and the IMA motor housing.
5. Install the lower transmission housing mounting bolts.

Front side



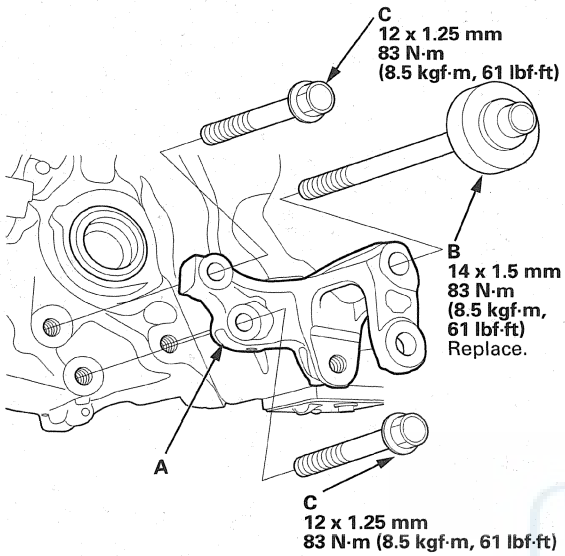
Rear side



(cont'd)

Transmission Installation (cont'd)

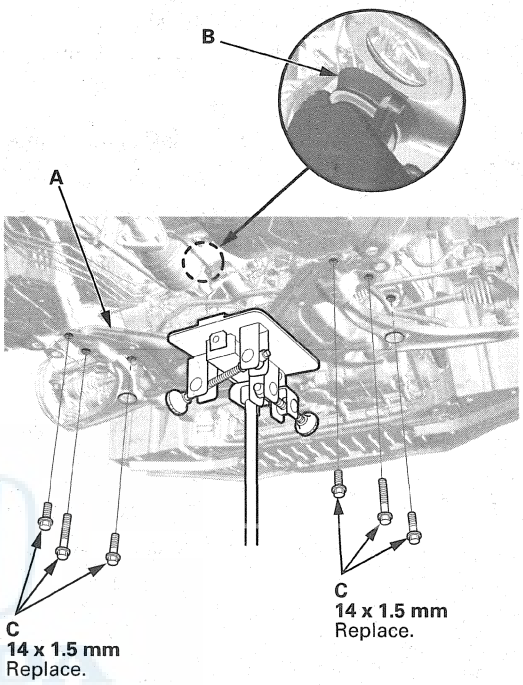
6. Install the torque rod bracket (A) with a new bolt (B) and bolts (C).



7. Install the intermediate shaft (see page 16-26).

8. Install both driveshafts (see page 16-19).

9. Set the front subframe (A) with the steering gearbox on the transmission jack and support it.



10. Carefully raise the front subframe with the transmission jack, and pass the pinion shaft into the passenger's compartment.

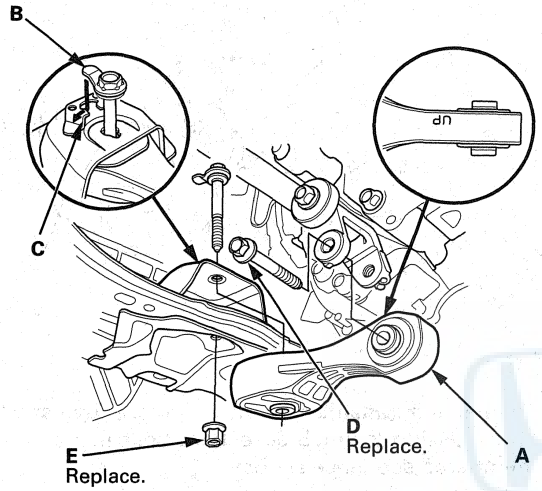
NOTE:

- Be sure that the pinion shaft grommet (B) is in place securely. Make sure the pinion shaft grommet is not turned up. Incorrect installation can cause leakage of water or mud, and noise.
- Take care not to damage the lower arm ball joint boot with the edge of the knuckle, etc.

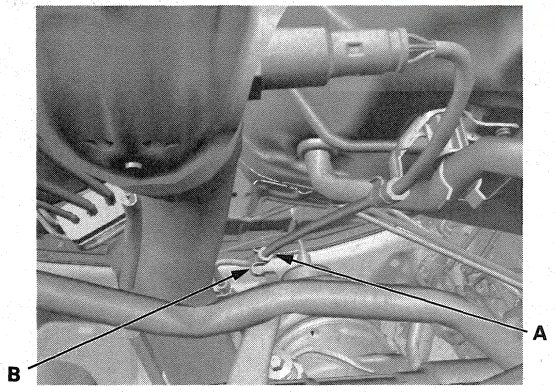
11. Loosely tighten new front subframe mounting bolts (C). Align the front subframe (see page 20-173), then tighten the bolts to the specified torque.

12. Install the torque rod (A). Install the bolt with the tab (B) on the bolt head aligned with the guide (C) on the front subframe, then loosely tighten a new torque rod mounting bolt (D) and a new nut (E).

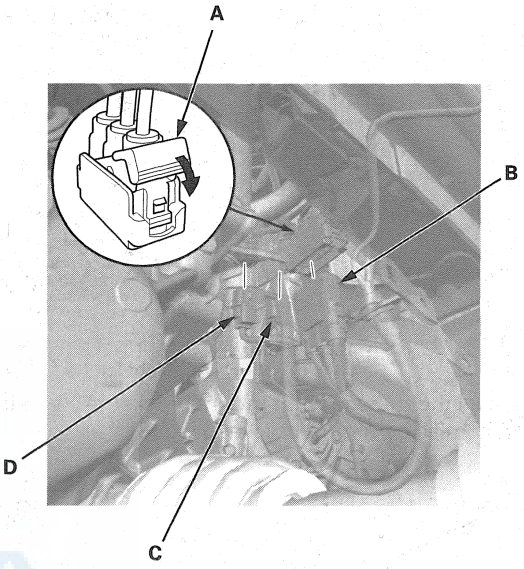
NOTE: Make sure to set "UP" mark of the torque rod to upper side when you install it.



13. Install the secondary HO2S wire (A) to the clamp (B).



14. Pull down the lever (A) of the EPS motor 3P connector (B), then confirm the connector is fully seated. Connect the EPS motor angle sensor 8P connector (C) and torque sensor 6P connector (D) to the steering gearbox.

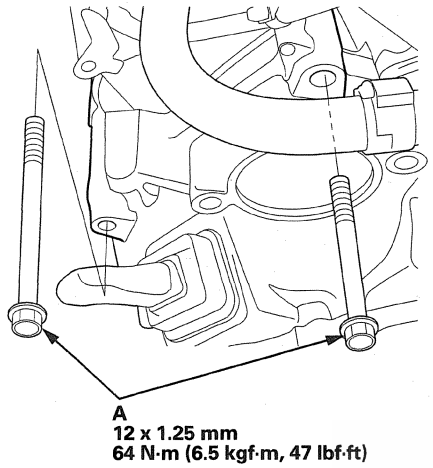


15. Connect the lower arm ball joints to the knuckles (see step 18 on page 17-70).
16. Connect the tie-rod end ball joints to the knuckles (see step 20 on page 17-71).
17. Connect the stabilizer links to the stabilizer bar (see page 18-20).
18. Lower the vehicle.

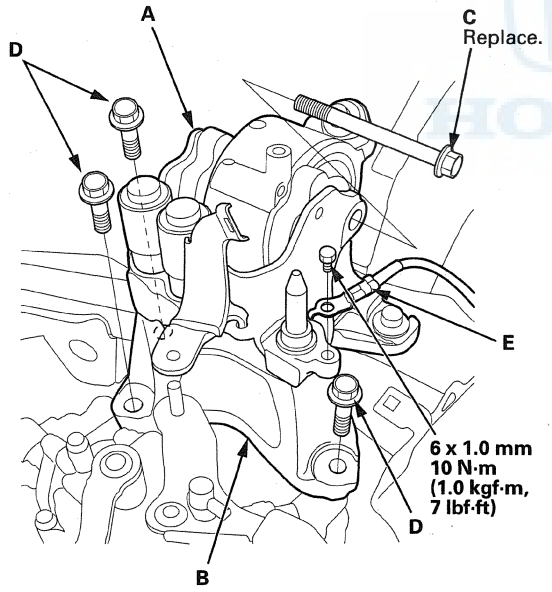
(cont'd)

Transmission Installation (cont'd)

19. Install the upper transmission housing mounting bolts (A).



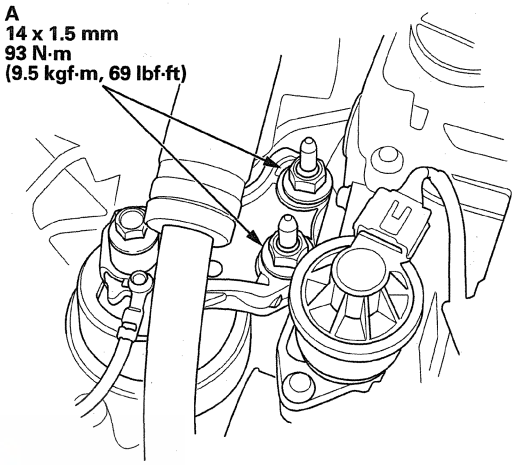
20. Install the transmission mount bracket (A) with the transmission mount bracket base (B).



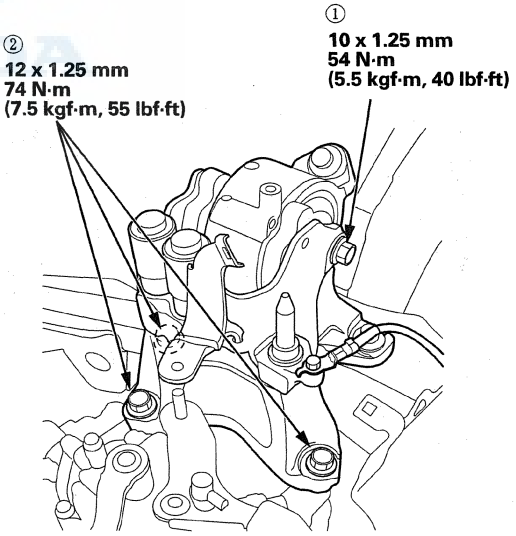
21. Loosely tighten new transmission mount bolt (C) and the transmission mount bracket base bolts (D), then install the ground cable (E).

22. Remove the engine support hanger (AAR-T1256) and the universal lifting eyelet from the engine.

23. Loosen and retighten the side engine mount/bracket assembly mounting nuts (A).

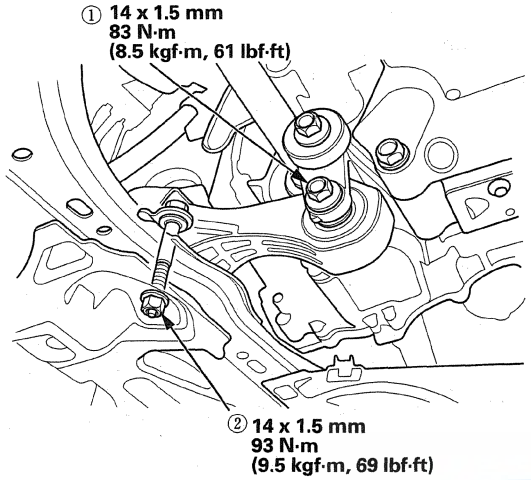


24. Tighten the transmission mount bracket bolt and the transmission mount bracket base bolts in the numbered sequence shown.



25. Raise the vehicle on a lift, and make sure it is securely supported.

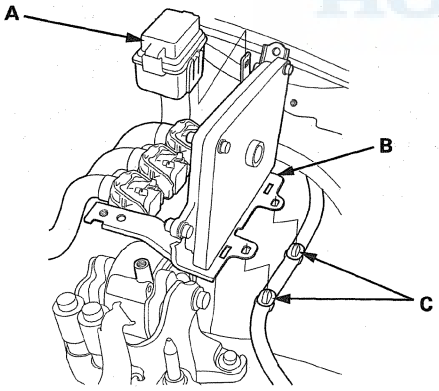
26. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.



27. Lower the vehicle.

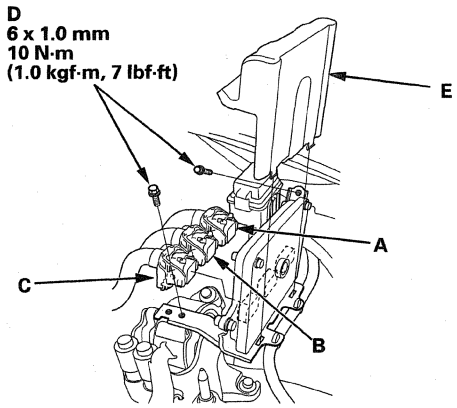
28. Connect the steering joint onto the steering gearbox pinion shaft, then install the steering joint cover (see page 17-64).

29. Install the ECM bracket (B) with the ECM to the body.



30. Install the harness clips (C) to the ECM bracket, then install auxiliary under-hood relay box A.

31. Install the ECM bracket mount bolts (D).

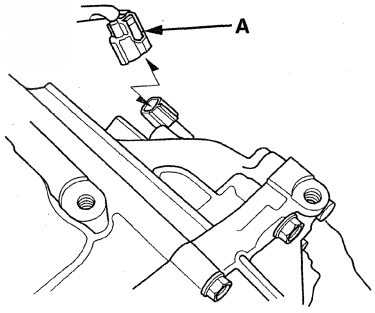


32. Connect ECM connectors A, B, and C.

NOTE: ECM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.

33. Install the ECM cover (E).

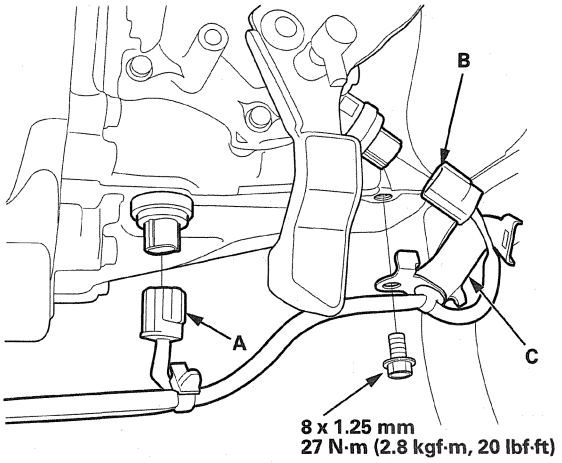
34. Connect the output shaft (countershaft) speed sensor 3P connector (A).



(cont'd)

Transmission Installation (cont'd)

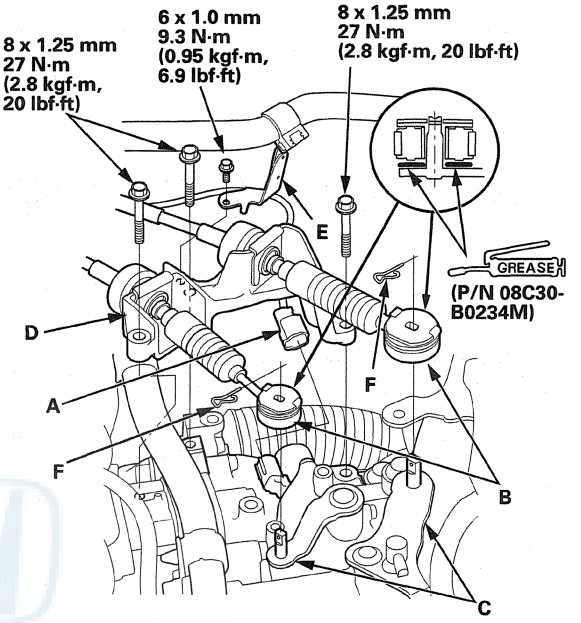
35. Connect the back-up light switch 2P connector (A).



36. Connect the neutral position switch 2P connector (B) and the harness bracket (C).

37. Install the starter (see page 4-10).

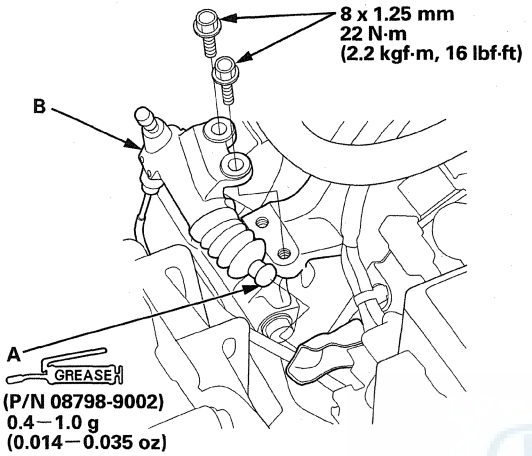
38. Connect the reverse lockout solenoid 2P connector (A).



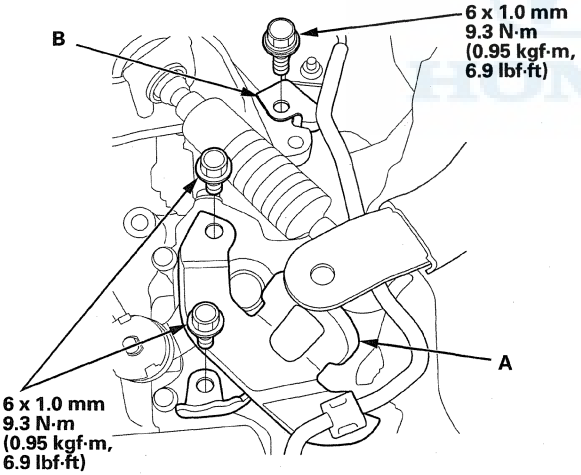
39. Apply a light coat of silicone grease (P/N 08C30-B0234M) to the cable ends (B), and connect the cable end to the change lever assembly (C), then install the shift cable bracket (D), the harness bracket (E), and the lock pins (F). Do not bend or damage the shift cables.

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

40. Apply a light coat of super high temp urea grease (P/N 08798-9002) to the end of the slave cylinder push rod (A). Install the slave cylinder (B). Be careful not to bend the clutch line.

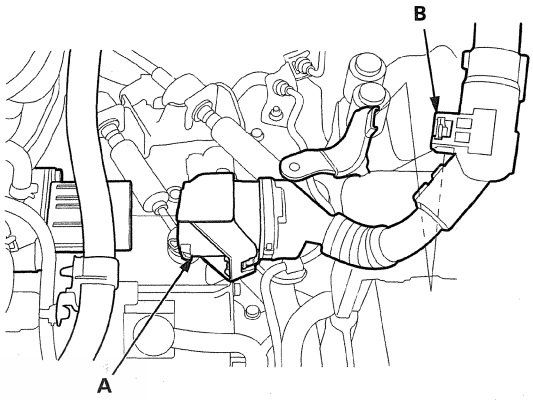


41. Install the cable guard bracket (A) and the clutch line bracket (B).



42. Connect the IMA motor power cable connector (A), then install the harness clamp (B).

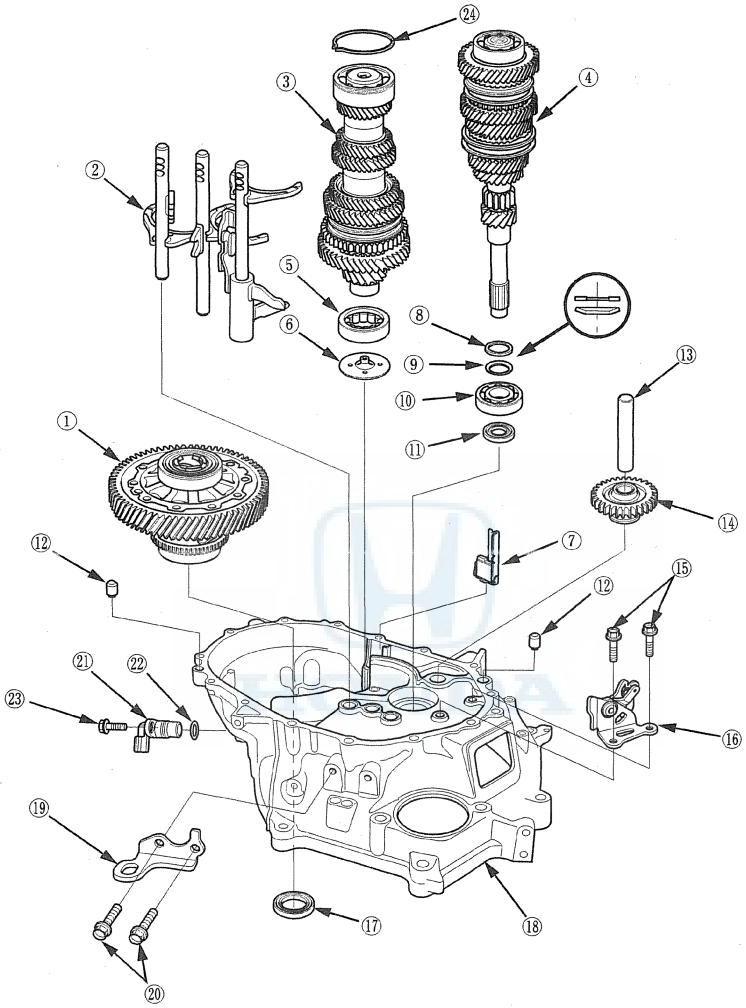
NOTE: Make sure you have the IMA system service precautions (see page 12-3).



43. Install the air cleaner (see page 9-3).
44. Do the 12 volt battery installation procedure (see page 22-87).
45. Install the front bumper center upper beam (see page 20-149).
46. Refill the transmission fluid to the proper level (see page 13-41).
47. Install the splash shield (see page 20-163).
48. Turn the battery module switch ON (see page 12-4).
49. Do the ECM reset procedure (see page 11-4).
50. Check the wheel alignment, and adjust it if necessary (see page 18-5).
51. Check the shift lever and the clutch operation.
52. Test-drive the vehicle.

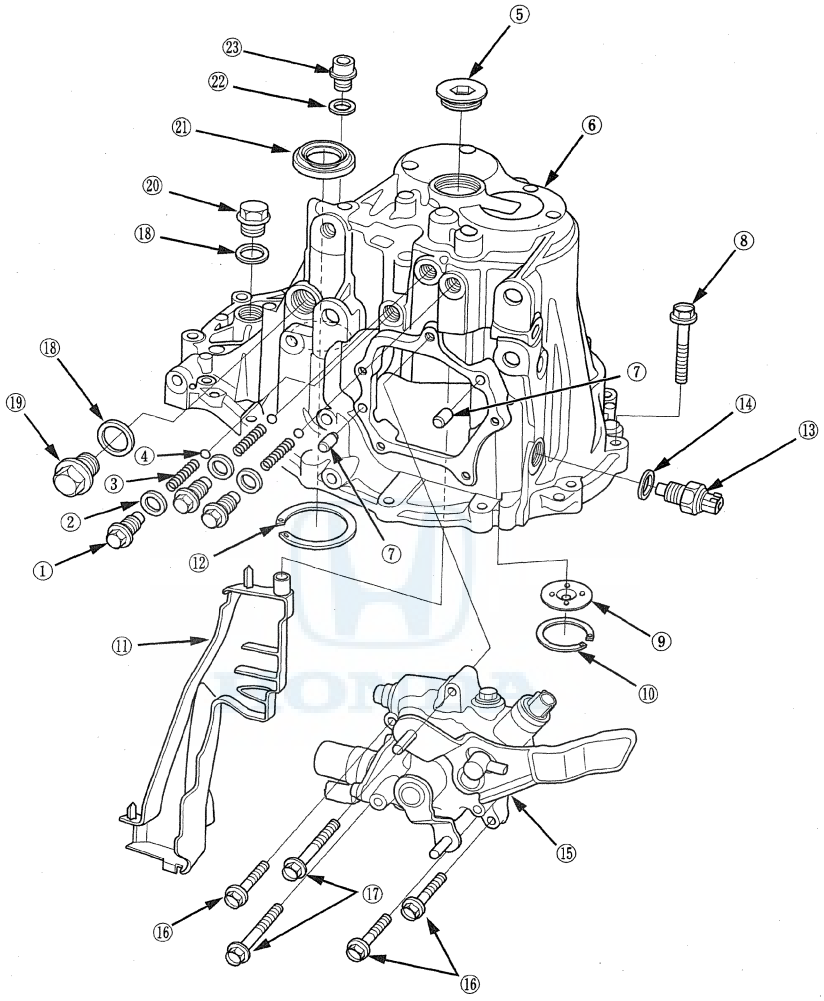
Transmission Disassembly

Exploded View - Clutch Housing



① DIFFERENTIAL ASSEMBLY
② SHIFT FORK ASSEMBLY
③ COUNTERSHAFT ASSEMBLY
④ MAINSHAFT ASSEMBLY
⑤ NEEDLE BEARING
⑥ OIL GUIDE PLATE C
⑦ MAGNET
⑧ 26 mm WASHER
⑨ 36 mm SPRING WASHER
⑩ BALL BEARING
⑪ 26 x 40 x 7 mm OIL SEAL
Replace.
⑫ 14 x 20 mm DOWEL PIN
⑬ REVERSE GEAR SHAFT
⑭ REVERSE IDLER GEAR
⑮ 6 x 1.0 mm SPECIAL BOLT
15 N·m (1.5 kgf·m, 11 lbf·ft)
⑯ REVERSE SHIFT FORK
⑰ 35 x 58 x 8 mm OIL SEAL
Replace.
⑱ CLUTCH HOUSING
⑲ TRANSMISSION HANGER
⑳ 8 x 1.25 mm FLANGE BOLT
27 N·m (2.8 kgf·m, 20 lbf·ft)
㉑ OUTPUT SHAFT (COUNTERSHAFT) SPEED SENSOR
㉒ O-RING
Replace.
㉓ 6 x 1.0 mm FLANGE BOLT
12 N·m (1.2 kgf·m, 9 lbf·ft)
㉔ 69 mm SNAP RING

Exploded View - Transmission Housing



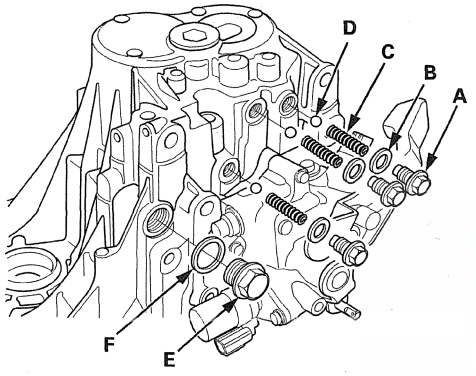
① **SET SCREW**
22 N·m (2.2 kgf·m, 16 lbf·ft)
② **12 mm SEALING WASHER**
Replace.
③ **DETENT BALL SPRING**
(Free Length Size: 26.0 mm (1.024 in))
④ **STEEL BALL**
(Ball Size: 7.94 mm (0.3126 in))
⑤ **32 mm SEALING CAP**
34 N·m (3.5 kgf·m, 25 lbf·ft)
⑥ **TRANSMISSION HOUSING**
⑦ **8 x 10 mm DOWEL PIN**
⑧ **8 x 1.25 mm FLANGE BOLT**
27 N·m (2.8 kgf·m, 20 lbf·ft)
⑨ **OIL GUIDE PLATE M**
⑩ **52 x 62 mm SHIM**
⑪ **OIL GUTTER PLATE**
⑫ **80 mm SHIM**
⑬ **BACK-UP LIGHT SWITCH**
29 N·m (3.0 kgf·m, 21 lbf·ft)
⑭ **18 mm SEALING WASHER**
Replace.
⑮ **CHANGE LEVER ASSEMBLY**
⑯ **6 x 30 x 1.0 mm FLANGE BOLT**
12 N·m (1.2 kgf·m, 9 lbf·ft)
⑰ **6 x 45 x 1.0 mm FLANGE BOLT**
12 N·m (1.2 kgf·m, 9 lbf·ft)
⑱ **20 mm SEALING WASHER**
Replace.
⑲ **20 mm BOLT**
44 N·m (4.5 kgf·m, 32 lbf·ft)
⑳ **FILLER PLUG**
44 N·m (4.5 kgf·m, 32 lbf·ft)
㉑ **40 x 56 x 8 mm OIL SEAL**
Replace.
㉒ **14 mm SEALING WASHER**
Replace.
㉓ **DRAIN PLUG**
39 N·m (4.0 kgf·m, 29 lbf·ft)

(cont'd)

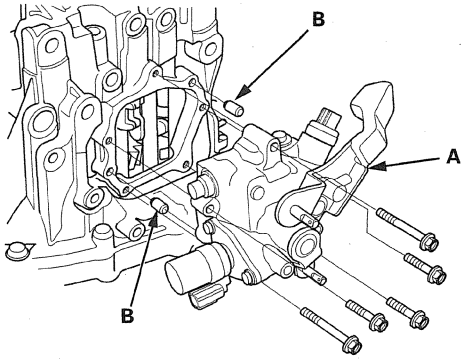
Transmission Disassembly (cont'd)

NOTE: Place the clutch housing on two pieces of wood that are thick enough to keep the mainshaft from hitting the workbench.

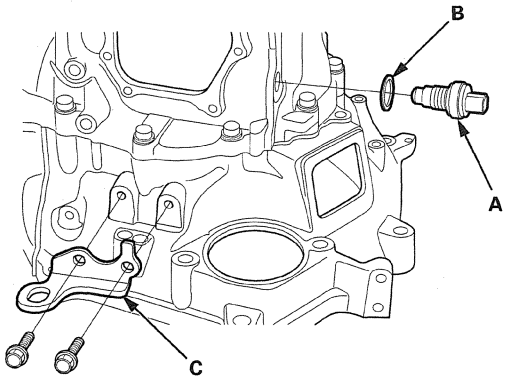
1. Remove the release bearing and the release fork (see page 13-22).
2. Remove the set screws (A), the 12 mm sealing washers (B), the detent ball springs (C), and the steel balls (D).



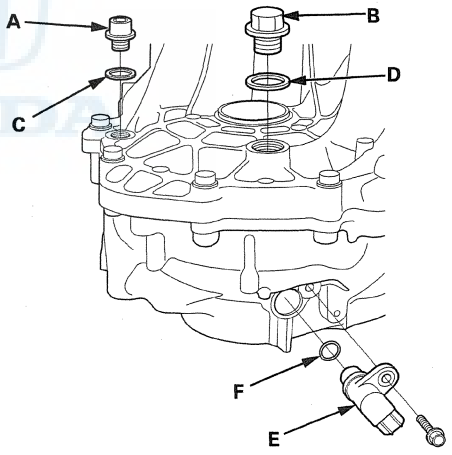
3. Remove the 20 mm bolt (E) and the 20 mm sealing washer (F).
4. Remove the change lever assembly (A) and the 8 x 10 mm dowel pins (B).



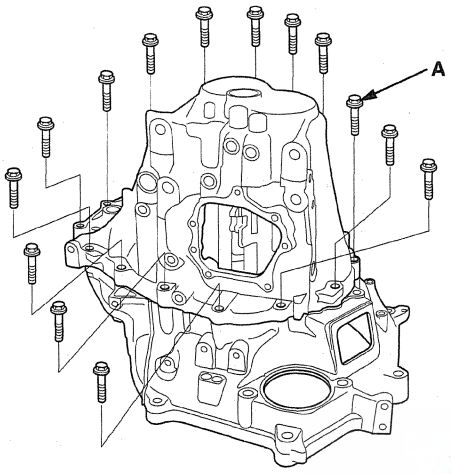
5. Remove the back-up light switch (A), the 18 mm sealing washer (B), and the transmission hanger (C).



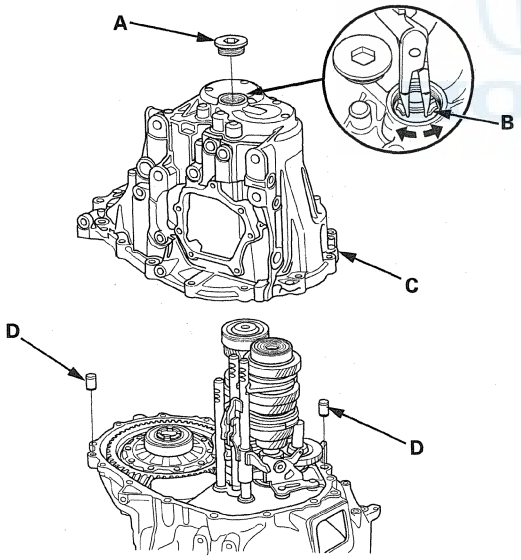
6. Remove the drain plug (A), the filler plug (B), the 14 mm sealing washer (C), the 20 mm searing washer (D), the output shaft (countershaft) speed sensor (E), and the O-ring (F).



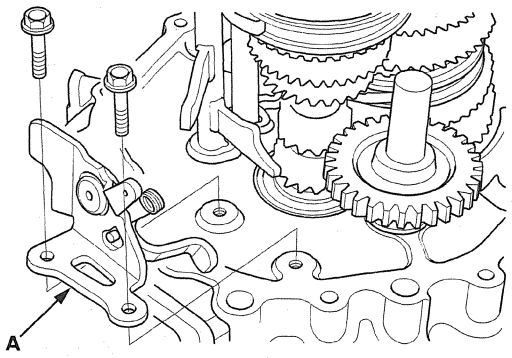
7. Remove the 8 x 1.25 mm flange bolts (A) in a crisscross pattern in several steps.



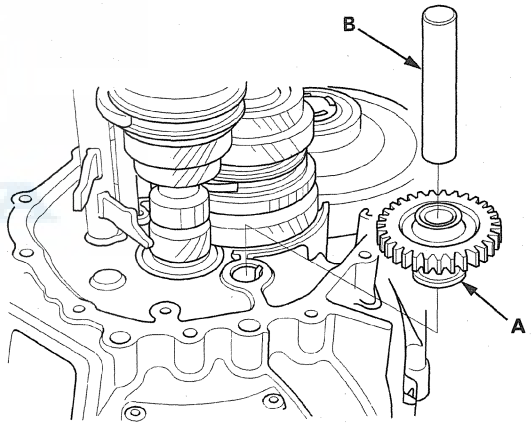
8. Remove the 32 mm sealing cap (A).



9. Expand the 69 mm snap ring (B) on the countershaft ball bearing, and remove it from the groove using a pair of snap ring pliers.
10. Remove the transmission housing (C) and the 14 x 20 mm dowel pins (D).
11. Remove the reverse shift fork (A).



12. Remove the reverse idler gear (A) and the reverse gear shaft (B).

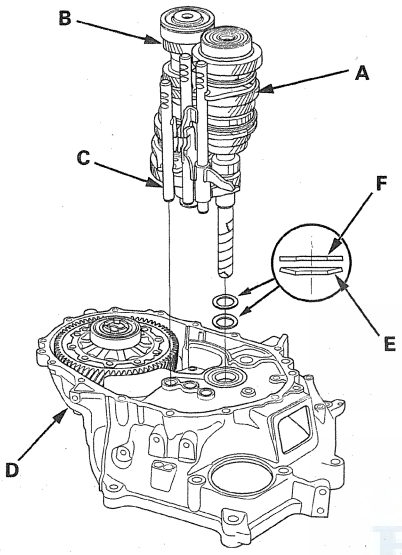


(cont'd)

Transmission Disassembly (cont'd)

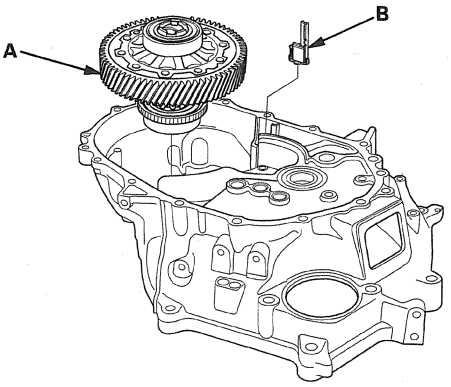
13. Apply tape to the mainshaft splines to protect the seal, then remove the mainshaft assembly (A) and the countershaft assembly (B) with the shift fork assembly (C) from the clutch housing (D).

    NOTE: Do not apply tape so thick that it damages the oil seal.

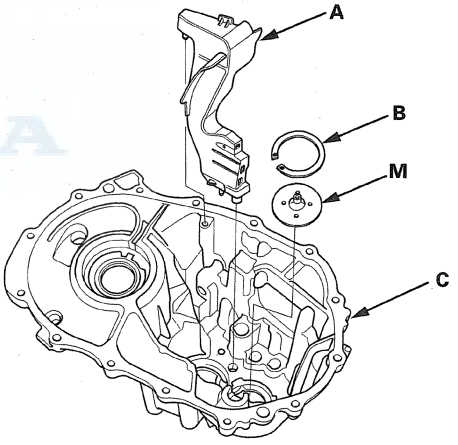


14. Remove the 36 mm spring washer (E) and the 26 mm washer (F).

15. Remove the differential assembly (A) and the magnet (B).



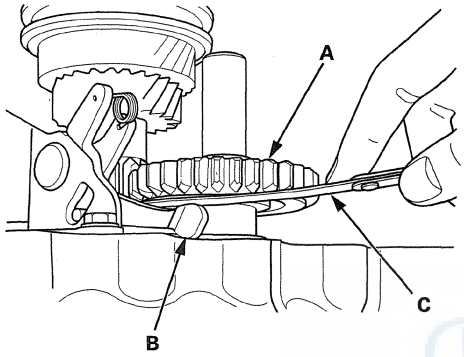
16. Remove the oil gutter plate (A), the oil guide plate M, and the 52 x 62 mm shim (B) from the transmission housing (C).



Reverse Shift Fork Clearance Inspection

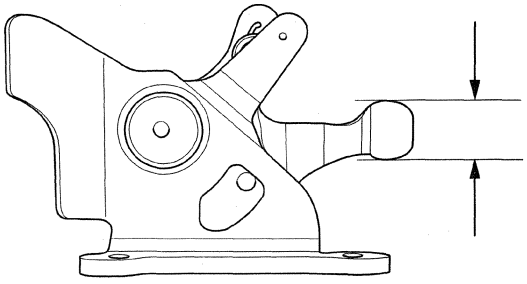
1. Measure the clearance between the reverse idler gear (A) and the reverse shift fork (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

Standard: **0.2—0.6 mm (0.008—0.024 in)**
Service Limit: **1.2 mm (0.047 in)**



2. Measure the width of the reverse shift fork.
   - If the width is not within the standard, replace the reverse shift fork.
   - If the width is within the standard, replace the reverse idle gear.

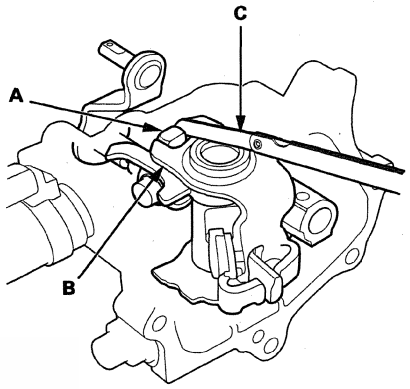
Standard: 14.7—14.9 mm (0.579—0.587 in)



Select Arm Clearance Inspection

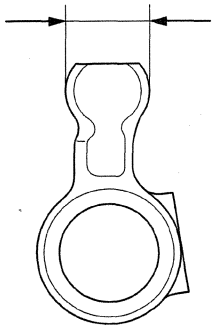
1. Measure the clearance between the select arm (A) and the interlock (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

Standard: **0.01—0.21 mm (0.001—0.008 in)**
Service Limit: **0.3 mm (0.012 in)**



2. Measure the width of the select arm.
   - If the width is not within the standard, replace the select arm.
   - If the width is within the standard, replace the interlock.

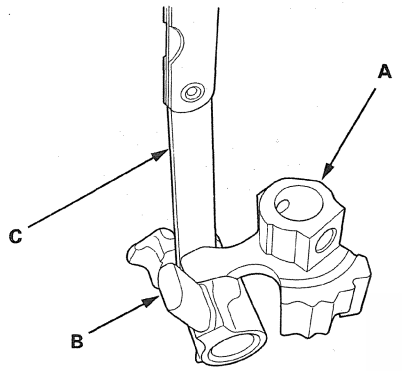
Standard: 12.9—13.0 mm (0.508—0.512 in)



Shift Piece Clearance Inspection

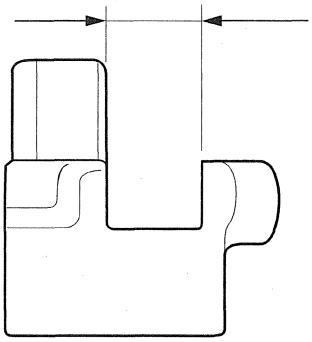
1. Measure the clearance between the shift arm (A) and the shift piece (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 2.

   Standard: **0.206—0.616 mm (0.009—0.024 in)**
   Service Limit: **0.7 mm (0.028 in)**



2. Measure the width of the shift piece.
   - If the width is not within the standard, replace the shift piece.
   - If the width is within the standard, replace the shift arm.

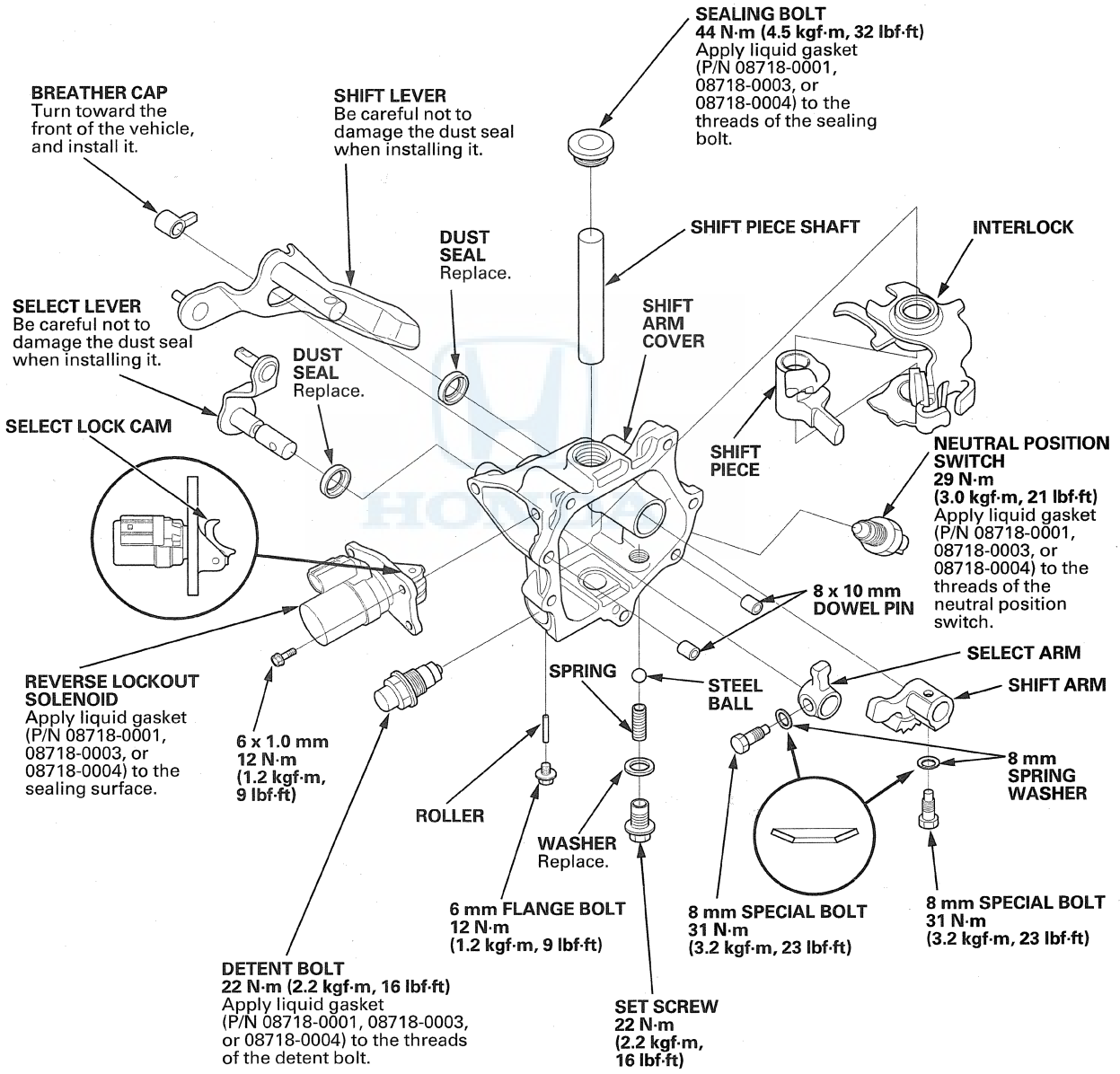
   Standard: 16.00—16.20 mm (0.6299—0.6378 in)



Change Lever Assembly Disassembly/Reassembly

NOTE:

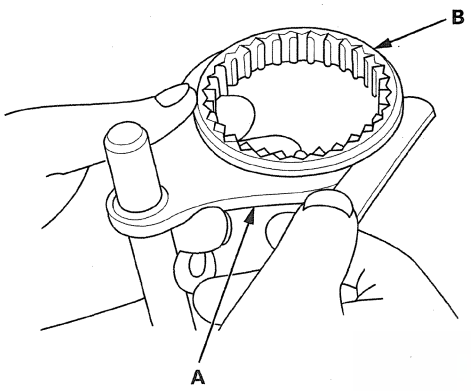
- Prior to reassembling, clean all the parts in solvent, dry them, and apply grease to the contact surfaces as shown. Do not clean the rubber parts with solvent.
- If too much time has passed after applying liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



Shift Fork Clearance Inspection

1. Measure the clearance between each shift fork (A) and its matching synchro sleeve (B). If the clearance exceeds the service limit, go to step 2.

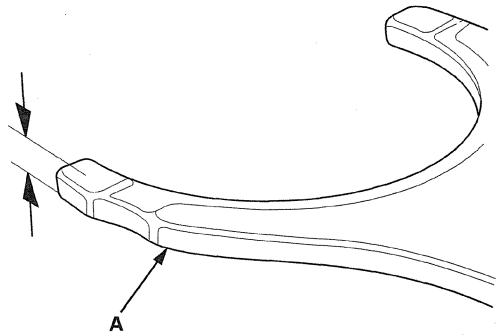
Standard: 0.35—0.65 mm (0.014—0.025 in)
Service Limit: 1.0 mm (0.039 in)



2. Measure the thickness of the shift fork (A) fingers.
   - If the thickness is not within the standard, replace the shift fork.
   - If the thickness is within the standard, replace the synchro sleeve and the synchro hub as a set.
   - If one arm of the shift fork shows more wear than others, the fork may be bent and needs to be replaced.

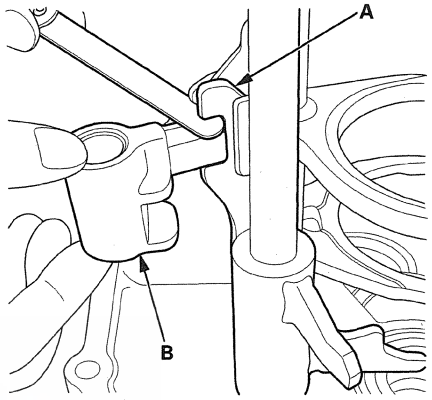
Standard:

1st/2nd shift fork:	**6.7—6.9 mm (0.264—0.272 in)**
3rd/4th, 5th/6th shift forks:	**7.4—7.6 mm (0.291—0.299 in)**



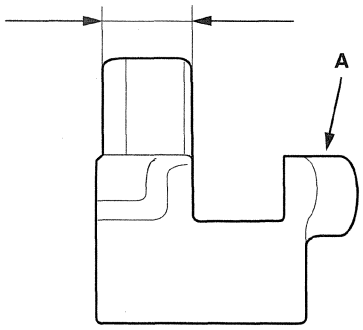
3. Measure the clearance between the shift forks (A) and the shift piece (B). If the clearance exceeds the service limit, go to step 4.

Standard: 0.20—0.50 mm (0.008—0.019 in)
Service Limit: 0.6 mm (0.024 in)



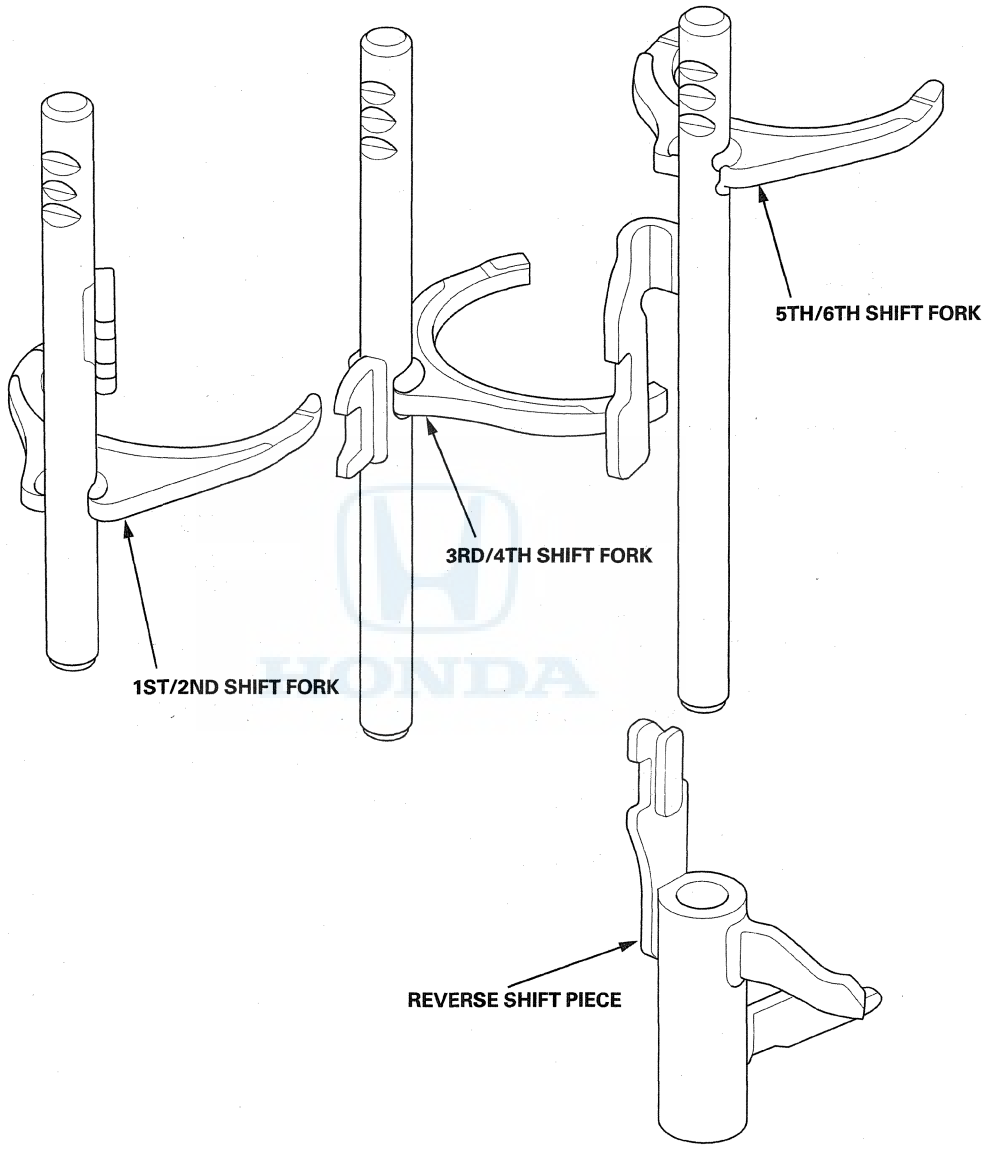
4. Measure the width of the shift piece (A).
   - If the width is not within the standard, replace the shift piece.
   - If the width is within the standard, replace the shift fork or the reverse shift piece.

Standard: 15.9—16.0 mm (0.626—0.630 in)



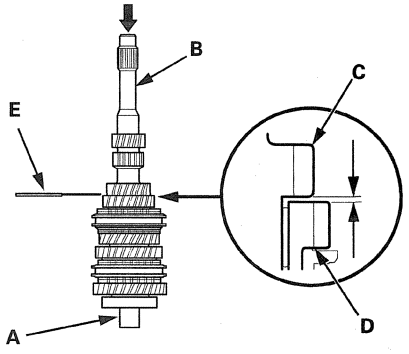
Shift Fork Disassembly/Reassembly

NOTE: Prior to reassembling, clean all the parts in solvent, dry them, and apply MTF to all contact surfaces.



Mainshaft Assembly Clearance Inspection

1. Support the bearing inner race with an appropriate sized socket (A), and push down on the mainshaft (B).

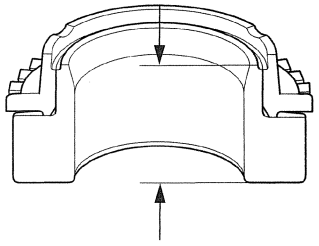


2. Measure the clearance between 2nd gear (C) and 3rd gear (D) with a feeler gauge (E).
   - If the clearance exceeds the service limit, go to step 3.
   - If the clearance is within the service limit, go to step 4.

   Standard: 0.06—0.21 mm (0.003—0.008 in)
   Service Limit: 0.30 mm (0.011 in)

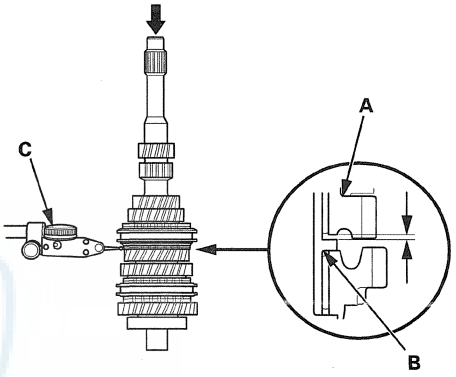
3. Measure the thickness of 3rd gear.
   - If the thickness is less than the service limit, replace 3rd gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and the 3rd/4th synchro sleeve as a set.

   Standard: 27.02—27.07 mm (1.0638—1.0657 in)
   Service Limit: 26.95 mm (1.0610 in)



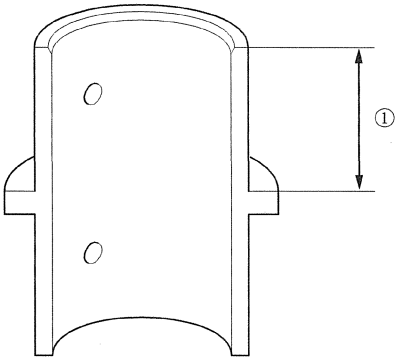
4. Measure the clearance between 4th gear (A) and the 4th/5th gear distance collar (B) with a dial indicator (C).
   - If the clearance exceeds the service limit, go to step 5.
   - If the clearance is within the service limit, go to step 7.

   Standard: 0.06—0.19 mm (0.0024—0.0075 in)
   Service Limit: 0.28 mm (0.0110 in)



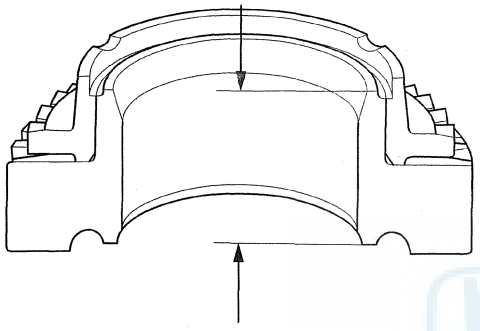
5. Measure distance ① of the 4th/5th gear distance collar as shown.
   - If the length ① is not within the standard, replace the 4th/5th gear distance collar.
   - If the length ① is within the standard, go to step 6.

   Standard: 22.53—22.56 mm (0.8870—0.8882 in)



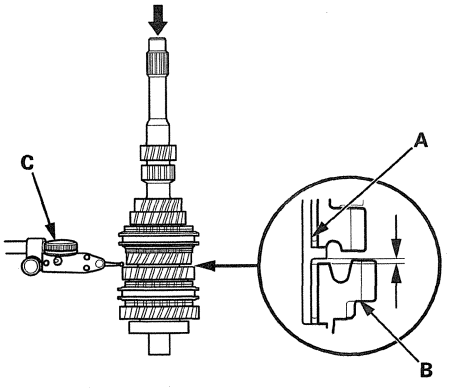
6. Measure the thickness of 4th gear.
   - If the thickness is less than the service limit, replace 4th gear.
   - If the thickness is within the service limit, replace the 3rd/4th synchro hub and the 3rd/4th synchro sleeve as a set.

   Standard: 25.52—25.57 mm (1.0047—1.0067 in)
   Service Limit: 25.45 mm (1.0020 in)



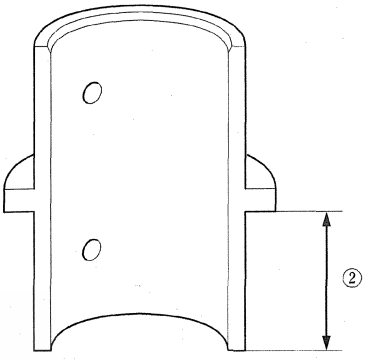
7. Measure the clearance between the 4th/5th gear distance collar (A) and 5th gear (B) with a dial indicator (C).
   - If the clearance exceeds the service limit, go to step 8.
   - If the clearance is within the service limit, go to step 10.

   Standard: 0.06—0.14 mm (0.0024—0.0055 in)
   Service Limit: 0.23 mm (0.0091 in)



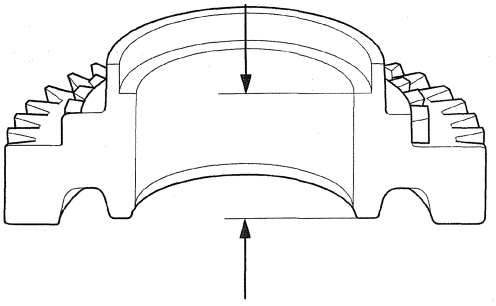
8. Measure the length ② of the 4th/5th gear distance collar as shown.
   - If the length ② is not within the standard, replace the 4th/5th gear distance collar.
   - If the length ② is within the standard, go to step 9.

   Standard: 22.53—22.56 mm (0.8870—0.8882 in)



9. Measure the thickness of 5th gear.
   - If the thickness is less than the service limit, replace 5th gear.
   - If the thickness is within the service limit, replace the 5th/6th synchro hub and the 5th/6th synchro sleeve as a set.

   Standard: 22.42—22.47 mm (0.8827—0.8846 in)
   Service Limit: 22.35 mm (0.8799 in)

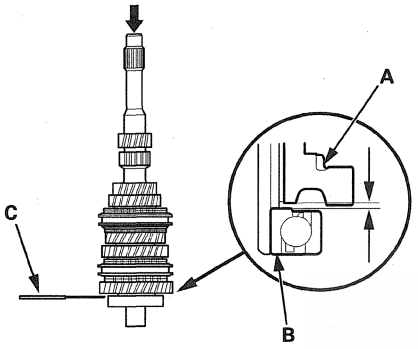


(cont'd)

Mainshaft Assembly Clearance Inspection (cont'd)

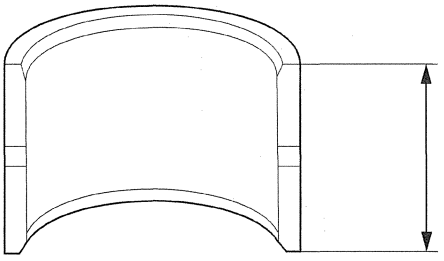
10. Measure the clearance between 6th gear (A) and the angular ball bearing inner race (B) with a feeler gauge (C). If the clearance exceeds the service limit, go to step 11.

    Standard: 0.06—0.16 mm (0.003—0.006 in)
    Service Limit: 0.25 mm (0.009 in)



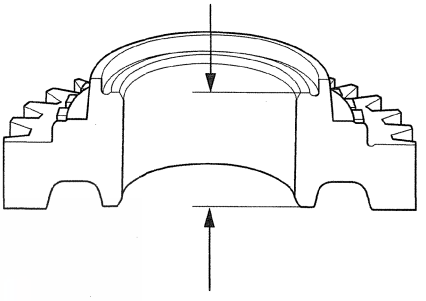
11. Measure the length of the 6th gear distance collar.
    - If the length is not within the standard, replace the 6th gear distance collar.
    - If the length is not within the standard, go to step 12.

    Standard: 24.03—24.08 mm (0.9461—0.9480 in)



12. Measure the thickness of 6th gear.
    - If the thickness is less than the service limit, replace 6th gear.
    - If the thickness is within the service limit, replace the 5th/6th synchro hub and the 5th/6th synchro sleeve as a set.

    Standard: 23.92—23.97 mm (0.9417—0.9437 in)
    Service Limit: 23.85 mm (0.9390 in)

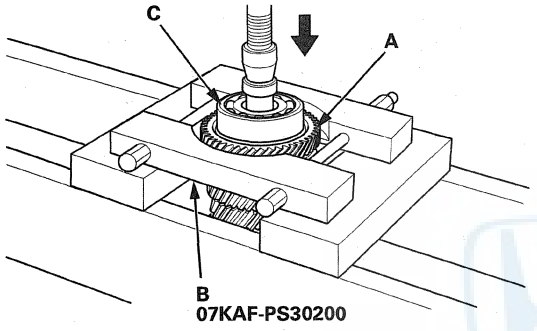


Mainshaft Disassembly

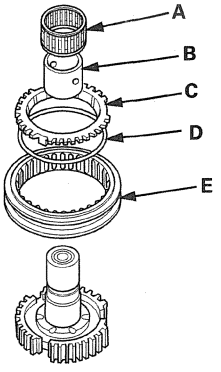
Special Tools Required
Bearing Separator 07KAF-PS30200

NOTE: Refer to the Exploded View in the Mainshaft Reassembly, as needed, when removing components pressed onto the mainshaft (see page 13-72).

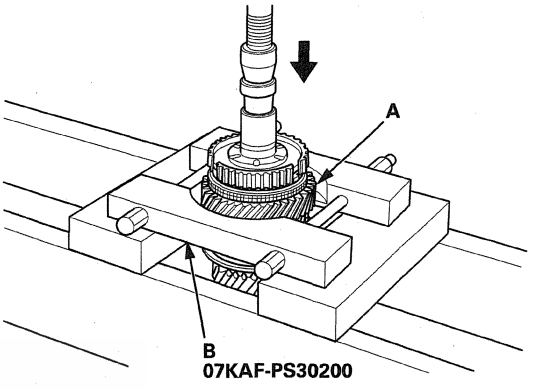
1. Support 6th gear (A) on bearing separator (B), and press the mainshaft out of the angular ball bearing (C) and 6th gear.



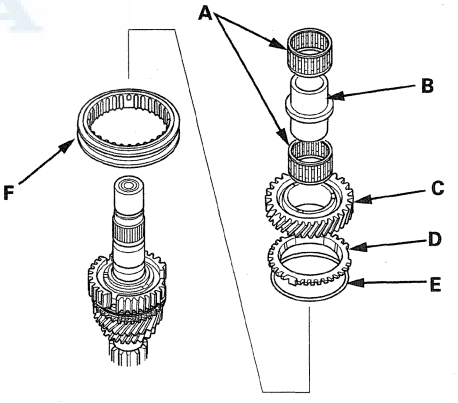
2. Remove the needle bearing (A), the 6th gear distance collar (B), the synchro ring (C), the synchro spring (D), and the 5th/6th synchro sleeve (E).



3. Support 5th gear (A) on bearing separator (B), and press the mainshaft out of the 5th/6th synchro hub, synchro spring, the synchro ring, and 5th gear.



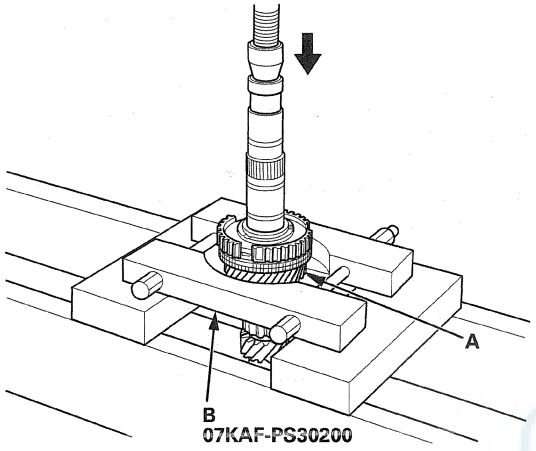
4. Remove the needle bearings (A), the 4th/5th gear distance collar (B), the 4th gear (C), the synchro ring (D), the synchro spring (E), and the 3rd/4th synchro sleeve (F).



(cont'd)

Mainshaft Disassembly (cont'd)

5. Support 3rd gear (A) on bearing separator (B), and press the mainshaft out of the 3rd/4th synchro hub, the synchro spring, the synchro ring, 3rd gear, and the needle bearing.



Mainshaft Inspection

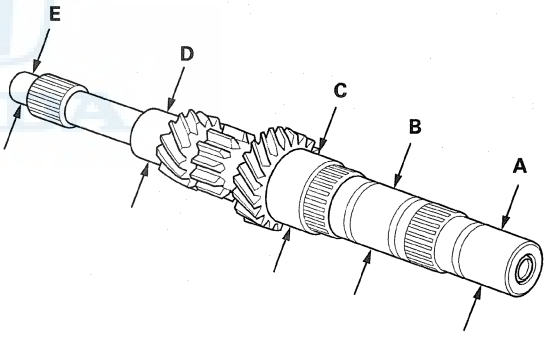
1. Inspect the oil passage, gear, and bearing contact areas for wear and damage, then measure the mainshaft at points A, B, C, D, and E. If any part of the mainshaft is less than the service limit, replace it.

Standard:

A Ball Bearing Contact Area (Transmission Housing Side): 24.987—25.000 mm (0.98374—0.98425 in)
B 4th/5th Gear Distance Collar Contact Area: 28.992—29.005 mm (1.14142—1.14193 in)
C Needle Bearing Contact Area: 34.984—35.000 mm (1.37732—1.37795 in)
D Ball Bearing Contact Area (Clutch Housing Side): 25.977—25.990 mm (1.02271—1.02323 in)
E Pilot Bushing Contact Area: 18.800—18.850 mm (0.74016—0.74212 in)

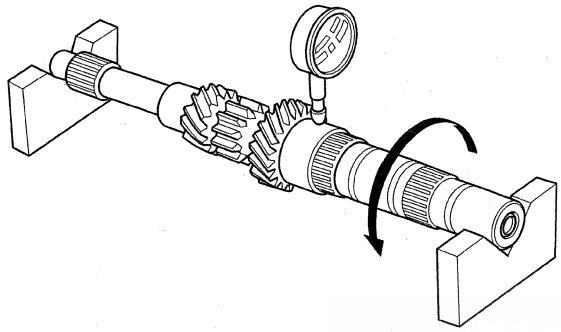
Service Limit:

A: 24.930 mm (0.98149 in)
B: 28.930 mm (1.13897 in)
C: 34.930 mm (1.37519 in)
D: 25.920 mm (1.02047 in)
E: 18.750 mm (0.73819 in)



2. Inspect the runout by supporting both ends of the mainshaft. Then rotate the mainshaft two complete turns while measuring with a dial gauge. If the runout exceeds the service limit, replace the mainshaft.

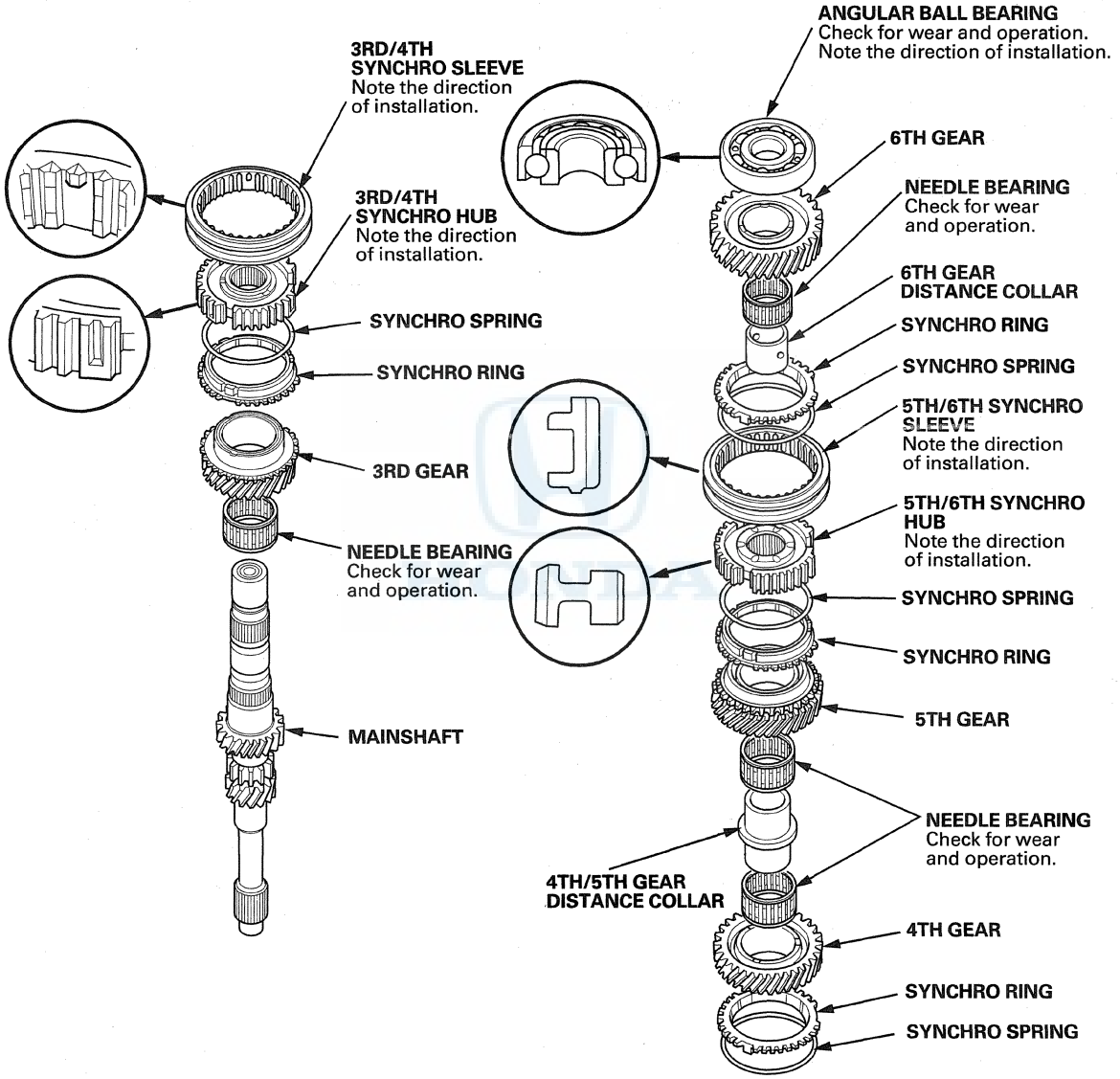
Standard: 0.02 mm (0.0008 in) max.
Service Limit: 0.05 mm (0.0020 in)



HONDA

Mainshaft Reassembly

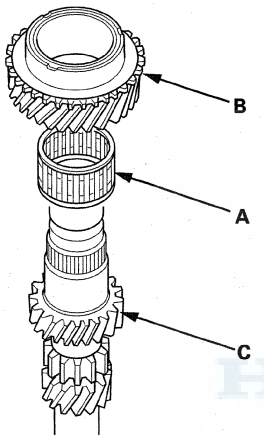
Exploded View



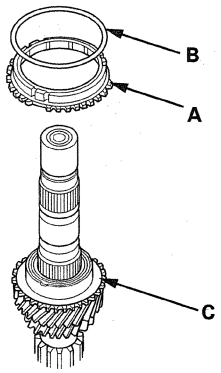
Special Tools Required
- Driver Handle, 40 mm I.D. 07746-0030100
- Attachment, 25 mm I.D. 07746-0030200
- Bearing Driver Attachment, 30 mm 07746-0030300

NOTE: Refer to the Exploded View, as needed, during this procedure.

1. Clean all the parts in solvent, dry them, and apply MTF to all contact surfaces.
2. Install the needle bearing (A) and 3rd gear (B) onto the mainshaft (C).

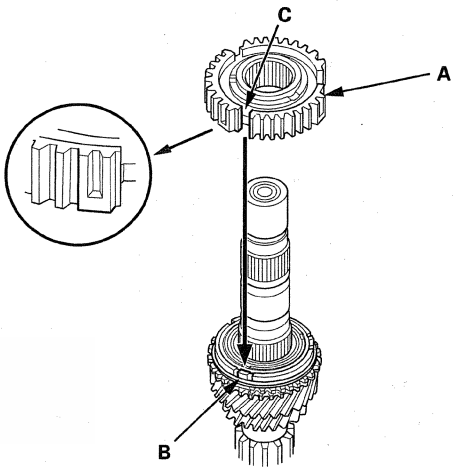


3. Install the synchro ring (A) with the synchro spring (B) onto 3rd gear (C).

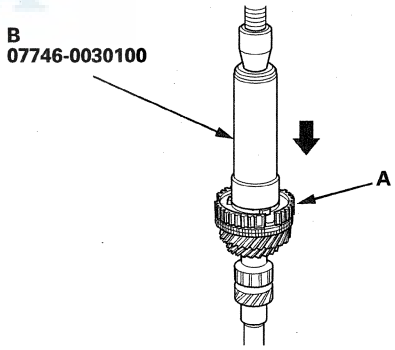


4. Install the 3rd/4th synchro hub (A) by aligning the synchro ring fingers (B) with the grooves (C) in the 3rd/4th synchro hub.

   NOTE: Make sure to install the 3rd/4th synchro hub in the direction shown.



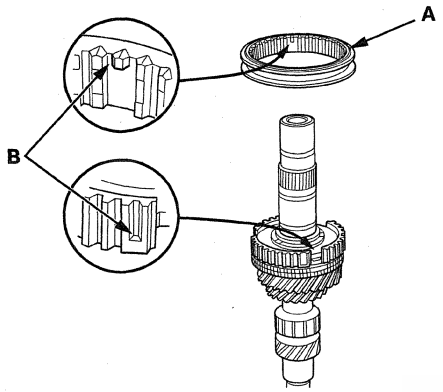
5. Press on the 3rd/4th synchro hub (A) using the 40 mm driver handle (B).



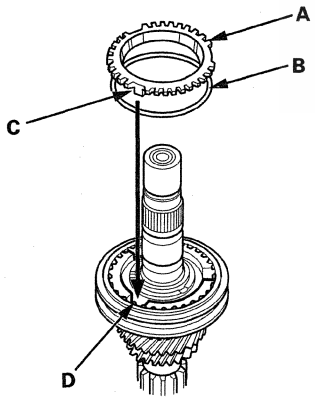
(cont'd)

Mainshaft Reassembly (cont'd)

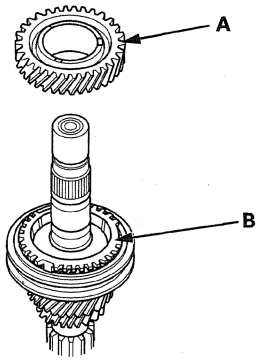
6. Install the 3rd/4th synchro sleeve (A) by aligning the stops (B) of the 3rd/4th synchro sleeve and the 3rd/4th synchro hub. After installation, check the operation of the 3rd/4th synchro hub set (see page 13-85).



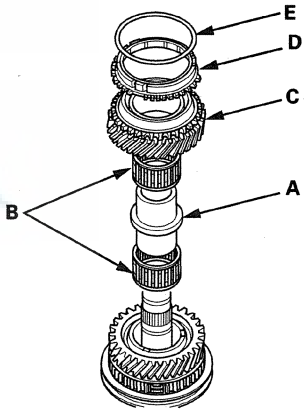
7. Install the synchro ring (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the grooves (D) in the 3rd/4th synchro hub.



8. Install 4th gear (A) onto the synchro ring (B).

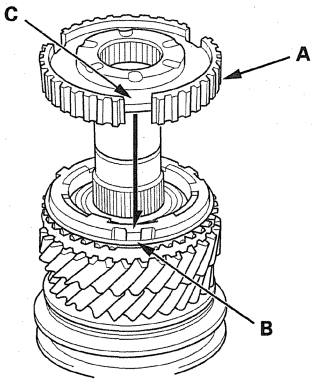


9. Install the 4th/5th gear distance collar (A) with the needle bearings (B) and 5th gear (C).

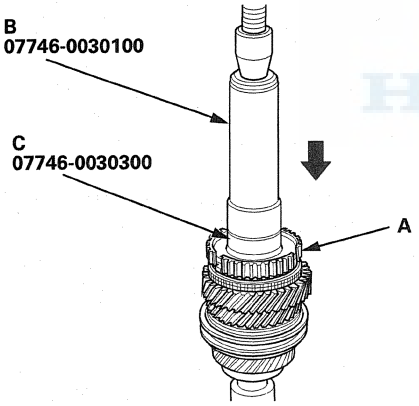


10. Install the synchro ring (D) with the synchro spring (E) onto 5th gear.

11. Install the 5th/6th synchro hub (A) by aligning the synchro ring fingers (B) with the grooves (C) in the 5th/6th synchro hub.

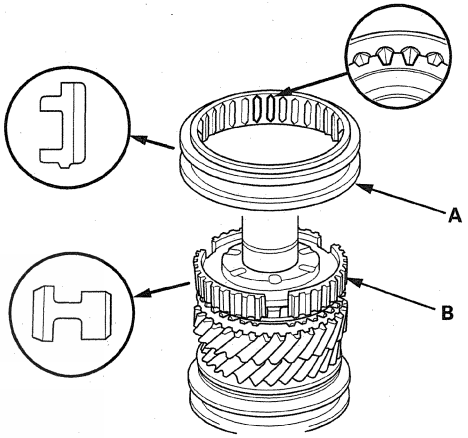


12. Press on the 5th/6th synchro hub (A) using the 40 mm driver handle (B) and the 30 mm bearing driver attachment (C).

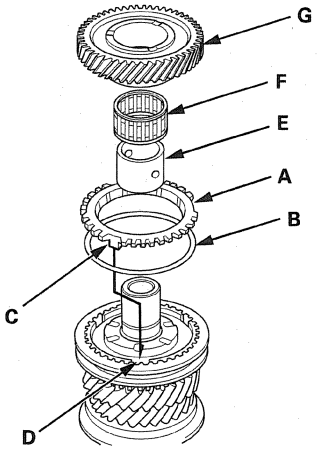


13. Install the 5th/6th synchro sleeve (A) by aligning the slots of the 5th/6th synchro sleeve and the 5th/6th synchro hub (B). After installation, check the operation of the 5th/6th synchro hub set (see page 13-85).

NOTE: Make sure to align the slots in the 5th/6th synchro hub as shown.



14. Install the synchro ring (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the grooves (D) in the 5th/6th synchro hub.



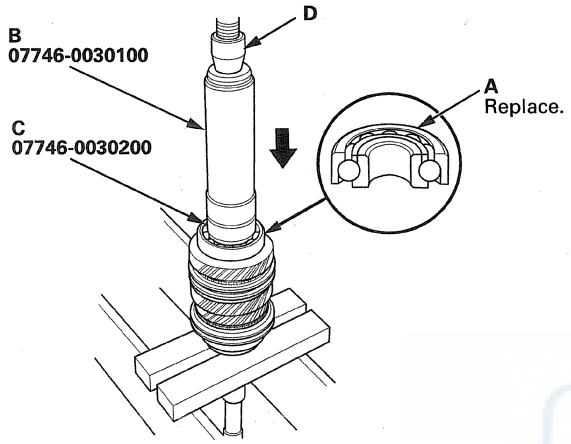
15. Install the 6th gear distance collar (E) with the needle bearing (F) and 6th gear (G).

(cont'd)

Mainshaft Reassembly (cont'd)

16. Press on a new angular ball bearing (A) using the 40 mm driver handle (B), the 25 mm attachment (C), and a press (D).

    NOTE: Make sure the angular ball bearing is installed in the correct direction.

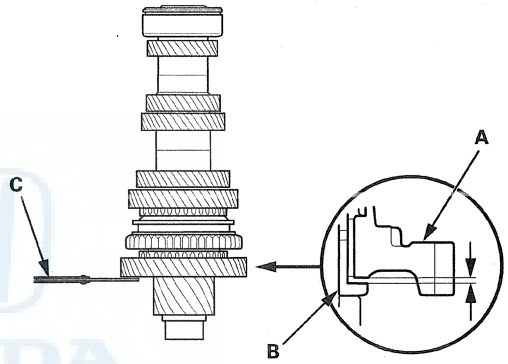


Countershaft Assembly Clearance Inspection

NOTE: Before inspection, make sure the special bolt is tightened to the specified torque (see step 20 on page 13-85).

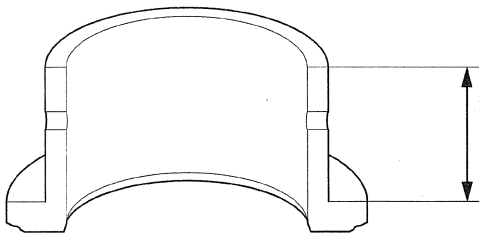
1. Measure the clearance between 1st gear (A) and the 1st gear distance collar (B) with a feeler gauge (C).
   - If the clearance exceeds the service limit, go to step 2.
   - If the clearance is within the service limit, go to step 4.

   Standard: 0.06—0.21 mm (0.003—0.008 in)
   Service Limit: 0.25 mm (0.009 in)



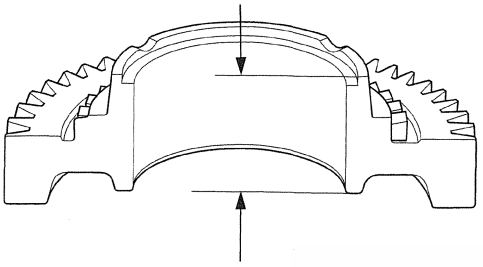
2. Measure the length of the 1st gear distance collar as shown.
   - If the length is not within the standard, replace the 1st gear distance collar.
   - If the length is within the standard, go to step 3.

   Standard: 26.53—26.58 mm (1.0445—1.0465 in)



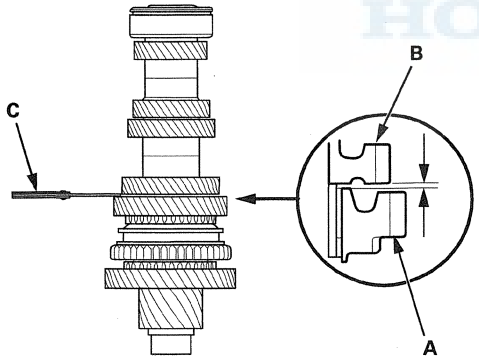
3. Measure the thickness of 1st gear.
   - If the thickness is less than the service limit, replace 1st gear.
   - If the thickness is within the service limit, replace the 1st/2nd synchro hub and reverse gear as a set.

   Standard: 27.42—27.47 mm (1.0795—1.0815 in)
   Service Limit: 27.35 mm (1.0768 in)



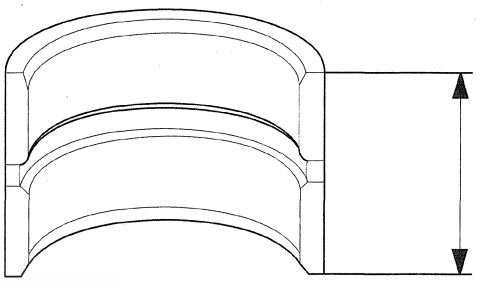
4. Measure the clearance between 2nd gear (A) and 3rd gear (B) with a feeler gauge (C). If the clearance is more than the service limit, go to step 5.

   Standard: 0.06—0.14 mm (0.003—0.005 in)
   Service Limit: 0.23 mm (0.009 in)



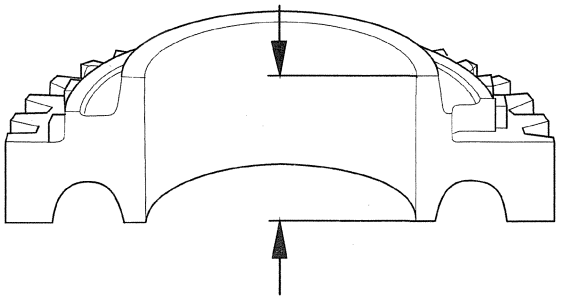
5. Measure the length of the 2nd gear distance collar.
   - If the length is not within the standard, replace the 2nd gear distance collar.
   - If the length is within the standard, go to step 6.

   Standard: 26.53—26.56 mm (1.0445—1.0457 in)



6. Measure the thickness of 2nd gear.
   - If the thickness is less than the service limit, replace 2nd gear.
   - If the thickness is within the service limit, replace the 1st/2nd synchro hub and reverse gear as a set.

   Standard: 26.42—26.47 mm (1.0402—1.0421 in)
   Service Limit: 26.35 mm (1.0374 in)

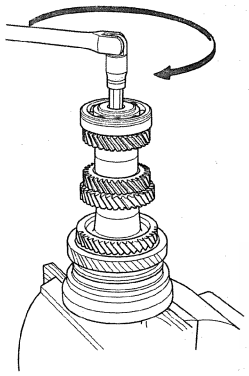


Countershaft Disassembly

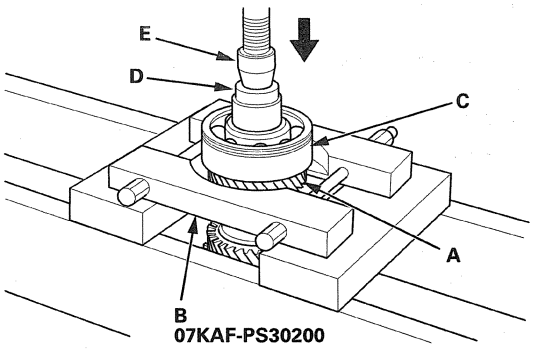
Special Tools Required
Bearing Separator 07KAF-PS30200

NOTE: Refer to the Exploded View in the countershaft reassembly, as needed, when removing components pressed onto the countershaft (see page 13-80).

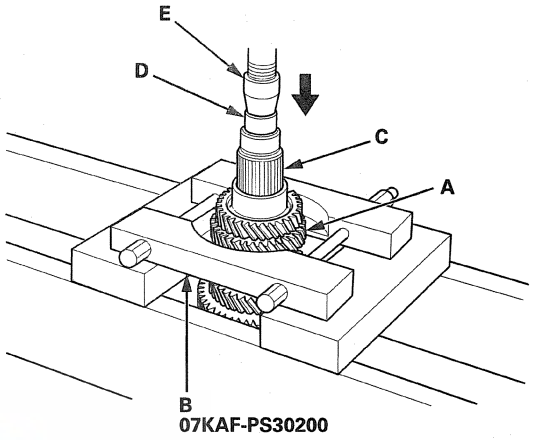
1. Securely clamp the countershaft assembly in a bench vise with wood blocks.



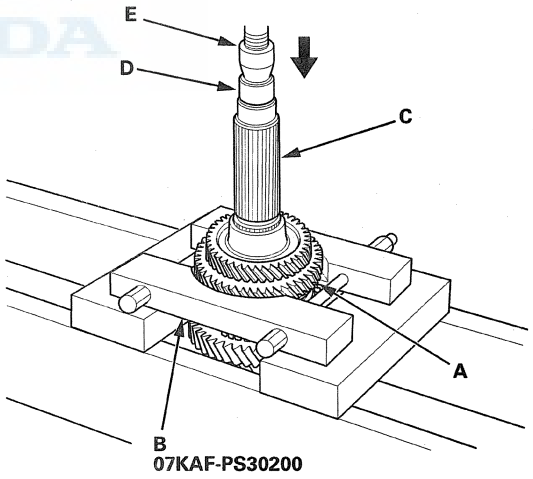
2. Remove the special bolt (left-hand threads).
3. Support 6th gear (A) on bearing separator (B), and press the countershaft out of the ball bearing (C), the 32 mm shim, and 6th gear using an attachment (D) and a press (E).



4. Support 4th gear (A) on bearing separator (B), and press the countershaft (C) out of 4th gear and 5th gear using an attachment (D) and a press (E).

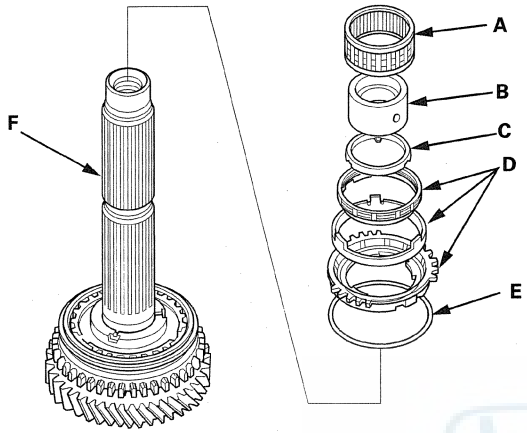


5. Support 2nd gear (A) on bearing separator (B), and press the countershaft (C) out of 2nd gear and 3rd gear using an attachment (D) and a press (E).

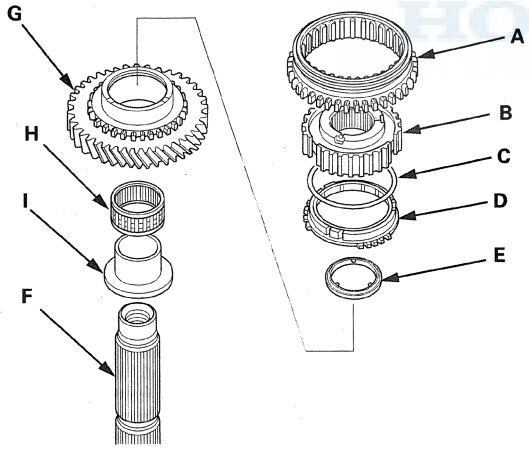


Countershaft Inspection

6. Remove the needle bearing (A), the 2nd gear distance collar (B), the friction damper (C), the double cone synchro assembly (D), and the synchro spring (E) from the countershaft (F).



7. Remove the reverse gear (A), the 1st/2nd synchro hub (B), the synchro spring (C), the synchro ring (D), and the friction damper (E) from the countershaft (F).

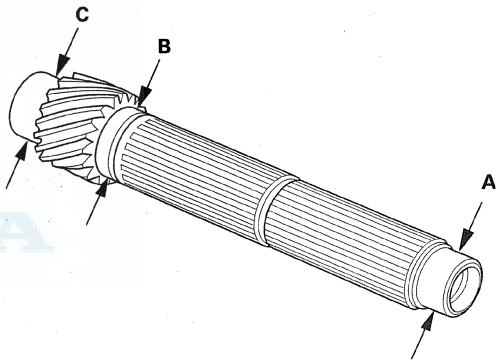


8. Remove 1st gear (G), the needle bearing (H), and the 1st gear distance collar (I) from the countershaft.

1. Inspect the oil passage, gear and bearing contact areas for wear and damage, then measure the countershaft at points A, B, and C. If any part of the countershaft is less than the service limit, replace it.

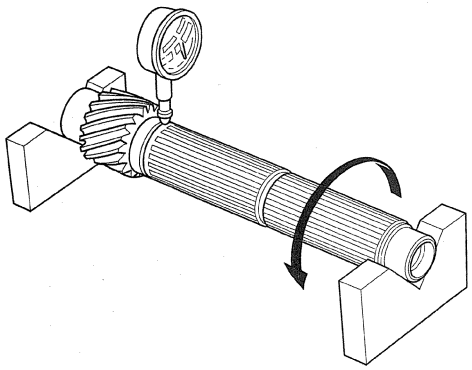
Standard:
A Ball Bearing Contact Area (Transmission Housing Side): 26.020—26.033 mm (1.02441—1.02492 in)
B 1st Gear Distance Collar Contact Area: 38.987—39.000 mm (1.53492—1.53543 in)
C Needle Bearing Contact Area (Clutch Housing Side): 34.000—34.015 mm (1.33858—1.33917 in)

Service Limit:
A: 25.970 mm (1.02244 in)
B: 38.940 mm (1.53307 in)
C: 33.950 mm (1.33661 in)



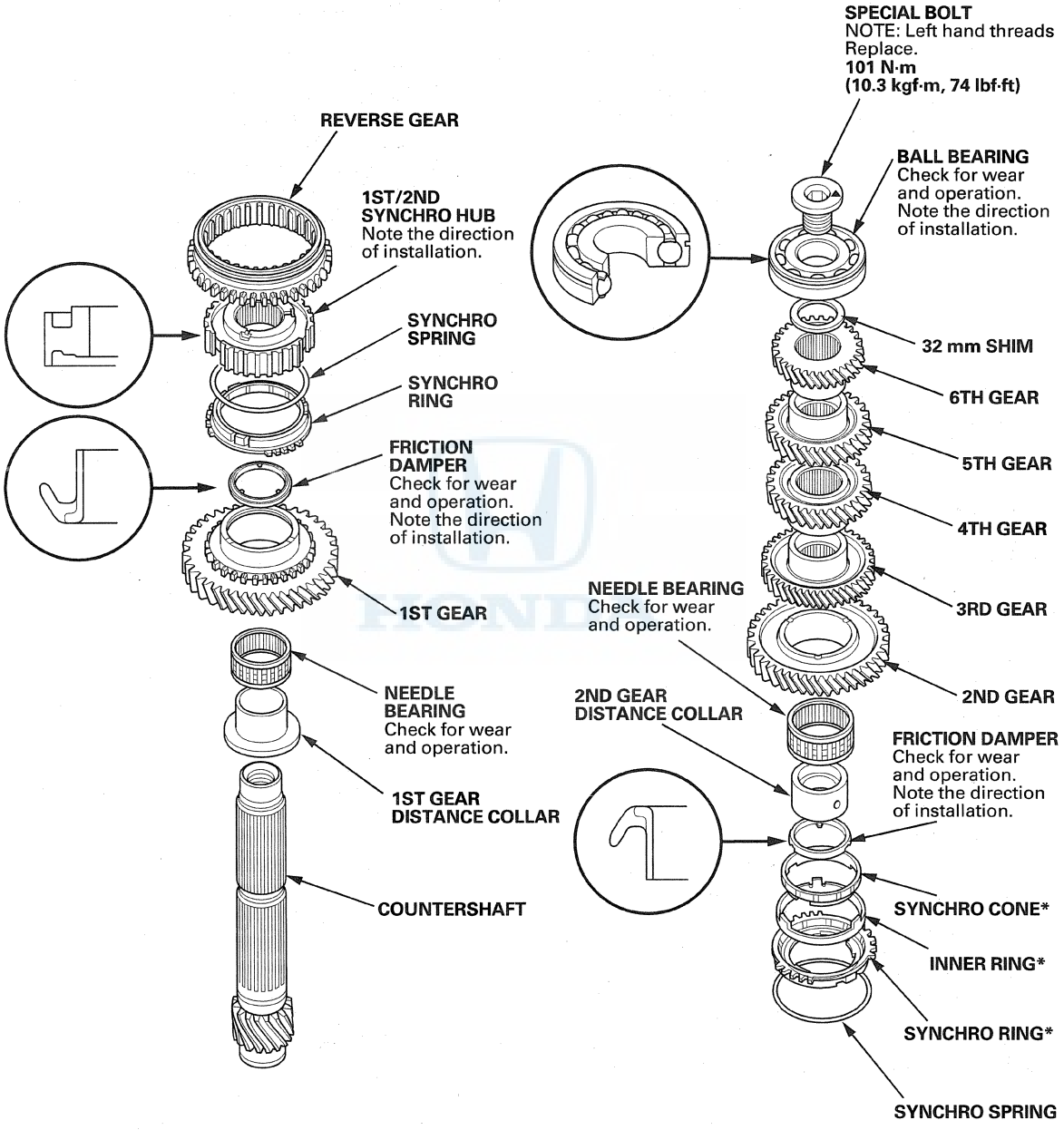
2. Inspect the runout by supporting both ends of the countershaft. Then rotate the countershaft two complete turns while measuring with a dial gauge. If the runout exceeds the service limit, replace the countershaft.

Standard: 0.02 mm (0.0008 in) max.
Service Limit: 0.05 mm (0.0020 in)



Countershaft Reassembly

Exploded View

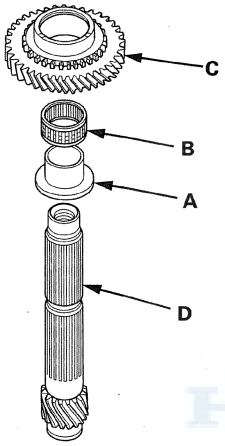


*: The components of the double cone synchro assembly.

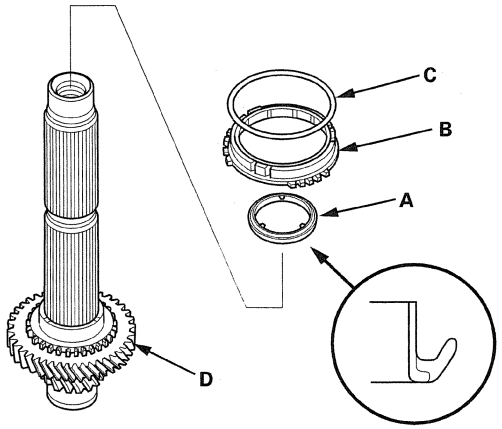
Special Tools Required
- Driver Handle, 40 mm I.D. 07746-0030100
- Bearing Driver Attachment, 30 mm 07746-0030300

NOTE: Refer to the Exploded View, as needed, during this procedure.

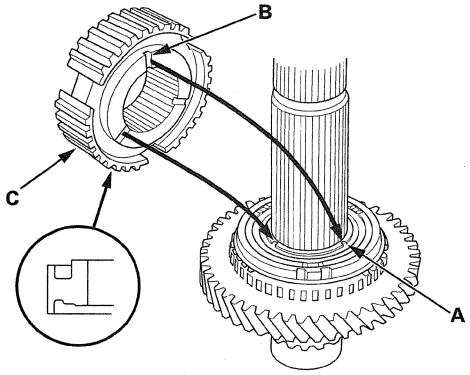
1. Clean all parts in solvent, dry them, and apply MTF to all contact surfaces.
2. Install the 1st gear distance collar (A) with the needle bearing (B) and 1st gear (C) on the countershaft (D).



3. Install the friction damper (A), the synchro ring (B), and the synchro spring (C) on 1st gear (D).

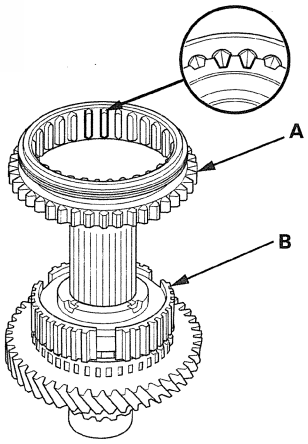


4. Align the fingers (A) on the friction damper with the grooves (B) on the 1st/2nd synchro hub (C), then install the 1st/2nd synchro hub onto the countershaft.



5. Install the reverse gear (A) by aligning the slots of the reverse gear and the 1st/2nd synchro hub (B). After installing, check the operation of the 1st/2nd synchro hub set (see page 13-85).

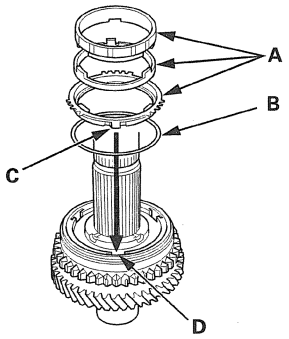
NOTE: Make sure to align the slots in the 1st/2nd synchro hub as shown.



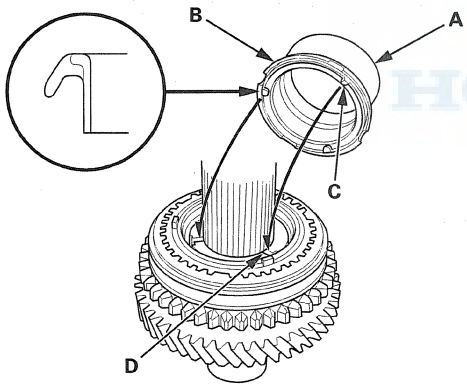
(cont'd)

Countershaft Reassembly (cont'd)

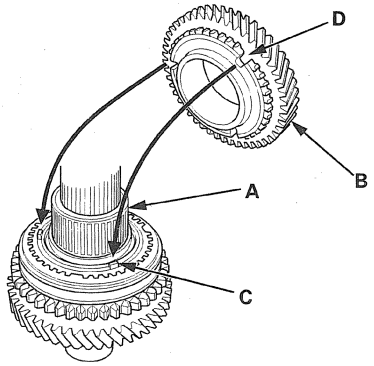
6. Install the double cone synchro assembly (A) with the synchro spring (B) by aligning the synchro ring fingers (C) with the 1st/2nd synchro hub grooves (D).



7. Install the 2nd gear distance collar (A) with the friction damper (B), then align the fingers (C) on the friction damper and the grooves (D) in the 1st/2nd synchro hub.

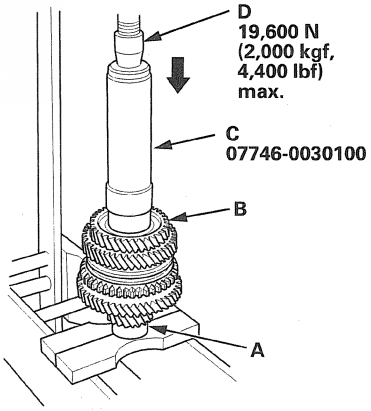


8. Install the needle bearing (A), then install 2nd gear (B) by aligning the synchro cone fingers (C) with the grooves (D) in 2nd gear.



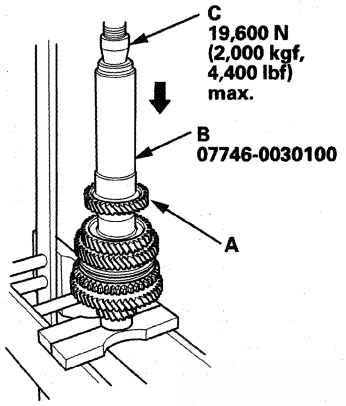
9. Support the countershaft (A) on steel blocks, then press on 3rd gear (B) using the 40 mm driver handle (C) and a press (D).

   NOTE: Do not exceed the maximum pressure.



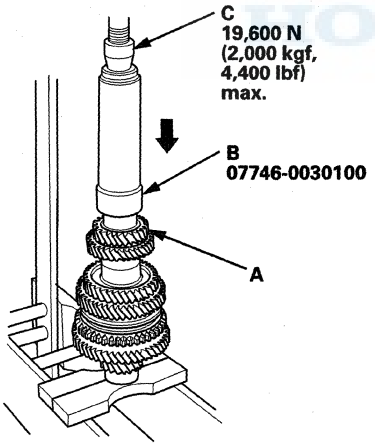
10. Press on 4th gear (A) using the 40 mm driver handle (B) and a press (C).

    NOTE: Do not exceed the maximum pressure.



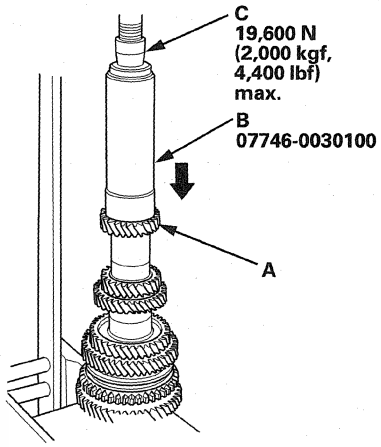
11. Press on 5th gear (A) using the 40 mm driver handle (B) and a press (C).

    NOTE: Do not exceed the maximum pressure.

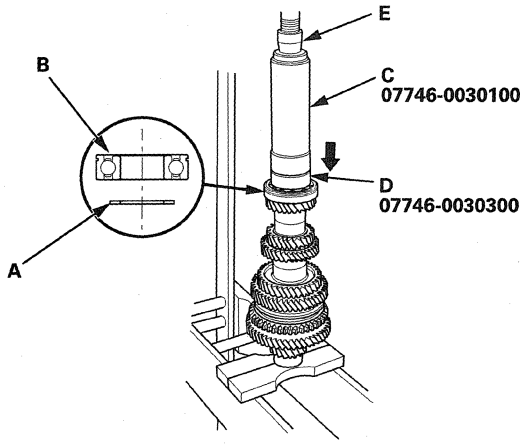


12. Press on 6th gear (A) using the 40 mm driver handle (B) and a press (C).

    NOTE: Do not exceed the maximum pressure.



13. Install the 32 mm shim (A), and temporarily press on the used ball bearing (B) using the 40 mm driver handle (C), the 30 mm bearing driver attachment (D), and a press (E).
    - Use any size of the 32 mm shim, and note size you used. Measurements taken in the following steps will determine the correct shim to use for final assembly.
    - Make sure the ball bearing is installed in the correct direction.

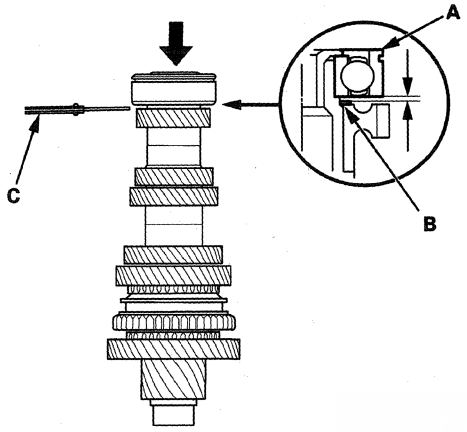


(cont'd)

Countershaft Reassembly (cont'd)

14. Measure the clearance between the bearing (A) and the 32 mm shim (B) with a feeler gauge (C).

Standard: 0.04—0.10 mm (0.002—0.003 in)



15. If the measured clearance in step 14 is not within the standard, select another suitable 32 mm shim from the table, then go to next step to replace the 32 mm shim and the ball bearing with new ones. If the measured clearance in step 14 is within the standard, go to the next step to replace only the ball bearing with a new one.

32 mm Shim

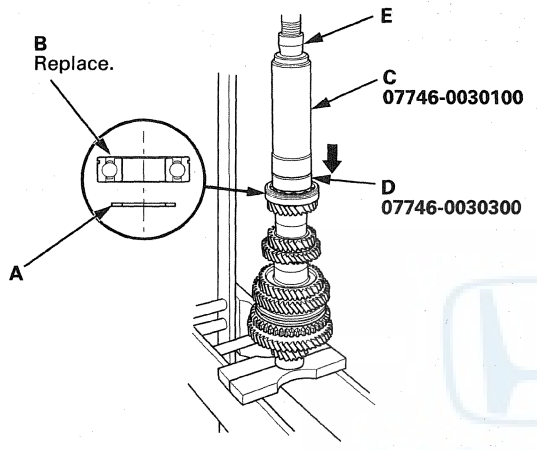
Type	Thickness
A	1.56 mm (0.0614 in)
B	1.60 mm (0.0630 in)
C	1.64 mm (0.0646 in)
D	1.68 mm (0.0661 in)
E	1.72 mm (0.0677 in)
F	1.76 mm (0.0693 in)
G	1.80 mm (0.0709 in)
H	1.84 mm (0.0724 in)
J	1.88 mm (0.0740 in)
K	1.92 mm (0.0756 in)
L	1.96 mm (0.0772 in)
M	2.00 mm (0.0787 in)
N	2.04 mm (0.0803 in)
P	2.08 mm (0.0819 in)
Q	2.12 mm (0.0835 in)
R	2.16 mm (0.0850 in)
S	2.20 mm (0.0866 in)
T	2.24 mm (0.0882 in)
U	2.28 mm (0.0898 in)
V	2.32 mm (0.0913 in)

16. Remove 6th gear with the ball bearing and the 32 mm shim using a press (see step 3 on page 13-78).

17. Repeat step 12 to install 6th gear.

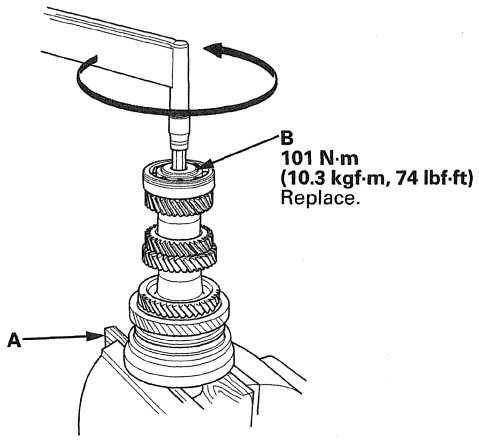
18. Install the correct 32 mm shim (A) and a new ball bearing (B) using the 40 mm driver handle (C), the 30 mm bearing driver attachment (D), and a press (E).

    NOTE:
    - If necessary, replace the 32 mm shim with the correct one selected in step 15.
    - Make sure the ball bearing is installed in the correct direction.



19. Recheck the clearance between the bearing and the 32 mm shim with a feeler gauge.

20. Securely clamp the countershaft assembly in a bench vise with wood blocks (A).



21. Tighten a new special bolt (B) (left-hand threads).

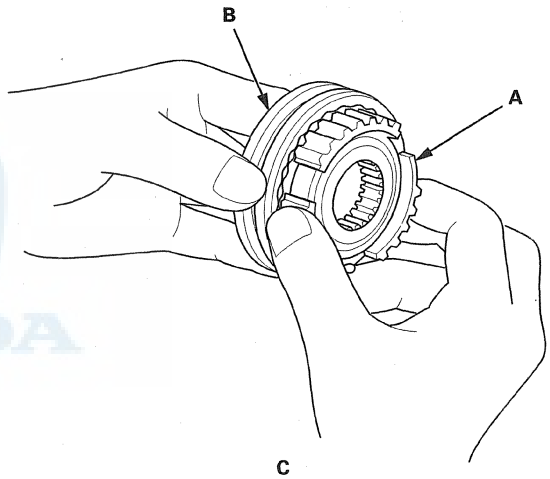
    NOTE: Apply MTF to the bolt threads and flange.

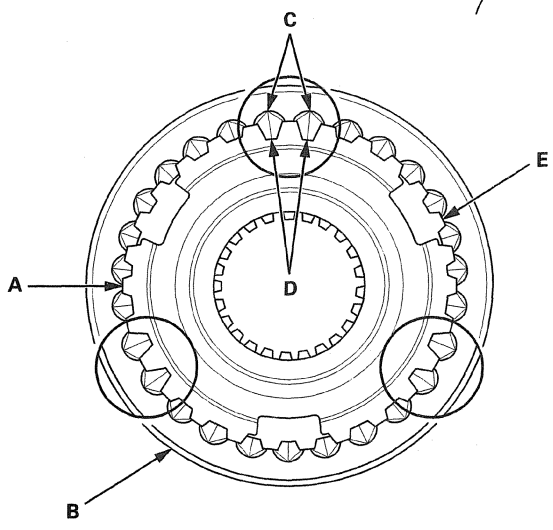
Synchro Sleeve and Hub Inspection and Reassembly

1. Inspect gear teeth on all synchro hubs and synchro sleeves for wear (rounded off corners).

2. Install each synchro hub (A) in its mating synchro sleeve (B), and check for free movement. Make sure to match the three sets of longer teeth (C) (120 degrees apart) on the synchro sleeve with the three sets of deeper grooves (D) in the synchro hub.

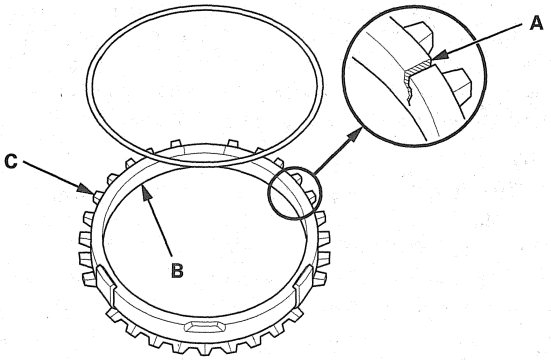
    NOTE:
    - Do not install the synchro sleeve with its longer teeth in the 1st/2nd and 5th/6th synchro hub slots (E) because it will damage the spring ring.
    - If replacement is required, always replace the synchro sleeve and the synchro hub as a set.





Synchro Ring and Gear Inspection

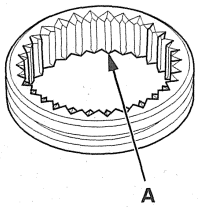
1. Inspect the synchro rings for scoring, cracks, and damage (A).



Example of synchro ring teeth



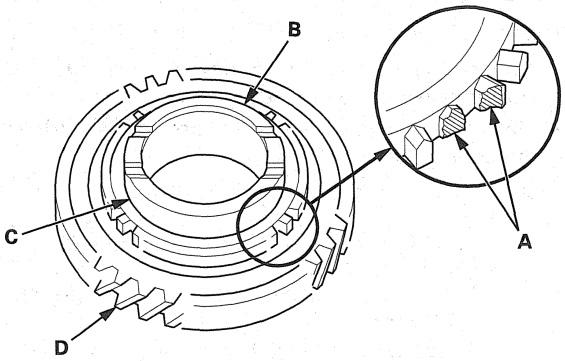
2. Inspect the inside of each synchro ring (B) for wear. Inspect the teeth (C) on each synchro ring for wear (rounded off).
3. Inspect the teeth (A) on each synchro sleeve and the matching teeth on each gear for wear (rounded off).



Example of synchro sleeve teeth and gear teeth



4. Inspect the synchro teeth on gear for scoring, cracks, and damage (A).

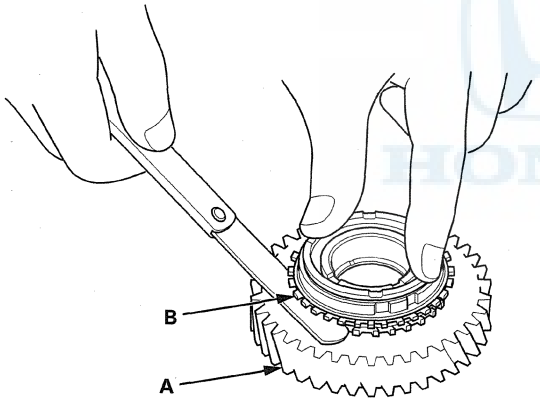


5. Inspect the thrust surface (B) on each gear hub for wear.
6. Inspect the cone surface (C) on each gear hub for wear and roughness.
7. Inspect the teeth on all gears (D) for uneven wear, scoring, and cracks.
8. Coat the cone surface of each gear with MTF, and place its synchro ring on it. Rotate the synchro ring and make sure that it does not slip.

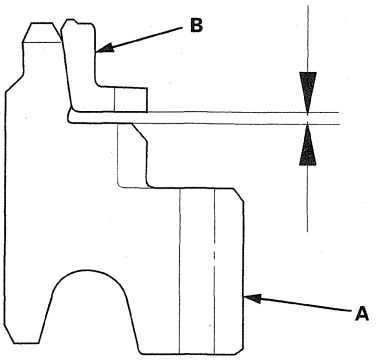
9. Measure the clearance between each gear (A) and its synchro ring (B) all around the gear. Hold the synchro ring against the gear evenly while measuring the clearance. If the clearance is less than the service limit, replace the synchro ring and gear.

Synchro Ring-to-Gear Clearance
Standard: 0.655—1.334 mm (0.025—0.052 in)
Service Limit: 0.4 mm (0.016 in)

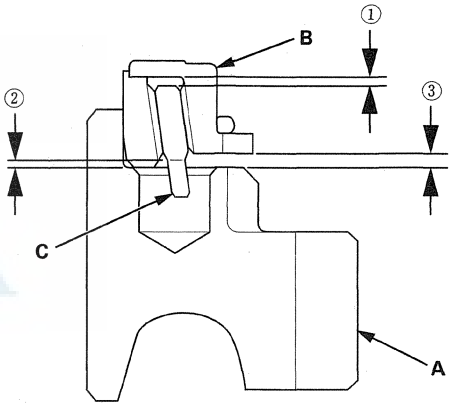
Double Cone Synchro-to-Gear Clearance
Standard:
①: Outer Synchro Ring (B) to Synchro Cone (C) 0.70—1.19 mm (0.028—0.046 in)
②: Synchro Cone (C) to Gear (A) 0.50—1.04 mm (0.002—0.040 in)
③: Outer Synchro Ring (B) to Gear (A) 0.95—1.68 mm (0.038—0.066 in)
Service Limit:
①: 0.3 mm (0.012 in)
②: 0.3 mm (0.012 in)
③: 0.6 mm (0.024 in)



Synchro ring-to-gear



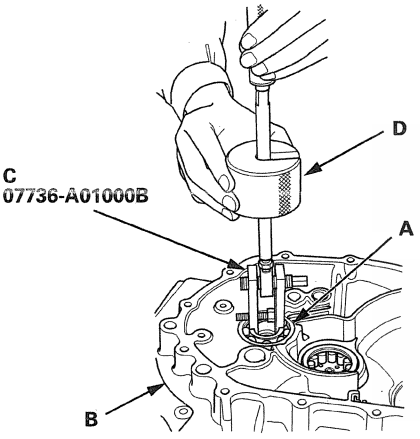
Double cone synchro-to-gear



Mainshaft Bearing and Oil Seal Replacement

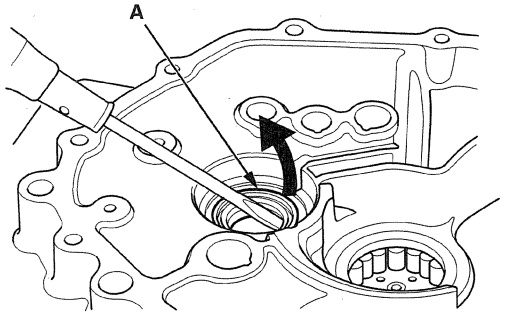
Special Tools Required
- Adjustable Bearing Puller, 25—40 mm 07736-A01000B
- Bearing Driver Attachment, 42 x 47 mm 07746-0010300
- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 3/8''-16 UNF, commercially available

1. Remove the differential assembly.
2. Remove the ball bearing (A) from the clutch housing (B) using the 25—40 mm adjustable bearing puller (C) and a commercially available 3/8''-16 UNF slide hammer (D).

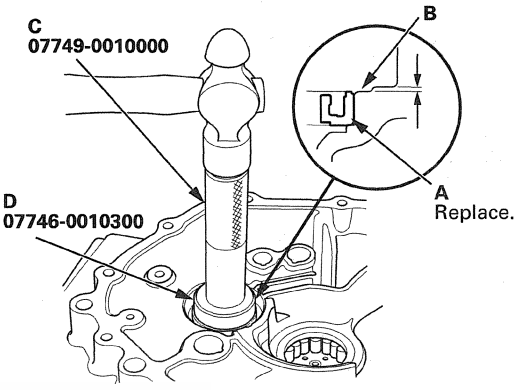


3. Remove the oil seal (A) from the clutch housing.

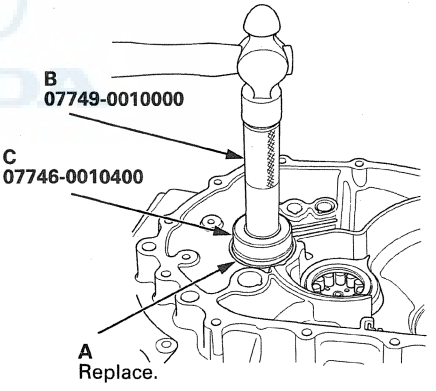
   NOTE: Be careful not to damage the clutch housing when removing the oil seal.



4. Drive in a new oil seal (A) about 0.5—0.9 mm (0.020—0.035 in) below the surface of the clutch housing (B) using the 15 x 135L driver handle (C) and the 42 x 47 mm bearing driver attachment (D).



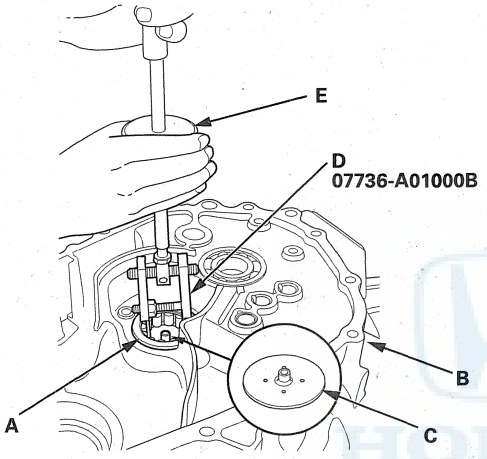
5. Drive in a new ball bearing (A) from the transmission side using the 15 x 135L driver handle (B) and the 52 x 55 mm bearing driver attachment (C).



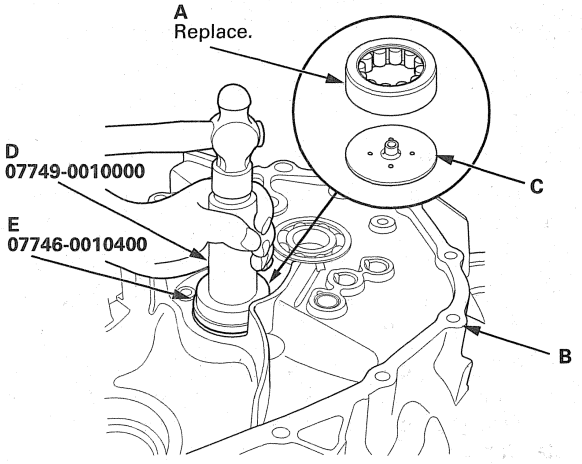
Countershaft Bearing Replacement

Special Tools Required
- Adjustable Bearing Puller, 25—40 mm 07736-A01000B
- Bearing Driver Attachment, 52 x 55 mm 07746-0010400
- Driver Handle, 15 x 135L 07749-0010000
- Slide Hammer 3/8''-16 UNF, commercially available

1. Remove the needle bearing (A) from the clutch housing (B) using the 25—40 mm adjustable bearing puller (D) and a commercially available 3/8''-16 UNF slide hammer (E), then remove oil guide plate C.



2. Position the oil guide plate C and new needle bearing (A) in the bore of the clutch housing (B).

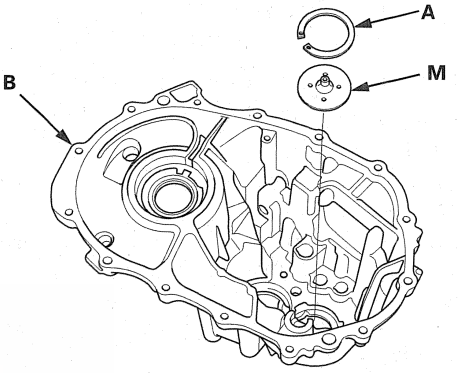


3. Press in the needle bearing using the 15 x 135L driver handle (D) and the 52 x 55 mm bearing driver attachment (E).

Mainshaft Thrust Clearance Adjustment

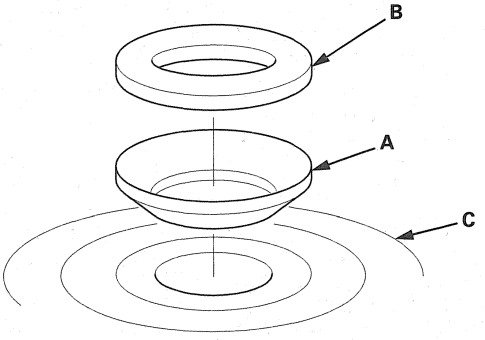
Special Tools Required
- Mainshaft Holder 07GAJ-PG20110
- Collar 07GAJ-PG20120
- Mainshaft Base 07GAJ-PG20130

1. Remove the 52 x 62 mm shim (A) and oil guide plate M from the transmission housing (B).



2. Thoroughly clean the 36 mm spring washer (A) and the 26 mm washer (B) before installing them on the clutch housing side ball bearing (C).

NOTE: Be sure to install the spring washer in the direction shown.



3. Assemble all of the mainshaft components.

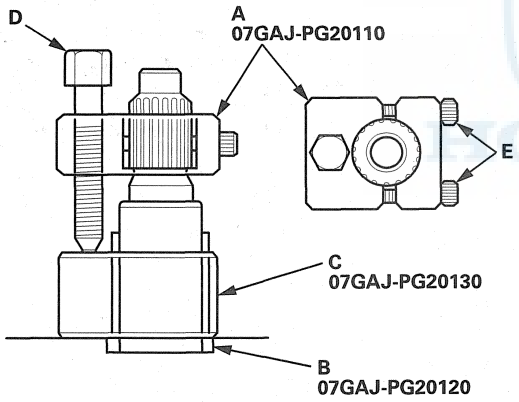
NOTE: Refer to the Exploded View, as needed, during the assembly.

(cont'd)

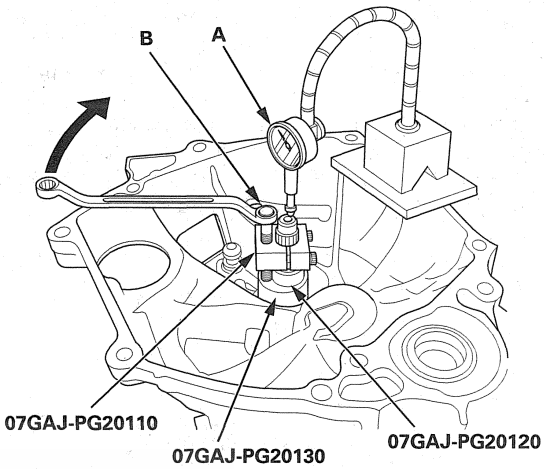
Mainshaft Thrust Clearance Adjustment (cont'd)

4. Install the mainshaft assembly into the clutch housing.
5. Place the transmission housing over the mainshaft and onto the clutch housing.
6. Tighten the clutch and transmission housings with several 8 mm bolts.

   NOTE: It is not necessary to use sealing agent between the housings for this procedure.
7. Lightly tap on the mainshaft with a plastic hammer.
8. Attach the mainshaft holder (A), the collar (B), and the mainshaft base (C) to the mainshaft as follows:
   - Backout the mainshaft holder bolt (D), and loosen the two hex bolts (E).
   - Fit the mainshaft holder over the mainshaft so its lip is toward the transmission.
   - Align the mainshaft holder lip around the groove at the inside of the mainshaft splines, then tighten the hex bolts.



9. Fully seat the mainshaft by tapping its end with the plastic hammer.
10. Thread the mainshaft holder bolt in until it just contacts the wide surface of the mainshaft base.
11. Zero a dial gauge (A) on the end of the mainshaft.



12. Turn the mainshaft holder bolt (B) clockwise; stop turning when the dial gauge has reached its maximum movement. The reading on the dial gauge is the amount of mainshaft thrust clearance.

    NOTE: Do not turn the mainshaft holder bolt more than 60 degrees after the needle of the dial gauge stops moving. Applying more pressure with the mainshaft holder bolt could damage the transmission.
13. If the reading is within the standard, the clearance is correct. If the reading is not within the standard, select the appropriate shim needed from the table, and recheck the thrust clearance.

    Standard: 0.11—0.18 mm (0.0043—0.0071 in)

    (Example)
    Measure reading: 1.93 mm (0.0760 in)

    Subtract the total clearance measurement from the middle of the clearance standard 0.14 mm (0.0055 in).

    1.93 — 0.14 (0.0760 —0.0055 in) = 1.79 mm (0.0705 in)

    Select the shim closest to the amount calculated. For this example, the 1.78 mm (0.0701 in) shim is best.
14. With oil guide plate M and the appropriate size shim installed in the transmission housing, check the thrust clearance again to verify the clearance is within the standard.

Transmission Reassembly

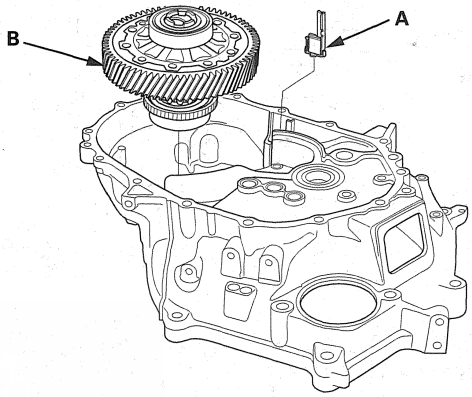
52 x 62 mm Shim

Type	Thickness
A	0.85 mm (0.0335 in)
B	0.88 mm (0.0346 in)
C	0.91 mm (0.0358 in)
D	0.94 mm (0.0370 in)
E	0.97 mm (0.0382 in)
F	1.00 mm (0.0394 in)
G	1.03 mm (0.0406 in)
H	1.06 mm (0.0417 in)
I	1.09 mm (0.0429 in)
J	1.12 mm (0.0441 in)
K	1.15 mm (0.0453 in)
L	1.18 mm (0.0465 in)
M	1.21 mm (0.0476 in)
N	1.24 mm (0.0488 in)
O	1.27 mm (0.0500 in)
P	1.30 mm (0.0512 in)
Q	1.33 mm (0.0524 in)
R	1.36 mm (0.0535 in)
S	1.39 mm (0.0547 in)
T	1.42 mm (0.0559 in)
U	1.45 mm (0.0571 in)
V	1.48 mm (0.0583 in)
W	1.51 mm (0.0594 in)
X	1.54 mm (0.0606 in)
Y	1.57 mm (0.0618 in)
Z	1.60 mm (0.0630 in)
AA	1.63 mm (0.0642 in)
AB	1.66 mm (0.0654 in)
AC	1.69 mm (0.0665 in)
AD	1.72 mm (0.0677 in)
AE	1.75 mm (0.0689 in)
AF	1.78 mm (0.0701 in)
AG	1.81 mm (0.0713 in)
AH	1.84 mm (0.0724 in)
AI	1.87 mm (0.0736 in)
AJ	1.90 mm (0.0748 in)
AK	1.93 mm (0.0760 in)
AL	1.96 mm (0.0772 in)
AM	1.99 mm (0.0783 in)
AN	2.02 mm (0.0795 in)
AO	2.05 mm (0.0807 in)
AP	2.08 mm (0.0819 in)
AQ	2.11 mm (0.0831 in)

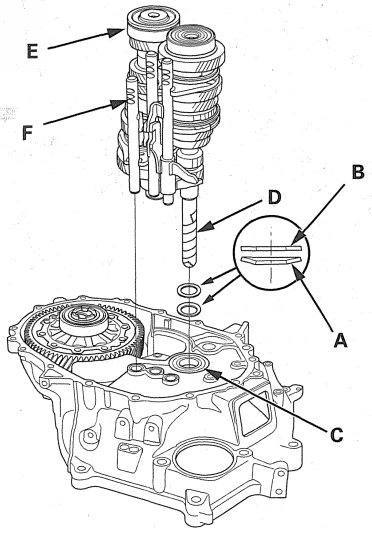
NOTE: Prior to reassembly, clean all the parts in solvent, dry them, and apply MTF to any contact surfaces.

1. Install the magnet (A) and differential assembly (B).

   NOTE: Clean the magnet any time the transmission is disassembled.



2. Install the 36 mm spring washer (A) and the 26 mm washer (B) over the ball bearing (C). Note the installation direction of the spring washer.



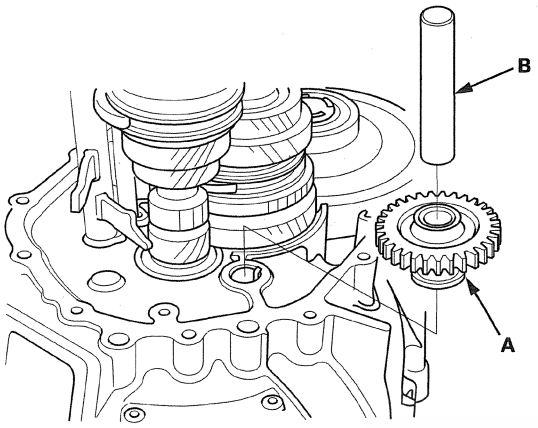
3. Apply vinyl tape to the mainshaft splines (D) to protect the seal. Install the mainshaft and the countershaft (E) with the shift forks (F), as an assembly.

   NOTE: Do not apply tape thick to damage the oil seal.

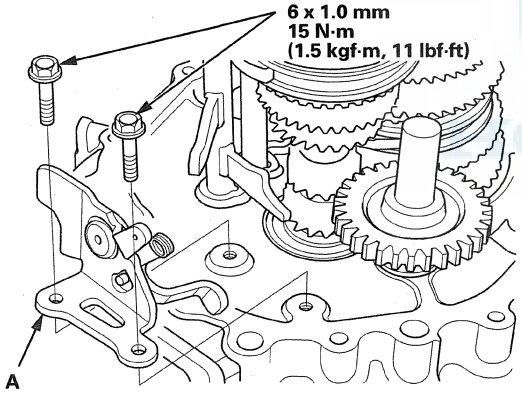
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Transmission Reassembly (cont'd)

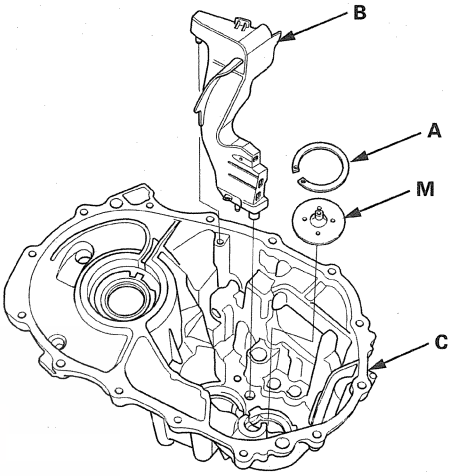
4. Install the reverse idler gear (A) and the reverse gear shaft (B).



5. Install the reverse shift fork (A).

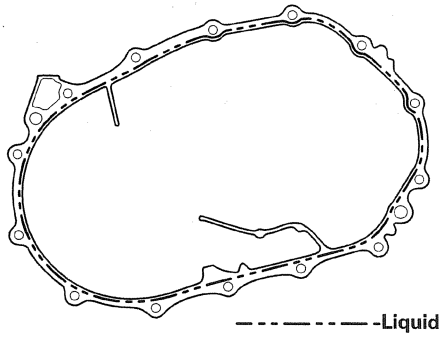


6. Select the proper size 52 x 62 mm shim (A) according to the measurements made during the Mainshaft Thrust Clearance Adjustment (see page 13-89). Install the oil gutter plate (B), oil guide plate M, and the 52 x 62 mm shim into the transmission housing (C).

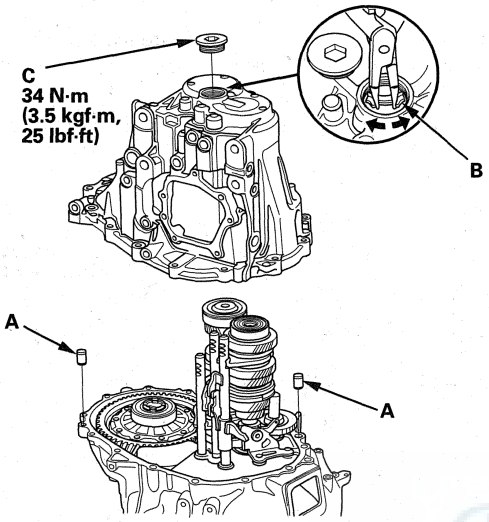


7. Clean any dirt or oil from the transmission housing sealing surface.
8. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009) evenly to the clutch housing mating surface of the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

   NOTE:
   - If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
   - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.



9. Install the two 14 x 20 mm dowel pins (A).

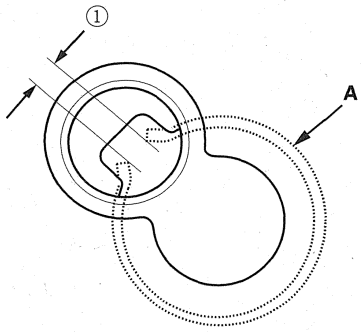


10. Place the transmission housing on the clutch housing, making sure to line up the shafts.
11. While expanding the 69 mm snap ring (B) on the countershaft ball bearing using snap ring pliers, push the transmission housing down to start the countershaft ball bearing through the snap ring. Release the pliers, and push down the housing until it bottoms out and the snap ring snaps in place in countershaft ball bearing snap ring groove.

    NOTE: Install the 32 mm sealing cap (C) after setting in the 69 mm snap ring.

12. Make sure that the 69 mm snap ring (A) is securely seated in the groove of the countershaft bearing.

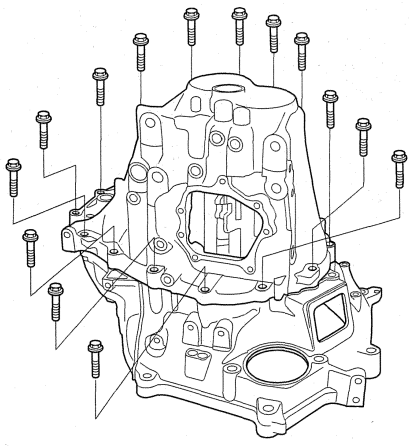
    Dimension ① as installed: 3.3—6.5 mm (0.130—0.256 in)



13. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, 08718-0009, or 08718-0012) to the threads of the 32 mm sealing cap, and install it on the transmission housing. Install the component within 5 minutes of applying the liquid gasket.

    NOTE:
    - If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
    - If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.

14. Install the 8 x 1.25 mm flange bolts finger-tight.

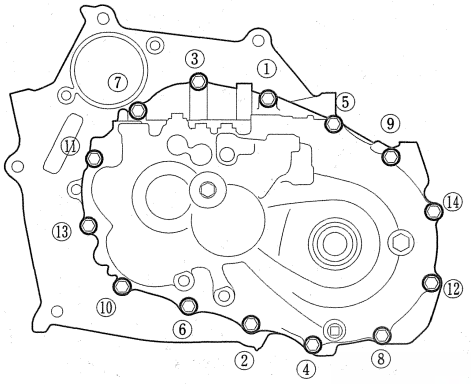


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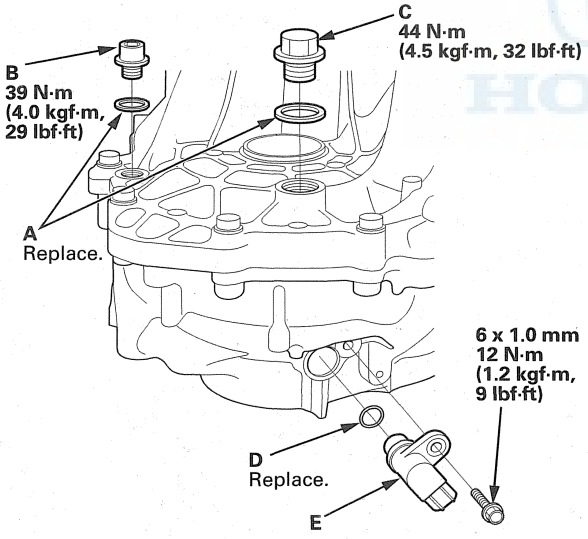
Transmission Reassembly (cont'd)

15. Torque the 8 x 1.25 mm flange bolts in a crisscross pattern in several steps.

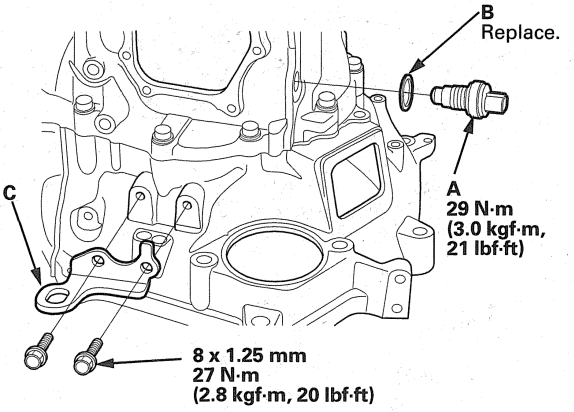
Specified Torque: 8 x 1.25 mm
27 N·m (2.8 kgf·m, 20 lbf·ft)



16. Install new washers (A), the drain plug (B), the filler plug (C), a new O-ring (D), and the output shaft (countershaft) speed sensor (E).



17. Install the back-up light switch (A) with a new 18 mm sealing washer (B) and the transmission hanger (C).

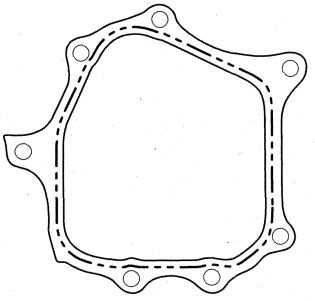


18. Clean any dirt or oil from the change lever assembly sealing surface.

19. Apply liquid gasket (P/N 08717-0004, 08718-0001, 08718-0003, 08718-0004, or 08718-0009) evenly to the transmission housing mating surface of the change lever assembly. Install the component within 5 minutes of applying the liquid gasket.

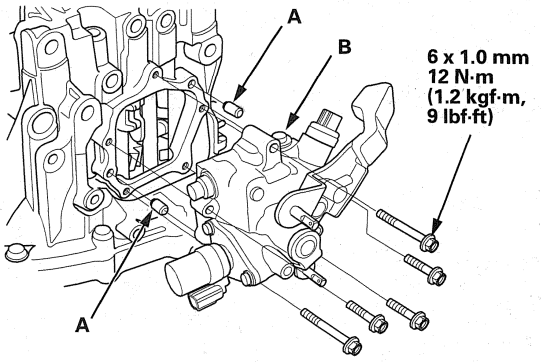
NOTE:

- If you apply liquid gasket P/N 08718-0012, the component must be installed within 4 minutes.
- If too much time has passed after applying the liquid gasket, remove the old liquid gasket and residue, then reapply new liquid gasket.
- Allow it to cure at least 30 minutes after assembly before filling the transmission with MTF.

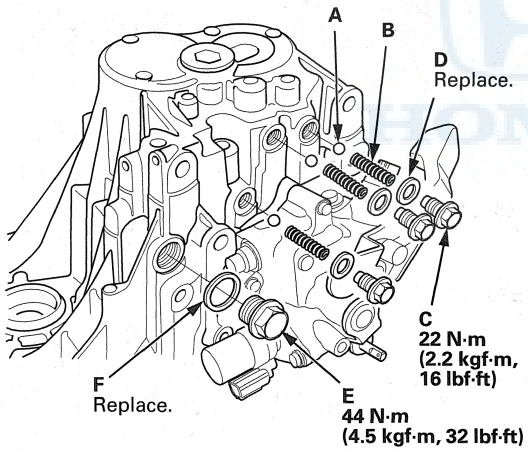


— - - — - - — - - Liquid gasket

20. Install the 8 x 10 mm dowel pins (A) and the change lever assembly (B).



21. Install the steel balls (A), the detent ball springs (B), and the set screws (C) with new 12 mm sealing washers (D).

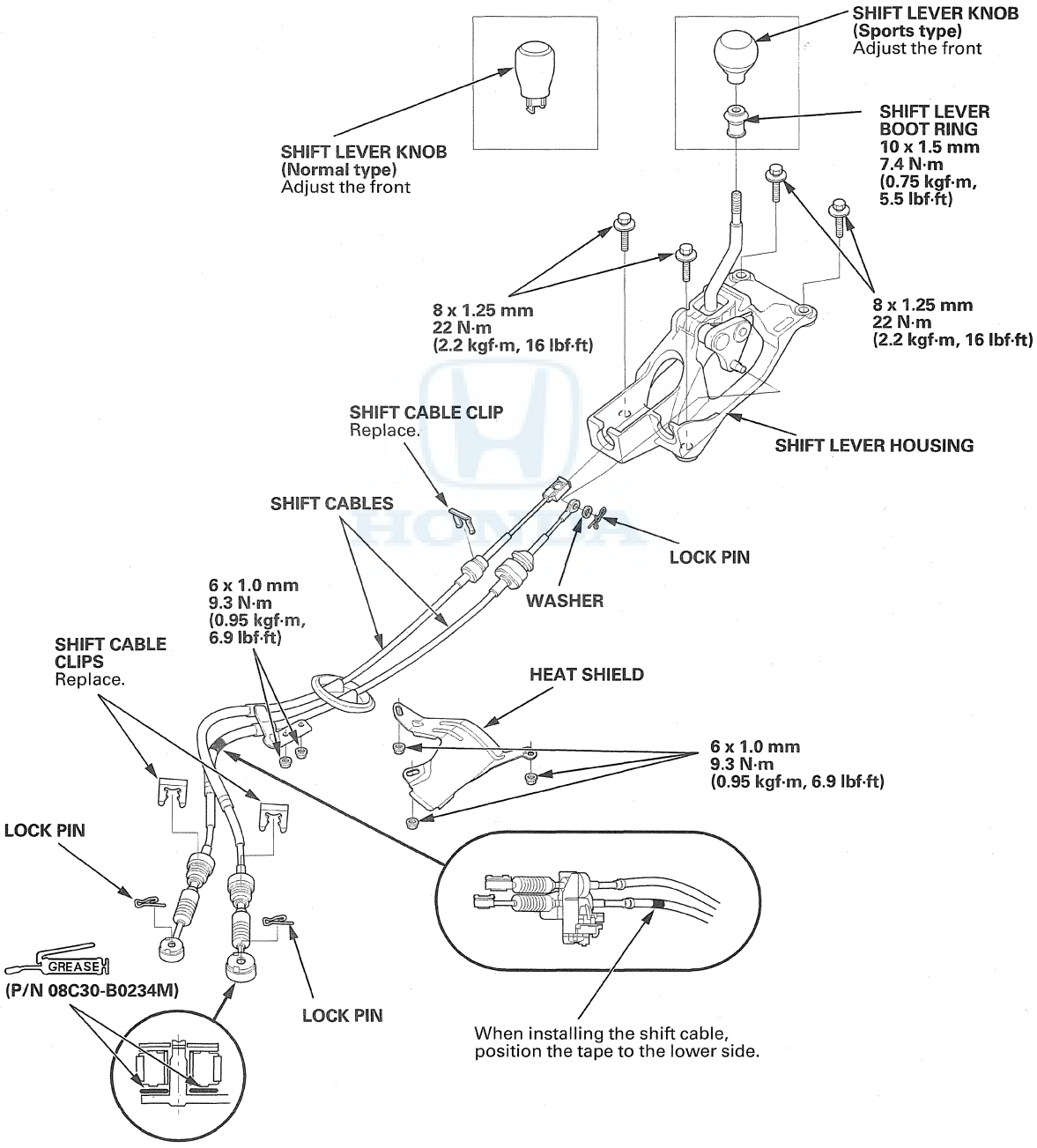


22. Install the 20 mm bolt (E) with a new 20 mm sealing washer (F).

Gearshift Mechanism Replacement

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

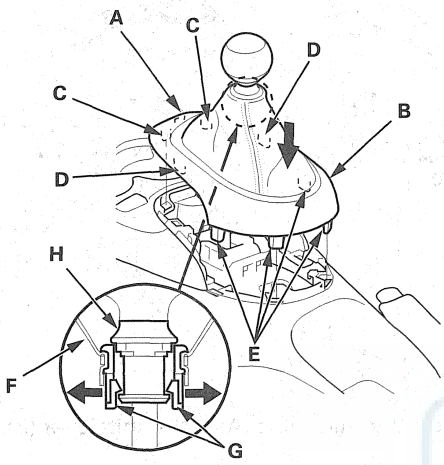
NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.



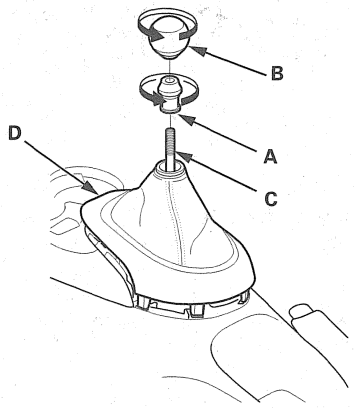
Shift Lever Housing Replacement

NOTE: Take care not to scratch the center console, dashboard, and related parts.

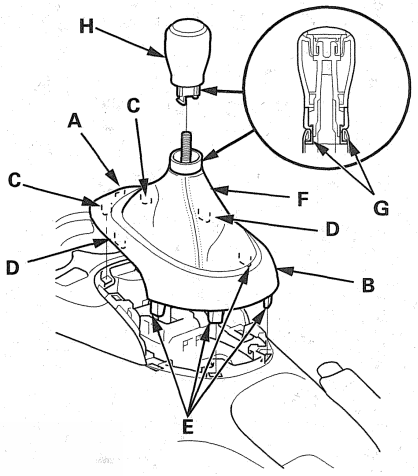
1. Sports type: Insert the appropriate trim tool into the slit (A) of the shift lever trim (B) to detach the clips (C).



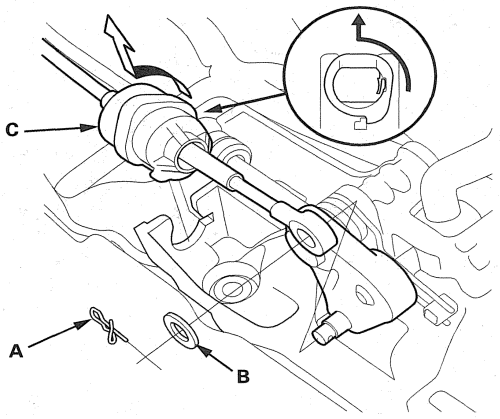
2. Sports type: Gently pry up along the edge of the shift lever trim to detach the hooks (D) and the clips (E), then reverse the shift lever boot (F).
3. Sports type: Release the hooks (G) from the shift lever boot ring (H), then lower the shift lever boot.
4. Sports type: Loosen the shift lever boot ring (A), then remove the shift lever knob (B) and the shift lever boot ring from the shift lever (C).



5. Sports type: Remove the shift lever trim (D).
6. Normal type: Insert the appropriate trim tool into the slit (A) of the shift lever trim (B) to detach the clips (C).



7. Normal type: Gently pry up along the edge of the shift lever trim to detach the hooks (D) and the clips (E).
8. Normal type: Lower the shift lever boot (F) to release the hooks (G) from the boot, then remove the shift lever knob (H).
9. Normal type: Remove the shift lever trim.
10. Remove the center console (see page 20-79).
11. Remove the lock pin (A) and the washer (B).

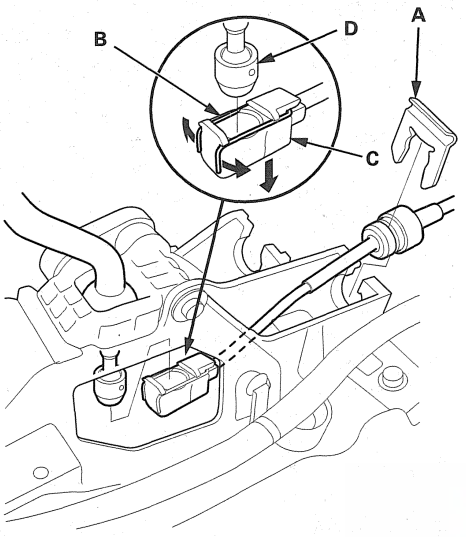


12. Rotate the shift cable (C) counterclockwise, then disconnect the shift cable from the shift lever housing.

(cont'd)

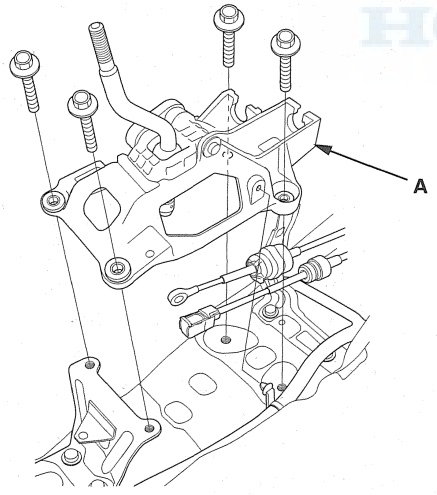
Shift Lever Housing Replacement (cont'd)

13. Remove the shift cable clip (A).

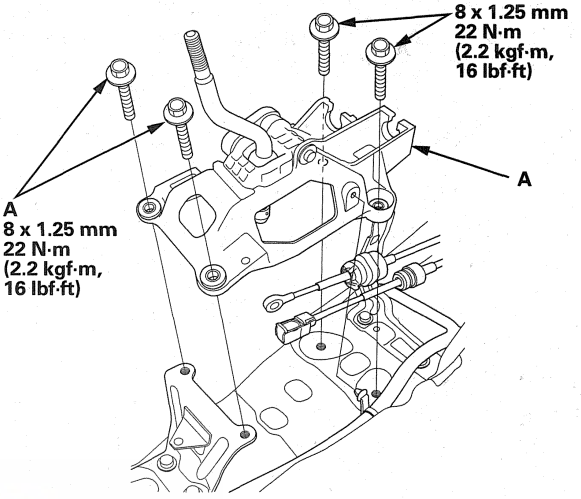


14. Expand the clamp (B), then disconnect the shift cable (C) from the shift lever (D).

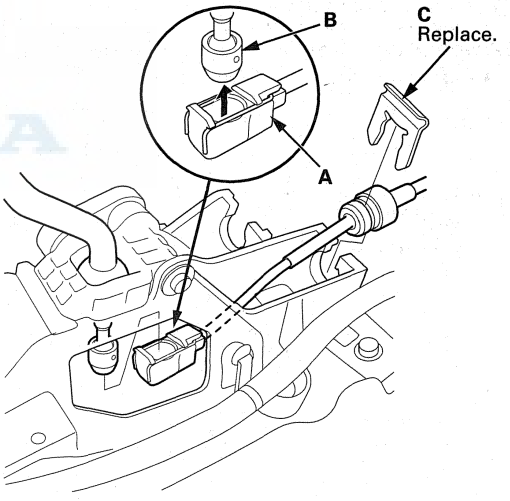
15. Remove the shift lever housing (A).



16. Install the shift lever housing (A).

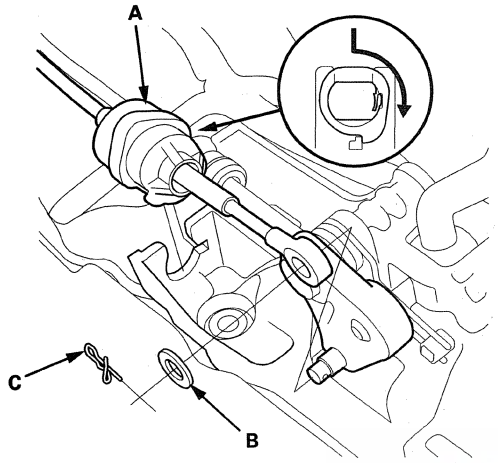


17. Connect the shift cable (A) to the shift lever (B).

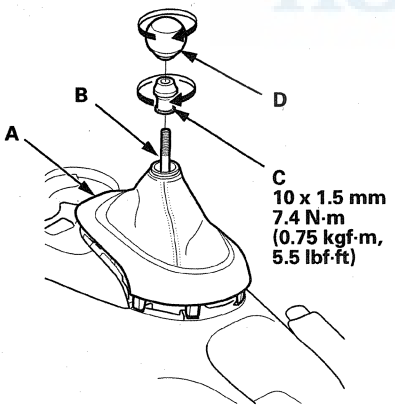


18. Install a new shift cable clip (C).

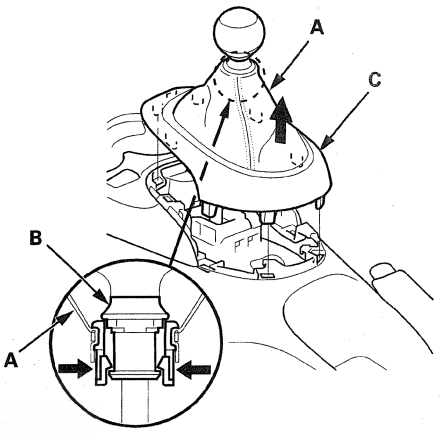
19. Rotate the shift cable (A) clockwise, then connect the shift cable to the shift lever housing.



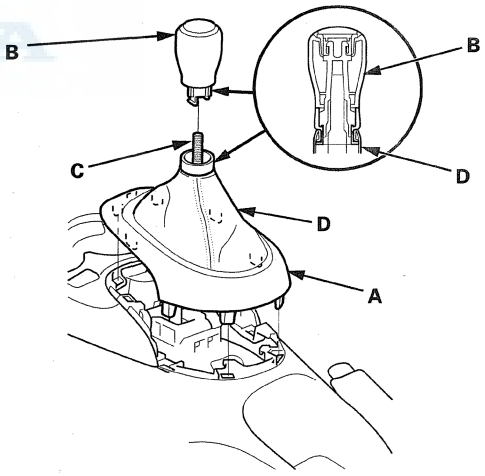
20. Install the washer (B) and the lock pin (C).
21. Install the center console (see page 20-79).
22. Sports type: Install the shift lever trim (A) over the shift lever (B).



23. Sports type: Install and turn the shift lever boot ring (C) until it reaches the bottom of the threads on the shift lever.
24. Sports type: Turn the shift lever knob (D) until the shift lever knob contacts the shift lever boot ring.
25. Sports type: Tighten the shift lever boot ring and the shift lever knob together with the shift pattern properly aligned.
26. Sports type: Connect the shift lever boot (A) to the shift lever boot ring (B)



27. Sports type: Install the shift lever trim (C) to the center console.
28. Normal type: Install the shift lever trim (A) to the center console.



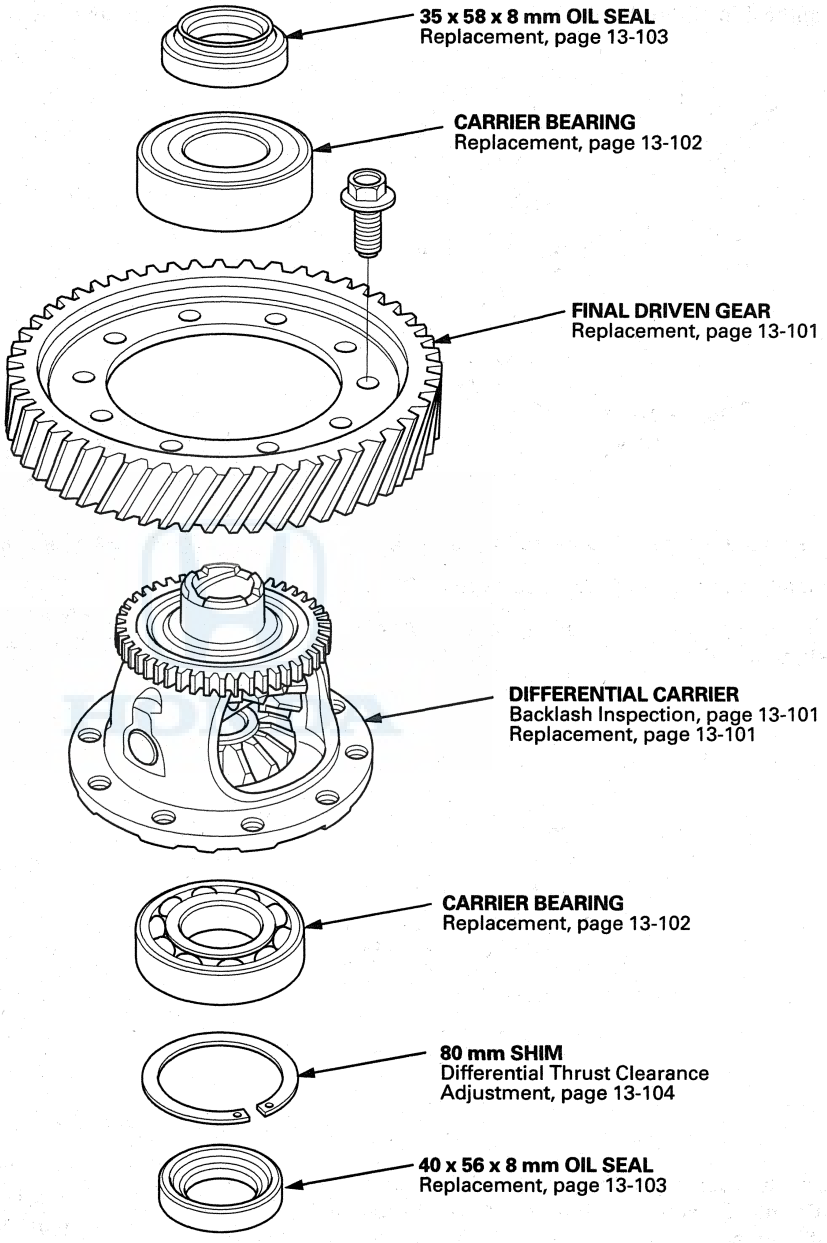
29. Normal type: Install the shift lever knob (B) on the shift lever (C), then connect the shift lever boot (D) to the shift lever knob.

    NOTE: Tighten the shift lever knob until the shift pattern is properly aligned.
30. Check the shift lever operation.

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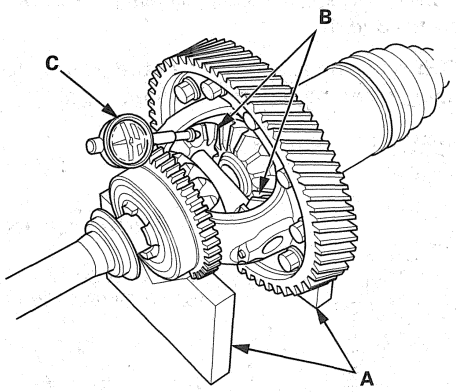
M/T Differential

Component Location Index



Backlash Inspection

1. Place the differential assembly on V-blocks (A), and install both axles.

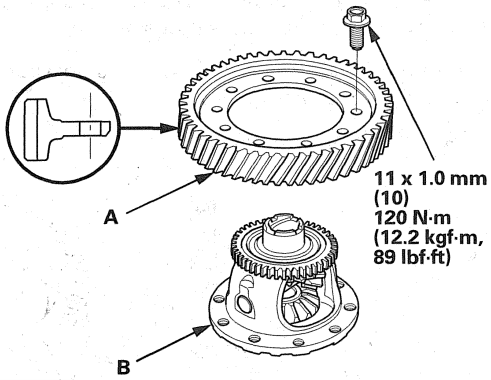


2. Measure the backlash of both pinion gears (B) with a dial indicator (C). If the backlash is not within the standard, replace the differential carrier.

Standard (New): 0.05—0.15 mm (0.0020—0.0059 in)

Differential Carrier/Final Driven Gear Replacement

1. Loosen the bolts in a crisscross pattern in several steps, then remove the final driven gear (A) from the differential carrier (B).



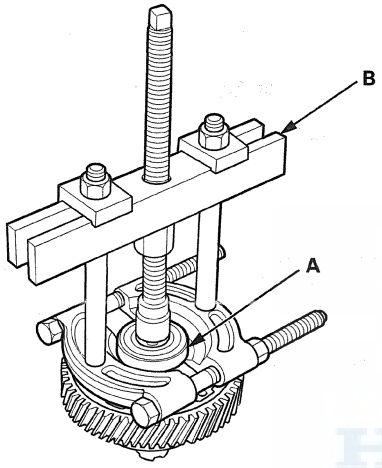
2. Install the final driven gear with the chamfer on the inside diameter facing the carrier. Tighten the bolts in a crisscross pattern in several steps.

Carrier Bearing Replacement

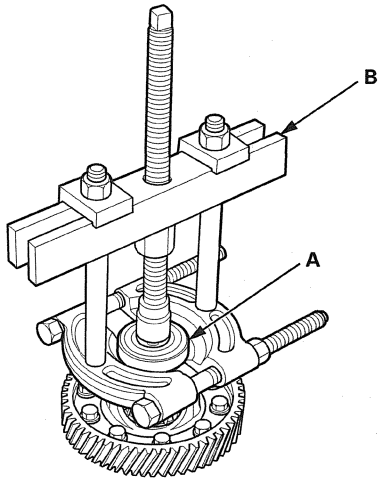
Special Tools Required
Driver Handle, 40 mm I.D. 07746-0030100

1. Check the carrier bearings for wear and rough rotation. If they rotate smoothly and the rollers show no signs of wear, the bearings are OK.
2. Remove the carrier bearings (A) using a commercially available bearing puller (B).

Transmission housing side



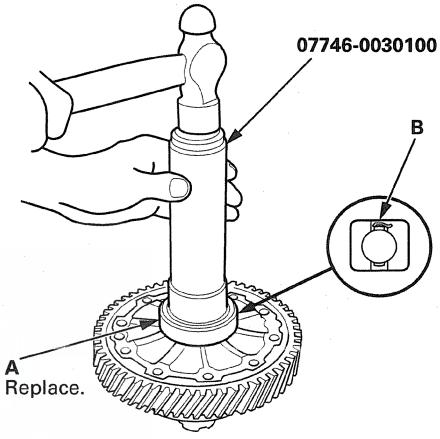
Clutch housing side



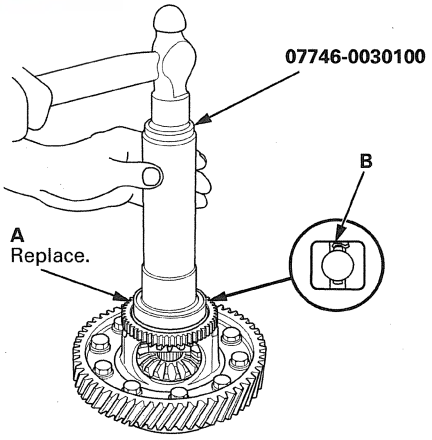
3. Install new bearings (A) using the 40 mm driver handle and a press. Press each bearing on until it bottoms. There should be no clearance between the bearings and the carrier.

   NOTE: Place the seal part (B) of the bearing towards the outside of the differential, then install it.

Transmission housing side



Clutch housing side

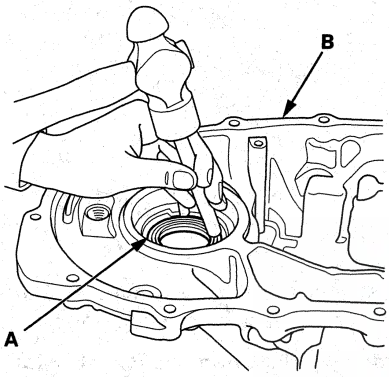


Oil Seal Replacement

Special Tools Required
- Oil Seal Driver Attachment, 64 x 72 mm 07JAD-PN00100
- Driver Handle, 15 x 135L 07749-0010000

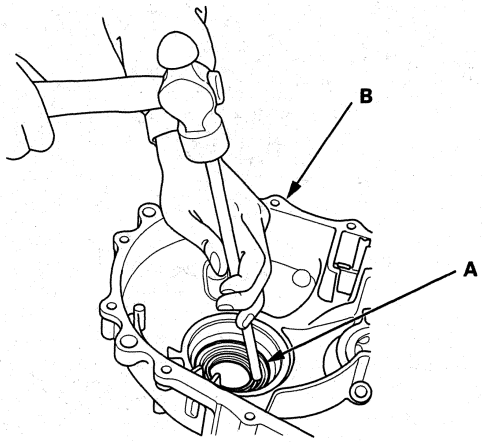
1. Remove the oil seal (A) from the transmission housing (B).

   NOTE: Be careful not to damage the transmission housing while removing the oil seals.

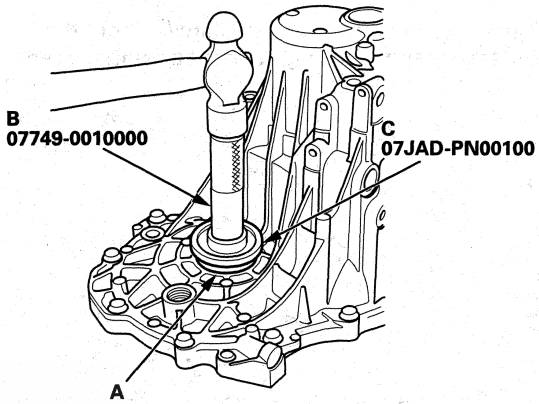


2. Remove the oil seal (A) from the clutch housing (B).

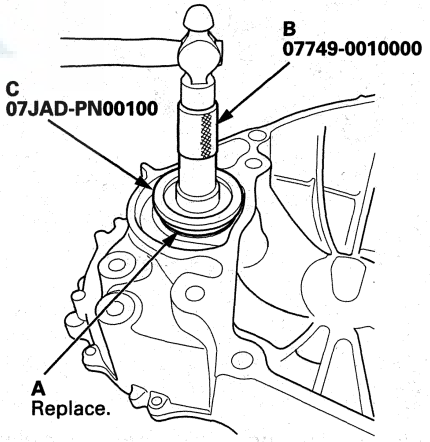
   NOTE: Be careful not to damage the clutch housing while removing the oil seal.



3. Install a new oil seal (A) flush with the transmission housing using the 15 x 135L driver handle (B) and the 64 x 72 mm oil seal driver attachment (C).



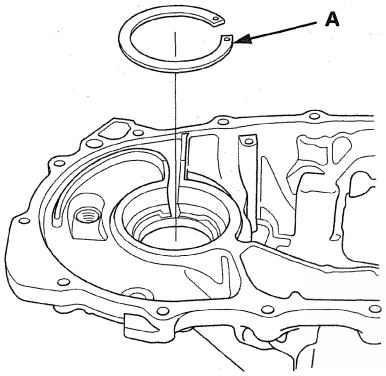
4. Install a new oil seal (A) flush with the clutch housing using the 15 x 135L driver handle (B) and the 64 x 72 mm oil seal driver attachment (C).



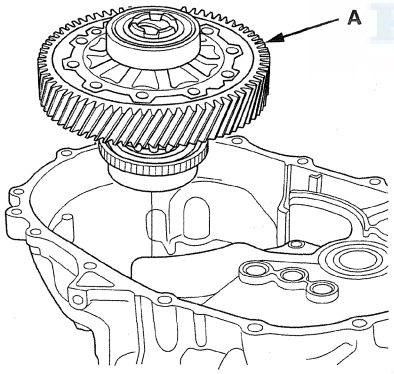
Differential Thrust Clearance Adjustment

Special Tools Required
Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the transmission housing side oil seal (see page 13-103).
2. If you removed the 80 mm shim (A) from the transmission housing, reinstall the same sized shim.



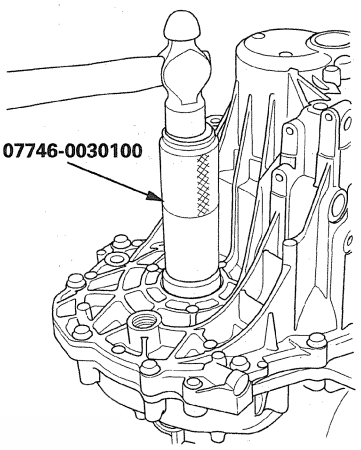
3. Install the differential assembly (A) into the clutch housing.



4. Install the transmission housing onto the clutch housing, then tighten the 8 x 1.25 mm flange bolts in a crisscross pattern in several steps (see step 15 on page 13-94).

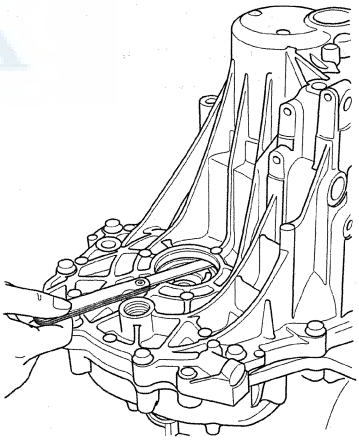
Specified Torque: 8 x 1.25 mm
27 N·m (2.8 kgf·m, 20 lbf·ft)

5. Use the 40 mm driver handle to bottom the differential assembly in the clutch housing.



6. Measure the clearance between the 80 mm shim and the bearing outer race in transmission housing.

Standard: 0.01—0.10 mm (0.001—0.003 in)



7. If the clearance exceeds the standard, select a new 80 mm shim from the following table. If the clearance measured in step 6 is within the standard, go to step 10.

80 mm Shim:

Type	Thickness
A	1.00 mm (0.0394 in)
B	1.10 mm (0.0433 in)
C	1.20 mm (0.0472 in)
D	1.30 mm (0.0512 in)
E	1.40 mm (0.0551 in)
F	1.50 mm (0.0591 in)
G	1.60 mm (0.0630 in)
H	1.70 mm (0.0669 in)
J	1.80 mm (0.0709 in)
K	1.05 mm (0.0413 in)
L	1.15 mm (0.0453 in)
M	1.25 mm (0.0492 in)
N	1.35 mm (0.0531 in)
P	1.45 mm (0.0571 in)
Q	1.55 mm (0.0610 in)
R	1.65 mm (0.0650 in)
S	1.75 mm (0.0689 in)

8. Remove the bolts and the transmission housing.
9. Replace the thrust shim selected in step 7, then recheck the clearance.
10. Install a new transmission housing side oil seal (see page 13-103).
11. Reinstall the transmission housing.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If CVT maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If CVT maintenance is required)



IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

Transaxle

CVT

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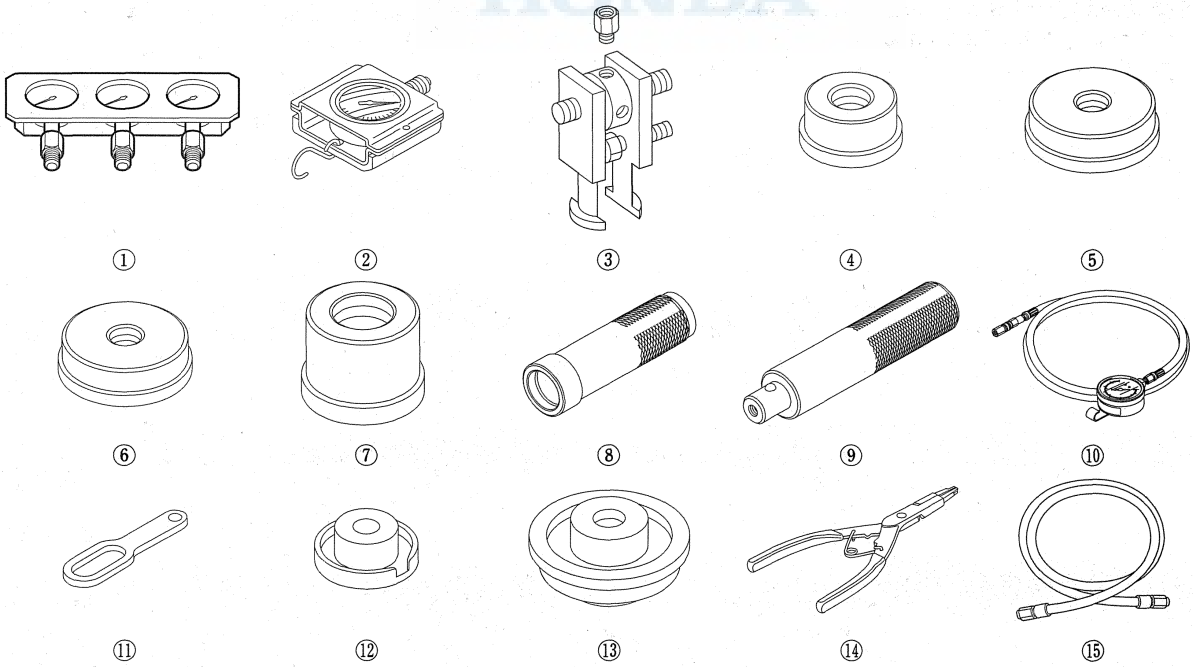
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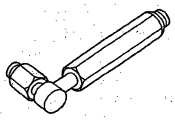
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Special Tools

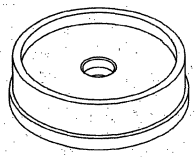
Ref.No.	Tool Number	Description	Qty
①	07406-0020401 or 07406-0020400	A/T Oil Pressure Gauge Set	1
②	07406-0070301	A/T Low Pressure Gauge w/Panel	1
③	07736-A01000B	Adjustable Bearing Puller, 25—40 mm	1
④	07746-0010200	Bearing Driver Attachment, 37 x 40 mm	1
⑤	07746-0010500	Bearing Driver Attachment, 62 x 68 mm	1
⑥	07746-0010600	Bearing Driver Attachment, 72 x 75 mm	1
⑦	07746-0010700	Bearing Driver Attachment, 24 x 26 mm	1
⑧	07746-0030100	Driver Handle, 40 mm I.D.	1
⑨	07749-0010000	Driver Handle, 15 x 135L	1
⑩	07AAJ-PLYA100	A/T High Pressure Gauge	1
⑪	07AAK-SNAA120	Universal Lifting Eyelet	1
⑫	07JAD-PH80101	Oil Seal Driver Attachment, 58 mm	1
⑬	07JAD-PN00100	Oil Seal Driver Attachment, 64 x 72 mm	1
⑭	07LGC-0010100	Snap Ring Pliers	1
⑮	07MAJ-PY4011A	A/T Pressure Hose, 2,210 mm	1
⑯	07MAJ-PY40120	A/T Pressure Adapter	1
⑰	07NAD-PX40100	Bearing Driver Attachment, 78 x 80 mm	1
⑱	07TAE-P4V0110	Reverse Brake Spring Compressor	1
⑲	07TAE-P4V0120	Start Clutch Remover	1
⑳	07TAE-P4VA131	Start Clutch Installer	1
㉑	07ZAE-PRP0100	Clutch Compressor Attachment	1

③: Must be used with a commercially available 3/8"—16 UNF slide hammer.

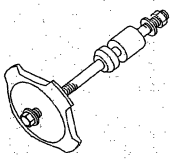




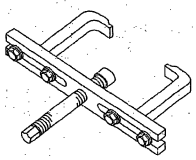
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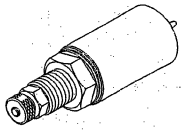
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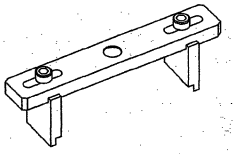
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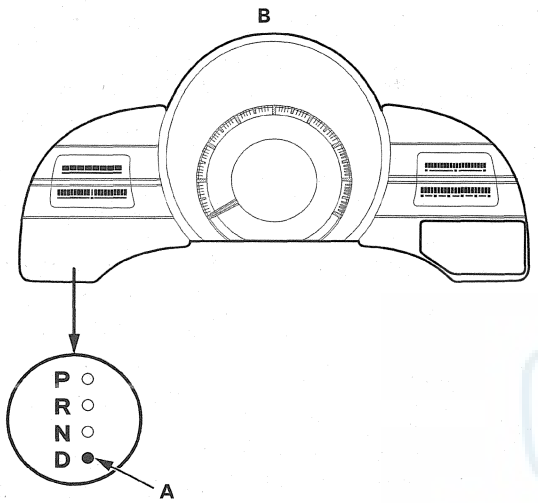
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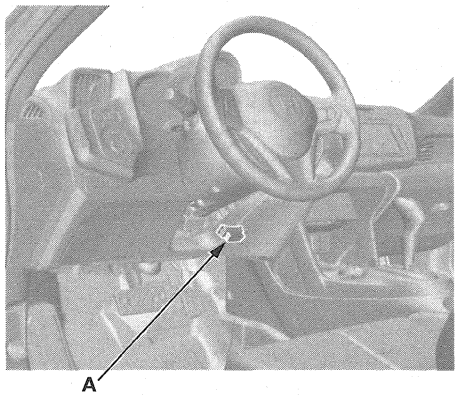
General Troubleshooting Information

How to Check for DTCs with the Honda Diagnostic System (HDS)

When the powertrain control module (PCM) senses an abnormality in the input or output system, the D indicator (A) in the gauge control module (B) will usually blink.



When the Honda Diagnostic System (HDS) is connected to the data link connector (DLC) (A) located under the driver's side of the dashboard and the SCS mode is selected, it will indicate the diagnostic trouble code (DTC) when the ignition switch is turned to ON (II) and the appropriate menu is selected.



If the D indicator and/or the malfunction indicator lamp (MIL) come on, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Check for Pending or Confirmed DTCs with the HDS.
5. Record the freeze data and on-board snapshot for all fuel and emissions DTCs and A/T DTCs.
6. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
7. Clear the DTC(s) and the data with the HDS.
8. Drive the vehicle for several minutes under the same conditions as those indicated by the freeze data or on-board snapshot, and then recheck for a DTC. If the A/T DTC returns, go to the indicated DTC's troubleshooting. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

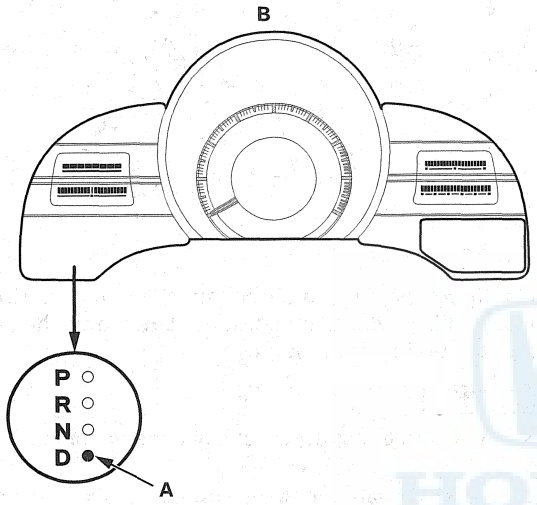
Symptom Troubleshooting Versus DTC Troubleshooting

Some symptoms will not set DTCs or cause the D indicator to blink. If the MIL has been reported ON or the D indicator has been blinking, check for DTCs. If the vehicle has an abnormal symptom, and there are no DTCs stored, do the symptom troubleshooting. Check the list of probable cause(s) for the symptom, until you find the problem.

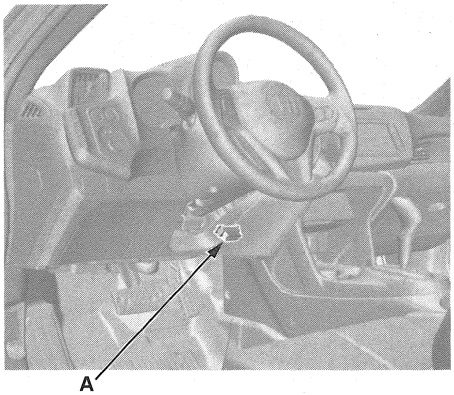
How to Check for DTCs with the SCS Mode (retrieving the flash codes)

NOTE: The preferred method is to use the HDS to retrieve the DTCs.

When the PCM senses an abnormality in the input or output system, the D indicator (A) in the gauge control module (B) will usually blink.



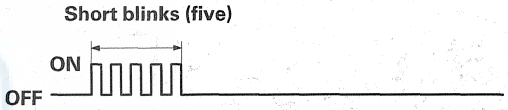
When the D indicator has been reported on, connect the HDS to the DLC (A) located under the driver's side of the dashboard. Turn the ignition switch to ON (II), select the SCS mode, then the D indicator will indicate (blink) the DTC.



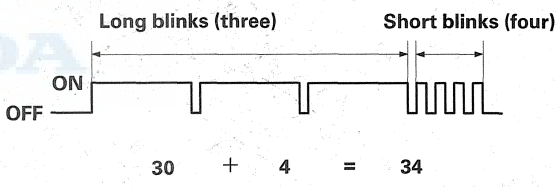
If the D indicator and/or the MIL come on, or if a driveability problem is suspected, follow this procedure:

1. Connect the HDS to the DLC. (See the HDS user's manual for specific instructions.)
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Select the SCS mode, then observe the D indicator in the gauge control module. Codes 1 through 9 are indicated by individual short blinks. Code 10 and above are indicated by a series of long and short blinks. One long blink equals ten short blinks. Add the long and short blinks together to determine the code.

Example: DTC P0705 (5)



Example: DTC P0717 (34)



5. Record all fuel and emissions DTCs and A/T DTCs.
6. If there is a fuel and emissions DTC, first check the fuel and emissions system as indicated by the DTC.
7. Clear the DTC(s) and the data with the HDS.
8. If the freeze data is available, drive the vehicle for several minutes with periods of wide open throttle, steady cruise, and stop and go, and then recheck for DTCs. If the A/T DTC returns, go to the indicated DTC's troubleshooting. If the DTC does not return, there was an intermittent problem within the circuit. Make sure all pins and terminals in the circuit are tight.

(cont'd)

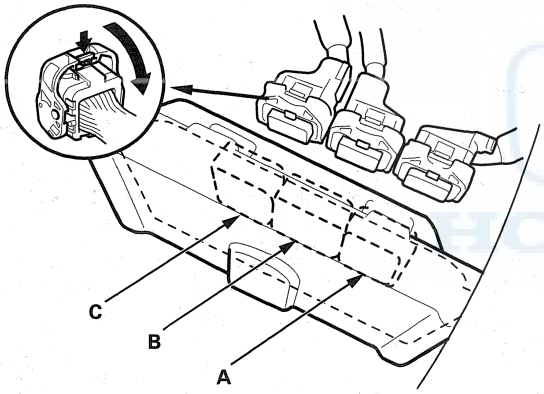
General Troubleshooting Information (cont'd)

How to Troubleshoot Circuits at the PCM Connectors

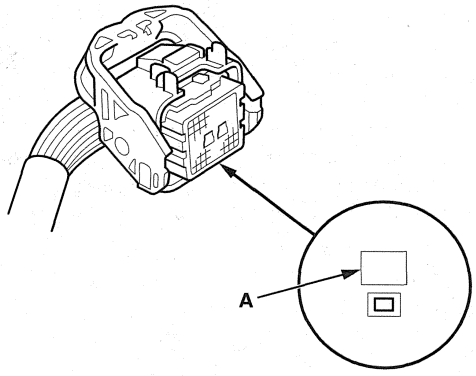
NOTE: The PCM overwrites data and monitors the EVAP system for about an hour after the ignition switch is turned to ACCESSORY (I) or to LOCK (0). Jumping the SCS line after turning the ignition switch to ACCESSORY (I) or LOCK (0) cancels this function. Disconnecting the PCM during this function, without jumping the SCS line first, can damage the PCM.

1. Jump the SCS line with the HDS.
2. Disconnect PCM connectors A, B, and C.

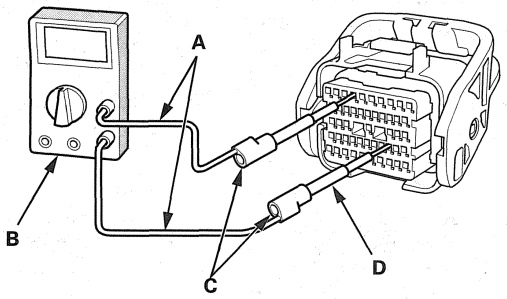
   NOTE: PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.



3. When diagnosis/troubleshooting is done at the PCM connector, use the terminal test port (A) above the terminal you need to check.



4. Connect one side of the patch cord (A) terminals to a commercially available digital multimeter (B), and connect the other side of the patch cord terminals (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).



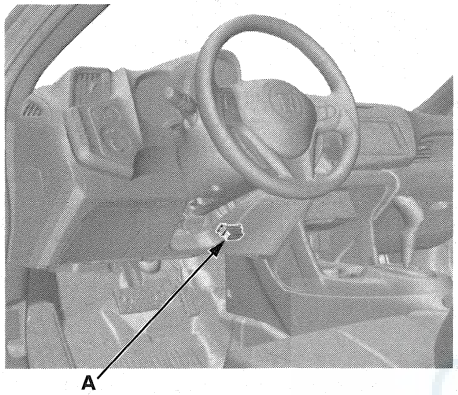
5. Gently contact the pin probe (male) into the terminal test port from the terminal side. Do not force the tips into the terminal test ports.

NOTICE

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

Clear A/T DTCs Procedure

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Clear the DTC(s) on the HDS screen.

OBD Status

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if a repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- PASSED: The on-board diagnosis is successfully completed.
- FAILED: The on-board diagnosis has completed but failed.
- NOT COMPLETED: The on-board diagnosis was running but is out of the enable conditions of the DTC.

How to End a Troubleshooting Session (required after any troubleshooting)

NOTE: Reset the PCM/TCM with the HDS while the engine is stopped.

1. Turn the ignition switch to LOCK (0).
2. Turn the ignition switch to ON (II), and wait for 30 seconds.
3. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.
4. Start the engine with the shift lever in P or N, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. To verify that the problem is repaired, test-drive the vehicle for several minutes at speeds over 31 mph (50 km/h) or under the same conditions as those indicated by the freeze data.

Updating the A/T Software in the PCM

Refer to the PCM Update (see page 11-207) when the A/T software updating is needed in the DTC troubleshooting.

Replacing the PCM

Refer to the PCM Replacement (see page 11-209) when replacing the PCM is needed in the DTC troubleshooting.

Substituting the PCM

Refer to the PCM substituting (see page 11-7) when substituting a known-good PCM is needed in the DTC troubleshooting.

PCM/TCM Reset

NOTE: To reset the PCM/TCM, initialize only the automatic transmission memory stored in the PCM or the TCM.

1. Select the A/T SYSTEM with the HDS.
2. Reset the PCM/TCM with the HDS while the engine is stopped.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II), and wait 30 seconds.
5. Turn the ignition switch to LOCK (0), and disconnect the HDS from the DLC.

(cont'd)

General Troubleshooting Information (cont'd)

Failure Reproduction Technique

Be careful of the following points while the vehicle is raising on a lift for the test-drive.

- Disable the VSA by pressing the VSA OFF button.
- VSA DTC(s) may come on when test-driving on a lift. If the VSA DTC(s) come on, clear the DTC(s) with the HDS.

Self-Diagnosis

If the PCM detects the failure of a signal from a sensor, a switch, a solenoid valve, or another control unit, it stores Pending or Confirmed DTCs. Depending on the failure, a Confirmed DTC is stored in either the first or the second drive cycle. When a Confirmed DTC is stored, the PCM blinks the D indicator and/or turns on the MIL by a signal sent to the gauge control module via F-CAN.

- **One Drive Cycle Detection Method:**
  When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or another control unit, the PCM stores a Pending or Confirmed DTC for the failure and blinks the D indicator and/or turns on the MIL immediately.
- **Two Drive Cycle Detection Method:**
  When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or another control unit in the first drive cycle, the PCM stores a Pending DTC. The D indicator and the MIL do not turn on at this time. If the failure continues in the second drive cycle, the PCM stores a Confirmed DTC and blinks the D indicator and/or turns on the MIL.

Fail-Safe Function

When an abnormality occurs in the signal from a sensor, a switch, a solenoid valve, or another control unit, the PCM ignores that signal and substitutes a pre-programmed value for that signal to allow the automatic transmission to continue operating. This causes a DTC to be stored and the D indicator to blink and/or the MIL to come on. The transmission may not shift normally during fail-safe operation. Do not run the test-driving diagnosis when the MIL is ON, or the D indicator is blinking.

DTC Troubleshooting Index

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review General Troubleshooting Information (see page 14-4).

DTC*(1)	Two Drive Cycle Detection	D Indicator	MIL	Detection Item	Page
P0107 (12)	———	Blinks	ON	Manifold Absolute Pressure (MAP) Sensor Circuit Low	DTC Troubleshooting (see page 14-81)
P0108 (12)	———	Blinks	ON	Manifold Absolute Pressure (MAP) Sensor Circuit High	DTC Troubleshooting (see page 14-81)
P0335 (88)	———	Blinks	ON	Crankshaft Position (CKP) Sensor No Signal	DTC Troubleshooting (see page 14-82)
P0336 (88)	———	Blinks	ON	Crankshaft Position (CKP) Sensor Circuit Range/Performance	DTC Troubleshooting (see page 14-83)
P0501 (36)*(2)	———	Blinks	ON	CVT Speed Sensor Circuit Range/Performance	DTC Troubleshooting (see page 14-84)
P0502 (36)*(2)	———	Blinks	ON	CVT Speed Sensor Circuit Open/Short	DTC Troubleshooting (see page 14-85)
P062F (—)	———	Blinks	ON	Powertrain Control Module (PCM) Internal Control Module Error	DTC Troubleshooting (see page 14-88)
P0705 (5)*(2)	———	Blinks	ON	Transmission Range Switch Multiple Shift Position Input	DTC Troubleshooting (see page 14-89)
P0706 (6)*(2)	○	OFF	ON	Transmission Range Switch Open	DTC Troubleshooting (see page 14-90)
P0716 (34)*(2)	———	Blinks	ON	CVT Input Shaft (Drive Pulley) Speed Sensor "A" Circuit Range/Performance	DTC Troubleshooting (see page 14-92)
P0717 (34)*(2)	———	Blinks	ON	CVT Input Shaft (Drive Pulley) Speed Sensor "A" Circuit No Signal	DTC Troubleshooting (see page 14-93)
P0721 (35)*(2)	———	Blinks	ON	CVT Output Shaft (Driven Pulley) Speed Sensor Range/Performance	DTC Troubleshooting (see page 14-96)
P0722 (35)*(2)	———	Blinks	ON	CVT Output Shaft (Driven Pulley) Speed Sensor No Signal Input	DTC Troubleshooting (see page 14-97)

NOTE:
*(1): The DTC in parentheses is the flash code the D indicator indicates when the DLC is connected to the HDS, and in the SCS mode.
*(2): This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.
*(3): This code is detected simultaneously with DTC P1898.
*(4): This code is detected simultaneously with DTC P1899.
*(5): The MIL comes on when the PGM-FI system detects the same failure.
*(6): '12 model

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC*(1)	Two Drive Cycle Detection	D Indicator	MIL	Detection Item	Page
P0746 (104)	○	Blinks	ON	CVT Drive Pulley Pressure Control Solenoid Valve Stuck OFF	DTC Troubleshooting (see page 14-100)
P0777 (105)	○	Blinks	ON	CVT Driven Pulley Pressure Control Solenoid Valve Stuck ON	DTC Troubleshooting (see page 14-101)
P0780 (100)*(3)	○	Blinks	ON	Shift Error	DTC Troubleshooting (see page 14-125)
P0780 (100)*(4)	○	Blinks	ON	Shift Error	DTC Troubleshooting (see page 14-127)
P0796 (103)	○	Blinks	ON	CVT Start Clutch Pressure Control Solenoid Valve Stuck OFF	DTC Troubleshooting (see page 14-103)
P0962 (38)*(2)	———	Blinks	ON	CVT Drive Pulley Pressure Control Valve Circuit Low	DTC Troubleshooting (see page 14-104)
P0963 (38)*(2)	———	Blinks	ON	CVT Drive Pulley Pressure Control Valve Circuit High	DTC Troubleshooting (see page 14-106)
P0966 (39)*(2)	———	Blinks	ON	CVT Driven Pulley Pressure Control Valve Circuit Low	DTC Troubleshooting (see page 14-108)
P0967 (39)*(2)	———	Blinks	ON	CVT Driven Pulley Pressure Control Valve Circuit High	DTC Troubleshooting (see page 14-110)
P0970 (32)*(2)	———	Blinks	ON	Pressure Control Solenoid "C" Control Circuit Low	DTC Troubleshooting (see page 14-113)
P0971 (32)*(2)	———	Blinks	ON	Pressure Control Solenoid "C" Control Circuit High	DTC Troubleshooting (see page 14-115)
P16C0 (—)	———	OFF	ON	PCM CVT Control System Incomplete Update	DTC Troubleshooting (see page 14-118)
P16D7 (107)	———	Blinks	OFF	PCM Internal F-CAN Communication Circuit Malfunction	DTC Troubleshooting (see page 14-118)
P16D8 (120)	———	Blinks	ON	PCM Internal IMA-CAN Communication Circuit Malfunction	DTC Troubleshooting (see page 14-118)

NOTE:
*(1): The DTC in parentheses is the flash code the D indicator indicates when the DLC is connected to the HDS, and in the SCS mode.
*(2): This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.
*(3): This code is detected simultaneously with DTC P1898.
*(4): This code is detected simultaneously with DTC P1899.
*(5): The MIL comes on when the PGM-FI system detects the same failure.
*(6): '12 model

DTC*(1)	Two Drive Cycle Detection	D Indicator	MIL	Detection Item	Page
P1860 (33)*(2)	———	Blinks	OFF	Inhibitor Solenoid Circuit Low	DTC Troubleshooting (see page 14-119)
P1861 (33)*(2)	———	Blinks	OFF	Inhibitor Solenoid Circuit High	DTC Troubleshooting (see page 14-121)
P1890 (42)	———	Blinks	OFF	CVT Speed Control System	DTC Troubleshooting (see page 14-123)
P1891 (43)	———	Blinks	OFF	Start Clutch Control System	DTC Troubleshooting (see page 14-124)
P1898 (100)	○	Blinks	ON	CVT Drive Pulley Pressure Control Valve Stuck ON or CVT Driven Pulley Pressure Control Valve Stuck OFF	DTC Troubleshooting (see page 14-125)
P1899 (100)	○	Blinks	ON	CVT Drive Pulley Pressure Control Valve Stuck OFF or CVT Driven Pulley Pressure Control Valve Stuck ON	DTC Troubleshooting (see page 14-127)
P2122 (20)	———	Blinks	ON	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low	DTC Troubleshooting (see page 14-128)
P2123 (20)	———	Blinks	ON	Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High	DTC Troubleshooting (see page 14-128)
U0029 (107)	———	OFF	OFF or ON*(5)	F-CAN Malfunction (F-CAN Bus OFF)	DTC Troubleshooting (see page 14-129)
U0038 (120)	———	Blinks	ON	IMA-CAN Malfunction (IMA-CAN Bus OFF)	DTC Troubleshooting (see page 14-130)
U0122 (107)	———	Blinks	OFF	Lost Communication With Vehicle Dynamics Control Module	DTC Troubleshooting (see page 14-129)
U0155 (107)	———	Blinks	OFF or ON*(5)	Lost Communication With Gauge Control Module	DTC Troubleshooting (see page 14-129)
U0302 (129)*(6)	———	Blinks	ON	PGM-FI System and A/T System Program Mismatch	DTC Troubleshooting (see page 14-131)
U1205 (120)	———	Blinks	ON	IMA-CAN Malfunction (PCM-to-Motor Control Module)	DTC Troubleshooting (see page 14-129)

NOTE:
*(1): The DTC in parentheses is the flash code the D indicator indicates when the DLC is connected to the HDS, and in the SCS mode.
*(2): This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.
*(3): This code is detected simultaneously with DTC P1898.
*(4): This code is detected simultaneously with DTC P1899.
*(5): The MIL comes on when the PGM-FI system detects the same failure.
*(6): '12 model

Symptom Troubleshooting Index

Electrical System Symptom Troubleshooting

Symptom	Probable cause(s)	Notes
When you turn the ignition switch to ON (II), the D indicator comes on and stays on in all shift lever positions, or it never comes on at all	• F-CAN communication line error • Gauge control module defective • PCM defective	• Check the F-CAN communication line for a DTC (see page 11-376). • Check the A/T gear position indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see page 22-325).
A/T gear position indicator does not come on while the shift lever is in that position	• F-CAN communication line error • Gauge control module defective • PCM defective • Transmission range switch defective • Shift cable broken or out of adjustment	• Check the F-CAN communication line for a DTC (see page 11-376). • Check the A/T gear position indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see page 22-325). • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the selector control lever.
Shift lever cannot be moved from P while pressing on the brake pedal	• PCM defective • Shift lock solenoid defective • Shift lock solenoid control circuit • Shift lock mechanism defective • Brake switch circuit • Brake switch defective • Accelerator pedal position sensor circuit • Accelerator pedal position sensor defective • Throttle body defective • Transmission range switch defective • Transmission range switch circuit	• Troubleshoot the shift lock system circuit (see page 14-217). • Test the shift lock solenoid (see page 14-221). • Inspect the transmission range switch (see page 14-199).
Ignition switch cannot be moved from ACCESSORY (I) to LOCK (0) (key is pushed in, the shift lever in P)	• PCM defective • Interlock control system circuit • Key interlock solenoid defective • Park pin switch defective • Transmission range switch defective	• Troubleshoot the key interlock system circuit (see page 22-96). • Inspect the transmission range switch (see page 14-199).
HDS does not communicate with the PCM	• DLC circuit • PCM defective	Troubleshoot the DLC circuit (see page 11-383).
Shift indicator does not work on even though the paddle shifter + (upshift switch) or paddle shifter − (downshift switch) is operated in D	• F-CAN communication line error • Gauge control module defective • PCM defective • Transmission range switch defective	• Check the F-CAN communication line for a DTC (see page 11-376). • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see page 22-325). • Check the indicator drive circuit in the gauge control module by gauge control module self-diagnostic function (see page 22-325). • Inspect the transmission range switch (see page 14-199).

Electrical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
When you press the paddle shifter + (upshift switch) in D, the transmission does not upshift	• PCM defective • Paddle shifter + (upshift switch) circuit	Troubleshoot the paddle shifter + (upshift switch) circuit (see page 14-207).
When you press the paddle shifter − (downshift switch) in D, the transmission does not downshift	• PCM defective • Paddle shifter − (downshift switch) circuit	Troubleshoot the paddle shifter − (downshift switch) circuit (see page 14-208).
M indicator does not come on even though the paddle shifter + (upshift switch) or paddle shifter − (downshift switch) is operated in D with the Sport Mode	• F-CAN communication line error • Gauge control module defective • PCM defective • Transmission range switch defective • 3-Mode switch defective	• Check the F-CAN communication line for a DTC. • Check the F-CAN communication line by using the gauge control module self-diagnostic function (see page 22-325). • Check the indicator drive circuit in the gauge control module by using the gauge control module self-diagnostic function (see page 22-325). • Inspect the transmission range switch (see page 14-199). • Inspect the 3-Mode switch (see page 22-351).

(cont'd)

Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting

Symptom	Probable cause(s)	Notes
Engine does not start in P or N	• Shift cable broken or out of adjustment • PCM defective • Transmission range switch defective • Flywheel assembly defective	• Check for a loose shift cable at the shift lever and the transmission control lever. • Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly.
Engine runs, but vehicle does not move in any position	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Start clutch assembly defective • Start clutch feed pipe damaged or out of round • Input shaft worn or damaged • Secondary drive gear or secondary driven gear worn or damaged • Final driven gear worn or damaged • Sun gear worn or damaged • Selector control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • CVTF pump worn, binding, or foreign material in CVTF pump • CVTF pump drive chain or CVTF pump drive/driven sprocket worn or damaged • Low CVTF level • CVTF strainer or CVTF filter clogged • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Transmission range switch defective • Flywheel drive plate worn or damaged • Flywheel assembly defective • Engine output low • Driveshaft disengaged	• Check the CVTF level (see page 14-153), and check the CVTF cooler lines for leakage and loose connections. • Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Check the lower valve body assembly for scoring and damage. • Check the flywheel drive plate for wear and damage. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the selector control shaft assembly for wear and damage. If the selector control shaft assembly is worn or damaged, replace it as an assembly. • Check the control lever for wear and damage. • Check the park pawl and the pawl shaft for wear and damage. If the park pawl or the pawl shaft are worn or damaged, replace them and also check the park gear for wear and damage. • Check the secondary drive gear, the secondary driven gear, and the final driven gear for wear and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly. • Inspect the differential pinion gears for wear. If the differential pinion gears are worn, replace the differential assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Vehicle does not move in D	• Forward clutch assembly defective • Sun gear worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • Manual valve body assembly defective • Transmission range switch defective • Engine output low	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the forward clutch pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the input shaft assembly for wear and damage. If the sun gear is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly.
Vehicle does not move in R	• Reverse brake defective • Reverse brake piston stuck, worn, or damaged • Planetary carrier assembly worn or damaged • Sun gear worn or damaged • Ring gear worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • Manual valve body assembly defective • Solenoid valves defective • PCM defective • Transmission range switch defective • Engine output low	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the input shaft assembly for wear and damage. If the planetary carrier assembly, the sun gear, or the ring gear are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Engine stops when shifted to D from N	• Intermediate housing assembly worn or damaged • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • PCM defective • Start clutch control system not calibrated in PCM • Engine output low	• Check for a stored DTC, and check for loose connectors. • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the reverse brake pressure and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Engine stops when shifted to R from N	• Intermediate housing assembly worn or damaged • Forward clutch assembly defective • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Planetary carrier assembly worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • PCM defective • Start clutch control system not calibrated in PCM • Engine output low	• Check for a stored DTC, and check for loose connectors. • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the forward clutch pressure, the reverse brake pressure, and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the planetary carrier assembly is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
No shift to higher ratio or lower ratio	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • CVTF pump worn, binding or foreign material in CVTF pump • Low CVTF level • CVTF strainer or CVTF filter clogged • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective	• Check the CVTF level (see page 14-153), and check the CVTF cooler lines for leakage and loose connections. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134) • Check the drive and driven pulley pressure, and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.
Poor acceleration	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • CVTF pump worn, binding or foreign material in CVTF pump • CVTF strainer or CVTF filter clogged • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • Manual valve lines worn or damaged • Solenoid valves defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective • Engine output low • IMA motor defective	• Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Check the drive and driven pulley pressure, and lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly. • Check for low fuel pressure (see page 11-290). • Check for a restricted exhaust system

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Engine revs up abnormally high while driving	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • CVTF pump worn, binding or foreign material in CVTF pump • Low CVTF level • CVTF strainer or CVTF filter clogged • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid valves defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
No engine braking	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Start clutch assembly defective • Start clutch feed pipe damaged or out of round • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid valves defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective • IMA motor defective	• Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Vehicle does not creep on a flat road in D	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn, or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • Low CVTF level • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid valves defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective • Start clutch control system not calibrated in PCM • Engine output low	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Vehicle moves in N, shift cable is properly adjusted	• Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Input shaft worn or damaged • Input shaft needle bearing seized, worn or damaged • Manual valve lever and pin worn or damaged • Manual valve body assembly defective	• Check the forward clutch pressure and the reverse brake clutch pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the input shaft assembly for wear and damage. If the input shaft or the input shaft needle bearings are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly.
Late shift after shifting from N to D, and return to N	• Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • CVTF pump worn, binding or foreign material in CVTF pump • Low CVTF level • CVTF strainer or CVTF filter clogged • CVTF deteriorated • Lower valve body assembly defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • PCM defective • Transmission range switch defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, and the forward clutch pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Late shift after shifting from N to R, and return to N	• Pulley pressure feed pipe damaged or out of round • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Reverse brake return springs/retainer worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • CVTF pump worn, binding or foreign material in CVTF pump • Low CVTF level • CVTF strainer or CVTF filter clogged • CVTF deteriorated • Lower valve body assembly defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid valves defective • PCM defective • Transmission range switch defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Unstable engine speed	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • CVTF pump worn, binding, or foreign material in CVTF pump • Low CVTF level • CVTF strainer or CVTF filter clogged • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid valves defective • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective • Start clutch control system not calibrated in PCM • Engine output low • IMA motor defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the CVTF strainer and the CVTF filter for debris. If the CVTF strainer or the CVTF filter is clogged, find the damaged components that caused debris, and clean the CVTF cooler lines (see page 14-175) if necessary. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Excessive shock when starting off	• Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • CVTF pump worn, binding or foreign material in CVTF pump • Low CVTF level • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Solenoid wire harness worn or damaged • PCM defective • Start clutch control system not calibrated in PCM • Engine output low • IMA motor defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Excessive shock when accelerating and decelerating	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • Low CVTF level • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • PCM defective • Start clutch control system not calibrated in PCM • Flywheel assembly defective • IMA motor defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the stall speed (see page 14-134) • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the lower valve body assembly for scoring and damage. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Excessive idle vibration in D and R	• Intermediate housing assembly worn or damaged • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • Input shaft worn or damaged • Low CVTF level • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Solenoid valves defective • Solenoid wire harness worn or damaged • PCM defective • Start clutch control system not calibrated in PCM • Flywheel drive plate worn or damaged • Flywheel assembly defective • Engine output low • IMA motor defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Check the flywheel drive plate for wear and damage. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.
Excessive idle vibration in N and P	• Intermediate housing assembly worn or damaged • Input shaft worn or damaged • Flywheel drive plate worn or damaged • Flywheel assembly defective • Engine output low • IMA motor defective	• Check the stall speed (see page 14-134). • Check the flywheel drive plate for wear and damage. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the input shaft is worn or damaged, replace it and also check the related part of the input shaft assembly for wear and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

(cont'd)

Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Vibration in all positions	• Flywheel drive plate worn or damaged • Flywheel assembly defective • IMA motor defective • Engine or transmission mount defective • Engine output low	• Check the stall speed (see page 14-134). • Check the flywheel drive plate for wear and damage. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly.
Noise from transmission in N and P	• Input shaft worn or damaged • Planetary carrier worn or damaged • Input shaft needle bearing seized, worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • CVTF pump worn, binding, or foreign material in CVTF pump • CVTF pump drive chain or CVTF pump drive/driven sprocket worn or damaged • Low CVTF level • Flywheel assembly defective	• Check the CVTF level (see page 14-153), and check the CVTF cooler lines for leakage and loose connections. • Check the stall speed (see page 14-134). • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket for wear and damage. If the CVTF pump assembly is worn or damaged, replace it as an assembly, if the CVTF pump drive chain or the CVTF pump drive/driven sprocket are worn or damaged, replace them. • Inspect the input shaft assembly for wear and damage. If the input shaft, the planetary carrier assembly, or the input needle bearing are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Noise from transmission in D	• Intermediate housing assembly worn or damaged • Start clutch assembly defective • Input shaft worn or damaged • Secondary drive gear or secondary driver gear worn or damaged • Final driven gear worn or damaged • Planetary carrier assembly worn or damaged • Input shaft needle bearing seized, worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • Selector control shaft assembly worn or damaged • Park pawl and pawl shaft worn or damaged • Park pawl spring worn or damaged • CVTF pump worn, binding, or foreign material in CVTF pump • CVTF pump drive chain or CVTF pump drive/driven sprocket worn or damaged • Low CVTF level • CVTF deteriorated • Flywheel assembly defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the input shaft, the planetary carrier assembly, or the input shaft needle bearing are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. • Check the selector control shaft assembly for wear and damage. If the selector control shaft assembly is worn or damaged, replace it as an assembly. • Check the park pawl, the pawl shaft, and the park pawl spring for wear and damage. If the park pawl, the pawl shaft, or the park pawl spring are worn or damaged, replace them and also check the park gear for wear and damage. • Check the secondary drive gear, the secondary driven gear, and the final driven gear for wear and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

(cont'd)

Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Noise from transmission in R	• Intermediate housing assembly worn or damaged • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Reverse brake return springs/retainer worn or damaged • Start clutch assembly defective • Input shaft worn or damaged • Secondary drive gear or secondary driven gear worn or damaged • Final driver gear worn or damaged • Planetary carrier assembly worn or damaged • Sun gear worn or damaged • Ring gear worn or damaged • Input shaft needle bearing seized, worn or damaged • Thrust needle bearing on planetary carrier seized, worn or damaged • Thrust washer on planetary carrier seized, worn or damaged • Selector control shaft assembly worn or damaged • Park pawl and pawl shaft worn or damaged • Park pawl spring worn or damaged • CVTF pump worn, binding, or foreign material in CVTF pump • CVTF pump drive chain or CVTF pump drive/driven sprocket worn or damaged • Low CVTF level • CVTF deteriorated • Flywheel assembly defective	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the flywheel assembly for wear and damage. If the flywheel assembly is worn or damaged, replace it as an assembly. • Inspect the input shaft assembly for wear and damage. If the input shaft, the planetary carrier assembly, the sun gear, the ring gear, or the input shaft needle bearing are worn or damaged, replace them and also check the related part of the input shaft assembly for wear and damage. • Check the thrust needle bearing and the thrust washers on the planetary carrier for wear and damage. If the thrust needle bearing or the thrust washer are worn or damaged, replace them and adjust the clearance with the thrust shim. • Check the selector control shaft assembly for wear and damage. If the selector control shaft assembly is worn or damaged, replace it as an assembly. • Check the park pawl, the pawl shaft, and the park pawl spring for wear and damage. If the park pawl, the pawl shaft, or the park pawl spring are worn or damaged, replace them and also check the park gear for wear and damage. • Check the secondary drive gear, the secondary driven gear, and the final driven gear for wear and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Stall speed high	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Forward clutch assembly defective • Reverse brake defective • Reverse brake piston stuck, worn or damaged • Start clutch assembly defective • Start clutch end-plate clearance incorrect • Start clutch feed pipe damaged or out of round • CVTF pump worn, binding, or foreign material in CVTF pump • Low CVTF level • CVTF deteriorated • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • Manual valve body assembly defective • Manual valve lines worn or damaged • Solenoid wire harness worn or damaged • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • PCM defective • Start clutch control system not calibrated in PCM	• Check the CVTF level (see page 14-153) and condition, and check the CVTF cooler lines for leakage and loose connections. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch. • Check the drive and driven pulley pressure, the lubrication pressure, the forward clutch pressure, and the reverse brake pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Inspect the clearance between the forward clutch end-plate and the top disc (see page 14-242). If the clearance is out of tolerance, replace the forward clutch assembly. • Inspect the reverse brake piston and the O-rings. Check the spring retainer for wear and damage. Inspect the clearance between the brake end-plate and the top disc. If the clearance is out of tolerance, inspect the brake discs and plates for wear and damage. If the discs and plates are worn or damaged, replace them as a set. If they are OK, adjust the clearance with the brake end-plate. • Inspect the solenoid wire harness for open and short. • Check the lower valve body assembly for scoring and damage. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.

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Symptom Troubleshooting Index (cont'd)

Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

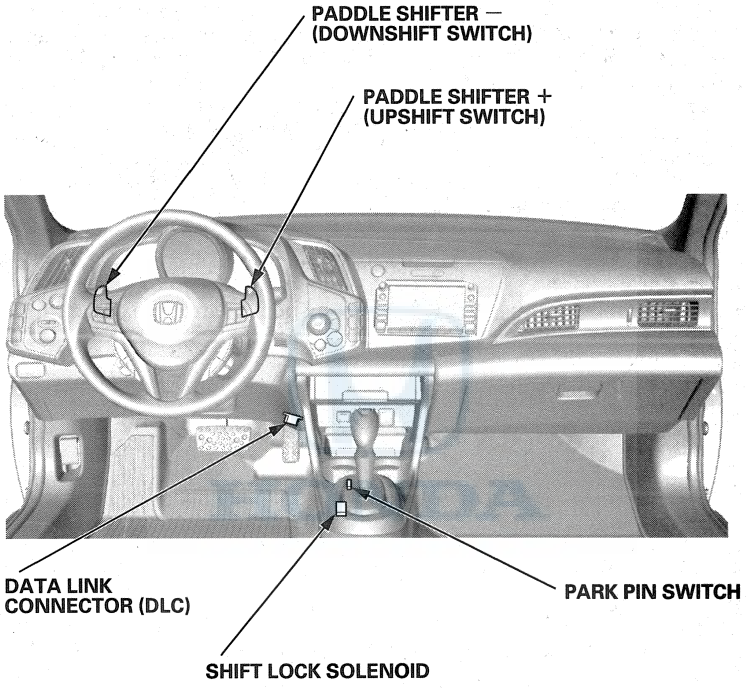
Symptom	Probable cause(s)	Notes
Stall speed low	• Intermediate housing assembly worn or damaged • Pulley pressure feed pipe damaged or out of round • Start clutch assembly defective • Lower valve body assembly defective • CVT driven pulley pressure control solenoid valve defective • CVT drive pulley pressure control solenoid valve defective • CVT clutch pressure control solenoid valve defective • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • PCM defective • Start clutch control system not calibrated in PCM • Engine output low • IMA motor defective	• Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Calibrate the start clutch control system (see page 14-150), and check the start clutch (see page 14-152). • Check the drive and driven pulley pressure, and the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Check the lower valve body assembly for scoring and damage. • Check the intermediate housing assembly for wear and damage. If the drive pulley, the driven pulley, the pulley shafts, the steel belt, or related part are worn or damaged, replace the intermediate housing assembly.
Judder when starting off	• Start clutch assembly defective • CVTF deteriorated • Lower valve body assembly defective • CVT clutch pressure control solenoid valve defective • CVT input shaft (drive pulley) and CVT output shaft (driven pulley) speed sensors defective • Vehicle speed sensor defective • PCM defective	• Check the CVTF condition. If necessary, replace the CVTF (see page 14-154), use genuine Honda CVTF. • Check for a stored DTC, and check for loose connectors. • Check the speed sensors installation, for wear and damage, and measure their resistance, and also check the O-rings for wear and damage. • Check the stall speed (see page 14-134). • Check the start clutch (see page 14-152). • Check the lubrication pressure (see page 14-135). If the pressure is low or there is no pressure, check the CVTF pump assembly, the CVTF pump drive chain, the CVTF pump drive/driven sprocket, and the CVTF feed pipes. • Check the lower valve body assembly for scoring and damage.
Shift lever does not operate smoothly	• Selector control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • Park gear worn or damaged • Park pawl spring worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • Manual valve body assembly defective • Transmission range switch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the selector control shaft assembly for wear and damage. If the selector control shaft assembly is worn or damaged, replace it as an assembly. • Check the control lever for wear and damage. • Check the park pawl, the pawl shaft, the park pawl spring, and the park gear for wear and damage.

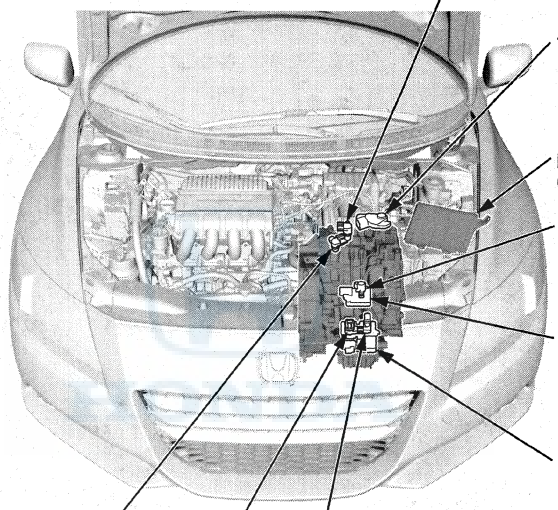
Hydraulic/Mechanical System Symptom Troubleshooting (cont'd)

Symptom	Probable cause(s)	Notes
Transmission will not shift into P, or transmission cannot shift out of P	• Selector control shaft assembly worn or damaged • Control lever worn or damaged • Park pawl and pawl shaft worn or damaged • Park gear worn or damaged • Park pawl spring worn or damaged • Shift cable broken or out of adjustment • Manual valve lever and pin worn or damaged • Manual valve body assembly defective • PCM defective • Transmission range switch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever. • Check the manual valve body assembly for scoring and damage. If the manual valve body assembly is worn or damaged, replace it as an assembly. • Check the selector control shaft assembly for wear and damage. If the selector control shaft assembly is worn or damaged, replace it as an assembly. • Check the control lever for wear and damage. • Check the park pawl, the pawl shaft, the park pawl spring, and the park gear for wear and damage.
A/T gear position indicator does not indicate shift lever positions	• Selector control shaft assembly worn or damaged • Shift cable broken or out of adjustment • PCM defective • Transmission range switch defective	• Check for a stored DTC, and check for loose connectors. • Inspect the transmission range switch (see page 14-199). • Check for a loose shift cable at the shift lever and the transmission control lever.

HONDA

Component Location Index





CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR
Replacement, page 14-147

TRANSMISSION RANGE SWITCH

POWERTRAIN CONTROL MODULE (PCM)

INHIBITOR SOLENOID
Test, page 14-142
Replacement, page 14-146

CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE
Test, page 14-141
Replacement, page 14-146

CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE
Test, page 14-141
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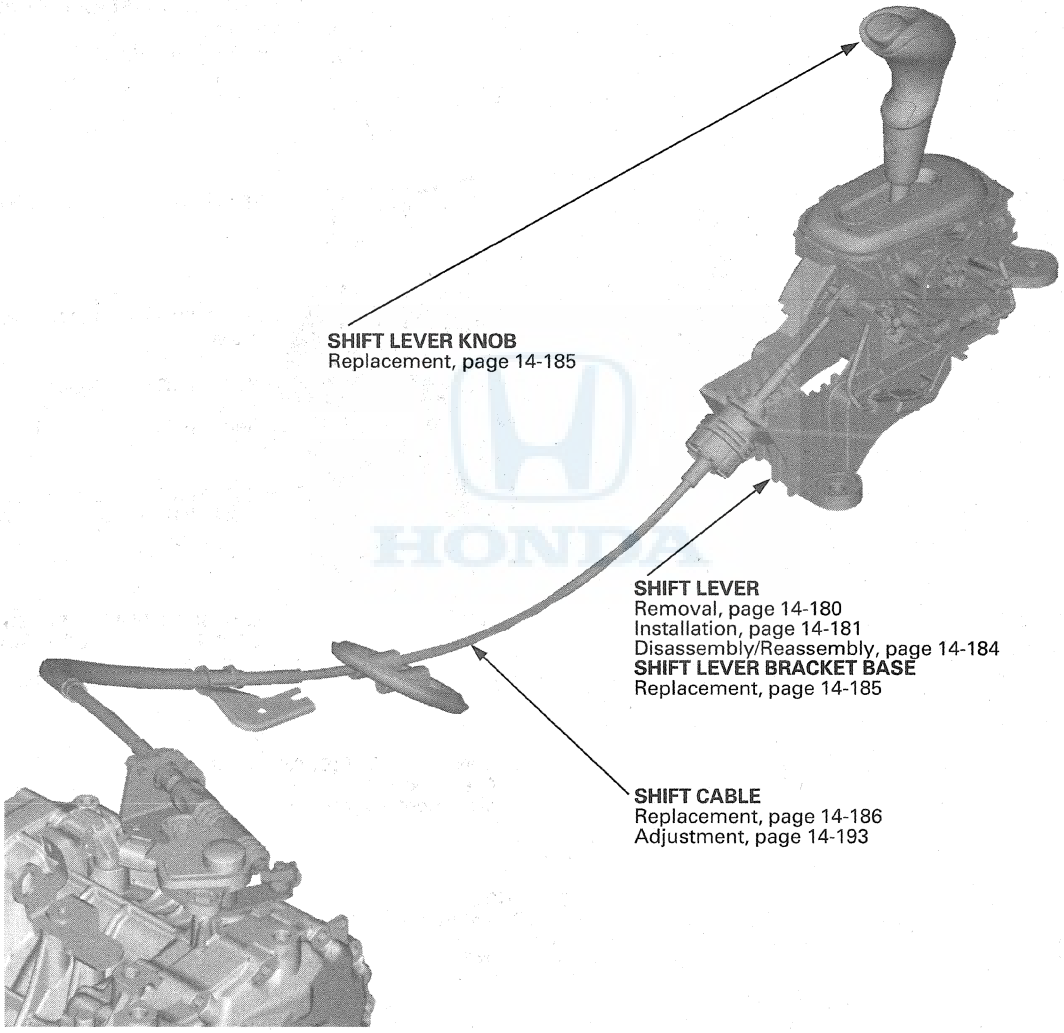
CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR
Replacement, page 14-147

CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE
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Replacement, page 14-145

VEHICLE SPEED SENSOR
Replacement, page 14-148

(cont'd)

Component Location Index (cont'd)



System Description

General Operation

The continuously variable transmission (CVT) is an electronically controlled automatic transmission with drive and driven pulleys, and a steel belt. The CVT provides stepless forward speeds and one in reverse.

Transmission

Around the outside of the flywheel is a ring gear which meshes with the starter drive gear when the engine is being started with the starter motor. The transmission has four parallel shafts: the input shaft, the drive pulley shaft, the driven pulley shaft, and the final drive shaft. The input shaft is connected to the flywheel, which is connected to the IMA motor rotor through the drive plate. This is connected to the end of the engine crankshaft. The drive pulley shaft and the driven pulley shaft consists of movable and fixed face pulleys. Both pulleys are linked by the steel belt. The input shaft includes the sun gear and the planetary gears with the carrier. The drive pulley shaft includes the drive pulley and the forward clutch. The driven pulley shaft includes the driven pulley, the start clutch, and the secondary drive gear which is integral with the park gear. The final drive shaft is positioned between the secondary drive gear and the final driven gear. The final drive shaft includes the secondary driven gear and the final drive gear which serves to change the rotation direction, because the drive pulley shaft and the driven pulley shaft rotate the same direction. Under certain conditions the planetary gears in the transmission are engaged by the forward clutch and the reverse brake, and power is transmitted from the drive pulley shaft to the driven pulley shaft to provide movement in D and R.

Electronic Control

The electronic control system consists of the PCM, sensors, and solenoid valves. Shifting is electronically controlled for comfortable driving under all conditions. The PCM is located in the engine compartment.

Hydraulic Control

The lower valve body assembly includes the main valve body, the secondary valve body, the CVT driven pulley pressure control solenoid valve, the CVT drive pulley pressure control solenoid valve, the CVT clutch pressure control solenoid valve, and the inhibitor solenoid. These valve bodies are positioned on the lower portion of the transmission housing. The manual valve body is bolted on the intermediate housing. The main valve body contains the start clutch shift valve, the shift inhibitor valve, the lubrication regulator valve, and cooler relief valve. The secondary valve body contains the pressure high (PH) regulator valve, the pressure high control (PHC) shift valve, the start clutch back-up valve, the clutch reducing valve, and the start clutch accumulator valve. The CVT driven pulley pressure control valve contains pulley control valve A and the driven pulley control valve with the solenoid. The CVT drive pulley pressure control valve contains pulley control valve B and the drive pulley control valve with the solenoid. The CVT start clutch pressure control valve consists of the start clutch pressure control valve and the solenoid. These solenoid valves are controlled by the PCM. The manual valve body contains the manual valve and the reverse inhibitor valve. The CVTF pump is located on the transmission housing, and it is linked with the input shaft by the drive/driven sprockets and the drive chain. The drive/driven pulleys, the forward clutch, and the start clutch receive fluid from their respective feed pipes, and the reverse brake receives fluid from an internal hydraulic circuit.

Shift Control

The PCM controls the shift pulley ratio through the solenoid valves, while receiving input signals from the various sensors and switches located throughout the vehicle. The PCM actuates the CVT driven and drive pulley pressure control solenoid valves to control pulley control valves A and B. Drive pulley pressure is regulated at pulley control valve B and applied to the drive pulley, driven pulley pressure is regulated at pulley control valve A and applied to the driven pulley, and the pulley ratio is changed to their directed ratio.

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System Description (cont'd)

Gear Selection

The shift lever has four positions, P: PARK, R: REVERSE, N: NEUTRAL, and D: DRIVE.
In D, the driver can select the Normal Mode, the ECON Mode, the Sport Mode with either non-stage speeds or 1st through 7th speed stage ranges with the manual-paddle shift mode, and the L mode.

Position			Description
P: PARK			Front wheels locked; park pawl engages with the park gear on the driven pulley shaft. The start clutch and the forward clutch disengage.
R: REVERSE			Reverse; reverse brake engages, and it locks with the planetary carrier to the intermediate housing.
N: NEUTRAL			Neutral; the start clutch and forward clutch disengage.
D: DRIVE	Normal Mode/ ECON Mode		Transmission automatically adjusts to keep the engine at the best rpm for driving under all conditions. It is also equipped with the smart-paddle shift mode that allows the transmission to be shifted manually to lower or higher ratios with the steering wheel-mounted paddles under certain conditions. To activate, press the paddle shifter + (upshift switch) or the paddle shifter − (downshift switch). The number of the selected ratio is displayed in the shift indicator. The system returns to the automatic shift mode and the shift indicator display turns off when the paddle shifter + (upshift switch) is held for about 2 seconds, when the optional Mode switch is pressed, or when the PCM detects a steady cruise.
	Sport Mode	Sport driving mode (non-stage speeds)	Transmission automatically adjusts to keep the engine at a higher rpm than the Normal Mode or the ECON Mode driving conditions.
		Manual-paddle shift mode (1st through 7th)	The transmission can be manually shifted from 1st through 7th using the steering wheel-mounted paddle shifters. The selected ratio position is displayed in the shift indicator. To activate, press the paddle shifter + (upshift switch) or the paddle shifter − (downshift switch). In this mode, the vehicle can also start off in 1st gear, upshift automatically through the ratios during acceleration, and then downshift automatically when decelerating to a stop. The system returns to the automatic shift mode and the shift indicator display turns off when the paddle shifter + (upshift switch) is held for about 2 seconds or when the optional Mode switch is pressed.
	Normal Mode/ ECON Mode/ Sport Mode	L mode	For engine braking and power for climbing; the transmission shifts into the lowest pulley ratio. To activate the L mode, press the paddle shifter + (upshift switch) and the paddle shifter − (downshift switch) at the same time and hold them for about 5 seconds. The shift indicator displays an L while the system is in L mode. The system returns to the automatic shift mode and the shift indicator display turns off when the paddle shifter + (upshift switch) and the paddle shifter − (downshift switch) are held at the same time for about 2 seconds or when the optional Mode switch is pressed.

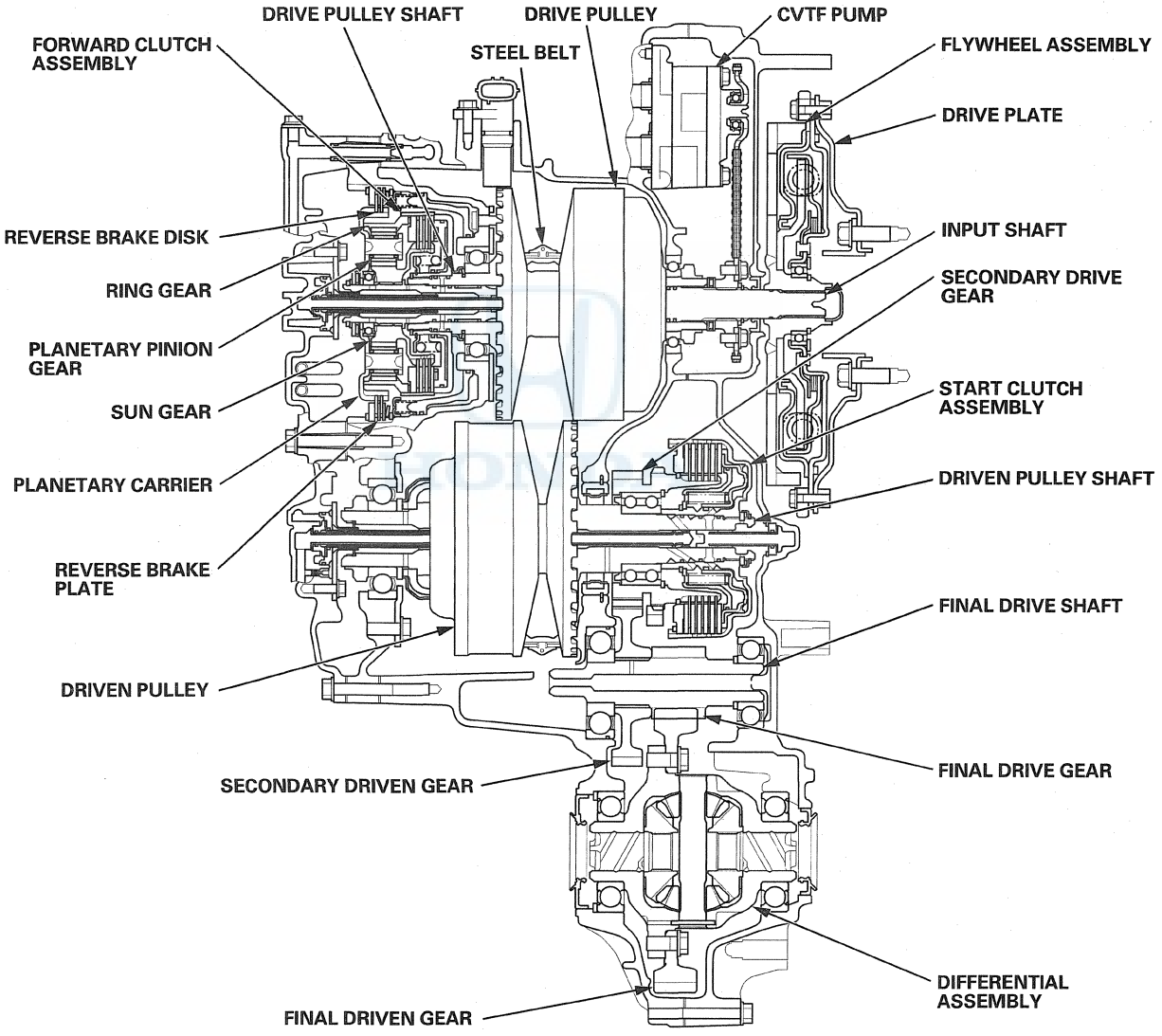
Starting the engine is possible only in P and N through the use of a neutral-safety switch.

Automatic Transmission (A/T) Gear Position Indicator

The A/T gear position indicator in the instrument panel shows which shift lever position has been selected.

Clutches/Reverse Brake/Planetary Gear/Pulleys

The CVT uses the hydraulic-actuated clutches and reverse brake to engage and disengage the transmission pulleys. When hydraulic pressure is introduced into the clutch drum and the reverse brake piston cavity, the clutch piston and the reverse brake piston are moved. This presses the friction discs and the steel plates together, locking them so they do not slip. Power is then transmitted through the engaged clutch pack to its hub-mounted gear, and through the engaged ring gear to the planetary pinion gears. Likewise, when the hydraulic pressure is bled from the clutch pack and reverse brake piston cavity, the piston releases the friction discs and the steel plates, and they are free to slide past each other. This allows the gear to spin independently on its shaft, transmitting no power.



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System Description (cont'd)

Start Clutch

The start clutch engages/disengages the secondary drive gear, and is located at the end of the driven pulley shaft. The start clutch is supplied hydraulic pressure by its CVTF feed pipe within the driven pulley shaft.

Forward Clutch

The forward clutch engages/disengages the sun gear, and is located at the end of the drive pulley shaft. The forward clutch is supplied hydraulic pressure by its CVTF feed pipe within the drive pulley shaft.

Reverse Brake

The reverse brake locks the planetary carrier in R, and is located inside the intermediate housing around the planetary carrier. The reverse brake discs engage/disengage the planetary carrier, and the reverse brake plates are fixed to the intermediate housing. The reverse brake is supplied hydraulic pressure by a circuit connected to the internal hydraulic circuit.

Planetary Gear Train

The planetary gear train is only used to switch the rotational direction of the drive pulley shafts in R. The planetary gear train consists of the sun gear, the planetary pinion gears, the planetary carrier, and the ring gear. The sun gear is connected to the input shaft with splines. The planetary pinion gears are mounted on the planetary carrier. The planetary carrier is located on the end of the input shaft, over the sun gear. The ring gear is located in the planetary carrier, and connected to the forward clutch drum. The sun gear inputs the engine power via the input shaft to the planetary pinion gears, and the ring gear outputs the engine power. In D (forward range), the planetary pinion gears do not rotate and revolve around the sun gear, so the planetary carrier rotates. In R (reverse range), the reverse brake locks the planetary carrier, and the sun gear drives the planetary pinion gears to rotate. The planetary pinion gears rotate, but do not revolve around the sun gear. The planetary pinion gears drive the ring gear in the opposite direction from the rotational direction of the sun gear.

Pulleys

Both pulleys consist of a movable face and a fixed face, and the effective pulley ratio changes with engine speed. The drive pulley and the driven pulley are linked by the steel belt. To achieve a low pulley ratio, high hydraulic pressure works on the movable face of the driven pulley and reduces the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage. To achieve a high pulley ratio, high hydraulic pressure works on the movable face of the drive pulley and reduces the effective diameter of the drive pulley, and low hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage.

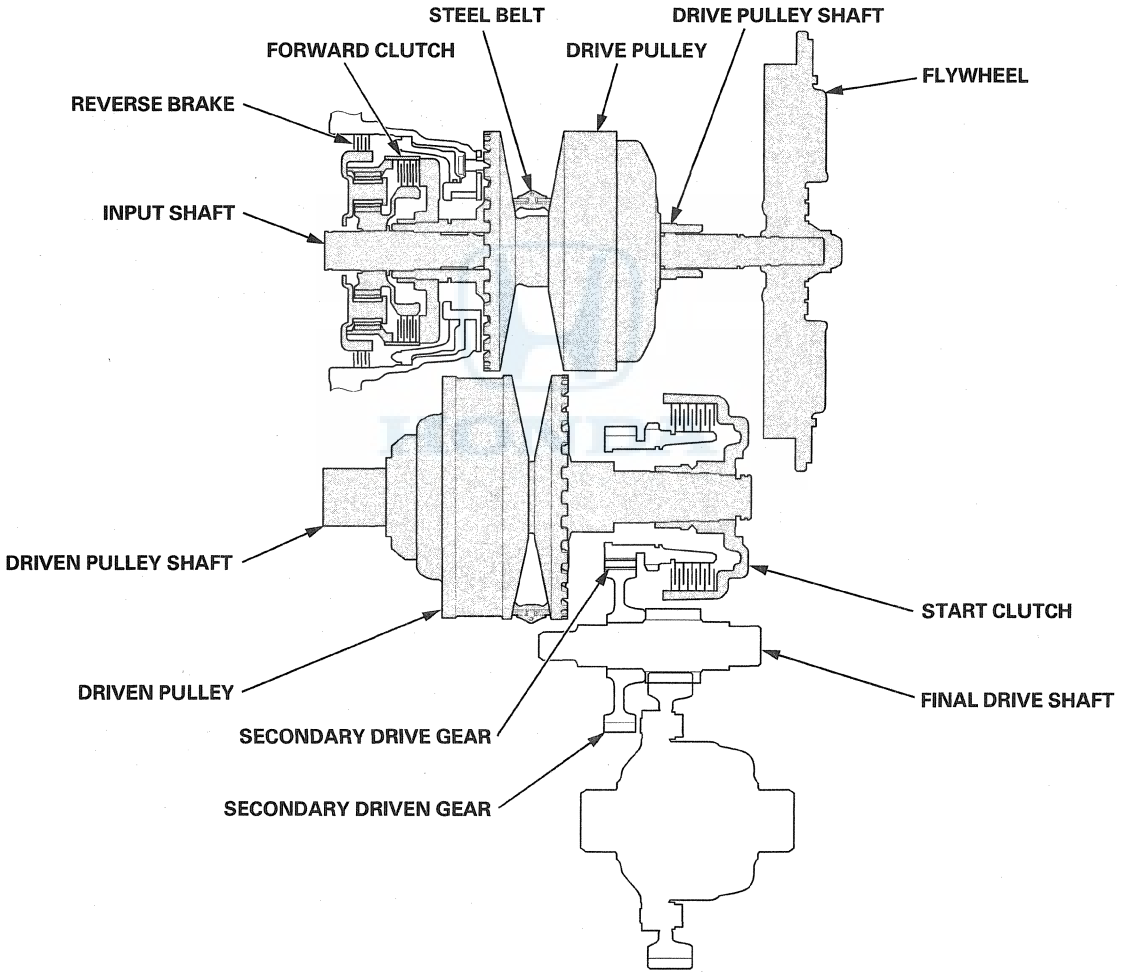
Power Flow

P Position

Hydraulic pressure is not applied to the start clutch, the forward clutch, and the reverse brake. Power is not transmitted to the secondary drive gear. The secondary drive gear is locked by the park pawl interlocking the park gear.

N Position

Engine power transmitted from the flywheel drives the input shaft, but hydraulic pressure is not applied to the forward clutch and the reverse brake. Power is not transmitted to the drive pulley shaft. Also hydraulic pressure is not applied to the start clutch.

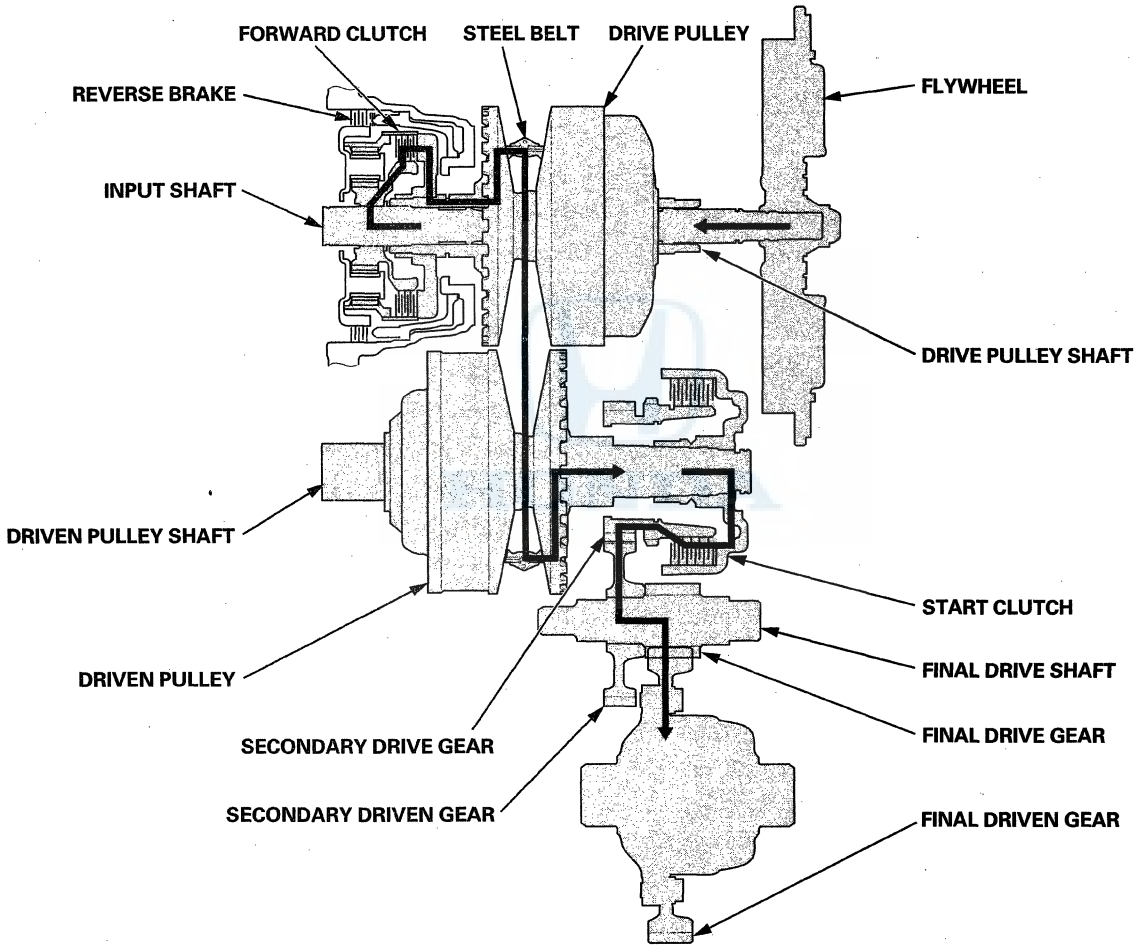


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System Description (cont'd)

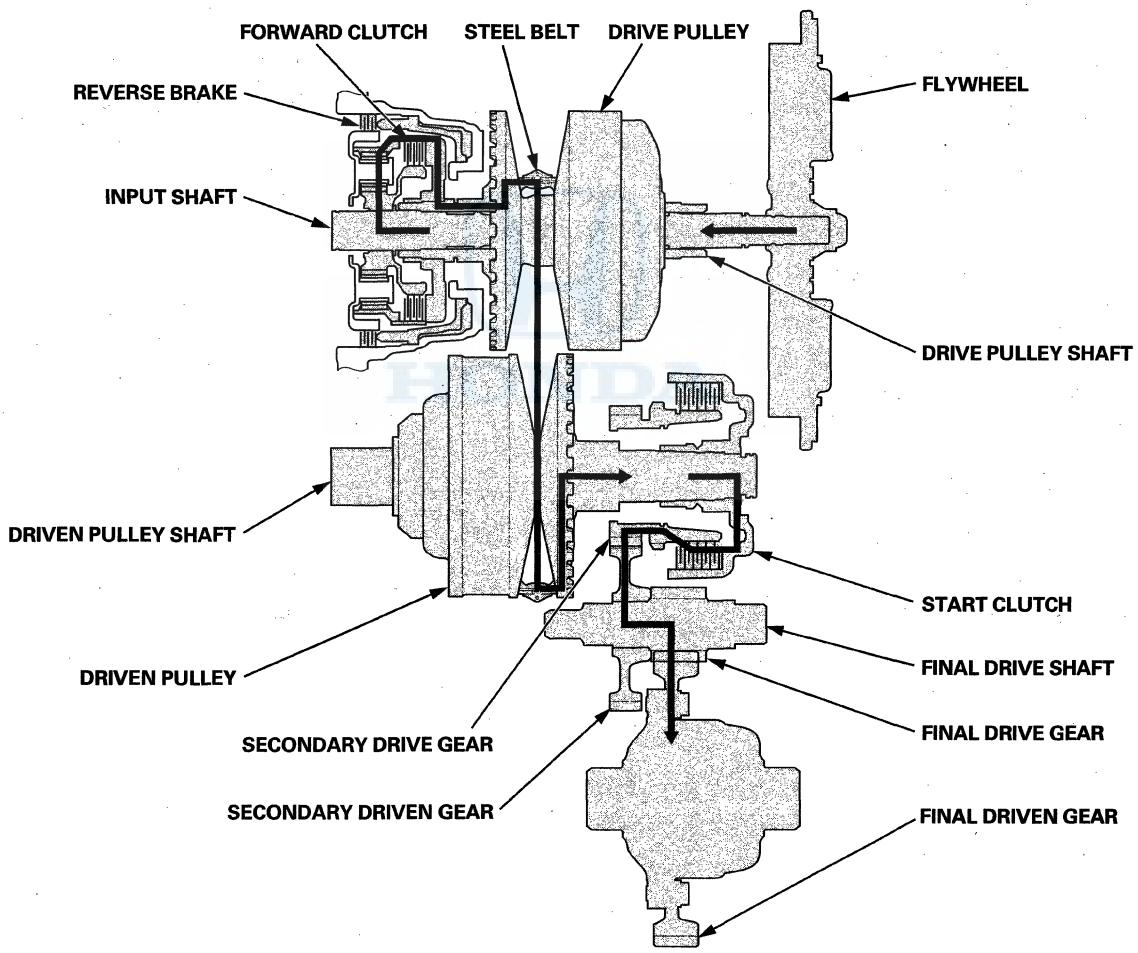
Forward Range; D Position

- Forward clutch: engage
- Reverse brake: disengage
- Start clutch: engage
- Hydraulic pressure is applied to the forward clutch and the start clutch, and the sun gear drives the forward clutch.
- The forward clutch drives the drive pulley shaft, which drives the driven pulley shaft linked by the steel belt.
- The driven pulley shaft drives the secondary drive gear via the start clutch.
- Power is transmitted to the secondary driven gear and the final drive gear, which in turn drives the final driven gear.



Reverse Range; R Position

- Forward clutch: disengage
- Reverse brake: engage
- Start clutch: engage
- Hydraulic pressure is applied to the reverse brake and the start clutch, and the planetary carrier locks with the reverse brake.
- The sun gear drives the planetary pinion gears to rotate, and the planetary pinion gears drive the ring gear in the opposite direction from the rotational direction of the sun gear.
- The ring gear drives the drive pulley shaft via the forward clutch drum, and the drive pulley shaft drives the driven pulley shaft linked by the steel belt.
- The driven pulley shaft drives the secondary drive gear via the start clutch.
- Power is transmitted to the secondary driven gear and the final drive gear, which in turn drives the final driven gear.



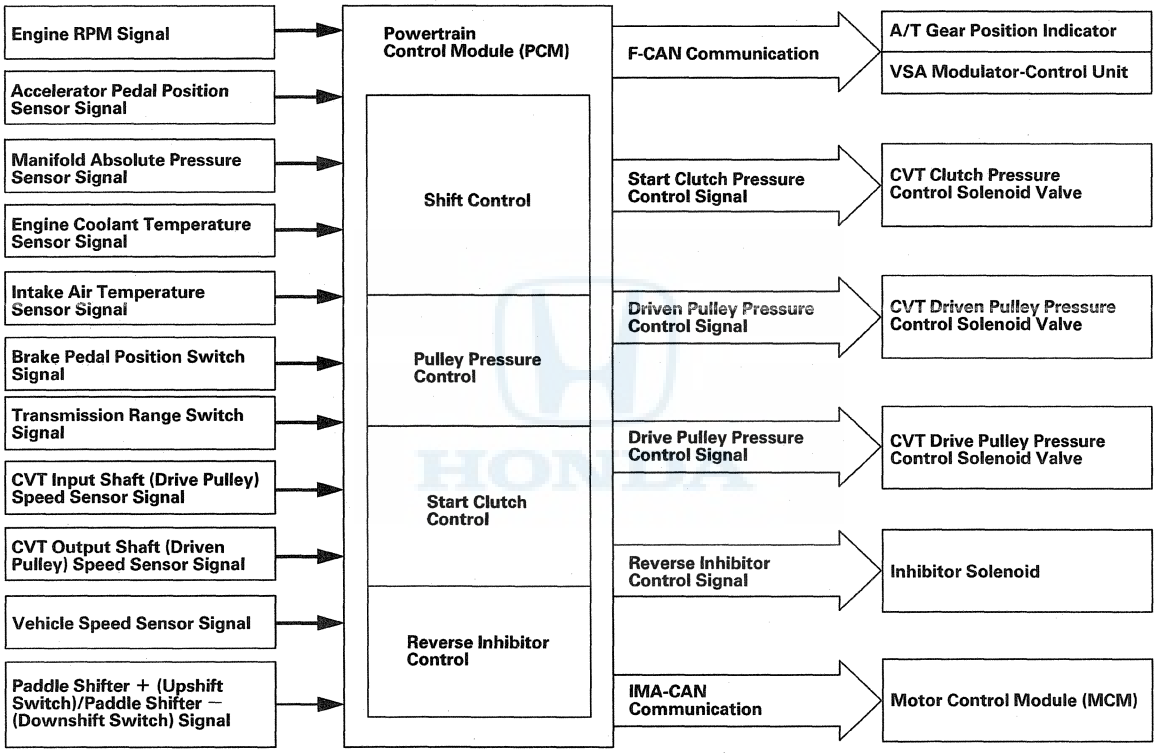
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System Description (cont'd)

Electronic Control System

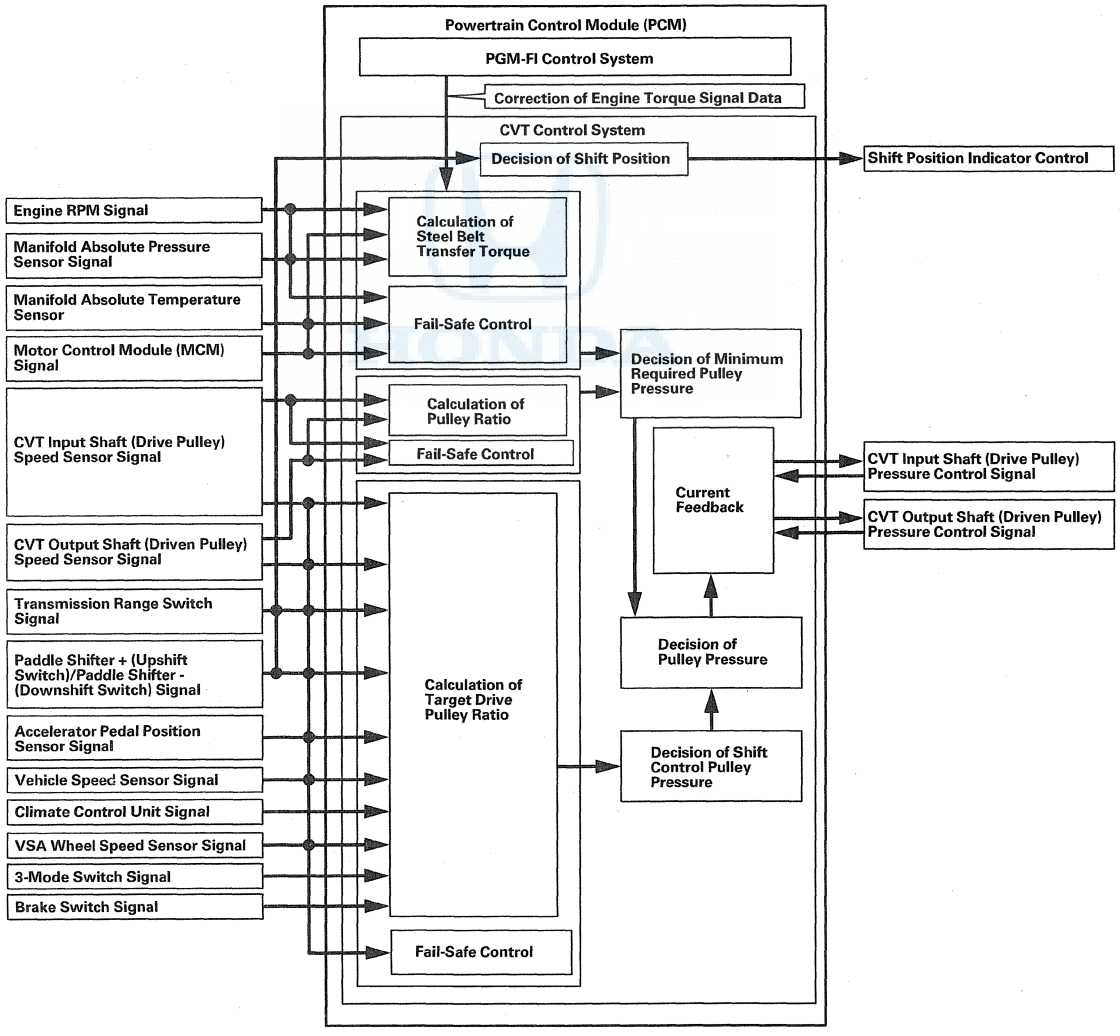
Electronic Control

The electronic control system consists of the PCM, sensors, switches, and solenoid valves.
The PCM receives input signals from sensors, switches, other control units, processes data, and outputs signals for the engine control system and the CVT control system. The CVT control system includes shift control, pulley pressure control, start clutch pressure control, and reverse inhibitor control. The PCM actuates the pulley control solenoid valves to control pulley control valves A and B shifting transmission pulley ratios.



Pulley Pressure Control/Shift Control

To reduce steel belt slippage and increase steel belt life, the PCM calculates signals from sensors and switches, and actuates the pulley pressure control solenoid valves to maintain optimum pulley pressure. When the pulley ratio is low (low vehicle speed), high hydraulic pressure works on the movable face of the driven pulley and reduces the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the drive pulley to eliminate the steel belt slippage. When the pulley ratio is high (high vehicle speed), high hydraulic pressure works on the movable face of the drive pulley and reduces the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage.
The PCM compares actual driving conditions with programmed driving conditions to control shifting, and it instantly determines a drive pulley ratio from various signals sent from sensors and switches. The PCM activates the CVT drive pulley pressure control solenoid valve to control pulley pressure to the pulleys. The drive pulley drives the driven pulley via a steel belt at varying ratios ranging from 2.526 to 0.421 in D and 4.510 to 1.725 in R.

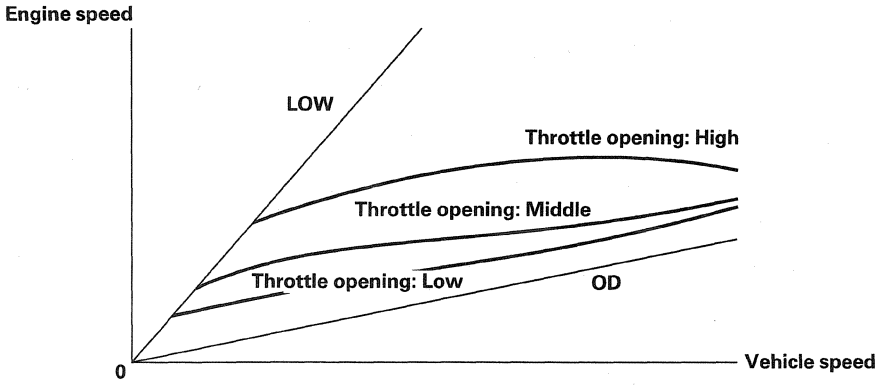


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System Description (cont'd)

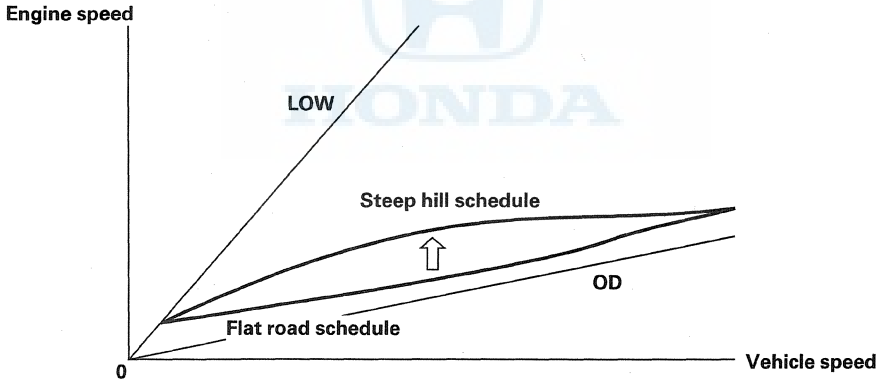
Grade Logic Control: Ascending Control

When the PCM determines that the vehicle is climbing a hill in D, the system selects the most suitable shift schedule based on the steepness of the grade so the vehicle can run smoothly and have more power when needed.



Grade Logic Control: Descending Control

When the PCM determines that the vehicle is going down a hill in D, the system selects the most suitable shift schedule based on the steepness of the grade so the vehicle can run smoothly in combination with engine braking.



Shift-Hold Control

When driving on winding roads, and the throttle is suddenly released and the brakes are applied, as is the case when decelerating at the entrance of a curve, the Shift-Hold Control keeps the transmission in its current (lower) ratio as it negotiates the corner and accelerates out. When the vehicle is driven aggressively on a winding road, the PCM will keep the engine speed on a higher-than-normal setting, so the vehicle can run smooth and have more power. The transmission will resume the normal setting after the PCM determines that normal driving has resumed.

3-Mode Drive System

This vehicle is equipped with the 3-Mode Drive System. The transmission control system controls the drive system by switching between the Normal Mode (standard drive mode), the ECON Mode, and the Sport Mode using a gear map, imparting the characteristics of each mode to the running of the vehicle.

Normal Mode

This mode controls the drive system so that, when the accelerator pedal is depressed only slightly during acceleration, the engine revolutions are kept mainly constant with respect to the speed of the vehicle, and when the accelerator pedal is depressed by a large amount, acceleration is maintained within a practical running limit without imparting stress on the vehicle and passengers.

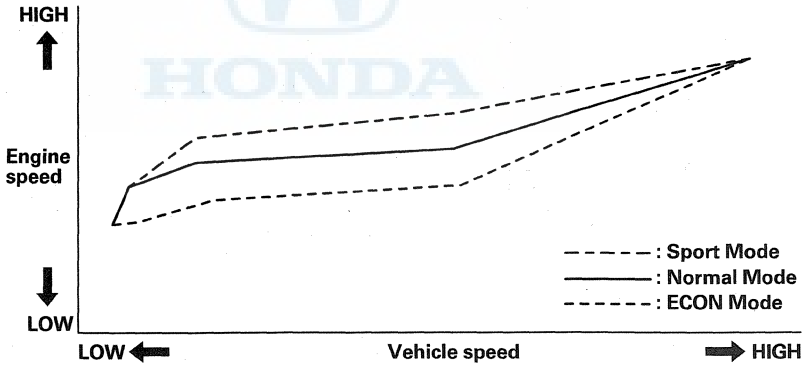
ECON Mode

This mode controls the drive system so that, when the accelerator pedal is depressed only slightly during acceleration, the engine revolutions are kept lower than the Normal Mode with respect to the speed of the vehicle, improving fuel economy. By lowering the response in engine revolutions with respect to the amount by which the accelerator pedal is depressed during acceleration, gear change responsiveness is softened and economy improved. However, when the accelerator pedal is depressed by a large amount, the same control is used as in the Normal Mode to maintain acceleration performance.

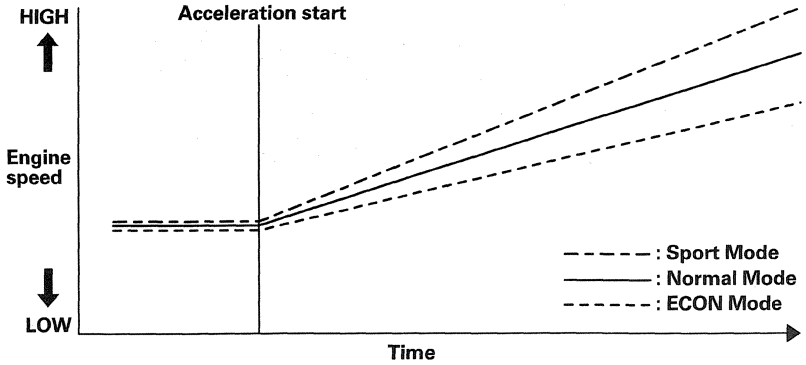
Sport Mode

This mode controls the drive system so that, when the accelerator pedal is depressed only slightly during acceleration, torque is improved over the Normal Mode with assistance from the IMA motor, maintaining powerful running of the engine. By increasing the response in engine revolutions with respect to the amount by which the accelerator pedal is depressed during acceleration, gear change responsiveness and torque during acceleration are improved.

Change the shift map



Reduce or increase the engine speed increasing ratio



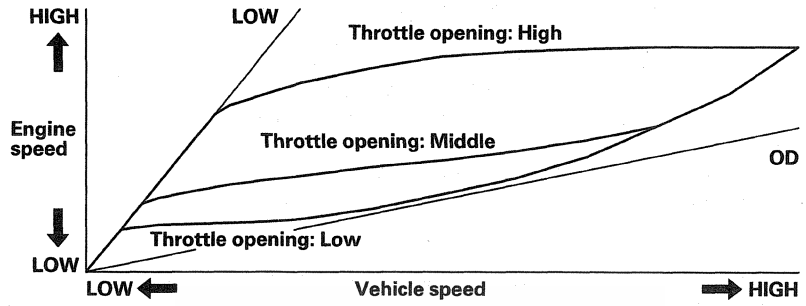
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System Description (cont'd)

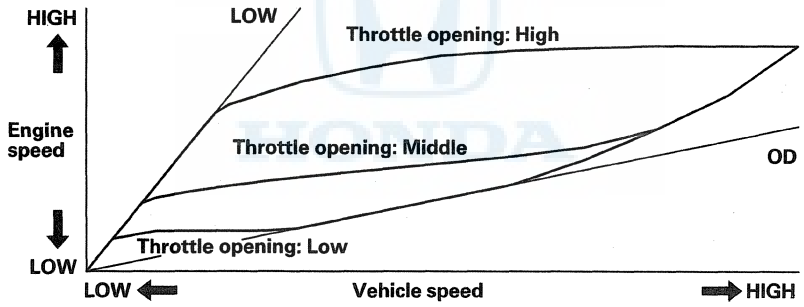
Change the driving characteristic

Each driving mode has a specialized shift map. Using information collected from the sensors, each shift map has specific shift points designed to keep the engine in its optimum rpm range for power and economy. The target engine rpm and the vehicle speed in each mode on a smooth, level road at light, normal, and wide open throttle position is shown in the graphs below.

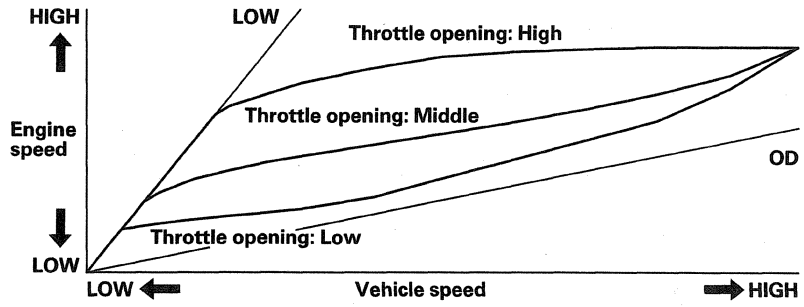
Normal Mode



ECON Mode

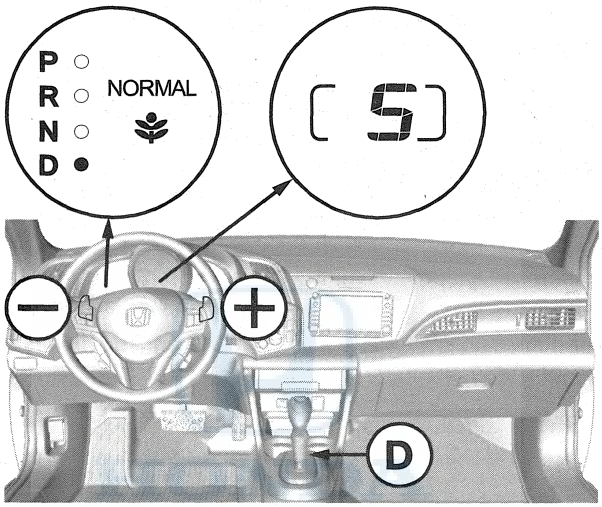


Sport Mode



Smart-Paddle Shift Mode

When in the Normal Mode or the ECON Mode, engage the smart-paddle shift mode by pressing either of the steering wheel mounted paddle shifters while driving in D. In this mode, the transmission can downshift by pressing the paddle shifter − (downshift switch), or upshift by pressing the paddle shifter + (upshift switch). Each time the transmission is shifted to any of the seven speeds using the paddles, the shift indicator in the gauge control module displays the current position. The system returns to the automatic shift mode and the shift indicator display turns off when the paddle shifter + (upshift switch) is held for about 2 seconds, when the optional Mode switch is pressed, or when the PCM detects a steady cruise.



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System Description (cont'd)

Manual-Paddle Shift Mode

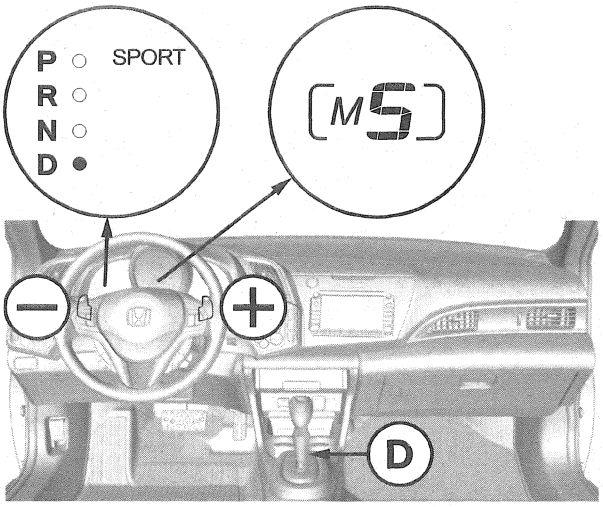
In D, the Sport Mode has two modes; the automatic shift mode and the manual-paddle shift mode. In the sport driving mode, the transmission keeps the engine at a higher rpm than the Normal Mode or the ECON Mode setting, and the steering wheel-mounted paddle shifters are ready to be activated to switch to the manual-paddle shift mode. In the sport driving mode, the shift indicator and the M indicator in the gauge control module do not come on.

When the paddle shifter + (upshift switch) or paddle shifter — (downshift switch) is pressed, the sport driving mode is canceled and the manual-paddle shift mode comes into operation. The shift indicator displays the number of the selected position, and the M indicator comes on. In the manual-paddle shift mode, the driver can shift up and down manually from 1st through 7th positions by using the paddle shifters, much like a manual transmission. The paddle shifters are installed on the back of the steering wheel, and the driver can shift positions by pressing the paddle shifters without taking either hand off the steering wheel.

In the manual-paddle shift mode, the transmission must be shifted up and down by pressing the paddle shifters. However, if the vehicle is coasting at a speed that would cause the engine to over-rev by downshifting, the transmission will not downshift when the paddle shifter — (downshift switch) is pressed. The shift indicator blinks the number of the selected position several times, then returns to the current position. If the vehicle speed reaches an appropriate speed while the shift indicator is blinking, the transmission downshifts and the shift indicator displays the selected position. Likewise, if the vehicle speed is below an appropriate speed to upshift when the paddle shifter + (upshift switch) is pressed, the transmission will not upshift. The shift indicator blinks the number of the selected position several times, and then returns to the number of the current position. If the vehicle speed reaches an appropriate upshift speed while the shift indicator is blinking, the transmission upshifts and the shift indicator displays the selected position.

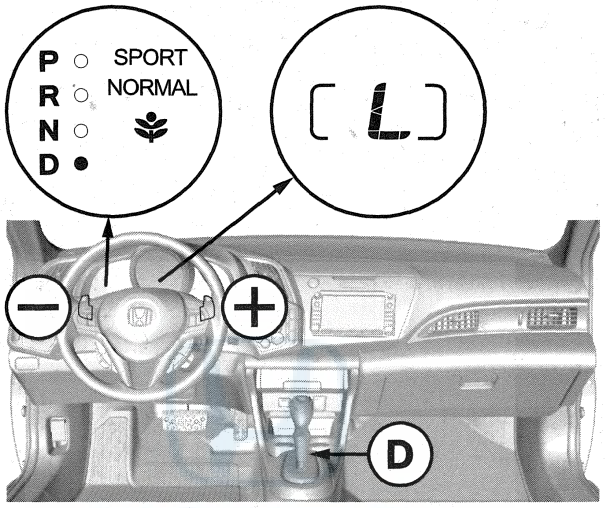
This mode has automatic upshifting areas to prevent engine over-revving, and downshifting areas so the vehicle can run smoothly with more power to cope with upcoming acceleration. When coasting, the transmission downshifts to the next lower position if the vehicle slows down to the programmed speed, or by pressing the brake pedal.
When the transmission decelerates to a stop, the transmission shifts to 1st position automatically. The transmission can be shifted to 2nd position by pressing the paddle shifter + (upshift switch) while the vehicle is stopped, and the vehicle can start off in 2nd position.

The number of the selected position goes off from the shift indicator, the M indicator goes off, and the system changes from the manual-paddle shift mode when the paddle shifter + (upshift switch) is held for about 2 seconds or when the optional Mode switch is pressed.



L mode

For maximum engine braking and power for climbing, activate the L mode by pressing the paddle shifter + (upshift switch) and the paddle shifter − (downshift switch) at the same time and hold them for about 5 seconds. The shift indicator displays an L while in this mode. The system will return to the automatic shift mode and the shift indicator display turns off when the paddle shifter + (upshift switch) and the paddle shifter − (downshift switch) are held at the same time for about 2 seconds or when the optional Mode switch is pressed.



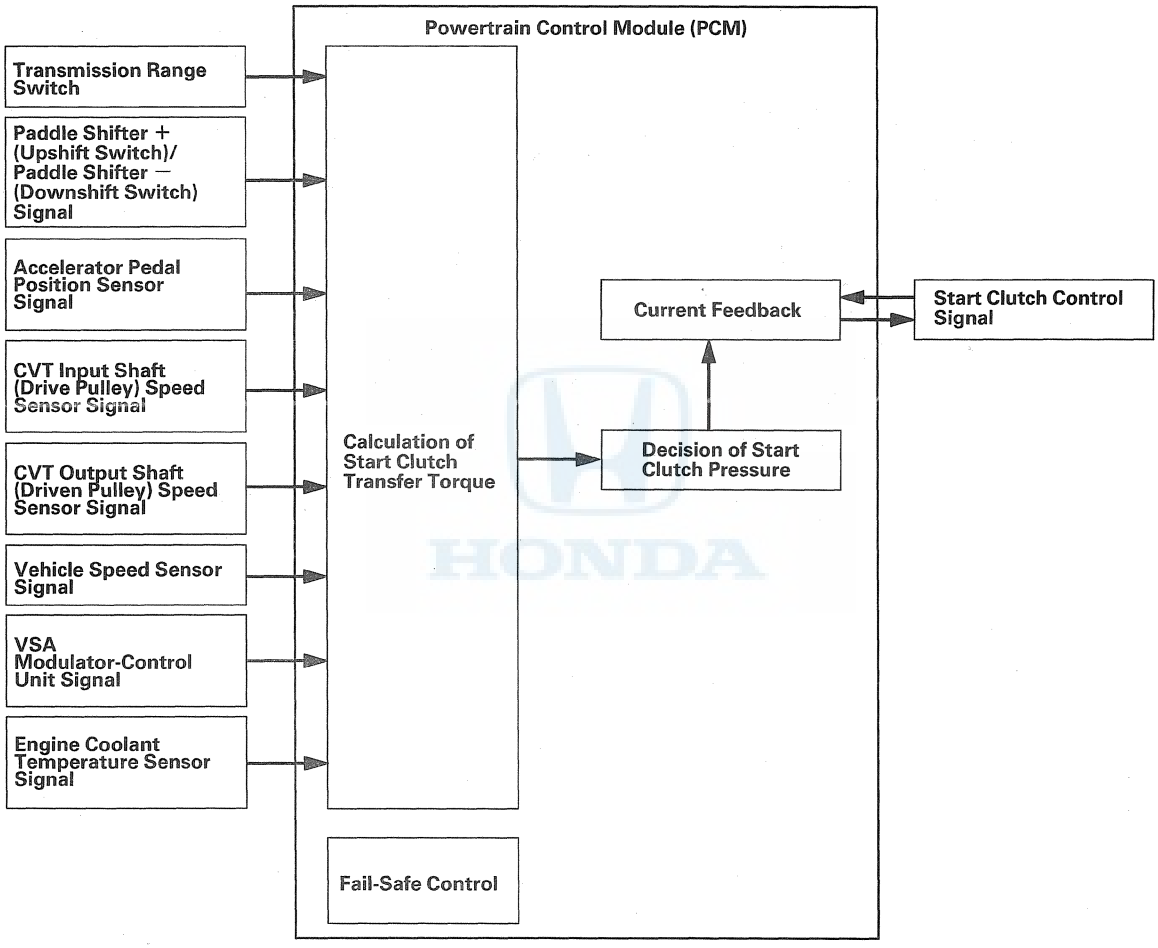
HONDA

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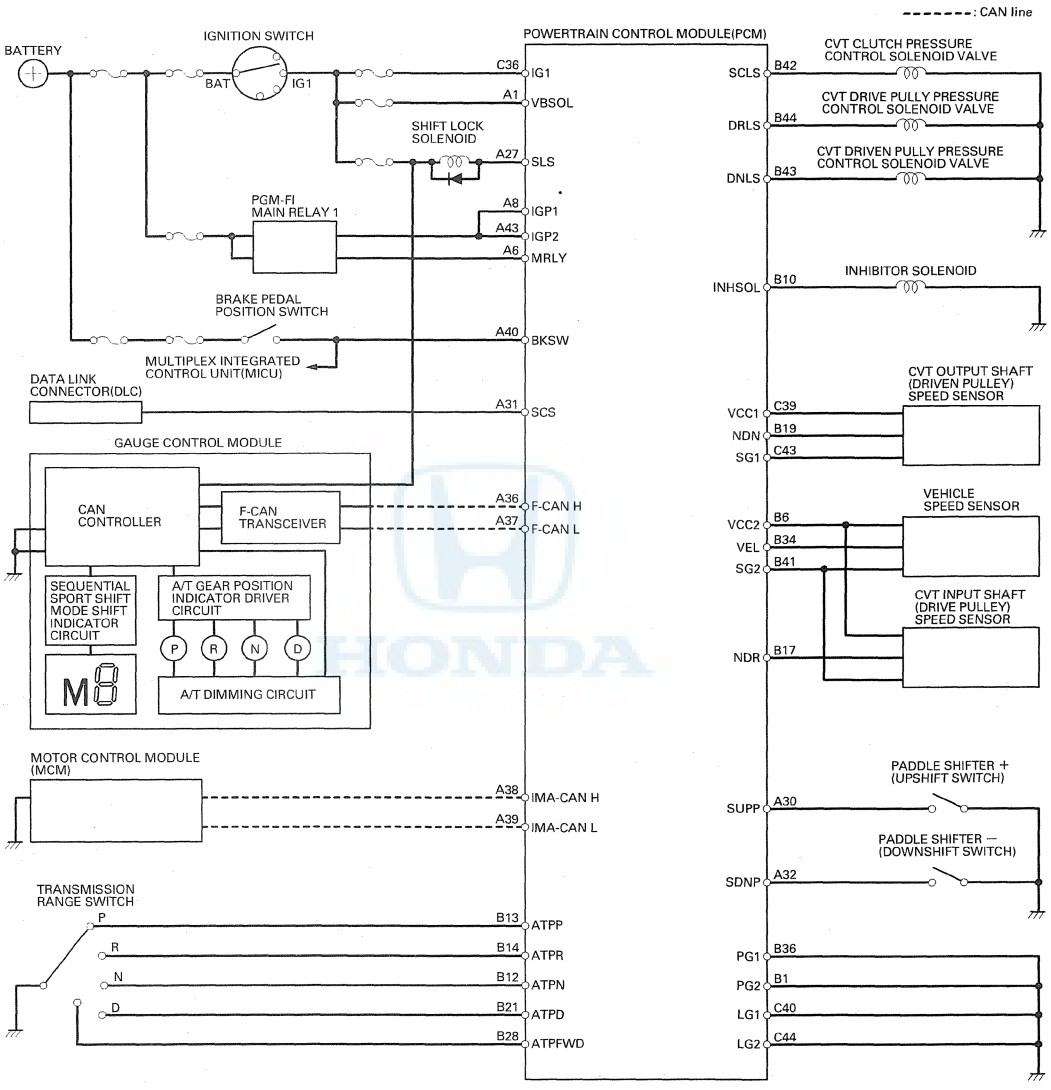
System Description (cont'd)

Start Clutch Pressure Control

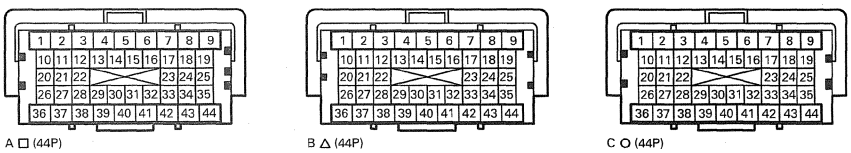
The hydraulic-controlled start clutch, like a torque converter, controls smooth starting-off and creeping in D and R. The PCM inputs signals from the sensors and the switches, and actuates the CVT clutch pressure control solenoid valve to regulate the clutch reducing pressure, and the clutch reducing pressure controls the start clutch.



PCM CVT Control System Electrical Connections



PCM Harness Connector Terminal Locations



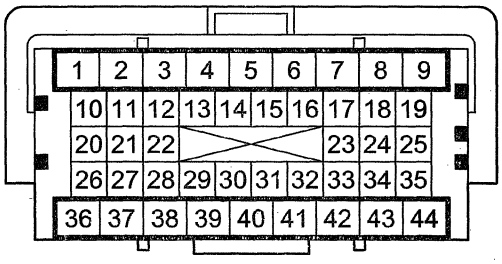
A □ (44P) B △ (44P) C ○ (44P)

Terminal side of female terminals

(cont'd)

System Description (cont'd)

PCM Inputs and Outputs at Connector A □ (44P)



Terminal side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Signal
A1	LT GRN	VBSOL (POWER SOURCE FOR SOLENOID VALVES)	Power source for solenoid valves	With ignition switch ON (II): battery voltage
A6	PUR	MRLY (PGM-FI MAIN RELAY 1)	Drives PGM-FI main relay 1	With ignition switch ON (II): about 0 V With ignition switch OFF: battery voltage
A8	YEL	IGP1 (POWER SOURCE 1)	Power source for PCM circuit	With ignition switch ON (II): battery voltage
A27	GRY	SLS (SHIFT LOCK SOLENOID)	Drives shift lock solenoid	With ignition switch ON (II), in the P, brake pedal pressed, and accelerator released: about 0 V
A30	YEL	SUPP (PADDLE SHIFTER + UPSHIFT SWITCH)	Detects paddle shifter + (upshift switch) signal	With ignition switch ON (II) and paddle shifter + (upshift switch) pressed: about 0 V With ignition switch ON (II) and paddle shifter + (upshift switch) released: battery voltage
A31	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check signal	With service check signal shorted using the HDS: about 0 V With service check signal opened: about 5.0 V
A32	LT GRN	SDNP (PADDLE SHIFTER − DOWNSHIFT SWITCH)	Detects paddle shifter − (downshift switch) signal	With ignition switch ON (II) and paddle shifter − (downshift switch) pressed: about 0 V With ignition switch ON (II) and paddle shifter − (downshift switch) released: battery voltage
A36	GRN	F-CAN H (CAN COMMUNICATION SIGNAL HIGH)	Sends and receives communication signal	With ignition switch ON (II): pulses
A37	PNK	F-CAN L (CAN COMMUNICATION SIGNAL LOW)	Sends and receives communication signal	With ignition switch ON (II): pulses
A38	WHT	IMA-CAN H (CAN COMMUNICATION SIGNAL HIGH)	Detects and receives communication signal to motor control module (MCM)	With ignition switch ON (II): pulses

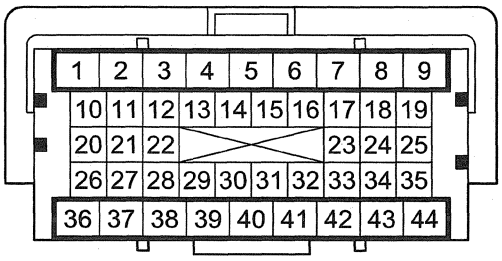
Terminal Number	Wire Color	Terminal Name	Description	Signal
A39	RED	IMA-CAN L (CAN COMMUNICATION SIGNAL LOW)	Detects and receives communication signal to motor control module (MCM)	With ignition switch ON (II): pulses
A40	WHT	BKSW (BRAKE PEDAL POSITION SWITCH)	Detects brake pedal position switch signal	Brake pedal released: about 0 V Brake pedal pressed: battery voltage
A43	YEL	IGP2 (POWER SOURCE 2)	Power source for PCM circuit	With ignition switch ON (II): battery voltage

HONDA

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System Description (cont'd)

PCM Inputs and Outputs at Connector B △ (44P)



Terminal side of female terminals

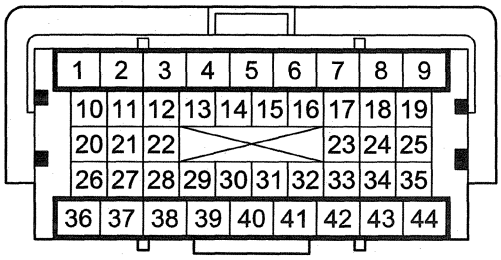
Terminal Number	Wire Color	Terminal Name	Description	Signal
B1	BRN	PG2 (POWER GROUND)	Ground circuit for PCM circuit	Less than 0.2 V at all times
B6	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
B10	GRN/BLK	INHSOL (INHIBITOR SOLENOID CONTROL)	Drives inhibitor solenoid	Until radiator fan comes on twice during idling in all positions: about 0 V With reverse inhibitor control in R: battery voltage
B12	RED/BLK	ATPN (TRANSMISSION RANGE SWITCH IN N)	Detects transmission range switch N position signal input	With ignition switch ON (II) in N: about 0 V With ignition switch ON (II) in any position other than N: about 5.0 V
B13	BLU/BLK	ATPP (TRANSMISSION RANGE SWITCH IN P)	Detects transmission range switch P position signal input	With ignition switch ON (II) in P: about 0 V With ignition switch ON (II) in any position other than P: battery voltage
B14	WHT	ATPR (TRANSMISSION RANGE SWITCH IN R)	Detects transmission range switch R position signal input	With ignition switch ON (II) in R: about 0 V With ignition switch ON (II) in any position other than R: battery voltage
B17	WHT/RED	NDR (CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR)	Detects CVT input shaft (drive pulley) speed sensor signal	With ignition switch ON (II): about 0 V, or about 5.0 V With engine idling in N: pulses
B19	WHT/GRN	NDN (CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR)	Detects CVT output shaft (driven pulley) speed sensor signal	With ignition switch ON (II): about 0 V, or about 5.0 V With engine idling in N: pulses
B21	PNK	ATPD (TRANSMISSION RANGE SWITCH IN D)	Detects transmission range switch D position signal input	With ignition switch ON (II) in D: about 0 V With ignition switch ON (II) in any position other than D: battery voltage

Terminal Number	Wire Color	Terminal Name	Description	Signal
B28	BLU/YEL	ATPFWD (TRANSMISSION RANGE SWITCH IN FWD)	Detects transmission range switch FWD position signal	With ignition switch ON (II) in D: about 0 V With ignition switch ON (II) in any position other than D: battery voltage
B34	BLK/WHT	VEL (VEHICLE SPEED SENSOR)	Detects vehicle speed sensor	With ignition switch ON (II) and when vehicle is stopped: about 0 V, or about 5.0 V Depending on vehicle speed: pulses
B36	BLK	PG1 (POWER GROUND)	Ground circuit for PCM circuit	Less than 0.2 V at all times
B41	GRN/YEL	SG2 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
B42	YEL	SCLS (CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE)	Drives CVT clutch pressure control solenoid valve	With ignition switch ON (II): duty controlled
B43	GRN/WHT	DNLS (CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE)	Drives CVT driven pulley pressure control solenoid valve	With ignition switch ON (II): duty controlled
B44	BLU/WHT	DRLS (CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE)	Drives CVT drive pulley pressure control solenoid valve	With ignition switch ON (II): duty controlled

(cont'd)

System Description (cont'd)

PCM Inputs and Outputs at Connector C ○ (44P)



Terminal side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Signal
C36	BLK/RED	IG1 (IGNITION SIGNAL)	Detects ignition signal	With ignition switch ON (II): battery voltage
C39	YEL/RED	VCC1 (SENSOR VOLTAGE)	Provides sensor reference voltage	With ignition switch ON (II): about 5.0 V
C40	BRN/YEL	LG1 (LOGIC GROUND)	Ground circuit for PCM circuit	Less than 0.2 V at all times
C43	GRN/WHT	SG1 (SENSOR GROUND)	Sensor ground	Less than 0.2 V at all times
C44	BRN/YEL	LG2 (LOGIC GROUND)	Ground circuit for PCM circuit	Less than 0.2 V at all times

Hydraulic Control

The hydraulic control system is controlled by the CVTF pump, the valves, and the solenoid valves. The CVTF pump is driven by the input shaft. The CVTF pump and the input shaft are linked by the CVTF pump drive chain and the sprockets. Fluid from the CVTF pump flows through the pressure high (PH) regulator valve to maintain specified pressure to the drive pulley, the driven pulley, and the manual valve.

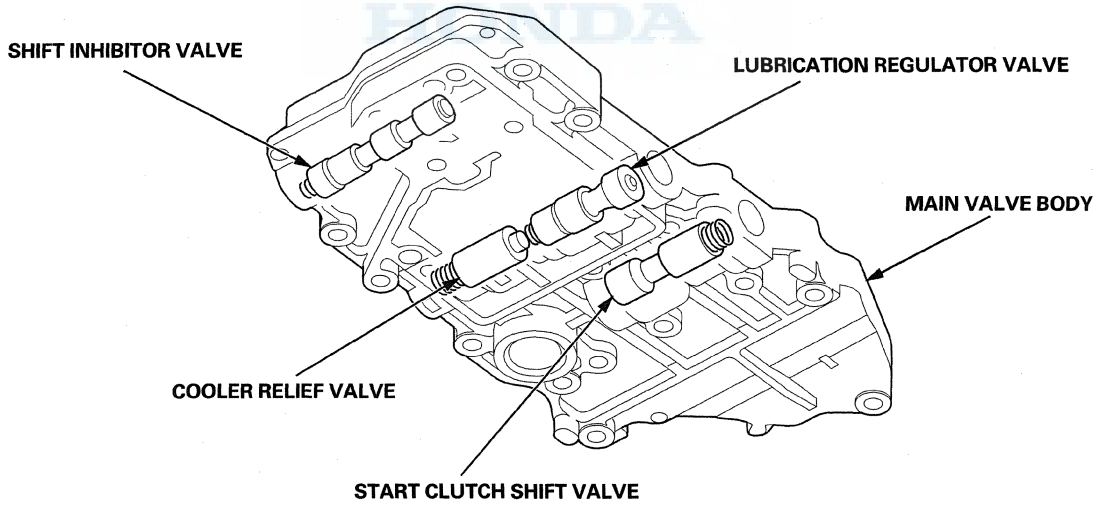
The lower valve body assembly includes the main valve body, the secondary valve body, the CVT driven pulley pressure control solenoid valve, the CVT clutch pressure control solenoid valve, the CVT drive pulley pressure control solenoid valve, and the inhibitor solenoid.

The manual valve body is bolted on the intermediate housing, and houses the manual valve which switches hydraulic pressure to meet with the shift lever position.

Main Valve Body

The main valve body contains the start clutch shift valve, the shift inhibitor valve, the lubrication regulator valve, and the cooler relief valve.

- Start Clutch Shift Valve
  When a control system malfunction occurs, the start clutch shift valve receives shift inhibitor pressure (SI) and covers the lubrication pressure (LUB) bypass circuit port.
- Shift Inhibitor Valve
  The shift inhibitor valve switches the fluid passage to switch the start clutch control from electronic control to hydraulic control when the electronic control system is faulty.
- Lubrication Regulator Valve
  The lubrication regulator valve stabilizes the lubrication pressure (LUB) to the internal circuit.
- Cooler Relief Valve
  The cooler relief valve stabilizes the CVTF cooler pressure (COL) and recirculation pressure (RCC) to the CVTF cooler and to the internal circuit.



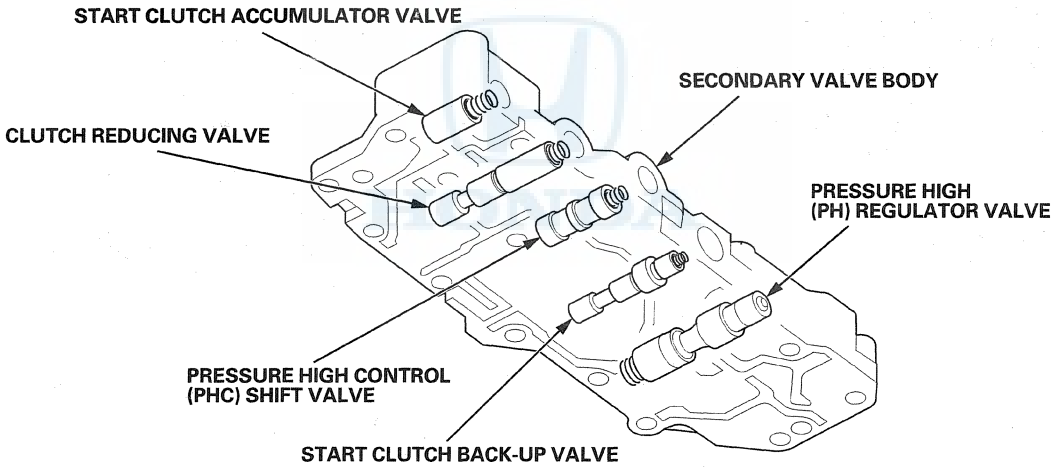
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System Description (cont'd)

Secondary Valve Body

The secondary valve body contains the pressure high (PH) regulator valve, the pressure high control (PHC) shift valve, the start clutch back-up valve, the clutch reducing valve, and the start clutch accumulator valve.

- PH Regulator Valve
  The PH regulator valve maintains hydraulic pressure supplied from the CVTF pump, and supplies PH pressure to the hydraulic control circuit and the lubrication circuit. PH pressure is regulated at the PH regulator valve by the PH control pressure (PHC) from PHC shift valve.
- PHC Shift Valve
  The PHC shift valve supplies PH control pressure (PHC) to the PH regulator valve to regulate PH pressure in accordance with the drive pulley control pressure (DRC) or driven pulley pressure (DNC).
- Start Clutch Back-Up Valve
  When a control system malfunction occurs, the start clutch back-up valve supplies start clutch control B pressure (CCB) based on shift inhibitor pressure (SI) to the start clutch.
- Clutch Reducing Valve
  The clutch reducing valve receives PH pressure from the PH regulator valve and regulates clutch reducing pressure (CR).
- Start Clutch Accumulator Valve
  The start clutch accumulator valve stabilizes the hydraulic pressure that is supplied to the start clutch.

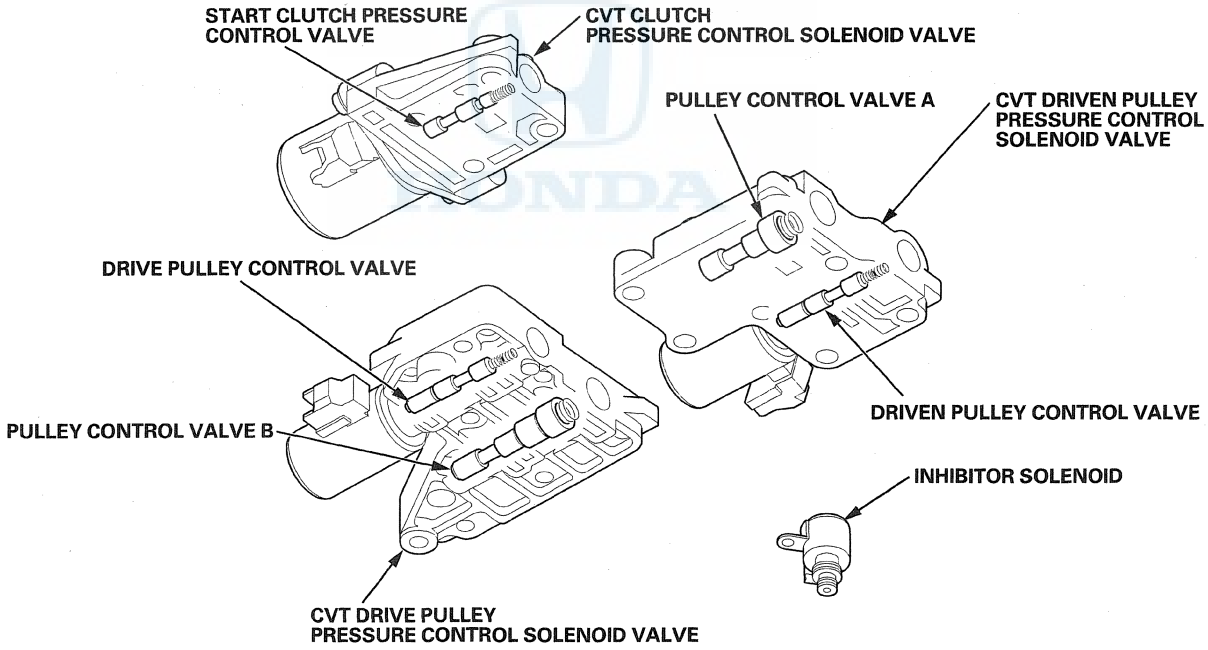


CVT Driven Pulley Pressure Control Solenoid Valve
The CVT driven pulley pressure control solenoid valve contains the driven pulley control valve with the solenoid and pulley control valve A. The driven pulley control solenoid valve controls pulley control valve A's position, which applies driven pulley pressure (DN) to the driven pulley.

CVT Drive Pulley Pressure Control Solenoid Valve
The CVT drive pulley pressure control solenoid valve contains the drive pulley control valve with the solenoid and pulley control valve B. The drive pulley control solenoid valve controls the position of pulley control valve B which applies drive pulley pressure (DR) to the drive pulley. The combination of the CVT driven pulley pressure control solenoid valve and the CVT drive pulley pressure control solenoid valve, applies pulley control pressures to the respective pulleys creating complete power transfer, eliminating steel belt slippage and increasing steel belt life.

CVT Clutch Pressure Control Solenoid Valve
The CVT clutch pressure control solenoid valve consists of the start clutch pressure control valve and the solenoid. The CVT clutch pressure control solenoid valve controls start clutch engagement according to the throttle opening.

Inhibitor Solenoid
The inhibitor solenoid controls reverse inhibitor valve's position, which applies reverse inhibitor pressure (SA) to the reverse brake.



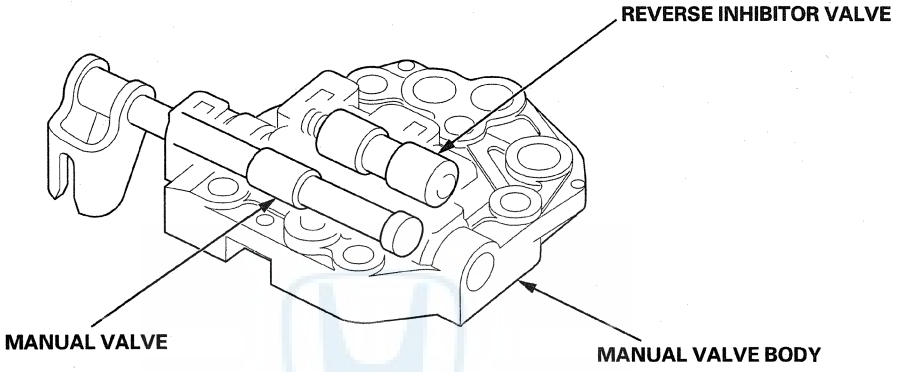
(cont'd)

System Description (cont'd)

Manual Valve Body

The manual valve body contains the manual valve and the reverse inhibitor valve. The manual valve body is bolted on the intermediate housing.

- Manual Valve
  The manual valve mechanically uncovers/covers the fluid passage according to the shift lever position.
- Reverse Inhibitor Valve
  The reverse inhibitor valve is controlled by reverse inhibitor pressure (SA) from the inhibitor solenoid. The reverse inhibitor valve intercepts the hydraulic pressure flowing to the reverse brake while the vehicle is moving forward at speeds over about 6 mph (10 km/h).



Hydraulic Flow

As the engine turns, the CVTF pump starts to operate. Transmission fluid (CVTF) is drawn through the CVTF strainer (filter) and discharged into the hydraulic circuit. Then, CVTF flowing from the CVTF pump flows to the pressure high (PH) regulator valve and becomes the pressure high (PH) pressure. PH pressure flows to the pulley control valves and then to the pulleys.

The PCM actuates the solenoid valves to control hydraulic pressure shifting pulley ratio and engaging the start clutch.

Hydraulic Pressure at the Port for use in the Hydraulic Circuit:

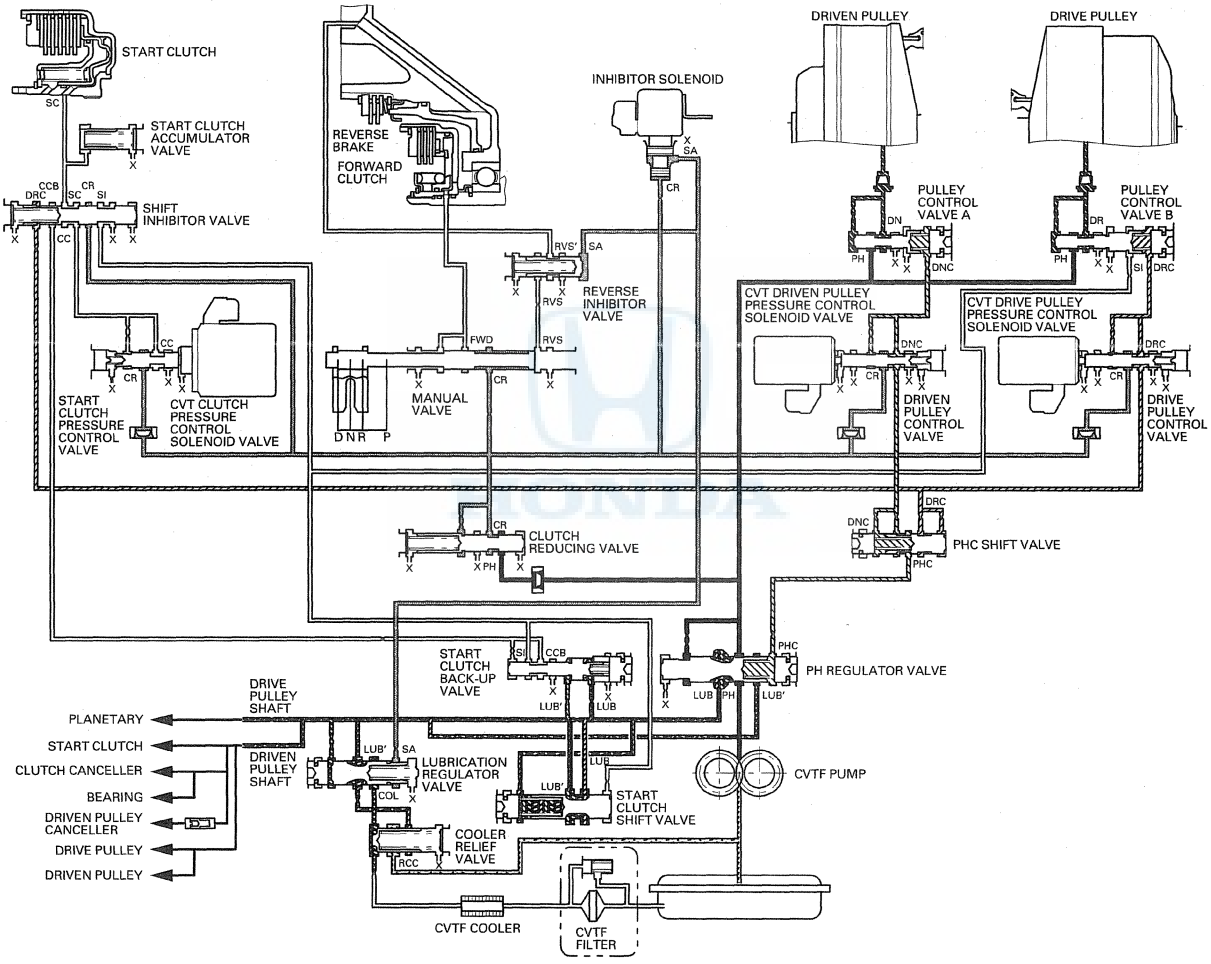
Port No.	Hydraulic Pressure	Port No.	Hydraulic Pressure
CC	Start Clutch Control	LUB	Lubrication
CCB	Start Clutch Control B	PH	Pressure High
COL	CVTF Cooler	PHC	Pressure High Control
CR	Clutch Reducing	RCC	Recirculation
DN	Driven Pulley	SA	Reverse Inhibitor
DNC	Driven Pulley Control	RVS	Reverse Brake
DR	Drive Pulley	SC	Start Clutch
DRC	Drive Pulley Control	SI	Shift Inhibitor
FWD	Forward Clutch	X	Drain

(cont'd)

System Description (cont'd)

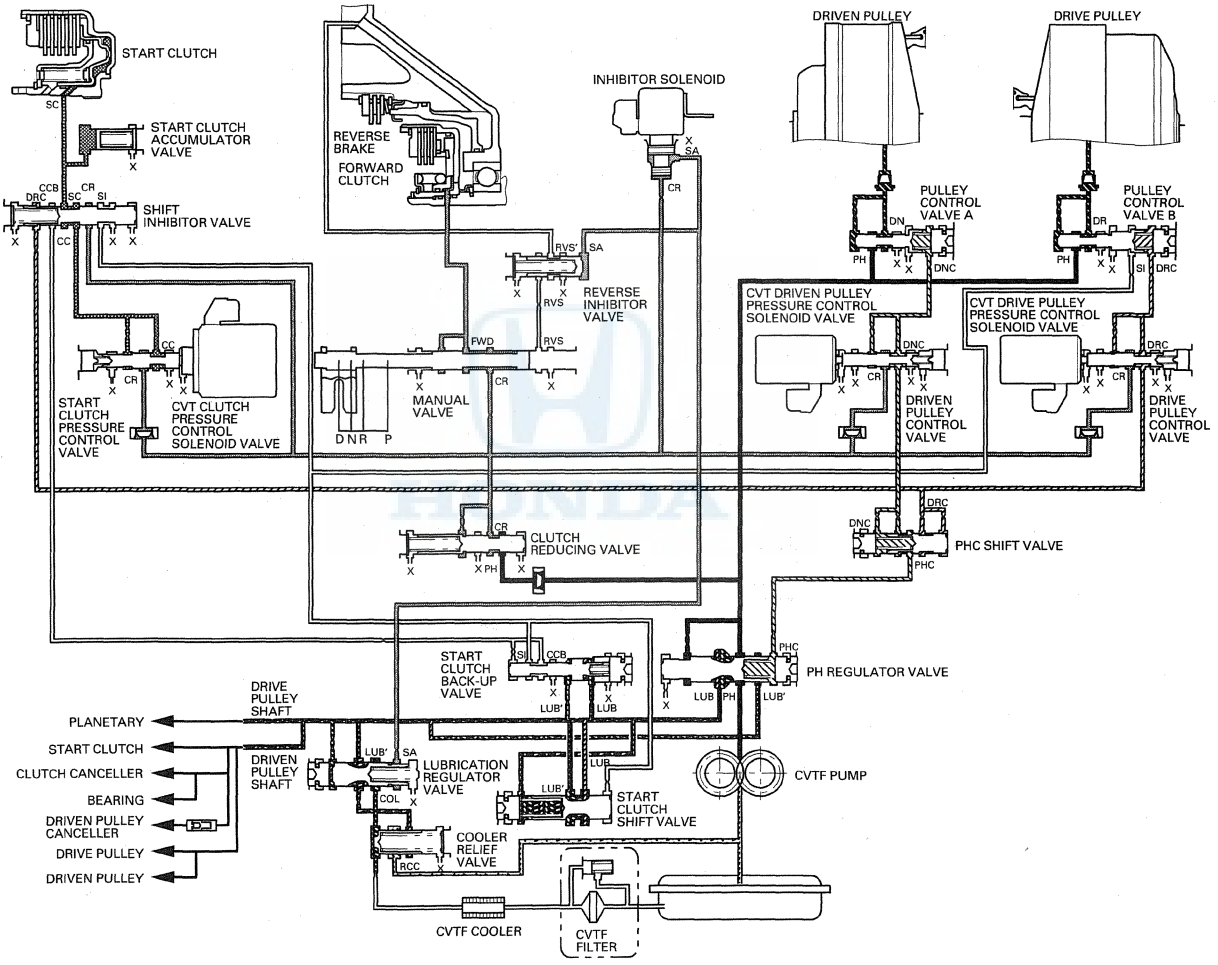
N Position

Fluid from the CVTF pump is regulated to high pressure at the pressure high (PH) regulator valve, and flows to the pulley control valves. The CVT driven pulley pressure control solenoid valve and the CVT drive pulley pressure control solenoid valve control pulley control valves A and B, which apply pressure to the pulleys. The driven pulley receives pressure higher than the pressure the drive pulley receives. Hydraulic pressure to the forward clutch is blocked by the manual valve, and hydraulic pressure to the start clutch is blocked by the CVT clutch pressure control solenoid valve. Under this condition, hydraulic pressure is not applied to the start clutch and the forward clutch.



D Position, at low speed range

The manual valve is shifted into the D position, and uncovers the forward clutch pressure (FWD) port leading to the forward clutch. The forward clutch pressure (FWD) flows to the forward clutch, the forward clutch is engaged, and drives the input shaft and the drive pulley shaft. The drive pulley receives low pressure, and the driven pulley receives high pressure. The PCM actuates the CVT clutch pressure control solenoid valve to control the start clutch pressure (SC). The start clutch control pressure (CC) from the CVT clutch pressure control solenoid valve becomes the start clutch pressure (SC) at the shift inhibitor valve, and flows to the start clutch. The start clutch is engaged, and the vehicle moves.

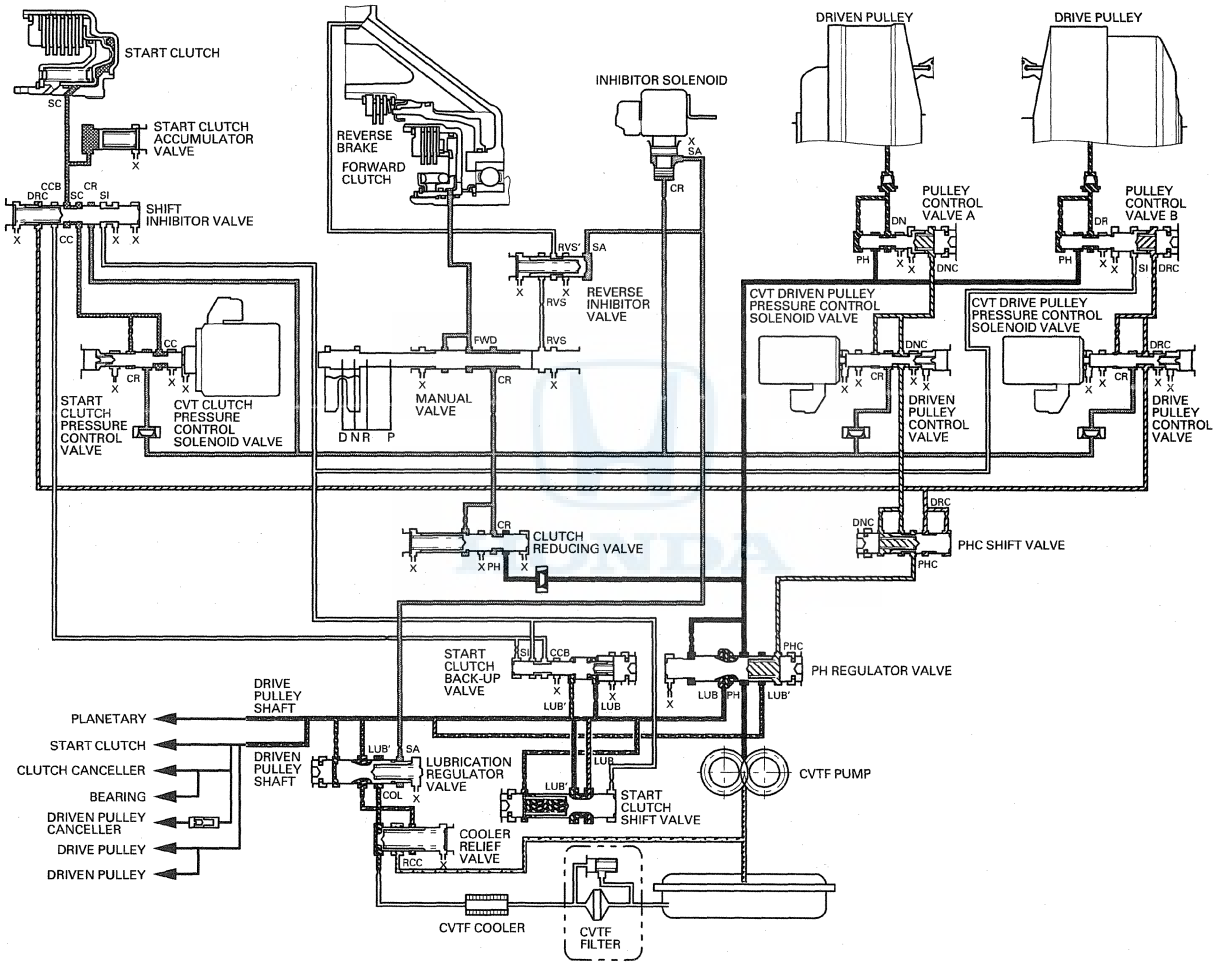


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System Description (cont'd)

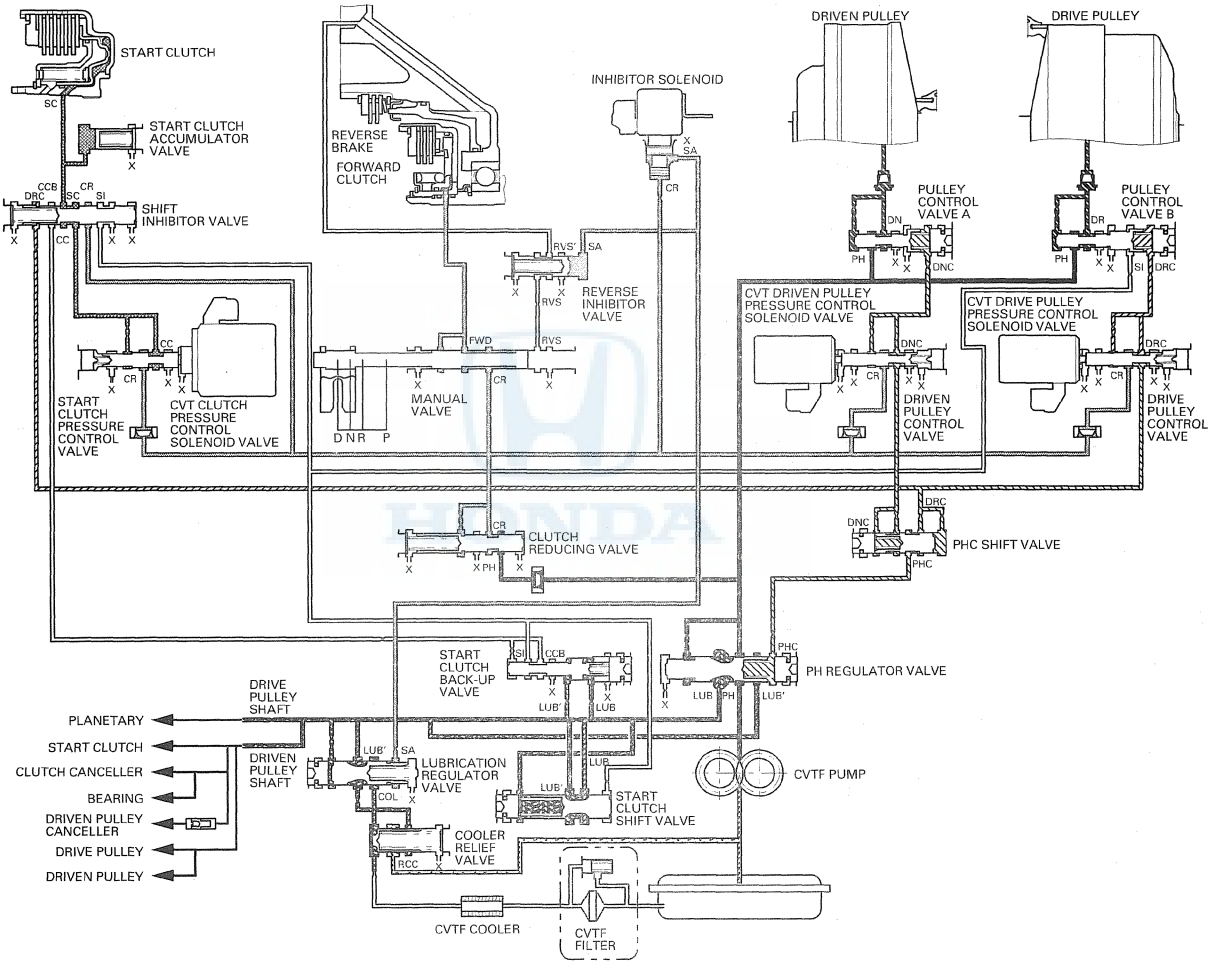
D Position, at high speed range

As the speed of the vehicle reaches the programmed value, the PCM controls the CVT driven pulley pressure control solenoid valve and the CVT drive pulley pressure control solenoid valve to provide about the same hydraulic pressure to the pulleys. The diameter in contact with the steel belt on the drive pulley and the driven pulley becomes nearly equal, and the pulley ratio is in high. Hydraulic pressure remains applied to the start clutch and the forward clutch.



D Position, at top speed range

The vehicle speed is further increased, the PCM controls the CVT driven pulley pressure control solenoid valve and the CVT drive pulley pressure control solenoid valve to apply hydraulic pressure to the drive pulley and to the driven pulley. The drive pulley receives high pressure and the driven pulley receives low pressure. The drive pulley provides the steel belt a large-diameter contact and the driven pulley provides a small-diameter contact, and the result is a high pulley ratio. Hydraulic pressure remains applied to the start clutch and the forward clutch.



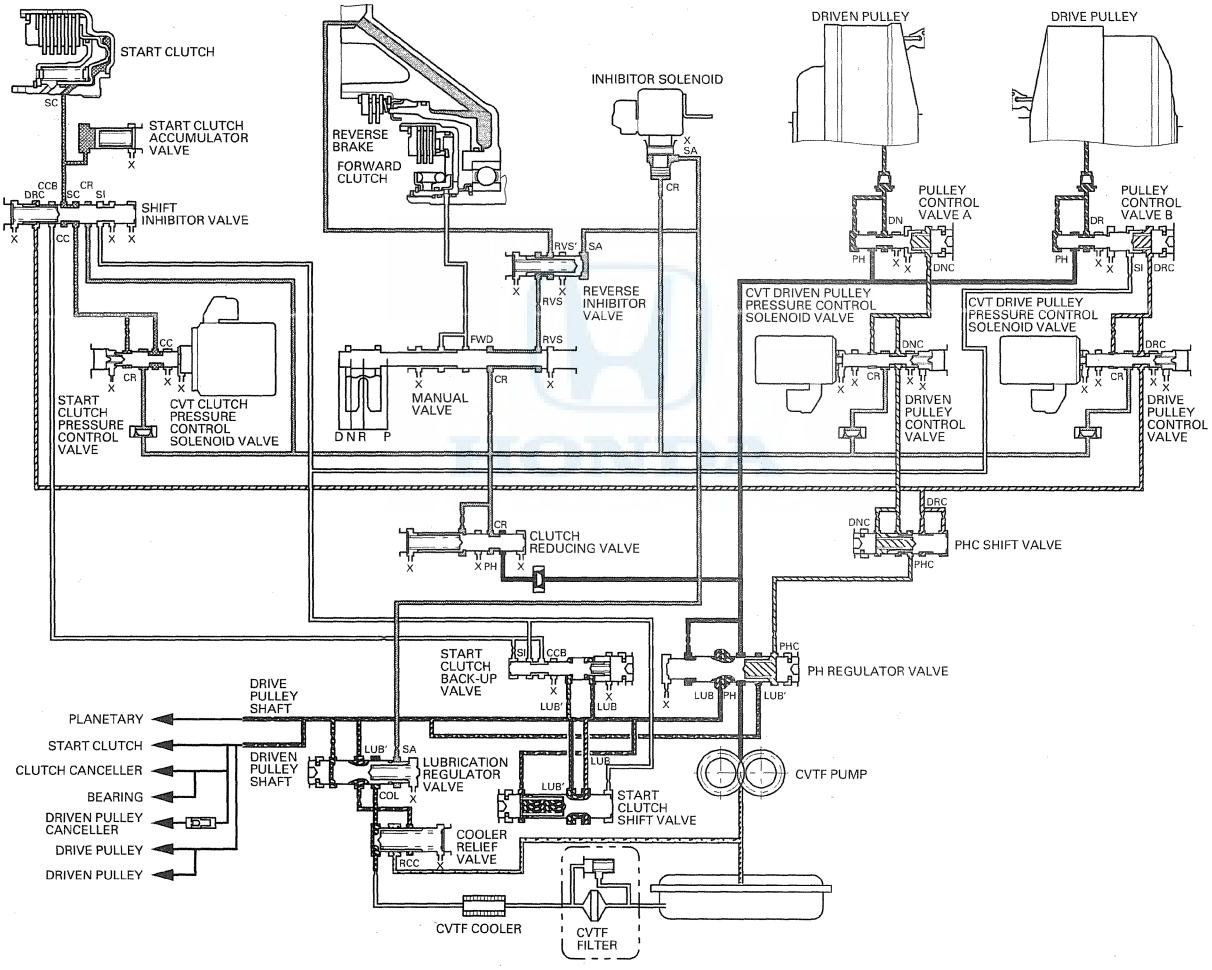
(cont'd)

System Description (cont'd)

R Position

The manual valve is shifted into the R position, and uncovers the reverse brake pressure (RVS) port leading to the reverse inhibitor valve. The inhibitor solenoid is turned OFF by the PCM, and the reverse inhibitor pressure (SA) is applied to the right end of the reverse inhibitor valve. The reverse inhibitor valve is moved to the left side, and uncovers the reverse brake pressure (RVS') port leading to the reverse brake. The clutch reducing pressure (CR) becomes the reverse brake pressure (RVS), and flows to the reverse brake via the reverse inhibitor valve. The reverse brake is engaged, and it locks the planetary carrier.

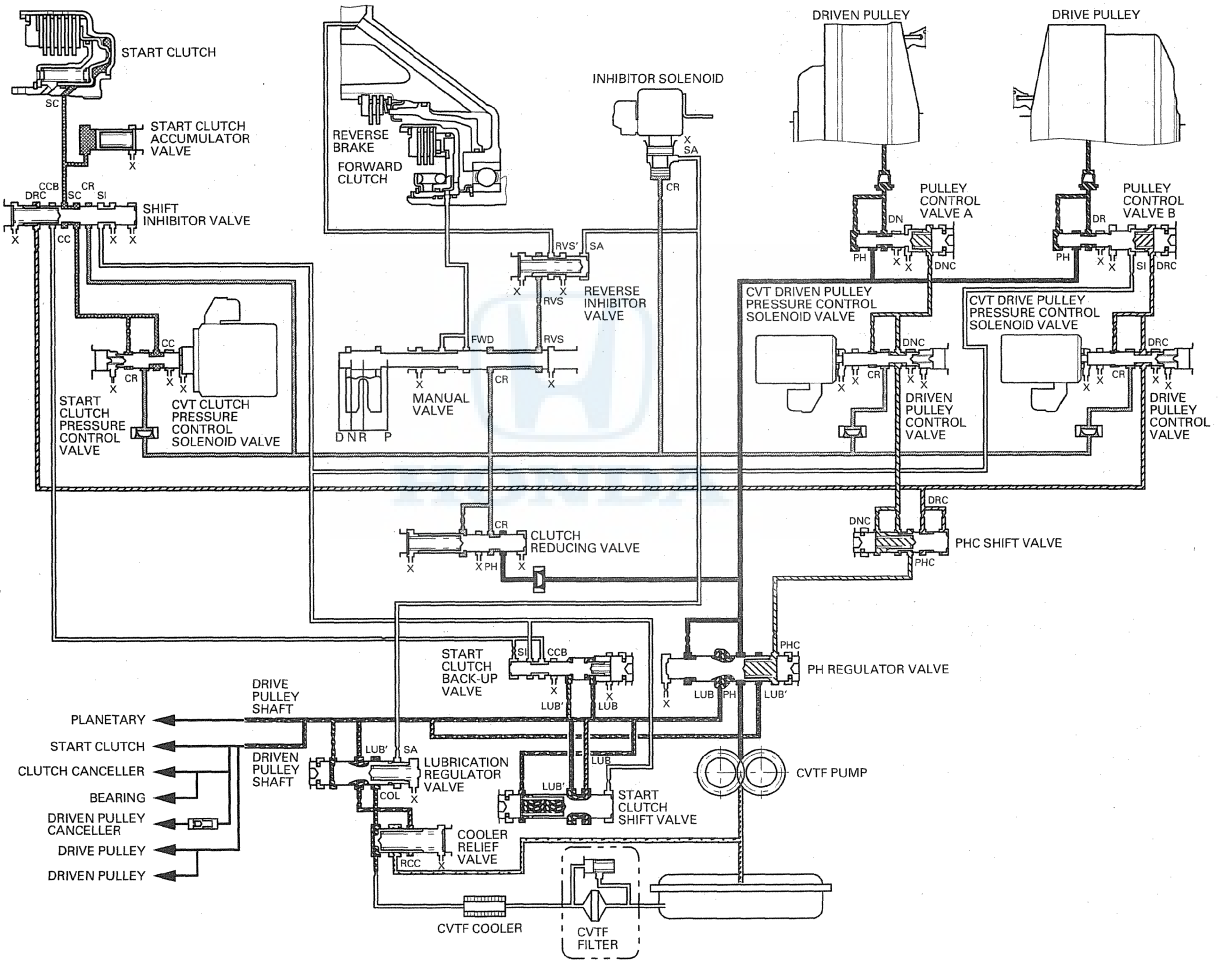
NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



R Position: Reverse Inhibitor Control

If R is selected while the vehicle is moving forward at speeds over 6 mph (10 km/h), the PCM outputs a signal to turn ON the inhibitor solenoid, and the reverse inhibitor pressure (SA) in the right end of the reverse inhibitor valve is released. The reverse inhibitor valve is moved to the right side, and uncovers the stop reverse brake pressure (RVS) port leading to the reverse brake from the manual valve. The reverse brake pressure (RVS) is not applied to the reverse brake, and power is not transmitted to the reverse direction.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

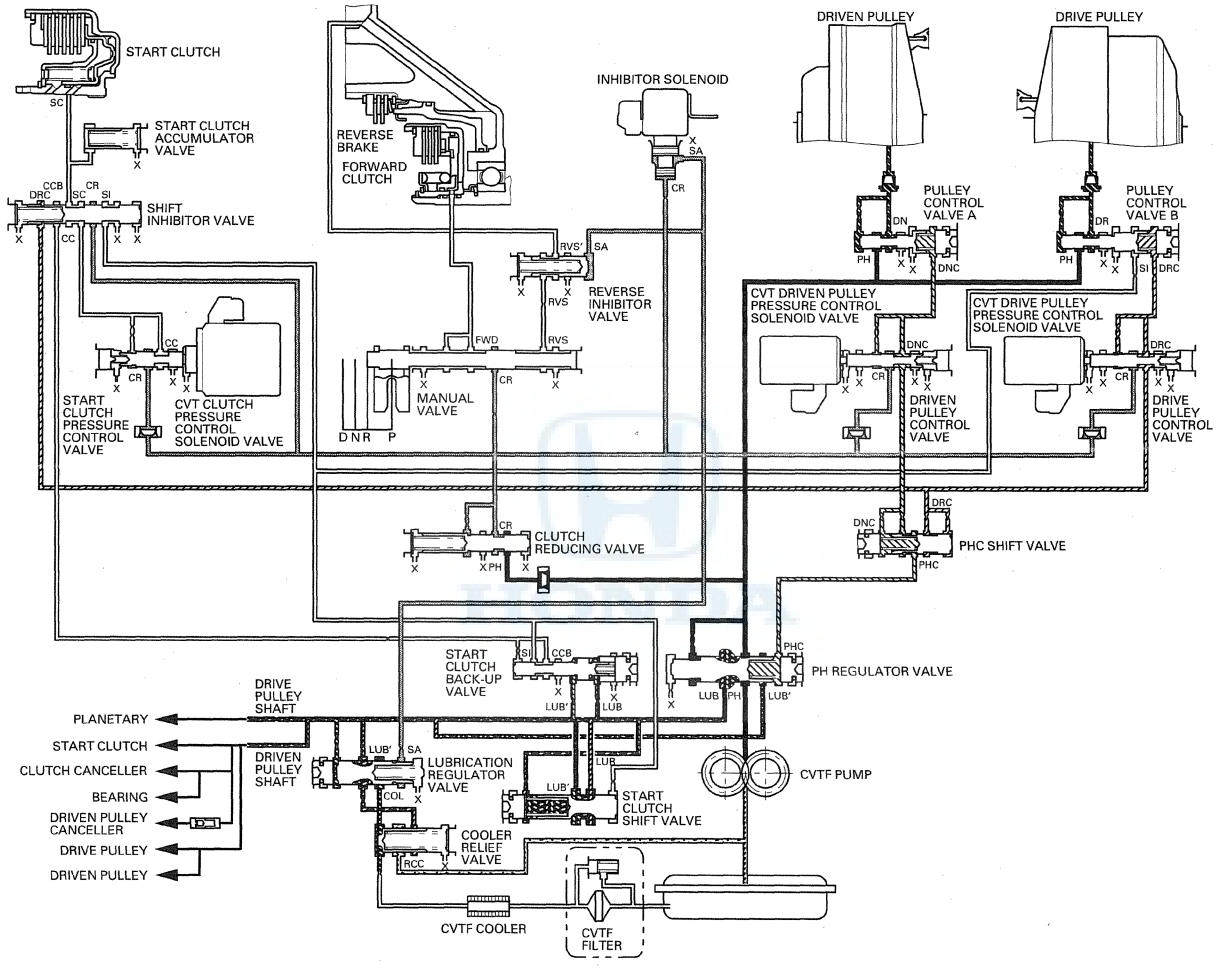


(cont'd)

System Description (cont'd)

P Position

The manual valve is shifted into the P position, and the manual valve blocks hydraulic pressure to the forward clutch. Hydraulic pressure is not applied to the start and forward clutches, and power is not transmitted to the drive pulley shaft.

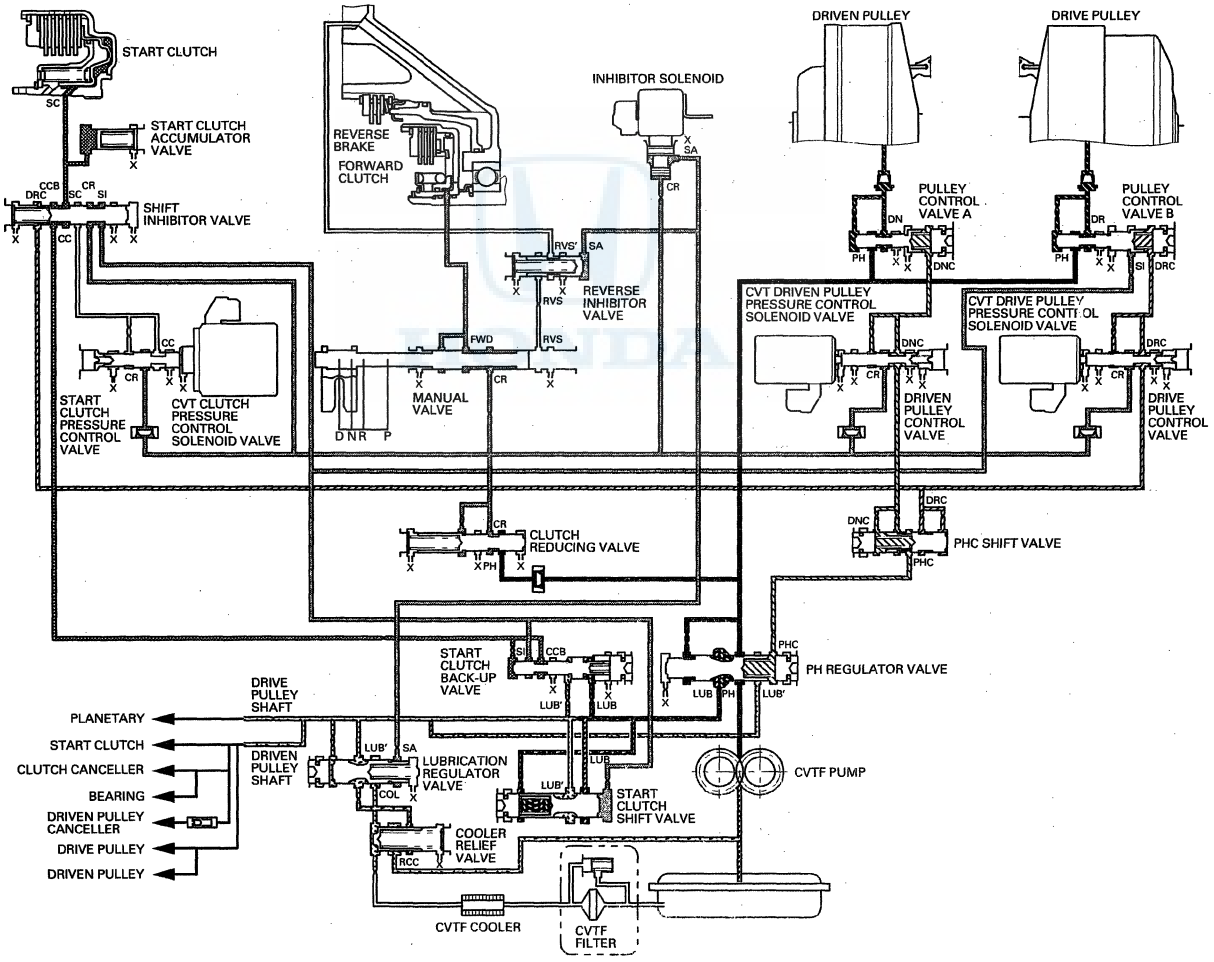


D Position, when an electronic control system malfunction occurs.

When an electronic control system malfunction occurs in D, and the CVT clutch pressure control solenoid valve cannot control the start clutch pressure circuit, the transmission creates a temporary circuit for the start clutch pressure control to allow the vehicle to be driven.

The CVT clutch pressure control solenoid valve covers the start clutch control pressure (CC) port leading to the shift inhibitor valve, and the shift inhibitor valve is moved to the left side by the drive pulley control pressure (DRC). The clutch reducing pressure (CR) becomes the shift inhibitor pressure (SI) at the shift inhibitor valve. The shift inhibitor pressure (SI) then flows to the left side of the start clutch back-up valve, and the becomes start clutch control B pressure (CCB). The start clutch control B pressure (CCB) becomes the start clutch pressure (SC) at the shift inhibitor valve, and flows to the start clutch. The clutch reducing pressure (CR) also flows to the manual valve and becomes the forward clutch pressure (FWD). The start clutch and the forward clutch are engaged, and the vehicle can move.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



(cont'd)

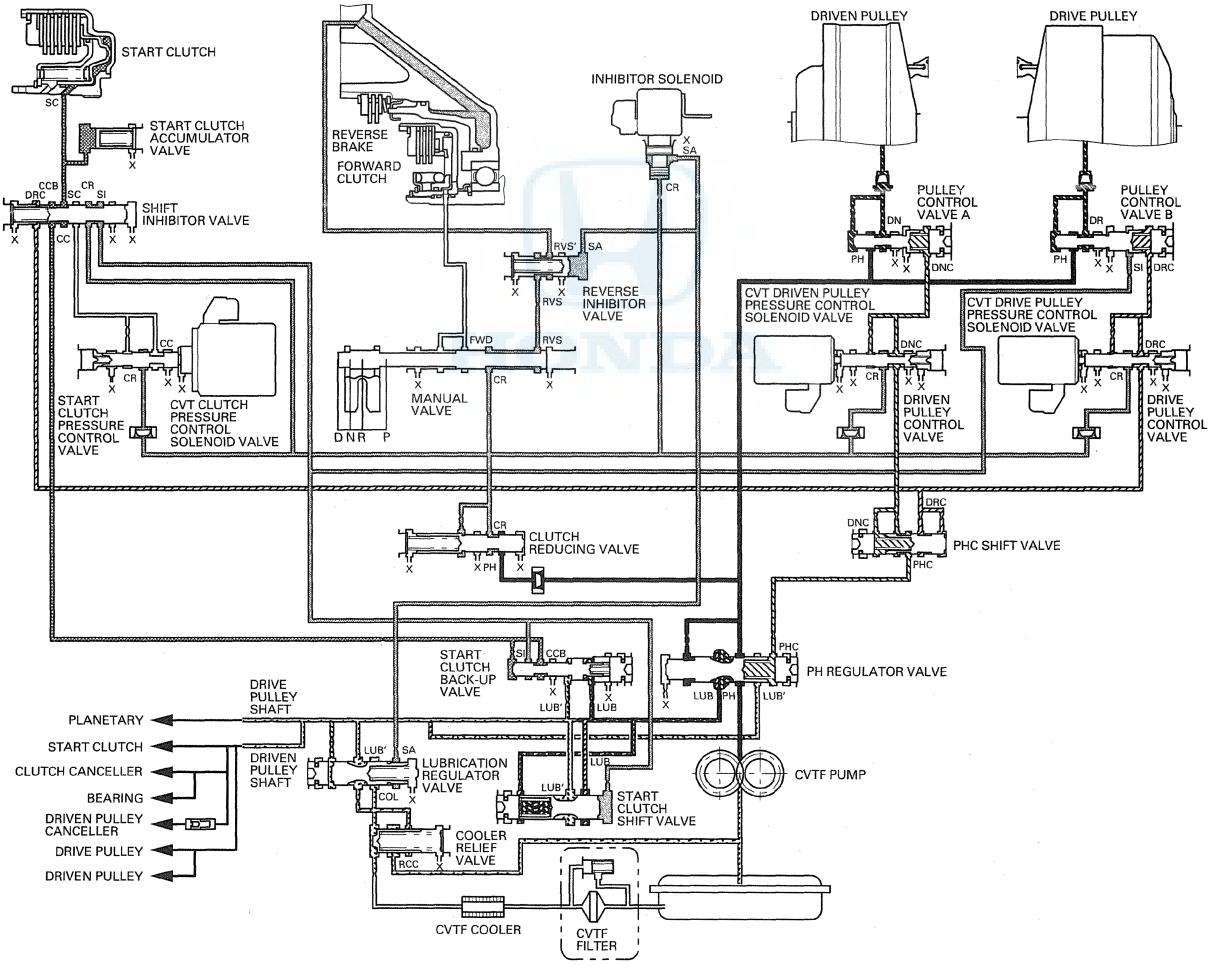
System Description (cont'd)

R Position, when an electronic control system malfunction occurs.

When an electronic control system malfunction occurs in R, and the CVT clutch pressure control solenoid valve cannot control the start clutch pressure circuit, the transmission creates a temporary circuit for the start clutch pressure control to allow the vehicle to be driven.

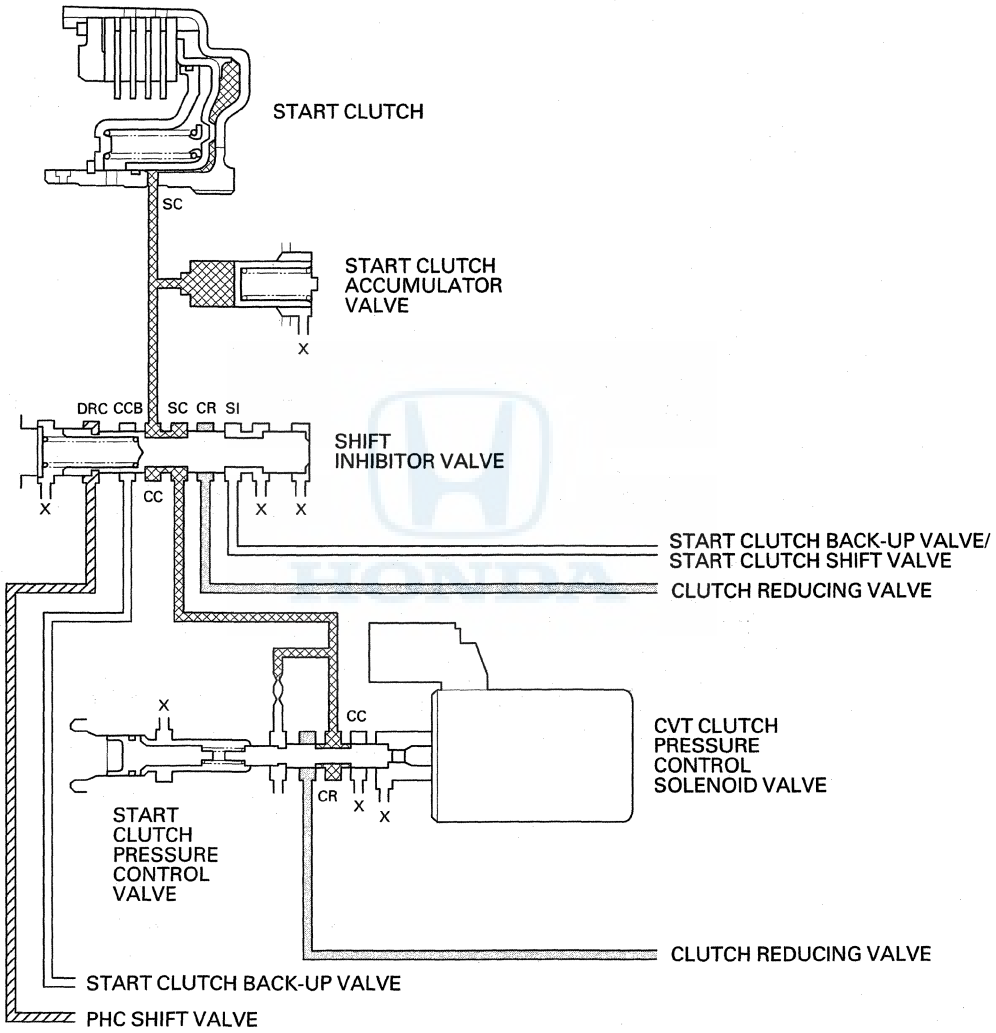
The CVT clutch pressure control solenoid valve covers the start clutch control pressure (CC) port leading to the shift inhibitor valve, and the shift inhibitor valve is moved to the left side by the drive pulley control pressure (DRC). The clutch reducing pressure (CR) becomes the shift inhibitor pressure (SI) at the shift inhibitor valve. The shift inhibitor pressure (SI) then flows to the left side of the start clutch back-up valve, and becomes the start clutch control B pressure (CCB). The start clutch control B pressure (CCB) becomes the start clutch pressure (SC) at the shift inhibitor valve, and flows to the start clutch. The clutch reducing pressure (CR) also flows to the manual valve and becomes the reverse brake pressure (RVS). The start clutch and the reverse brake are engaged, and the vehicle can reverse.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



Operation of the Start Clutch Pressure

The start clutch control pressure (CC) from the CVT clutch pressure control solenoid valve becomes start clutch pressure (SC) at the shift inhibitor valve, and flows to the start clutch. The PCM actuates the CVT clutch pressure control solenoid valve to control start clutch pressure when starting the vehicle. The start clutch is engaged like a torque converter to control smooth starting-off and creeping in D and R.

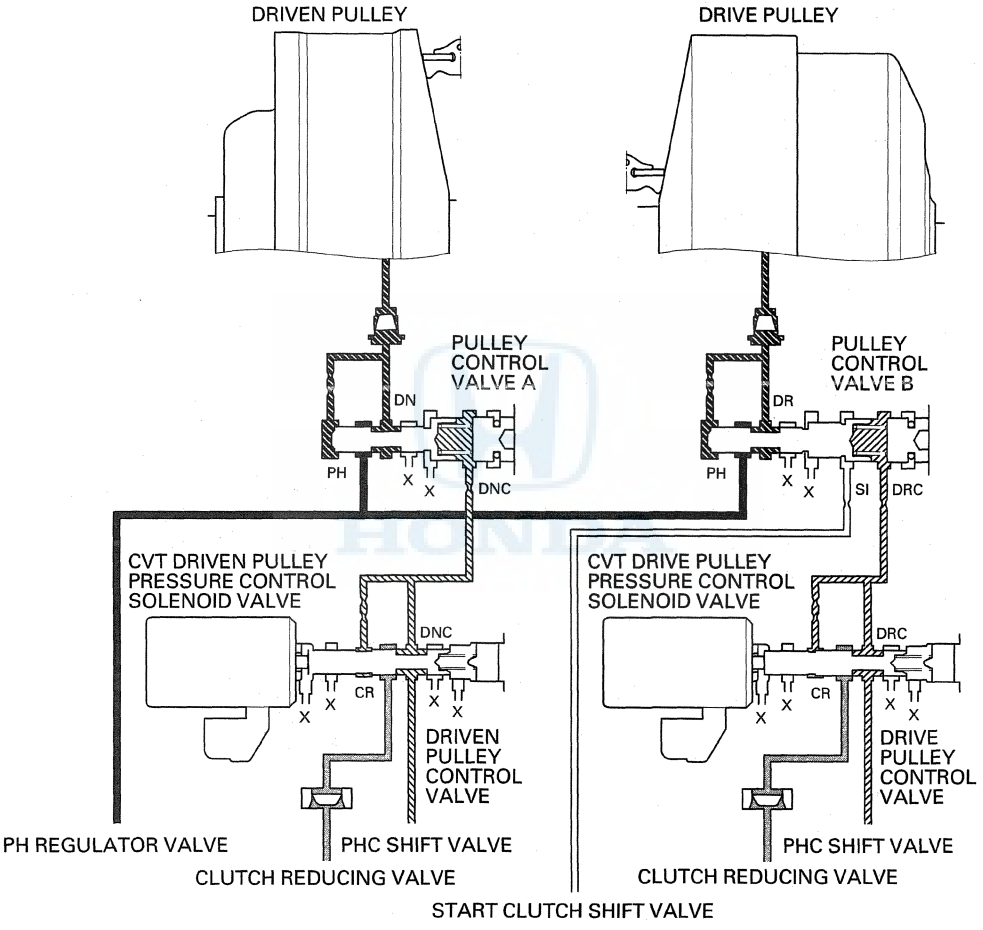


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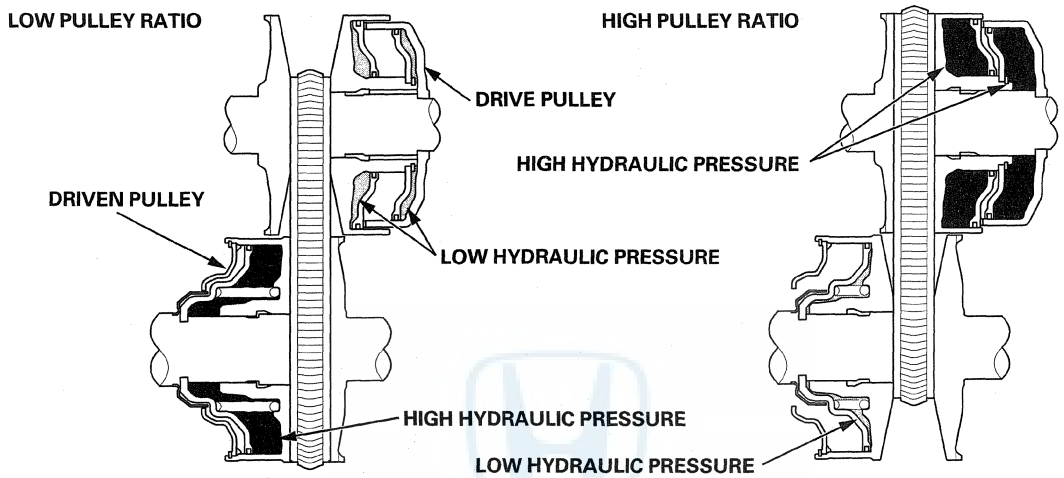
System Description (cont'd)

Operation of the Pulleys Pressure

The pressure high pressure (PH) from the PH regulator valve becomes the driven pulley pressure (DN) and the drive pulley pressure (DR) at pulley control valve A and pulley control valve B, and flows to the driven pulley and the drive pulley. The PCM actuates the CVT pulley pressure control solenoid valve to control the pulley pressure control valve. The pulley control valve controls the hydraulic pressure to the drive pulley and the driven pulley to control the pulley ratio.



When the pulley ratio is low (low vehicle speed), high hydraulic pressure works on the movable face of the driven pulley and increases the effective diameter of the driven pulley, and a lower hydraulic pressure works on the movable face of the drive pulley to decrease the effective diameter of the drive pulley. When the pulley ratio is high (high vehicle speed), high hydraulic pressure works on the movable face of the drive pulley and increases the effective diameter of the drive pulley, and a lower hydraulic pressure works on the movable face of the driven pulley to reduce the effective diameter of the driven pulley.



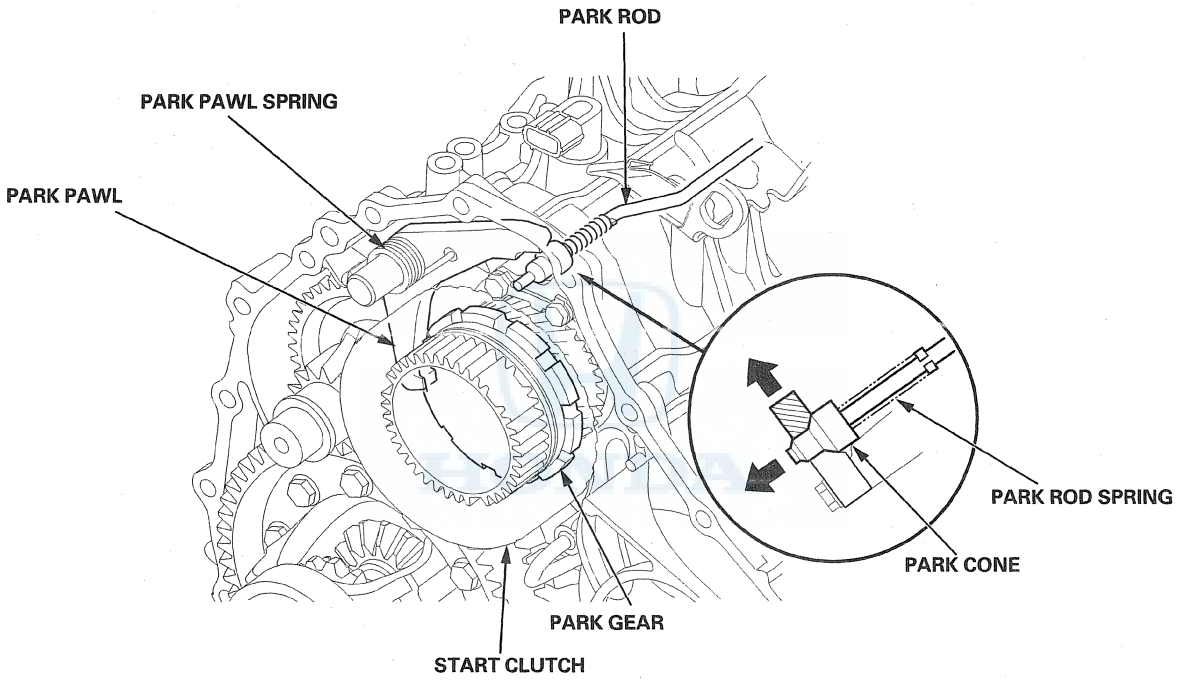
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System Description (cont'd)

Park Mechanism

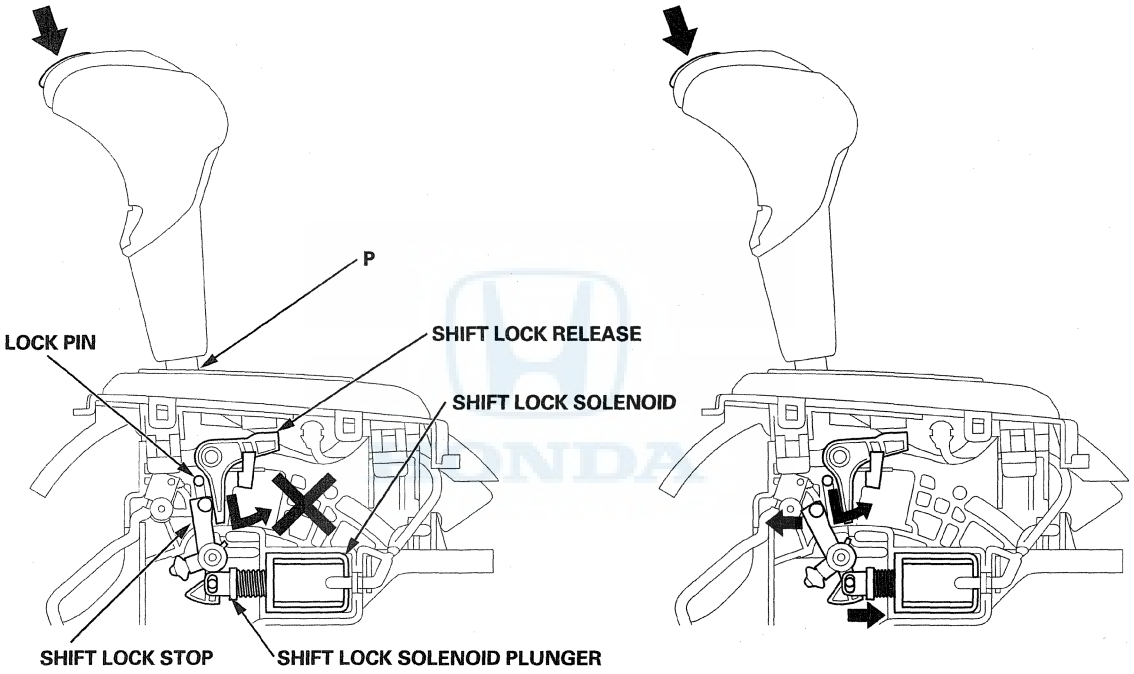
The park mechanism locks the transmission by engaging the park pawl with the park gear which is integral with the secondary drive gear. The secondary drive gear engages with the secondary driven gear which is splined to the final drive shaft, and the final drive gear integrated with the final drive shaft engages the final driven gear.

Shifting to P causes the park cone (installed at the end of the park rod) to press the park pawl onto the park gear. Even if the end of the park pawl rides on the top of the park gear teeth, slight movement of the vehicle will cause the park pawl and the park gear to mesh with each other completely because the park rod spring puts tension on the park cone. The park pawl receives the tension (which acts to separate the park pawl from the park gear) from the park pawl spring.



Shift Lock System

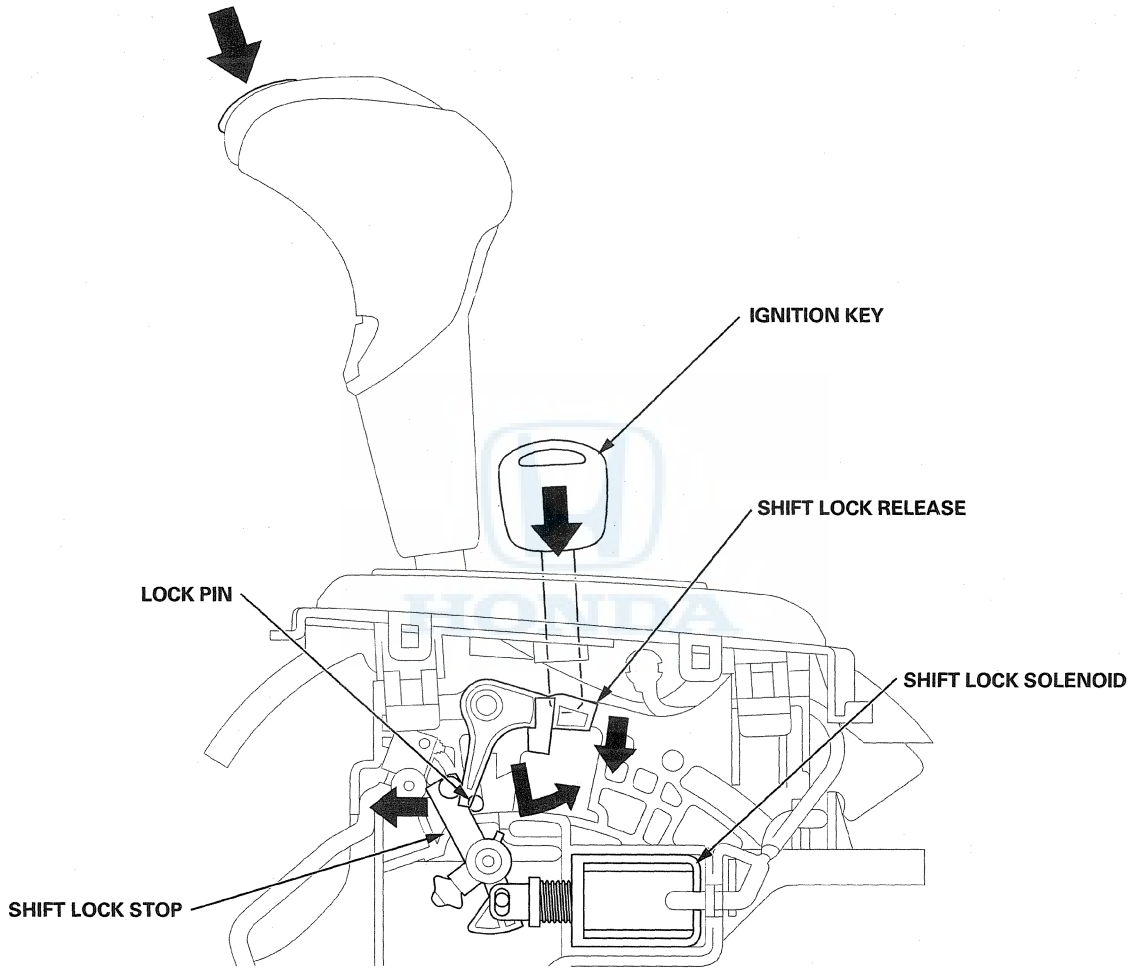
The shift lock system prevents the shift lever from mis-shifting. The shift lock solenoid is normally OFF. After starting the engine in P, the shift lever cannot move to any other position from P because the shift lock stop stops the lock pin unless certain conditions are met. When the brake pedal is pressed and the accelerator pedal is not pressed, the PCM commands are shift lock solenoid is ON; the shift lock solenoid plunger in the shift lock solenoid pulls the shift lock stop to release the lock pin. Pressing the shift lever button allows the shift lever to move to any other position. When the brake pedal and the accelerator pedal are pressed at the same time, the PCM commands the solenoid OFF and the shift lock system is locked.



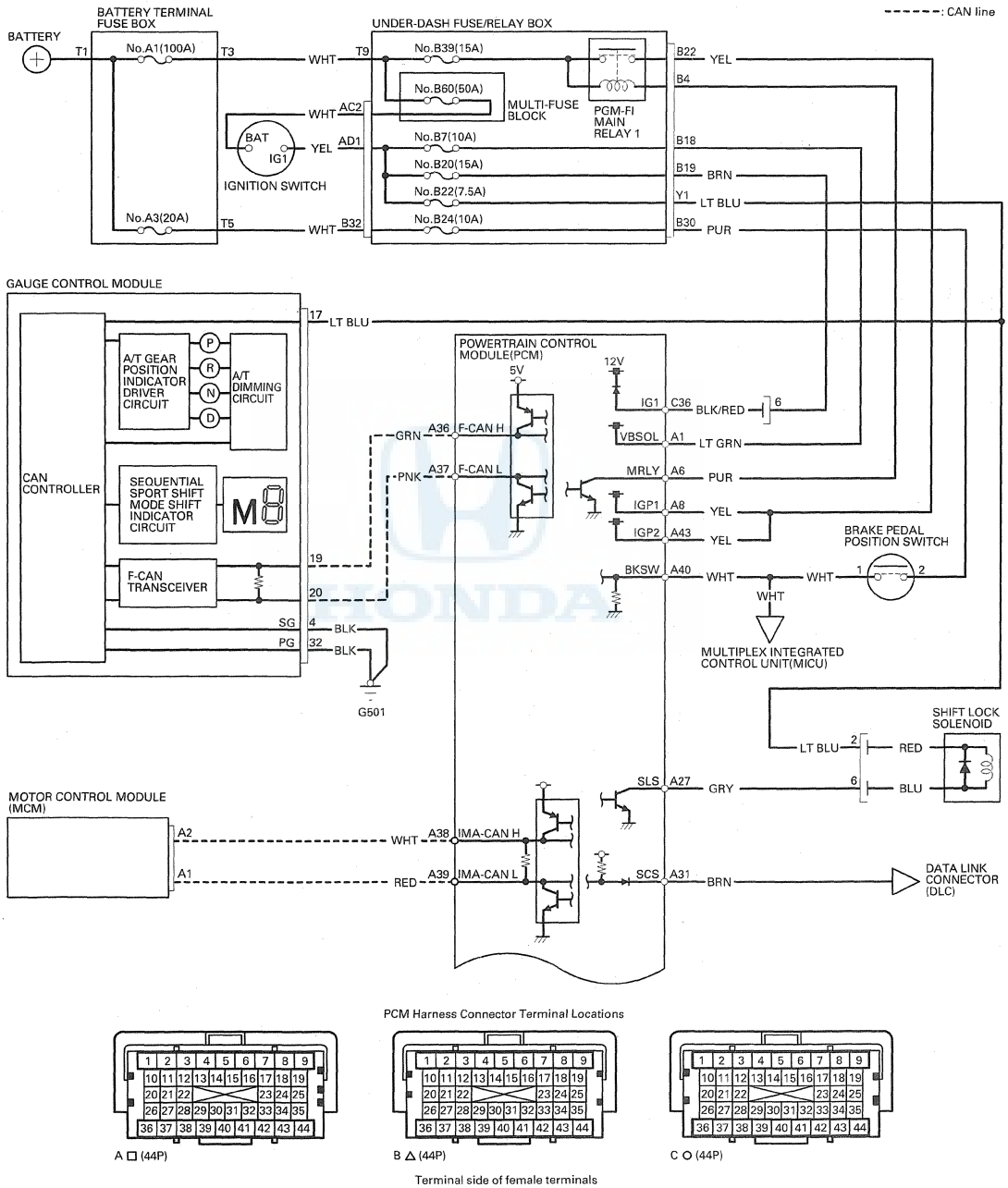
(cont'd)

System Description (cont'd)

When the shift lock system does not operate due to mechanical or electrical trouble, you can unlock the shift lock temporarily by inserting the ignition key into the shift lock release hole and pressing the shift lock release. When the shift lock release is pressed, the shift lock stop releases the lock pin, and the shift lever can move to any other position.

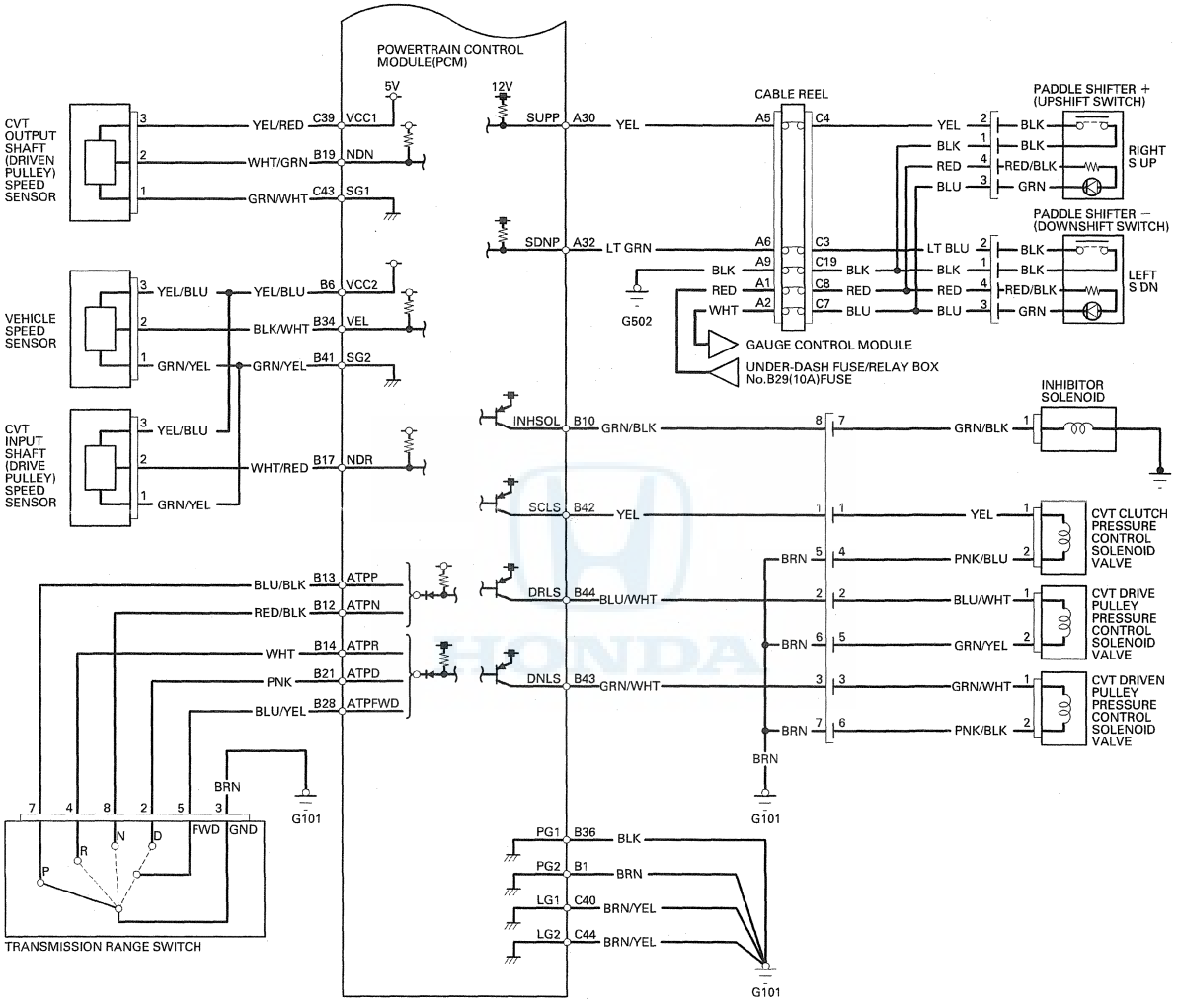


Circuit Diagram - PCM CVT Control System

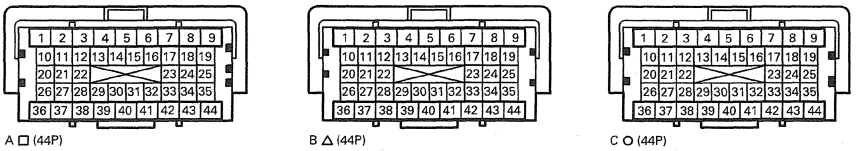


(cont'd)

System Description (cont'd)



PCM Harness Connector Terminal Locations



A □ (44P) B △ (44P) C ○ (44P)

Terminal side of female terminals

DTC Troubleshooting

DTC P0107: Manifold Absolute Pressure (MAP) Sensor Circuit Low

DTC P0108: Manifold Absolute Pressure (MAP) Sensor Circuit High

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC P0107 or P0108 indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC P0107 troubleshooting (see page 11-90) or DTC P0108 troubleshooting (see page 11-92) in PGM-FI Systems.■

   NO–Go to step 5.
5. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC P0107 or P0108 indicated in the A/T SYSTEM?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■
6. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
7. Start the engine, and let it idle for at least 2 minutes.
8. Check for Pending or Confirmed DTCs the A/T SYSTEM with the HDS.

   Is DTC P0107 or P0108 indicated in the A/T SYSTEM?

   YES–Check for poor connections or loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1.

   NO–Go to step 9.
9. Monitor the OBD STATUS for P0107 or P0108 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 8, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the MAP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 7.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0335: Crankshaft Position (CKP) Sensor No Signal

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 30 seconds.
4. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC P0335 indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC P0335 troubleshooting in PGM-FI Systems (see page 11-138).■

   NO–Go to step 5.
5. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC P0335 indicated in the A/T SYSTEM?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■
6. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
7. Start the engine, and let it idle for at least 2 minutes.
8. Check for Pending or Confirmed DTCs the A/T SYSTEM with the HDS.

   Is DTC P0335 indicated in the A/T SYSTEM?

   YES–Check for poor connections or loose terminals at the CKP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1.

   NO–Go to step 9.
9. Monitor the OBD STATUS for P0335 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 8, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the CKP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 7.

DTC P0336: Crankshaft Position (CKP) Sensor Circuit Range/Performance

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 30 seconds.
4. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC P0335 or P0339 indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC P0335 troubleshooting (see page 11-138) or DTC P0339 troubleshooting (see page 11-140) in PGM-FI Systems.■

   NO–Go to step 5.
5. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC P0336 indicated in the A/T SYSTEM?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■
6. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
7. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 30 seconds.
8. Check for Pending or Confirmed DTCs the A/T SYSTEM with the HDS.

   Is DTC P0336 indicated in the A/T SYSTEM?

   YES–Check for poor connections or loose terminals at the CKP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1.

   NO–Go to step 9.
9. Monitor the OBD STATUS for P0336 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 8, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the CKP sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 7. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 7.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0501: CVT Speed Sensor Circuit Range/Performance

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
4. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 4,500 rpm or higher, then release the accelerator without pressing it again, for at least 6 seconds. Slow down and stop the wheels.
5. Monitor the OBD STATUS for P0501 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Replace the vehicle speed sensor (see page 14-148), then go to step 6.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the vehicle speed sensor. If the HDS indicates NOT COMPLETED, go to step 4.
6. Turn the ignition switch to ON (II).
7. Clear the DTC with the HDS.
8. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and keep the vehicle at speeds over 25 mph (40 km/h) while monitoring the Output shaft (Driven pulley) Speed rpm in the Data List with the HDS, then release the accelerator without pressing it again, for at least 7 seconds. Slow down and stop the wheels.
9. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0501 indicated?

   YES–Go to step 11.

   NO–Go to step 10.
10. Monitor the OBD STATUS for P0501 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 9, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the vehicle speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 8.
11. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
12. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and keep the vehicle at speeds over 25 mph (40 km/h) while monitoring the Output shaft (Driven pulley) Speed rpm in the Data List with the HDS, then release the accelerator without pressing it again, for at least 7 seconds. Slow down and stop the wheels.
13. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0501 indicated?

    YES–Check for poor connections or loose terminals between the vehicle speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 12. If the PCM was substituted, go to step 1.

    NO–Go to step 14.
14. Monitor the OBD STATUS for P0501 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 13, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the vehicle speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 12. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 12.

DTC P0502: CVT Speed Sensor Circuit Open/Short

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

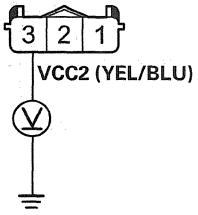
1. Check for proper vehicle speed sensor installation (see page 14-148). If the sensor is installed incorrectly, reinstall the sensor correctly, then go to step 22.
2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
5. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 4,500 rpm or higher, then release the accelerator without pressing it again, for at least 6 seconds. Slow down and stop the wheels.
6. Monitor the OBD STATUS for P0502 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the vehicle speed sensor. If the HDS indicates NOT COMPLETED, go to step 5.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the vehicle speed sensor 3P connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between vehicle speed sensor 3P connector terminal No. 3 and body ground.

VEHICLE SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

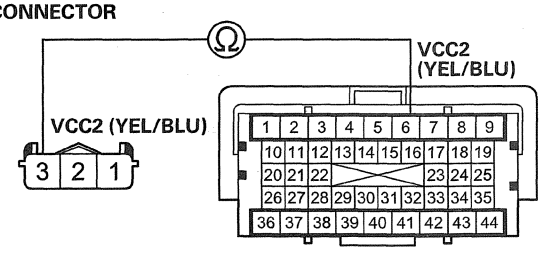
Is there about 5 V?

YES–Go to step 15.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (44P).
14. Check for continuity between PCM connector terminal B6 and vehicle speed sensor 3P connector terminal No. 3.

VEHICLE SPEED SENSOR 3P CONNECTOR **PCM CONNECTOR B (44P)**



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

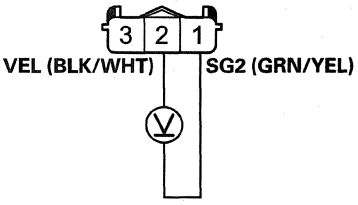
NO–Repair an open in the wire between PCM connector terminal B6 and vehicle speed sensor 3P connector, then go to step 22.

(cont'd)

DTC Troubleshooting (cont'd)

15. Measure the voltage between vehicle speed sensor 3P connector terminals No. 1 and No. 2.

VEHICLE SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

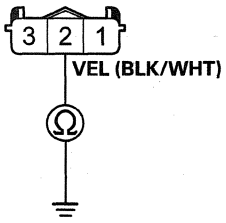
Is there about 5 V?

YES–Replace the vehicle speed sensor (see page 14-148), then go to step 22.

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector B (44P).
19. Check for continuity between vehicle speed sensor 3P connector terminal No. 2 and body ground.

VEHICLE SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

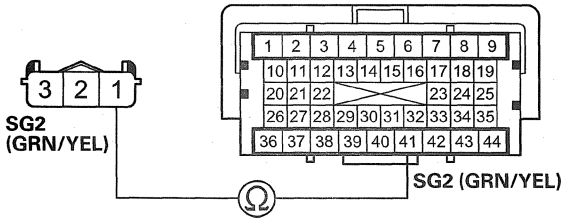
Is there continuity?

YES–Repair a short in the wire between PCM connector terminal B34 and the vehicle speed sensor 3P connector, then go to step 22.

NO–Go to step 20.

20. Check for continuity between PCM connector terminal B41 and vehicle speed sensor 3P connector terminal No. 1.

VEHICLE SPEED SENSOR 3P CONNECTOR **PCM CONNECTOR B (44P)**



Wire side of female terminals

Terminal side of female terminals

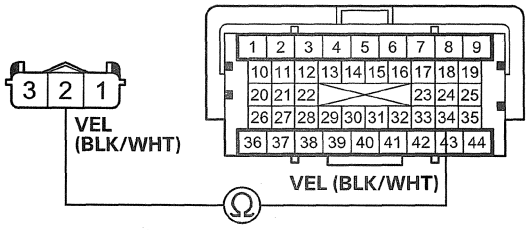
Is there continuity?

YES–Go to step 21.

NO–Repair an open in the wire between PCM connector terminal B41 and the vehicle speed sensor 3P connector, then go to step 22.

21. Check for continuity between PCM connector terminal B34 and vehicle speed sensor 3P connector terminal No. 2.

VEHICLE SPEED SENSOR 3P CONNECTOR **PCM CONNECTOR B (44P)**



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

NO–Repair an open in the wire between PCM connector terminal B34 and the vehicle speed sensor 3P connector, then go to step 22.

22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS.
25. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and keep the vehicle at speeds over 25 mph (40 km/h) while monitoring the Output shaft (Driven pulley) Speed rpm in the Data List with the HDS, then release the accelerator without pressing it again, for at least 7 seconds. Slow down and stop the wheels.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0502 indicated?

    YES–Check for poor connections or loose terminals between the vehicle speed sensor and the PCM, then go to step 1.

    NO–Go to step 27.
27. Monitor the OBD STATUS for P0502 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the vehicle speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.
28. Reconnect all connectors.
29. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
30. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and keep the vehicle at speeds over 25 mph (40 km/h) while monitoring the Output shaft (Driven pulley) Speed rpm in the Data List with the HDS, then release the accelerator without pressing it again, for at least 7 seconds. Slow down and stop the wheels.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0502 indicated?

    YES–Check for poor connections or loose terminals between the vehicle speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 2.

    NO–Go to step 32.
32. Monitor the OBD STATUS for P0502 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 31, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the vehicle speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 30.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P062F: Powertrain Control Module (PCM) Internal Control Module Error

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Clear the DTC with the HDS.
2. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC P062F indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC P062F troubleshooting in the PGM-FI Systems (see page 11-155).■

   NO–Go to step 3.
3. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC P062F indicated in the A/T SYSTEM?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Update the A/T software in the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
5. Start the engine, and let it idle for at least 2 minutes.
6. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC P062F indicated in the A/T SYSTEM?

   YES–Check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 5. If the PCM was substituted, go to step 1.

   NO–Go to step 7.
7. Monitor the OBD STATUS for P062F in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other DTCs were indicated on step 6, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections and loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 5. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED go to step 5.

DTC P0705: Transmission Range Switch Multiple Shift Position Input

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Compare the ATPP, ATPR, ATPN, ATPD, and ATPFWD inputs with the HDS to the following table in each shift lever position.

	ATPP	ATPR	ATPN	ATPD	ATPFWD
P	ON	OFF	OFF	OFF	OFF
R	OFF	ON	OFF	OFF	OFF
N	OFF	OFF	ON	OFF	OFF
D	OFF	OFF	OFF	ON	ON

Do the transmission range switch signals match?

YES–Intermittent failure, the system is OK at this time.■

NO–Go to step 3.

3. Compare the ATPP, ATPR, ATPN, ATPD, and ATPFWD inputs with the HDS to the table in step 2 in each shift lever position.

Are any transmission range switch signals ON in all shift lever position?

YES–Go to step 9.

NO–Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Disconnect the transmission range switch 8P connector.
6. Connect the transmission range switch 8P connector terminal that incorrectly indicated ON in step 3 to body ground with a jumper wire; refer to the following table.

	Transmission range switch 8P connector	Wire color
ATPP	No. 7	BLU/BLK
ATPR	No. 4	WHT
ATPN	No. 8	RED/BLK
ATPD	No. 2	PNK
ATPFWD	No. 5	BLU/YEL

7. Turn the ignition switch to ON (II).
8. Compare the ATPP, ATPR, ATPN, ATPD, and ATPFWD inputs with the HDS to the table in step 2.

Do multiple transmission range switch signals indicate ON?

YES–Repair a short in the wires between the transmission range switch and the PCM; refer to the following table.■

	PCM connector	Transmission range switch 8P connector	Wire color
ATPP	B13	No. 7	BLU/BLK
ATPR	B14	No. 4	WHT
ATPN	B12	No. 8	RED/BLK
ATPD	B21	No. 2	PNK
ATP FWD	B28	No. 5	BLU/YEL

NO–Replace the transmission range switch (see page 14-200).■

9. Turn the ignition switch to LOCK (0).
10. Disconnect the transmission range switch 8P connector.
11. Turn the ignition switch to ON (II).
12. Check the abnormal transmission range switch signal that remained ON with the HDS.

Do any transmission range switch signals remain ON?

YES–Go to step 13.

NO–Replace the transmission range switch (see page 14-200).■

(cont'd)

DTC Troubleshooting (cont'd)

13. Check for continuity to body ground in the circuit which remained ON; refer to the following table.

	Transmission range switch 8P connector	Wire color
ATPP	No. 7	BLU/BLK
ATPR	No. 4	WHT
ATPN	No. 8	RED/BLK
ATPD	No. 2	PNK
ATPFWD	No. 5	BLU/YEL

Does the circuit that indicated ON have continuity to body ground?

YES–Repair a short in the wires between the transmission range switch and the PCM; refer to the following table.■

	PCM connector	Transmission range switch 8P connector	Wire color
ATPP	B13	No. 7	BLU/BLK
ATPR	B14	No. 4	WHT
ATPN	B12	No. 8	RED/BLK
ATPD	B21	No. 2	PNK
ATP FWD	B28	No. 5	BLU/YEL

NO–Replace the PCM (see page 11-209).■

DTC P0706: Transmission Range Switch Open

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Make sure the shift cable is adjusted properly (see page 14-193).
2. Turn the ignition switch to ON (II).
3. Compare the ATPP, ATPR, ATPN, ATPD, and ATPFWD inputs with the HDS to the following table in each shift lever position.

	ATPP	ATPR	ATPN	ATPD	ATPFWD
P	ON	OFF	OFF	OFF	OFF
R	OFF	ON	OFF	OFF	OFF
N	OFF	OFF	ON	OFF	OFF
D	OFF	OFF	OFF	ON	ON

Do the transmission range switch signals match?

YES–Intermittent failure, the system is OK at this time.■

NO–Go to step 4.

4. Compare the ATPP, ATPR, ATPN, ATPD, and ATPFWD inputs with the HDS to the table in step 3 in each shift lever position.

Do all shift positions remain OFF?

YES–Go to step 14.

NO–Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Disconnect the transmission range switch 8P connector.
7. Connect the transmission range switch 8P connector terminal which did not indicate ON in step 4 to body ground with a jumper wire; refer to the following table.

	Transmission range switch 8P connector	Wire color
ATPP	No. 7	BLU/BLK
ATPR	No. 4	WHT
ATPN	No. 8	RED/BLK
ATPD	No. 2	PNK
ATPFWD	No. 5	BLU/YEL

8. Turn the ignition switch to ON (II).
9. Check the transmission range switch signals that did not indicate ON with the HDS.

   Does the transmission range switch indicate ON?

   YES–Replace the transmission range switch (see page 14-200).■

   NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between the transmission range switch 8P connector terminal and the PCM connector terminal of the input which indicated OFF; refer to the following table.

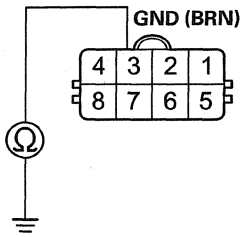
	PCM connector	Transmission range switch 8P connector	Wire color
ATPP	B13	No. 7	BLU/BLK
ATPR	B14	No. 4	WHT
ATPN	B12	No. 8	RED/BLK
ATPD	B21	No. 2	PNK
ATP FWD	B28	No. 5	BLU/YEL

   Is there continuity?

   YES–Replace the PCM (see page 11-209).■

   NO–Repair an open in the wire between the transmission range switch and the PCM.■
14. Turn the ignition switch to LOCK (0).
15. Disconnect the transmission range switch 8P connector.
16. Check for continuity between transmission range switch 8P connector terminal No. 3 and body ground.

TRANSMISSION RANGE SWITCH 8P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the transmission range switch (see page 14-200).■

NO–Repair an open in the wire between the transmission range switch and body ground (G101), or repair poor body ground (G101).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0716: CVT Input Shaft (Drive Pulley) Speed Sensor "A" Circuit Range/Performance

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is sometimes caused by an electrical circuit problem and sometimes caused by a worn or defective flywheel drive plate in the transmission.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
4. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, at speeds over 19 mph (30 km/h) for at least 30 seconds. Slow down and stop the wheels.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0717 indicated?

   YES–Go to the DTC P0717 troubleshooting (see page 14-93).■

   NO–Go to step 6.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0716 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Check the CVT input shaft (drive pulley) speed sensor for poor connection and proper installation.

   Is the connection and installation OK?

   YES–Replace the CVT input shaft (drive pulley) speed sensor (see page 14-147), then go to step 9.

   NO–Reconnect the CVT input shaft (drive pulley) speed sensor 3P connector and reinstall the CVT input shaft (drive pulley) speed sensor, then go to step 9.
9. Turn the ignition switch to ON (II).
10. Clear the DTC with the HDS.
11. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, at speeds over 19 mph (30 km/h) for at least 30 seconds. Slow down and stop the wheels.
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0716 indicated?

    YES–Check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM, then go to step 1.

    NO–Go to step 13.
13. Monitor the OBD STATUS for P0716 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.

DTC P0717: CVT Input Shaft (Drive Pulley) Speed Sensor "A" Circuit No Signal

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is sometimes caused by an electrical circuit problem and sometimes caused by a worn or defective flywheel drive plate in the transmission.

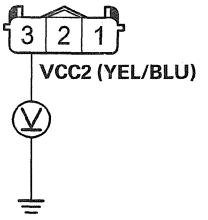
1. Check for proper CVT input shaft (drive pulley) speed sensor installation (see page 14-147). If the sensor is installed incorrectly, reinstall the sensor correctly, then go to step 22.
2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
5. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, at speeds over 19 mph (30 km/h) for at least 30 seconds. Slow down and stop the wheels.
6. Monitor the OBD STATUS for P0717 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM. If the HDS indicates NOT COMPLETED, go to step 5.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the CVT input shaft (drive pulley) speed sensor 3P connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between CVT input shaft (drive pulley) speed sensor 3P connector terminal No. 3 and body ground.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

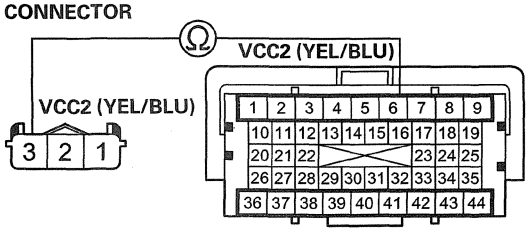
YES–Go to step 15.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector B (44P).
14. Check for continuity between PCM connector terminal B6 and CVT input shaft (drive pulley) speed sensor 3P connector terminal No. 3.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

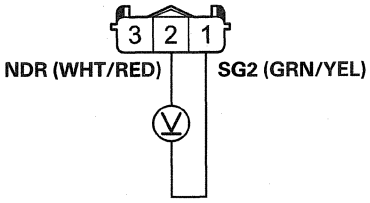
NO–Repair an open in the wire between PCM connector terminal B6 and the CVT input shaft (drive pulley) speed sensor 3P connector, then go to step 22.

(cont'd)

DTC Troubleshooting (cont'd)

15. Measure the voltage between CVT input shaft (drive pulley) speed sensor 3P connector terminals No. 1 and No. 2.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

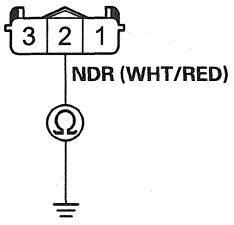
Is there about 5 V?

YES–Replace the CVT input shaft (drive pulley) speed sensor (see page 14-147), then go to step 22.

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector B (44P).
19. Check for continuity between CVT input shaft (drive pulley) speed sensor 3P connector terminal No. 2 and body ground.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there continuity?

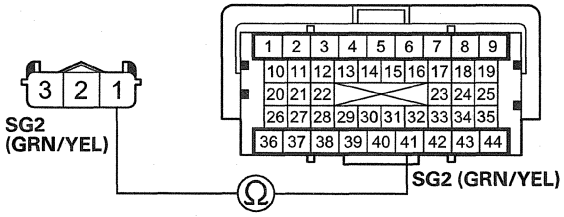
YES–Repair a short in the wire between PCM connector terminal B17 and the CVT input shaft (drive pulley) speed sensor 3P connector, then go to step 22.

NO–Go to step 20.

20. Check for continuity between PCM connector terminal B41 and CVT input shaft (drive pulley) speed sensor 3P connector terminal No. 1.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

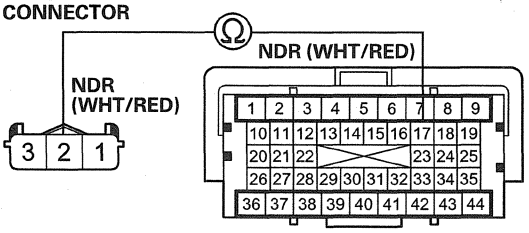
YES–Go to step 21.

NO–Repair an open in the wire between PCM connector terminal B41 and the CVT input shaft (drive pulley) speed sensor 3P connector, then go to step 22.

21. Check for continuity between PCM connector terminal B17 and CVT input shaft (drive pulley) speed sensor 3P connector terminal No. 2.

CVT INPUT SHAFT (DRIVE PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

NO–Repair an open in the wire between PCM connector terminal B17 and the CVT input shaft (drive pulley) speed sensor 3P connector, then go to step 22.

22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS.
25. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, at speeds over 19 mph (30 km/h) for at least 30 seconds. Slow down and stop the wheels.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0717 indicated?

    YES–Check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM, then go to step 1.

    NO–Go to step 27.
27. Monitor the OBD STATUS for P0717 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.
28. Reconnect all connectors.
29. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
30. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, at speeds over 19 mph (30 km/h) for at least 30 seconds. Slow down and stop the wheels.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0717 indicated?

    YES–Check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 1.

    NO–Go to step 32.
32. Monitor the OBD STATUS for P0717 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 31, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT input shaft (drive pulley) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 30.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0721: CVT Output Shaft (Driven Pulley) Speed Sensor Range/Performance

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is sometimes caused by an electrical circuit problem and sometimes caused by a broken steel belt in the transmission.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
4. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 3,500 rpm or higher, for at least 30 seconds. Slow down and stop the wheels.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0722 indicated?

   YES–Go to the DTC P0722 troubleshooting (see page 14-97).■

   NO–Go to step 6.
6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0721 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Check the CVT output shaft (driven pulley) speed sensor for poor connection and proper installation.

   Is the connection and installation OK?

   YES–Replace the CVT output shaft (driven pulley) speed sensor (see page 14-147), then go to step 9.

   NO–Reconnect the CVT output shaft (driven pulley) speed sensor 3P connector and reinstall the CVT output shaft (driven pulley) speed sensor, then go to step 9.
9. Turn the ignition switch to ON (II).
10. Clear the DTC with the HDS.
11. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 3,500 rpm or higher, for at least 30 seconds. Slow down and stop the wheels.
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0721 indicated?

    YES–Check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM, then go to step 1.

    NO–Go to step 13.
13. Monitor the OBD STATUS for P0721 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.

DTC P0722: CVT Output Shaft (Driven Pulley) Speed Sensor No Signal Input

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is sometimes caused by an electrical circuit problem and sometimes caused by a broken steel belt in the transmission.

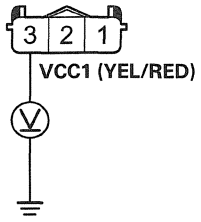
1. Check for proper CVT output shaft (driven pulley) speed sensor installation (see page 14-147). If the sensor is installed incorrectly, reinstall the sensor correctly, then go to step 22.
2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
5. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 3,500 rpm or higher, for at least 30 seconds. Slow down and stop the wheels.
6. Monitor the OBD STATUS for P0722 in the DTCs MENU with the HDS.

   Does the HDS indicate FAILED?

   YES–Go to step 7.

   NO–If the HDS indicates PASSED, intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM. If the HDS indicates NOT COMPLETED, go to step 5.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the CVT output shaft (driven pulley) speed sensor 3P connector.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between CVT output shaft (driven pulley) speed sensor 3P connector terminal No. 3 and body ground.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

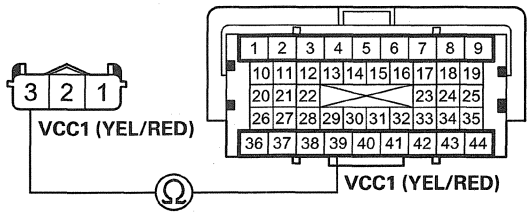
YES–Go to step 15.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Jump the SCS line with the HDS.
13. Disconnect PCM connector C (44P).
14. Check for continuity between PCM connector terminal C39 and CVT output shaft (driven pulley) speed sensor 3P connector terminal No. 3.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR C (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

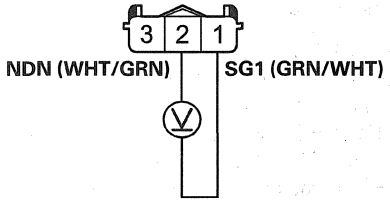
NO–Repair an open in the wire between PCM connector terminal C39 and the CVT output shaft (driven pulley) speed sensor 3P connector, then go to step 22.

(cont'd)

DTC Troubleshooting (cont'd)

15. Measure the voltage between CVT output shaft (driven pulley) speed sensor 3P connector terminals No. 1 and No. 2.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

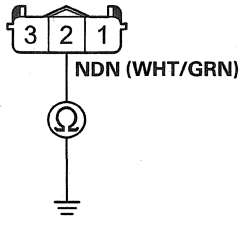
Is there about 5 V?

YES–Replace the CVT output shaft (driven pulley) speed sensor (see page 14-147), then go to step 22.

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Jump the SCS line with the HDS.
18. Disconnect PCM connector B (44P).
19. Check for continuity between CVT output shaft (driven pulley) speed sensor 3P connector terminal No. 2 and body ground.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR



Wire side of female terminals

Is there continuity?

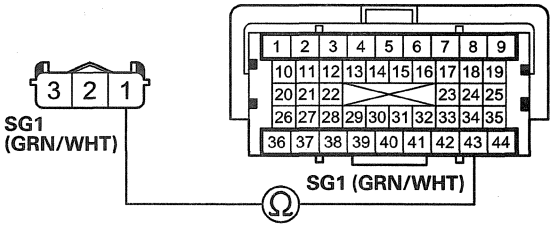
YES–Repair a short in the wire between PCM connector terminal B19 and the CVT output shaft (driven pulley) speed sensor 3P connector, then go to step 22.

NO–Go to step 20.

20. Check for continuity between PCM connector terminal C43 and CVT output shaft (driven pulley) speed sensor 3P connector terminal No. 1.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR C (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

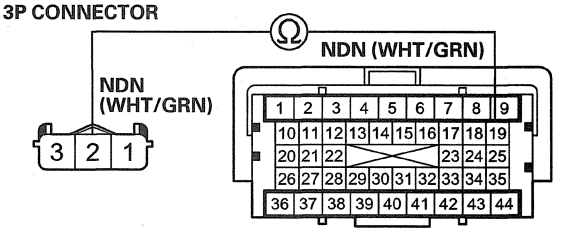
YES–Go to step 21.

NO–Repair an open in the wire between PCM connector terminal C43 and the CVT output shaft (driven pulley) speed sensor 3P connector, then go to step 22.

21. Check for continuity between PCM connector terminal B19 and CVT output shaft (driven pulley) speed sensor 3P connector terminal No. 2.

CVT OUTPUT SHAFT (DRIVEN PULLEY) SPEED SENSOR 3P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 28.

NO–Repair an open in the wire between PCM connector terminal B19 and the CVT output shaft (driven pulley) speed sensor 3P connector, then go to step 22.

22. Reconnect all connectors.
23. Turn the ignition switch to ON (II).
24. Clear the DTC with the HDS.
25. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 3,500 rpm or higher, for at least 30 seconds. Slow down and stop the wheels.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0722 indicated?

    YES–Check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM, then go to step 1.

    NO–Go to step 27.
27. Monitor the OBD STATUS for P0722 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.
28. Reconnect all connectors.
29. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
30. Start the engine, disable the VSA by pressing the VSA OFF button, run the vehicle with the shift lever in D, and the engine speed at 3,500 rpm or higher, for at least 30 seconds. Slow down and stop the wheels.
31. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0722 indicated?

    YES–Check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 1.

    NO–Go to step 32.
32. Monitor the OBD STATUS for P0722 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 31, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT output shaft (driven pulley) speed sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 30. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 30.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0746: CVT Drive Pulley Pressure Control Solenoid Valve Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any other Pending or Confirmed DTCs indicated simultaneously with DTC P0746?

   YES–Go to the indicated DTC's troubleshooting, and recheck.

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. Check the SOC in the DATA LIST with the HDS.

   Does the SOC indicate more than 50%?

   YES–Go to step 6.

   NO–Start the engine with the shift lever in P or N, hold it at 3,500 rpm until the SOC indicates at least 50%, then go to step 6.
6. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
7. Accelerate from a stop at full throttle on a flat road for about 15 seconds. Do not release the accelerator during the test-drive.
8. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
9. Turn the ignition switch to LOCK (0), then restart the engine and repeat test-driving step 6.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0746, P0777, or P1899 indicated?

    YES–The CVT drive pulley pressure control solenoid valve may be stuck OFF or the CVT driven pulley pressure control valve may be stuck ON:
    - DTC P0746 is indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145).
    - DTC P0777 is indicated, replace the CVT driven pulley pressure control solenoid valve (see page 14-146).
    - DTC P1899 is indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145) and CVT driven pulley pressure control solenoid valve (see page 14-146) as a set.

    If any part was replaced, go to step 11.

    NO–Go to step 6, and repeat the test-drive. If the HDS does not indicate a DTC after the test-drive has been done four times, the problem was an intermittent failure; the system is OK at this time.

11. Turn the ignition switch to ON (II).
12. Clear the DTC with the HDS.
13. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
14. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
15. Accelerate from a stop at full throttle on a flat road for about 15 seconds. Do not release the accelerator during the test-drive.
16. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
17. Turn the ignition switch to LOCK (0), then restart the engine and repeat test-driving step 14.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0746 indicated?

    YES–Replace the transmission.■

    NO–Go to step 19.
19. Monitor the OBD STATUS for P0746 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT drive pulley pressure control solenoid valve and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 13.

DTC P0777: CVT Driven Pulley Pressure Control Solenoid Valve Stuck ON

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any other Pending or Confirmed DTCs indicated simultaneously with DTC P0777?

   YES–Go to the indicated DTC's troubleshooting, and recheck.

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. Check the SOC in the DATA LIST with the HDS.

   Does the SOC indicate more than 50%?

   YES–Go to step 6.

   NO–Start the engine with the shift lever in P or N, hold it at 3,500 rpm until the SOC indicates at least 50%, then go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
7. Accelerate from a stop at full throttle on a flat road for about 15 seconds. Do not release the accelerator during the test-drive.
8. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
9. Turn the ignition switch to LOCK (0), then restart the engine and repeat test-driving step 6.
10. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0746, P0777, or P1899 indicated?

    YES–The CVT driven pulley pressure control solenoid valve may be stuck ON or the CVT drive pulley pressure control valve may be stuck OFF:
    - DTC P0746 is indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145).
    - DTC P0777 is indicated, replace the CVT driven pulley pressure control solenoid valve (see page 14-146).
    - DTC P1899 is indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145) and CVT driven pulley pressure control solenoid valve (see page 14-146) as a set.

    If any part was replaced, go to step 11.

    NO–Go to step 6, and repeat the test-drive. If the HDS does not indicate a DTC after the test-drive has been done four times, the problem was an intermittent failure; the system is OK at this time.
11. Turn the ignition switch to ON (II).
12. Clear the DTC with the HDS.
13. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
14. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
15. Accelerate from a stop at full throttle on a flat road for about 15 seconds. Do not release the accelerator during the test-drive.
16. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
17. Turn the ignition switch to LOCK (0), then restart the engine and repeat test-driving step 14.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0777 indicated?

    YES–Replace the transmission.■

    NO–Go to step 19.
19. Monitor the OBD STATUS for P0777 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT driven pulley pressure control solenoid valve and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 13.

DTC P0796: CVT Start Clutch Pressure Control Solenoid Valve Stuck OFF

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON(II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0501 or P0502 indicated along with DTC P0796?

   YES–Go to the DTC P0501 troubleshooting (see page 14-84) or DTC P0502 troubleshooting (see page 14-85), and recheck.

   NO–Go to step 3.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1891 indicated along with DTC P0796?

   YES–Replace the start clutch, then go to step 11.

   NO–Go to step 4.
4. Clear the DTCs with the HDS.
5. Set the parking brake, and block the front wheels securely.
6. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
7. Firmly press the brake pedal, and shift the shift lever to D.
8. While pressing the brake pedal firmly, press the accelerator for 6—8 seconds at full throttle, and measure the stall speed rpm in D.

   Does the engine speed exceed 3,500 rpm?

   YES–Replace the CVT clutch pressure control solenoid valve (see page 14-145), then go to step 9.

   NO–Intermittent failure, the system is OK at this time.■
9. Turn the ignition switch to ON(II).
10. Clear the DTC with the HDS.
11. Start the engine, shift the shift lever to D while pressing the brake pedal, and run the engine at idle for at least 10 seconds. Then test-drive the vehicle at an engine speed of 4,000 rpm
12. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0796 indicated?

    YES–Replace the transmission.■

    NO–Go to step 13.
13. Monitor the OBD STATUS for P0796 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 12, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT clutch pressure control solenoid valve and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 11.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0962: CVT Drive Pulley Pressure Control Valve Circuit Low

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

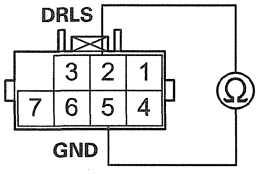
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0962 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminals No. 2 and No. 5.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

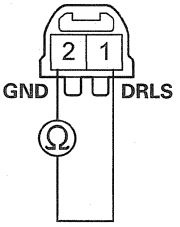
Is there 3.8—6.8 Ω?

YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the CVT drive pulley pressure control solenoid valve 2P connector.
10. Measure the resistance between CVT drive pulley pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

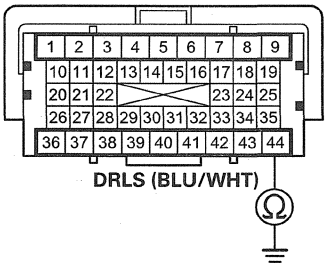
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 14.

NO–Replace the CVT drive pulley pressure control solenoid valve (see page 14-145), then go to step 14.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B44 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal B44 and the solenoid wire harness 8P connector, then go to step 14.

NO–Go to step 20.

14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and let it idle for at least 1 second.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0962 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve, then go to step 1.

    NO–Go to step 19.

19. Monitor the OBD STATUS for P0962 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 17.

20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
22. Start the engine, and let it idle for at least 1 second.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0962 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1.

    NO–Go to step 24.

24. Monitor the OBD STATUS for P0962 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P0963: CVT Drive Pulley Pressure Control Valve Circuit High

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

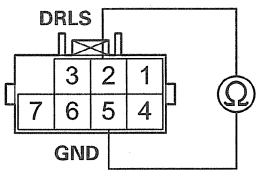
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0963 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve. ■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminals No. 2 and No. 5.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

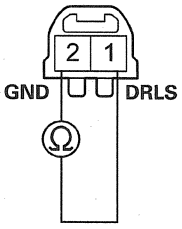
Is there 3.8—6.8 Ω?

YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the CVT drive pulley pressure control solenoid valve 2P connector.
10. Measure the resistance between CVT drive pulley pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT DRIVE PULLEY PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

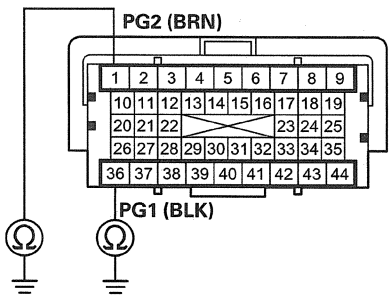
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 17.

NO–Replace the CVT drive pulley pressure control solenoid valve (see page 14-145), then go to step 17.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B1 and body ground, and between PCM connector terminal B36 and body ground.

PCM CONNECTOR B (44P)



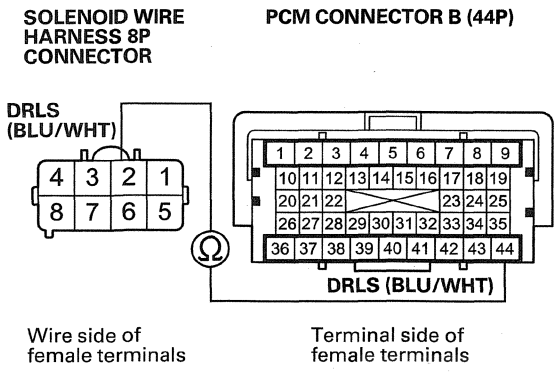
Terminal side of female terminals

Is there continuity?

YES–Go to step 14.

NO–Repair an open in the wire between PCM connector terminal B1, B36, and body ground (G101), or repair poor body ground (G101), then go to step 17.

14. Check for continuity between PCM connector terminal B44 and solenoid wire harness 8P connector terminal No. 2.



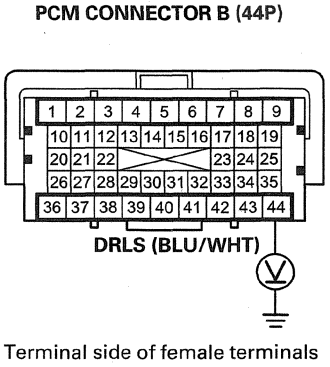
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between PCM connector terminal B44 and the solenoid wire harness 8P connector, then go to step 17.

15. Turn the ignition switch to ON (II).

16. Measure the voltage between PCM connector terminal B44 and body ground.



Is there voltage?

YES–Repair a short to power in the wire between PCM connector terminal B44 and the solenoid wire harness 8P connector, then go to step 17.

NO–Go to step 23.

17. Reconnect all connectors.

18. Turn the ignition switch to ON (II).

19. Clear the DTC with the HDS.

20. Start the engine, and let it idle for at least 1 second.

21. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0963 indicated?

YES–Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve, then go to step 1.

NO–Go to step 22.

22. Monitor the OBD STATUS for P0963 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.

23. Reconnect all connectors.

24. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).

25. Start the engine, and let it idle for at least 1 second.

26. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0963 indicated?

YES–Check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 25. If the PCM was substituted, go to step 1.

NO–Go to step 27.

(cont'd)

DTC Troubleshooting (cont'd)

27. Monitor the OBD STATUS for P0963 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT drive pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 25. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.

DTC P0966: CVT Driven Pulley Pressure Control Valve Circuit Low

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

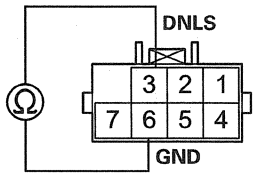
   Is DTC P0966 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve.■

5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminals No. 3 and No. 6.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

Is there 3.8—6.8 Ω?

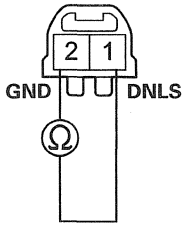
YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the CVT driven pulley pressure control solenoid valve 2P connector.

10. Measure the resistance between CVT driven pulley pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

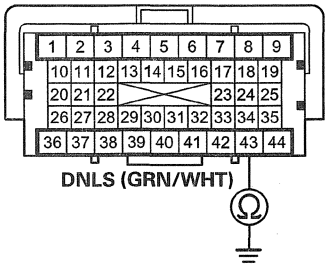
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 14.

NO–Replace the CVT driven pulley pressure control solenoid valve (see page 14-146), then go to step 14.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B43 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal B43 and the solenoid wire harness 8P connector, then go to step 14.

NO–Go to step 20.

14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Start the engine, and let it idle for at least 1 second.
18. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0966 indicated?

YES–Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve, then go to step 1.

NO–Go to step 19.

19. Monitor the OBD STATUS for P0966 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 17.

20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
22. Start the engine, and let it idle for at least 1 second.
23. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0966 indicated?

YES–Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1.

NO–Go to step 24.

(cont'd)

DTC Troubleshooting (cont'd)

24. Monitor the OBD STATUS for P0966 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

DTC P0967: CVT Driven Pulley Pressure Control Valve Circuit High

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

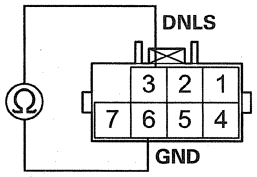
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, and let it idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0967 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminals No. 3 and No. 6.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

Is there 3.8—6.8 Ω?

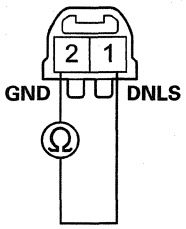
YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the CVT driven pulley pressure control solenoid valve 2P connector.

10. Measure the resistance between CVT driven pulley pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT DRIVEN PULLEY PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

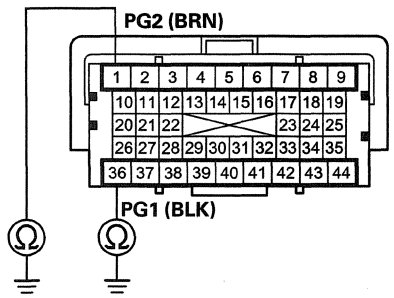
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 17.

NO–Replace the CVT driven pulley pressure control solenoid valve (see page 14-146), then go to step 17.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B1 and body ground, and between PCM connector terminal B36 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

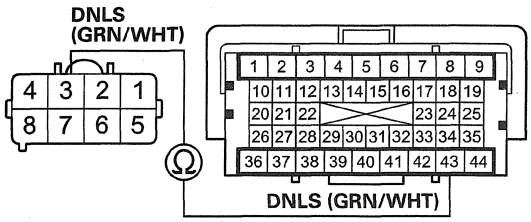
YES–Go to step 14.

NO–Repair an open in the wire between PCM connector terminal B1, B36, and body ground (G101), or repair poor body ground (G101), then go to step 17.

14. Check for continuity between PCM connector terminal B43 and solenoid wire harness 8P connector terminal No. 3.

SOLENOID WIRE HARNESS 8P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

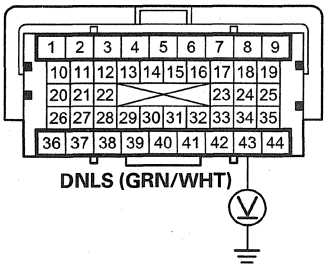
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between PCM connector terminal B43 and the solenoid wire harness 8P connector, then go to step 17.

15. Turn the ignition switch to ON (II).
16. Measure the voltage between PCM connector terminal B43 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there voltage?

YES–Repair a short to power in the wire between PCM connector terminal B43 and the solenoid wire harness 8P connector, then go to step 17.

NO–Go to step 23.

(cont'd)

DTC Troubleshooting (cont'd)

17. Reconnect all connectors.
18. Turn the ignition switch to ON (II).
19. Clear the DTC with the HDS.
20. Start the engine, and let it idle for at least 1 second.
21. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0967 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve, then go to step 1.

    NO–Go to step 22.

22. Monitor the OBD STATUS for P0967 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 21, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 20.

23. Reconnect all connectors.
24. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
25. Start the engine, and let it idle for at least 1 second.
26. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0967 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 25. If the PCM was substituted, go to step 1.

    NO–Go to step 27.

27. Monitor the OBD STATUS for P0967 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 26, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT driven pulley pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 25. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 25.

DTC P0970: Pressure Control Solenoid "C" Control Circuit Low

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

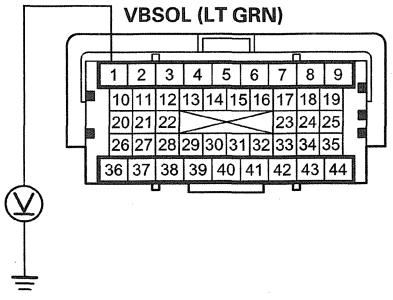
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0970 indicated?

   YES–Go to step 12.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve.■
5. Turn the ignition switch to LOCK (0).
6. Jump the SCS line with the HDS.
7. Disconnect PCM connector A (44P).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between PCM connector terminal A1 and body ground.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 12.

NO–Go to step 10.

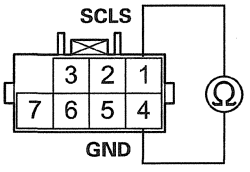
10. Turn the ignition switch to LOCK (0).
11. Check for blown No. B7 (10A) fuse in the under-dash fuse/relay box.

    Is the fuse OK?

    YES–Repair an open in the wire between PCM connector terminal A1 and the under-dash fuse/relay box, then go to step 21.

    NO–Repair a short in the wire between PCM connector terminal A1 and the under-dash fuse/relay box, then go to step 21.
12. Turn the ignition switch to LOCK (0).
13. Disconnect the solenoid wire harness 8P connector.
14. Measure the resistance between solenoid wire harness 7P connector terminals No. 1 and No. 4.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

Is there 3.8—6.8 Ω?

YES–Go to step 18.

NO–Go to step 15.

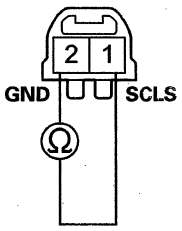
15. Remove the lower valve body (see page 14-142).
16. Disconnect the CVT clutch pressure control solenoid valve 2P connector.

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the resistance between CVT clutch pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

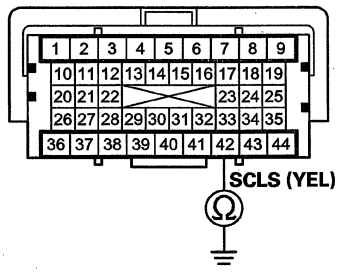
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 21.

NO–Replace the CVT clutch pressure control solenoid valve (see page 14-145), then go to step 21.

18. Jump the SCS line with the HDS.
19. Disconnect PCM connector B (44P).
20. Check for continuity between PCM connector terminal B42 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal B42 and the solenoid wire harness 8P connector, then go to step 21.

NO–Go to step 27.

21. Reconnect all connectors.
22. Turn the ignition switch to ON (II).
23. Clear the DTC with the HDS.
24. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0970 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve, then go to step 1.

    NO–Go to step 26.

26. Monitor the OBD STATUS for P0970 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 25, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 24.

27. Reconnect all connectors.
28. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
29. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
30. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0970 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 29. If the PCM was substituted, go to step 1.

    NO–Go to step 31.

31. Monitor the OBD STATUS for P0970 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 30, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 29. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 29.

DTC P0971: Pressure Control Solenoid "C" Control Circuit High

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

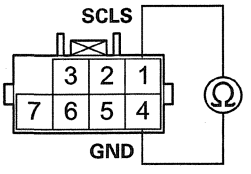
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P0971 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminals No. 1 and No. 4.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

Is there 3.8–6.8 Ω?

YES–Go to step 11.

NO–Go to step 8.

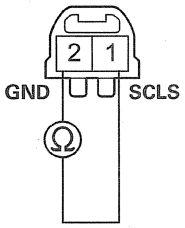
8. Remove the lower valve body (see page 14-142).

(cont'd)

DTC Troubleshooting (cont'd)

9. Disconnect the CVT clutch pressure control solenoid valve 2P connector.
10. Measure the resistance between CVT clutch pressure control solenoid valve 2P connector terminals No. 1 and No. 2.

CVT CLUTCH PRESSURE CONTROL SOLENOID VALVE 2P CONNECTOR



Terminal side of male terminals

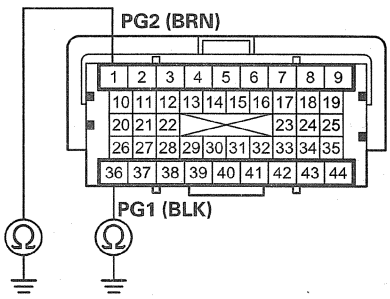
Is there 3.8—6.8 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 16.

NO–Replace the CVT clutch pressure control solenoid valve (see page 14-145), then go to step 16.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B1 and body ground, and between PCM connector terminal B36 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

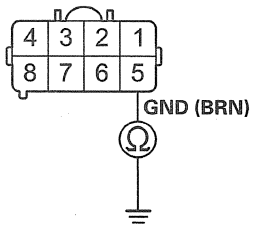
Is there continuity?

YES–Go to step 14.

NO–Repair an open in the wire between PCM connector terminal B1, B36, and body ground (G101), or repair poor body ground (G101), then go to step 16.

14. Check for continuity between solenoid wire harness 8P connector terminal No. 5 and body ground.

SOLENOID WIRE HARNESS 8P CONNECTOR



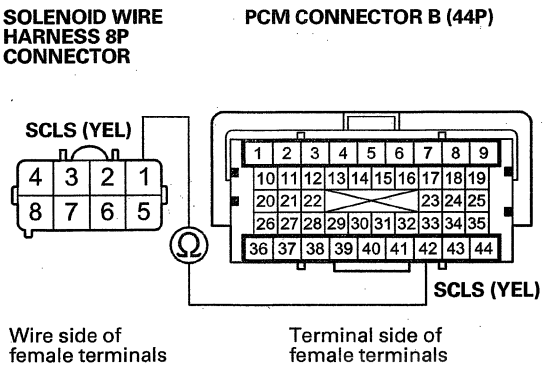
Wire side of female terminals

Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between solenoid wire harness 8P connector terminal No. 5 and body ground, then go to step 16.

15. Check for continuity between PCM connector terminal B42 and solenoid wire harness 8P connector terminal No. 1.



Is there continuity?

YES–Go to step 22.

NO–Repair an open in the wire between PCM connector terminal B42 and the solenoid wire harness 8P connector, then go to step 16.

16. Reconnect all connectors.
17. Turn the ignition switch to ON (II).
18. Clear the DTC with the HDS.
19. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0971 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve, then go to step 1.

    NO–Go to step 21.

21. Monitor the OBD STATUS for P0971 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 19.

22. Reconnect all connectors.
23. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
24. Start the engine, shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 1 second.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P0971 indicated?

    YES–Check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 24. If the PCM was substituted, go to step 1.

    NO–Go to step 26.

26. Monitor the OBD STATUS for P0971 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 25, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the PCM and the CVT clutch pressure control solenoid valve. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 24. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 24.

(cont'd)

DTC Troubleshooting (cont'd)

DTC P16C0: PCM CVT Control System Incomplete Update

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is indicated when PCM updating is incomplete.
- Do not turn the ignition switch to LOCK (0) or ACCESSORY (I) while updating the PCM. If you turn the ignition switch to LOCK (0) or ACCESSORY (I) before completion, the PCM can be damaged.

1. Update the PCM (see page 11-207).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16C0 indicated?

   YES–Replace the original PCM (see page 11-209).■

   NO–Troubleshooting is complete.■

DTC P16D7: PCM Internal F-CAN Communication Circuit Malfunction

DTC P16D8: PCM Internal IMA-CAN Communication Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II), and wait for at least 5 seconds.
5. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0029 or U0038 indicated?

   YES–Go to the DTC U0029 troubleshooting (see page 14-129) or the DTC U0038 troubleshooting (see page 14-130).■

   NO–Go to step 6.

6. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P16D7 or P16D8 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK this time.■

7. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
8. Start the engine, and let it idle for at least 2 minutes.
9. Monitor the OBD STATUS for P16D7 or P16D8 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209).■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals between PCM and F-CAN circuit. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 8. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 8.

DTC P1860: Inhibitor Solenoid Circuit Low

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

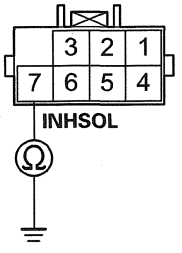
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1860 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the inhibitor solenoid.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminal No. 7 and body ground.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

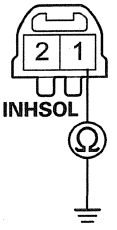
Is there 11.7–21.0 Ω?

YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the inhibitor solenoid 2P connector.
10. Measure the resistance between inhibitor solenoid 2P connector terminal No. 1 and body ground.

INHIBITOR SOLENOID 2P CONNECTOR



Terminal side of male terminals

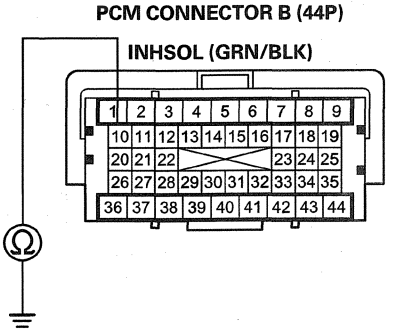
Is there 11.7–21.0 Ω?

YES–Replace the solenoid wire harness (see page 14-145), then go to step 14.

NO–Replace the inhibitor solenoid (see page 14-146), then go to step 14.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B10 and body ground.

PCM CONNECTOR B (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal B10 and the solenoid wire harness 8P connector, then go to step 14.

NO–Go to step 20.

(cont'd)

DTC Troubleshooting (cont'd)

14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1860 indicated?

    YES–Check for an intermittent short between the inhibitor solenoid and the PCM, then go to step 1.

    NO–Go to step 19.
19. Monitor the OBD STATUS for P1860 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the inhibitor solenoid and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 17.
20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
22. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1860 indicated?

    YES–Check for poor connections or loose terminals between the inhibitor solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1.

    NO–Go to step 24.
24. Monitor the OBD STATUS for P1860 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the inhibitor solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

DTC P1861: Inhibitor Solenoid Circuit High

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is caused by an electrical circuit problem and cannot be caused by a mechanical problem in the transmission.

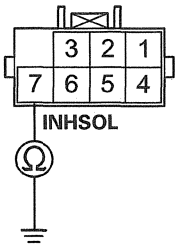
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
4. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC P1861 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals between the PCM and the inhibitor solenoid.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Measure the resistance between solenoid wire harness 7P connector terminal No. 7 and body ground.

SOLENOID WIRE HARNESS 7P CONNECTOR



Terminal side of male terminals

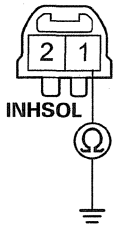
Is there 11.7—21.0 Ω?

YES–Go to step 11.

NO–Go to step 8.

8. Remove the lower valve body (see page 14-142).
9. Disconnect the inhibitor solenoid 2P connector.
10. Measure the resistance between inhibitor solenoid 2P connector terminal No. 1 and body ground.

INHIBITOR SOLENOID 2P CONNECTOR



Terminal side of male terminals

Is there 11.7—21.0 Ω?

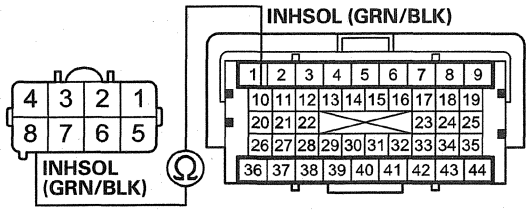
YES–Replace the solenoid wire harness (see page 14-145), then go to step 14.

NO–Replace the inhibitor solenoid (see page 14-146), then go to step 14.

11. Jump the SCS line with the HDS.
12. Disconnect PCM connector B (44P).
13. Check for continuity between PCM connector terminal B10 and solenoid wire harness 8P connector terminal No. 8.

SOLENOID WIRE HARNESS 8P CONNECTOR

PCM CONNECTOR B (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Go to step 20.

NO–Repair an open in the wire between PCM connector terminal B10 and the solenoid wire harness 8P connector, then go to step 14.

(cont'd)

DTC Troubleshooting (cont'd)

14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
18. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1861 indicated?

    YES–Check for poor connections or loose terminals between the inhibitor solenoid and the PCM, then go to step 1.

    NO–Go to step 19.

19. Monitor the OBD STATUS for P1861 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 18, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the inhibitor solenoid and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 17.

20. Reconnect all connectors.
21. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
22. Select the Inhibitor Solenoid Test in the Miscellaneous Test Menu with the HDS.
23. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1861 indicated?

    YES–Check for poor connections or loose terminals between the inhibitor solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1.

    NO–Go to step 24.

24. Monitor the OBD STATUS for P1861 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 23, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the inhibitor solenoid and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 22. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 22.

DTC P1890: CVT Speed Control System

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any other Pending or Confirmed DTCs indicated along with DTC P1890?

   YES–Go to the indicated DTC's troubleshooting, and recheck.

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. Check the SOC in the DATA LIST with the HDS.

   Does the SOC indicate more than 50%?

   YES–Go to step 6.

   NO–Start the engine with the shift lever in P or N, hold it at 3,500 rpm until the SOC indicates at least 50%, then go to step 6.
6. Test-drive the vehicle at about 37 mph (60 km/h) for at least 1 minute.
7. Check for Pending or Confirmed DTCs with the HDS.

   Are any DTCs indicated?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 6, and repeat the test-drive. If the HDS does not indicate a DTC after the test-drive has been done four times, go to step 8.
8. Park the vehicle on level ground, apply the parking brake, and block all four wheels securely.
9. Start the engine.
10. Firmly press the brake pedal, and shift the shift lever to D.
11. While pressing the brake pedal firmly, also press the accelerator for 6—8 seconds at full throttle, and measure the stall speed rpm.

    Does the stall speed exceed 3,500 rpm?

    YES–Replace the transmission.■

    NO–Go to step 12.
12. Test-drive the vehicle at about 37 mph (60 km/h) under the condition that APP Sensor A 2.31 V for at least 1 minute.
13. Check the engine speed when vehicle speed is 37 mph (60 km/h).

    Is the engine speed 2,200—2,800 rpm?

    YES–Intermittent failure, the system is OK at this time. If necessary, replace the CVTF (see page 14-154), and recheck.

    NO–Replace the transmission.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC P1891: Start Clutch Control System

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any other Pending or Confirmed DTCs indicated along with DTC P1891?

   YES–Go to step 3.

   NO–Go to step 4.
3. Check for Pending or Confirmed DTCs with the HDS.

   Is the DTC P0796 indicated along with DTC P1891?

   YES–Replace the start clutch, then go to step 19.

   NO–Go to the indicated DTC's troubleshooting, and recheck.
4. Clear the DTC with the HDS.
5. Turn the ignition switch to LOCK (0).
6. Disconnect the solenoid wire harness 8P connector.
7. Start the engine. Shift the shift lever to D, and release the parking brake and brake pedal, then check if the vehicle moves.

   Did the vehicle move?

   YES–Go to step 8.

   NO–Replace the start clutch, then go to step 19.
8. Turn the ignition switch to LOCK (0).
9. Reconnect the solenoid wire harness 8P connector.
10. Start the engine. Shift the shift lever to D, and check the creeping speed on level ground.

    Is the creeping speed about 3 mph (5 km/h)?

    YES–Go to step 11.

    NO–Replace CVT clutch pressure control solenoid valve (see page 14-145), then go to step 18.
11. Park the vehicle on level ground, apply the parking brake, and block all four wheels securely.
12. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
13. Firmly press the brake pedal, and shift the shift lever to D.
14. While pressing the brake pedal firmly, press the accelerator for 6—8 seconds at full throttle, and measure the stall speed rpm in D.

    Does the engine speed exceed 3,500 rpm?

    YES–Replace the start clutch, then go to step 19.

    NO–Go to step 15.
15. Turn the ignition switch to LOCK (0).
16. Disconnect the solenoid wire harness 8P connector.
17. Start the engine. Shift the shift lever to D, and release the parking brake and brake pedal, then check if the vehicle moves.

    Did the vehicle move?

    YES–Go to step 22.

    NO–Replace the start clutch, then go to step 19.
18. Clear the DTC with the HDS.
19. Start the engine. Test-drive the vehicle at about 37 mph (60 km/h) for at least 1 minute.
20. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1891 indicated?

    YES–Check for poor connections or loose terminals between the CVT clutch pressure control solenoid valve and the PCM, then go to step 1.

    NO–Go to step 21.
21. Monitor the OBD STATUS for P1891 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT clutch pressure control solenoid valve and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 19.

22. Reconnect all connectors.
23. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
24. Start the engine. Test-drive the vehicle at about 37 mph (60 km/h) for at least 1 minute.
25. Check for Pending or Confirmed DTCs with the HDS.

    Is DTC P1891 indicated?

    YES–Check for poor connections or loose terminals between the CVT clutch pressure control solenoid valve and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 24. If the PCM was substituted, go to step 1.

    NO–Go to step 26.
26. Monitor the OBD STATUS for P1891 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 25, go to the indicated DTC's troubleshooting. ■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT clutch pressure control solenoid valve and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 24. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 24.

DTC P1898: CVT Drive Pulley Pressure Control Valve Stuck ON or CVT Driven Pulley Pressure Control Valve Stuck OFF

DTC P0780: Shift Error

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- Keep replacement solenoid valves on hand: the CVT drive pulley pressure control solenoid valve and the CVT driven pulley pressure control solenoid valve set.

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

    Are any other Pending or Confirmed DTCs indicated along with DTC P1898 and P0780?

    YES–Go to the indicated DTC's troubleshooting, and recheck.

    NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. Check the SOC in the DATA LIST with the HDS.

    Does the SOC indicate more than 50%?

    YES–Go to step 6.

    NO–Start the engine with the shift lever in P or N, hold it at 3,500 rpm until the SOC indicates at least 50%, then go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
7. Accelerate from a stop until the vehicle speed reaches 40—50 mph (65—80 km/h) on a flat road for at least 15 seconds. Do not release the accelerator during the test-drive.
8. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds. Then return to the test-drive of step 7.
9. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P1898 and P0780 indicated?

   YES–Replace the CVT drive pulley pressure control solenoid valve (see page 14-145) and the CVT driven pulley pressure control solenoid valve (see page 14-146)as a set, then go to step 10.

   NO–Go to step 6, and repeat the test-drive. If the HDS does not indicate a DTC after the test-drive has been done four times, the problem was an intermittent failure; the system is OK at this time.
10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS.
12. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
13. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
14. Accelerate from a stop until the vehicle speed reaches 40—50 mph (65—80 km/h) on a flat road for at least 15 seconds. Do not release the accelerator during the test-drive.
15. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds. Then return to the test-drive of step 14.
16. Check for Pending or Confirmed DTCs with the HDS.

    Are DTC P1898 and P0780 indicated?

    YES–Replace the transmission.■

    NO–Go to step 17.
17. Monitor the OBD STATUS for P1898 and P0780 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT drive pulley pressure control solenoid valve, the CVT driven pulley pressure control solenoid valve, and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 12.

DTC P1899: CVT Drive Pulley Pressure Control Valve Stuck OFF or CVT Driven Pulley Pressure Control Valve Stuck ON

DTC P0780: Shift Error

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- Keep replacement solenoid valves on hand: the CVT drive pulley pressure control solenoid valve and the CVT driven pulley pressure control solenoid valve set.

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs with the HDS.

   Are any other Pending or Confirmed DTCs indicated along with DTC P1899 and P0780?

   YES–Go to the indicated DTC's troubleshooting, and recheck.

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
5. Check the SOC in the DATA LIST with the HDS.

   Does the SOC indicate more than 50%?

   YES–Go to step 6.

   NO–Start the engine with the shift lever in P or N, hold it at 3,500 rpm until the SOC indicates at least 50%, then go to step 6.
6. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
7. Accelerate from a stop until the vehicle speed reaches 40—50 mph (65—80 km/h) on a flat road for at least 15 seconds. Do not release the accelerator during the test-drive.
8. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds. Then return to the test-drive of step 7.
9. Check for Pending or Confirmed DTCs with the HDS.

   Are DTC P0746, P0777, or P1899 and P0780 indicated?

   YES–The CVT drive pulley pressure control solenoid valve may be stuck OFF or the CVT driven pulley pressure control solenoid valve may be stuck ON:
   - DTC P0746 is indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145).
   - DTC P0777 is indicated, replace the CVT driven pulley pressure control solenoid valve (see page 14-146).
   - DTC P1899 and P0780 are indicated, replace the CVT drive pulley pressure control solenoid valve (see page 14-145) and CVT driven pulley pressure control solenoid valve (see page 14-146) as a set.

   If any part was replaced, go to step 10.

   NO–Go to step 6, and repeat the test-drive. If the HDS does not indicate a DTC after the test-drive has been done four times, the problem was an intermittent failure; the system is OK at this time.

(cont'd)

DTC Troubleshooting (cont'd)

10. Turn the ignition switch to ON (II).
11. Clear the DTC with the HDS .
12. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
13. Shift the shift lever to D while pressing the brake pedal, and let the engine idle for at least 5 seconds.
14. Accelerate from a stop until the vehicle speed reaches 40—50 mph (65—80 km/h) on a flat road for at least 15 seconds. Do not release the accelerator during the test-drive.
15. Slow down to a stop, keep the shift lever in D while pressing the brake pedal, and let the engine idle for at least 5 seconds. Then return to the test-drive of step 14.
16. Check for Pending or Confirmed DTCs with the HDS.

    Are DTC P1899 and P0780 indicated?

    YES–Replace the transmission.■

    NO–Go to step 17.
17. Monitor the OBD STATUS for P1899 and P0780 in the DTCs MENU with the HDS.

    Does the HDS indicate PASSED?

    YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 16, go to the indicated DTC's troubleshooting.■

    NO–If the HDS indicates FAILED, check for poor connections or loose terminals between the CVT drive pulley pressure control solenoid valve, the CVT driven pulley pressure control solenoid valve, and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 12.

DTC P2122: Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit Low

DTC P2123: Accelerator Pedal Position (APP) Sensor A (Throttle Position (TP) Sensor D) Circuit High

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

    Is DTC P2122 or P2123 indicated in the PGM-FI SYSTEM?

    YES–Go to the DTC P2122 troubleshooting (see page 11-233) or DTC P2123 troubleshooting (see page 11-236) in Electronic Throttle Control Systems (ETCS).■

    NO–Go to step 4.
4. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

    Is DTC P2122 or P2123 indicated in the A/T SYSTEM?

    YES–Go to step 5.

    NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■
5. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
6. Start the engine, and let it idle for at least 2 minutes.
7. Check for Pending or Confirmed DTCs the A/T SYSTEM with the HDS.

    Is DTC P2122 or P2123 indicated in the A/T SYSTEM?

    YES–Check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 6. If the PCM was substituted, go to step 1.

    NO–Go to step 8.

8. Monitor the OBD STATUS for P2122 or P2123 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 6. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 6.

DTC U0029: F-CAN Malfunction (F-CAN Bus OFF)

DTC U0122: Lost Communication With Vehicle Dynamics Control Module

DTC U0155: Lost Communication With Gauge Control Module

DTC U1205: IMA-CAN Malfunction (PCM-to-Motor Control Module)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC U0029, U0122, U0155, or U1205 indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC U0029 troubleshooting (see page 11-364), DTC U0122 troubleshooting (see page 11-372), DTC U0155 troubleshooting (see page 11-374), or DTC U1205 troubleshooting (see page 11-364) in Communication Systems.■

   NO–Go to step 4.

4. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC U0029, U0122, U0155, or U1205 indicated in the A/T SYSTEM?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

5. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
6. Start the engine, and let it idle for at least 2 minutes.
7. Check for Pending or Confirmed DTCs the A/T SYSTEM with the HDS.

   Is DTC U0029, U0122, U0155, or U1205 indicated in the A/T SYSTEM?

   YES–Check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 6. If the PCM was substituted, go to step 1.

   NO–Go to step 8.
8. Monitor the OBD STATUS for U0029, U0122, U0155, or U1205 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 1. If the HDS indicates NOT COMPLETED, go to step 6.

DTC U0038: IMA-CAN Malfunction (IMA-CAN Bus OFF)

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Check for Pending or Confirmed DTCs in the PGM-FI SYSTEM with the HDS.

   Is DTC U0038 indicated in the PGM-FI SYSTEM?

   YES–Go to the DTC U0038 troubleshooting in Communication Systems (see page 11-364).■

   NO–Go to step 4.
4. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC U0038 indicated in the A/T SYSTEM?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. If any other Pending or Confirmed DTCs were indicated, go to the indicated DTC's troubleshooting.■
5. Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7).
6. Start the engine, and let it idle for at least 2 minutes.
7. Check for Pending or Confirmed DTCs in the A/T SYSTEM with the HDS.

   Is DTC U0038 indicated in the A/T SYSTEM?

   YES–Check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 6. If the PCM was substituted, go to step 1.

   NO–Go to step 8.

8. Monitor the OBD STATUS for U0038 in the DTCs MENU with the HDS.

   Does the HDS indicate PASSED?

   YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-209). If any other Pending or Confirmed DTCs were indicated in step 7, go to the indicated DTC's troubleshooting.■

   NO–If the HDS indicates FAILED, check for poor connections or loose terminals at the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-7), then go to step 6. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 6.

DTC U0302: PGM-FI System and A/T System Program Mismatch

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot with the HDS, and review the General Troubleshooting Information (see page 14-4).
- This code is indicated when PCM updating is incomplete.
- Do not turn the ignition switch to LOCK (0) or ACCESSORY (I) while updating the PCM. If you turn the ignition switch to LOCK (0) or ACCESSORY (I) before completion, the PCM can be damaged.

1. Update the PCM (A/T system) (see page 11-207).
2. Check for Pending or Confirmed DTCs with the HDS.

   Is DTC U0302 indicated?

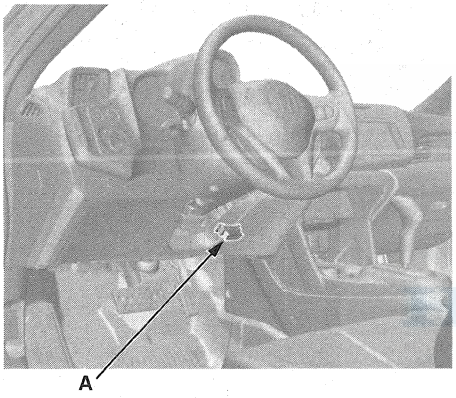
   YES–Replace the original PCM (see page 11-209).■

   NO–Troubleshooting is complete.■

HONDA

Road Test

1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
2. Apply the parking brake, and block all four wheels.
3. Shift the shift lever to D while pressing the brake pedal firmly. Press the accelerator pedal, and release it suddenly. The engine should not stall.
4. Repeat step 3 in all shift lever positions.
5. Turn the ignition switch to LOCK (0)
6. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



7. Turn the ignition switch to ON (II).
8. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
9. Prepare the HDS to take a HIGH SPEED SNAPSHOT (refer to the HDS user's guide for more details if needed):
   - Select the High Speed icon.
   - Select these parameters:
     - Vehicle Speed
     - Output Shaft (Driven Pulley) Speed (rpm)
     - Input Shaft (Drive Pulley) Speed (rpm)
     - Engine Speed
     - APP Sensor A (V)
     - Battery Voltage
     - Brake Switch
   - Set the Trigger Type to Parameter.
   - Adjust the Parameter setting to APP Sensor A above 1.21 V.
   - Set the recording time to 60 seconds.
   - Set the Trigger point to -30 seconds.
10. Find a suitable level road. When you are ready to do the test, press OK on the HDS.
11. Shift the shift lever to D with the Normal Mode.
12. Monitor the HDS, and accelerate quickly until APP Sensor A reads 1.22 V. Maintain a steady throttle at 1.22 V until the vehicle reaches a reasonable speed, then slow the vehicle, and come to a stop.
13. Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary and repeat step 12.
14. Adjust the Parameter setting to 2.30 V. Test-drive the vehicle again. While monitoring the HDS, accelerate quickly until APP Sensor A reads 2.31 V. Maintain a steady throttle at 2.31 V until the vehicle reaches a reasonable speed, then slow the vehicle, and come to a stop.
15. Save the snapshot if the entire event was recorded, or increase the recording time setting as necessary and repeat step 14.
16. Accelerate quickly until the accelerator pedal is to the floor. Maintain a steady pedal until the vehicle reaches to reasonable speed, then slow to a stop, and save the snapshot. Repeat steps 12 thru 16 in D with the Sport Mode and the L mode.

17. Review each snapshot individually, and compare APP Sensor A Voltage, Vehicle Speed, and Engine Speed to the following table:

In D with Normal Mode:

APP Sensor A Voltage	Vehicle Speed	Engine Speed
1.22 V	25 mph (40 km/h)	900—1,300 rpm
2.31 V	25 mph (40 km/h)	1,950—2,550 rpm
	37 mph (60 km/h)	2,200—2,800 rpm
	62 mph (100 km/h)	2,580—3,180 rpm
4.50 V	25 mph (40 km/h)	2,750—4,500 rpm
	37 mph (60 km/h)	4,000—5,500 rpm
	62 mph (100 km/h)	5,400—6,000 rpm

In D with Sport Mode:

APP Sensor A Voltage	Vehicle Speed	Engine Speed
1.22 V	25 mph (40 km/h)	1,350—1,750 rpm
	37 mph (60 km/h)	1,400—2,000 rpm
	62 mph (100 km/h)	2,250—2,850 rpm
2.31 V	25 mph (40 km/h)	2,450—3,050 rpm
	37 mph (60 km/h)	2,800—3,400 rpm
	62 mph (100 km/h)	3,400—4,000 rpm
4.50 V	25 mph (40 km/h)	4,150—5,050 rpm
	37 mph (60 km/h)	4,600—5,700 rpm
	62 mph (100 km/h)	5,400—6,000 rpm

In D with L mode:

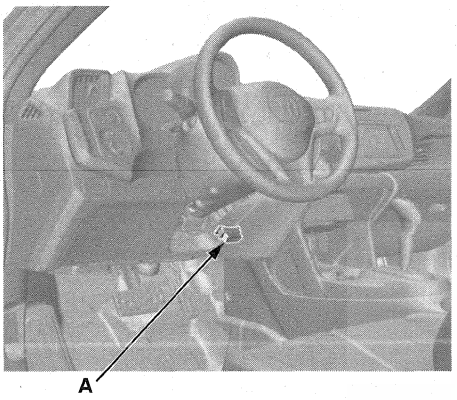
APP Sensor A Voltage	Vehicle Speed	Engine Speed
1.22 V	25 mph (40 km/h)	3,070—3,670 rpm
	37 mph (60 km/h)	3,600—4,200 rpm
	62 mph (100 km/h)	4,150—4,750 rpm
2.31 V	25 mph (40 km/h)	3,800—4,400 rpm
	37 mph (60 km/h)	4,250—4,850 rpm
	62 mph (100 km/h)	4,700—5,300 rpm
4.50 V	25 mph (40 km/h)	3,600—5,300 rpm
	37 mph (60 km/h)	4,300—5,700 rpm
	62 mph (100 km/h)	5,400—6,000 rpm

18. Park the vehicle on a slope (about 16-degrees), apply the brake, and shift into P. Release the brake; the vehicle should not move.

    NOTE: Always use the brake to hold the vehicle when stopped on an incline in gear. Depending on the grade of the incline, the vehicle could roll backwards if the brake is released.

Stall Speed Test

1. Make sure the transmission fluid is filled to the proper level (see page 14-153).
2. Apply the parking brake, and block all four wheels.
3. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
6. Check the SOC in the DATA LIST with the HDS. If the SOC indicates less than 50%, hold the engine speed at 3,500 rpm without load (in P or N) until the SOC indicates at least 50%.
7. Make sure the A/C switch is OFF.
8. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
9. Shift the shift lever to D with the Normal Mode while pressing the brake pedal firmly, then press the accelerator pedal to the floor for 6 to 8 seconds, and note the engine speed. Do not move the shift lever while raising the engine speed.
10. Allow 2 minutes for cooling, then repeat the test with the shift lever in D with the ECON Mode and the Sport Mode.
11. Allow 2 minutes for cooling, then shift the shift lever to D. Press the paddle shifter + (upshift switch) and the paddle shifter − (downshift switch) at the same time, and hold them for about 5 seconds. Check that the shift indicator displays L, then repeat the test in the L mode.
12. Allow 2 minutes for cooling, then repeat the test with the shift lever in R.

NOTE:

- Do not test stall speed for more than 10 seconds at a time.
- Stall speed tests should be used for diagnostic purposes only.
- Do not test stall speed with the A/T pressure gauges installed, there is danger that exceeds the resisting pressure limit of the A/T pressure gauge.
- Do not move the shift lever while raising the engine speed.

Stall Speed rpm

Position	Specification	Service Limit
D (Normal Mode/ ECON Mode/ Sport Mode/ L mode)	2,050 rpm	1,900−2,200 rpm
R	2,500 rpm	2,400−2,600 rpm

13. If the stall speeds are out of the service limit, the problems and probable causes are listed in the table.

Problem	Probable Causes
Stall speed rpm high in D with the Normal Mode, the ECON Mode, the Sport Mode, and the L mode, and R	• CVTF pump output low • CVTF pump defective • Clogged CVTF strainer • Pressure high (PH) regulator valve stuck closed • Slipping forward clutch • Start clutch defective
Stall speed rpm high in R	• Slipping reverse brake • Start clutch defective
Stall speed rpm low in D with the Normal Mode, the ECON Mode, the Sport Mode, and the L mode, and R	• Engine output low • Start clutch defective • Pulley control valves A and B stuck

Pressure Test

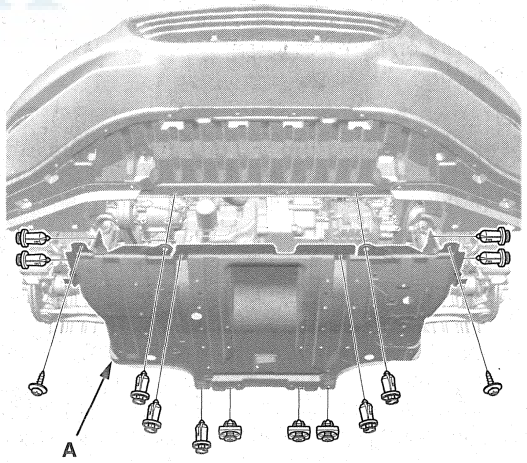
Special Tools Required

- A/T High Pressure Gauge 07AAJ-PLYA100
- A/T Pressure Hose, 2,210 mm 07MAJ-PY4011A
- A/T Pressure Adapter 07MAJ-PY40120
- A/T Oil Pressure Gauge Set 07406-0020401 or 07406-0020400
- A/T Low Pressure Gauge w/Panel 07406-0070301

NOTE:

- Do not test pressure for more than 10 seconds at a time.
- Do not move the shift lever while raising the engine speed.
- Disable the VSA by pressing the VSA OFF button.
- VSA DTC(s) may come on during the test-drive. If the VSA DTC(s) come on, clear the DTC(s) with the HDS.

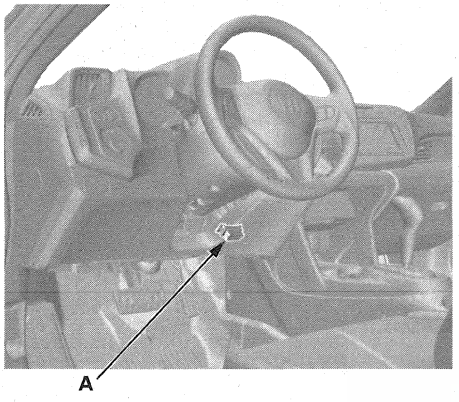
1. Make sure the transmission fluid is filled to the proper level (see page 14-153).
2. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
3. Remove the splash shield (A) (see page 20-163).



(cont'd)

Pressure Test (cont'd)

4. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.

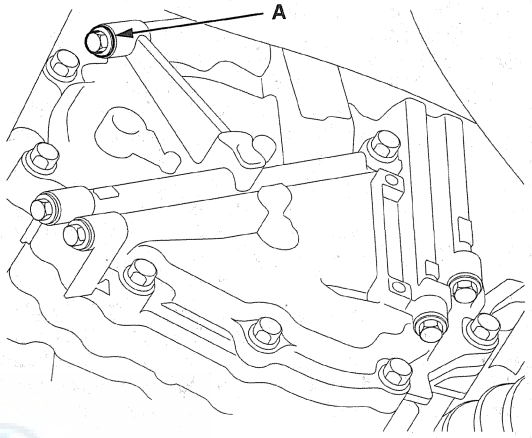


5. Turn the ignition switch to ON (II).
6. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
7. Use the recommended pressure gauge, pressure hose, and pressure hose adapter. Do not allow dust or other foreign particles to enter the holes while connecting the gauges.

   NOTE:
   - Drive pulley pressure and driven pulley pressure may be above 3,430 kPa (34.98 kgf/cm², 497.5 psi) when there is a transmission problem that causes the PCM to go into fail-safe mode.
   - When troubleshooting, you must use the A/T high pressure gauge to measure drive pulley pressure and driven pulley pressure.

Forward Clutch Pressure

8. Connect the A/T oil pressure gauge set to the forward clutch pressure inspection port (A).



9. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).
10. Shift the shift lever to D, and measure the forward clutch pressure at the forward clutch pressure inspection port while firmly pressing the brake pedal, and holding the engine speed at 1,700 rpm.

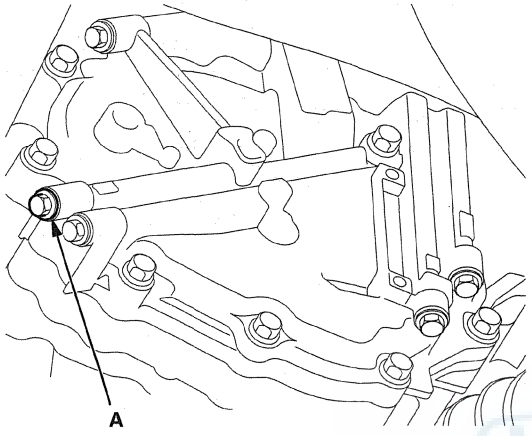
Pressure	Standard
Forward clutch	1,570—1,840 kPa (16.01—18.76 kgf/cm², 227.7—266.9 psi)

11. Turn the engine off, then disconnect the pressure gauges from the pressure inspection ports.
12. Install the sealing bolts and new sealing washers to the pressure inspection ports, and tighten the bolts to 17 N·m (1.7 kgf·m, 13 lbf·ft). Do not reuse the old sealing washer.
13. If the pressure is out of standard, the problem and probable causes are listed in the table.

Problem	Probable causes
No or low forward clutch pressure	• Forward clutch defective • CVTF pump defective • PH regulator valve defective • CR valve defective • Manual valve defective

Drive Pulley Pressure

14. Connect the A/T high pressure gauge to the drive pulley pressure inspection port (A).



15. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).
16. Shift the shift lever to N, and measure the drive pulley pressure at the drive pulley pressure inspection port while firmly pressing the brake pedal, and holding the engine speed at 1,700 rpm.

Pressure	Standard
Drive Pulley	240—540 kPa (2.45—5.51 kgf/cm², 34.8—78.3 psi)

17. Turn the engine off, then disconnect the pressure gauges from the pressure inspection ports.
18. Install the sealing bolts and new sealing washers to the pressure inspection ports, and tighten the bolts to 17 N·m (1.7 kgf·m, 13 lbf·ft). Do not reuse the old sealing washer.
19. If the pressure is out of standard, the problems and probable causes are listed in the table.

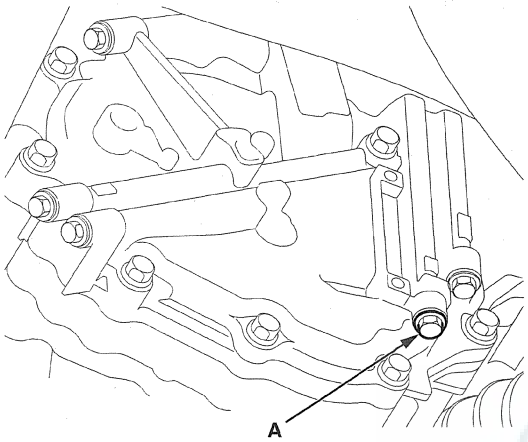
Problem	Probable causes
No or low drive pulley pressure	• CVTF pump defective • PH regulator valve defective • CVT drive pulley pressure control solenoid valve defective
Drive pulley pressure too high	• PH regulator valve defective • CVT drive pulley pressure control solenoid valve defective

(cont'd)

Pressure Test (cont'd)

Driven Pulley Pressure

20. Connect the A/T high pressure gauge to the drive pulley pressure inspection port (A).



21. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).

22. Shift the shift lever to N, and measure the driven pulley pressure at the driven pulley pressure inspection port while firmly pressing the brake pedal, and holding the engine speed at 1,700 rpm.

Pressure	Standard
Driven Pulley	830—1,130 kPa (8.46—11.52 kgf/cm², 120.4—163.9 psi)

23. Turn the engine off, then disconnect the pressure gauges from the pressure inspection ports.

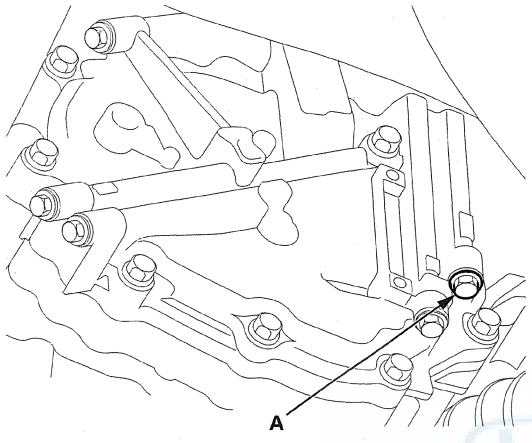
24. Install the sealing bolts and new sealing washers to the pressure inspection ports, and tighten the bolts to 17 N·m (1.7 kgf·m, 13 lbf·ft). Do not reuse the old sealing washer.

25. If the pressure is out of standard, the problems and probable causes are listed in the table.

Problem	Probable causes
No or low driven pulley pressure	• CVTF pump defective • PH regulator valve defective • CVT driven pulley pressure control solenoid valve defective
Driven pulley pressure too high	• PH regulator valve defective • CVT driven pulley pressure control solenoid valve defective

Lubrication Pressure

26. Connect the A/T low pressure gauge to the lubrication pressure inspection port (A).



27. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).

28. Shift the shift lever to N, and measure the lubrication pressure at the lubrication pressure inspection port while firmly pressing the brake pedal, and holding the engine speed at 3,000 rpm.

Pressure	Standard
Lubrication	250—400 kPa (2.55—4.08 kgf/cm², 36.3—58.0 psi)

29. Turn the engine off, then disconnect the pressure gauges from the pressure inspection ports.

30. Install the sealing bolts and new sealing washers to the pressure inspection ports, and tighten the bolts to 17 N·m (1.7 kgf·m, 13 lbf·ft). Do not reuse the old sealing washer.

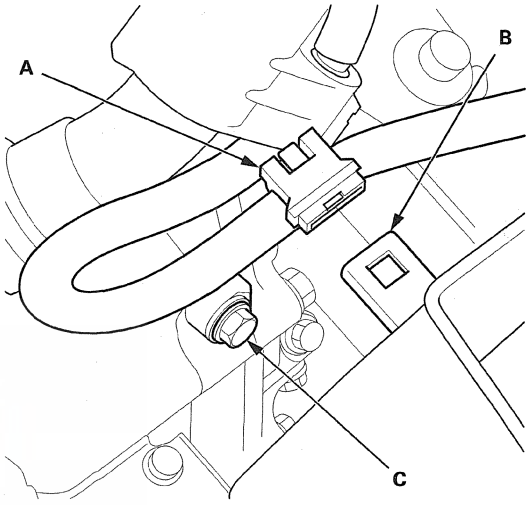
31. If the pressure is out of standard, the problem and probable causes are listed in the table.

Problem	Probable causes
No or low lubrication pressure	• CVTF pump defective • Lubrication valve defective • Inhibitor solenoid defective

Reverse Brake Pressure

32. Remove the air cleaner (see page 9-3).

33. Remove the harness clamp (A) from the clamp bracket (B).



34. Connect the A/T oil pressure gauge set to the reverse brake pressure inspection port (C).

35. Install the air cleaner (see page 9-3), then start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).

36. Shift the shift lever to R, and measure the reverse brake pressure at the reverse brake pressure inspection port while firmly pressing the brake pedal, and holding the engine speed at 1,700 rpm.

Pressure	Standard
Reverse brake	1,570—1,840 kPa (16.01—18.76 kgf/cm², 227.7—266.9 psi)

37. Turn the engine off, then remove the air cleaner (see page 9-3) and disconnect the pressure gauges from the pressure inspection ports.

38. Install the sealing bolts and new sealing washers to the pressure inspection ports, and tighten the bolts to 17 N·m (1.7 kgf·m, 13 lbf·ft). Do not reuse the old sealing washer.

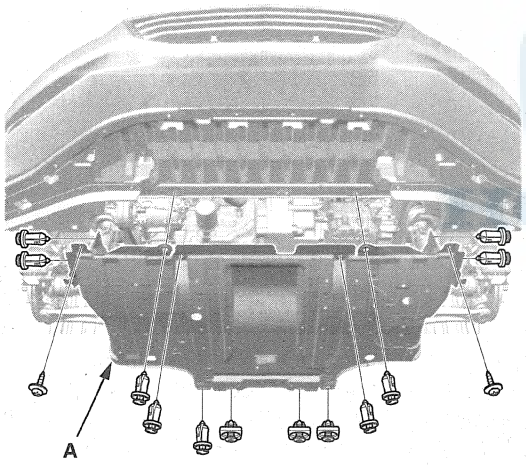
(cont'd)

Pressure Test (cont'd)

39. If the pressure is out of standard, the problem and probable causes are listed in the table.

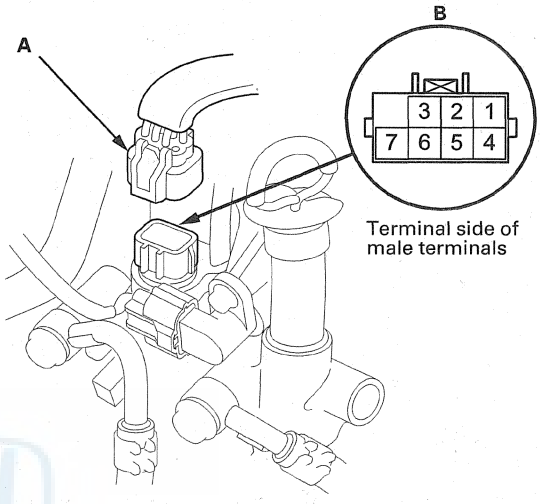
Problem	Probable causes
No or low reverse brake pressure	• Reverse brake defective • Reverse inhibitor valve • Manual valve defective • Inhibitor solenoid defective • CVTF pump defective • PH regulator valve defective • CR valve defective

40. Install the air cleaner (see page 9-3).
41. Check the CVT fluid level (see page 14-153). Refill the transmission with CVTF if necessary.
42. Install the splash shield (A) (see page 20-163).



CVT Clutch Pressure Control Solenoid Valve Test

1. Remove the air cleaner (see page 9-3).
2. Disconnect the solenoid wire harness 8P connector (A).



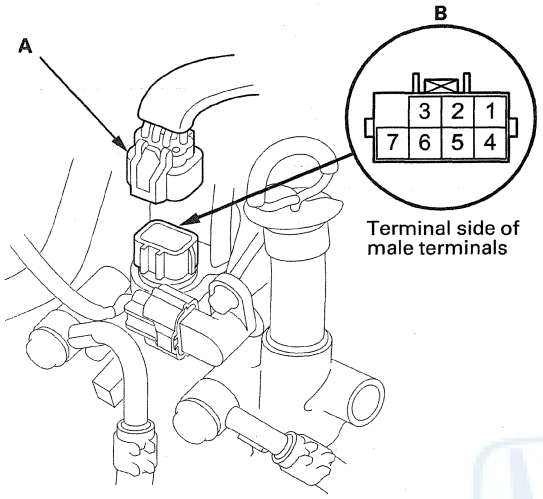
3. Measure the CVT clutch pressure control solenoid valve resistance between solenoid wire harness 7P connector (B) terminals No. 1 and No. 4.

   Standard: 3.8—6.8 Ω

4. If the resistance is out of standard, check for open or short in the solenoid wire harness. If the wires are OK, replace the CVT clutch pressure control solenoid valve (see page 14-145).
5. Connect a jumper wire from the battery positive terminal to solenoid wire harness 7P connector terminal No. 1, and connect another jumper wire from the battery negative terminal to terminal No. 4. A clicking sound should be heard.
6. If no clicking sound is heard, remove the CVT clutch pressure control solenoid valve, and clean it, then recheck. Replace the CVT clutch pressure control solenoid valve if a problem recurs (see page 14-145).

CVT Drive Pulley Pressure Control Solenoid Valve Test

1. Remove the air cleaner (see page 9-3).
2. Disconnect the solenoid wire harness 8P connector (A).



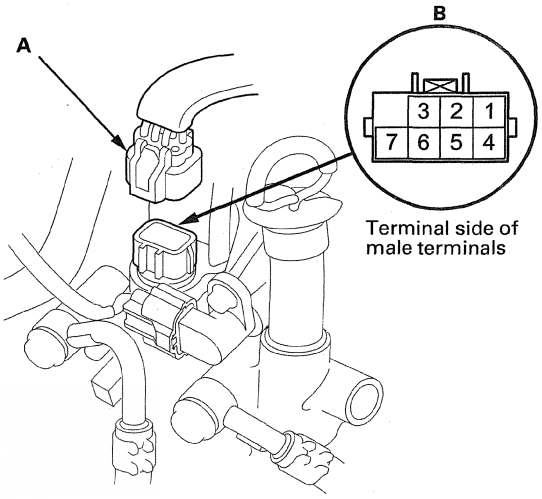
3. Measure the CVT drive pulley pressure control solenoid valve resistance between solenoid wire harness 7P connector (B) terminals No. 2 and No. 5.

   Standard: 3.8—6.8 Ω

4. If the resistance is out of standard, check for open or short in the solenoid wire harness. If the wires are OK, replace the CVT drive pulley pressure control solenoid valve (see page 14-145).
5. Connect a jumper wire from the battery positive terminal to solenoid wire harness 7P connector terminal No. 2, and connect another jumper wire from the battery negative terminal to terminal No. 5. A clicking sound should be heard.
6. If no clicking sound is heard, remove the CVT drive pulley pressure control solenoid valve, and clean it, then recheck. Replace the CVT drive pulley pressure control solenoid valve if a problem recurs (see page 14-145).

CVT Driven Pulley Pressure Control Solenoid Valve Test

1. Remove the air cleaner (see page 9-3).
2. Disconnect the solenoid wire harness 8P connector (A).



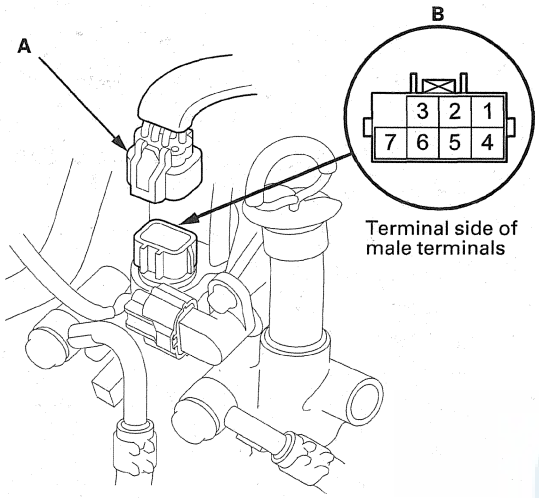
3. Measure the CVT driven pulley pressure control solenoid valve resistance between solenoid wire harness 7P connector (B) terminals No. 3 and No. 6.

   Standard: 3.8—6.8 Ω

4. If the resistance is out of standard, check for open or short in the solenoid wire harness. If the wires are OK, replace the CVT driven pulley pressure control solenoid valve (see page 14-146).
5. Connect a jumper wire from the battery positive terminal to solenoid wire harness 7P connector terminal No. 3, and connect another jumper wire from the battery negative terminal to terminal No. 6. A clicking sound should be heard.
6. If no clicking sound is heard, remove the CVT driven pulley pressure control solenoid valve, and clean it, then recheck. Replace the CVT driven pulley pressure control solenoid valve if a problem recurs (see page 14-146).

Inhibitor Solenoid Test

1. Remove the air cleaner (see page 9-3).
2. Disconnect the solenoid wire harness 8P connector (A).



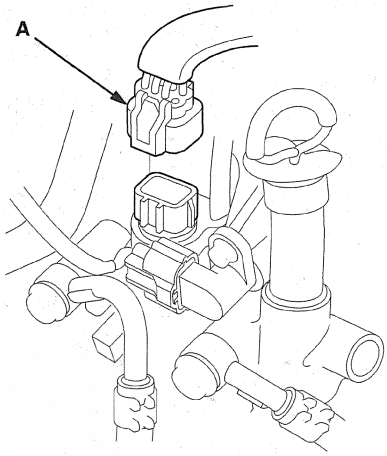
3. Measure the inhibitor solenoid resistance between solenoid wire harness 7P connector (B) terminal No. 7 and body ground.

   Standard: 11.7—21.0 Ω

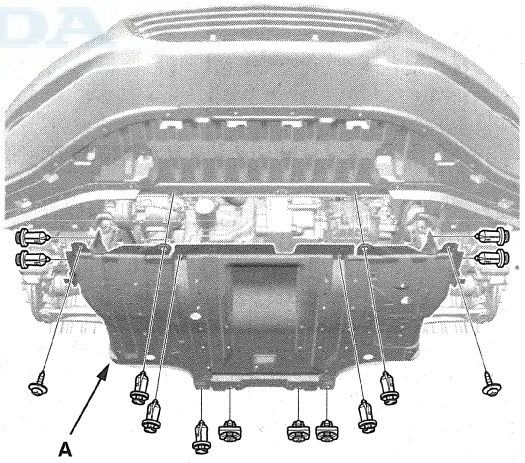
4. If the resistance is out of standard, check for open or short in the solenoid wire harness. If the wire is OK, replace the inhibitor solenoid (see page 14-146).
5. Connect a jumper wire from the battery positive terminal to solenoid wire harness 7P connector terminal No. 7, and connect another jumper wire from the battery negative terminal to body ground. A clicking sound should be heard.
6. If no clicking sound is heard, replace the inhibitor solenoid (see page 14-146).

Lower Valve Body Removal/Installation

1. Raise the vehicle on a lift, and make sure it is securely supported.
2. Disconnect the solenoid wire harness 8P connector (A).



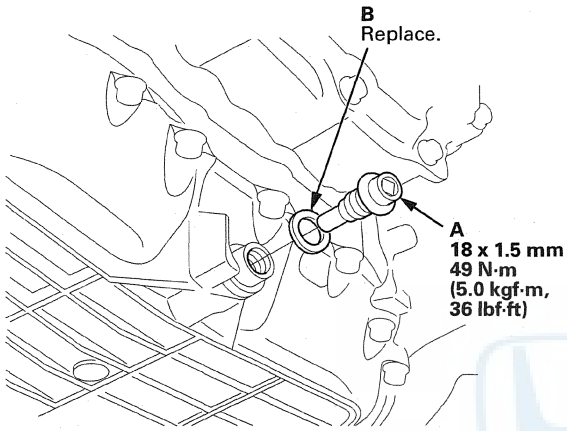
3. Remove the splash shield (A) (see page 20-163).



4. Remove the drain plug (A), and drain the CVTF.

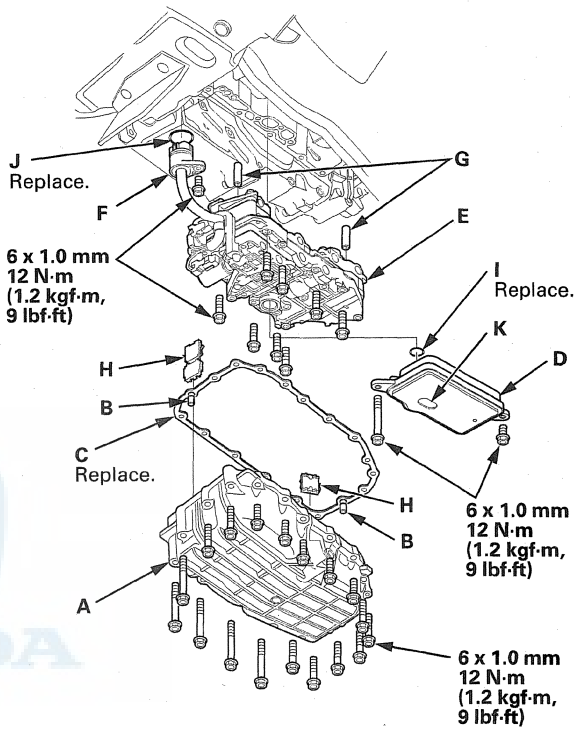
NOTE:

- Remove metal particles from the magnetic surface of the drain plug.
- If a cooler cleaning is necessary, refer to the CVTF cooler cleaning (see page 14-175).



5. Reinstall the drain plug and a new sealing washer (B).

6. Remove the CVTF pan (A), the two dowel pins (B), and the gasket (C).



7. Remove the CVTF strainer (D).

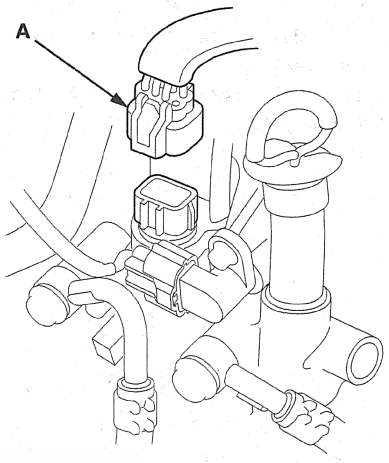
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Lower Valve Body Removal/Installation (cont'd)

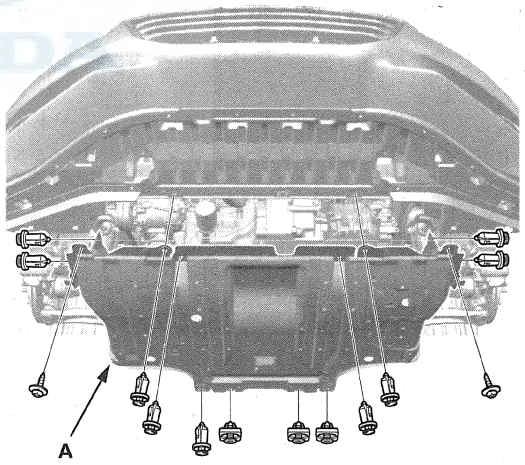
8. Remove the eight bolts securing the lower valve body (E), and hold the lower valve body.

   NOTE: Do not damage the solenoid wire harness enough when you holding the lower valve body removing it.

9. Remove the bolt securing the solenoid wire harness 7P connector (F), then remove the lower valve body, the two CVTF pipes (G), and the solenoid wire harness 7P connector from the transmission housing.
10. Remove the CVTF magnets (H), and clean and reinstall them in the CVTF pan.
11. Remove the O-ring (I) from the CVTF strainer, and remove the O-ring (J) from the solenoid wire harness 7P connector.
12. Clean the inlet opening (K) of the CVTF strainer thoroughly with compressed air, then check that it is in good condition and that the inlet opening is not clogged.
13. Test the CVTF strainer by pouring clean CVTF through the inlet opening, and replace it if it is clogged or damaged.
14. Install a new O-ring on the solenoid wire harness 7P connector.
15. Install the two CVTF pipes on the lower valve body, then install the solenoid wire harness 7P connector and the lower valve body in the transmission housing.
16. Install a new O-ring on the CVTF strainer, then install the CVTF strainer on the lower valve body.
17. Install the two dowel pins and a new gasket on the transmission housing.
18. Place the CVTF pan on the transmission housing.
19. Install the CVTF pan bolts, and tighten them to the specified torque in a crisscross pattern in at least two or three steps.
20. Connect the solenoid wire harness 8P connector (A).



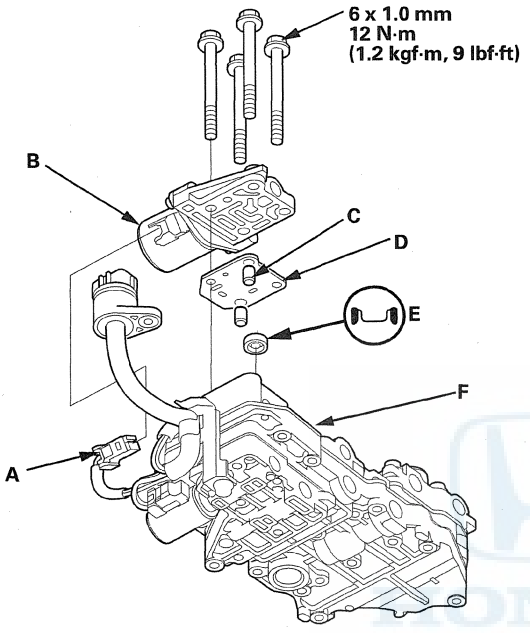
21. Refill the transmission with CVTF (see step 9 on page 14-155).
22. Install the splash shield (A) (see page 20-163).



23. Do the start clutch pressure control calibration procedures (see page 14-150) if any control solenoid valves in the lower valve body were replaced.

CVT Clutch Pressure Control Solenoid Valve Replacement

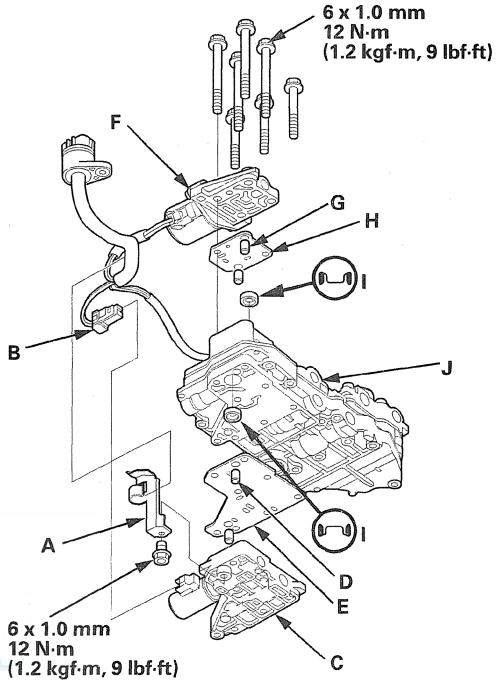
1. Remove the lower valve body (see page 14-142).
2. Disconnect the CVT clutch pressure control solenoid valve 2P connector (A).



3. Remove the CVT clutch pressure control solenoid valve (B), the dowel pins (C), and the separator plate (D).
4. Check that the filter (E) is in good condition, replace it if it is clogged or damaged.
5. Install a new CVT clutch pressure control solenoid valve with the dowel pins and the separator plate on the lower valve body (F).
6. Connect the CVT clutch pressure control solenoid valve 2P connector.
7. Install the lower valve body (see page 14-142).

CVT Drive Pulley Pressure Control Solenoid Valve Replacement

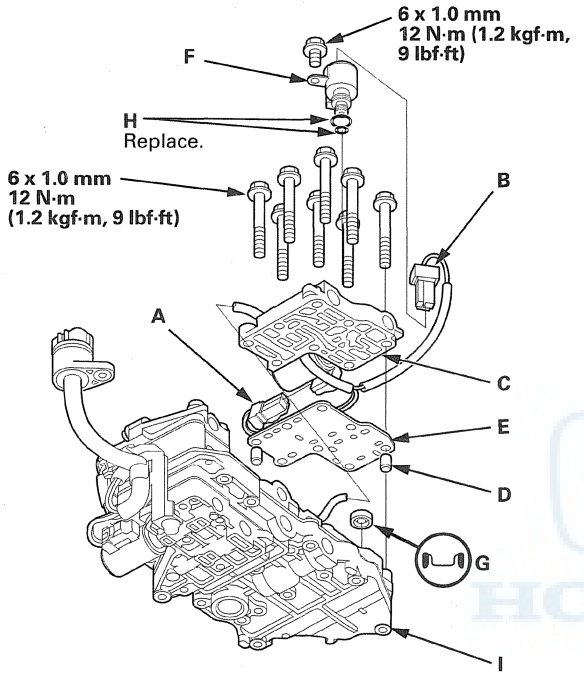
1. Remove the lower valve body (see page 14-142).
2. Remove the solenoid wire harness clamp (A).



3. Disconnect the CVT drive pulley pressure control solenoid valve 2P connector (B).
4. Remove the seven bolts, and remove the CVT drive pulley pressure control solenoid valve (C), the dowel pins (D), and the separator plate (E). The CVT clutch pressure control solenoid valve (F), the dowel pins (G), and the separator plate (H) can also be removed.
5. Check that the filters (I) are in good condition, replace them if these are clogged or damaged.
6. Install a new CVT drive pulley pressure control solenoid valve with the dowel pins, the separator plate, the CVT clutch pressure control solenoid valve with the dowel pins, and the separator plate on the lower valve body (J).
7. Connect the CVT drive pulley pressure control solenoid valve 2P connector.
8. Install the solenoid wire harness clamp.
9. Install the lower valve body (see page 14-142).

CVT Driven Pulley Pressure Control Solenoid Valve Replacement

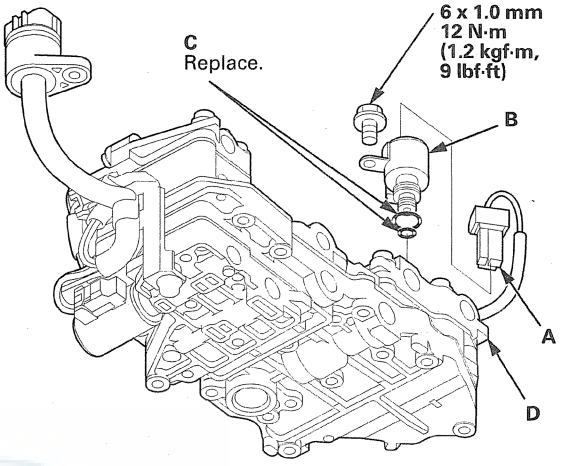
1. Remove the lower valve body (see page 14-142).
2. Disconnect the CVT driven pulley pressure control solenoid valve 2P connector (A) and the inhibitor solenoid 2P connector (B).



3. Remove the CVT driven pulley pressure control solenoid valve (C), the dowel pins (D), and the separator plate (E), and remove the inhibitor solenoid (F) from the CVT driven pulley pressure control solenoid valve.
4. Check that the filter (G) is in good condition, replace it if it is clogged or damaged.
5. Remove the O-rings (H) from the inhibitor solenoid.
6. Install new O-rings on the inhibitor solenoid, then install the inhibitor solenoid on a new CVT driven pulley pressure control solenoid valve.
7. Install a new CVT driven pulley pressure control solenoid valve with the dowel pins and the separator plate on the lower valve body (I).
8. Connect the CVT driven pulley pressure control solenoid valve 2P connector and the inhibitor solenoid 2P connector.
9. Install the lower valve body (see page 14-142).

Inhibitor Solenoid Replacement

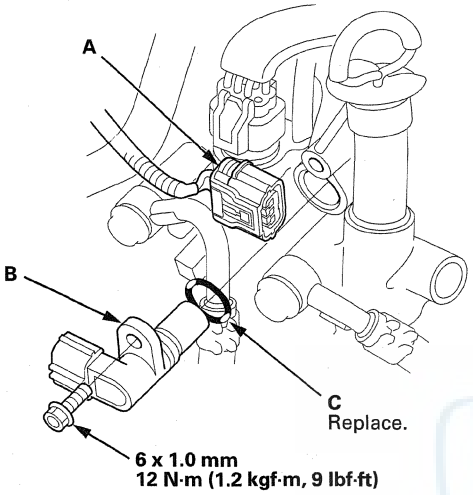
1. Remove the lower valve body (see page 14-142).
2. Disconnect the inhibitor solenoid 2P connector (A).



3. Remove the inhibitor solenoid (B), then remove the O-rings (C) from the inhibitor solenoid.
4. Install new O-rings on a new inhibitor solenoid, then install the inhibitor solenoid on the CVT driven pulley pressure control valve (D).
5. Connect the inhibitor solenoid 2P connector.
6. Install the lower valve body (see page 14-142).

CVT Input Shaft (Drive Pulley) Speed Sensor Replacement

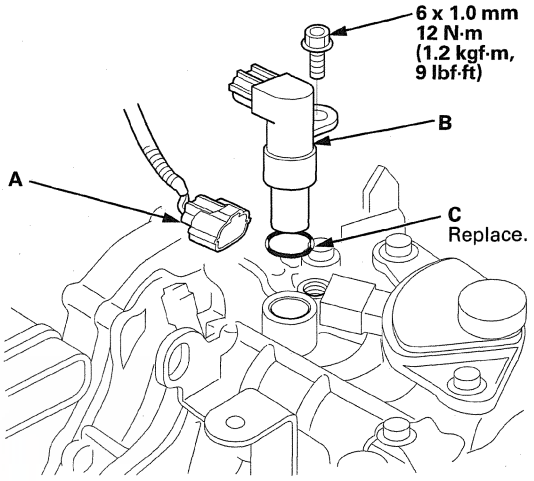
1. Remove the air cleaner (see page 9-3).
2. Disconnect the CVT input shaft (drive pulley) speed sensor 3P connector (A), then remove the CVT input shaft (drive pulley) speed sensor (B).



3. Install a new O-ring (C) on a new CVT input shaft (drive pulley) speed sensor, then install the CVT input shaft (drive pulley) speed sensor in the transmission housing.
4. Check the connector for rust, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
5. Install the air cleaner (see page 9-3).

CVT Output Shaft (Driven Pulley) Speed Sensor Replacement

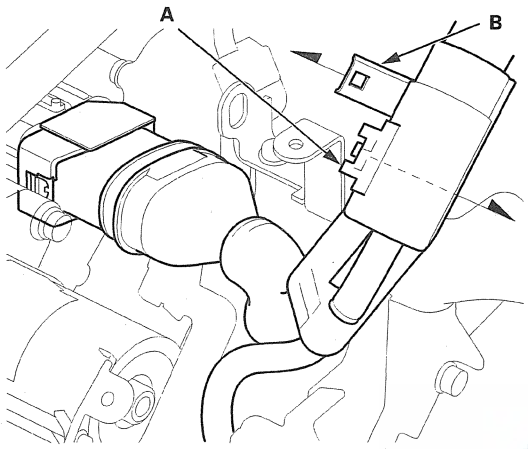
1. Remove the air cleaner (see page 9-3).
2. Disconnect the CVT output shaft (driven pulley) speed sensor 3P connector (A), then remove the CVT output shaft (driven pulley) speed sensor (B).



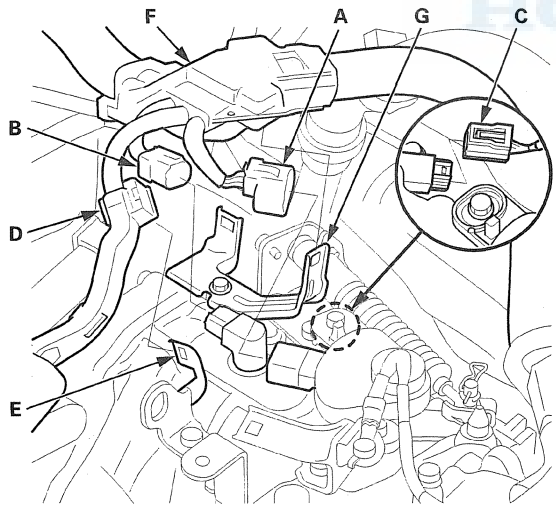
3. Install a new O-ring (C) on a new CVT output shaft (driven pulley) speed sensor, then install the CVT output shaft (driven pulley) speed sensor in the transmission housing.
4. Check the connector for rust, dirt, or oil, and clean or repair if necessary, then connect the connector securely.
5. Install the air cleaner (see page 9-3).

Vehicle Speed Sensor Replacement

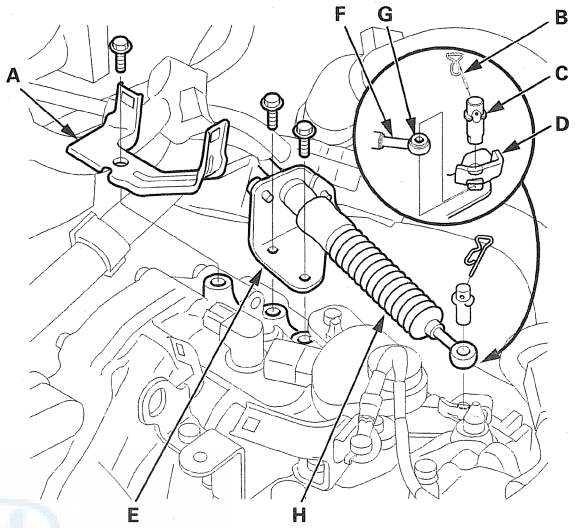
1. Remove the air cleaner (see page 9-3).
2. Remove the IMA motor power cable clamp (A) from the clamp bracket (B).



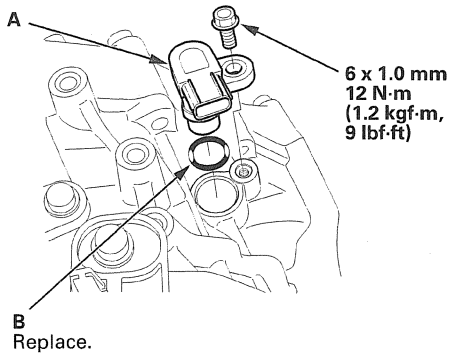
3. Disconnect the transmission range switch 8P connector (A), the CVT output shaft (driven pulley) speed sensor 3P connector (B), and the vehicle speed sensor 3P connector (C).



4. Remove the harness holder (D) from the clamp bracket (E), and remove the harness cover (F) from the clamp bracket (G).
5. Remove the clamp bracket (A).

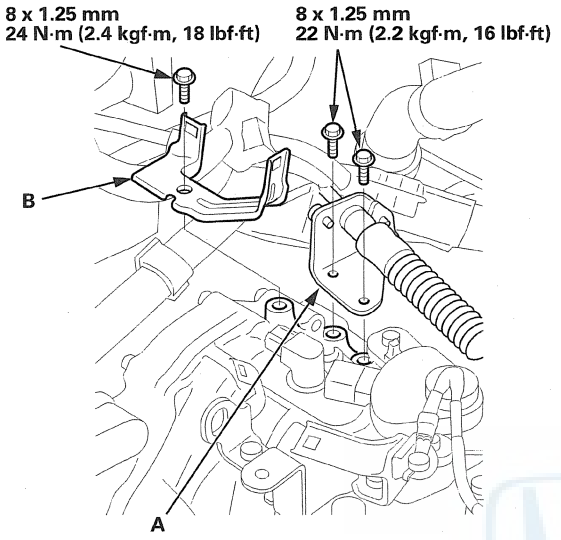


6. Remove the lock pin (B) and the control pin (C) from the selector control lever (D).
7. Remove the bolts securing the shift cable holder (E), then separate the shift cable end (F) from the selector control lever. Check the shift cable end collar (G) for wear or damage, and replace the shift cable (H) (see page 14-186) if necessary.
8. Remove the vehicle speed sensor (A) and the O-ring (B).



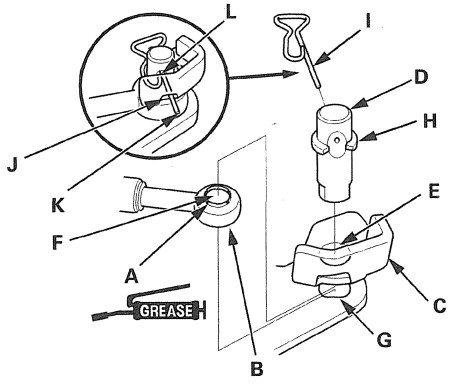
9. Install a new O-ring on a new vehicle speed sensor, then install the vehicle speed sensor in the transmission housing.

10. Secure the shift cable holder (A) on the transmission with the bolts.



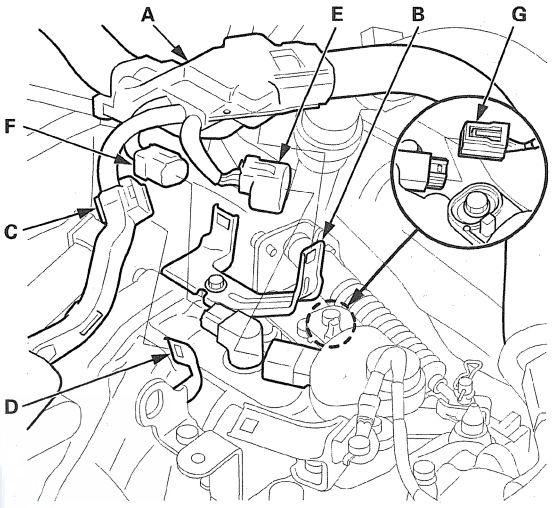
11. Install the clamp bracket (B).

12. Apply molybdenum grease to the hole in the shift cable end collar (A). Attach the shift cable end (B) to the selector control lever (C). Insert the control pin (D) through the selector control lever hole (E), through the shift cable end collar hole (F), and into the selector control lever slotted hole (G) in the direction shown. Push the control pin until its flange (H) contacts the selector control lever surface.



13. Insert the lock pin (I) in the direction shown through the control pin hole and out the opening (J) of the selector control lever so that the hooked end (K) of the lock pin locks into the countersunk hole (L) of the control pin.

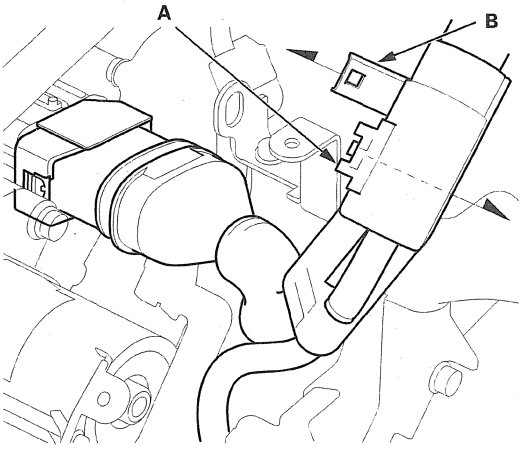
14. Install the harness cover (A) to the clamp bracket (B), and install the harness holder (C) to the clamp bracket (D).



15. Connect the transmission range switch 8P connector (E), the CVT output shaft (driven pulley) speed sensor 3P connector (F), and the vehicle speed sensor 3P connector (G).

NOTE: Check the connector for rust, dirt, or oil, and clean or repair if necessary, then connect the connector securely.

16. Install the IMA motor power cable clamp (A) to the clamp bracket (B).



17. Install the air cleaner (see page 9-3).

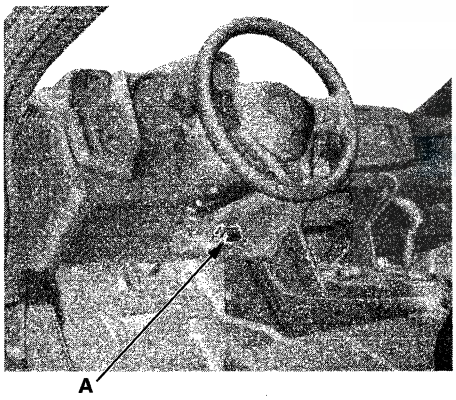
Start Clutch Pressure Control Calibration Procedures

Do the start clutch pressure control calibration procedures whenever you do any of these actions:

- Replace the PCM
- Reset the PCM/TCM
- Update the PCM
- Replace the transmission
- Overhaul the transmission
- Replace the engine assembly
- Overhaul the engine assembly
- Replace the lower valve body
- Replace the start clutch

Start Clutch Pressure Control Calibration Procedure with the HDS

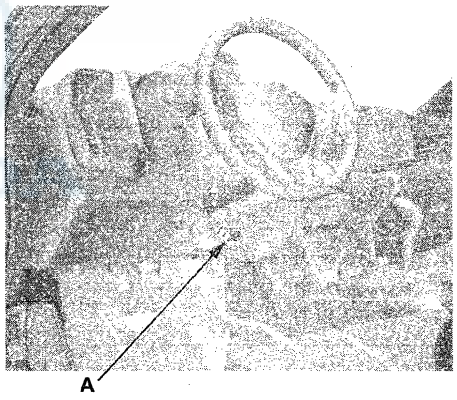
1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Follow the HDS screen prompts in the Start Clutch Feedback Learn (see the HDS Operator's manual).
5. Test-drive the vehicle for several minutes, make sure the engine does not stall or flare when starting off, and verify that a problem does not occur on the start clutch pressure control system.

Start Clutch Pressure Control Calibration Procedure with SCS mode

1. Apply the parking brake, and block all four wheels securely.
2. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).
3. Make sure that the MIL does not come on and the D indicator does not blink. If the MIL comes on or the D indicator blinks, check the fuel and emissions system or the CVT control system.
4. Turn the ignition switch to LOCK (0).
5. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



6. Turn the ignition switch to ON (II).
7. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
8. Follow the HDS screen prompts to short-circuit the SCS signal terminal using the tester menu.
9. Press the brake pedal, and continue pressing the pedal until the calibration is completed.
10. Start the engine without a load (headlights, audio system, blower fan, rear window defogger, A/C, etc.), and let it idle.
11. Shift the shift lever to N then D, then return to N. Repeat this shifting pattern two times within 20 seconds after the engine is started.

12. Follow the HDS screen prompts to open-circuit the SCS signal terminal using the tester menu, then disconnect the HDS from the DLC.
13. Check that the D indicator comes on when the shift lever is in N, then goes off.
14. If the D indicator blinks or does not come on, or if the indicator comes on and stays on, turn the ignition switch to LOCK (0), and restart the procedure with step 5.
15. Shift to D, and check that the D indicator comes on, then goes off.
16. If the D indicator blinks or does not come on, or if the indicator comes on and stays on, turn the ignition switch to LOCK (0), and restart the procedure with step 5.
17. Test-drive the vehicle for several minutes, make sure the engine does not stall or flare when starting off, and verify that a problem does not occur on the start clutch pressure control system.

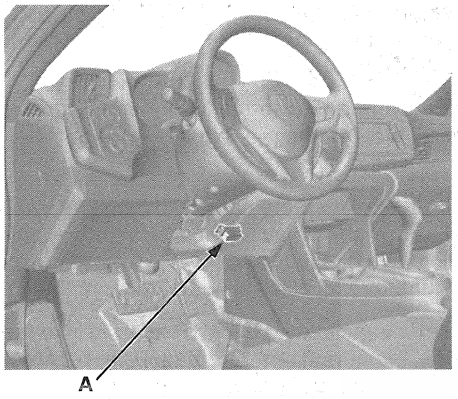
Start Clutch Pressure Control Calibration Procedure by Driving the Vehicle

1. Start the engine, and warm up the engine to normal operating temperature (the radiator fan comes on twice).
2. Make sure that the MIL does not come on and the D indicator does not blink. If the MIL comes on or the D indicator blinks, check the fuel and emissions system or the CVT control system.
3. Start the engine without a load (headlights, audio system, blower fan, rear window defogger, A/C, etc.), and let it idle.
4. Check the IMA battery charge level. If the IMA battery level indicator displays no level, hold the engine speed between 3,500 and 4,000 rpm without load (in P or N) until the level in the indicator is half full.
5. Drive the vehicle with the shift lever in D until the vehicle speed reaches 37 mph (60 km/h), then release the accelerator and decelerate without pressing the brake pedal for at least 5 seconds to reach completion.
6. Test-drive the vehicle for several minutes, make sure the engine does not stall or flare when starting off, and verify that a problem does not occur on the start clutch pressure control system.

Start Clutch Check

NOTE: If the transmission acts abnormally when the vehicle starts off, check the start clutch with the HDS.

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



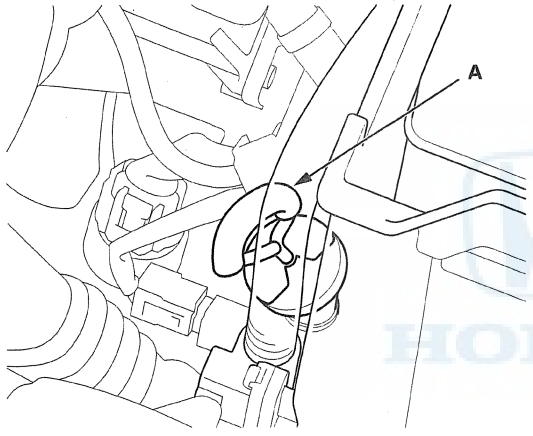
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM, and go to the A/T Data List. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Select Data List in the A/T SYSTEM Menu, and monitor the Start Clutch Status with the HDS.
   - If the HDS indicates Normal, the start clutch is OK, then disconnect the HDS.
   - If the HDS indicates Unchecked, go to step 7.
   - If the HDS indicates Judder1 or Judder2, replace the CVTF (see page 14-154), then go to step 5.
5. Select Start Clutch Status Data Clear in the Miscellaneous Test Menu, and clear the start clutch status with the HDS.
6. Select Data List in the A/T SYSTEM Menu, and monitor the Start Clutch Status Diagnosis condition with the HDS.
   - If the HDS indicates Not ready, warm up the engine to normal operating temperature (the radiator fan comes on twice), then go to step 7.
   - If the HDS indicates Ready, go to step 7.
7. Start the engine, and shift the shift lever to D while pressing the brake pedal.
8. Accelerate from a stop at over 50% throttle (with 2.75 V of the APP sensor voltage by monitoring APP Sensor A (V) with the HDS), then slow down to a stop.
9. Repeat step 8 two times.
10. Select Data List in the A/T SYSTEM Menu, and make sure that the Start Clutch Status is Normal with the HDS.
11. Test-drive the vehicle for several minutes, make sure the engine does not stall or flare when starting off, and verify that a problem does not occur on the start clutch pressure control system.

CVT Fluid Level Check

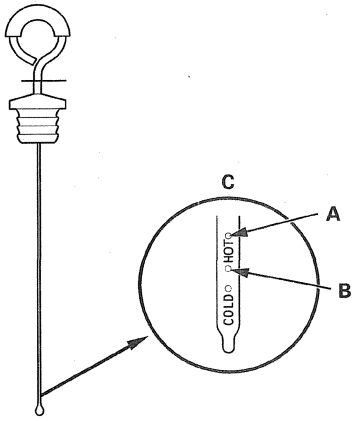
NOTE: Keep all foreign particles out of the transmission.

1. Park the vehicle on the level ground.
2. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice), and turn the engine off.

   NOTE: Check the CVT fluid level within 60—90 seconds after turning the engine off. Higher fluid level may be indicated if the radiator fan comes on twice or more.
3. Remove the dipstick (yellow loop) (A), and wipe it with a clean cloth.

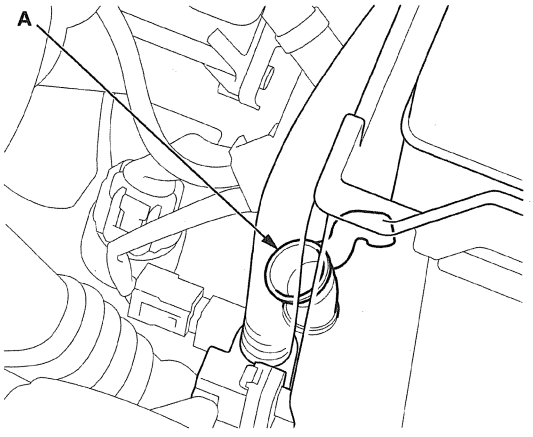


4. Insert the dipstick back into the tube.
5. Remove the dipstick, and check the CVT fluid level. It should be between the upper mark (A) and the lower mark (B) on the HOT level in tip of the dipstick (C).



6. If the CVT fluid level is below the lower mark, check for fluid leaks at the transmission, the CVTF filter, the CVTF cooler hoses, the CVTF cooler lines, and the CVTF cooler line joints. If a problem is found, fix it before filling the transmission with CVTF.

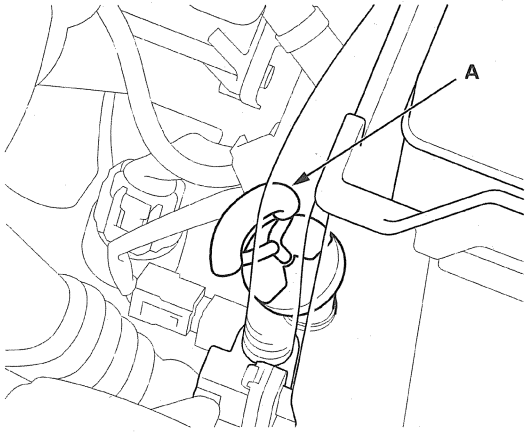
   NOTE: If the vehicle is driven when the CVT fluid level is below the lower mark, one or more of these symptoms may occur:
   - Noise from transmission in D and R.
   - Engine runs, but vehicle does not move in any position.
   - No shift to a higher ratio or lower ratio.
   - Flares while driving.
   - Excessive shock when accelerating and decelerating.
   - Vehicle does not creep on a flat road in D.
   - Late shift after shifting from N to D or N to R.
   - Unstable rpm while driving.
   - Stall speed high.
7. If the level is above the upper mark, drain the CVTF to proper level (see step 5 on page 14-154).
8. If necessary, fill the transmission with CVTF through the dipstick tube opening (A) to bring the fluid level between the upper mark and the lower mark of the dipstick. Do not fill the fluid above the upper mark. Always use Honda CVTF. Using a non-Honda CVTF can affect shift quality.



(cont'd)

CVT Fluid Level Check (cont'd)

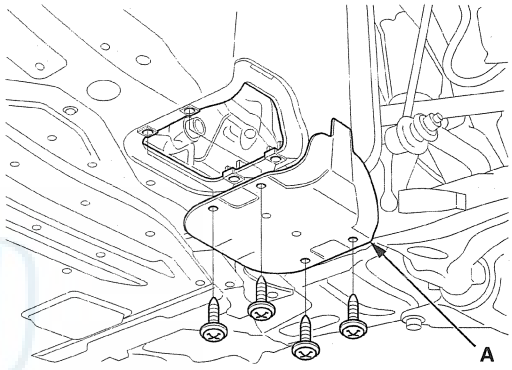
9. Insert the dipstick (A).



CVT Fluid Replacement

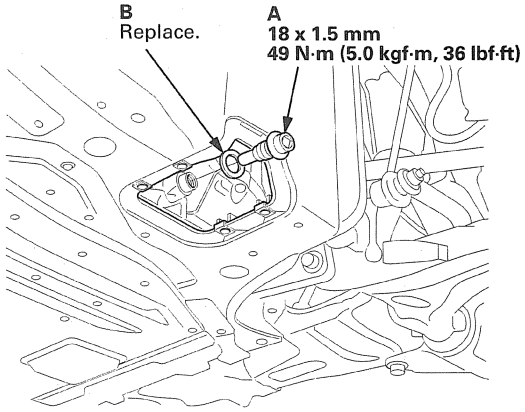
NOTE: Keep all foreign particles out of the transmission.

1. Start the engine, and warm it up to normal operating temperature (the radiator fan comes on twice).
2. Park the vehicle on level ground, and turn the engine off.
3. Raise the vehicle on a lift, and make sure it is securely supported.
4. Remove the lid (A) for maintenance.



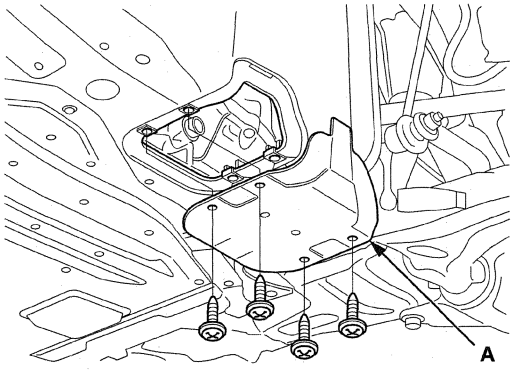
5. Remove the drain plug (A), and drain the CVTF.

   NOTE:
   - Remove metal particles from the magnetic surface of the drain plug.
   - If a cooler cleaning is necessary, refer to the CVTF cooler cleaning (see page 14-175).

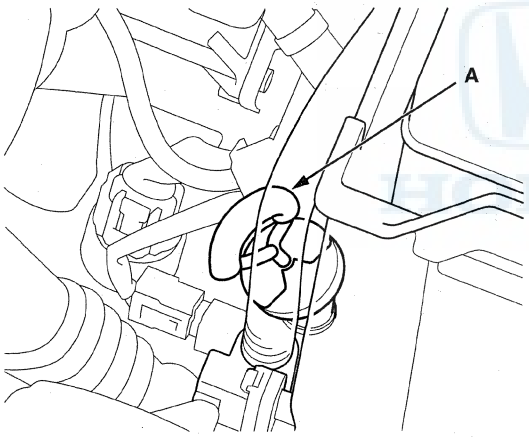


6. Reinstall the drain plug and a new sealing washer (B).

7. Install the lid (A) for maintenance.

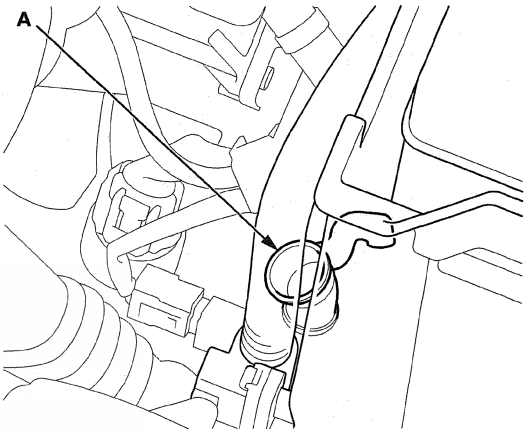


8. Remove the dipstick (yellow loop) (A), and wipe it with a clean cloth.

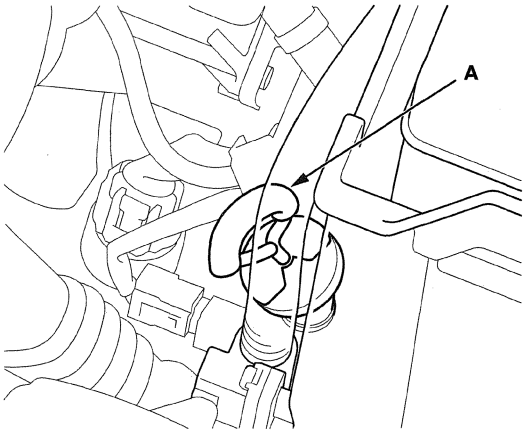


9. Refill the transmission with the recommended fluid through the dipstick tube opening (A) to bring it to the upper mark on the dipstick. Always use Honda CVTF. Using a non-Honda CVTF can affect shift quality.

CVT Fluid Capacity:
2.8 L (3.0 US qt) at change
5.2 L (5.5 US qt) at overhaul



10. Check that the CVT fluid level (see page 14-153).
11. Insert the dipstick (A).

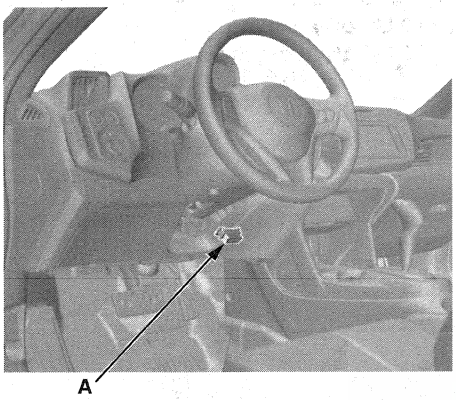


12. If the Maintenance Minder required replacing the CVTF, reset the Maintenance Minder (see page 3-4). Even if the Maintenance Minder did not require you to replace the CVTF, go to step 13.

(cont'd)

CVT Fluid Replacement (cont'd)

13. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



14. Go to the Individual Maintenance Items Reset (see page 3-6), and do the MAINTENANCE SUB ITEM 3 RESET with the HDS.

Transmission Removal

Special Tools Required

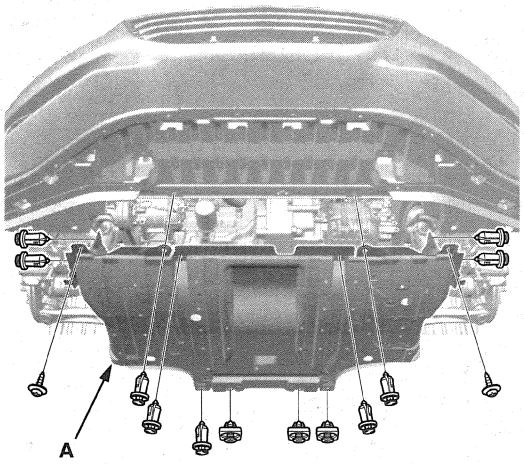
- Universal Lifting Eyelet 07AAK-SNAA120
- Engine Hanger Adapter VSB02C000026*
- Engine Support Hanger, A and Reds AAR-T1256*

*Available through the Honda Tool and Equipment Program 888-424-6857

NOTE:

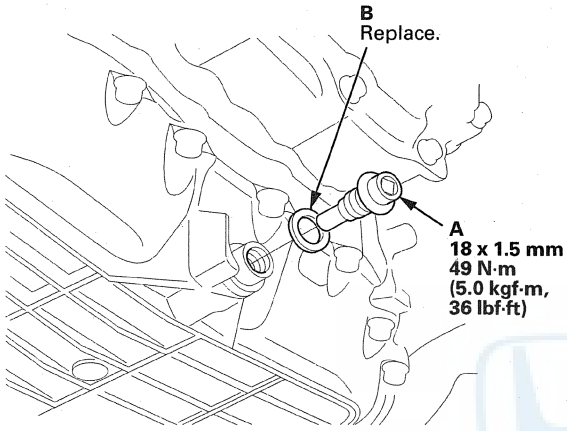
- Use fender covers to avoid damaging painted surfaces.
- The engine support hanger (AAR-T1256) must be used with the side engine mount installed.
- IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precaution before doing repairs or service (see page 12-3).

1. Turn the battery module switch OFF, and measure the voltage at the IMA battery module terminals (see page 12-4).
2. Secure the hood in the vertical position.
3. Do the 12 volt battery removal procedure (see page 22-87).
4. Remove the front bumper center upper beam (see page 20-149).
5. Remove the air cleaner (see page 9-3).
6. Raise the vehicle on a lift, and make sure it is securely supported.
7. Remove the splash shield (A) (see page 20-163).

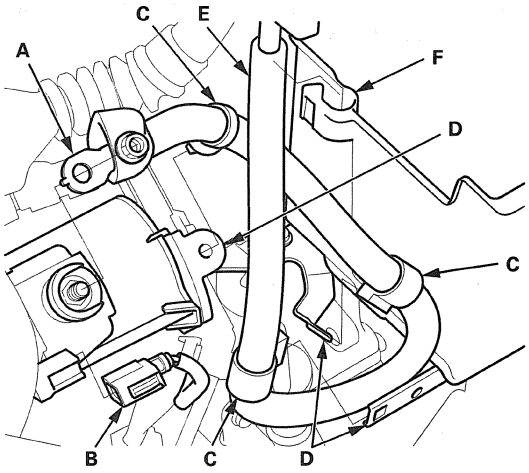


8. Remove the drain plug (A), and drain the CVTF.

NOTE:
- Remove metal particles from the magnetic surface of the drain plug.
- If a cooler cleaning is necessary, refer to the CVTF cooler cleaning (see page 14-175).

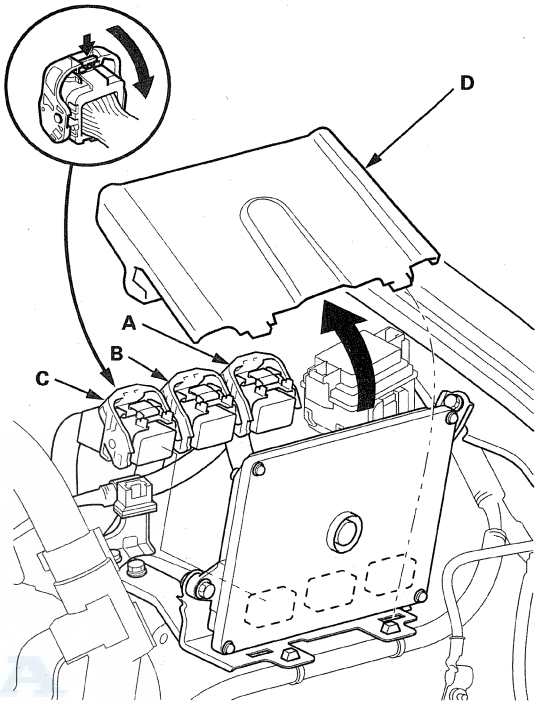


9. Reinstall the drain plug and a new sealing washer (B).
10. Remove the starter cable (A), and disconnect the S terminal connector (B).



11. Remove the harness clamps (C) from the clamp brackets (D), and remove the starter harness (E) from the harness clamp (F) on the battery tray.

12. Remove the PCM cover (D).

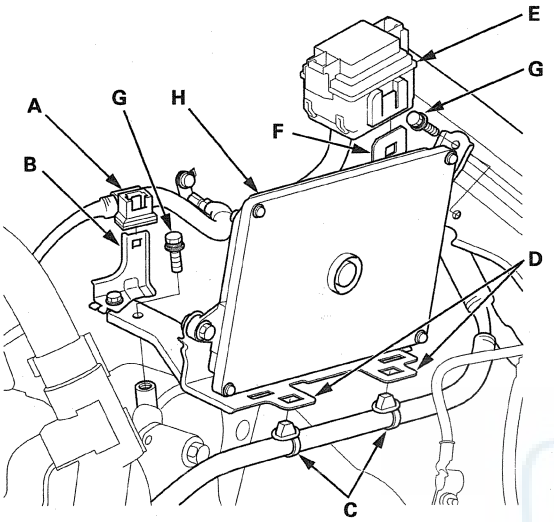


13. Disconnect PCM connectors A, B, and C.

(cont'd)

Transmission Removal (cont'd)

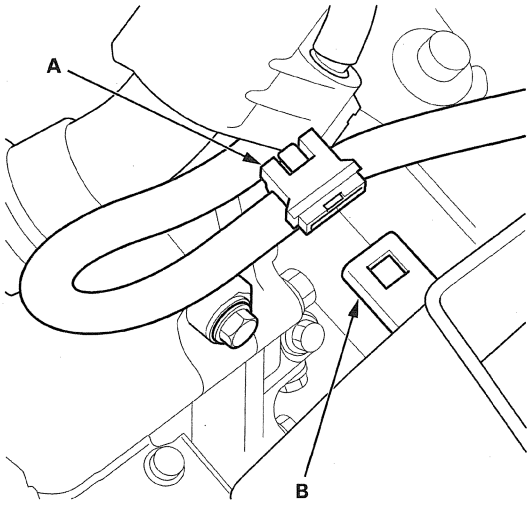
14. Remove the harness clamp (A) from the clamp bracket (B), and remove the harness clamps (C) from the clamp brackets (D) on the PCM bracket.



15. Remove auxiliary under-hood relay box A (E) from the clamp bracket (F).

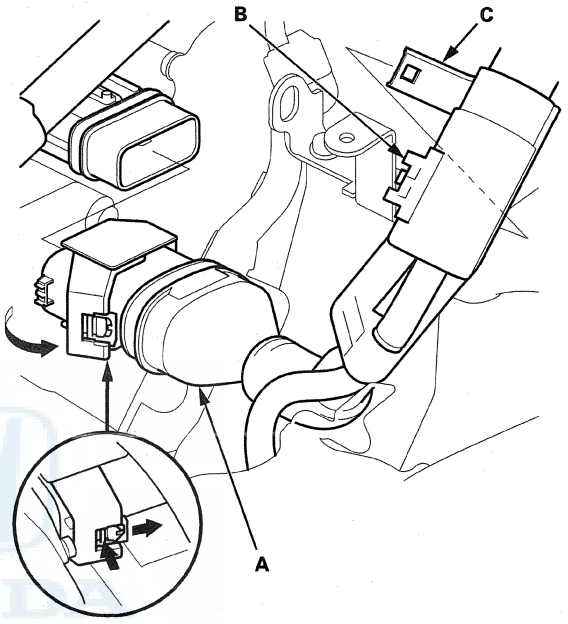
16. Remove the bolts (G), then remove the PCM (H) with PCM bracket.

17. Remove the harness clamp (A) from the clamp bracket (B) on the battery base.



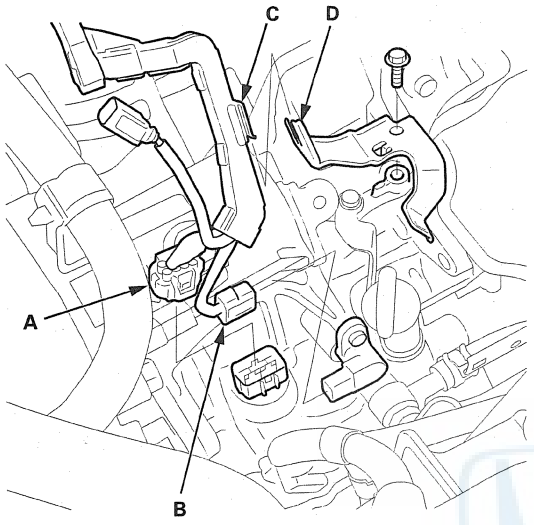
18. Disconnect the IMA motor power cable connector (A).

NOTE: Before disconnecting the IMA motor power cable connector, make sure you have read the IMA service precaution (see page 12-3).



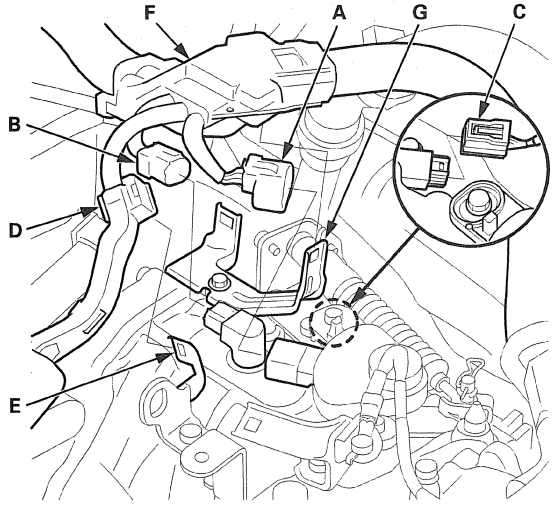
19. Remove the IMA motor power cable clamp (B) from the clamp bracket (C).

20. Disconnect the solenoid wire harness 8P connector (A) and the CVT input shaft (drive pulley) speed sensor 3P connector (B).



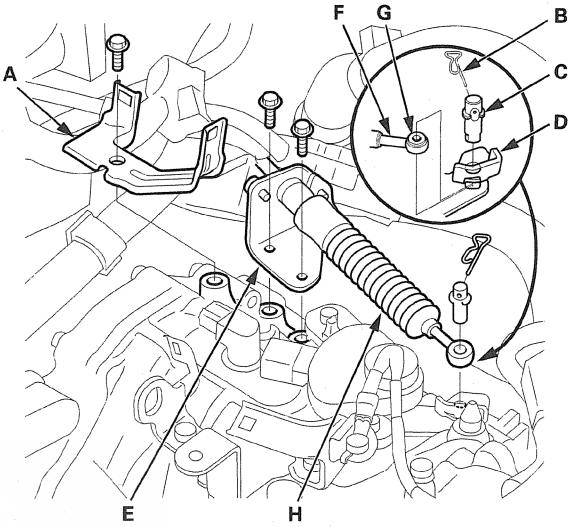
21. Remove the harness holder (C) from the clamp bracket (D), then remove the clamp bracket.

22. Disconnect the transmission range switch 8P connector (A), the CVT output shaft (driven pulley) speed sensor 3P connector (B), and the vehicle speed sensor 3P connector (C).



23. Remove the harness holder (D) from the clamp bracket (E), and remove the harness cover (F) from the clamp bracket (G).

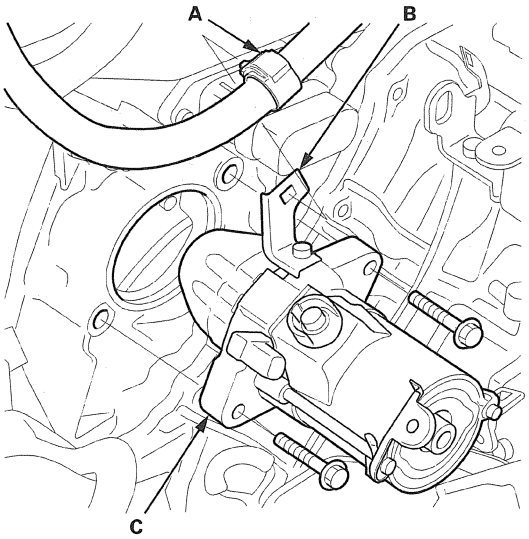
24. Remove the clamp bracket (A).



25. Remove the lock pin (B) and the control pin (C) from the selector control lever (D).

26. Remove the bolts securing the shift cable holder (E), then separate the shift cable end (F) from the selector control lever. Check the shift cable end collar (G) for wear or damage, and replace the shift cable (H) (see page 14-186) if necessary.

27. Remove the hose clamp (A) from the clamp bracket (B).

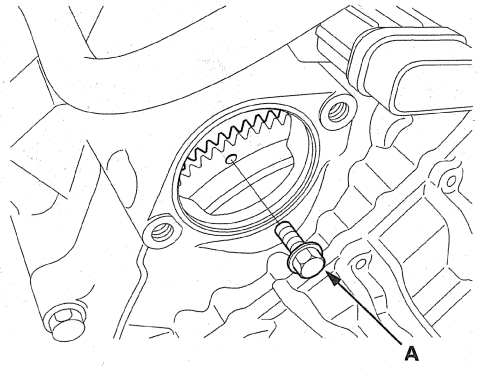


28. Remove the starter (C).

(cont'd)

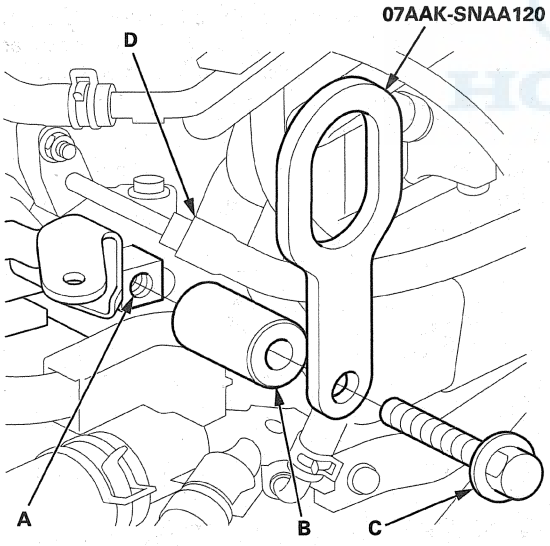
Transmission Removal (cont'd)

29. Remove the drive plate bolts (A) (six) at the opening of the starter while rotating the engine crankshaft pulley.

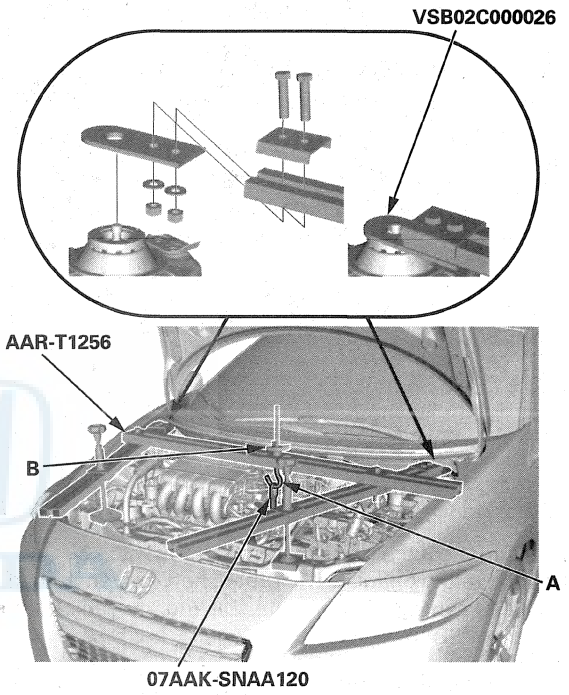


30. Attach the universal lifting eyelet to the cylinder head (A) with a spacer (B) and an 8 x 1.25 mm bolt (C).

    NOTE: Select a spacer that is long enough that the universal lifting eyelet does not interfere with the fuel feed tube (D).

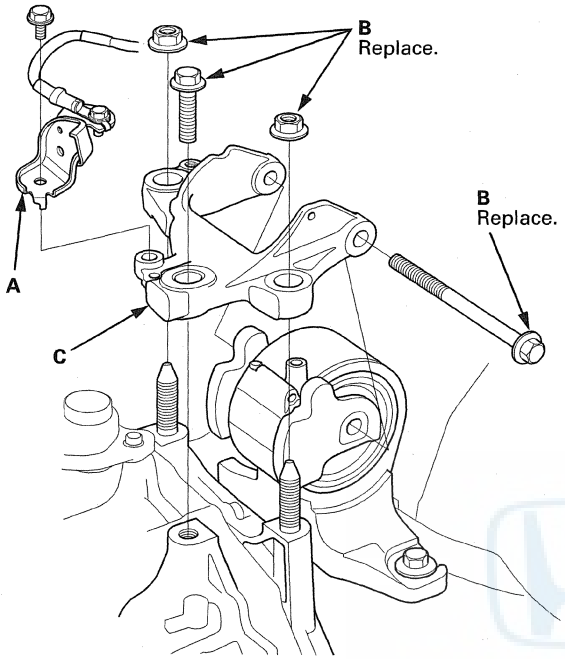


31. Install the engine hanger adapter (VSB02C000026) to the engine support hanger (AAR-T1256), then install the engine support hanger onto the vehicle, and attach the hook (A) to the universal lifting eyelet. Tighten the wing nut (B) by hand, and lift and support the engine/IMA motor/transmission.



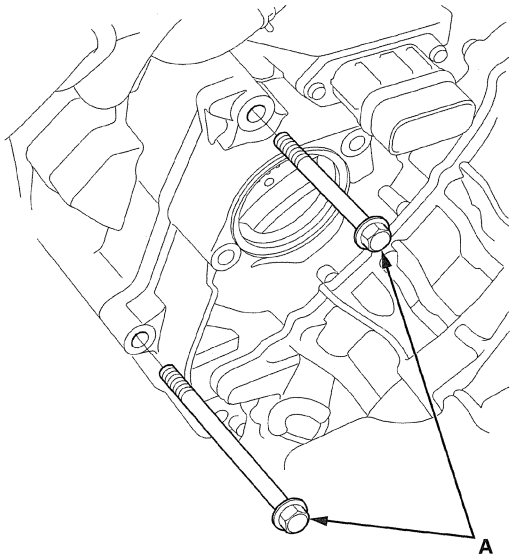
32. Remove the steering joint cover, and the steering joint from the steering gearbox pinion shaft, then install the steering wheel holder tool (see step 5 on page 17-64).

33. Remove the ground cable terminal bracket (A).



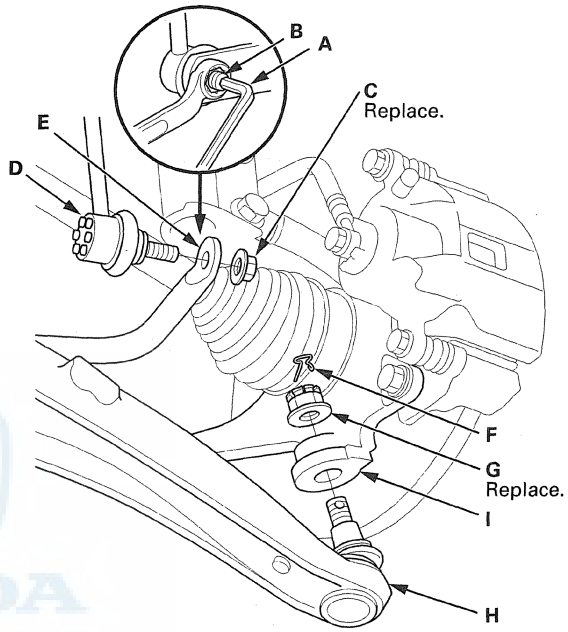
34. Remove the bolts/nuts (B) and the transmission mount bracket (C).

35. Remove the upper and front transmission housing mounting bolts (A).



36. Place a jack under the transmission.

37. Insert a 5 mm hex wrench (A) in the top of the ball joint pins (B), and remove the nuts (C), then separate the stabilizer links (D) from both stabilizer ends (E).

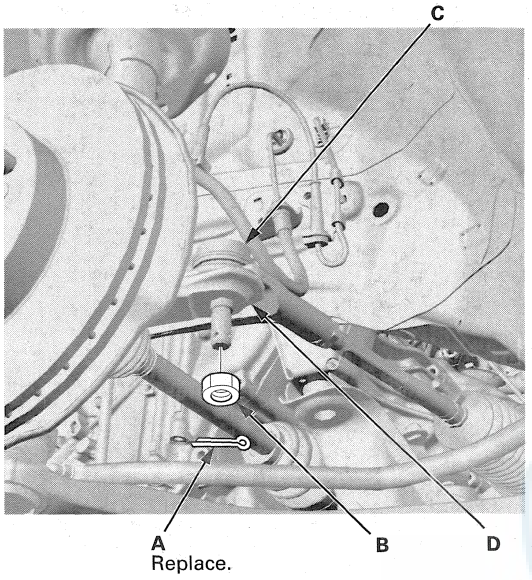


38. Remove the lock pins (F) and the castle nuts (G), and separate the lower arms (H) from both knuckles (I) using the ball joint remover (see page 18-11).

(cont'd)

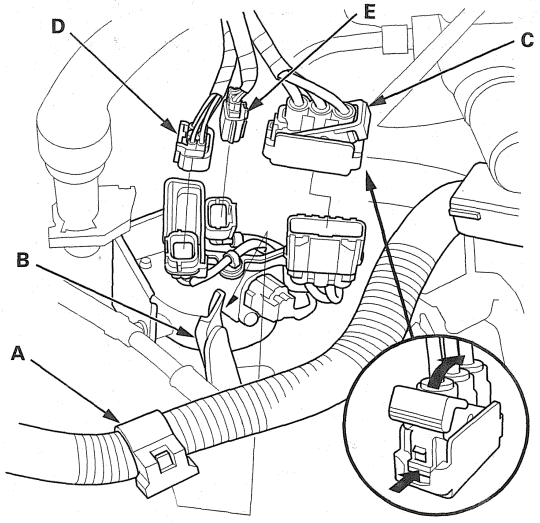
Transmission Removal (cont'd)

39. Remove the cotter pins (A) and the nuts (B), and separate the tie-rod end ball joints (C) from both knuckles (D) (see page 18-11).

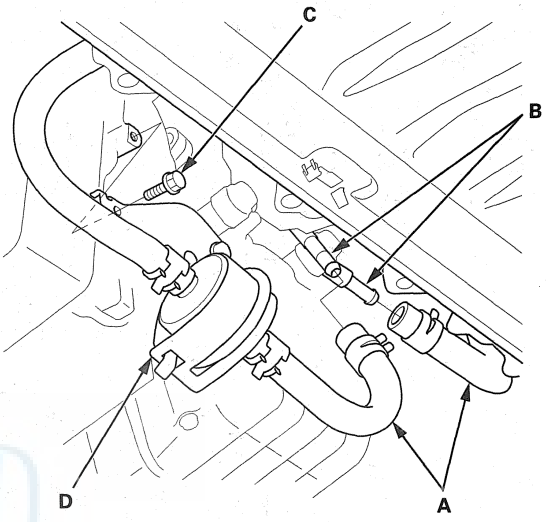


Replace.

40. Remove the harness clamp (A) from the clamp bracket (B), then disconnect the EPS motor 3P connector (C), the torque sensor 6P connector (D), and the EPS motor angle sensor 8P connector (E).

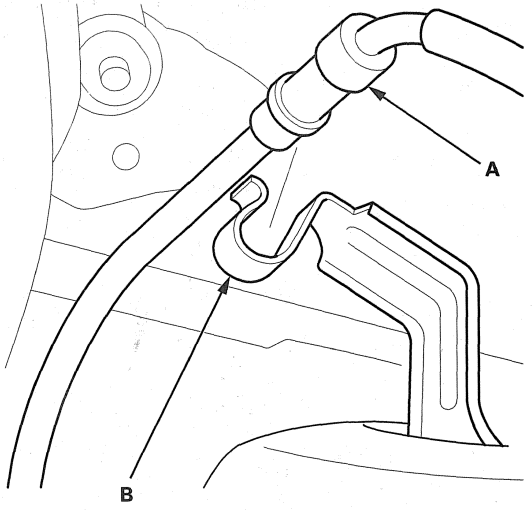


41. Disconnect the CVTF cooler hoses (A) from the CVTF cooler pipes (B), then plug the CVTF cooler hoses and the pipes.

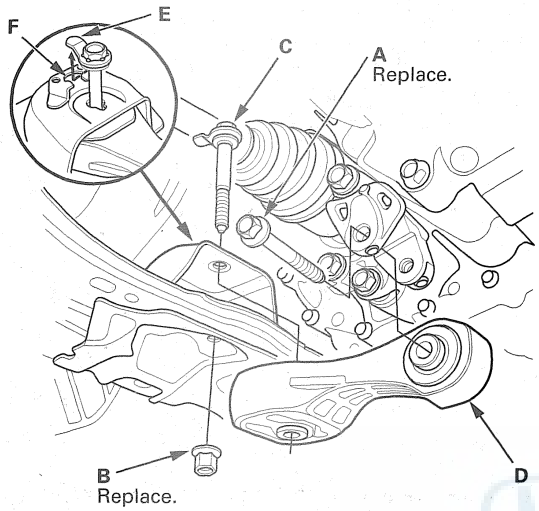


42. Remove the bolt (C) and the CVTF filter (D) with the CVTF filter holder, then hang the CVTF filter on body.

43. Remove the secondary HO2S harness clamp (A) from the clamp bracket (B) on the steering gearbox.



44. Remove the torque rod bolt (A) from the transmission.

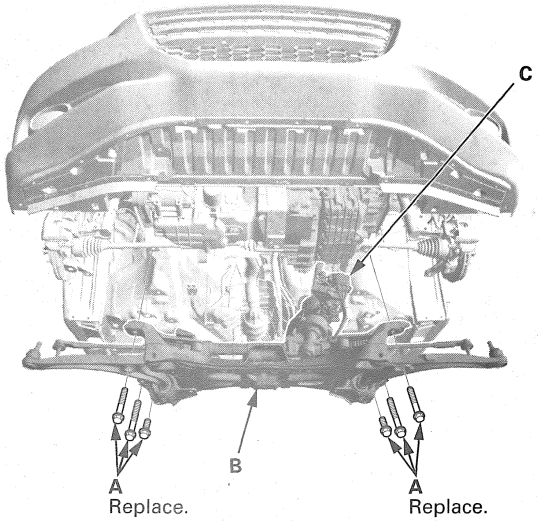


45. Remove the torque rod nut (B) and bolt (C) from the front subframe, and remove the lower torque rod (D).

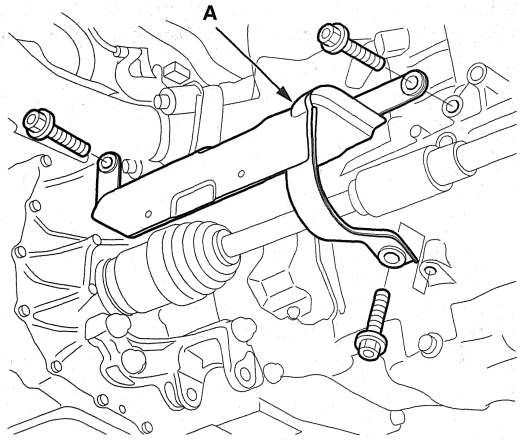
NOTE: Make sure the tab (E) on the bolt head aligned with the guide (F) on the front subframe.

46. Support the front subframe with a piece of wood and a jack.

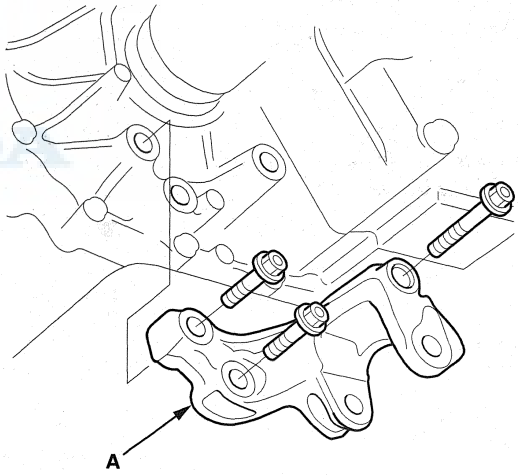
47. Remove the six bolts (A) securing the front subframe (B), then remove the subframe with the steering gearbox (C).



48. Remove the driveshaft cover (A).



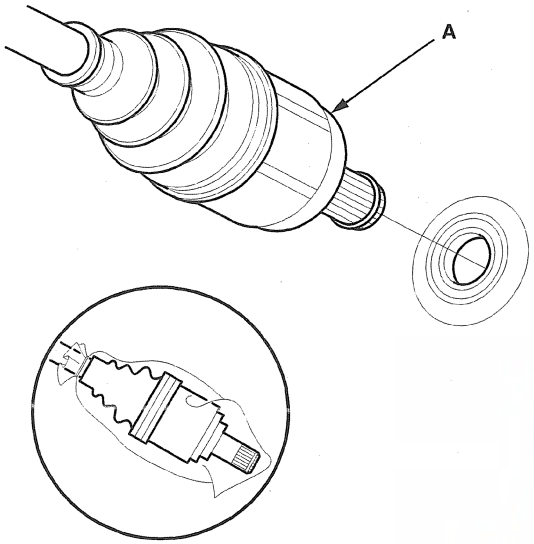
49. Remove the torque rod bracket (A).



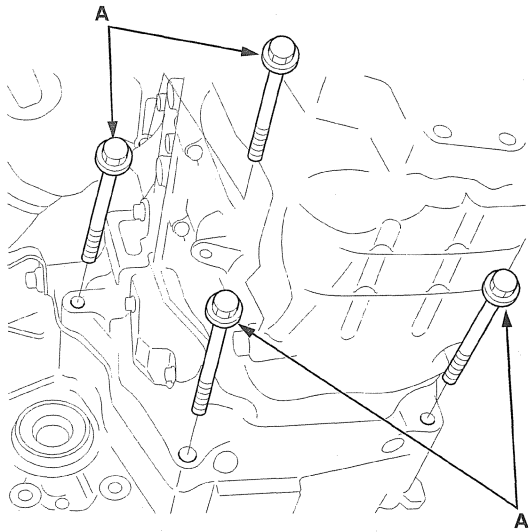
(cont'd)

Transmission Removal (cont'd)

50. Remove the left and right driveshafts (A) from the differential (see step 8 on page 16-5). Coat all precision machined surfaces with clean engine oil, then put plastic bags over driveshaft ends and hang the driveshafts on the body.

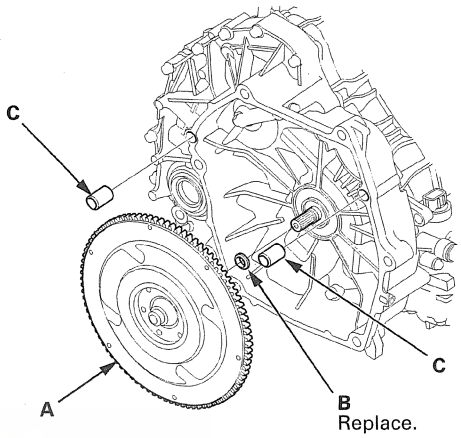


51. Remove the rear and lower transmission housing mounting bolts (A).



52. Slide the transmission away from the engine/IMA motor to remove the transmission from the vehicle.

53. Remove the flywheel assembly (A) with the rubber sealing ring (B) and the two dowel pins (C).



54. Check the drive plate and the flywheel support for wear or damage, and replace the drive plate and the flywheel support (see page 14-165) if necessary.

NOTE:

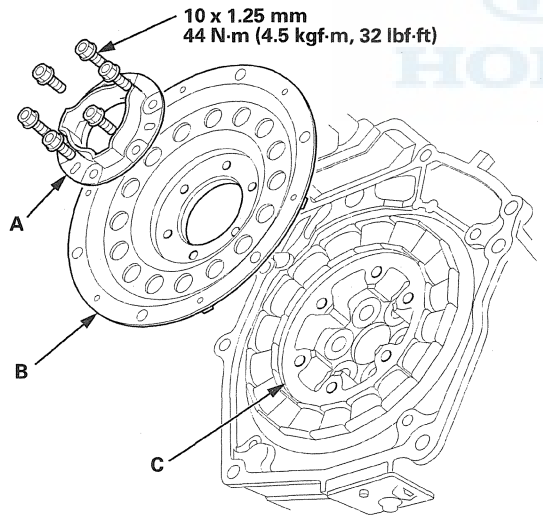
- The motor rotor contains very strong magnets and should be handled with special care.
- Keep pieces of metal and all foreign particles out of the motor rotor during the transmission removal.
- Keep the motor rotor away from magnetically sensitive devices.
- Do not blow air near the rotor, as metal particles may get on the magnets.

Drive Plate Removal/Installation

NOTE:

- The motor rotor contains very strong magnets and should be handled with special care.
- Extra special care must be taken on the installation of the drive plate, it may suddenly be pulled toward the motor with great force causing serious hand or finger injury, or damaged components.
- Keep pieces of metal and all foreign particles out of the motor rotor during the transmission removal.
- Keep the motor rotor away from magnetically sensitive devices.
- Do not blow air near the rotor, as metal particles may get on the magnets.
- IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precaution before doing repairs or service (see page 12-3).

1. Remove the transmission assembly (see page 14-156).
2. Remove the flywheel support (A) and the drive plate (B).



3. Inspect the drive plate and the flywheel support, and replace it if it is damaged.
4. Install the drive plate and the flywheel support on the motor rotor (C), and install the bolts, tighten them to the specified torque in a crisscross pattern in at least two or three steps.
5. Install the transmission assembly (see page 14-165).

Transmission Installation

Special Tools Required

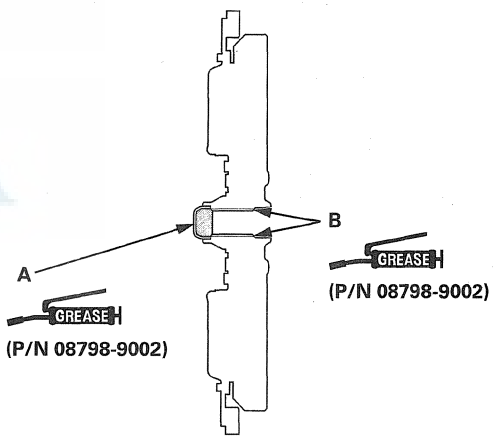
- Engine Support Hanger, A and Reds AAR-T1256*
- Engine Hanger Adapter VSB02C000026*
- Universal Lifting Eyelet 07AAK-SNAA120

*Available through the Honda Tool and Equipment Program 888-424-6857

NOTE:

- Use fender covers to avoid damaging painted surfaces.
- IMA components are located in this area. The IMA is a high-voltage system. You must be familiar with the IMA system before working on or around it. Make sure you have read the IMA service precaution before doing repairs or service (see page 12-3).

1. Clean the CVTF cooler (see page 14-175).
2. Remove the used grease in the flywheel hub cap (A) and the flywheel splines (B).

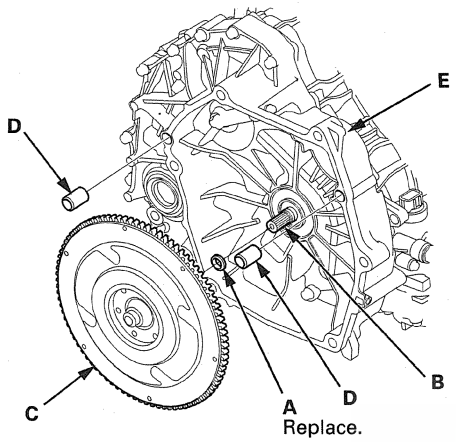


3. Fill the inside of the flywheel hub cap with about 1.0—2.0 g (0.035—0.071 oz.) of Super High Temp Urea Grease (P/N 08798-9002), and coat the flywheel hub splines. Do not overfill the flywheel hub cap with grease.

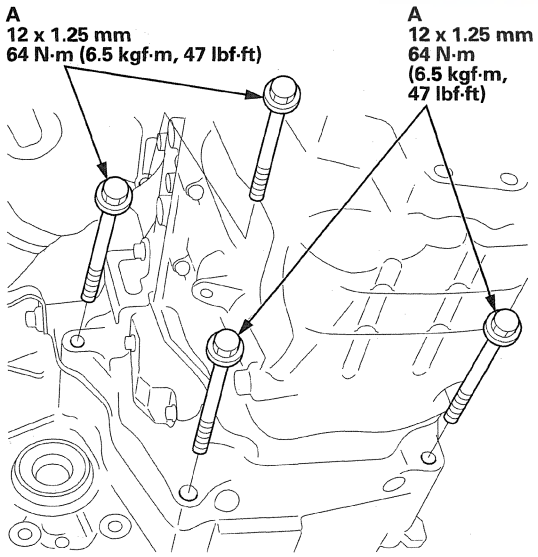
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Transmission Installation (cont'd)

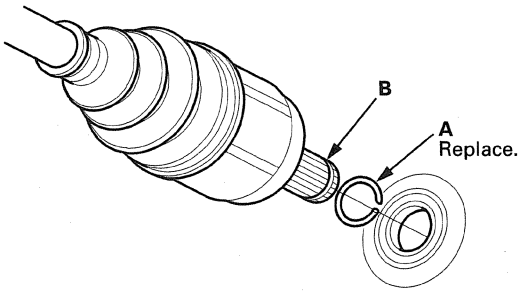
4. Install a new rubber sealing ring (A) on the input shaft (B).



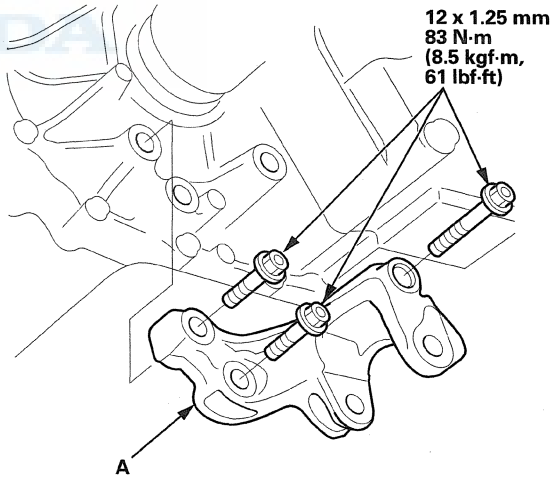
5. Install the flywheel (C) on the input shaft, and install the two dowel pins (D) in the flywheel housing (E).
6. Place the transmission on a jack, and raise the transmission to the engine level, then fit the transmission to the engine/IMA motor.
7. Install the rear and lower transmission housing mounting bolts (A).



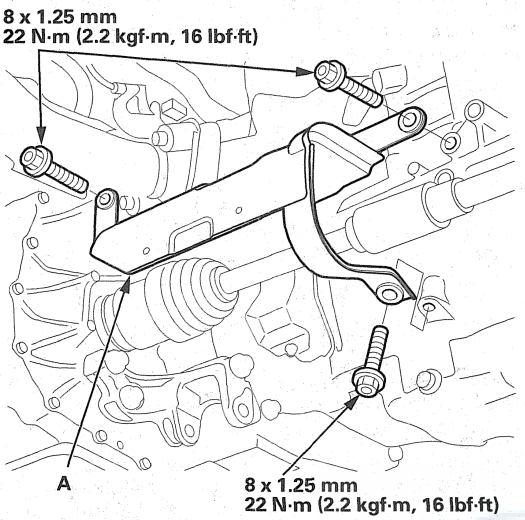
8. Install a new set ring (A) on the left and right driveshafts (B).



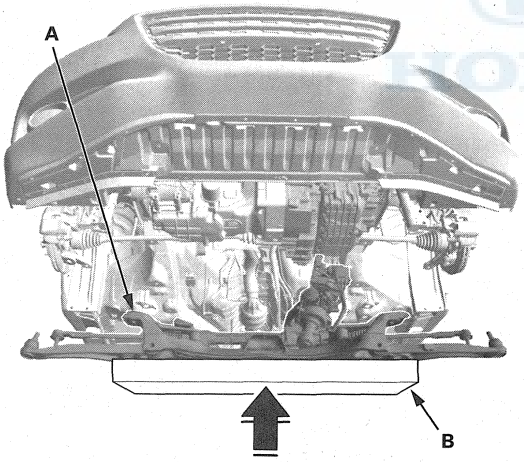
9. Clean the areas where the left and right driveshafts contacts the transmission (differential) with solvent, and dry with compressed air. Then install the left and right driveshafts (see step 2 on page 16-19); be sure not to allow dust or other foreign particles to enter the transmission. Turn the steering knuckle fully outward, and slide the driveshafts into the differential until you feel their set rings fully engage the side gear.
10. Install the torque rod bracket (A).



11. Install the driveshaft cover (A).



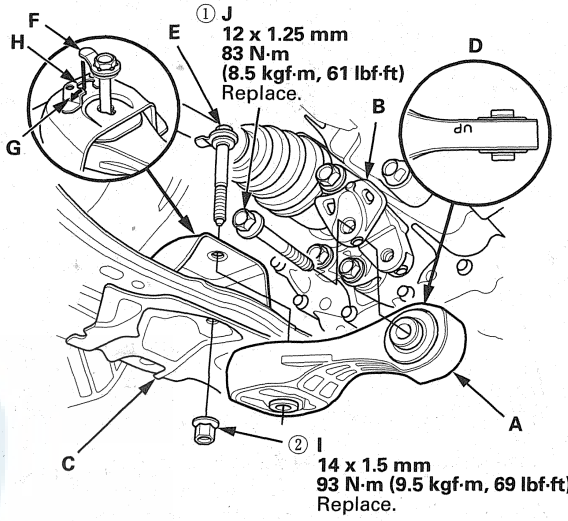
12. Support the front subframe (A) with a piece of wood (B) and a jack, then lift the front subframe up to body.



13. Check and adjust the front subframe alignment (see page 20-173).

14. Place a jack under the transmission, raise it, and attach the torque rod (A) to the mounting bracket (B) and the front subframe (C).

NOTE: Make sure the "UP" mark (D) of the torque rod faces up when you install it.



15. Install the mounting bolt (E), and set the tab (F) on the bolt head into the stop (G) through the guide (H), then loosely install the new nut (I).

16. Loosely install the new mounting bolt (J).

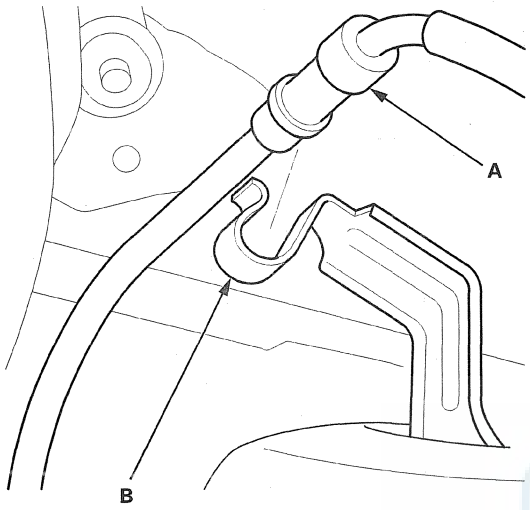
NOTE: Tighten the bolt/nut in the numbered sequence shown to the specified torque in step 32.

17. Remove the jack.

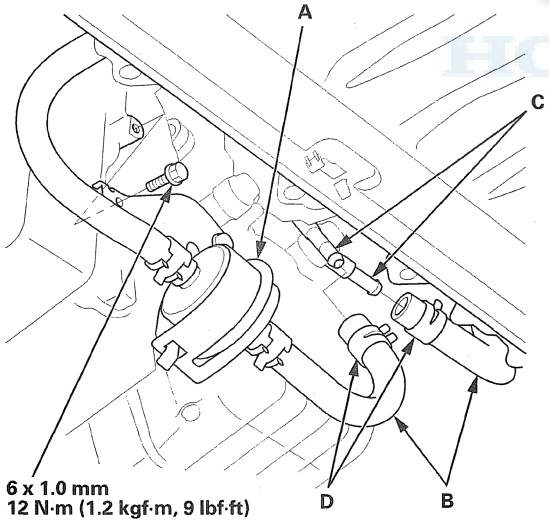
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Transmission Installation (cont'd)

18. Install the secondary HO2S harness clamp (A) to the clamp bracket (B) on the steering gearbox.

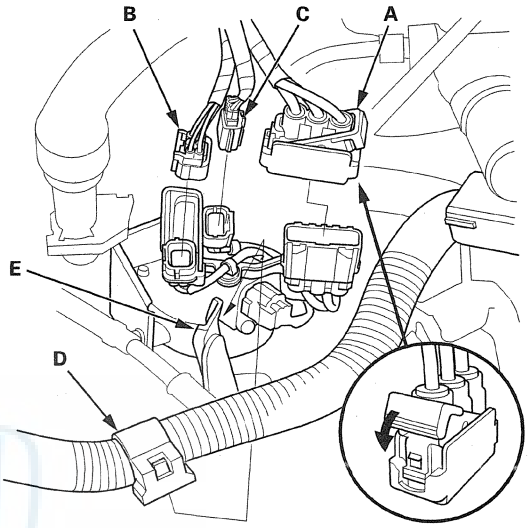


19. Install the CVTF filter (A) with the CVTF filter holder.

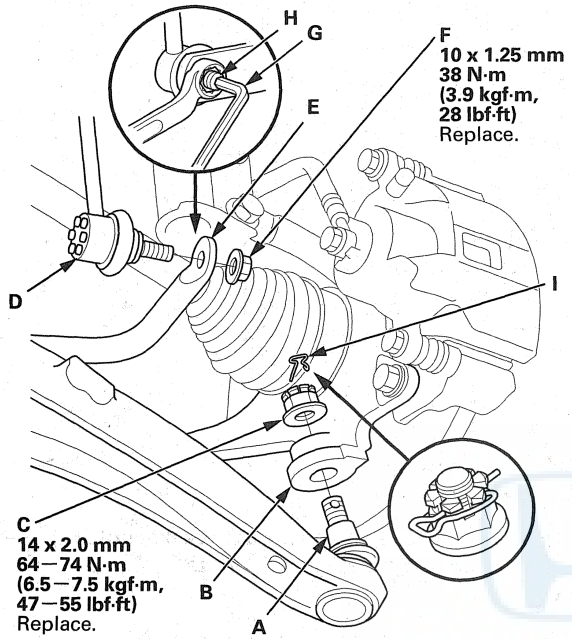


20. Connect the CVTF cooler hoses (B) to the CVTF cooler pipes (C), and secure the hoses with the clips (D) (see page 14-178).

21. Connect the EPS motor 3P connector (A), the torque sensor 6P connector (B), and the EPS motor angle sensor 8P connector (C), then install the harness clamp (D) to the clamp bracket (E).

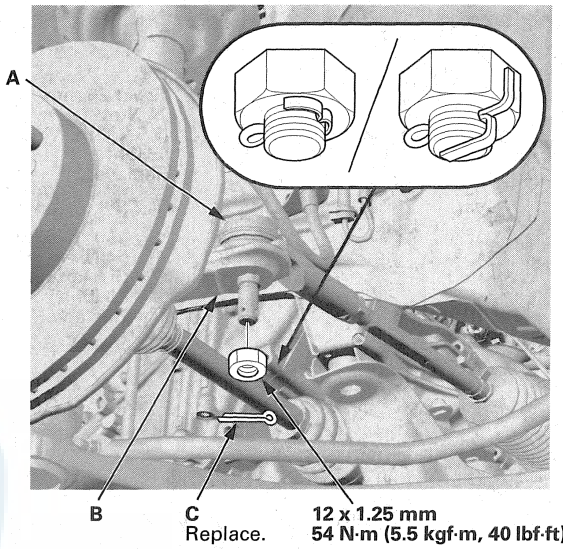


22. Connect the ball joints (A) to both knuckles (B), and loosely install the new ball joint nuts (C).

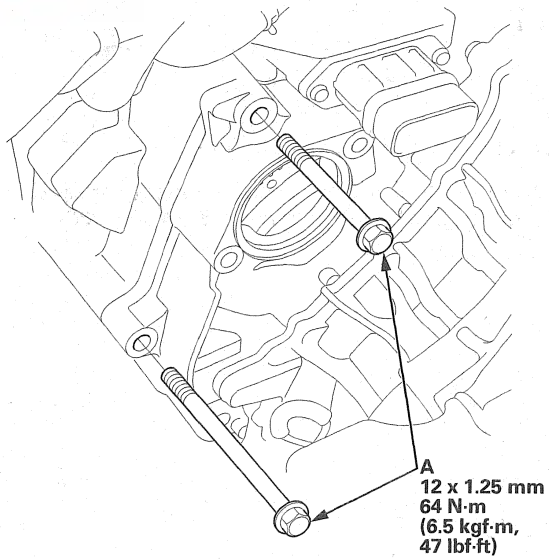


23. Connect the stabilizer links (D) to both stabilizer ends (E), and install the new nuts (F). Insert a 5 mm hex wrench (G) in the top of the ball joint pins (H), and tighten the nuts. Raise the suspension to load it with the vehicle weight before fully tightening ball joint nuts to the specified torque values, then secure the nuts with the lock pins (I).

24. Install the tie-rod end ball joints (A) to both knuckles (B), then install a new cotter pins (C) in the direction shown.



25. Install the upper and front transmission housing mounting bolts (A).

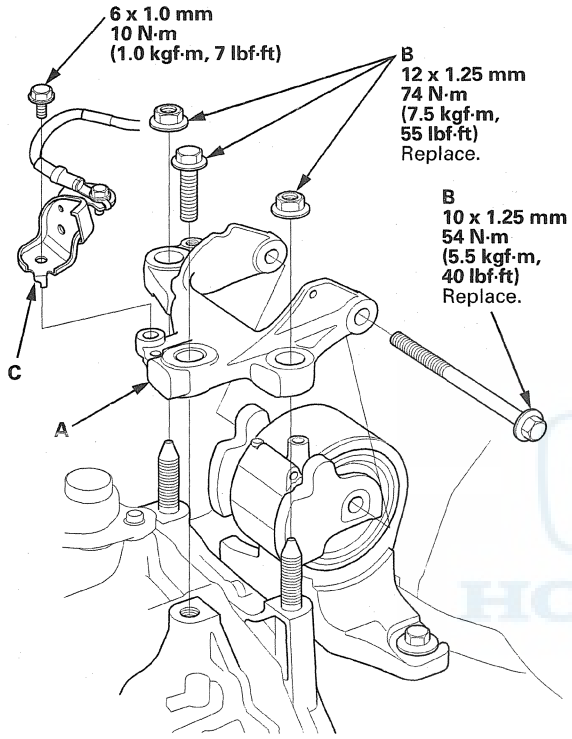


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Transmission Installation (cont'd)

26. Install the transmission mount bracket (A), then loosely install the new bolts/nuts (B).

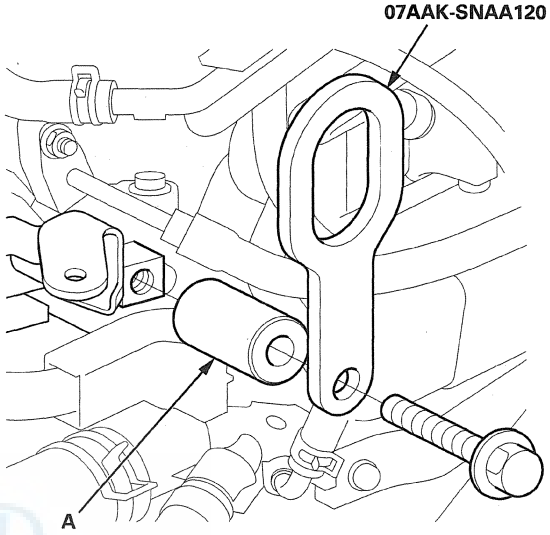
    NOTE: Tighten the bolts/nuts to the specified torque in step 31.



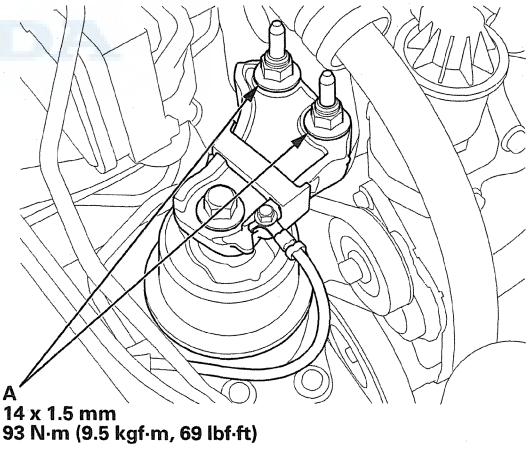
27. Install the ground cable terminal bracket (C).

28. Remove the engine support hanger (AAR-T1256) and the engine hanger adapter (VSB02C000026).

29. Remove the universal lifting eyelet and the spacer (A).



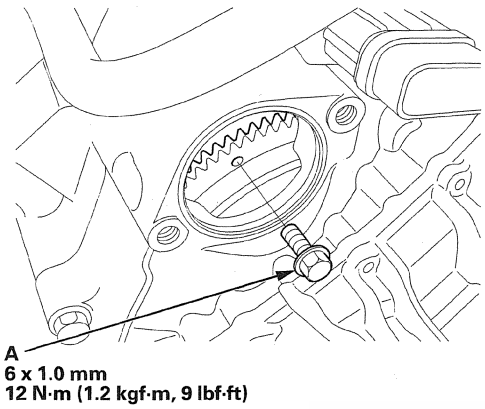
30. Loosen the side engine mount/bracket nuts (A), then retighten it to the specified torque.



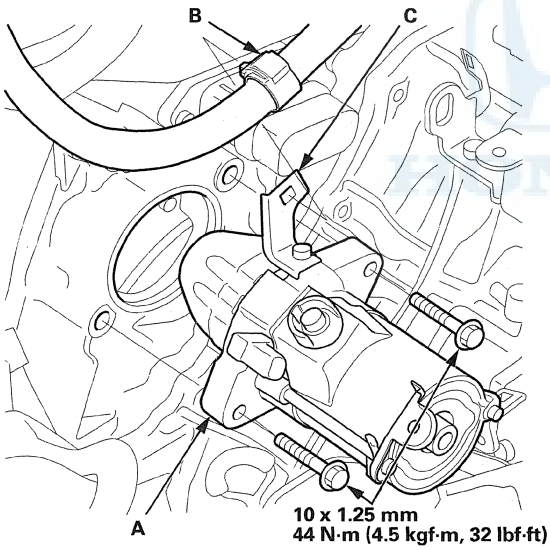
31. Tighten the bolts/nuts of the transmission mount bracket to the specified torque.

32. Tighten the bolt/nut of the torque rod to the specified torque.

33. Install the drive plate bolts (A) (six) at the opening of the starter while rotating the engine crankshaft pulley.

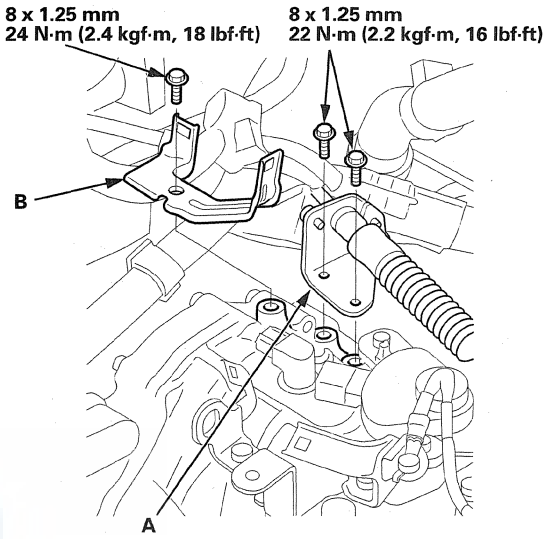


34. Install the starter (A).



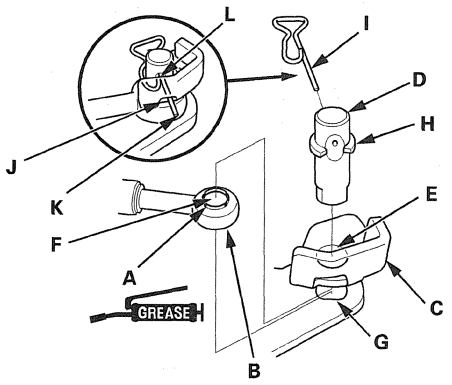
35. Install the hose clamp (B) to the clamp bracket (C).

36. Secure the shift cable holder (A) on the transmission with the bolts.



37. Install the clamp bracket (B).

38. Apply molybdenum grease to the hole in the shift cable end collar (A). Attach the shift cable end (B) to the selector control lever (C). Insert the control pin (D) through the selector control lever hole (E), through the shift cable end collar hole (F), and into the selector control lever slotted hole (G) in the direction shown. Push the control pin until its flange (H) contacts the selector control lever surface.

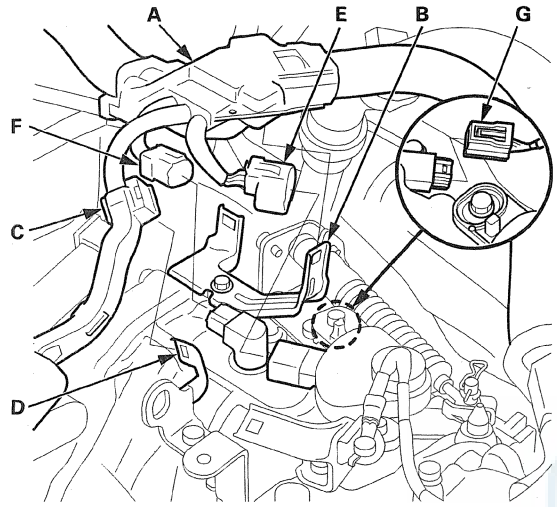


39. Insert the lock pin (I) in the direction shown through the control pin hole and out the opening (J) of the selector control lever so that the hooked end (K) of the lock pin locks into the countersunk hole (L) of the control pin.

(cont'd)

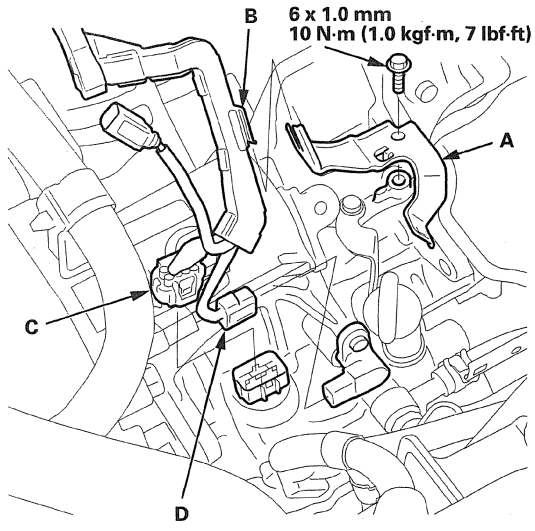
Transmission Installation (cont'd)

40. Install the harness cover (A) to the clamp bracket (B), and install the harness holder (C) on the clamp bracket (D).



41. Connect the transmission range switch 8P connector (E), the CVT output shaft (driven pulley) speed sensor 3P connector (F), and the vehicle speed sensor 3P connector (G).

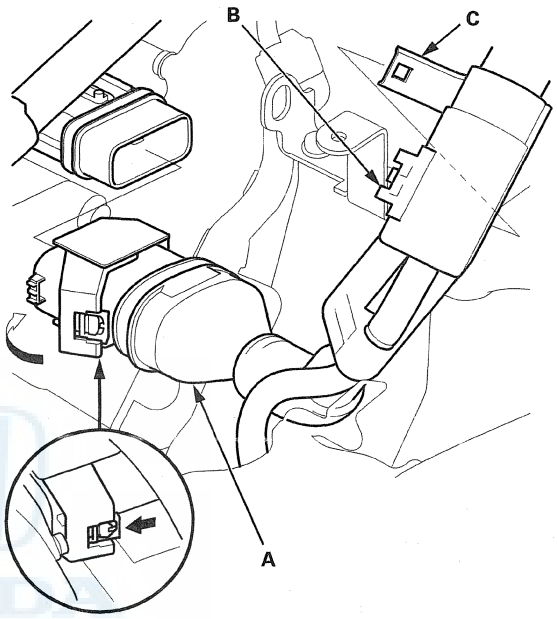
42. Install the clamp bracket (A), then install the harness holder (B) on the clamp bracket.



43. Connect the solenoid wire harness 8P connector (C) and the CVT input shaft (drive pulley) speed sensor 3P connector (D).

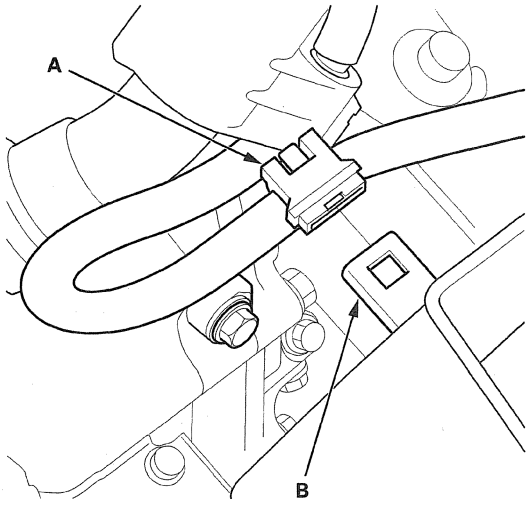
44. Connect the IMA motor power cable connector (A).

NOTE: Before connecting the IMA motor power cable connector, make sure you have read the IMA service precaution (see page 12-3).

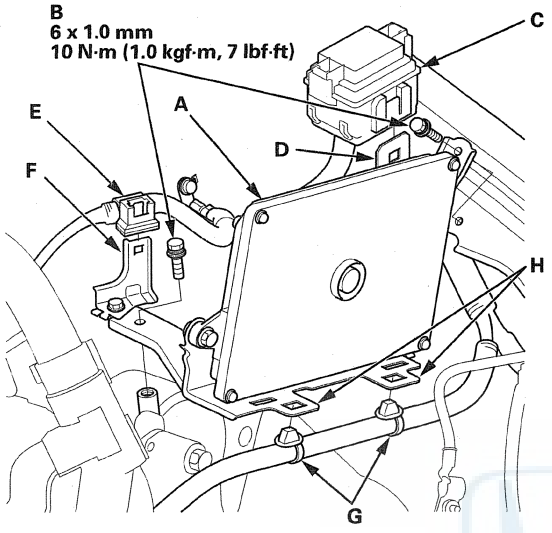


45. Install the IMA motor power cable clamp (B) on the clamp bracket (C).

46. Install the harness clamp (A) on the clamp bracket (B) of the battery base.



47. Install the PCM bracket with the PCM (A), secure the bolts (B).

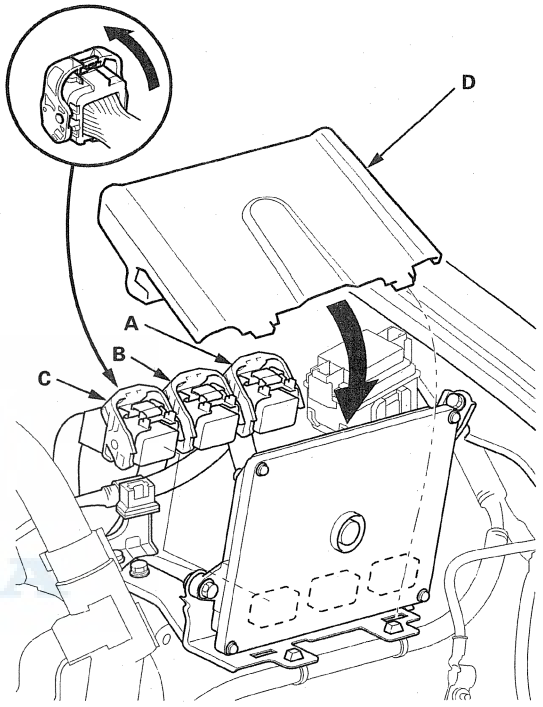


48. Install auxiliary under-hood relay box A (C) to the clamp bracket (D) of the PCM bracket.

49. Install the harness clamp (E) to the clamp bracket (F), and install the harness clamps (G) to the clamp bracket (H) of the PCM bracket.

50. Connect PCM connectors A, B, and C.

NOTE: PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.

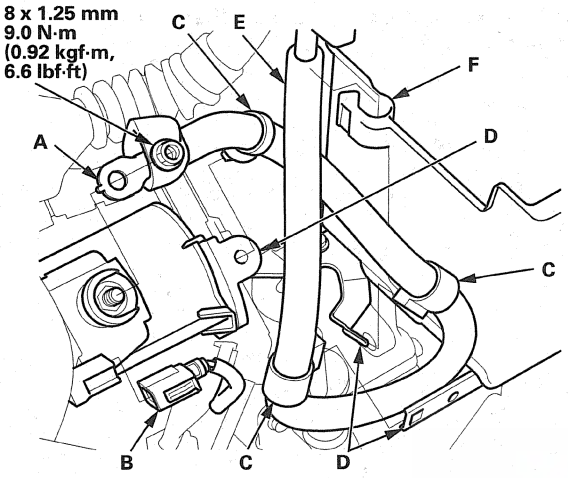


51. Install the PCM cover (D).

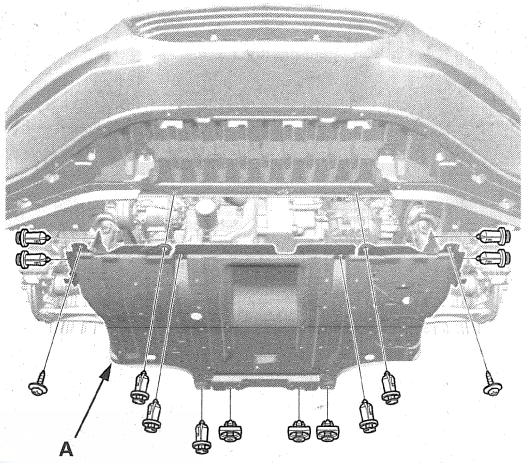
(cont'd)

Transmission Installation (cont'd)

52. Install the starter cable (A), and connect the S terminal connector (B).



53. Install the harness clamps (C) on the clamp brackets (D), and install the starter harness (E) in the harness clamp (F) of the battery tray.
54. Install the front bumper center upper beam (see page 20-149).
55. Install the air cleaner (see page 9-3).
56. Remove the steering wheel holder tool, then install the steering joint to the steering gearbox pinion shaft, and the steering joint cover (see step 23 on page 17-71).
57. Do the 12 volt battery installation procedure (see page 22-87).
58. Turn the battery module switch ON (see page 12-4).
59. Refill the transmission with CVTF (see step 9 on page 14-155).
60. Install the splash shield (A) (see page 20-163).



61. Set the parking brake. Start the engine, and shift the transmission through all positions three times.
62. Check the shift lever operation, the A/T gear position indicator operation, and the shift cable adjustment (see page 14-193).
63. Check and adjust the front wheel alignment (see page 18-5).
64. Start the engine with the shift lever in P or N, and warm it up to normal operating temperature (the radiator fan comes on twice). Turn the engine off, and check the CVT fluid level (see page 14-153).
65. After the transmission is disassembled or replaced, reset the PCM/TCM with the HDS (see page 14-7), then do the PCM idle learn procedure (see page 11-274).
66. Do the start clutch pressure control calibration procedures (see page 14-150).
67. If the IMA battery level indicator displays no level, apply the parking brake, then start the engine with the shift lever in P or N, and hold it between 3,500 and 4,000 rpm without load until the level in the indicator is half full.
68. Road test the vehicle (see page 14-132).

CVTF Cooler Cleaning

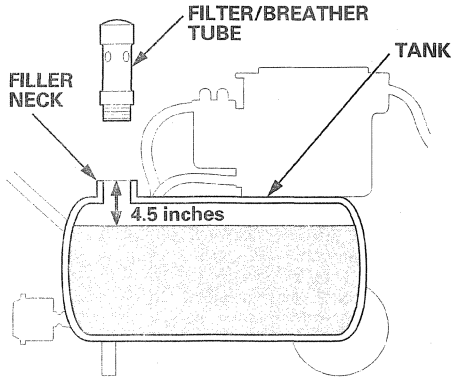
Special Tools Required
- ATF Cooler Cleaner GHTTTCF6H*
- Magnetic Nonbypass Spin-On Filter GTHGNBP2*

*Available through the Honda Tool and Equipment Program 888-424-6857

NOTE:
- Before installing an overhauled or remanufactured CVT, you must thoroughly clean the CVTF cooler to prevent system contamination. Failure to do so could cause a repeat CVT failure.
- The cleaning procedure involves heated CVTF delivered under high pressure (100 psi). Check the security of all hoses and connections. Always wear safety glasses or a face shield, along with gloves and protective clothing. If you get CVTF in your eyes or on your skin, rinse with water immediately.

⚠ WARNING
- Improper use of the ATF cooler cleaner can result in burns and other serious injuries.
- Always wear eye protection and protective clothing, and follow this procedure.

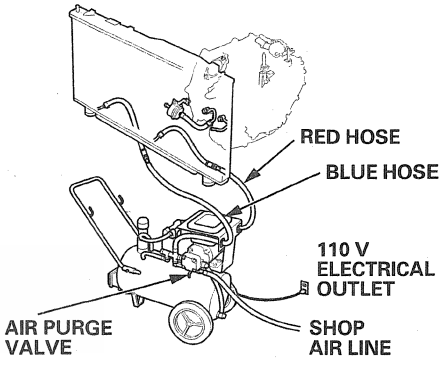
1. Check the fluid in the cooler cleaner tank. (The fluid level should be 4.5 inches from the top of the filler neck.) Adjust the level if needed; do not overfill. Use only Honda CVTF; do not use any additives.



2. Plug the cooler cleaner into a 110 V grounded electrical outlet.

NOTICE

Make sure the outlet has no other appliances (light fixtures, drop lights, extension cords) plugged into it. Also, never plug the cooler cleaner into an extension cord or drop light; you could damage the unit.



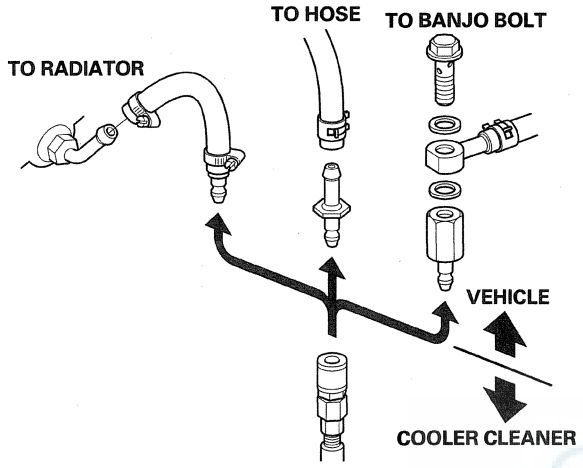
3. Flip the HEAT toggle switch to ON; the green indicator above the toggle switch comes on. Wait 1 hour for the cooler cleaner to reach its operating temperature. (The cooler cleaner is ready to use when the temperature gauge reads 140 °F to 150 °F.)

NOTE: If the red indicator above the HEAT toggle switch comes on, the fluid level in the tank is too low for the tank heater to work (see step 1 of this procedure).

(cont'd)

CVTF Cooler Cleaning (cont'd)

4. Select the appropriate pair of fittings, and attach them to the radiator, to the hoses, or to the banjo bolts for flow through the ATF cooler cleaner.



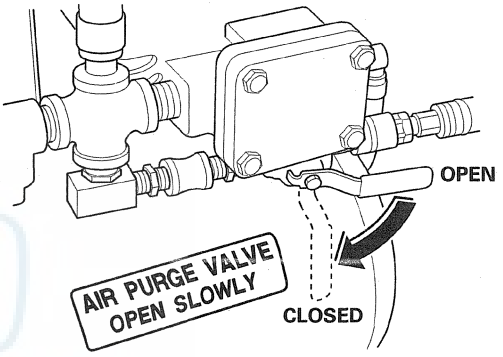
5. Connect the red hose to the cooler outlet line (the line that normally goes to the external filter on the transmission).
6. Connect the blue hose to the cooler inlet line.
7. Connect a shop air hose (regulated to 100 to 125 psi) to the air purge valve.

NOTICE

The quick-connect fitting has a one-way check valve to keep CVTF from entering your shop's air system. Do not remove or replace the fitting. Attach the coupler provided with the cooler cleaner to your shop air line if your coupler is not compatible.

8. Flip the MOTOR toggle switch to ON; the green indicator above the toggle switch comes on. Let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically to cause agitation and improve the cleaning process. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

   NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.



9. With the air purge valve open, flip the MOTOR toggle switch to OFF; the green indicator goes off. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual CVTF, then close the valve.
10. Disconnect the red and blue hoses from the CVTF cooler. Now connect the red hose to the cooler inlet line.
11. Now connect the blue hose to the cooler outlet line.
12. Flip the MOTOR toggle switch to ON, and let the pump run for 5 minutes. While the pump is running, open and close the air purge valve periodically. Always open the valve slowly. At the end of the 5-minute cleaning period, leave the air purge valve open.

    NOTE: While the pump is running with the air purge valve open, it is normal to see vapor coming from the filler/breather tube vents.

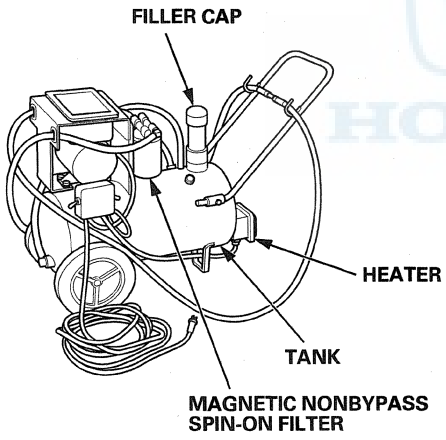
13. With the air purge valve open, flip the MOTOR toggle switch to OFF. Leave the air purge valve open for at least 15 seconds to purge the lines and hoses of residual CVTF, then close the valve.

14. Disconnect the red and blue hoses from the CVTF cooler lines.
15. Connect the red and blue hoses to each other.
16. Disconnect the shop air from the air purge valve. Disconnect and stow the coupler if used.
17. Disconnect and stow the fittings from the CVTF cooler inlet and outlet lines.
18. Unplug the cooler cleaner from the 110 V outlet.

Tool Maintenance

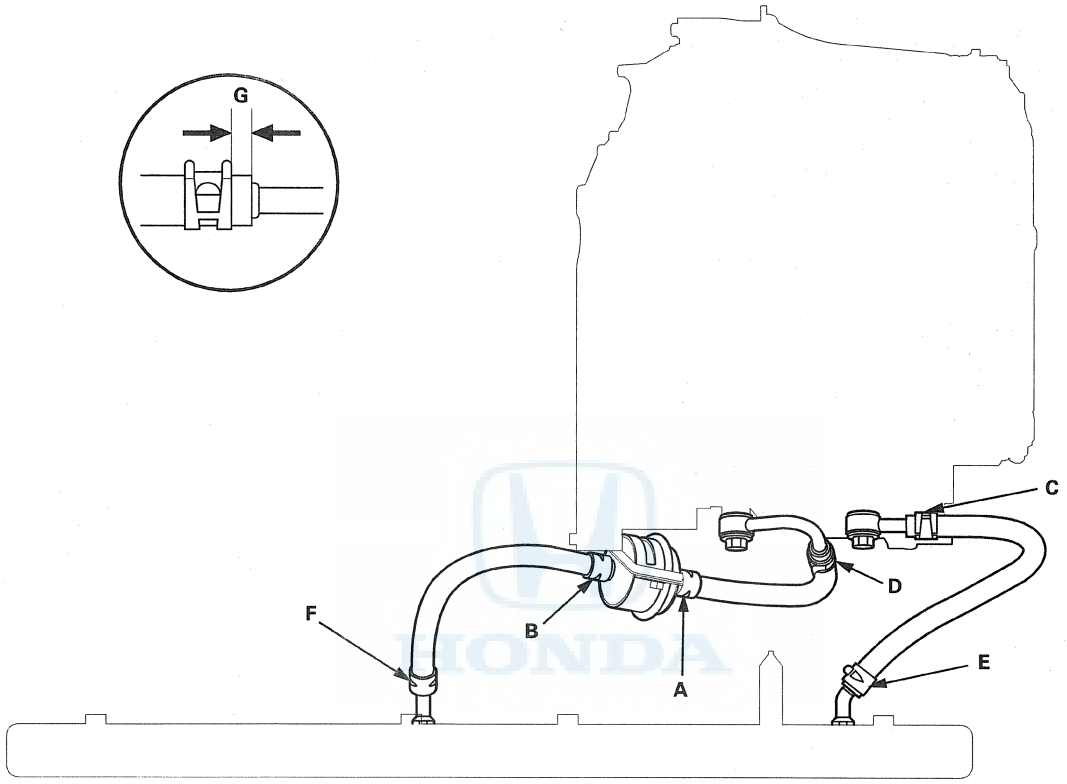
Follow these instructions to keep the ATF cooler cleaner working properly:

- Replace the two magnetic nonbypass spin-on filters after every 20 hours of use, based on the hour-meter, or when you notice a restriction in the flow.
- Check the level and condition of the fluid in the tank before each use.
- Replace the CVTF in the tank when it looks dark or dirty.



CVTF Cooler Hose Replacement

Exploded View



NOTE: When installing the hose clamps, make sure they do not interfere with the surrounding parts.

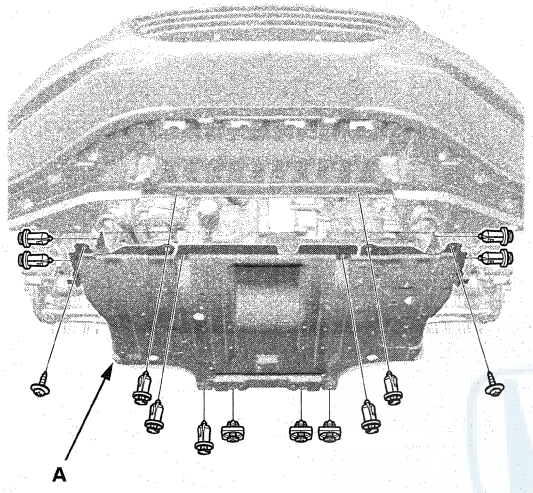
1. Install the CVTF cooler hoses over the CVTF cooler lines with the clips at appropriate points in reference to the following list.

Point	Distance from Hose End to Clip (G)	Hose End Contact Point
A	2—4 mm (0.08—0.16 in)	CVTF Filter Housing from 5—7 mm (0.20—0.28 in)
B		
C	6—8 mm (0.24—0.31 in)	Pipe Bracket
D		Bulge
E	2—4 mm (0.08—0.16 in)	
F		

2. Check the CVT fluid level (see page 14-153). Refill the transmission with CVTF if necessary.

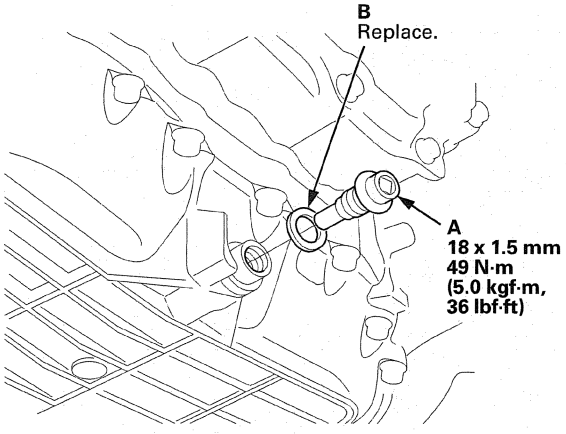
CVTF Filter Replacement

1. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the splash shield (A) (see page 20-163).

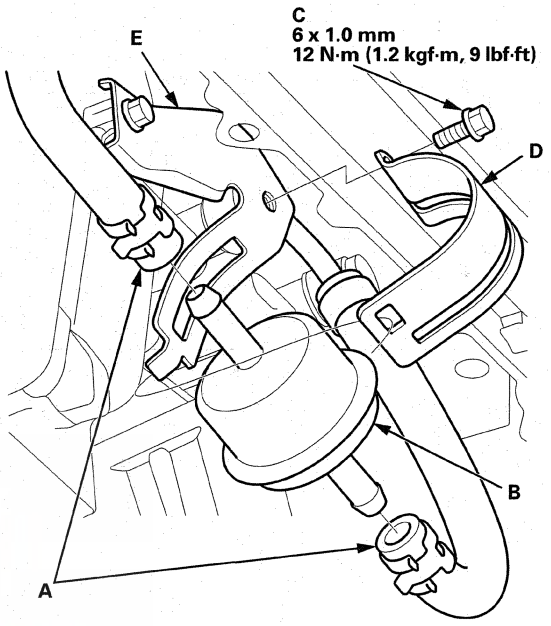


3. Remove the drain plug (A), and drain the CVTF.

   NOTE:
   - Remove metal particles from the magnetic surface of the drain plug.
   - If a cooler cleaning is necessary, refer to the CVTF cooler cleaning (see page 14-175).



4. Reinstall the drain plug and a new sealing washer (B).
5. Disconnect the CVTF cooler hoses (A) from the CVTF filter (B).

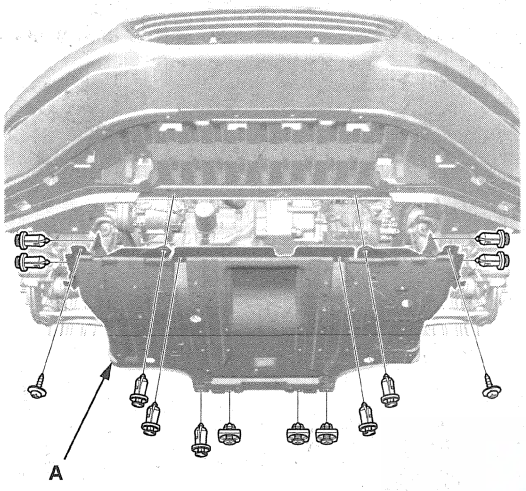


6. Remove the bolt (C) and the CVTF filter bracket (D), then remove the CVTF filter.
7. Secure the new CVTF filter on holder bracket (E) with the CVTF filter holder and the bolt.
8. Slide the CVTF cooler hoses with the hose clips on the CVTF filter (see page 14-178).
9. Refill the transmission with CVTF to the proper level (see step 9 on page 14-155).

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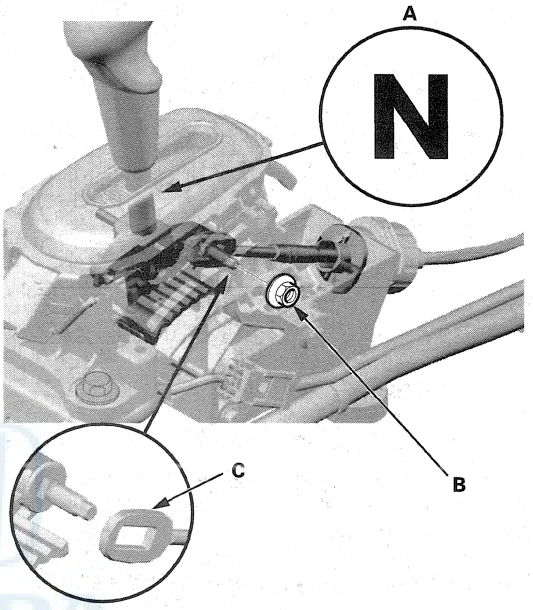
CVTF Filter Replacement (cont'd)

10. Install the splash shield (A) (see page 20-163).



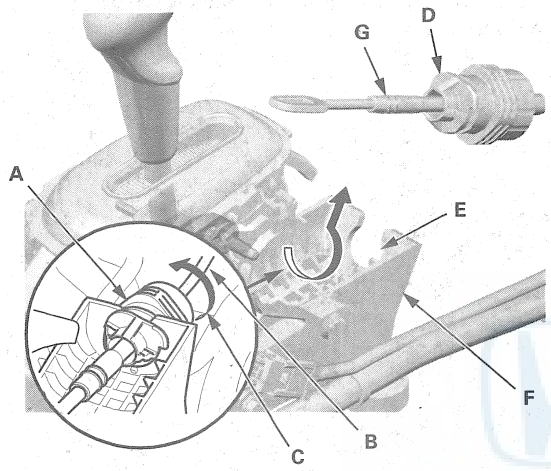
Shift Lever Removal

1. Remove the center console (see page 20-79).
2. Apply the parking brake, and move the shift lever to N (A).

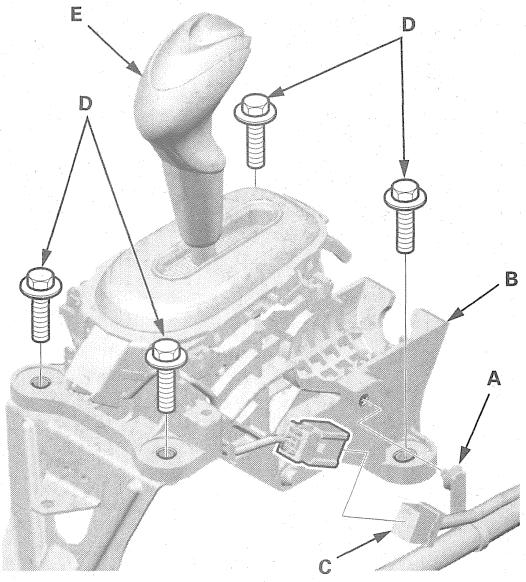


3. Remove the nut (B) securing the shift cable end (C).

4. Rotate the socket holder (A) on the shift cable (B) counterclockwise (C) a quarter turn; the corner (D) on the socket holder will be in the opening (E) of the shift lever bracket base (F). Then slide the socket holder to remove the shift cable from the shift lever bracket base. Do not remove the shift cable by pulling the shift cable guide (G).



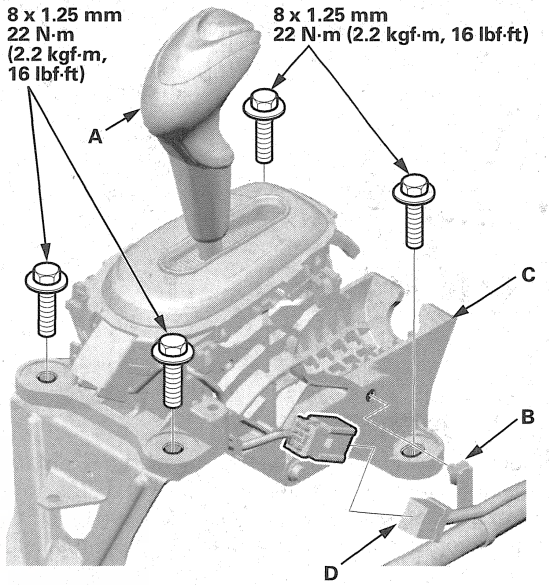
5. Remove the harness clamp (A) from the shift lever bracket base (B), and disconnect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (C).



6. Remove the bolts (D) and the shift lever assembly (E).

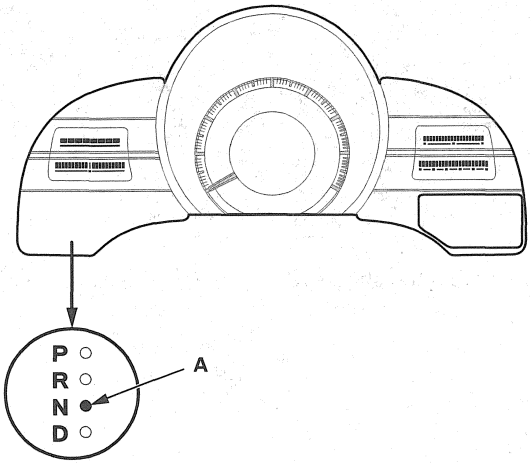
Shift Lever Installation

1. Install the shift lever assembly (A).



2. Install the harness clamp (B) to the shift lever bracket base (C), and connect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (D).

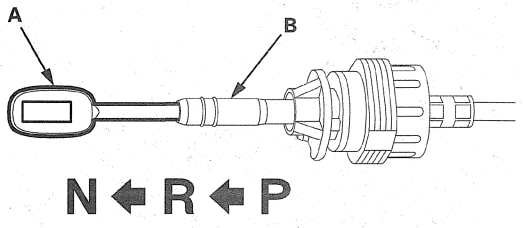
3. Turn the ignition switch to ON (II), and check that the N indicator comes on (A).



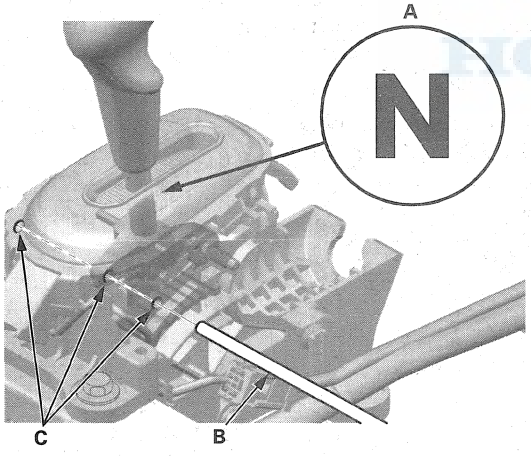
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Shift Lever Installation (cont'd)

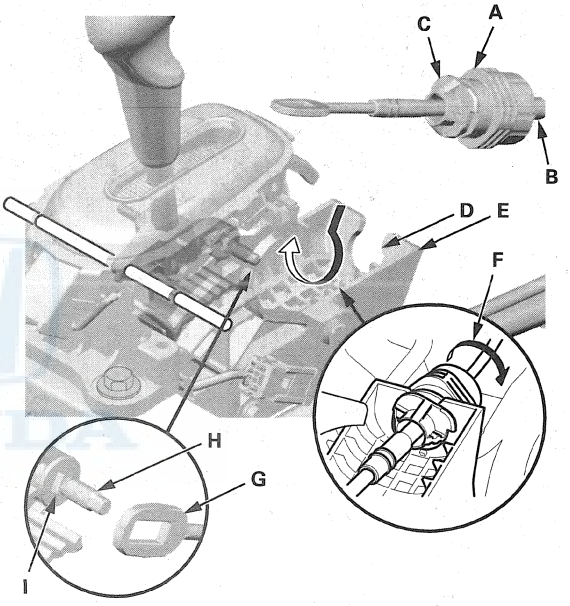
4. If necessary, push the shift cable (A) until it stops, then release it. Pull the shift cable back two steps so that the shift position is in N. Do not hold the shift cable guide (B) to adjust the shift cable.



5. Turn the ignition switch to LOCK (0).
6. Place the shift lever in N (A), then insert a 6 mm (0.24 in) pin (B) into the positioning holes (C) on the shift lever bracket base and into the positioning hole on the shift lever. Use only the 6 mm (0.24 in) pin that is free of burrs.

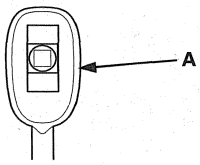


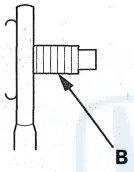
7. Check that the shift lever is secured in N.
8. Rotate the socket holder (A) on the shift cable (B) to place the corner (C) on the holder opposite the opening (D) in the shift lever bracket base (E). Align the socket holder with the opening in the bracket, then slide the socket holder into the shift lever bracket base. Rotate the socket holder clockwise (F) a quarter turn until the socket holder stops to secure the shift cable. Install the shift cable end (G) over the mounting stud (H) by aligning its square hole with the square fitting (I) at the bottom of the stud.



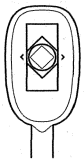
9. Make sure the shift cable end (A) is properly installed on the mounting stud (B).
   - If the shift cable end is out of position with the mounting stud, remove the shift cable from the shift cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable install on the shift cable bracket.
   - If the cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.

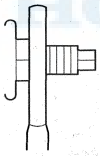
Properly installed:
Shift cable end rides on the bottom of the mounting stud.



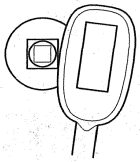


Improperly installed:
Shift cable end out of position with mounting stud.

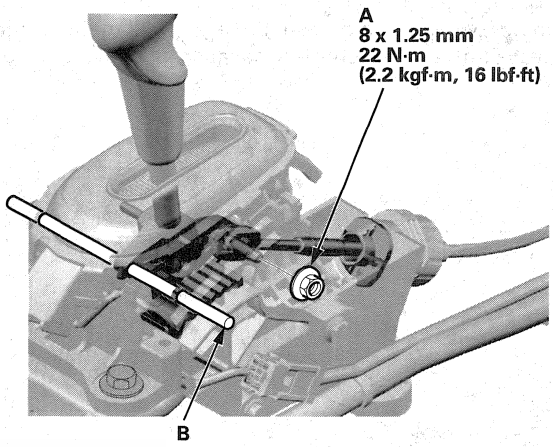




Shift cable end out of alignment with the mounting stud.



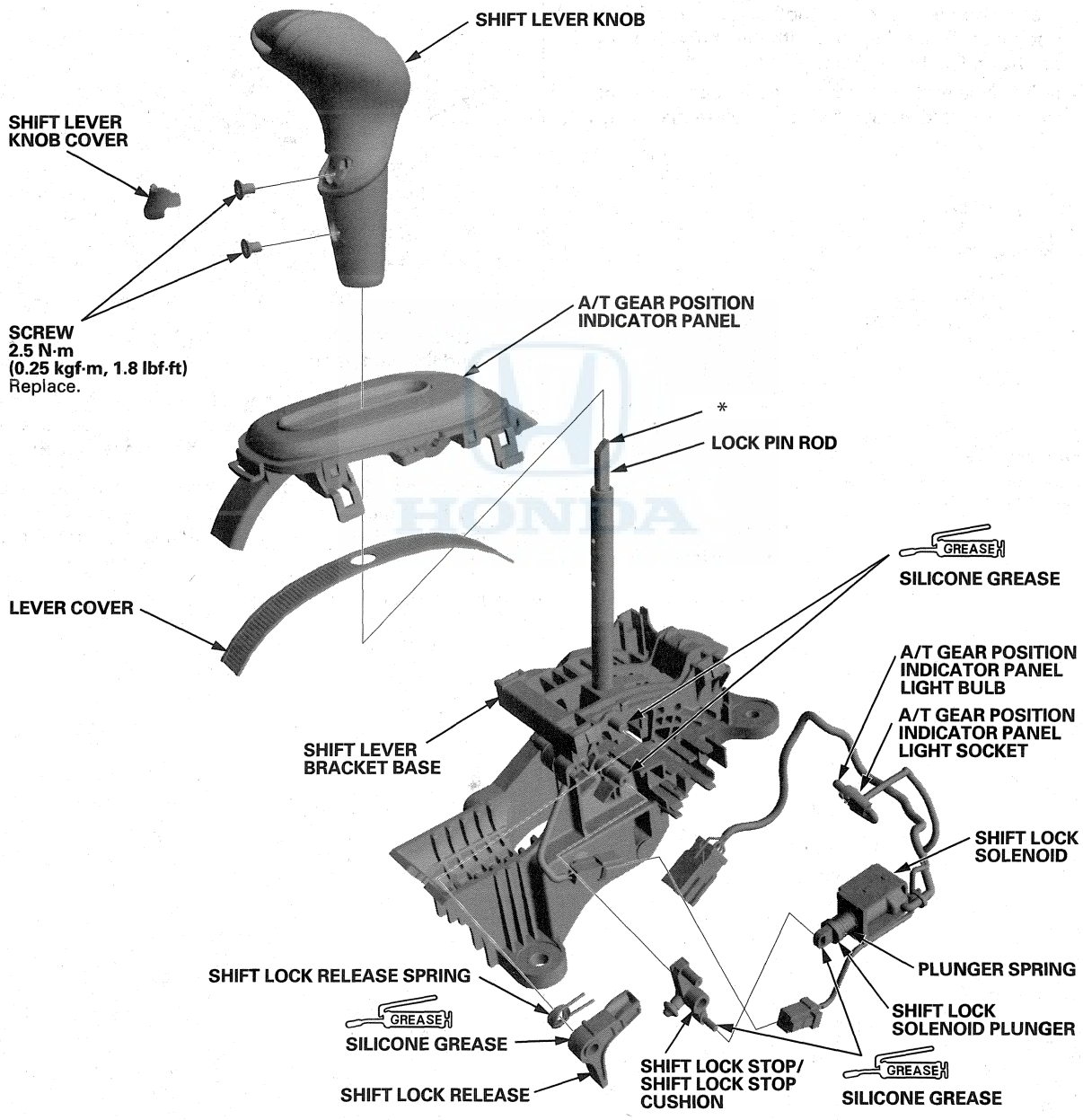
10. Secure the shift cable end with the nut (A).



11. Remove the 6 mm (0.24 in) pin (B) that was installed to hold the shift lever.
12. Turn the ignition switch to ON (II). Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
13. Shift the shift lever to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back into P.
14. Install the center console (see page 20-79).

Shift Lever Disassembly/Reassembly

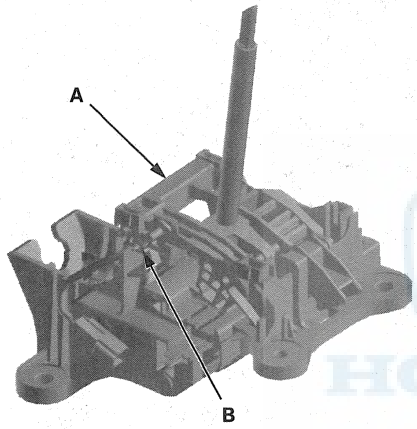
NOTE:
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.
- Do not wipe off the grease that is applied to the portion of the shift lever marked with an asterisk (*) when you disassemble or assemble it because a special grease is used.



Shift Lever Bracket Base Replacement

1. Remove the shift lever assembly (see page 14-180).
2. Remove the shift lever knob, the A/T gear position indicator panel, the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly, the shift lock release, the shift lock release spring, and the shift lock stop/ shift lock stop cushion from the shift lever assembly (see page 14-184).
3. Replace the shift lever bracket base (A).

   NOTE: The park pin switch (B) is built into the shift lever bracket base.

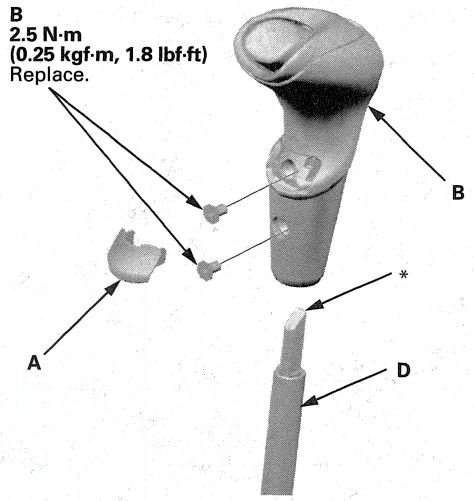


4. Install the shift lock stop/shift lock stop cushion, the shift lock release spring, the shift lock release, the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly, the A/T gear position indicator panel, and the shift lever knob to the shift lever bracket base (see page 14-184).
5. Install the shift lever assembly (see page 14-181).

Shift Lever Knob Replacement

NOTE: Do not wipe off the grease that is applied to the portion of the shift lever marked with an asterisk (*) when you disassemble or assemble it because a special grease is used.

1. Wrap the end of a thin blade screwdriver with tape, pry the shift lever knob cover (A), and remove it.

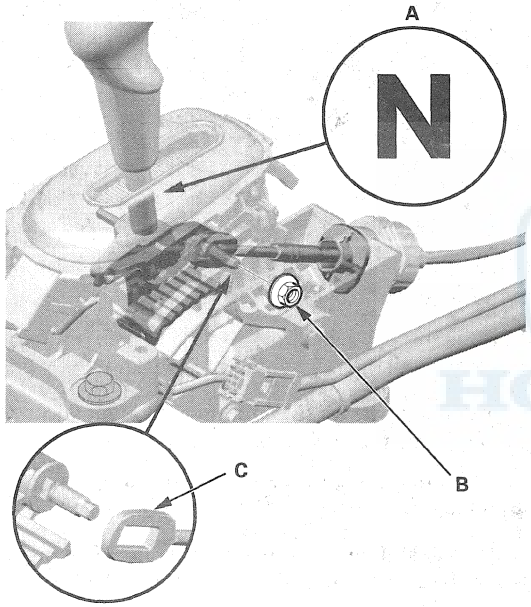


2. Remove the screws (B) and the shift lever knob (C), then replace the shift lever knob.
3. Install new screws to secure the shift lever knob to the shift lever (D).
4. Install the shift lever knob cover by pushing the shift lever knob cover onto the shift lever knob securely.

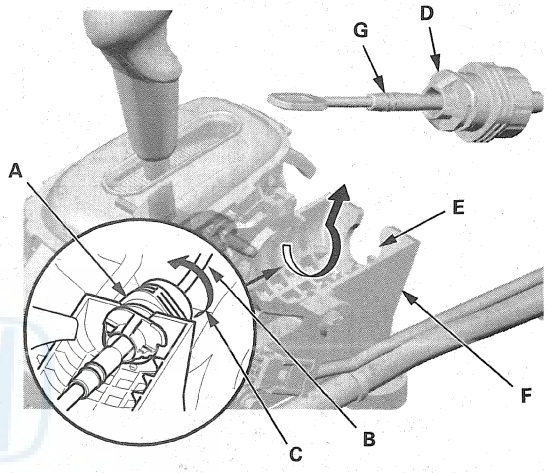
Shift Cable Replacement

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repair or service.

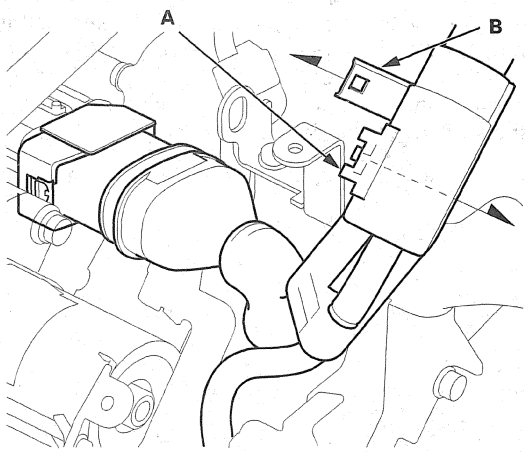
1. Raise the vehicle on a lift, or apply the parking brake, block rear wheels, and raise the front of the vehicle. Make sure it is securely supported.
2. Remove the center console (see page 20-79).
3. Apply the parking brake, and move the shift lever to N (A).



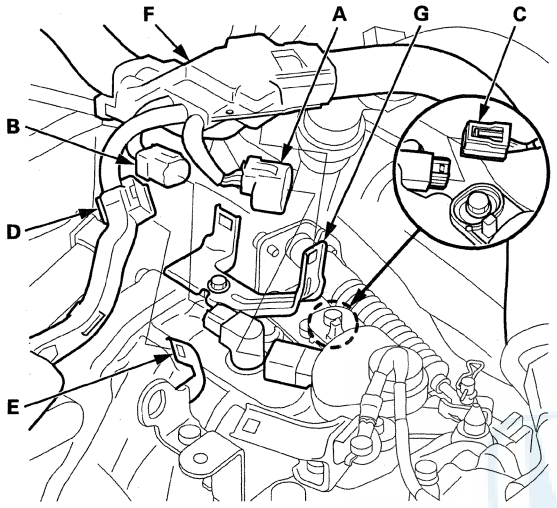
4. Remove the nut (B) securing the shift cable end (C).
5. Rotate the socket holder (A) on the shift cable (B) counterclockwise (C) a quarter turn; the corner (D) on the socket holder will be in the opening (E) of the shift lever bracket base (F). Then slide the socket holder to remove the shift cable from the shift lever bracket base. Do not remove the shift cable by pulling the shift cable guide (G).



6. Remove the air cleaner (see page 9-3).
7. Remove the IMA motor power cable clamp (A) from the bracket (B).

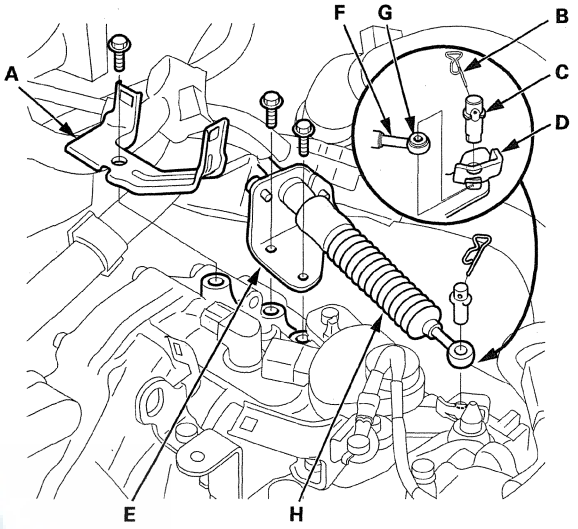


8. Disconnect the transmission range switch 8P connector (A), the CVT output shaft (driven pulley) speed sensor 3P connector (B), and the vehicle speed sensor 3P connector (C).



9. Remove the harness holder (D) from the clamp bracket (E), and remove the harness cover (F) from the clamp bracket (G).

10. Remove the clamp bracket (A).



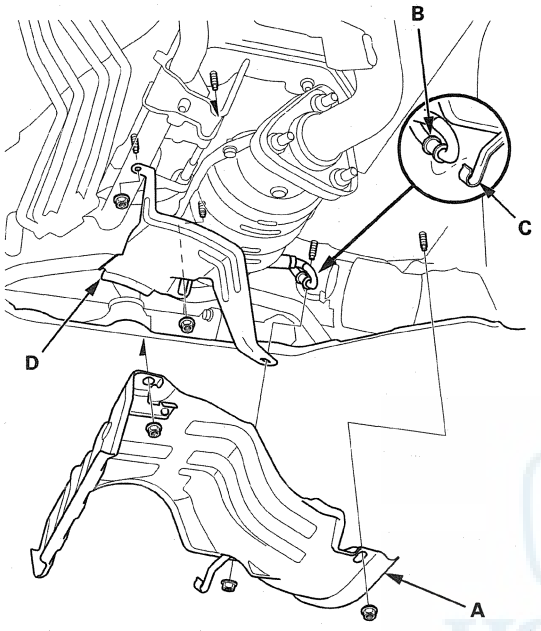
11. Remove the lock pin (B) and the control pin (C) from the selector control lever (D).

12. Remove the bolts securing the shift cable holder (E), then separate the shift cable end (F) from the selector control lever. Check the shift cable end collar (G) for wear or damage, and replace the shift cable (H) if necessary.

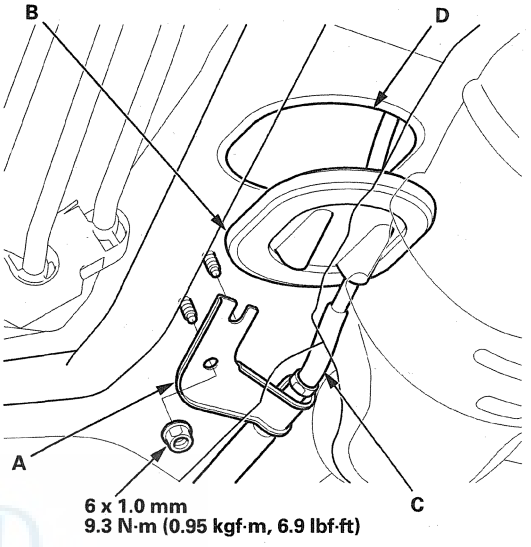
(cont'd)

Shift Cable Replacement (cont'd)

13. Remove the heat shield (A), and the secondary HO2S harness clamp (B) from the clamp bracket (C) of the heat shield, then remove the heat shield (D).



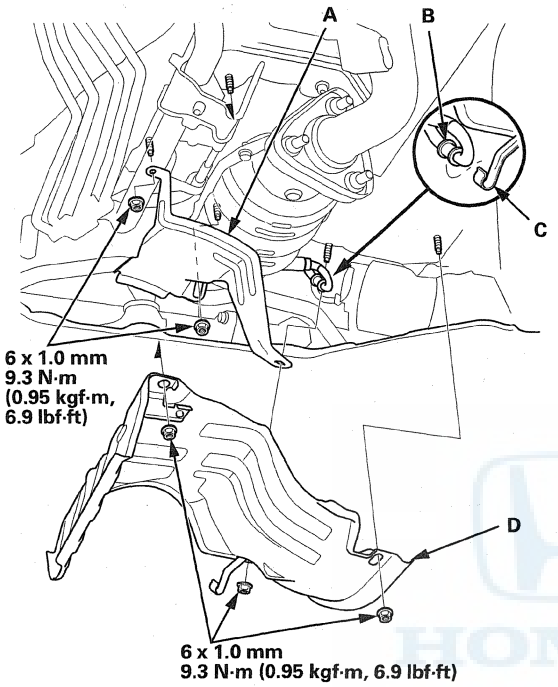
14. Remove the nut securing the shift cable bracket (A).



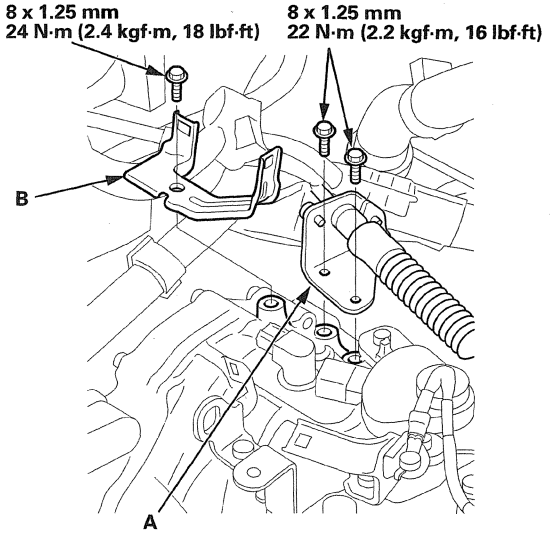
15. Remove the shift cable grommet (B), and pull out the shift cable (C).

16. Insert a new shift cable through the grommet hole (D), and install the grommet in its hole. Do not bend the shift cable excessively. Then secure the shift cable bracket with the nut.

17. Install the heat shield (A), then install the secondary HO2S harness clamp (B) to the clamp bracket (C) of the heat shield (D) and the heat shield.

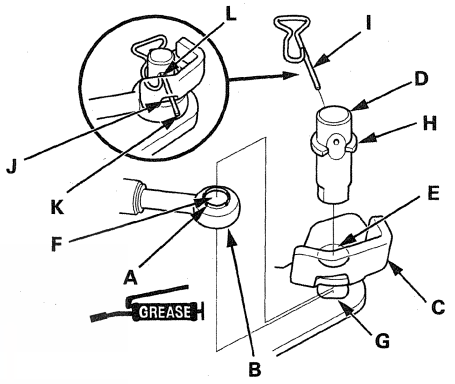


18. Secure the shift cable holder (A) on the transmission with the bolts.



19. Install the clamp bracket (B).

20. Apply molybdenum grease to the hole in the shift cable end collar (A). Attach the shift cable end (B) to the selector control lever (C). Insert the control pin (D) through the selector control lever hole (E), through the shift cable end collar hole (F), and into the selector control lever slotted hole (G) in the direction shown. Push the control pin until its flange (H) contacts the selector control lever surface.

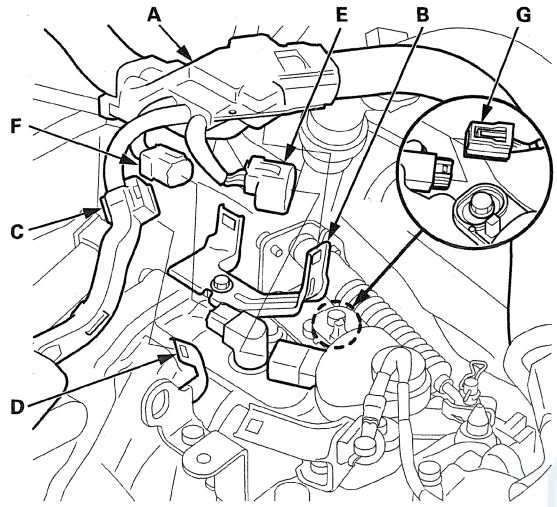


21. Insert the lock pin (I) in the direction shown through the control pin hole and out the opening (J) of the selector control lever so that the hooked end (K) of the lock pin locks into the countersunk hole (L) of the control pin.

(cont'd)

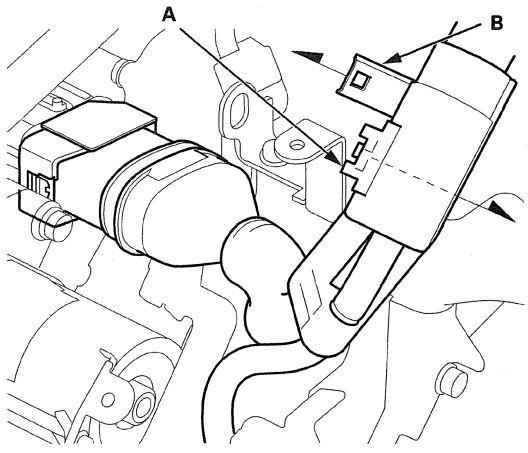
Shift Cable Replacement (cont'd)

22. Install the harness cover (A) to the clamp bracket (B), and install the harness holder (C) to the clamp bracket (D).



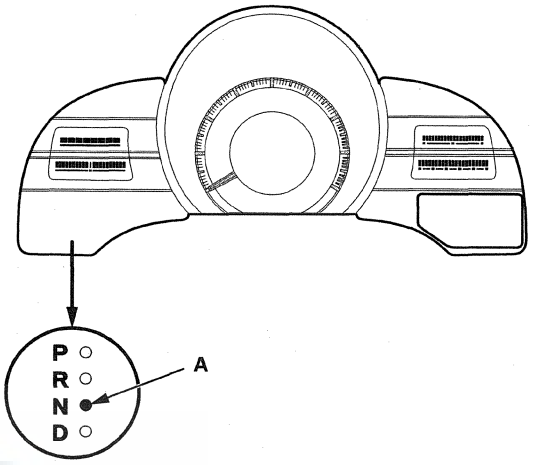
23. Connect the transmission range switch 8P connector (E), the CVT output shaft (driven pulley) speed sensor 3P connector (F), and the vehicle speed sensor 3P connector (G).

24. Install the IMA motor power cable clamp (A) to the clamp bracket (B).

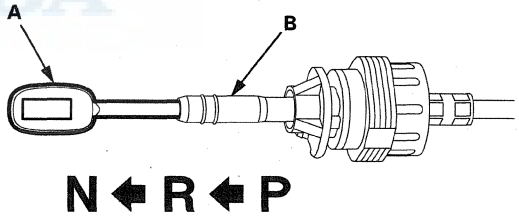


25. Install the air cleaner (see page 9-3).

26. Turn the ignition switch to ON (II), and check that the N indicator comes on (A).

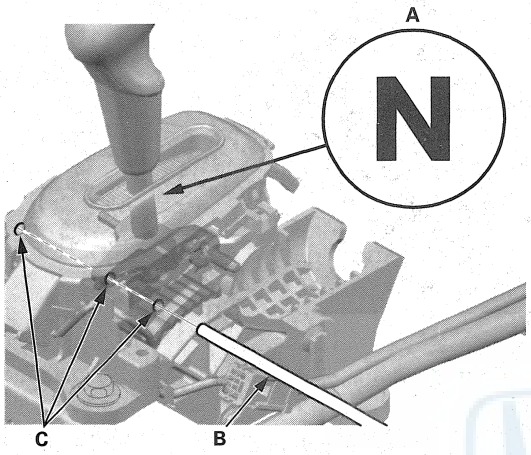


27. If necessary, push the shift cable (A) until it stops, then release it. Pull the shift cable back two steps so that the shift position is in N. Do not hold the shift cable guide (B) to adjust the shift cable.



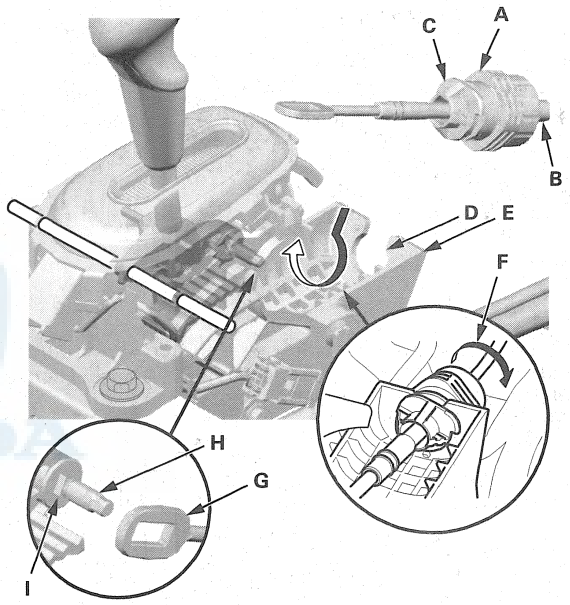
28. Turn the ignition switch to LOCK (0).

29. Place the shift lever in N (A), then insert a 6 mm (0.24 in) pin (B) into the positioning holes (C) on the shift lever bracket base and into the positioning hole on the shift lever. Use only the 6 mm (0.24 in) pin that is free of burrs.



30. Check that the shift lever is secured in N.

31. Rotate the socket holder (A) on the shift cable (B) to place the corner (C) on the holder opposite the opening (D) in the shift lever bracket base (E). Align the socket holder with the opening in the bracket, then slide the socket holder into the shift lever bracket base. Rotate the socket holder clockwise (F) a quarter turn until the socket holder stops to secure the shift cable. Install the shift cable end (G) over the mounting stud (H) by aligning its square hole with the square fitting (I) at the bottom of the stud.

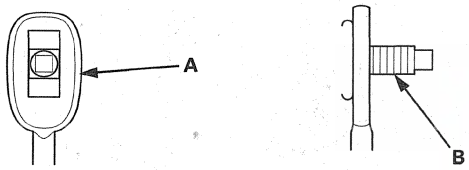


(cont'd)

Shift Cable Replacement (cont'd)

32. Make sure the shift cable end (A) is properly installed on the mounting stud (B).
    - If the shift cable end is out of position with the mounting stud, remove the shift cable from the shift cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable install on the shift cable bracket.
    - If the cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.

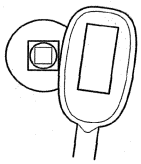
Properly installed:
Shift cable end rides on the bottom of the mounting stud.



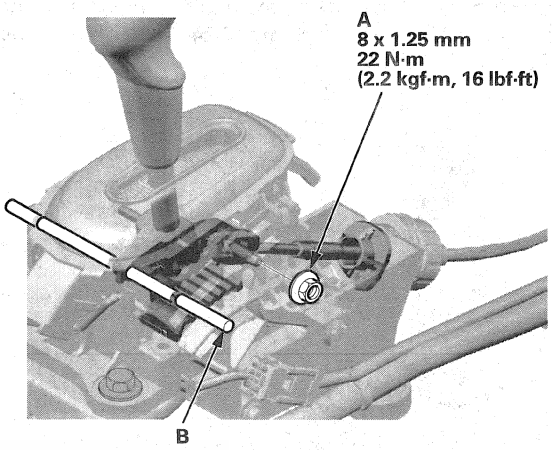
Improperly installed:
Shift cable end out of position with mounting stud.



Shift cable end out of alignment with the mounting stud.



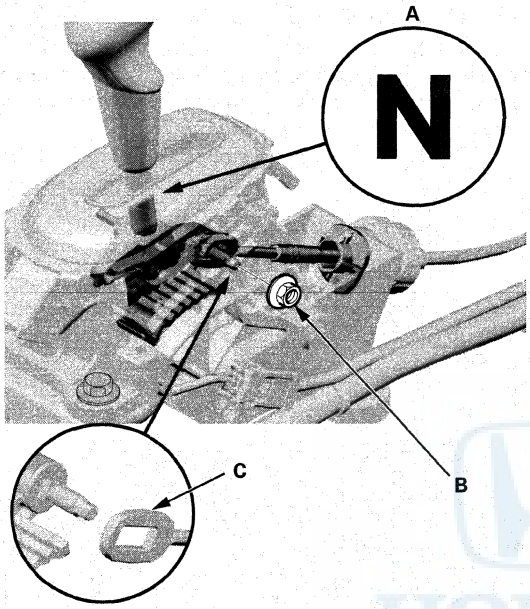
33. Secure the shift cable end with the nut (A).



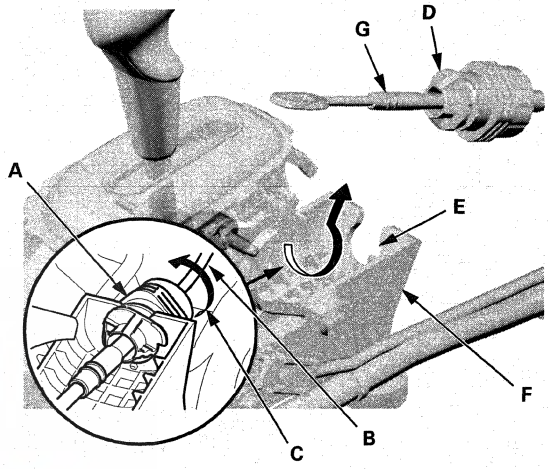
34. Remove the 6 mm (0.24 in) pin (B) that was installed to hold the shift lever.
35. Turn the ignition switch to ON (II). Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
36. Shift the shift lever to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back into P.
37. Install the center console (see page 20-79).

Shift Cable Adjustment

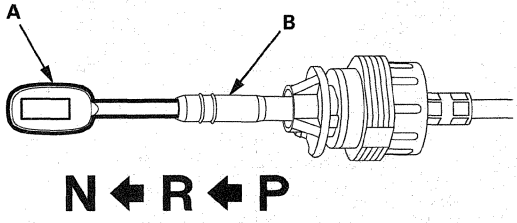
1. Remove the center console (see page 20-79).
2. Apply the parking brake, and move the shift lever to N (A).



3. Remove the nut (B) securing the shift cable end (C).
4. Rotate the socket holder (A) on the shift cable (B) counterclockwise (C) a quarter turn; the corner (D) on the socket holder will be in the opening (E) of the shift lever bracket base (F). Then slide the socket holder to remove the shift cable from the shift lever bracket base. Do not remove the shift cable by pulling the shift cable guide (G).



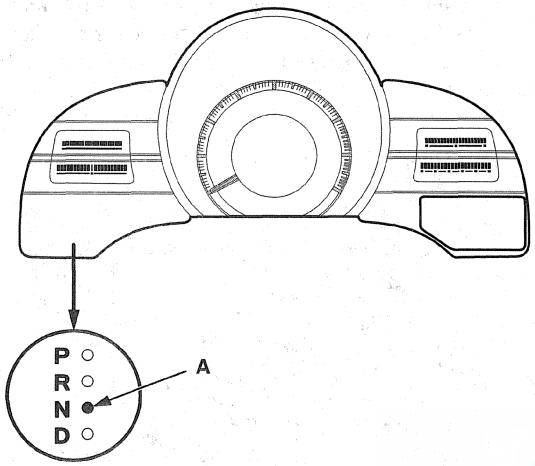
5. Push the shift cable (A) until it stops, then release it. Pull the shift cable back two steps so that the shift position is in N. Do not hold the shift cable guide (B) to adjust the shift cable.



(cont'd)

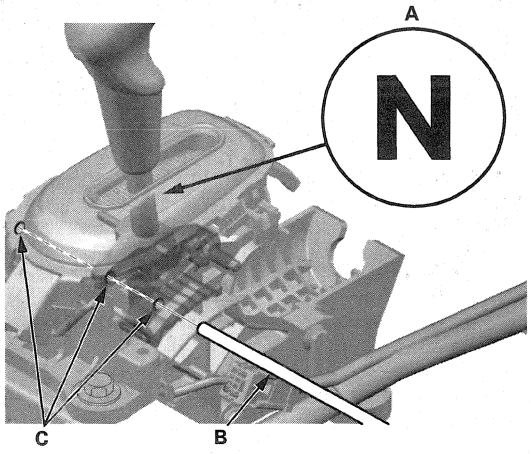
Shift Cable Adjustment (cont'd)

6. Turn the ignition switch to ON (II), and check that the N indicator comes on (A).



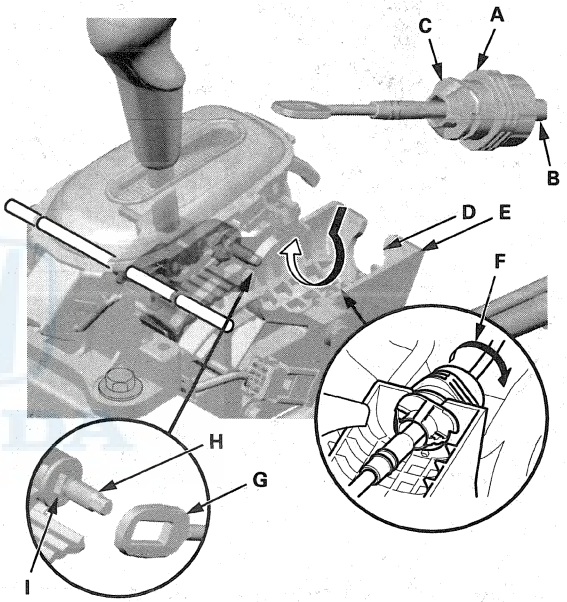
7. Turn the ignition switch to LOCK (0).

8. Place the shift lever in N (A), then insert a 6 mm (0.24 in) pin (B) into the positioning holes (C) on the shift lever bracket base and into the positioning hole on the shift lever. Use only the 6 mm (0.24 in) pin that is free of burrs.



9. Check that the shift lever is secured in N.

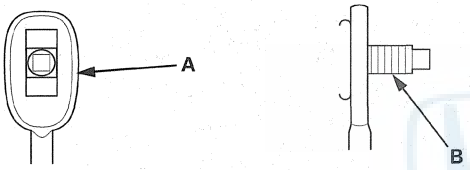
10. Rotate the socket holder (A) on the shift cable (B) to place the corner (C) on the holder opposite the opening (D) in the shift lever bracket base (E). Align the socket holder with the opening in the bracket, then slide the socket holder into the shift lever bracket base. Rotate the socket holder clockwise (F) a quarter turn until the socket holder stops to secure the shift cable. Install the shift cable end (G) over the mounting stud (H) by aligning its square hole with the square fitting (I) at the bottom of the stud.



11. Make sure the shift cable end (A) is properly installed on the mounting stud (B).
    - If the shift cable end is out of position with the mounting stud, remove the shift cable from the shift cable bracket, then reinstall the cable end over the mounting stud before reinstalling the shift cable to the shift cable bracket. Do not install the shift cable end on the mounting stud with the shift cable install on the shift cable bracket.
    - If the cable end does not ride at the bottom of the mounting stud, rotate the stud to align the square fitting with the hole.

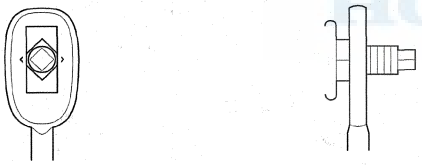
Properly installed:

Shift cable end rides on the bottom of the mounting stud.

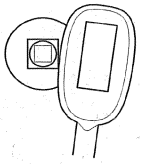


Improperly installed:

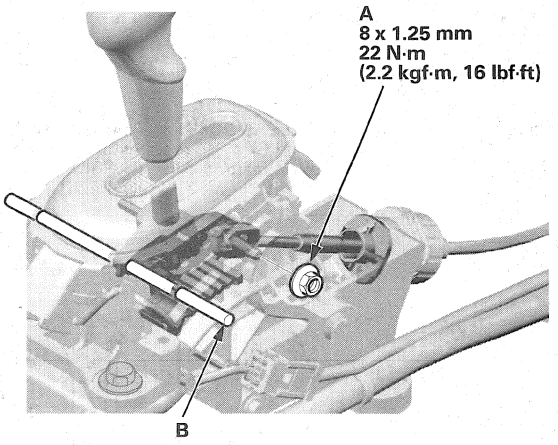
Shift cable end out of position with mounting stud.



Shift cable end out of alignment with the mounting stud.



12. Secure the shift cable end with the nut (A).

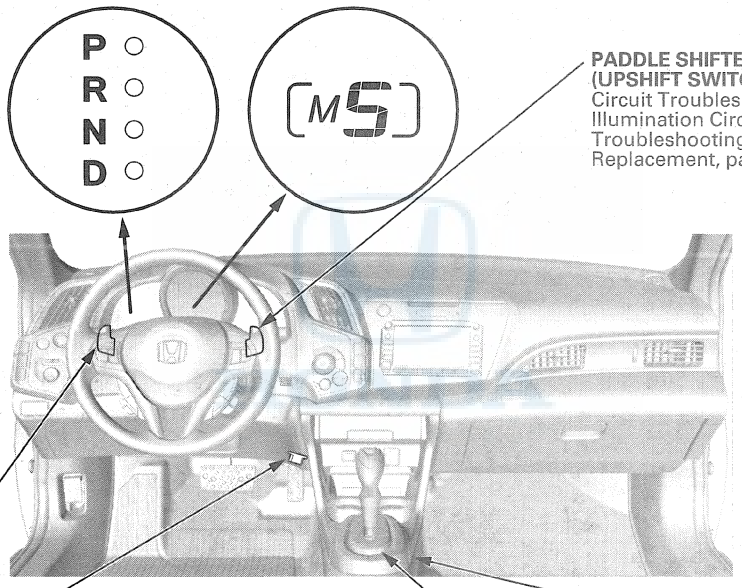


13. Remove the 6 mm (0.24 in) pin (B) that was installed to hold the shift lever.
14. Turn the ignition switch to ON (II). Move the shift lever to each position, and check that the A/T gear position indicator follows the transmission range switch.
15. Shift the shift lever to P, and check that the shift lock works properly. Push the shift lock release, and check that the shift lever releases, and also check that the shift lever locks when it is shifted back into P.
16. Install the center console (see page 20-79).

A/T Gear Position Indicator

Component Location Index

A/T GEAR POSITION INDICATOR
F-CAN Circuit Troubleshooting, page 11-376
Gauge Control Module Self-Diagnostic Function
Indicator Drive Circuit Check, page 22-325



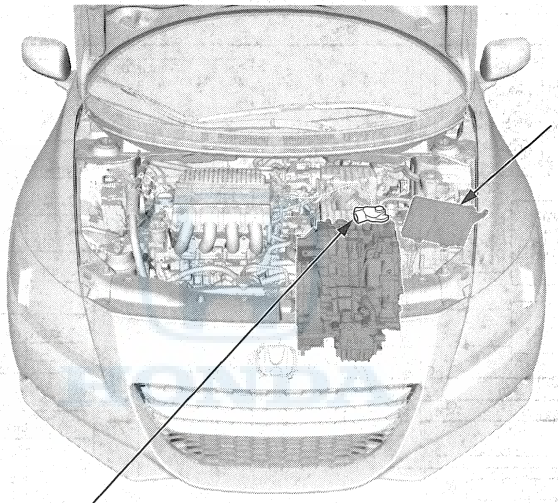
PADDLE SHIFTER +
(UPSHIFT SWITCH)
Circuit Troubleshooting, page 14-207
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DATA LINK CONNECTOR
(DLC)

A/T GEAR POSITION
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PADDLE SHIFTER –
(DOWNSHIFT SWITCH)
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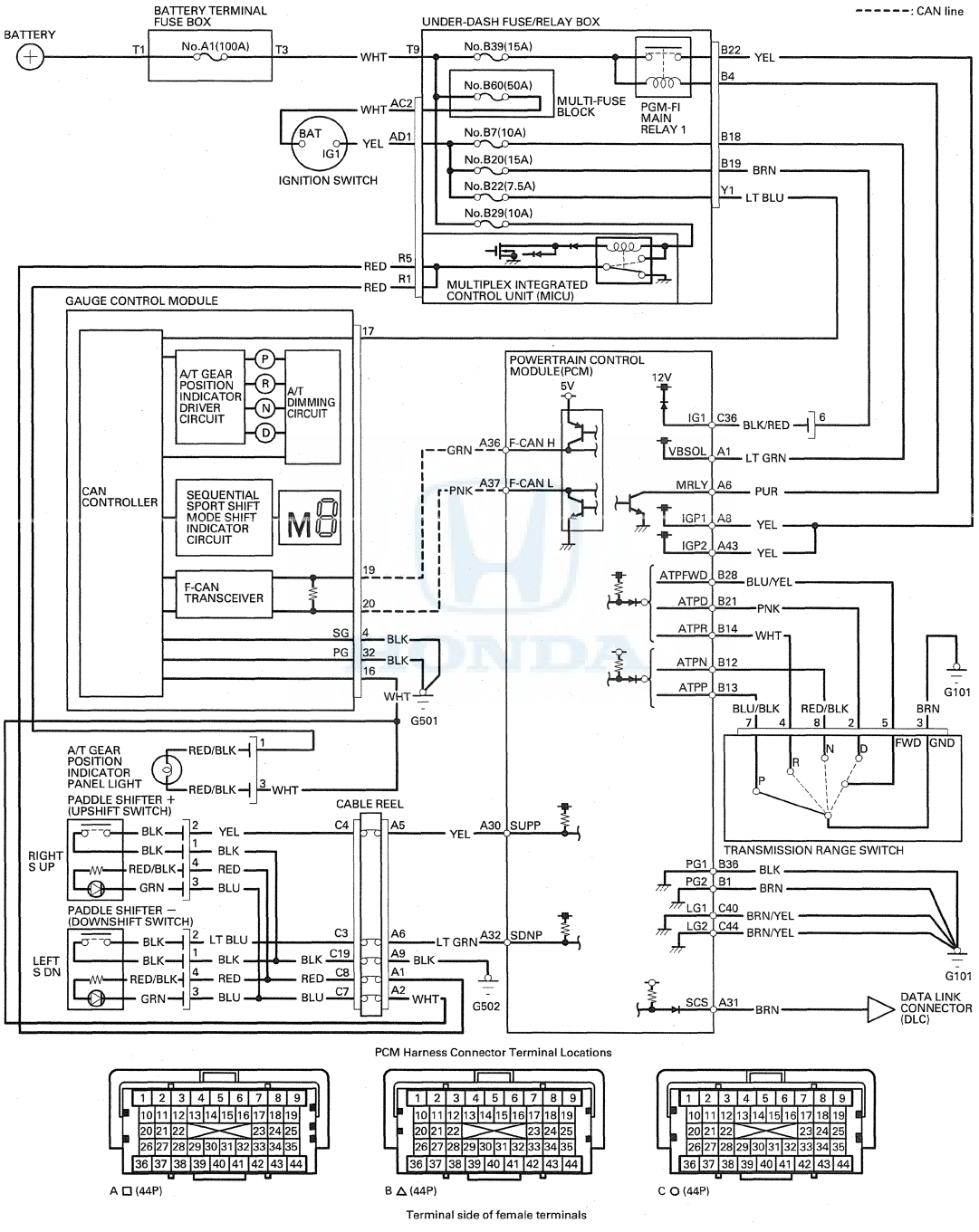
A/T GEAR POSITION
INDICATOR PANEL
Replacement, page 14-202
A/T GEAR POSITION
INDICATOR PANEL LIGHT
Replacement, page 14-206
A/T GEAR POSITION
INDICATOR PANEL LIGHT
HARNESS
Replacement, page 14-204



TRANSMISSION RANGE SWITCH
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A/T Gear Position Indicator

Circuit Diagram



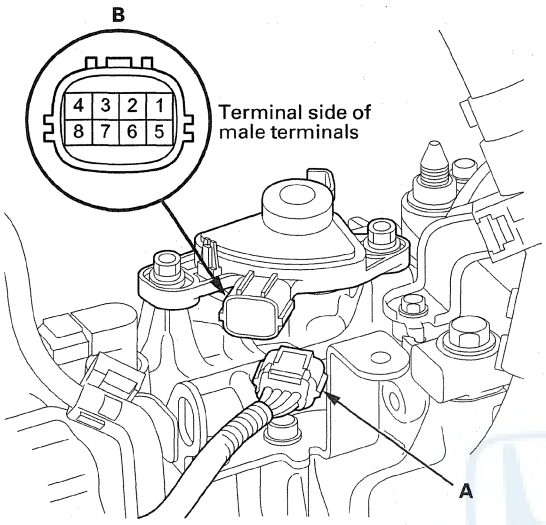
PCM Harness Connector Terminal Locations

A □ (44P) B △ (44P) C ○ (44P)

Terminal side of female terminals

Transmission Range Switch Test

1. Remove the air cleaner (see page 9-3).
2. Disconnect the transmission range switch 8P connector (A).



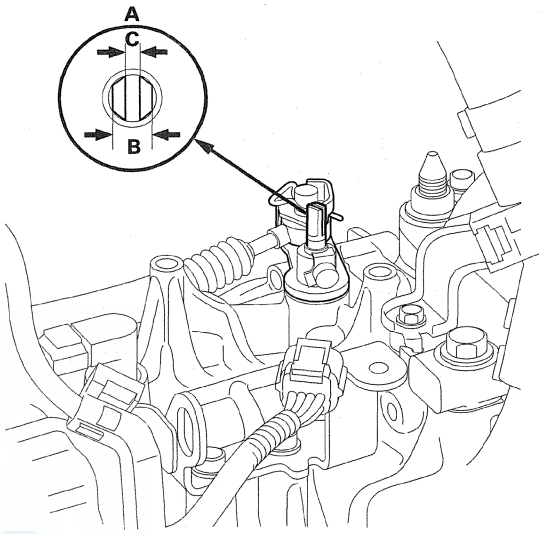
3. Check for continuity between terminals at the transmission range switch 8P connector (B). There should be continuity between the terminals in each switch position as shown in the following table.

Transmission Range Switch 8P Connector

Position/Connector Terminal/Signal Connection								
	1	2	3	4	5	6	7	8
	—	ATPD	GND	ATPR	ATP FWD	—	ATPP	ATPN
P			○				○	
R			○	○				
N			○					○
D		○	○		○			

4. The transmission range switch test is completed if the test results are OK. If there is no continuity between any terminals, go to step 5.
5. Remove the transmission range switch (see page 14-200), and check the end of the selector control shaft (A).

Selector Control Shaft Specifications
Width (B): 6.1—6.2 mm (0.240—0.244 in)
End Gap (C): 1.8—2.0 mm (0.071—0.079 in)

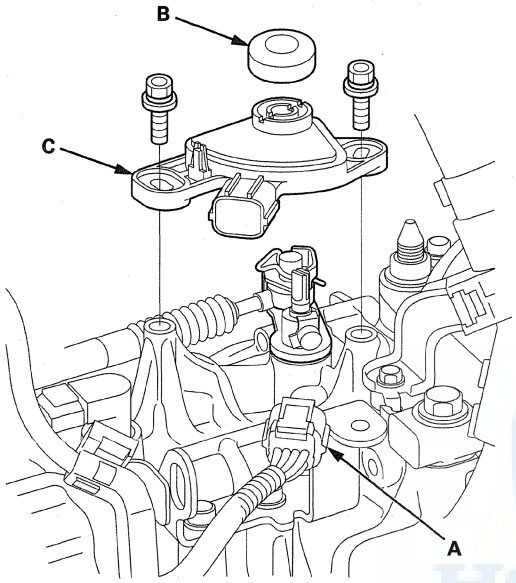


6. If the measurement of the selector control shaft end is within the standard, replace the transmission range switch (see page 14-200). If the measurement is out of the standard, repair the selector control shaft end, then install the transmission range switch (see page 14-200), and recheck the transmission range switch continuity.

A/T Gear Position Indicator

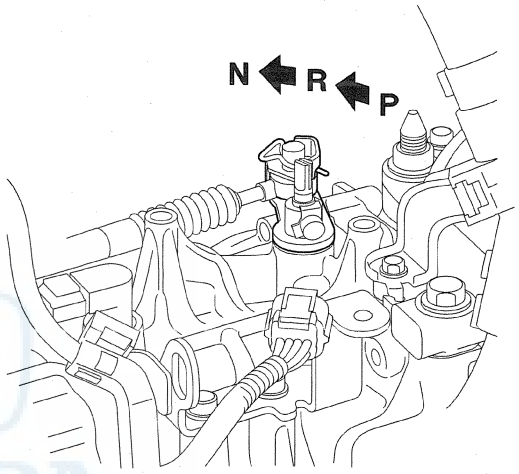
Transmission Range Switch Replacement

1. Apply the parking brake, and move the shift lever to N.
2. Remove the air cleaner (see page 9-3).
3. Disconnect the transmission range switch 8P connector (A), and remove the control shaft cover (B).



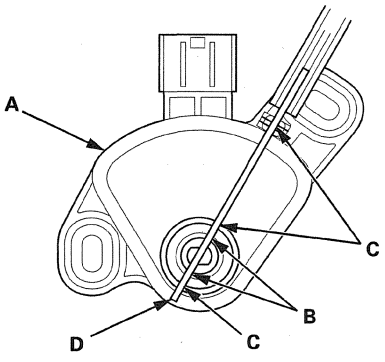
4. Remove the transmission range switch (C).
5. Make sure the selector control shaft is in the N position. If necessary, move the shift lever from P to N.

   NOTE: Do not use the selector control shaft to adjust the shift position. If the selector control shaft tips are squeezed together it will cause a faulty signal or position due to play between the selector control shaft and the transmission range switch.



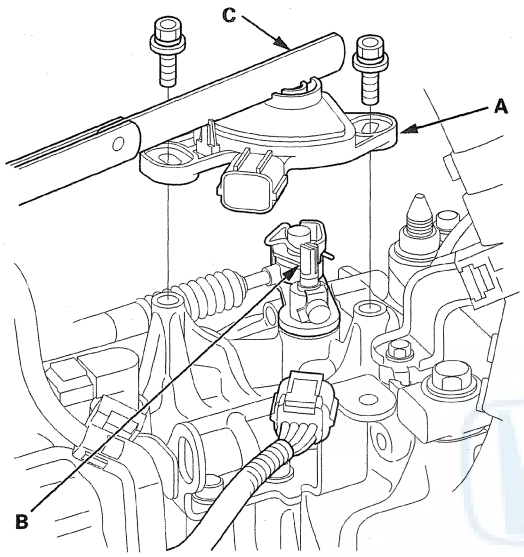
6. Set a new transmission range switch (A) to the N position, align the cutouts (B) on the rotary-frame with the neutral positioning cutouts (C) on the transmission range switch. Then put a 2.0 mm (0.079 in) feeler gauge blade (D) in the cutouts to hold the transmission range switch in the N position.

   NOTE: Be sure to use a 2.0 mm (0.079 in) feeler gauge blade or equivalent to hold the transmission range switch in the N position.

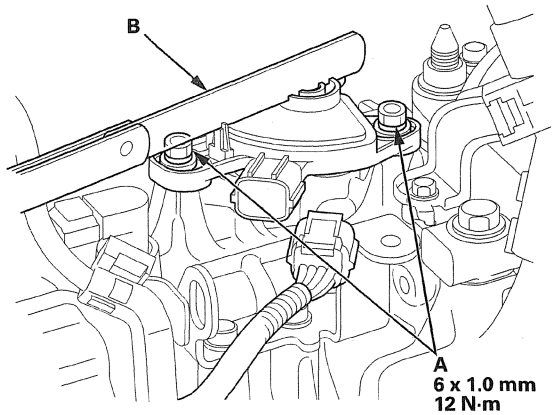


HONDA

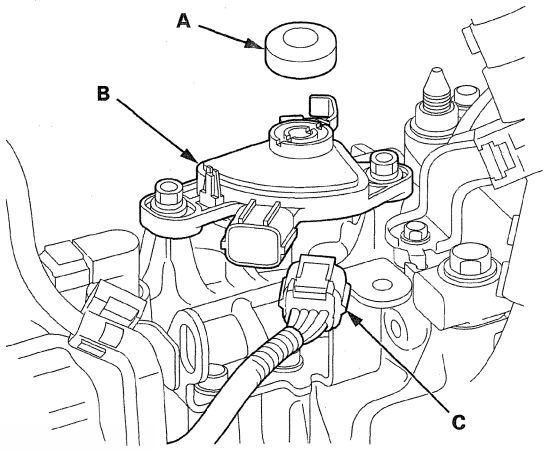
7. Install the transmission range switch (A) gently on the selector control shaft (B) while holding it in the N position with the 2.0 mm (0.079 in) feeler gauge blade (C).



8. Tighten the bolts (A) on the transmission range switch while you continue to hold the N position with the 2.0 mm (0.079 in) feeler gauge blade (B). Do not move the transmission range switch when tightening the bolts. Then remove the 2.0 mm (0.079 in) feeler gauge blade.



9. Install the selector control shaft cover (A) on the transmission range switch (B).

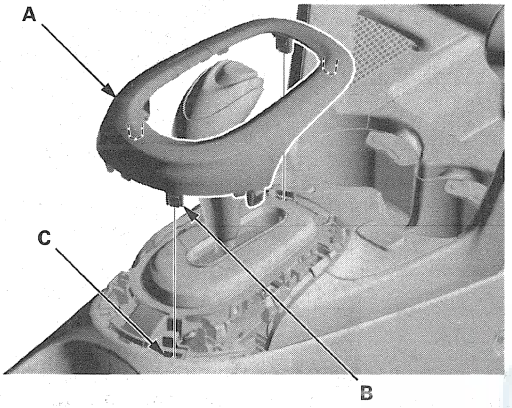


10. Check the connector for rust, dirt, or oil, clean or repair if necessary, then connect the transmission range switch 8P connector (C) securely.
11. Turn the ignition switch to ON (II). Move the shift lever through all positions, and check the transmission range switch synchronization with the A/T gear position indicator.
12. Check that the engine will start with the shift lever in P and N, and will not start in any other shift lever position.
13. Check that the back-up lights come on when the shift lever is in R.
14. Raise the vehicle on a lift, or apply the parking brake, block the rear wheels, and raise the front of the vehicle. Make sure it is securely supported, and allow the front wheels to rotate freely.
15. Start the engine, and check the shift lever operation.
16. Install the air cleaner (see page 9-3).

A/T Gear Position Indicator

A/T Gear Position Indicator Panel Trim Replacement

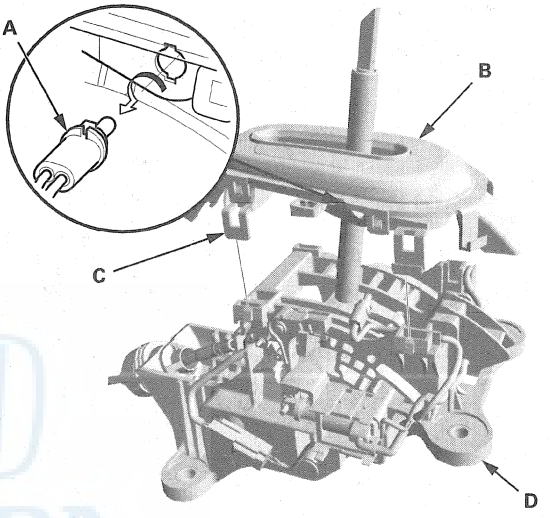
1. Apply the parking brake, and move the shift lever to N.
2. Wrap the end of a thin blade screwdriver with tape, and pry up the A/T gear position indicator panel trim (A) by releasing the six lock clips (B) from the center console.



3. Replace the A/T gear position indicator panel trim, check the lock clips for wear and damage, and replace them if necessary.
4. Install the new A/T gear position indicator panel trim, and push the lock clips into the hooks (C) securely.
5. Shift the shift lever to P.

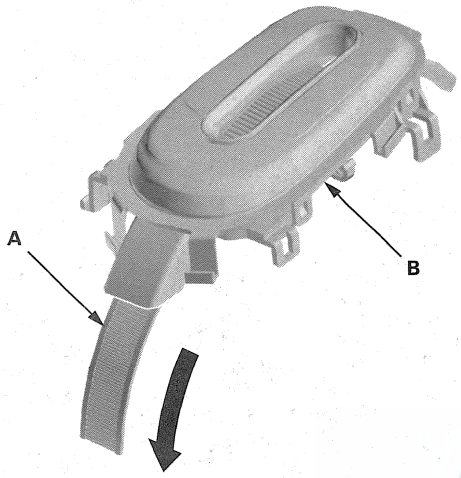
A/T Gear Position Indicator Panel Replacement

1. Remove the center console (see page 20-79).
2. Apply the parking brake, and move the shift lever to N.
3. Remove the shift lever knob (see page 14-185).
4. Remove the A/T gear position indicator panel light socket (A).

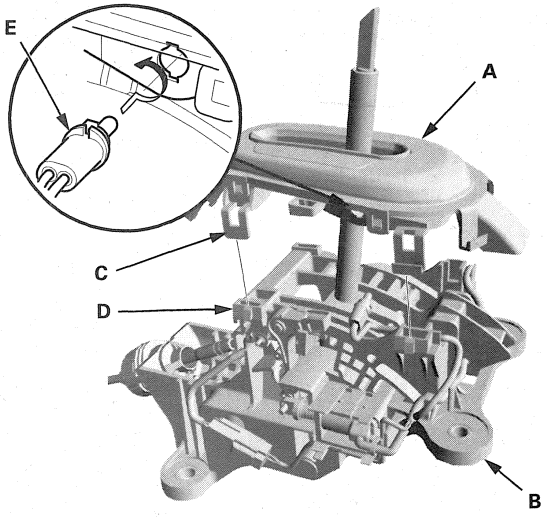


5. Wrap the end of a thin blade screwdriver with tape, and pry up the A/T gear position indicator panel (B) by releasing the four locks (C) from the shift lever bracket base (D).

6. Remove the lever cover (A) from the A/T gear position indicator panel (B).



7. Check the lever cover for wear and damage, and replace it if necessary.
8. Install the lever cover to the new A/T gear position indicator panel.
9. Install the A/T gear position indicator panel (A) to the shift lever bracket base (B), and push the locks (C) to the hooks (D) securely.



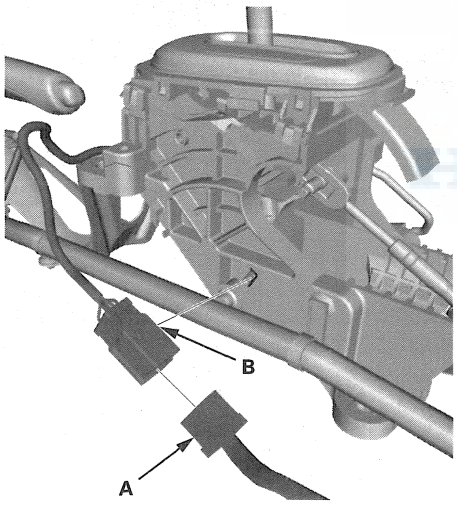
10. Install the A/T gear position indicator panel light socket (E).
11. Install the shift lever knob (see page 14-185).
12. Install the center console (see page 20-79).
13. Shift the shift lever to P.

A/T Gear Position Indicator Panel Light Harness Replacement

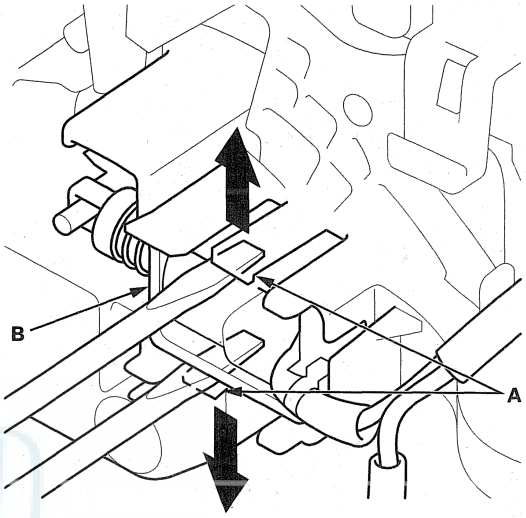
NOTE:

- The A/T gear position indicator panel light harness is contained in the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly.
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

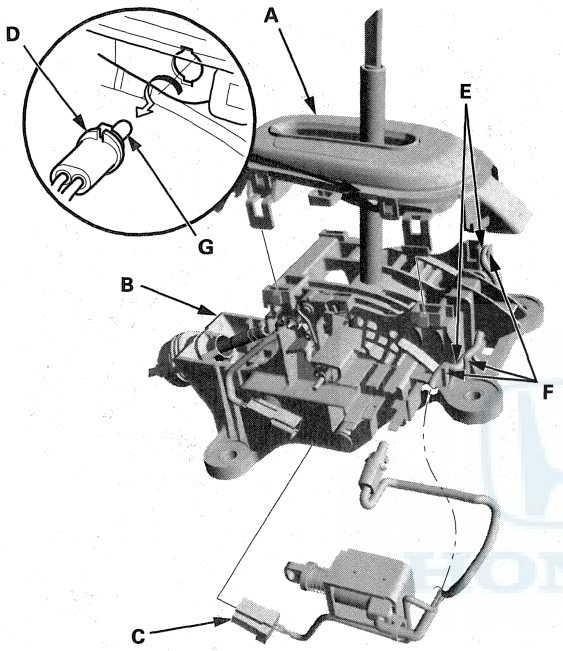
1. Remove the center console (see page 20-79).
2. Apply the parking brake, and move the shift lever to N.
3. Remove the shift knob (see page 14-185).
4. Disconnect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (A), and remove the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector clamp (B) from the shift lever bracket base.



5. Release the lock tabs (A) retaining the shift lock solenoid (B) using a thin blade screwdriver, then remove the shift lock solenoid.

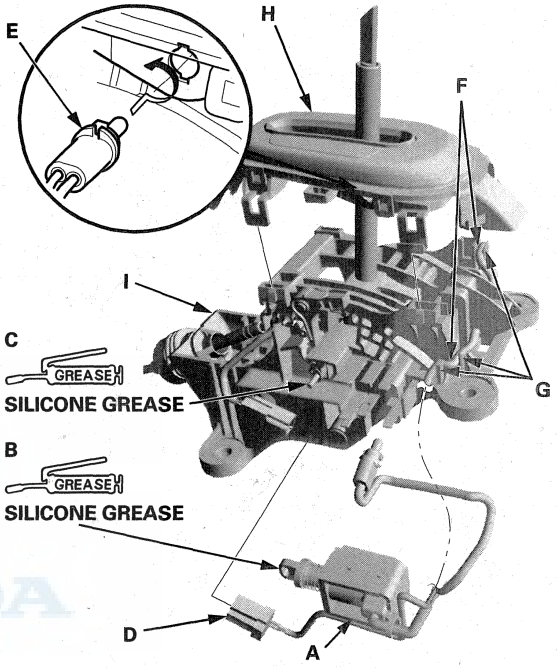


6. Remove the A/T gear position indicator panel (A) from the shift lever bracket base (B) (see page 14-202), then disconnect the park pin switch 2P connector (C), and remove the A/T gear position indicator panel light socket (D).



7. Remove the harness (E) from harness guides (F), then replace the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly. Check the A/T gear position indicator panel light bulb (G), and replace it if necessary.

8. Install the shift lock solenoid (A) by aligning the joint of the shift lock solenoid plunger (B) with the tip of the shift lock stop (C), then push the shift lock solenoid into the shift lever bracket base securely.

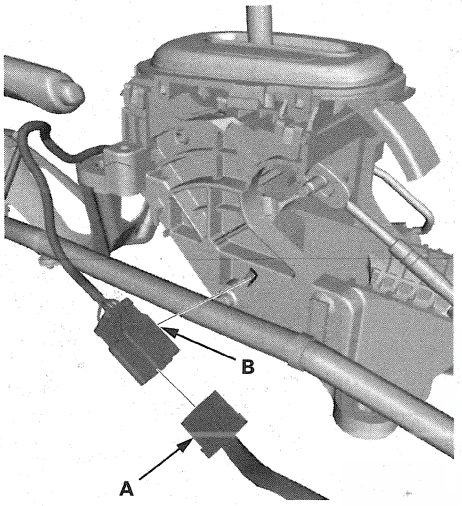


9. Connect the park pin switch 2P connector (D), install the A/T gear position indicator panel light socket (E), and install the harness (F) to the harness guides (G). Then install the A/T gear position indicator panel (H) to the shift lever bracket base (I) (see page 14-202).

(cont'd)

A/T Gear Position Indicator Panel Light Harness Replacement (cont'd)

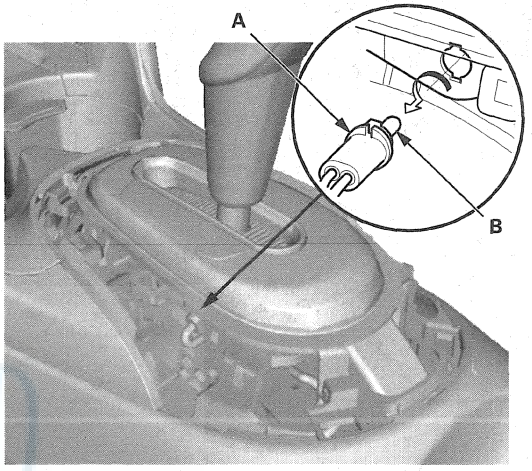
10. Connect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (A), and install the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector clamp (B) to the shift lever bracket base.



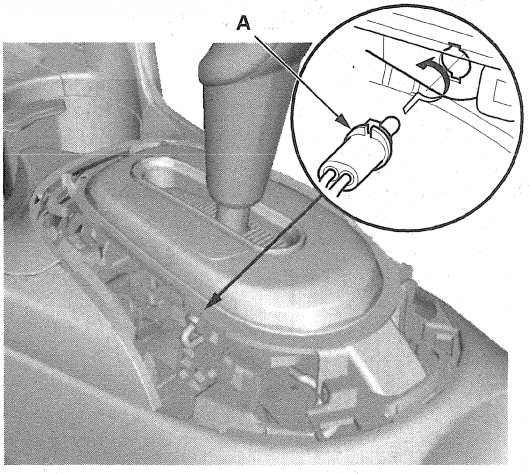
11. Install the shift knob (see page 14-185).
12. Test the shift lock solenoid (see page 14-221).
13. Install the center console (see page 20-79).

A/T Gear Position Indicator Panel Light Replacement

1. Remove the A/T gear position indicator panel trim (see page 14-202).
2. Remove the A/T gear position indicator panel light socket (A), and replace the A/T gear position indicator panel light bulb (B).



3. Install the A/T gear position indicator panel light socket (A).



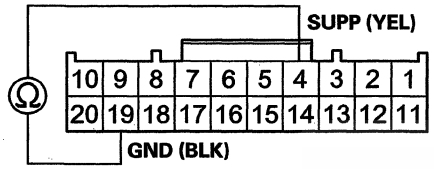
4. Install the A/T gear position indicator panel trim (see page 14-202).

Paddle Shifter + (Upshift Switch) Circuit Troubleshooting

SRS components are located in this area. Review the SRS component (see page 24-11) locations and the precautions and procedures (see page 24-13) before doing repair or service.

1. Remove the steering wheel (see page 17-6).
2. Check for continuity between cable reel connector C (20P) terminals No. 4 and No. 19 when pressing and releasing the paddle shifter + (upshift switch).

CABLE REEL CONNECTOR C (20P)



Wire side of female terminals

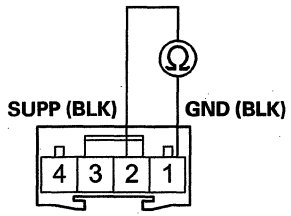
Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES–Go to step 5.

NO–Go to step 3.

3. Disconnect the paddle shifter + (upshift switch) 4P connector.
4. Check for continuity between paddle shifter + (upshift switch) 4P connector terminals No. 1 and No. 2 when pressing and releasing the paddle shifter + (upshift switch).

PADDLE SHIFTER + (UPSHIFT SWITCH) 4P CONNECTOR



Terminal side of male terminals

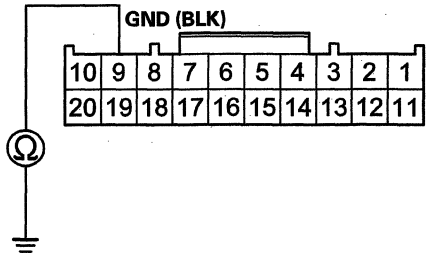
Is there continuity when pressing the paddle shifter + (upshift switch) and no continuity when the paddle shifter + (upshift switch) is released?

YES–Replace the cable reel subharness.■

NO–Replace the paddle shifter + (upshift switch) (see page 14-213).■

5. Remove the cable reel (see page 24-183).
6. Check for continuity between cable reel connector A (20P) terminal No. 9 and body ground.

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

YES–Go to step 7.

NO–Repair an open in the wire between cable reel connector A (20P) terminal No. 9 and body ground (G502), or repair poor body ground (G502).■

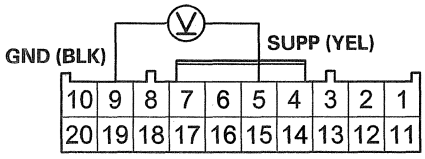
7. Turn the ignition switch to ON (II).

(cont'd)

Paddle Shifter + (Upshift Switch) Circuit Troubleshooting (cont'd)

8. Measure the voltage between cable reel connector A (20P) terminals No. 5 and No. 9.

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

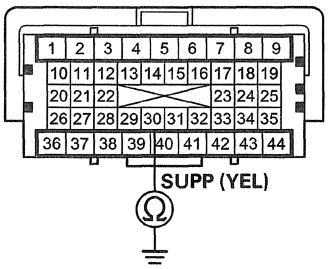
Is there battery voltage?

YES–Replace the cable reel (see page 24-183).■

NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (44P).
12. Check for continuity between PCM connector terminal A30 and body ground.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal A30 and the cable reel connector A (20P).■

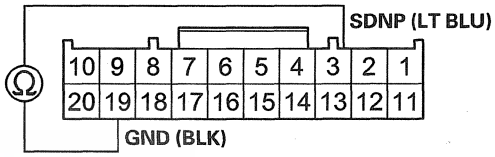
NO–Check for loose or poor connections at PCM connector terminal A30. If the connection is OK, substitute a known-good PCM (see page 11-7) and recheck.■

Paddle Shifter – (Downshift Switch) Circuit Troubleshooting

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repair or service.

1. Remove the steering wheel (see page 17-6).
2. Check for continuity between cable reel connector C (20P) terminals No. 3 and No. 19 when pressing and releasing the paddle shifter — (downshift switch).

CABLE REEL CONNECTOR C (20P)



Wire side of female terminals

Is there continuity when pressing the paddle shifter — (downshift switch) and no continuity when the paddle shifter — (downshift switch) is released?

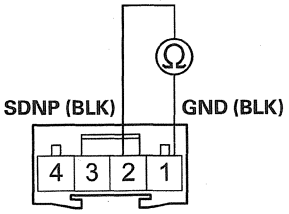
YES–Go to step 5.

NO–Go to step 3.

3. Disconnect the paddle shifter — (downshift switch) 4P connector.

4. Check for continuity between paddle shifter — (downshift switch) 4P connector terminals No. 1 and No. 2 when pressing and releasing the paddle shifter — (downshift switch).

PADDLE SHIFTER — (DOWNSHIFT SWITCH) 4P CONNECTOR



Terminal side of male terminals

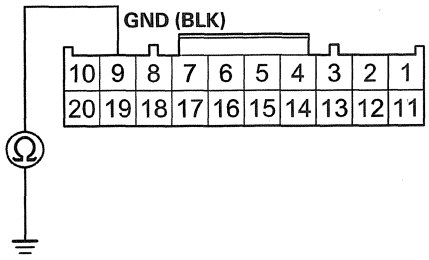
Is there continuity when pressing the paddle shifter — (downshift switch) and no continuity when the paddle shifter — (downshift switch) is released?

YES–Replace the cable reel subharness.■

NO–Replace the paddle shifter — (downshift switch) (see page 14-213).■

5. Remove the cable reel (see page 24-183).
6. Check for continuity between cable reel connector A (20P) terminal No. 9 and body ground.

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

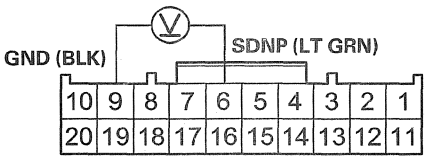
Is there continuity?

YES–Go to step 7.

NO–Repair an open in the wire between cable reel connector A (20P) terminal No. 9 and body ground (G502), or repair poor body ground (G502).■

7. Turn the ignition switch to ON (II).
8. Measure the voltage between cable reel connector A (20P) terminals No. 6 and No. 9.

CABLE REEL CONNECTOR A (20P)



Wire side of female terminals

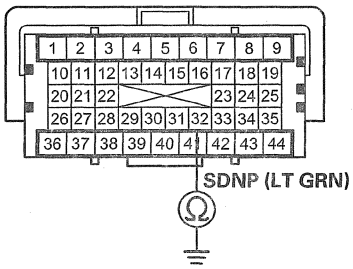
Is there battery voltage?

YES–Replace the cable reel (see page 24-183).■

NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Jump the SCS line with the HDS.
11. Disconnect PCM connector A (44P).
12. Check for continuity between PCM connector terminal A32 and body ground.

PCM CONNECTOR A (44P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between PCM connector terminal A32 and the cable reel connector A (20P).■

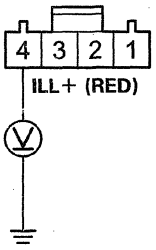
NO–Check for loose or poor connections at PCM connector terminal A32. If the connection is OK, substitute a known-good PCM (see page 11-7) and recheck.■

Paddle Shifter + (Upshift Switch) Illumination Circuit Troubleshooting

SRS components are located in this area. Review the SRS component (see page 24-11) locations and the precautions and procedures (see page 24-13) before doing repair or service.

1. Remove the driver's airbag (see page 24-166).
2. Disconnect the paddle shifter + (upshift switch) 4P connector.
3. Turn the lighting switch ON.
4. Measure the voltage between paddle shifter + (upshift switch) 4P connector terminal No. 4 and body ground.

PADDLE SHIFTER + (UPSHIFT SWITCH) 4P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 8.

NO–Go to step 5.

5. Turn the lighting switch OFF.
6. Check for blown No. B29 (10A) fuse in the under-dash fuse/relay box.

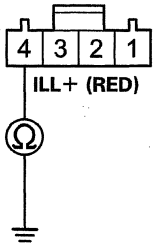
Is the fuse OK?

YES–Repair an open in the wire between paddle shifter + (upshift switch) 4P connector terminal No. 4 and the under-dash fuse/relay box.■

NO–Go to step 7.

7. Check for continuity between paddle shifter + (upshift switch) 4P connector terminal No. 4 and body ground.

PADDLE SHIFTER + (UPSHIFT SWITCH) 4P CONNECTOR



Wire side of female terminals

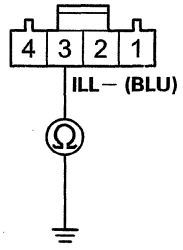
Is there continuity?

YES–Repair a short in the wire between paddle shifter + (upshift switch) 4P connector terminal No. 4 and the under-dash fuse/relay box.■

NO–Go to step 9.

8. Turn the lighting switch OFF.
9. Check for continuity between paddle shifter + (upshift switch) 4P connector terminal No. 3 and body ground.

PADDLE SHIFTER + (UPSHIFT SWITCH) 4P CONNECTOR



Wire side of female terminals

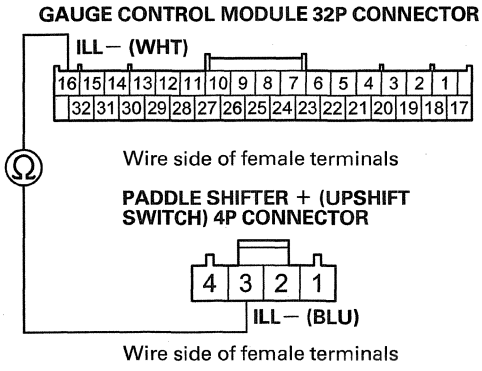
Is there continuity?

YES–Repair a short in the wire between paddle shifter + (upshift switch) 4P connector terminal No. 3 and the gauge control module.■

NO–Go to step 10.

10. Disconnect the gauge control module 32P connector.

11. Check for continuity between paddle shifter + (upshift switch) 4P connector terminal No. 3 and gauge control module 32P connector terminal No. 16.



Is there continuity?

YES–Check the illumination control circuit in the gauge control module self-diagnostic function (see page 22-325). If the test results are OK, replace the paddle shifter + (upshift switch) (see page 14-213).■

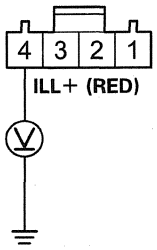
NO–Repair an open in the wire between paddle shifter + (upshift switch) 4P connector terminal No. 3 and the gauge control module.■

Paddle Shifter – (Downshift Switch) Illumination Circuit Troubleshooting

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repair or service.

1. Remove the driver's airbag (see page 24-166).
2. Disconnect the paddle shifter – (downshift switch) 4P connector.
3. Turn the lighting switch ON.
4. Measure the voltage between paddle shifter – (downshift switch) 4P connector terminal No. 4 and body ground.

PADDLE SHIFTER – (DOWNSHIFT SWITCH) 4P CONNECTOR



Is there battery voltage?

YES–Go to step 8.

NO–Go to step 5.

5. Turn the lighting switch OFF.
6. Check for blown No. B29 (10A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES–Repair an open in the wire between paddle shifter – (downshift switch) 4P connector terminal No. 4 and the under-dash fuse/relay box.■

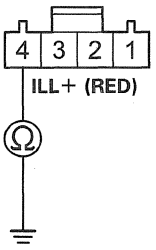
NO–Go to step 7.

(cont'd)

Paddle Shifter – (Downshift Switch) Illumination Circuit Troubleshooting (cont'd)

7. Check for continuity between paddle shifter — (downshift switch) 4P connector terminal No. 4 and body ground.

PADDLE SHIFTER — (DOWNSHIFT SWITCH) 4P CONNECTOR



Wire side of female terminals

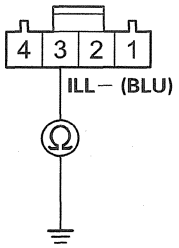
Is there continuity?

YES–Repair a short in the wire between paddle shifter — (downshift switch) 4P connector terminal No. 4 and the under-dash fuse/relay box.■

NO–Go to step 9.

8. Turn the lighting switch OFF.
9. Check for continuity between paddle shifter — (downshift switch) 4P connector terminal No. 3 and body ground.

PADDLE SHIFTER — (DOWNSHIFT SWITCH) 4P CONNECTOR



Wire side of female terminals

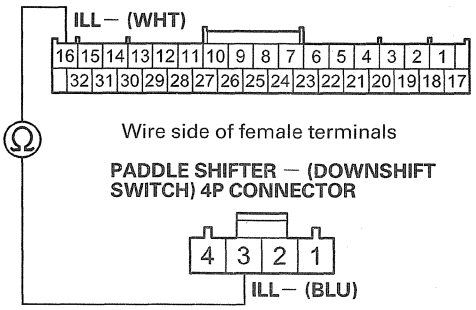
Is there continuity?

YES–Repair a short in the wire between paddle shifter — (downshift switch) 4P connector terminal No. 3 and the gauge control module.■

NO–Go to step 10.

10. Disconnect the gauge control module 32P connector.
11. Check for continuity between paddle shifter — (downshift switch) 4P connector terminal No. 3 and gauge control module 32P connector terminal No. 16.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there continuity?

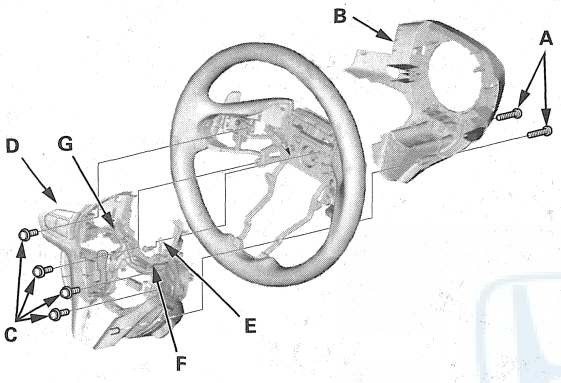
YES–Check the illumination control circuit in the gauge control module self-diagnostic function (see page 22-325). If the test results are OK, replace the paddle shifter — (downshift switch) (see page 14-213).■

NO–Repair an open in the wire between paddle shifter — (downshift switch) 4P connector terminal No. 3 and the gauge control module.■

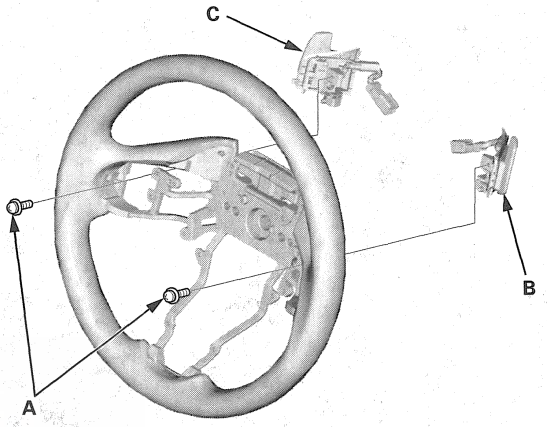
Paddle Shifter + (Upshift Switch) or Paddle Shifter – (Downshift Switch) Replacement

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

1. Remove the steering wheel (see page 17-6).
2. Remove the two screws (A) securing the steering wheel rear cover (B), then remove the steering wheel rear cover.



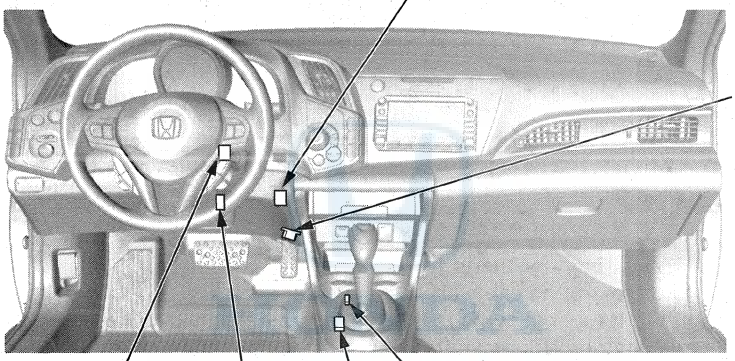
3. Remove the four screws (C) securing the steering wheel trim assembly (D), and the ground cable (E). And remove the paddle shifter + (upshift switch) 4P connector (F) and the paddle shifter – (downshift switch) 4P connector (G) from its holder. Disconnect the paddle shifter + (upshift switch) 4P connector and the paddle shifter – (downshift switch) 4P connector, and then remove the steering wheel trim assembly.
4. Remove the screws (A) securing the paddle shifter + (upshift switch) (B) or paddle shifter – (downshift switch) (C), then remove the paddle shifter + (upshift switch) or paddle shifter – (downshift switch), and replace it with a new one.



5. Install the new paddle shifter + (upshift switch) or paddle shifter – (downshift switch) on the steering wheel, and secure it with the screws.
6. Install the steering wheel trim assembly, and secure it with the four screws. Install the ground cable, connect the paddle shifter + (upshift switch) 4P connector and the paddle shifter – (downshift switch) 4P connector, then install the paddle shifter + (upshift switch) 4P connector and the paddle shifter – (downshift switch) 4P connector into its holder.
7. Install the steering wheel rear cover with the two screws.
8. Install the steering wheel (see page 17-8).

A/T Interlock System

Component Location Index



ACCELERATOR PEDAL POSITION (APP) SENSOR
Sensor Signal Inspection, page 11-251

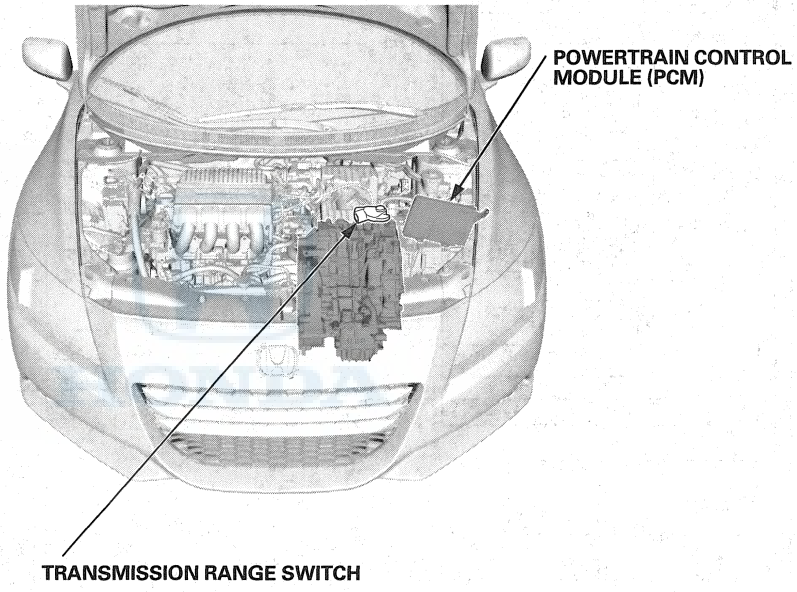
DATA LINK CONNECTOR (DLC)

PARK PIN SWITCH
Key Interlock System Circuit Troubleshooting, page 22-96
Test, page 22-99
Replacement, page 14-225

SHIFT LOCK SOLENOID
Shift Lock System Circuit Troubleshooting, page 14-217
Test, page 14-221
Replacement, page 14-221

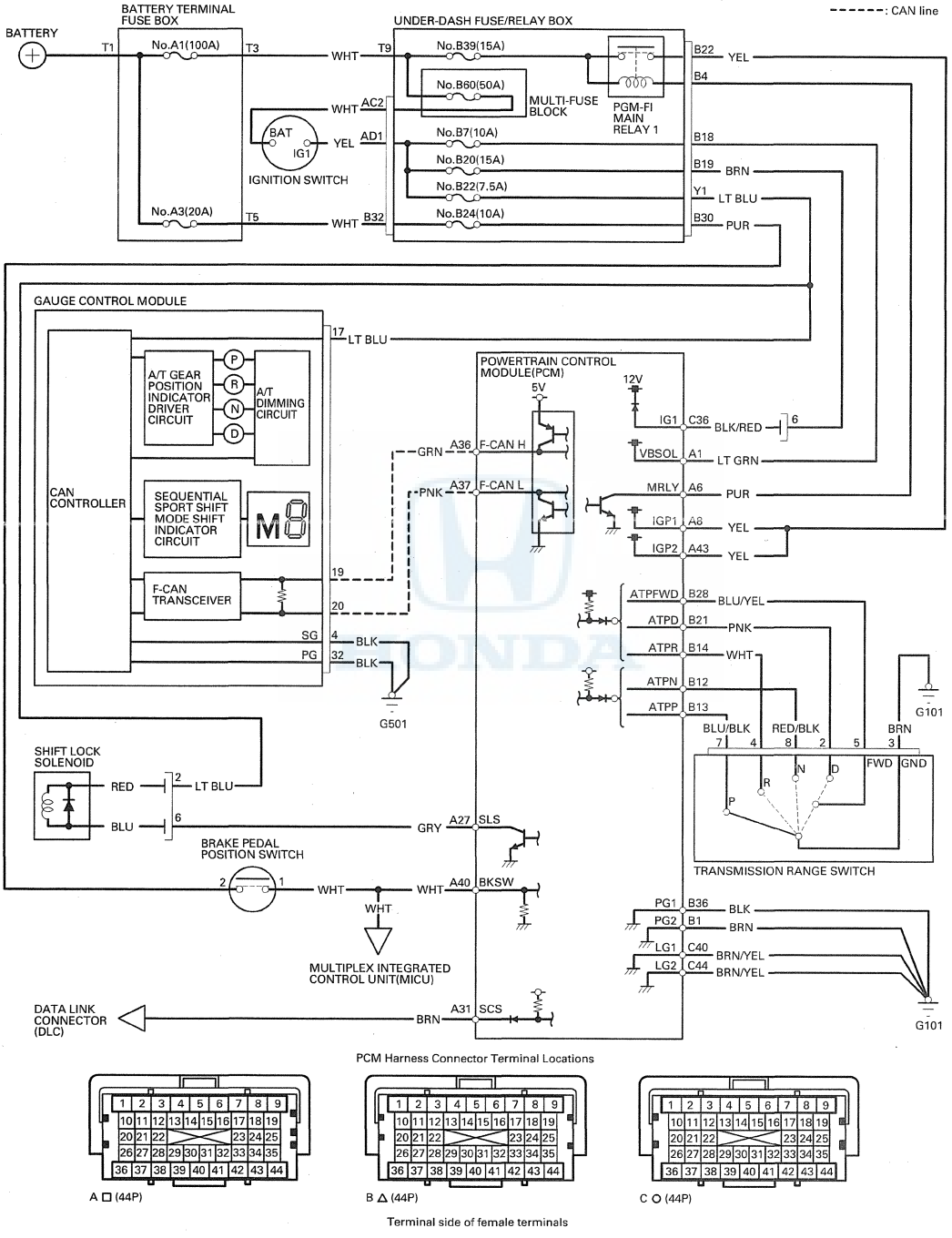
BRAKE PEDAL POSITION SWITCH
Signal Circuit Troubleshooting, page 11-272

STEERING LOCK ASSEMBLY KEY INTERLOCK SOLENOID
Key Interlock System Circuit Troubleshooting, page 22-96


POWERTRAIN CONTROL MODULE (PCM)
TRANSMISSION RANGE SWITCH

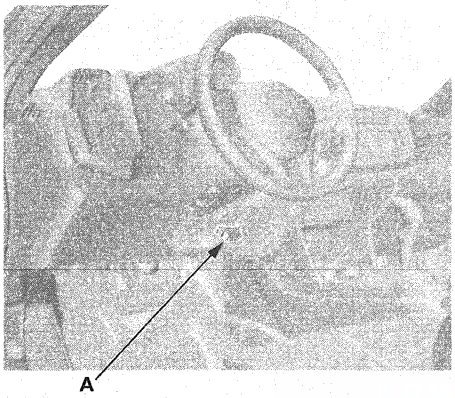
A/T Interlock System

Circuit Diagram



Shift Lock System Circuit Troubleshooting

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Check the Accelerator Pedal Position (APP) Sensor in the Data List with the HDS. Do not press the accelerator.

   Is the APP Sensor opening 5 % or above, or is the APP Sensor A voltage 1.16 V or above?

   YES–Check the APP sensor (see page 11-251).■

   NO–Go to step 5.
5. Check the Brake Switch signal with the HDS in the A/T Data List while pressing the brake pedal, and when the brake pedal is released.

   Does the brake pedal position switch work properly?

   YES–Go to step 6.

   NO–Troubleshoot the brake pedal position switch signal circuit (see page 11-272).■
6. Check the A/T P Switch signal with the HDS in the A/T Data List. The shift lever must be in P.

   Is the A/T P Switch ON?

   YES–Go to step 7.

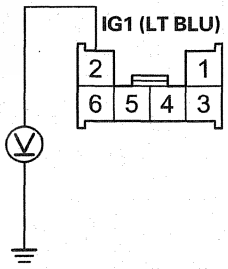
   NO–Go to step 23.
7. Select the Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.

   Does the shift lock solenoid work properly?

   YES–Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see page 11-209).■

   NO–Go to step 8.
8. Turn the ignition switch to LOCK (0).
9. Remove the center console (see page 20-79).
10. Disconnect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector.
11. Turn the ignition switch to ON (II).
12. Measure the voltage between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 2 and body ground.

PARK PIN SWITCH/SHIFT LOCK SOLENOID/ A/T GEAR POSITION INDICATOR PANEL LIGHT 6P CONNECTOR



Wire side of female terminals

   Is there battery voltage?

   YES–Go to step 16.

   NO–Go to step 13.
13. Check for blown No. B22 (7.5A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

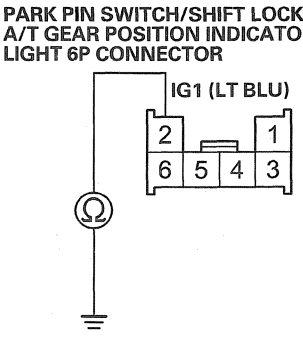
   YES–Repair an open in the wire between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 2 and the under-dash fuse/relay box.■

   NO–Go to step 14.
14. Turn the ignition switch to LOCK (0).

(cont'd)

Shift Lock System Circuit Troubleshooting (cont'd)

15. Check for continuity between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 2 and body ground.



Wire side of female terminals

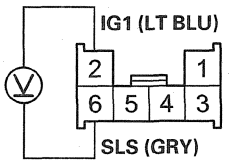
Is there continuity?

YES–Repair a short in the wire between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 2 and the under-dash fuse/relay box.■

NO–Check for a short in the wire between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 2 and the shift lock solenoid, and repair it if necessary. If the wire is OK, replace the shift lock solenoid (see page 14-221).■

16. Shift the shift lever to P, and press the brake pedal. Do not press the accelerator.

17. Measure the voltage between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminals No. 2 and No. 6 while pressing the brake pedal.



Wire side of female terminals

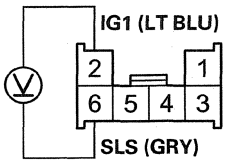
Is there battery voltage?

YES–Go to step 18.

NO–Go to step 19.

18. Release the brake pedal, and measure the voltage between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminals No. 2 and No. 6. The shift lever must be in P.

PARK PIN SWITCH/SHIFT LOCK SOLENOID/ A/T GEAR POSITION INDICATOR PANEL LIGHT 6P CONNECTOR



Wire side of female terminals

Is there battery voltage?

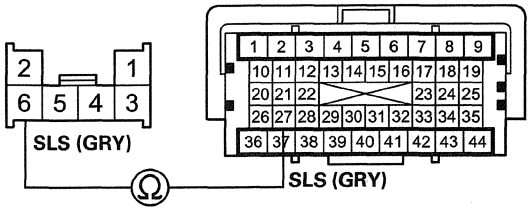
YES–Repair a short in the wire between park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 6 and the PCM connector.■

NO–Check for a short or an open in the wire between the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector and the shift lock mechanism, and repair them if necessary. If they are OK, replace the shift lock solenoid (see page 14-221).■

19. Turn the ignition switch to LOCK (0).
20. Jump the SCS line with the HDS.
21. Disconnect PCM connector A (44P).
22. Check for continuity between PCM connector terminal A27 and park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector terminal No. 6.

PARK PIN SWITCH/ SHIFT LOCK SOLENOID/ A/T GEAR POSITION INDICATOR PANEL LIGHT 6P CONNECTOR

PCM CONNECTOR A (44P)



Wire side of female terminals

Terminal side of female terminals

Is there continuity?

YES–Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see page 11-209).■

NO–Repair an open in the wire between PCM connector terminal A27 and the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector.■

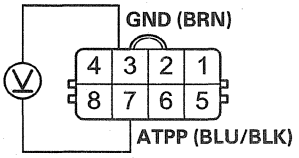
23. Turn the ignition switch to LOCK (0).
24. Disconnect the transmission range switch 8P connector.
25. Turn the ignition switch to ON (II).

(cont'd)

Shift Lock System Circuit Troubleshooting (cont'd)

26. Measure the voltage between transmission range switch 8P connector terminals No. 3 and No. 7.

TRANSMISSION RANGE SWITCH 8P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 27.

NO–Go to step 28.

27. Test the transmission range switch (see page 14-199).

Is the transmission range switch OK?

YES–Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see page 11-209).■

NO–Replace the transmission range switch (see page 14-200).■

28. Turn the ignition switch to LOCK (0).

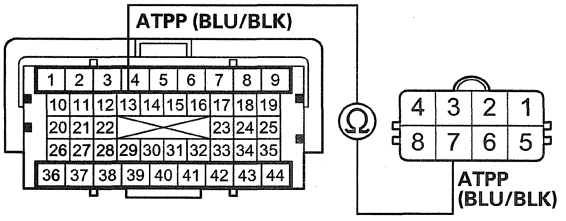
29. Jump the SCS line with the HDS.

30. Disconnect PCM connector B (44P).

31. Check for continuity between PCM connector terminal B13 and transmission range switch 8P connector terminal No. 7.

PCM CONNECTOR B (44P)

TRANSMISSION RANGE SWITCH 8P CONNECTOR



Terminal side of female terminals

Wire side of female terminals

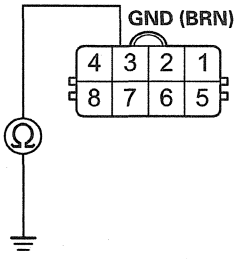
Is there continuity?

YES–Go to step 32.

NO–Repair an open in the wire between PCM connector terminal B13 and the transmission range switch 8P connector.■

32. Check for continuity between transmission range switch 8P connector terminal No. 3 and body ground.

TRANSMISSION RANGE SWITCH 8P CONNECTOR



Wire side of female terminals

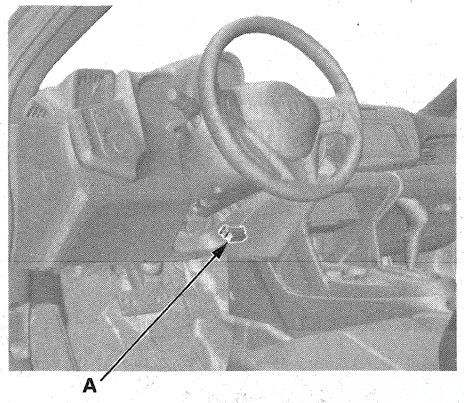
Is there continuity?

YES–Update the PCM if it does not have the latest software (see page 11-207), or substitute a known-good PCM (see page 11-7), and recheck. If the symptom goes away with a known-good PCM, replace the original PCM (see page 11-209).■

NO–Repair an open in the wire between transmission range switch 8P connector terminal No. 3 and body ground (G101), or repair poor body ground (G101).■

Shift Lock Solenoid Test

1. Connect the HDS to the DLC (A) located under the driver's side of the dashboard.



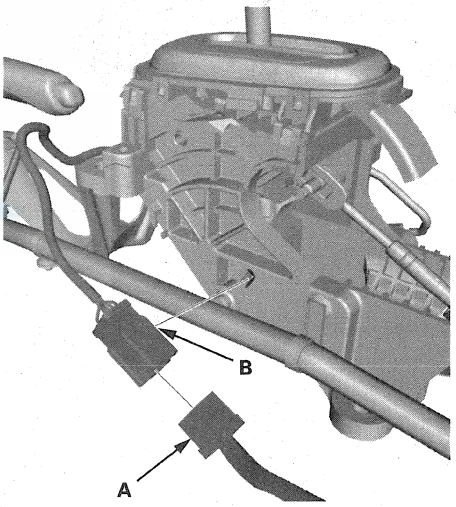
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Select the Shift Lock Solenoid Test in the Miscellaneous Test Menu, and check that the shift lock solenoid operates with the HDS.
5. Make sure that the shift lever can be moved out of P when Shift Lock Solenoid : ON. Move the shift lever back in P, and make sure it locks with Shift Lock Solenoid : OFF.
6. Make sure that the shift lock releases when the shift lock release is pushed, and make sure it locks when the shift lock release is released.
7. If shift lock solenoid does not work properly, troubleshoot shift lock system (see page 14-217).

Shift Lock Solenoid Replacement

NOTE:

- The shift lock solenoid is contained in the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly.
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

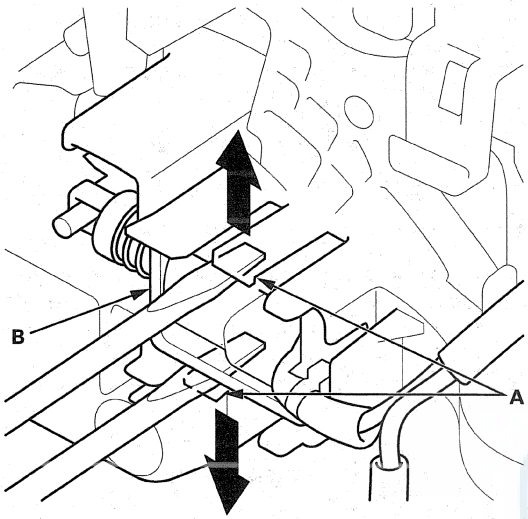
1. Remove the center console (see page 20-79).
2. Apply the parking brake, and move the shift lever to N.
3. Remove the shift knob (see page 14-185).
4. Disconnect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (A), and remove the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector clamp (B) from the shift lever bracket base.



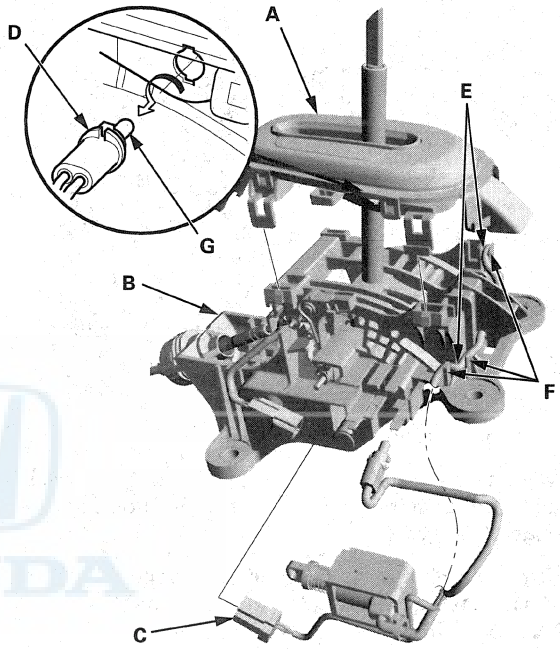
(cont'd)

Shift Lock Solenoid Replacement (cont'd)

5. Release the lock tabs (A) retaining the shift lock solenoid (B) using a thin blade screwdriver, then remove the shift lock solenoid.

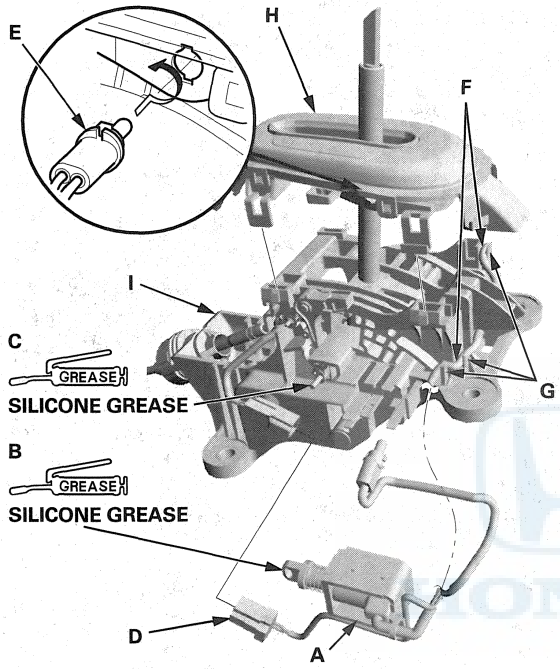


6. Remove the A/T gear position indicator panel (A) from the shift lever bracket base (B) (see page 14-202), then disconnect the park pin switch 2P connector (C), and remove the A/T gear position indicator panel light socket (D).



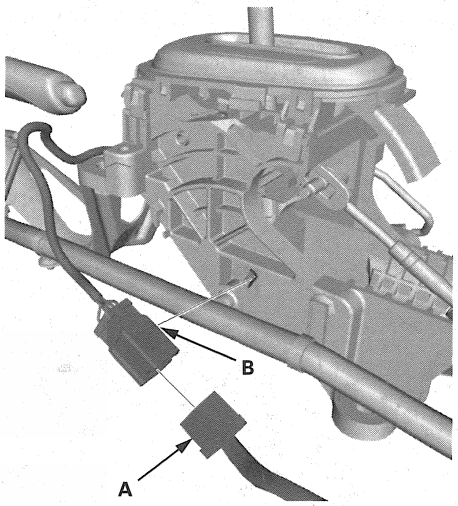
7. Remove the harness (E) from harness guides (F), then replace the park pin switch harness/shift lock solenoid/A/T gear position indicator panel light assembly. Check the A/T gear position indicator panel light bulb (G), and replace it if necessary.

8. Install the shift lock solenoid (A) by aligning the joint of the shift lock solenoid plunger (B) with the tip of the shift lock stop (C), then push the shift lock solenoid into the shift lever bracket base securely.



9. Connect the park pin switch 2P connector (D), install the A/T gear position indicator panel light socket (E), and install the harness (F) to the harness guides (G). Then install the A/T gear position indicator panel (H) to the shift lever bracket base (I) (see page 14-202).

10. Connect the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector (A), and install the park pin switch/shift lock solenoid/A/T gear position indicator panel light 6P connector clamp (B) to the shift lever bracket base.

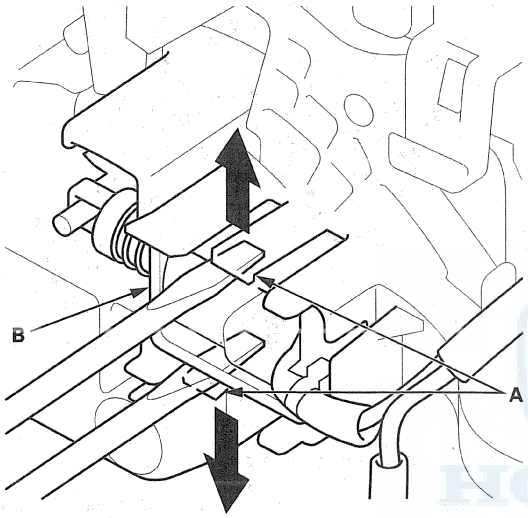


11. Install the shift knob (see page 14-185).
12. Test the shift lock solenoid (see page 14-221).
13. Install the center console (see page 20-79).

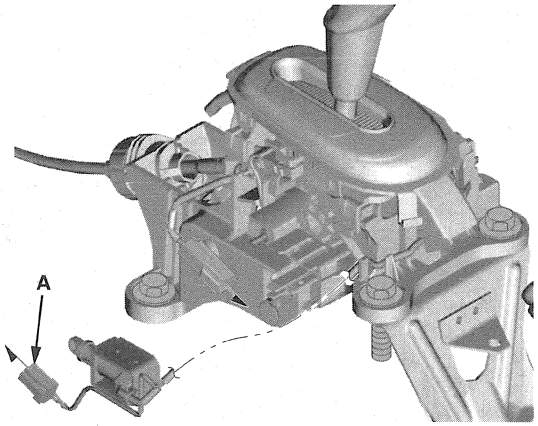
Shift Lock Stop/Shift Lock Stop Cushion Replacement

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

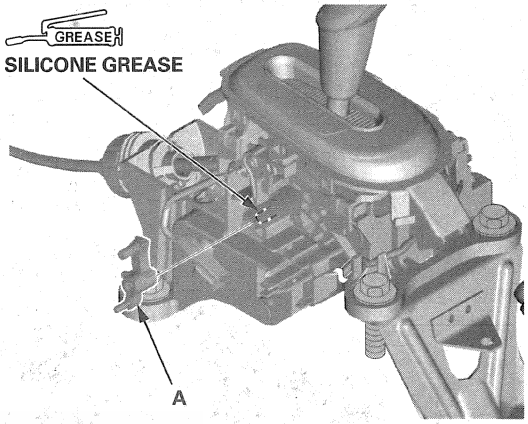
1. Remove the center console (see page 20-79).
2. Release the lock tabs (A) retaining the shift lock solenoid (B) using thin blade screwdriver, then remove the shift lock solenoid.



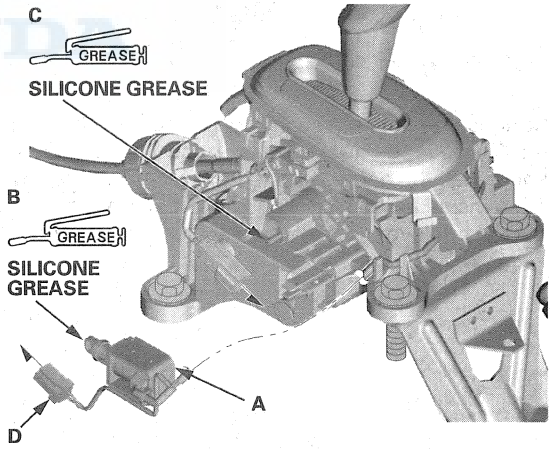
3. Disconnect the park pin switch 2P connector (A).



4. Remove the shift lock stop/stop cushion (A), and replace them as an assembly.



5. Install the shift lock solenoid (A) by aligning the joint of the shift lock solenoid plunger (B) with the tip of the shift lock stop (C), then push the shift lock solenoid into the shift lever bracket base securely.

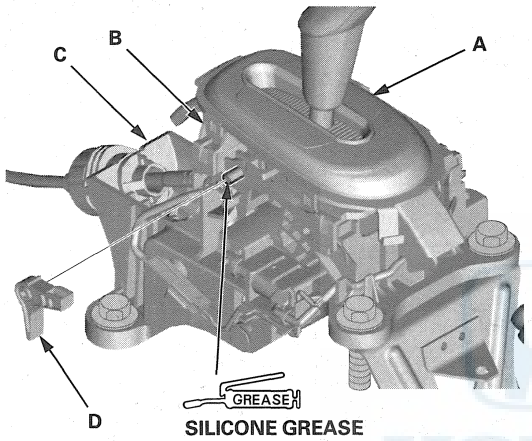


6. Connect the park pin switch 2P connector (D).
7. Install the center console (see page 20-79).

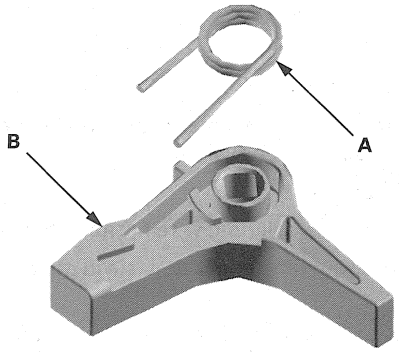
Shift Lock Release/Release Spring Replacement

NOTE: Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

1. Remove the center console (see page 20-79).
2. Wrap the end of a thin blade screwdriver with tape, and pry up the A/T gear position indicator panel (A) by releasing the four locks (B) from the shift lever bracket base (C), and move the indicator panel up.



3. Remove the shift lock release (D).
4. Remove the release spring (A) from the shift lock release (B), and replace the shift lock release or the release spring.



5. Install the A/T gear position indicator panel on the shift lever bracket base.
6. Install the center console (see page 20-79).

Park Pin Switch Replacement

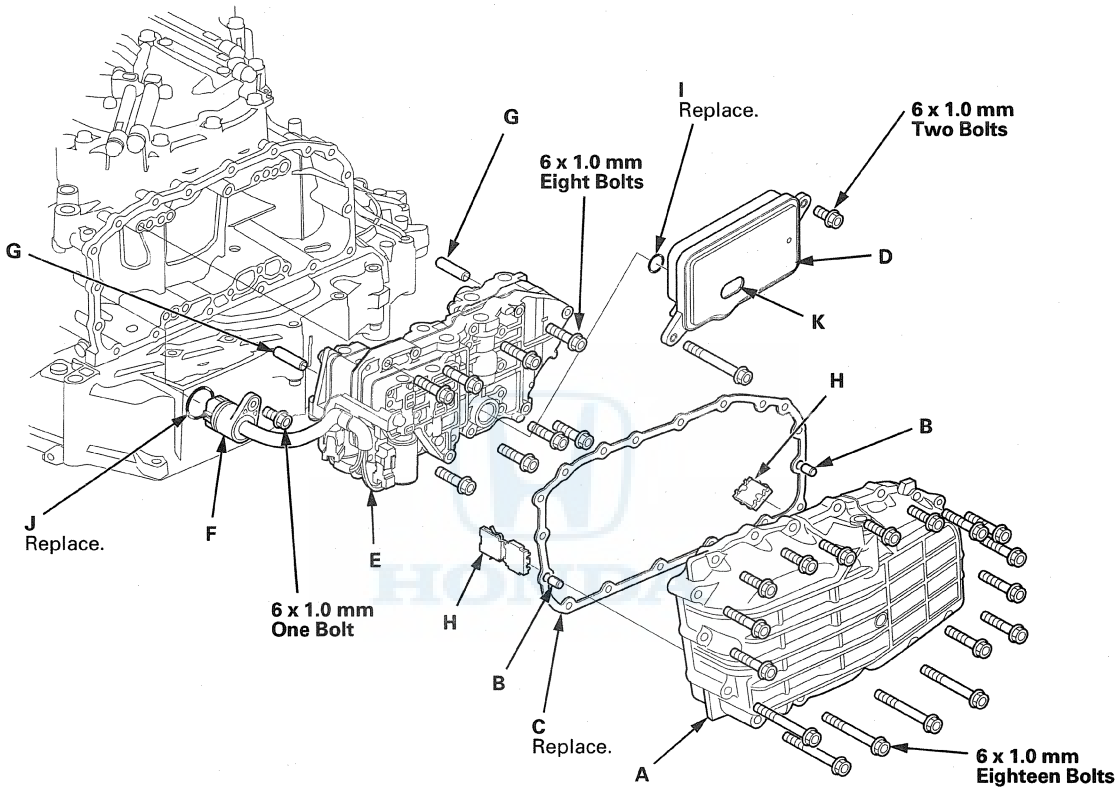
NOTE: The park pin switch is contained in the shift lever bracket base, and not available separately from the shift lever bracket base.

1. Replace the shift lever bracket base (see page 14-185).

Transmission Disassembly

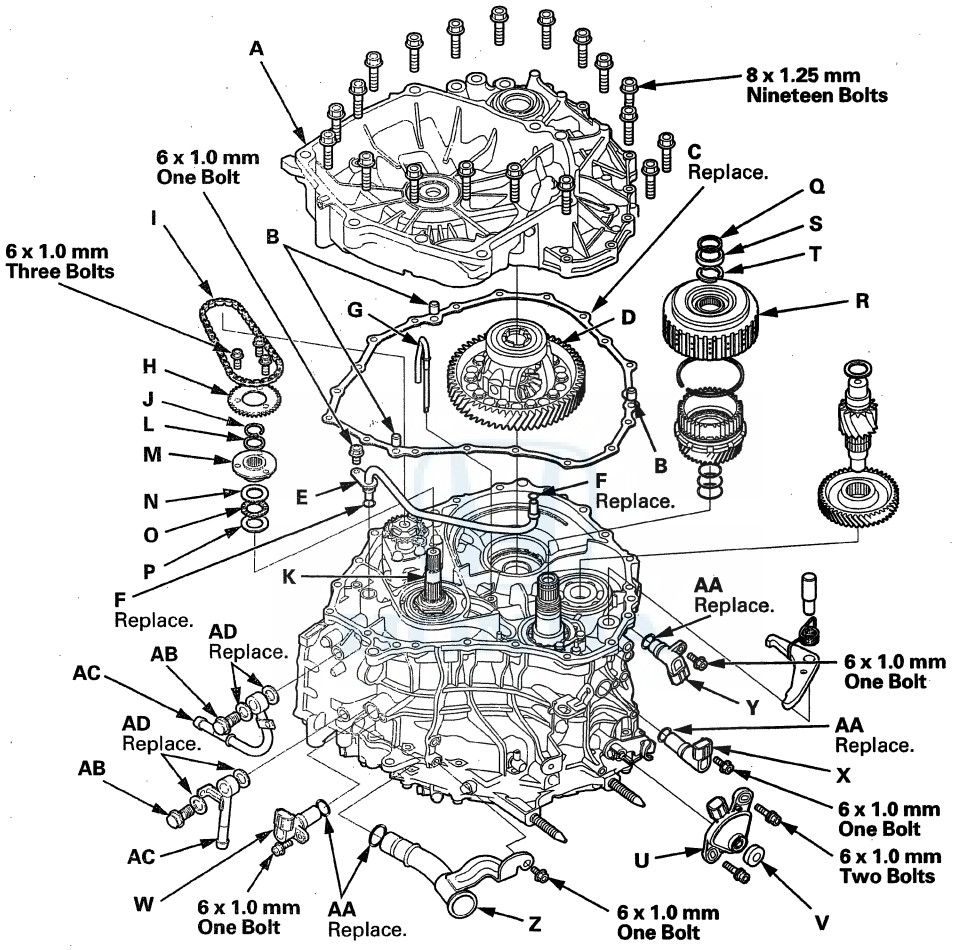
Special Tools Required
- Start Clutch Remover 07TAE-P4V0120
- Reverse Brake Spring Compressor 07TAE-P4V0110

1. Remove the CVTF pan (A) (eighteen bolts), the two dowel pins (B), and the gasket (C).



2. Remove the CVTF strainer (D) (two bolts).
3. Remove the eight bolts securing the lower valve body (E), and hold the lower valve body.
4. Remove the bolt securing the solenoid wire harness 7P connector (F), then remove the lower valve body, the two CVTF pipes (G), and the solenoid wire harness 7P connector from the transmission housing.
5. Remove the CVTF magnets (H), and clean and reinstall them in the CVTF pan.
6. Remove the O-ring (I) from the CVTF strainer, and remove the O-ring (J) from the solenoid wire harness 7P connector.
7. Clean the inlet opening (K) of the CVTF strainer thoroughly with compressed air, then check that it is in good condition and that the inlet opening is not clogged.
8. Test the CVTF strainer by pouring clean CVTF through the inlet opening, and replace it if it is clogged or damaged.

9. Turn the transmission end cover down.
10. Remove the flywheel housing (A) (nineteen bolts), the three dowel pins (B), and the gasket (C).

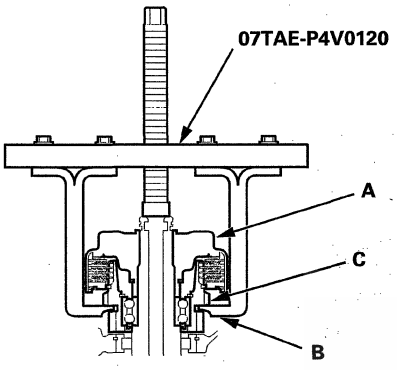


11. Remove the differential assembly (D).
12. Remove the CVTF passage pipe (E) (one bolt), the O-rings (F), and the lubrication pipe (G).
13. Remove the three bolts securing the CVTF pump drive sprocket (H), then remove the CVTF pump drive sprocket and the CVTF pump drive chain (I).
14. Remove the snap ring (J) from the input shaft (K), then remove the thrust shim (L), the CVTF pump drive sprocket hub (M), the thrust washer (N), the thrust needle bearing (O), and the thrust washer (P) from the input shaft.
15. Remove the snap ring (Q) securing the start clutch (R), then remove the cotter retainer (S) and the cotters (T).
16. Remove the transmission range switch (U) (two bolts) with the control shaft cover (V).
17. Remove the CVT input shaft (drive pulley) speed sensor (W), the CVT output shaft (driven pulley) speed sensor (X), the vehicle speed sensor (Y), and the dipstick tube (Z) (each one bolt), and remove the O-rings (AA).
18. Remove the line bolts (AB) securing the CVTF cooler lines (AC), then remove the CVTF cooler lines and the sealing washers (AD).

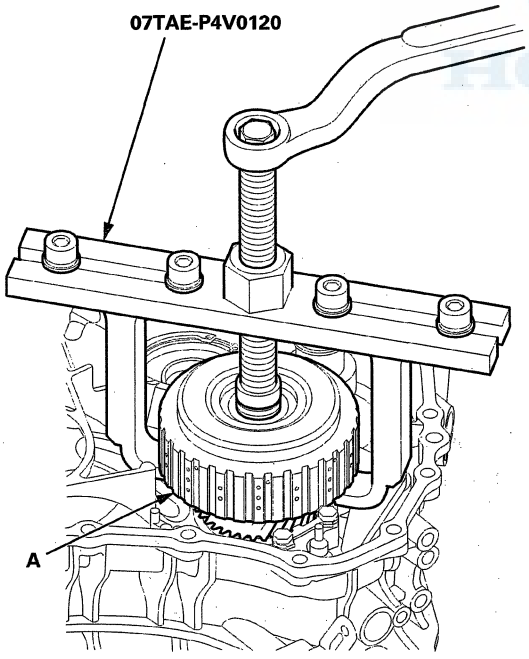
(cont'd)

Transmission Disassembly (cont'd)

19. Set the start clutch remover on the start clutch (A), and attach the pawl (B) of the start clutch remover to the park gear (C) securely. Do not place the pawl of the start clutch remover on the start clutch guide. If the pawl contacts the start clutch guide, the clutch guide may be damaged. Be sure not to allow dust and other foreign particles to enter the driven pulley shaft.



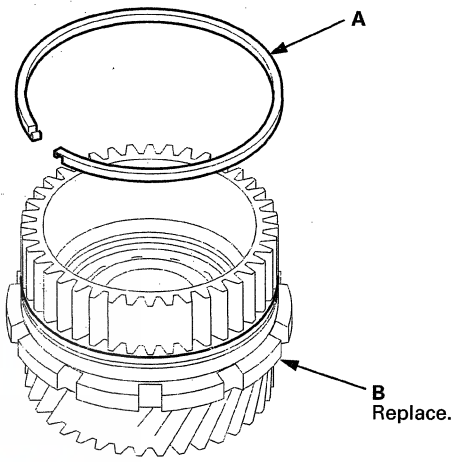
20. Remove the start clutch (A) from the driven pulley shaft.



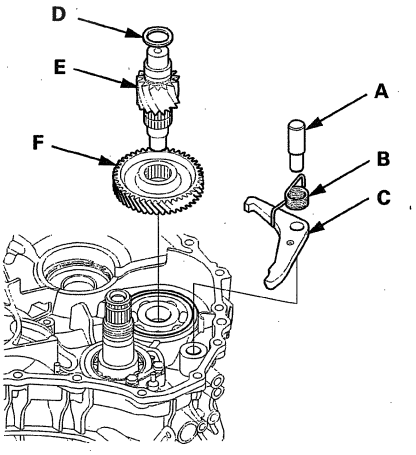
21. Remove the secondary drive/park gear from the start clutch.

22. Remove the sealing ring (A) from the secondary drive/park gear (B), check it for rust, dirt, wear, or damage, and clean or replace it if necessary; it will be reinstalled on a new secondary drive/park gear when assembling the transmission.

    NOTE: The secondary drive/park gear must be replaced when disassembling the transmission.



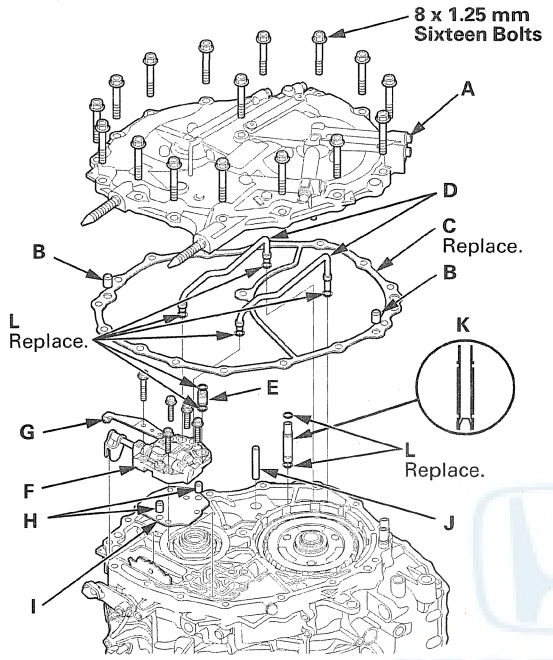
23. Remove the park pawl shaft (A), and remove the park pawl spring (B) and the park pawl (C).



24. Remove the thrust shim (D) and the final drive shaft (E), then remove the secondary driven gear (F).

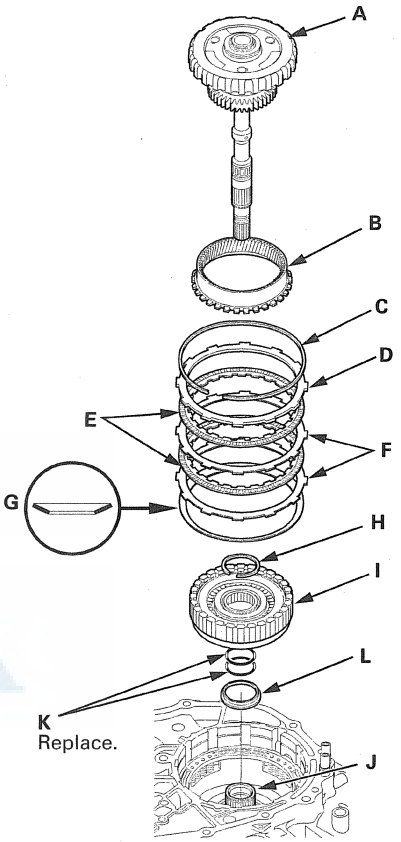
25. Turn the transmission upside down, and set it on a workbench to prevent damaging to the input shaft and the driven pulley shaft.

26. Remove the end cover (A) (sixteen bolts), the two dowel pins (B), and the gasket (C).



27. Remove the two CVTF feed pipes (D).
28. Remove the 10.9 x 18.6 mm CVTF feed pipe (E) from the manual valve body (F).
29. Remove the manual valve body (five bolts), the detent spring (G), the two dowel pins (H), and the separator plate (I).
30. Remove the 8 mm CVTF pipe (J) and the 10.9 x 56 mm CVTF feed pipe (K).
31. Remove the O-rings (L) of the CVTF feed pipes.

32. Remove the planetary carrier/input shaft assembly (A), then remove the ring gear (B).

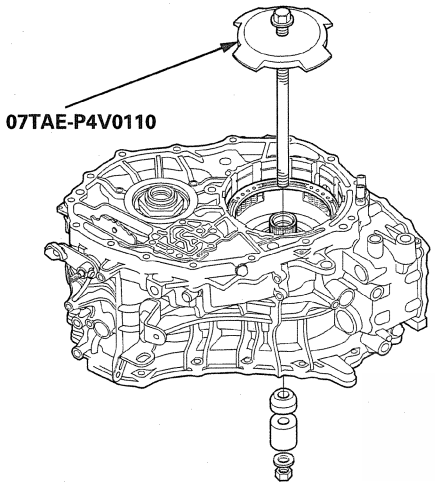


33. Remove the reverse brake snap ring (C), then remove the reverse brake end-plate (D), the two brake discs (E), the two brake plates (F), and the disc spring (G).
34. Remove the snap ring (H) securing the forward clutch (I) to the drive pulley shaft (J), then remove the forward clutch, the two O-rings (K), and the snap ring retainer (L) from the drive pulley shaft.

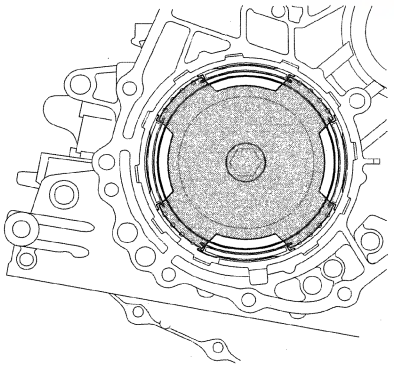
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Transmission Disassembly (cont'd)

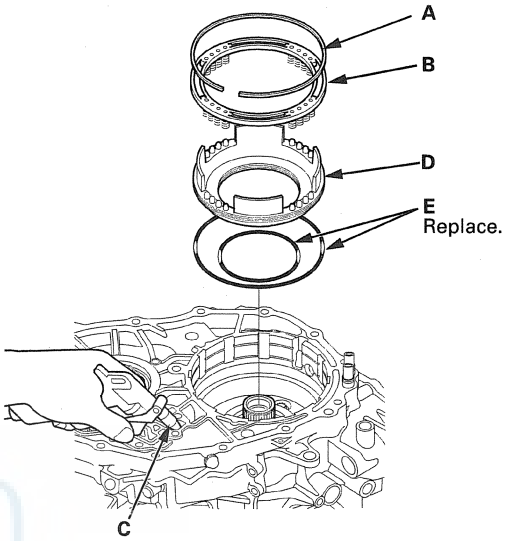
35. Install the reverse brake spring compressor to remove the snap ring securing the reverse brake return spring retainer.



36. Compress the return spring using the reverse brake spring compressor. Be sure the reverse brake spring compressor is set over the reverse brake return springs.



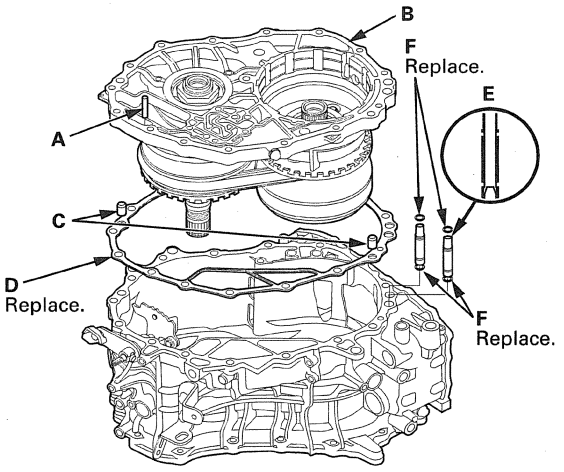
37. Remove the snap ring (A) while compressing the return spring.



38. Remove the reverse brake spring compressor, then remove the spring retainer/return spring assembly (B).

39. Apply air pressure to reverse brake pressure circuit hole (C) to remove the reverse brake piston (D), then remove the O-rings (E) from the reverse brake piston.

40. Remove the roller (A).

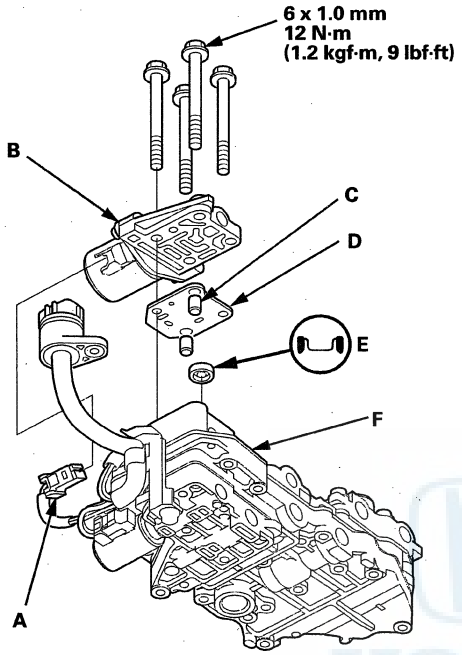


41. Remove the intermediate housing (B), the two dowel pins (C), and the gasket (D).

42. Remove the two 10.9 x 56 mm CVTF feed pipes (E) and the O-rings (F).

CVT Clutch Pressure Control Solenoid Valve Removal/Installation

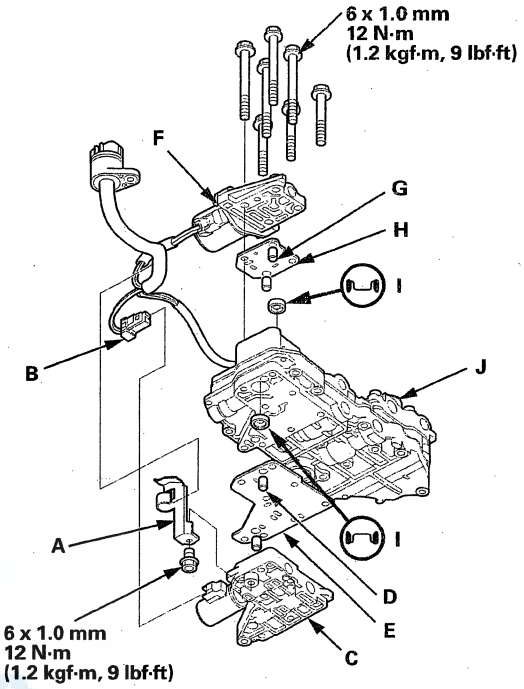
1. Disconnect the CVT clutch pressure control solenoid valve 2P connector (A).



2. Remove the CVT clutch pressure control solenoid valve (B), the dowel pins (C), and the separator plate (D).
3. Check that the filter (E) is in good condition, replace it if it is clogged or damaged.
4. Install the CVT clutch pressure control solenoid valve with the two dowel pins and the separator plate on the lower valve body (F).
5. Connect the CVT clutch pressure control solenoid valve 2P connector.

CVT Drive Pulley Pressure Control Solenoid Valve Removal/Installation

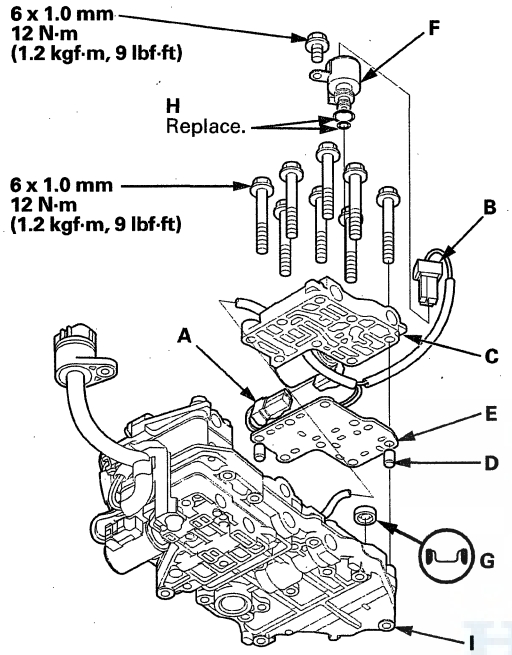
1. Remove the solenoid wire harness clamp (A).



2. Disconnect the CVT drive pulley pressure control solenoid valve 2P connector (B).
3. Remove the seven bolts, and remove the CVT drive pulley pressure control solenoid valve (C), the dowel pins (D), and the separator plate (E). The CVT clutch pressure control solenoid valve (F), the dowel pins (G), and the separator plate (H) can also be removed.
4. Check that the filters (I) are in good condition, replace them if these are clogged or damaged.
5. Install the CVT drive pulley pressure control solenoid valve with the two dowel pins, the separator plate, the CVT clutch pressure control solenoid valve with the two dowel pins, and the separator plate on the lower valve body (J).
6. Connect the CVT drive pulley pressure control solenoid valve 2P connector.
7. Install the solenoid wire harness clamp.

CVT Driven Pulley Pressure Control Solenoid Valve Removal/Installation

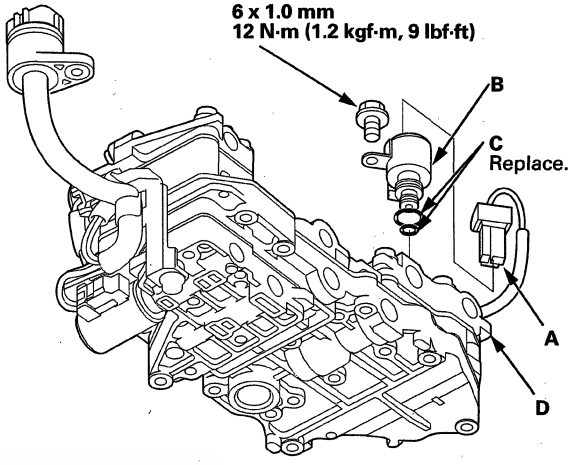
1. Disconnect the CVT driven pulley pressure control solenoid valve 2P connector (A) and the inhibitor solenoid 2P connector (B).



2. Remove the CVT driven pulley pressure control solenoid valve (C), the dowel pins (D), and the separator plate (E), and remove the inhibitor solenoid (F) from the CVT driven pulley pressure control solenoid valve.
3. Check that the filter (G) is in good condition, and replace it if it is clogged or damaged.
4. Remove the two O-rings (H) from the inhibitor solenoid.
5. Install the two O-rings on the inhibitor solenoid, then install the inhibitor solenoid on the CVT driven pulley pressure control solenoid valve.
6. Install the CVT driven pulley pressure control solenoid valve with the two dowel pins and the separator plate on the lower valve body (I).
7. Connect the CVT driven pulley pressure control solenoid valve 2P connector and the inhibitor solenoid 2P connector.

Inhibitor Solenoid Removal/Installation

1. Disconnect the inhibitor solenoid 2P connector (A).

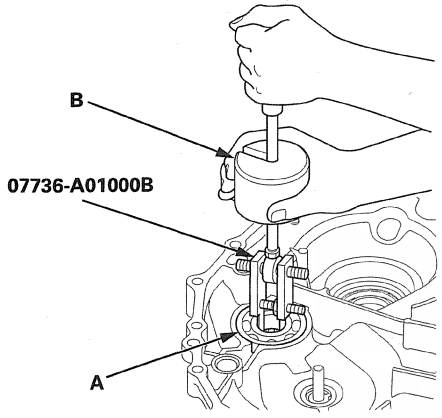


2. Remove the inhibitor solenoid (B), then remove the O-rings (C) from the inhibitor solenoid.
3. Install the two O-rings on the inhibitor solenoid, then install the inhibitor solenoid on the CVT driven pulley pressure control solenoid valve (D).
4. Connect the inhibitor solenoid 2P connector.

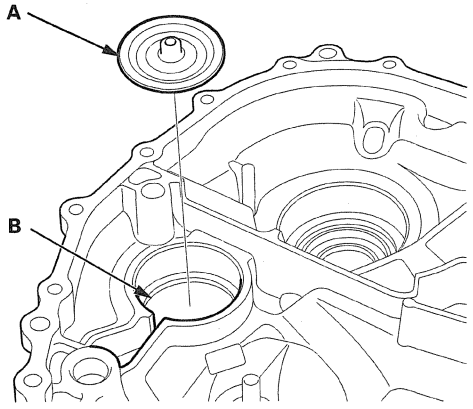
Final Drive Shaft Bearing Replacement

Special Tools Required
- Adjustable Bearing Puller, 25—40 mm 07736-A01000B
- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 62 x 68 mm 07746-0010500

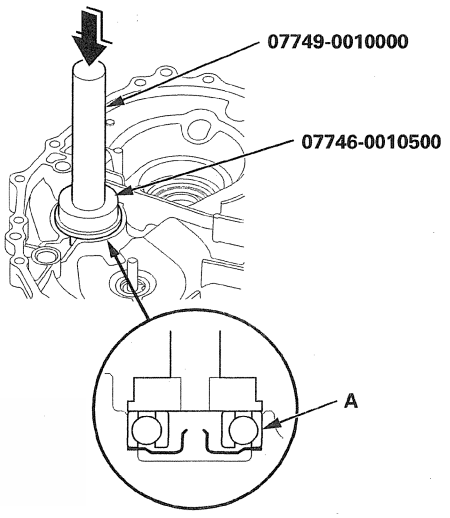
1. Remove the final drive shaft bearing (A) using the 25—40 mm adjustable bearing puller and a commercially available 3/8"—16 UNF slide hammer (B).



2. Remove the oil guide plate (A), and check the oil guide plate for rust, dirt, wear, or damage, and clean or replace it if necessary. Clean the hole (B) of the flywheel housing, then install the oil guide plate.



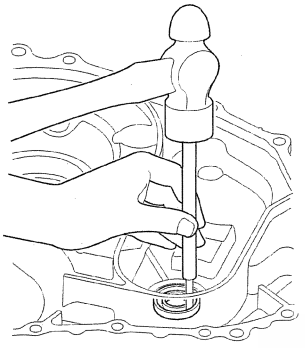
3. Install the new bearing (A) into the flywheel housing using the 15 x 135L driver handle and the 62 x 68 mm bearing driver attachment.



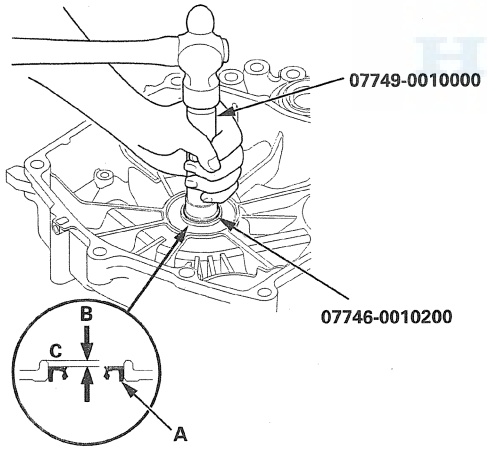
Input Shaft Oil Seal Replacement

Special Tools Required
- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 37 x 40 mm 07746-0010200

1. Remove the input shaft oil seal from the flywheel housing.

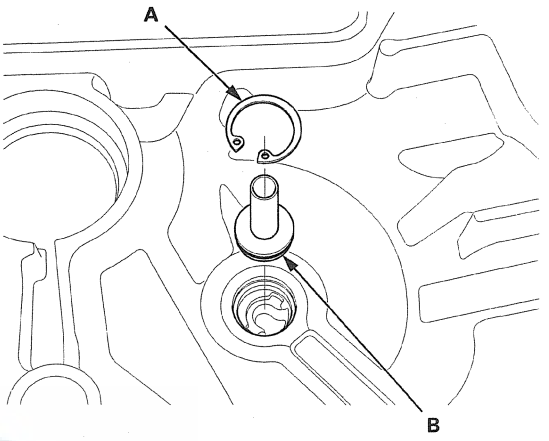


2. Install a new input shaft oil seal (A) to a depth of 2.5—3.5 mm (0.098—0.138 in) (B) below the flywheel housing level (C) using the 15 x 135L driver handle and the 37 x 40 mm bearing driver attachment.

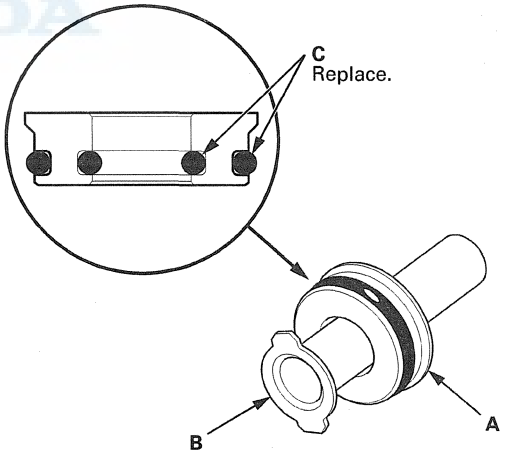


CVTF Feed Pipe/Feed Pipe Guide Replacement

1. Remove the snap ring (A) from the flywheel housing on the CVTF feed pipe/feed pipe guide (B), then remove the CVTF feed pipe/feed pipe guide.

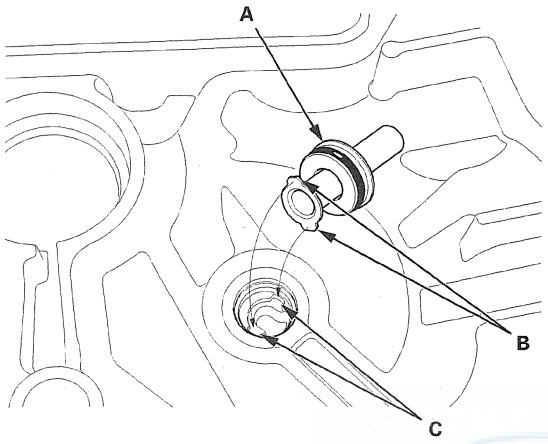


2. Remove the feed pipe guide (A) from the CVTF feed pipe (B), and remove the O-rings (C) from the feed pipe guide.

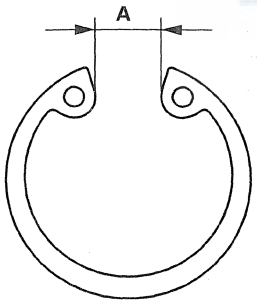


3. Replace the CVTF feed pipe or the feed pipe guide, then install new O-rings to the feed pipe guide.
4. Install the CVTF feed pipe through the feed pipe guide.

5. Install the CVTF feed pipe/feed pipe guide (A) to the flywheel housing by aligning the CVTF feed pipe tabs (B) with the guides (C) on the flywheel housing.



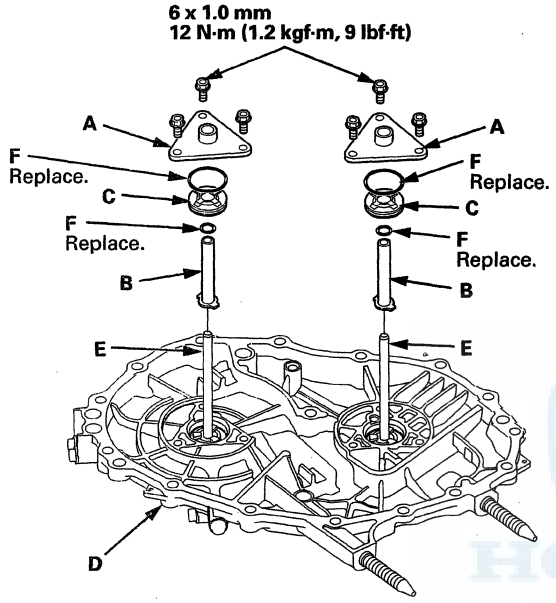
6. After installing the CVTF feed pipe/feed pipe guide, install and check that the snap ring is seated in the feed pipe guide and the housing groove, and that the ring end gap (A) is 5.4 mm (0.213 in) or more.



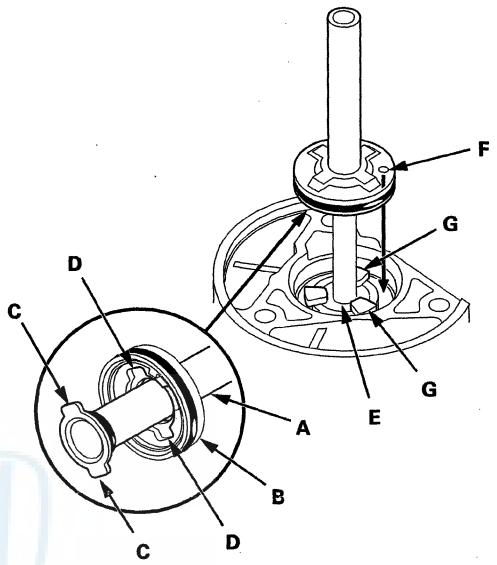
CVTF Feed Pipe Replacement

1. Remove the two feed pipe flange plates (A), then remove the two CVTF feed pipes (B) and two feed pipe flanges (C) from the end cover (D).

   NOTE: Replace the end cover if replacement of the unremovable two CVTF feed pipes (E) is required.



2. Remove the O-rings (F) from the two CVTF feed pipes and the two feed pipe flanges, then replace the two CVTF feed pipes.
3. Check the two feed pipe flange plates and the two feed pipe flanges for wear or damage, and replace them if necessary.
4. Install new O-rings over two new CVTF feed pipes and on the two feed pipe flanges.
5. Install the CVTF feed pipe (A) through the feed pipe flange (B) by aligning the CVTF feed pipe tabs (C) with the guides (D) on the feed pipe flange.

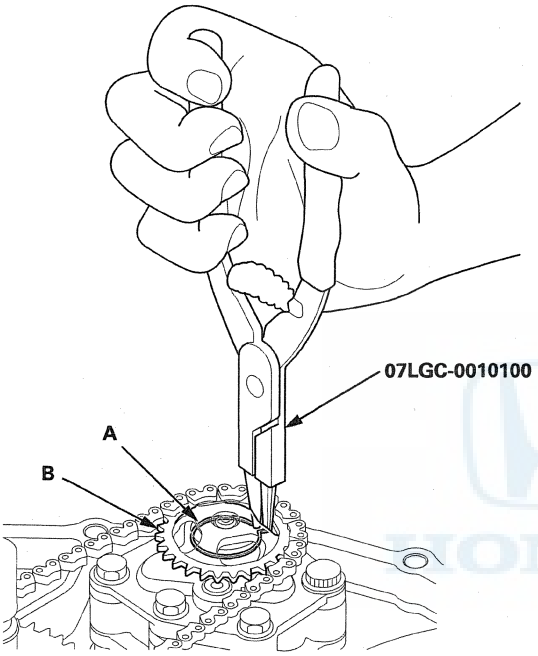


6. Install the CVTF feed pipe over the unremovable CVTF feed pipe (E), and align the mark (F) on the feed pipe flange between the tabs (G) on the end cover.
7. Install the feed pipe flange plate.

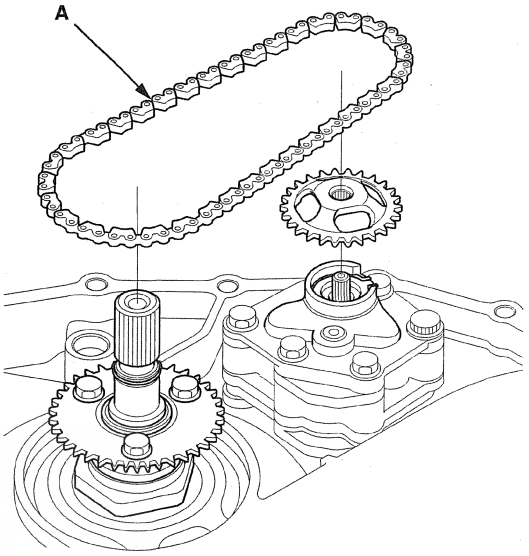
CVTF Pump Sprocket/Chain Removal/Installation

Special Tools Required
Snap Ring Pliers 07LGC-0010100

1. Expand the snap ring (A) under the CVTF pump sprocket (B) using snap ring pliers, and remove the CVTF pump sprocket from the CVTF pump.



2. Remove the CVTF pump drive chain (A).

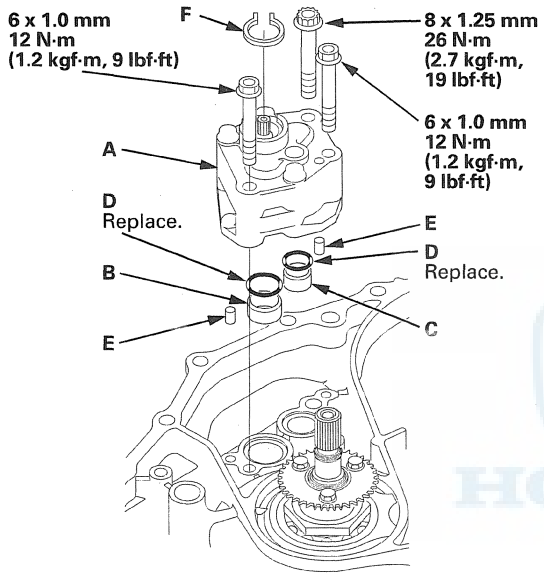


3. Check the CVTF pump sprocket and the CVTF pump drive chain for wear or damage, and replace them if necessary.
4. Install the CVTF pump drive chain and the CVTF pump sprocket.
5. After installing the CVTF pump sprocket, check that the snap ring is seated in the CVTF pump sprocket and the CVTF pump housing groove.

CVTF Pump Replacement

NOTE: Replace the CVTF pump with assembly for nonresolution parts.

1. Remove the CVTF pump drive chain and the CVTF pump sprocket (see page 14-237).
2. Remove the three bolts securing the CVTF pump (A), then remove the CVTF pump from the transmission housing.



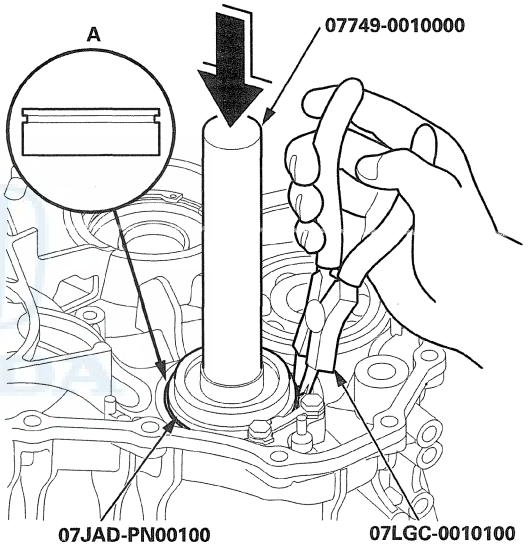
3. Remove the 22 x 10 mm CVTF pipe (B), the 18 x 10 mm CVTF pipe (C), the O-rings (D), the two dowel pins (E), and the snap ring (F).
4. Replace the CVTF pump.
5. Install the 22 x 10 mm CVTF pipe and the 18 x 10 mm CVTF pipe in the transmission housing, then install new two O-rings over the CVTF pipes.
6. Install a new CVTF pump (three bolts) with two dowel pins. Do not pinch the O-rings.
7. Install the snap ring in the snap ring groove.
8. Install the CVTF pump drive chain and the CVTF pump sprocket (see page 14-237).

Driven Pulley Shaft Bearing Removal/Installation

Special Tools Required

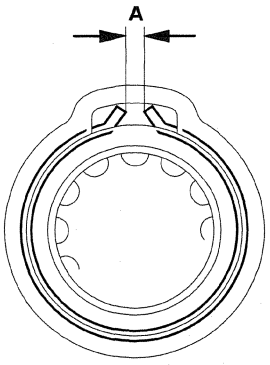
- Driver Handle, 15 x 135L 07749-0010000
- Oil Seal Driver Attachment, 64 x 72 mm 07JAD-PN00100
- Snap Ring Pliers 07LGC-0010100

1. Expand the snap ring using snap ring pliers, then push the driven pulley shaft bearing (A) out using the 15 x 135L driver handle and the 64 x 72 mm oil seal driver attachment. Do not remove the snap ring unless it is necessary to clean the groove in the transmission housing.



2. Check the driven pulley shaft bearing for wear or damage, and replace it if necessary.
3. Expand the snap ring using snap ring pliers, and install the driven pulley shaft bearing part-way into the transmission housing.
4. Release the pliers, then push the driven pulley shaft bearing down into the transmission housing until the snap ring snaps in place around it.

5. After installing the bearing, check that the snap ring is seated in the driven pulley shaft bearing and the housing groove, and that the ring end gap (A) is 9.0 mm (0.354 in) or less.

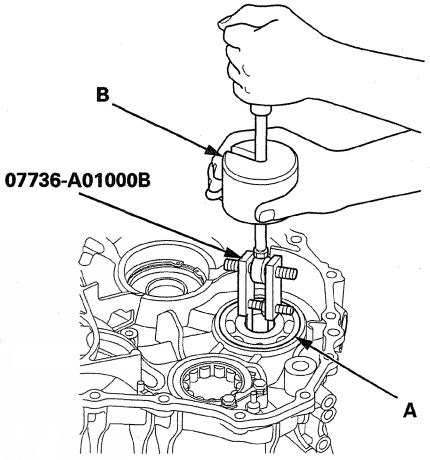


Final Drive Shaft Bearing Removal/Installation

Special Tools Required

- Adjustable Bearing Puller, 25—40 mm 07736-A01000B
- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 72 x 75 mm 07746-0010600

1. Remove the final drive shaft bearing (A) using the 25—40 mm adjustable bearing puller and a commercially available 3/8"—16 UNF slide hammer (B).

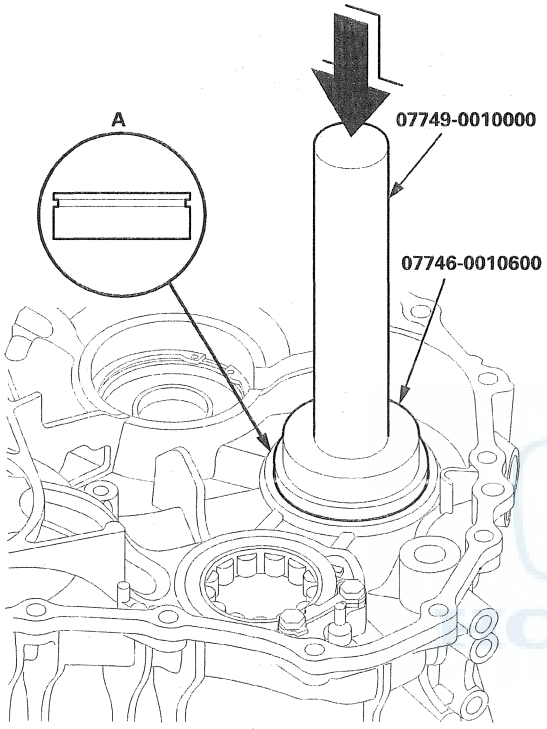


2. Check the final drive shaft bearing for wear or damage, and replace it if necessary.

(cont'd)

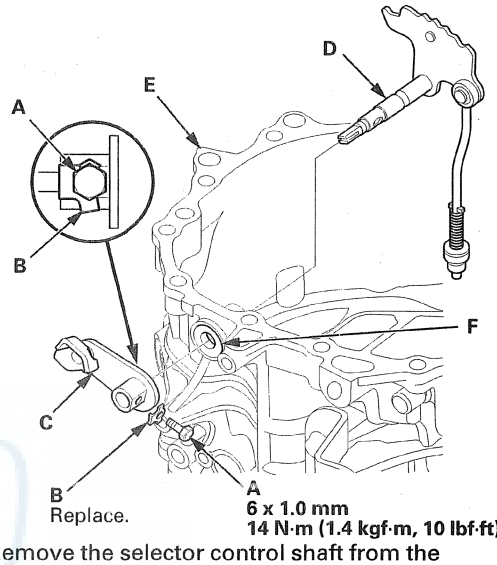
Final Drive Shaft Bearing Removal/Installation (cont'd)

3. Install the final drive shaft bearing (A) into the transmission housing using the 15 x 135L driver handle and the 72 x 75 mm bearing driver attachment.



Selector Control Shaft Removal/Installation

1. Remove the bolt (A) and the lock washer (B), then remove the control lever (C) from the selector control shaft (D).

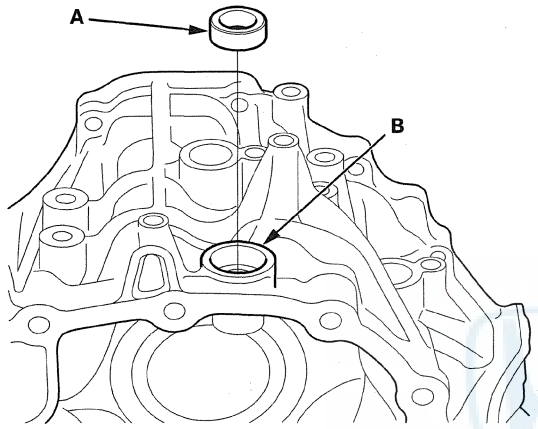


2. Remove the selector control shaft from the transmission housing (E), then check the control lever and the selector control shaft for wear or damage, and replace them if necessary.
3. Check for fluid leaks between the transmission housing and the selector control shaft oil seal (F). If there is a fluid leak, replace the selector control shaft oil seal (see page 14-241).
4. Install the selector control shaft in the transmission housing, and install the control lever on the selector control shaft.
5. Install the bolt with a new lock washer.

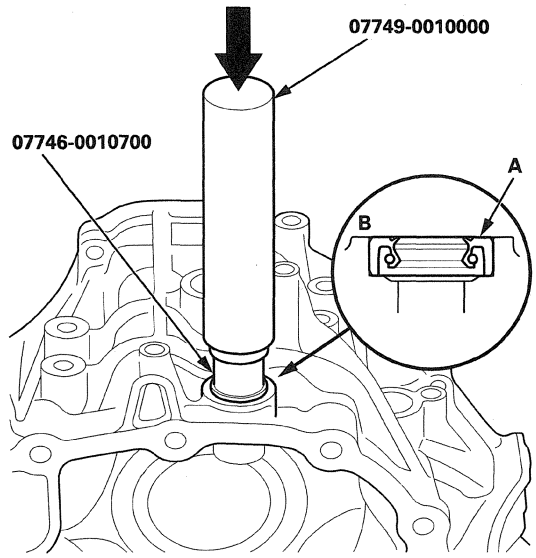
Selector Control Shaft Oil Seal Replacement

Special Tools Required
- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 24 x 26 mm 07746-0010700

1. Remove the selector control shaft (see page 14-240).
2. Remove the selector control shaft oil seal (A) from the transmission housing (B).



3. Install a new selector control shaft oil seal (A) flush with the transmission housing level (B) using the 15 x 135L driver handle and the 24 x 26 mm bearing driver attachment.

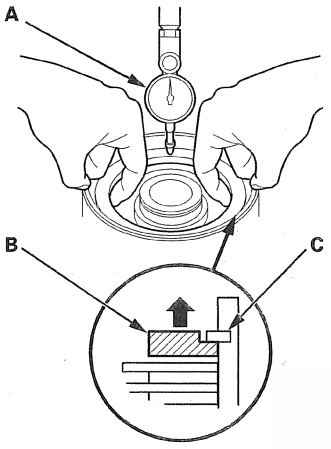


4. Install the selector control shaft (see page 14-240).

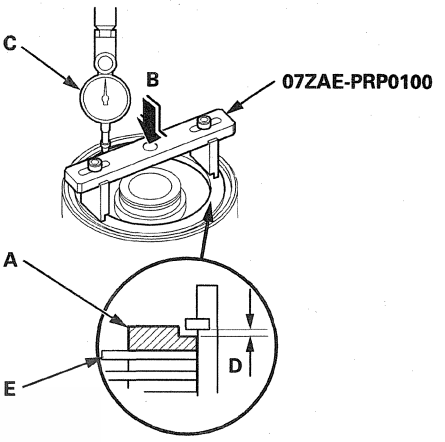
Clutch Clearance Inspection

Special Tools Required
Clutch Compressor Attachment 07ZAE-PRP0100

1. Set a dial indicator (A) on the clutch end-plate (B).



2. Zero the dial indicator with the clutch end-plate is lifted up to the snap ring (C).
3. Release the clutch end-plate (A) to lower the clutch end-plate, then put the clutch compressor attachment on the clutch end-plate.



4. Press the clutch compressor attachment down with 39 N (4.0 kgf, 8.8 lbf) (B) using a force gauge, and read the dial indicator (C).
5. The dial indicator reads the clearance (D) between the clutch end-plate and the top disc (E). Take measurements in at least three places, and use the average as the actual clearance.

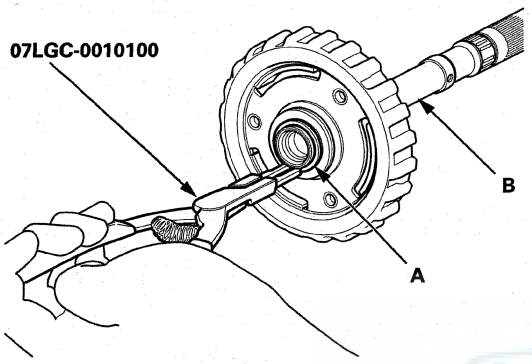
   Clearance Between the Clutch End-Plate and the Top Disc
   Service Limit: 0.6—0.8 mm (0.024—0.031 in)

6. If the clearance is out of the service limit, replace the forward clutch assembly.

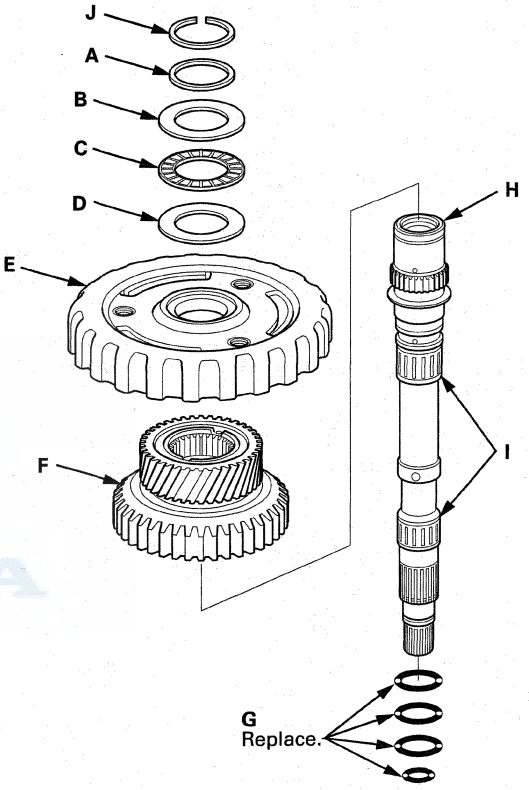
Input Shaft Disassembly/Inspection/Reassembly

Special Tools Required
Snap Ring Pliers 07LGC-0010100

1. Expand the snap ring (A) on the input shaft (B) using snap ring pliers, and remove the snap ring from the input shaft.



2. Remove the 25 x 31 mm thrust shim (A), the 25 x 41.5 x 2.5 mm thrust shim (B), the thrust needle bearing (C), the 25 x 41.5 x 1 mm thrust shim (D), the planetary carrier (E), the sun gear (F), and the O-rings (G) from the input shaft (H).

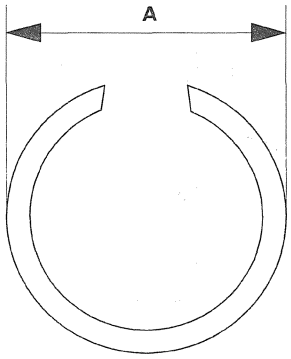


3. Check the 25 x 31 mm thrust shim, the 25 x 41.5 x 2.5 mm thrust shim, the thrust needle bearing, the 25 x 41.5 x 1 mm thrust shim, the planetary carrier, the sun gear, the O-rings, the input shaft, and the needle bearing (I) for wear or damage, and replace them if necessary.
4. Install new O-rings, the sun gear, the planetary carrier, the 25 x 41.5 x 1 mm thrust shim, the thrust needle bearing, the 25 x 41.5 x 2.5 mm thrust shim, the 25 x 31 mm thrust shim, and the snap ring (J) to the input shaft.

(cont'd)

Input Shaft Disassembly/Inspection/Reassembly (cont'd)

5. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the input shaft, and check that the ring outside diameter (A) is 30.7 mm (1.209 in) or less.

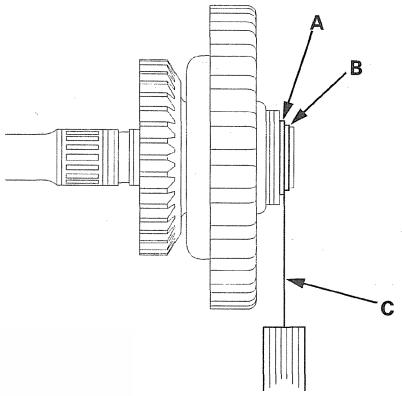


6. Inspect the planetary carrier clearance (see page 14-244).

Planetary Carrier Clearance Inspection

1. Measure the clearance between the 25 x 31 mm thrust shim (A) and the snap ring (B) using a feeler gauge (C), in at least three places. Use the average as the actual clearance.

Standard: 0.050—0.115 mm (0.002—0.004 in)



2. If the clearance is out of standard, remove the 25 x 31 mm thrust shim, and measure it thickness.
3. Select a new 25 x 31 mm thrust shim from the following table and install it, then recheck that the clearance is within the standard.

THRUST SHIM, 25 x 31 mm

No.	Thickness
A	1.05 mm (0.0413 in)
B	1.12 mm (0.0441 in)
C	1.19 mm (0.0469 in)
D	1.26 mm (0.0496 in)
E	1.33 mm (0.0524 in)
F	1.40 mm (0.0551 in)
G	1.47 mm (0.0579 in)
H	1.54 mm (0.0606 in)
I	1.61 mm (0.0634 in)
J	1.68 mm (0.0661 in)
K	1.75 mm (0.0689 in)
L	1.82 mm (0.0717 in)
M	1.085 mm (0.04272 in)
N	1.155 mm (0.04547 in)
O	1.225 mm (0.04823 in)
P	1.295 mm (0.05098 in)
Q	1.365 mm (0.05374 in)
R	1.435 mm (0.05650 in)
S	1.505 mm (0.05925 in)
T	1.575 mm (0.06201 in)
U	1.645 mm (0.06476 in)
V	1.715 mm (0.06752 in)
W	1.785 mm (0.07028 in)

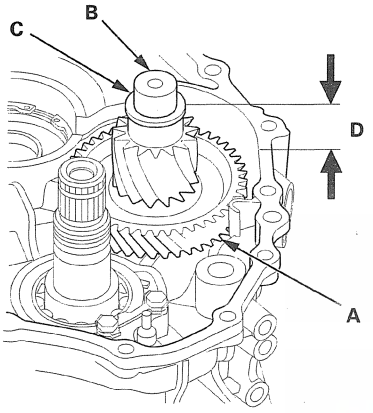
4. After installing the all parts to the input shaft, check that the snap ring is seated in the snap ring groove on the input shaft, and that the ring outside diameter is 30.7 mm (1.209 in) or less (see step 5 on page 14-244).

HONDA

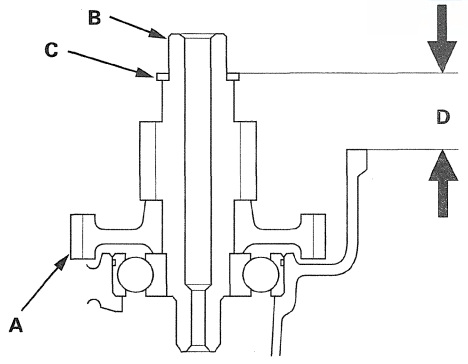
Thrust Clearance Inspection

NOTE: If the transmission housing, the flywheel housing, the final drive shaft, the secondary driven gear, or the final drive shaft bearing is replaced, the final drive shaft thrust clearance must be adjusted with a 25 x 35 mm thrust shim.

1. Install the secondary driven gear (A) on the final drive shaft (B), then install the final drive shaft in the transmission housing. Install the existing 25 x 35 mm thrust washer (C).

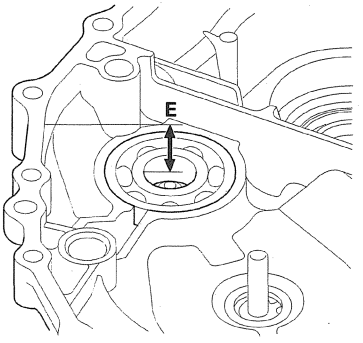


Final Drive Shaft Cutaway View

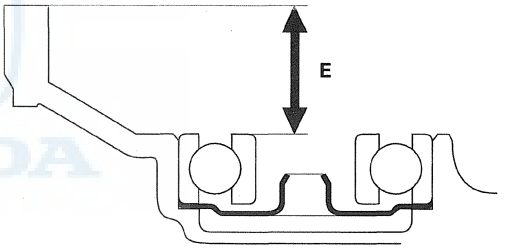


2. Measure the distance (D) between the transmission housing surface and the thrust shim surface on the final drive shaft, then note the measurement (measurement D).

3. Measure the distance (E) between the flywheel housing surface and the bearing inner race surface, then note the measurement (measurement E).



Final Drive Shaft Bearing Cutaway View



4. Calculate the final drive shaft thrust clearance using the formula:

   Clearance
   = Measurement D − Measurement E + Flywheel housing gasket thickness

   Standard: 0 − 0.15 mm (0 − 0.0059 in)

   NOTE: The standard of the clearance includes thickness of the flywheel housing gasket (0.5 mm, 0.020 in)

5. If the clearance is out of standard, remove the 25 x 35 mm thrust shim, and measure it thickness.

6. Select a new 25 x 35 mm thrust shim from the following table and install it, then recheck that the clearance is within the standard.

THRUST SHIM, 25 x 35 mm

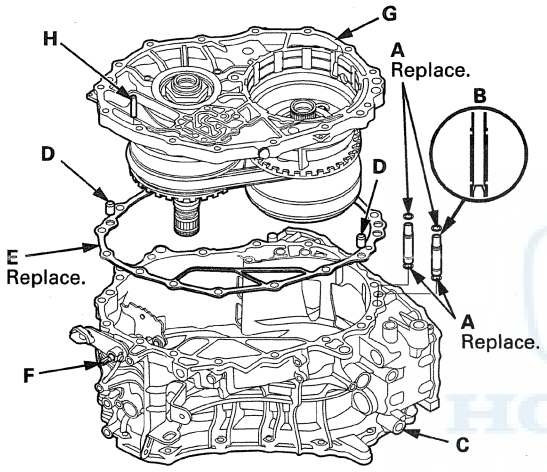
No.	Thickness
A	2.80 mm (0.1102 in)
B	2.90 mm (0.1142 in)
C	3.00 mm (0.1181 in)
D	3.10 mm (0.1220 in)
E	3.20 mm (0.1260 in)
F	3.30 mm (0.1299 in)
G	3.40 mm (0.1339 in)
H	3.50 mm (0.1378 in)
I	3.60 mm (0.1417 in)
J	3.70 mm (0.1457 in)
K	3.80 mm (0.1496 in)
L	3.90 mm (0.1535 in)
M	4.00 mm (0.1575 in)

Transmission Reassembly

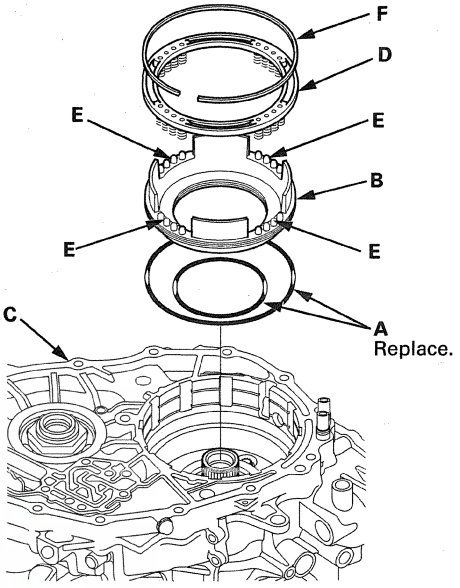
Special Tools Required
- Reverse Brake Spring Compressor 07TAE-P4V0110
- Start Clutch Installer 07TAE-P4VA131

NOTE: When you reassemble the transmission, soak the start clutch assembly, the forward clutch assembly, and the reverse brake disks in Honda Genuine CVTF for at least 30 minutes prior to installation.

1. Install new O-rings (A) on the CVTF feed pipes (10.9 x 56 mm) (B), then install them with the filter ends into the transmission housing (C).

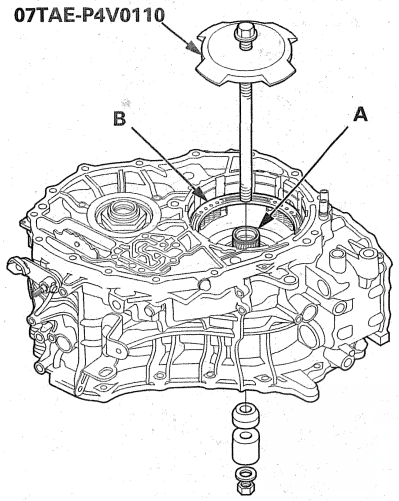


2. Install the two dowel pins (D) and a new gasket (E) on the transmission housing.
3. Push the selector control shaft (F) toward the outside of the transmission housing, then install the intermediate housing (G).
4. Pull the selector control shaft back, then install the roller (H) in the intermediate housing by aligning the groove on the selector control shaft.
5. Install two new O-rings (A) on the reverse brake piston (B), then install the piston in the intermediate housing (C).

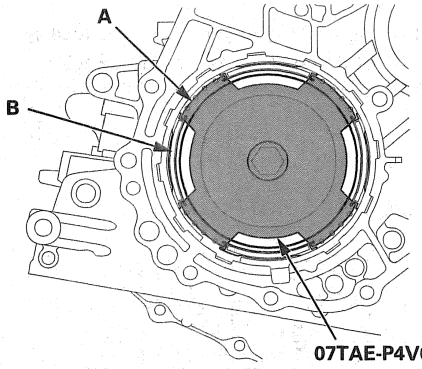


6. Install the spring retainer/return spring assembly (D); install the return springs on the spring guides (E) of the reverse brake piston.
7. The snap ring (F) is installed by compressing the spring retainer/return spring assembly by the reverse brake spring compressor on and after the next step.

8. Install the reverse brake spring compressor through the drive pulley shaft (A) to compress the spring retainer/return spring assembly (B).

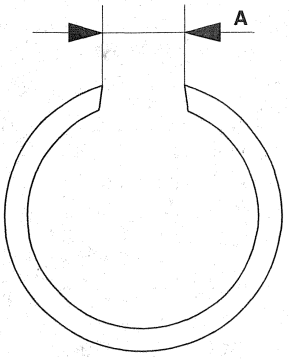


9. Compress the spring retainer/return spring assembly, and make sure that the reverse brake spring compressor is set over the return springs, and the reverse brake spring compressor tabs (A) do not ride on the reverse brake piston (B).

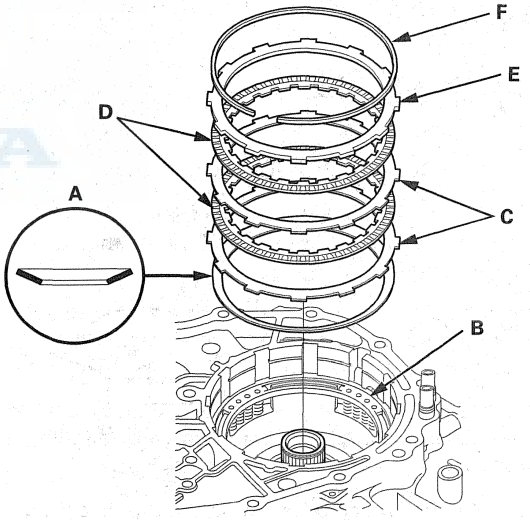


10. Install the snap ring in the intermediate housing above the spring retainer, then remove the reverse brake spring compressor.

11. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the intermediate housing, and that the ring end gap (A) is 15 mm (0.59 in) or more.



12. Install the disc spring (A) on the spring retainer (B) in the direction shown.

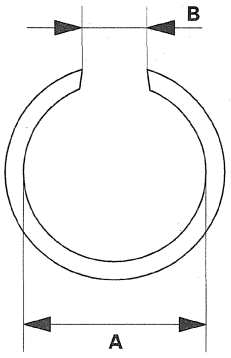


13. Starting with one of the reverse brake plate (C), alternately install the two reverse brake plates and the reverse brake discs (D). Install the reverse brake end-plate (E), then install the snap ring (F).

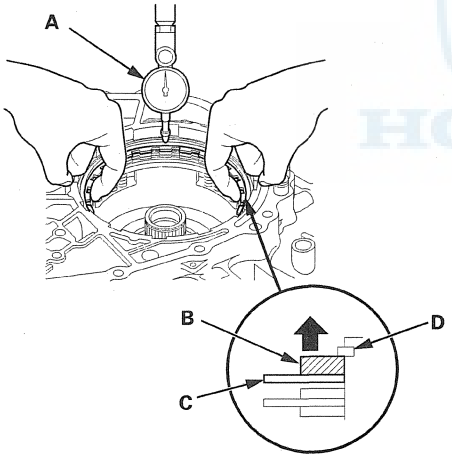
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Transmission Reassembly (cont'd)

14. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the intermediate housing, and that the snap ring inside diameter (A) is 143.5 mm (5.650 in) or more, and also check that the snap ring end gap (B) is 8.7 mm (0.343 in) or more.



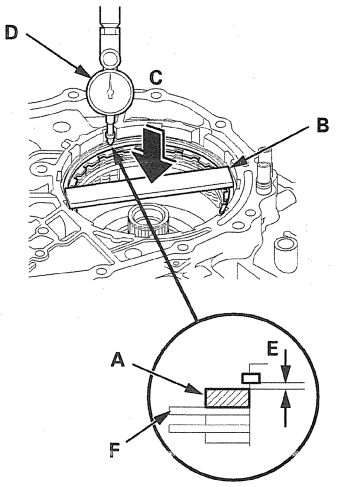
15. Set up a dial indicator (A) on the reverse brake end-plate (B).



16. Zero the dial indicator by lifting the top disc (C) up against the reverse brake end-plate and the reverse brake end-plate up against the snap ring (D).

17. Release the reverse brake end-plate (A) to lower the reverse brake end-plate, and place a steel plate (B) across width of the reverse brake end-plate.

Standard: 0.55—0.70 mm (0.0217—0.0276 in)



18. Press the steel plate down with 49 N (5.0 kgf, 11.0 lbf) (C) using a force gauge, and read the dial indicator (D). The dial indicator reads the clearance (E) between the reverse brake end-plate and the top-disc (F). Take measurements in at least three places, and use the average as the actual clearance.

19. If the clearance is out of standard, remove the reverse brake end-plate, and measure it thickness.

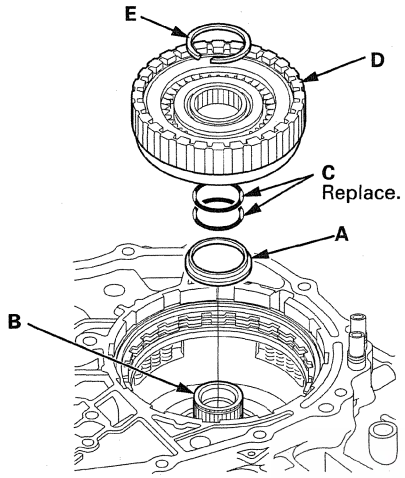
20. Select a new reverse brake end-plate from the following table and install it, then recheck that the clearance is within the standard.

REVERSE BRAKE END-PLATE

Mark	Thickness
2	3.8 mm (0.150 in)
B	3.9 mm (0.154 in)
3	4.0 mm (0.157 in)
C	4.1 mm (0.161 in)
4	4.2 mm (0.165 in)
D	4.3 mm (0.169 in)
5	4.4 mm (0.173 in)
E	4.5 mm (0.177 in)
6	4.6 mm (0.181 in)
F	4.7 mm (0.185 in)
7	4.8 mm (0.189 in)
8	5.0 mm (0.197 in)

21. If the reverse brake end-plate is replaced, install the snap ring, and check that the snap ring inside diameter and end gap are within the tolerance.

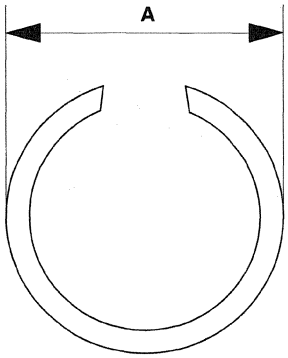
22. Install the snap ring retainer (A) over the drive pulley shaft (B).



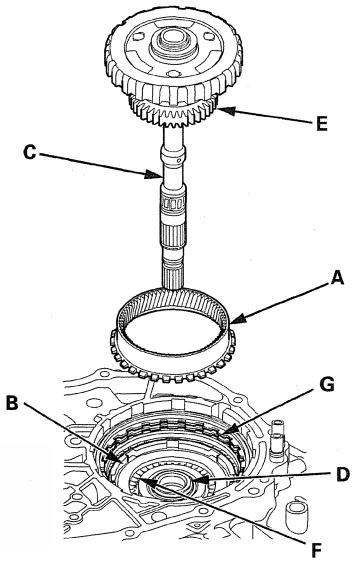
23. Wrap the drive pulley shaft splines with tape to prevent O-ring damage. Install two new O-rings (C) in the drive pulley shaft O-ring grooves, then remove the tape.

24. Install the forward clutch (D) on the drive pulley shaft, then install the snap ring (E) to secure the forward clutch.

25. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the drive pulley shaft, and that the snap ring outside diameter (A) is 41.4 mm (1.630 in) or less.

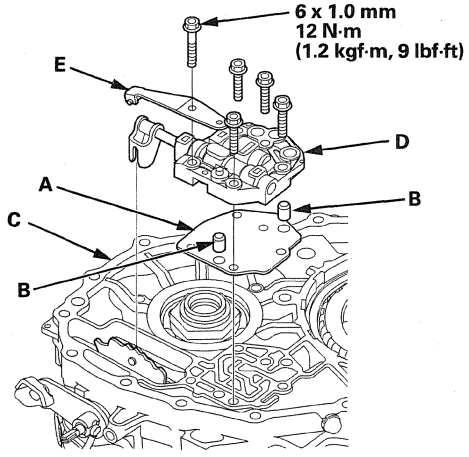


26. Install the ring gear (A) on the forward clutch (B).



27. Install the input shaft/planetary carrier assembly (C) through the drive pulley shaft (D) by aligning the sun gear (E) with the forward clutch discs (F) and aligning the planetary carrier with the reverse brake discs (G).

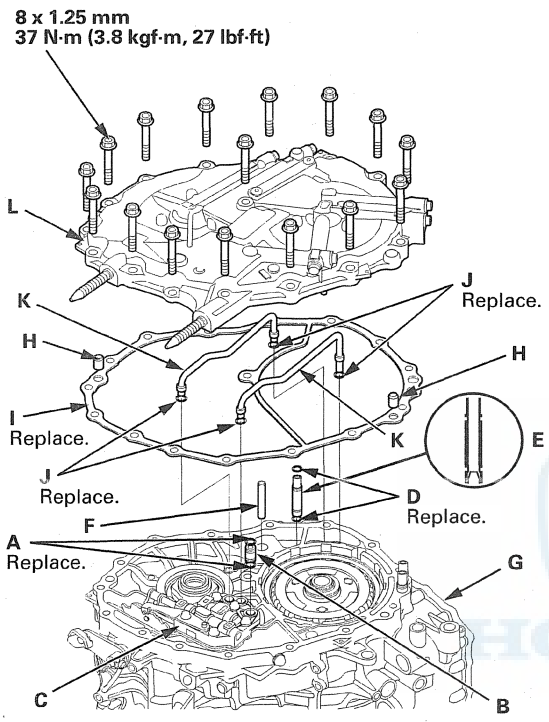
28. Install the manual valve body separator plate (A) and the two dowel pins (B) on the intermediate housing (C), then install the manual valve body (D) and detent spring (E).



(cont'd)

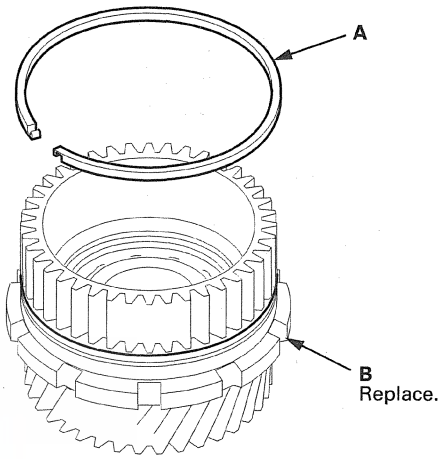
Transmission Reassembly (cont'd)

29. Install two new O-rings (A) on the 10.9 x 18.6 mm CVTF feed pipe (B), then install it on the manual valve body (C).

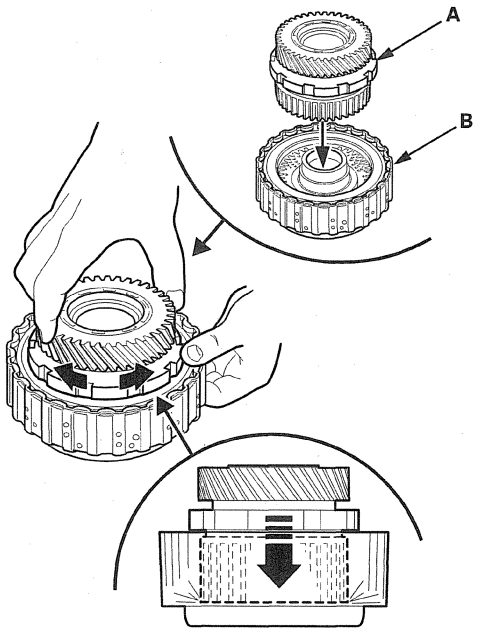


30. Install two new O-rings (D) on the 10.9 x 56 mm CVTF feed pipe (E), then install it with the filter end and the 8 mm CVTF pipe (F) in the intermediate housing (G).
31. Install the two dowel pins (H) and a new gasket (I) on the intermediate housing.
32. Install four new O-rings (J) on the two CVTF feed pipes (K), then install them on the manual valve body and the intermediate housing.
33. Place the end cover (L) on the intermediate housing.
34. Install the end cover bolts (sixteen), and tighten them to the specified torque in a crisscross pattern in at least two or three steps, then turn the transmission end cover down.
35. Install the sealing ring (A) on a new secondary drive/park gear (B).

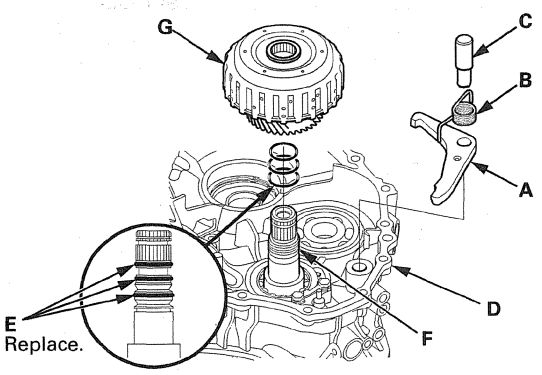
    NOTE: The secondary drive/park gear must be replaced when disassembling the transmission.



36. Insert the secondary drive/park gear (A) into the start clutch (B). Wiggle the secondary drive/park gear back and forth as it goes into the start clutch, and push in the secondary drive/park gear until it bottoms out.



37. Install the park pawl (A), the pawl spring (B), and the pawl shaft (C) on the transmission housing (D), then move the control lever to any position other than P.

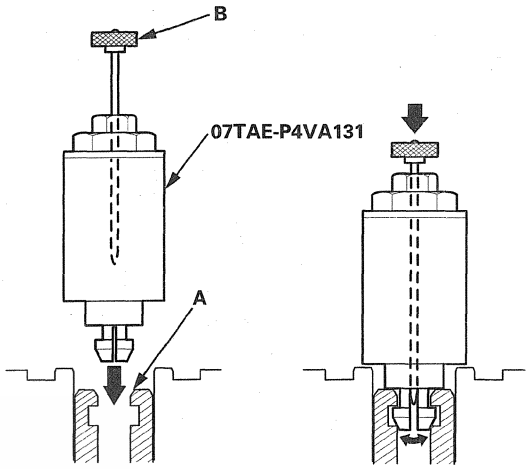


38. Use the CVTF to lubricate the new O-rings (E) for the driven pulley shaft (F), then install the O-rings on the driven pulley shaft.

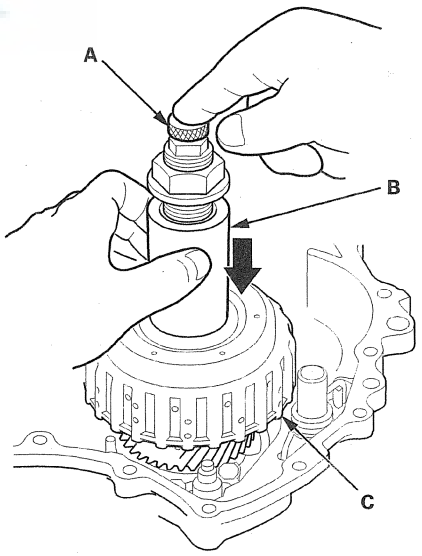
39. Place the start clutch and secondary drive/park gear (G) onto the driven pulley shaft.

NOTE: Make sure to hold the secondary drive/park gear engaged into the start clutch when you install the start clutch and secondary drive/park gear onto the driven pulley shaft.

40. Seat the start clutch by aligning the tip of the start clutch installer with the driven pulley shaft hole (A) and then pushing down the handle (B).



41. While holding the handle (A) down, push down the bottom part (B) of the start clutch installer until it contacts the seating surface of the start clutch (C).

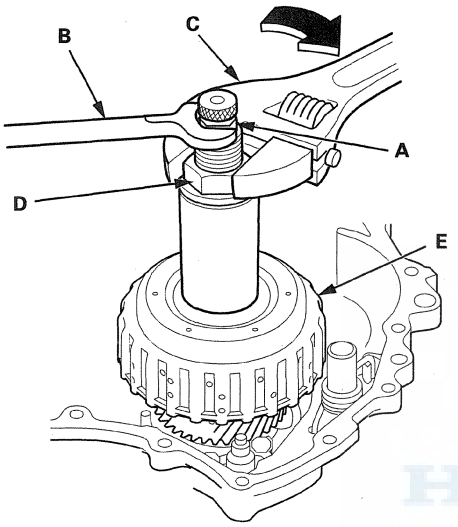


(cont'd)

Transmission Reassembly (cont'd)

42. Hold the upper hex section (A) of the start clutch installer with a 19 mm wrench (B), then use an adjustable wrench (C) to tighten the lower nut (D) of the start clutch installer until the start clutch (E) seats.

    NOTE: When using the start clutch installer, hold the upper hex section and then turn the lower nut. Turning the upper hex section could damage the start clutch installer.

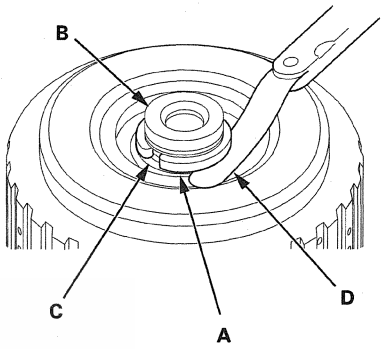


43. Remove the start clutch installer.

44. Reach under the start clutch to confirm that the clutch end-plate can move up and down slightly (less than 1.0 mm (0.039 in)).

45. Install the 25.5 mm cotters (A) to the cotter groove on the driven pulley shaft (B), then measure the clearance between the cotters and the start clutch guide (C) using a feeler gauge (D). Take measurements in at least three places, and use the average as the actual clearance.

    Standard: 0—0.13 mm (0—0.005 in)



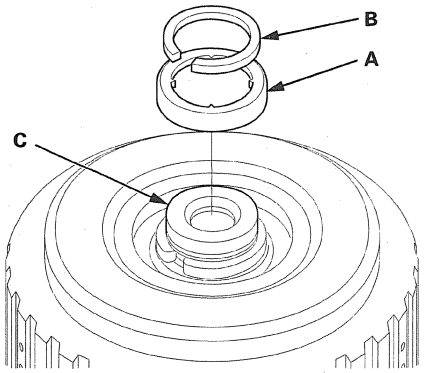
46. If the clearance is out of standard, remove the cotters, and measure its thickness.

47. Select new 25.5 mm cotters from the following table and install its, then recheck that the clearance is within the standard.

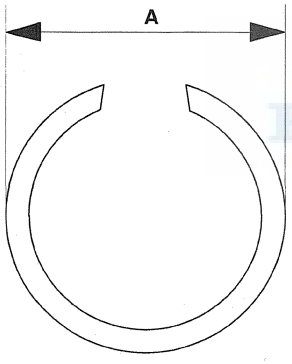
    COTTERS, 25.5 mm

No.	Thickness
A	2.90 mm (0.1142 in)
B	3.00 mm (0.1181 in)
C	3.10 mm (0.1220 in)
D	3.20 mm (0.1260 in)

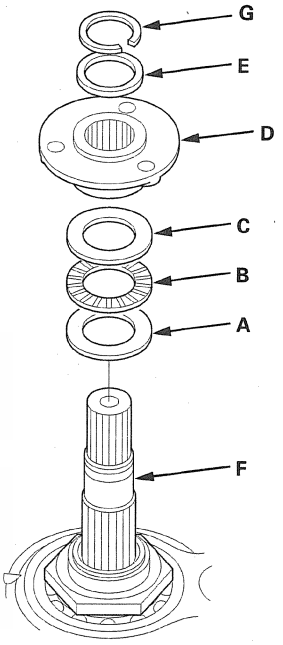
48. Install the cotter retainer (A) and the snap ring (B) to the driven pulley shaft (C).



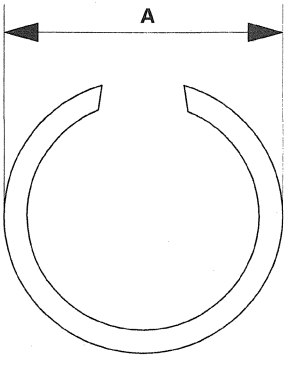
49. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the driven pulley shaft, and that the snap ring outside diameter (A) is 33.9 mm (1.335 in) or less.



50. Install the thrust washer (A), the thrust needle bearing (B), the thrust washer (C), the CVTF pump drive sprocket hub (D), and the 22 x 28 mm thrust shim (E) on the input shaft (F), and install the snap ring (G) to secure them.



51. After installing the snap ring, check that the snap ring is seated in the snap ring groove of the input shaft, and that the snap ring outside diameter (A) is 26.3 mm (1.035 in) or less.

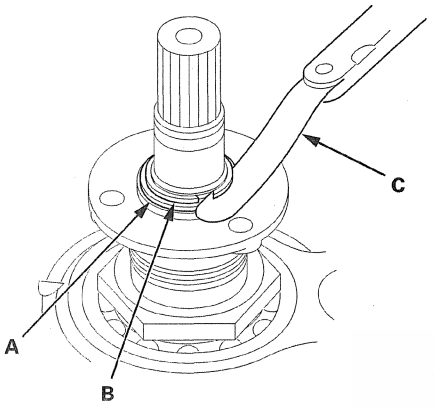


(cont'd)

Transmission Reassembly (cont'd)

52. Measure the clearance between the 22 x 28 mm thrust shim (A) and the snap ring (B) using a feeler gauge (C). Take measurements in at least three places, and use the average as the actual clearance.

Standard: 0.37—0.65 mm (0.015—0.025 in)



53. If the clearance is out of standard, remove the 22 x 28 mm thrust shim, and measure its thickness.

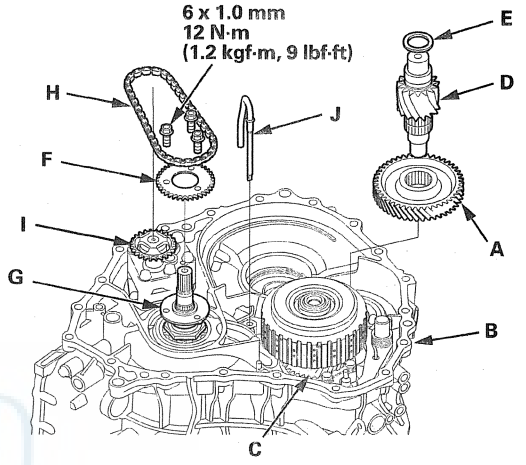
54. Select a new 22 x 28 thrust shim from the following table and install it, then recheck that the clearance is within the standard.

THRUST SHIM, 22 x 28 mm

No.	Thickness
C	1.15 mm (0.0453 in)
D	1.40 mm (0.0551 in)
E	1.65 mm (0.0650 in)
F	1.90 mm (0.0748 in)
G	2.15 mm (0.0846 in)
H	2.40 mm (0.0945 in)

55. If the 22 x 28 mm thrust shim is replaced, install the snap ring, and check that the snap ring outside diameter is within the tolerance.

56. Place the secondary driven gear (A) on the transmission housing (B) by aligning it with the secondary drive gear (C), then install the final drive shaft (D) through the secondary driven gear into the transmission housing.

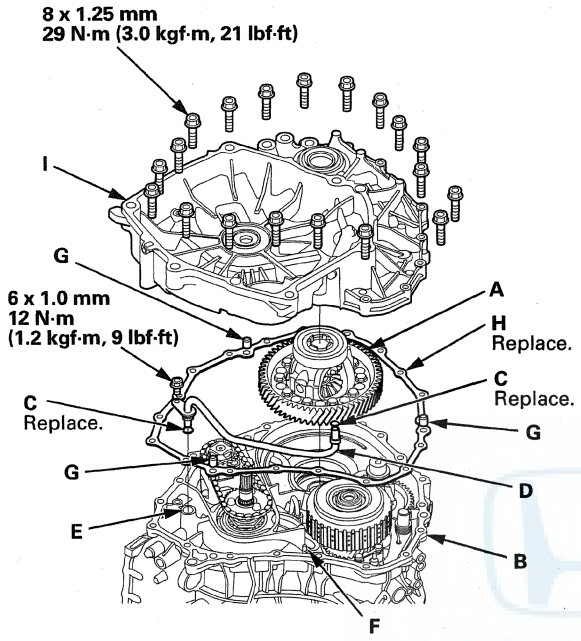


57. Install the 25 x 35 mm thrust shim (E) on the final drive shaft.

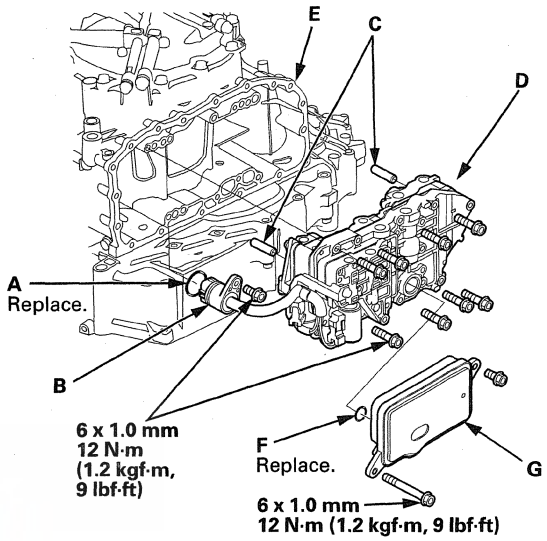
58. Position the CVTF pump drive sprocket (F) on the CVTF pump drive sprocket hub (G), and put the CVTF pump drive chain (H) on the CVTF pump drive sprocket and the CVTF pump sprocket (I), then secure the CVTF pump drive sprocket with the three bolts.

59. Install the lubrication pipe (J).

60. Install the differential assembly (A) onto the transmission housing (B).



61. Install two new O-rings (C) on both ends of the CVTF passage pipe (D), then install the CVTF passage pipe in the pipe joint (E) of the transmission housing, and put the other end on the pipe guide (F).
62. Install the three dowel pins (G) and a new gasket (H) on the transmission housing.
63. Place the flywheel housing (I) on the transmission housing.
64. Install the housing bolts (nineteen), and tighten them to the specified torque in a crisscross pattern in at least two or three steps, then turn the transmission flywheel housing down.
65. Install a new O-ring (A) on the solenoid wire harness 7P connector (B).

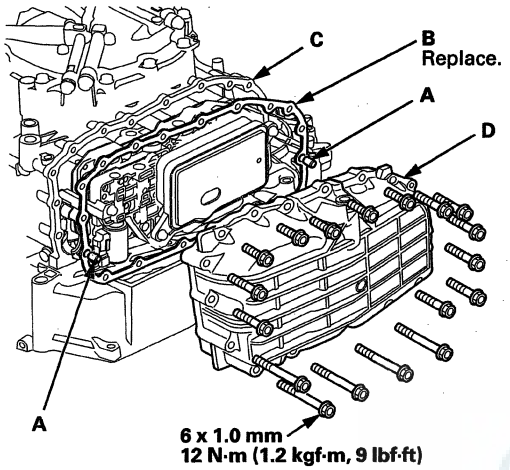


66. Install the two CVTF pipes (C) on the lower valve body (D), then install the solenoid wire harness 7P connector and the lower valve body in the transmission housing (E).
67. Install a new O-ring (F) on the CVTF strainer (G), then install the CVTF strainer (two bolts) on the lower valve body.

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Transmission Reassembly (cont'd)

68. Install the two dowel pins (A) and a new gasket (B) on the transmission housing (C).

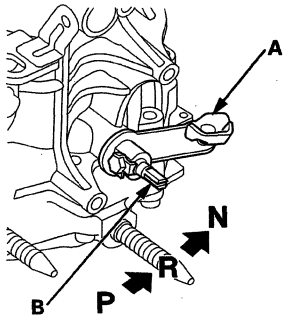


69. Place the CVTF pan (D) on the transmission housing.

70. Install the CVTF pan bolts (eighteen), and tighten them to the specified torque in a crisscross pattern in at least two or three steps.

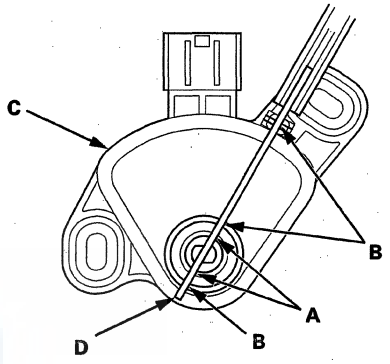
71. Move the shift position from the P position to the N position by turning the selector control lever (A).

    NOTE: Do not squeeze the end (B) of the selector control shaft tips together when turning. If the tips are squeezed together it will cause a faulty control signal or position due to play between the selector control shaft and the transmission range switch.

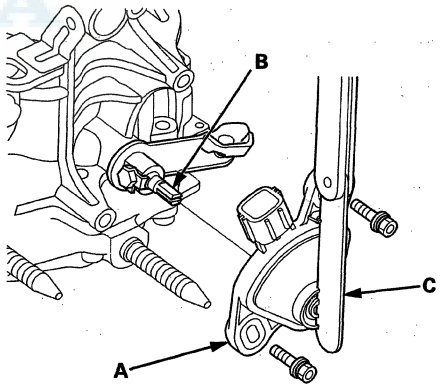


72. Align the cutouts (A) on the rotary-frame with the neutral positioning cutouts (B) on the transmission range switch (C). Then put a 2.0 mm (0.079 in) feeler gauge blade (D) in the cutouts to hold the transmission range switch in the N position.

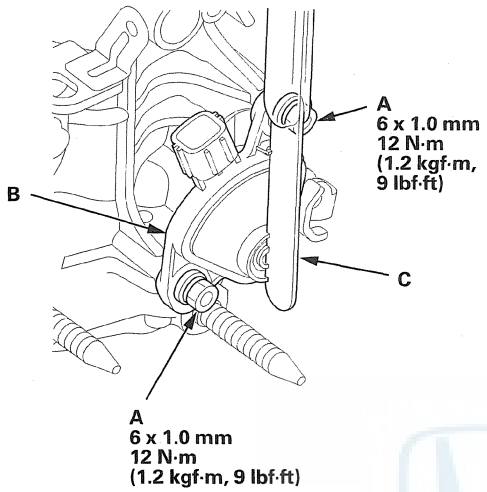
    NOTE: Be sure to use a 2.0 mm (0.079 in) feeler gauge blade or equivalent to hold the transmission range switch in the N position.



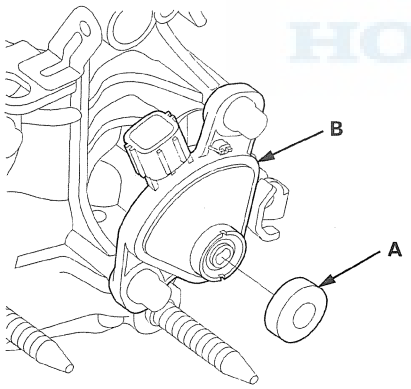
73. Install the transmission range switch (A) gently on the selector control shaft (B) while holding it in the N position with the 2.0 mm (0.079 in) blade (C).



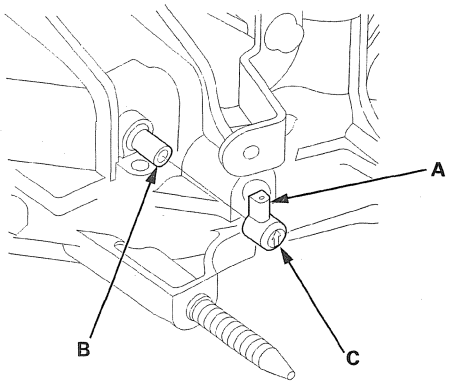
74. Tighten the bolts (A) on the transmission range switch (B) while you continue to hold it in the N position. Do not move the transmission range switch when tightening the bolts. Remove the feeler gauge (C).



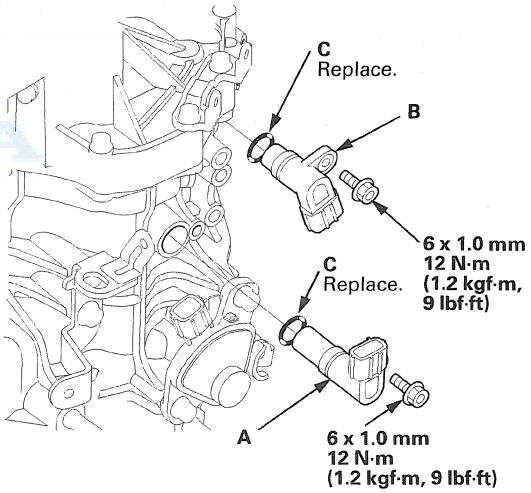
75. Install the control shaft cover (A) on the transmission range switch (B).



76. Install the breather cap (A) on the breather pipe (B) with its arrow (C) pointing to the flywheel housing.



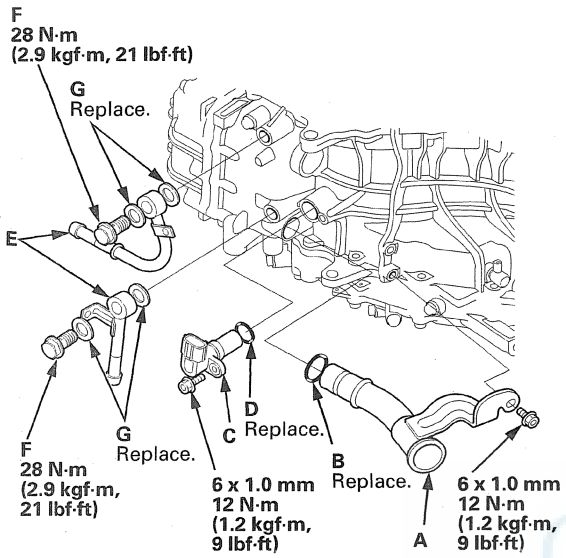
77. Install the CVT output shaft (driven pulley) speed sensor (A), and the vehicle speed sensor (B), with new O-rings (C).



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Transmission Reassembly (cont'd)

78. Install the dipstick tube (A) with a new O-ring (B).

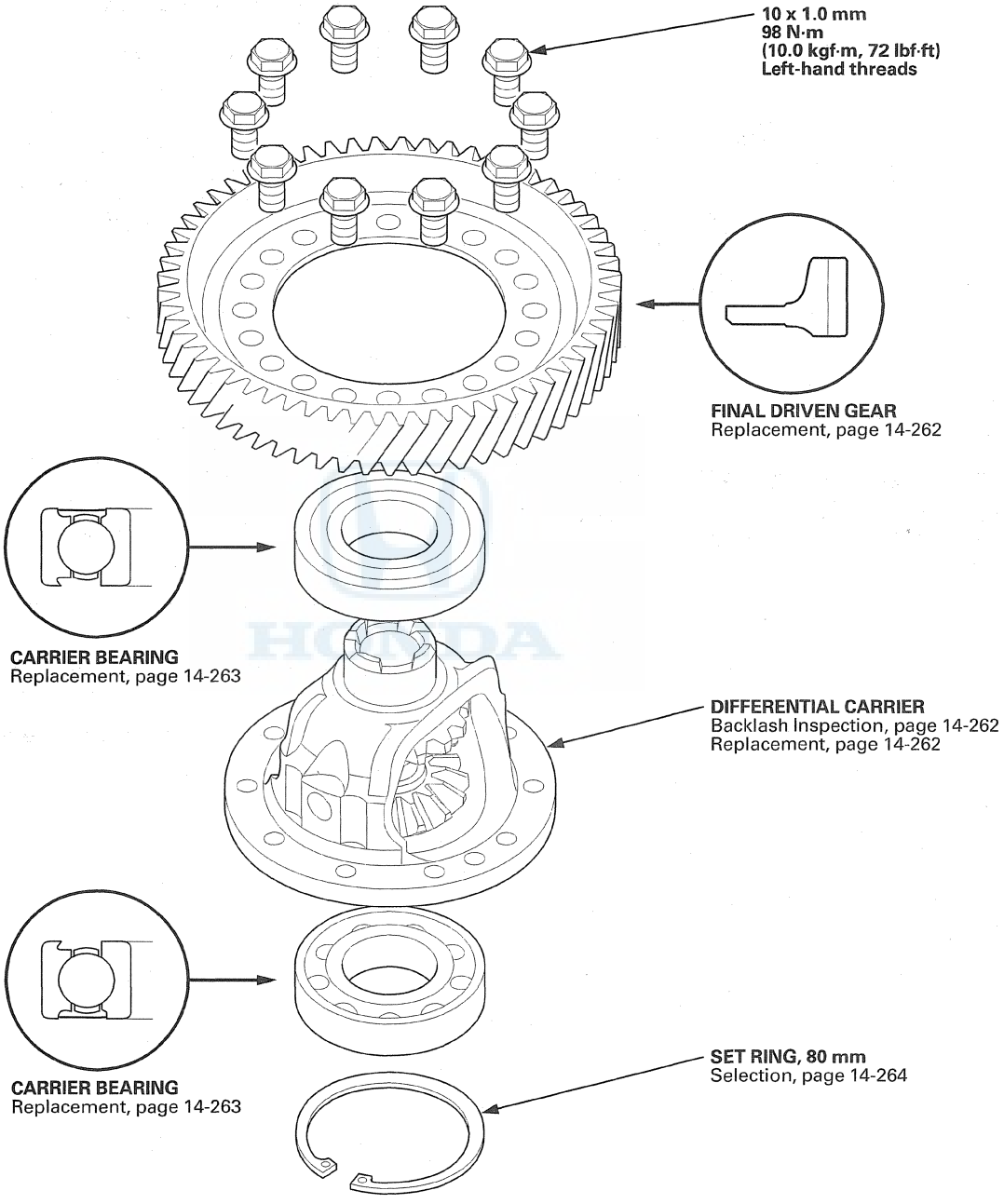


79. Install the CVT input shaft (drive pulley) speed sensor (C) with a new O-ring (D).

80. Install the two CVTF cooler lines (E) with the line bolts (F) and new sealing washers (G).

81. Install the CVTF dipstick in the tube.

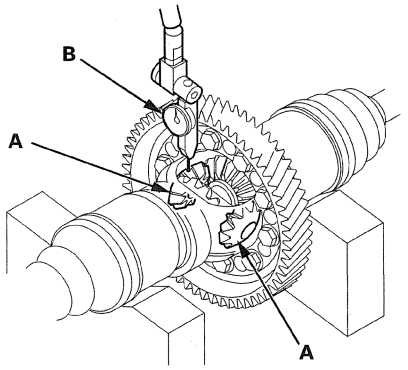
Component Location Index



CVT Differential

Backlash Inspection

1. Install the driveshafts on the differential, then place the axles on V-blocks.



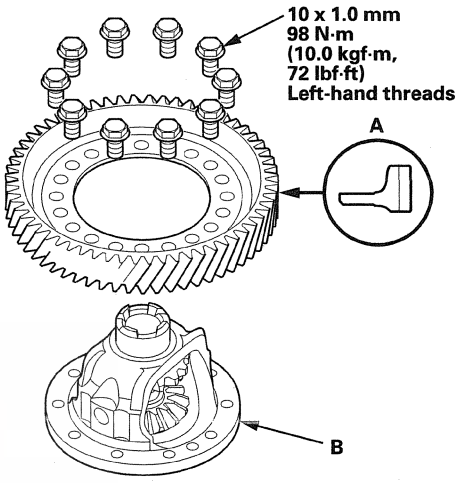
2. Check the backlash of the pinion gears (A) using a dial indicator (B).

   Standard: 0.05—0.15 mm (0.0020—0.0059 in)

3. If the backlash is out of standard, replace the differential carrier (see page 14-262).

Differential Carrier/Final Driven Gear Replacement

1. Remove the carrier bearings (see page 14-263).
2. Remove the final driven gear (A) from the differential carrier (B), and replace the differential carrier or the final driven gear. The final driven gear bolts have left-hand threads.



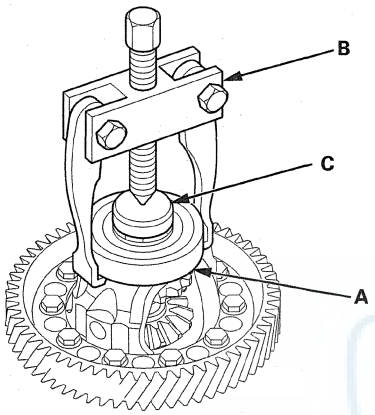
3. Install the final driven gear in the direction shown on the differential carrier.
4. Tighten the bolts to the specified torque in a crisscross pattern in at least two or three steps.
5. Install the carrier bearings (see page 14-263).

Carrier Bearing Replacement

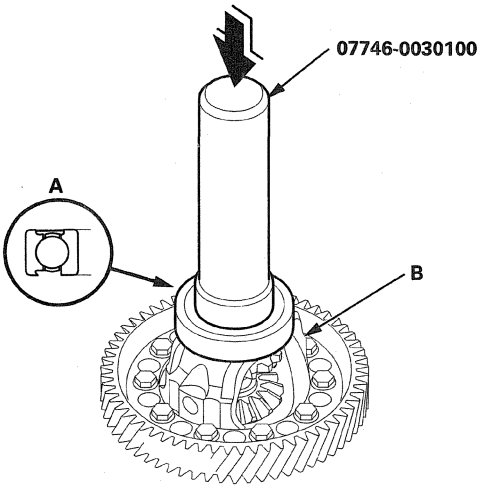
Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

1. Remove the carrier bearings (transmission housing side and flywheel housing side) (A) using a commercially available puller (B) and a spacer (C), and replace the carrier bearings.



2. Install new bearings (A) in the direction shown on the differential carrier (B) using the 40 mm driver handle and a press. Press the bearing on until it bottoms.

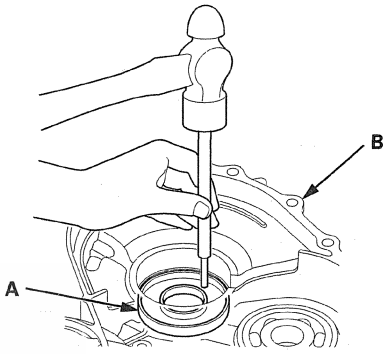


Oil Seal Replacement

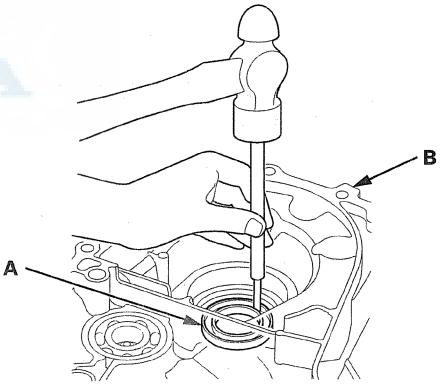
Special Tools Required

- Driver Handle, 15 x 135L 07749-0010000
- Bearing Driver Attachment, 78 x 80 mm 07NAD-PX40100
- Oil Seal Driver Attachment, 58 mm 07JAD-PH80101

1. Remove the oil seal (A) from the transmission housing (B).



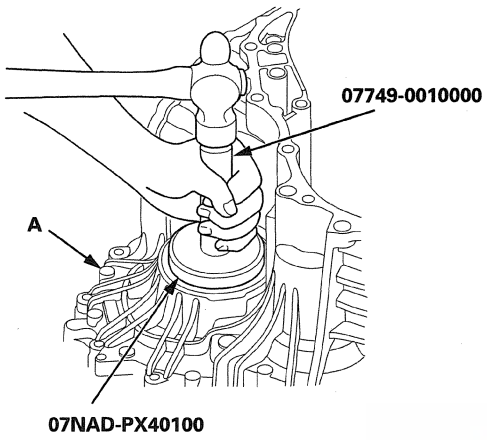
2. Remove the oil seal (A) from the flywheel housing (B).



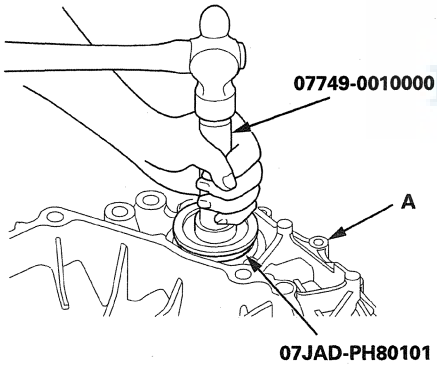
(cont'd)

Oil Seal Replacement (cont'd)

3. Install a new oil seal flush to the transmission housing (A) using the 15 x 135L driver handle and the 78 x 80 mm bearing driver attachment.



4. Install a new oil seal flush with the flywheel housing (A) using the 15 x 135L driver handle and the 58 mm oil seal driver attachment.

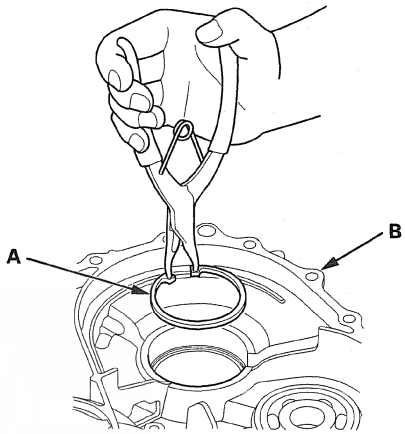


Carrier Bearing Side Clearance Inspection

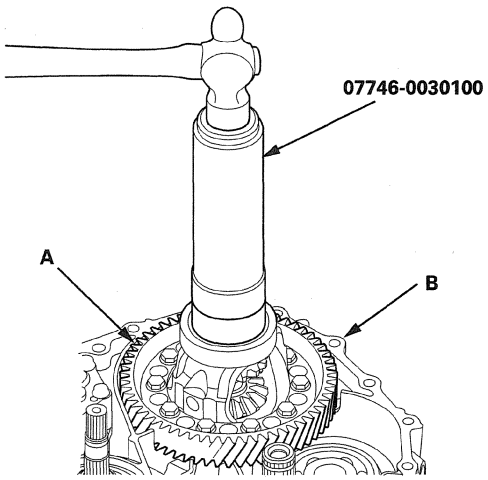
Special Tools Required

Driver Handle, 40 mm I.D. 07746-0030100

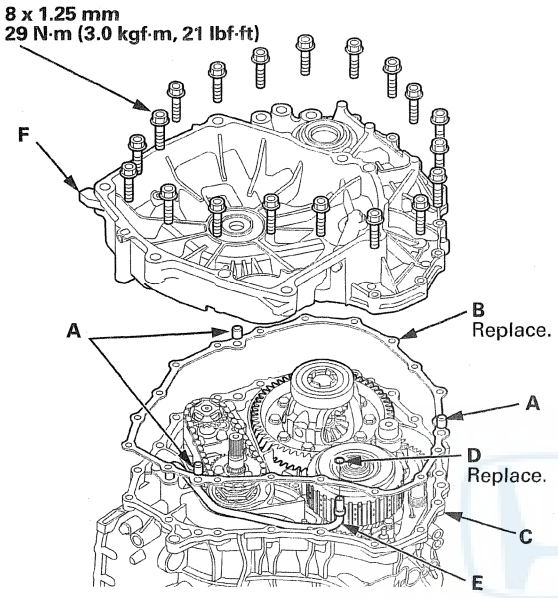
1. Remove the oil seal from the transmission housing (see page 14-263).
2. Install the set ring (A) in the transmission housing (B).



3. Install the differential assembly (A) in the transmission housing (B), then drive the differential to seat in the transmission housing using the 40 mm driver handle.



4. Install the three dowel pins (A) and a new gasket (B) on the transmission housing (C), and Install a new O-ring (D) on end of the CVTF passage pipe (E).

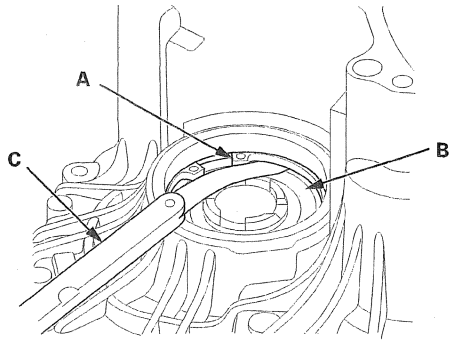


5. Place the flywheel housing (F) on the transmission housing.

6. Install the housing bolts (nineteen), and tighten them to the specified torque in a crisscross pattern in at least two or three steps, then turn the transmission flywheel housing down.

7. Measure the clearance between the set ring (A) and the carrier bearing (B) outer race using a feeler gauge (C).

Standard: 0—0.15 mm (0—0.005 in)



8. If the clearance is out of standard, remove the set ring, and measure its thickness.

9. Select a new set ring from the following table.

SET RING, 80 mm

No.	Thickness
1	2.5 mm (0.098 in)
2	2.6 mm (0.102 in)
3	2.7 mm (0.106 in)
4	2.8 mm (0.110 in)
5	2.9 mm (0.114 in)
6	3.0 mm (0.118 in)

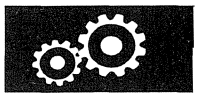
10. Install a new set ring, and recheck the clearance and make sure it is within the standard.

11. Install the oil seal to the transmission housing (see page 14-263).

Transaxle

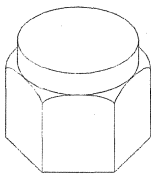
Driveline/Axle

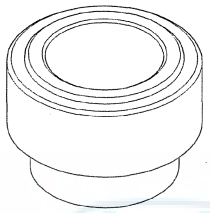
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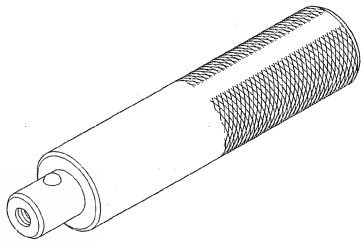


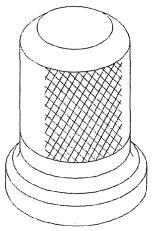
Special Tools

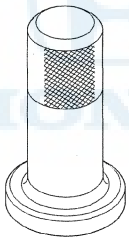
Ref.No.	Tool Number	Description	Qty
①	071AF-S3VA000	Ball Joint Thread Protector, 14 mm	1
②	07746-0030400	Driver, Inner 35 mm I.D.	1
③	07749-0010000	Driver Handle, 15 x 135L	1
④	07947-SB0A100	Oil Seal Driver, 44.5 mm	1
⑤	07JAD-PL90100	Oil Seal Driver, 65 mm	1
⑥	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑦	07NAD-P20A100	Oil Seal Driver Attachment	1
⑧	07NAF-SR3A101	Half Shaft Base	1
⑨	07XAC-001010A	Threaded Adapter, 22 x 1.5 mm	1

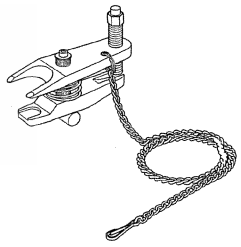

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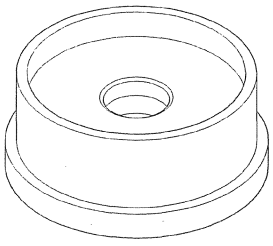

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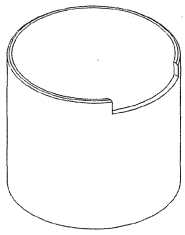

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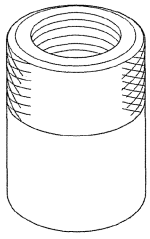

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⑥

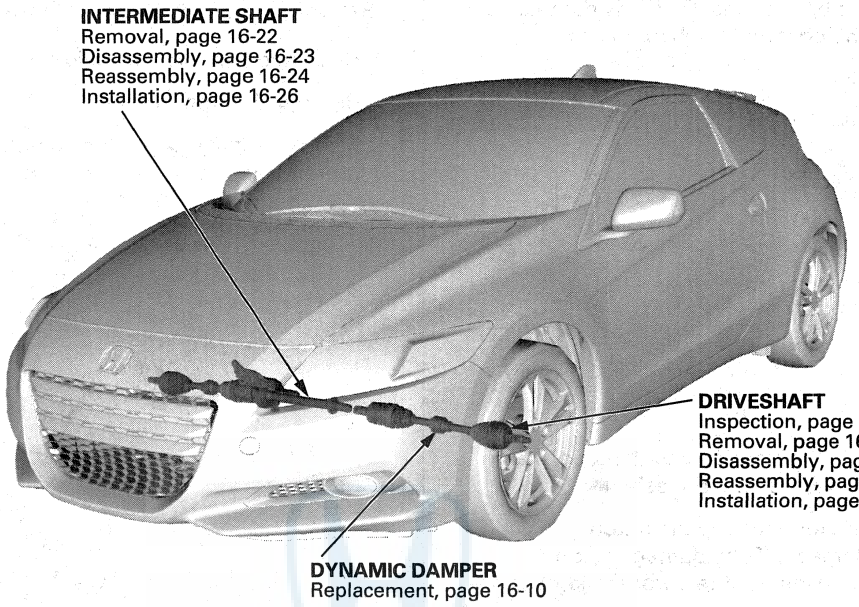

⑦


⑧

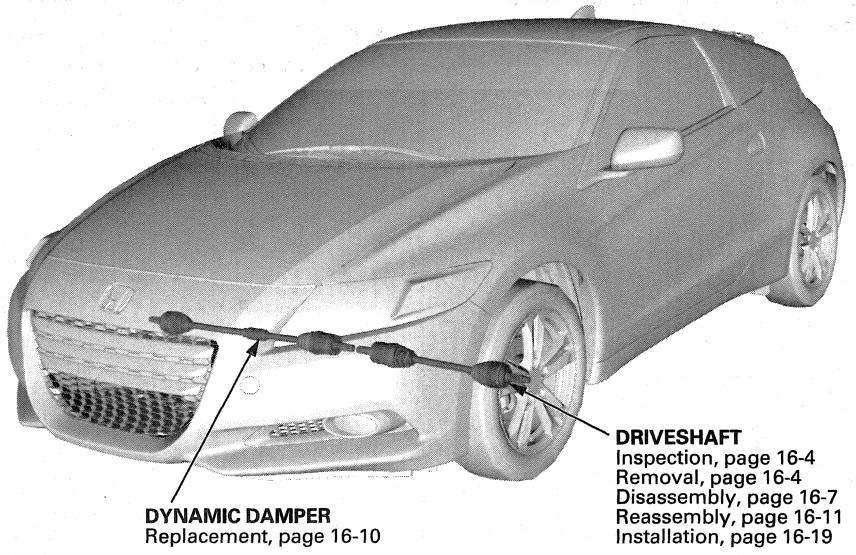

⑨

Component Location Index

M/T model

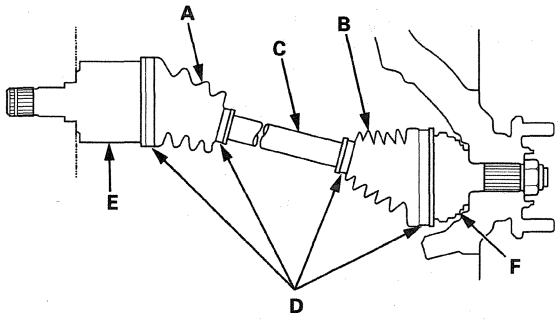


CVT model



Driveshaft Inspection

1. Check the inboard boot (A) and the outboard boot (B) on the driveshaft (C) for cracks, damage, leaking grease, and loose boot bands (D). If any damage is found, replace the boot and the boot bands.

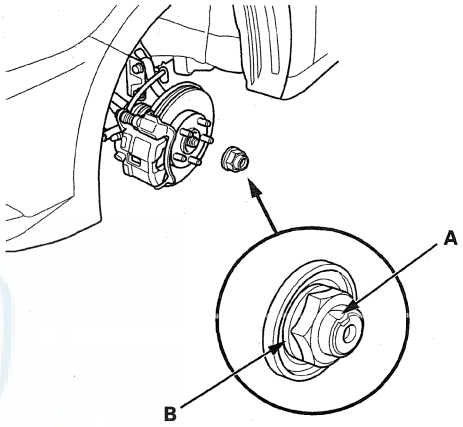


2. Check the driveshaft for cracks and damage. If any damage is found, replace the driveshaft.
3. Check the inboard joint (E) and the outboard joint (F) for cracks and damage. If any damage is found, replace the inboard joint or the outboard joint as an assembly.
4. Hold the inboard joint and turn the front wheel by hand, then make sure the joint is not excessively loose. If necessary, replace the inboard joint or the outboard joint as an assembly.

Driveshaft Removal

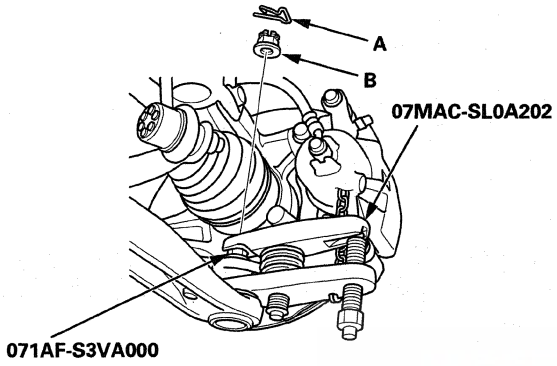
Special Tools Required
- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Pry up the stake (A) on the spindle nut (B), then remove the nut.

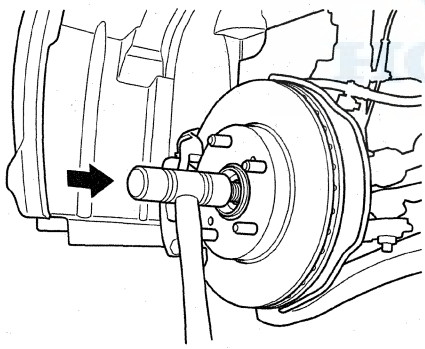


4. Remove the splash shield (see page 20-163).
5. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer:
   - Manual transmission (see page 13-41)
   - CVT (see page 14-154)

6. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B). Separate the ball joint from the knuckle using the 14 mm ball joint thread protector and the 28 mm ball joint remover (see page 18-11).



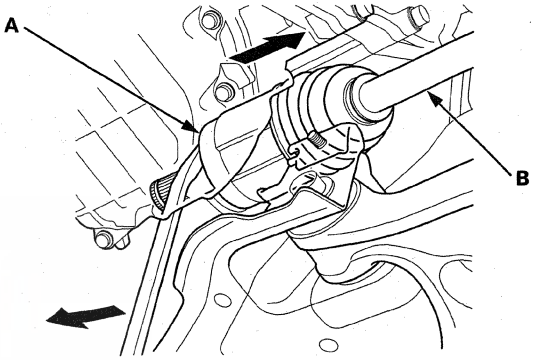
7. Pull the knuckle outward, and separate the outboard joint from the front hub using a soft face hammer.



8. Left driveshaft: Pry the inboard joint (A) from the differential using a pry bar. Remove the driveshaft as an assembly.

NOTE:

- Do not pull on the driveshaft (B), or the inboard joint may come apart. Pull the inboard joint straight out to avoid damaging the oil seal.
- Be careful not to damage the oil seal or the end of the inboard joint with the pry bar.



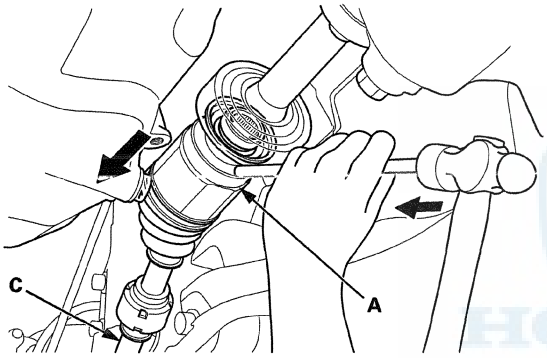
(cont'd)

Driveshaft Removal (cont'd)

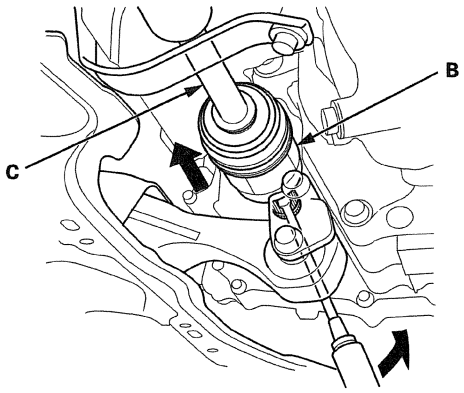
9. Right driveshaft: Drive the inboard joint (A) off of the intermediate shaft using a drift punch and a hammer (M/T model). Pry the inboard joint (B) from the differential using the pry bar (CVT model). Remove the driveshaft as an assembly.

   NOTE:
   - Do not pull on the driveshaft (C) or the inboard joint may come apart. Pull the inboard joint straight out to avoid damaging the oil seal.
   - Be careful not to damage the oil seal or the end of the inboard joint with the drift punch or the pry bar.

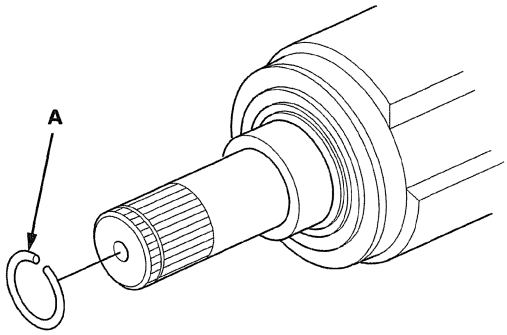
M/T model



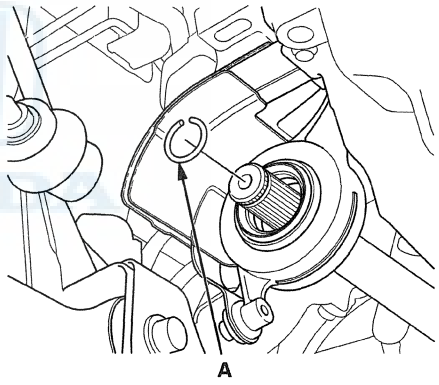
CVT model



10. Remove the set ring (A) from the inboard joint (except M/T model right driveshaft).



11. Remove the set ring (A) from the intermediate shaft (M/T model).



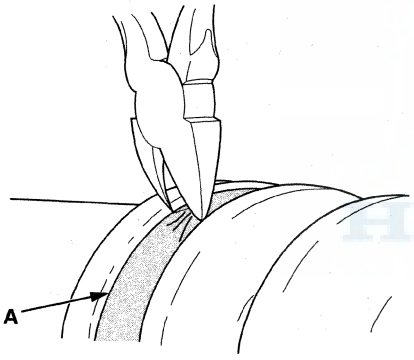
Driveshaft Disassembly

Special Tools Required
- Threaded Adapter, 22 x 1.5 mm 07XAC-001010A
- Slide Hammer 5/8"-18 UNF, commercially available
- Boot Band Pliers, commercially available
- Bearing Puller, commercially available

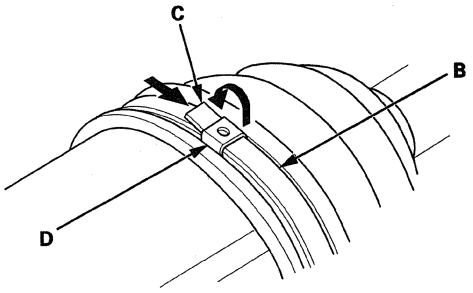
Inboard Joint Side

1. Remove the boot bands. Be careful not to damage the boot.
   - If the boot band is a welded type (A), cut the boot band.
   - If the boot band is a double loop type (B), lift up the band end (C), then push it into the clip (D).
   - If the boot band is a low profile type (E), pinch the boot band using commercially available boot band pliers (F).

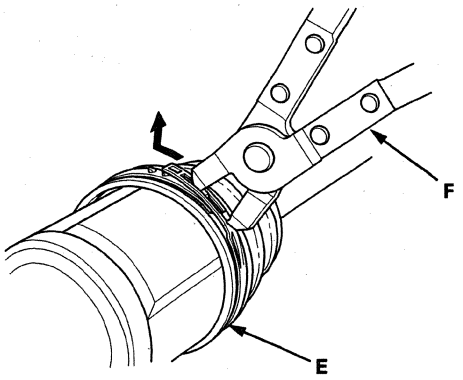
Welded type



Double loop type

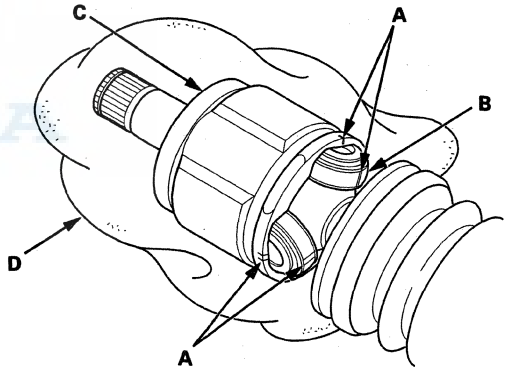


Low profile type



2. Make marks (A) on each roller (B) and the inboard joint (C) to identify the locations of the rollers to the grooves in the inboard joint.

   NOTE: Do not engrave or scribe any marks on the rolling surface.



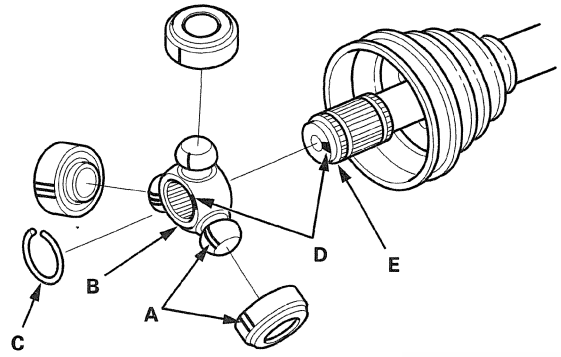
3. Remove the inboard joint on a clean shop towel (D). Be careful not to drop the rollers when separating them from the inboard joint.

(cont'd)

Driveshaft Disassembly (cont'd)

4. Make marks (A) on the spider (B) that match the marks on the rollers, then remove the rollers.

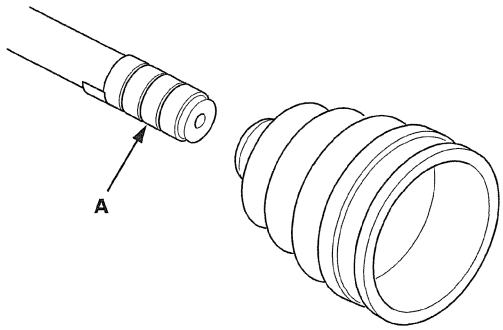
   NOTE: Do not engrave or scribe any marks on the rolling surface.



5. Remove the circlip (C).
6. Make marks (D) on the spider and the driveshaft (E) to identify the position of the spider on the shaft.
7. Remove the spider.

   NOTE: If necessary, use a commercially available bearing puller.

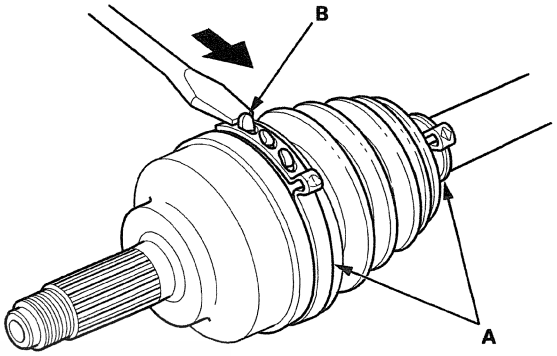
8. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.



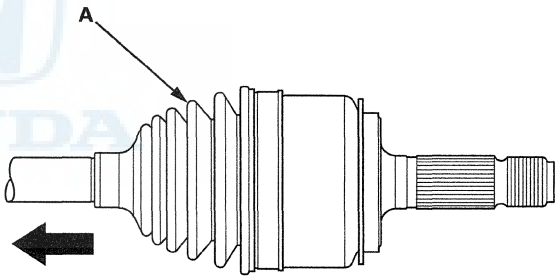
9. Remove the inboard boot. Be careful not to damage the boot.
10. Remove the vinyl tape.

Outboard Joint Side

1. Remove the boot bands (A). Lift up the three tabs (B) using a flat-tipped screwdriver, then release the band. Be careful not to damage the boot.

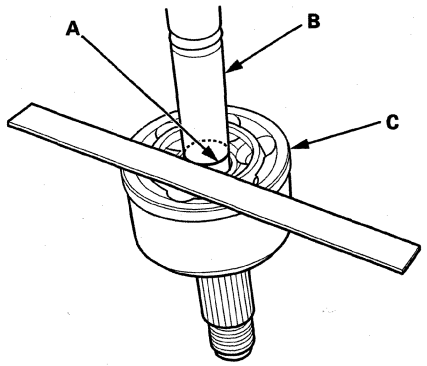


2. Slide the outboard boot (A) partially toward the inboard joint side. Be careful not to damage the boot.

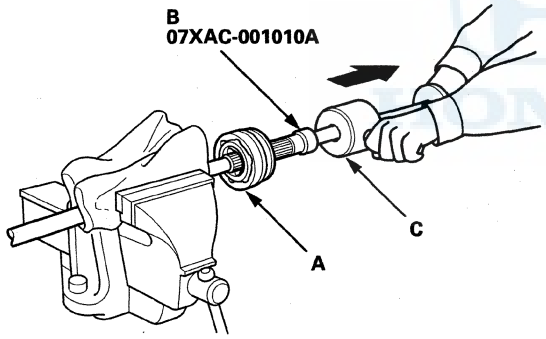


3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.

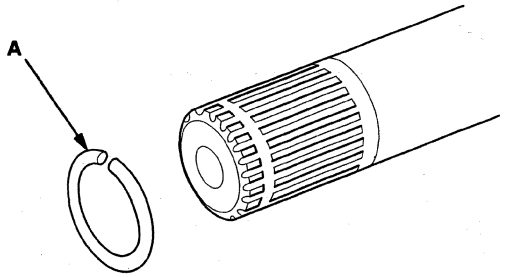
4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint end (C).



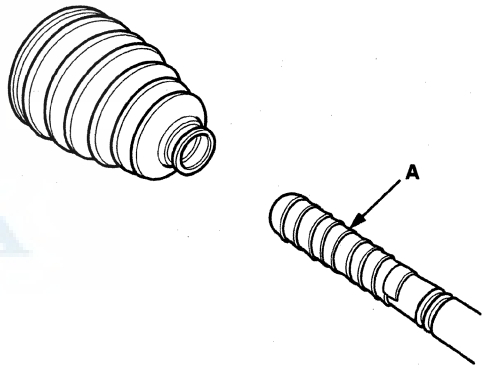
5. Securely clamp the driveshaft in a bench vise with a shop towel wrapped around the driveshaft.
6. Remove the outboard joint (A) using the 22 x 1.5 mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).



7. Remove the driveshaft from the bench vise.
8. Remove the stop ring (A) from the driveshaft.



9. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.

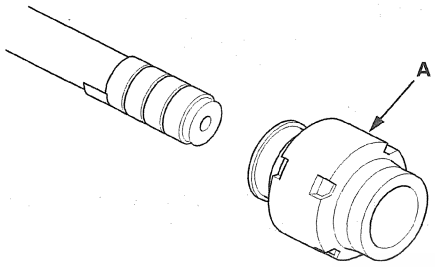


10. Remove the outboard boot. Be careful not to damage the boot.
11. Remove the vinyl tape.

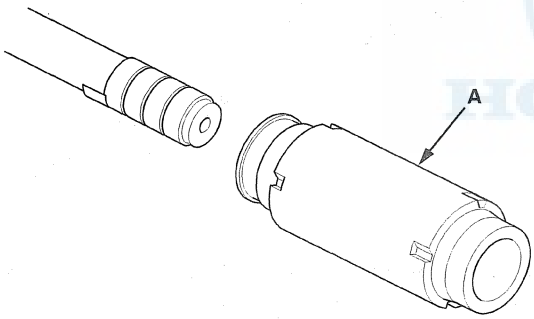
Dynamic Damper Replacement

1. Remove the inboard joint (see page 16-7).
2. Remove the dynamic damper band (see step 1 on page 16-7).
3. Remove the dynamic damper (A).

Dynamic damper type 1



Dynamic damper type 2



4. Install a new dynamic damper.

NOTE: Be careful not to swap the dynamic dampers. Check the type of dynamic damper by its shape.

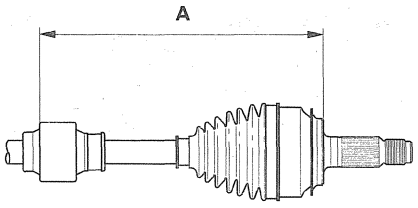
Dynamic Damper Type

Model	Driveshaft	Type
M/T	Left	1
	Right	1
CVT	Left	———
	Right	2

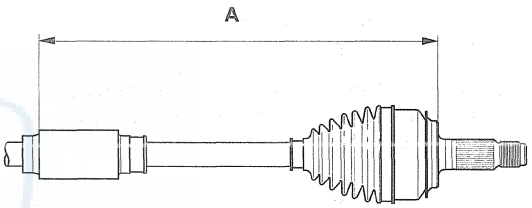
5. Adjust the specified distance (A) between the outboard joint side and the dynamic damper edge.

NOTE: Check the type of dynamic damper by its shape.

Dynamic damper type 1



Dynamic damper type 2



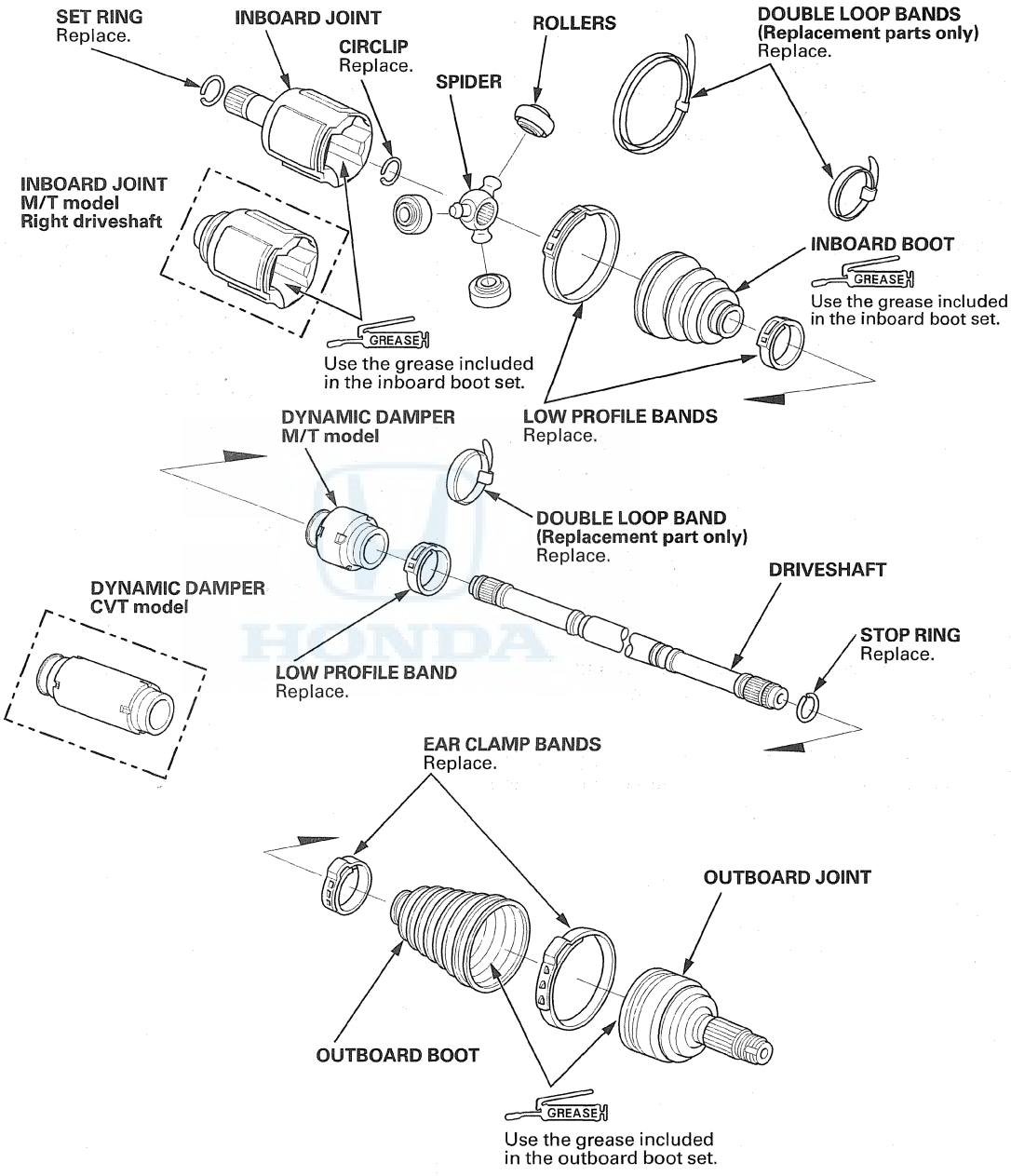
Dynamic Damper Position

Model	Driveshaft	Dynamic damper type	Specified distance (A)
M/T	Left	1	250.5—255.5 mm (9.862—10.059 in)
	Right	1	249.2—254.2 mm (9.811—10.008 in)
CVT	Left	———	———
	Right	2	477.5—482.5 mm (18.799—18.996 in)

6. Install a new dynamic damper band (see step 10 on page 16-14).
7. Install the inboard joint (see page 16-12).

Driveshaft Reassembly

Exploded View



(cont'd)

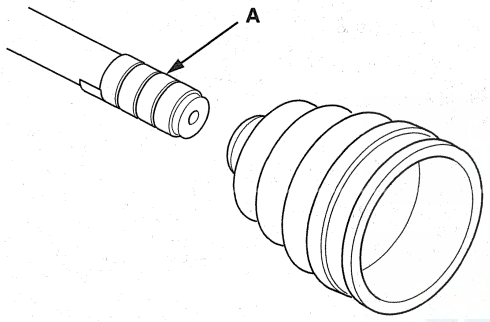
Driveshaft Reassembly (cont'd)

Special Tools Required
- Boot Band Tool KD-3191 or equivalent, commercially available
- Boot Band Clamp Tool Kent-Moore J-35910 or equivalent, commercially available
- Boot Band Pliers, commercially available

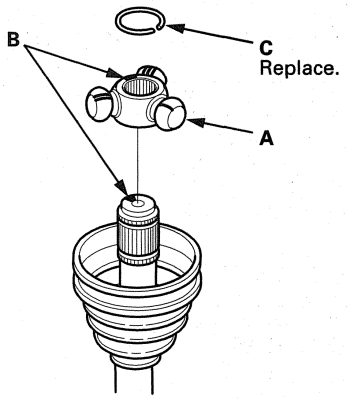
NOTE: Refer to the Exploded View, as needed, during this procedure.

Inboard Joint Side

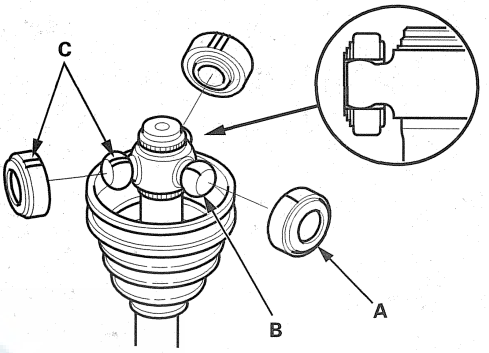
1. Wrap the splines with vinyl tape (A) to prevent damaging the inboard boot.



2. Install the inboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the inboard boot.
3. Install the spider (A) onto the driveshaft by aligning the marks (B) you made on the spider and the end of the driveshaft.

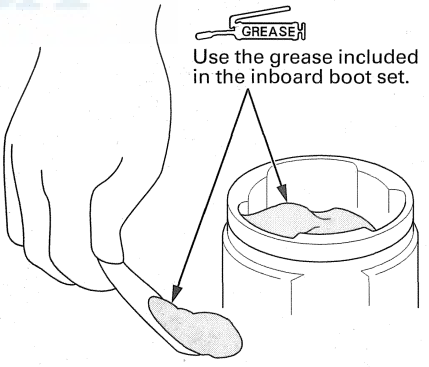


4. Install a new circlip (C) into the driveshaft groove. Always rotate the circlip in its groove to make sure it is fully seated.
5. Fit the rollers (A) onto the spider (B) as shown, and note these items:
   - Reinstall the rollers in their original positions on the spider by aligning the marks (C) you made.
   - Hold the driveshaft pointed up to prevent the rollers from falling off.

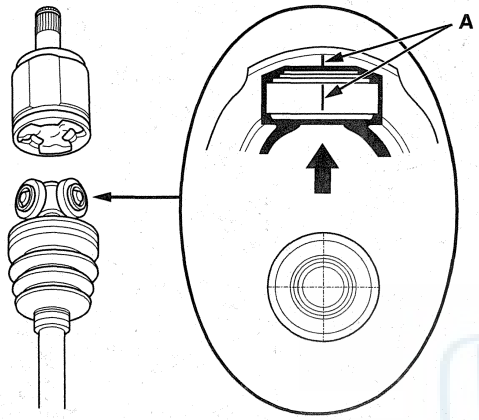


6. Pack the inboard joint with the joint grease included in the new inboard boot set.

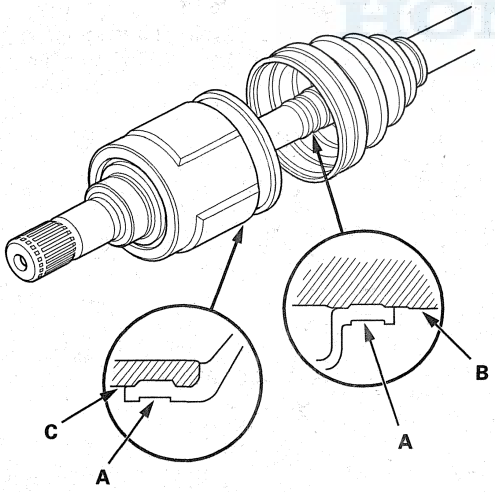
Grease quantity
Inboard joint: 90—100 g (3.17—3.53 oz)



7. Fit the inboard joint onto the driveshaft, and note these items:
   - Reinstall the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the rollers.
   - Hold the driveshaft so the inboard joint is pointing up to prevent it from falling off.

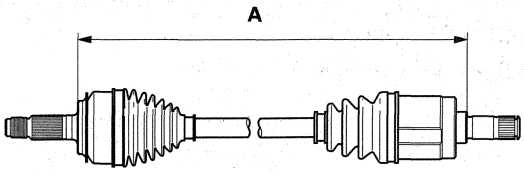


8. Fit the boot ends (A) onto the driveshaft (B) and the inboard joint (C).

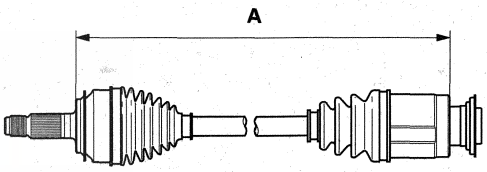


9. Adjust the length (A) of the driveshafts to the figure as shown, then adjust the boots to halfway between full compression and full extension. Bleed excess air from the boots by inserting a flat-tipped screwdriver between the boot and the joint.

Driveshaft type 1



Driveshaft type 2



Driveshaft Length

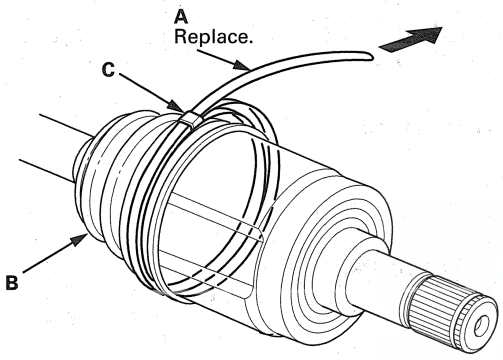
Model	Driveshaft	Type	Specified length (A)
M/T	Left	1	513–518 mm (20.20–20.39 in)
	Right	2	472–477 mm (18.58–18.78 in)
CVT	Left	1	508–513 mm (20.00–20.20 in)
	Right	1	823–828 mm (32.40–32.60 in)

(cont'd)

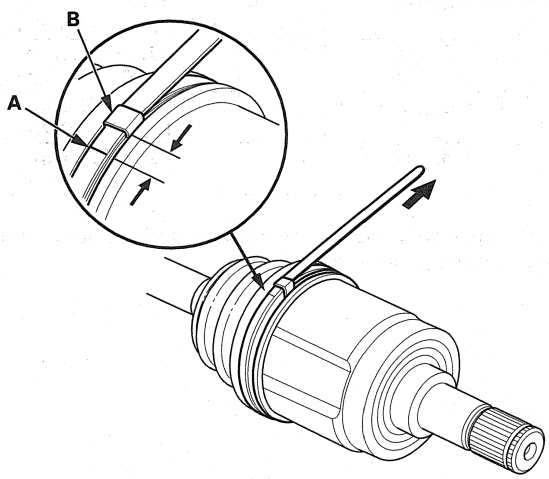
Driveshaft Reassembly (cont'd)

10. Install new boot bands.
    - For the double loop type, go to step 11.
    - For the low profile type, go to step 20.
11. Fit the boot ends onto the driveshaft and the inboard joint, then install a new double loop band (A) onto the boot (B).

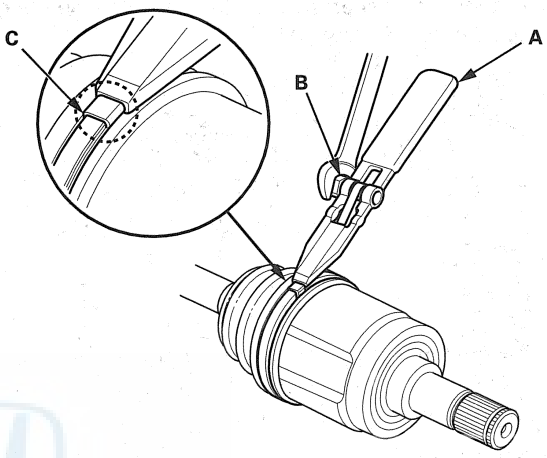
    NOTE: Pass the end of the new double loop band through the clip (C) twice in the direction of the forward rotation of the driveshaft.



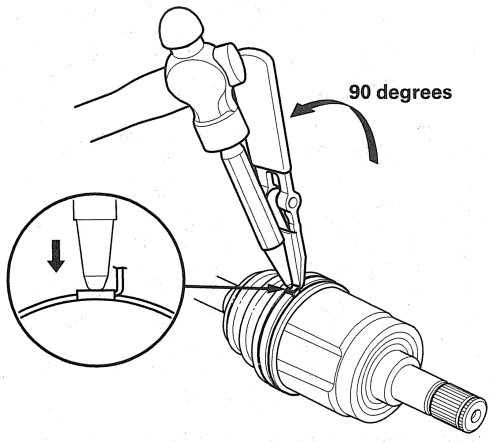
12. Pull up the slack in the band by hand.
13. Mark a line (A) on the band 10—14 mm (0.39—0.55 in) from the clip (B).



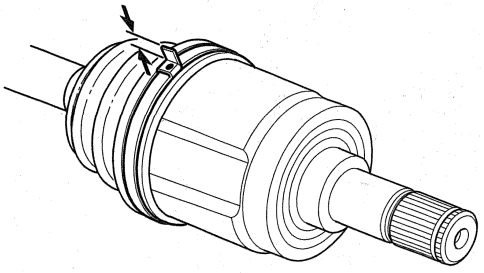
14. Thread the free end of the band through the nose section of the commercially available boot band tool (KD-3191 or equivalent) (A), and into the slot on the winding mandrel (B).



15. Using a wrench on the winding mandrel of the boot band tool, tighten the band until the marked line (C) on the band meets the edge of the clip.
16. Lift up the boot band tool to bend the free end of the band 90 degrees to the clip. Center-punch the clip, then fold over the remaining tail onto the clip.



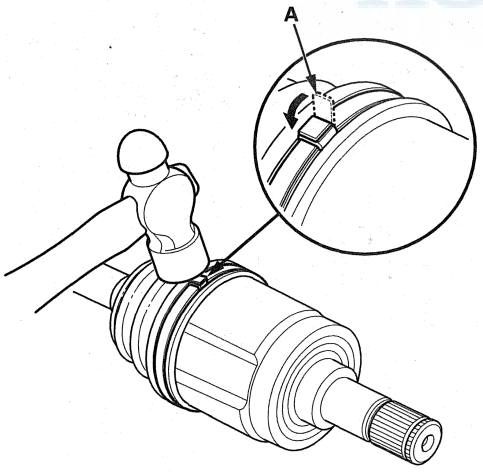
17. Unwind the boot band tool, and cut off the excess free end of the band to leave a 5—10 mm (0.20—0.39 in) tail protruding from the clip.



18. Bend the band end (A) by tapping it down using a hammer.

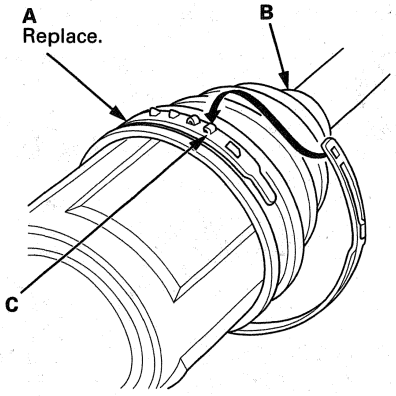
NOTE:

- Make sure the band and the clip do not interfere with anything on the vehicle, and the band does not move.
- Clean any grease remaining on the surrounding surfaces.

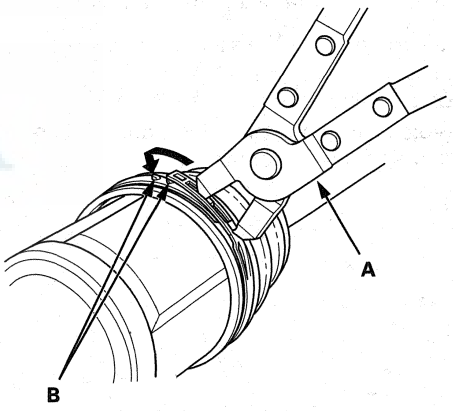


19. Repeat steps 11 through 18 for the band on the other end of the boot.

20. Install a new low profile band (A) onto the boot (B), then hook the tab (C) of the band.



21. Close the hook portion of the band using a commercially available boot band pliers (A), then hook the tabs (B) of the band.



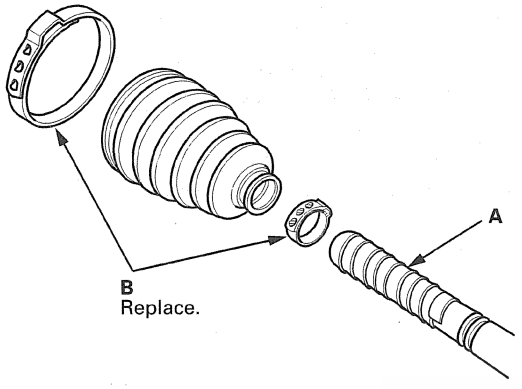
22. Install the boot band on the other end of the boot, and repeat steps 20 and 21.

(cont'd)

Driveshaft Reassembly (cont'd)

Outboard Joint Side

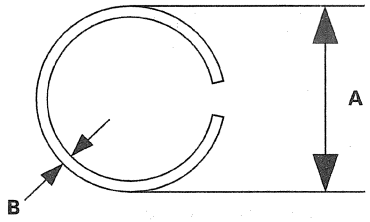
1. Wrap the splines with vinyl tape (A) to prevent damaging the outboard boot.



2. Install new ear clamp bands (B) and the outboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Make sure to check the size of a new stop ring.

NOTICE

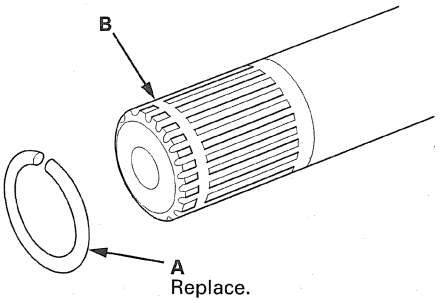
To avoid driveshaft and vehicle damage, make sure you install a new stop ring.



Stop ring specifications

Model	Over diameter (A)	Wire diameter (B)
M/T	26.0 mm (1.024 in)	2.0 mm (0.079 in)
CVT	23.5 mm (0.925 in)	2.0 mm (0.079 in)

4. Install the stop ring (A) into the driveshaft groove (B).

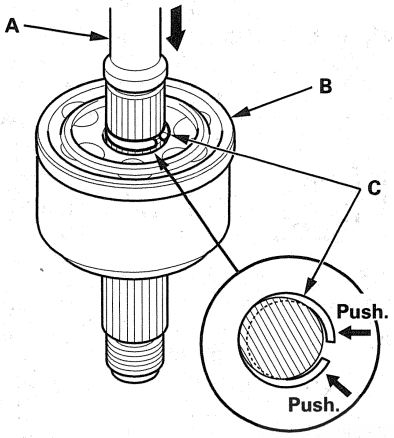


5. Pack about 35 g (1.23 oz) of grease included in the new outboard boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.

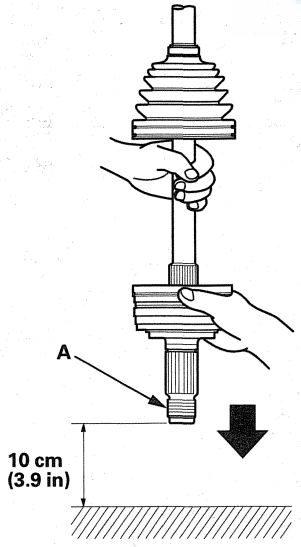


6. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint.



7. To completely seat the outboard joint, pick up the driveshaft and the joint, and tap or hit the assembly onto a hard surface from a height of about 10 cm (3.9 in).

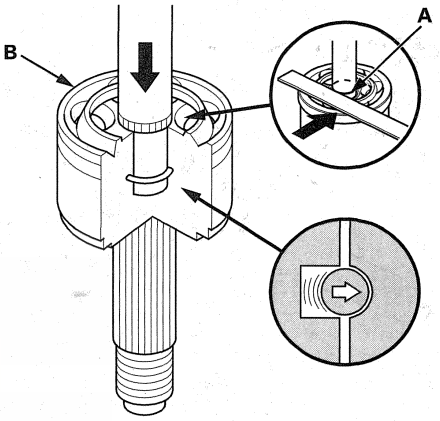
   NOTE: Do not use a hammer as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.



8. Check the alignment of the paint mark (A) you made with the outboard joint end (B).

NOTICE

To avoid driveshaft and vehicle damage, the shaft must be all the way into the outboard joint to ensure the stop ring is properly seated.

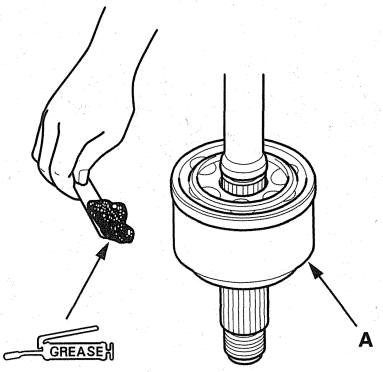


9. Pack the outboard joint (A) with the remaining joint grease included in the new outboard boot set.

Total grease quantity

Outboard joint:

Model	Quantity
M/T	85–95 g (3.00–3.35 oz)
CVT	95–105 g (3.35–3.70 oz)

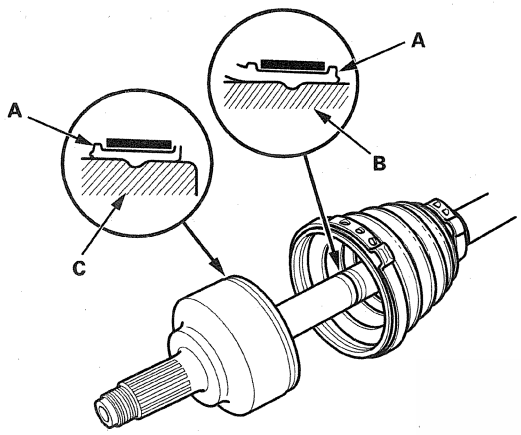


Use the grease included in the outboard boot set.

(cont'd)

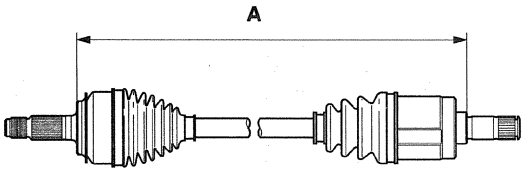
Driveshaft Reassembly (cont'd)

10. Fit the boot ends (A) onto the driveshaft (B) and the outboard joint (C). Bleed any excess air from the boot by inserting a flat-tipped screwdriver between the boot and the joint.

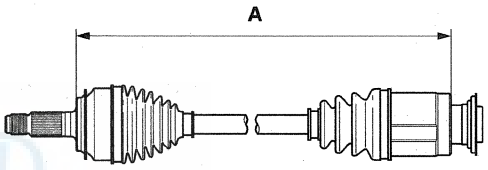


11. Inspect the length (A) of the driveshafts to the figure as shown, then adjust the boots to halfway between full compression and full extension.

Driveshaft type 1



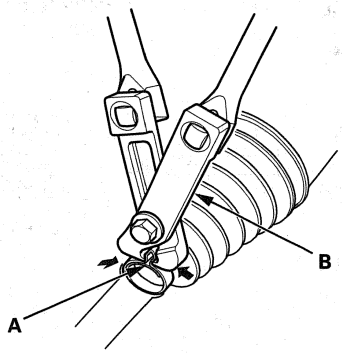
Driveshaft type 2



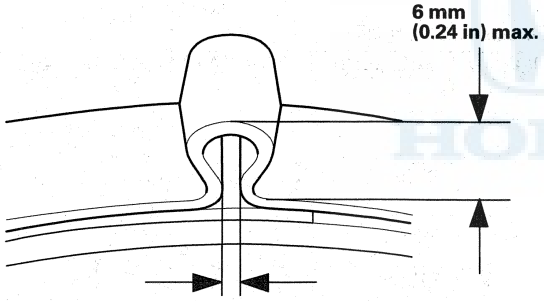
Driveshaft Length

Model	Driveshaft	Type	Specified length (A)
M/T	Left	1	513–518 mm (20.20–20.39 in)
	Right	2	472–477 mm (18.58–18.78 in)
CVT	Left	1	508–513 mm (20.00–20.20 in)
	Right	1	823–828 mm (32.40–32.60 in)

12. Close the ear portion (A) of the band using a commercially available boot band clamp tool (Kent-Moore J-35910 or equivalent) (B).



13. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.



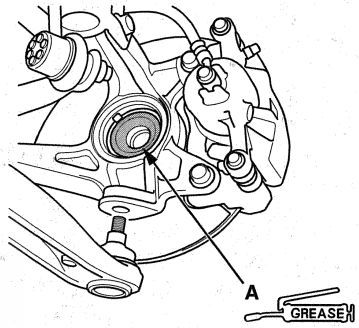
14. Repeat steps 12 and 13 for the band on the other end of the boot.

Driveshaft Installation

NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are clean.

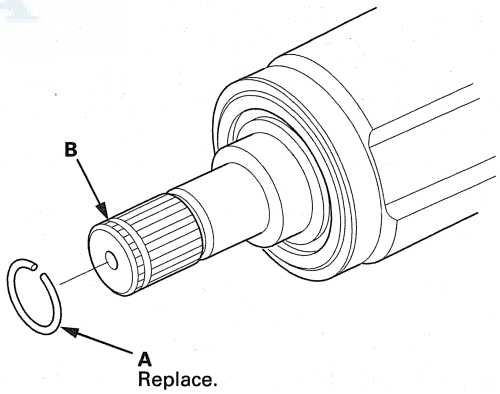
1. Apply about 5 g (0.18 oz) of moly 60 paste (P/N 08734-0001) to the contact area (A) of the outboard joint and the front wheel bearing.

   NOTE: The paste helps to prevent noise and vibration.



(P/N 08734-0001)

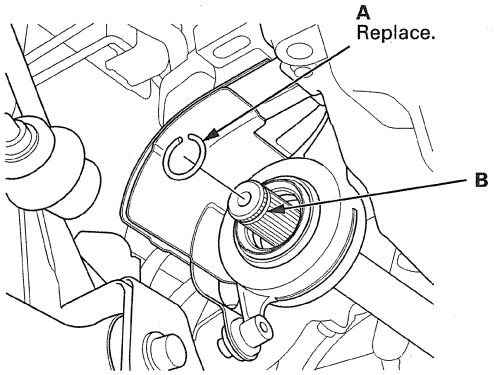
2. Install a new set ring (A) into the set ring groove (B) of the driveshaft inboard joint (except M/T model right driveshaft).



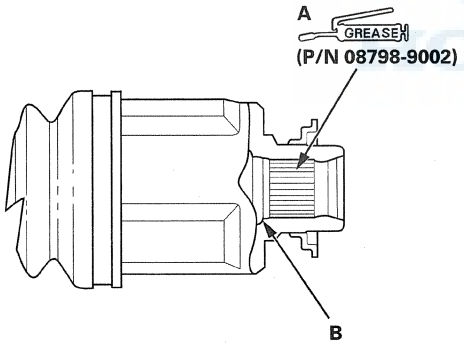
(cont'd)

Driveshaft Installation (cont'd)

3. Install a new set ring (A) into the set ring groove (B) of the intermediate shaft (M/T model).



4. Apply 0.5—1.0 g (0.018—0.035 oz) of super high temp urea grease (P/N 08798-9002) to the whole splined surface (A) of the right driveshaft (M/T model). After applying grease, remove the grease from the splined grooves at intervals of 2—3 splines and from the set ring groove (B) so that air can bleed from the intermediate shaft.

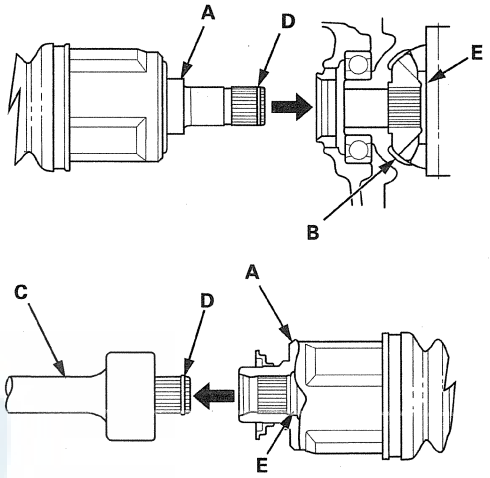


5. Clean the areas where the driveshaft contacts the differential thoroughly with solvent, and dry them with compressed air.

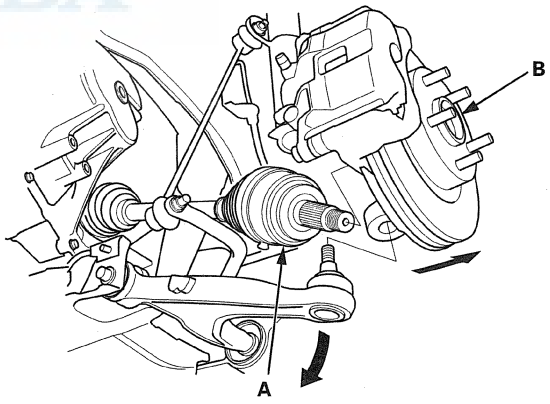
   NOTE: Do not wash the rubber parts with solvent.

6. Insert the inboard end (A) of the driveshaft into the differential (B) or the intermediate shaft (C) until the set ring (D) locks in the groove (E).

   NOTE: Insert the driveshaft horizontally to prevent damaging the oil seal.



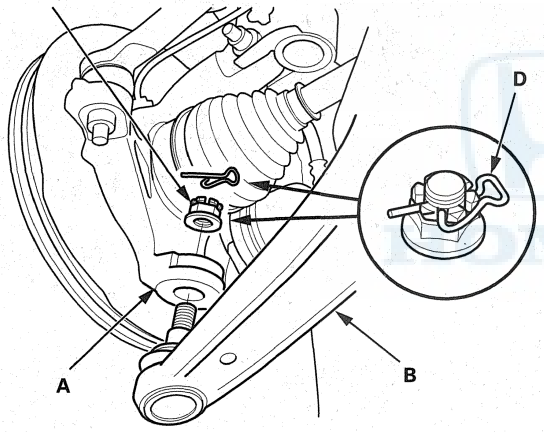
7. Install the outboard joint (A) into the front hub (B) on the knuckle.



8. Wipe off any grease contamination from the ball joint tapered section and threads, then install the knuckle (A) onto the lower arm (B). Be careful not to damage the ball joint boot. Wipe off the grease before tightening the nut at the ball joint. Torque a new castle nut (C) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole.

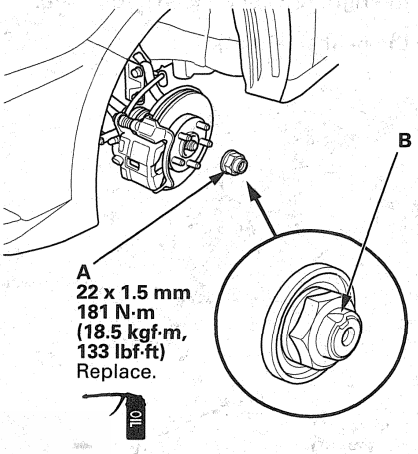
   NOTE:
   - Make sure the ball joint boot is not damaged or cracked.
   - Do not align the nut by loosening it.

C
14 x 2.0 mm
64—74 N·m
(6.5—7.5 kgf·m,
47—55 lbf·ft)
Replace.



9. Install the lock pin (D) into the ball joint pin hole.

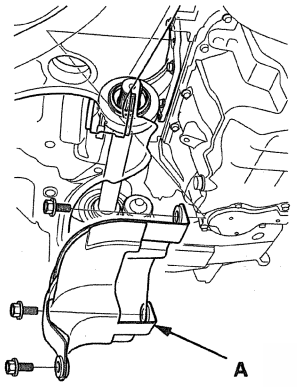
10. Apply a small amount of engine oil to the seating surface of a new spindle nut (A).



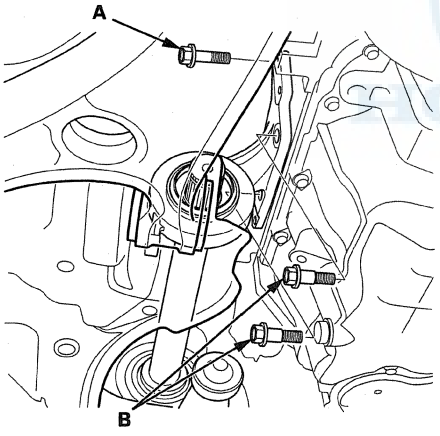
11. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
12. Clean the mating surfaces of the brake disc and the wheel, then install the front wheel.
13. Turn the front wheel by hand, and make sure there is no interference between the driveshaft and the surrounding parts.
14. Refill the transmission with the recommended transmission fluid:
    - Manual transmission (see page 13-41)
    - CVT (see page 14-154)
15. Install the splash shield (see page 20-163).
16. Lower the vehicle.
17. Check the wheel alignment, and adjust it if necessary (see page 18-5).
18. Test-drive the vehicle.

Intermediate Shaft Removal

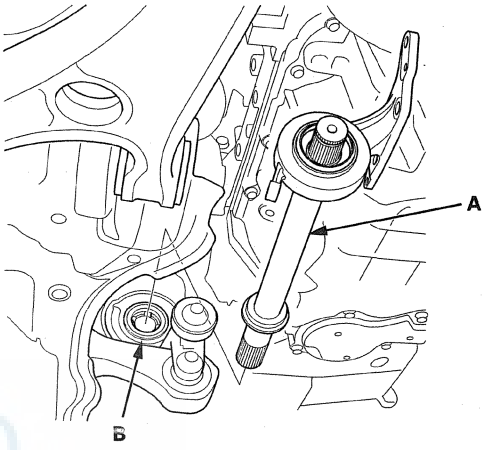
1. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer (see page 13-41).
2. Remove the right driveshaft (see page 16-4).
3. Remove the heat shield (A).



4. Remove the flange bolt (A) and the two dowel bolts (B).



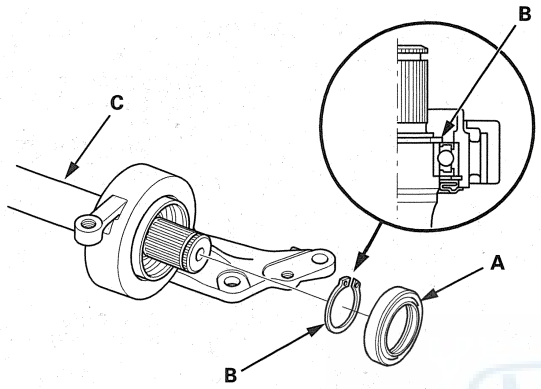
5. Remove the intermediate shaft (A) from the differential. Hold the intermediate shaft horizontally until it is clear of the differential to prevent damaging the oil seal (B).



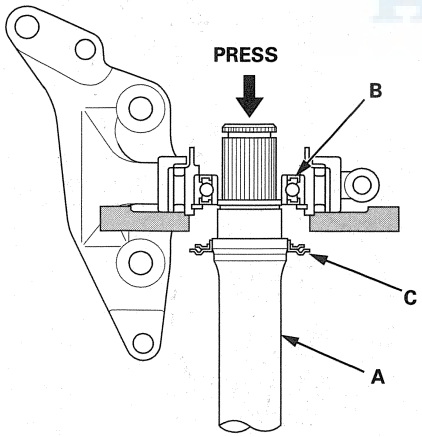
Intermediate Shaft Disassembly

Special Tools Required
- Half Shaft Base 07NAF-SR3A101
- Oil Seal Driver, 44.5 mm 07947-SB0A100

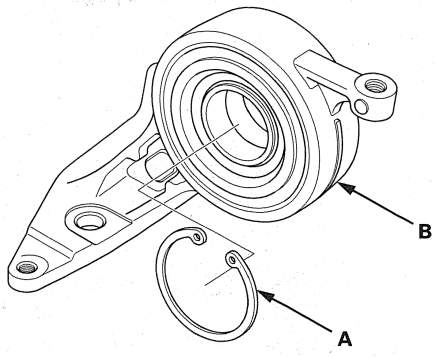
1. Remove the outer seal (A) and the external snap ring (B) from the intermediate shaft (C).



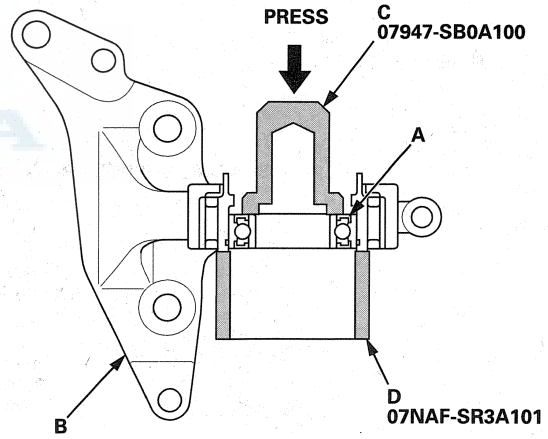
2. Press the intermediate shaft (A) out of the intermediate shaft bearing (B) using a press. Be careful not to damage the bearing support ring (C) on the intermediate shaft during disassembly.



3. Remove the internal snap ring (A) from the bearing support (B).



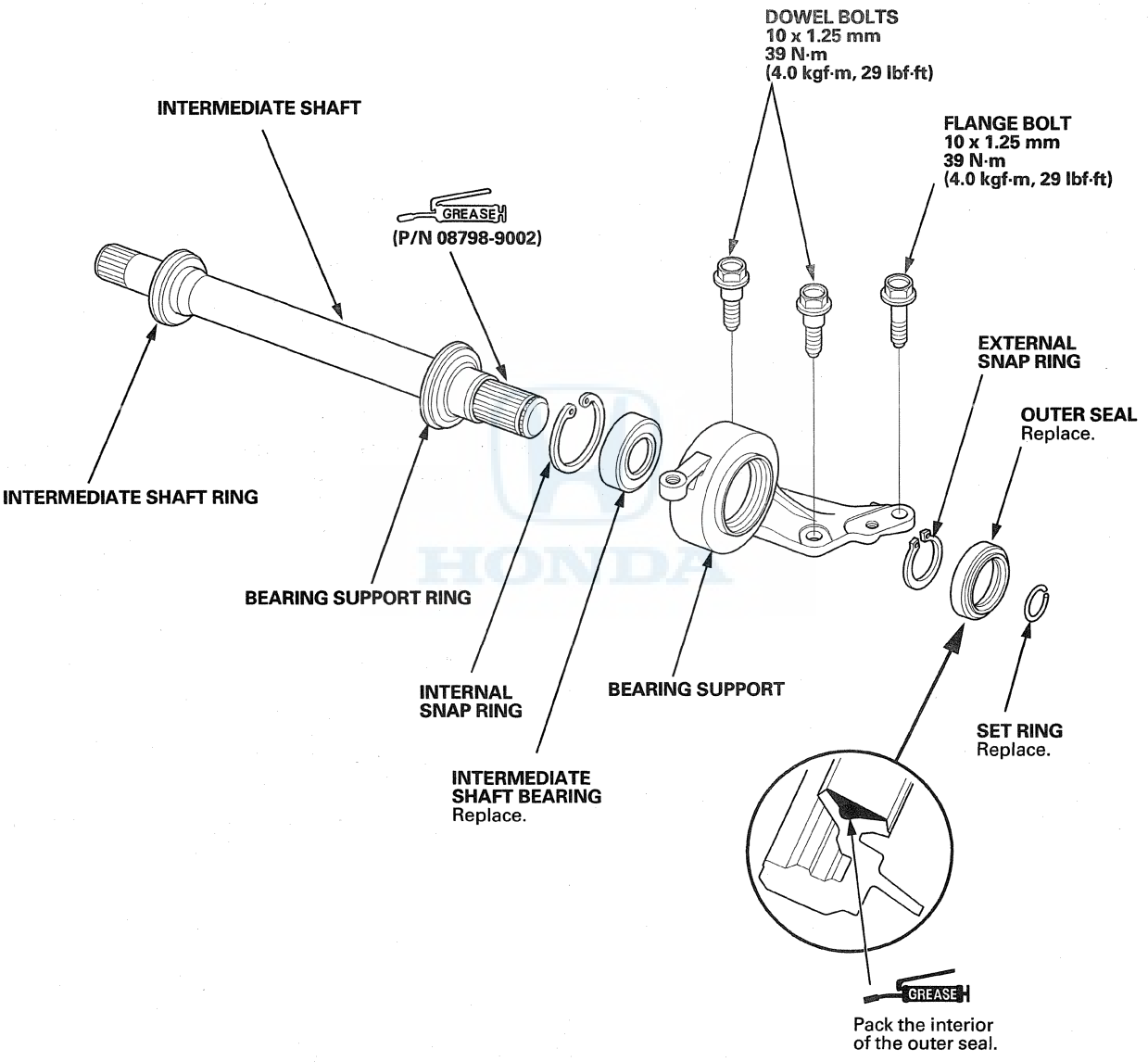
4. Press the intermediate shaft bearing (A) out of the bearing support (B) using the 44.5 mm oil seal driver (C), the half shaft base (D), and a press.



HONDA

Intermediate Shaft Reassembly

Exploded View



Special Tools Required

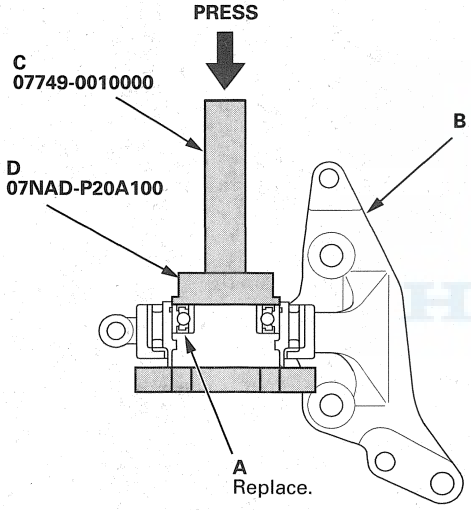
- Oil Seal Driver, 65 mm 07JAD-PL90100
- Oil Seal Driver Attachment 07NAD-P20A100
- Driver, Inner 35 mm I.D. 07746-0030400
- Driver Handle, 15 x 135L 07749-0010000

NOTE: Refer to the Exploded View, as needed, during this procedure.

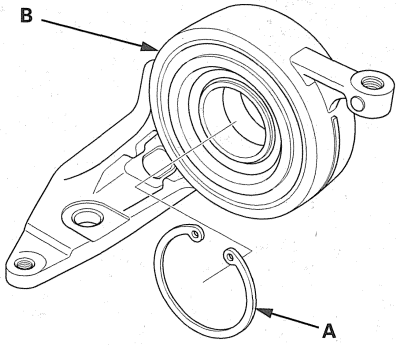
1. Clean the disassembled parts with solvent, and dry them with compressed air.

   NOTE: Do not wash the rubber parts with solvent.

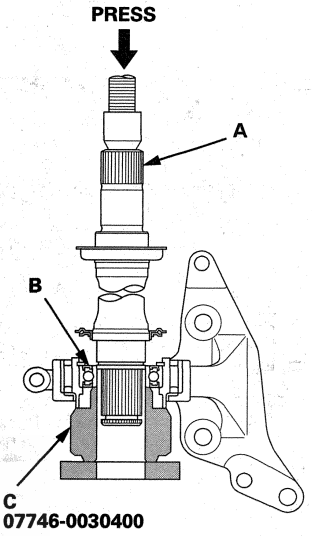
2. Press a new intermediate shaft bearing (A) into the bearing support (B) using the 15 x 135L driver handle (C), oil seal driver attachment (D), and a press.



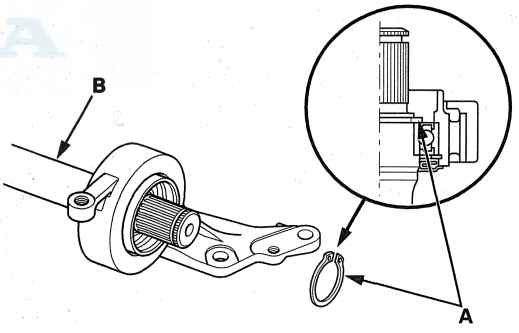
3. Install the internal snap ring (A) into the groove of the bearing support (B).



4. Press the intermediate shaft (A) into the shaft bearing (B) using the 35 mm inner driver (C) and a press.



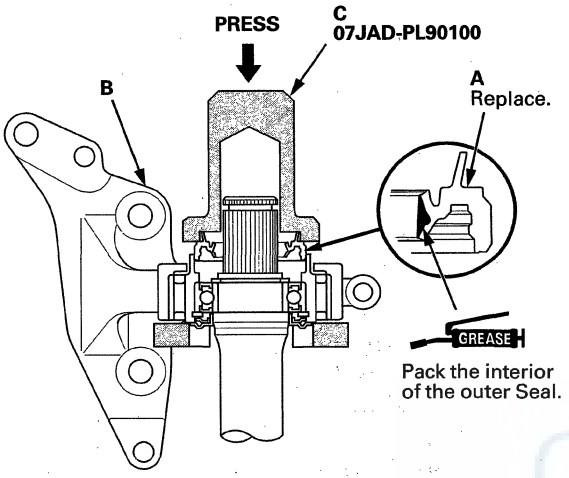
5. Install the external snap ring (A) in the groove of the intermediate shaft (B).



(cont'd)

Intermediate Shaft Reassembly (cont'd)

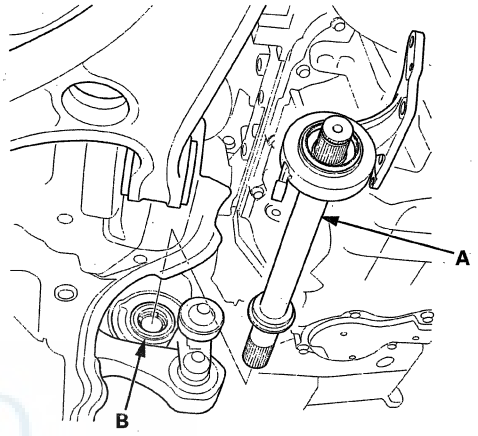
6. Install a new outer seal (A) into the bearing support (B) using the 65 mm oil seal driver (C) and a press. Press in the seal flush with the surface of the bearing support.



Intermediate Shaft Installation

1. Clean the areas where the intermediate shaft (A) contact the differential thoroughly with solvent, and dry them with compressed air.

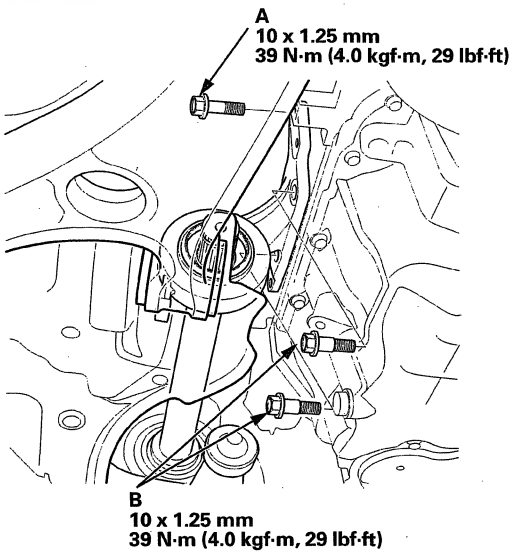
   NOTE: Do not wash the rubber parts with solvent.



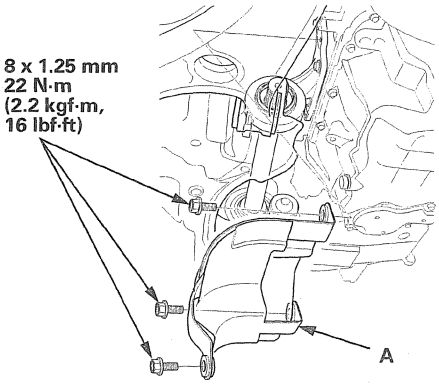
2. Insert the intermediate shaft into the differential correctly.

   NOTE: Insert the intermediate shaft carefully to prevent damaging the oil seal (B).

3. Install the flange bolt (A) and the two dowel bolts (B).



4. Install the heat shield (A).



5. Install the right driveshaft (see page 16-19).
6. Refill the transmission with the recommended transmission fluid (see page 13-41).
7. Check the wheel alignment, and adjust it if necessary (see page 18-5).
8. Test-drive the vehicle.

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NOTES

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Navigation Tools: Click on the “Table of Contents” below, or use the Bookmarks to the left.

INTRODUCTION

How to Use This Manual

This manual is divided into multiple sections. The first page of each section is marked with a black tab that lines up with its corresponding thumb index tab on this page and the back cover. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

Each section includes:

1. A table of contents, or an exploded view index showing:
   - Parts disassembly sequence.
   - Bolt torques and thread sizes.
   - Page references to descriptions in text.
2. Disassembly/assembly procedures and tools.
3. Inspection.
4. Testing/troubleshooting.
5. Repair.
6. Adjustments.

Safety Messages

Your safety, and the safety of others, is very important. To help you make informed decisions, we have provided safety messages, and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing this vehicle. You must use your own good judgment.

You will find important safety information in a variety of forms including:

- **Safety Labels** — on the vehicle.
- **Safety Messages** — preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION. These signal words mean:

⚠ DANGER	You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ WARNING	You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ CAUTION	You CAN be HURT if you don't follow instructions.

- **Instructions** — how to service this vehicle correctly and safely.

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at anytime without notice. No part of this publication may be reproduced, or stored in a retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, images, and tables.

As you read this manual, you will find information that is preceded by a **NOTICE** symbol. The purpose of this message is to help prevent damage to your vehicle, other property, or the environment.

First Edition 10/2011
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Specifications apply to USA and Canada

Honda Motor Co., Ltd.
Service Publication Office

As sections with * include SRS and IMA components; special precautions are required when servicing.

marked sections are not included in this manual, see Volume 1.

General Information
Specifications
Maintenance
*Engine Electrical
*Engine Mechanical
Engine Cooling
*Fuel and Emissions
IMA System
*Transaxle
*Steering
Suspension (Including TPMS)
*Brakes (Including VSA)
*Body
*Heating, Ventilation, and Air Conditioning
*Body Electrical
*Audio, Navigation, and Telematics
*Restraints

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BISHKO AUTOMOBILE LITERATURE

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If steering maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

Steering

Steering

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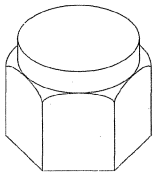
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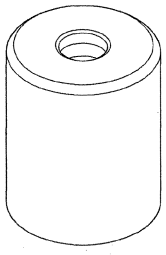
HONDA

Special Tools

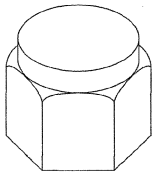
Ref.No.	Tool Number	Description	Qty
①	071AF-S3VA000	Ball Joint Thread Protector, 14 mm	1
②	07965-SA50500	Bearing Driver Attachment, 36 mm	1
③	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
④	07MAA-SL00100, 07916-SA50001, or 07AAA-TL2A100	Locknut Wrench, 40 mm	1
⑤	07MAC-SL0A202	Ball Joint Remover, 28 mm	1



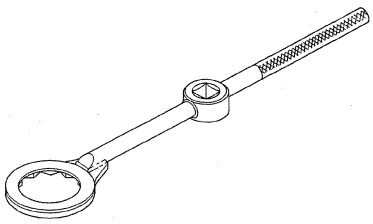
①



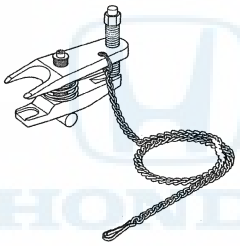
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③

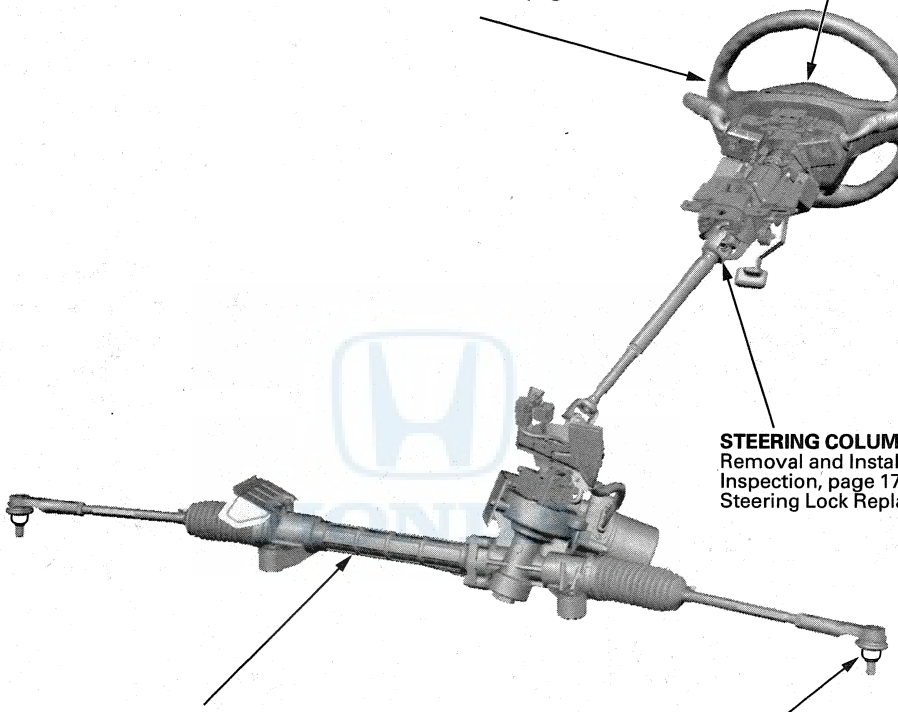


④



⑤

Component Location Index



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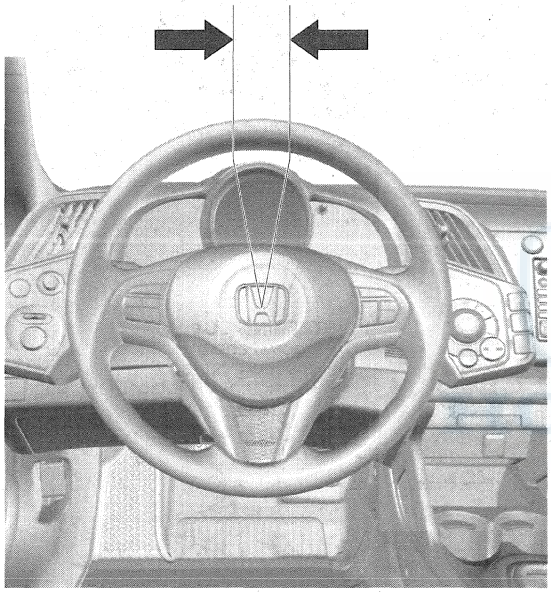
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Gearbox Mount Cushion Replacement, page 17-20
EPS Component Location Index, page 17-21

TIE-ROD END BALL JOINT BOOT
Replacement, page 17-19

Steering Wheel Rotational Play Check

1. Set the front wheels in the straight ahead position.
2. Measure how far you can turn the steering wheel left and right without moving the front wheels.
   - If the play is within the limit, the steering gearbox and the steering linkage are OK.
   - If the play exceeds the limit, adjust the rack guide (see page 17-18). If the play is still excessive after rack guide adjustment, do the steering linkage and gearbox inspection (see page 17-5).

Rotational play: 0—10 mm (0—0.39 in)

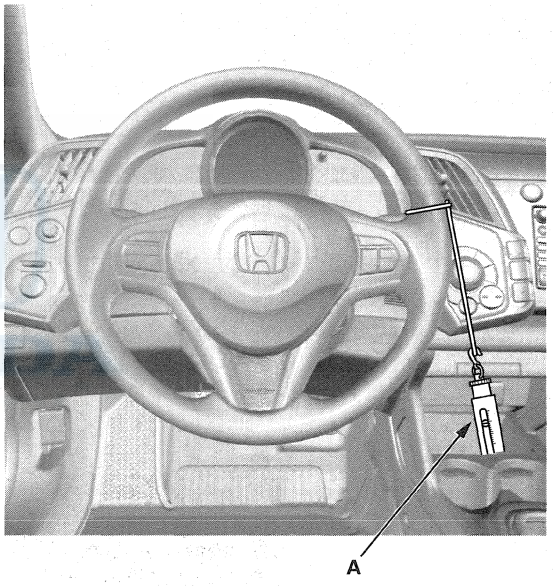


Power Assist Check

NOTE: This test should be done with original equipment tires and wheels at the correct tire pressure.

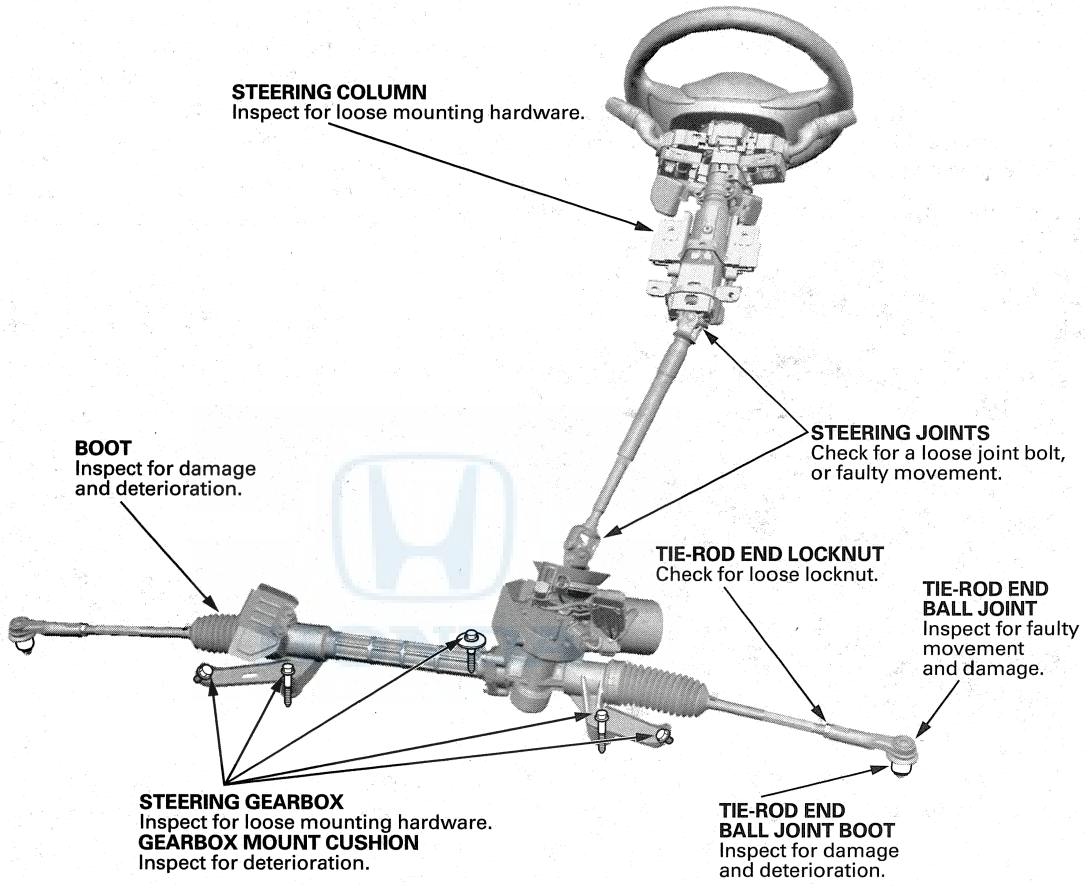
1. Start the engine, and let it idle.
2. Make sure the 3-mode Drive System is in the Normal Mode.
3. Attach a commercially available spring scale (A) to the steering wheel. With the engine idling and the vehicle on a clean, dry floor, pull the scale as shown, and read it as soon as the tires begin to turn.

Initial turning load: 29 N (3.0 kgf, 6.6 lbf)



4. If the scale reads no more than the specification, the power assist is OK. If it reads more, check these items:
   - Steering linkage (see page 17-5)
   - Rack guide adjustment (see page 17-18)
   - EPS system (see page 17-22)

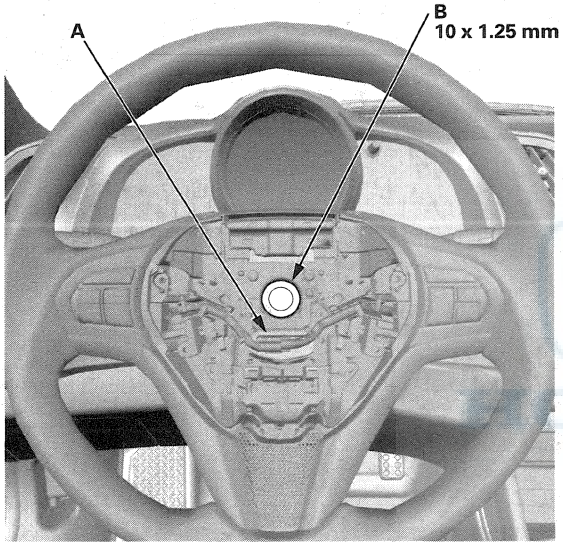
Steering Linkage and Gearbox Inspection



Steering Wheel Removal

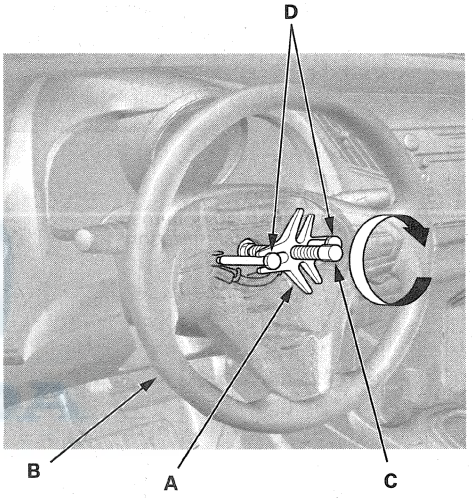
SRS components are located in this area. Review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13) before doing repairs or service.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Set the front wheels in the straight ahead position, then remove the driver's airbag from the steering wheel (see page 24-166).
3. Disconnect the cable reel subharness connector (A).

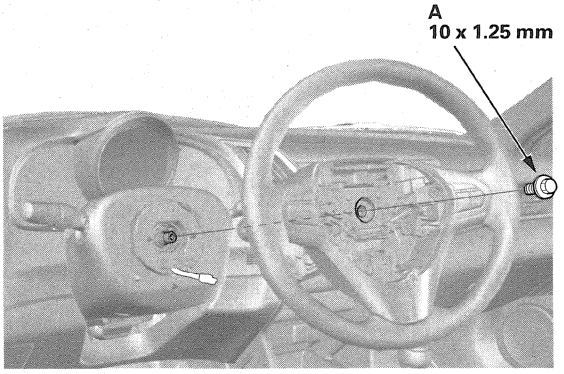


4. Loosen the steering wheel bolt (B) three turns.
5. Install a commercially available steering wheel puller (A) on the steering wheel (B). Free the steering wheel from the steering column shaft by turning the pressure bolt (C) of the puller.

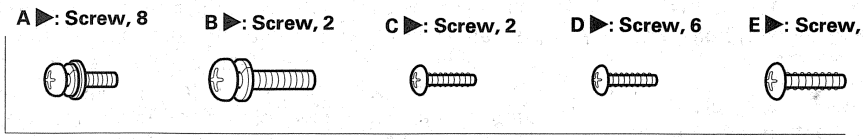
   Note these items when removing the steering wheel:
   - Do not tap on the steering wheel or the steering column shaft when removing the steering wheel.
   - If you thread the puller bolts (D) into the wheel hub more than five threads, the bolts will hit the cable reel and damage it. To prevent this, install a pair of jam nuts five threads up on each puller bolt.

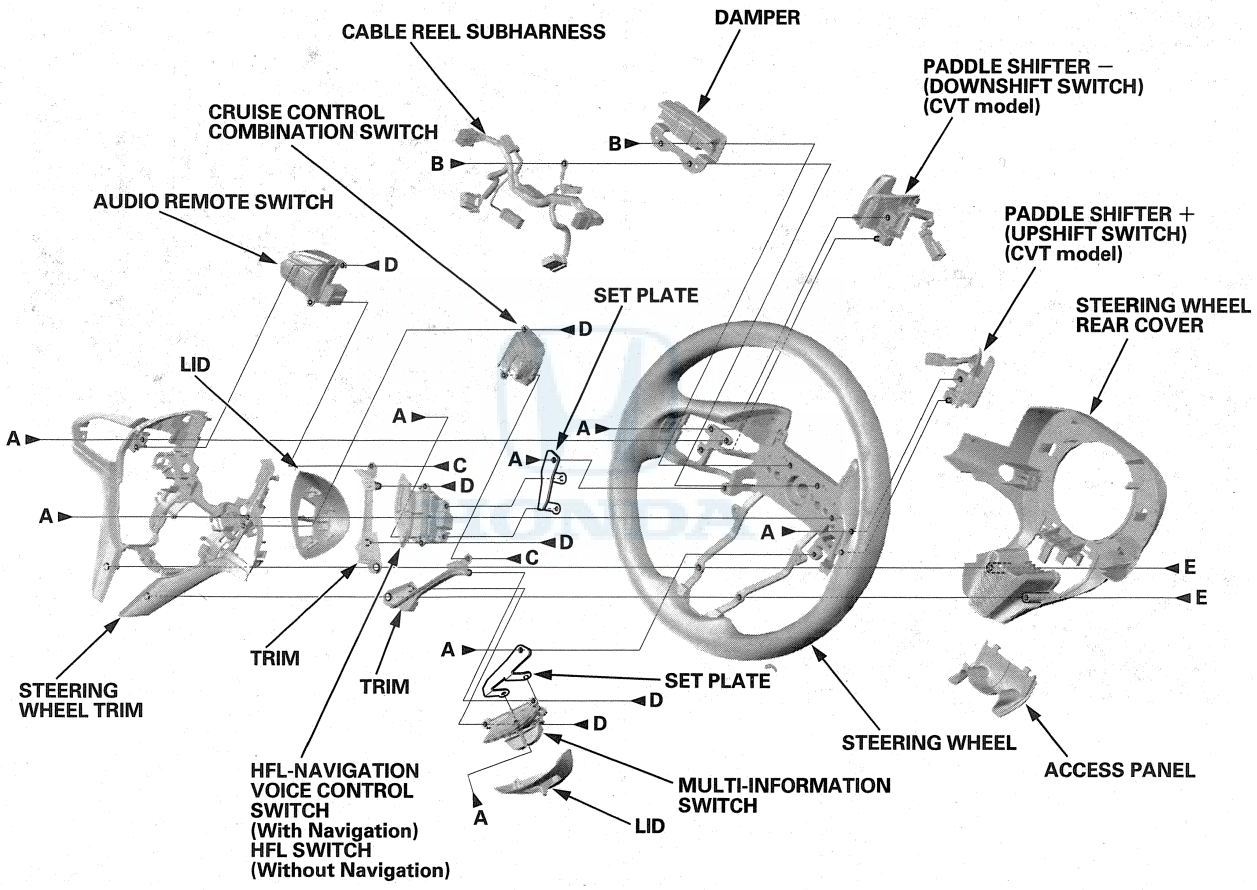


6. Remove the steering wheel puller, then remove the steering wheel bolt (A) and steering wheel from the steering column.



Steering Wheel Disassembly/Reassembly

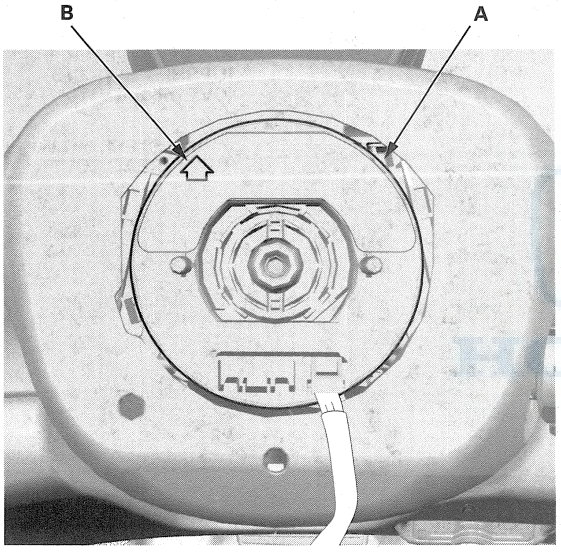




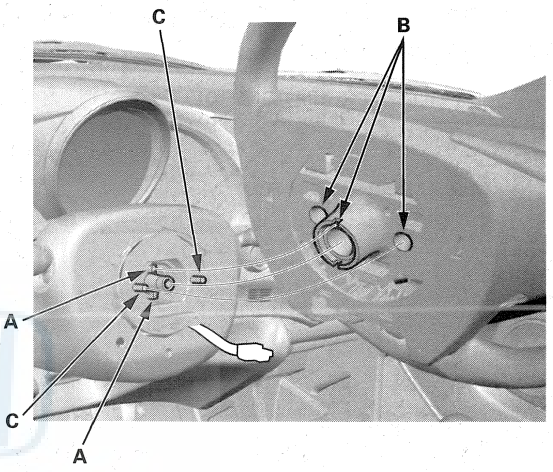
Steering Wheel Installation

SRS components are located in this area. Review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13) before doing repairs or service.

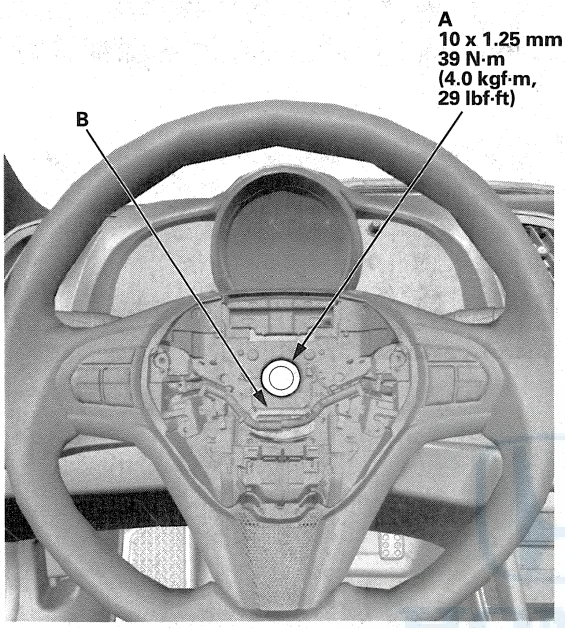
1. Before installing the steering wheel, make sure the front wheels are pointing straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise about three full turns. The arrow mark (B) on the cable reel label should point straight up.



2. Position the two tabs (A) of the turn signal canceling sleeve as shown. Install the steering wheel on to the steering column shaft, making sure the steering wheel hub (B) engages the pins (C) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.



3. Install the steering wheel bolt (A), and tighten it to the specified torque. Connect the cable reel subharness connector (B). Make sure the wire harness is routed and fastened properly.



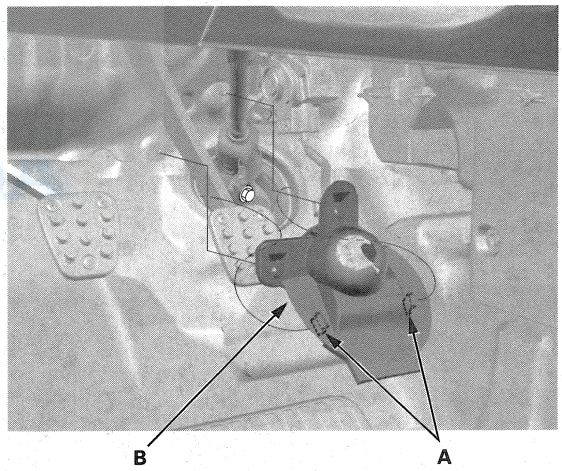
4. Install the driver's airbag (see page 24-166).
5. Do the 12 volt battery terminal reconnection procedure (see page 22-86), and check these items:
   - Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
   - Make sure the horn and turn signal switches work properly.
   - Make sure the steering wheel switches work properly.
6. After installation, check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel is not centered), correct the engagement of the wheel/column shaft splines.

Steering Column Removal and Installation

SRS components are located in this area. Review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13) before doing repairs or service.

Removal

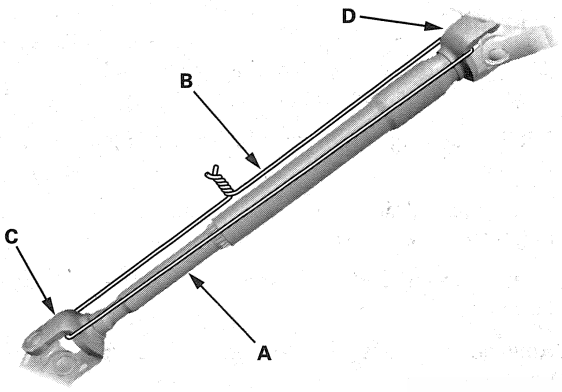
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Tilt the steering column all the way up, and move it all the way in.
3. Remove the driver's airbag (see page 24-166) and the steering wheel (see page 17-6).
4. Remove the driver's dashboard undercover (see page 20-86).
5. Release the hooks (A), then remove the steering joint cover (B).



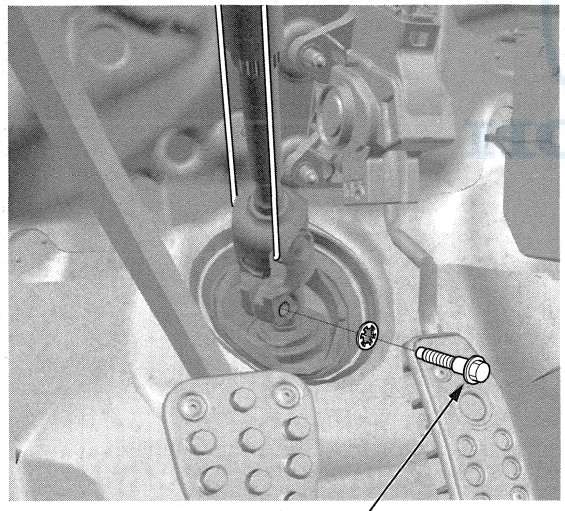
(cont'd)

Steering Column Removal and Installation (cont'd)

6. Hold the splined shaft (A) on the column with a piece of wire (B) between the joint yoke (C) of the splined shaft and joint yoke (D) of the splined tube to prevent the splined shaft from pulling out.



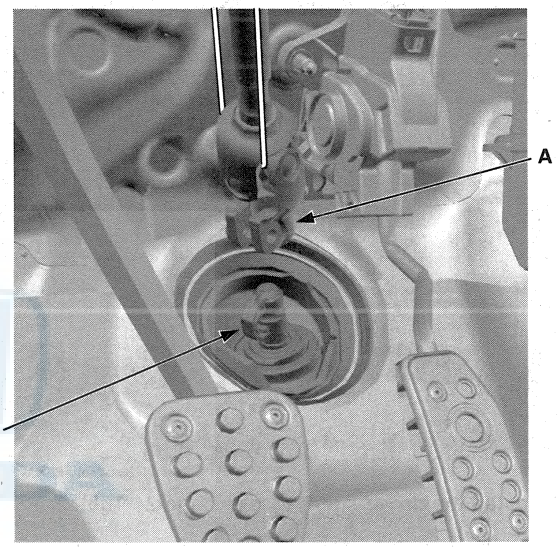
7. Remove the steering joint bolt (A).



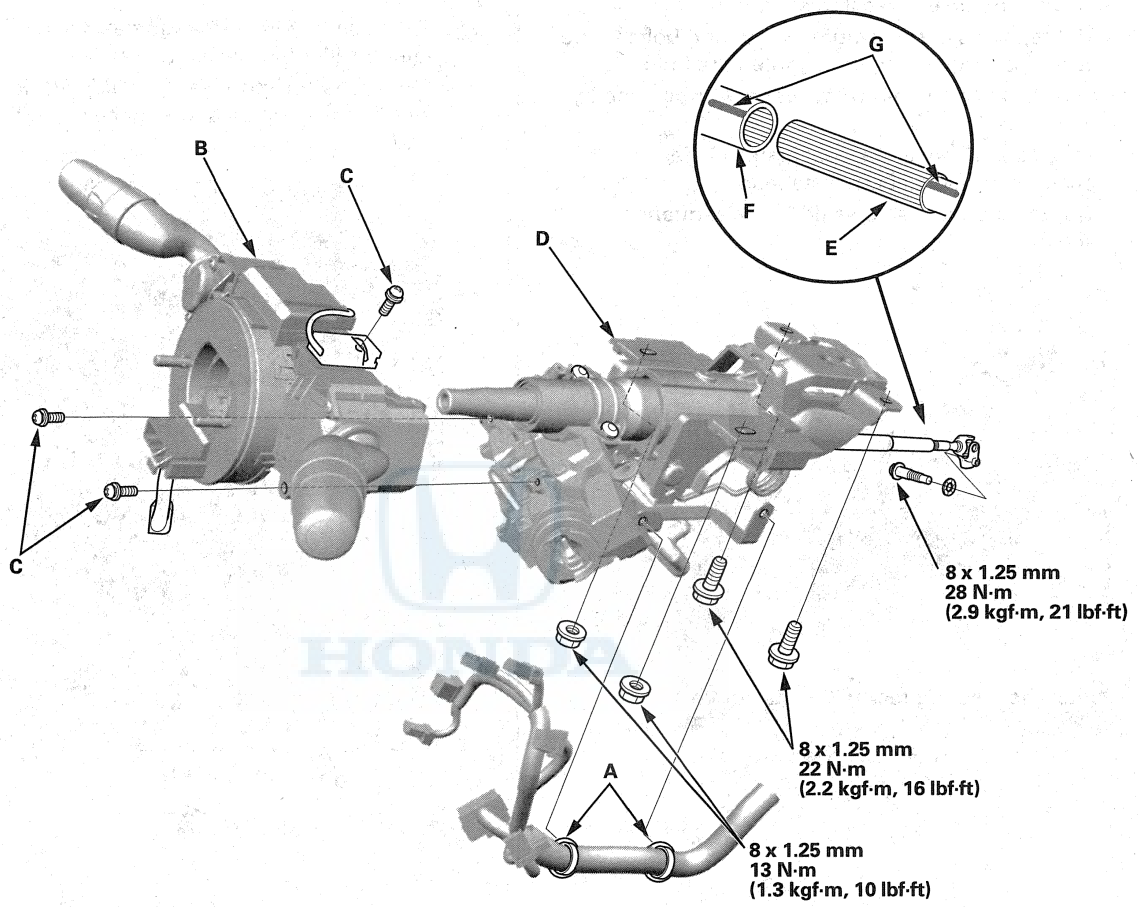
8. Disconnect the steering joint (A) by moving the steering joint toward the column.

NOTE:

- If the center guide (B) is in place and has not moved, leave it in place.
- If the center guide has moved or been removed, discard it.



9. Remove the column covers (see page 20-96).
10. Disconnect the connectors from the ignition switch, and release the wire harness clips (A) from the steering column.



11. Disconnect the connectors from the combination switch assembly/cable reel (B).
12. Remove the combination switch assembly/cable reel from the steering column shaft by removing the three screws (C).
13. Remove the steering column (D) by removing the attaching nuts and bolts. If the splined shaft (E) is removed, slip it into the splined tube (F) by aligning the paint or stamped marks (G).

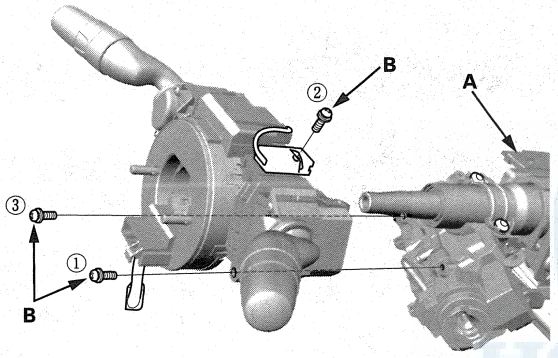
    NOTE: Do not release the lock lever until the steering column is installed. If the lock lever is released before installation, adjust the steering column after installation (see step 6 on page 17-15).

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Steering Column Removal and Installation (cont'd)

Installation

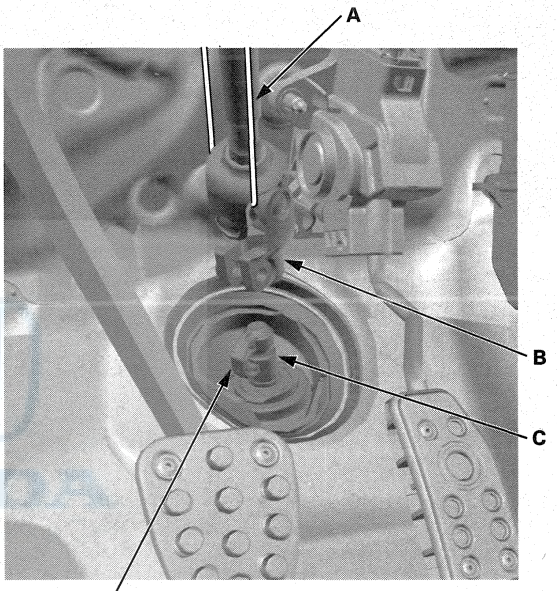
1. Install the steering column in the reverse order of removal, and note these items:
   - Tighten the steering column mounting bolts to the specified torque first, then tighten the nuts.
   - Make sure the wires are not caught or pinched by any parts.
   - Take care not to let the coat plates (A) fall out of position during column installation.
   - Tighten the three screws (B) in the sequence shown.

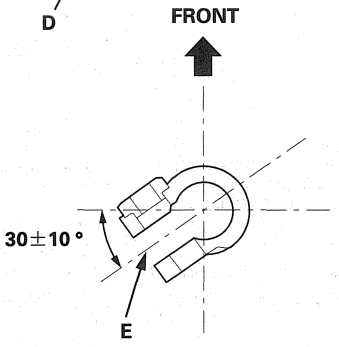


2. Center the steering rack within its stroke.

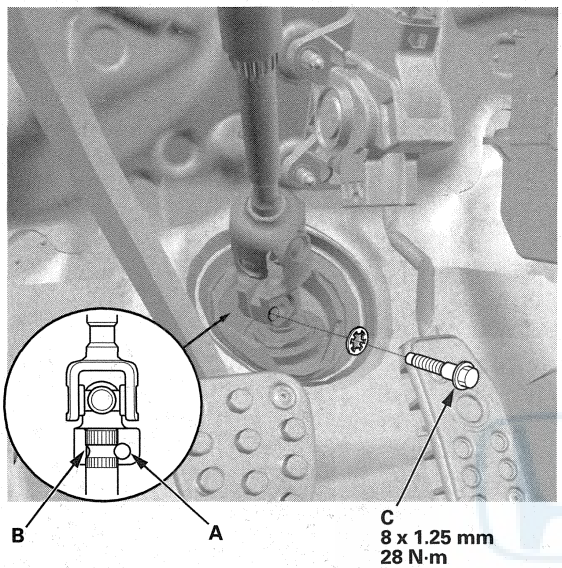
3. Cut the wire (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C).

   NOTE:
   - Pinion shaft with center guide: Install the steering joint by aligning the center guide (D).
   - Pinion shaft without center guide: Position the steering column by aligning the gap (E) with the angle.





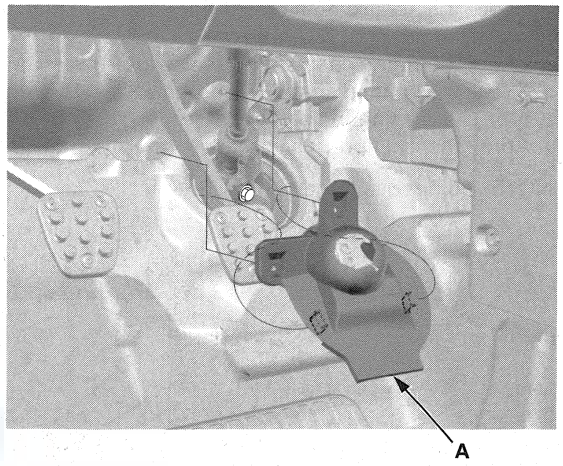
4. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft, then loosely install the steering joint bolt (C). Be sure that the joint bolt is securely in the groove in the pinion shaft.



5. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the steering joint bolt to the specified torque.

6. Install the steering joint cover (A).

NOTE: Check the steering joint cover for damage and cracks. If the steering joint cover is cracked, replace the steering joint cover.



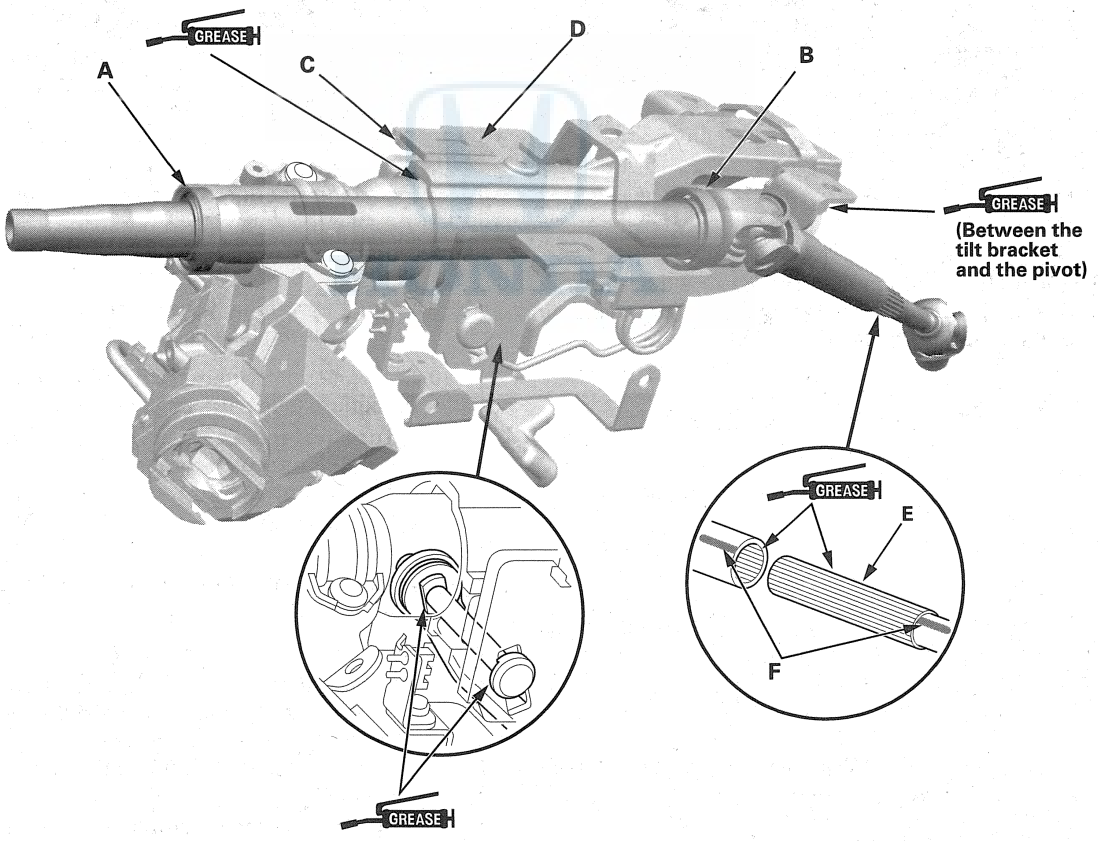
7. Install the steering column covers (see page 20-96).
8. Install the driver's dashboard undercover (see page 20-86).
9. Install the steering wheel (see page 17-8) and the driver's airbag (see page 24-166).
10. Do the 12 volt battery terminal reconnection procedure (see page 22-87), and check these items:
    - Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
    - Make sure the horn and turn signal switches work properly.
    - Make sure the steering wheel switches work properly.
11. After installation, check these items:
    - Check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft splines.
    - Set the steering column to the center tilt position, and to the center telescopic position, then do the front toe inspection (see page 18-7).

Steering Column Inspection

Inspection

1. Remove the steering column (see page 17-9).
2. Check these items:
   - Check the upper ball bearing (A) and the lower ball bearing (B) for play and proper movement. If any bearing is noisy or has excessive play, replace the steering column as an assembly.
   - Check the absorbing plates (C) and the coat plates (D) for distortion or breakage. If there is distortion or breakage, replace the steering column as an assembly.
   - Check the tilt mechanism and telescopic mechanism for movement and damage.
   - Check the splined shaft (E) for smooth movement in and out. If the splined shaft is removed, slip it into the splined tube by aligning the paint or stamped marks (F). If it sticks or binds, replace the steering column as an assembly.
   - Apply the multipurpose grease to the steering column.

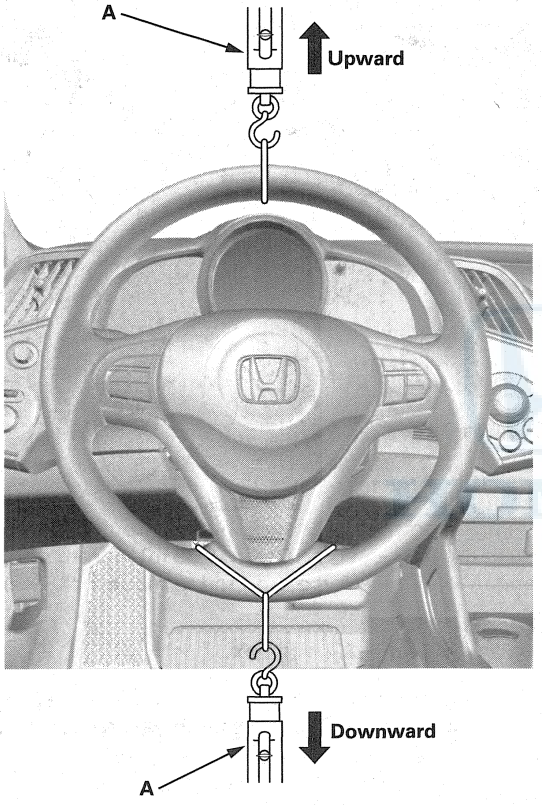
   NOTE: Do not use silicone grease.



3. Install the steering column (see page 17-12).

Check of Tilting Force

1. Set the steering wheel in the straight ahead driving position, and loosen the lock lever fully.
2. Attach a commercially available spring scale (A) to the highest point of the steering wheel, and tilt the steering column to the lowest position.



3. Pull the spring scale straight up, and read the force required to move the steering column.
4. Attach the spring scale to the lowest point of the steering wheel.
5. Pull the spring scale straight down, and read the force required to move the steering column.

   Tilting force (upward/downward):
   Standard: 69 N (7.0 kgf, 15.5 lbf) max.

6. If the measurement is higher than specified, or if the tilt function feels rough, do this.

   -1. Loosen the steering column mounting nuts and bolts (see step 13 on page 17-11) so they are finger-tight.
   -2. Release the lock lever, and tilt and telescope the steering column several times.
   -3. Tilt the column down, then tighten the lock lever.
   -4. Torque the bolts, then torque the nuts.

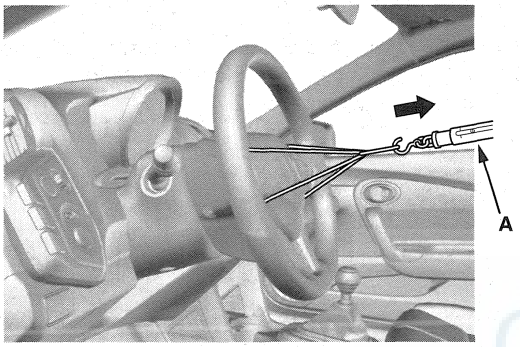
7. Test the tilting force again. If the force is still higher than the specification, replace the steering column as an assembly (see page 17-9).

(cont'd)

Steering Column Inspection (cont'd)

Check of Telescoping Force

1. Set the steering wheel in the straight ahead driving position, and loosen the lock lever fully.
2. Attach a commercially available spring scale (A) to the center point of the steering wheel, and push the steering column all the way in.



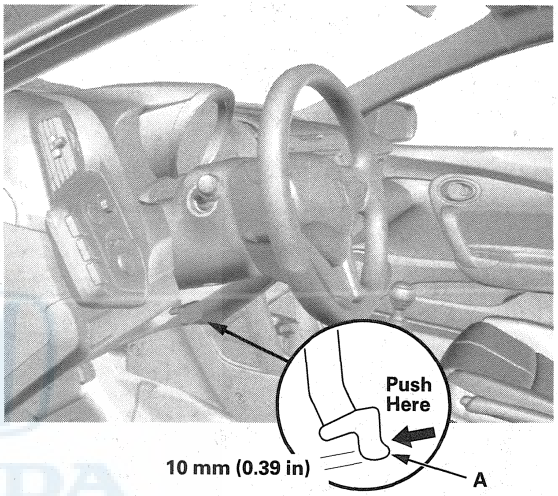
3. Pull the spring scale, and read the force required to move the steering column during telescoping.

   Telescoping force:
   Standard: 90 N (9.2 kgf, 20.2 lbf) max.

4. If the measurement is higher than specified, replace the steering column as an assembly (see page 17-9).

Check of Lock Lever Force

1. Move the lock lever (A) from the loosened position to the locked position three to five times, then release the lock lever. Adjust the steering column to the center tilt position and also to the full telescopic out position, and hold the steering wheel.



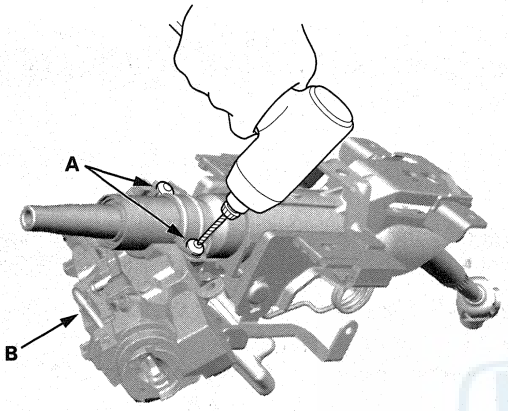
2. Using a commercially available push-pull gauge, push the lock lever at 10 mm (0.39 in) in from its end, and measure the force required to move lock lever.

   Lock lever force:
   82 N (8.4 kgf, 18.4 lbf) max.

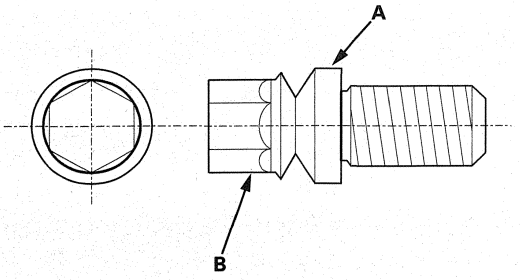
3. If the measurement is higher than specified, replace the steering column as an assembly (see page 17-9).

Steering Lock Replacement

1. Remove the steering column (see page 17-9).
2. Center-punch each of the two shear bolts (A), and drill their heads off with a 5.0 mm (0.197 in) drill bit. Be careful not to damage the steering lock (B) when removing the shear bolts.



3. Remove the shear bolts from the steering lock, then remove the steering lock.
4. Remove the immobilizer-keyless control unit from the steering lock, then install it to the new steering lock (see page 22-203).
5. Install the steering lock without the key inserted.
6. Loosely tighten the new shear bolts.
7. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
8. Tighten the shear bolts (A) until the hex heads (B) twist off.

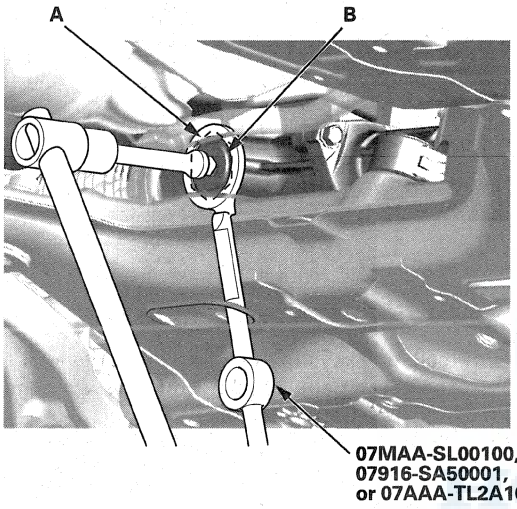


9. Install the steering column (see page 17-12).
10. Rewrite all new keys to the immobilizer-keyless control unit (see page 22-202), and make sure the immobilizer system works properly.

Rack Guide Adjustment

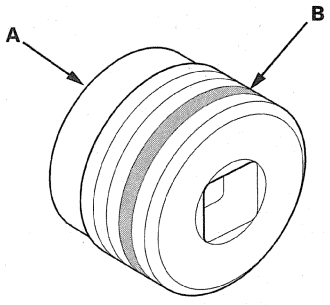
Special Tools Required
Locknut Wrench, 40 mm 07MAA-SL00100, 07916-SA50001, or 07AAA-TL2A100

1. Set the front wheels in the straight ahead position.
2. Loosen the rack guide screw locknut (A) with the locknut wrench, then remove the rack guide screw (B).

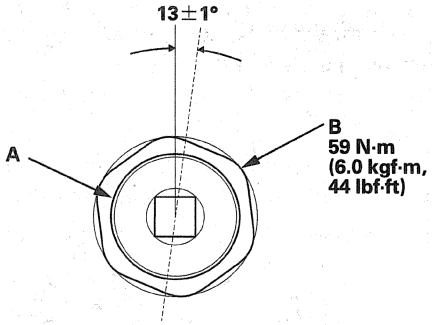


3. Remove the old sealant from the rack guide screw (A), and apply new sealant (Three Bond 1215 or Loctite 5699) to the middle of the threads (B). Loosely install the rack guide screw on the steering gearbox.

   NOTE: If more than 5 minutes has passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.



4. Tighten the rack guide screw (A) to 25 N·m (2.5 kgf·m, 18 lbf·ft), then loosen it.



5. Retighten the rack guide screw to 3.9 N·m (0.40 kgf·m, 2.9 lbf·ft), then back it off to the specified angle.

   Specified return angle: 13±1°

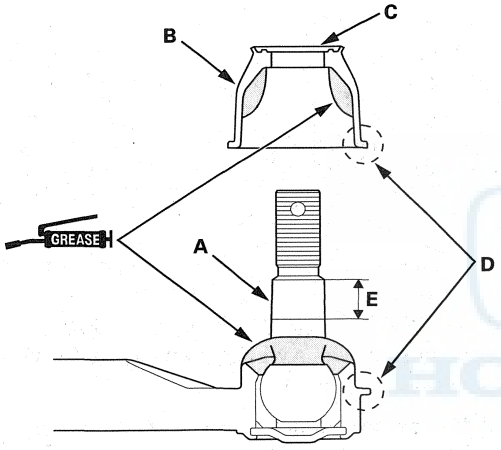
6. Hold the rack guide screw stationary with a wrench, and tighten the locknut (B) by hand until it's fully seated.
7. Install the locknut wrench on the locknut, and hold the rack guide screw stationary with a wrench. Tighten the locknut to the specified torque.
8. Check for unusual steering effort through the complete turning range.
9. Check the steering wheel rotational play (see page 17-4) and the power assist (see page 17-4).

Tie-Rod End Ball Joint Boot Replacement

Special Tools Required

Bearing Driver Attachment, 36 mm 07965-SA50500

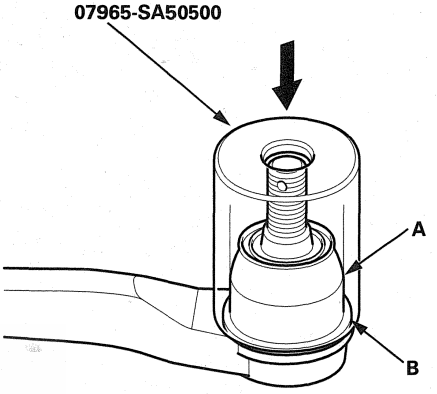
1. Disconnect the tie-rod end ball joint from the knuckle (see step 11 on page 17-65).
2. Remove the tie-rod end from the rack end (see page 17-74).
3. Remove the tie-rod end ball joint boot from the tie-rod end, and wipe the old grease off the ball pin.
4. Pack the lower area of the ball pin (A) with fresh multipurpose grease.



5. Pack the interior of a new tie-rod end ball joint boot (B) and lip (C) with fresh multipurpose grease.

   Note these items when installing new grease:
   - Keep grease off the boot mounting area (D) and the tapered section (E) of the ball pin.
   - Do not allow dust, dirt, or other foreign materials to enter the boot.

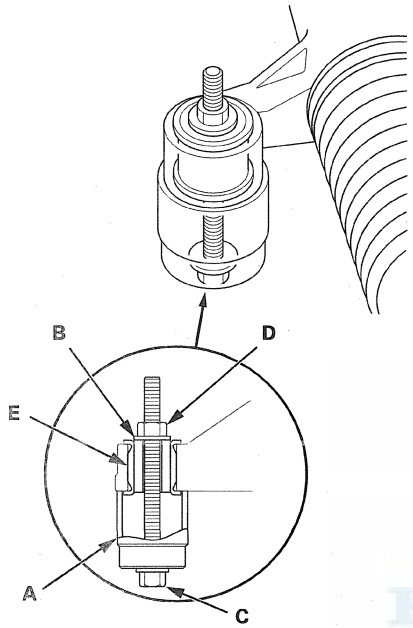
6. Install the new tie-rod end ball joint boot (A) using the bearing driver attachment. The boot must not have a gap at the boot installation sections (B). After installing the boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.



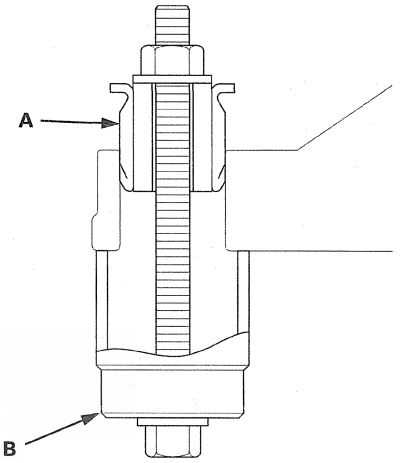
7. Install the tie-rod end to the rack end (see page 17-74).
8. Connect the tie-rod end ball joint to the knuckle (see step 20 on page 17-71).
9. Check the wheel alignment, and adjust it if necessary (see page 18-5).

Gearbox Mount Cushion Replacement

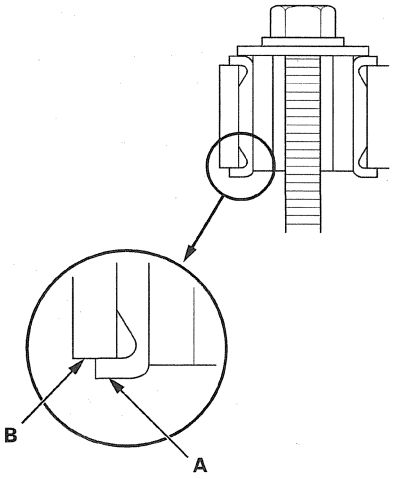
1. Remove the steering gearbox (see page 17-64).
2. Position a 34 mm socket (A) on the flange part of the gearbox housing with a washer (B), a 10 x 105 mm flange bolt (C), and a 10 mm nut (D) as shown.



3. Hold the flange bolt with a wrench, and tighten the nut with a wrench. Remove the gearbox mount cushion (E).
4. Apply a mild soap and water solution to the new gearbox mount cushion surface (A), then place the mount cushion on the gearbox mounting cushion hole.



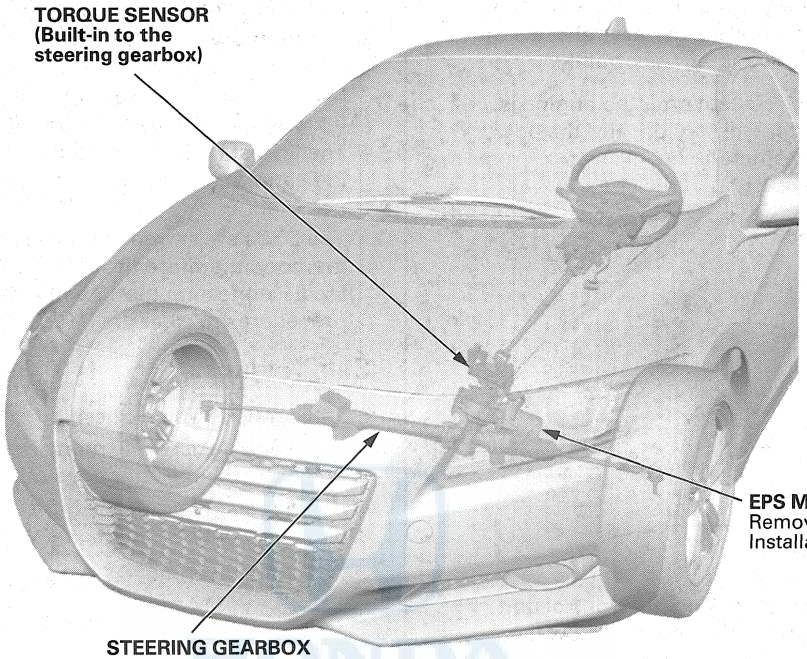
5. Position a 34 mm socket (B) on the flange part of the gearbox housing with a washer, a flange bolt, and a nut as shown.
6. Install the gearbox mount cushion by tightening the nut until the mount cushion edge (A) properly fit on the gearbox flange surface (B).

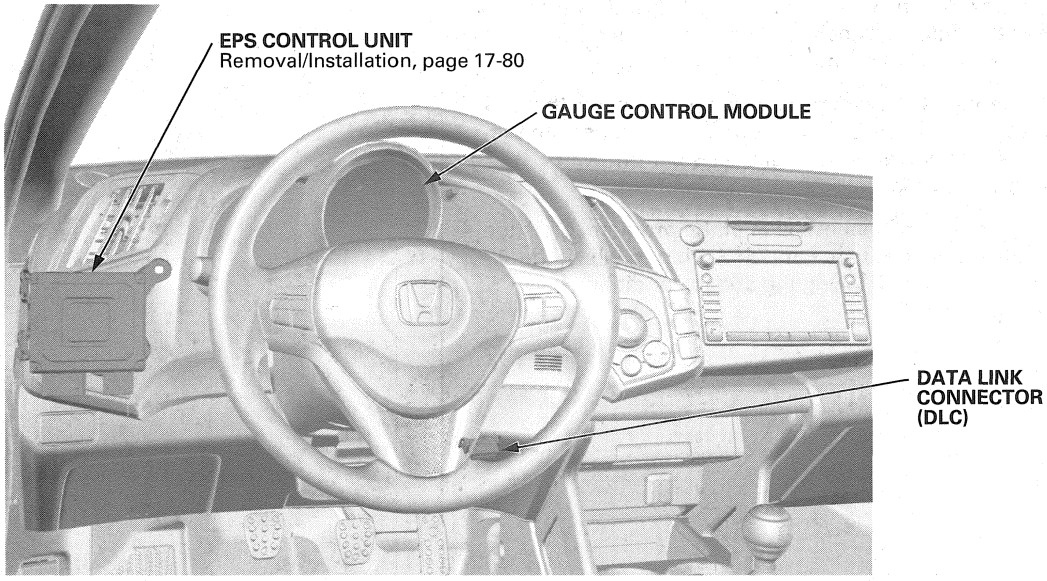


7. Install the steering gearbox (see page 17-68).

EPS Components

Component Location Index





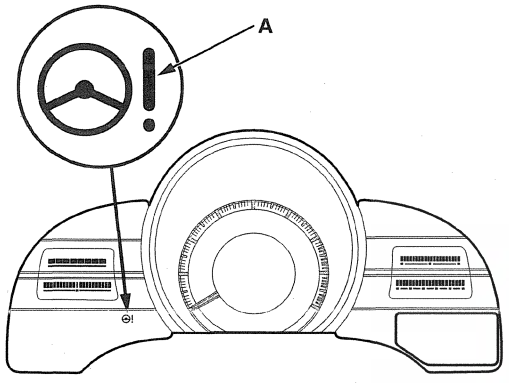
EPS Components

General Troubleshooting Information

EPS Indicator

Under normal conditions, the EPS indicator (A) comes on when the ignition switch is turned to ON (II), then goes off after the engine is started. This indicates that the LED and its circuit are operating correctly.

If there is a failure in the system after the engine is started, the EPS indicator will stay on, and the power assist is turned off or restricted.



When the EPS indicator comes on, the control unit stores the DTC. In this case, the control unit will not activate the EPS system after the engine starts again, but it keeps the EPS indicator on.

When a problem is detected and the EPS indicator comes on, there are cases when the indicator stays on until the ignition switch is turned to LOCK (0), and cases when the indicator goes off automatically when the system returns to normal.

Even though the system is operating normally, the EPS indicator will come on under some conditions with the vehicle stopped and the engine at high rpm with constant input from the steering wheel.

To determine the actual cause of the problem, question the customer about the conditions during which the problem occurred, taking the above conditions into consideration.

Diagnostic Trouble Code (DTC)

- If the CPU cannot be activated, or it fails, the EPS indicator comes on, but the DTC is not stored.
- The memory can hold any number of DTCs. However, when the same DTC is detected more than once, the most recent DTC is written over the prior DTC, therefore only one occurrence is stored.
- The lowest DTC is indicated first. The DTCs are indicated in ascending order, not in the order that they occurred.
- The DTCs are stored in the EEPROM (non-volatile memory) therefore the stored DTCs cannot be erased by disconnecting the 12 volt battery. Do the specified procedures to clear the DTCs.

Self-Diagnosis

Self-diagnosis can be classified into two categories:

- Initial diagnosis: Done right after the engine starts and until the EPS indicator goes off.
- Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned to LOCK (0).

Restriction on Power Assist Operation

Repeated extreme steering force, such as turning the steering wheel continuously back-and-forth with the vehicle stopped, causes an increase in electrical current draw by the EPS motor. The increase of electric current causes the EPS motor to heat up. Because this heat adversely affects the system, the control unit monitors the electric current draw of the EPS motor.

When the control unit detects heat build-up in the EPS motor, it reduces the electric current to the EPS motor gradually to protect the system, and it restricts the power assist operation. The EPS indicator comes on during this function.

When steering torque is not applied to the steering wheel, or when the ignition is turned to LOCK (0) and the EPS motor cools, the control unit will restore the power assist gradually until it's fully restored (after about 10 minutes).

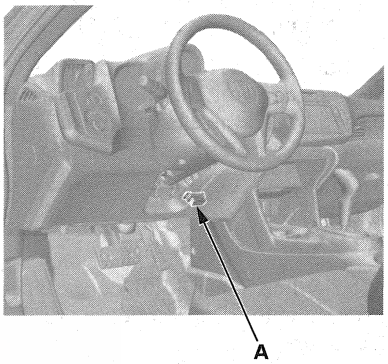
How to Troubleshoot DTCs

The troubleshooting procedures assume that the cause of the problem is still present and the EPS indicator is still on. Following the procedure when the EPS indicator does not come on can result in incorrect diagnosis.

1. Question the customer about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting. Find out when the EPS indicator came on, such as while turning, after turning, when the vehicle was at a certain speed, etc.
2. When the EPS indicator does not come on during the test-drive, but troubleshooting is done based on the DTC, check for loose connectors, poor terminal contact, etc., in the affected circuit before you start troubleshooting.
3. After troubleshooting, clear the DTC and test-drive the vehicle. Be sure the EPS indicator does not come on.

How to Use the HDS (Honda Diagnostic System)

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Check the DTC for all systems, and note it. Then refer to the indicated DTC's troubleshooting, and do the appropriate troubleshooting procedure.

NOTE:

- The HDS reads the DTC, the current data, and other system data.
- For specific operations, refer to the Help menu that came with the HDS.

(cont'd)

General Troubleshooting Information (cont'd)

How to Retrieve DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting. Do the all systems DTC check, and troubleshoot any powertrain DTCs first.
5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the EPS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0).

DTC Troubleshooting Index

DTC	Detection Item	Note
11-02	Low/high IG1-terminal voltage	DTC Troubleshooting (see page 17-37)
12-01	Motor Power Supply Voltage	DTC Troubleshooting (see page 17-37)
21-03	CAN Vehicle Speed Stuck ON	DTC Troubleshooting (see page 17-37)
22-01	Engine Speed Signal	DTC Troubleshooting (see page 17-38)
23-01	CAN Data Stuck ON	DTC Troubleshooting (see page 17-39)
23-02	CAN Vehicle Speed Data	DTC Troubleshooting (see page 17-40)
23-03	CAN Engine Speed Data	DTC Troubleshooting (see page 17-41)
23-04	CAN Bus-off Malfunction	DTC Troubleshooting (see page 17-42)
23-05	CAN 3 Mode Information Malfunction	DTC Troubleshooting (see page 17-43)
32-09	Motor Current Correlation	DTC Troubleshooting (see page 17-44)
32-0B	Over Current	DTC Troubleshooting (see page 17-45)
32-0C	Battery Current Detect Circuit	DTC Troubleshooting (see page 17-39)
32-0E	Over Current Continuation	DTC Troubleshooting (see page 17-45)
32-0F	Battery Current/Motor Current Correlation	DTC Troubleshooting (see page 17-46)
34-01	Power Relay	DTC Troubleshooting (see page 17-39)
34-02	Fail-Safe Relay	DTC Troubleshooting (see page 17-45)
35-01	EPS Control Unit Internal Circuit (CPU)	DTC Troubleshooting (see page 17-39)
35-02	EPS Control Unit Internal Circuit (EEPROM1)	DTC Troubleshooting (see page 17-39)
35-04	EPS Control Unit Internal Circuit (CPU Communication)	DTC Troubleshooting (see page 17-39)
35-05	EPS Control Unit Internal Circuit (A/D Conversion)	DTC Troubleshooting (see page 17-39)
35-08	EPS Control Unit Internal Circuit (EEPROM2)	DTC Troubleshooting (see page 17-39)
35-0A	EPS Control Unit Internal Circuit (CPU Operation)	DTC Troubleshooting (see page 17-39)
36-02	EPS Control Unit Internal Circuit (INH Output Circuit)	DTC Troubleshooting (see page 17-39)
37-01	EPS Control Unit Internal Circuit (Step-up Circuit)	DTC Troubleshooting (see page 17-39)
38-01	EPS Control Unit Internal Circuit (Temperature Sensor)	DTC Troubleshooting (see page 17-39)
39-01	EPS Control Unit Internal Circuit (Precharge Circuit)	DTC Troubleshooting (see page 17-46)
39-02	EPS Control Unit Internal Circuit (Outside WDT)	DTC Troubleshooting (see page 17-46)
39-03	EPS Control Unit Internal Circuit (Power Self-holding Circuit)	DTC Troubleshooting (see page 17-47)
52-01	Torque Sensor Allowable Tolerance (Initial diagnosis)	DTC Troubleshooting (see page 17-47)
52-02	Torque Sensor Power Supply (Initial diagnosis)	DTC Troubleshooting (see page 17-49)
52-03	Main Torque Sensor	DTC Troubleshooting (see page 17-47)
52-04	Sub Torque Sensor	DTC Troubleshooting (see page 17-47)
52-05	Torque Sensor Allowable Tolerance	DTC Troubleshooting (see page 17-47)
52-06	Torque Sensor Offset Out of Range	DTC Troubleshooting (see page 17-50)
52-07	Torque Sensor Amplifier Out of Range	DTC Troubleshooting (see page 17-46)
52-08	Torque Sensor Power Supply	DTC Troubleshooting (see page 17-51)
61-04	Motor Harness Malfunction	DTC Troubleshooting (see page 17-52)
61-05	Motor Harness Short	DTC Troubleshooting (see page 17-53)
61-06	Motor Harness Open	DTC Troubleshooting (see page 17-54)
71-01	Motor Angle Sensor (SIN/COS signals)	DTC Troubleshooting (see page 17-56)
71-03	Motor Angle Sensor (SIN/COS signals)	DTC Troubleshooting (see page 17-56)
71-04	Motor Angle Sensor (Check Signals)	DTC Troubleshooting (see page 17-58)

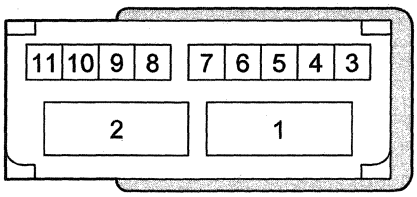
EPS Components

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the EPS control unit or the vehicle	Troubleshoot the DLC circuit (see page 11-383)	
EPS indicator does not come on	Symptom Troubleshooting (see page 17-60)	
EPS indicator does not go off, and no DTCs are stored	Symptom Troubleshooting (see page 17-60)	

System Description

EPS Control Unit Inputs and Outputs for Connector A (11P)



Wire side of female terminals

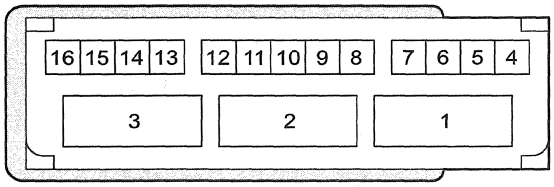
Terminal Number	Wire color	Terminal sign (Terminal name)	Description	Signal
1	WHT	+B EPS MTR (Plus battery)	Power source for the actuator EPS motor	Battery voltage (about 12V) at all times
2	BLK	EPS GND (Power ground)	Ground for the EPS control unit	Continuity to ground
3	LT BLU	NEP (Engine speed pulse)	Detects engine speed signal	With engine running: pulses
4	ORN	MG1	Ground for the motor	——
5	BLU	K-LINE (Data link connector)	Communicates with HDS	Pulse voltage (digital signal)
6	YEL	MG2	Ground for the motor	——
7	GRN	F-CAN H (F-CAN HI)	F-CAN communication circuit	——
8	Not used	Not used	——	——
9	PNK	F-CAN L (F-CAN LO)	F-CAN communication circuit	——
10	Not used	Not used	——	——
11	ORN	IG1 (Ignition 1)	Power source for activating the system	With ignition switch ON (II): battery voltage (about 12V)

(cont'd)

EPS Components

System Description (cont'd)

EPS Control Unit Inputs and Outputs for Connector B (16P)



Wire side of female terminals

Terminal Number	Wire color	Terminal sign (Terminal name)	Description	Signal
1	GRN	EPS MW	Drive the EPS motor	———
2	RED	EPS MU	Drive the EPS motor	———
3	BLU	EPS MV	Drive the EPS motor	———
4	RED	EPS S3 (Signal 3)	Detects EPS motor angle sensor signal	———
5	YEL	EPS S1 (Signal 1)	Detects EPS motor angle sensor signal	———
6	GRY	EPS S4 (Signal 4)	Detects EPS motor angle sensor signal	———
7	LT BLU	EPS S2 (Signal 2)	Detects EPS motor angle sensor signal	———
8	PNK	EPS R2 (Motor angle sensor 2)	Detects EPS motor angle sensor signal	———
9	GRY	SH GND (Sealed ground)	Ground for the sealed line	———
10	GRN	EPS R1 (Motor angle sensor 1)	Detects EPS motor angle sensor signal	———
11	Not used	Not used	———	———
12	BRN	VREF (Reference voltage)	Reference voltage for torque sensor	With engine running: about 3.3 V
13	RED	SUB (Sub voltage)	Detects torque sensor signal	Turn to the right: about 2.5—1.7 V (decrease) Turn to the left: about 2.5—3.3 V (increase)
14	WHT	SE (Sensor earth)	Ground for the torque sensor	Continuity to ground
15	BLU	MAIN (main voltage)	Detects torque sensor signal	Turn to the right: about 2.5—3.3 V (increase) Turn to the left: about 2.5—1.7 V (decrease)
16	YEL	VCC (Voltage common)	Power source for torque sensor	With engine running: about 10 V

System Outline

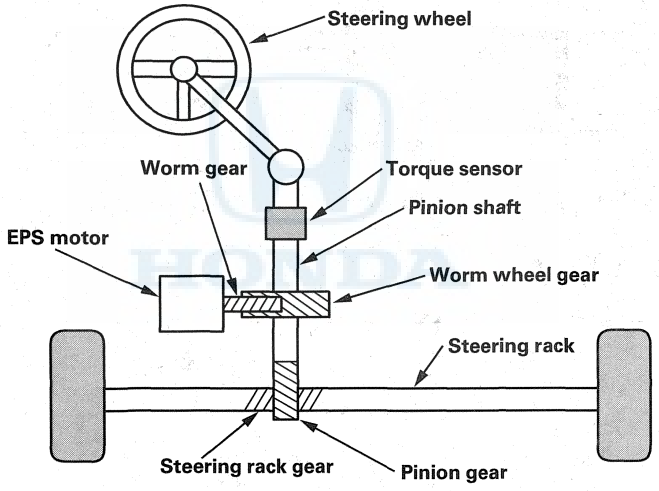
This vehicle is equipped with electrical power steering (EPS). The driver's steering force is assisted by an electric motor at the steering gearbox, instead of an engine-driven oil pump to generate oil pressure, so the EPS system improves engine efficiency.

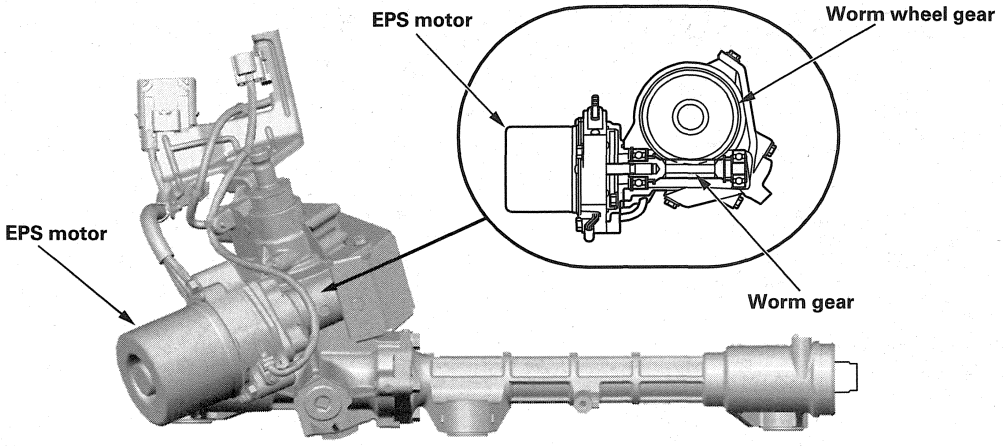
The EPS control unit monitors and controls the EPS motor's assisting force to match driving conditions.

- Low vehicle speeds: High power assist (for easy handling)
- High speed driving: Low power assist (for stable driving)
- Low speed to high speed driving: Change smoothly from high assist to low assist

Steering Gearbox

The steering force from the steering wheel is sent to the pinion shaft. The torque sensor measures the difference between the force applied to the pinion shaft and the resistance to turning the wheels due to road friction, and converts it to a voltage signal which is sent to the EPS control unit. Based on this signal, the EPS control unit controls the current to the EPS motor. The EPS motor rotates the worm wheel gear through the worm gear. This becomes the assist force in the steering system.





(cont'd)

EPS Components

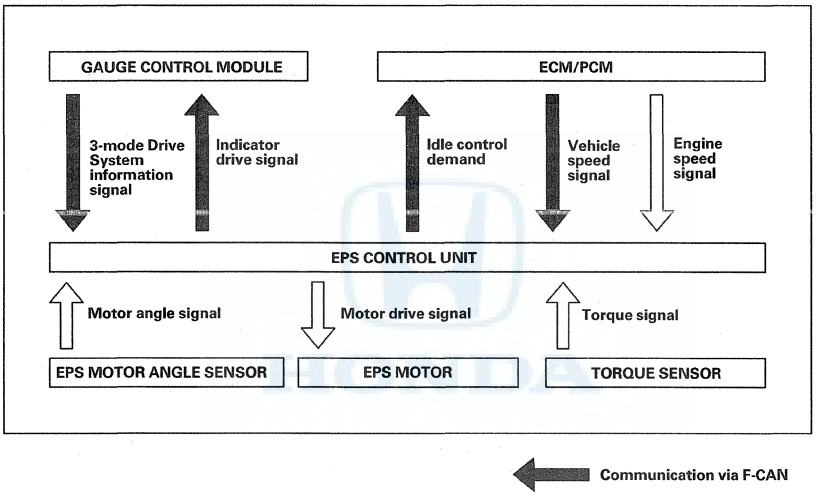
System Description (cont'd)

System Operation

The EPS control unit controls the EPS motor by these signals:
- Vehicle speed signal (from ECM/PCM)
- Engine speed signal (from ECM/PCM)
- EPS motor angle sensor signal
- Torque sensor signal
- 3-mode Drive System information signal

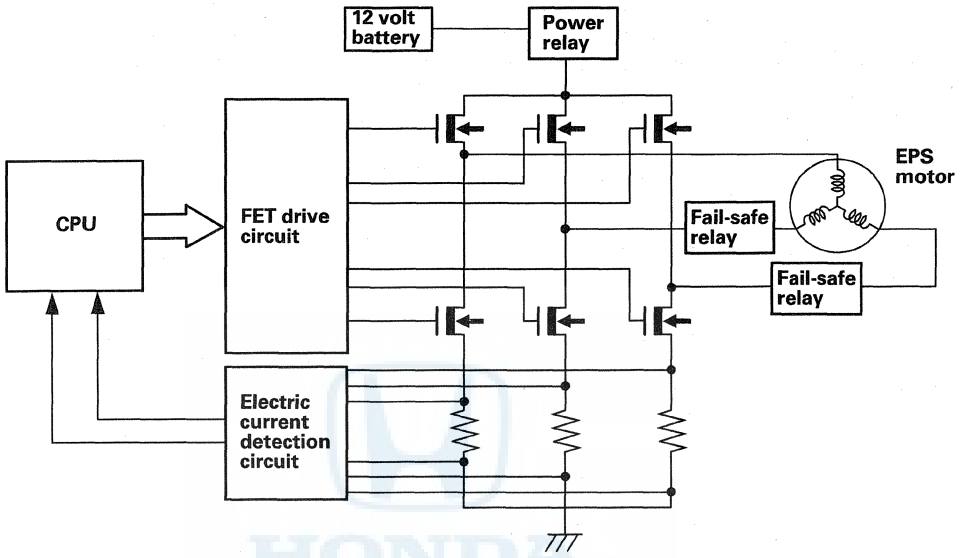
At idle or low vehicle speeds, the EPS control unit sends a signal to the ECM/PCM to increase the engine idle speed to prevent the engine from stalling.

When the EPS control unit detects a failure in the system, it stores a DTC and sends a signal to the gauge control module to turn the EPS indicator on.



EPS Motor Operation

The EPS uses an efficient brushless DC motor. The EPS motor control circuit is composed of a system control CPU, the field-effect transistor (FET) drive circuit, the H type FET bridge, the power relay, the fail-safe relay, the electric current sensor, and the EPS motor. From the input sensor signals, the CPU calculates and duty cycles outputs the appropriate three-phase current for the FET drive circuit. This operation is duty controlled.



Power relay (built into the EPS control unit)

When the system is operating normally, the CPU turns the power relay on, and the power is provided to the FET bridge. When the CPU detects a failure in the system which has the demand to shut down the system, the CPU turns the power relay off.

Fail-safe relay (built into the EPS control unit)

When the system is operating normally, the CPU turns the fail-safe relay on, and the power is provided to the EPS motor. When the CPU detects a failure in the system that requires it to shut down the system, the CPU turns the fail-safe relay off at the same time it turns the power relay off. This relay is a fail-safe in the event the power relay is faulty and does not turn off.

Electric current detection circuit

An electric current detection circuit monitors the current of each phase circuit to the motor, and sends a signal to the CPU.

(cont'd)

System Description (cont'd)

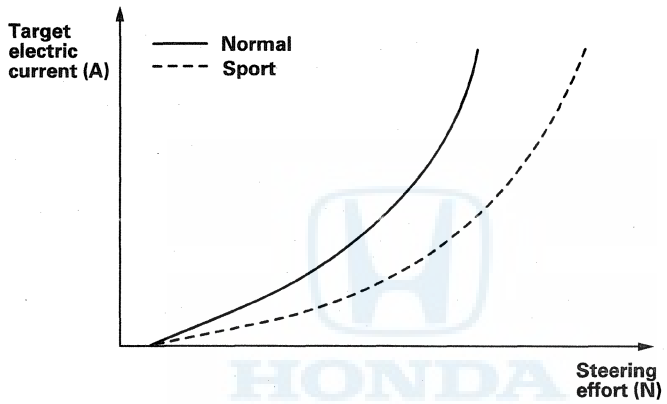
3-Mode Drive System

The EPS control unit has two power assist control maps which correspond to the 3-mode Drive System information sent from the gauge control module.

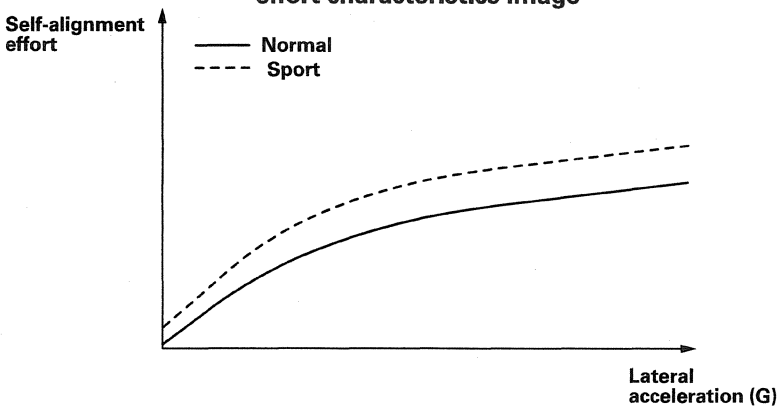
When the 3-mode Drive System is in the Normal or ECON Mode, the EPS control map is set to the normal, and when it is in the Sport Mode, the EPS control map is set to sport.

When the control map is set to normal, power assist is mapped to provide light and easy steering effort at low speeds. When the control map is set to sport, on the other hand, the system is set up to require more steering effort at low speed and it increases the self-alignment effort when turning compared with the normal control state.
When the control modes switches, the system changes gradually (normal to sport: about 0.5 second, sport to normal: about 1.5 second) to avoid shocks caused by a sudden change in power assistance.

EPS control map image

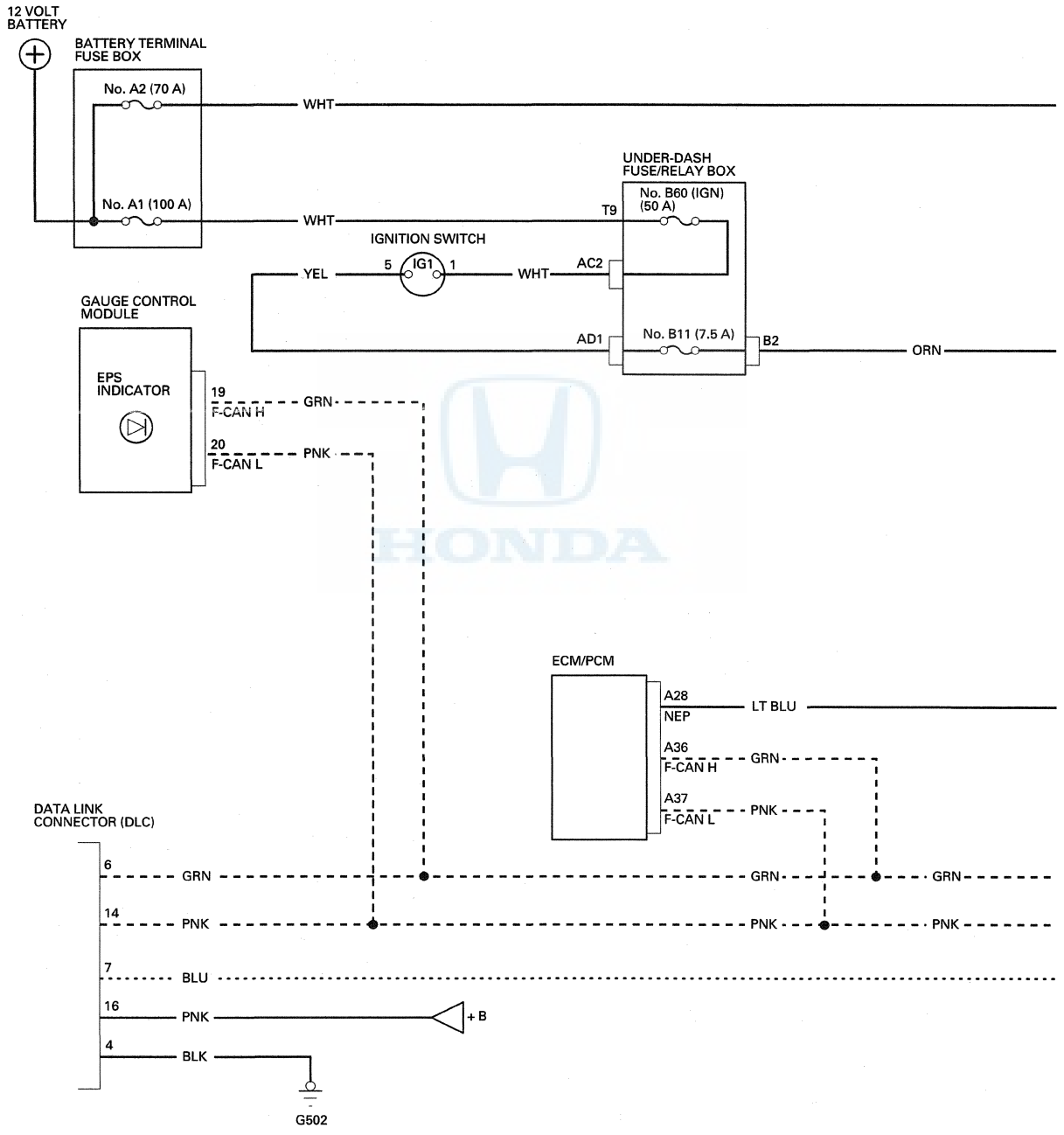


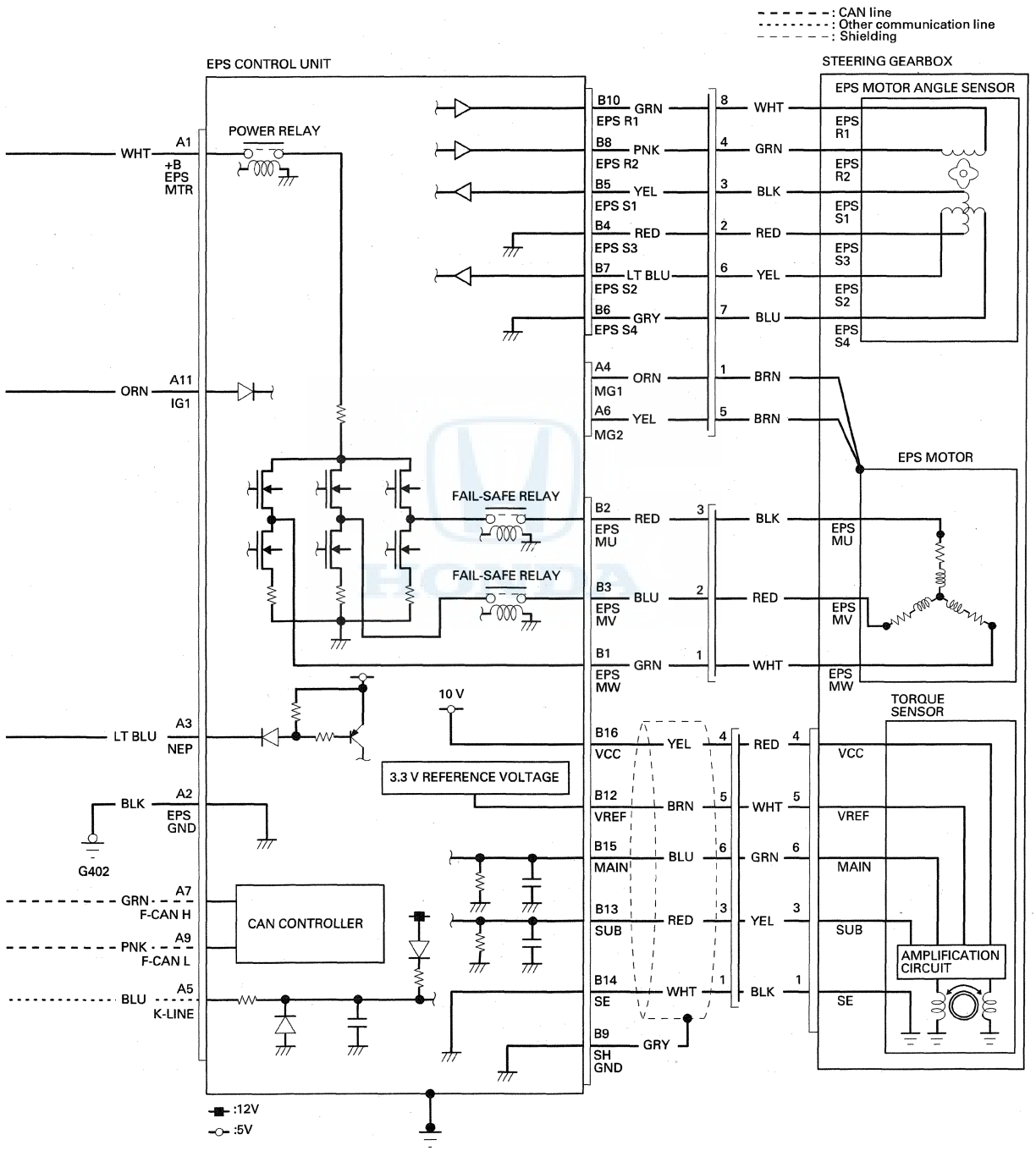
Corner steering self-alignment effort characteristics image



EPS Components

Circuit Diagram



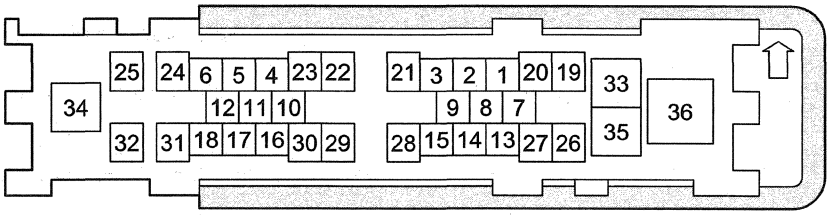

: CAN line
: Other communication line
: Shielding
EPS CONTROL UNIT
STEERING GEARBOX
EPS MOTOR ANGLE SENSOR
POWER RELAY
WHT
A1
+B
EPS
MTR
ORN
A11
IG1
FAIL-SAFE RELAY
FAIL-SAFE RELAY
EPS MOTOR
10 V
LT BLU
A3
NEP
3.3 V REFERENCE VOLTAGE
BLK
A2
EPS
GND
G402
GRN
A7
F-CAN H
PNK
A9
F-CAN L
CAN CONTROLLER
BLU
A5
K-LINE
TORQUE
SENSOR
AMPLIFICATION
CIRCUIT
B10 GRN EPS R1
B8 PNK EPS R2
B5 YEL EPS S1
B4 RED EPS S3
B7 LT BLU EPS S2
B6 GRY EPS S4
A4 ORN MG1
A6 YEL MG2
B2 RED EPS MU
B3 BLU EPS MV
B1 GRN EPS MW
B16 YEL VCC
B12 BRN VREF
B15 BLU MAIN
B13 RED SUB
B14 WHT SE
B9 GRY SH GND
8 WHT
4 GRN
3 BLK
2 RED
6 YEL
7 BLU
1 BRN
5 BRN
3 BLK
2 RED
1 WHT
4 RED
5 WHT
6 GRN
3 YEL
1 BLK
EPS R1
EPS R2
EPS S1
EPS S3
EPS S2
EPS S4
EPS MU
EPS MV
EPS MW
VCC
VREF
MAIN
SUB
SE
:12V
:5V

(cont'd)

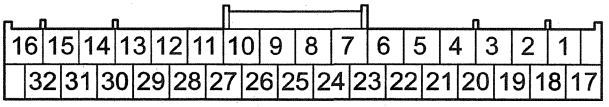
EPS Components

Circuit Diagram (cont'd)

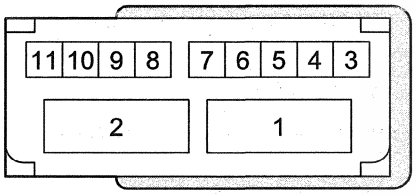
UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)



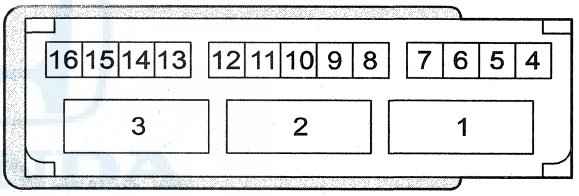
GAUGE CONTROL MODULE 32P CONNECTOR



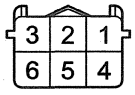
EPS CONTROL UNIT CONNECTOR A (11P)



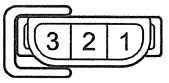
EPS CONTROL UNIT CONNECTOR B (16P)



TORQUE SENSOR 6P CONNECTOR

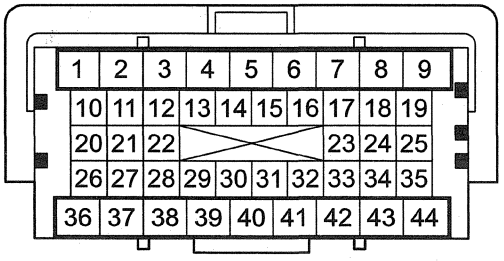


EPS MOTOR 3P CONNECTOR

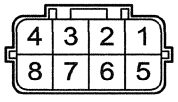


Wire side of female terminals

ECM/PCM CONNECTOR A (44P)

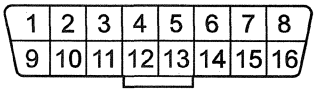


EPS MOTOR ANGLE SENSOR 8P CONNECTOR



Terminal side of male terminals

DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

DTC Troubleshooting

DTC 11-02: Low/high IG1-terminal voltage

DTC 12-01: Motor Power Supply Voltage

1. Start the engine.
2. Check the BATTERY and IG1 in the EPS DATA LIST with the HDS.

   Is there battery voltage?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Check the battery (see page 22-85) and charging system indicator circuit troubleshooting (see page 12-200). If they are OK, go to step 3.
3. Check for a poor connection at all IG1 circuit connections between the EPS control unit connector A (11P) terminal No. 11 and the under dash fuse/relay box No. B11 (7.5 A) fuse.

   Are the connections OK?

   YES–Go to step 4.

   NO–Repair the IG1 circuit.■
4. Check for a poor connection at all +B circuit connections between the EPS control unit connector A (11P) terminal No. 1 and the battery terminal fuse box No. A2 (70 A) fuse.

   Are the connections OK?

   YES–Substitute a known-good EPS control unit (see page 17-80), and recheck.■

   NO–Repair the +B circuit.■

DTC 21-03: CAN Vehicle Speed Stuck ON

NOTE:

- Check for any powertrain DTCs and troubleshoot those first.
- Even though the system is operating normally, the EPS indicator will come on caused and set DTC 21-03 when you raise the engine speed with the vehicle stopped. See General Troubleshooting (see page 17-22).
- VSA DTCs may set during this troubleshooting. If so, clear them.

1. Raise and support the vehicle (see page 1-10), and allow all wheels to rotate freely.
2. Start the engine.
3. Turn off the VSA function by using the VSA OFF switch.
4. Run the vehicle in 4th gear (MT) or D (CVT).
5. Check the VEHICLE SPEED in the EPS DATA LIST with the HDS.

   Is the vehicle speed indicated?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 6.
6. Start the engine, and check the tachometer and the speedometer.

   Does the tachometer and the speedometer work correctly?

   YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, Replace the EPS control unit (see page 17-80).■

   NO–Troubleshoot the gauge control module (see page 22-325).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 22-01: Engine Speed Signal

NOTE: Check for any powertrain DTCs and troubleshoot those first.

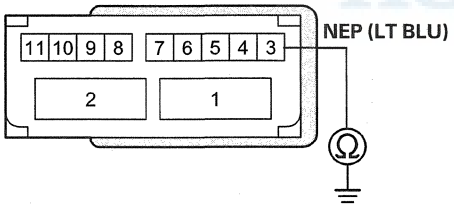
1. Start the engine.
2. Check the ENGINE SPEED in the EPS DATA LIST with the HDS.

   Is 0—300 rpm indicated?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time.■
3. Turn the ignition switch to LOCK (0).
4. Short the SCS line with the HDS.
5. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
6. Disconnect EPS control unit connector A (11P) (see step 3 on page 17-80).
7. Check for continuity between EPS control unit connector A (11P) terminal No. 3 and body ground.

EPS CONTROL UNIT CONNECTOR A (11P)



Wire side of female terminals

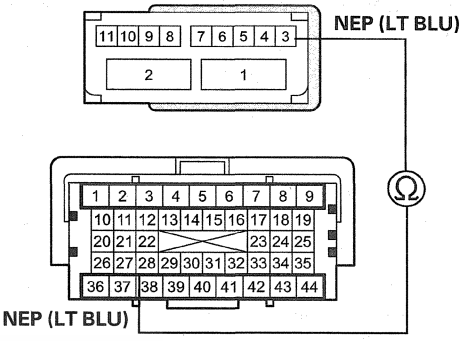
Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the ECM/PCM.■

NO–Go to step 8.

8. Check for continuity between EPS control unit connector A (11P) terminal No. 3 and ECM/PCM connector A (44P) terminal No. 28.

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

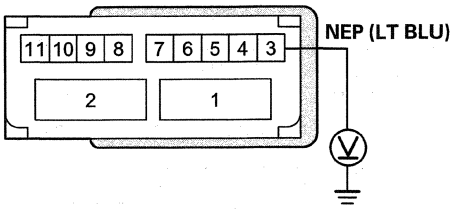
YES–Go to step 9.

NO–Repair an open in the wire between the EPS control unit and the ECM/PCM.■

9. Reconnect ECM/PCM connector A (44P).
10. Turn the ignition switch to ON (II).

11. Measure the voltage between EPS control unit connector A (11P) terminal No. 3 and body ground.

EPS CONTROL UNIT CONNECTOR A (11P)



Wire side of female terminals

Is there battery voltage?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see page 11-209).■

DTC 23-01: CAN Data Stuck ON

DTC 32-0C: Battery Current Detect Circuit

DTC 34-01: Power Relay

DTC 35-01: EPS Control Unit Internal Circuit (CPU)

DTC 35-02: EPS Control Unit Internal Circuit (EEPROM1)

DTC 35-04: EPS Control Unit Internal Circuit (CPU Communication)

DTC 35-05: EPS Control Unit Internal Circuit (A/D Conversion)

DTC 35-08: EPS Control Unit Internal Circuit (EEPROM2)

DTC 35-0A: ECU Internal Circuit (CPU Operation)

DTC 36-02: EPS Control Unit Internal Circuit (INH Output Circuit)

DTC 37-01: EPS Control Unit Internal Circuit (Step-up Circuit)

DTC 38-01: EPS Control Unit Internal Circuit (Temperature Sensor)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 23-01, 32-0C, 34-01, 35-01, 35-02, 35-04, 35-05, 35-08, 35-0A, 36-02, 37-01, or 38-01 indicated?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Intermittent failure, the system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 23-02: CAN Vehicle Speed Data

NOTE: Clear the DTC related to the VSA.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

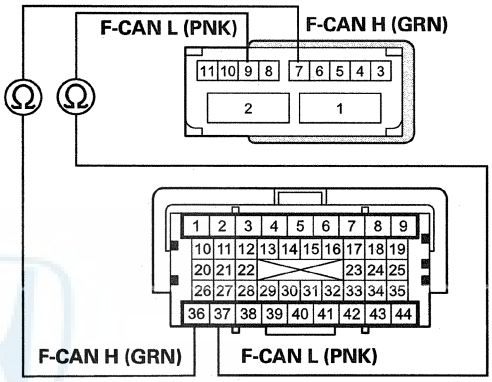
   Is DTC 23-02 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Turn the ignition switch to LOCK (0).
7. Short the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
9. Disconnect EPS control unit connector A (11P) (see step 3 on page 17-80).
10. Check for continuity between EPS control unit connector A (11P) terminals and ECM/PCM connector A (44P) terminals (see table).

Sign	EPS Control Unit Connector A (11P) Terminal	ECM/PCM Connector A (44P) Terminal
F-CAN L	No. 9	No. 37
F-CAN H	No. 7	No. 36

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the EPS control unit and the ECM/PCM.■

11. Reconnect ECM/PCM connector A (44P).
12. Reconnect EPS control unit connector A (11P).
13. Raise and support the vehicle (see page 1-10), and allow all wheels to rotate freely.
14. Start the engine.
15. Turn off the VSA function by using the VSA OFF switch.
16. Run the vehicle in 4th gear (MT) or D (CVT).
17. Check the VEHICLE SPEED in the EPS DATA LIST with the HDS.

    Is the vehicle speed indicated?

    YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

    NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see page 11-209).■

DTC 23-03: CAN Engine Speed Data

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 23-03 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Turn the ignition switch to LOCK (0).
7. Short the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
9. Disconnect EPS control unit connector A (11P) (see step 3 on page 17-80).

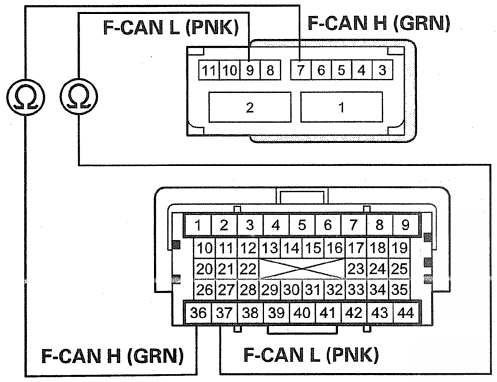
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DTC Troubleshooting (cont'd)

10. Check for continuity between EPS control unit connector A (11P) terminals and ECM/PCM connector A (44P) terminals (see table).

Sign	EPS Control Unit Connector A (11P) Terminal	ECM/PCM Connector A (44P) Terminal
F-CAN L	No. 9	No. 37
F-CAN H	No. 7	No. 36

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Go to step 11.

NO–Repair an open in the wire between the EPS control unit and the ECM/PCM.■

11. Reconnect ECM/PCM connector A (44P).
12. Reconnect EPS control unit connector A (11P).
13. Start the engine.
14. Check the ENGINE SPEED in the EPS DATA LIST with the HDS.

Is engine speed indicated?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see page 11-209).■

DTC 23-04: CAN Bus-Off Malfunction

NOTE: Check for any powertrain DTCs and troubleshoot those first.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 23-04 indicated?

YES–Go to step 6.

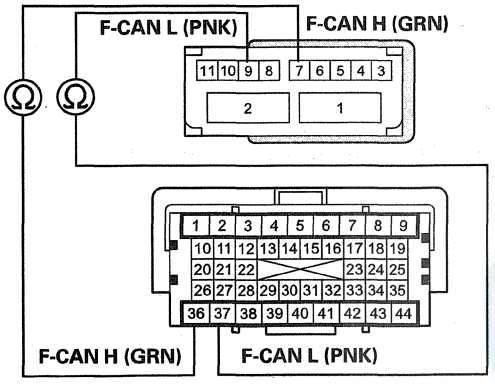
NO–Intermittent failure, the system is OK at this time.■

6. Turn the ignition switch to LOCK (0).
7. Short the SCS line with the HDS.
8. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
9. Disconnect EPS control unit connector A (11P) (see step 3 on page 17-80).

10. Check for continuity between EPS control unit connector A (11P) terminals and ECM/PCM connector A (44P) terminals (see table).

Sign	EPS Control Unit Connector A (11P) Terminal	ECM/PCM Connector A (44P) Terminal
F-CAN L	No. 9	No. 37
F-CAN H	No. 7	No. 36

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Repair an open in the wire between the EPS control unit and the ECM/PCM.■

DTC 23-05: CAN 3 Mode Information Malfunction

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 23-05 indicated?

YES–

- If DTC 21-03, 23-01, 23-02, 23-03, and 23-04 are indicated at the same time, go to step 6.
- If DTC 21-03, 23-01, 23-02, 23-03, and 23-04 are not indicated, troubleshoot the gauge control module (see page 22-325).■

NO–Intermittent failure, the system is OK at this time.■

6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector (see step 3 on page 22-354).
8. Disconnect the EPS control unit connector A (11P) (see step 3 on page 17-80).

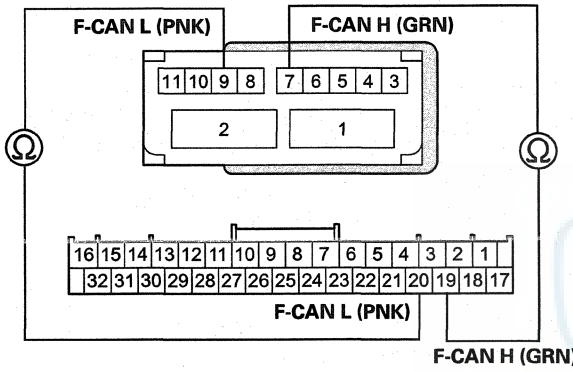
(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between EPS control unit connector A (11P) terminals and gauge control module 32P connector terminals (see table).

Sign	EPS Control Unit Connector A (11P) Terminal	Gauge Control Module 32P Connector Terminal
F-CAN L	No. 9	No. 20
F-CAN H	No. 7	No. 19

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Repair an open in the wire between the EPS control unit and the gauge control module.■

DTC 32-09: Motor Current Correlation

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

Is DTC 32-09 indicated?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, Replace the EPS control unit (see page 17-80).■

NO–Intermittent failure, the system is OK at this time.■

DTC 32-0B: Over Current

DTC 32-0E: Over Current Continuation

DTC 34-02: Fail-Safe Relay

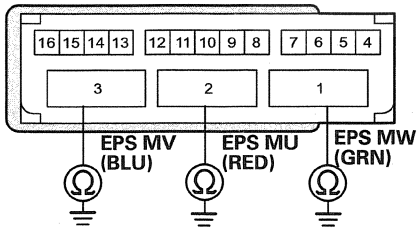
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 32-0B, 32-0E, or 34-02 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

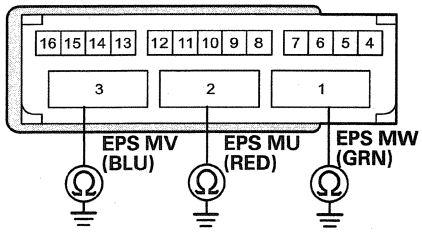
Is there continuity?

YES–Go to step 9.

NO–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

9. Disconnect the EPS motor 3P connector (see step 17 on page 17-66).
10. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the EPS motor.■

NO–Replace the EPS motor (see page 17-62).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 32-0F: Battery Current/Motor Current Correlation

DTC 52-07: Torque Sensor Amplifier Out of Range

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Turn the steering wheel from lock to lock several times.
6. Check for DTCs with the HDS.

Is DTC 32-0F or 52-07 indicated?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, Replace the EPS control unit (see page 17-80).■

NO–Intermittent failure, the system is OK at this time.■

DTC 39-01: EPS Control Unit Internal Circuit (Precharge Circuit)

DTC 39-02: EPS Control Unit Internal Circuit (Outside WDT)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II).
5. Check for DTCs with the HDS.

Is DTC 39-01 or DTC 39-02 indicated?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, Replace the EPS control unit (see page 17-80).■

NO–Intermittent failure, the system is OK at this time.■

DTC 39-03: EPS Control Unit Internal Circuit (Power Self-Holding Circuit)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Wait 30 seconds or more.
5. Turn the ignition switch to ON (II).
6. Check for DTCs with the HDS.

   Is DTC 39-03 indicated?

   YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, Replace the EPS control unit (see page 17-80).■

   NO–Intermittent failure, the system is OK at this time.■

DTC 52-01: Torque Sensor Allowable Tolerance (Initial Diagnosis)

DTC 52-03: Main Torque Sensor

DTC 52-04: Sub Torque Sensor

DTC 52-05: Torque Sensor Allowable Tolerance

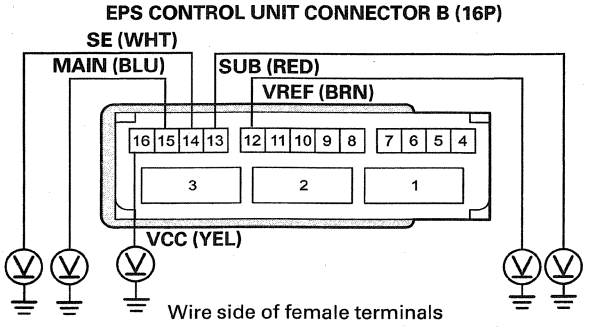
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 52-01, 52-03, 52-04, or 52-05 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■

6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between body ground and EPS control unit connector B (16P) terminals No. 12, No. 13, No. 14, No. 15, and No. 16 individually.



   Is there battery voltage?

   YES–Repair a short to power in the wire harness between the EPS control unit and the torque sensor.■

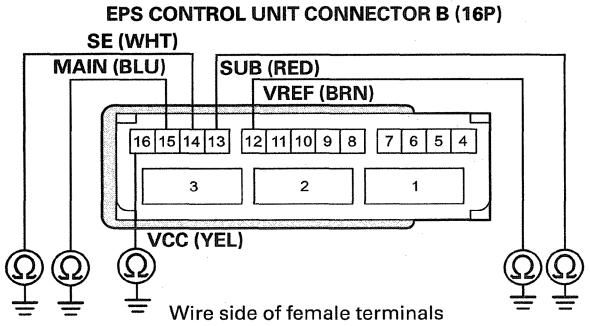
   NO–Go to step 10.

10. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

11. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 12, No. 13, No. 14, No. 15, and No. 16 individually.



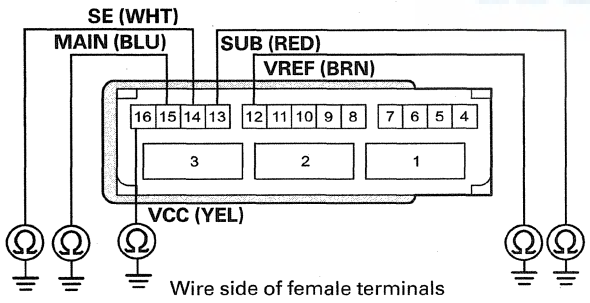
Is there continuity?

YES–Go to step 12.

NO–Go to step 14.

12. Disconnect the torque sensor 6P connector (see step 17 on page 17-66).

13. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 12, No. 13, No. 14, No. 15, and No. 16 individually.



Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the torque sensor.■

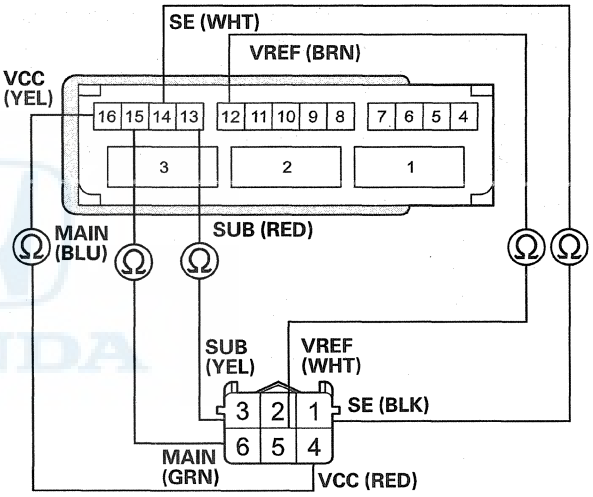
NO–Replace the steering gearbox (see page 17-64).■

14. Disconnect the torque sensor 6P connector (see step 17 on page 17-66).

15. Check for continuity between EPS control unit connector B (16P) terminals and torque sensor 6P connector terminals (see table).

Sign	EPS Control Unit Connector B (16P) Terminal	Torque Sensor 6P Connector Terminal
VREF	No. 12	No. 5
MAIN	No. 15	No. 6
SE	No. 14	No. 1
SUB	No. 13	No. 3
VCC	No. 16	No. 4

EPS CONTROL UNIT CONNECTOR B (16P)
Wire side of female terminals



TORQUE SENSOR 6P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 16.

NO–Repair an open in the wire between the EPS control unit and the torque sensor.■

16. Substitute a known-good EPS control unit (see page 17-80).

17. Reconnect all the connectors.

18. Start the engine.

19. Check for DTCs with the HDS.

Is DTC 52-01, 52-03, 52-04, or 52-05 indicated?

YES–Replace the steering gearbox (see page 17-64).■

NO–Replace the original EPS control unit (see page 17-80).■

DTC 52-02: Torque Sensor Power Supply (Initial Diagnosis)

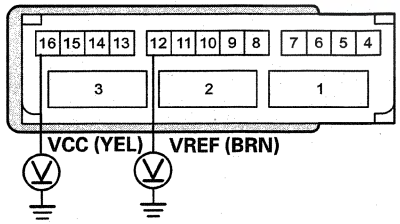
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 52-02 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between body ground and EPS control unit connector B (16P) terminals No. 12 and No. 16 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire harness between the EPS control unit and the torque sensor.■

NO–Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good EPS control unit (see page 17-80).
12. Start the engine.
13. Check for DTCs with the HDS.

    Is DTC 52-02 indicated?

    YES–Replace the steering gearbox (see page 17-64).■

    NO–Replace the original EPS control unit (see page 17-80).■

(cont'd)

DTC Troubleshooting (cont'd)

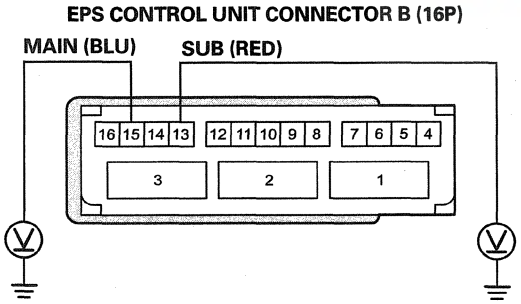
DTC 52-06: Torque Sensor Offset Out of Range

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Turn the steering wheel from lock to lock several times.
6. Check for DTCs with the HDS.

   Is DTC 52-06 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
9. Turn the ignition switch to ON (II).
10. Measure the voltage between body ground and EPS control unit connector B (16P) terminals No. 13 and No. 15 individually.

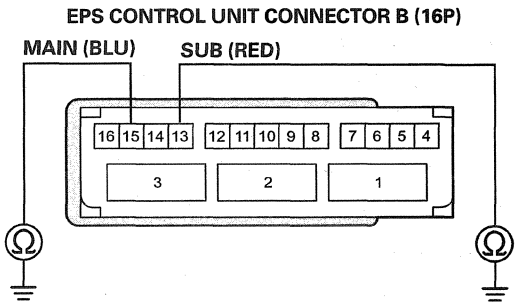


Wire side of female terminals

   Is there battery voltage?

   YES–Repair a short to power in the wire between the EPS control unit and the torque sensor.■

   NO–Go to step 11.
11. Turn the ignition switch to LOCK (0).
12. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 13 and No. 15 individually.

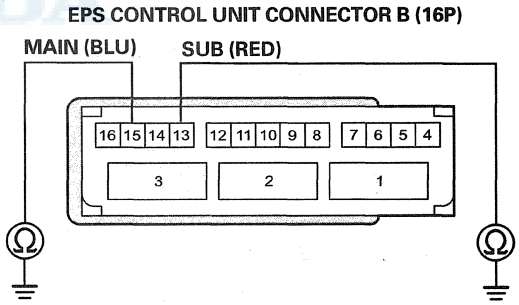


Wire side of female terminals

   Is there continuity?

   YES–Go to step 13.

   NO–Go to step 15.
13. Disconnect the torque sensor 6P connector (see step 17 on page 17-66).
14. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 13 and No. 15 individually.



Wire side of female terminals

   Is there continuity?

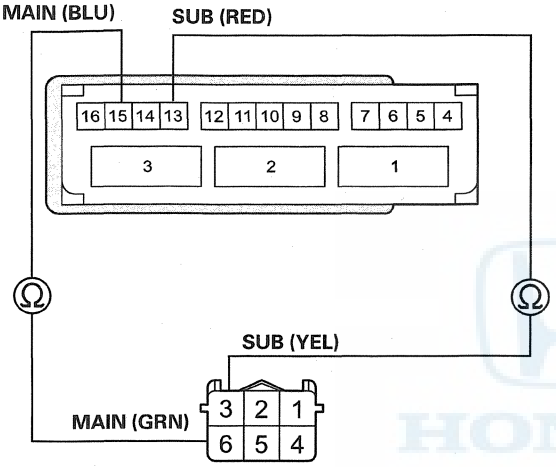
   YES–Repair a short to body ground in the wire between the EPS control unit and the torque sensor.■

   NO–Replace the steering gearbox (see page 17-64).■
15. Disconnect the torque sensor 6P connector (see step 17 on page 17-66).

16. Check for continuity between EPS control unit connector B (16P) terminals and torque sensor 6P connector terminals (see table).

Sign	EPS Control Unit Connector B (16P) Terminal	Torque Sensor 6P Connector Terminal
MAIN	No. 15	No. 6
SUB	No. 13	No. 3

EPS CONTROL UNIT CONNECTOR B (16P)
Wire side of female terminals



TORQUE SENSOR 6P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 17.

NO–Repair an open in the wire between the EPS control unit and the torque sensor.■

17. Substitute a known-good EPS control unit (see page 17-80).
18. Reconnect all the connectors.
19. Start the engine.
20. Turn the steering wheel from lock to lock several times.
21. Check for DTCs with the HDS.

Is DTC 52-06 indicated?

YES–Replace the steering gearbox (see page 17-64).■

NO–Replace the original EPS control unit (see page 17-80).■

DTC 52-08: Torque Sensor Power Supply

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

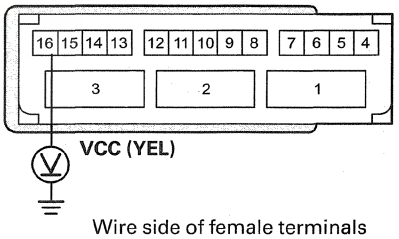
Is DTC 52-08 indicated?

YES–Go to step 6.

NO–Intermittent failure, the system is OK at this time.■

6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between EPS control unit connector B (16P) terminal No. 16 and body ground.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the EPS control unit and the torque sensor.■

NO–Go to step 10.

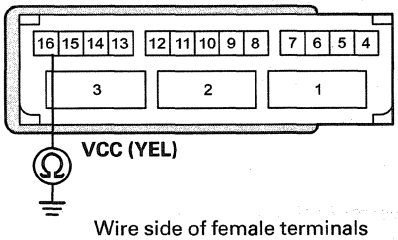
10. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

11. Check for continuity between EPS control unit connector B (16P) terminal No. 16 and body ground.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

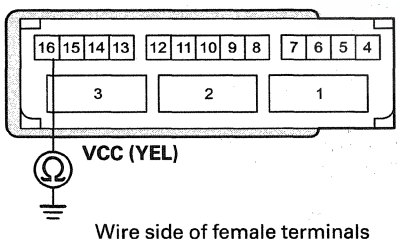
Is there continuity?

YES–Go to step 12.

NO–Go to step 14.

12. Disconnect the torque sensor 6P connector (see step 17 on page 17-66).
13. Check for continuity between EPS control unit connector B (16P) terminal No. 16 and body ground.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the torque sensor.■

NO–Replace the steering gearbox (see page 17-64).■

14. Substitute a known-good EPS control unit (see page 17-80).
15. Start the engine.
16. Check for DTCs with the HDS.

Is DTC 52-08 indicated?

YES–Replace the steering gearbox (see page 17-64).■

NO–Replace the original EPS control unit (see page 17-80).■

DTC 61-04: Motor Harness Malfunction

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

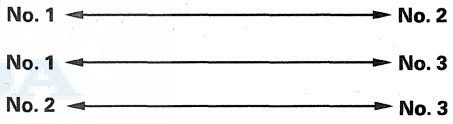
Is DTC 61-04 indicated?

YES–Go to step 6.

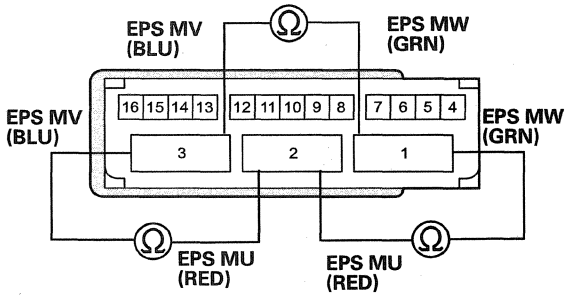
NO–Intermittent failure, the system is OK at this time.■

6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Check for continuity between the following terminals of EPS control unit connector B (16P).

EPS CONTROL UNIT CONNECTOR B (16P)



EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Go to step 9.

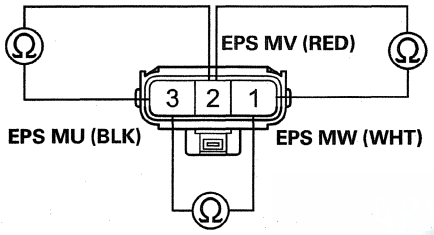
9. Disconnect the EPS motor 3P connector (see step 17 on page 17-66).

10. On the EPS motor side, check for continuity between following terminals of EPS motor 3P connector.

EPS MOTOR 3P CONNECTOR

No. 1 ◄——————► **No. 2**
No. 1 ◄——————► **No. 3**
No. 2 ◄——————► **No. 3**

EPS MOTOR 3P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES–Repair an open in the wire between the EPS control unit and the EPS motor.■

NO–Replace the EPS motor (see page 17-62).■

DTC 61-05: Motor Harness Short

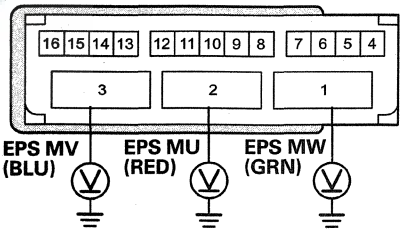
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Check for DTCs with the HDS.

   Is DTC 61-05 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Turn the ignition switch to LOCK (0).
7. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
8. Turn the ignition switch to ON (II).
9. Measure the voltage between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the EPS control unit and the EPS motor.■

NO–Go to step 10.

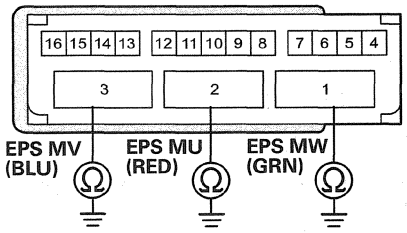
10. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

11. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

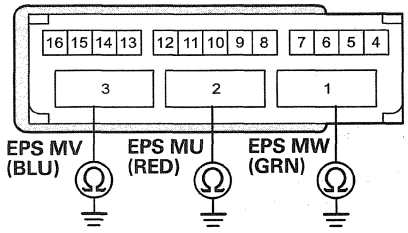
YES–Go to step 12.

NO–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

12. Disconnect the EPS motor 3P connector (see step 17 on page 17-66).

13. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the EPS motor.■

NO–Replace the EPS motor (see page 17-62).■

DTC 61-06: Motor Harness Open

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Turn the steering wheel from lock to lock several times.
6. Check for DTCs with the HDS.

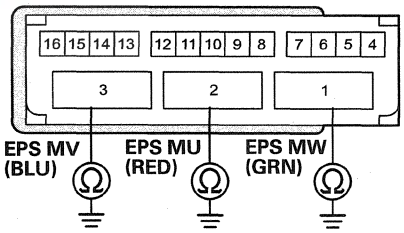
Is DTC 61-06 indicated?

YES–Go to step 7.

NO–Intermittent failure, the system is OK at this time.■

7. Turn the ignition switch to LOCK (0).
8. Disconnect EPS control unit connectors B (16P) (see step 3 on page 17-80).
9. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

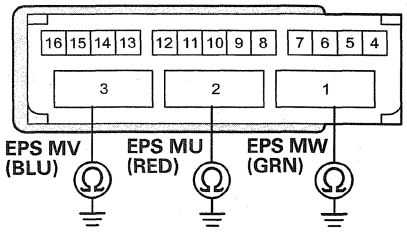
YES–Go to step 10.

NO–Go to step 12.

10. Disconnect the EPS motor 3P connector (see step 17 on page 17-66).

11. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 1, No. 2, and No. 3 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the EPS control unit and the EPS motor.■

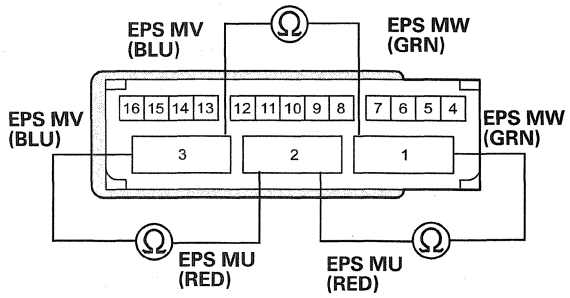
NO–Replace the EPS motor (see page 17-62).■

12. Check for continuity between following terminals of EPS control unit connector B (16P).

EPS CONTROL UNIT CONNECTOR B (16P)

No. 1 ◄——► No. 2
No. 1 ◄——► No. 3
No. 2 ◄——► No. 3

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

NO–Go to step 13.

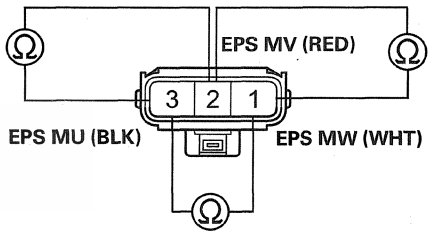
13. Disconnect the EPS motor 3P connector (see step 17 on page 17-66).

14. On the EPS motor side, check for continuity between following terminals of EPS motor 3P connector.

EPS MOTOR 3P CONNECTOR

No. 1 ◄——► No. 2
No. 1 ◄——► No. 3
No. 2 ◄——► No. 3

EPS MOTOR 3P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES–Repair an open in the wire between the EPS control unit and the EPS motor.■

NO–Replace the EPS motor (see page 17-62).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 71-01: Motor Angle Sensor (SIN/COS Signals)

DTC 71-03: Motor Angle Sensor (SIN/COS Signals)

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait at least 10 seconds.
6. Check for DTCs with the HDS.

   Is DTC 71-01 or 71-03 indicated?

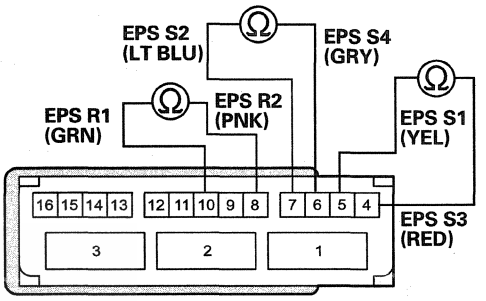
   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
9. Measure the resistance between following terminals of EPS control unit connector B (16P).

EPS CONTROL UNIT CONNECTOR B (16P)

No. 4 ◄——► **No. 5**
No. 6 ◄——► **No. 7**
No. 8 ◄——► **No. 10**

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

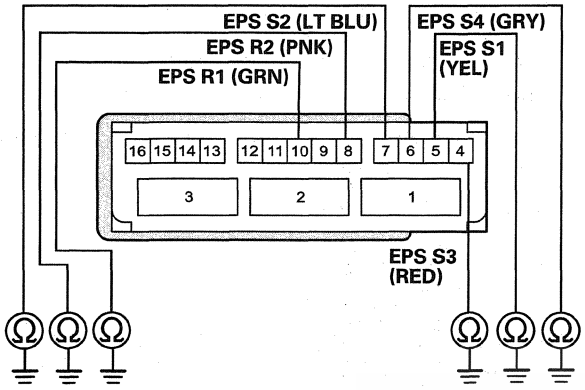
Is the resistance between R1—R2: 13.5—17.5 Ω, S1—S3: 25—32 Ω, and S2—S4: 25—32 Ω?

YES–Go to step 10.

NO–Go to step 13.

10. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 4, No. 5, No. 6, No. 7, No. 8, and No. 10 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

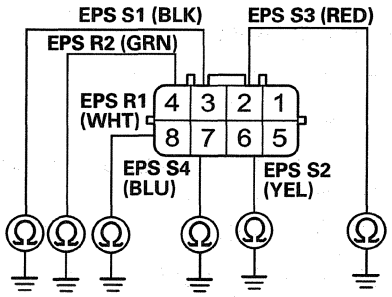
YES–Go to step 11.

NO–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

11. Disconnect the EPS motor angle sensor 8P connector (see step 17 on page 17-66).

12. On the sensor side, check for continuity between body ground and EPS motor angle sensor 8P connector terminals No. 2, No. 3, No. 4, No. 6, No. 7, and No. 8 individually.

EPS MOTOR ANGLE SENSOR 8P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the EPS motor (see page 17-62).■

NO–Repair a short to body ground in the wire between the EPS control unit and the EPS motor angle sensor.■

13. Disconnect the EPS motor angle sensor 8P connector (see step 17 on page 17-66).

(cont'd)

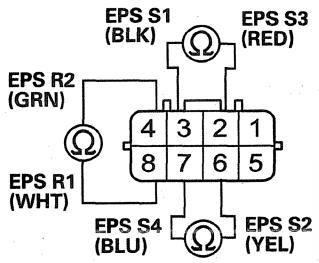
DTC Troubleshooting (cont'd)

14. On the sensor side, measure the resistance between following terminals of EPS motor angle sensor 8P connector.

EPS MOTOR ANGLE SENSOR 8P CONNECTOR

No. 2 ◄——► No. 3
No. 4 ◄——► No. 8
No. 6 ◄——► No. 7

EPS MOTOR ANGLE SENSOR 8P CONNECTOR



Wire side of female terminals

Is the resistance between R1—R2: 13.5—17.5 Ω, S1—S3: 25—32 Ω, and S2—S4: 25—32 Ω?

YES–Repair an open or short in the wire between the EPS control unit and the EPS motor angle sensor.■

NO–Replace the EPS motor (see page 17-62).■

DTC 71-04: Motor Angle Sensor (Check Signals)

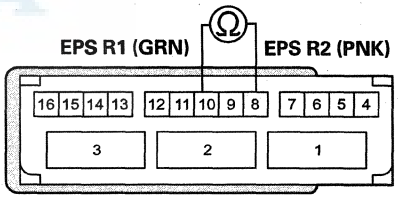
1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start the engine.
5. Turn the steering wheel to the right or left, and wait at least 10 seconds.
6. Check for DTCs with the HDS.

   Is DTC 71-04 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time.■
7. Turn the ignition switch to LOCK (0).
8. Disconnect EPS control unit connector B (16P) (see step 3 on page 17-80).
9. Measure the resistance between EPS control unit connector B (16P) terminals No. 8 and No. 10.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

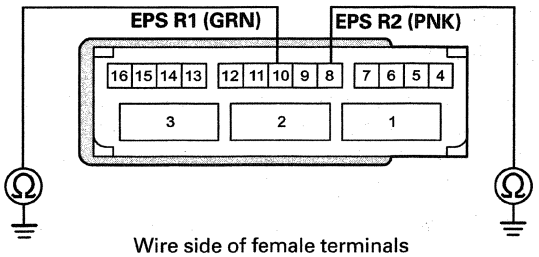
Is the resistance between 13.5—17.5 Ω?

YES–Go to step 10.

NO–Go to step 13.

10. Check for continuity between body ground and EPS control unit connector B (16P) terminals No. 8 and No. 10 individually.

EPS CONTROL UNIT CONNECTOR B (16P)



Wire side of female terminals

Is there continuity?

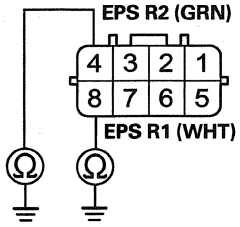
YES–Go to step 11.

NO–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

11. Disconnect the EPS motor angle sensor 8P connector (see step 17 on page 17-66).

12. On the sensor side, check for continuity between body ground and EPS motor angle sensor 8P connector terminals No. 4 and No. 8 individually.

EPS MOTOR ANGLE SENSOR 8P CONNECTOR



Wire side of female terminals

Is there continuity?

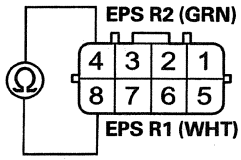
YES–Replace the EPS motor (see page 17-62).■

NO–Repair a short to body ground in the wire between the EPS control unit and the EPS motor angle sensor.■

13. Disconnect the EPS motor angle sensor 8P connector (see step 17 on page 17-66).

14. On the sensor side, measure the resistance between EPS motor angle sensor 8P connector terminals No. 4 and No. 8.

EPS MOTOR ANGLE SENSOR 8P CONNECTOR



Wire side of female terminals

Is the resistance between 13.5—17.5 Ω?

YES–Repair an open or short in the wire between the EPS control unit and the EPS motor angle sensor.■

NO–Replace the EPS motor (see page 17-62).■

Symptom Troubleshooting

EPS indicator does not come on

1. Turn the ignition switch to ON (II), and watch the EPS indicator.

   Does the EPS indicator come on?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Troubleshoot the gauge control module (see page 22-325).■

EPS indicator does not go off, and no DTCs are stored

1. Turn the ignition switch to LOCK (0).
2. Check the No. B11 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse blown?

   YES–Replace the fuse. Turn the ignition switch to ON (II), then turn it to LOCK (0) again. If the fuse blows again, repair the short to ground on the No. B11 (7.5 A) fuse circuit.■

   NO–Reinstall the checked fuse, then go to step 3.

3. Check the No. A2 (70 A) fuse in the battery terminal fuse box.

   Is the fuse blown?

   YES–Replace the fuse. Turn the ignition switch to ON (II), then turn it to LOCK (0) again. If the fuse blows again, repair the short to ground on the No. A2 (70 A) fuse circuit.■

   NO–Reinstall the checked fuse, then go to step 4.

4. Do the gauge control module self-diagnostic function.

   Is the gauge control module OK?

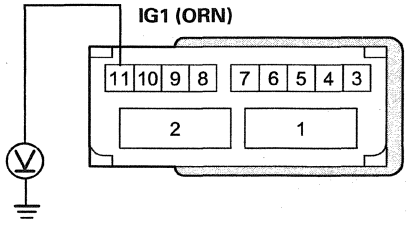
   YES–Go to step 5.

   NO–Replace the gauge control module (see page 22-354).■

5. Turn the ignition switch to LOCK (0).
6. Disconnect EPS control unit connector A (11P) (see step 3 on page 17-80).
7. Turn the ignition switch to ON (II).

8. Measure the voltage between EPS control unit connector A (11P) terminal No. 11 and body ground.

EPS CONTROL UNIT CONNECTOR A (11P)



Wire side of female terminals

Is there battery voltage?

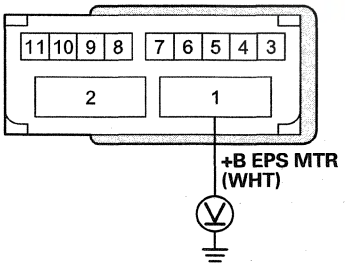
YES–Go to step 9.

NO–Repair an open in the wire between the EPS control unit and the No. B11 (7.5 A) fuse in the under-dash fuse/relay box.■

9. Turn the ignition switch to LOCK (0).

10. Measure the voltage between EPS control unit connector A (11P) terminal No. 1 and body ground.

EPS CONTROL UNIT CONNECTOR A (11P)



Wire side of female terminals

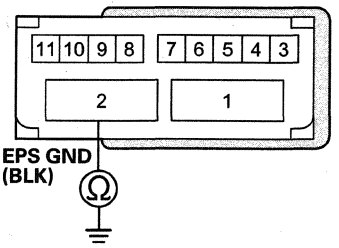
Is there battery voltage?

YES–Go to step 11.

NO–Repair an open in the wire between the EPS control unit and No. A2 (70 A) fuse in the battery terminal fuse box.■

11. Check for continuity between EPS control unit connector A (11P) terminal No. 2 and body ground.

EPS CONTROL UNIT CONNECTOR A (11P)



Wire side of female terminals

Is there continuity?

YES–Go to step 12.

NO–Repair an open in the wire between the EPS control unit and the body ground (G402).■

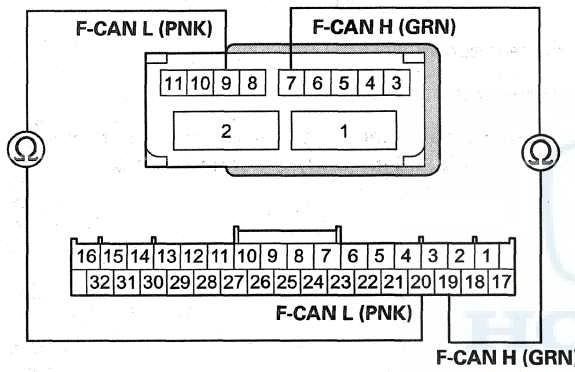
(cont'd)

Symptom Troubleshooting (cont'd)

12. Disconnect the gauge control module 32P connector (see step 3 on page 22-354).
13. Check for continuity between EPS control unit connector A (11P) terminals and gauge control module 32P connector terminals (see table).

Sign	EPS Control Unit Connector A (11P) Terminal	Gauge Control Module 32P Connector Terminal
F-CAN L	No. 9	No. 20
F-CAN H	No. 7	No. 19

EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose terminals in the EPS control unit connectors, and repair if necessary. If no poor connections are found, replace the EPS control unit (see page 17-80).■

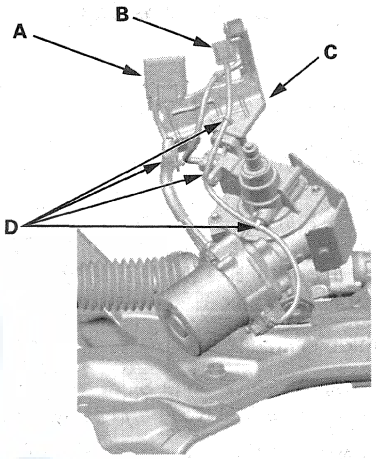
NO–Repair an open in the wire between the EPS control unit and the gauge control module.■

EPS Motor Removal and Installation

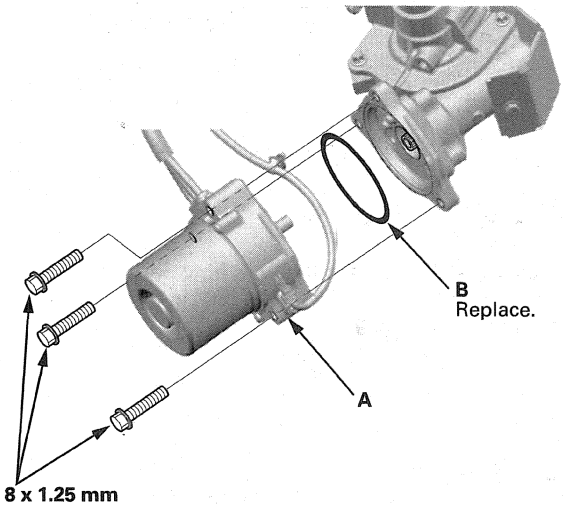
NOTE: Do not allow dust, dirt, or other foreign materials to enter the steering gearbox.

Removal

1. Remove the steering gearbox (see page 17-64).
2. Remove the EPS motor 3P connector (A) and the EPS motor angle sensor 8P connector (B) from the connector bracket (C).

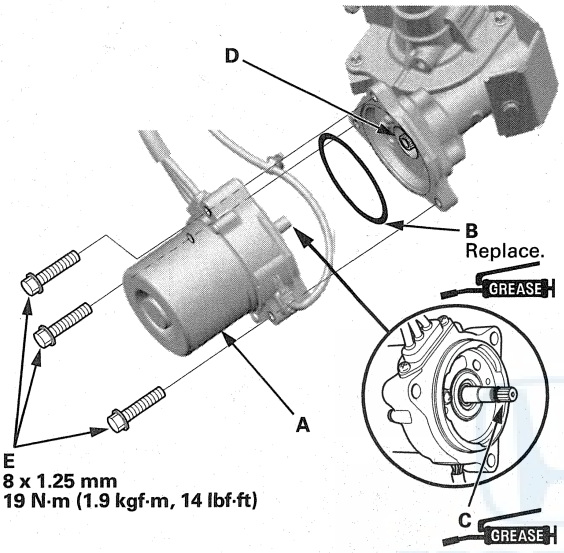


3. Remove the wire harness clips (D).
4. Remove the EPS motor (A) and the O-ring (B) from the steering gearbox.

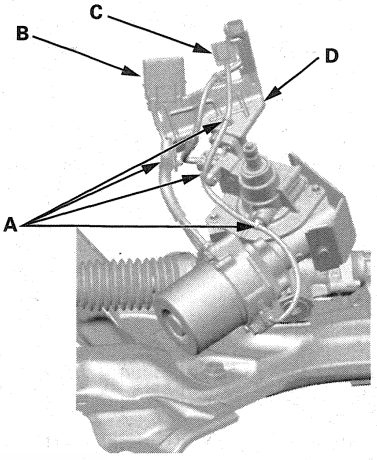


Installation

1. Clean the mating surfaces of the EPS motor (A) and the steering gearbox.



2. Apply the steering grease (08C35-B0534L) to a new O-ring (B), and carefully fit it on the EPS motor.
3. Apply the steering grease (08C35-B0534L) to the EPS motor shaft (C).
4. Install the EPS motor on the steering gearbox by engaging the EPS motor shaft and the worm shaft (D).
5. Before tightening the bolts, turn the motor two or three times to the right and left about 45 degrees. Make sure the EPS motor is evenly seated on the steering gearbox, and that the O-ring is not pinched between the mating surfaces.
6. Tighten the EPS motor mounting bolts (E) to the specified torque.
7. Install the wire harness clips (A).



8. Install the EPS motor 3P connector (B) and the EPS motor angle sensor 8P connector (C) to the connector bracket (D).
9. Install the steering gearbox (see page 17-68).

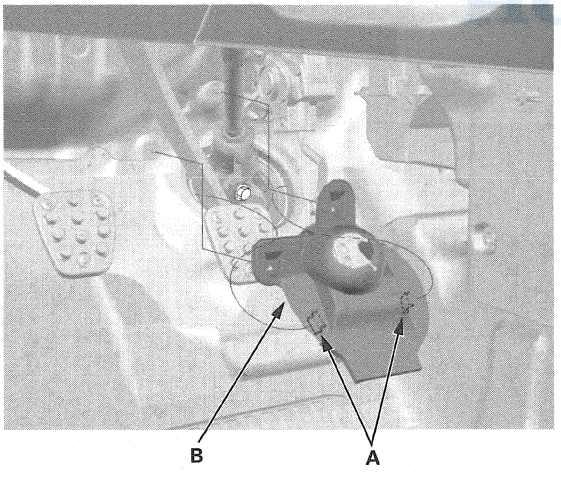
Steering Gearbox Removal and Installation

Special Tools Required
- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000

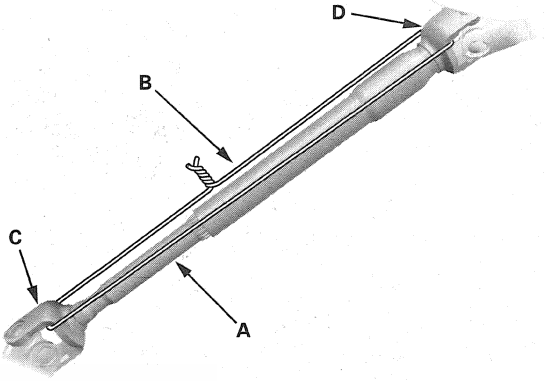
Note these items during removal:
- Using solvent and a brush, wash any oil and dirt off the end of the steering gearbox. Avoid any electrical parts. Blow dry with compressed air.
- Be sure to hold the steering wheel before disconnecting the steering joint or damage to the cable reel can occur.

Removal

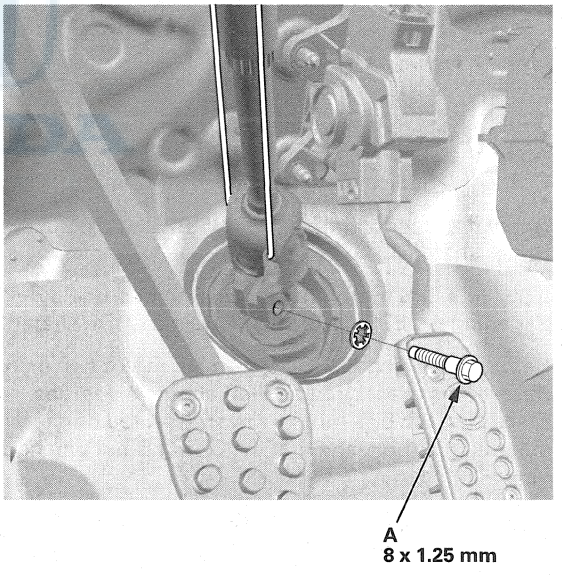
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Raise and support the vehicle (see page 1-10).
3. Remove the front wheels.
4. Tilt the steering column all the way down and move it all the way in.
5. Release the hooks (A), then remove the steering joint cover (B).



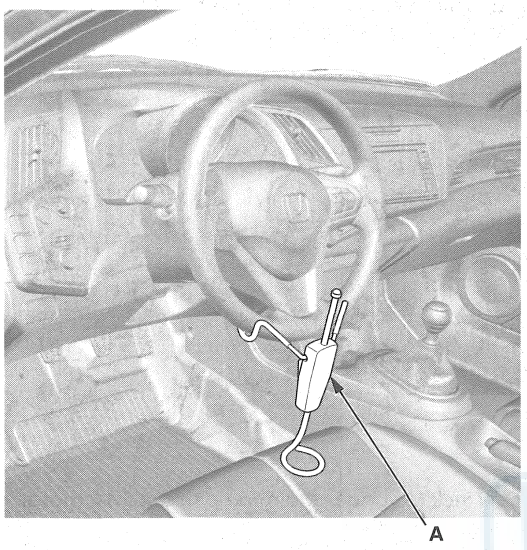
6. Hold the splined shaft (A) on the column with a piece of wire (B) between the joint yoke (C) of the splined shaft and joint yoke (D) of the splined tube to prevent the splined shaft from pulling out.



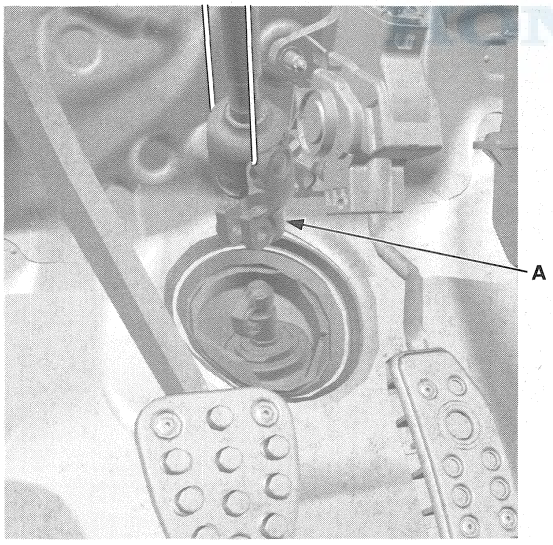
7. Remove the steering joint bolt (A).



8. Center the steering wheel spokes, and install a commercially available steering wheel holder tool (A).

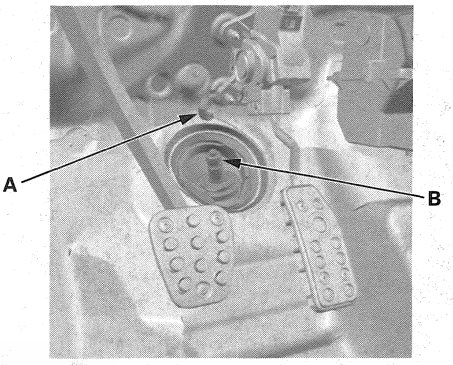


9. Disconnect the steering joint (A) by moving the steering joint toward the column.

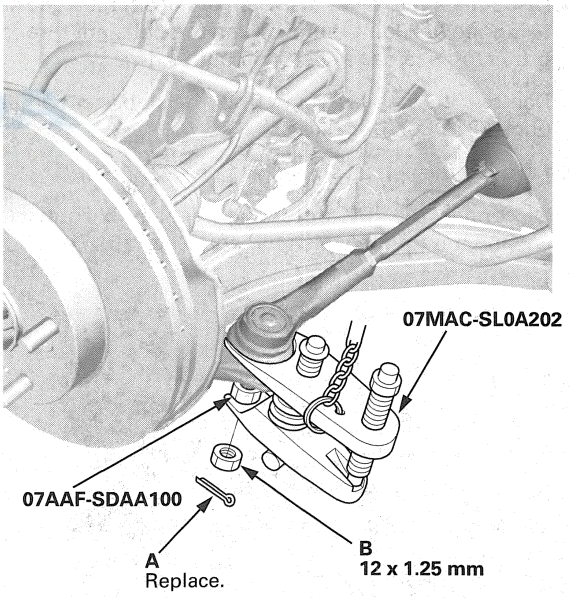


10. Remove the center guide (A) (if equipped) from the top of the pinion shaft (B), and discard it.

NOTE: The center guide is for factory assembly use only.



11. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B) on both sides.

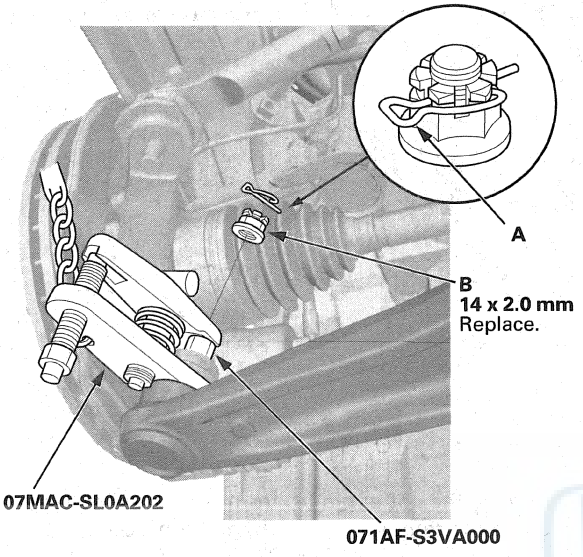


12. Disconnect the tie-rod end ball joint from the knuckle using the ball joint remover and the ball joint thread protector (see page 18-11) on both sides.

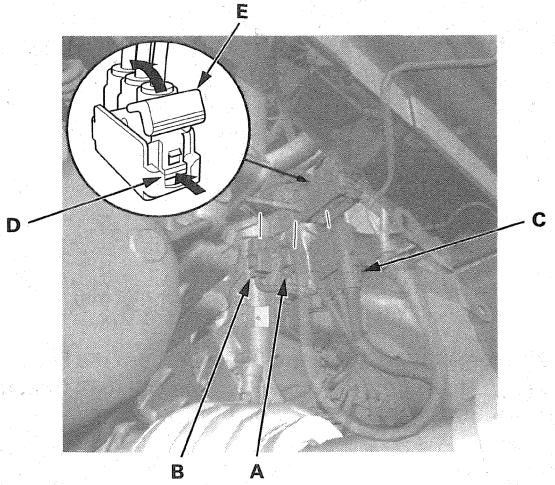
(cont'd)

Steering Gearbox Removal and Installation (cont'd)

13. Remove the lock pin (A) from the lower arm ball joint, and remove the castle nut (B) from both sides.



14. Disconnect the lower arm ball joint from the knuckle using the ball joint remover and the ball joint thread protector (see page 18-11) on both sides.
15. Remove the stabilizer links from the stabilizer bar (see page 18-20) on both sides.
16. Remove the splash shield (see page 20-163).
17. Disconnect the EPS motor angle sensor 8P connector (A) and the torque sensor 6P connector (B).

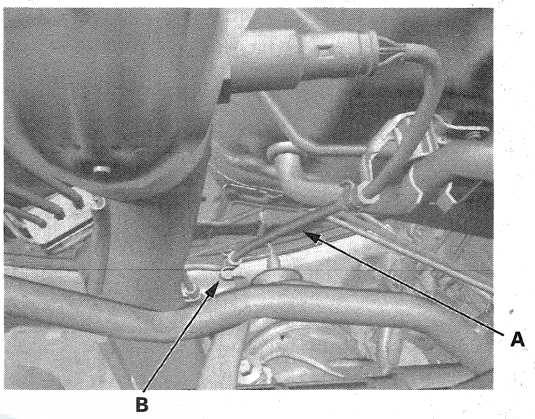


18. Disconnect the EPS motor 3P connector (C) by pushing the lock (D) and pulling up the lever (E).

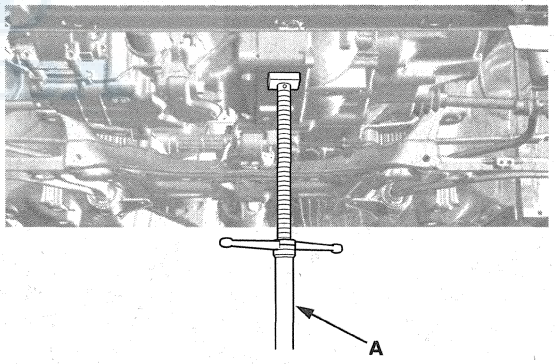
    NOTE: Wrap the connectors with vinyl tape to avoid contamination from grease or water.

19. Remove the secondary HO2S wire (A) from the clamp (B).

    NOTE: Do not disconnect the secondary HO2S 4P connector and the secondary HO2S.

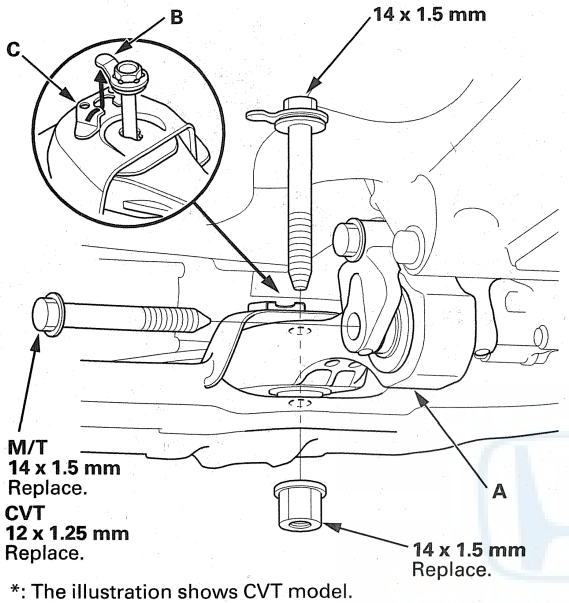


20. Place a jack (A) under the middle of the IMA motor housing.



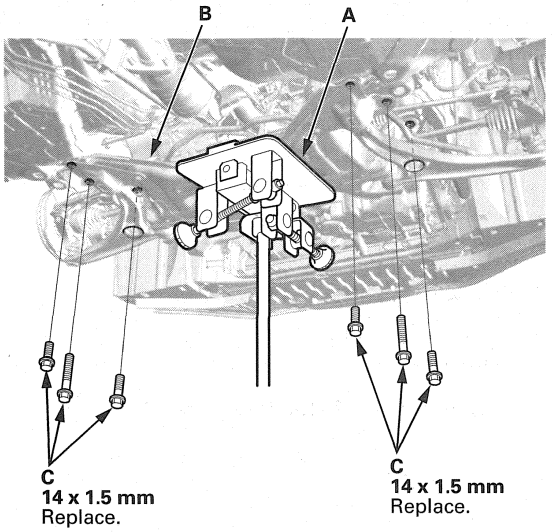
21. Remove the torque rod (A).

NOTE: Make sure the tab (B) on the bolt head aligned with the guide (C) on the front subframe.



*: The illustration shows CVT model.

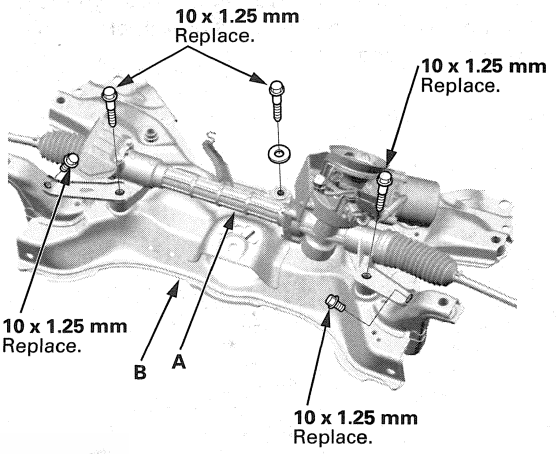
22. Attach a transmission jack (A) to the middle of the front subframe (B), and support the front subframe securely by raising the transmission jack.



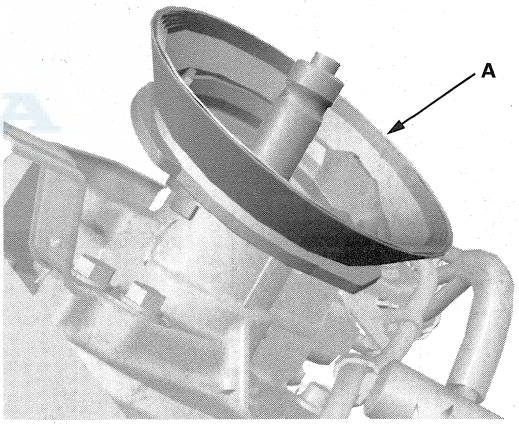
23. Remove the front subframe mounting bolts (C).

24. Lower the front subframe and the steering gearbox as an assembly by lowering the jack slowly.

25. Remove the steering gearbox (A) from the front subframe (B).



26. Remove the pinion shaft grommet (A).

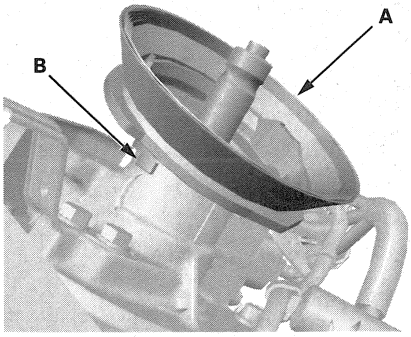


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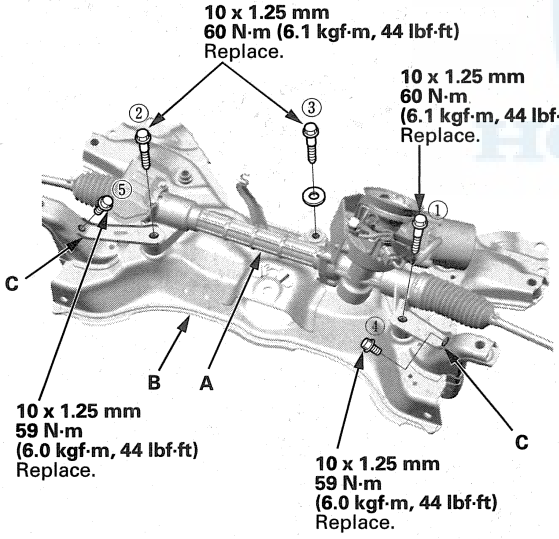
Steering Gearbox Removal and Installation (cont'd)

Installation

1. Install the pinion shaft grommet (A). Align the lug portion (B) in the pinion shaft grommet with the steering gearbox.

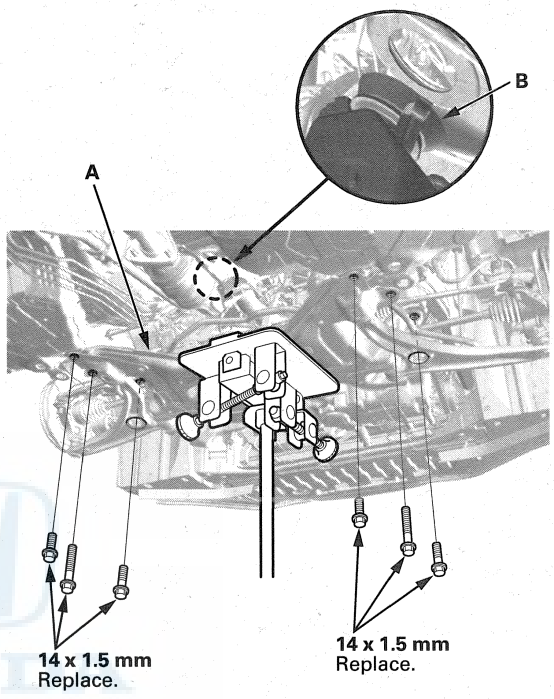


2. Place the steering gearbox (A) on the front subframe (B).



3. Loosely install the stiffener plates (C), and new gearbox mounting bolts, then tighten the bolts to the specified torque in the sequence as shown.

4. Set the front subframe (A) mounting the steering gearbox on the transmission jack and support it.



5. Carefully raise the front subframe with the transmission jack, and pass the pinion shaft into the passenger's compartment.

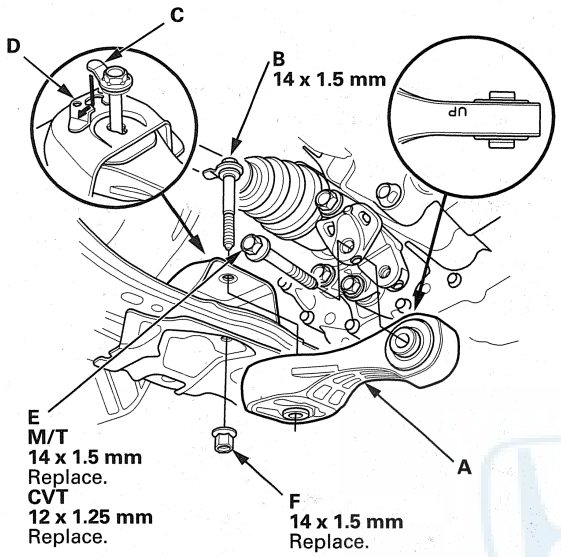
   NOTE:
   - Be sure that the pinion shaft grommet (B) is securely in place. Make sure the lip of the pinion shaft grommet is not turned up. Incorrect installation can cause leakage of water and mud, or noise.
   - Take care not to damage the lower arm ball joint boot with the edge of the knuckle, etc.

6. Install the front subframe, then loosely tighten the new front subframe mounting bolts.

7. Align the front subframe (see page 20-174).

8. Install the torque rod (A).

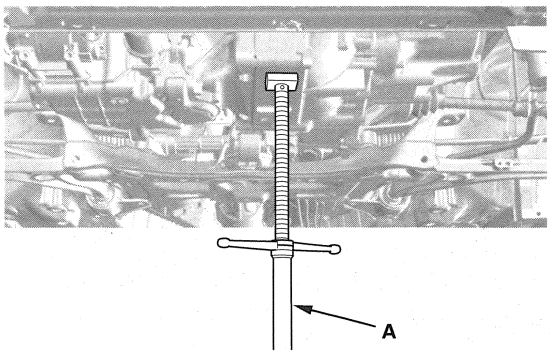
NOTE: Be sure to install the torque rod with the "UP" mark facing up.



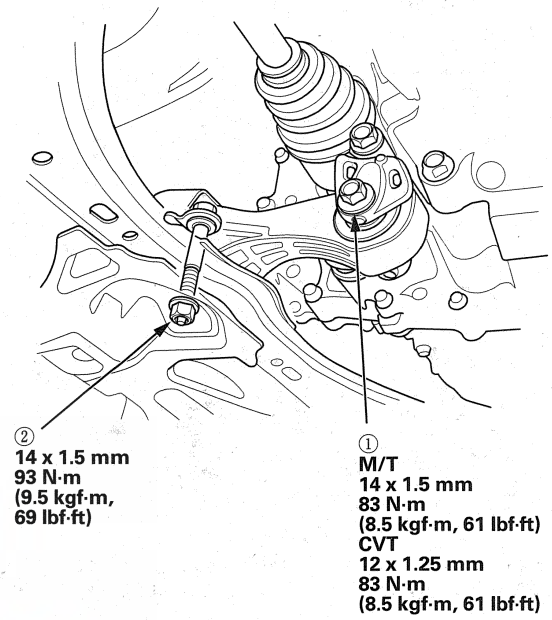
*: The illustration shows CVT model.

9. Install the bolt (B) with the tab (C) on the bolt head aligned with the guide (D) on the front subframe, then loosely install a new torque rod mounting bolt (E) and nut (F).

10. Remove the jack (A).

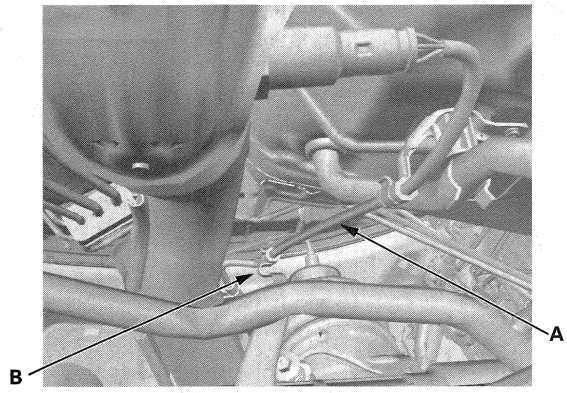


11. Tighten the torque rod mounting bolt and nut in the numbered sequence shown.



*: The illustration shows CVT model.

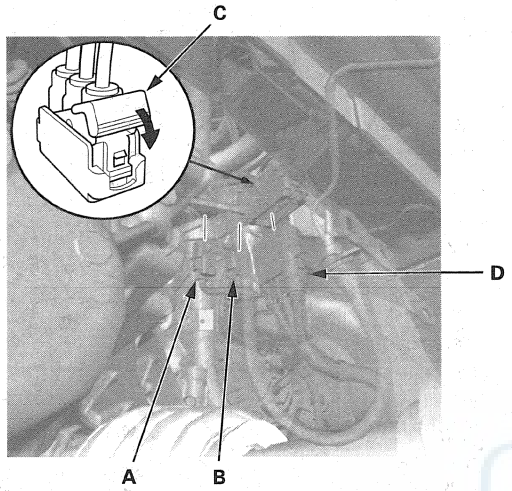
12. Install the secondary HO2S wire (A) in the clamp (B).



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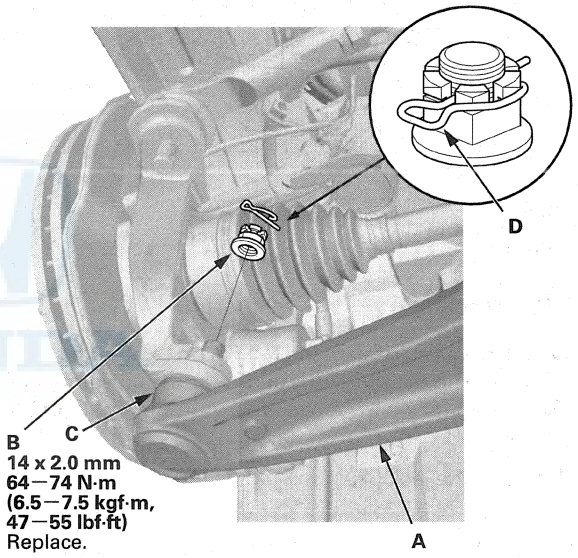
Steering Gearbox Removal and Installation (cont'd)

13. Remove the vinyl tape from the connectors.
14. Connect the torque sensor 6P connector (A) and the EPS motor angle sensor 8P connector (B).



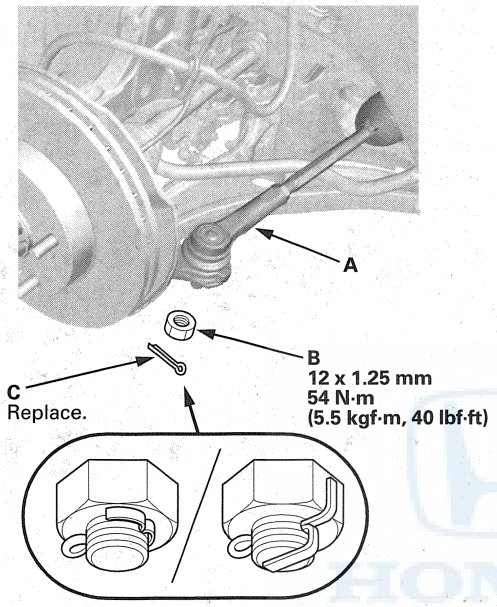
15. Pull down the lever (C) of the EPS motor 3P connector (D), then confirm the connector is fully seated.
16. Install the stabilizer links to the stabilizer bar (see page 18-20) on both sides.
17. Install the splash shield (see page 20-163).
18. Wipe off any grease contamination from the tapered section and threads of the ball joint. Connect the lower arm (A) to the knuckle. Install a new castle nut (B), and tighten it to the specified torque on both sides.

    NOTE:
    - Be careful not to damage the lower arm ball joint boot (C). Check the ball joint boot for deformation before connecting the knuckle.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the joint pin clip hole. Do not align the castle nut by loosening it.



19. Install the lock pin (D) on both sides.

20. Wipe off any grease contamination from the tapered section and threads of the tie-rod end ball joint. Connect the tie-rod end (A) to the knuckles. Install the nut (B), and tighten it to the specified torque on both sides.

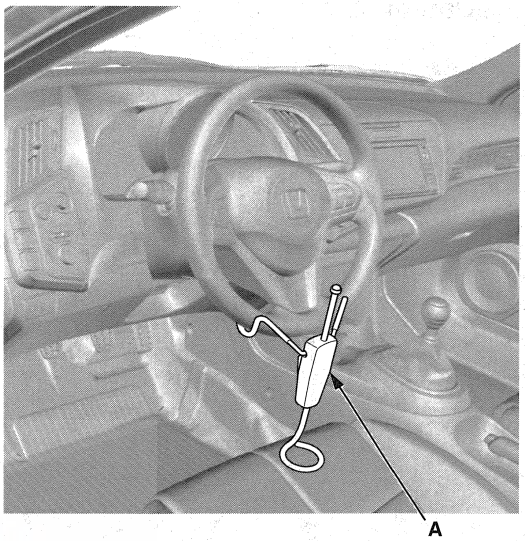


21. Install a new cotter pin (C), and bend it as shown on both sides.

22. Install the front wheels, then set the wheels in the straight ahead position.

    NOTE: Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

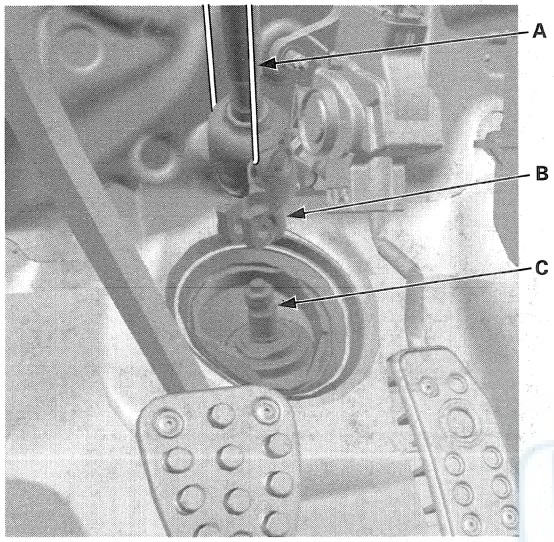
23. Remove the steering wheel holder tool (A).

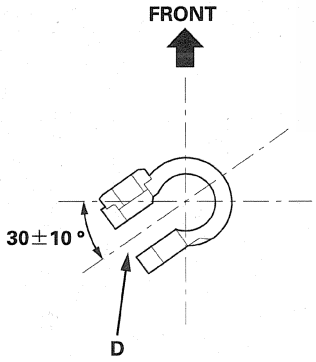


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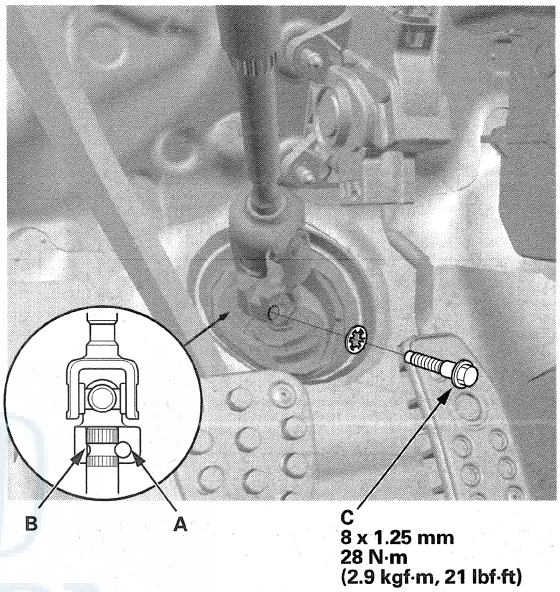
Steering Gearbox Removal and Installation (cont'd)

24. Cut the wire (A), and slip the lower end of the steering joint (B) onto the pinion shaft (C) taking care to align the gap (D) within the angle.





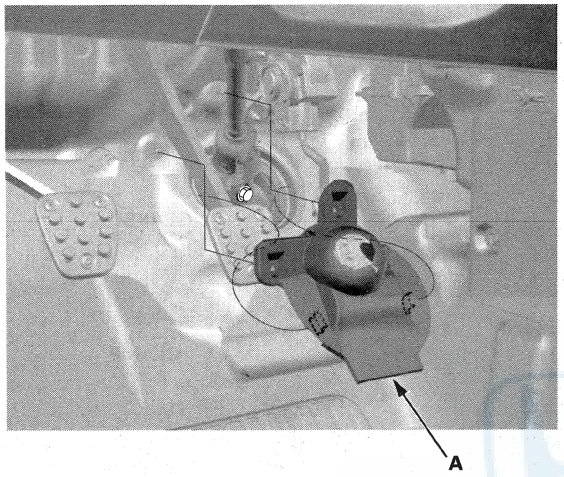
25. Align the bolt hole (A) on the steering joint with the groove (B) around the pinion shaft, then loosely install the steering joint bolt (C). Be sure that the joint bolt is securely in the groove in the pinion shaft.



26. Pull on the steering joint to make sure that the steering joint is fully seated, then tighten the steering joint bolt to the specified torque.

27. Install the steering joint cover (A).

    NOTE: Check the steering joint cover for damage and cracks. If the steering joint cover is cracked, replace the steering joint cover.



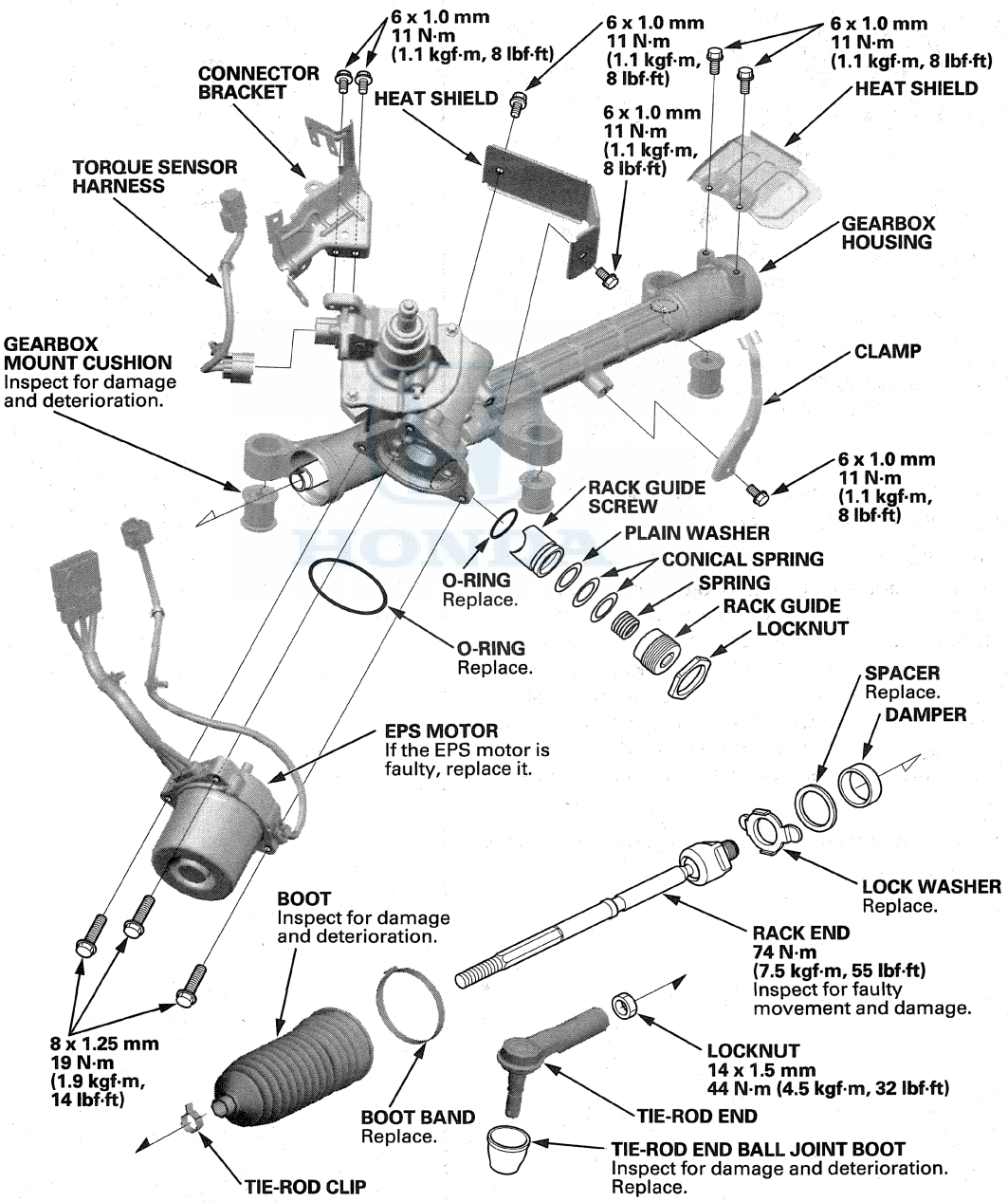
28. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
29. After installation, check these items:
    - Start the engine, allow it to idle, and turn the steering wheel from lock to lock several times. Check that the EPS indicator does not come on.
    - Check the steering wheel spoke angle. If steering spoke angles to the right and left are not equal (steering wheel and rack are not centered), correct the engagement of the joint/pinion shaft serrations, then adjust the front toe by turning the tie-rod ends, if necessary.
30. Check the wheel alignment, and adjust it if necessary (see page 18-5).

EPS Components

Steering Gearbox Disassembly/Reassembly

NOTE: For these operations, refer to the complete procedure as needed.
- EPS motor removal and installation (see page 17-62)
- Rack guide removal/installation (see page 17-79)
- Rack end removal and installation (see page 17-75)

Exploded view

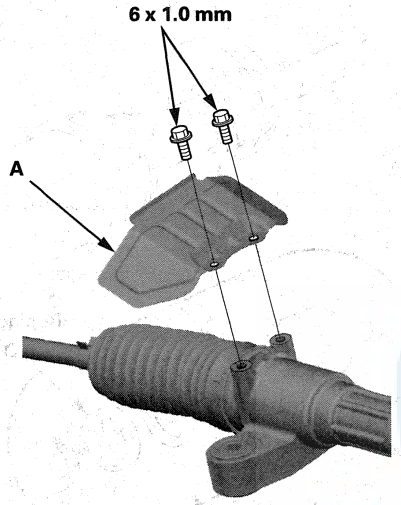


Rack End Removal and Installation

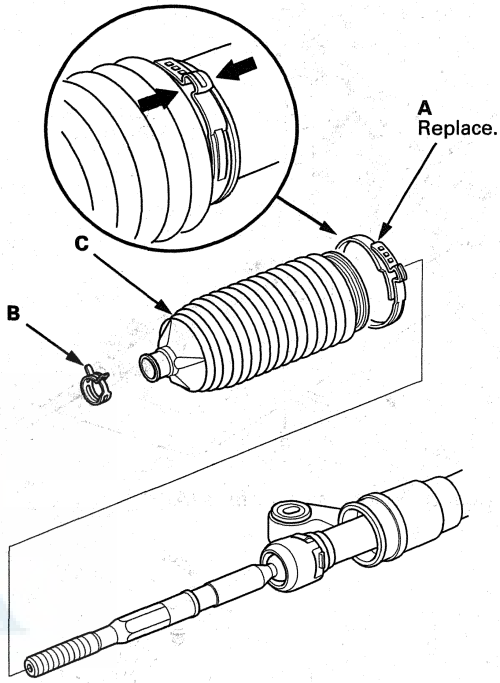
Removal

NOTE: Do not allow dust, dirt, or other foreign materials to enter the steering gearbox.

1. Remove the steering gearbox (see page 17-64).
2. Remove the heat shield (A).



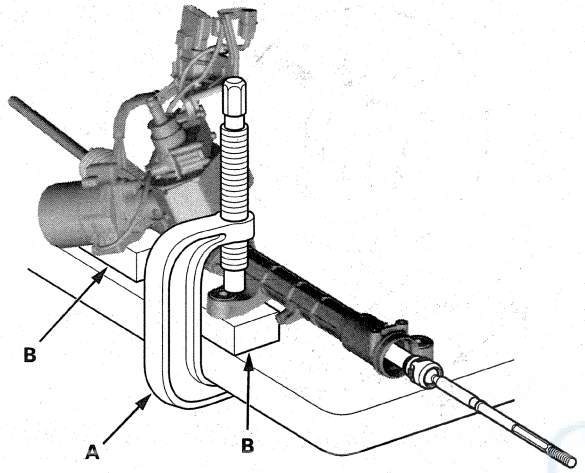
3. Remove the tie-rod end and the locknut from the rack end.
4. Remove the boot band (A) and the tie-rod clip (B). Pull the boot (C) away from the end of the steering gearbox.



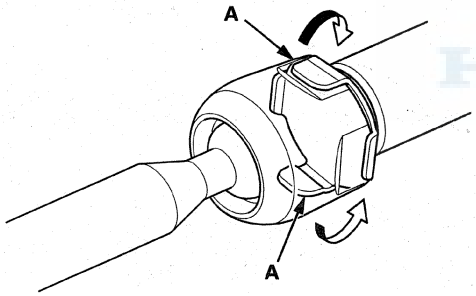
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Rack End Removal and Installation (cont'd)

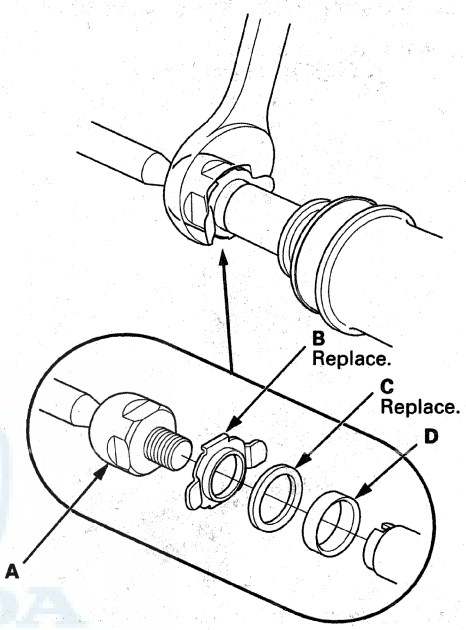
5. Hold the gearbox housing using a C-clamp (A) and wooden blocks (B) to a work bench as shown. Do not clamp the cylinder part of the gearbox housing in a vise.



6. Unbend the lock washer tabs (A).

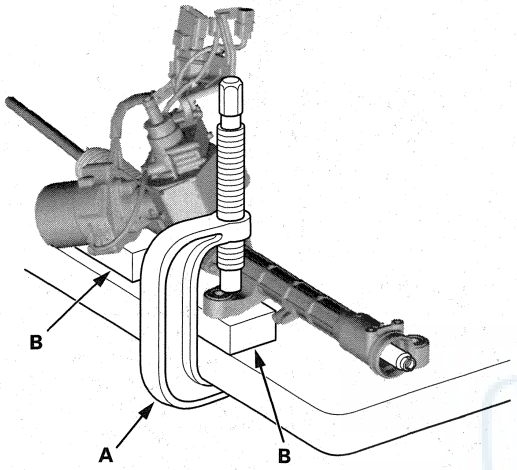


7. Unscrew the rack end (A) with a wrench. Be careful not to damage the rack shaft surface with the wrench. Remove the rack end, the lock washer (B), the spacer (C), and the damper (D).



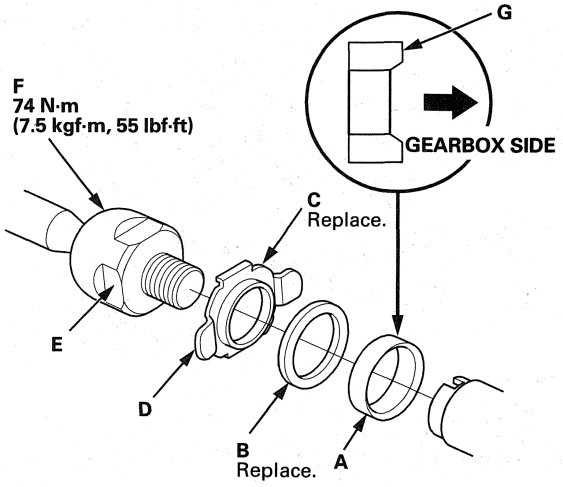
Installation

1. Hold the gearbox housing using a C-clamp (A) and wooden blocks (B) to a work bench as shown. Do not clamp the cylinder part of the gearbox housing in a vise.

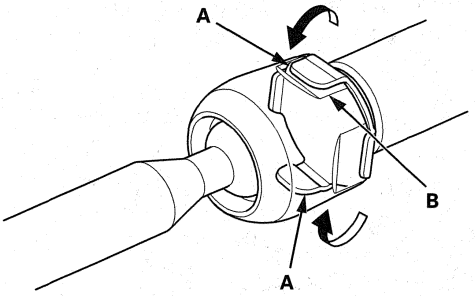


2. Install the damper (A), a new spacer (B), and a new lock washer (C). Align the lock washer tabs (D) with the flat spots (E) on the rack end ball joint housing. Install the rack end (F) while holding the lock washer in place.

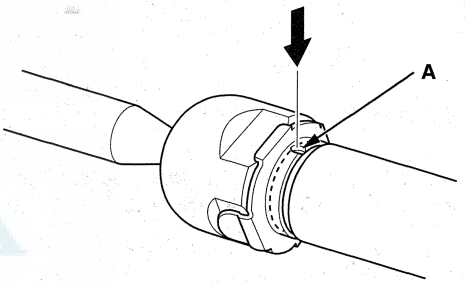
   NOTE: Make sure that the tapered side (G) of the damper is facing toward the gearbox.



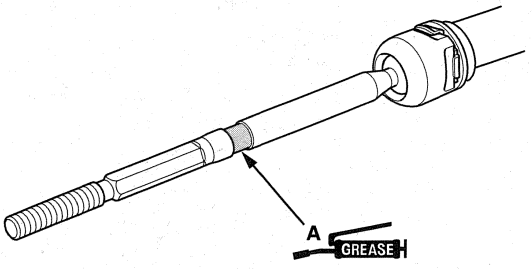
3. Bend the lock washer tabs (A) back against the flat spots (B) on the rack end ball joint housing.



4. Stake the lock washer at the stake point (A) on the rack.



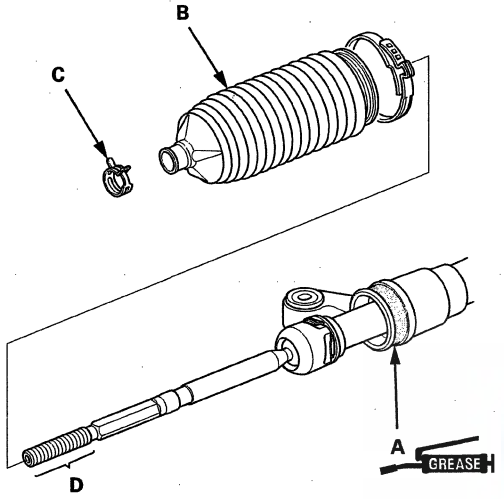
5. Apply a light coat of multipurpose grease to the boot installation groove (A) on the rack end.



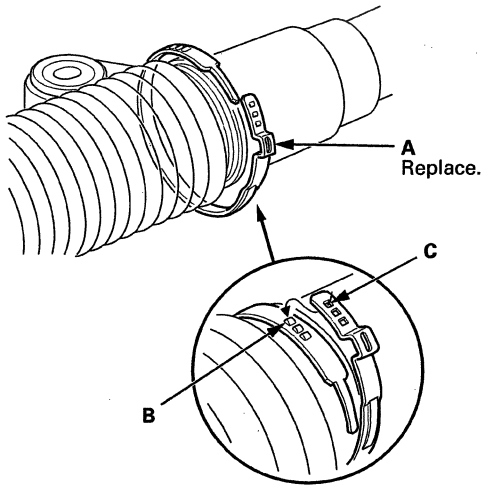
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Rack End Removal and Installation (cont'd)

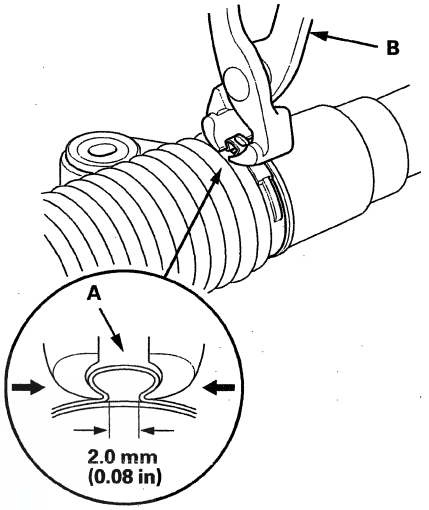
6. Apply a light coat of multipurpose grease to the boot installation groove (A) around the gearbox housing. Install the boot (B) on the rack end with the tie-rod clip (C), and fit the boot end in the installation groove in the housing properly.



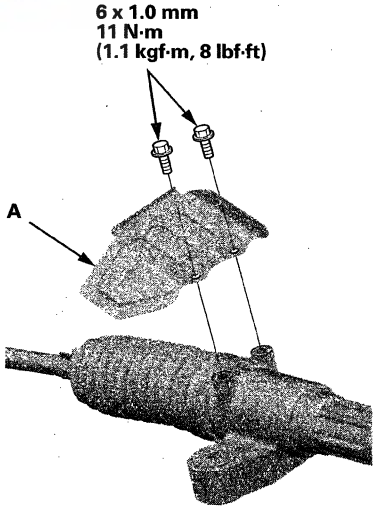
7. After installing the boot, wipe the grease off the threaded section (D) of the rack end.
8. Install a new boot band (A) by aligning the tabs (B) with the holes (C) of the band.



9. Close the ear portion (A) of the boot band with commercially available boot band pliers, Oetiker 1098 or equivalent (B).



10. Slide the rack right and left to be certain that the boots are not deformed or twisted.
11. Install the heat shield (A).



12. Install the tie-rod end and the locknut to the rack end.
13. Install the steering gearbox (see page 17-68).

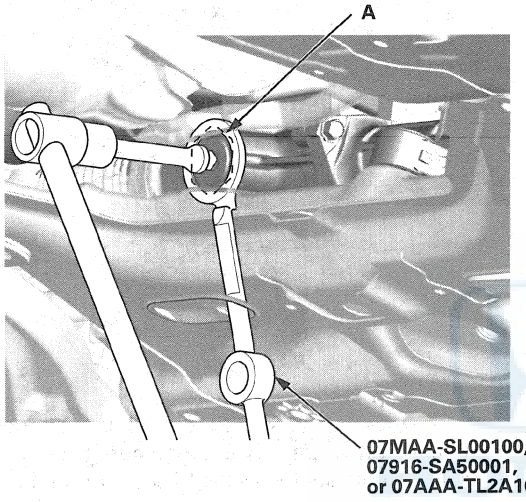
Rack Guide Removal/Installation

Special Tools Required

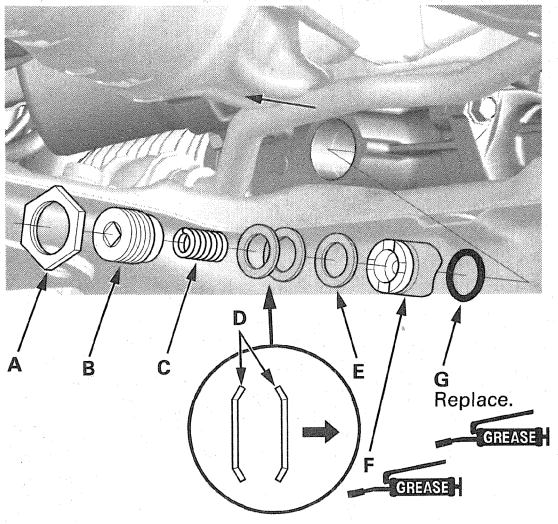
Locknut Wrench, 40 mm 07MAA-SL00100, 07916-SA50001, or 07AAA-TL2A100

NOTE: During removal/installation, do not allow dust, dirt, or other foreign materials to enter the steering gearbox.

1. Loosen the locknut (A) using the locknut wrench.



2. Remove the locknut (A), the rack guide screw (B), the spring (C), the conical springs (D), the plain washer (E), and the rack guide (F).



3. Remove the O-ring (G) from the rack guide. Wipe the grease off the sliding surface of the rack guide.
4. Apply the steering grease (08C35-B0534L) to a new O-ring, then install it to the rack guide.
5. Apply the steering grease (08C35-B0534L) to the sliding surface and the circumference of the rack guide, and install it onto the gearbox housing. Wipe the grease off the threaded section of the gearbox housing.
6. Install the plain washer onto the gearbox housing.
7. Install the conical springs onto the gearbox housing.

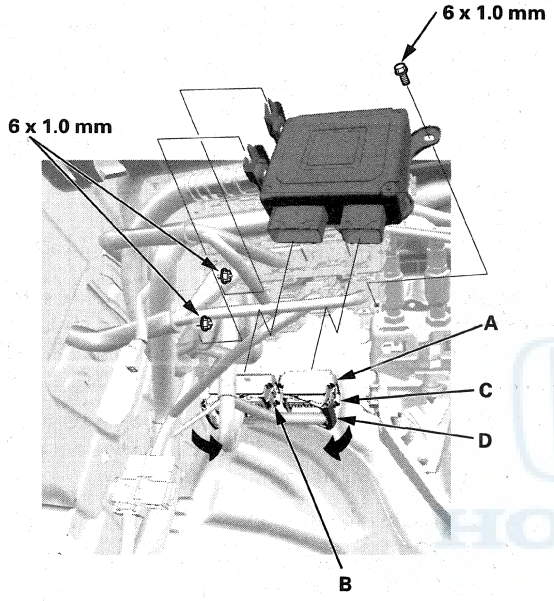
   NOTE: Conical springs are directional, install them as shown.
8. Install the spring onto the gearbox housing.
9. Remove the old sealant from the rack guide screw, and apply new sealant (Three Bond 1215 or Loctite 5699) to the middle of the threads. Loosely install the rack guide screw on the steering gearbox.

   NOTE: If more than 5 minutes has passed after applying the sealant, remove the old sealant and residue, and reapply new sealant.
10. Loosely install the locknut.
11. Adjust the rack guide screw (see page 17-18). After adjusting, check that the rack moves smoothly by sliding the rack right and left.

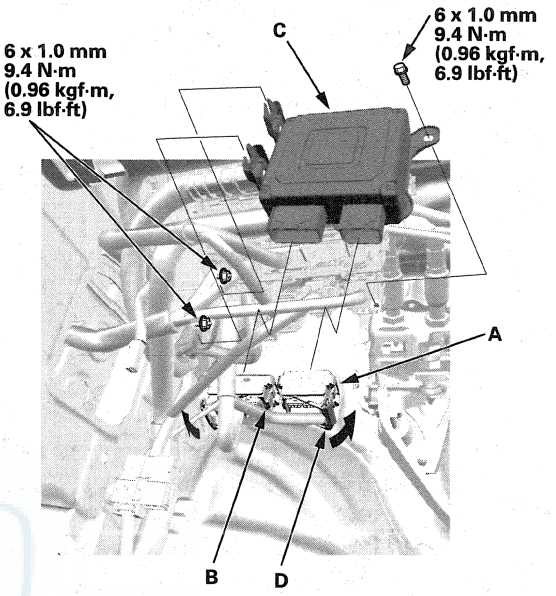
EPS Components

EPS Control Unit Removal/Installation

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the driver's kick panel (see page 20-52).
3. Disconnect EPS control unit connector A (11P) and connector B (16P) by pushing the lock (C) and pulling down the lever (D) from the EPS control unit.



4. Remove the EPS control unit.
5. Install the EPS control unit (C).

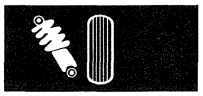


6. Pull up the lever (D) of the EPS control unit connector A (11P) and connector B (16P), then confirm the connector is fully seated to the EPS control unit.
7. Install the driver's kick panel (see page 20-52).
8. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
9. After installation, start the engine, allow it to idle, and turn the steering wheel from lock to lock several times. Check that the EPS indicator does not come on.

Suspension

Suspension 18–1

TPMS 18–41



Suspension

Front and Rear Suspension

Special Tools 18–2
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Rear Suspension 18–4
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Wheel Bearing End Play Inspection 18–8
Wheel Runout Inspection 18–9
Wheel Bolt Replacement 18–9
Ball Joint Removal 18–11
Ball Joint Boot Inspection/Replacement 18–12

Front Suspension

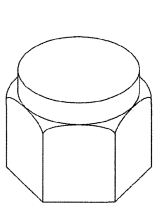
Knuckle/Hub/Wheel Bearing Replacement 18–13
Lower Arm Removal/Installation 18–19
Stabilizer Link Removal/Installation 18–20
Stabilizer Bar Replacement 18–20
Damper/Spring Removal/Installation 18–22
Damper/Spring Disassembly, Inspection, and Reassembly 18–24

Rear Suspension

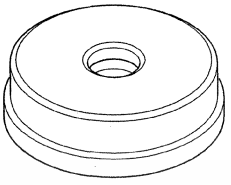
Hub Bearing Unit Replacement 18–28
Axle Beam Replacement 18–30
Damper Replacement 18–31
Spring Replacement 18–36
Dynamic Damper Replacement 18–39
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Special Tools

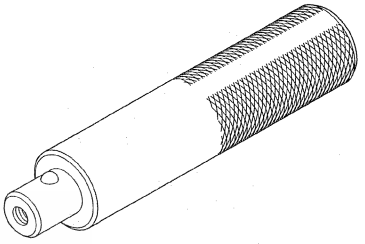
Ref.No.	Tool Number	Description	Qty
①	071AF-S3VA000	Ball Joint Thread Protector, 14 mm	1
②	07746-0010500	Bearing Driver Attachment, 62 x 68 mm	1
③	07749-0010000	Driver Handle, 15 x 135L	1
④	07965-SA70100	Hub Dis/Assembly Pin, 34 mm	1
⑤	07965-SD90100	Support Base	1
⑥	07974-6790001	Tie-Rod Boots Driver, 37.8 mm	1
⑦	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
⑧	07MAC-SL0A202	Ball Joint Remover, 28 mm	1



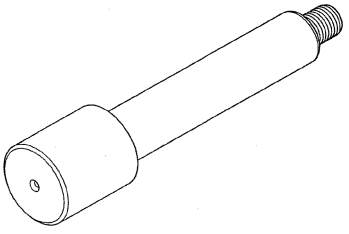
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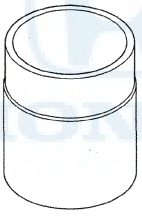
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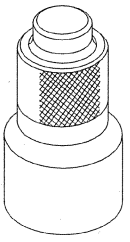
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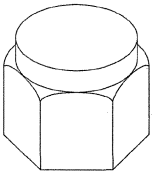
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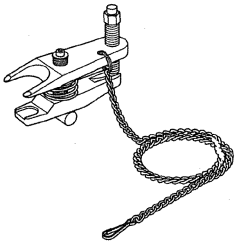
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⑥

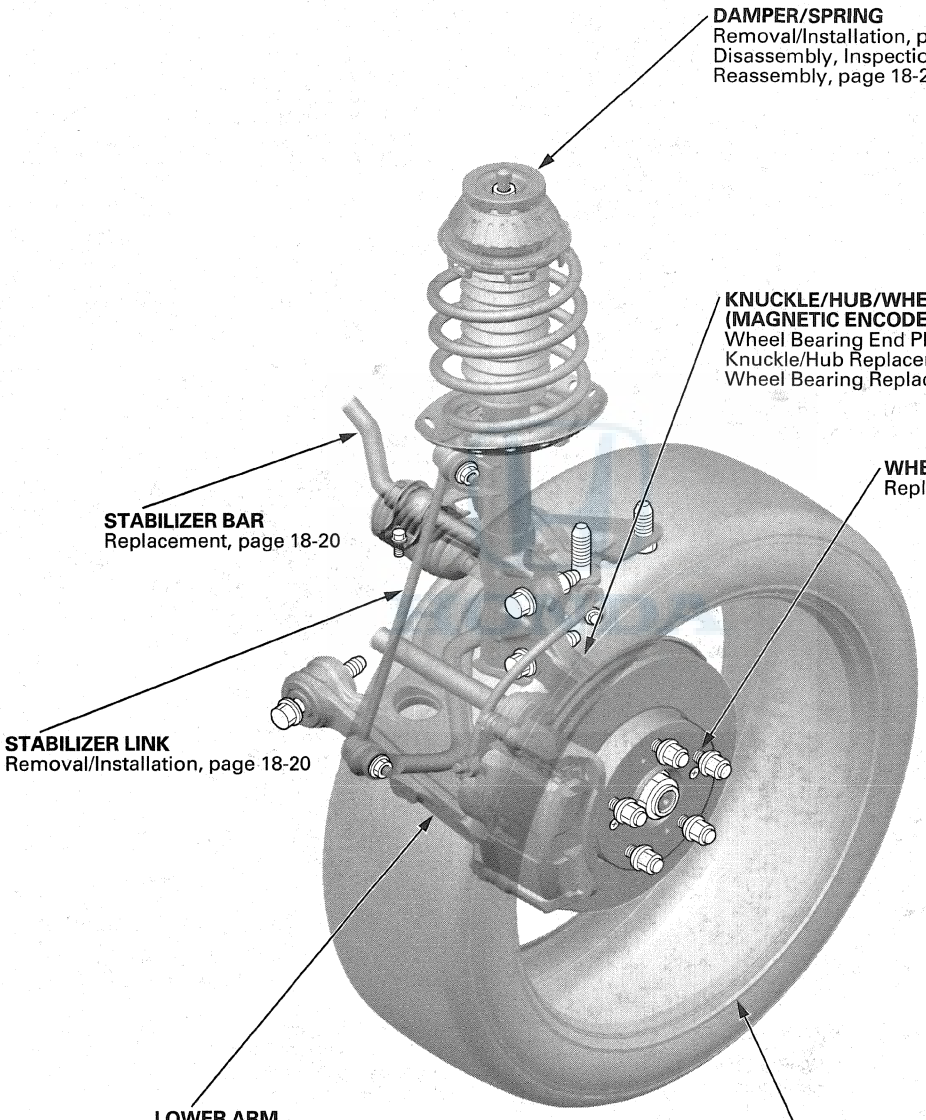


⑦

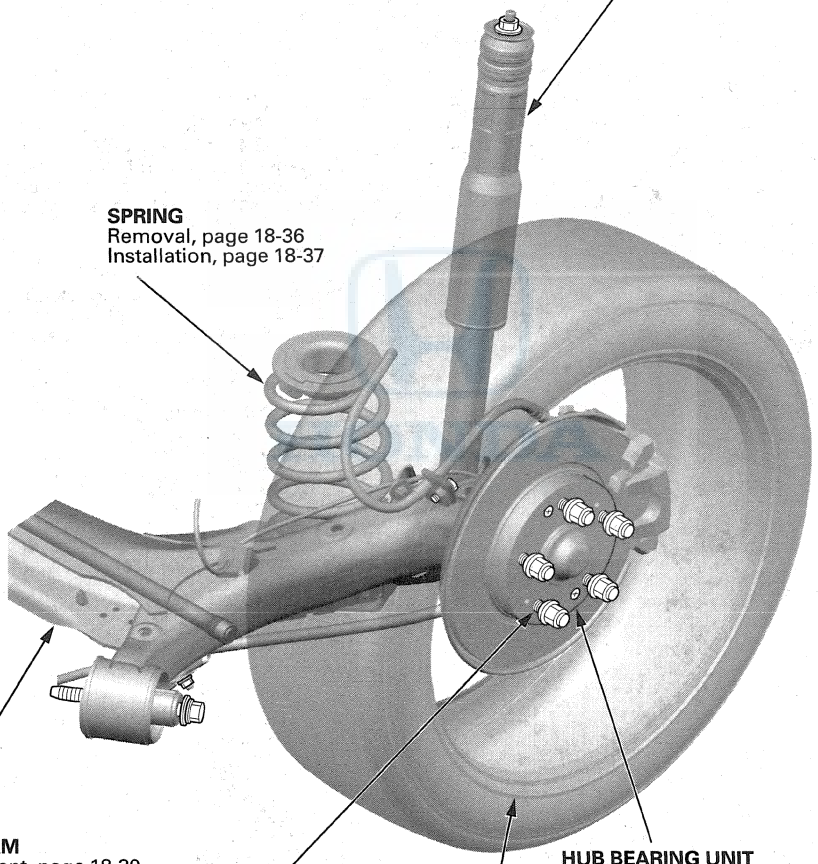


⑧

Component Location Index - Front Suspension



Component Location Index - Rear Suspension



Wheel Alignment

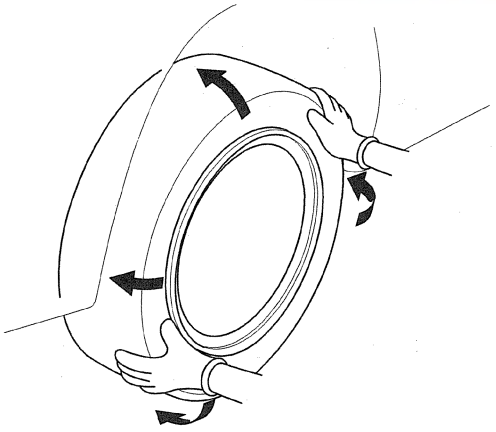
The suspension can be adjusted for front camber and front toe. However, each of these adjustments are related to each other. For example, when you adjust the camber, the toe will change. Therefore, you must adjust the front wheel alignment whenever you adjust camber or toe.

Pre-Alignment Checks

For proper inspection and adjustment of the wheel alignment, do these checks:

1. Release the parking brake to avoid an incorrect measurement.
2. Make sure the suspension is not modified.
3. Make sure the fuel tank is full, and that the spare tire, the jack, and the tools are in place on the vehicle.
4. Check the tire size and tire pressure.

   NOTE: See tire information label attached to the doorjamb.
5. Check the runout of the wheels and tires (see page 18-9).
6. Check the suspension ball joints. (Raise and support the vehicle. Hold a tire with your hands, and move it up and down and right and left to check for movement.)



7. Before doing alignment inspections, be sure to remove all extra weight from the vehicle, and no one should be inside the vehicle (driver or passengers).
8. Lower the vehicle to the ground, and bounce the vehicle up and down several times to stabilize the suspension.
9. Check that the steering column is set at the center tilt and telescopic position.

Caster Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the caster angle.

   Caster angle: 3 ° 22 ′ ±1 °

   - If the measurement is within the specifications, go to camber inspection.
   - If the measurement is not within the specifications, check for bent or damaged suspension components.

Camber Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Check the camber angle.

   Camber angle:
   Front: 0 ° 00 ′ ±1 °
   (Maximum difference between the right and left side: 0°45')
   Rear: −1 ° 30 ′±1 °

   - If the measurement is within the specifications, go to rear toe inspection.
   - If the measurement for the front camber is not within the specifications, go to front camber adjustment.
   - If the measurement for the rear camber is not within the specifications, check for bent or damaged suspension components.

(cont'd)

Wheel Alignment (cont'd)

Front Camber Adjustment

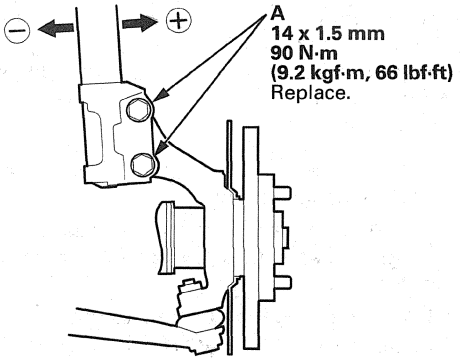
The front camber can be adjusted by exchanging one or both of the damper pinch bolts with the smaller diameter adjusting bolt(s). The difference between the adjusting bolt diameter and the pinch bolt hole diameter allows for a small range of adjustment.

NOTE: If you need to use an adjusting bolt, refer to the Parts Catalog.

Damper pinch bolt: **Adjusting bolt:**

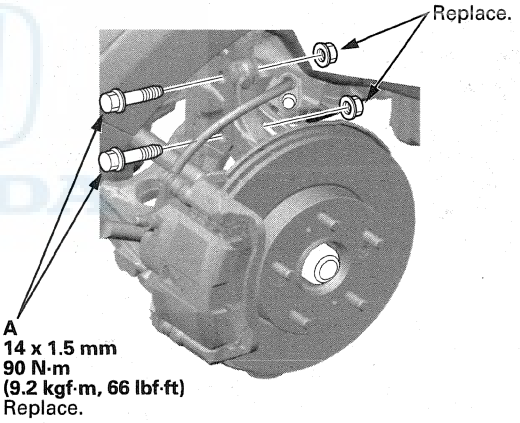


1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheels.
3. Loosen the damper pinch bolts (A), and adjust the camber angle by moving the bottom of the damper within the range of the damper pinch bolt free play.



4. Tighten the damper pinch bolts while holding the self-locking nuts to the specified torque.
5. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.
6. Lower the vehicle to the ground, and bounce the front of the vehicle up and down several times to stabilize the suspension.
7. Measure the camber angle.
   - If the measurement is within the specifications, go to rear toe inspection.
   - If the measurement is not within the specifications, go to step 8.
8. Raise and support the vehicle (see page 1-10).
9. Remove the front wheels.
10. Replace the damper pinch bolts with the adjusting bolts (A), and adjust the camber angle.

    NOTE:
    - The camber angle can be adjusted up to ±20′ (center of tolerance) by replacing one damper pinch bolt with the adjusting bolt.
    - The camber angle can be adjusted up to ±40′ by replacing both damper pinch bolts with the adjusting bolts.



11. Tighten the adjusting bolts while holding the self-locking nuts to the specified torque.
12. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.
13. Lower the vehicle to the ground, and bounce the front of the vehicle up and down several times to stabilize the suspension.
14. Measure the camber angle.
    - If the camber measurement is correct, measure the toe-in, and adjust it if necessary.
    - If the camber angle is not within the specifications, repeat steps 8 through 13 to readjust the camber angle.

Rear Toe Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Release the parking brake to avoid an incorrect measurement.
2. Check the toe.

   Rear toe-in: 3^{+2}_{-3} mm ($0.12^{+0.08}_{-0.12}$ in)

   - If the measurement is within the specifications, go to front toe inspection.
   - If the measurement is not within the specifications, check for bent or damaged suspension components.

Front Toe Inspection/Adjustment

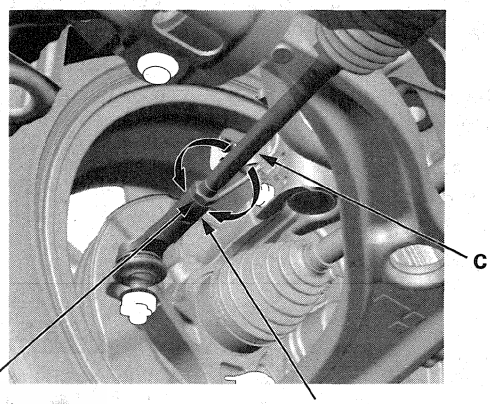
Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Set the steering column to the middle tilt and telescopic positions. Center the steering wheel spokes, and install a steering wheel holder tool.
2. Check the toe with the wheels pointed straight ahead.

   Front toe-in: 0±3 mm (0±0.12 in)

   - If adjustment is required, go to step 3.
   - If no adjustment is required, go to turning angle inspection.

3. Loosen the tie-rod end locknuts (A) while holding the flat surface sections (B) of the tie-rod end with a wrench, and turn both tie-rods (C) until the front toe is within specifications.



A
14 x 1.5 mm
44 N·m (4.5 kgf·m, 32 lbf·ft)

4. After adjusting, tighten the tie-rod locknuts to the specified torque. Reposition the rack-end boot if it is twisted or damaged.
5. Go to turning angle inspection.

(cont'd)

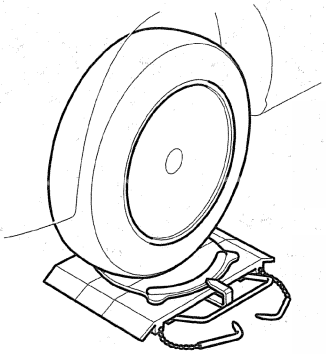
Wheel Alignment (cont'd)

Turning Angle Inspection

Use commercially available computerized four wheel alignment equipment to measure wheel alignment (caster, camber, toe, and turning angle). Follow the equipment manufacturer's instructions.

1. Turn the steering wheel right and left while applying the brake, and measure the turning angle of the both wheels.

   Turning angle:
   Inward: 38 ° 08 ′ ±2 °
   Outward (reference): 31 ° 46 ′ ±1 °

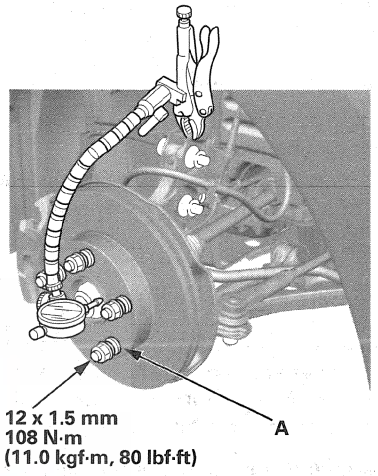


2. If the measurement is not within the specifications, even up both sides of the tie-rod threaded section length while adjusting the front toe. If it is correct, but the turning angle is not within the specifications, check for bent or damaged suspension components.

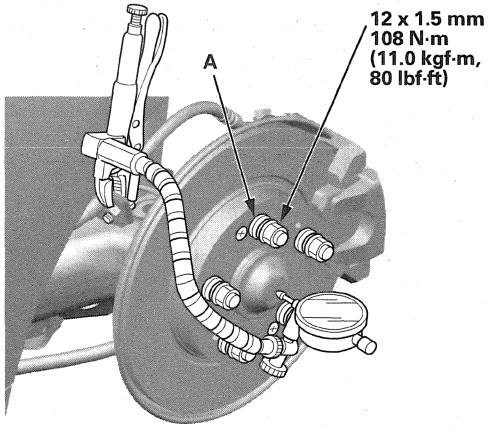
Wheel Bearing End Play Inspection

1. Raise and support the vehicle (see page 1-10).
2. Remove the wheels.
3. Install suitable flat washers (A) and the wheel nuts. Tighten the nuts to the specified torque to hold the brake disc securely against the hub.

Front



Rear



4. Attach the dial gauge. Place the dial gauge against the hub flange.
5. Measure the bearing end play while moving the brake disc inward and outward.

   Wheel bearing end play:
   Front/Rear: 0—0.05 mm (0—0.0020 in)

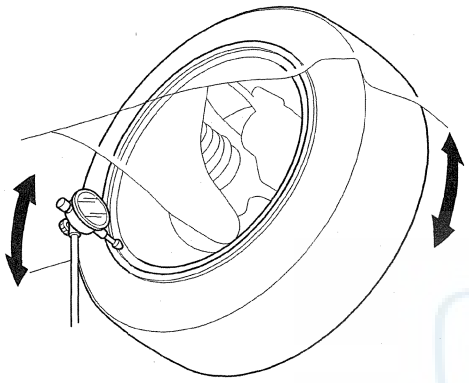
6. If the bearing end play measurement is more than the standard, replace the wheel bearing or the hub bearing unit.

Wheel Runout Inspection

1. Raise and support the vehicle (see page 1-10).
2. Check for bent or deformed wheel.
3. Set up the dial gauge as shown, and measure the axial runout by turning the wheel.

Front and rear wheel axial runout:

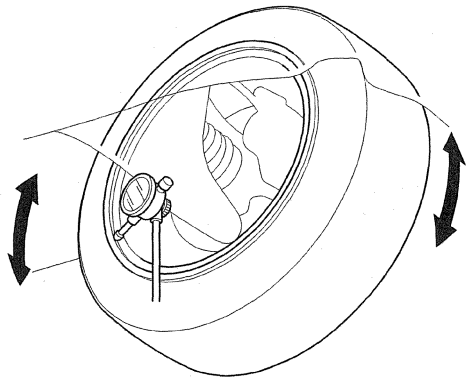
Standard:	**0—0.7 mm (0—0.028 in)**
Service limit:	**2.0 mm (0.079 in)**



4. Reset the dial gauge to the position shown, and measure the radial runout.

Front and rear wheel radial runout:

Standard:	**0—0.7 mm (0—0.028 in)**
Service limit:	**1.5 mm (0.059 in)**



5. If the wheel runout is not within the specification, check the wheel bearing end play (see page 18-8), and make sure the mating surfaces between the brake disc and the inside of the wheel are clean.
6. If the bearing end play is within the specification (see page 18-8), but the wheel runout is more than the service limit, replace the wheel.

Wheel Bolt Replacement

Special Tools Required

Ball Joint Remover, 28 mm 07MAC-SL0A202

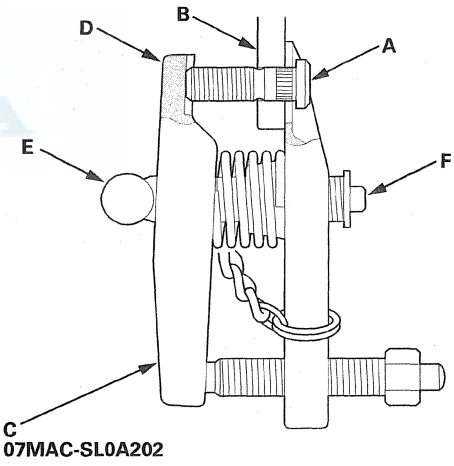
NOTICE

- Do not use a hammer or impact tools (pneumatic or electric) to remove and install the wheel bolts.
- Be careful not to damage the threads of the wheel bolts.

Front

1. Raise and support the vehicle (see page 1-10).
2. Remove the front brake disc (see page 19-18).
3. Separate the wheel bolt (A) from the hub (B) using the ball joint remover (C), and keep the jaw (D) of the ball joint remover vertical against the wheel bolt (see page 18-11).

   NOTE: If the angle of the remover against the wheel bolt is not square, readjust the ball joint remover by turning the head (E) of the adjusting bolt (F).

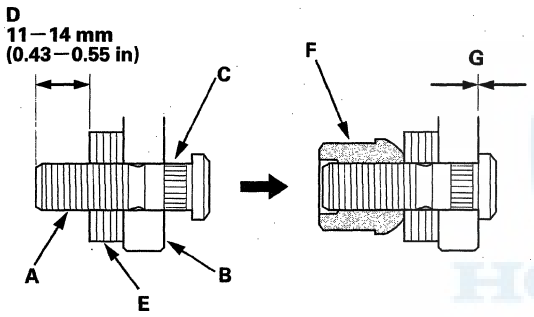


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Wheel Bolt Replacement (cont'd)

4. Insert a new wheel bolt (A) into the hub (B) while aligning the splined surfaces (C) on the hub hole with the wheel bolt. Adjust the measurement (D) with the washers (P/N 94101-12800 or equivalent) (E), then install a nut (P/N 90304-SC2-000 or equivalent) (F) hand-tight.

   NOTE:
   - Before installing the new wheel bolt, clean the mating surfaces on the bolt and the hub.
   - Degrease the area around the wheel bolt and the threaded section of the nut.
   - Make sure the wheel bolt is installed vertically in relation to the hub disc surface.
   - Do not install the nut and washers that have been used as tools on a vehicle.



5. Tighten the nut until the wheel bolt is drawn fully into the hub. Do not exceed the maximum torque limit. Make sure there is no gap (G) between the bolt and the hub.

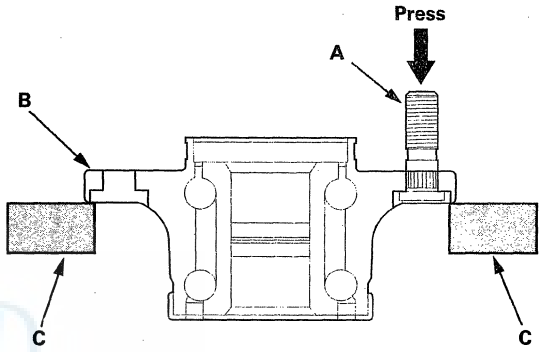
   Limited torque:
   108 N·m (11.0 kgf·m, 80 lbf·ft) max.

6. Install the front brake disc (see page 19-18).

   NOTE:
   - If you cannot tighten the wheel nut to the specified torque when installing the wheel, replace the front hub as an assembly (see page 18-13).
   - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

Rear

1. Raise and support the vehicle (see page 1-10).
2. Remove the hub bearing unit (see page 18-28).
3. Separate the wheel bolt (A) from the hub (B) using a hydraulic press. Support the hub with hydraulic press attachments (C) or equivalent tools.



4. Insert a new wheel bolt into the hub while aligning the splined surfaces on the hub hole with the wheel bolt.

   NOTE:
   - Before installing the new wheel bolt, clean the mating surfaces on the bolt and the hub.
   - Degrease all around the wheel bolt.
   - Make sure the wheel bolt is installed vertically in relation to the hub disc surface.

5. Install the wheel bolt using a hydraulic press until the wheel bolt shoulder is fully seated.
6. Install the hub bearing unit (see page 18-28).

   NOTE: If you cannot tighten the wheel nut to the specified torque when installing the wheel, replace the hub bearing unit as an assembly (see page 18-28).

Ball Joint Removal

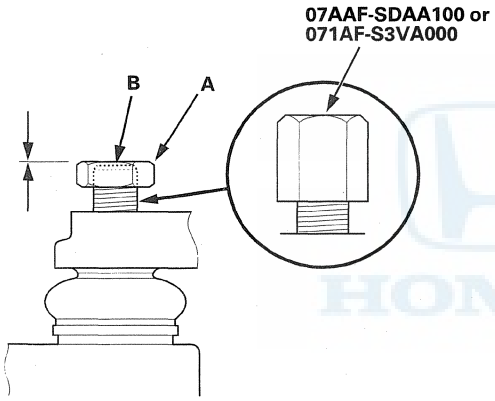
Special Tools Required
- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000
- Ball Joint Remover, 28 mm 07MAC-SL0A202

NOTICE

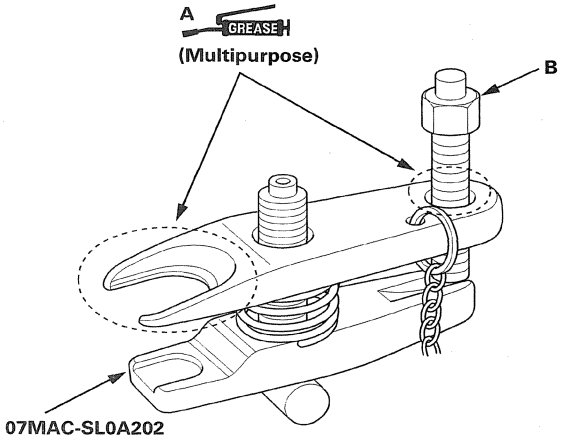
Always use a ball joint remover to disconnect a ball joint. Do not strike the housing or any other part of the ball joint connection to disconnect it.

1. Install a hex nut (A) or the ball joint thread protector onto the threads of the ball joint (B).

   NOTE: When using a hex nut, make sure the nut is flush with the ball joint pin end to prevent damage to the threaded end of the ball joint pin.

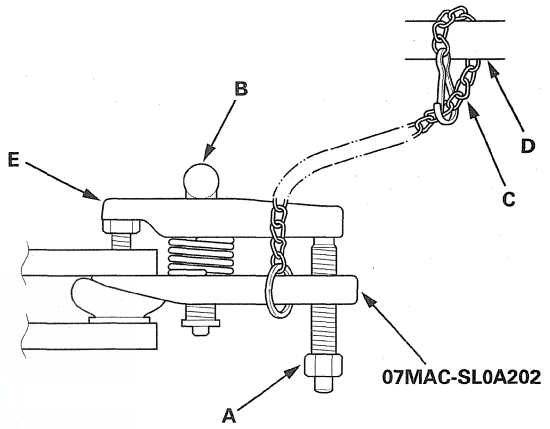


2. Apply grease to the ball joint remover on the areas shown (A). This will ease installation of the tool and prevent damage to the pressure bolt (B) threads.



3. Loosen the pressure bolt (A), and install the ball joint remover as shown. Insert the jaws carefully, making sure not to damage the ball joint boot. Adjust the jaw spacing by turning the adjusting bolt (B).

   NOTE: Fasten the safety chain (C) securely to a suspension arm or the subframe (D). Do not fasten it to a brake line or wire harness.



4. After adjusting the adjusting bolt, make sure the head of the adjusting bolt is in the position shown to allow the jaw (E) to pivot.

5. With a wrench, tighten the pressure bolt until the ball joint pin pops loose from the ball joint connecting hole. If necessary, apply penetrating type lubricant to loosen the ball joint pin.

   NOTE: Do not use pneumatic or electric tools on the pressure bolt.

6. Remove the ball joint remover, then remove the nut from the end of the ball joint pin, and pull the ball joint out of the ball joint connecting hole. Inspect the ball joint boot, and replace it if damaged.

Ball Joint Boot Inspection/Replacement

Special Tools Required
Tie-Rod Boots Driver, 37.8 mm 07974-6790001

Lower Arm

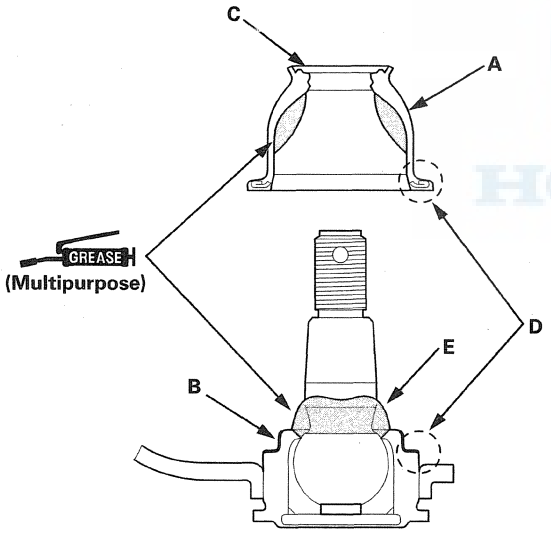
1. Check the ball joint boot for weakness, damage, cracks, and grease leaks.

   NOTE:
   - If the ball joint boot is damaged and leaks grease, replace the lower arm (see page 18-19).
   - If the ball joint boot is weak and cracked but does not leak grease, go to step 2. Replace the ball joint boot.

2. Remove the lower arm (see page 18-19).

3. Remove the ball joint boot (A).

   NOTE: Be careful not to damage the mating surface with ball joint boot of ball joint housing (B).

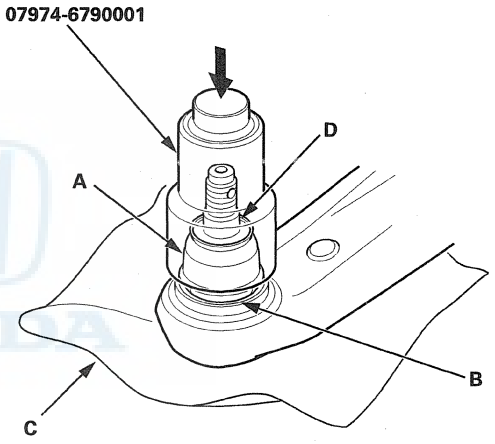


4. Pack the interior and lip (C) of a new ball joint boot with grease. Keep the grease off of the ball joint boot-to-lower arm mating surfaces (D).

   NOTE: Use the grease that comes with the ball joint kit.

5. Pack fresh grease into the base (E). Do not let dirt or other foreign materials get into the ball joint boot.

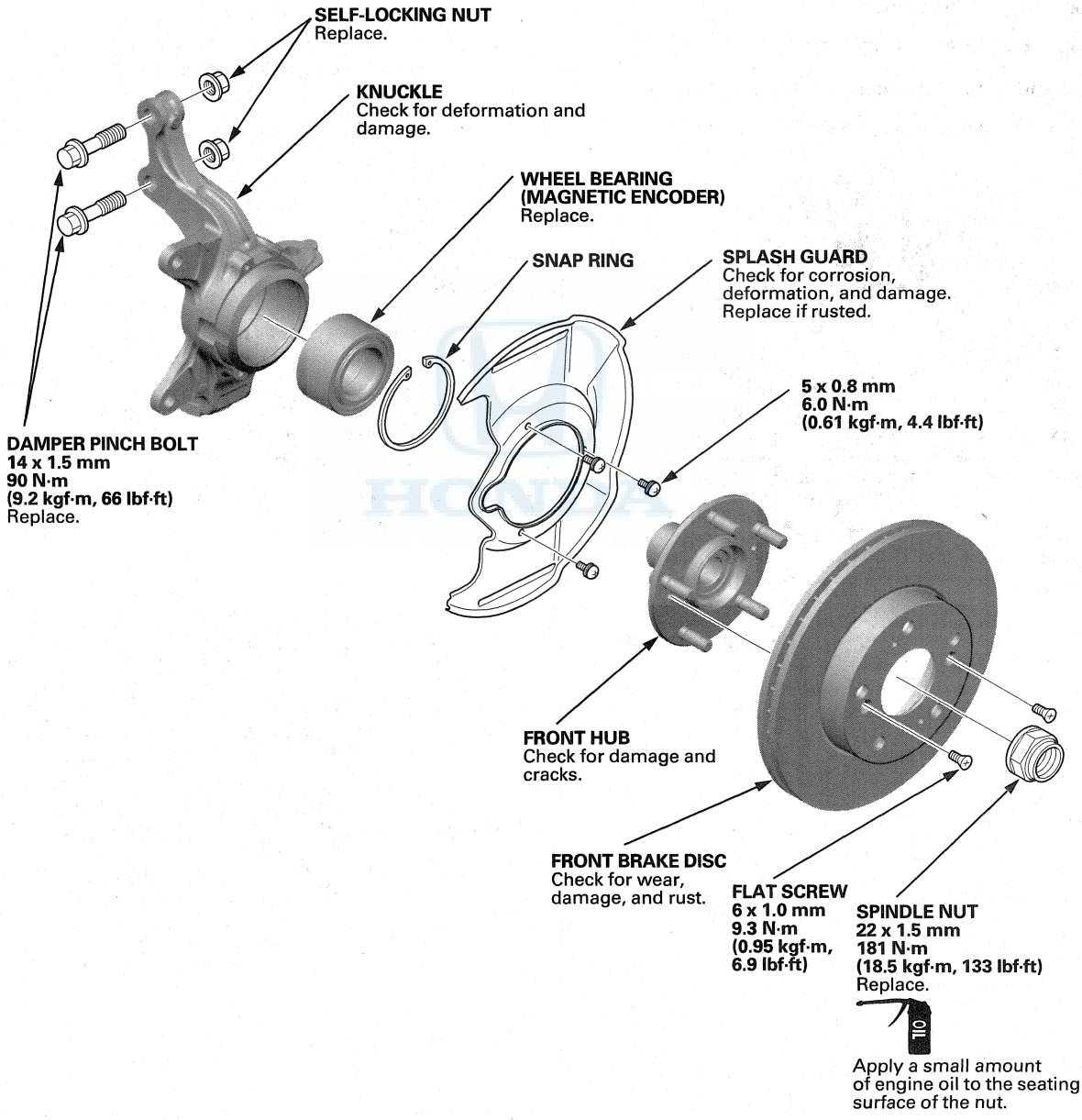
6. Install the ball joint boot (A) using the tie-rod boots driver by hand. The ball joint boot must not have a gap at the ball joint boot installation sections (B).
   - Press the ball joint boot on a clean shop towel (C).
   - After installing the ball joint boot on the ball joint, squeeze it gently to force out any air, then wipe the grease off the tapered portion of the ball joint pin (D).
   - After installing the ball joint boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.



7. Install the lower arm (see page 18-19).

Knuckle/Hub/Wheel Bearing Replacement

Exploded View



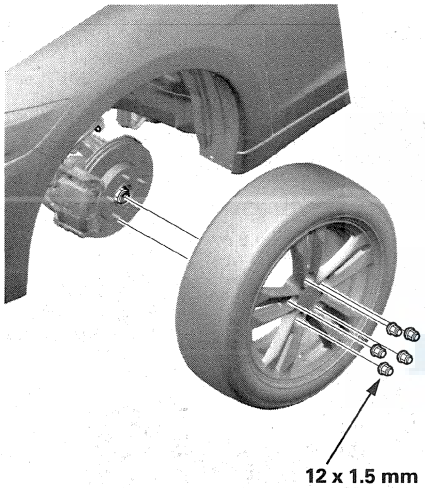
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Knuckle/Hub/Wheel Bearing Replacement (cont'd)

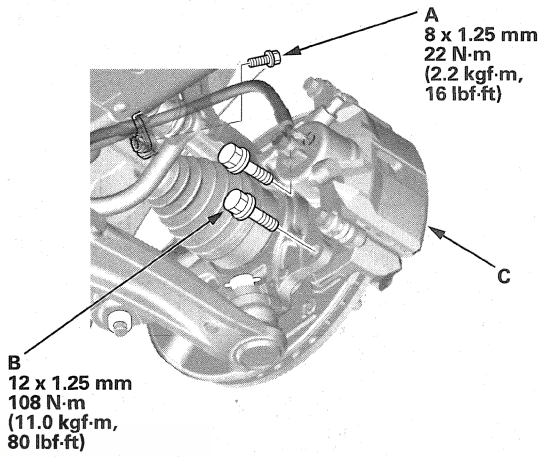
Special Tools Required
- Ball Joint Thread Protector, 12 mm 07AAF-SDAA100
- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000
- Hub Dis/Assembly Pin, 34 mm 07965-SA70100
- Bearing Driver Attachment, 62 x 68 mm 07746-0010500
- Driver Handle, 15 x 135L 07749-0010000
- Support Base 07965-SD90100

Knuckle/Hub Replacement

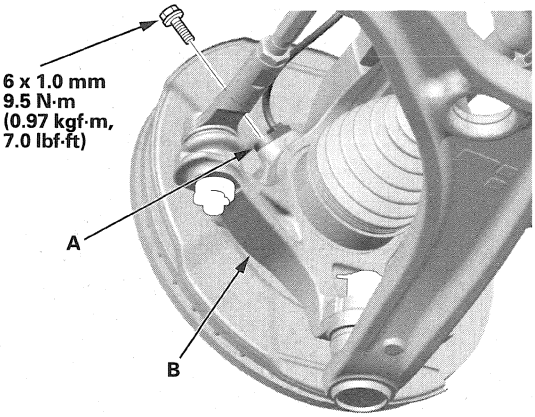
1. Raise and support the vehicle (see page 1-10).
2. Remove the wheel nuts and the front wheel.



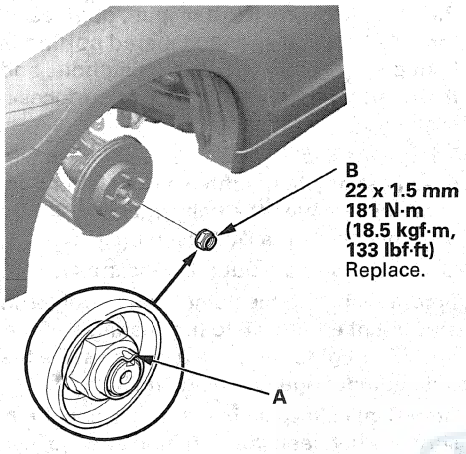
3. Remove the brake hose mounting bolt (A) from the damper bracket.



4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or the brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.
5. Remove the wheel speed sensor (A) from the knuckle (B). Do not disconnect the wheel speed sensor 2P connector.

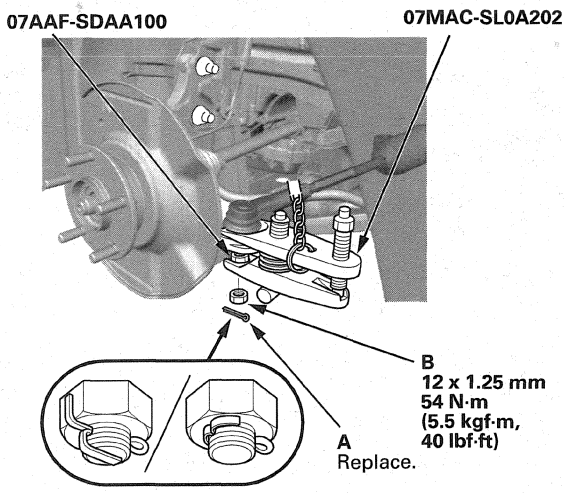


6. Pry up the stake (A) on the spindle nut (B), then remove the nut.



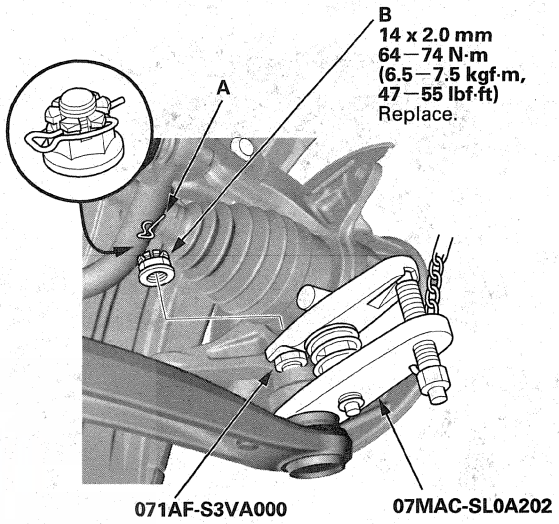
7. Remove the front brake disc (see page 19-18).
8. Check the front hub for damage and cracks.
9. Remove the cotter pin (A) from the tie-rod end ball joint, then remove the nut (B).

   NOTE: During installation, install a new cotter pin after tightening the nut, and bend its end as shown.



10. Disconnect the tie-rod end ball joint from the knuckle using the ball joint remover (see page 18-11).
11. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B).

    NOTE: During installation, install the lock pin as shown after tightening a new castle nut.



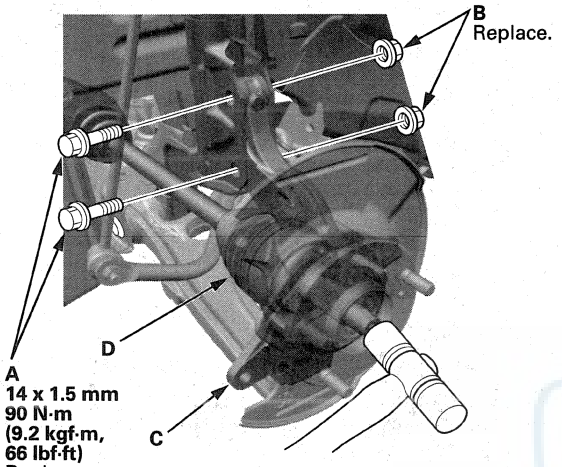
12. Disconnect the lower ball joint from the knuckle using the ball joint remover (see page 18-11).

(cont'd)

Knuckle/Hub/Wheel Bearing Replacement (cont'd)

13. Remove the damper pinch bolts (A) and the self-locking nuts (B) from the damper.

    NOTE: Use new damper pinch bolts and new self-locking nuts during reassembly.



14. Pull the knuckle (C) outward, and separate the outboard joint (D) from the front hub using a soft face hammer.

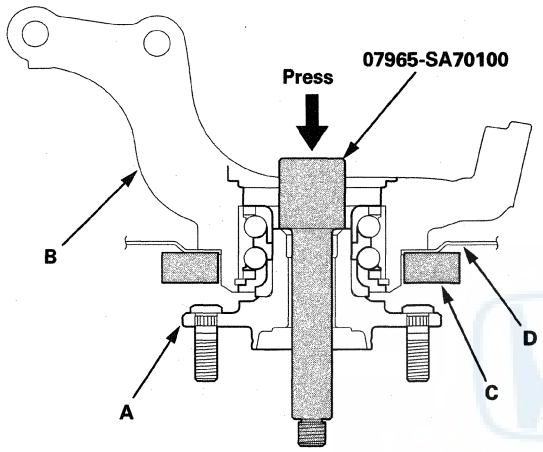
    NOTE:
    - Do not pull the driveshaft end outward. The driveshaft inboard joint may come apart.
    - During installation, apply grease to the mating surfaces of the wheel bearing and the driveshaft outboard joint (see step 1 on page 16-19).

15. Install the knuckle/hub in the reverse order of removal, and note these items:
    - Be careful not to damage the ball joint boot when connecting the knuckle.
    - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, and the threaded section and the mating surfaces of the castle nut.
    - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
    - Use a new spindle nut on reassembly.
    - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.
    - Before installing the brake disc, clean the mating surfaces between the front hub and the inside of the brake disc.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

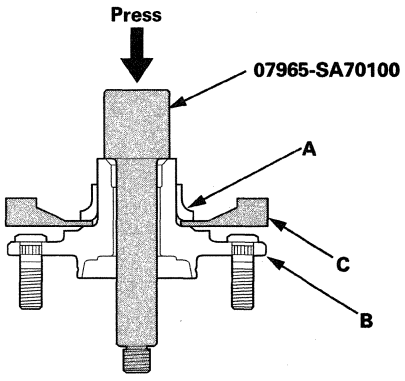
16. Check the wheel alignment, and adjust it if necessary (see page 18-5).

Wheel Bearing Replacement

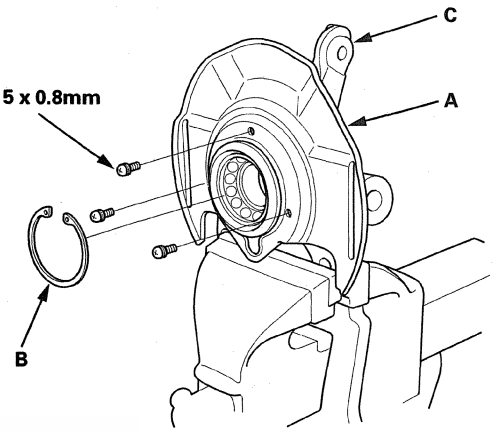
1. Separate the hub (A) from the knuckle (B) using the hub dis/assembly pin and a hydraulic press. Hold the knuckle with the attachment (C) of the hydraulic press or equivalent tool. Be careful not to damage or deform the splash guard (D). Hold onto the hub to keep it from falling when pressed clear.



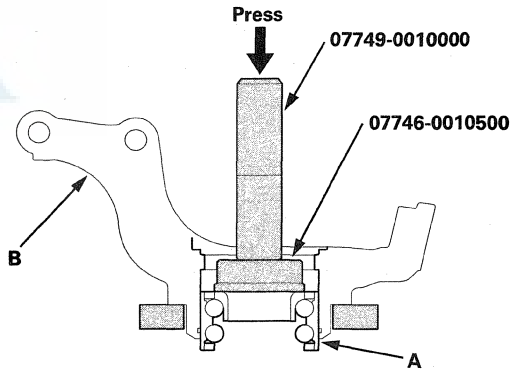
2. Press the wheel bearing inner race (A) off of the hub (B) using the hub dis/assembly pin, a commercially available bearing separator (C), and a press.



3. Remove the splash guard (A) and the snap ring (B) from the knuckle (C).



4. Press the wheel bearing (A) out of the knuckle (B) using the bearing driver attachment, the driver handle, and a press.



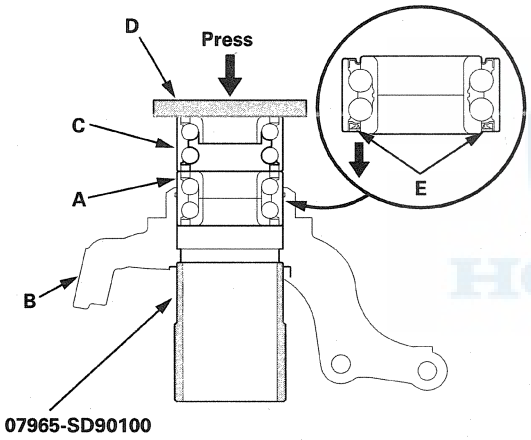
5. Wash the knuckle and the hub thoroughly in high flash point solvent before reassembly.

(cont'd)

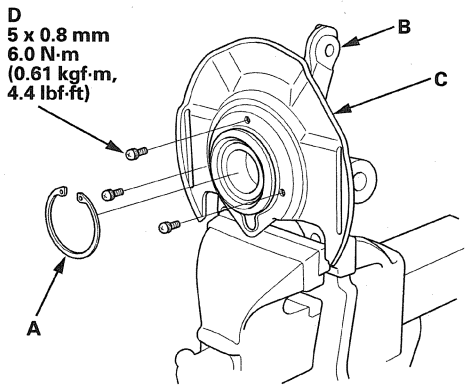
Knuckle/Hub/Wheel Bearing Replacement (cont'd)

6. Press a new wheel bearing (A) into the knuckle (B) using the old bearing (C), a steel plate (D), the support base, and a press.

   NOTE:
   - Install the wheel bearing with the wheel speed sensor magnetic encoder (E) (brown color) toward the inside of the knuckle.
   - Remove any oil, grease, dust, metal debris, and other foreign material from the magnetic encoder surface.
   - Keep any magnetic tools away from the encoder surface.
   - Be careful not to damage the encoder surface when you insert the wheel bearing.

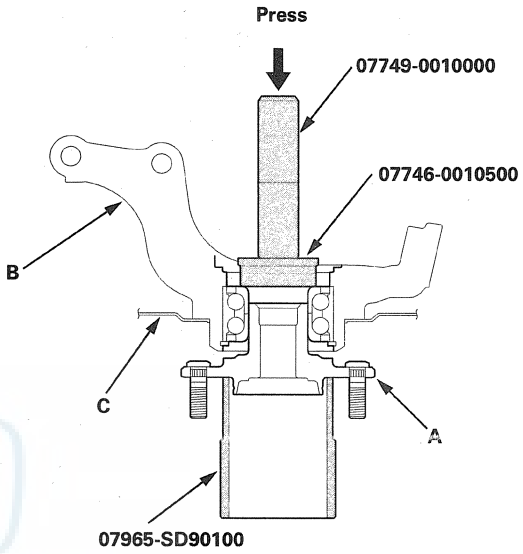


7. Install the snap ring (A) securely in the knuckle (B).



8. Install the splash guard (C), and tighten the screws (D) to the specified torque.

9. Install the hub (A) onto the knuckle (B) using the bearing driver attachment, the driver handle, the support base, and a hydraulic press. Be careful not to damage the splash guard (C).



Lower Arm Removal/Installation

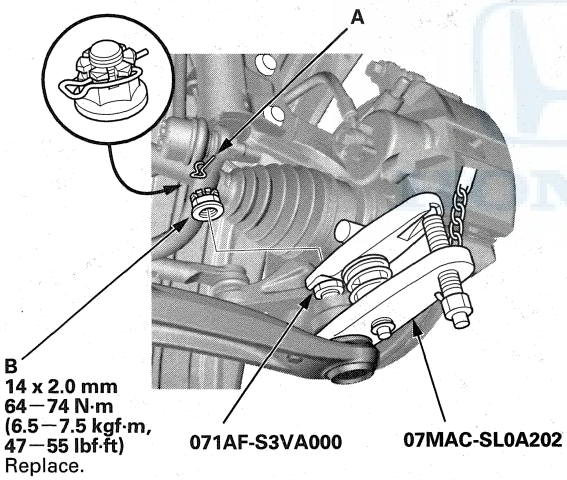
Special Tools Required
- Ball Joint Remover, 28 mm 07MAC-SL0A202
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000

NOTICE

Do not remove the lower arm from both sides at the same time. The lower arm mounting bolts also secure the subframe to the vehicle.

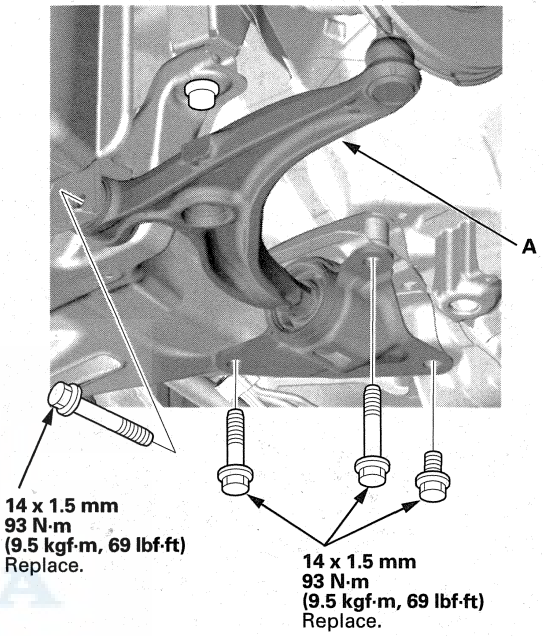
1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Remove the splash shield (see page 20-163).
4. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B).

   NOTE: During installation, install the lock pin as shown after tightening a new castle nut.



5. Disconnect the lower ball joint from the knuckle using the ball joint remover (see page 18-11).
6. Remove the lower arm mounting bolts, then remove the lower arm (A) from the front subframe.

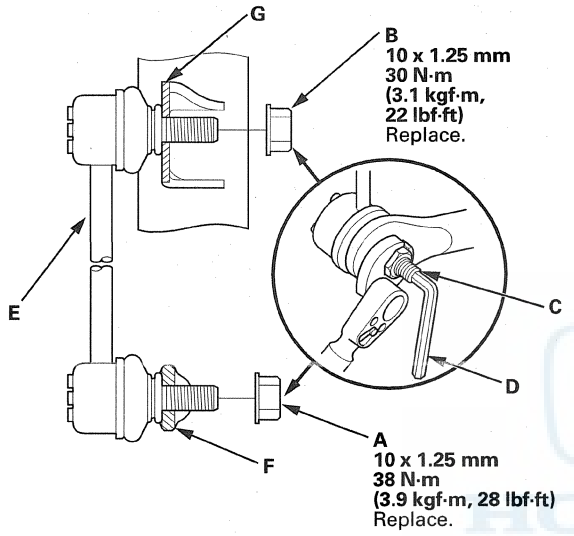
   NOTE: Use new lower arm mounting bolts during reassembly.



7. Install the lower arm in the reverse order of removal, and note these items:
   - First install all the components, and lightly tighten the bolts and the nuts, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque. Do not place the jack against the ball joint of the lower arm.
   - Be careful not to damage the ball joint boot when connecting to the knuckle.
   - Before connecting the ball joint, degrease the threaded section and the tapered portion of the ball joint pin, the ball joint connecting hole, and the threaded section and the mating surfaces of the castle nut.
   - Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole. Do not align the castle nut by loosening it.
   - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.
8. Check the wheel alignment, and adjust it if necessary (see page 18-5).

Stabilizer Link Removal/Installation

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Remove the self-locking nut (A) and the nut (B) while holding the respective joint pin (C) with a hex wrench (D), then remove the stabilizer link (E).

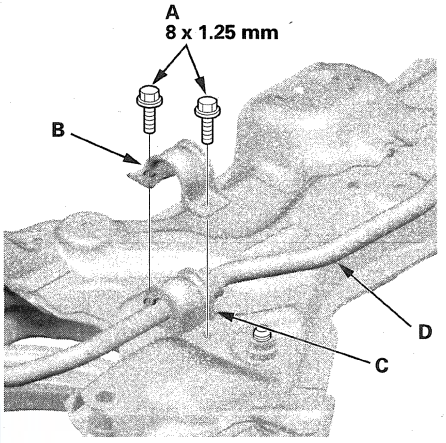


4. Install the stabilizer link on the stabilizer bar (F) and the damper (G) with the joint pins set at the center of their range of movement.
5. Install a new self-locking nut and a new nut, and tighten them to the specified torque while holding the respective joint pin with a hex wrench.
6. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.
7. Test-drive the vehicle.
8. After 5 minutes of driving, tighten the self-locking nut again to the specified torque.

Stabilizer Bar Replacement

Removal

1. Remove the steering gearbox (see page 17-64).
2. Remove the bolts (A) and the bushing holders (B), then remove the bushings (C).

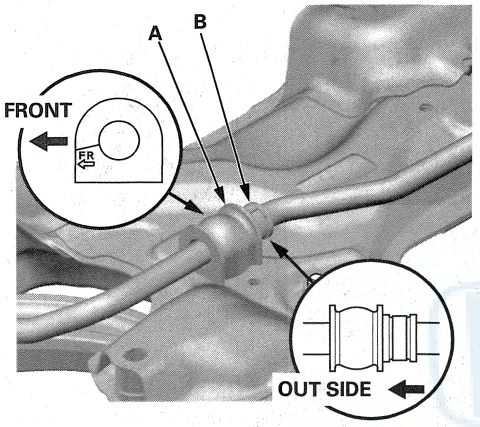


3. Remove the stabilizer bar (D) from the front subframe.

Installation

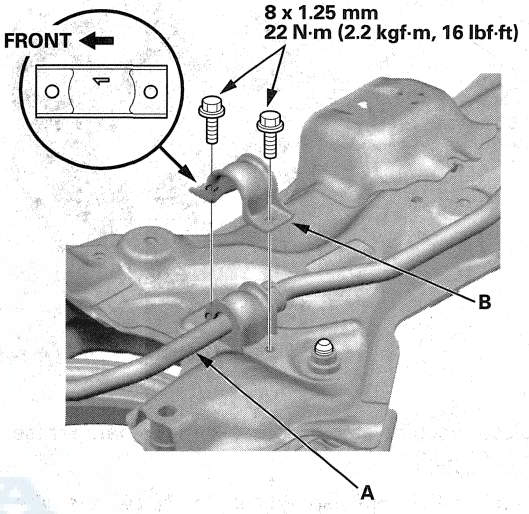
1. Install the bushings (A) on the stabilizer bar.

   NOTE:
   - Note the direction of installation for the bushings.
   - Align the stabilizer band clamp (B) with the side of the bushings.



2. Install the stabilizer bar (A) with the bushings on the front subframe.

   NOTE:
   - Note the right and left direction of the stabilizer bar.
   - Note the direction of installation for the bushing holders (B).

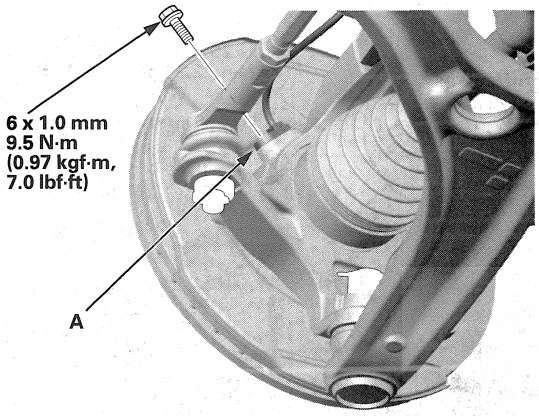


3. Install the steering gearbox (see page 17-68).

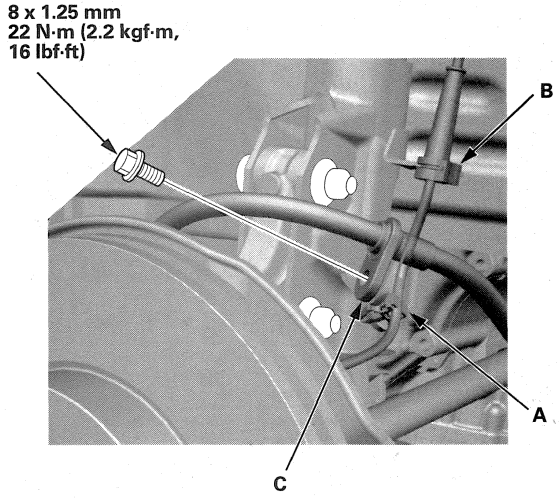
HONDA

Damper/Spring Removal/Installation

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Remove the wheel speed sensor (A) from the knuckle. Do not disconnect the wheel speed sensor 2P connector.



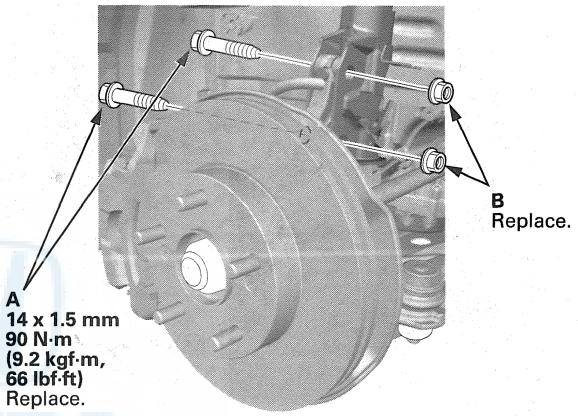
4. Disconnect the stabilizer link from the damper (see page 18-20).
5. Remove the wheel speed sensor clip (A), the wire guide grommet (B), and the brake hose bracket (C) from the damper. Do not disconnect the wheel speed sensor 2P connector.



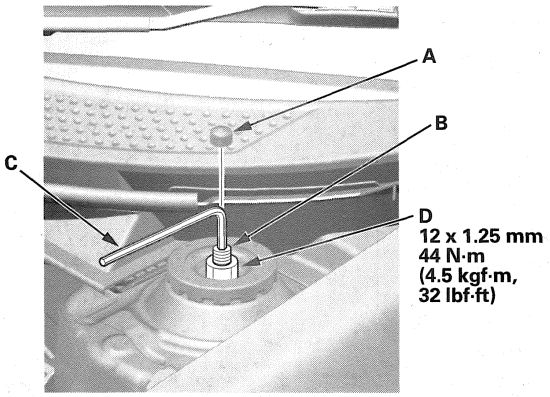
6. Remove the damper pinch bolts (A) and the self-locking nuts (B) from the damper.

NOTE:

- Do not allow the knuckle to rotate too far outward. This may allow the driveshaft inboard joint come apart.
- During installation, install new damper pinch bolts and new self-locking nuts, then tighten the damper pinch bolts to the specified torque.

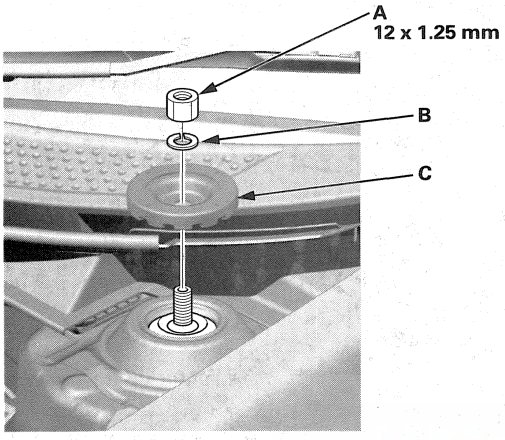


7. Remove the damper cap (A) from the top of the damper.



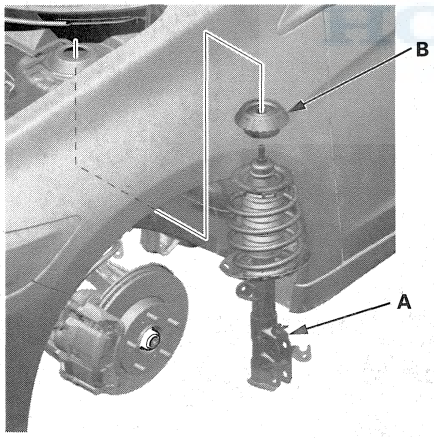
8. Hold the damper shaft (B) using a hex wrench (C), and loosen the damper mounting nut (D).

9. Remove the damper mounting nut (A) and the wave washer (B), then remove the damper mounting base (C) from the top of the damper.



10. Remove the damper/spring (A) and the damper rubber mount (B).

    NOTE: Be careful not to damage the body.



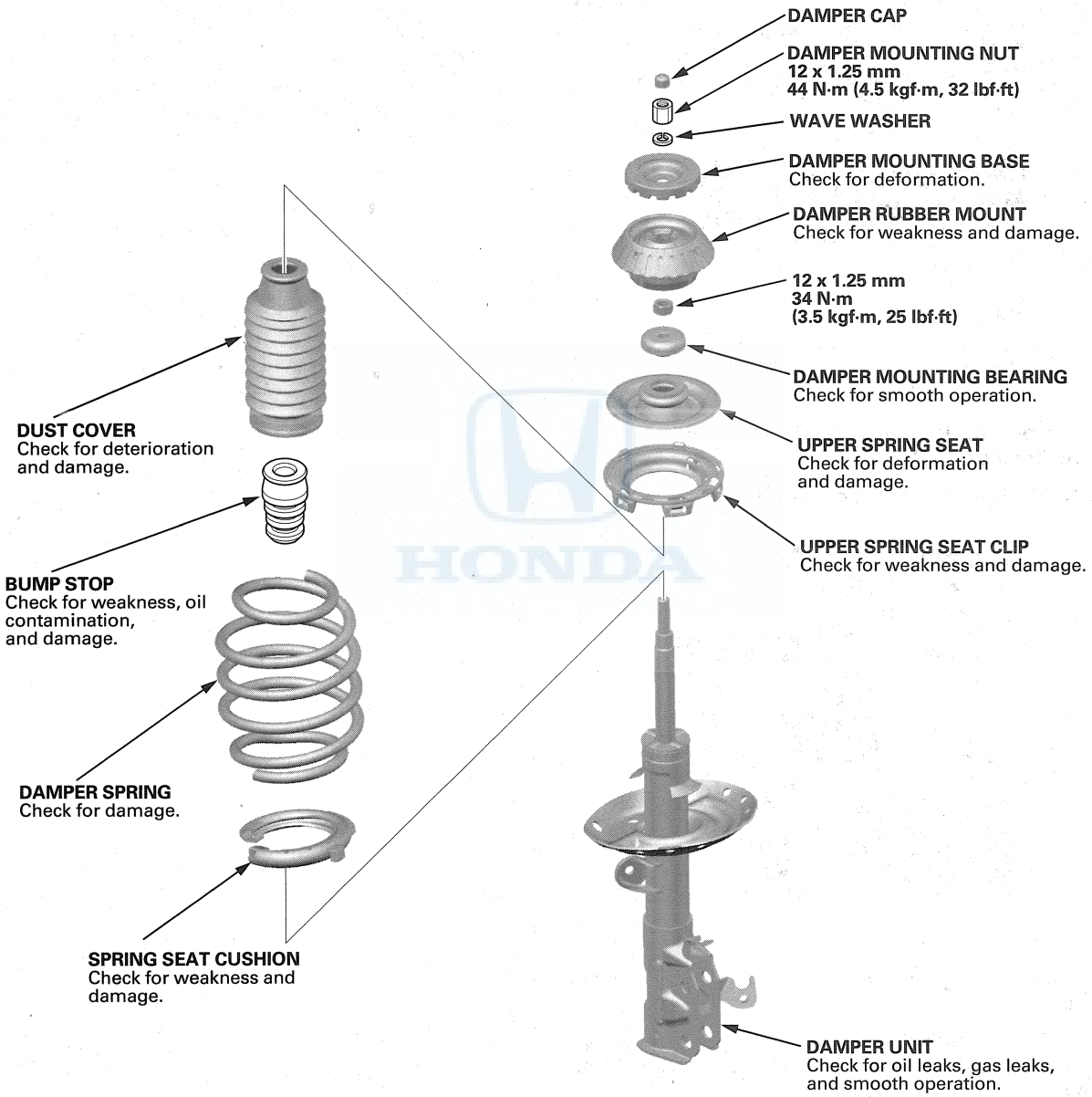
11. Install all of the removed parts in the reverse order of removal.

    NOTE: Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

12. Check the wheel alignment, and adjust it if necessary (see page 18-5).

Damper/Spring Disassembly, Inspection, and Reassembly

Exploded View

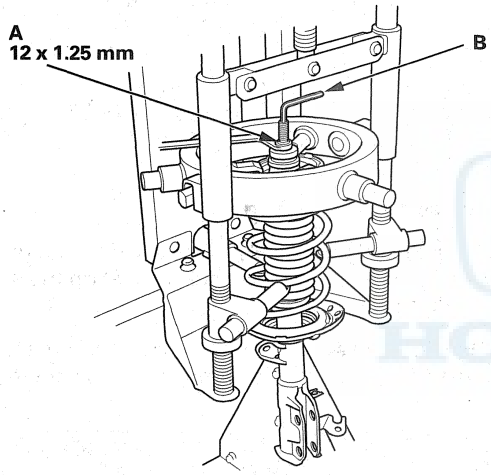


NOTE:

- When compressing the damper spring, use a commercially available strut spring compressor (Branick MST-580A or Model 7200, or equivalent) according to the manufacturer's instructions.
- Refer to the Exploded View as needed during the following procedure.

Disassembly

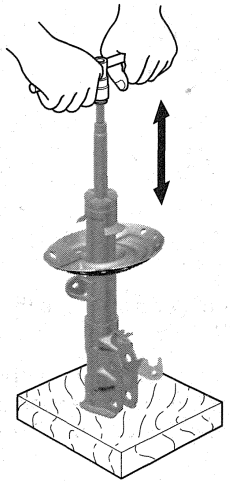
1. Compress the damper spring, then remove the nut (A) while holding the damper shaft with a hex wrench (B). Do not compress the damper spring more than necessary to remove the nut.



2. Release the pressure from the strut spring compressor, then disassemble the damper as shown in the Exploded View.

Inspection

1. Install the nut on the damper shaft end, and set the socket wrench and T-handle on the nut.
2. Compress the damper unit by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.



3. Check for oil leaks, abnormal noises, and binding during these tests.

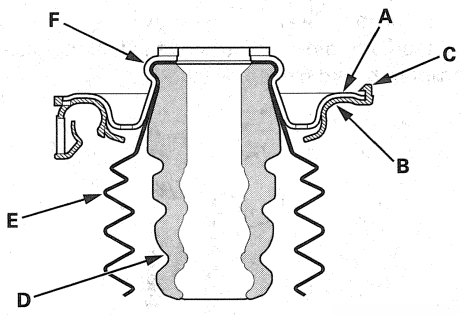
(cont'd)

Damper/Spring Disassembly, Inspection, and Reassembly (cont'd)

Reassembly

1. Install the upper spring seat (A) to the upper spring seat clip (B).

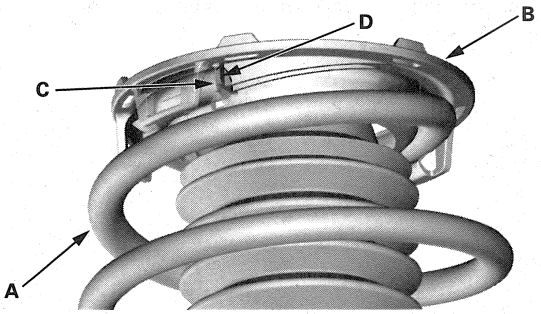
   NOTE: Make sure to securely set the upper spring seat to the hook (C) on the spring seat clip.



2. Install the bump stop (D) and the dust cover (E) to the upper spring seat.

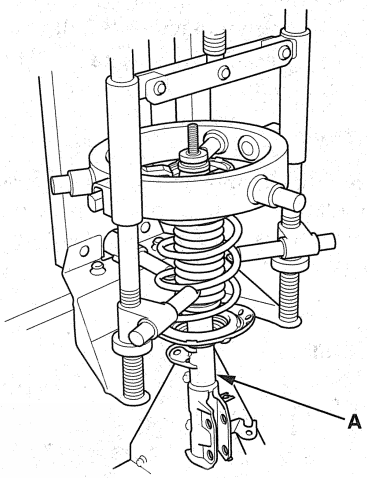
   NOTE: Push the bump stop and the dust cover into the indentation (F) in the upper spring seat securely.

3. Install the damper spring (A) on the upper spring seat clip (B) by aligning the upper end (C) of the damper spring with the ledge portion (D) of the upper spring seat clip.



4. Install the spring seat cushion on the damper spring.

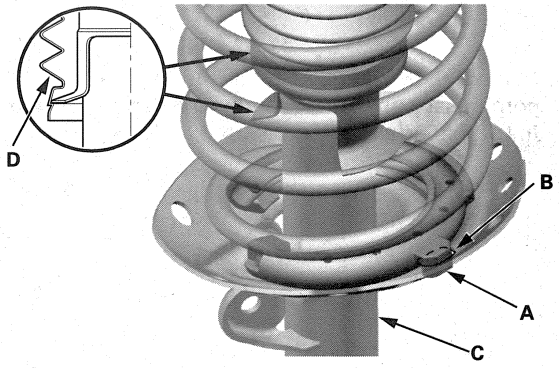
5. Install all the parts except the nut and the damper bearing onto the damper unit (A) by referring to the Exploded View.



6. Compress the damper spring.

7. Align the raised portion (A) of the spring seat cushion and the hole (B) of the lower spring seat on the damper unit (C).

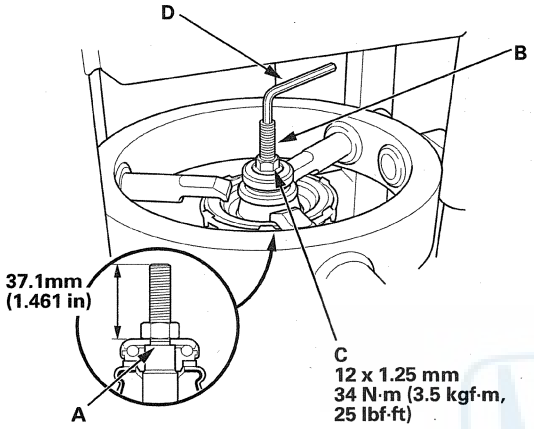
   NOTE: After reassembling the damper/spring, install the dust cover (D) into the damper unit as shown.



8. Install the damper bearing onto the damper shaft.

9. Compress the damper spring until the position (A) of the damper shaft (B) comes in contact with the damper bearing. Do not excessively compress the damper spring.

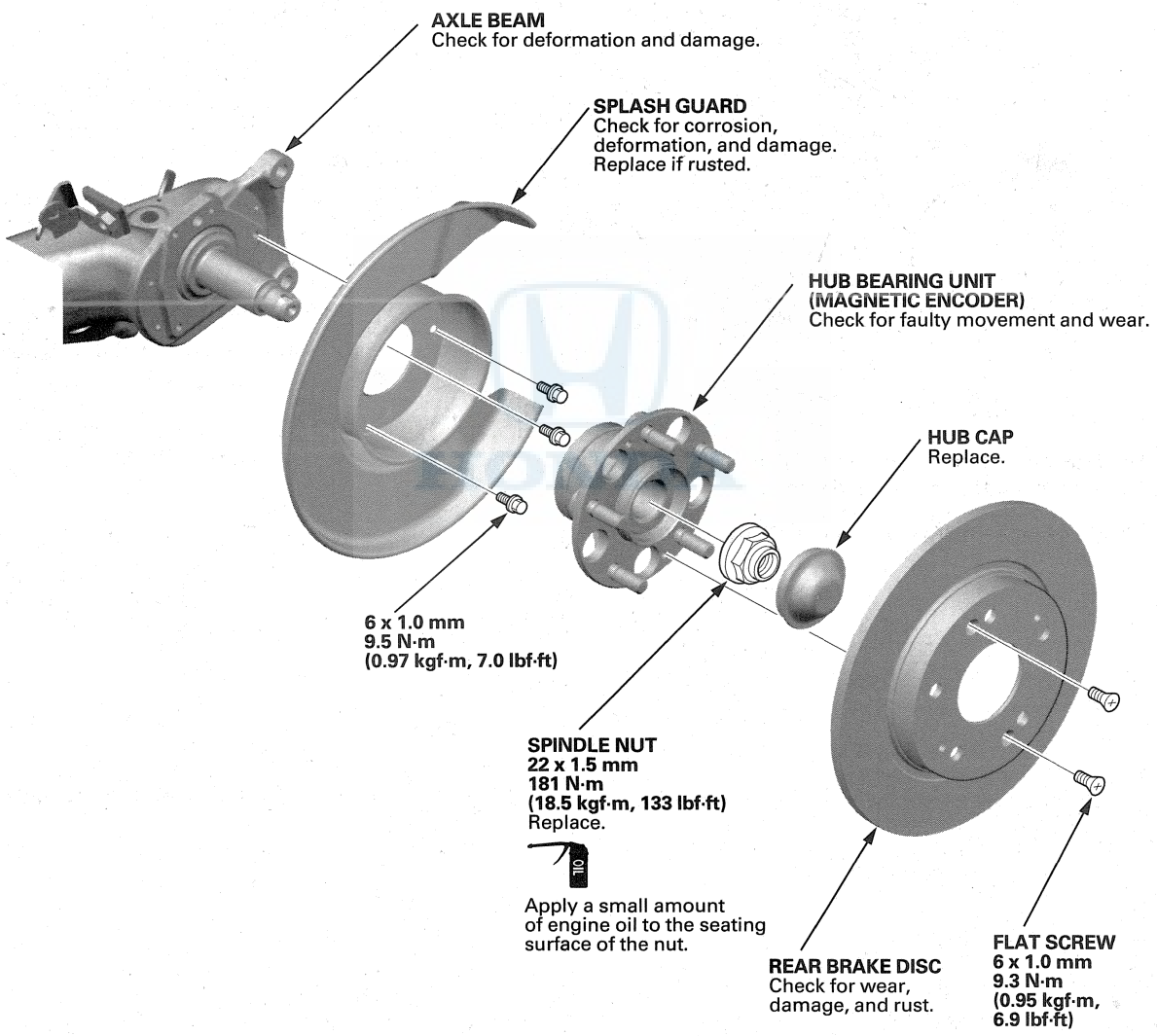
   NOTE: Make sure the distance of the rod is 37.1 mm (1.461 in) from the upper surface of the bearing.



10. Install the nut (C).
11. Hold the damper shaft with a hex wrench (D), and tighten the nut to the specified torque.
12. Remove the damper/spring from the strut spring compressor.

Hub Bearing Unit Replacement

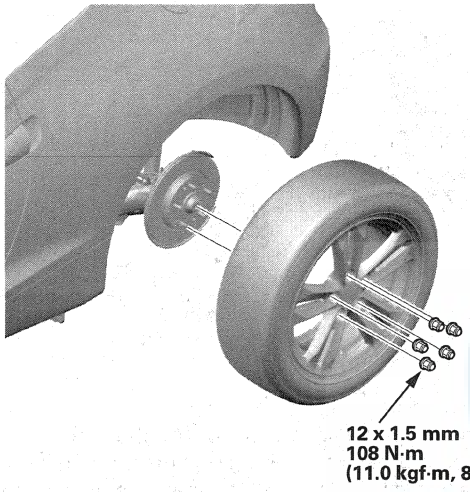
Exploded View



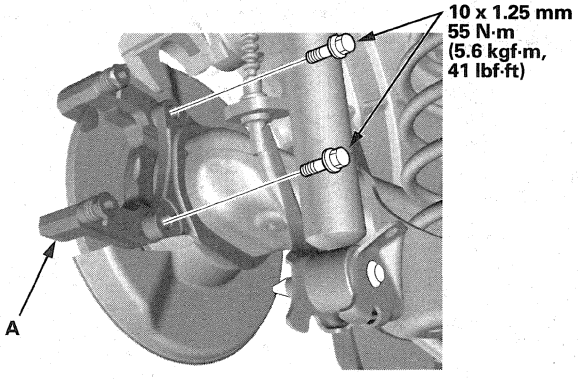
Replacement

NOTE: Refer to the Exploded View as needed during the following procedure.

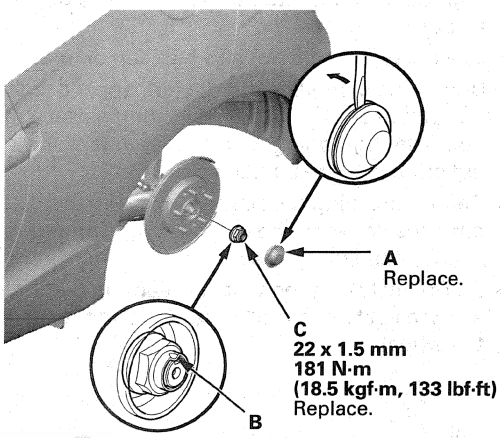
1. Raise and support the vehicle (see page 1-10).
2. Remove the wheel nuts and the rear wheel.



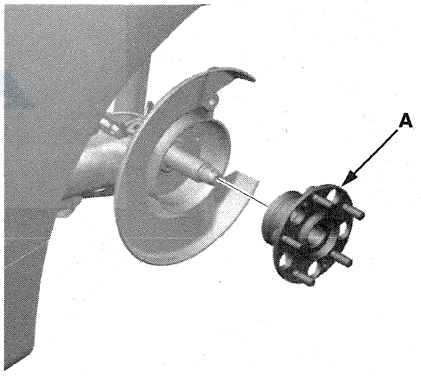
3. Release the parking brake lever fully.
4. Remove the caliper body and the brake pads from the caliper bracket (see step 4 on page 19-28).
5. Remove the caliper bracket (A) from the axle beam.



6. Remove the hub cap (A). Pry up the stake (B) on the spindle nut (C), then remove the nut.



7. Remove the rear brake disc (see page 19-32).
8. Remove the hub bearing unit (A) from the spindle.



9. Check the hub bearing unit for damage and cracks.

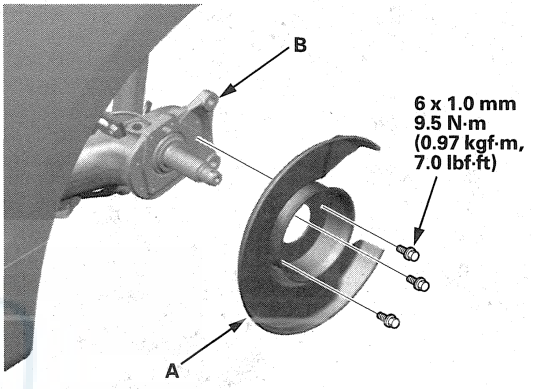
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Hub Bearing Unit Replacement (cont'd)

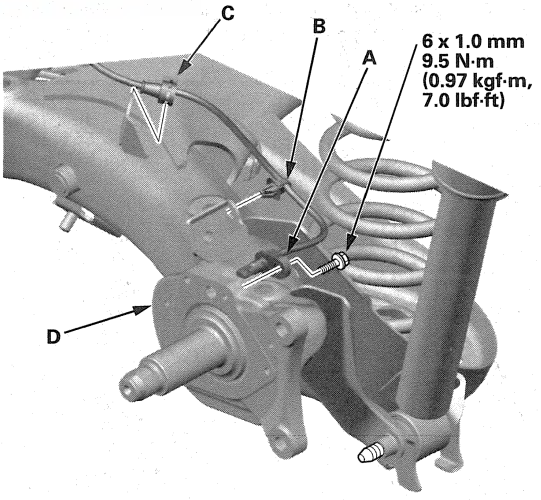
10. Install the hub bearing unit in the reverse order of removal, and note these items:
    - Tighten all mounting hardware to the specified torque.
    - Use a new spindle nut and hub cap on reassembly.
    - Before installing the spindle nut, apply a small amount of engine oil to the seating surface of the nut. After tightening, use a drift to stake the spindle nut shoulder against the spindle.
    - Before installing the brake disc, clean the mating surfaces between the hub bearing unit and the inside of the brake disc.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

Axle Beam Replacement

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Remove the rear hub bearing unit (see page 18-29).
4. Remove the rear spring seat lower cover (see page 20-167).
5. Remove the splash guard (A) from the axle beam (B).

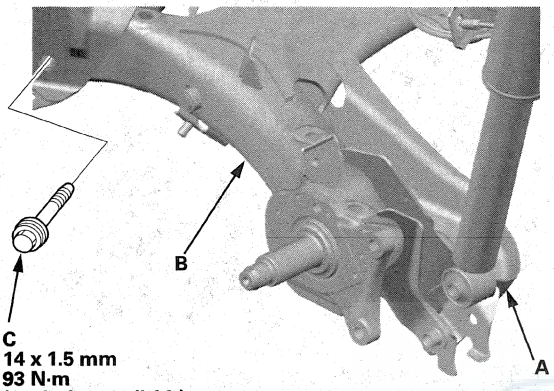


6. Remove the wheel speed sensor (A), the wheel speed sensor clip (B), and the wire guide grommet (C) from the axle beam (D). Do not disconnect the wheel speed sensor 2P connector.



7. Remove the rear spring (see page 18-36).

8. Place a floor jack under the lower spring seat (A) on both sides of the axle beam (B), and support it by raising the floor jack. Do not place the floor jack under the center of the axle beam.



9. Remove the axle beam mounting bolt (C) on both sides.

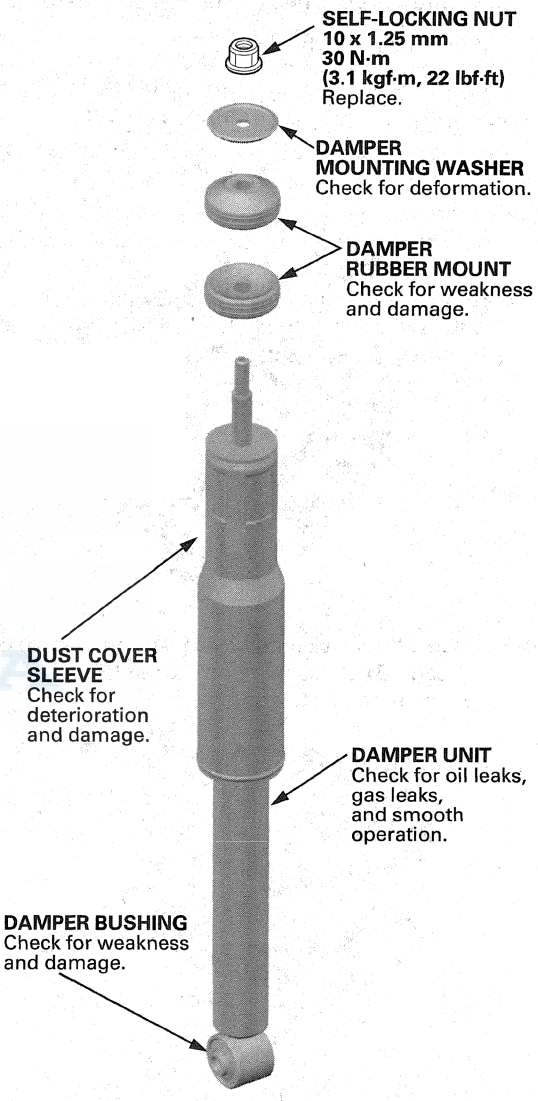
   NOTE: Use new axle beam mounting bolts during reassembly.

10. Lower the jack slowly, then remove the axle beam.

11. Install the axle beam in the reverse order of removal, and note these items:
    - First install all the components, and lightly tighten the bolts, and place a jack under the lower spring seat of the axle beam on both sides, then raise the suspension to load it with the vehicle's weight before fully tightening to the specified torque.
    - After installing the brake hose and the parking brake cable, check for interference and twisting of other parts.
    - Before installing the brake disc, clean the mating surfaces between the hub bearing unit and the inside of the brake disc.
    - Check the brake hose joint for leaks, and tighten if necessary.
    - Before installing the wheel, clean the mating surfaces between the brake disc and the inside of the wheel.

12. Check the wheel alignment, and adjust it if necessary (see page 18-5).

Exploded View

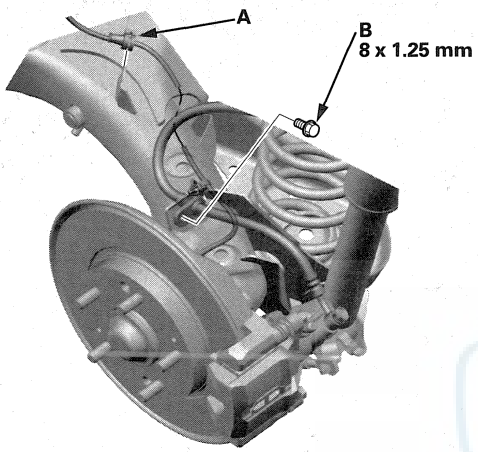


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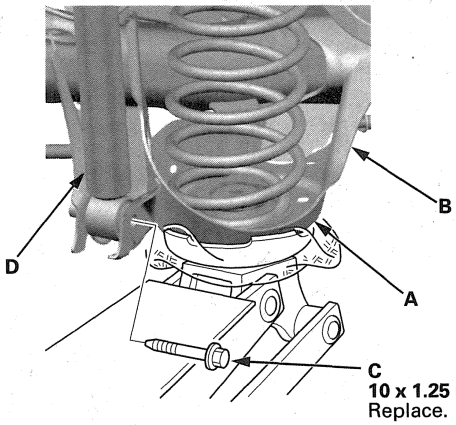
Damper Replacement (cont'd)

Removal

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Remove the wire guide grommet (A) and the brake hose mounting bolt (B) from the axle beam.



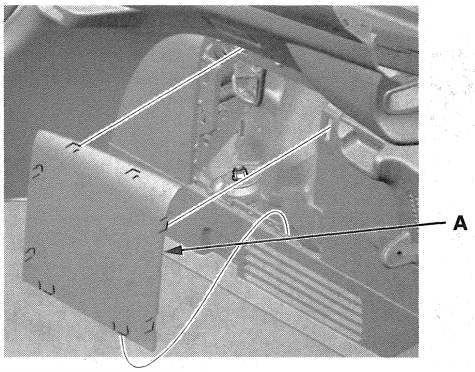
4. Position a floor jack under lower spring seat (A) on the axle beam (B). Raise the floor jack until the suspension begins to compress.



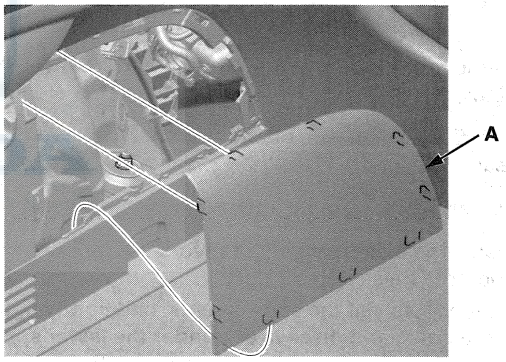
5. Remove the damper mounting bolt (C) that connects the axle beam and the damper (D).

6. Remove the damper maintenance lid (A) on the cargo area side trim.

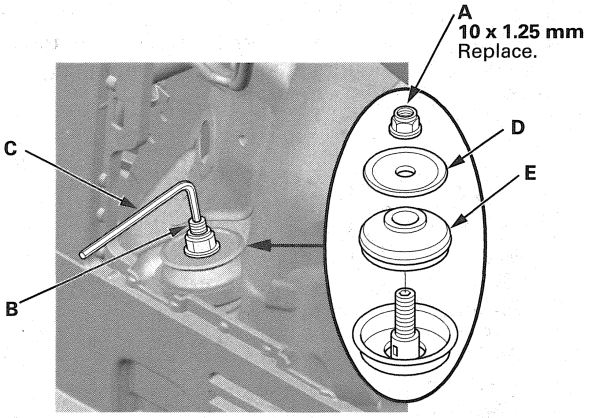
Driver's side



Passenger's side

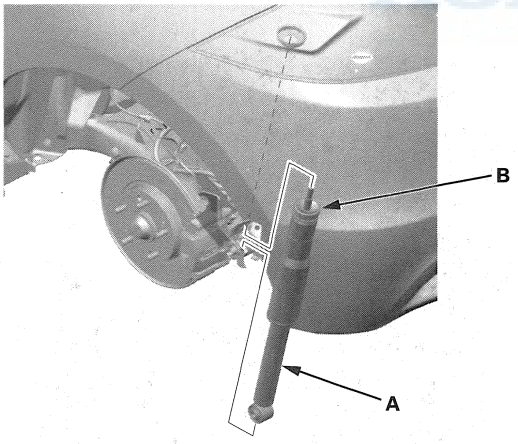


7. Remove the self-locking nut (A) while holding the damper shaft (B) with a hex wrench (C).



8. Remove the damper mounting washer (D) and the damper rubber mount (E) from the top of the damper.
9. Compress the damper assembly (A) by hand, and remove it from the vehicle.

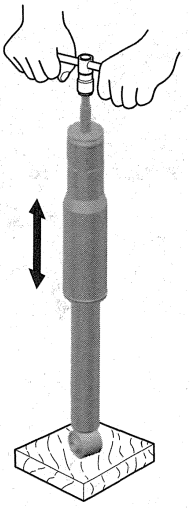
   NOTE: Be careful not to damage the body.



10. Remove the damper rubber mount (B).

Inspection

1. Install the flange nut on the damper shaft end, and set the socket wrench and T-handle on the nut.
2. Compress the damper unit by hand, and check for smooth operation through a full stroke, both compression and extension. The damper should extend smoothly and constantly when compression is released. If it does not, the gas is leaking and the damper should be replaced.



3. Check for oil leaks, abnormal noises, and binding during these tests.

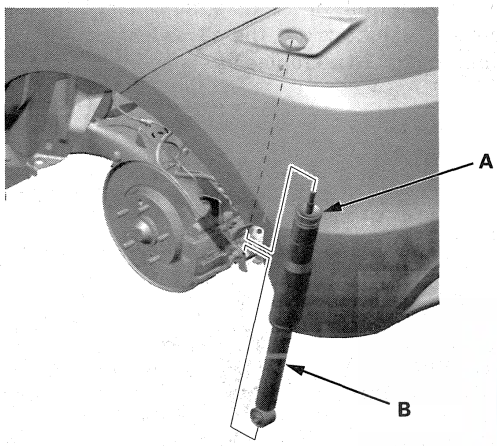
(cont'd)

Damper Replacement (cont'd)

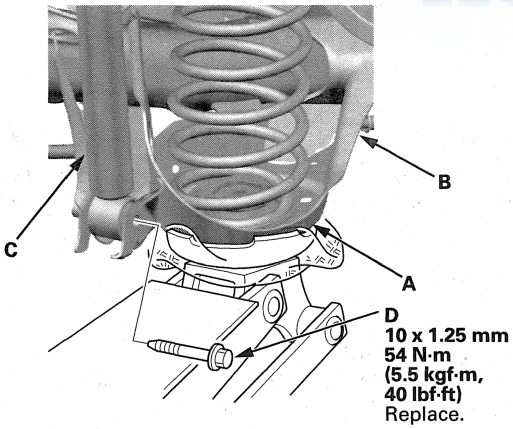
Installation

1. Install the damper rubber mount (A) onto the damper unit. Position the damper assembly (B) between the body and the axle beam.

   NOTE: Be careful not to damage the body.

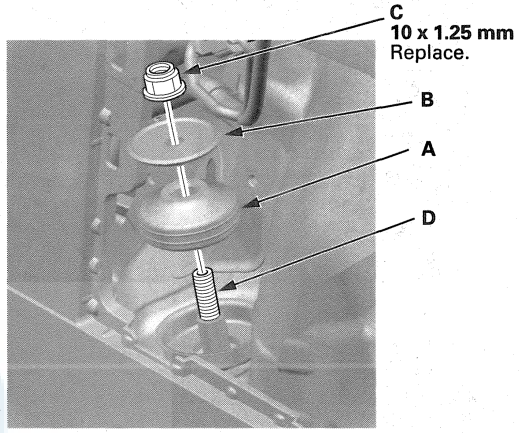


2. Position the floor jack under lower spring seat (A) on the axle beam (B).

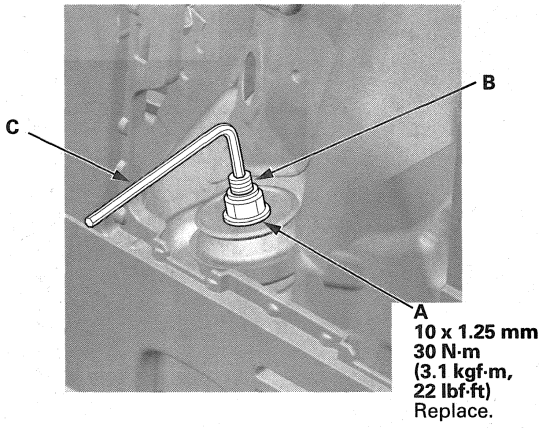


3. Slowly raise the jack until you can align the bolt hole with the holes in the axle beam and the damper (C), then loosely tighten a new damper mounting bolt (D).
4. Raise the rear suspension with the jack until the vehicle just lifts off of the lift, then tighten the damper mounting bolts to the specified torque.
5. Install the damper rubber mount (A), the damper mounting washer (B), and the self-locking nut (C) on the damper shaft (D).

   NOTE: During installation, note the direction of the damper rubber mount and the damper mounting washer.

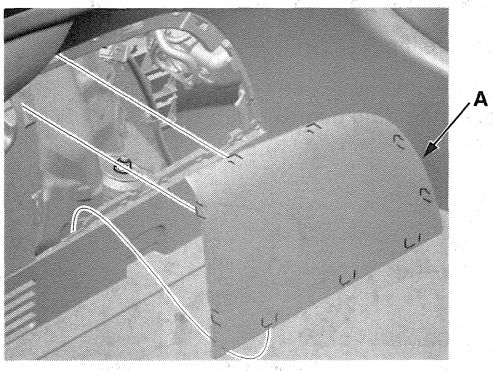


6. Tighten the self-locking nut (A) to the specified torque while holding the damper shaft (B) with a hex wrench (C).

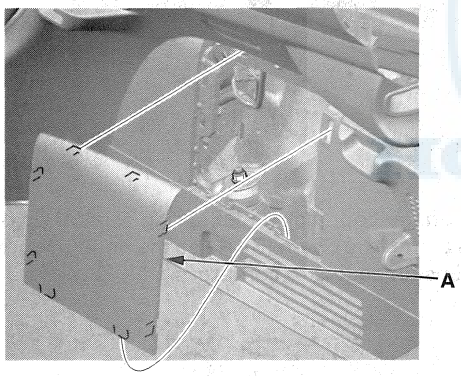


7. Install the damper maintenance lid (A) on the cargo area side trim.

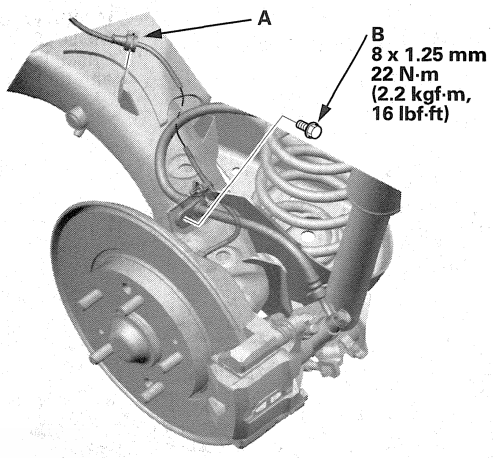
Driver's side



Passenger's side



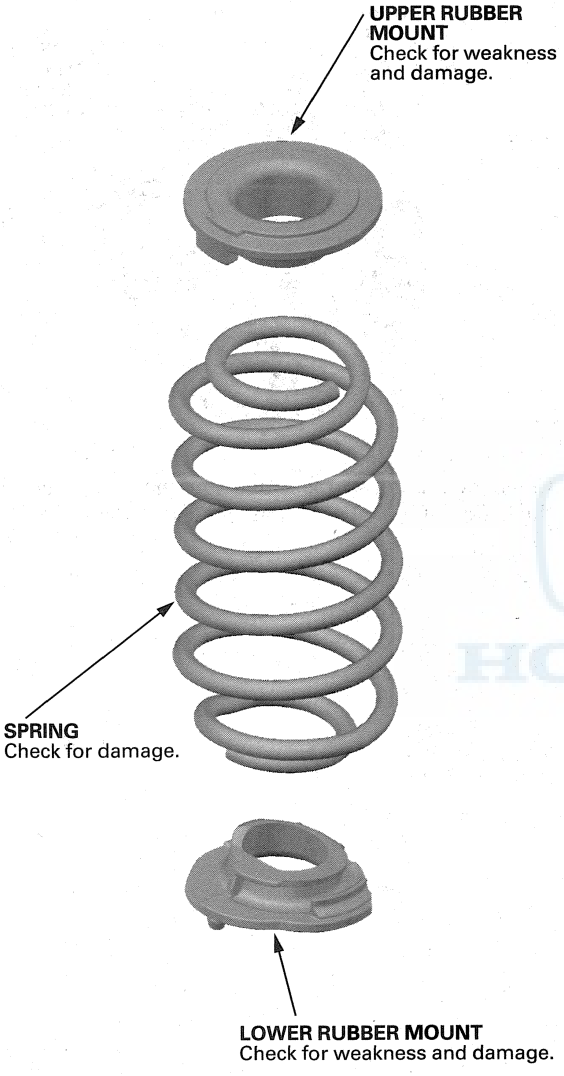
8. Install the wire guide grommet (A) and the brake hose mounting bolt (B) on the axle beam.



9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheel.

Spring Replacement

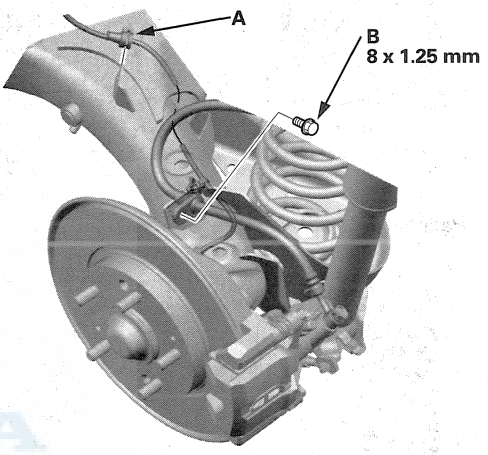
Exploded View



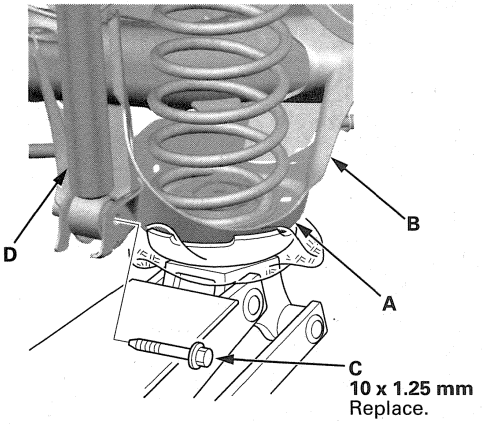
Removal

NOTE: Refer to the Exploded View as needed during the following procedure.

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Remove the wire guide grommet (A) and the brake hose mounting bolt (B) from both sides of the axle beam.

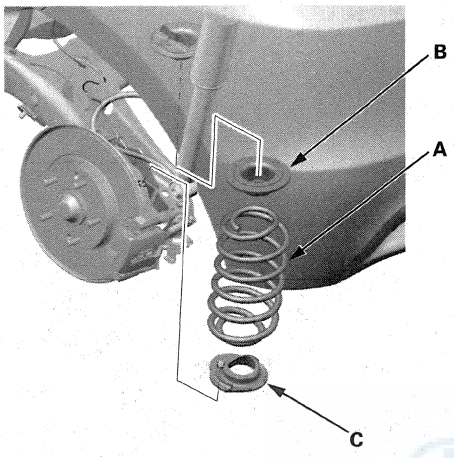


4. Position the floor jack under spring seat (A) on both sides of the axle beam (B). Raise the floor jack until the suspension begins to compress.



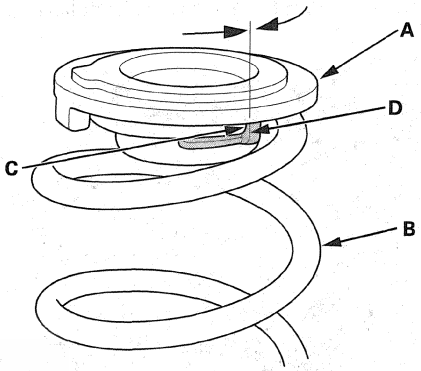
5. Remove the damper mounting bolt (C) that connects the axle beam and the damper (D) from both sides.
6. Lower the floor jack gradually.

7. Remove the spring (A), the upper rubber mount (B), and the lower rubber mount (C). Do not lower the jack more than necessary.

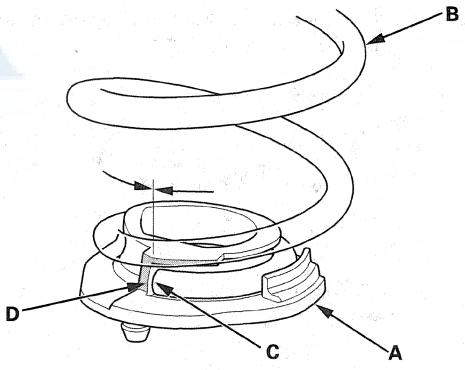


Installation

1. Install the upper rubber mount (A) on the spring (B) by aligning the upper end (C) of the spring with the ledge portion (D) of the upper rubber mount.



2. Install the lower rubber mount (A) on the spring (B) by aligning the lower end (C) of the spring with the ledge portion (D) of the lower rubber mount.

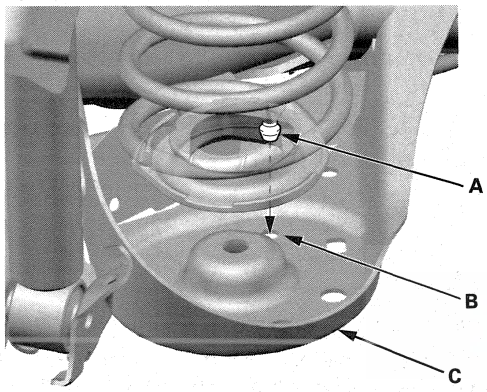


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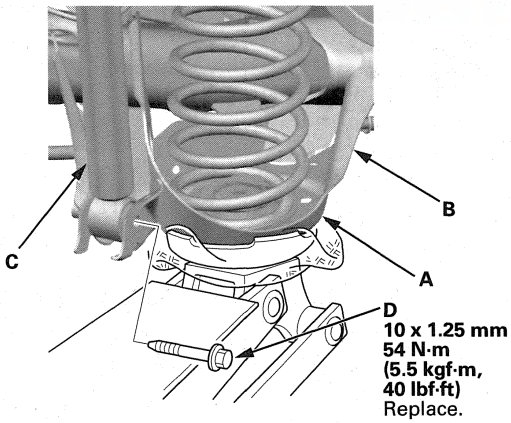
Spring Replacement (cont'd)

3. Install the tab (A) of the lower rubber mount into the groove (B) of the lower spring seat.

   NOTE:
   - Make sure that the tab of the lower rubber mount is properly installed into the axle beam (C).
   - Make sure that the spring is installed correctly.



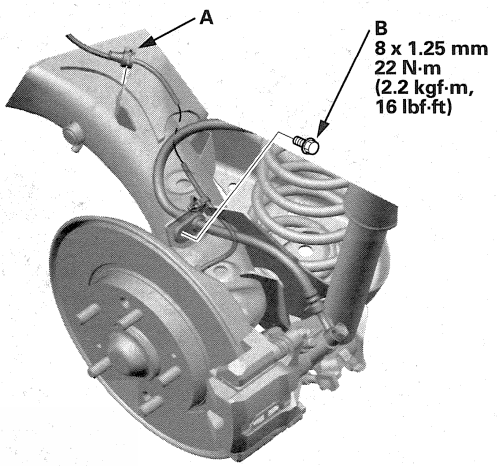
4. Position a floor jack under the lower spring seat (A) on both sides of the axle beam (B).



5. Slowly raise the jacks until you can align the bolt hole with the holes in the axle beam and the damper (C), then loosely tighten a new damper mounting bolt (D) on both sides.

6. Raise the rear suspension with the jacks until the vehicle just lifts off of the lift, then tighten the damper mounting bolts to the specified torque.

7. Install the wire guide grommet (A) and the brake hose bracket mounting bolt (B) on both sides of the axle beam.

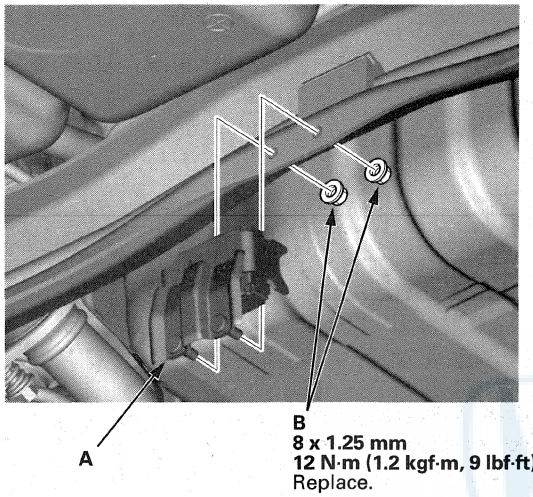


8. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheel.

Dynamic Damper Replacement

1. Raise and support the vehicle (see page 1-10).
2. Remove the dynamic damper (A) from the axle beam.

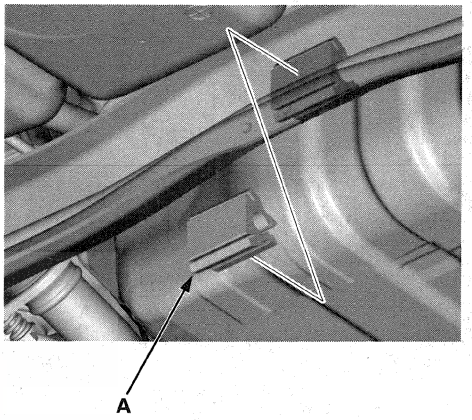
   NOTE: Use new self-locking nuts (B) during reassembly.



3. Install the new dynamic damper in the reverse order of removal.

Stabilizer Bushing Replacement

1. Raise and support the vehicle (see page 1-10).
2. Remove the dynamic damper from the axle beam (see page 18-39).
3. Remove the stabilizer bushing (A) from the axle beam.



4. Apply silicone spray (P/N 08209-0001) to the new stabilizer bushing. This will ease installation of the bushing into the stabilizer and the axle beam.

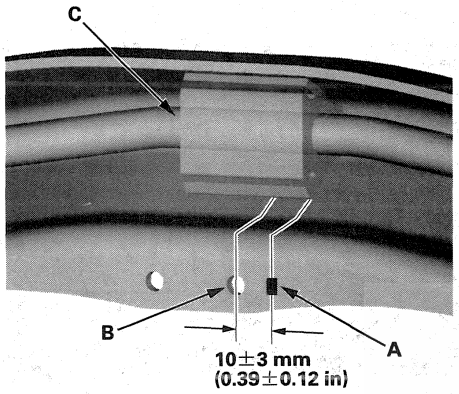
   NOTE: When spraying any agents that contain silicone, cover all the connectors, terminals, and switches in area with a protective cloth or plastic sheet.

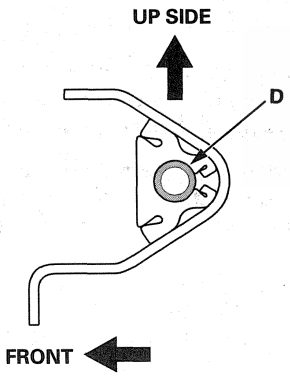
(cont'd)

Stabilizer Bushing Replacement (cont'd)

5. Make a mark (A) near the hole (B) of the axle beam as shown. Install the stabilizer bushing (C) into the axle beam by aligning the end face of the stabilizer bushing to the plant mark.

   NOTE: Make sure the stabilizer bushing is installed into the stabilizer (D).





6. Install the dynamic damper on the axle beam (see page 18-39).

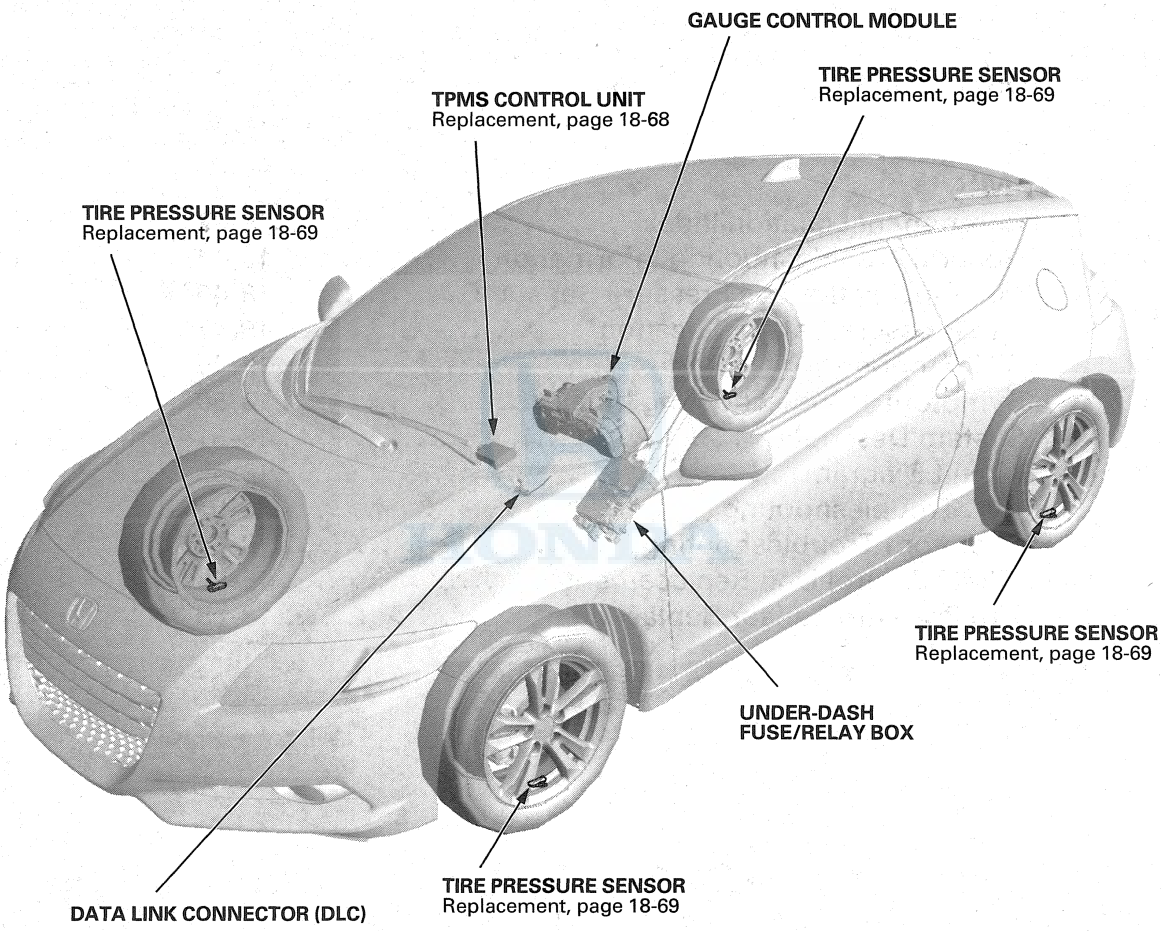
Suspension

TPMS

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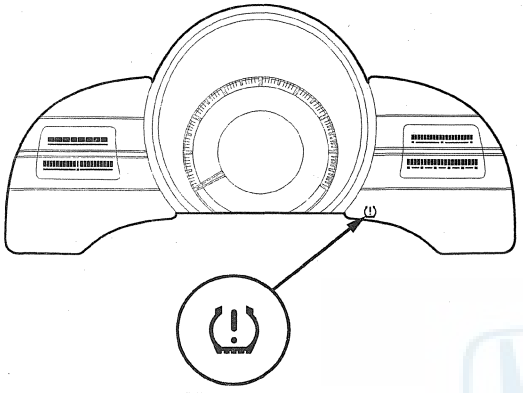
Component Location Index



General Troubleshooting Information

System Indicator

The TPMS (tire pressure monitoring system) has the low tire pressure/TPMS indicator.



Low Tire Pressure/TPMS Indicator

When the system is OK, the low tire pressure/TPMS indicator should come on when you turn the ignition switch to ON (II), and then go off 2 seconds later. If they don't, there is a problem with the system.

The Low Tire Pressure/TPMS Indicator

- If the system detects low pressure in any of the four tires, the low pressure/TPMS indicator comes on.
- When the indicator comes on because of a low tire pressure, inflate the tires and test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute, and the low tire pressure/TPMS indicator will go off.
- If a problem in the system is detected, the low tire pressure/TPMS indicator comes on after blinking for 75 seconds.

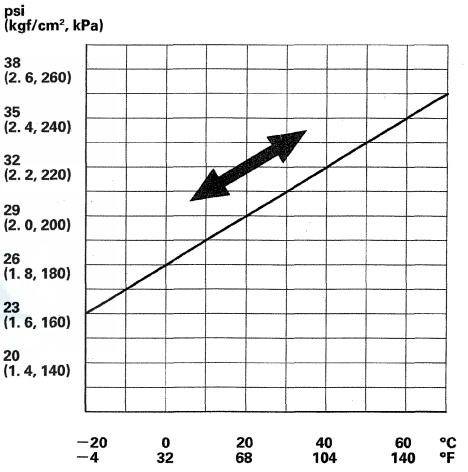
DTC 11, 13, 15, 17

If the system detects low pressure in any of the four tires, the low tire pressure/TPMS indicator comes on, and the TPMS control unit sets one or more of these codes: DTC 11, 13, 15, 17. When the tire pressure returns to normal, and the TPMS control unit receives the normal pressure signal from the tire pressure sensor, the TPMS control unit turns off the indicator. However, the TPMS control unit still retains the DTC(s).

NOTE: It is necessary to test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute so that the tire pressure sensor transmits the signal.

Tire Pressure Changing by Temperature

Tire pressures increase slightly as the temperature in the tires rises during driving. Pressures can also increase or decrease slightly with changes in outside air temperature. A temperature change of about 18 °F (10 °C) changes tire pressure by about 10 kPa (0.1 kgf/cm², 1.5 psi). If the temperature drops, tire pressure could decrease enough to turn on the low tire pressure/TPMS indicator, but later, the tire temperature could increase enough to turn the indicator off. To resolve a complaint of such intermittent indications, confirm and clear the stored DTC(s) and check the cold tire pressures. Then explain to the customer how temperature changes can affect the system.



(cont'd)

General Troubleshooting Information (cont'd)

Problems That are Not System Faults

- Tire Sealant
  Fluid sealant used to repair a punctured tire can damage the tire pressure sensor mounted on each wheel. It can prevent the system from detecting the correct tire pressure, which sets a DTC 11, 13, 15, or 17 even though the system is normal.
- Cold Weather
  When the weather is extremely cold, about −4 °F (−20 °C) or colder, the output of the lithium battery in each tire pressure sensor may drop far enough that the control unit sets a DTC for low battery voltage (DTC 31, 33, 35, or 37) even though the system is normal.
- Non-TPMS Wheels (including the spare tire)
  Vehicles equipped with TPMS must use wheels made for the system. Every TPMS type wheel has an exclusive mark; do not use any other type of wheel (see page 18-53).
  When a flat tire is replaced with the spare tire, the low tire pressure/TPMS indicator comes on (DTC 32, 34, 36, or 38) even though the system is normal. Because the system is no longer receiving the signal from the flat tire's transmitter.

How a Diagnostic Trouble Code (DTC) is Set

- When the system detects a problem, the TPMS control unit sets a code, but shifts to fail-safe mode, and does not alert the driver to low tire pressures.
- If the TPMS control unit loses power or fails, the low tire pressure/TPMS indicator (starts blinking) comes on, but no DTCs are set.
- The memory can hold all the DTCs that could possibly be set. However, when the same DTCs are detected more than once, the most recent one overwrites the previous one, so only the latest DTC of each type is stored.
- DTCs are indicated in ascending order, not in the order they occurred.
- Set DTCs are stored in the EEPROM (nonvolatile memory), they cannot be cleared by disconnecting the battery. To clear a DTC, connect the HDS (Honda Diagnostic System) to the data link connector (DLC), and follow the screen prompts.

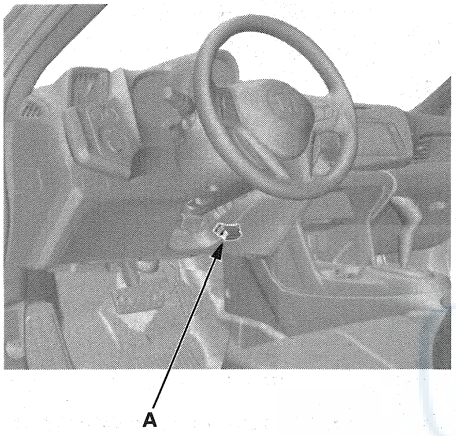
How to Troubleshoot DTCs

DTC troubleshooting procedures assume the cause of the problem is still present and the low tire pressure/TPMS indicator (starts blinking) is still on. Do not use a troubleshooting procedure unless the system has set the DTC listed for it.

1. Ask the customer to describe the conditions when the indicator came on, and try to reproduce the same conditions for troubleshooting. Find out if the customer checked and/or adjusted tire pressures since the indicator came on.
2. If an indicator does not come on during the test-drive, check for loose terminals, poor contact due to damaged terminals, etc. before you start troubleshooting.
3. After troubleshooting, repair and clear the DTCs, and test-drive the vehicle. Make sure no indicators come on.

How to Retrieve DTCs

1. With the ignition switch in LOCK (0), connect the HDS (Honda Diagnostic System) to the data link connector (DLC) (A) located under the driver's side of the dashboard.

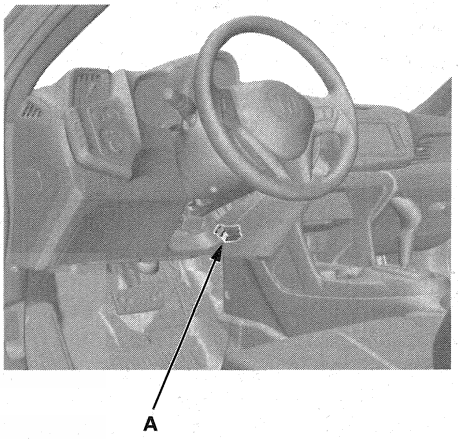


2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting.

   NOTE: See the HDS Help menu for specific instructions.
5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Clear the DTC(s) by following the screen prompts on the HDS.

   NOTE: See the HDS Help menu for specific instructions.
5. Turn the ignition switch to LOCK (0).

Memorizing the Tire Pressure Sensor ID

Special Tools Required
TPMS Trigger Tool ATEQ VT55*
*Available through the Honda Tool and Equipment Program 888-424-6857

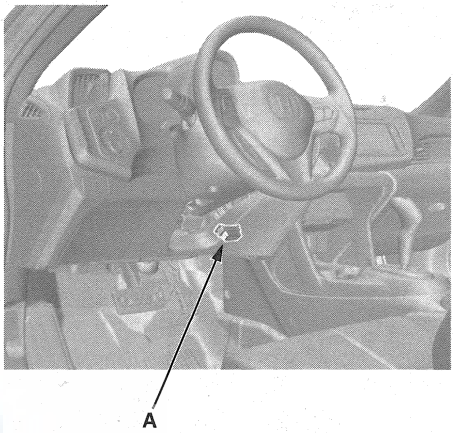
All four tire pressure sensor IDs must be memorized to the TPMS control unit whenever you do any of these actions:

- Replace the TPMS control unit.
- Replace the tire pressure sensor.
- Substitute a known-good wheel with tire pressure sensor.

NOTE:

- Make sure the TPMS tool has the latest software. Check the official Honda service website for more service information about the TPMS tool.
- The TPMS tool is necessary to do this procedure.
- Let the vehicle sit for at least 5 minutes to allow the tire pressure sensors to switch to sleep mode.
- To ensure the TPMS control unit memorizes the correct sensor ID, the vehicle with the new tire pressure sensor must be at least 10 ft (3 m) away from other vehicles that have tire pressure sensors.
- When doing a tire rotation, memorizing the tire pressure sensors is not needed.

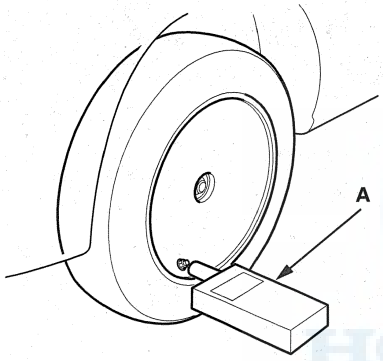
1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Select Sensor ID Learning from the mode menu on the HDS.
5. Follow HDS screen prompts to turn on the TPMS tool.

6. Hold the TPMS tool (A) near the valve stem of one wheel, and memorize the pressure sensor ID by following the screen prompts on the HDS.

   NOTE:
   - See the HDS Help menu for specific instructions.
   - If you turn the ignition switch to LOCK (0) before memorizing all four sensor IDs, the memorizing sensor ID is canceled.
   - If more than one sensor ID is displayed on the HDS, verify that the vehicle has not been driven for 5 minutes, and there are no other vehicles or tire pressure sensors within 10 ft (3 m).



7. Repeat step 6 for each wheel until all four tire pressure sensor IDs are memorized. When all four sensor IDs are memorized, the low tire pressure/TPMS indicator blinks.
8. Turn the ignition switch to LOCK (0).
9. Disconnect the HDS from the DLC.
10. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
11. Make sure the low tire pressure/TPMS indicator does not blink.
12. Make sure the tires are inflated to the specified tire pressure listed on the doorjamb label.
13. Turn the ignition switch to LOCK (0).

Tire Pressure Sensor Location

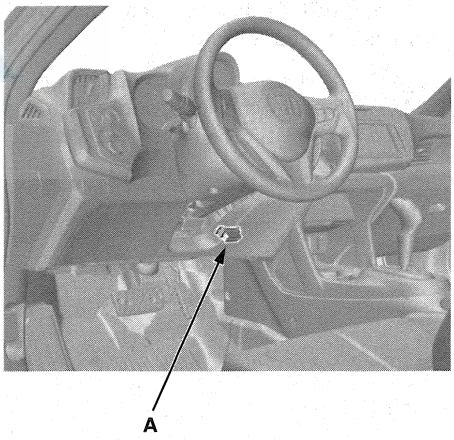
Special Tools Required

TPMS Trigger Tool ATEQ VT55*

*Available through the Honda Tool and Equipment Program 888-424-6857

NOTE:
- Make sure the TPMS tool has the latest software. Check the official Honda service website for more service information about the TPMS tool.
- The TPMS tool is necessary to do this procedure.
- Let the vehicle sit for at least 5 minutes to allow the pressure sensors to switch to sleep mode.
- This procedure locates where the tire pressure sensors 1, 2, 3, 4 are mounted, when activated by the TPMS tool.
- Position the vehicle at least 10 ft (3 m) away from other vehicles that have tire pressure sensors.

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

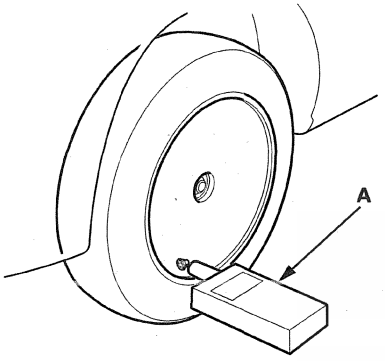


2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the TPMS control unit. If it does not, go to DLC circuit troubleshooting (see page 11-383).

(cont'd)

Tire Pressure Sensor Location (cont'd)

4. Using the HDS, bring up the TPMS DATA LIST, scroll down to the bottom, and locate the four tire pressure sensor ID numbers. These are the sensor ID numbers assigned to each tire location.
5. Follow the HDS screen prompts under tire pressure sensor ID learn to turn on the TPMS tool.
6. Hold the TPMS tool (A) near the valve stem of one wheel, and activate the tire pressure sensor.



7. The TPMS tool will display the sensor data including the tire pressure sensor ID number.
8. Locate the tire pressure sensor ID number on the TPMS DATA LIST with the HDS, and match it to the sensor ID on the TPMS tool. Note the sensor location.
9. Turn the ignition switch to LOCK (0).

DTC Troubleshooting Index

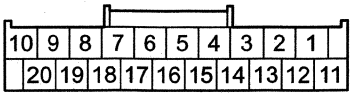
DTC	Detection Item	Troubleshooting
11	Tire 1 Low Air Pressure	DTC Troubleshooting (see page 18-57)
13	Tire 2 Low Air Pressure	DTC Troubleshooting (see page 18-57)
15	Tire 3 Low Air Pressure	DTC Troubleshooting (see page 18-57)
17	Tire 4 Low Air Pressure	DTC Troubleshooting (see page 18-57)
21	Tire 1 Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see page 18-58)
22	Tire 2 Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see page 18-58)
23	Tire 3 Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see page 18-58)
24	Tire 4 Pressure Sensor Abnormally High Temperature	DTC Troubleshooting (see page 18-58)
31	Tire 1 Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see page 18-59)
32	Tire 1 Pressure Sensor Signal Failure	DTC Troubleshooting (see page 18-59)
33	Tire 2 Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see page 18-59)
34	Tire 2 Pressure Sensor Signal Failure	DTC Troubleshooting (see page 18-59)
35	Tire 3 Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see page 18-59)
36	Tire 3 Pressure Sensor Signal Failure	DTC Troubleshooting (see page 18-59)
37	Tire 4 Pressure Sensor Low Battery Voltage	DTC Troubleshooting (see page 18-59)
38	Tire 4 Pressure Sensor Signal Failure	DTC Troubleshooting (see page 18-59)
41	Abnormal Signal Reception Error	DTC Troubleshooting (see page 18-60)
51	Tire 1 Pressure Sensor Registration Error	DTC Troubleshooting (see page 18-61)
53	Tire 2 Pressure Sensor Registration Error	DTC Troubleshooting (see page 18-61)
55	Tire 3 Pressure Sensor Registration Error	DTC Troubleshooting (see page 18-61)
57	Tire 4 Pressure Sensor Registration Error	DTC Troubleshooting (see page 18-61)
81	TPMS Control Unit Failure	DTC Troubleshooting (see page 18-62)
83	No VSP Signal	DTC Troubleshooting (see page 18-62)
85	F-CAN Communication Failure	DTC Troubleshooting (see page 18-63)
91	Tire 1 Pressure Sensor Internal Error	DTC Troubleshooting (see page 18-64)
93	Tire 2 Pressure Sensor Internal Error	DTC Troubleshooting (see page 18-64)
95	Tire 3 Pressure Sensor Internal Error	DTC Troubleshooting (see page 18-64)
97	Tire 4 Pressure Sensor Internal Error	DTC Troubleshooting (see page 18-64)

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the TPMS control unit or the vehicle	Troubleshoot the DLC circuit (see page 11-383).	
Low tire pressure/TPMS indicator does not come on, and no DTCs are stored	1. Do the gauge control module self-diagnostic function (see page 22-325). 2. Symptom Troubleshooting. (see page 18-64)	
Low tire pressure/TPMS indicator does not go off, and no DTCs are stored	1. Do the gauge control module self-diagnostic function (see page 22-325). 2. Symptom Troubleshooting. (see page 18-65)	

System Description

TPMS Control Unit Inputs and Outputs at the 20P Connector



Wire side of female terminals

Terminal number	Wire color	Terminal sign	Description	Signal
1	PNK	+B (Battery positive)	Power source for the TPMS control unit	Battery voltage (about 12 V) at all times
2	Not used	Not used	———	———
3	LT BLU	IG1 (Ignition switch 1)	Power source for activating the system	With ignition switch ON (II): battery voltage (about 12 V) With ignition switch in LOCK (0): less than 0.1 V
4	BLU	K-LINE (Data link connector)	Communications with the HDS	———
5	Not used	Not used	———	———
6	Not used	Not used	———	———
7	Not used	Not used	———	———
8	BLK	GND (Ground)	Ground for the TPMS control unit	Less than 0.1 V at all times
9	GRN	F-CAN H (F-CAN communication signal high)	F-CAN communication circuit	With ignition switch ON (II): pulses
10	Not used	Not used	———	———
11	Not used	Not used	———	———
12	Not used	Not used	———	———
13	Not used	Not used	———	———
14	Not used	Not used	———	———
15	Not used	Not used	———	———
16	Not used	Not used	———	———
17	Not used	Not used	———	———
18	Not used	Not used	———	———
19	Not used	Not used	———	———
20	PNK	F-CAN L (F-CAN communication signal low)	F-CAN communication circuit	With ignition switch ON (II): pulses

(cont'd)

System Description (cont'd)

System Structure

Once the vehicle speed exceeds 28 mph (45 km/h), the TPMS control unit monitors all four tire pressure sensors and the system function. If it detects low pressure in a tire, it alerts the driver by turning on the low tire pressure/TPMS indicator. If it detects a problem in the system, it turns on the low tire pressure/TPMS indicator (starts blinking).

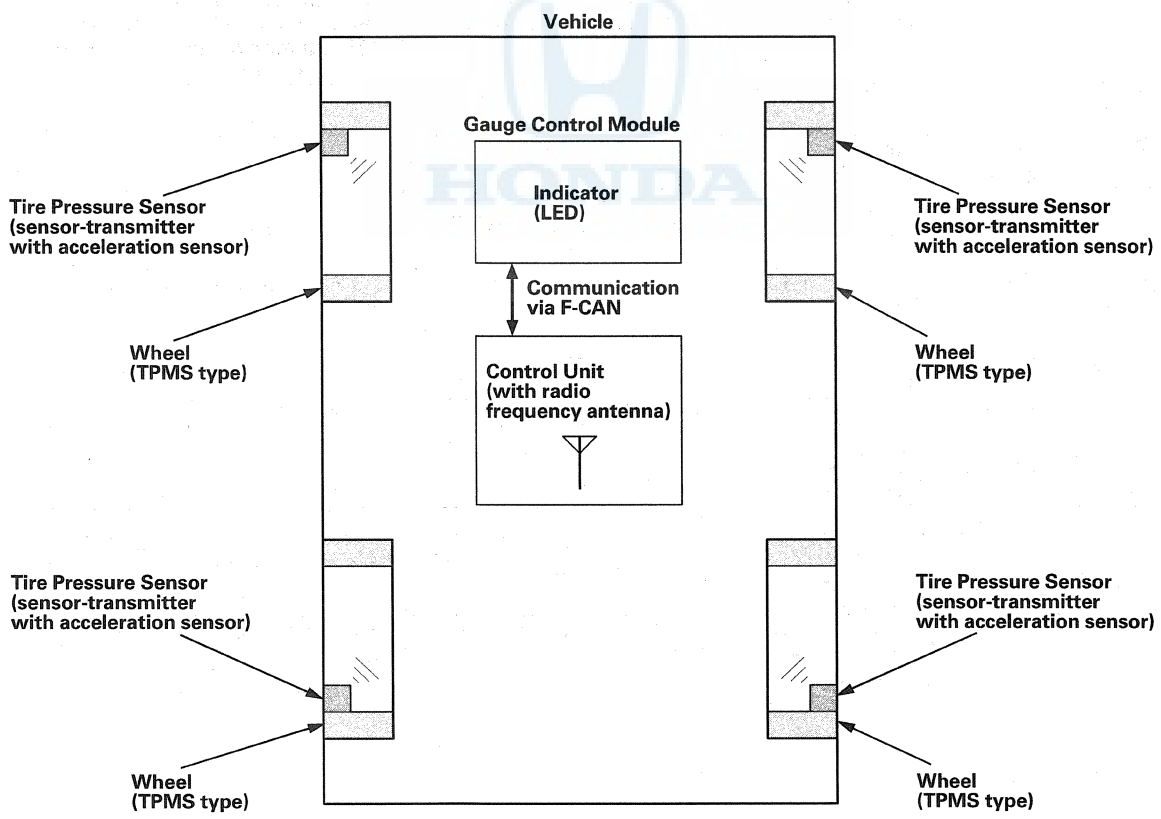
Control unit

Mounted over the accelerator pedal module, the TPMS control unit receives wireless pressure sensor ID signals every time the vehicle speeds exceeds 28 mph (45 km/h). It also receives wireless signals from the transmitters for tire pressure and the sensor condition, and it continuously monitors and controls the system. The TPMS control unit cannot directly determine the position (location) of a tire pressure sensor(s) on the vehicle since it is a wireless system. Tire pressure sensor locations will change during scheduled vehicle maintenance (tire rotation).

NOTE: To determine the actual location of each tire pressure sensor on the vehicle, do the tire pressure sensor location procedure (see page 18-47). Once the tire pressure sensor locations are identified, write the sensor ID on the side wall of the tire with a tire crayon to eliminate confusion.

Indicators

The indicator is in the gauge control module:
The low tire pressure/TPMS indicator comes on when any tire pressure is low.
The low tire pressure/TPMS indicator blinks when the system is malfunctioning.



Tire pressure sensor

Each sensor is an integrated unit made up of the tire valve stem, a pressure sensor, and a transmitter. The unit is attached to the inside of the wheel, around the valve stem. The sensor transmits the internal tire information to the TPMS control unit once every 60 seconds when the vehicle speed exceeds 28 mph (45 km/h). When the TPMS control unit receives a tire pressure signal that is less than 175 kPa (1.8 kgf/cm^2, 25 psi), the TPMS control unit then turns on the low tire pressure/TPMS indicator. When that tire's pressure is increased to more than 200 kPa (2.0 kgf/cm^2, 29 psi), and the vehicle is driven above 28 mph (45 km/h) the transmitter sends the tire pressure signal to the TPMS control unit, and then the TPMS control unit turns the indicator off.

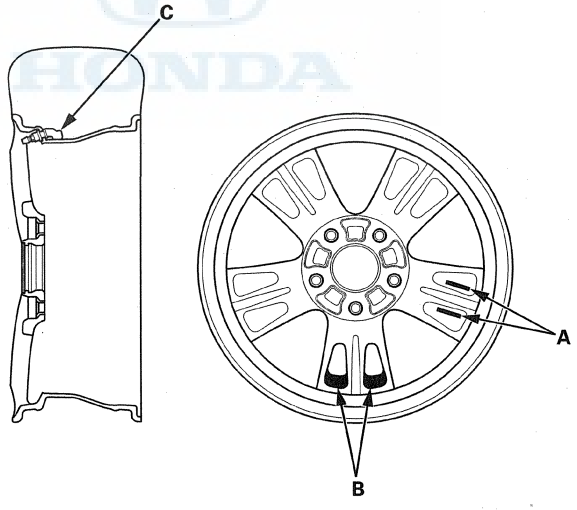
NOTE: Do not mix the TPMS tire pressure sensors or TPMS type wheels with other TPMS types. Be sure to use the correct type sensors and wheels for this system.

Sensors are active:

- When the wheel rotates over 28 mph (45 km/h) the sensor detects the momentum, and switches the sensor to the normal function mode.
- The LF (low frequency) signal of the TPMS tool makes the sensor active even though the vehicle is stopped. The tire pressure sensor goes into sleep mode when the acceleration sensor detects the wheel is stationary for 5 minutes or more.

Wheels

The TPMS will not work unless TPMS type wheels are installed on the vehicle. The original equipment wheels have a "TPMS" mark (A) on them. The wheels also have counterweights (B) incorporated on the opposite side of the tire pressure sensor (C) to counterbalance the weight of the sensor.



(cont'd)

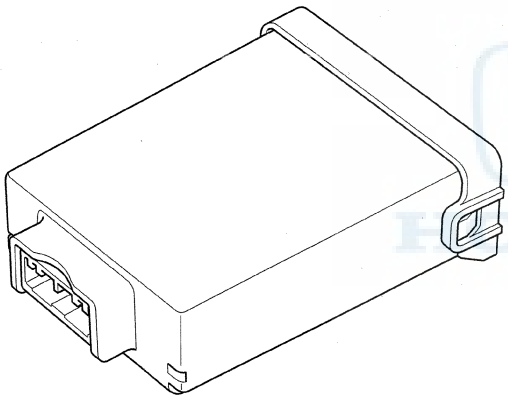
System Description (cont'd)

System Communication

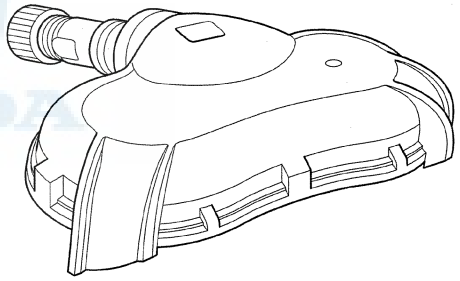
- When the vehicle is traveling more than 28 mph (45 km/h), an RF (radio frequency) band wave signal is transmitted from each tire pressure sensor to the TPMS control unit.
- When the wheels rotate, the tire pressure sensors momentum is detected, switching them from sleep mode to normal function (awake) mode. After the vehicle is stationary for 5 minutes, the sensors switch from normal function mode back to sleep mode to extend their battery life.
- Each tire pressure sensor has its own tire pressure sensor ID to prevent jamming by similar systems on other vehicles. After memorizing all the sensor IDs, the TPMS control unit recognizes only those specific signals.
- A tire pressure sensor ID cannot be memorized automatically. The TPMS control unit knows which sensor ID belongs to each tire pressure sensor. This recurring ID confirmation prevents any confusion in the system as a result of normal tire rotation.

NOTE: Be careful not to bend the brackets on the TPMS control unit. Misalignment of the TPMS control unit could interfere with sending and receiving signals.

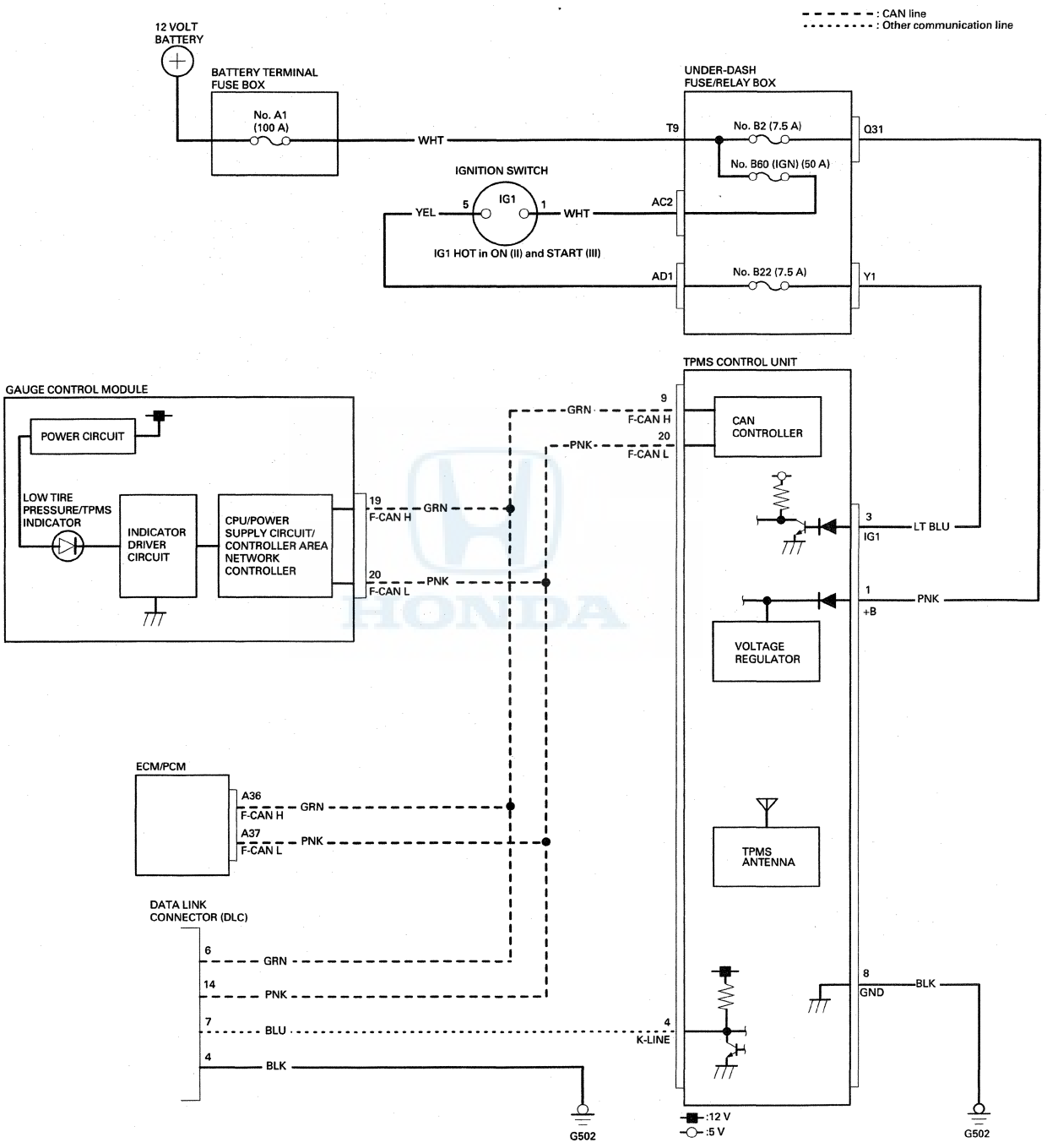
TPMS Control Unit
(with an internal radio frequency antenna)



Tire Pressure Sensor
(sensor-transmitter with acceleration sensor)



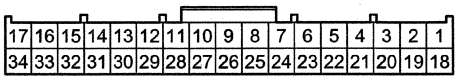
Circuit Diagram



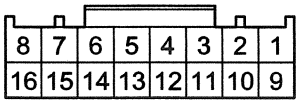
(cont'd)

Circuit Diagram (cont'd)

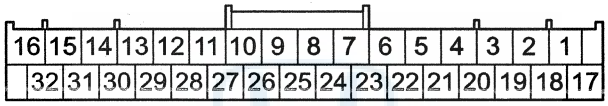
UNDER-DASH FUSE/RELAY BOX
CONNECTOR Q (34P)



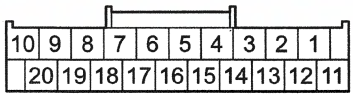
UNDER-DASH FUSE/RELAY BOX
CONNECTOR Y (16P)



GAUGE CONTROL MODULE 32P CONNECTOR

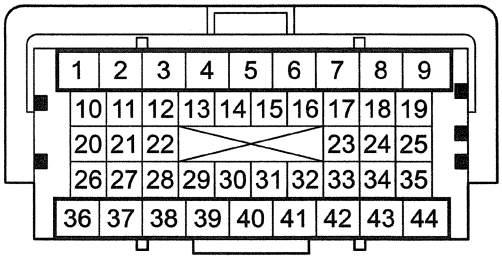


TPMS CONTROL UNIT 20P CONNECTOR

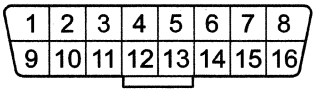


Wire side of female terminals

ECM/PCM CONNECTOR A (44P)



DATA LINK CONNECTOR (DLC)



Terminal side of female terminals

DTC Troubleshooting

DTC 11, 13, 15, 17: Tire Low Air Pressure

NOTE: If low tire pressure is detected, the TPMS control unit sets one or more of these DTCs, and turns on the low tire pressure/TPMS indicator. If the low tire pressure/TPMS indicator comes on because of a low tire pressure, and the customer corrects it before bringing the vehicle in, the DTCs will be stored, but the indicator turns off.

1. Turn the ignition switch to LOCK (0).
2. Make sure the tires are inflated to the specified tire pressure listed on the doorjamb label.
3. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.

   Does the low tire pressure/TPMS indicator go off?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.
4. Check for DTCs with the HDS.
5. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
11	No. 1
13	No. 2
15	No. 3
17	No. 4

6. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).
7. Check the TIRE 1, TIRE 2, TIRE 3, or TIRE 4 AIR PRESSURE in the TPMS DATA LIST with the HDS, and compare it with the actual measured tire pressure.

   Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm², 6 psi) of the actual tire pressure?

   YES–Go to step 8.

   NO–Replace the appropriate tire pressure sensor (see page 18-69).■
8. Clear the DTC with the HDS.
9. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
10. Check for DTCs with the HDS.

    Is DTC 11, 13, 15, or 17 indicated?

    YES–Replace the TPMS control unit (see page 18-68).■

    NO–If any other DTCs are indicated, troubleshoot the appropriate DTC. If no DTCs are indicated, the system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 21, 22, 23, 24: Tire Pressure Sensor Abnormally High Temperature

1. Turn the ignition switch to LOCK (0).
2. Make sure the tires have cooled down.

   NOTE: An abnormal rise in the internal temperature of the tires can be caused by:
   - Excessive braking
   - Failure to release the parking brake (rear tires only)
   - Leaving the vehicle running while parked (front tires only)
   - Improper assembly of a wheel and tire
3. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.

   Does the low tire pressure/TPMS indicator go off?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.
4. Check for DTCs with the HDS.
5. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
21	No. 1
22	No. 2
23	No. 3
24	No. 4

6. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).
7. Check the TIRE 1, TIRE 2, TIRE 3, or TIRE 4 AIR TEMPERATURE in the TPMS DATA LIST with the HDS.

   Is 176 °F (80 °C) or more indicated?

   YES–Replace the appropriate tire pressure sensor (see page 18-69).■

   NO–Go to step 8.
8. Clear the DTC with the HDS.
9. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
10. Check for DTCs with the HDS.

    Is DTC 21, 22, 23, or 24 indicated?

    YES–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

    NO–If any other DTCs are indicated, troubleshoot the appropriate DTC. If no DTCs are indicated, the system is OK at this time.■

DTC 31, 33, 35, 37: Tire Pressure Sensor Low Battery Voltage

NOTE: This problem occurs when the temperature around the sensor is −4 °F (−20 °C) or less. Note that the diagnosis must be made in a place where ambient temperature is −4 °F (−20 °C) or more.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
4. Check for DTCs with the HDS.

   Is DTC 31, 33, 35, or 37 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
31	No. 1
33	No. 2
35	No. 3
37	No. 4

6. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Go to step 7.

   NO–Check that the tire pressure sensor is properly mounted. If necessary, replace the appropriate tire pressure sensor (see page 18-69).■
7. Check the TIRE 1, TIRE 2, TIRE 3, or TIRE 4 PRESSURE SENSOR BATTERY STATUS in the TPMS DATA LIST with the HDS.

   Is LOW indicated?

   YES–Replace the appropriate tire pressure sensor (see page 18-69).■

   NO–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

DTC 32, 34, 36, 38: Tire Pressure Sensor Signal Failure

NOTE:

- Inspect for an aftermarket electrical device(s) (such as an inverter, battery charger, CB radio, etc.) interfering with the RF signal from the tire pressure sensors when driving the vehicle.
- If DTC 41 is also set, troubleshoot the DTC first (see page 18-60).

1. Turn the ignition switch to LOCK (0).
2. Make sure all four wheels are TPMS type wheels with mounted tire pressure sensors.

   Are TPMS type wheels with a tire pressure sensor mounted on the vehicle?

   YES–Go to step 3.

   NO–Install the TPMS type wheel, and memorize the pressure sensor ID with the HDS (see page 18-46).■
3. Turn the ignition switch to ON (II).
4. Check for DTCs with the HDS.
5. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
32	No. 1
34	No. 2
36	No. 3
38	No. 4

6. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Go to step 7.

   NO–Check for an aftermarket electrical device interfering with the RF signals from the sensors. If there are no electrical devices causing interference, replace the appropriate tire pressure sensor (see page 18-69).■

(cont'd)

DTC Troubleshooting (cont'd)

7. Turn the ignition switch to LOCK (0), and wait 5 minutes or more.
8. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
9. Check if the value of the AIR PRESSURE and AIR TEMPERATURE of the affected sensor changes from DEFAULT to the correct tire pressure on the TPMS DATA LIST with the HDS.

   Does the value of the AIR PRESSURE and AIR TEMPERATURE change from DEFAULT to the correct tire pressure?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Replace the appropriate tire pressure sensor (see page 18-69).■

DTC 41: Abnormal Signal Reception Error

NOTE: Inspect for an aftermarket electrical device(s) (such as an inverter, battery charger, CB radio, etc.) interfering with the RF signal from the tire pressure sensors when driving the vehicle.

1. Turn the ignition switch to LOCK (0).
2. Make sure all four wheels are TPMS type wheels with mounted tire pressure sensors.

   Are TPMS type wheels with tire pressure sensors mounted on the vehicle?

   YES–Go to step 3.

   NO–Install the TPMS type wheel, and memorize the tire pressure sensor ID with the HDS (see page 18-46).■
3. Memorize the tire pressure sensor IDs with the HDS (see page 18-46).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Substitute a known-good TPMS control unit (see page 18-68), then go to step 4.
4. Memorize the tire pressure sensor IDs with the HDS (see page 18-46).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Replace the original TPMS control unit (see page 18-68).■

   NO–Do the troubleshooting for DTC 32, 34, 36, 38 (see page 18-59).■

DTC 51, 53, 55, 57: Tire Pressure Sensor Registration Error

NOTE:

- The DTCs will only set during memorizing the tire pressure sensor ID.
- Inspect for an aftermarket electrical device(s) (such as an inverter, battery charger, CB radio, etc.) interfering with the RF signal from the tire pressure sensors when driving the vehicle.

1. Turn the ignition switch to LOCK (0).
2. Make sure all four wheels are TPMS type wheels with mounted tire pressure sensors.

   Are TPMS type wheels with a tire pressure sensor mounted on the vehicle?

   YES–Go to step 3.

   NO–Install the TPMS type wheel, and memorize the tire pressure sensor ID with the HDS (see page 18-46).■
3. Turn the ignition switch to ON (II).
4. Check for DTCs with the HDS.
5. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
51	No. 1
53	No. 2
55	No. 3
57	No. 4

6. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Go to step 7.

   NO–Check for an aftermarket electrical device interfering with the RF signals from the sensors. If there are no electrical devices causing interference, replace the appropriate tire pressure sensor (see page 18-69).■
7. Turn the ignition switch to LOCK (0), and wait 5 minutes or more.
8. Turn the ignition switch to ON (II).
9. Clear the DTC with the HDS.
10. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
11. Check for DTCs with the HDS.

    Is DTC 51, 53, 55, or 57 indicated?

    YES–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

    NO–Intermittent failure, the system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 81: TPMS Control Unit Failure

NOTE: Low 12 volt battery voltage can cause this DTC. Make sure the 12 volt battery is fully charged and in good condition (see page 22-85).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

   Is DTC 81 indicated?

   YES–Replace the TPMS control unit (see page 18-68).■

   NO–Intermittent failure, the system is OK at this time.■

DTC 83: No VSP Signal

NOTE: If DTC 85 stored at the same time as DTC 83, troubleshoot DTC 85 first, then recheck for DTC 83.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Test-drive the vehicle at 7 mph (10 km/h) or more.
4. Check the speedometer.

   Does the speedometer register speed?

   YES–Go to step 5.

   NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then go to step 1 and recheck. If the ECM/PCM was updated and DTCs are not indicated, troubleshooting is complete. If the ECM/PCM was substituted and DTCs are not indicated, replace the original ECM/PCM (see page 11-209).■

5. Check the VEHICLE SPEED in the TPMS DATA LIST with the HDS.

   Is the vehicle speed indicated?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Substitute a known-good TPMS control unit (see page 18-68), and recheck.■

DTC 85: F-CAN Communication Failure

NOTE: Check the fuel and emissions systems DTCs with the HDS, and troubleshoot the ECM/PCM and F-CAN communication errors first (see page 11-3).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Wait about 5 seconds.
5. Check for DTCs with the HDS.

   Is DTC 85 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time.■
6. Test-drive the vehicle.

   Does the speedometer work?

   YES–Go to step 10.

   NO–Go to step 7.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).
9. Test-drive the vehicle.

   Does the speedometer work?

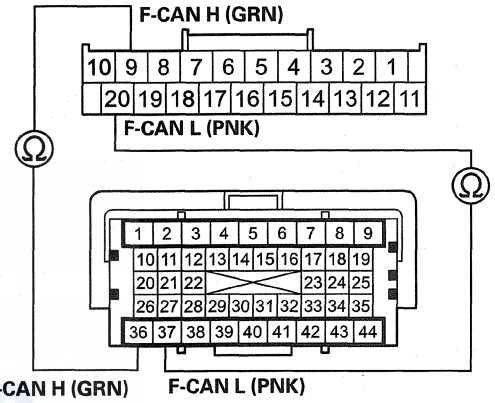
   YES–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

   NO–Turn the ignition switch to LOCK (0), and reconnect all connectors, then check and troubleshoot the fuel and emissions systems (see page 11-3).■
10. Turn the ignition switch to LOCK (0).
11. Short the SCS line with the HDS.
12. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
13. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).
14. Check for continuity between TPMS control unit 20P connector terminals and ECM/PCM connector A (44P) terminals individually (see table).

Terminal Name	TPMS Control Unit 20P Connector Terminal	ECM/PCM Connector A (44P) Terminal
F-CAN L	No. 20	No. 37
F-CAN H	No. 9	No. 36

TPMS CONTROL UNIT 20P CONNECTOR

Wire side of female terminals



ECM/PCM CONNECTOR A (44P)

Terminal side of female terminals

Is there continuity?

YES–Check for loose terminals and poor connections at the TPMS control unit and G502. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

NO–Repair an open in the wire between the TPMS control unit and the ECM/PCM.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 91, 93, 95, 97: Tire Pressure Sensor Internal Error

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Note the tire pressure sensor(s) number by the indicated DTC.

DTC	Tire Pressure Sensor Number
91	No. 1
93	No. 2
95	No. 3
97	No. 4

4. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Go to step 5.

   NO–Check that the tire pressure sensor is properly mounted. If necessary, replace the appropriate tire pressure sensor (see page 18-69).■
5. Clear the DTC with the HDS.
6. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
7. Check for DTCs with the HDS.

   Is DTC 91, 93, 95, or 97 indicated?

   YES–Replace the appropriate tire pressure sensor (see page 18-69), and recheck. If DTCs are still present, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

   NO–If any other DTCs are indicated, troubleshoot the appropriate DTC. If no DTCs are indicated, the system is OK at this time.■

Symptom Troubleshooting

Low tire pressure/TPMS indicator does not come on, and no DTCs are stored

1. Turn the ignition switch to ON (II).
2. Check the low tire pressure/TPMS indicator for several seconds when the ignition switch is turned to ON (II).

   Did the indicator come on, and then go off?

   YES–Go to step 3.

   NO–Go to step 7.
3. Test-drive the vehicle at 28 mph (45 km/h) or more for at least 1 minute.
4. Stop the vehicle, and lower the pressure in each tire until the low tire pressure/TPMS indicator comes on.

   NOTE:
   - Reinflate the tire before continuing to the next tire.
   - After noting whether the low tire pressure/TPMS indicator came on, make sure it goes off when you reinflate the tire before proceeding to the next tire.
   - If 5 minutes has passed since finishing the last test-drive, reactivate the appropriate tire pressure sensor using the TPMS tool (see page 18-47).

   Does the indicator come on when the pressure drops below 175 kPa (1.8 kgf/cm², 25 psi) or less?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 5.
5. Do the tire pressure sensor location procedure to determine the affected tire location and relate it to the tire pressure sensor number (see page 18-47).

   Did each tire pressure sensor respond to the TPMS tool?

   YES–Go to step 6.

   NO–Check that the tire pressure sensor is properly mounted. If necessary, replace the appropriate tire pressure sensor (see page 18-69).■
6. Check the TIRE 1, TIRE 2, TIRE 3, or TIRE 4 AIR PRESSURE in the TPMS DATA LIST with the HDS, and compare with the actual measured tire pressure.

   Is the indicated tire pressure on the HDS within 40 kPa (0.4 kgf/cm², 6 psi) of the actual tire pressure?

   YES–Substitute a known-good TPMS control unit (see page 18-68), and recheck.■

   NO–Replace the appropriate tire pressure sensor (see page 18-69).■

7. Do the gauge control module self-diagnostic function (see page 22-325).

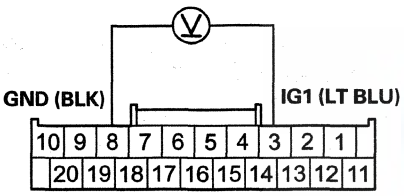
   Is the gauge control module OK?

   YES–Go to step 8.

   NO–Replace the gauge control module (see page 22-354).■

8. Turn the ignition switch to LOCK (0).
9. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).
10. Measure the voltage between TPMS control unit 20P connector terminals No. 3 and No. 8.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the TPMS control unit and the No. B22 (7.5 A) fuse in the driver's under-dash fuse/relay box.■

NO–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

Low tire pressure/TPMS indicator does not go off, and no DTCs are stored

NOTE:

- Check for gauge DTCs with the HDS (see page 22-6). If multiple DTCs are present, including U0029, troubleshoot those DTCs first. If only DTC U0029 is present, continue with the following troubleshooting.
- If the TPMS control unit was replaced, the low tire pressure/TPMS indicator will be on until all four tire pressure sensor ID codes are learned.

1. Turn the ignition switch to ON (II).
2. Check the low tire pressure/TPMS indicator for several seconds when the ignition switch is turned ON (II).

   Did the indicator come on, and then go off?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 3.

3. Turn the ignition switch to LOCK (0).
4. Check the No. B2 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse blown?

   YES–Go to step 5.

   NO–Reinstall the checked fuse, then go to step 7.

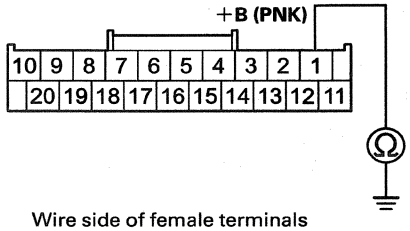
5. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).

(cont'd)

Symptom Troubleshooting (cont'd)

6. With the No. B2 (7.5 A) fuse removed, check for continuity between body ground and TPMS control unit 20P connector terminal No. 1.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the No. B2 (7.5 A) fuse in the under-dash fuse/relay box and the TPMS control unit.■

NO–Install a new No. B2 (7.5 A) fuse in the under-dash fuse/relay box, then go to step 10.

7. Check the No. B22 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse blown?

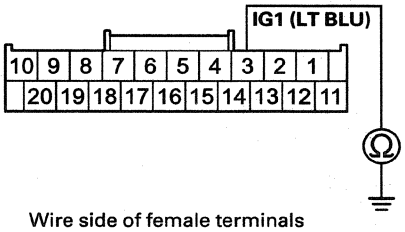
YES–Go to step 8.

NO–Reinstall the checked fuse, then go to step 13.

8. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).

9. With the No. B22 (7.5 A) fuse removed, check for continuity between body ground and TPMS control unit 20P connector terminal No. 3.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the No. B22 (7.5 A) fuse in the under-dash fuse/relay box and the TPMS control unit.■

NO–Install a new No. B22 (7.5 A) fuse in the under-dash fuse/relay box, then go to step 10.

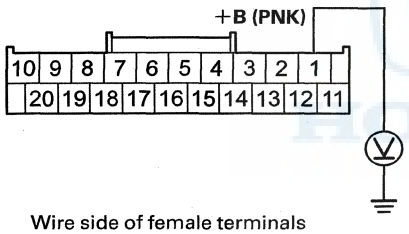
10. Reconnect the TPMS control unit 20P connector.
11. Turn the ignition switch to ON (II).
12. Check the low tire pressure/TPMS indicator for several seconds when the ignition switch is turned ON (II).

    Did the indicator come on, and then go off?

    YES–Troubleshooting is complete.■

    NO–Check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■
13. Disconnect the TPMS control unit 20P connector (see step 3 on page 18-68).
14. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 1.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

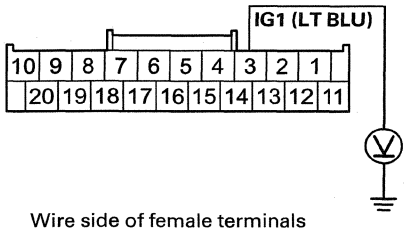
Is there battery voltage?

YES–Go to step 15.

NO–Repair an open in the wire between the TPMS control unit and the No. B2 (7.5 A) fuse in the under-dash fuse/relay box.■

15. Turn the ignition switch to ON (II).
16. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 3.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 17.

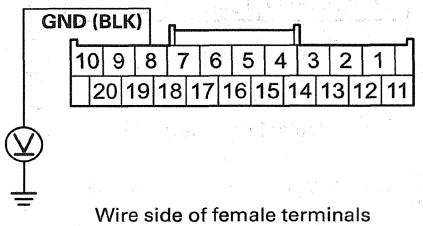
NO–Repair an open in the wire between the TPMS control unit and the No. B22 (7.5 A) fuse in the under-dash fuse/relay box.■

(cont'd)

Symptom Troubleshooting (cont'd)

17. Turn the ignition switch to LOCK (0).
18. Reconnect the TPMS control unit 20P connector.
19. Turn the ignition switch to ON (II).
20. Measure the voltage between body ground and TPMS control unit 20P connector terminal No. 8.

TPMS CONTROL UNIT 20P CONNECTOR



Wire side of female terminals

Is there 0.1 V or more?

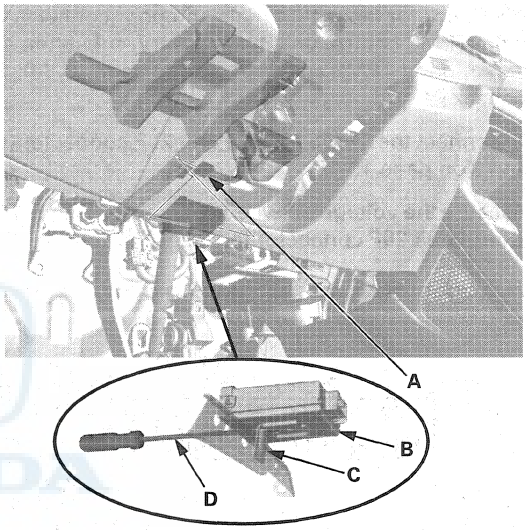
YES–Repair an open or high resistance in the wire between the TPMS control unit and body ground (G502).■

NO–Do the troubleshooting for the gauge control module (see page 22-325). If the gauge control module is OK, check for loose terminals and poor connections at the TPMS control unit. If necessary, substitute a known-good TPMS control unit (see page 18-68), and recheck.■

TPMS Control Unit Replacement

NOTE: Make sure the TPMS control unit mounting bracket is not bent or twisted as this may affect its communication with the tire pressure sensors.

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's dashboard undercover (see page 20-86).
3. Disconnect the TPMS control unit connector (A).



4. Remove the TPMS control unit (B) from the bracket (C).

   NOTE: While separating the TPMS control unit from the bracket, use a flat-tipped screwdriver (D) to push and release it from the bracket.

5. Install the TPMS control unit in the reverse order of removal.

   NOTE: Make sure the TPMS control unit is properly installed. You will hear a click when the TPMS control unit is securely mounted on the bracket.

6. Connect the HDS, and memorize the tire pressure sensor IDs using the TPMS tool (see page 18-46).

Tire Pressure Sensor Replacement

Removal

NOTICE

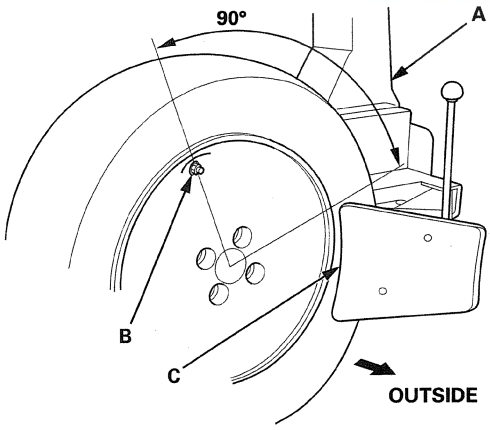
Each tire pressure sensor contains a lithium anode battery that is not removable. The complete tire pressure sensor should be disposed of according to local battery disposal guidelines or requirements. An improperly disposed battery can be harmful to the environment.

1. Raise and support the vehicle (see page 1-10).
2. Remove the wheel with the faulty sensor.
3. Remove the tire valve stem cap and the valve stem core to deflate the tire.
4. Remove any balance weights, and then break the bead loose from the wheel with a commercially available tire changer (A).

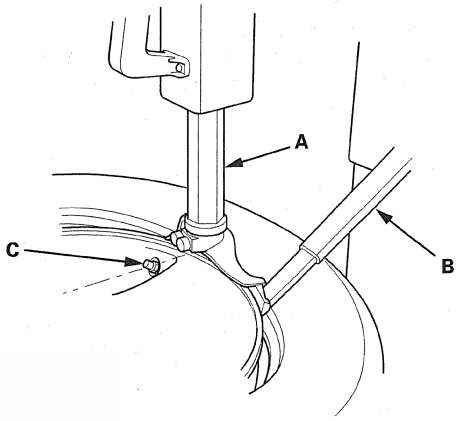
NOTICE

Note these items to avoid damaging the tire pressure sensor:

- Do the outside of the wheel first.
- Position the wheel as shown so the valve stem (B) is 90 degrees from the bead breaker (C) as shown.
- Do not position the bead breaker of the tire changer too close to the rim.

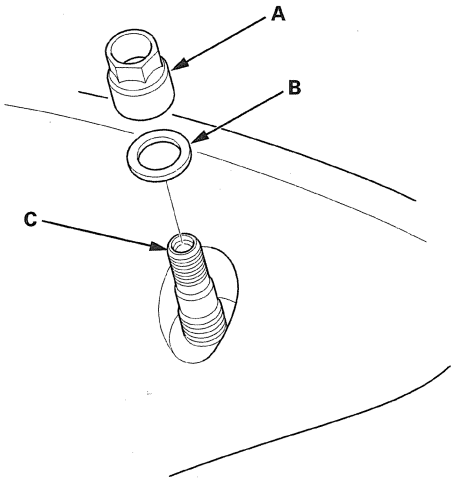


5. Position the wheel so the tire machine (A) and the tire iron (B) are next to the valve stem (C) and will move away from it when the machine starts. Then remove the tire from the wheel.



6. Remove the valve stem nut (A) and the washer (B), then remove the tire pressure sensor with the valve stem (C) from the wheel.

NOTE: Check the nut and the washer; if they have deterioration or damage, replace with new ones during reassembly.

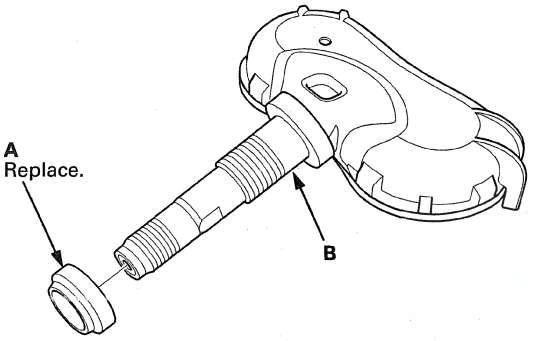


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Tire Pressure Sensor Replacement (cont'd)

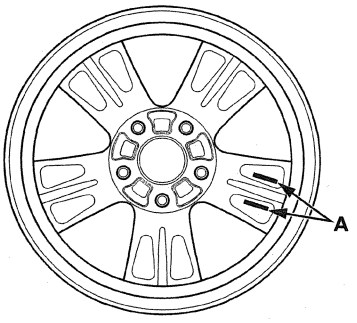
7. Remove and discard the valve stem grommet (A) from the tire pressure sensor (B).

   NOTE:
   - The valve stem grommet might stay in the wheel; make sure you remove it.
   - Always use a new valve stem grommet whenever the tire pressure sensor has been removed from the wheel, or when replacing the tire.



Installation

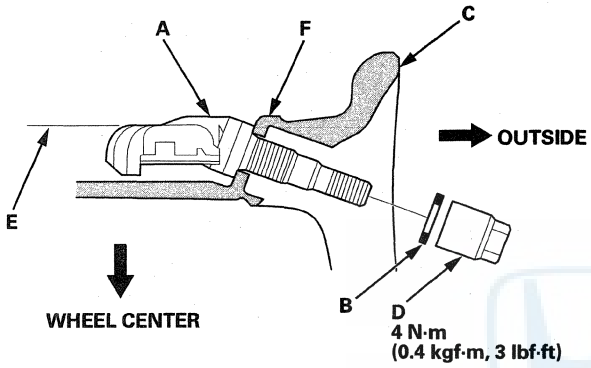
NOTE: Use only wheels that have a "TPMS" stamp (A) on the inside of the wheels.

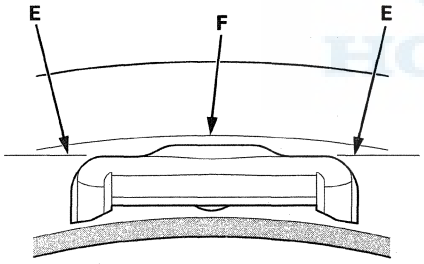


1. Before installing the tire pressure sensor, clean the mating surfaces on the sensor and the wheel.

2. Install the tire pressure sensor (A) and the washer (B) to the wheel (C), and tighten the valve stem nut (D) finger tight. Make sure the pressure sensor is resting on the wheel.

   NOTE: Install the tire pressure sensor so that the sensor housing surface (E) does not extend beyond the protrusion (F) on the wheel to prevent the sensor housing from being caught on the bead of the tire when assembling the tire.

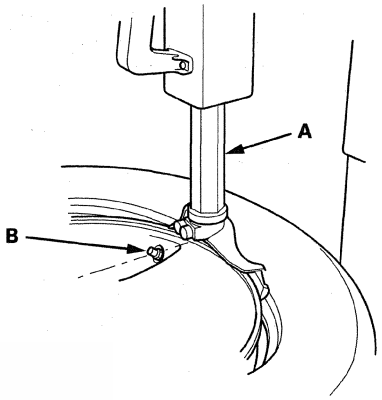




3. Tighten the valve stem nut to the specified torque while holding the tire pressure sensor.

   NOTE:
   - Do not use air or electric impact tools to tighten a valve stem nut.
   - Do not twist the tire pressure sensor to adjust its position with the wheel, as this will damage or deform the valve stem grommet.

4. Lube the tire bead sparingly with a paste-type tire mounting lubricant, and position the wheel so the tire machine (A) is next to the valve stem (B) and will move away from it when the machine starts. Then install the tire onto the wheel.



5. With a dry air source, inflate the tire to 300 kPa (3.1 kgf/cm², 44 psi) to seat the tire bead to the rim, then adjust the tire pressure (see page 18-6), and install the valve stem cap.

   NOTE: Make sure the tire bead is seated on both sides of the rim uniformly.

6. Check and adjust the wheel balance, then install the wheels on the vehicle.

7. Lower the vehicle. Torque the wheel nuts to specifications (see page 18-14).

8. Connect the HDS, and memorize the pressure sensor IDs using the TPMS tool (see page 18-46).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If brake maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If brake maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

Brakes

Conventional Brake Components 19–1

Brake Booster Pressure Monitoring System ... 19–43

VSA System Components 19–65

HONDA



Brakes

Conventional Brake Components

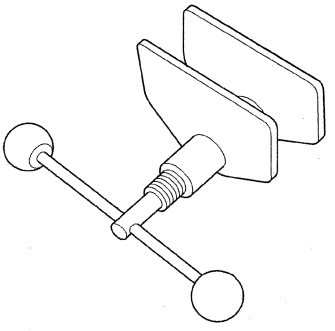
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Conventional Brake Components

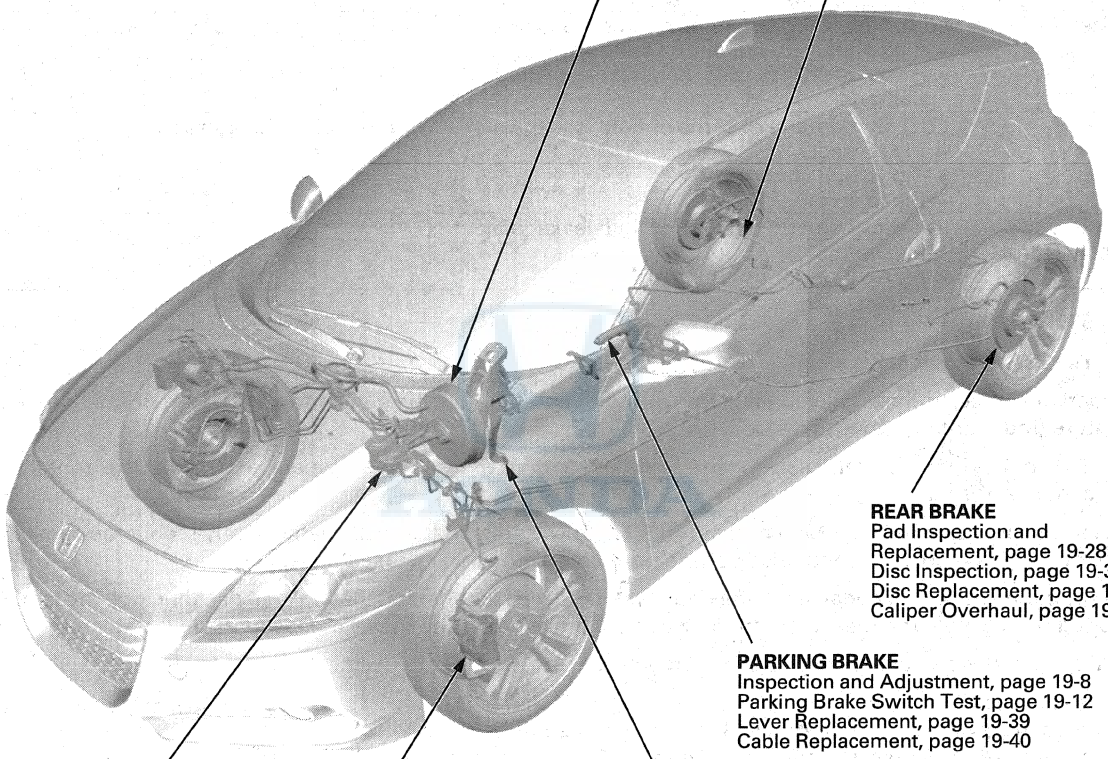
Special Tools

Ref.No.	Tool Number	Description	Qty
①	07AAE-SEPA101	Brake Caliper Piston Compressor	1



①

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Conventional Brake Components

Brake System Inspection and Test

Inspect the brake system components listed. Repair or replace any parts that are leaking or damaged.

Component Inspections:

Component	Procedure	Also check for
Master Cylinder	Look for damage or signs of fluid leakage at: • Reservoir tank, reservoir union or master cylinder body. • Lines, reservoir tank hose and grommets, and their joints. • Between master cylinder and brake booster.	Bulging seal at reservoir tank cap. This is a sign of fluid contamination.
Brake Hoses	Look for damage or signs of fluid leakage at: • Line joints and banjo bolt connections. • Hoses and lines, also inspect for twisting or damage.	Bulging, twisted, or bent lines.
Caliper	Look for damage or signs of fluid leakage at: • Piston seal. • Banjo bolt connections. • Bleed screw.	Seized or sticking caliper pins.
VSA Modulator-Control Unit	Look for damage or signs of fluid leakage at: • Line joints. • Modulator-control unit.	

Brake System Test

Brake pedal sinks/fades when braking

1. Set the parking brake, and start the engine, then turn off the A/C. Allow the engine to warm up to normal operating temperature (radiator fan comes on twice).
2. Attach a 50 mm (1.97 in) piece of masking tape along the bottom of the steering wheel, and draw a horizontal reference mark across it.
3. With the transmission in Neutral (M/T) or P or N (CVT), press and hold the brake pedal lightly (about the same pressure needed to keep a CVT-equipped vehicle from creeping), then release the parking brake.
4. While still holding the brake pedal, hook the end of the tape measure behind the brake pedal, then pull the tape up to the steering wheel. Note the measurement between the brake pedal and the reference mark on the steering wheel.
5. Apply steady pressure to the brake pedal for 3 minutes.
6. Watch the tape measure.
   - If the measurement increases 10 mm (0.39 in) or less, the master cylinder is OK.
   - If the measurement increases more than 10 mm (0.39 in), replace the master cylinder.

Rapid brake pad wear, vehicle vibration (after a long drive), or high, hard brake pedal

NOTE: Make sure that the caliper pins are installed correctly.

The upper caliper pin and the lower caliper pin are different. If the pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear. For proper caliper pin locations: Front caliper (see page 19-20), rear caliper (see page 19-33).

1. Drive the vehicle until the brakes drag or until the pedal is high and hard. This can take 20 or more brake pedal applications during an extended test-drive.
2. With the engine running, raise and support the vehicle (see page 1-10), and spin all four wheels by hand.

   Is there brake drag at any of the wheels?

   YES–Go to step 3.

   NO–Look for other causes of pad wear, high pedal, or vehicle vibration.■
3. Turn the ignition switch to LOCK (0), press the brake pedal several times to deplete the vacuum in the brake booster, and then spin the wheels again to check for brake drag.

   Is there brake drag at any of the wheels?

   YES–Go to step 4.

   NO–Replace the brake booster (see page 19-26).■
4. Without removing the brake lines, unbolt and separate the master cylinder from the booster, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES–Go to step 5.

   NO–Check the brake pedal position switch adjustment and the brake pedal free play (see page 19-6).■
5. Loosen the hydraulic lines at the master cylinder, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES–Go to step 6.

   NO–Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid, then replace all rubber parts in the brake system that were exposed to contaminated fluid. If the brake fluid is OK, replace the master cylinder (see page 19-22).■
6. Loosen the bleed screws at each caliper, then spin the wheels to check for brake drag.

   Is there brake drag at any of the wheels?

   YES–Check the master cylinder reservoir for contamination in the brake fluid. If you find contamination, flush the entire brake system of all contaminated fluid, then replace all rubber parts in the brake system that were exposed to contaminated fluid. If the brake fluid is OK, disassemble and repair the caliper on the wheel(s) with brake drag.■

   NO–Look for and replace any damaged brake lines. If all brake lines are OK, replace the VSA modulator-control unit (see page 19-125).

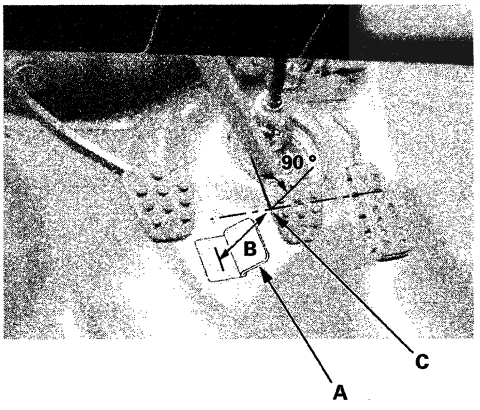
Brake Pedal and Brake Pedal Position Switch/Idle Stop Switch Adjustment

Pedal Height

1. Remove the driver's dashboard undercover (see page 20-86).
2. Turn the brake pedal position switch 45° counterclockwise, and pull it back until it is no longer touching the brake pedal.
3. CVT model: Disconnect idle stop switch connector. Turn the idle stop switch counterclockwise, and pull it back until it is no longer touching the brake pedal.
4. Remove the steering joint cover (see step 5 on page 17-9).
5. Remove the driver's side kick panel (see page 20-52).
6. Pull back the carpet, and find the cutout in the insulation (A). Measure the pedal height (B) at the left side middle of the pedal pad (C) to the floor without the insulation.

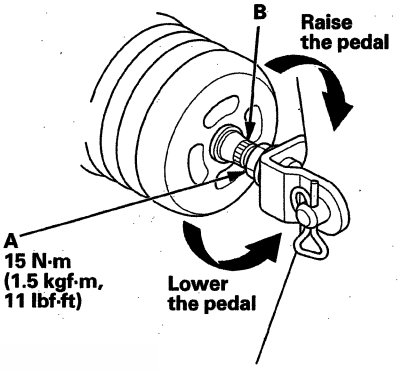
Standard pedal height:

M/T model	
With pedal pad cover:	**170 mm (6.69 in)**
Without pedal pad cover:	**168 mm (6.61 in)**
CVT model	
With pedal pad cover:	**196 mm (7.72 in)**
Without pedal pad cover:	**194 mm (7.64 in)**

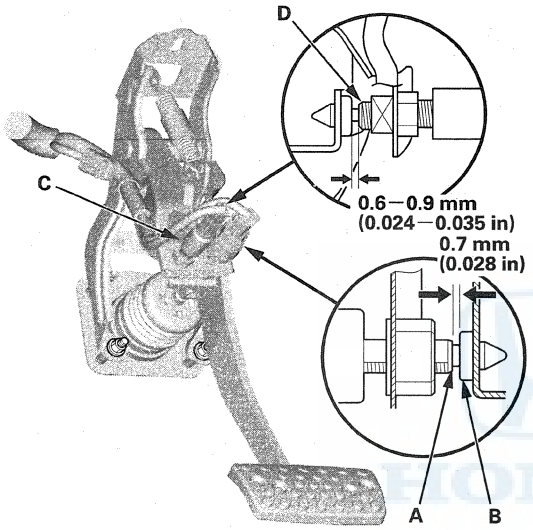


*: The illustration shows M/T model.

7. Loosen the pushrod locknut (A), and screw the pushrod (B) in or out with pliers until the standard pedal height from the floor is reached. After adjustment, tighten the locknut firmly. Do not adjust the pedal height with the pushrod pressed.



8. Brake pedal position switch adjustment: Lift up on the brake pedal by hand. Push in the brake pedal position switch until its plunger is fully pressed (threaded end (A) touching the pad (B) on the pedal arm). Turn the switch 45 ° clockwise to lock it. The gap between the brake pedal position switch and the pad is automatically adjusted to 0.7 mm (0.028 in) by locking the switch. Make sure the brake lights go off when the pedal is released.



*: The illustration shows CVT model.

9. Idle stop switch adjustment (CVT model): Adjust the idle stop switch (C). Screw in the idle stop switch until its plunger is fully pressed (threaded end (D) is touching the pad on the pedal arm). Then back off the switch 1/2—3/4 turn to make 0.6—0.9 mm (0.024—0.035 in) of clearance between the threaded end and the pad. Tighten the locknut firmly. Connect the idle stop switch connector. When finished, start the engine, and warm it up to normal operating temperature (the radiator fan comes on), then make sure the engine stops when the brake pedal is pressed.

   NOTE:

   - When either the brake pedal position switch or the idle stop switch needs adjusting, both switches must be adjusted together to keep their functions synchronized. Always adjust the brake pedal position switch first, then adjust the idle stop switch; never adjust the switches independently.
   - When the brake pedal is released, the brake pedal position switch is normally open and the idle stop switch is normally closed.

10. Install all the removed parts in the reverse order of removal.

11. Check the brake pedal free play.

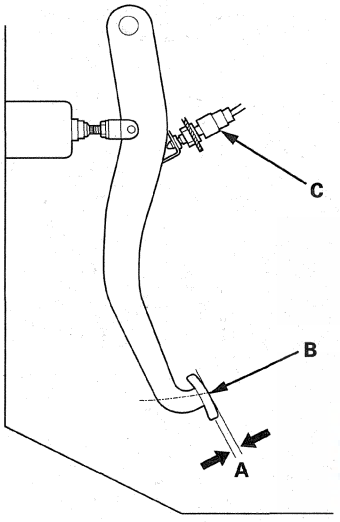
(cont'd)

Brake Pedal and Brake Pedal Position Switch/Idle Stop Switch Adjustment (cont'd)

Pedal Free Play

1. With the ignition switch in LOCK (0), inspect the free play (A) at the brake pedal pad (B) by pushing the brake pedal by hand. If the brake pedal free play is out of specification, adjust the brake pedal position switch (C). If the brake pedal free play is insufficient, it may result in brake drag.

Free play: 1.0—7.2 mm (0.039—0.283 in)

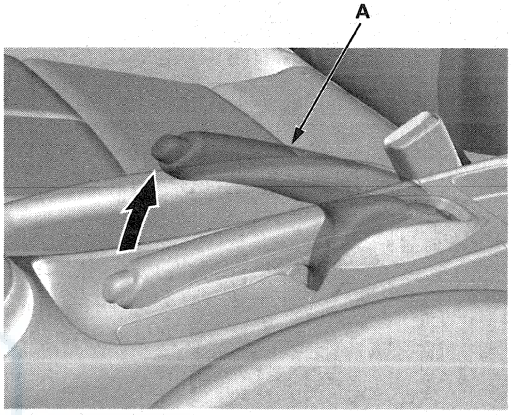


Parking Brake Inspection and Adjustment

Inspection

1. Pull the parking brake lever (A) with 196 N (20.0 kgf, 44.1 lbf) of force to fully apply the parking brake. The parking brake lever should be locked within the specified number of clicks.

Lever locked clicks: 5 to 7

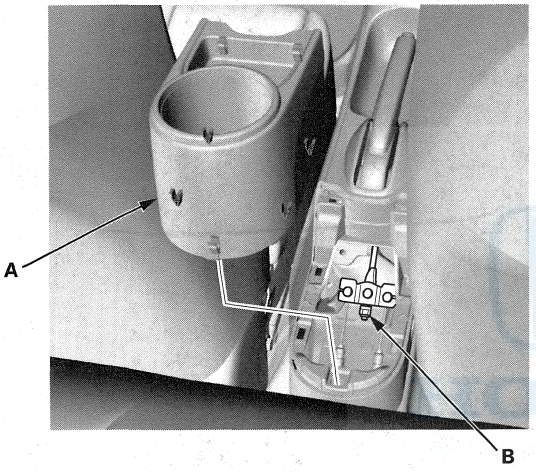


2. If the number of lever clicks is not as specified, adjust the parking brake.

Adjustment

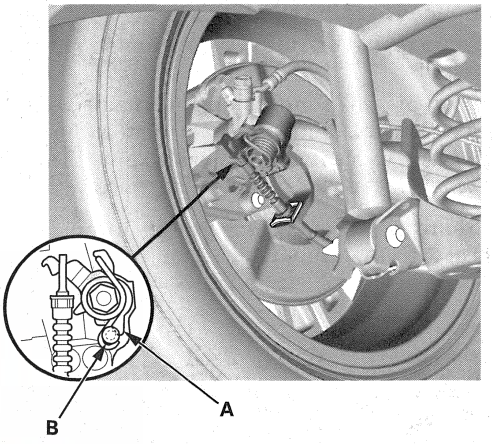
NOTE: After servicing the rear brake caliper, loosen the parking brake adjusting nut, start the engine, and press the brake pedal several times to set the self-adjusting brake before adjusting the parking brake.

1. Raise and support the vehicle (see page 1-10).
2. Release the parking brake lever fully.
3. Pull out the rear console (A) (see page 20-81).



4. Loosen the parking brake adjusting nut (B).
5. Make sure the lever (A) on the rear brake caliper contacts the stop pin (B).

   NOTE: When the parking brake lever does not contact the stop pin, loosen the adjusting nut in the center console until the parking brake lever contacts the stop pin, then start the engine, and press the brake pedal several times.



6. Pull the parking brake lever 1 click.
7. Tighten the parking brake adjusting nut until the parking brakes drag slightly when the rear wheels are turned.
8. Release the parking brake lever fully, and check that the parking brakes do not drag when the rear wheels are turned. Readjust if necessary.
9. Make sure the parking brake lever within the specified number of clicks (5 to 7 clicks).
10. Install the trim in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips into place securely.

Brake System Bleeding

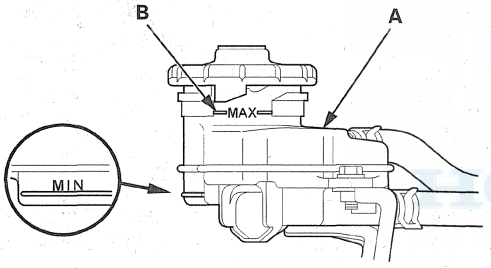
NOTICE

Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

NOTE:

- Do not reuse the drained fluid. Use only new Honda DOT 3 Brake Fluid from an unopened container. Using a non-Honda brake fluid can cause corrosion and shorten the life of the system.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- The reservoir tank connected to the master cylinder must be at the MAX (upper) level mark at the start of the bleeding procedure and checked after bleeding each wheel location. Add fluid as required.

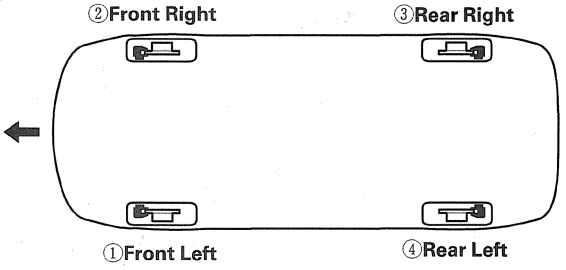
1. Make sure the brake fluid level in the reservoir tank (A) is at the MAX (upper) level line (B).



2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Start the bleeding at the driver's side of the front brake system.

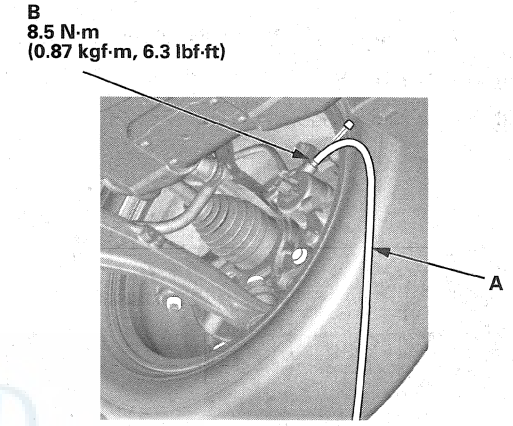
   NOTE: Bleed the calipers in the sequence shown.

BLEEDING SEQUENCE:

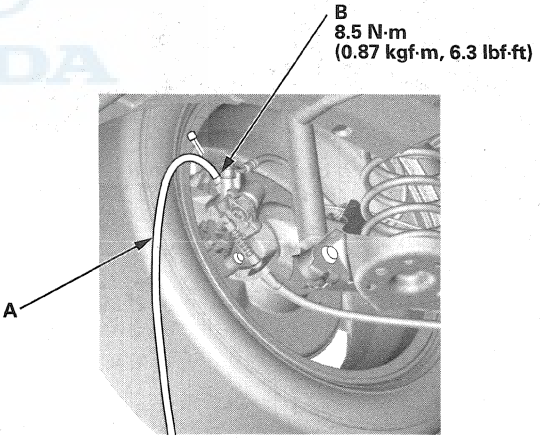


4. Attach a length of clear drain tube (A) to the bleed screw (B), then loosen the bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.

Front

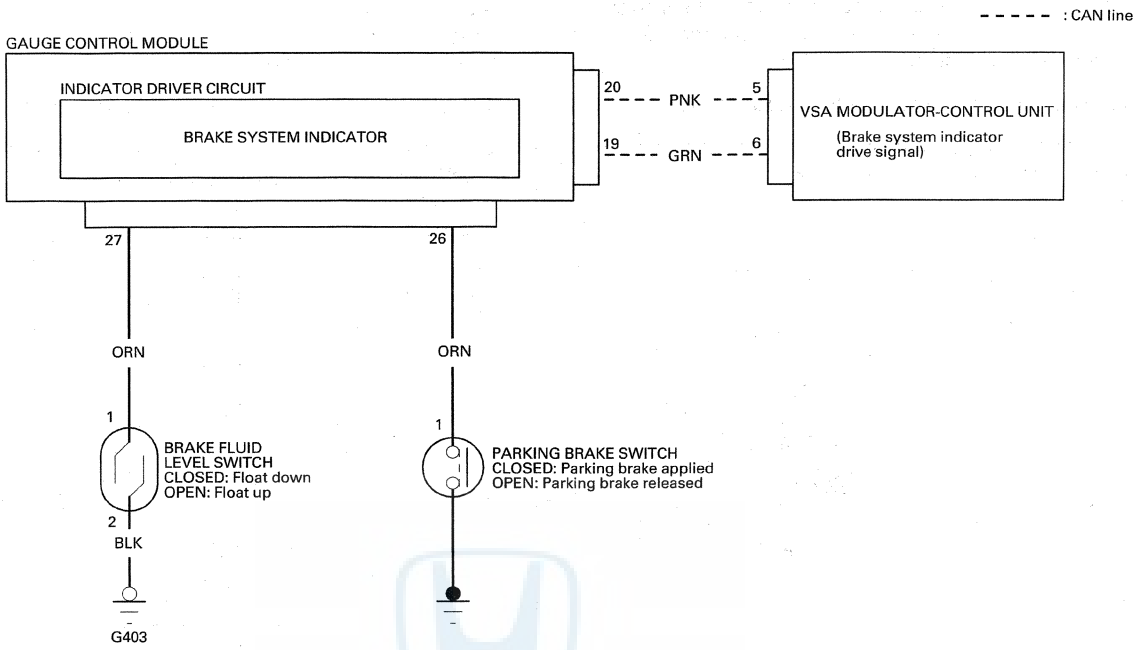


Rear



5. Refill the master cylinder reservoir tank to the MAX (upper) level line.
6. Repeat the procedure for each brake circuit until there are no air bubbles in the fluid.

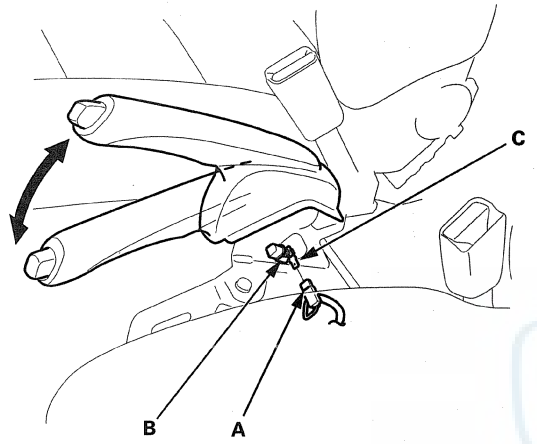
Brake System Indicator Circuit Diagram



Parking Brake Switch Test

NOTE: If both the VSA indicator and the brake system indicator come on at the same time, check the VSA system first (see page 19-68).

1. Remove the center console (see page 20-79).
2. Disconnect the parking brake switch connector (A) from the parking brake switch (B).



3. Check for continuity between the switch terminal (C) and body ground.
   - With the parking brake lever pulled, there should be continuity.
   - With the parking brake lever released, there should be no continuity.

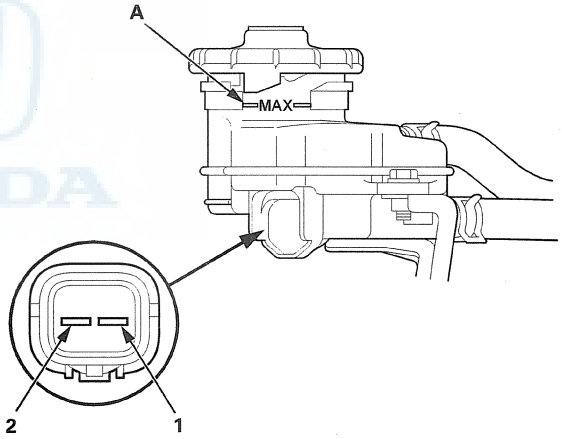
   NOTE: If the parking brake switch and the brake fluid level switch are OK, but the brake system indicator does not function, do the gauge control module self-diagnostic function (see page 22-325).
4. Reconnect the parking brake switch connector.
5. Install the center console (see page 20-79).

Brake Fluid Level Switch Test

NOTE: If both the VSA indicator and the brake system indicator come on at the same time, check the VSA system first (see page 19-68).

1. Disconnect the brake fluid level switch connector.
2. Check for continuity between the terminals (1) and (2) with the float in the down position and in the up position.
   - Remove the brake fluid completely from the reservoir tank. With the float down, there should be continuity.
   - Fill the reservoir tank with brake fluid to the MAX (upper) level (A). With the float up, there should be no continuity.

   NOTE: If the parking brake switch and brake fluid level switch are OK, but the brake system indicator does not function, do the gauge control module self-diagnostic function (see page 22-325).



3. Reconnect the brake fluid level switch connector.

Front Brake Pad Inspection and Replacement

Special Tools Required
Brake Caliper Piston Compressor 07AAE-SEPA101

⚠CAUTION

Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

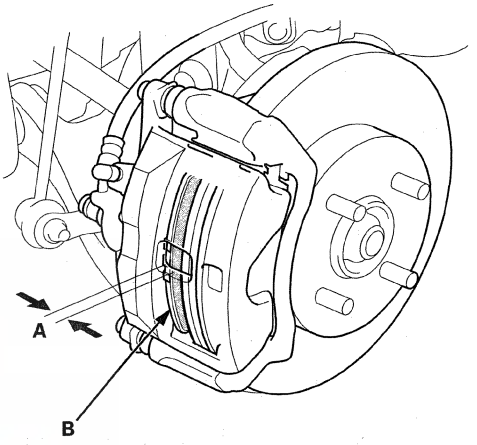
- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

Inspection

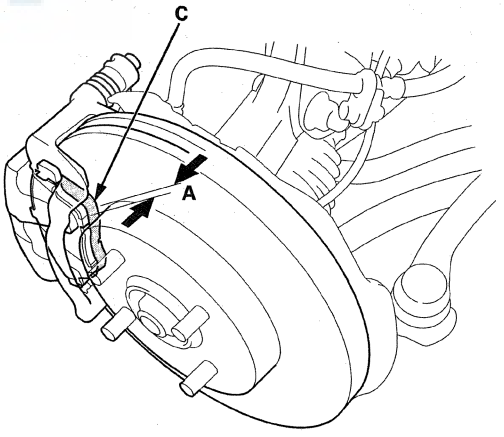
1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheels.
3. Check the thickness (A) of the inner pad (B) and the outer pad (C). Do not include the thickness of the backing plate.

Brake pad thickness:
Standard: 10.0 mm (0.394 in)
Service limit: 1.6 mm (0.063 in)

Inner pad:



Outer pad:



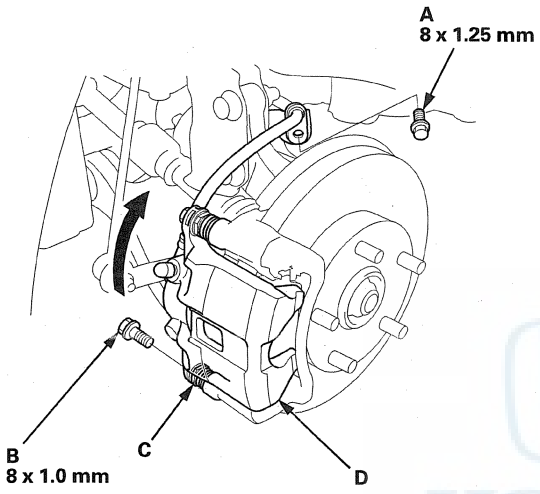
4. If any part of the brake pad thickness is less than the service limit, replace the front brake pads as a set.
5. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.

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Front Brake Pad Inspection and Replacement (cont'd)

Replacement

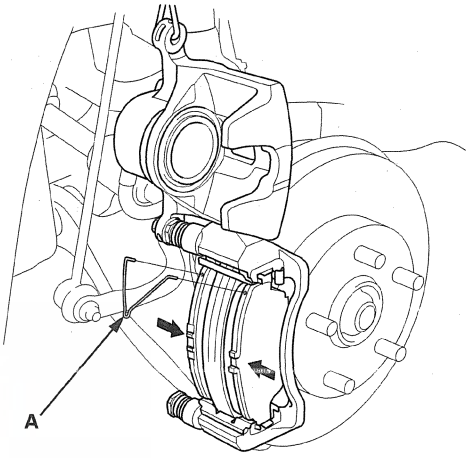
1. Remove some brake fluid from the master cylinder.
2. Raise and support the vehicle (see page 1-10).
3. Remove the front wheels.
4. Remove the brake hose mounting bolt (A).



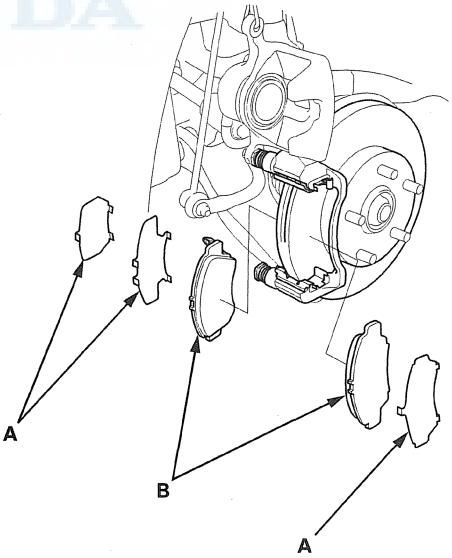
5. Remove the flange bolt (B) while holding the caliper pin (C) with a wrench. Be careful not to damage the pin boot, and pivot the caliper (D) up out of the way. Check the hose and the pin boots for damage and deterioration.

6. Remove the pad springs (A) while holding the brake pads.

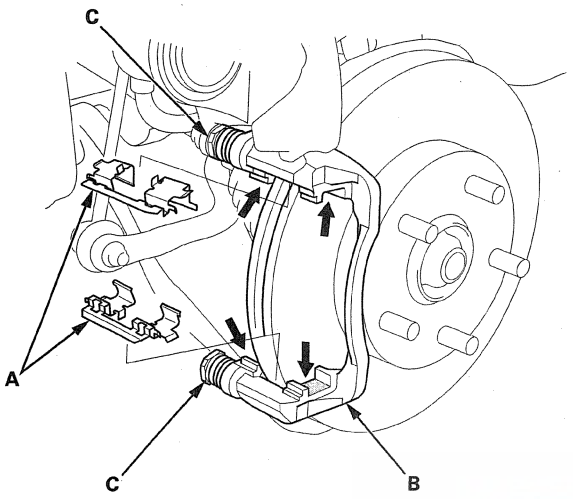
   NOTE: The pad springs are installed on the pads to prevent brake drag. Be careful when pivoting the caliper body up or the spring could pop out of position.



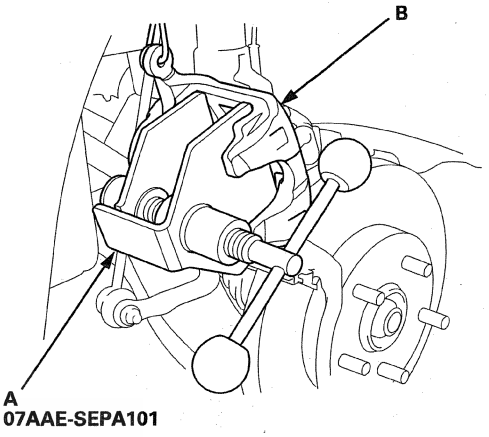
7. Remove the pad shims (A) and the brake pads (B).



8. Remove the pad retainers (A).



9. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks. Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
10. Inspect the brake disc for runout, thickness, parallelism (see page 19-17), and check for damage and cracks.
11. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainer mating surface of the caliper bracket (indicated by the arrows).
12. Install the pad retainers. Wipe off the excess assembly paste from the retainers. Keep the assembly paste away from the brake disc and the brake pads.
13. Install the brake caliper piston compressor (A) on the caliper body (B).



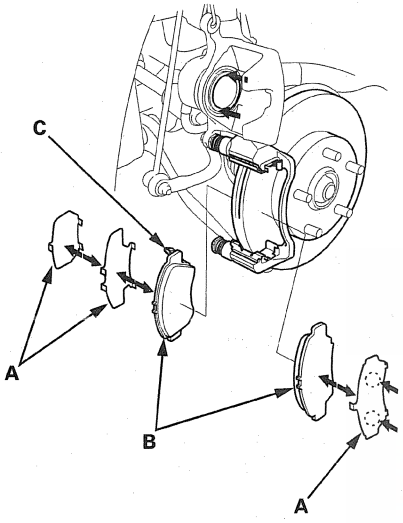
14. Press in the piston with the brake caliper piston compressor so the caliper will fit over the brake pads. Make sure the piston boot is in position to prevent damaging it when pivoting the caliper down.

    NOTE: Be careful when pressing in the piston; brake fluid might overflow from the master cylinder reservoir tank. If brake fluid gets on any painted surface, wash it off immediately with water.
15. Remove the brake caliper piston compressor.

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Front Brake Pad Inspection and Replacement (cont'd)

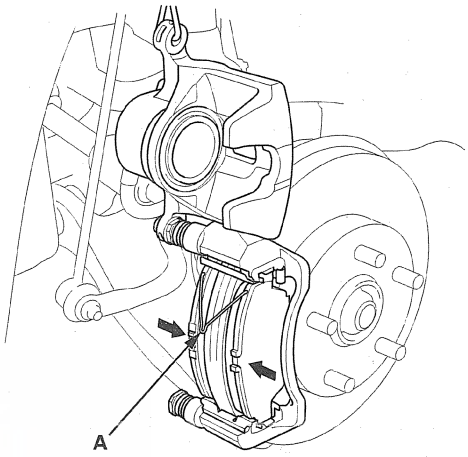
16. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe off the excess assembly paste from the pad shims and brake pads friction material. Keep grease and assembly paste away from the brake disc and brake pads. Contaminated brake disc or brake pads reduce stopping ability.



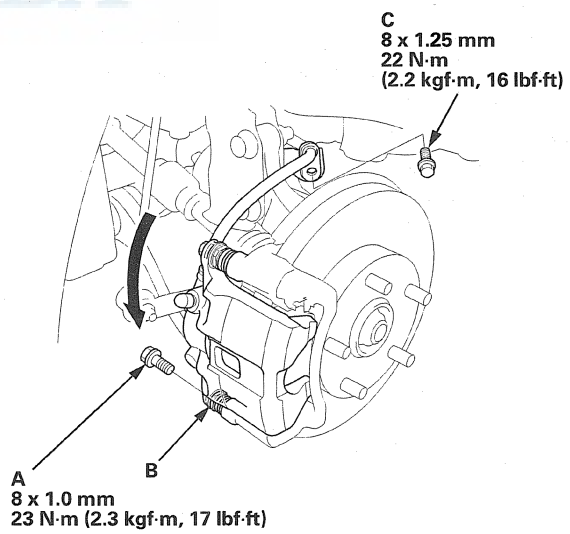
17. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the upper inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a temporary loss of braking efficiency.

18. Install the pad springs (A) while holding the brake pads.

    NOTE: Insert the pad spring ends into the pad installation holes securely.



19. Pivot the caliper down into position. Install the flange bolt (A), and tighten it to the specified torque while holding the caliper pin (B) with a wrench being careful not to damage the pin boot.



20. Install the brake hose mounting bolt (C).

21. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.

22. Press the brake pedal several times to make sure the brakes work.

    NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

23. Add brake fluid as needed.

24. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then check for leaks (see page 19-36).

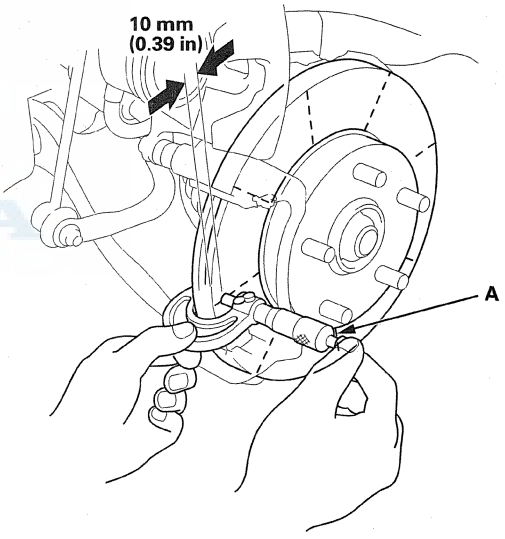
Front Brake Disc Inspection

Thickness and Parallelism

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheels.
3. Remove the brake pads (see page 19-14).
4. Using a micrometer (A), measure the brake disc thickness at eight points, about 45 ° apart and 10 mm (0.39 in) in from the outer edge of the brake disc. Replace the brake disc if the smallest measurement is less than the max. refinishing limit.

   Brake disc thickness:
   Standard: 21.0 mm (0.827 in)
   Max. refinishing limit: 19.0 mm (0.748 in)
   Brake disc parallelism: 0.015 mm (0.00059 in)

   NOTE: This is the maximum allowable difference between the thickness measurements.



5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

   NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see page 19-18).

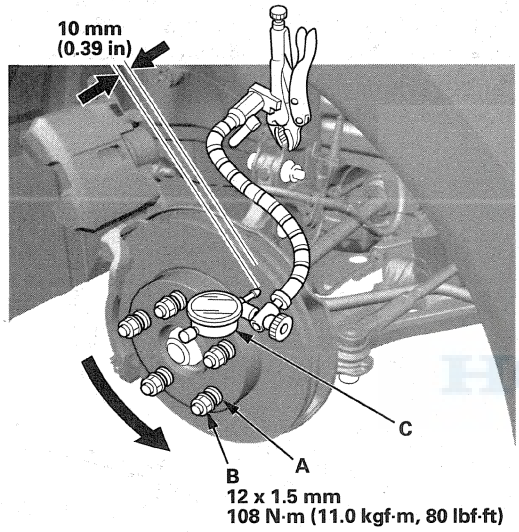
6. Inspect the brake disc runout.

(cont'd)

Front Brake Disc Inspection (cont'd)

Runout

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheels.
3. Remove the brake pads (see page 19-14).
4. Inspect the brake disc to wheel surface for damage and cracks. Clean the brake disc thoroughly, and remove all rust.
5. Install suitable flat washers (A) and the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.



6. Set up the dial gauge (C) against the brake disc as shown, and measure the runout at 10 mm (0.39 in) from the outer edge of the brake disc.

   Brake disc runout:
   Service limit: 0.04 mm (0.0016 in)

7. If the brake disc is beyond the service limit, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

   Max. refinishing limit: 19.0 mm (0.748 in)

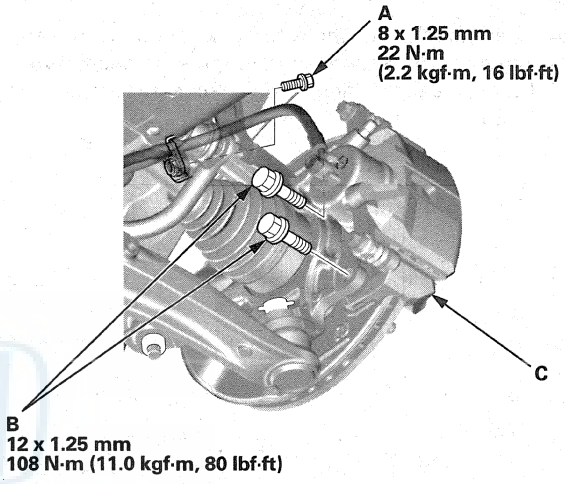
   NOTE:
   - If the brake disc is beyond the service limit for refinishing, replace it (see page 19-18).
   - If the brake disc is replaced with a new one, check the new disc for runout. If the new disc is out of specification, refinish the disc.

8. Install the brake pads (see page 19-14).
9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheels.

Front Brake Disc Replacement

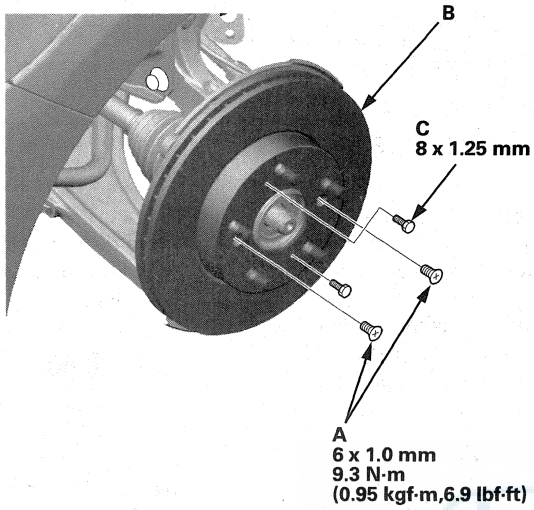
NOTE: Keep grease away from the brake disc and brake pads.

1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Remove the brake hose mounting bolts (A).



4. Remove the brake caliper bracket mounting bolts (B), then remove the caliper assembly (C) from the knuckle. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper assembly from the undercarriage. Do not twist the brake hose excessively.

5. Remove the brake disc flathead screws (A).



6. Remove the brake disc (B) from the front hub.

   NOTE: If the brake disc is stuck to the front hub, thread two 8 x 1.25 mm bolts (C) into the brake disc to push it away from the front hub. Turn each bolt 90 degrees at a time to prevent the brake disc from binding.

7. Install the brake disc in the reverse order of removal.

   NOTE: Before installing the brake disc, clean the mating surfaces between the front hub and the inside of the brake disc.

8. Inspect the brake disc runout (see page 19-17).

9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.

Conventional Brake Components

Front Brake Caliper Overhaul

⚠CAUTION

Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.
- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

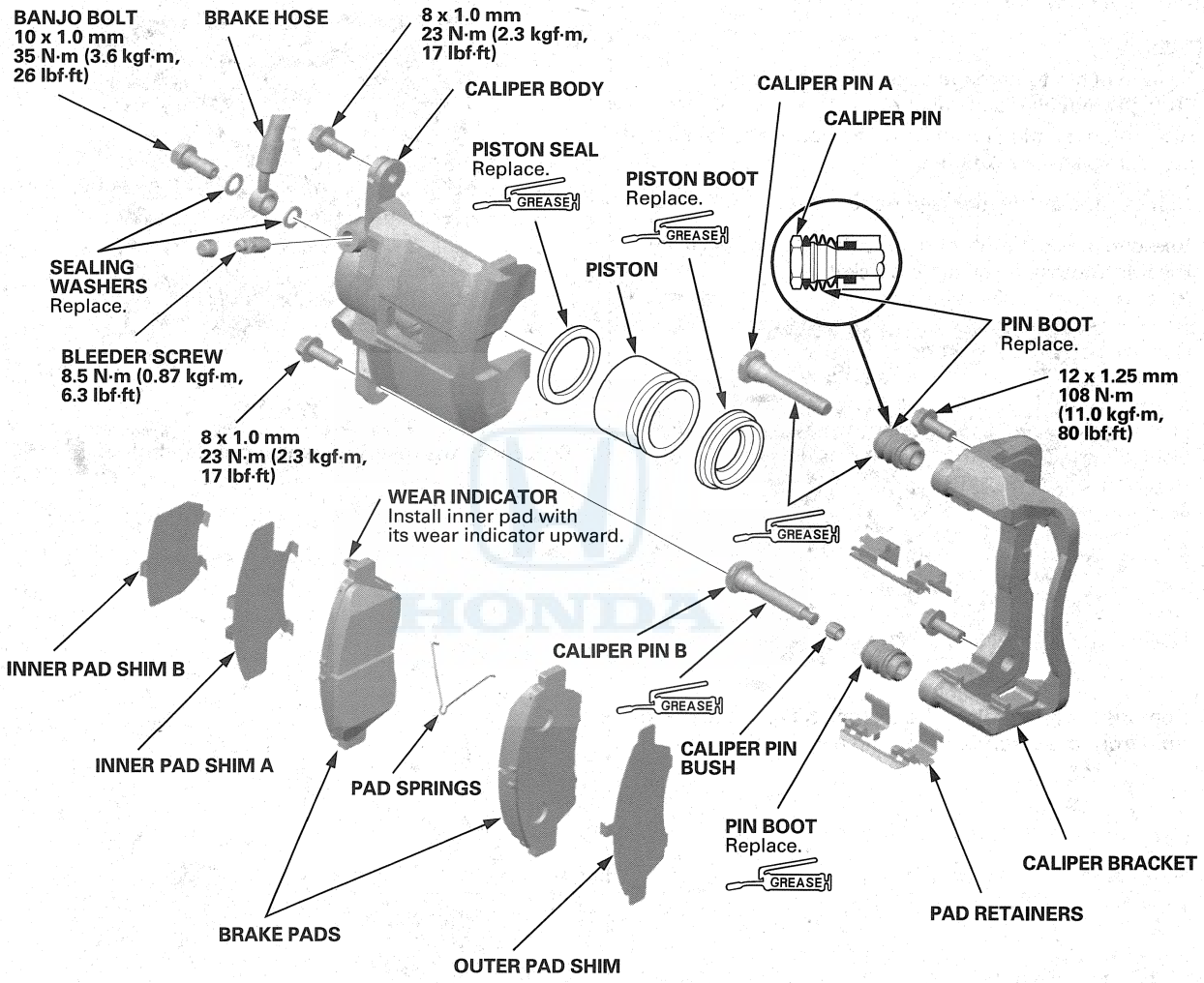
NOTICE

Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:
- Make sure that the caliper pins are installed correctly. Upper caliper pin A and lower caliper pin B are different. If these caliper pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear.
- To prevent dripping brake fluid, cover disconnected hose joints with clean rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or the brake pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only new Honda DOT 3 Brake Fluid from an unopened container. Using a non-Honda brake fluid can cause corrosion and shorten the life of the system.
- Coat the piston, the piston seal groove, and the caliper bore with clean brake fluid.
- Use recommended greases in the front caliper set.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- Refer to the Exploded View as needed during this procedure.
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

Exploded View

GREASE : Honda silicone grease (P/N 08C30-B0234M)



Master Cylinder Replacement

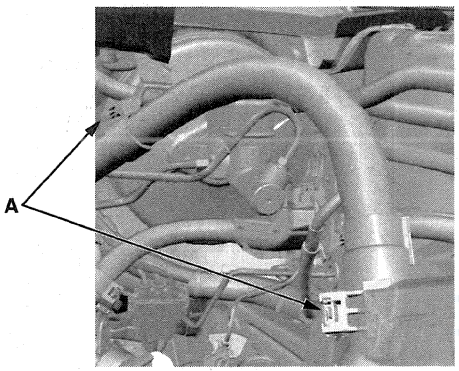
NOTICE

Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

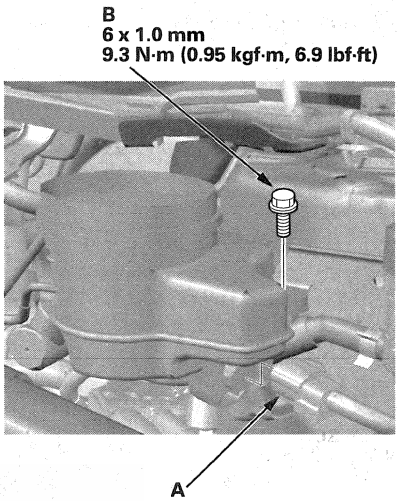
NOTE:

- Be careful not to damage or bend the brake lines during removal and installation.
- After removal, plug the ends of the hoses and joints to prevent spilling brake fluid.

1. Remove the air cleaner (see page 9-3).
2. Remove the IMA motor power cable clamps (A) from the IMA motor power cable bracket.

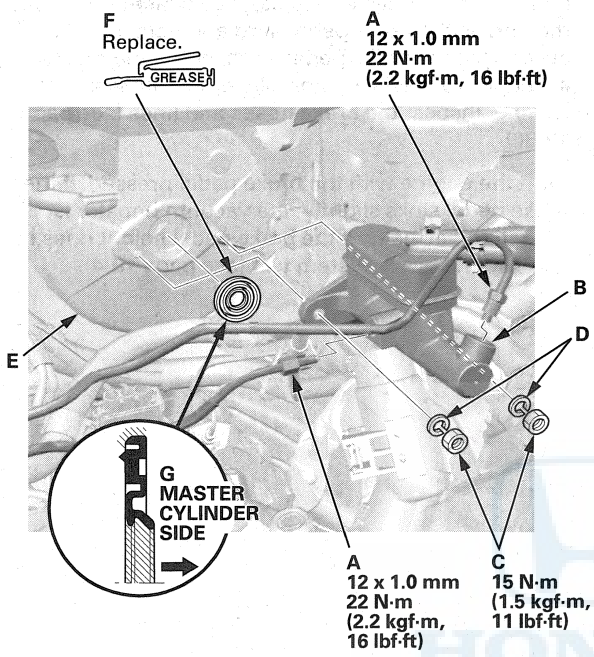


3. Remove the reservoir tank cap, then remove the brake fluid from the reservoir tank with a syringe.
4. Disconnect the brake fluid level switch connector (A).



5. Remove the reservoir tank mounting bolt (B).

6. Disconnect the brake lines (A) from the master cylinder (B). To prevent spills, cover the hose joints with clean rags or shop towels.



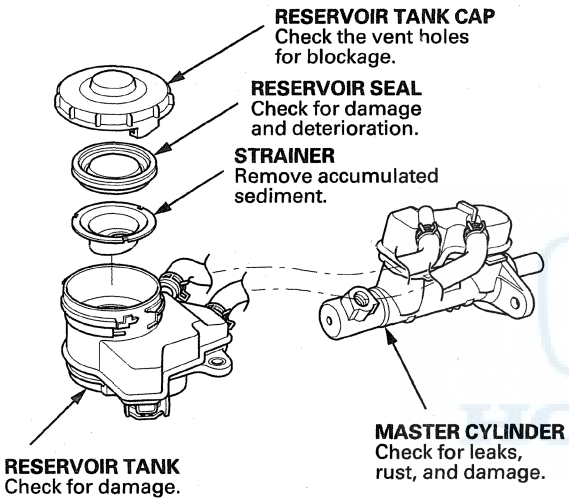
7. Remove the master cylinder mounting nuts (C) and the washers (D).
8. Remove the master cylinder from the brake booster (E). Be careful not to bend or damage the brake lines when removing the master cylinder.
9. Remove the rod seal (F) from the master cylinder.

   NOTE: During installation, set the new rod seal onto the master cylinder with its grooved side (G) toward the master cylinder.

10. Install the master cylinder in the reverse order of removal, and note these items:
    - Coat the inner bore lip and the outer circumference of the new rod seal with the shin-etsu silicone grease (P/N 08798-9013).
    - Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.
    - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see page 19-6).
11. Bleed the brake system (see page 19-10).
12. Spin the wheels to check for brake drag.

Master Cylinder Inspection

1. Remove the master cylinder (see page 19-22).
2. Inspect and note these items:
   - Before reassembling, check that all parts are free of dirt and other foreign particles.
   - Do not try to disassemble the master cylinder assembly. Replace the master cylinder assembly with a new part, if necessary.
   - Do not allow dirt or foreign matter to contaminate the brake fluid.



3. Install the master cylinder (see page 19-22).

Brake Booster Test

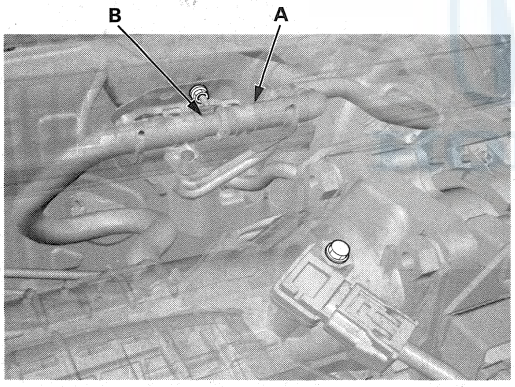
Functional Test

1. With the ignition switch in LOCK (0), press the brake pedal several times to deplete the vacuum reservoir, then press the brake pedal hard and hold it for 15 seconds. If the brake pedal sinks, either the master cylinder is bypassing internally or the brake system is leaking. Inspect the brake hoses and lines (see page 19-36).
2. Start the engine with the brake pedal pressed. If the brake pedal sinks slightly, the vacuum booster is operating normally. If the brake pedal height does not vary, do the brake system test (see page 19-4).

Leak Test

1. Press the brake pedal with the engine running, then turn the ignition switch to LOCK (0). The brake pedal height should not vary while pressed for 30 seconds.
   - If the pedal height rises, go to step 6.
   - If it does not rise, go to step 2.
2. Start the engine, and let it idle for 30 seconds. Turn the ignition switch to LOCK (0), and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
   - If it rises, the brake booster is OK.
   - If it does not rise, go to step 3.
3. Disconnect the brake booster vacuum hose (A) at the booster. The check valve (B) is built into the hose.

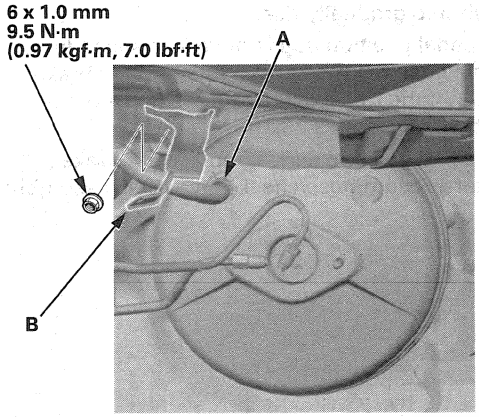
   NOTE: If the check valve is faulty, replace the brake booster vacuum hose/check valve as an assembly.



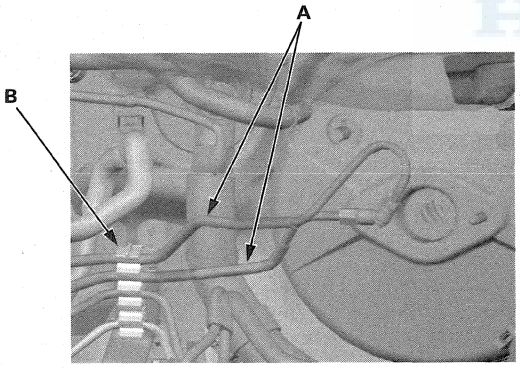
4. Start the engine, and let it idle. There should be vacuum available.
   - If no vacuum is available, the check valve is not working properly. Replace the brake booster vacuum hose and the check valve, and retest.
   - If vacuum is found, go to step 5.
5. With the ignition switch at LOCK (0), reconnect the vacuum hose to the brake booster.
6. Start the engine, and then pinch the brake booster vacuum hose between the check valve and the booster.
7. Turn the ignition switch to LOCK (0), and wait 30 seconds. Press the brake pedal several times using normal pressure. When the pedal is first pressed, it should be low. On consecutive applications, the pedal height should gradually rise.
   - If the pedal position does not vary, inspect the rod seal between the master cylinder and the brake booster. If the rod seal is OK, replace the brake booster (see page 19-26).
   - If the pedal position varies, replace the brake booster vacuum hose/check valve as an assembly.

Brake Booster Replacement

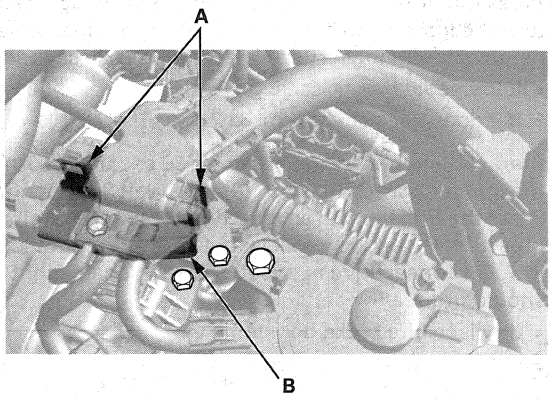
1. Remove the master cylinder (see page 19-22).
2. Disconnect the brake booster vacuum hose (A) from the brake booster.



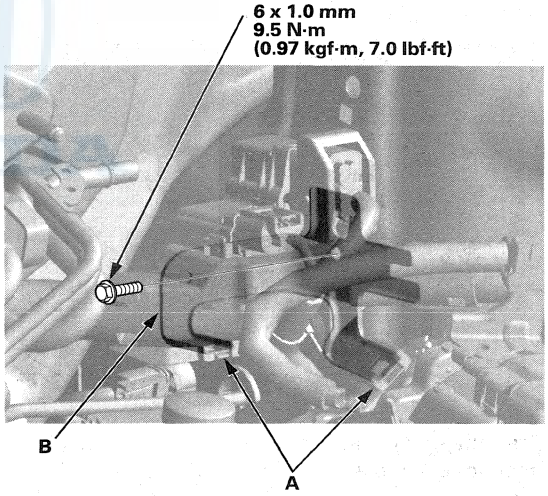
3. Remove the IMA motor power cable bracket (B).
4. Remove the brake lines (A) from the clamp (B).



5. Remove the engine wire harness clamps (A) from the engine wire harness bracket (B).



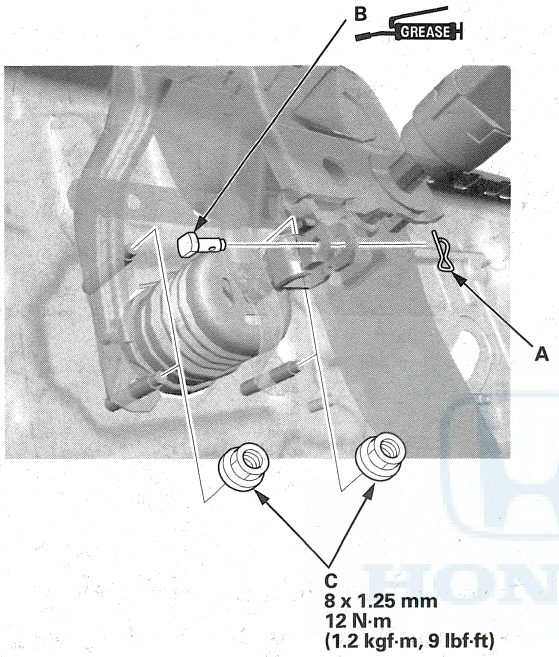
6. Remove the engine wire harness clamps (A) from the engine wire harness bracket (B), then remove the engine wire harness bracket.



7. Remove the driver's dashboard undercover (see page 20-86).

8. Remove the lock pin (A) and the clevis pin (B), then disconnect the clevis from the brake pedal.

   NOTE: During installation, apply multipurpose grease to the clevis pin in the brake pedal.



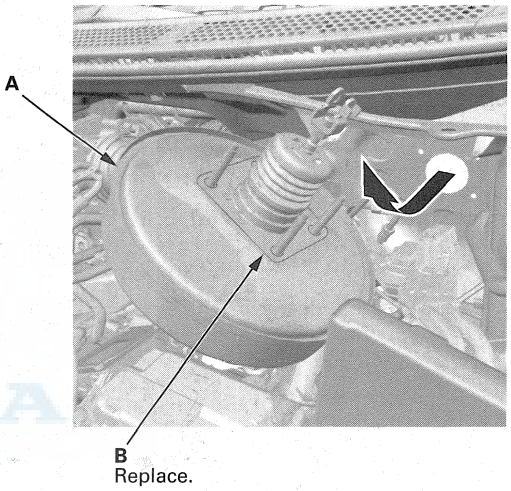
9. Remove the brake booster/brake pedal mounting nuts (C).

10. Remove the brake booster (A) from the engine compartment.

NOTICE

- Be careful not to damage the booster surfaces and threads of the booster stud bolts.
- Be careful not to bend or damage the brake lines or other components hoses and lines.

NOTE: Use a new booster gasket (B) during reassembly.



11. Install the brake booster in the reverse order of removal, and note these items:
    - Install the master cylinder after installing the brake booster (see page 19-22).
    - Check the brake pedal height and free play after installing the master cylinder, and adjust it if necessary (see page 19-6).
    - Bleed the brake system (see page 19-10).

Rear Brake Pad Inspection and Replacement

⚠CAUTION

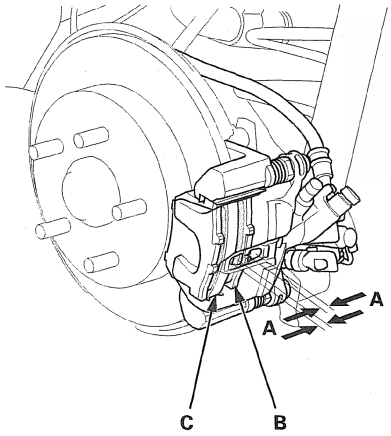
Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

Inspection

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Check the thickness (A) of the inner pad (B) and the outer pad (C). Do not include the thickness of the backing plate.

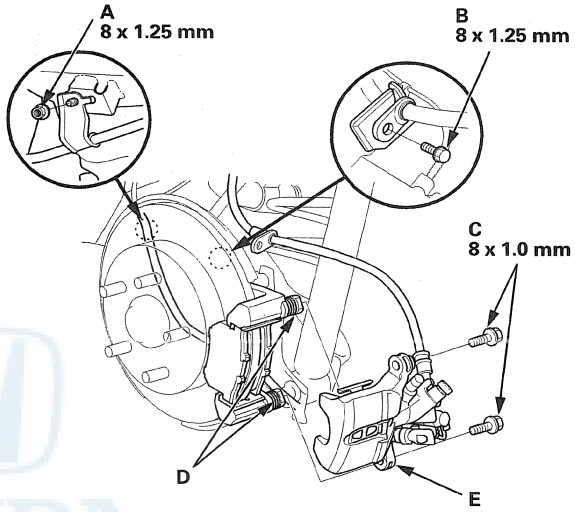
Brake pad thickness:
Standard: 9.0 mm (0.354 in)
Service limit: 1.6 mm (0.063 in)



4. If any part of the brake pad thickness is less than the service limit, replace the rear brake pads as a set.
5. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheels.

Replacement

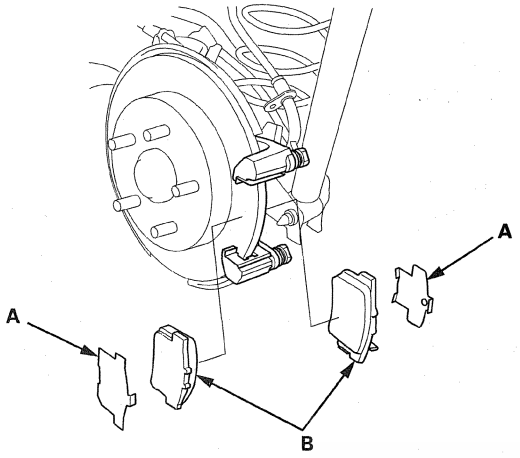
1. Remove some brake fluid from the master cylinder.
2. Raise and support the vehicle (see page 1-10).
3. Remove the rear wheels.
4. Remove the parking brake cable mounting nut (A).



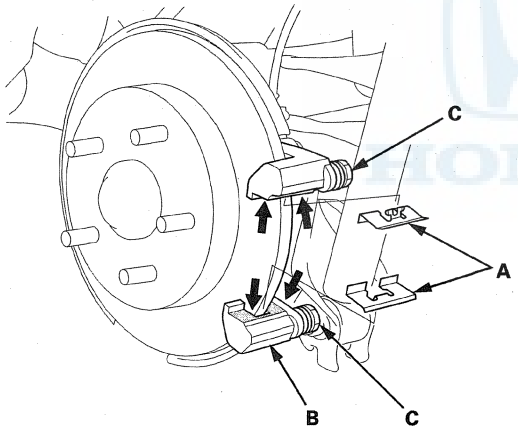
5. Remove the brake hose mounting bolt (B).
6. Remove the flange bolts (C) while holding the respective caliper pins (D) with a wrench. Be careful not to damage the pin boot, and remove the caliper (E). Check the hose, the pin boots, and the parking brake cable boots for damage and deterioration.

   NOTE: Do not twist the brake hose and the parking brake cable to prevent damage.

7. Remove the pad shims (A) and the brake pads (B).

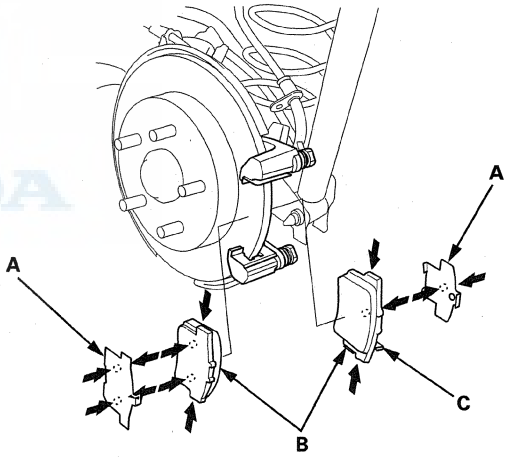


8. Remove the pad retainers (A).



9. Clean the caliper bracket (B) thoroughly; remove any rust, and check for grooves and cracks.
   Verify that the caliper pins (C) move in and out smoothly. Clean and lube if needed.
10. Inspect the brake disc for runout, thickness, parallelism (see page 19-31), and check for damage and cracks.
11. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the retainer mating surfaces of the caliper bracket (indicated by the arrows).
12. Install the pad retainers. Wipe off the excess assembly paste from the retainers. Keep the assembly paste away from the brake disc and the brake pads.
13. Apply a thin coat of M-77 assembly paste (P/N 08798-9010) to the pad side of the shims (A), the back of the brake pads (B), and the other areas indicated by the arrows. Wipe off the excess assembly paste from the pad shims and the brake pads friction material. Keep grease and assembly paste away from the brake disc and the brake pads. Contaminated brake disc or brake pads reduce stopping ability.

    NOTE:
    - The grease between the mating surfaces of the shim and the pad must be applied lightly on one place on the inner pad and two places on the outer pad as shown in the illustration.
    - After the shim is attached, remove the shim from the pad and make sure that grease is not spread on the whole surface.
    - When the shim is attached, make sure that the shim and the pad are tightly attached.



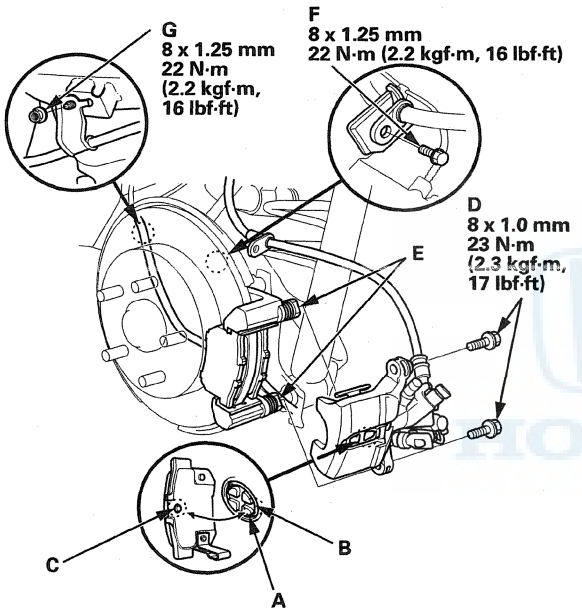
14. Install the brake pads and pad shims correctly. Install the brake pad with the wear indicator (C) on the bottom inside. If you are reusing the brake pads, always reinstall the brake pads in their original positions to prevent a temporary loss of braking efficiency.

(cont'd)

Rear Brake Pad Inspection and Replacement (cont'd)

15. Rotate the caliper piston (A) clockwise into the cylinder, then align the cutout (B) in the piston with the tab (C) on the inner pad by turning the piston back. Lubricate the boot with silicone grease to avoid twisting the piston boot. If the piston boot is twisted, back it out so it is positioned properly.

    NOTE: Be careful when moving the piston back in the caliper; brake fluid might overflow from the master cylinder reservoir tank. If brake fluid gets on any painted surface, wash it off immediately with water.



16. Install the caliper. Install the flange bolts (D), and tighten it to the specified torque while holding the respective caliper pins (E) with a wrench being careful not to damage the pin boots and parking brake cable boots.
17. Install the brake hose mounting bolt (F).
18. Install the parking brake cable mounting nut (G).
19. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheels.
20. Press the brake pedal several times to make sure the brakes work.

    NOTE: Engagement may require a greater pedal stroke immediately after the brake pads have been replaced as a set. Several applications of the brake pedal will restore the normal pedal stroke.

21. Add brake fluid as needed.
22. After installation, check for leaks at hose and line joints or connections, and retighten if necessary. Test-drive the vehicle, then recheck for leaks (see page 19-36).
23. Adjust the parking brake (see page 19-9).

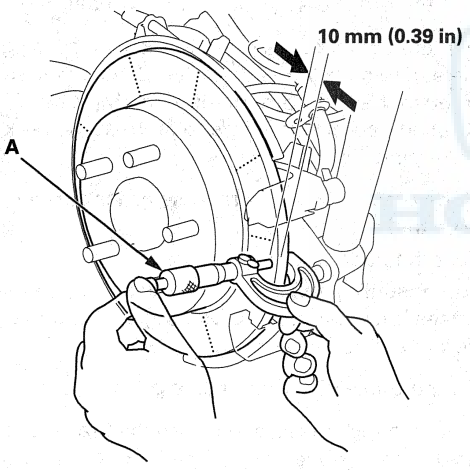
Rear Brake Disc Inspection

Thickness and Parallelism

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Remove the brake pads (see page 19-28).
4. Using a micrometer (A), measure the brake disc thickness at eight points, about 45 ° apart and 10 mm (0.39 in) in from the outer edge of the brake disc. Replace the brake disc if the smallest measurement is less than the max. refinishing limit.

   Brake disc thickness:
   Standard: 9.0 mm (0.354 in)
   Max. refinishing limit: 8.0 mm (0.315 in)
   Brake disc parallelism: 0.015 mm (0.00059 in)

   NOTE: This is the maximum allowable difference between the thickness measurements.



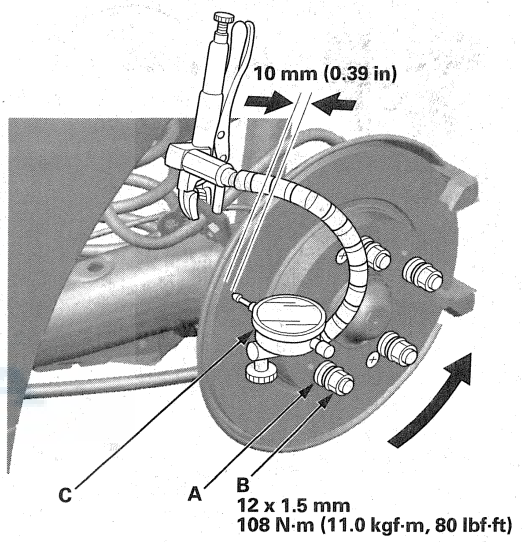
5. If the brake disc is beyond the service limit for parallelism, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

   NOTE: If the brake disc is beyond the service limit for refinishing, replace it (see page 19-32).

6. Inspect the brake disc runout.

Runout

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheels.
3. Remove the brake pads (see page 19-28).
4. Inspect the brake disc to wheel surface for damage and cracks. Clean the brake disc thoroughly, and remove all rust.
5. Install suitable flat washers (A) and the wheel nuts (B), and tighten the wheel nuts to the specified torque to hold the brake disc securely against the hub.



6. Set up the dial gauge (C) against the brake disc as shown, and measure the runout at 10 mm (0.39 in) from the outer edge of the brake disc.

   Brake disc runout:
   Service limit: 0.04 mm (0.0016 in)

7. If the brake disc is beyond the service limit, refinish the brake disc with a Honda-approved commercially available on-car brake lathe.

   Max. refinishing limit: 8.0 mm (0.315 in)

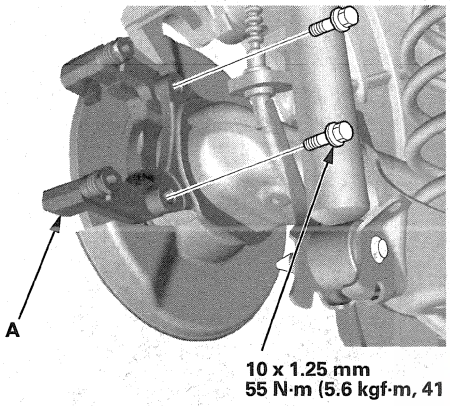
   NOTE:
   - If the brake disc is beyond the service limit for refinishing, replace it (see page 19-32).
   - If the brake disc is replaced with a new one, check the new disc for runout. If the new disc is out of specification, refinish the disc.

8. Install the brake pads (see page 19-28).
9. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheels.

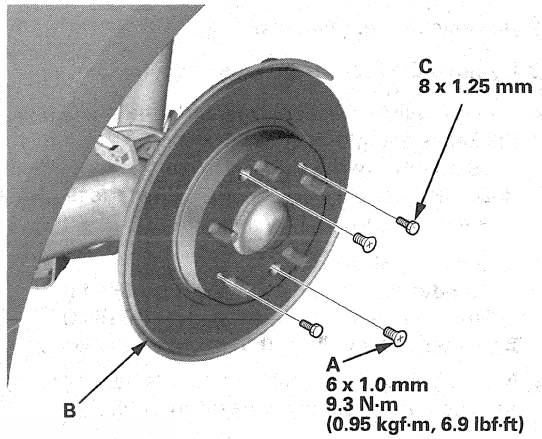
Rear Brake Disc Replacement

NOTE: Keep grease away from the brake disc and brake pads.

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheel.
3. Release the parking brake lever fully.
4. Remove the caliper body and the brake pads from the caliper bracket (see page 19-28).
5. Remove the caliper bracket (A) from the knuckle.



6. Remove the brake disc flathead screws (A).



7. Remove the brake disc (B) from the hub bearing unit.

   NOTE: If the brake disc is stuck to the hub bearing unit, thread two 8 x 1.25 mm bolts (C) into the brake disc to push it away from the hub bearing unit. Turn each bolt 90 degrees at a time to prevent the brake disc from binding.

8. Install the brake disc in the reverse order of removal, and note these items:
   - Adjust the parking brake (see page 19-9).
   - Before installing the brake disc, clean the mating surfaces between the hub bearing unit and the inside of the brake disc.
9. Inspect the brake disc runout (see page 19-31).
10. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheel.

Rear Brake Caliper Overhaul

⚠CAUTION

Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.
- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner.

NOTICE

Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

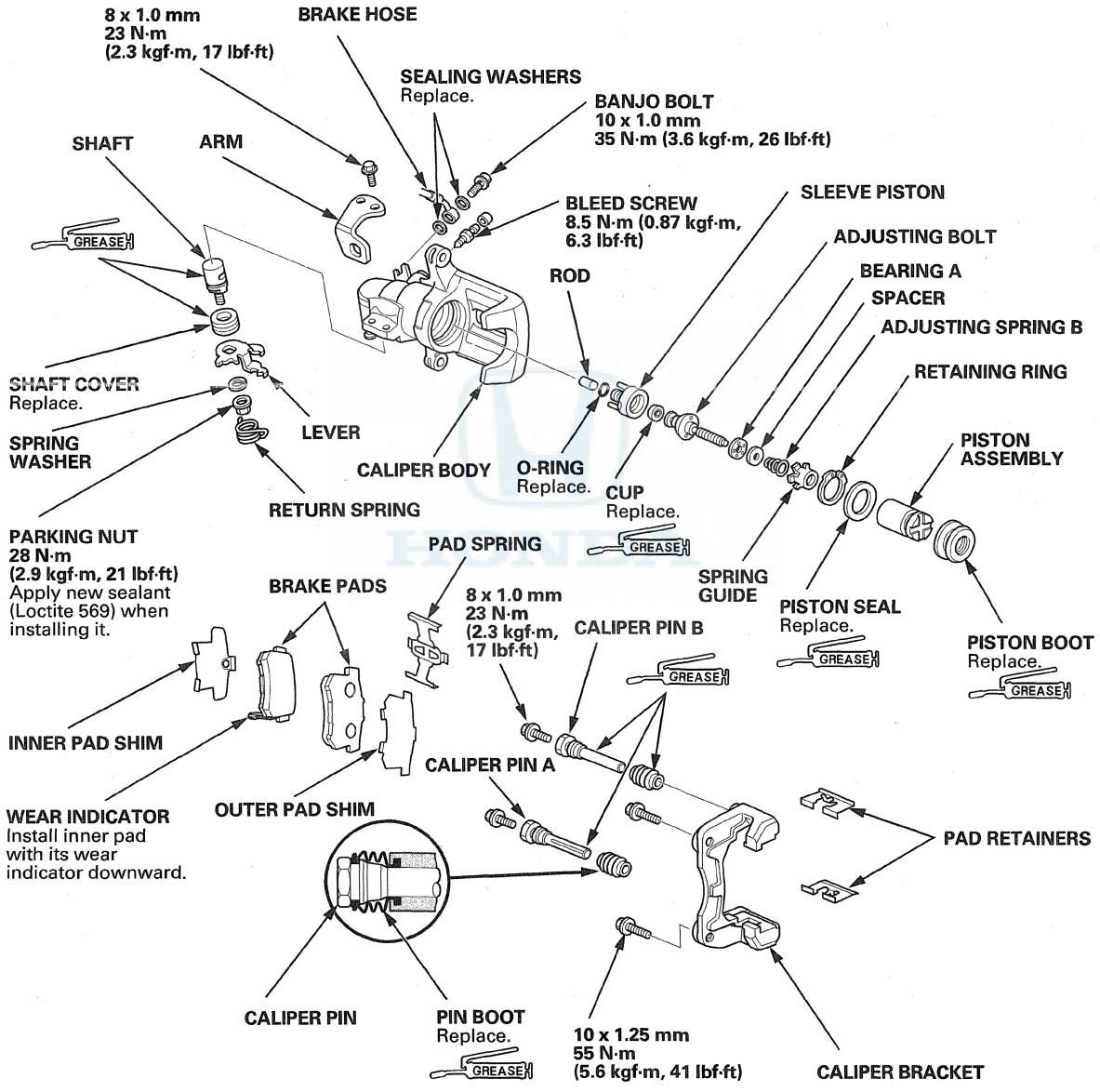
Remove, disassemble, inspect, reassemble, and install the caliper, and note these items:
- Make sure that the caliper pins are installed correctly. Upper caliper pin B and lower caliper pin A are different. If these caliper pins are installed in the wrong location, it will cause vibration, uneven or rapid brake pad wear, and possibly uneven tire wear.
- To prevent dripping brake fluid, cover disconnected hose joints with clean rags or shop towels.
- Clean all parts in brake fluid and air dry; blow out all passages with compressed air.
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones as specified in the illustration.
- Make sure no dirt or other foreign matter gets in the brake fluid.
- Make sure no grease or oil gets on the brake discs or the brake pads.
- When reusing brake pads, always reinstall them in their original positions to prevent loss of braking efficiency.
- Do not reuse drained brake fluid. Use only new Honda DOT 3 Brake Fluid from an unopened container. Using a non-Honda brake fluid can cause corrosion and shorten the life of the system.
- Coat the piston, the piston seal groove, and the caliper bore with clean brake fluid.
- Use recommended greases in the rear caliper set.
- After installing the caliper, check the brake hose and line for leaks, interference, and twisting.
- Refer to the Exploded View as needed during this procedure.
- Make sure not to get any silicone grease on the terminal part of the connectors and switches, especially if you have silicone grease on your hands or gloves.

(cont'd)

Rear Brake Caliper Overhaul (cont'd)

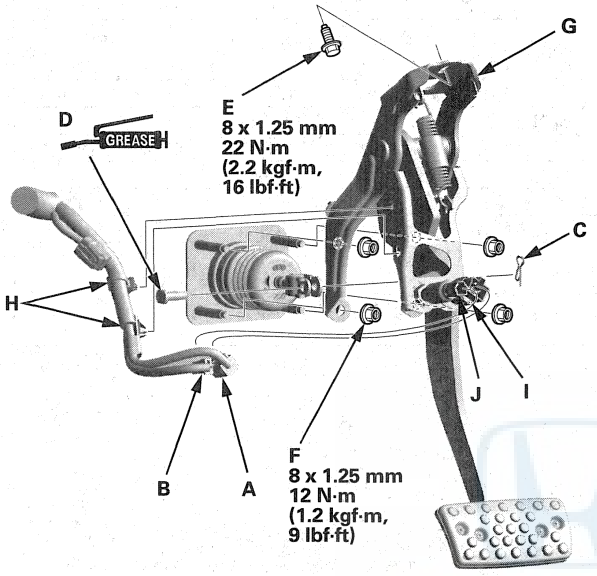
Exploded View

GREASE : Honda silicone grease (P/N 08C30-B0234M)



Brake Pedal Replacement

1. Remove the driver's dashboard undercover (see page 20-86).
2. Disconnect the brake pedal position switch connector (A).



*: The illustration shows CVT model.

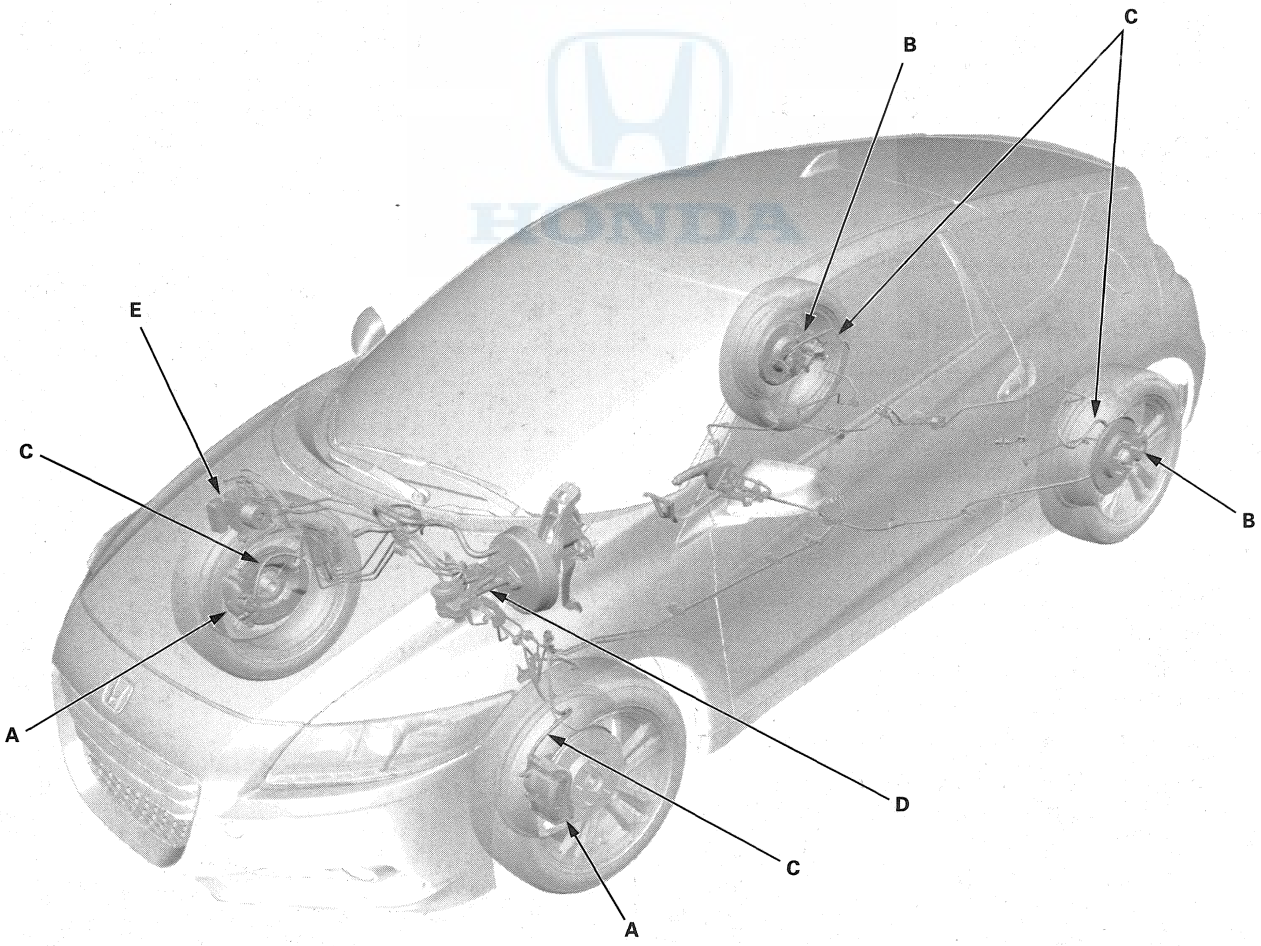
3. CVT model: Disconnect the idle stop switch connector (B).
4. Remove the lock pin (C) and clevis pin (D).

   NOTE: During installation, apply multipurpose grease to the clevis pin in the brake pedal.
5. Remove the brake pedal mounting bolt (E) and the brake booster/brake pedal mounting nuts (F).
6. Remove the brake pedal with bracket (G).
7. Remove the clip (H) from the brake pedal bracket.
8. Remove the brake pedal position switch (I) by turning it 45° counterclockwise.
9. CVT model: Remove the idle stop switch (J) by turning it counterclockwise.
10. Install the brake pedal in the reverse order of removal.
11. Do the brake pedal and brake pedal position switch/idle stop switch adjustment (see page 19-6).

Brake Hose and Line Inspection

1. Inspect the brake hoses for damage, deterioration, leaks, interference, and twisting.
2. Check the brake lines for damage, rusting, and leaks. Also check for bent brake lines.
3. Check for leaks at hose and line joints and connections, and retighten if necessary.
4. Check the master cylinder and the VSA modulator-control unit for damage and leaks.

Connection Point	Component	Connected to	Specified Torque	Note
A	Front brake caliper	Brake hose	35 N·m (3.6 kgf·m, 26 lbf·ft)	Banjo bolt
		Bleed screw	8.5 N·m (0.87 kgf·m, 6.3 lbf·ft)	
B	Rear brake caliper	Brake hose	35 N·m (3.6 kgf·m, 26 lbf·ft)	Banjo bolt
		Bleed screw	8.5 N·m (0.87 kgf·m, 6.3 lbf·ft)	
C	Brake hose	Brake line	15 N·m (1.5 kgf·m, 11 lbf·ft)	Flare nut
D	Master cylinder	Brake line	22 N·m (2.2 kgf·m, 16 lbf·ft)	Flare nut
E	VSA modulator-control unit	Brake line (10 mm nut)	15 N·m (1.5 kgf·m, 11 lbf·ft)	Flare nut
		Brake line (12 mm nut)	22 N·m (2.2 kgf·m, 16 lbf·ft)	



Brake Hose Replacement

NOTICE

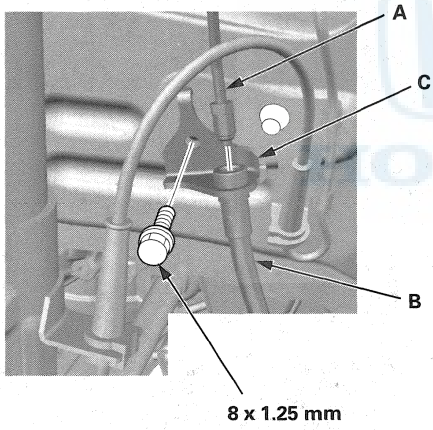
Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

NOTE:

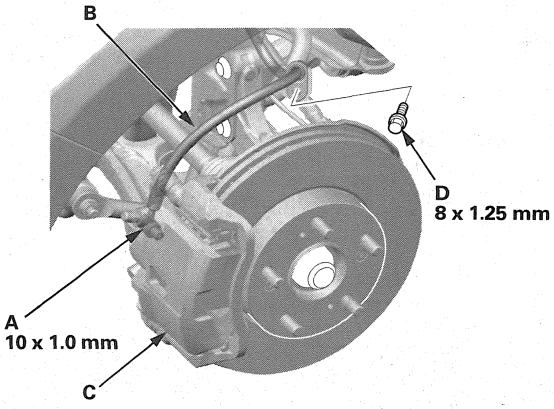
- Before reassembling, check that all parts are free of dirt and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- After removal, plug the end of a hose and joints to prevent spilling brake fluid.

Front

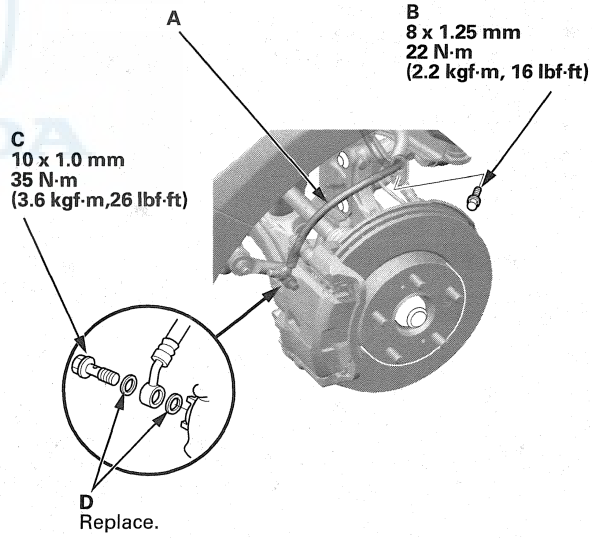
1. Raise and support the vehicle (see page 1-10).
2. Remove the front wheel.
3. Disconnect the brake line (A) from the brake hose (B), then remove the brake hose bracket (C).



4. Remove the banjo bolt (A), and disconnect the brake hose (B) from the caliper (C).



5. Remove the brake hose mounting bolt (D), then remove the brake hose.
6. Install the brake hose (A) with the mounting bolt (B).

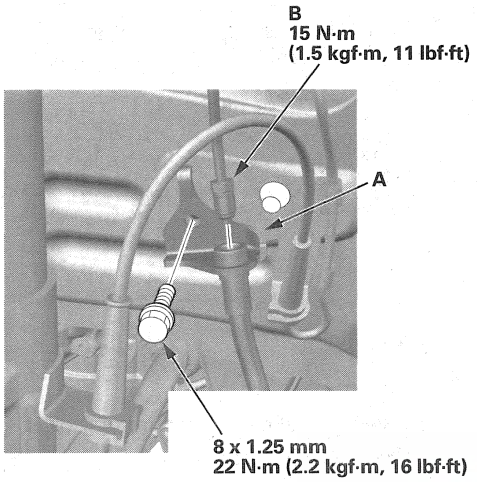


7. Connect the brake hose to the caliper with the banjo bolt (C) and new sealing washers (D).

(cont'd)

Brake Hose Replacement (cont'd)

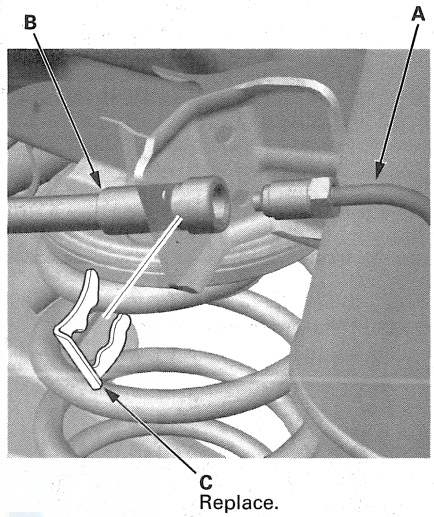
8. Install the brake hose bracket (A) to the body, then connect the brake line (B). Do not twist the brake hose.



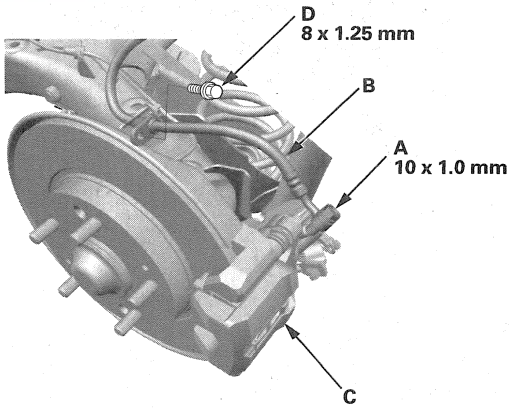
9. After installing the brake hose, bleed the brake system (see page 19-10).
10. Do the following checks:
    - Check the brake hose and line joint for leaks, and tighten if necessary.
    - Check the brake hoses for interference and twisting.
11. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the front wheel.

Rear

1. Raise and support the vehicle (see page 1-10).
2. Remove the rear wheel.
3. Disconnect the brake line (A) from the brake hose (B), then remove the brake hose clip (C).

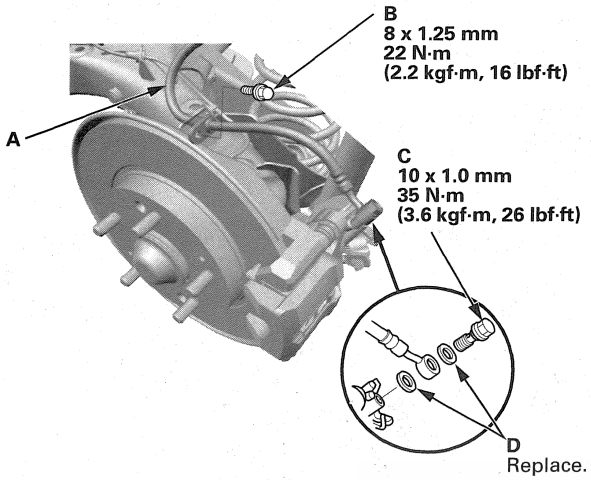


4. Remove the banjo bolt (A), and disconnect the brake hose (B) from the caliper (C).

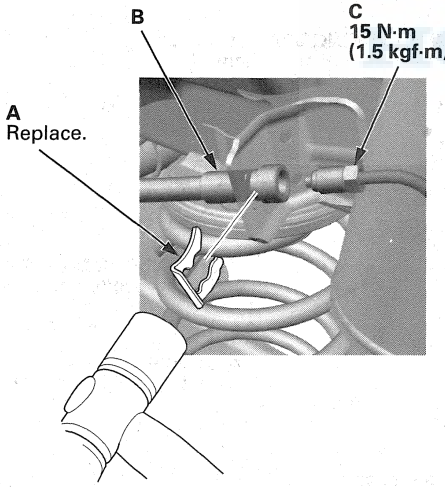


5. Remove the brake hose mounting bolt (D), then remove the brake hose.

6. Install the brake hose (A) with the mounting bolt (B).



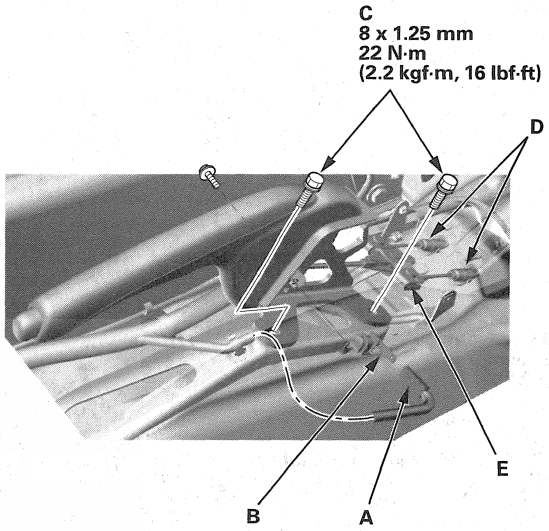
7. Connect the brake hose to the caliper with the banjo bolt (C) and new sealing washers (D).
8. Install a new brake hose clip (A) to the brake hose (B) on the bracket, then connect the brake line (C). Do not twist the brake hose.



9. After installing the brake hoses, bleed the brake system (see page 19-10).
10. Do the following checks:
    - Check the brake hose and line joint for leaks, and tighten if necessary.
    - Check the brake hose for interference and twisting.
11. Clean the mating surfaces between the brake disc and the inside of the wheel, then install the rear wheel.

Parking Brake Lever Replacement

1. Release the parking brake lever fully.
2. Remove the center console (see page 20-79).
3. Disconnect the parking brake switch connector (A) from the parking brake switch (B).

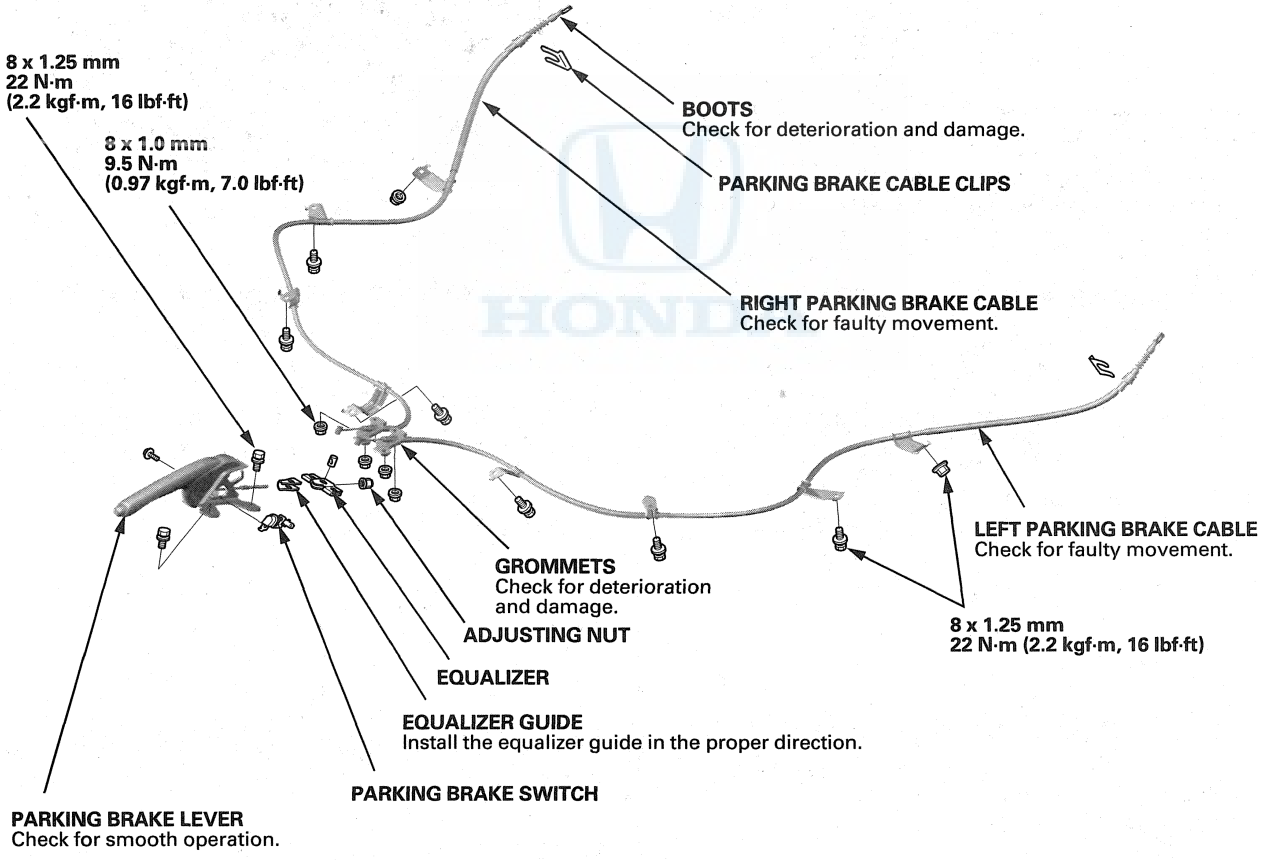


4. Remove the parking brake lever mount bolts (C).
5. Disconnect the parking brake cables (D) from the equalizer (E).
6. Remove the parking brake switch.
7. Install the parking brake lever in the reverse order of removal.
8. Adjust the parking brake (see page 19-9).

Conventional Brake Components

Parking Brake Cable Replacement

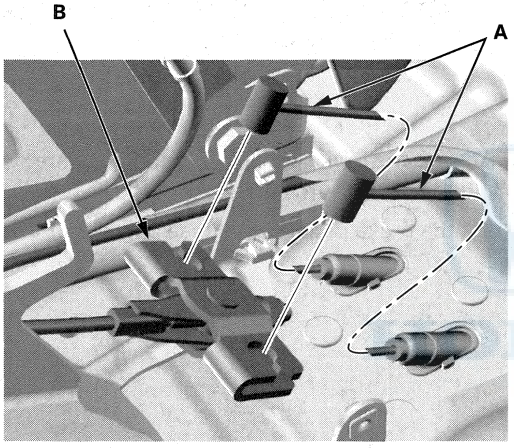
Exploded View



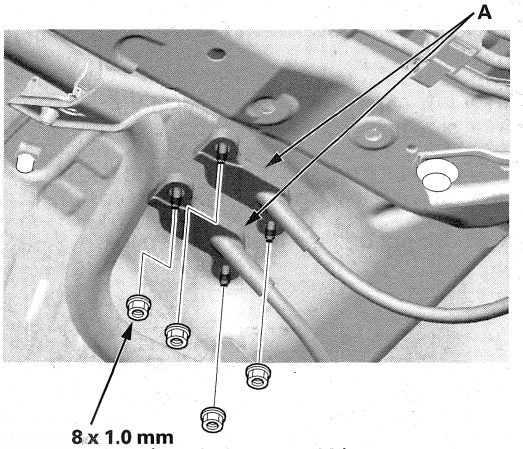
NOTE:

- The parking brake cables must not be bent or distorted. This will lead to stiff operation and premature cable failure.
- Refer to the Exploded View as needed during this procedure.

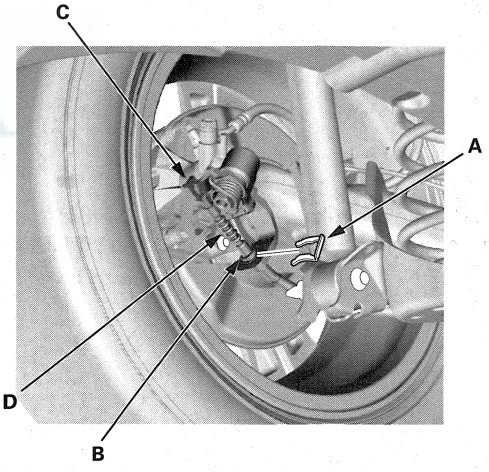
1. Release the parking brake lever fully.
2. Remove the center console (see page 20-79).
3. Loosen the parking brake adjusting nut.
4. Disconnect the parking brake cables (A) from the equalizer (B).



5. Remove the middle floor undercover (see page 20-166).
6. Remove the parking brake cable grommets (A), and pull out the parking brake cable from the body floor.



7. Remove the parking brake cable clip (A) from the parking brake cable (B).



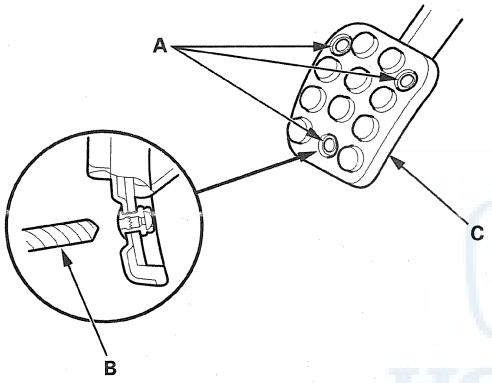
8. Disconnect the parking brake cable from the lever (C).
9. Remove the parking brake cable mounting hardware, then remove the cable.
10. Install the parking brake cable in the reverse order of removal, and note these items:
    - Be careful not to bend or distort the cable, and boot (D).
    - Make sure the parking brake cable clip is fully seated on the cable housing.
    - Adjust the parking brake (see page 19-9).

Brake Pedal Pad Cover Replacement

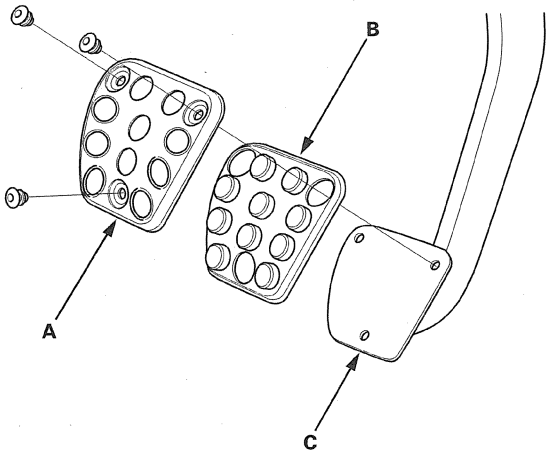
NOTE:
- This procedure shows a model equipped with a brake pedal pad cover.
- The illustration shows an M/T model; the CVT model is similar.

1. Cover the carpet under the brake pedal to prevent metal shavings from getting on the carpet.
2. Center-punch each of the rivets (A), and drill their heads off with a 3 mm (0.12 in) drill bit (B).

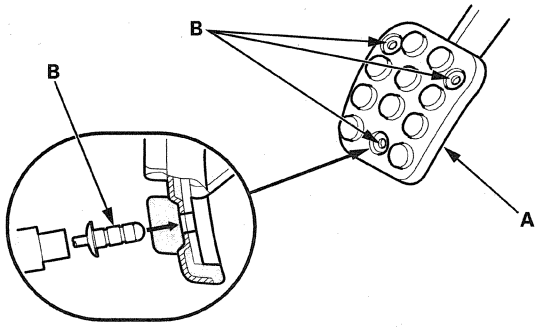
   NOTE: Do not drill the brake pedal pad (C).



3. Remove the brake pedal plate pad cover (A) and the brake pedal cover (B) from the brake pedal pad (C).



4. Set the brake pedal cover on the brake pedal plate.
5. Install the brake pedal pad cover (A) with the rivets (B) firmly attached.

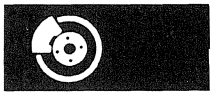


6. Make sure the brake pedal cover and plate are securely fastened on the brake pedal.
7. Check the brake pedal height (see page 19-6).

Brakes

Brake Booster Pressure Monitoring System

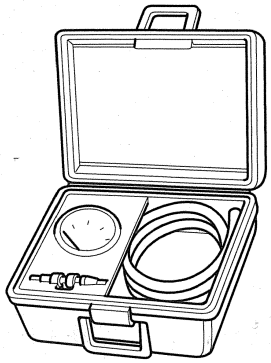
Special Tools 19–44
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General Troubleshooting Information 19–46
DTC Troubleshooting Index 19–48
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DTC Troubleshooting 19–52
Brake Booster Pressure Sensor A Replacement 19–63
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Brake Booster Pressure Monitoring System

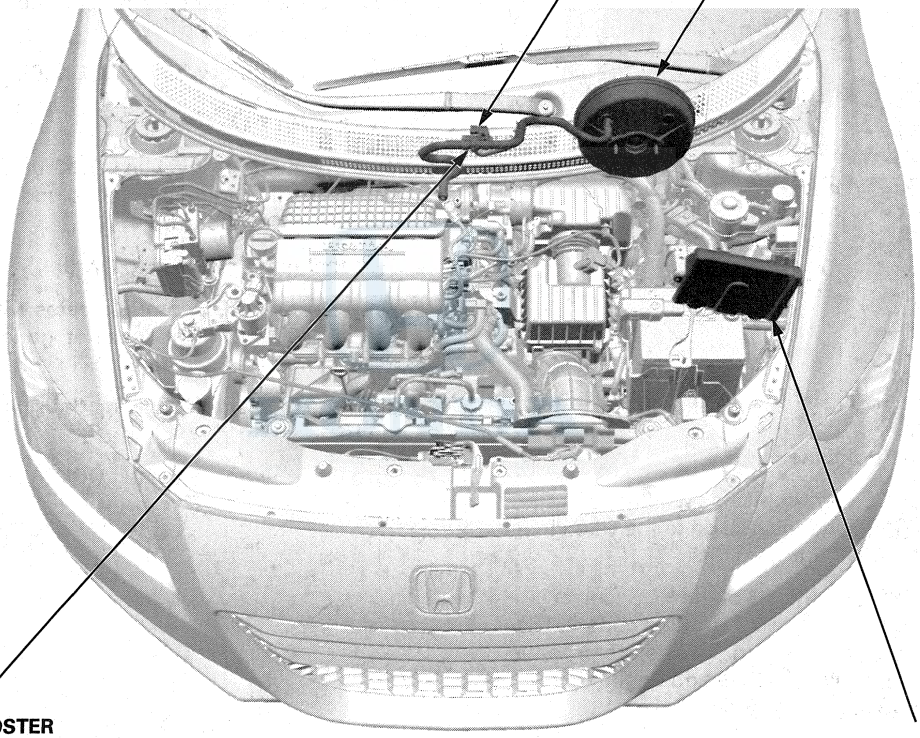
Special Tools

Ref.No.	Tool Number	Description	Qty
①	07JAZ-001000B	Vacuum/Pressure Gauge, 0—4 In.Hg,	1



①

Component Location Index

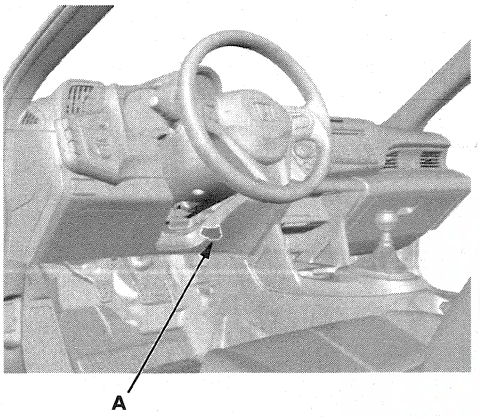


General Troubleshooting Information

How to Use the HDS (Honda Diagnostic System)

NOTE: Make sure the battery is in good condition and fully charged.

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. In the BRAKE SYSTEM MENU of the HDS, select EVPS, then check the diagnostic trouble code (DTC) and the freeze data, and note them. Then refer to the indicated DTC's troubleshooting, and begin the appropriate troubleshooting procedure.

   NOTE:
   - Freeze data indicates the ECM/PCM conditions when the first system malfunction that activated the indicator was detected.
   - The HDS can read the DTC, the freeze data, the current data, and other system data.
   - For specific operations, refer to the Help menu that came with the HDS.

How to Retrieve DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting.
5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

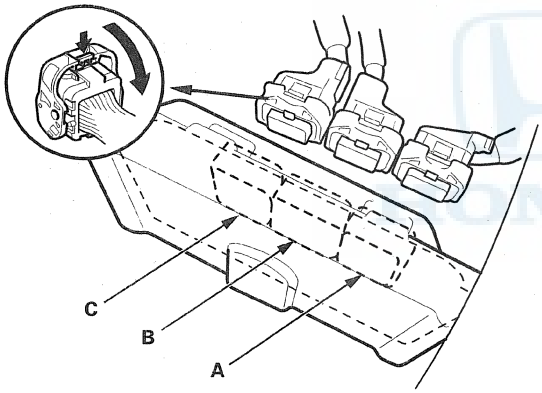
1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the ECM/PCM. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0).

How to Troubleshoot Circuits at the ECM/PCM Connectors

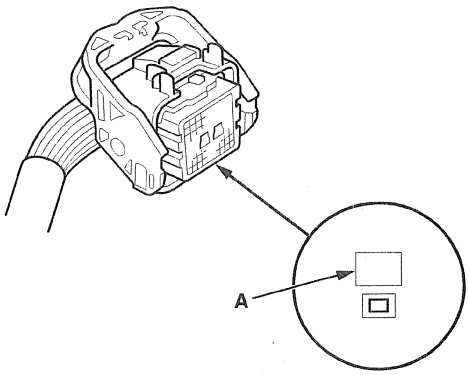
NOTE: The ECM/PCM overwrites data and monitors the EVAP system for about 60 minutes after the ignition switch is turned to ACCESSORY (I) or to LOCK (0). Jumping the SCS line after turning the ignition switch to ACCESSORY (I) or to LOCK (0) cancels this function. Disconnecting the ECM/PCM during this function, without jumping the SCS line first, can damage the ECM/PCM.

1. Jump the SCS line with the HDS.
2. Disconnect ECM/PCM connectors A, B, and C.

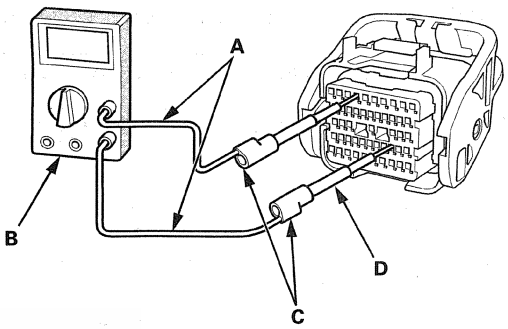
   NOTE: ECM/PCM connectors A, B, and C have symbols (A=□, B=△, C=○) embossed on them for identification.



3. When diagnosis/troubleshooting is done at the ECM/PCM connector, use the terminal test port (A) above the terminal you need to check.



4. Connect one side of the patch cord (A) terminals to a commercially available digital multimeter (B), and connect the other side of the patch cord terminals (C) to a commercially available banana jack (Pomona Electronics Tool No. 3563 or equivalent) (D).



5. Gently insert the pin probe (male) at the test port from the terminal side. Do not force the tips into the terminals.

NOTICE

- For accurate results, always use the pin probe (male).
- To prevent damage to the connector terminals, do not insert test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.
- Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

Brake Booster Pressure Monitoring System

DTC Troubleshooting Index

DTC	Detection Item	Note
P0555	Brake Booster Pressure Sensor A Circuit High Voltage	DTC Troubleshooting (see page 19-52)
P0557	Brake Booster Pressure Sensor A Circuit Low Voltage	DTC Troubleshooting (see page 19-55)
P15C1	Brake Booster Pressure Sensor B Circuit High Voltage	DTC Troubleshooting (see page 19-56)
P15C2	Brake Booster Pressure Sensor B Circuit Low Voltage	DTC Troubleshooting (see page 19-59)
P15C3	Brake Booster Pressure Sensor A/B Voltage Incorrect Correlation	DTC Troubleshooting (see page 19-61)

NOTE: When the DTCs are stored, the IMA system indicator comes on.

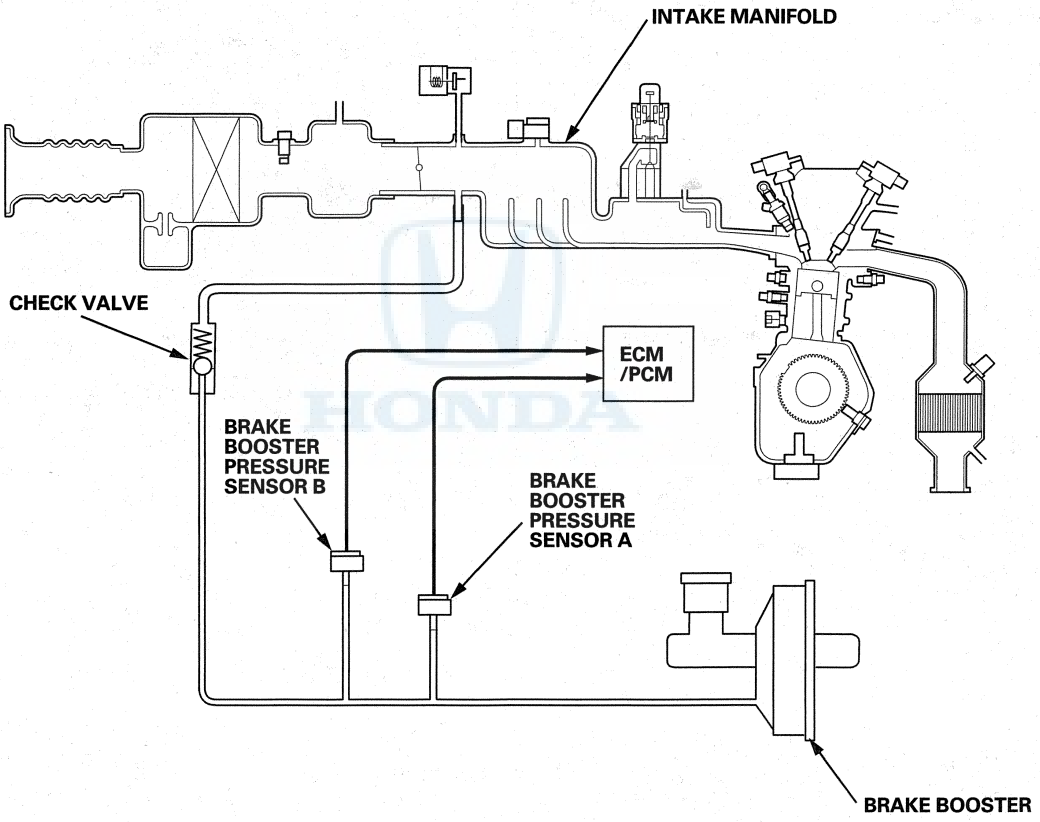
System Description

System Outline

During an auto idle stop, the vacuum inside the intake manifold decreases.

The power brake booster vacuum assist is constantly monitored by the ECM/PCM to make sure there is the appropriate amount of vacuum available for applying the brakes.

- When the brake booster vacuum is less than the reference value, an auto idle stop is not allowed.
- Auto idle stop is monitored constantly and prohibited by the ECM/PCM when detecting a sensor failure. (Two sensors monitor for the same abnormalities.)
- The IMA system indicator comes on when either or both of the brake booster pressure sensors fail.

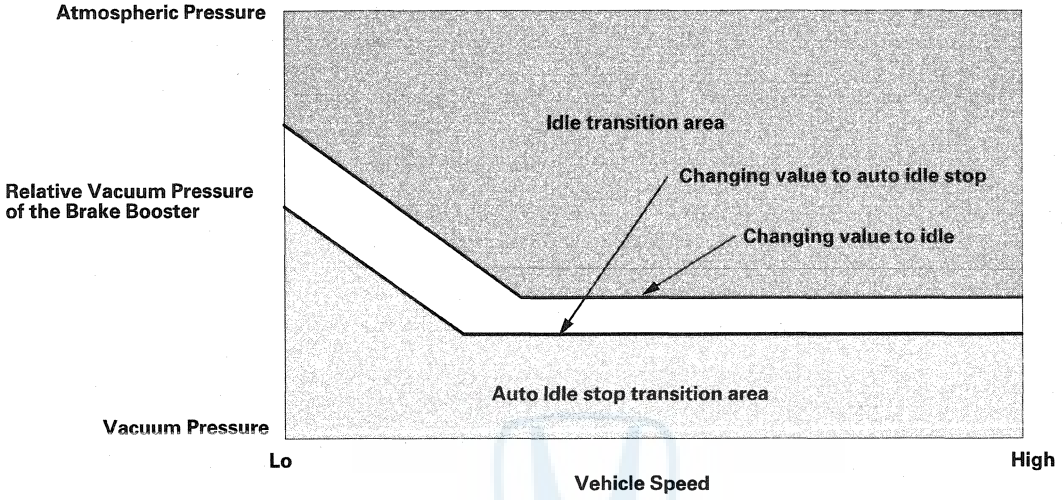


(cont'd)

Brake Booster Pressure Monitoring System

System Description (cont'd)

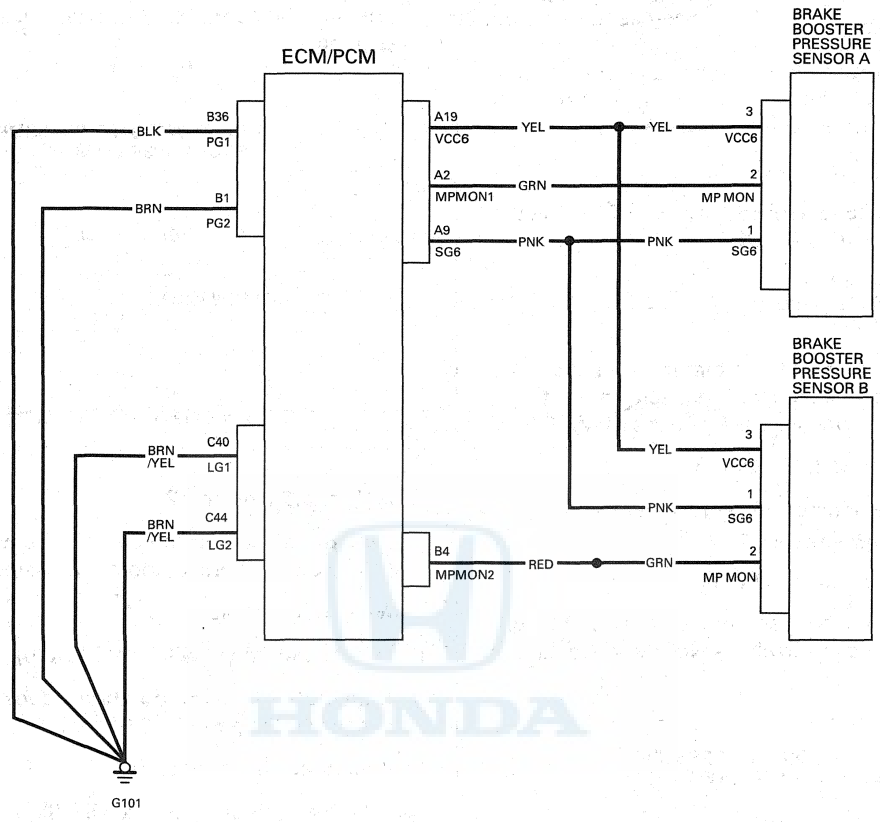
The brake booster vacuum must reach the established point to ensure enough braking force to allow for auto idle stop activation. If the established value is decreased to the extent that braking force cannot be ensured, the engine will transition from auto idle stop to the engine idling.



Vacuum Pressure of Brake Booster and Auto Idle Stop Conditions

HONDA

Circuit Diagram



DTC Troubleshooting

DTC P0555: Brake Booster Pressure Sensor A Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-46).

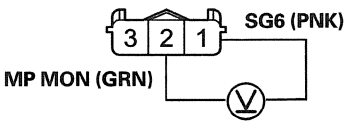
1. Turn the ignition switch to ON (II).
2. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

   Is there 4.5 V or more?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at brake booster pressure sensor A and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect brake booster pressure sensor A 3P connector (see step 2 on page 19-63).
5. Turn the ignition switch to ON (II).
6. Measure the voltage between brake booster pressure sensor A 3P connector terminals No. 1 and No. 2.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

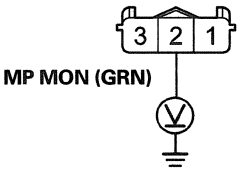
Is there 4.8 V or more?

YES–Go to step 7.

NO–Go to step 20.

7. Turn the ignition switch to LOCK (0).
8. Short the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
10. Turn the ignition switch to ON (II).
11. Measure the voltage between brake booster pressure sensor A 3P connector terminal No. 2 and body ground.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

Is there 0.5 V or more?

YES–Repair a short to power in the wire between the ECM/PCM and brake booster pressure sensor A.■

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Substitute a known-good brake booster pressure sensor A (see page 19-63).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Turn the ignition switch to LOCK (0).
18. Turn the ignition switch to ON (II).
19. Check for DTCs with the HDS.

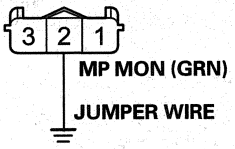
    Is DTC P0555 indicated?

    YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

    NO–Replace the original brake booster pressure sensor A (see page 19-63).■
20. Turn the ignition switch to LOCK (0).

21. Connect brake booster pressure sensor A 3P connector terminal No. 2 to body ground with a jumper wire.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

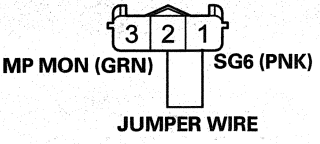
22. Turn the ignition switch to ON (II).
23. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

    Is there 0.1 V or less?

    YES–Go to step 24.

    NO–Go to step 32.
24. Turn the ignition switch to LOCK (0).
25. Connect brake booster pressure sensor A 3P connector terminals No. 1 and No. 2 with a jumper wire.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

26. Turn the ignition switch to ON (II).
27. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

    Is there 0.1 V or less?

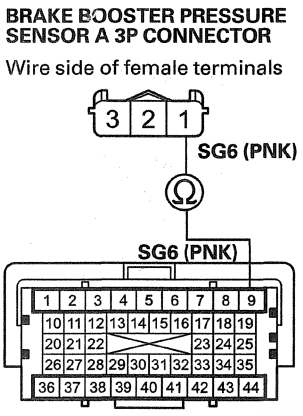
    YES–Replace brake booster pressure sensor A (see page 19-63).■

    NO–Go to step 28.
28. Turn the ignition switch to LOCK (0).
29. Short the SCS line with the HDS.
30. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).

(cont'd)

DTC Troubleshooting (cont'd)

31. Check for continuity between ECM/PCM connector A (44P) terminal No. 9 and brake booster pressure sensor A 3P connector terminal No. 1.



Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

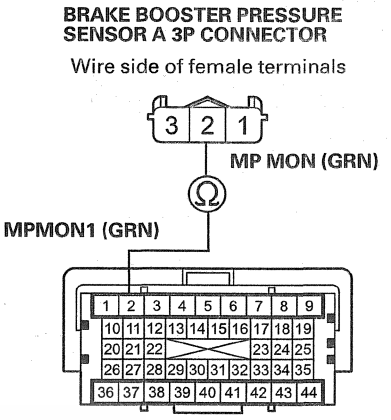
NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor A.■

32. Turn the ignition switch to LOCK (0).

33. Short the SCS line with the HDS.

34. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).

35. Check for continuity between ECM/PCM connector A (44P) terminal No. 2 and brake booster pressure sensor A 3P connector terminal No. 2.



Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor A.■

DTC P0557: Brake Booster Pressure Sensor A Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-46).

1. Turn the ignition switch to ON (II).
2. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

   Is there 0.23 V or less?

   YES–Go to step 3.

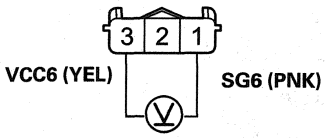
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at brake booster pressure sensor A and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect brake booster pressure sensor A 3P connector (see step 2 on page 19-63).
5. Turn the ignition switch to ON (II).
6. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

   Is there about 5 V?

   YES–Go to step 7.

   NO–Go to step 12.
7. Measure the voltage between brake booster pressure sensor A 3P connector terminals No. 1 and No. 3.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

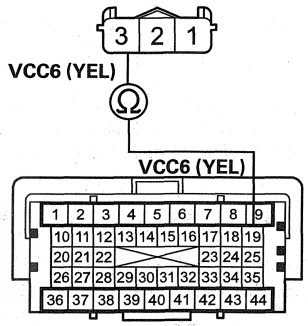
YES–Replace brake booster pressure sensor A (see page 19-63).■

NO–Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Short the SCS line with the HDS.
10. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
11. Check for continuity between ECM/PCM connector A (44P) terminal No.19 and brake booster pressure sensor A 3P connector terminal No. 3.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR

Wire side of female terminals



ECM/PCM CONNECTOR A (44P)

Terminal side of female terminals

Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor A.■

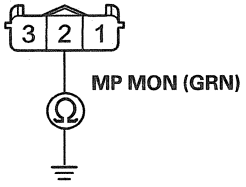
12. Turn the ignition switch to LOCK (0).
13. Short the SCS line with the HDS.
14. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).

(cont'd)

DTC Troubleshooting (cont'd)

15. Check for continuity between brake booster pressure sensor A 3P connector terminal No. 2 and body ground.

BRAKE BOOSTER PRESSURE SENSOR A 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM and brake booster pressure sensor A.■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

DTC P15C1: Brake Booster Pressure Sensor B Circuit High Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-46).

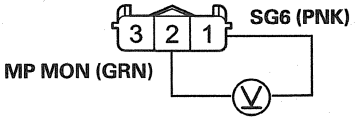
1. Turn the ignition switch to ON (II).
2. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

   Is there 4.5 V or more?

   YES–Go to step 3.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at brake booster pressure sensor B and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect brake booster pressure sensor B 3P connector (see step 2 on page 19-64).
5. Turn the ignition switch to ON (II).
6. Measure the voltage between brake booster pressure sensor B 3P connector terminals No. 1 and No. 2.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

Is there 4.8 V or more?

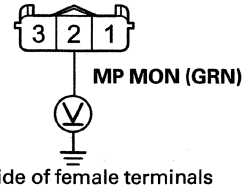
YES–Go to step 7.

NO–Go to step 20.

7. Turn the ignition switch to LOCK (0).
8. Short the SCS line with the HDS.
9. Disconnect ECM/PCM connector B (44P) (see step 14 on page 11-210).
10. Turn the ignition switch to ON (II).

11. Measure the voltage between brake booster pressure sensor B 3P connector terminals No. 2 and body ground.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

Is there 0.5 V or more?

YES–Repair a short to power in the wire between the ECM/PCM and brake booster pressure sensor B.■

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Substitute a known-good brake booster pressure sensor B (see page 19-64).
14. Reconnect all connectors.
15. Turn the ignition switch to ON (II).
16. Clear the DTC with the HDS.
17. Turn the ignition switch to LOCK (0).
18. Turn the ignition switch to ON (II).
19. Check for DTCs with the HDS.

Is DTC P15C1 indicated?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Replace the original brake booster pressure sensor B (see page 19-64).■

20. Turn the ignition switch to LOCK (0).
21. Connect brake booster pressure sensor B 3P connector terminals No. 2 to body ground with a jumper wire.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

22. Turn the ignition switch to ON (II).
23. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

Is there 0.1 V or less?

YES–Go to step 24.

NO–Go to step 32.

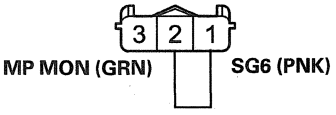
24. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

25. Connect brake booster pressure sensor B 3P connector terminals No. 1 and No. 2 with a jumper wire.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

26. Turn the ignition switch to ON (II).
27. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

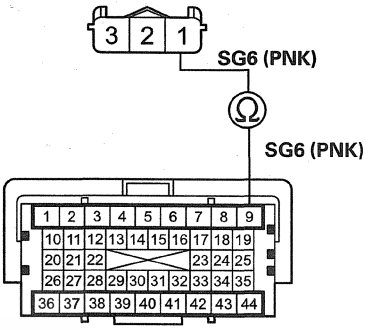
    Is there 0.1 V or less?

    YES–Replace brake booster pressure sensor B (see page 19-64).■

    NO–Go to step 28.
28. Turn the ignition switch to LOCK (0).
29. Short the SCS line with the HDS.
30. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
31. Check for continuity between ECM/PCM connector A (44P) terminal No. 9 and brake booster pressure sensor B 3P connector terminal No. 1.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR

Wire side of female terminals



ECM/PCM CONNECTOR A (44P)

Terminal side of female terminals

Is there continuity?

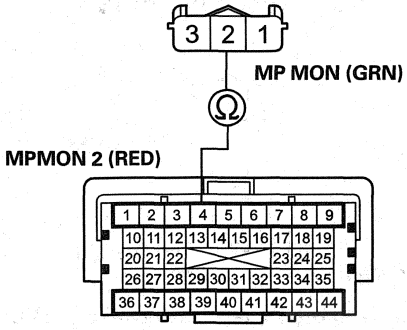
YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor B.■

32. Turn the ignition switch to LOCK (0).
33. Short the SCS line with the HDS.
34. Disconnect ECM/PCM connector B (44P) (see step 14 on page 11-210).

35. Check for continuity between ECM/PCM connector B (44P) terminal No.4 and brake booster pressure sensor B 3P connector terminal No. 2.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR
Wire side of female terminals



ECM/PCM CONNECTOR B (44P)
Terminal side of female terminals

Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor B.■

DTC P15C2: Brake Booster Pressure Sensor B Circuit Low Voltage

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-46).

1. Turn the ignition switch to ON (II).
2. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

   Is there 0.23 V or less?

   YES–Go to step 3.

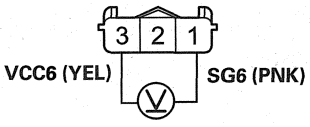
   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at brake booster pressure sensor B and the ECM/PCM.■
3. Turn the ignition switch to LOCK (0).
4. Disconnect brake booster pressure sensor B 3P connector (see step 2 on page 19-64).
5. Turn the ignition switch to ON (II).
6. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

   Is there about 5 V?

   YES–Go to step 7.

   NO–Go to step 12.
7. Measure the voltage between brake booster pressure sensor B 3P connector terminals No. 1 and No. 3.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Replace brake booster pressure sensor B (see page 19-64).■

NO–Go to step 8.
8. Turn the ignition switch to LOCK (0).

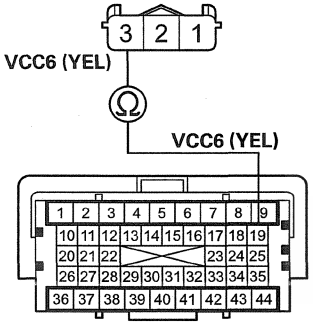
(cont'd)

DTC Troubleshooting (cont'd)

9. Short the SCS line with the HDS.
10. Disconnect ECM/PCM connector A (44P) (see step 14 on page 11-210).
11. Check for continuity between ECM/PCM connector A (44P) terminal No.19 and brake booster pressure sensor B 3P connector terminal No. 3.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR

Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

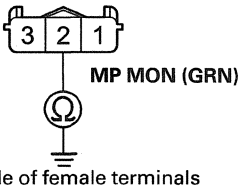
Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the ECM/PCM and brake booster pressure sensor B.■

12. Turn the ignition switch to LOCK (0).
13. Short the SCS line with the HDS.
14. Disconnect ECM/PCM connector B (44P) (see step 14 on page 11-210).
15. Check for continuity between brake booster pressure sensor B 3P connector terminal No. 2 and body ground.

BRAKE BOOSTER PRESSURE SENSOR B 3P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the ECM/PCM and brake booster pressure sensor B.■

NO–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

DTC P15C3: Brake Booster Pressure Sensor A/B Voltage Incorrect Correlation

Special Tools Required
Vacuum/Pressure Gauge, 0—4 In.Hg, 07JAZ-001000B

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-46).

1. Turn the ignition switch to ON (II).
2. Check for Pending or Confirmed DTCs in the PGM-FI system with the HDS.

   Are there DTC(s) indicated in the PGM-FI system?

   YES–Go to the indicated DTC's troubleshooting.■

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0).
5. Turn the ignition switch to ON (II).
6. Check for DTCs with the HDS.

   Is DTC P15C3 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at brake booster pressure sensors and the ECM/PCM.■
7. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in Neutral) until the radiator fan comes on, then let it idle.
8. Turn the ignition switch to LOCK (0).
9. Turn the ignition switch to ON (II).
10. Press the brake pedal several times to deplete the vacuum with monitoring BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B 0.1 V or less?

    YES–Repair a short in the wire between brake booster pressure sensor A and brake booster pressure sensor B.■

    NO–Go to step 11.
11. Check BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Go to step 14.

    NO–Go to step 12.
12. Check BRAKE BOOSTER PRESSURE SENSOR A and MAP SENSOR in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and MAP SENSOR 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Go to step 13.

    NO–Go to step 20.
13. Check BRAKE BOOSTER PRESSURE SENSOR B and MAP SENSOR in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR B and MAP SENSOR 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Compare value of MAP SENSOR with the value of BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B, then check the sensor which has a larger difference in the value.
    - Brake booster pressure sensor A: Go to step 20.
    - Brake booster pressure sensor B: Go to step 23.

    NO–Go to step 23.
14. Press the brake pedal several times to deplete the vacuum.
15. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in Neutral) until the radiator fan comes on, then let it idle.
16. With light pedal force, press the brake pedal several times slowly.
17. Check BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE B in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Go to step 26.

    NO–Go to step 18.

(cont'd)

DTC Troubleshooting (cont'd)

18. Check BRAKE BOOSTER PRESSURE SENSOR A and MAP SENSOR in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and MAP SENSOR 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Go to step 19.

    NO–Go to step 20.

19. Check BRAKE BOOSTER PRESSURE SENSOR B and MAP SENSOR in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR B and MAP SENSOR 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Compare value of MAP SENSOR with the value of BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B, then check the sensor which has a larger difference in the value.
    - BRAKE BOOSTER PRESSURE SENSOR A: Go to step 20.
    - BRAKE BOOSTER PRESSURE SENSOR B: Go to step 23.

    NO–Go to step 23.

20. Turn the ignition switch to LOCK (0).

21. Disconnect the vacuum hose from brake booster pressure sensor A (see step 3 on page 19-63).

22. Start the engine, then check for vacuum at the vacuum hose.

    Is there vacuum?

    YES–Replace brake booster pressure sensor A (see page 19-63).■

    NO–Repair the clogged hose which connects brake booster pressure sensor A to the brake vacuum hose.■

23. Turn the ignition switch to LOCK (0).

24. Disconnect the vacuum hose from brake booster pressure sensor B (see step 3 on page 19-64).

25. Start the engine, then check for vacuum at the vacuum hose.

    Is there vacuum?

    YES–Replace brake booster pressure sensor B (see page 19-64).■

    NO–Repair the clogged hose which connects brake booster pressure sensor B to the brake vacuum hose.■

26. Clear the DTC with the HDS.

27. Turn the ignition switch to LOCK (0).

28. Turn the ignition switch to ON (II).

29. Press the brake pedal several times to deplete the vacuum.

30. Check for DTCs with the HDS.

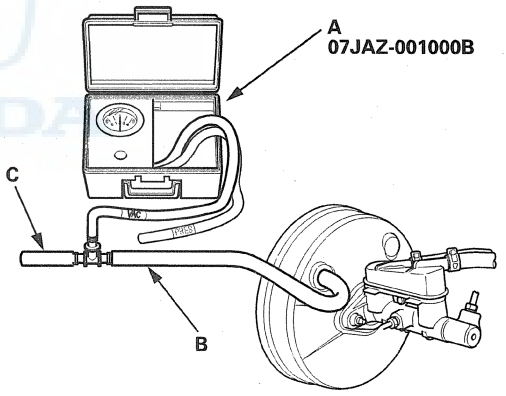
    Is DTC P15C3 indicated?

    YES–Go to step 31.

    NO–Check for poor connections or loose terminals at brake booster pressure sensor A, brake booster pressure sensor B, and the ECM/PCM.■

31. Check BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE B in the EVPS DATA LIST with the HDS.

32. Install the vacuum/pressure gauge (A) and a suitable hose (B) between the brake booster and the vacuum hose (C).



33. Start the engine. Hold the engine speed at 3,000 rpm without load (CVT in P or N, M/T in Neutral) until the radiator fan comes on, then let it idle.
34. Turn the ignition switch to LOCK (0).
35. Turn the ignition switch to ON (II).
36. Set the value of BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B to the values in the freeze data with pressing the brake pedal several times with low treading strength.
37. Check BRAKE BOOSTER PRESSURE SENSOR A in the EVPS DATA LIST with the HDS.

    Is the difference between BRAKE BOOSTER PRESSURE SENSOR A and the value of vacuum/pressure gauge 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Go to step 38.

    NO–Replace brake booster pressure sensor A (see page 19-63).■
38. Check BRAKE BOOSTER PRESSURE SENSOR B in the EVPS DATA LIST with the HDS.

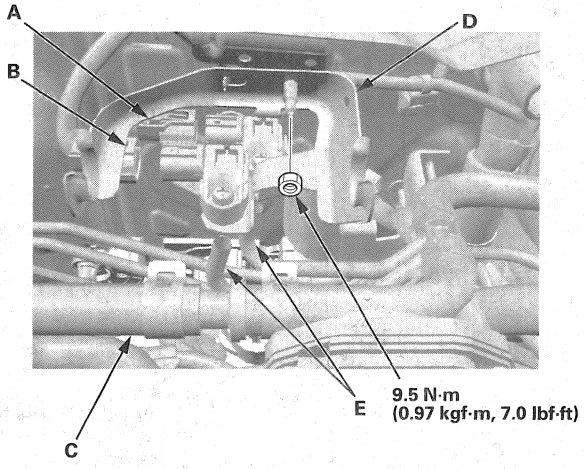
    Is the difference between BRAKE BOOSTER PRESSURE SENSOR B and the value of vacuum/pressure gauge 6 kPa (50 mmHg, 1.8 inHg) or less?

    YES–Compare the value of the vacuum/pressure gauge with the value of BRAKE BOOSTER PRESSURE SENSOR A and BRAKE BOOSTER PRESSURE SENSOR B in the recorded data in the freeze data. Do this process a few times, then replace brake booster pressure sensor A (see page 19-63) or brake booster pressure sensor B (see page 19-64), which ever has the larger difference in the value.■

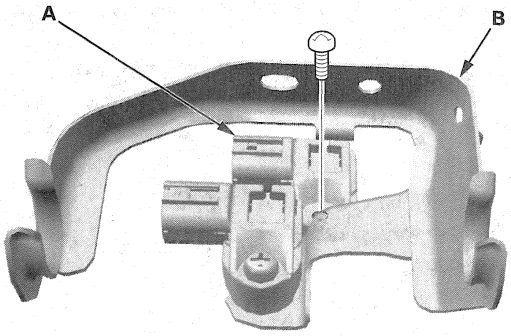
    NO–Replace brake booster pressure sensor B (see page 19-64).■

Brake Booster Pressure Sensor A Replacement

1. Remove the vacuum hose (C) from the vacuum hose bracket (D).



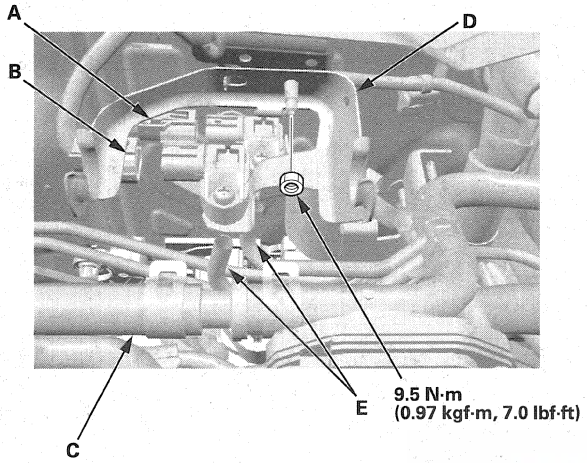
2. Disconnect the brake booster pressure sensor A 3P connector and the brake booster pressure sensor B 3P connector.
3. Disconnect the vacuum hoses (E).
4. Remove the vacuum hose bracket with brake booster pressure sensors A and B from the body.
5. Remove brake booster pressure sensor A from the vacuum hose bracket (B).



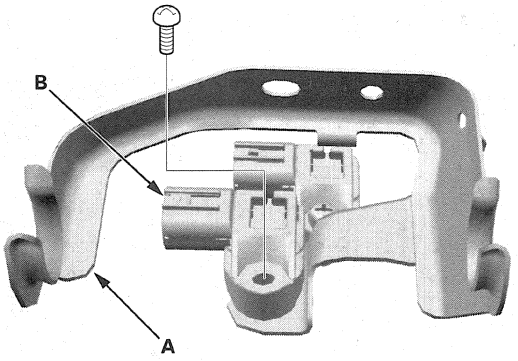
6. Install the sensor in the reverse order of removal.

Brake Booster Pressure Sensor B Replacement

1. Remove the vacuum hose (C) from the vacuum hose bracket (D).



2. Disconnect the brake booster pressure sensor A 3P connector and the brake booster pressure sensor B 3P connector.
3. Disconnect the vacuum hoses (E).
4. Remove the vacuum hose bracket with brake booster pressure sensors A and B from the body.
5. Remove brake booster pressure sensor B from the vacuum hose bracket (A).



6. Install the sensor in the reverse order of removal.

Brakes

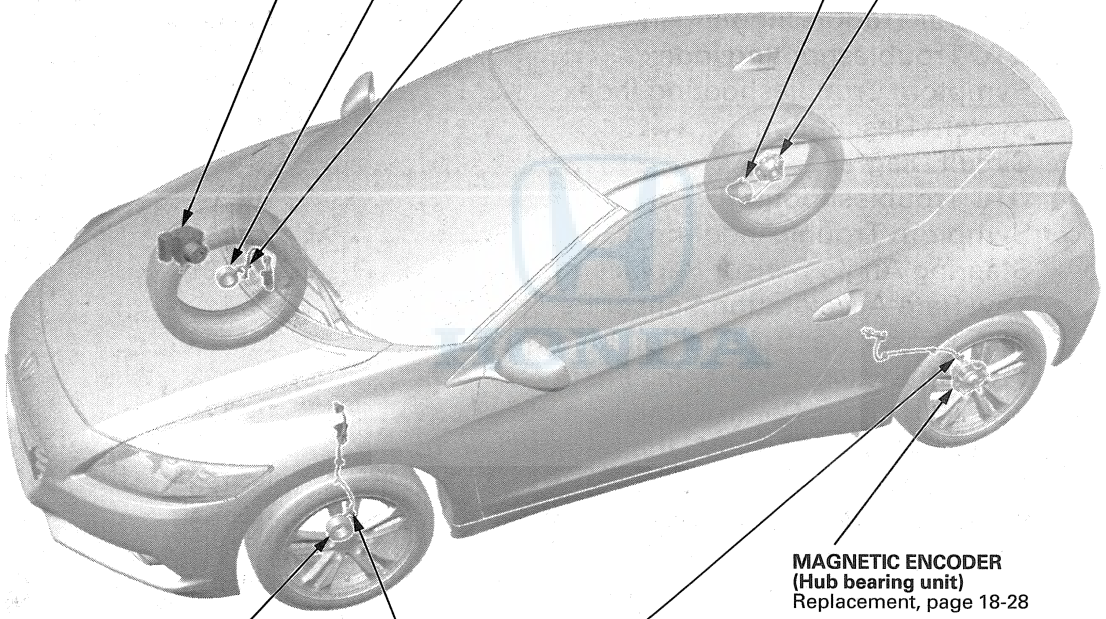
VSA System Components

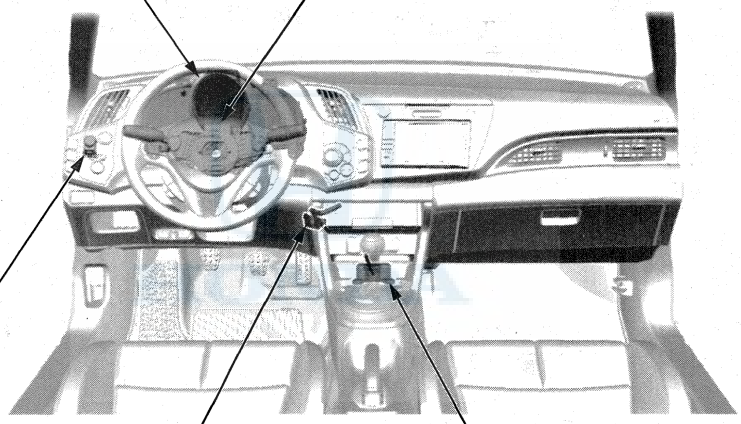
Component Location Index 19–66
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VSA System Components

Component Location Index




GAUGE CONTROL MODULE
STEERING ANGLE SENSOR
(Combination switch body assembly)
Replacement, page 19-121
YAW RATE-ACCELERATION SENSOR
Replacement, page 19-122
DATA LINK
CONNECTOR (DLC)
VSA OFF SWITCH
Test/Replacement, page 19-123

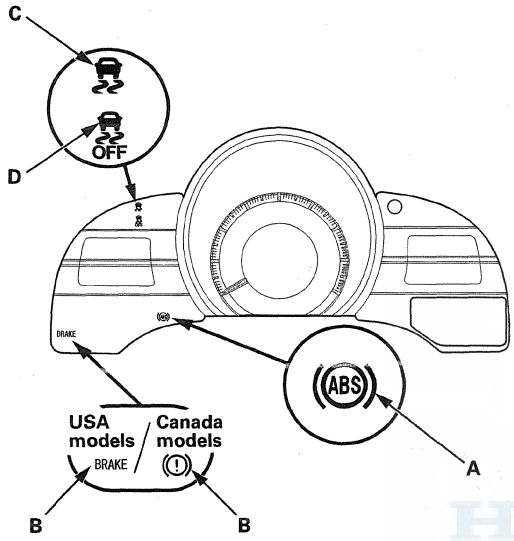
VSA System Components

General Troubleshooting Information

System Indicator

This system has four indicators:

- ABS indicator (A)
- Brake system indicator (B)
- VSA indicator (C)
- VSA OFF indicator (D)



When the system is OK, each indicator comes on for about 2 seconds after turning the ignition switch to ON (II), then goes off.

When the system detects a problem, a DTC will set and, depending upon the failure, the VSA modulator-control unit determines which indicator(s) will turn on. If the problem goes away (system returns to normal), the indicator(s) will be controlled in the following way depending upon the DTC that was set:

- The indicator(s) will come on and stay on when the ignition switch is ON (II).
- The indicator(s) will automatically go off.
- The indicator(s) will go off after the vehicle is driven.

ABS Indicator

The ABS indicator comes on when the ABS function is lost. The brakes still work like a conventional system.

Brake System Indicator

The brake system indicator comes on when the EBD function is lost, the parking brake is applied, and/or the brake fluid level is low.

NOTE: If two or more wheel speed sensors fail, the brake system indicator will come on.

VSA Indicator

The VSA indicator comes on when the VSA function is lost. The VSA indicator blinks when the VSA function is activating.

VSA OFF Indicator

The VSA OFF indicator comes on, when the VSA is turned OFF by using the VSA OFF switch.

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Diagnostic Trouble Code (DTC)

- The memory can hold all DTCs. However, when the same DTC is detected more than once, the more recent DTC is written over the earlier one. Therefore, when the same problem is detected repeatedly, it is memorized as a single DTC.
- The DTCs are indicated in ascending number order, not in the order they occur.
- The DTCs are memorized in the EEPROM in the VSA modulator-control unit. Therefore, the memorized DTCs cannot be erased by disconnecting the battery. Do the specified procedures to clear the DTCs.

Self-Diagnosis

- Self-diagnosis can be classified into two categories:
  - Initial diagnosis: Done right after the ignition switch is turned to ON (II) and until the ABS and VSA indicator go off.
  - Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned to LOCK (0).
- When the system detects a problem, the VSA modulator-control unit shifts to fail-safe mode.

Kickback

The pump motor operates when the VSA modulator-control unit is functioning, and the fluid in the reservoir is forced out to the master cylinder, causing kickback at the brake pedal.

Pump Motor

- The pump motor operates when the VSA modulator-control unit is functioning.
- The VSA modulator-control unit checks the pump motor operation during the first acceleration after the vehicle starts driving.

Brake Fluid Replacement/Air Bleeding

Brake fluid replacement and air bleeding procedures are identical to the procedures used on vehicles without the VSA system (see page 19-10).

How to Troubleshoot DTCs

The troubleshooting procedures assume that the cause of the problem is still present and the ABS and/or VSA indicator is still on. Following a troubleshooting procedure for a DTC that has been cleared but does not reset can result in incorrect diagnosis.

NOTE: Always troubleshoot fuel and emissions DTCs first.

1. Question the customer about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting. Find out when the ABS and/or VSA indicator came on, such as during activation, after activation, when the vehicle was traveling at a certain speed, etc. If necessary, have the customer demonstrate the concern.
2. When the ABS and/or VSA indicators do not come on during the test-drive, but troubleshooting is done based on the DTC, check for loose connectors, poor contact of the terminals, etc. in the circuit indicated by the DTC.
3. After troubleshooting, or the repairs are done, clear the DTCs, and test-drive the vehicle under the same conditions that originally set the DTCs. Make sure the ABS and/or VSA indicator do not come on.

Intermittent Failures

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If you cannot reproduce the condition, check for loose connections and terminals. Also check ground and power connections related to the circuit that you are troubleshooting.

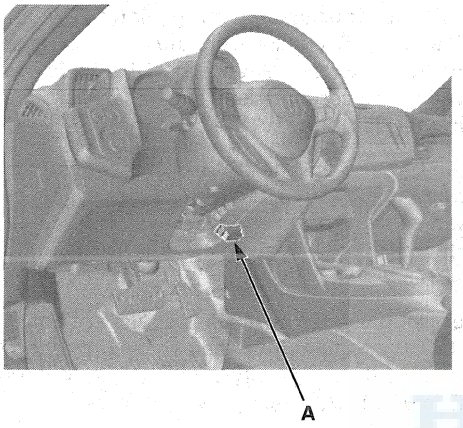
(cont'd)

General Troubleshooting Information (cont'd)

How to Use the HDS (Honda Diagnostic System)

NOTE: Make sure the 12 volt battery is in good condition and fully charged.

1. If the system indicators stay on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Check the diagnostic trouble code (DTC) and the freeze data, and note them. Then refer to the indicated DTC's troubleshooting, and do the appropriate troubleshooting procedure.

   NOTE:
   - Freeze data indicates the VSA conditions when the first system malfunction that activated the indicator was detected.
   - The HDS can read the DTC, the freeze data, the current data, and other system data.
   - For specific operations, refer to the Help menu that came with the HDS.

How to Retrieve DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC troubleshooting.
5. Turn the ignition switch to LOCK (0).

How to Clear DTCs

1. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) under the driver's side of the dashboard.
2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Clear the DTC(s) by following the screen prompts on the HDS.
5. Turn the ignition switch to LOCK (0).

DTC Troubleshooting Index

DTC	Detection Item	Note
11	Right-Front Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see page 19-87)
12	Right-Front Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see page 19-92)
13	Left-Front Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see page 19-87)
14	Left-Front Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see page 19-92)
15	Right-Rear Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see page 19-87)
16	Right-Rear Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see page 19-92)
17	Left-Rear Wheel Speed Sensor Circuit Malfunction	DTC Troubleshooting (see page 19-87)
18	Left-Rear Wheel Speed Sensor Signal Malfunction	DTC Troubleshooting (see page 19-92)
21	Right-Front Magnetic Encoder Malfunction	DTC Troubleshooting (see page 19-94)
22	Left-Front Magnetic Encoder Malfunction	DTC Troubleshooting (see page 19-94)
23	Right-Rear Magnetic Encoder Malfunction	DTC Troubleshooting (see page 19-94)
24	Left-Rear Magnetic Encoder Malfunction	DTC Troubleshooting (see page 19-94)
25	Yaw Rate Sensor Malfunction	DTC Troubleshooting (see page 19-95)
26	Lateral Acceleration Sensor Malfunction	DTC Troubleshooting (see page 19-95)
27	Steering Angle Sensor Malfunction	DTC Troubleshooting (see page 19-97)
28*	Longitudinal Acceleration Sensor Malfunction	DTC Troubleshooting (see page 19-95)
31	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
32	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
33	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
34	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
35	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
36	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
37	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
38	ABS Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-100)
51	Motor Lock	DTC Troubleshooting (see page 19-101)
52	Motor Stuck	DTC Troubleshooting (see page 19-101)
54	Fail-Safe Relay Malfunction	DTC Troubleshooting (see page 19-103)
61	Battery Voltage Low	DTC Troubleshooting (see page 19-104)
62	Battery Voltage High	DTC Troubleshooting (see page 19-104)
64	Sensor Power Source Voltage Malfunction	DTC Troubleshooting (see page 19-105)
65	Brake Fluid Low Level	DTC Troubleshooting (see page 19-106)
66	Pressure Sensor Malfunction	DTC Troubleshooting (see page 19-107)
68	Brake Pedal Position Switch Malfunction	DTC Troubleshooting (see page 19-107)
81	VSA Modulator-Control Unit Internal Circuit Malfunction	DTC Troubleshooting (see page 19-108)
83	PGM-FI Malfunction	DTC Troubleshooting (see page 19-109)
84	VSA Sensor Neutral Position Not Written	DTC Troubleshooting (see page 19-110)
86	F-CAN Communication Malfunction	DTC Troubleshooting (see page 19-110)
91	VSA Activation Time Too Long	DTC Troubleshooting (see page 19-113)
104	Yaw Rate-Acceleration Sensor Malfunction	DTC Troubleshooting (see page 19-95)
105	Hydraulic Unit Temperature Sensor Malfunction	DTC Troubleshooting (see page 19-113)
111*	Back-Up Light Switch Malfunction	DTC Troubleshooting (see page 19-114)
112*	Neutral Switch Malfunction	DTC Troubleshooting (see page 19-114)
121	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-117)
122	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-117)
123	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-117)
124	VSA Solenoid Valve Malfunction	DTC Troubleshooting (see page 19-117)
158	ECU Software Update Failure	DTC Troubleshooting (see page 19-117)

*: M/T model.

VSA System Components

Symptom Troubleshooting Index

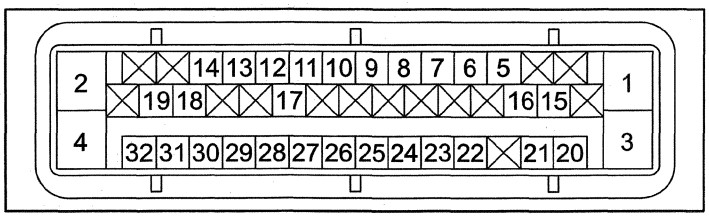
When the vehicle has one of these symptoms, check for VSA diagnostic trouble codes (DTCs) with the HDS. If there are no DTCs, do the diagnostic procedure for the symptom, in the sequence listed, until you find the cause.

Symptom	Diagnostic procedure	Also check for
HDS does not communicate with the VSA modulator-control unit or the vehicle	Troubleshoot the DLC circuit (see page 11-383).	
ABS indicator, brake system indicator, VSA indicator, or VSA OFF indicator does not come on at start-up (bulb check)	1. Do the gauge control module self-diagnostic function (see page 22-325). 2. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124), if the VSA modulator-control unit was updated and the symptom is still present, replace the VSA modulator-control unit (see page 19-125).	
VSA cannot be turned OFF	1. Symptom troubleshooting (see page 19-118). 2. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124), if the VSA modulator-control unit was updated and the symptom is still present, replace the VSA modulator-control unit (see page 19-125).	
VSA OFF indicator does not go off	Do the VSA sensor neutral position memorization (see page 19-123).	
ABS indicator, brake system indicator, and VSA indicator do not go off	1. Check for F-CAN DTCs, and troubleshoot and repair those first (see page 11-3). 2. Symptom troubleshooting (see page 19-119).	

HONDA

System Description

VSA Modulator-Control Unit Inputs and Outputs for 32P Connector (Connector Disconnected)



Wire side of female terminals

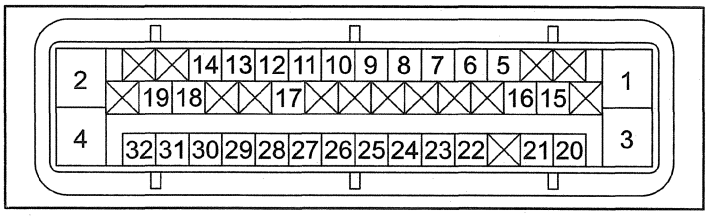
Terminal number	Wire color	Terminal sign	Description	Signal
1	BLK	FSR GND	Ground for the VSA modulator-control unit	Continuity to ground
2	GRN	MTR +B	Power source for the motor relay	Battery voltage (about 12V) at all times
3	BLK	MTR GND	Ground for the pump motor	Continuity to ground
4	WHT	FSR +B	Power source for the fail-safe relay	Battery voltage (about 12V) at all times
5	PNK	F-CAN L	F-CAN communication circuit	———
6	GRN	F-CAN H	F-CAN communication circuit	———
7	Not used	Not used	———	———
8	BLU	K-LINE	Communication with HDS	Pulse voltage (digital signal)
9	Not used	Not used	———	———
10	ORN	IG1 ABS (7.5A)	Power source for activating the system	With ignition switch ON (II): battery voltage (about 12V)
11	Not used	Not used	———	———
12	Not used	Not used	———	———
13	PUR	SVCC	Power source for the steering angle sensor	———
14	Not used	Not used	———	———
15	LT BLU	STR Z	Detects steering angle sensor signal	———
16	Not used	Not used	———	———
17	Not used	Not used	———	———
18	Not used	Not used	———	———
19	Not used	Not used	———	———

(cont'd)

VSA System Components

System Description (cont'd)

VSA Modulator-Control Unit Inputs and Outputs for 32P Connector (Connector Disconnected)

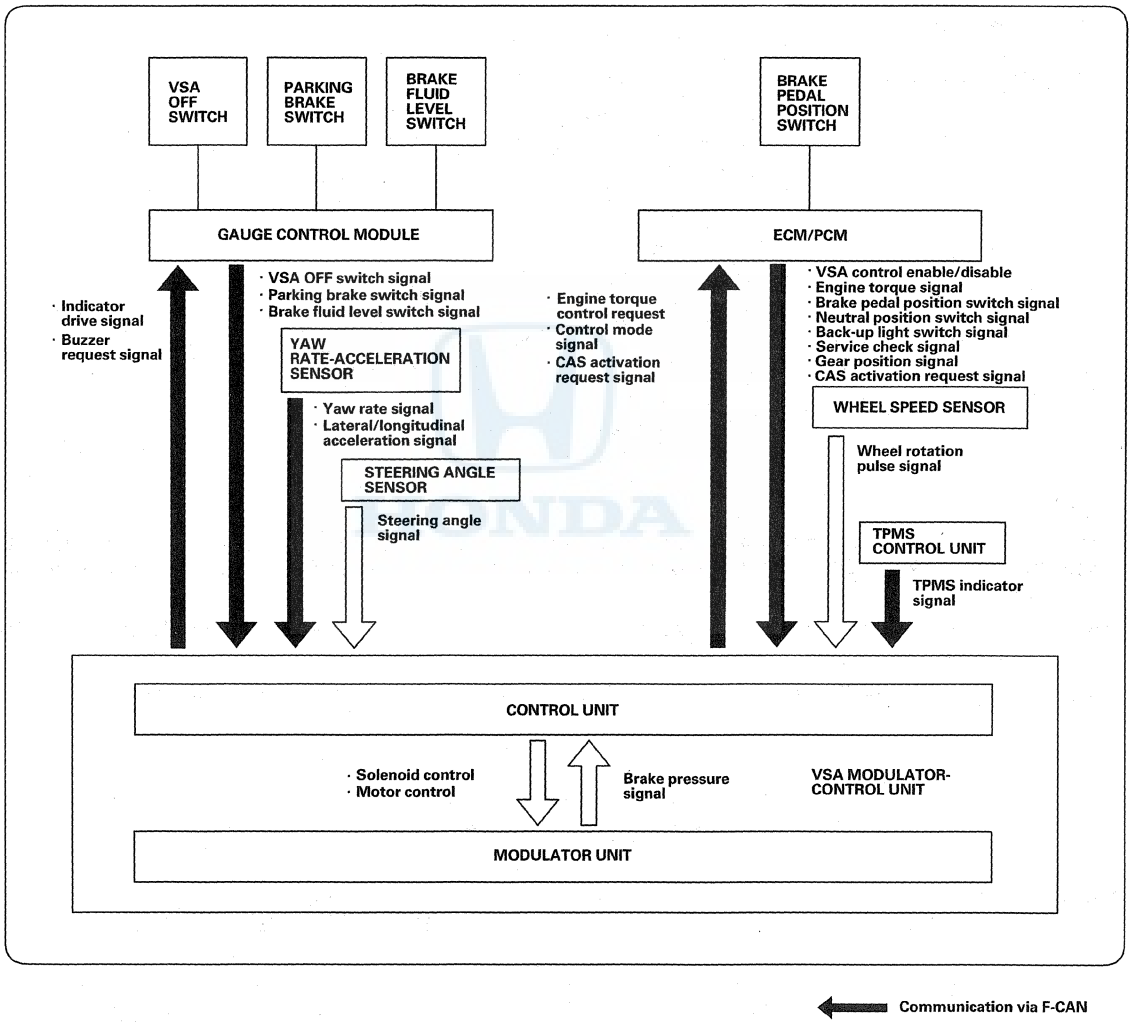


Wire side of female terminals

Terminal number	Wire color	Terminal sign	Description	Signal
20	BRN	FLS−	Detects left-front wheel speed sensor signal	———
21	LT GRN	FLS+	Detects left-front wheel speed sensor signal	———
22	GRN	RRS+	Detects right-rear wheel speed sensor signal	———
23	WHT	RRS−	Detects right-rear wheel speed sensor signal	———
24	GRY	STR A	Detects steering angle sensor signal	———
25	BLU	STR G	Ground for the steering angle sensor	———
26	ORN	WEN	Detects write enable signal	———
27	GRN	STR B	Detects steering angle sensor signal	———
28	GRY	RLS−	Detects left-rear wheel speed sensor signal	———
29	PNK	RLS+	Detects left-rear wheel speed sensor signal	———
30	Not used	Not used	———	———
31	YEL	FRS+	Detects right-front wheel speed sensor signal	———
32	BLU	FRS−	Detects right-front wheel speed sensor signal	———

System Outline

This system is composed of the VSA modulator-control unit, the wheel speed sensors, the steering angle sensor, the yaw rate-acceleration sensor, and the system indicators in the gauge control module. The VSA modulator-control unit controls the Anti-Lock Brake System (ABS), the Electronic Brake Distribution (EBD), the Traction Control System (TCS), the Vehicle Stability Assist (VSA), the Creep Aid System (CAS) on CVT models, the Hill Start Assist (HSA) on M/T models, and brake assist with the brake pressure of each wheel and reduces engine torque.



(cont'd)

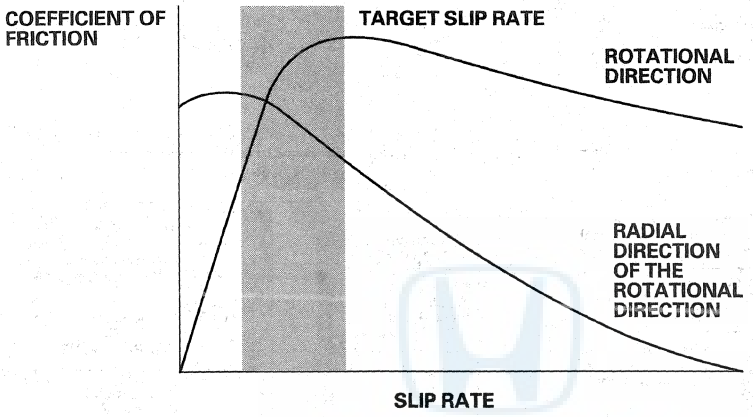
System Description (cont'd)

ABS (Anti-Lock Brake System) Features

Anti-Lock Control

Without ABS, when the brake pedal is pressed while driving, the wheels sometimes lock before the vehicle comes to a stop. In such an event, the maneuverability of the vehicle is reduced if the front wheels are locked, and the stability of the vehicle is reduced if the rear wheels are locked, creating an extremely unstable condition. With ABS, the system precisely controls the slip rate of the wheels to ensure maximum grip force from the tires, and it thereby ensures maneuverability and stability of the vehicle. The ABS calculates the slip rate of the wheels based on the four wheel speeds, and then it controls the brake fluid pressure to reach the target slip rate.

Grip force of tire and road surface

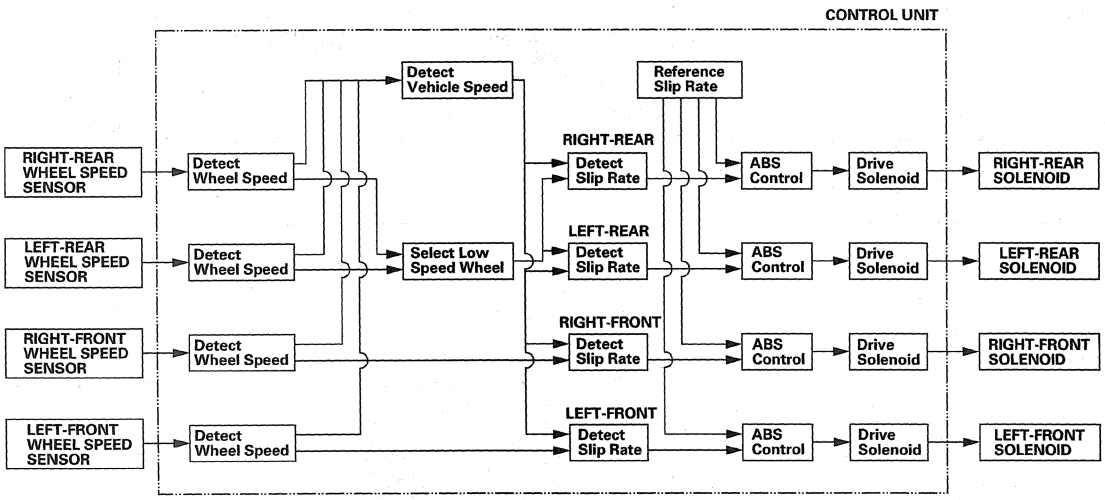


Main Control

The control unit detects the wheel speed based on the wheel speed sensor signals it receives, then it calculates the vehicle speed based on the detected wheel speed. The control unit detects the vehicle speed during deceleration based on the wheel speeds.

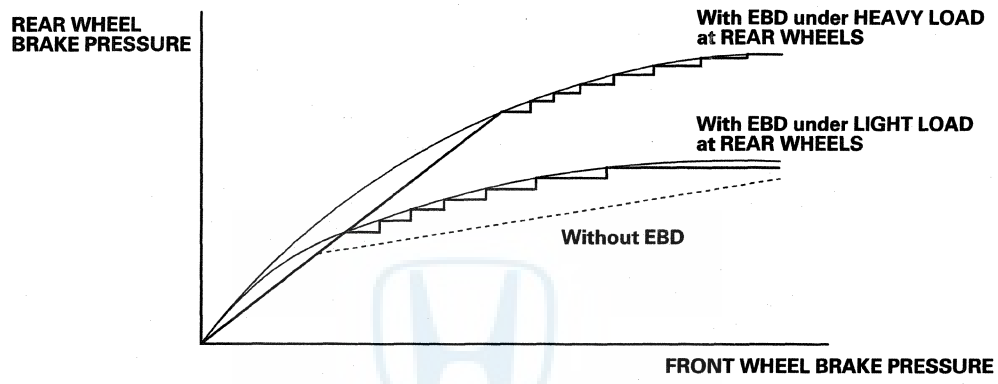
The control unit calculates the slip rate of each wheel, and transmits the control signal to the modulator unit solenoid valve when the slip rate is high.

The hydraulic control has three modes: Pressure retaining, pressure reducing, and pressure intensifying.



EBD (Electronic Brake Distribution) Features

The EBD feature helps control vehicle braking by adjusting the rear brake force in accordance with the rear wheel load before the ABS operates. Based on the wheel speed sensor signals, the control unit uses the modulator to control the rear brakes individually. When the rear wheel speed is less than the front wheel speed, the VSA modulator-control unit retains the current rear brake fluid pressure by closing the inlet valve in the modulator. As the rear wheel speed increases and approaches the front wheel speed, the VSA modulator-control unit increases the rear brake fluid pressure by momentarily opening the inlet valve. This whole process is repeated very rapidly. While this is happening, kickback may be felt at the brake pedal, you may also hear a muted buzzing sound from the VSA modulator-control unit. This is normal.

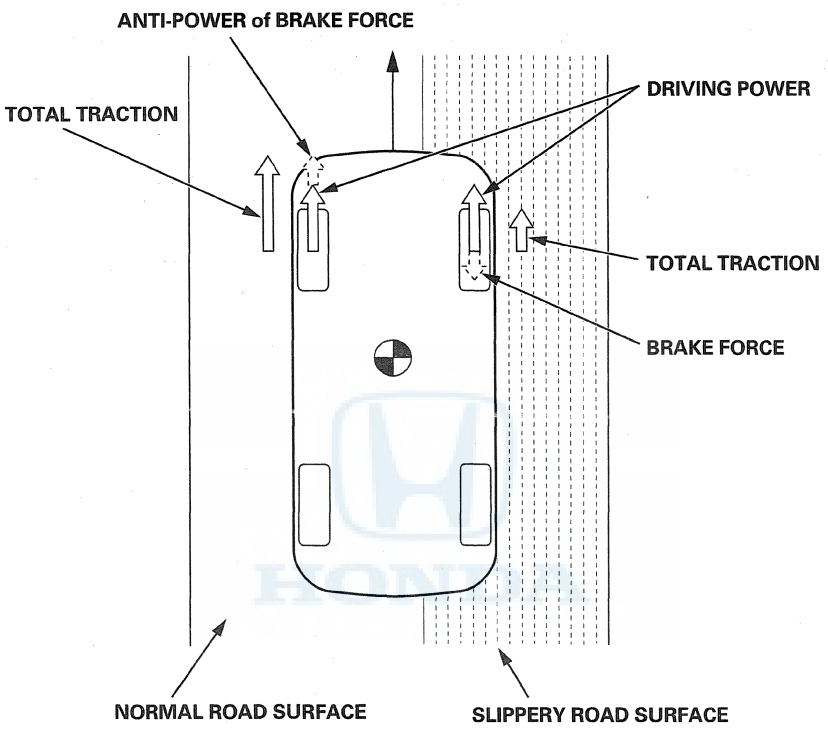


(cont'd)

System Description (cont'd)

TCS (Traction Control System) Features

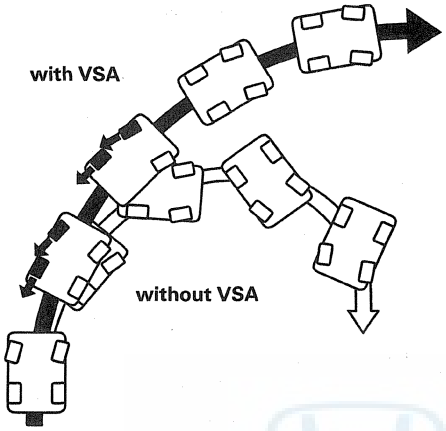
When a drive wheel loses traction on a slippery road surface and starts to spin, the VSA modulator-control unit applies brake pressure to the spinning wheel and sends an engine torque control request to the ECM/PCM to slow the spinning wheel and keep traction.



VSA (Vehicle Stability Assist) System Features

Oversteer control

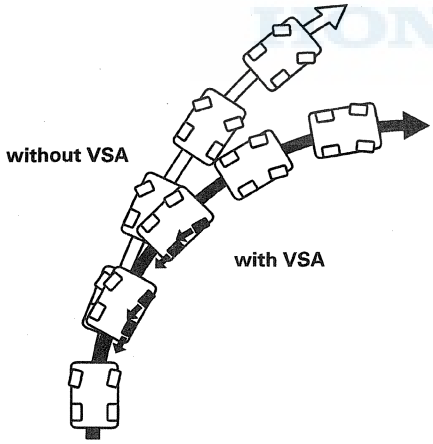
Applies the brake to the front and rear outside wheels



The brake makes the yaw rate opposite the turning direction

Understeer control

- Applies the brake to the front and rear inside wheels
- Controls the engine torque when accelerating



The braking increases the yaw rate toward the turning direction

The throttle control effect;
- **Reduces vehicle speed**
- **Increases cornering force**

(cont'd)

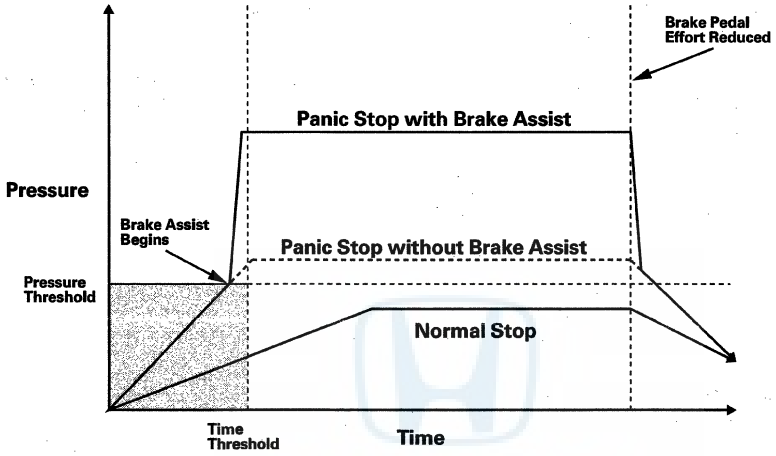
System Description (cont'd)

Brake Assist Features

Brake assist helps ensure that any driver can achieve the full braking potential of the vehicle by increasing brake system pressure in a panic situation, bringing the vehicle into a full ABS stop.

If during a panic stop the VSA modulator-control unit determines that the brake system pressure increases above a threshold in less than a certain amount of time, the VSA modulator-control unit engages brake assist.

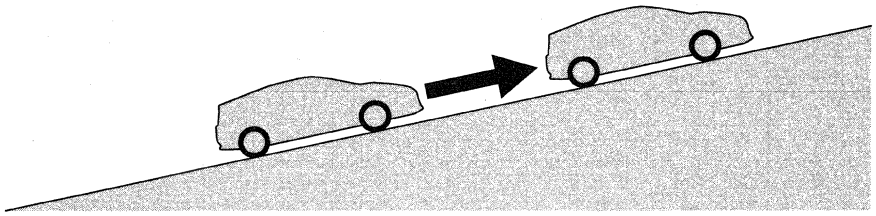
Because the brake system pressure crossed the pressure threshold before the time threshold had expired, the VSA modulator-control unit goes into brake assist mode.

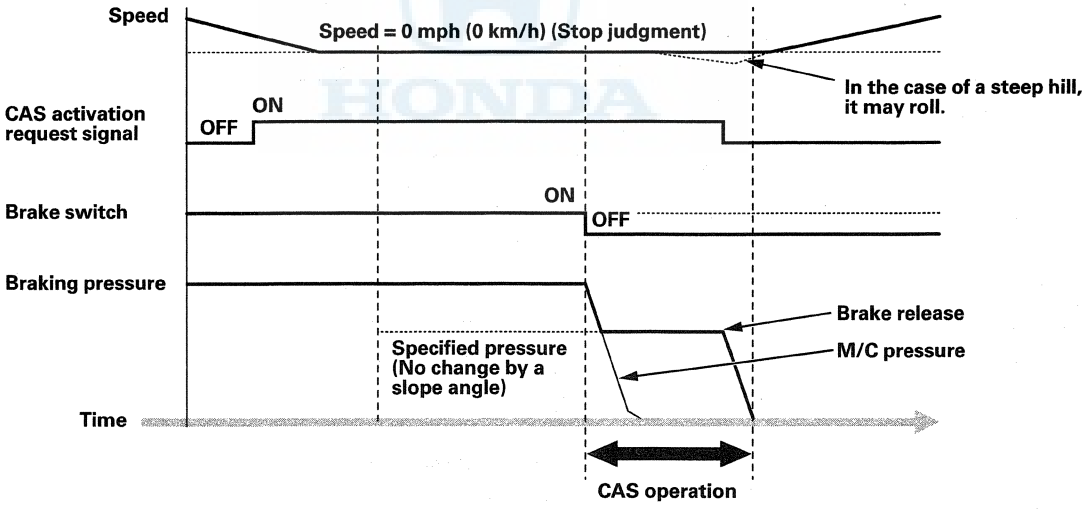


CAS (Creep Aid System) Features (CVT model)

This system prevents the vehicle from rolling forward or backward on a hill during which the driver releases the brake pedal by controlling the brake pressure.

When the VSA modulator control unit receives a CAS activation request signal from the PCM, the system assists the driver to get the vehicle started by holding the brake pressure. This control is done not only on hills, but also on level roads. When the driver lifts their foot off the brake pedal to get the vehicle started, the brake switch is turned off, and then the brake pressure is held by operating the TCS valve and the ESV valve.



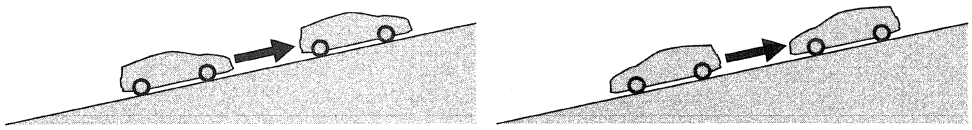


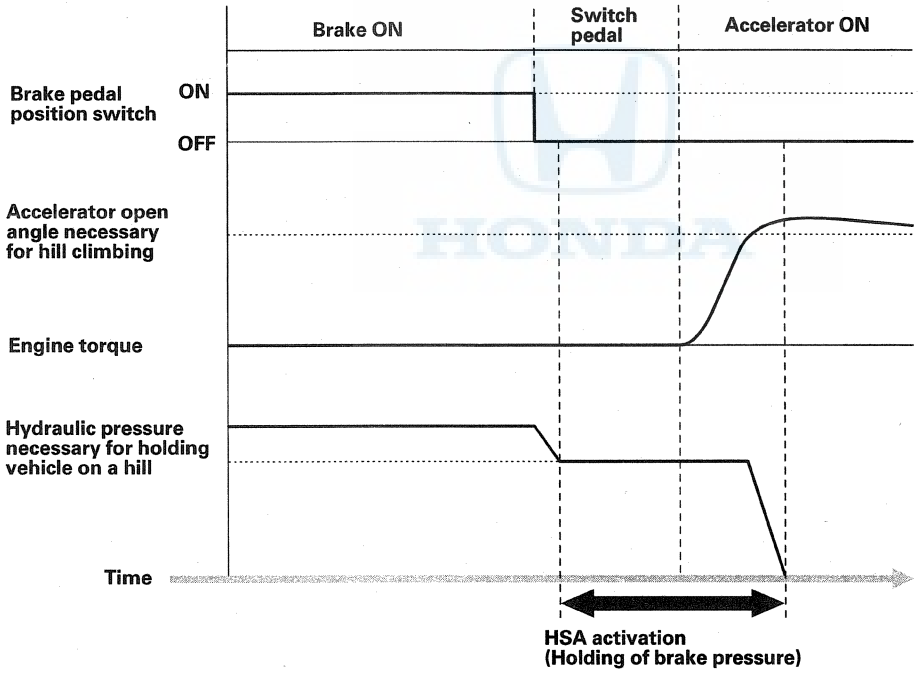
(cont'd)

System Description (cont'd)

HSA (Hill Start Assist) Features (M/T model)

Prevents the vehicle from rolling backwards when moving your foot from the brake pedal to the accelerator pedal while stopped on a hill. The control unit reads the angle of inclination from the yaw rate-acceleration sensor, and that all four wheels are stopped, then it calculates the amount of fluid pressure required to keep the vehicle from rolling backward when the control unit sees the brake pressure decrease as the driver lifts their foot off of the brake pedal, and moves their foot to the accelerator pedal. The HSA also works when the vehicle is stopped on a downhill slope.



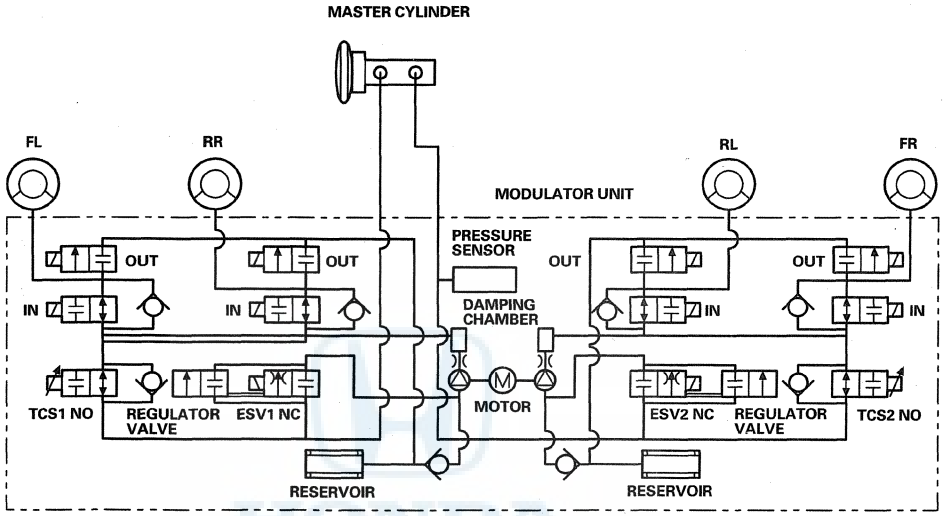


Modulator Unit

The modulator unit consists of the inlet solenoid valve, the outlet solenoid valve, the TCS NO (normally open) solenoid valve, the ESV NC (normally closed) solenoid valve, the reservoir, the pump, and the pump motor.

The hydraulic control has three modes of ABS action; pressure intensifying, pressure retaining, and pressure reducing. Pressure intensifying (VSA) mode is combination of the TCS, VSA, CAS, HSA, and brake assist action.

The hydraulic circuit is an independent four channel type; one channel for each wheel.



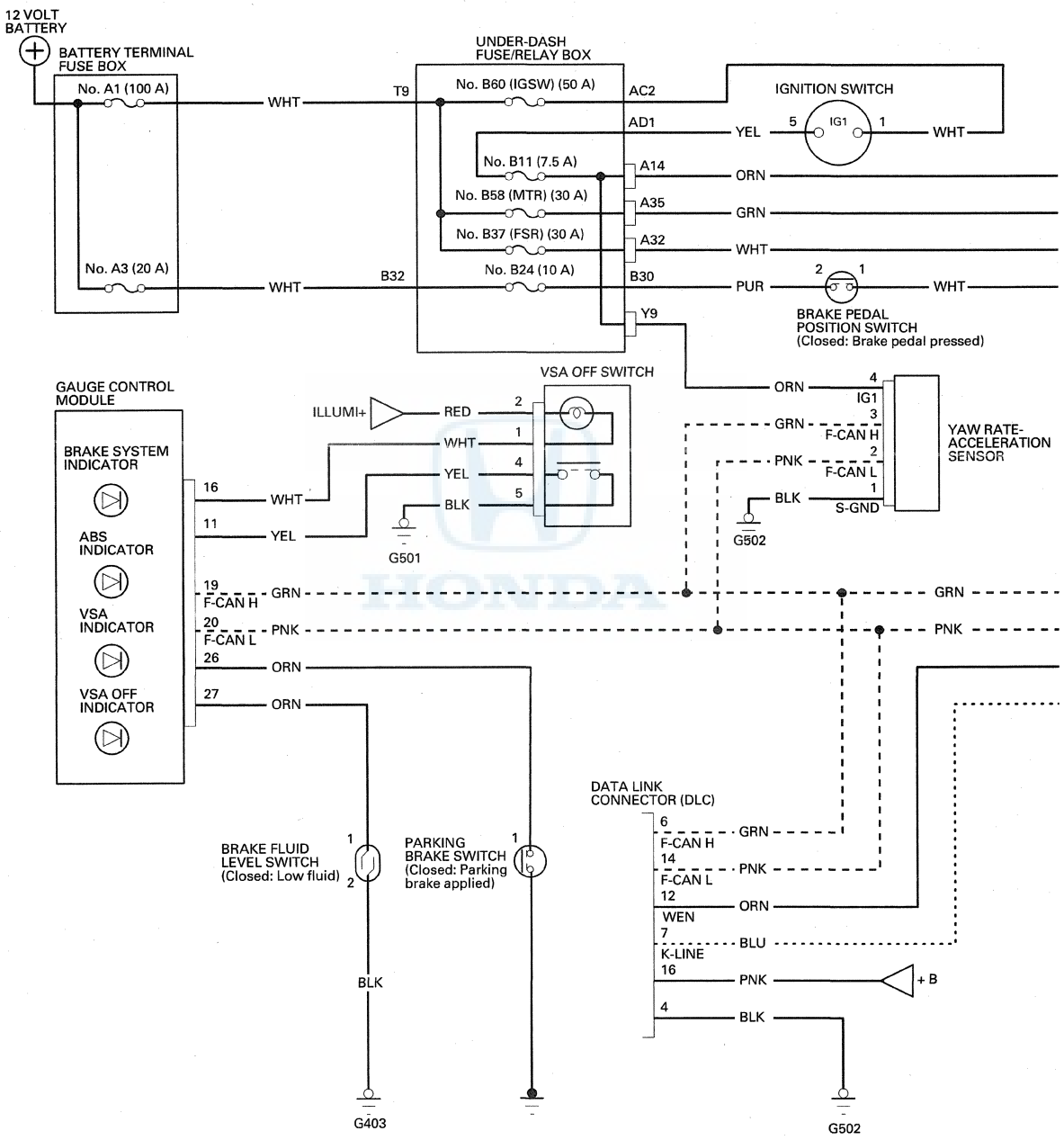
IN: INLET SOLENOID VALVE (NORMALLY OPEN)
OUT: OUTLET SOLENOID VALVE (NORMALLY CLOSED)

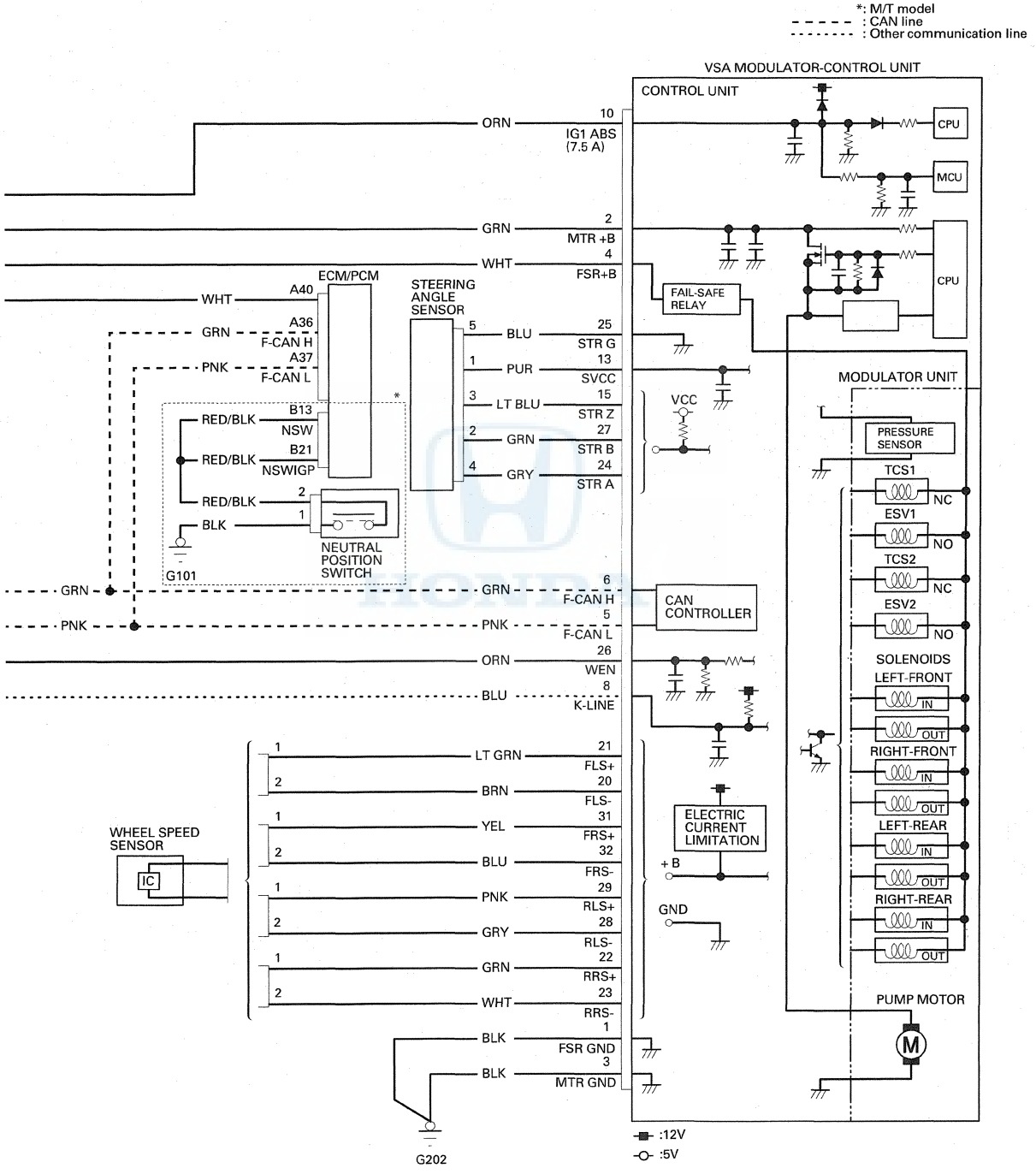
Mode	TCS NO Valve	ESV NC Valve	Inlet Solenoid Valve	Outlet Solenoid Valve	Brake Fluid
Pressure intensifying mode	open	closed	open	closed	Master cylinder fluid is pumped out to the caliper.
Pressure retaining mode	open	closed	closed	closed	Caliper fluid is retained by the inlet and outlet valves.
Pressure reducing mode	open	closed	closed	open	• Caliper fluid flows through the outlet valve to the reservoir. • The motor pumps the reservoir fluid through the damping chamber to the master cylinder*.
Pressure intensifying mode (VSA)	closed	open	open	closed	• Master cylinder fluid is pumped out by the pump through the ESV NC valve to the caliper. • Caliper fluid pressure exceeds master cylinder pressure.

*: The motor will continue running until the operation of the one anti-lock brake control is finished with the first pressure reducing mode.

VSA System Components

Circuit Diagram

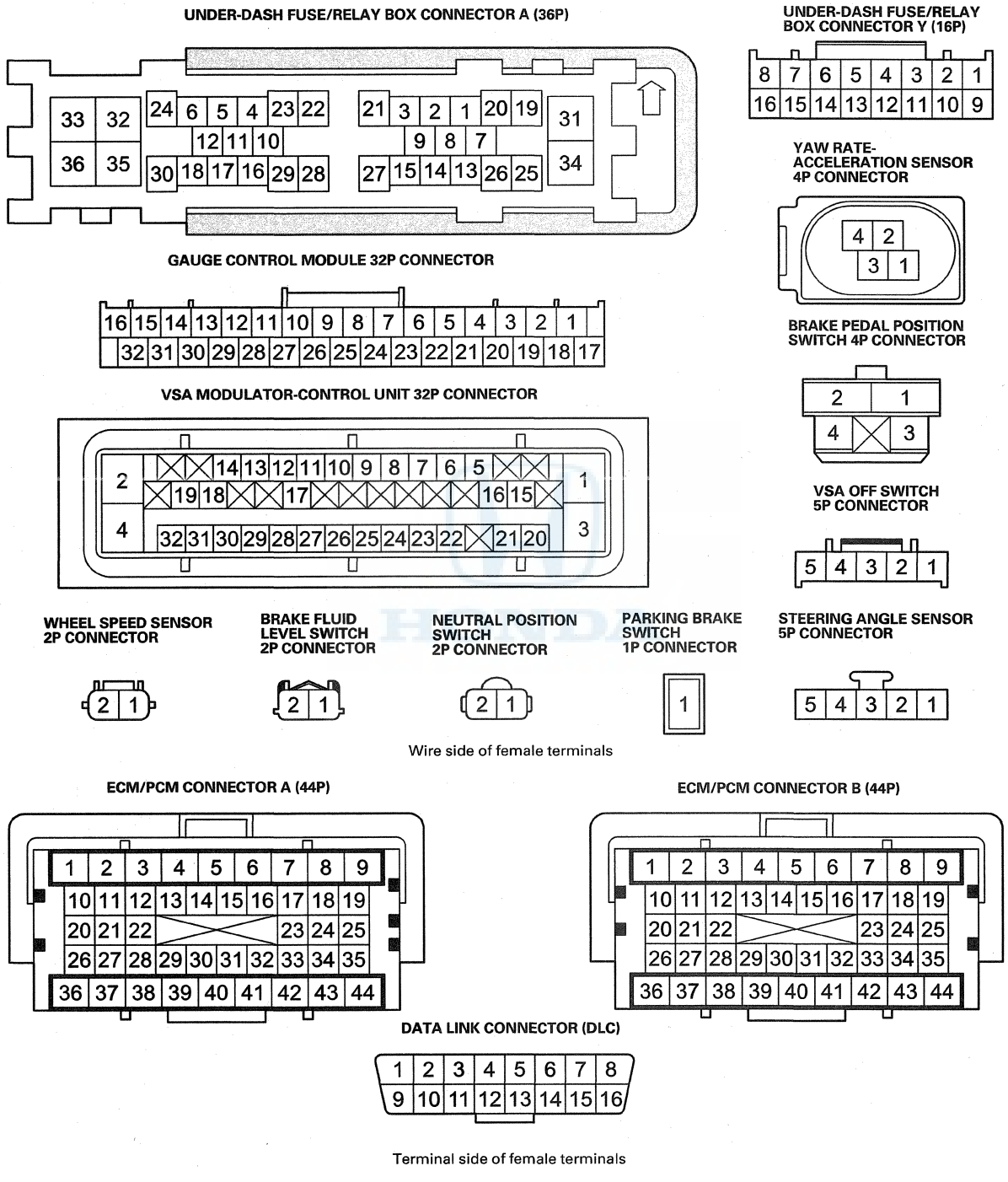



*: M/T model
: CAN line
: Other communication line
VSA MODULATOR-CONTROL UNIT
CONTROL UNIT
CPU
MCU
CPU
FAIL-SAFE RELAY
MODULATOR UNIT
PRESSURE SENSOR
TCS1
NC
ESV1
NO
TCS2
NC
ESV2
NO
SOLENOIDS
LEFT-FRONT
IN
OUT
RIGHT-FRONT
IN
OUT
LEFT-REAR
IN
OUT
RIGHT-REAR
IN
OUT
PUMP MOTOR
M
VCC
CAN CONTROLLER
ELECTRIC CURRENT LIMITATION
+B
GND
ORN
10
IG1 ABS (7.5 A)
GRN
2
MTR +B
WHT
4
FSR+B
BLU
25
STR G
PUR
13
SVCC
LT BLU
15
STR Z
GRN
27
STR B
GRY
24
STR A
GRN
6
F-CAN H
PNK
5
F-CAN L
ORN
26
WEN
BLU
8
K-LINE
LT GRN
21
FLS+
BRN
20
FLS-
YEL
31
FRS+
BLU
32
FRS-
PNK
29
RLS+
GRY
28
RLS-
GRN
22
RRS+
WHT
23
RRS-
BLK
1
FSR GND
BLK
3
MTR GND
ECM/PCM
A40
WHT
A36
GRN
F-CAN H
A37
PNK
F-CAN L
B13
RED/BLK
NSW
B21
RED/BLK
NSWIGP
2
RED/BLK
1
BLK
G101
NEUTRAL POSITION SWITCH
STEERING ANGLE SENSOR
5
1
3
2
4
WHEEL SPEED SENSOR
IC
G202
:12V
:5V

(cont'd)

VSA System Components

Circuit Diagram (cont'd)



DTC Troubleshooting

DTC 11: Right-Front Wheel Speed Sensor Circuit Malfunction

DTC 13: Left-Front Wheel Speed Sensor Circuit Malfunction

DTC 15: Right-Rear Wheel Speed Sensor Circuit Malfunction

DTC 17: Left-Rear Wheel Speed Sensor Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

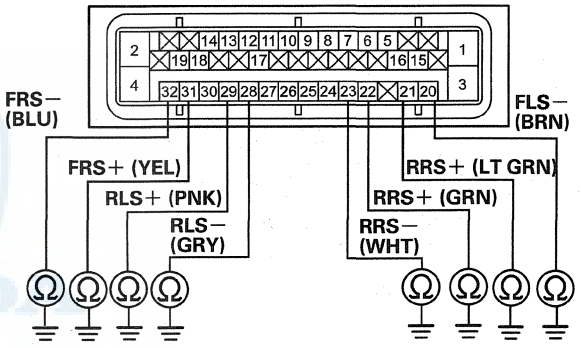
   Is DTC 11, 13, 15, or 17 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Turn the ignition switch to LOCK (0).
7. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
8. Check for continuity between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 32P connector individually (see table).

DTC	Appropriate Terminal	
	+B	GND
11 Right-front	FRS+: No. 31	FRS−: No. 32
13 Left-front	FLS+: No. 21	FLS−: No. 20
15 Right-rear	RRS+: No. 22	RRS−: No. 23
17 Left-rear	RLS+: No. 29	RLS−: No. 28

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 9.

NO–Go to step 11.

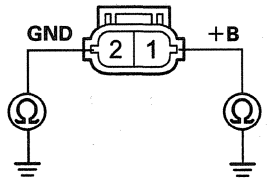
9. Disconnect the appropriate wheel speed sensor 2P connector (see page 19-129).

(cont'd)

DTC Troubleshooting (cont'd)

10. On the sensor side, check for continuity between body ground and wheel speed sensor 2P connector terminals No. 1 and No. 2 individually.

WHEEL SPEED SENSOR 2P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES–Replace the appropriate wheel speed sensor (see page 19-129).■

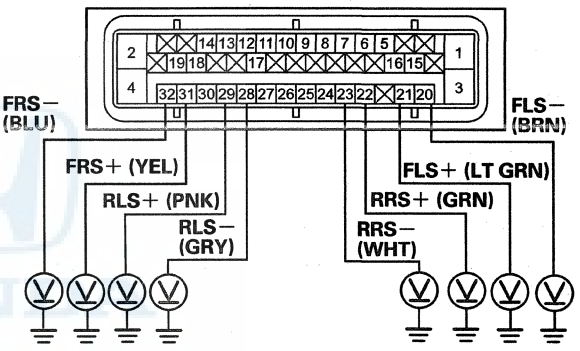
NO–Repair a short to body ground in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.■

11. Turn the ignition switch to ON (II).

12. Measure the voltage between body ground and the appropriate wheel speed sensor +B and GND terminals of the VSA modulator-control unit 32P connector individually (see table).

DTC	Appropriate Terminal	
	+B	GND
11 Right-front	FRS+: No. 31	FRS−: No. 32
13 Left-front	FLS+: No. 21	FLS−: No. 20
15 Right-rear	RRS+: No. 22	RRS−: No. 23
17 Left-rear	RLS+: No. 29	RLS−: No. 28

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there 0.1 V or more?

YES–Go to step 13.

NO–Go to step 17.

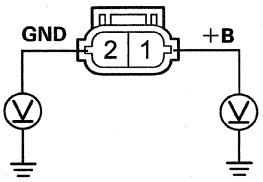
13. Turn the ignition switch to LOCK (0).

14. Disconnect the appropriate wheel speed sensor 2P connector (see page 19-129).

15. Turn the ignition switch to ON (II).

16. On the sensor side, measure the voltage between body ground and wheel speed sensor 2P connector terminals No. 1 and No. 2 individually.

WHEEL SPEED SENSOR 2P CONNECTOR



Terminal side of male terminals

Is there 0.1 V or more?

YES–Replace the appropriate wheel speed sensor (see page 19-129).■

NO–Repair a short to power in the wire between the VSA modulator-control unit and the appropriate wheel speed sensor.■

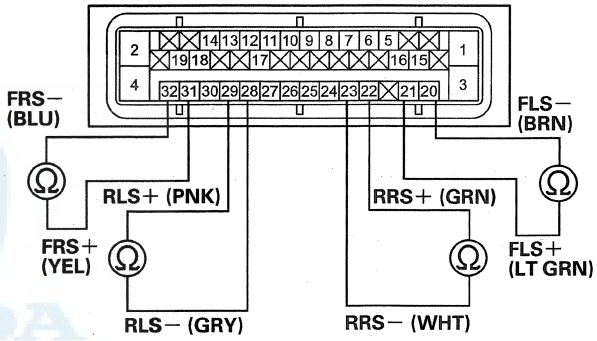
17. Turn the ignition switch to LOCK (0).

18. Disconnect the appropriate wheel speed sensor 2P connector (see page 19-129).

19. Check for continuity between the appropriate VSA modulator-control unit 32P connector wheel speed sensor+B and GND terminals (see table).

DTC	Appropriate Terminal	
	+B	GND
11 Right-front	FRS+: No. 31	FRS−: No. 32
13 Left-front	FLS+: No. 21	FLS−: No. 20
15 Right-rear	RRS+: No. 22	RRS−: No. 23
17 Left-rear	RLS+: No. 29	RLS−: No. 28

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.■

NO–Go to step 20.

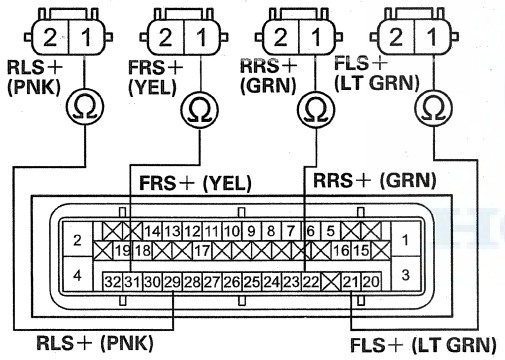
(cont'd)

DTC Troubleshooting (cont'd)

20. Check for continuity between the appropriate VSA modulator-control unit 32P connector terminal and the wheel speed sensor 2P connector terminal (see table).

DTC	VSA Modulator-Control Unit 32P Connector Terminal	Appropriate Wheel Speed Sensor 2P Connector Terminal No. 1
11	No. 31	Right-front
13	No. 21	Left-front
15	No. 22	Right-rear
17	No. 29	Left-rear

WHEEL SPEED SENSOR 2P CONNECTOR
Wire side of female terminals



VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals

Is there continuity?

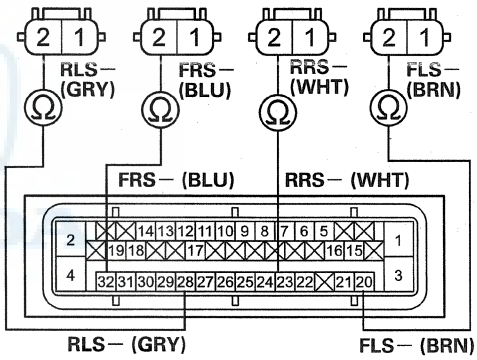
YES–Go to step 21.

NO–Repair an open in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.■

21. Check for continuity between the appropriate VSA modulator-control unit 32P connector terminal and the wheel speed sensor 2P connector terminal (see table).

DTC	VSA Modulator-Control Unit 32P Connector Terminal	Appropriate Wheel Speed Sensor 2P Connector Terminal No. 2
11	No. 32	Right-front
13	No. 20	Left-front
15	No. 23	Right-rear
17	No. 28	Left-rear

WHEEL SPEED SENSOR 2P CONNECTOR
Wire side of female terminals



VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–

- If the DTCs indicate one wheel speed sensor (either the right or left) on the same axle (front or rear), go to step 22.
- If the DTCs indicate both wheel speed sensors (right and left) on the same axle (front or rear), go to step 29.

NO–Repair an open in the wire between the appropriate wheel speed sensor and the VSA modulator-control unit.■

22. Swap the applicable left and right wheel speed sensors.
23. Reconnect all connectors.
24. Turn the ignition switch to ON (II).
25. Clear the DTC with the HDS.

26. Turn the ignition switch to LOCK (0).
27. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
28. Check for DTCs with the HDS.

DTCs Before Swapping	DTCs After Swapping
11 (Right-front)	13 (Left-front)
13 (Left-front)	11 (Right-front)
15 (Right-rear)	17 (Left-rear)
17 (Left-rear)	15 (Right-rear)

    Is the DTC indicated for the opposite wheel?

    YES–Replace the original wheel speed sensor (see page 19-129).■

    NO–Go to step 29.
29. Substitute a known-good wheel speed sensor (see page 19-129).
30. Reconnect all connectors.
31. Turn the ignition switch to ON (II).
32. Clear the DTC with the HDS.
33. Turn the ignition switch to LOCK (0).
34. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
35. Check for DTCs with the HDS.

    Is DTC 11, 13, 15, or 17 indicated?

    YES–Go to step 36.

    NO–Replace the original wheel speed sensor (see page 19-129).■
36. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
37. Turn the ignition switch to LOCK (0).
38. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on a straight section of road, not on a lift.
39. Check for DTCs with the HDS.

    Is DTC 11, 13, 15, or 17 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 12: Right-Front Wheel Speed Sensor Signal Malfunction

DTC 14: Left-Front Wheel Speed Sensor Signal Malfunction

DTC 16: Right-Rear Wheel Speed Sensor Signal Malfunction

DTC 18: Left-Rear Wheel Speed Sensor Signal Malfunction

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).
- If the ABS and the VSA indicators come on because of electrical noise, the indicator goes off when you test-drive the vehicle at 9 mph (15 km/h) after the system returns to normal.
- An incorrectly installed wheel bearing can cause one of these DTCs.

1. Turn the ignition switch to LOCK (0).
2. Check that the appropriate wheel speed sensor is properly mounted (see page 19-129).

DTC	Appropriate Wheel Speed Sensor
12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

Is the wheel speed sensor installation OK?

YES–Go to step 3.

NO–Reinstall the wheel speed sensor, and check the mounting position (see page 19-129).■

3. Inspect the appropriate magnetic encoder for damage, debris, and correct installation.

DTC	Appropriate Magnetic Encoder	Note
12	Right-front	Remove the driveshaft outboard joint from the appropriate wheel hub (see page 18-13).
14	Left-front	
16	Right-rear	Remove the hub bearing unit (see page 18-28).
18	Left-rear	

Is the magnetic encoder surface OK?

YES–Go to step 4.

NO–Remove the debris from the magnetic encoder, or replace the wheel bearing (front) or the hub bearing unit (rear):

- Front: Replace the front wheel bearing (see page 18-13).■
- Rear: Replace the rear hub bearing unit (see page 18-28).■

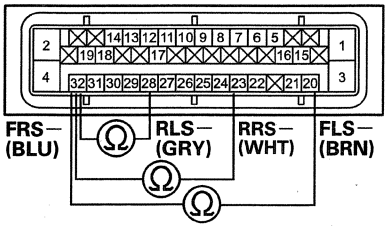
4. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).

5. Check for continuity between the appropriate wheel speed sensor GND terminal and the other wheel speed sensor GND terminals of the VSA modulator-control unit 32P connector (see table).

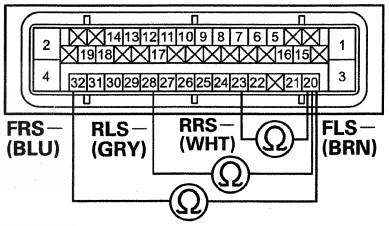
DTC	Appropriate Terminal	Other Terminals		
12	FRS−: No. 32	No. 20	No. 23	No. 28
14	FLS−: No. 20	No. 32	No. 23	No. 28
16	RRS−: No. 23	No. 32	No. 20	No. 28
18	RLS−: No. 28	No. 32	No. 20	No. 23

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR

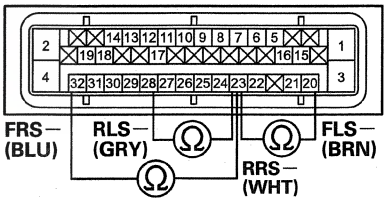
DTC 12:



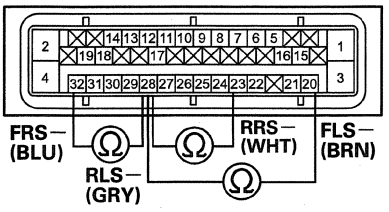
DTC 14:



DTC 16:



DTC 18:



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires between the appropriate wheel speed sensor and the other wheel speed sensor.■

NO–Go to step 6.

(cont'd)

DTC Troubleshooting (cont'd)

6. Substitute a known-good wheel speed sensor (see page 19-129).
7. Reconnect all connectors.
8. Turn the ignition switch to ON (II).
9. Clear the DTC with the HDS.
10. Turn the ignition switch to LOCK (0).
11. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
12. Check for DTCs with the HDS.

    Is DTC 12, 14, 16, or 18 indicated?

    YES–Go to step 13.

    NO–Replace the original wheel speed sensor (see page 19-129).■
13. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
14. Turn the ignition switch to LOCK (0).
15. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
16. Check for DTCs with the HDS.

    Is DTC 12, 14, 16, or 18 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 21: Right-Front Magnetic Encoder Malfunction

DTC 22: Left-Front Magnetic Encoder Malfunction

DTC 23: Right-Rear Magnetic Encoder Malfunction

DTC 24: Left-Rear Magnetic Encoder Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 21, 22, 23, or 24 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

6. Inspect the appropriate magnetic encoder for damage, debris, and correct installation.

DTC	Appropriate Magnetic Encoder	Note
21	Right-front	Remove the driveshaft outboard joint from the appropriate wheel hub (see page 18-13).
22	Left-front	
23	Right-rear	Remove the hub bearing unit (see page 18-28).
24	Left-rear	

Is the magnetic encoder surface OK?

YES–Go to step 7.

NO–Remove the debris from the magnetic encoder, or replace the wheel bearing (front) or the hub bearing unit (rear):

- Front: Replace the front wheel bearing (see page 18-13).■
- Rear: Replace the rear hub bearing unit (see page 18-28).■

7. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
8. Turn the ignition switch to LOCK (0).
9. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on a straight section of road, not on a lift.

10. Check for DTCs with the HDS.

    Is DTC 21, 22, 23, or 24 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 25: Yaw Rate Sensor Malfunction

DTC 26: Lateral Acceleration Sensor Malfunction

DTC 28: Longitudinal Acceleration Sensor Malfunction

DTC 104: Yaw Rate-Acceleration Sensor Malfunction

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).
- These code(s) will set after test-drive if the sensor is installed incorrectly.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle around a number of corners.

   NOTE: Drive the vehicle on the road, not on a lift.

5. Check for DTCs with the HDS.

   Is DTC 25, 26, 28, or 104 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

6. Check the size, air pressure, and the amount of wear of all four tires.

   Is the tire condition OK?

   YES–Go to step 7.

   NO–Replace the tires and/or adjust the air pressure, then recheck by test-driving.■

7. Check the YAW/G COMBINE SENSOR DIAGNOSIS in the VSA FREEZE DATA with the HDS.

   Is YAW/G COMBINE SENSOR DIAGNOSIS NORMAL?

   YES–Go to step 13.

   NO–Go to step 8.

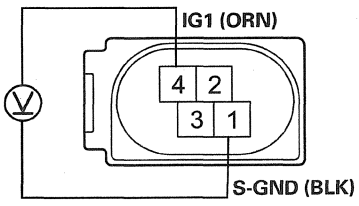
8. Turn the ignition switch to LOCK (0).
9. Disconnect the yaw rate-acceleration sensor 4P connector (see step 3 on page 19-122).
10. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

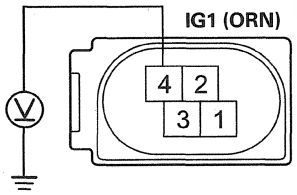
Is there battery voltage?

YES–Replace the yaw rate-acceleration sensor (see page 19-122).■

NO–Go to step 12.

12. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 4 and body ground.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

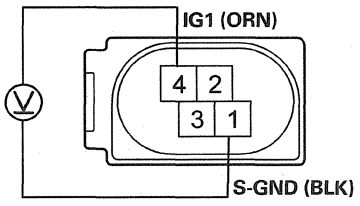
Is there battery voltage?

YES–Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G502).■

NO–Repair an open in the wire between the yaw rate-acceleration sensor and the under-dash fuse/relay box.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the yaw rate-acceleration sensor 4P connector (see step 3 on page 19-122).
15. Turn the ignition switch to ON (II).
16. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

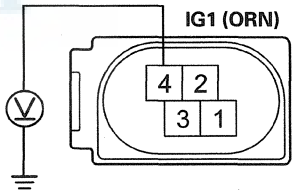
Is there battery voltage?

YES–Go to step 18.

NO–Go to step 17.

17. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 4 and body ground.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G502).■

NO–Repair an open in the wire between the yaw rate-acceleration sensor and the under-dash fuse/relay box.■

18. Check the wheel alignment (see page 18-5).

Is the wheel alignment OK?

YES–Go to step 19.

NO–Make sure the suspension is not modified, and adjust the wheel alignment correctly, and recheck by test-driving.■

19. Substitute a known-good yaw rate-acceleration sensor (see page 19-122).
20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Clear the DTC with the HDS.
23. Turn the ignition switch to LOCK (0).
24. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.
25. Check for DTCs with the HDS.

    Is DTC 25, 26, 28, or 104 indicated?

    YES–Go to step 26.

    NO–Replace the original yaw rate-acceleration sensor (see page 19-122).■
26. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
27. Turn the ignition switch to LOCK (0).
28. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.
29. Check for DTCs with the HDS.

    Is DTC 25, 26, 28, or 104 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 27: Steering Angle Sensor Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle around a number of corners.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 27 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Check the size, air pressure, and the amount of wear of all four tires.

   Is the tire condition OK?

   YES–Go to step 7.

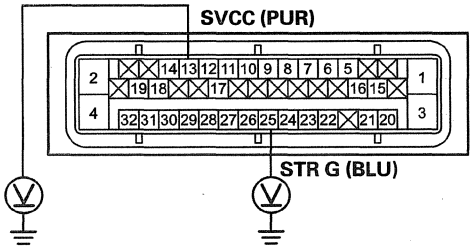
   NO–Replace the tires and/or adjust the air pressure, then recheck by test-driving.■
7. Turn the ignition switch to LOCK (0).
8. Disconnect the steering angle sensor 5P connector (see page 19-121).
9. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
10. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure the voltage between body ground and VSA modulator-control unit 32P connector terminals No. 13 and No. 25 individually.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

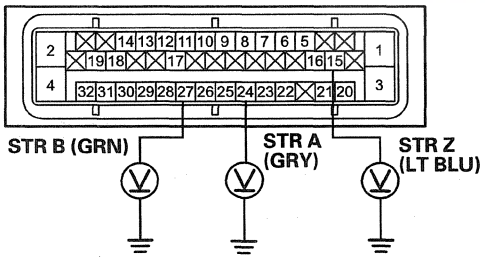
Is there 0.1 V or more?

YES–Repair a short to power in the wire between the VSA modulator-control unit and the steering angle sensor.■

NO–Go to step 12.

12. Measure the voltage between body ground and VSA modulator-control unit 32P connector terminals No. 15, No. 24, and No. 27 individually.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there 0.1 V or more?

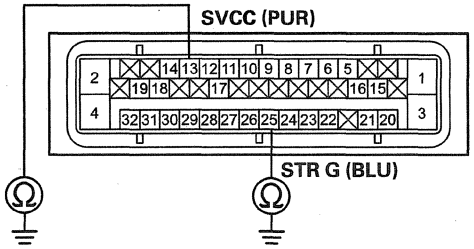
YES–Repair a short to power in the wire between the VSA modulator-control unit and the steering angle sensor.■

NO–Go to step 13.

13. Turn the ignition switch to LOCK (0).

14. Check for continuity between body ground and VSA modulator-control unit 32P connector terminals No. 13 and No. 25 individually.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

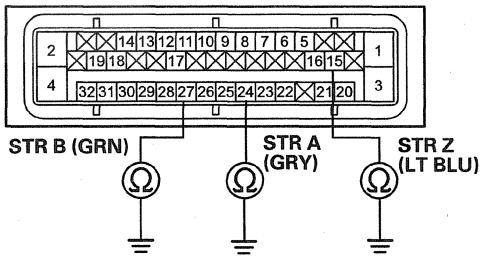
Is there continuity?

YES–Repair a short to body ground in the wire between the VSA modulator-control unit and the steering angle sensor.■

NO–Go to step 15.

15. Check for continuity between body ground and VSA modulator-control unit 32P connector terminals No. 15, No. 24, and No. 27 individually.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

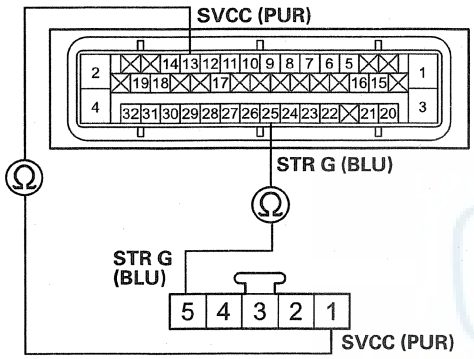
YES–Repair a short to body ground in the wire between the VSA modulator-control unit and the steering angle sensor.■

NO–Go to step 16.

16. Check for continuity between VSA modulator-control unit 32P connector terminal and steering angle sensor 5P connector terminal individually (see table).

Sign	VSA Modulator-Control Unit 32P Connector Terminal	Steering Angle Sensor 5P Connector Terminal
SVCC	No. 13	No. 1
STR G	No. 25	No. 5

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals



STEERING ANGLE SENSOR 5P CONNECTOR
Wire side of female terminals

Is there continuity?

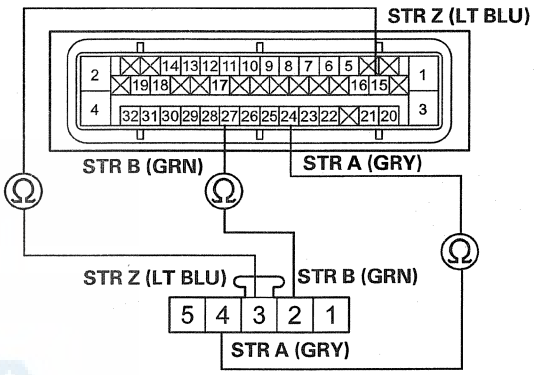
YES–Go to step 17.

NO–Repair an open in the wire between the VSA modulator-control unit and the steering angle sensor.■

17. Check for continuity between VSA modulator-control unit 32P connector terminal and steering angle sensor 5P connector terminal individually (see table).

Sign	VSA Modulator-Control Unit 32P Connector Terminal	Steering Angle Sensor 5P Connector Terminal
STR-A	No. 24	No. 4
STR-B	No. 27	No. 2
STR-Z	No. 15	No. 3

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals



STEERING ANGLE SENSOR 5P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 18.

NO–Repair an open in the wire between the VSA modulator-control unit and the steering angle sensor.■

18. Check the wheel alignment (see page 18-5).

Is the wheel alignment OK?

YES–Go to step 19.

NO–Make sure the suspension is not modified, and adjust the wheel alignment correctly, and recheck by test-driving.■

(cont'd)

DTC Troubleshooting (cont'd)

19. Substitute a known-good steering angle sensor (see page 19-121).

    NOTE: Make sure the steering angle sensor and combination switch is mounted properly.

20. Reconnect all connectors.
21. Turn the ignition switch to ON (II).
22. Clear the DTC with the HDS.
23. Turn the ignition switch to LOCK (0).
24. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.

25. Check for DTCs with the HDS.

    Is DTC 27 indicated?

    YES–Go to step 26.

    NO–Check for loose terminals in the steering angle sensor 5P connector. If the connections are OK, replace the steering angle sensor (see page 19-121).■

26. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
27. Turn the ignition switch to LOCK (0).
28. Test-drive the vehicle around a number of corners.

    NOTE: Drive the vehicle on the road, not on a lift.

29. Check for DTCs with the HDS.

    Is DTC 27 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS Solenoid Valve Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

    Is DTC 31, 32, 33, 34, 35, 36, 37, or 38 indicated?

    YES–Go to step 5.

    NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

5. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
6. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
7. Check for DTCs with the HDS.

    Is DTC 31, 32, 33, 34, 35, 36, 37, or 38 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 51: Motor Lock

DTC 52: Motor Stuck

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 51 or 52 indicated?

   YES–Go to step 6.

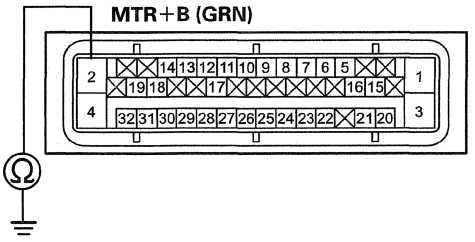
   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Turn the ignition switch to LOCK (0).
7. Check the No. B58 (MTR) (30 A) fuse in the under-dash fuse/relay box.

   Is the fuse blown?

   YES–Go to step 8.

   NO–Reinstall the checked fuse, then go to step 16.
8. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
9. Check for continuity between VSA modulator-control unit 32P connector terminal No. 2 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the No. B58 (MTR) (30 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

NO–Install a new No. B58 (MTR) (30 A) fuse in the under-dash fuse/relay box, then go to step 10.

10. Reconnect the VSA modulator-control unit 32P connector.
11. Turn the ignition switch to ON (II).
12. Clear the DTC with the HDS.
13. Turn the ignition switch to LOCK (0).
14. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
15. Check for DTCs with the HDS.

    Is DTC 51 or 52 indicated?

    YES–Go to step 20.

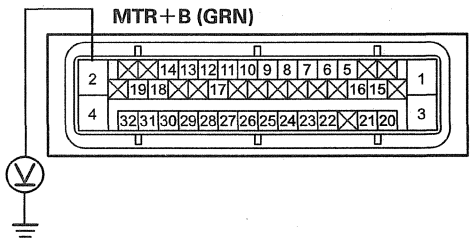
    NO–Troubleshooting is complete.■
16. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the voltage between VSA modulator-control unit 32P connector terminal No. 2 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

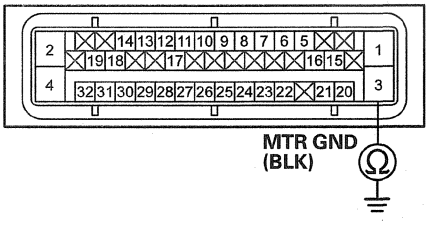
Is there battery voltage?

YES–Go to step 18.

NO–Repair an open in the wire between the No. B58 (MTR) (30 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

18. Check for continuity between VSA modulator-control unit 32P connector terminal No. 3 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the VSA modulator-control unit and body ground (G202).■

19. Reconnect the VSA modulator-control unit 32P connector.
20. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
21. Turn the ignition switch to LOCK (0).
22. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
23. Check for DTCs with the HDS.

    Is DTC 51 or 52 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 54: Fail-Safe Relay Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 54 indicated?

   YES–Go to step 6.

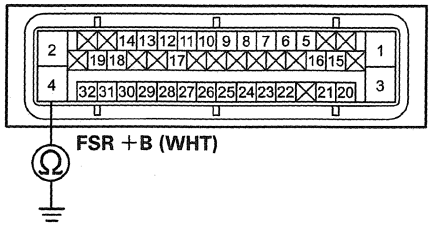
   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Turn the ignition switch to LOCK (0).
7. Check the No. B37 (30 A) fuse in the under-dash fuse/relay box.

   Is the fuse blown?

   YES–Go to step 8.

   NO–Reinstall the checked fuse, then go to step 16.
8. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
9. Check for continuity between VSA modulator-control unit 32P connector terminal No. 4 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the No. B37 (FSR) (30 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

NO–Install a new No. B37 (FSR) (30 A) fuse in the under-dash fuse/relay box, then go to step 10.

10. Reconnect the VSA modulator-control unit 32P connector.
11. Turn the ignition switch to ON (II).
12. Clear the DTC with the HDS.
13. Turn the ignition switch to LOCK (0).
14. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
15. Check for DTCs with the HDS.

    Is DTC 54 indicated?

    YES–Go to step 19.

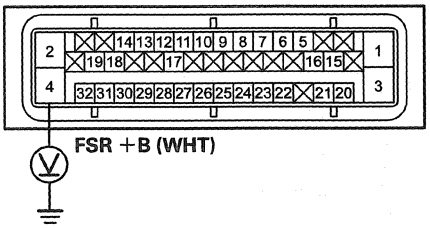
    NO–Troubleshooting is complete.■
16. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the voltage between VSA modulator-control unit 32P connector terminal No. 4 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 18.

NO–Repair an open in the wire between the No. B37 (FSR) (30 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

18. Reconnect the VSA modulator-control unit 32P connector.
19. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
20. Turn the ignition switch to LOCK (0).
21. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.

22. Check for DTCs with the HDS.

    Is DTC 54 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 61: Battery Voltage Low

DTC 62: Battery Voltage High

NOTE:

- Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).
- If the vehicle has high electric load or a weak 12 volt battery, DTC 61 may be stored when starting the engine.

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.

   Does the ABS indicator come on?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

4. Check for DTCs with the HDS.

   Is DTC 61 or 62 indicated?

   YES–Check the 12 volt battery (see page 22-85) and charging system indicator circuit troubleshooting (see page 12-200).■

   NO–Do the appropriate troubleshooting for the DTC indicated.■

DTC 64: Sensor Power Source Voltage Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

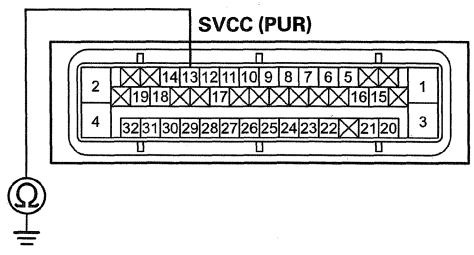
   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 64 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Turn the ignition switch to LOCK (0).
7. Disconnect the steering angle sensor 5P connector (see page 19-121).
8. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
9. Check for continuity between VSA modulator-control unit 32P connector terminal No. 13 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the VSA modulator-control unit and the steering angle sensor.■

NO–Go to step 10.

10. Reconnect all connectors.
11. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
12. Turn the ignition switch to LOCK (0).
13. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
14. Check for DTCs with the HDS.

    Is DTC 64 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 65: Brake Fluid Low Level

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Check the brake fluid level in the master cylinder reservoir tank (see page 19-10).

   Is the brake fluid level OK?

   YES–Go to step 2.

   NO–Inspect the brake pads: Front (see page 19-13), rear (see page 19-28), and replace worn out brake pads, then recheck.■

2. Turn the ignition switch to ON (II).
3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0).
5. Disconnect the brake fluid level switch 2P connector (see step 1 on page 19-12).
6. Turn the ignition switch to ON (II).
7. Check for DTCs with the HDS.

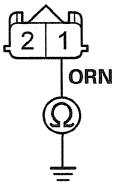
   Is DTC 65 indicated?

   YES–Go to step 8.

   NO–Replace the master cylinder (see page 19-22).■

8. Turn the ignition switch to LOCK (0).
9. Disconnect the gauge control module 32P connector (see page 22-354).
10. Check for continuity between brake fluid level switch 2P connector terminal No. 1 and body ground.

BRAKE FLUID LEVEL SWITCH 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the gauge control module and the brake fluid level switch.■

NO–Go to step 11.

11. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
12. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
13. Check for DTCs with the HDS.

    Is DTC 65 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 66: Pressure Sensor Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 66 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
7. Turn the ignition switch to LOCK (0).
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
9. Check for DTCs with the HDS.

   Is DTC 66 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 68: Brake Pedal Position Switch Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Check for other system DTCs.

   Is another DTC indicated?

   YES–Do the appropriate troubleshooting for the DTC.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Check the brake pedal position switch (see page 22-246), and adjustment (see page 19-6).

   Is the switch and adjustment OK?

   YES–Go to step 5.

   NO–Adjust the brake pedal position switch. If necessary, replace the brake pedal position switch (see page 19-6).■
5. Turn the ignition switch to ON (II).
6. Clear the DTC with the HDS.
7. Turn the ignition switch to LOCK (0).
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
9. Check for DTCs with the HDS.

   Is DTC 68 indicated?

   YES–Go to step 10.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
10. Troubleshoot the brake pedal position switch signal circuit (see page 11-272).

    Is the brake pedal position switch circuit OK?

    YES–Go to step 11.

    NO–Repair the brake pedal position switch circuit.■

(cont'd)

DTC Troubleshooting (cont'd)

11. Reconnect all connectors.
12. Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7).
13. Turn the ignition switch to ON (II).
14. Clear the DTC with the HDS.
15. Turn the ignition switch to LOCK (0).
16. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
17. Check for DTCs with the HDS.

    Is DTC 68 indicated?

    YES–Check for loose terminals in the ECM/PCM connector A (44P). If the ECM/PCM was updated, substitute a known-good ECM/PCM (see page 11-7), then retest. If the ECM/PCM was substituted, go to step 18.

    NO–If the ECM/PCM was updated, troubleshooting is complete. If the ECM/PCM was substituted, replace the original ECM/PCM (see page 11-209).■
18. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
19. Turn the ignition switch to LOCK (0).
20. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
21. Check for DTCs with the HDS.

    Is DTC 68 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 81: VSA Modulator-Control Unit Internal Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Check for other system DTCs.

   Is another DTC indicated?

   YES–Do the appropriate troubleshooting for the DTC.■

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0).
5. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
6. Check for DTCs with the HDS.

   Is DTC 81 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
7. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
8. Turn the ignition switch to LOCK (0).
9. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
10. Check for DTCs with the HDS.

    Is DTC 81 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 83: PGM-FI Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Check for DTC with the HDS.

   Is DTC 86 indicated?

   YES–Do the troubleshooting for DTC 86.■

   NO–Go to step 3.
3. Clear the DTC with the HDS.
4. Turn the ignition switch to LOCK (0).
5. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
6. Check for DTCs with the HDS.

   Is DTC 83 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
7. Check for fuel and emissions systems DTCs with the HDS (see page 11-3).

   Are any ECM/PCM DTCs indicated?

   YES–Do the applicable troubleshooting for the ECM/PCM.■

   NO–Go to step 8.
8. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
9. Turn the ignition switch to LOCK (0).
10. Test-drive the vehicle at 19 mph (30 km/h) or more.

    NOTE: Drive the vehicle on the road, not on a lift.
11. Check for DTCs with the HDS.

    Is DTC 83 indicated?

    YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

    NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 84: VSA Sensor Neutral Position Not Written

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Do the VSA sensor neutral position memorization (see page 19-123).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
4. Check for DTCs with the HDS.

   Is DTC 84 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
5. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
6. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
7. Check for DTCs with the HDS.

   Is DTC 84 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 86: F-CAN Communication Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Start and run the engine for at least 5 seconds.
5. Check for DTCs with the HDS.

   Is DTC 86 indicated?

   YES–Go to step 6.

   NO–Check the COMMU PCM, COMMU GAUGE, and COMMU YAW RATE/G, in the VSA FREEZE DATA with the HDS. Then check for F-CAN communication lines continuity to the appropriate system or sensor and loose terminals in the appropriate system or sensor connectors.■
6. Check the COMMU PCM, COMMU GAUGE, and COMMU YAW RATE/G, in the VSA FREEZE DATA with the HDS.

   Is there a communication error in the system or sensor?

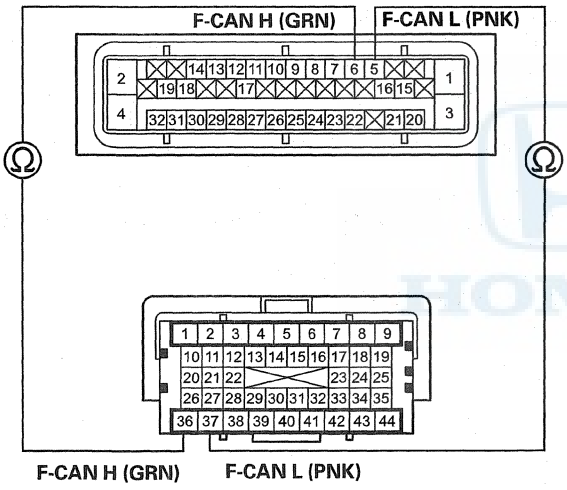
   YES–Go to step 7.

   NO–Go to step 22.
7. Turn the ignition switch to LOCK (0).
8. Short the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (44P) (see page 11-209).
10. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
11. Disconnect the gauge control module 32P connector (see page 22-354).
12. Disconnect the yaw rate-acceleration sensor 4P connector (see page 19-122).

13. Check the F-CAN communication lines for continuity between the VSA modulator-control unit and the appropriate system or sensor (see table).

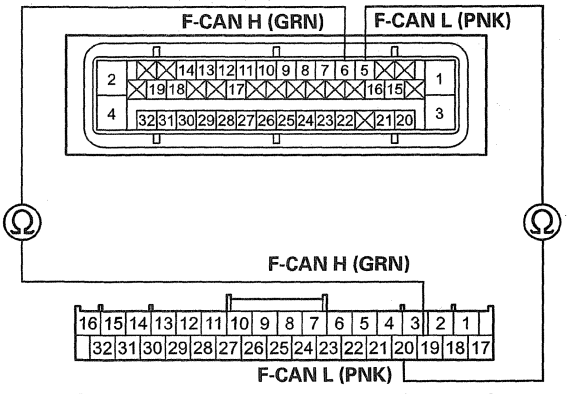
Component	F-CAN L Terminal	F-CAN H Terminal
VSA Modulator-Control Unit	No. 5	No. 6
ECM/PCM	A37	A36
Gauge Control Module	No. 20	No. 19
Yaw Rate-Acceleration Sensor	No. 2	No. 3

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals



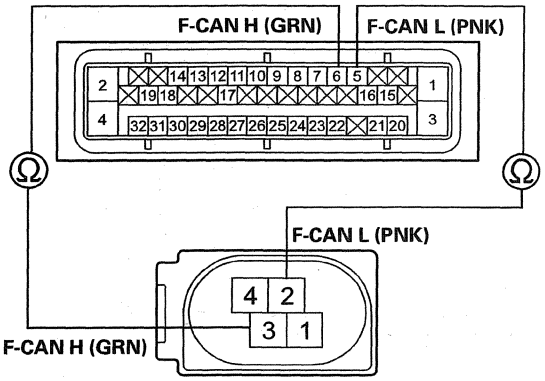
ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals



YAW RATE-ACCELERATION SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity on the F-CAN communication lines?

YES–

- If the appropriate system or sensor is the yaw rate-acceleration sensor: go to step 14.
- If the appropriate system or sensor is not the yaw rate-acceleration sensor: go to step 18.

NO–Repair an open in the appropriate line.■

14. Check for loose terminals in the yaw rate-acceleration sensor 4P connector.

Is the yaw rate-acceleration sensor 4P connector OK?

YES–Go to step 15.

NO–Repair or reconnect the connector securely.■

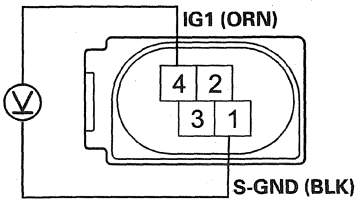
15. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

16. Measure the voltage between yaw rate-acceleration sensor 4P connector terminals No. 1 and No. 4.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

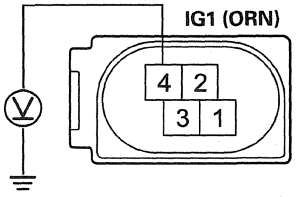
Is there battery voltage?

YES–Replace the yaw rate-acceleration sensor (see page 19-122).■

NO–Go to step 17.

17. Measure the voltage between yaw rate-acceleration sensor 4P connector terminal No. 4 and body ground.

YAW RATE-ACCELERATION SENSOR 4P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Repair an open in the wire between the yaw rate-acceleration sensor and body ground (G502).■

NO–Repair an open in the wire between the yaw rate-acceleration sensor and the under-dash fuse/relay box.■

18. Check for loose terminals in the appropriate system connectors.

Are the appropriate system connectors OK?

YES–Go to step 19.

NO–Repair or reconnect the connector securely.■

19. Reconnect all the connectors.
20. Start and run the engine for at least 5 seconds.
21. Check for other system DTCs with the HDS.

Is another DTC indicated?

YES–Do the appropriate DTC troubleshooting.■

NO–Go to step 22.

22. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
23. Turn the ignition switch to LOCK (0).
24. Start and run the engine for at least 5 seconds.
25. Check for DTCs with the HDS.

Is DTC 86 indicated?

YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 91: VSA Activation Time Too Long

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 91 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
7. Turn the ignition switch to LOCK (0).
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
9. Check for DTCs with the HDS.

   Is DTC 91 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 105: Hydraulic Unit Temperature Sensor Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 105 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
7. Turn the ignition switch to LOCK (0).
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
9. Check for DTCs with the HDS.

   Is DTC 105 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 111: Back-Up Light Switch Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II) for at least 5 seconds.
2. Check for DTCs with the HDS.

   Is DTC 86 indicated?

   YES–Do the troubleshooting for DTC 86 (see page 19-110).■

   NO–Go to step 3.
3. Check the BACK-UP LIGHT SWITCH in the PGM-FI DATA LIST with the HDS.

   Does it indicate ON when the shift lever is in reverse, and OFF when the shift lever is in neutral?

   YES–Go to step 4.

   NO–Check the back-up light switch (see page 13-42).■
4. Check the BACK-UP LIGHT SWITCH in the VSA DATA LIST with the HDS.

   Does it indicate ON when the shift lever is in reverse, and OFF when the shift lever is in neutral?

   YES–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

   NO–Go to step 5.
5. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
6. Turn the ignition switch to LOCK (0).
7. Turn the ignition switch to ON (II).
8. Check the BACK-UP LIGHT SWITCH in the VSA DATA LIST with the HDS.

   Does it indicate ON when the shift lever is in reverse, and OFF when the shift lever is in neutral?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 112: Neutral Switch Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Check for DTCs with the HDS.

   Is DTC 86 indicated?

   YES–Do the troubleshooting for DTC 86 (see page 19-110).■

   NO–Go to step 3.
3. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

   Does it indicate ON when the shift lever is in neutral, and OFF when the shift lever is not in neutral?

   YES–Go to step 25.

   NO–

   - If the indicator remains on: Go to step 4.
   - If the indicator remains off: Go to step 12.
   - If the indicator is flashing: Check the installation of the neutral position switch (see page 13-43).■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the neutral position switch 2P connector (see step 2 on page 13-43).
6. Turn the ignition switch to ON (II).
7. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

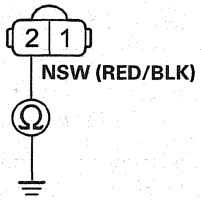
   Does it indicate OFF?

   YES–Replace the neutral position switch (see page 13-43).■

   NO–Go to step 8.
8. Turn the ignition switch to LOCK (0).
9. Short the SCS line with the HDS.
10. Disconnect ECM connector B (44P) (see step 14 on page 11-210).

11. Check for continuity between neutral position switch 2P connector terminal No. 2 and body ground.

NEUTRAL POSITION SWITCH 2P CONNECTOR



Wire side of female terminals

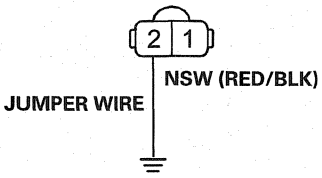
Is there continuity?

YES–Repair a short to body ground between the ECM and the neutral position switch.■

NO–Update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom/indication goes away with a known-good ECM, replace the original ECM (see page 11-209).■

12. Turn the ignition switch to LOCK (0).
13. Disconnect the neutral position switch 2P connector (see step 2 on page 13-43).
14. Connect neutral position switch 2P connector terminal No. 2 to body ground with a jumper wire.

NEUTRAL POSITION SWITCH 2P CONNECTOR



Wire side of female terminals

15. Turn the ignition switch to ON (II).
16. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

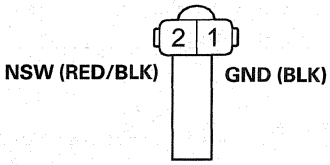
Does it indicate ON?

YES–Go to step 17.

NO–Go to step 21.

17. Turn the ignition switch to LOCK (0).
18. Connect neutral position switch 2P connector terminals No. 1 and No. 2 with a jumper wire.

NEUTRAL POSITION SWITCH 2P CONNECTOR



JUMPER WIRE

Wire side of female terminals

19. Turn the ignition switch to ON (II).
20. Check the NP SWITCH in the PGM-FI DATA LIST with the HDS.

Does it indicate OFF?

YES–Repair an open in the wire between the neutral position switch and body ground (G101).■

NO–Replace the neutral position switch (see page 13-43).■

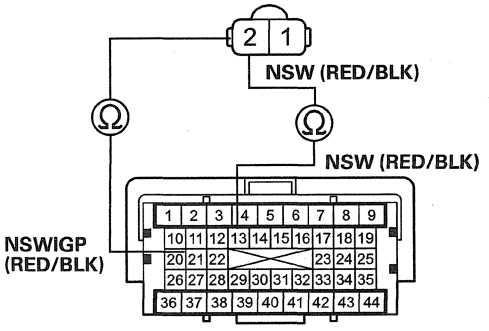
21. Turn the ignition switch to LOCK (0).
22. Disconnect the jumper wire from the neutral position switch 2P connector.
23. Short the SCS line with the HDS.

(cont'd)

DTC Troubleshooting (cont'd)

24. Check for continuity between ECM connector B (44P) terminals No. 13 and No. 21, and neutral position switch 2P connector terminal No. 2 individually.

NEUTRAL POSITION SWITCH 2P CONNECTOR
Wire side of female terminals



ECM CONNECTOR B (44P)
Terminal side of female terminals

Is there continuity?

YES–Update the ECM if it does not have the latest software (see page 11-207), or substitute a known-good ECM (see page 11-7), then recheck. If the symptom/indicator goes away with a known-good ECM, replace the original ECM (see page 11-209).■

NO–Repair an open in the wire between the neutral position switch and ECM.■

25. Check the NEUTRAL SWITCH STATUS in the VSA DATA LIST with the HDS.

Does it indicate ON when the shift lever is in neutral, and OFF when the shift lever is not in neutral?

YES–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

NO–Go to step 26.

26. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).

27. Turn the ignition switch to LOCK (0).

28. Turn the ignition switch to ON (II).

29. Check the NEUTRAL SWITCH STATUS in the VSA DATA LIST with the HDS.

Does it indicate ON when the shift lever is in neutral, and OFF when the shift lever is in except neutral?

YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 121: VSA Solenoid Valve Malfunction

DTC 122: VSA Solenoid Valve Malfunction

DTC 123: VSA Solenoid Valve Malfunction

DTC 124: VSA Solenoid Valve Malfunction

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Turn the ignition switch to ON (II).
2. Clear the DTC with the HDS.
3. Turn the ignition switch to LOCK (0).
4. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
5. Check for DTCs with the HDS.

   Is DTC 121, 122, 123, or 124 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■
6. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
7. Turn the ignition switch to LOCK (0).
8. Test-drive the vehicle at 19 mph (30 km/h) or more.

   NOTE: Drive the vehicle on the road, not on a lift.
9. Check for DTCs with the HDS.

   Is DTC 121, 122, 123, or 124 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

DTC 158: ECU Software Update Failure

NOTE: Before you troubleshoot, record all freeze data and any on-board snapshot, and review the general troubleshooting information (see page 19-68).

1. Update the VSA modulator-control unit (see page 19-124).
2. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
3. Check for DTCs with the HDS.

   Is DTC 158 indicated?

   YES–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

   NO–Intermittent failure, the system is OK at this time. Refer to intermittent failures troubleshooting (see page 19-69).■

Symptom Troubleshooting

VSA cannot be turned OFF

NOTE: If the low tire pressure/TPMS indicator turns ON, the VSA cannot be turned OFF. Check the tire pressure first.

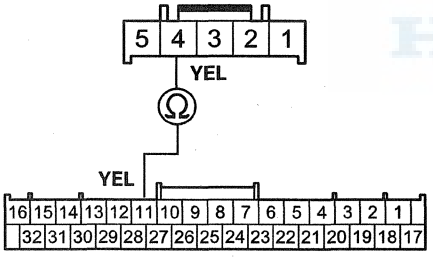
1. Turn the ignition switch to LOCK (0).
2. Check the VSA OFF switch (see page 19-123).

   Is the VSA OFF switch OK?

   YES–Go to step 3.

   NO–Replace the VSA OFF switch (see page 19-123).■
3. Disconnect the VSA OFF switch 5P connector (see page 19-123).
4. Disconnect the gauge control module 32P connector (see page 22-354).
5. Check for continuity between gauge control module 32P connector terminal No. 11 and VSA OFF switch 5P connector terminal No. 4.

VSA OFF SWITCH 5P CONNECTOR
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

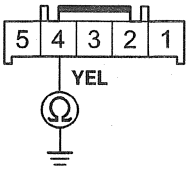
Is there continuity?

YES–Go to step 6.

NO–Repair an open in the wire between the gauge control module and the VSA OFF switch .■

6. Check for continuity between VSA OFF switch 5P connector terminal No. 4 and body ground.

VSA OFF SWITCH 5P CONNECTOR



Wire side of female terminals

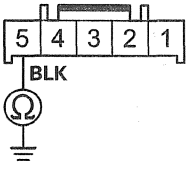
Is there continuity?

YES–Repair a short to body ground in the wire between the gauge control module and the VSA OFF switch.■

NO–Go to step 7.

7. Check for continuity between VSA OFF switch 5P connector terminal No. 5 and body ground.

VSA OFF SWITCH 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Substitute a known-good gauge control module (see page 22-354), and recheck. If it is OK, replace the original gauge control module (see page 22-354).■

NO–Repair an open in the wire between the VSA OFF switch and body ground (G501).■

ABS indicator, brake system indicator, and VSA indicator do not go off

1. Turn the ignition switch to LOCK (0).
2. Check the No. B11 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse blown?

   YES–Replace the fuse. Turn the ignition switch to ON (II), then turn it to LOCK (0) again. If the fuse blows again, repair the short to ground on the No. B11 (7.5A) fuse circuit.■

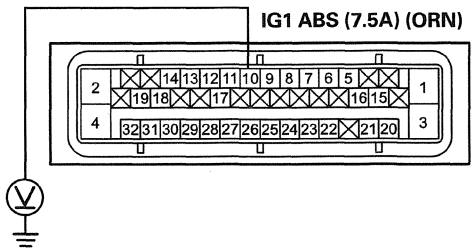
   NO–Reinstall the checked fuse, then go to step 3.
3. Do the gauge control module self-diagnostic function (see page 22-325).

   Is the gauge control module OK?

   YES–Go to step 4.

   NO–Replace the gauge control module (see page 22-354).■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the VSA modulator-control unit 32P connector (see step 3 on page 19-126).
6. Turn the ignition switch to ON (II).
7. Measure the voltage between VSA modulator-control unit 32P connector terminal No. 10 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

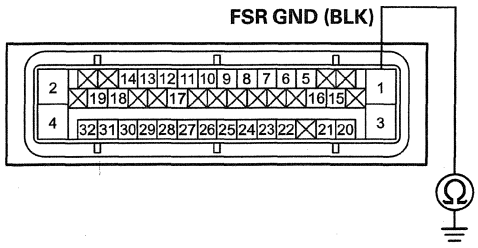
Is there battery voltage?

YES–Go to step 8.

NO–Repair an open in the wire between the No. B11 (7.5 A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

8. Turn the ignition switch to LOCK (0).
9. Check for continuity between VSA modulator-control unit 32P connector terminal No. 1 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

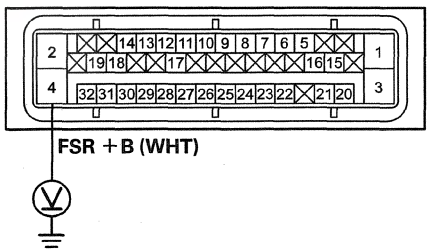
Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire between the VSA modulator-control unit and body ground (G202).■

10. Measure the voltage between VSA modulator-control unit 32P connector terminal No. 4 and body ground.

VSA MODULATOR-CONTROL UNIT 32P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 11.

NO–Repair an open in the wire between the No. B37 (30A) fuse in the under-dash fuse/relay box and the VSA modulator-control unit.■

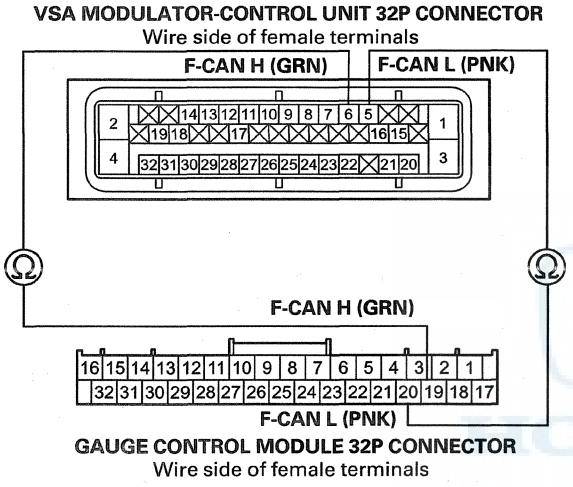
11. Disconnect the gauge control module 32P connector (see step 3 on page 22-354).

(cont'd)

Symptom Troubleshooting (cont'd)

12. Check for continuity between the VSA modulator-control unit 32P connector terminal and the gauge control module 32P connector terminal (see table).

Sign	VSA Modulator-Control Unit 32P Connector Terminal	Gauge Control Module 32P Connector Terminal
F-CAN L	No. 5	No. 20
F-CAN H	No. 6	No. 19



Is there continuity?

YES–Go to step 13.

NO–Repair an open in the wire between the gauge control module and the VSA modulator-control unit.■

13. Reconnect all connectors.
14. Update the VSA modulator-control unit if it does not have the latest software (see page 19-124).
15. Turn the ignition switch to LOCK (0), then turn it to ON (II) again.
16. Check the ABS indicator, the brake system indicator, and the VSA indicator for several seconds when the ignition switch is turned to ON (II).

    Do the indicators come on then go off?

    YES–If the VSA modulator-control unit was updated, troubleshooting is complete. If any other DTCs are indicated, go to the indicated DTCs troubleshooting.■

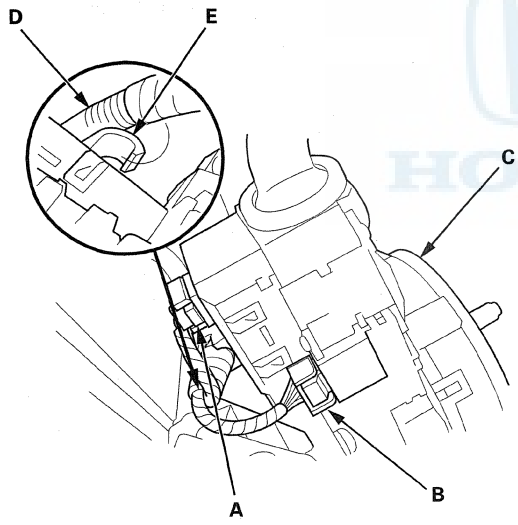
    NO–Check for loose terminals in the VSA modulator-control unit 32P connector. If the VSA modulator-control unit was updated and the symptom/indication is still present, replace the VSA modulator-control unit (see page 19-125).■

Steering Angle Sensor Replacement

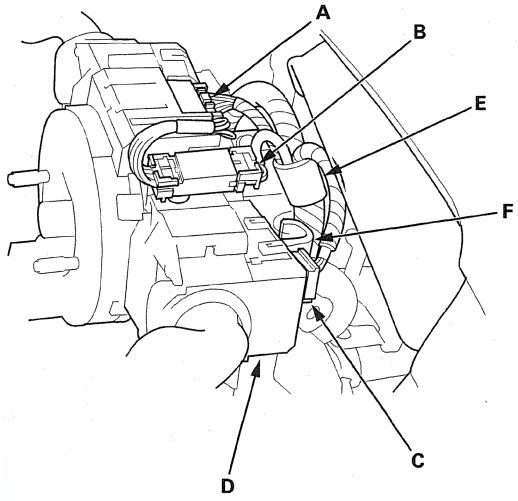
SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE: Do not damage or drop the combination switch as the steering angle sensor is sensitive to shock and vibration.

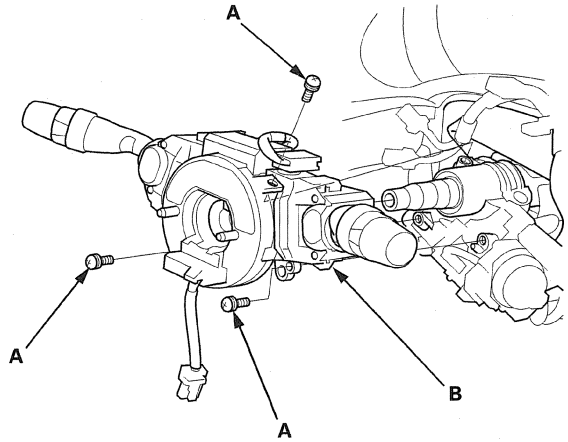
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. With the front wheels in the straight-ahead position and the steering wheel centered, then remove the steering wheel (see page 17-6).
3. Remove the steering column covers (see page 20-96).
4. Disconnect the combination light switch 12P connector (A) and the steering angle sensor 5P connector (B) from the combination switch assembly/cable reel (C).



5. Remove the wire harness (D) from the harness holder (E).
6. Disconnect the cable reel connector A (20P), the cable reel connector B (4P), and the wiper/washer switch 8P connector (C) from the combination switch assembly/cable reel (D).



7. Remove the wire harness (E) from the harness holder (F).
8. Remove the combination switch assembly/cable reel mounting screws (A), then remove the combination switch assembly/cable reel (B) from the steering lock.



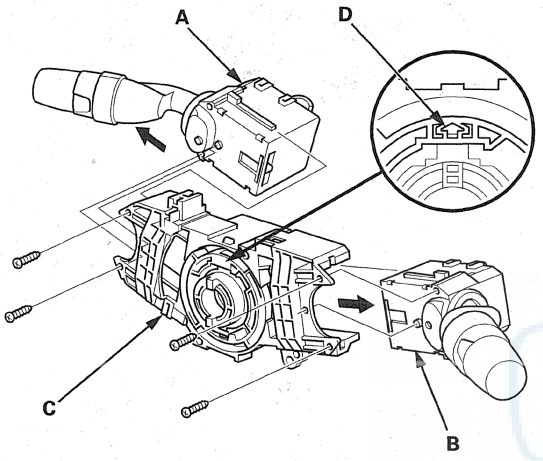
9. Remove the cable reel (see page 24-183).

(cont'd)

Steering Angle Sensor Replacement (cont'd)

10. Remove the combination light switch (A) and the wiper/washer switch (B) from the combination switch body assembly (C).

    NOTE: When installing the cable reel, set the turn signal canceling sleeve position so that the arrow points (D) straight up.



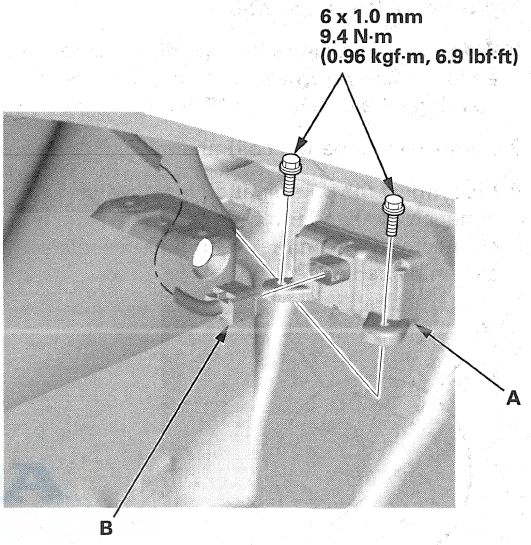
11. Install the combination switch body assembly in the reverse order of removal, and note these items:

    NOTE:
    - Do not remove the steering angle sensor from the combination switch body assembly.
    - Tighten the combination switch assembly/cable reel mounting screws in the proper sequence (see step 1 on page 17-12).

Yaw Rate-Acceleration Sensor Replacement

NOTE:
- Do not damage or drop the sensor as it is sensitive.
- Do not use power tools when replacing the sensor.
- Check the yaw rate-acceleration sensor bracket for a deformation.

1. Turn the ignition switch to LOCK (0).
2. Remove the yaw rate-acceleration sensor (A).

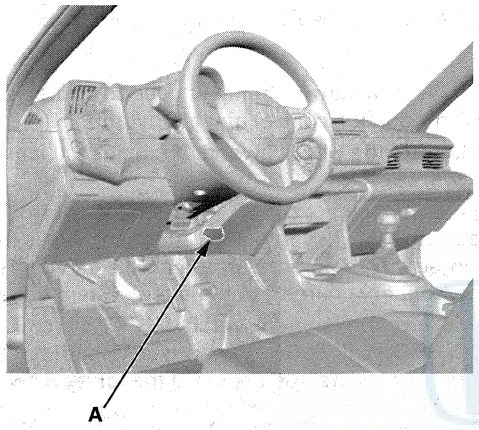


3. Disconnect the yaw rate-acceleration sensor 4P connector (B).
4. Install the yaw rate-acceleration sensor in the reverse order of removal.
5. Do the VSA sensor neutral position memorization (see page 19-123).

VSA Sensor Neutral Position Memorization

NOTE: Do not press the brake pedal during this procedure.

1. Park the vehicle on a flat and level surface, with the steering wheel in the straight ahead position.
2. With the ignition switch in LOCK (0), connect the HDS to the data link connector (DLC) (A) under the driver's side of the dashboard.

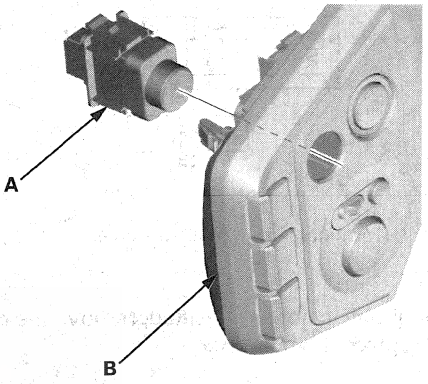


3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
5. Select VSA ADJUSTMENT with the HDS, and follow the screen prompts.

   NOTE: See the HDS Help menu for specific instructions.
6. Turn the ignition switch to LOCK (0).

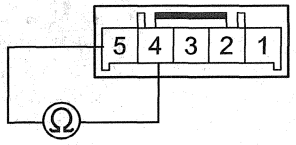
VSA Off Switch Test/Replacement

1. Turn the ignition switch to LOCK (0).
2. Remove the instrument panel (see page 20-83).
3. Push out the VSA OFF switch (A) from the back of the instrument panel (B).



4. On the switch side, check for continuity between the VSA OFF switch 5P connector terminal in each switch position according to the table.

VSA OFF SWITCH 5P CONNECTOR



Terminal side of male terminals

Position \ Terminal	4	5
PRESSED	○	○
RELEASED		

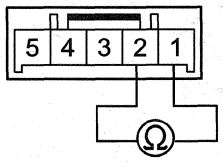
- If the switch does not work as described in the table, replace the switch.
- If the switch tests OK, go to step 5.

(cont'd)

VSA Off Switch Test/Replacement (cont'd)

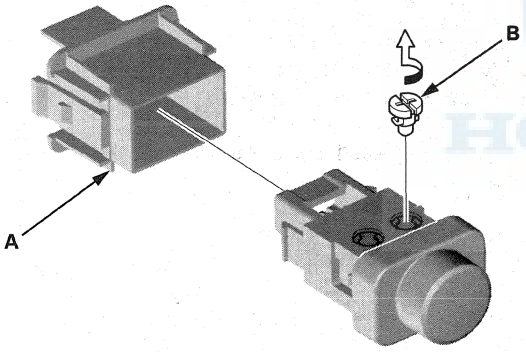
5. On the switch side, check for continuity between VSA OFF switch 5P connector terminals No. 1 and No. 2. There should be continuity at all times.

VSA OFF SWITCH 5P CONNECTOR



Terminal side of male terminals

6. If the continuity is not as specified, remove the cover (A), and replace the bulb (B).



7. Install the VSA OFF switch in the reverse order of removal.

VSA Modulator-Control Unit Update

Special Tools Required

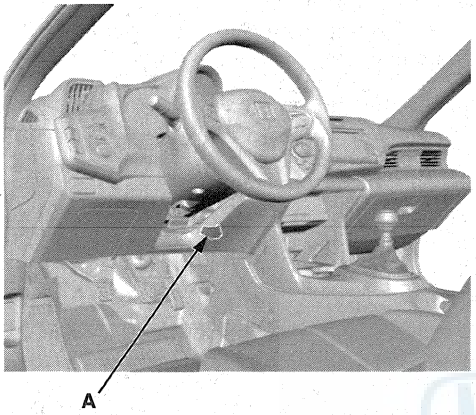
- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

NOTE:

- Use this procedure when you need to update the VSA modulator-control unit at anytime.
- Make sure the HDS/iN workstation has the latest software version.
- Before you update the VSA modulator-control unit, make sure the 12 volt battery in the vehicle is fully charged, and connect a jumper to the 12 volt battery (not a battery charger) to maintain system voltage.
- Never turn the ignition switch to LOCK (0) or ACCESSORY (I) during the update. If there is a problem with the update, leave the ignition switch to ON (II).
- To prevent VSA modulator-control unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do a VSA modulator-control unit update whenever the VSA modulator-control unit is substituted or replaced.
- You cannot update a VSA modulator-control unit with a program it already has. It will only accept a new program.
- High temperature in the engine compartment might cause the VSA modulator-control unit to become too hot to run the update. If the engine has been running before this procedure, open the hood and cool the engine compartment.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) when you disconnect the HIM from the data link connector (DLC). This will prevent VSA modulator-control unit damage.
- DTCs stored in memory are cleared when the VSA modulator-control unit is updated.

1. Turn the ignition switch to ON (II), but do not start the engine.
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Make sure the HDS communicates with the vehicle and the VSA modulator-control unit. If it does not, go to the DLC circuit troubleshooting (see page 11-383).
4. Select the update mode, and follow the screen prompts to update the VSA modulator-control unit.
5. If the software in the VSA modulator-control unit is the latest, disconnect the HDS/HIM/GNA600 from the DLC. If the software in the VSA modulator-control unit is not the latest, follow the instructions on the screen.
6. Do the VSA sensor neutral position memorization procedure (see page 19-123).

VSA Modulator-Control Unit Removal and Installation

NOTICE

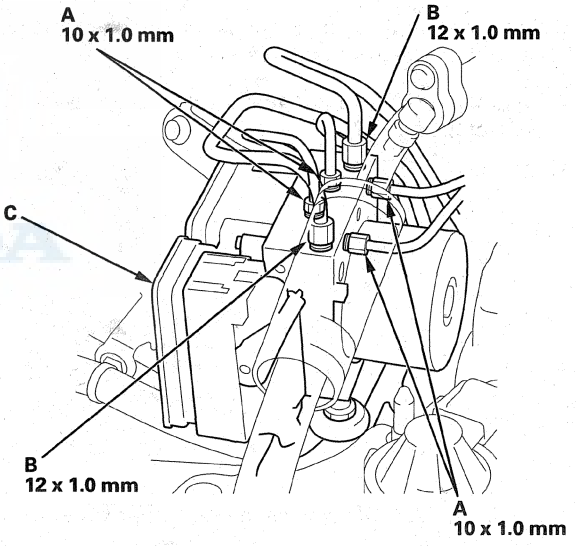
Do not spill brake fluid on the vehicle; it may damage the paint. If brake fluid gets on the paint, wash it off immediately with water.

NOTE:

- Be careful not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from dripping, plug and cover the hose ends and joints with a shop towel.

Removal

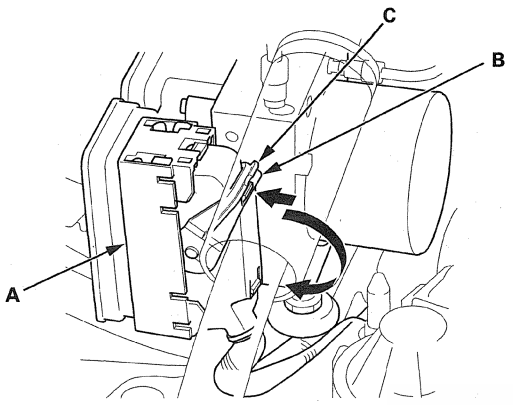
1. Turn the ignition switch to LOCK (0).
2. Disconnect the 10 mm brake lines (A) and the 12 mm brake lines (B) from the VSA modulator-control unit (C).



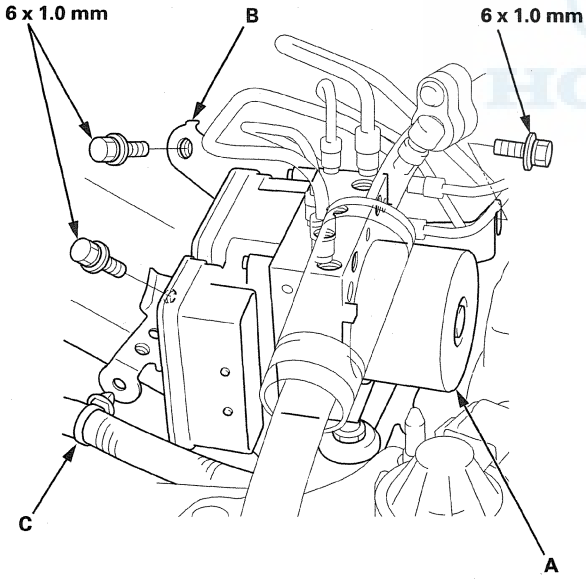
(cont'd)

VSA Modulator-Control Unit Removal and Installation (cont'd)

3. Disconnect the VSA modulator-control unit 32P connector (A) by pushing the lock (B) and pulling down the lever (C); the connector disconnects itself.

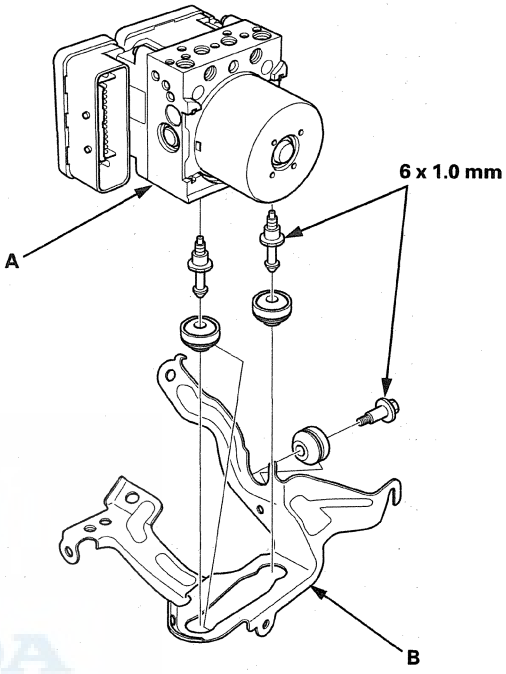


4. Remove the VSA modulator-control unit (A) with the bracket (B) from the body.



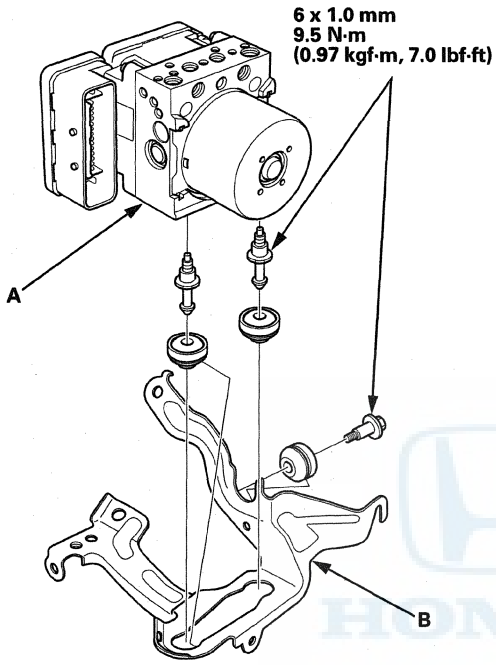
5. Remove the wire harness clip (C) from the bracket.

6. Remove the VSA modulator-control unit (A) from the bracket (B).

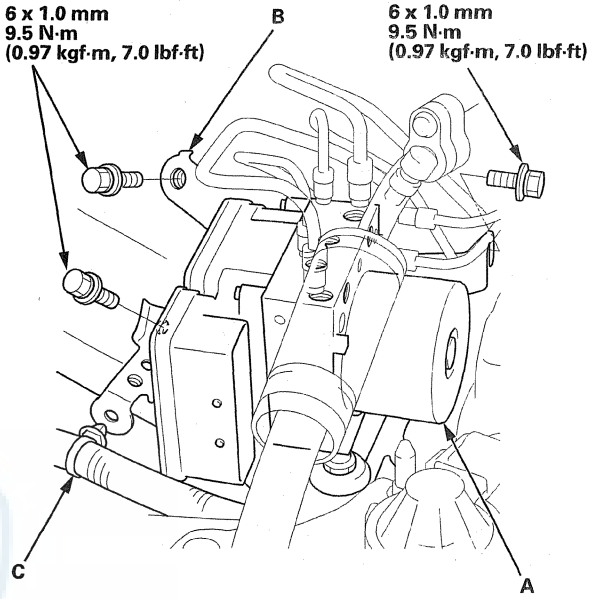


Installation

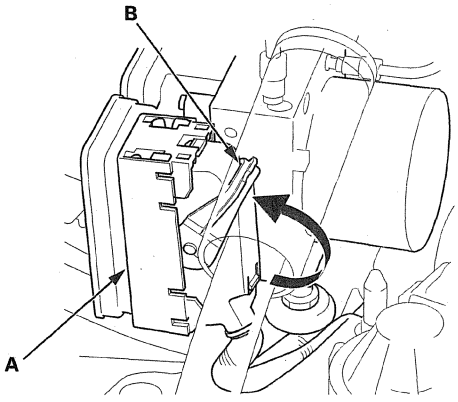
1. Install the VSA modulator-control unit (A) onto the bracket (B).



2. Install the VSA modulator-control unit (A) with the bracket (B) to the body.



3. Install the wire harness clip (C) to the bracket.
4. Align the connecting surface of the VSA modulator-control unit 32P connector (A) to the VSA modulator-control unit.



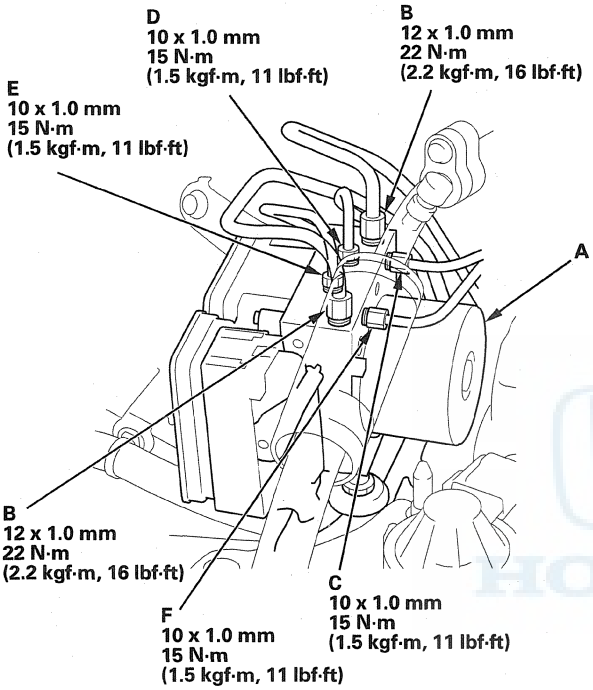
5. Pull up the lever (B) of the VSA modulator-control unit 32P connector, then confirm the connector is fully seated.

(cont'd)

VSA Modulator-Control Unit Removal and Installation (cont'd)

6. Connect the 10 mm brake lines and the 12 mm brake lines to the VSA modulator-control unit (A).

   NOTE: The brake lines are connected to the master cylinder (B), the left-rear (C), the right-front (D), the left-front (E), and the right-rear (F) brake systems.



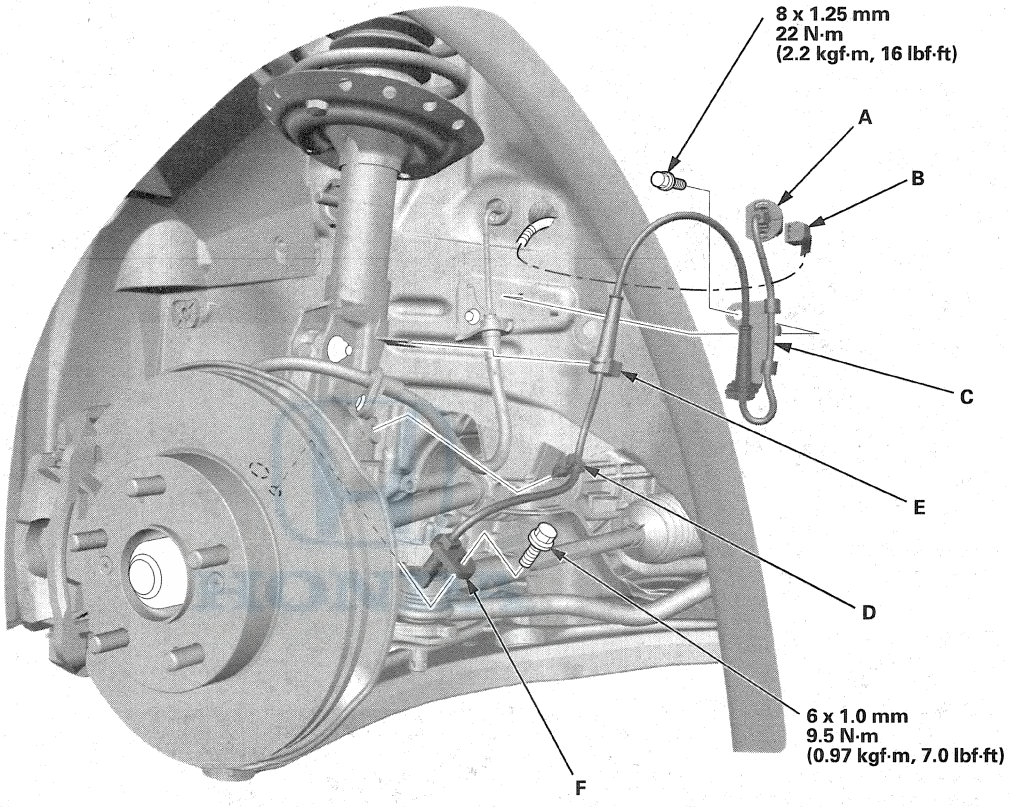
7. Bleed the brake system (see page 19-10).
8. Do the VSA sensor neutral position memorization procedure (see page 19-123).
9. Start the engine, and check that the VSA indicators go off.
10. Test-drive the vehicle, and make sure that the VSA indicators do not come on.

    NOTE: If the brake pedal is spongy, there may be air trapped in the modulator which could then be induced into the normal brake system during modulation. Bleed the brake system again (see page 19-10).

Wheel Speed Sensor Replacement

Front

1. Turn the ignition switch to LOCK (0).
2. Remove the grommet (A), then disconnect the wheel speed sensor 2P connector (B).



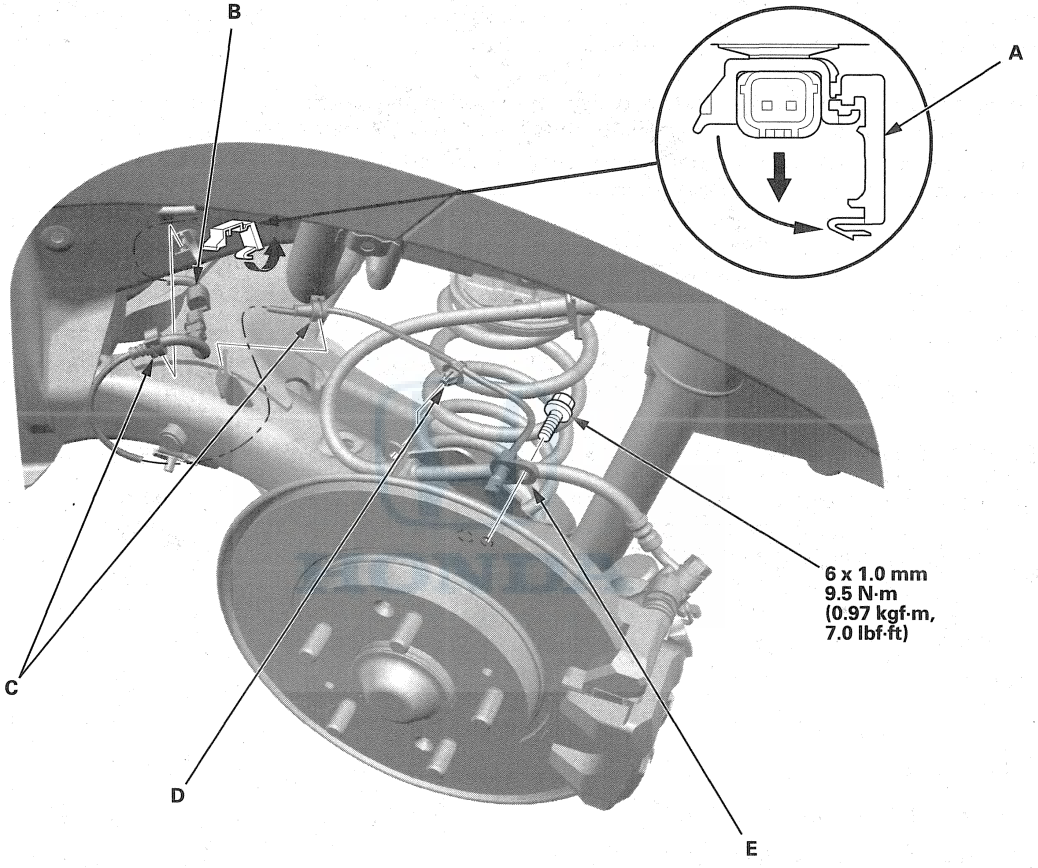
3. Remove the bolt and the bracket (C), the clip (D), and the wire guide grommet (E).
4. Remove the bolt and the wheel speed sensor (F).
5. Install the wheel speed sensor in the reverse order of removal, and note these items:
   - Do not twist the sensor wires.
   - If the wheel speed sensor comes in contact with the hub bearing, it is faulty.
   - Make sure there is no debris in the sensor mounting hole.
6. Start the engine, and make sure the VSA indicators go off.
7. Test-drive the vehicle, and make sure the VSA indicators do not come on.

(cont'd)

Wheel Speed Sensor Replacement (cont'd)

Rear

1. Turn the ignition switch to LOCK (0).
2. Release the connector holding clamps (A), then disconnect the wheel speed sensor 2P connector (B).



3. Remove the wire guide grommets (C) and the clip (D).
4. Remove the bolt and the wheel speed sensor (E).
5. Install the wheel speed sensor in the reverse order of removal, and note these items:
   - Do not twist the sensor wires.
   - If the wheel speed sensor comes in contact with the hub bearing unit, it is faulty.
   - Make sure there is no debris in the sensor mounting hole.
6. Start the engine, and make sure the VSA indicators go off.
7. Test-drive the vehicle, and make sure the VSA indicators do not come on.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If body maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If body maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).



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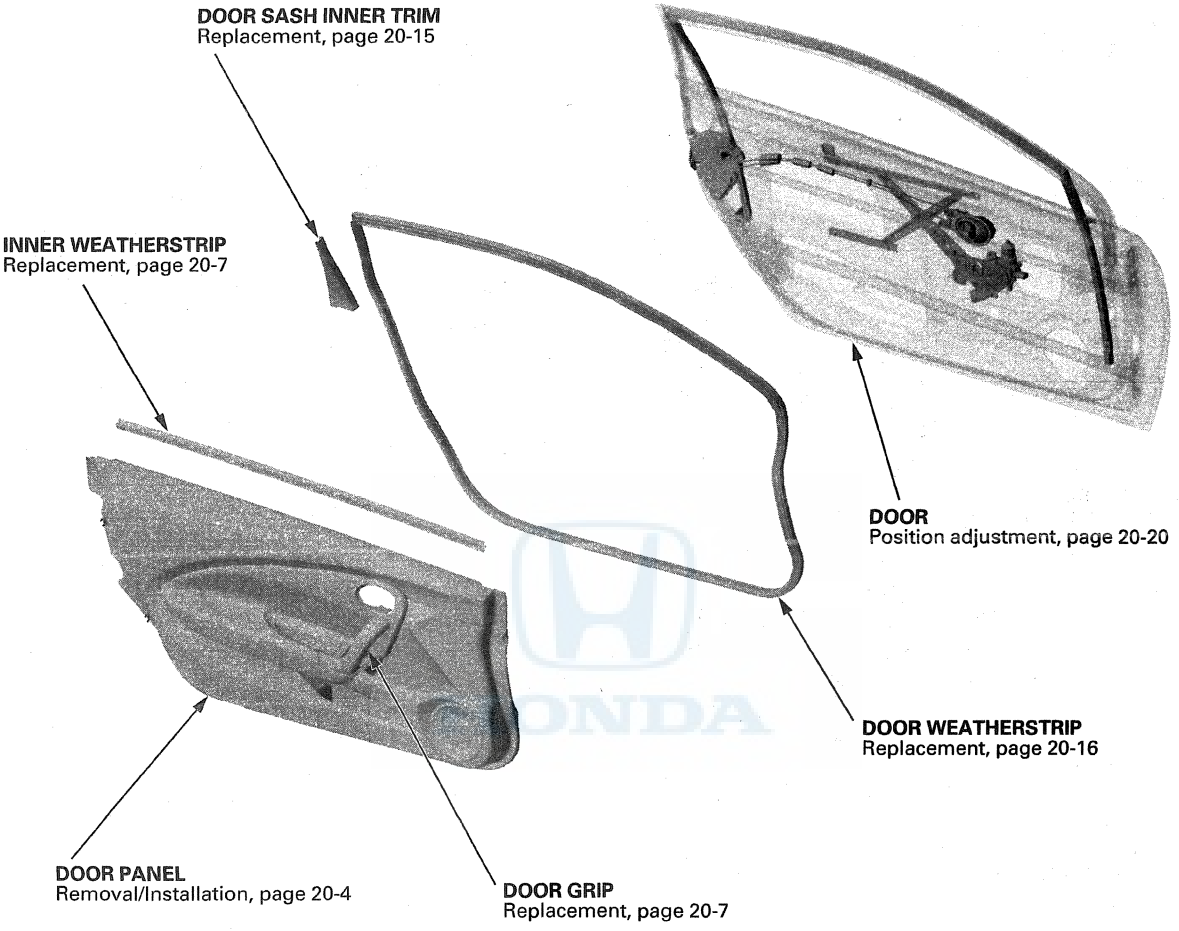
Frame

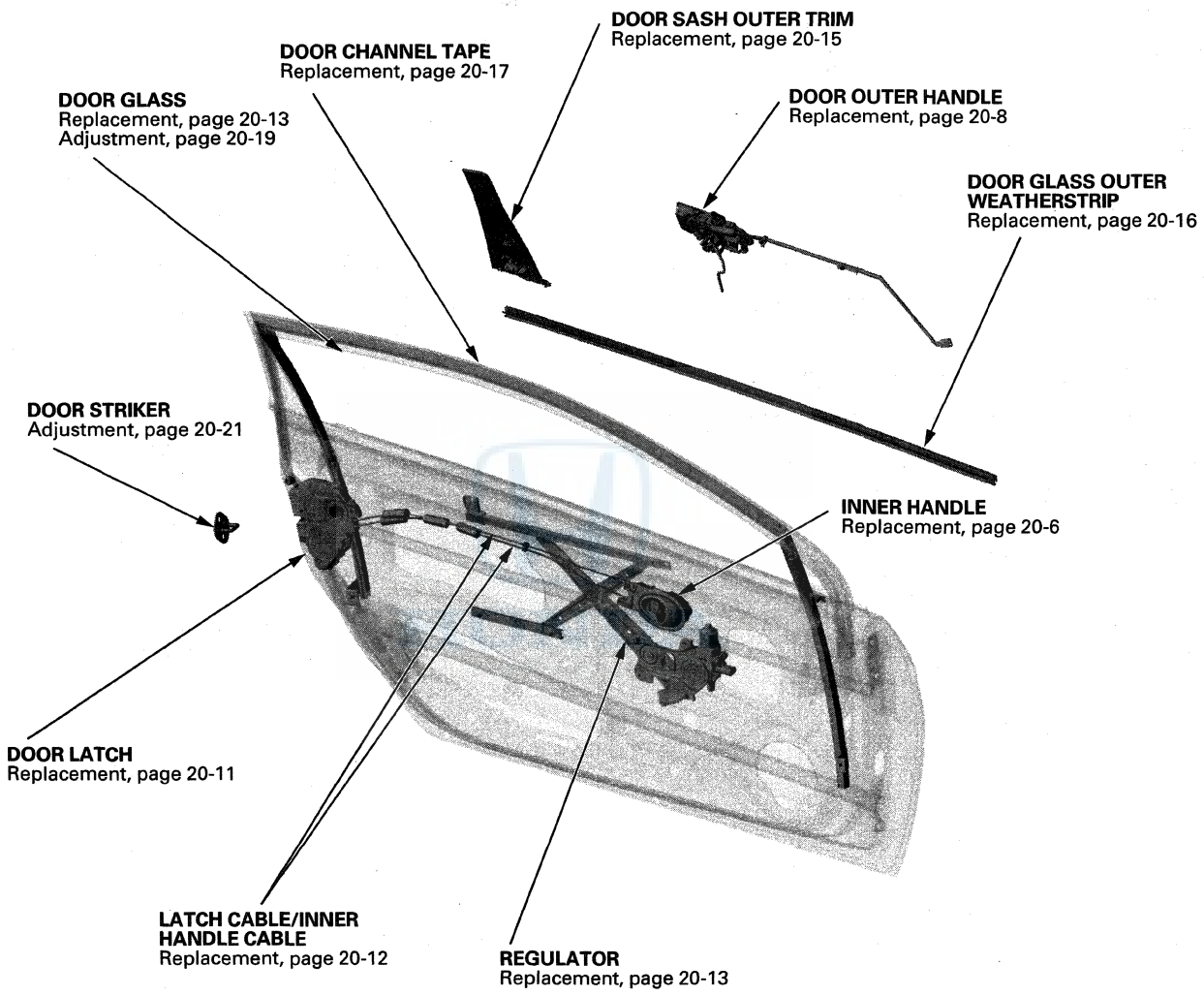
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Doors

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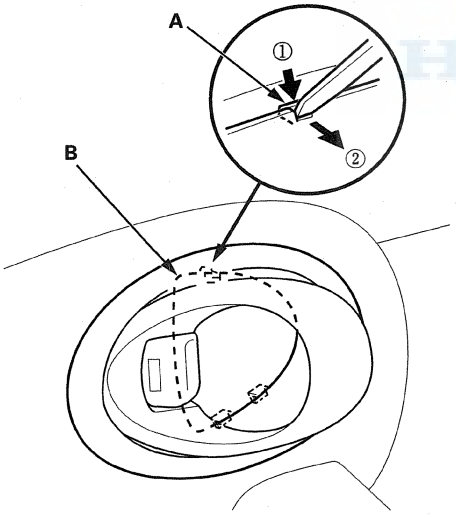
Door Panel Removal/Installation

Special Tools Required
- KTC Trim Tool Set SOJATP2014*
- Trim Pad Remover, Snap-on A 177A or equivalent, commercially available

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- If there are small scratches on the film trim, remove them with an extra fine plastic polishing compound.

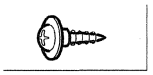
1. Lower the glass fully.
2. Remove the door mirror cover (see page 20-23).
3. Remove the door sash inner trim (see page 20-15).
4. Push on the upper hook (A) with the appropriate trim tool, then pull back the inner handle cap (B) to remove it.

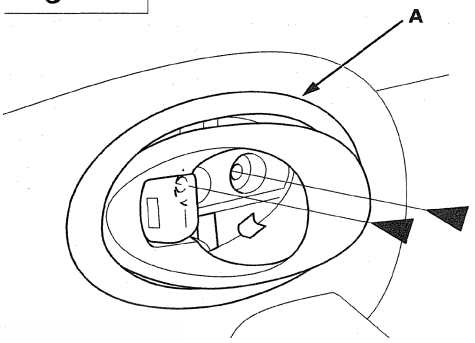


5. Remove the screws securing the inner handle (A).

Fastener Locations

▶ : Screw, 2

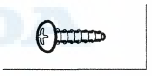




6. Remove the pull pocket cap (A), and remove the screw.

Fastener Location

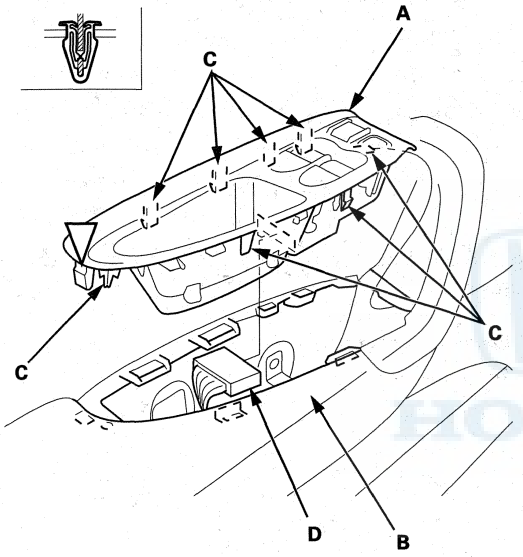
▶ : Screw, 1



7. Remove the power window switch panel (A) from the door panel (B).

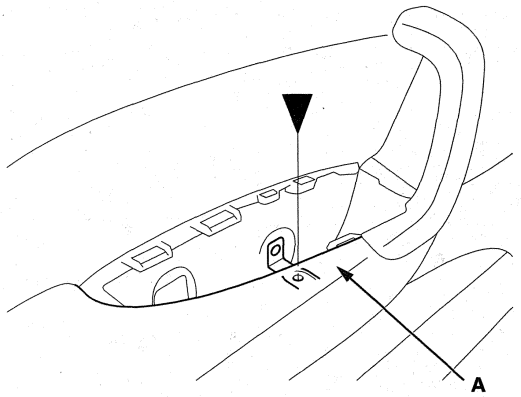
-1. Pry up the power window switch panel to release the clip.
-2. Pull out along the edge of the panel to release all of the hooks (C).
-3. Disconnect the power window switch connector (D).

Fastener Location
▷ : Clip, 1



8. Remove the screw securing the door panel (A).

Fastener Location
▶ : Screw, 1

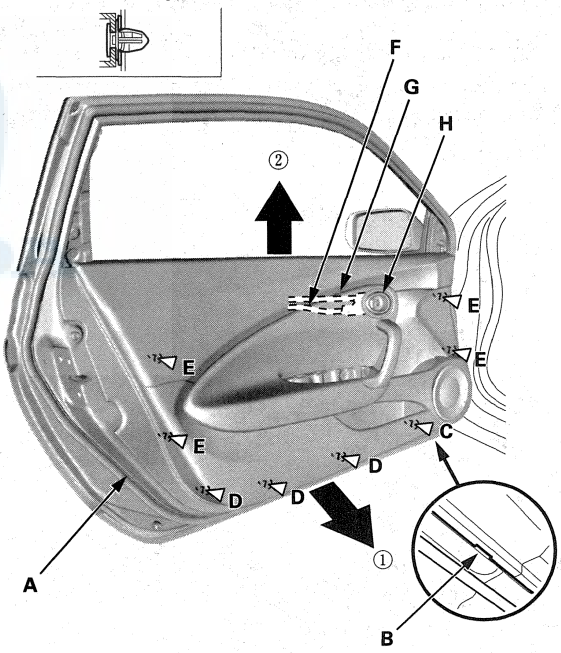


9. Remove the door panel (A) with as little bending as possible to avoid creasing or breaking it.

-1. Start at the bottom edge of the door panel, insert a commercially available trim pad remover into the notch (B) in the lower edge of the door panel to detach the clip (C).
-2. Detach the clips (D), then pull out the bottom edge of the door panel.
-3. Detach the upper clips (E).
-4. Starting at the rear, pull the door panel upward.

NOTE: The inner handle cable (F) and the latch cable (G) are connected to the inner handle (H). Do not pull up the door panel too far, or these cables will be damaged.

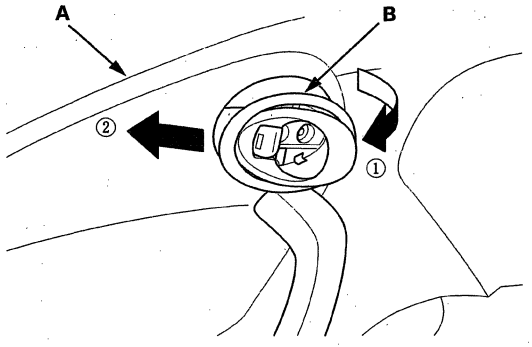
Fastener Locations
C, D, E ▷ : Clip, 8



(cont'd)

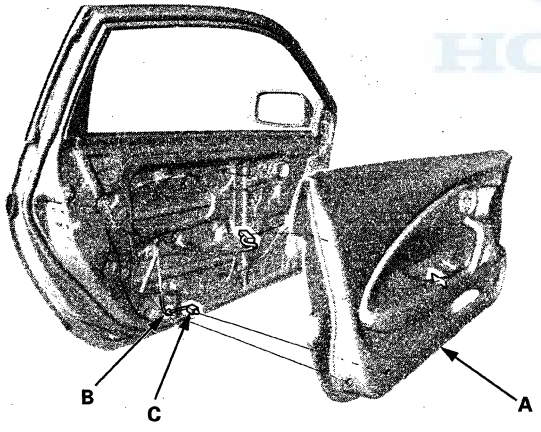
Door Panel Removal/Installation (cont'd)

10. While holding the door panel (A) away from the door, remove the inner handle (B) from the opening of the door panel.



11. While holding the door panel (A) away from the door, detach the door harness clip (B), and disconnect the courtesy light bulb socket (C).

NOTE: If you are only removing the door panel, go to step 15. If you are doing further disassembly, proceed to step 12.

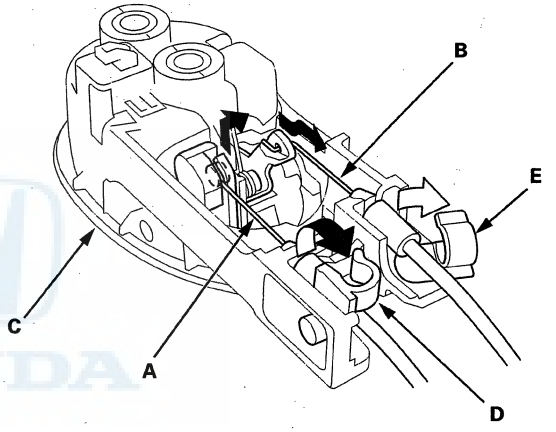


Inner handle replacement

12. Disconnect the inner handle cable (A) and the latch cable (B) from the inner handle (C), then remove the handle.

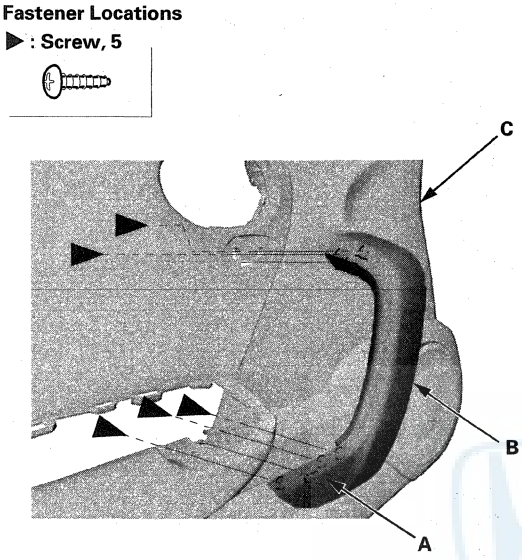
-1. Release the inner handle cable fastener (D), then disconnect the inner handle cable from the inner handle.
-2. Release the latch cable fastener (E), then disconnect the latch cable from the inner handle.

NOTE: If the cable fasteners are damaged or stress-whitened, replace them with new ones.



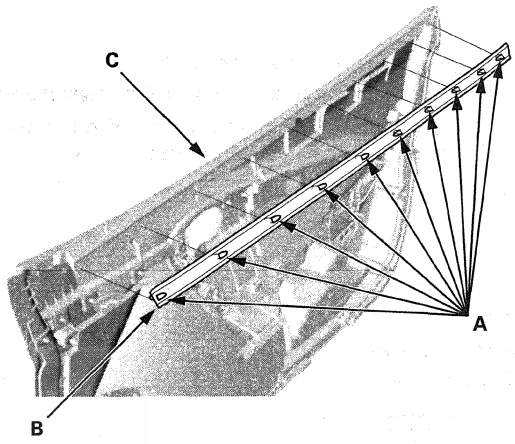
Door grip replacement

13. Remove the screws and detach the hook (A), then remove the door grip (B) from the door panel (C).



Inner weatherstrip replacement

14. Release the hooks (A), then remove the inner weatherstrip (B) from the door panel (C).



15. Install the door panel in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - If the inner door handle cable end is damaged or stress-whitened, replace it with a new one.
    - Replace any damaged cable fasteners with new ones.
    - Make sure the connectors are plugged in properly, and the cables are connected securely.
    - Make sure the power window and power door lock operates properly.
    - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.
    - Push the clips, the hooks, and the fasteners into place securely.

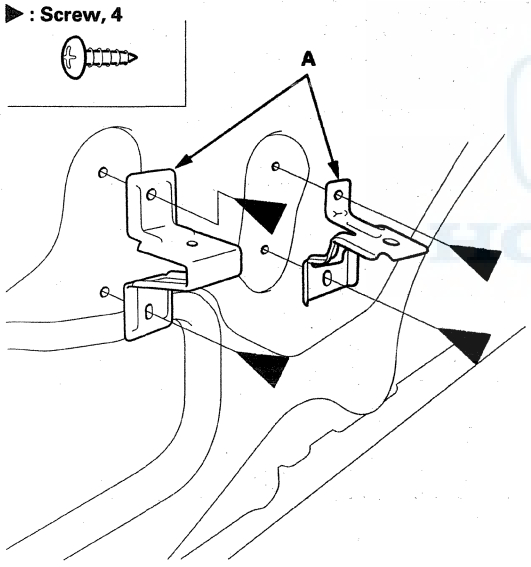
Door Outer Handle Replacement

Special Tools Required
KTC Trim Tool Set SOJATP2014*
*Available through the Honda Tool and Equipment Program, 888-424-6857

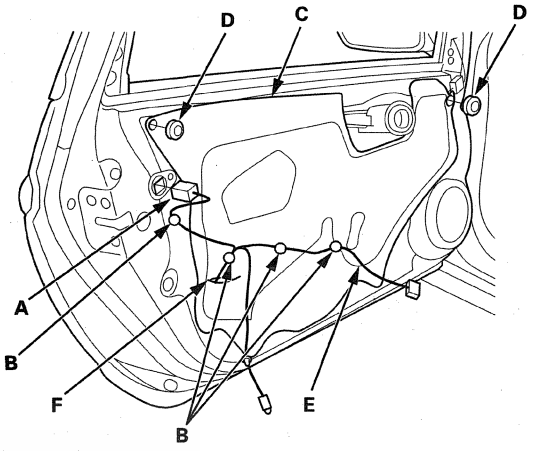
NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the door panel (see page 20-4).
2. Raise the glass fully.
3. Remove the screws, then remove the pull pocket brackets (A).

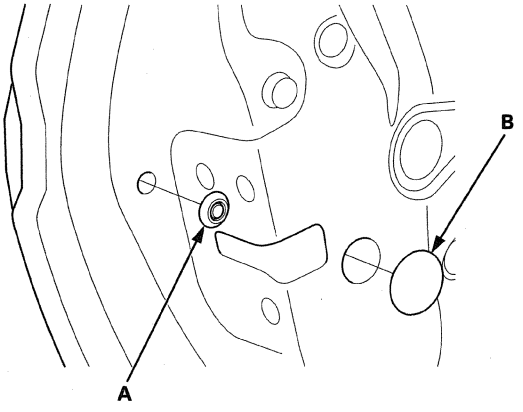
Fastener Locations
▶ : Screw, 4



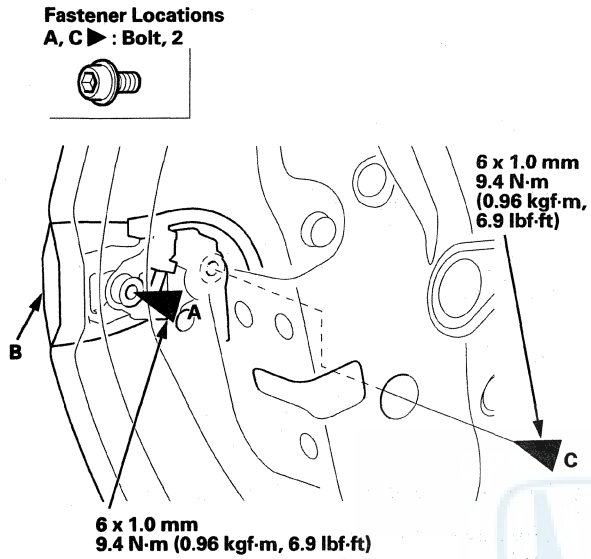
4. Disconnect the power door lock actuator connector (A), and detach the door harness clips (B).



5. Remove the plastic cover (C) as needed.
   -1. Remove the plug cap (D).
   -2. Pass the door harness (E) through the slit (F) in the plastic cover.
   NOTE: If the plastic cover is damaged or torn, replace it with a new one.
6. Remove the door latch (see page 20-11).
7. Remove the maintenance cap (A) and the door outer handle hole seal (B).

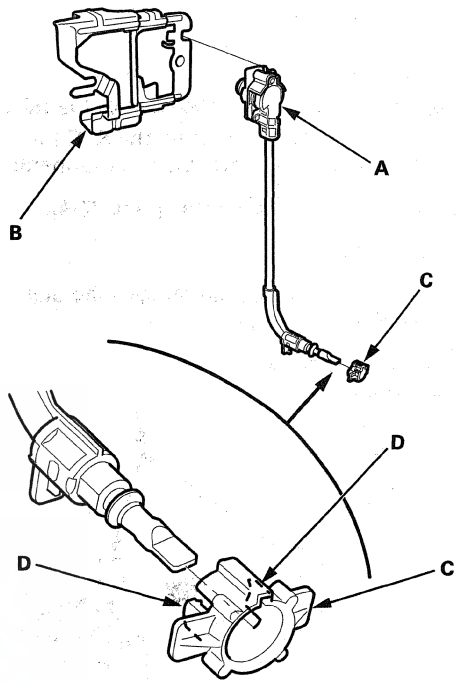


8. Loosen the bolt (A) of the rear side of the door outer handle (B).



9. Remove the bolt (C) of the front side of the door outer handle.

10. Remove the lock cylinder cable (A) (driver's door) and slide the outer handle protector (B) forward, then remove it.



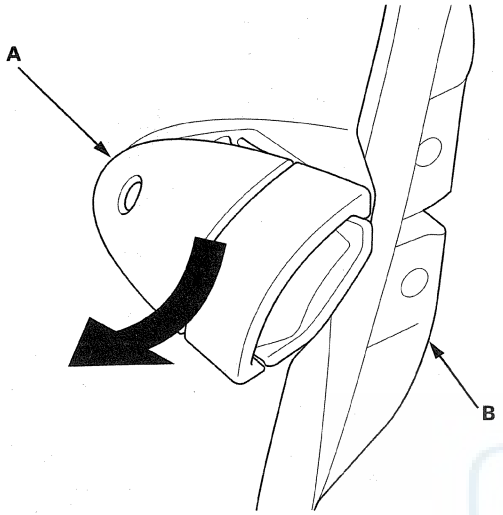
11. Driver's door: If the retainer (C) of the cylinder cable/key cylinder is damaged, release the hooks (D), then replace it with a new one.

(cont'd)

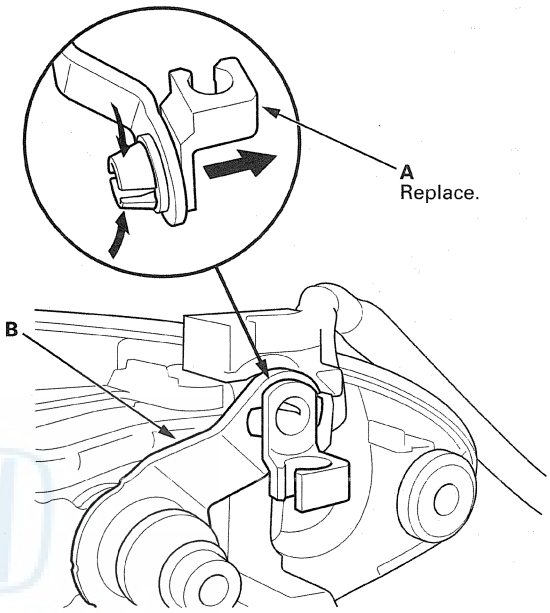
Door Outer Handle Replacement (cont'd)

12. Remove the outer handle (A) from the door (B).

    NOTE: Take care not to scratch the door.



13. Remove the rod fastener (A) from the outer handle base (B), then replace the rod fastener with a new one.

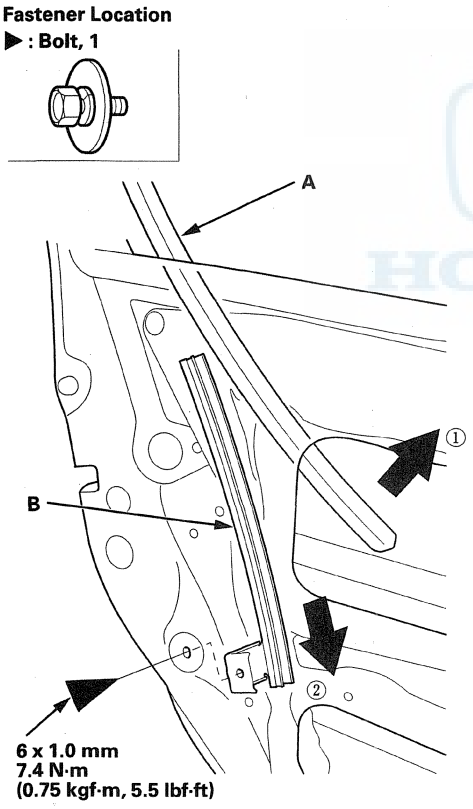


14. Install the removed parts in the reverse order of removal, and note these items:
    - Make sure that the actuator connector is plugged in properly, and that the outer handle rod is connected securely.
    - Make sure the door handle operates properly.
    - Make sure the door key cylinder/door lock operates properly.
    - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.
    - Push the clips and hooks into place securely.

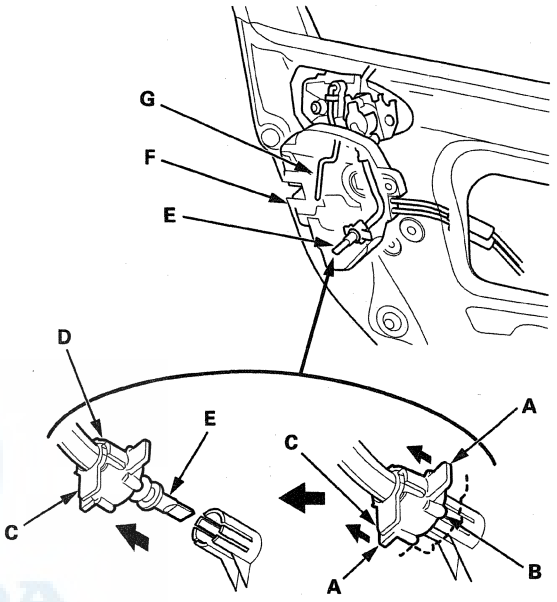
Door Latch Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door and related parts.

1. Raise the glass fully.
2. Remove the door panel (see page 20-4).
3. Remove the inner handle (see page 20-6).
4. Disconnect the power door lock actuator connector and detach the harness clips (see step 4 on page 20-8).
5. Remove the plastic cover, as needed (see step 5 on page 20-8).
6. Pull the glass run channel (A) away as needed, and remove the bolt, then remove the center lower sash (B) by pulling it downward.



7. Driver's door: Pull both side flanges (A) of the retainer (B) outward, and pull out the middle flange portion (C) of the outer casing cover (D), then disconnect the cylinder cable (E) from the latch (F).



8. Pull out the bottom of the outer handle rod (G) from the latch.

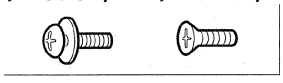
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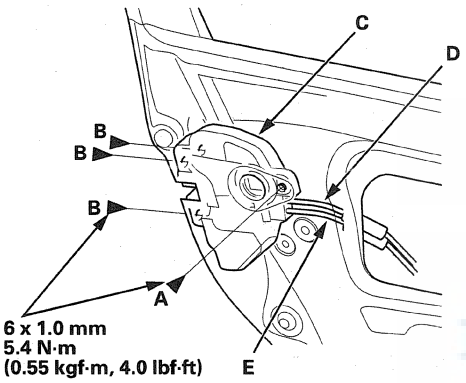
Door Latch Replacement (cont'd)

9. Remove the screws (A, B) securing the latch (C), then remove the latch through the hole in the door.

   NOTE:
   - Take care not to bend the latch cable (D), and the inner handle cable (E).
   - If you are only removing the door latch, go to step 13. If you are doing further disassembly, proceed to step 10.

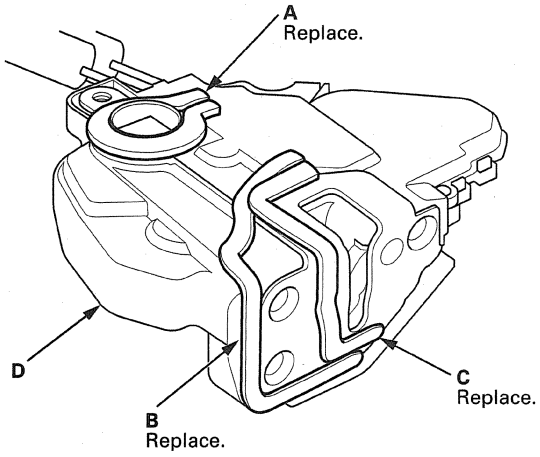
Fastener Locations
A ▶ : Screw, 1 B ▶ : Screw, 3





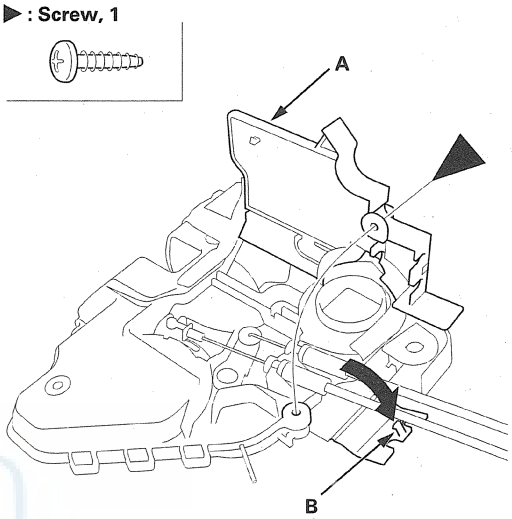
Latch cable and inner handle cable replacement

10. Remove the foam seals (A, B, C) from the latch (D).

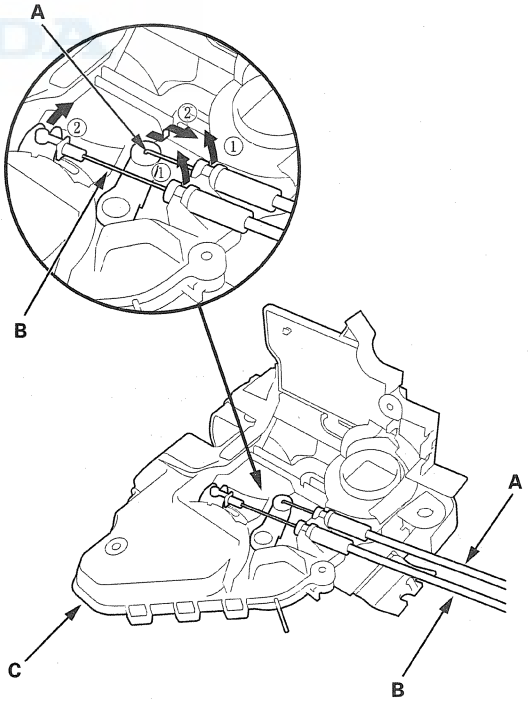


11. Remove the screw, then remove the latch protector (A) by releasing the hook (B).

Fastener Location
▶ : Screw, 1



12. Disconnect the latch cable (A) and inner handle cable (B) from the latch (C).



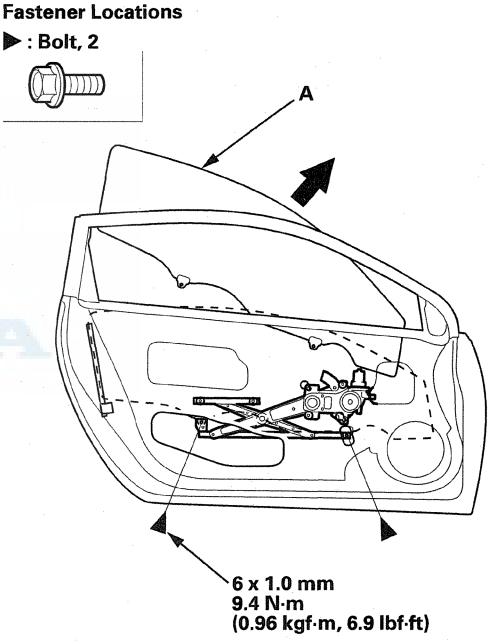
13. Install the latch in the reverse order of removal, and note these items:
    - Before reinstalling the latch protector, clean the latch and latch protector surfaces with isopropyl alcohol where the new foam seals will be attached.
    - After reinstalling the latch protector to the latch, attach the new foam seals to the protector and the latch.
    - Make sure the actuator connector is plugged in properly, and each rod is connected securely.
    - Make sure the latch cable and the inner handle cable are connected securely.
    - Make sure the door lock operates properly.
    - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.

Door Glass and Regulator Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.

1. Remove the door panel (see page 20-4).
2. Disconnect the power door lock actuator connector, and detach the harness clips (see step 4 on page 20-8).
3. Remove the plastic cover (see step 5 on page 20-8).
4. Carefully raise the glass (A) until you can see the bolts, then remove them. Carefully pull the glass out through the window slot.

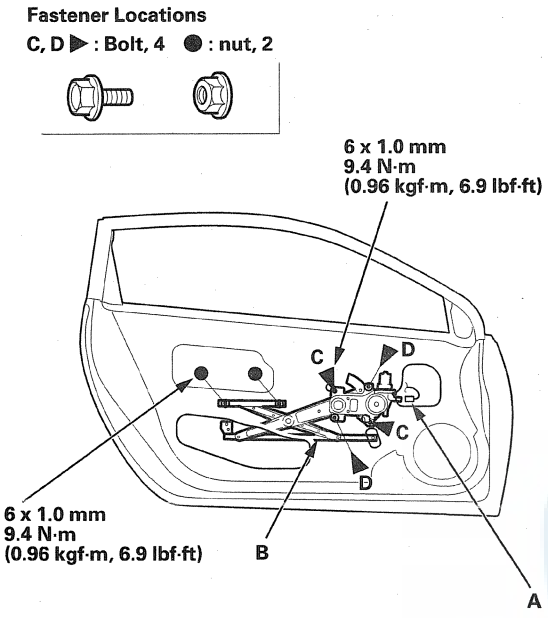
   NOTE: Take care not to drop the glass inside the door.



(cont'd)

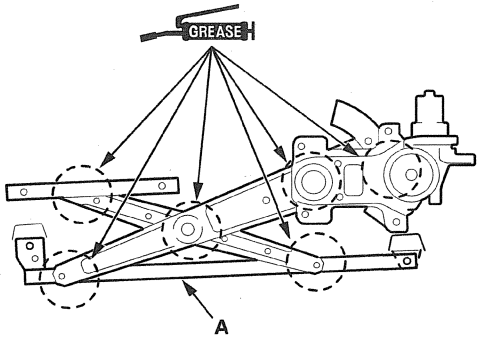
Door Glass and Regulator Replacement (cont'd)

5. Disconnect the connector (A) from the regulator (B), and loosen the bolts (C).



6. Remove the bolts (D) and nuts, then remove the regulator through the hole in the door.

7. Apply multipurpose grease to all the sliding surfaces of the regulator (A) where shown.



8. If necessary, remove the power window motor (see step 3 on page 22-288).

9. Install the glass and the regulator in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the connector is plugged in properly.
   - Push the clips into place securely.
   - Roll the glass up and down to verify that if it moves freely without binding.
   - Make sure that there is no clearance between the glass and the glass run channel when the glass is closed.
   - Adjust the position of the glass as necessary (see page 20-19).
   - Do the power window control unit reset procedure (see page 22-279).
   - When reinstalling the door panel, make sure the plastic cover is installed properly and sealed around its outside perimeter to seal out water.
   - Check for water leaks (see step 8 on page 20-19).
   - Test-drive and check for wind noise and rattles.
   - Make sure the power door locks, the power windows, and the power mirrors operate properly.

Door Sash Inner Trim Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

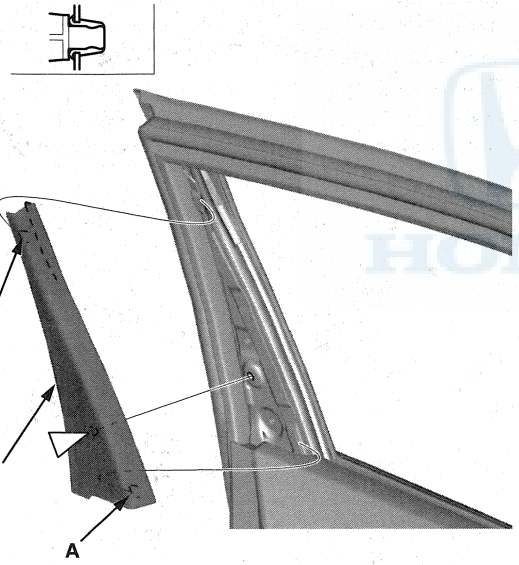
NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Lower the door glass fully.
2. Detach the clip and hooks (A), then remove the door sash inner trim (B).

Fastener Location

▷ : **Clip, 1**



3. Install the trim in the reverse order of removal, and push the clip and the hooks into place securely.

Door Sash Outer Trim Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

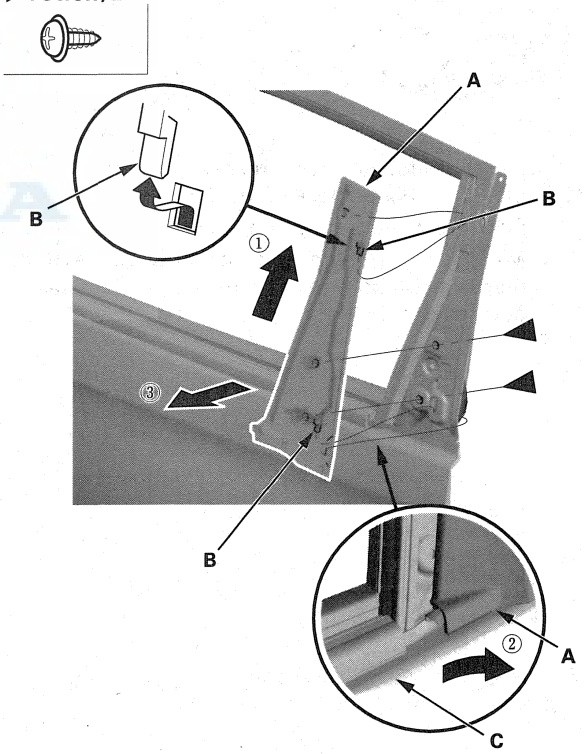
NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.

1. Remove the door sash inner trim (see page 20-15).
2. Remove the door sash outer trim (A).
   -1. Remove the screws from inside the door.
   -2. Pull up the trim to release the hooks (B) from the door.
   -3. Release the lower edge of the trim from the door glass outer weatherstrip (C), then remove the trim.

Fastener Locations

▶ : **Screw, 2**

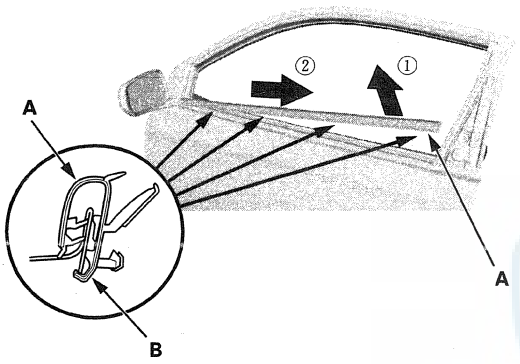


3. Install the trim in the reverse order of removal, and push the hooks into place securely.

Door Glass Outer Weatherstrip Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.

1. Remove the door sash outer trim (see page 20-15).
2. Lower the glass fully.
3. Pull up the rear edge of the door glass outer weatherstrip (A), and detach the hooks (B). Slide the weatherstrip rearward, then remove it.

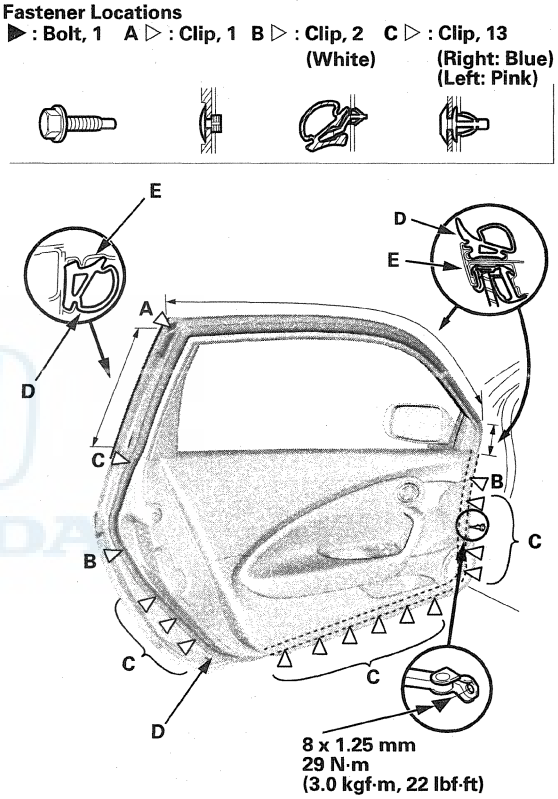


4. Install the weatherstrip in the reverse order of removal, and note these items:
   - Push the weatherstrip into place securely.
   - Make sure that there is no clearance between the rear edge of the weatherstrip and the door sash outer trim.

Door Weatherstrip Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.
- Use a clip remover to remove the clips.

1. Remove the door checker mounting bolt at the front pillar.



2. Detach the clips (A, B, C), then remove the door weatherstrip (D).
3. Install the weatherstrip in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - Make sure the weatherstrip is installed in the holder (E) securely.
   - Apply medium strength liquid thread lock to the door checker mounting bolt before installation.
   - Check for water leaks (see step 8 on page 20-19).

Door Channel Tape Replacement

NOTE:
- Keep dust away from the working area.
- When working at lower temperatures, heat the door channel and the door channel tape with a hair dryer.
  Door channel: about 59 °F (15 °C).
  Door channel tape: about 86 °F (30 °C).
- When heating the door channel tape, heat it evenly and gradually to prevent deformation.
- When pressing the door channel tape, slowly press it from the corner to prevent air bubbles and wrinkles.
- If there are air bubbles in the door channel tape, release the air with your finger or a plastic squeegee.
- If the air bubble is more than 10 mm (0.39 in) in diameter, peel up the door channel tape, then reapply it.

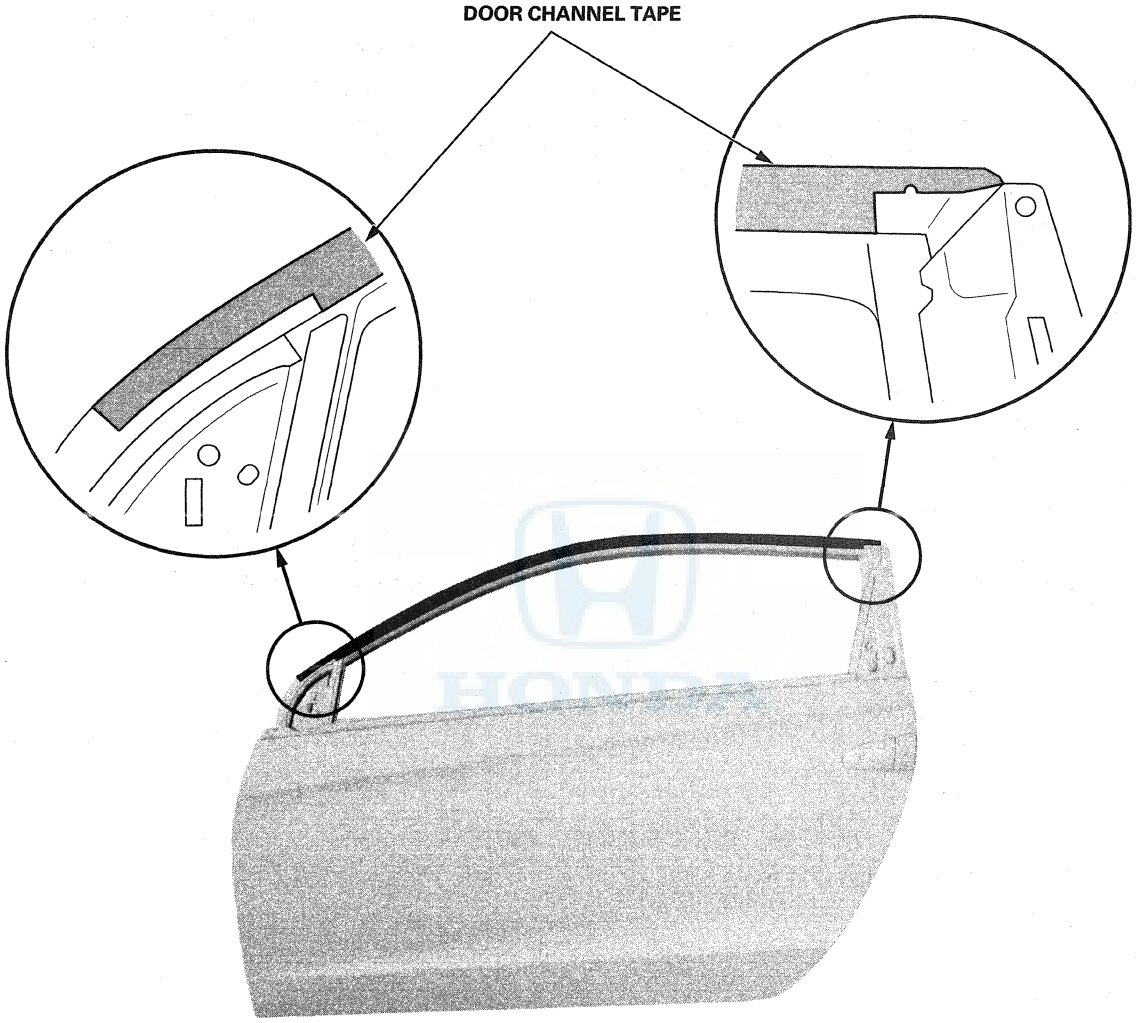
1. The following tools are required to replace the door channel tape:
   - Plastic squeegee
   - Isopropyl alcohol
   - Sponge or shop towel
   - Hair dryer
2. Remove these items:
   - Power mirror (see page 20-23)
   - Door glass outer weatherstrip (see page 20-16)
   - Door weatherstrip, as needed (see page 20-16)
   - Glass run channel, as needed (see step 6 on page 20-11)
   - Door sash outer trim (see page 20-15)
3. Slowly peel up the old door channel tape while heating it with a hair dryer.
4. Clean the door channel bonding surface with a sponge dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
5. Attach the door channel tape.
   -1. Peel the edge of the adhesive backing from the channel tape.
   -2. Fit the door channel tape to the door channel.
   -3. Apply the door channel tape to the door channel while peeling the adhesive backing from it a little at a time. Check that the channel tape is parallel with the door channel.
   -4. Push firmly on the door channel tape with a plastic squeegee (felt side).

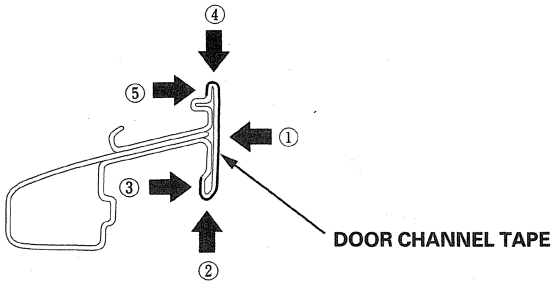
   NOTE: To prevent air bubbles, slowly press the door channel tape around the door frame corner.
6. As necessary, repeat the preceding steps.
7. Reinstall all remaining removed parts.
8. Check that the body color on the door channel is covered by the door channel tape.
9. Check for water leaks (see step 8 on page 20-19).

(cont'd)

Door Channel Tape Replacement (cont'd)

Attachment Point (Reference)



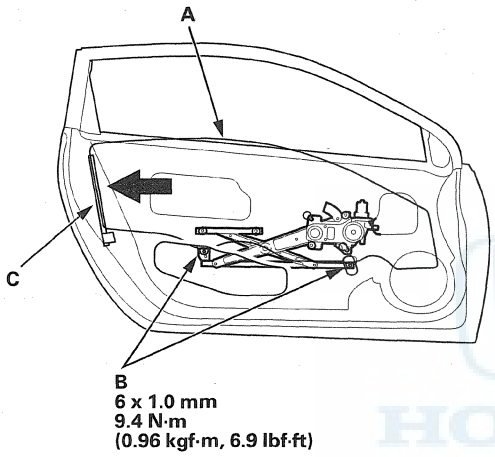


NOTE: Apply in numbered sequence.

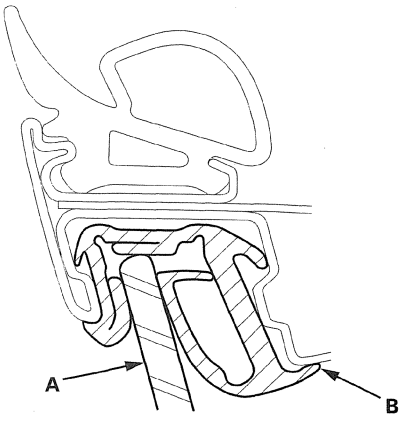
Door Glass Adjustment

NOTE: Check the door weatherstrip and the glass run channel for damage or deterioration, and replace them if necessary.

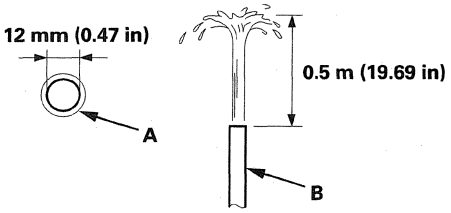
1. Place the vehicle on a firm, level surface.
2. Remove these items:
   - Door panel (see page 20-4)
   - Plastic cover (see step 5 on page 20-8)
3. Carefully lower the glass (A) until you can see the glass mounting bolts (B), then loosen them.

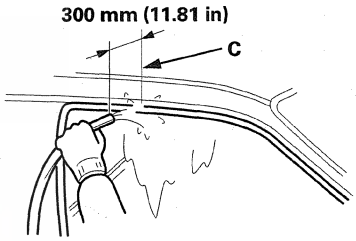


4. Push the glass against the glass run channel (C), then tighten the glass mounting bolts.
5. Check that the glass moves smoothly.
6. Raise the glass fully, and check for gaps. Also make sure that the glass (A) contacts the glass run channel (B) evenly.



7. Attach the plastic cover making sure it is sealed around its outside perimeter to seal out water.
8. Check for water leaks. Run water over the roof and on the sealing area as shown, and note these items:
   - Use a 12 mm (0.47 in) diameter hose (A).
   - Adjust the rate of water flow as shown (B).
   - Do not use a nozzle.
   - Hold the hose about 300 mm (11.81 in) away from the door (C).



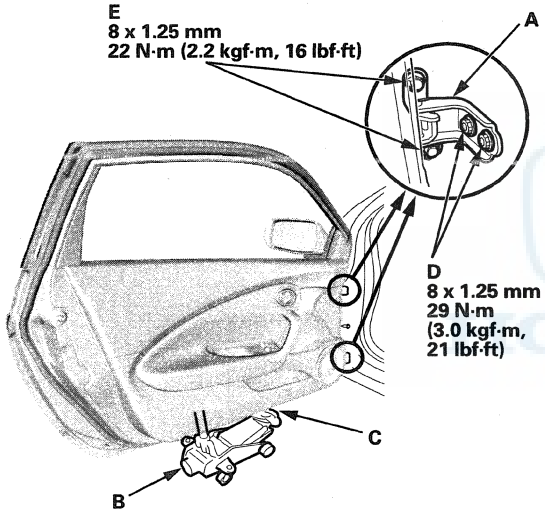


9. Reinstall the door panel (see page 20-4).
10. Do the power window control unit reset procedure (see page 22-279).

Door Position Adjustment

NOTE: Check for a flush fit with the body, then check for equal gaps between the front, rear, and bottom door edges and the body. Check that the door and body edges are parallel.

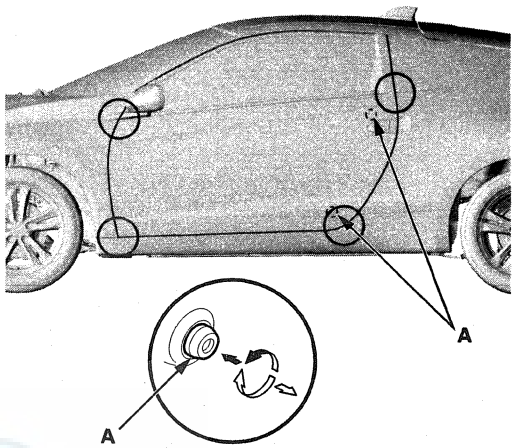
1. Place the vehicle on a firm, level surface when adjusting the doors.
2. Adjust at the hinges (A):
   - Pad a floor jack (B) with shop towels (C), then use the jack to support the door to prevent damage to the door while adjusting it.
   - Loosen the hinge mounting bolts (D) slightly, and move the door backward or forward, up or down as necessary to equalize the gaps.



3. If necessary, replace the door mounting bolts with the adjusting bolts made specifically for door adjustment, then adjust at the door: Loosen the door mounting bolts (E) slightly, and move the door up or down as necessary to equalize the gaps, and move it in or out until it is flush with the body.

   NOTE: Refer to the Parts Catalog if you need to use an adjusting bolt.

4. Check that the door and body edges are parallel. If necessary, adjust the door cushions (A) to make the rear of the doors flush with the body.

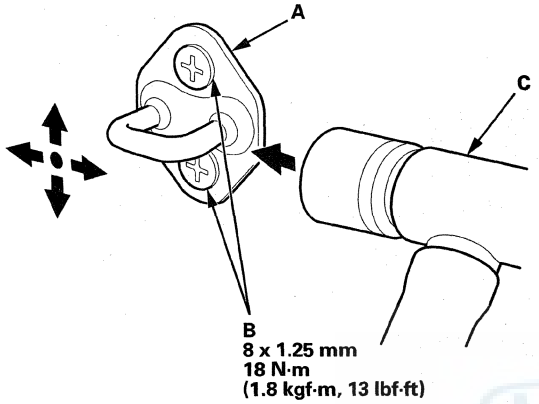


5. Apply touch-up paint to the hinge mounting bolts and around the hinges.
6. Check for water leaks (see step 8 on page 20-19).

Door Striker Adjustment

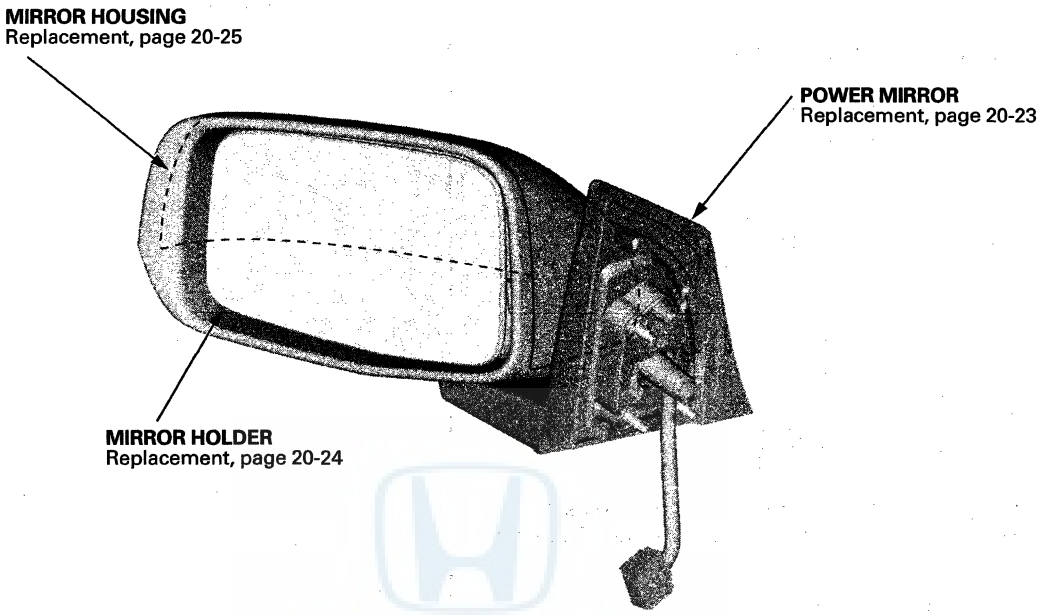
Make sure the door latches securely without slamming it. If necessary, adjust the striker (A): The striker nuts are fixed, but the striker can be adjusted slightly up or down, and in or out.

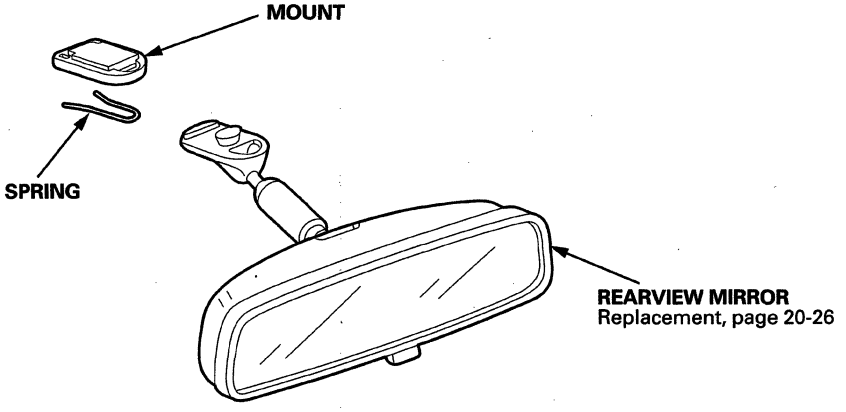
1. Loosen the screws (B) slightly.



2. Wrap the striker with a shop towel, then adjust the striker by tapping it with a plastic hammer (C). Do not tap the striker too hard.
3. Lightly tighten the screws.
4. Hold the outer handle out, and push the door against the body to make sure the striker allows a flush fit. If the door latches properly, tighten the screws to the specified torque and recheck.

Component Location Index



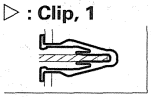


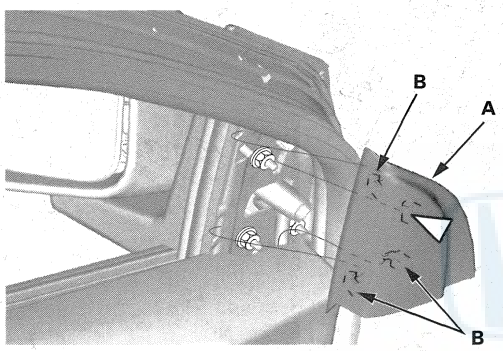
Power Mirror Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the door or the related parts.

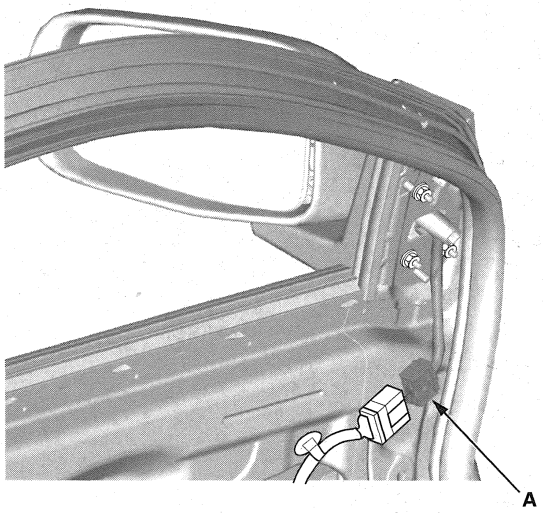
1. Lower the door glass fully.
2. Carefully pull out the door mirror cover (A) to release the hooks (B) and detach the clip, then remove it.

Fastener Location
▷ : Clip, 1





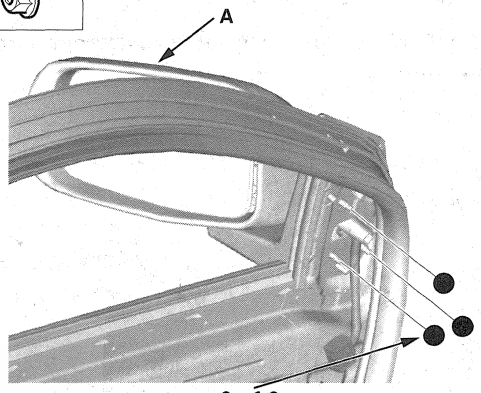
3. Remove the door panel (see page 20-4).
4. Disconnect the connector (A).



5. While holding the power mirror (A), remove the nuts securing the mirror.

Fastener Locations
● : Nut, 3





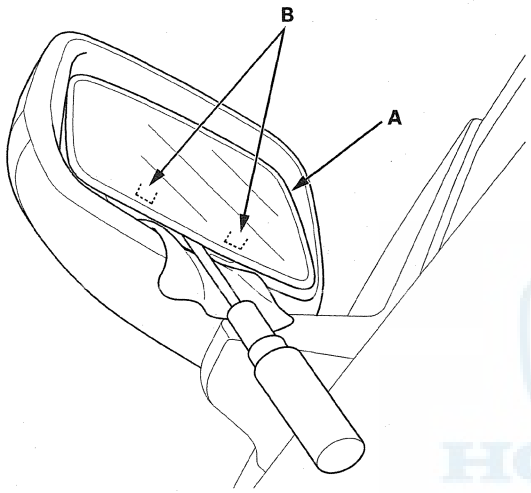
6 x 1.0 mm
9.4 N·m (0.96 kgf·m, 6.9 lbf·ft)

6. While holding the mirror, pull out the harness through the hole in the door. Take care not to scratch the door.
7. Install the power mirror in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly.
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Push the clip and hooks into place securely.

Mirror Holder Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the power mirror or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

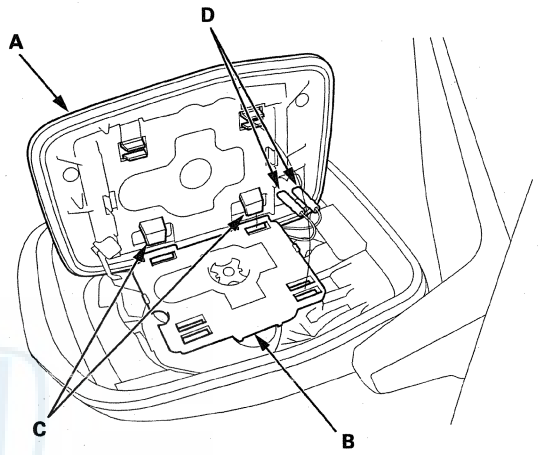
1. Carefully push on the top edge of the mirror holder (A) by hand.



2. Put a shop towel in the opening between the bottom edge of the mirror holder and the mirror housing to prevent scratches, and detach the bottom hooks (B) with a flat-tip screwdriver.

3. Separate the mirror holder (A) from the actuator (B) by releasing the hooks (C). Disconnect the mirror defogger connectors (D).

   NOTE: If you are only removing the mirror holder, go to step 5. If you are doing further disassembly of the mirror, proceed to step 4.

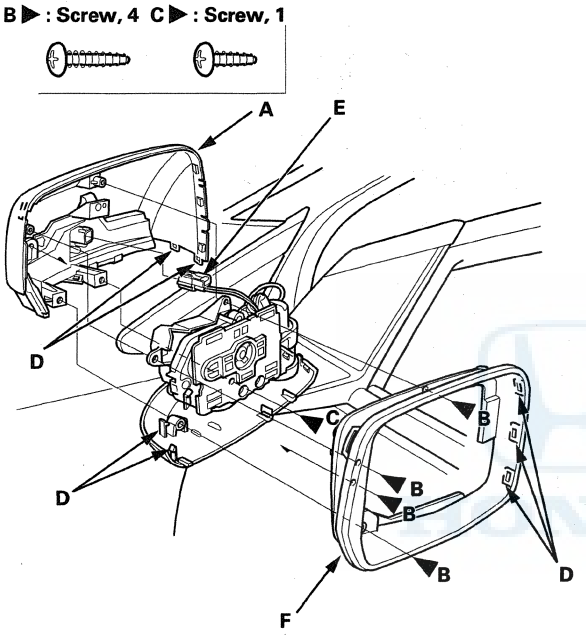


Mirror housing replacement

4. Remove the mirror housing (A).

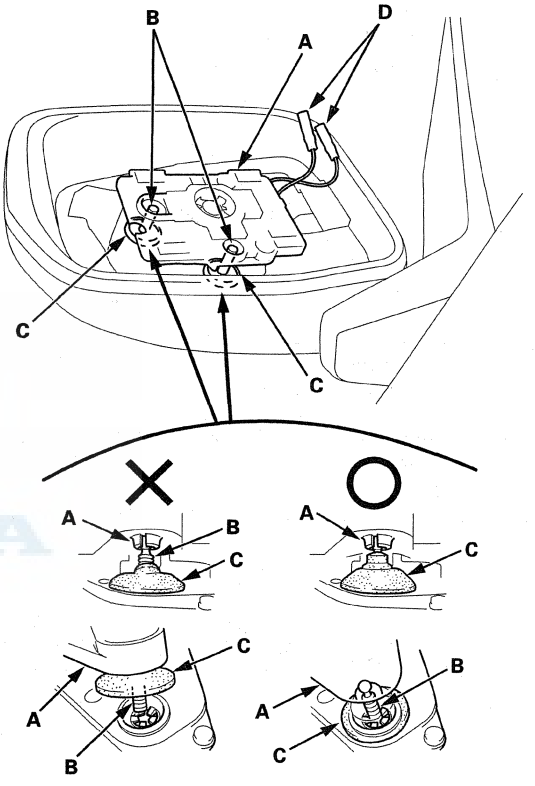
-1. Remove the screws (B, C).
-2. Release the hooks (D) and disconnect the side turn signal light connector (E), then remove the visor (F) and the mirror housing.

Fastener Locations
B ▶ : Screw, 4 C ▶ : Screw, 1



5. Before reinstalling the mirror holder to the inner holder (A) of the actuator, check the actuator rods (B) and the actuator boots (C):

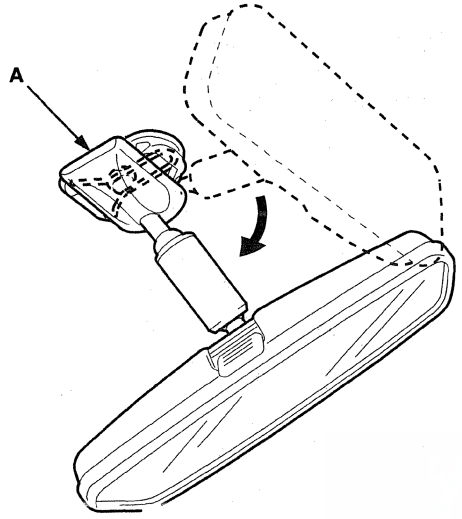
NOTE: Make sure each actuator rod is inserted into the actuator securely, and each actuator boot is fully seated on the actuator.



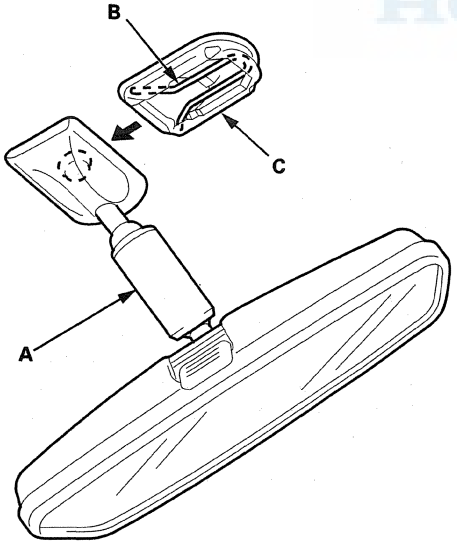
6. Reconnect the mirror defogger connectors (D).
7. Reattach the hooks of the mirror holder to the actuator, then position the mirror holder on the actuator. Carefully push on the hook portions of the mirror holder until the mirror holder locks into place.
8. Check the actuator operation.

Rearview Mirror Replacement

1. Turn the rearview mirror base (A) 90°.

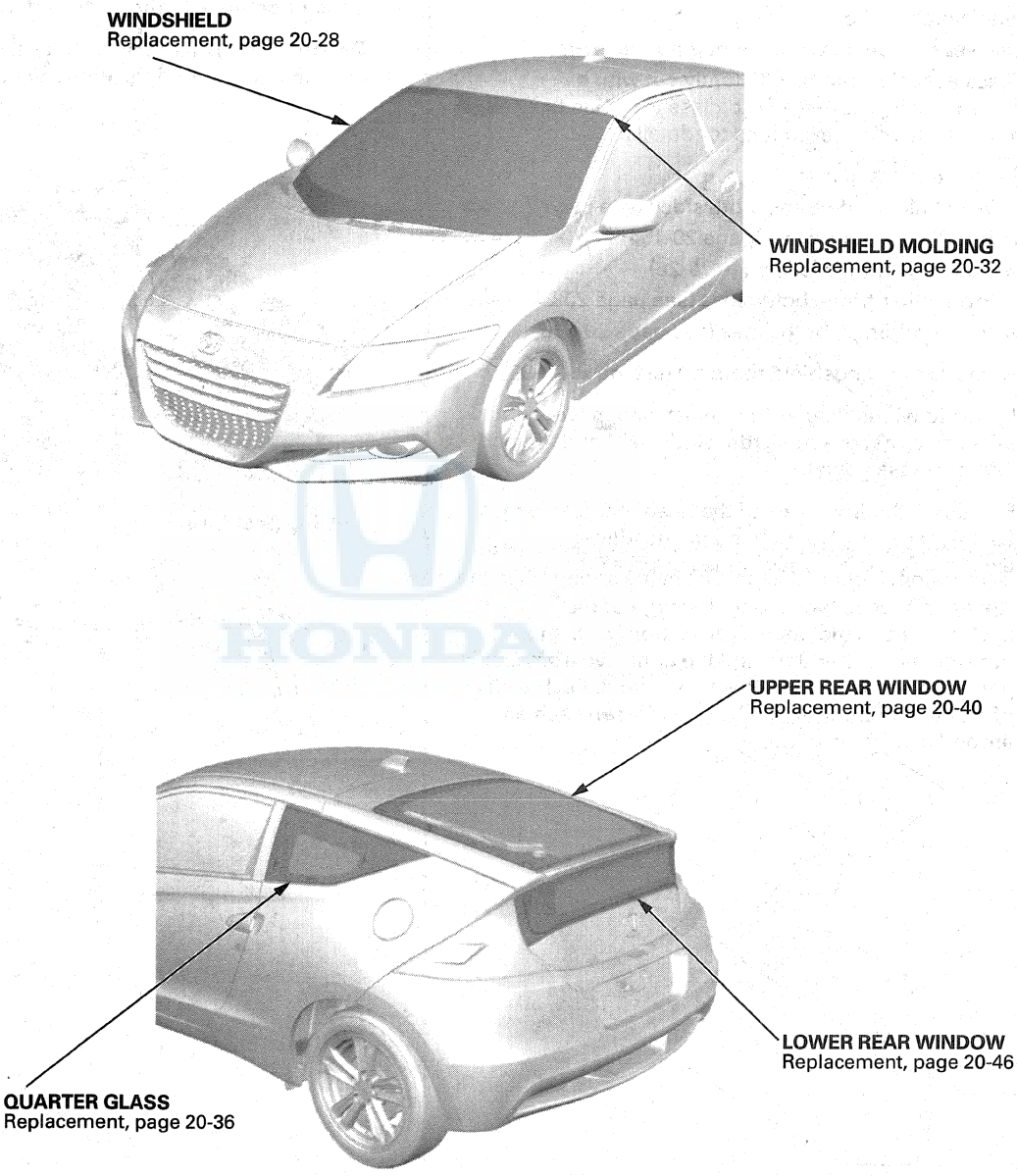


2. Slide the rearview mirror (A) down toward the bottom of the windshield to detach it from the spring (B) in the mount (C).



3. If necessary, remove the spring from the mount.
4. Install the rearview mirror in the reverse order of removal.

Component Location Index

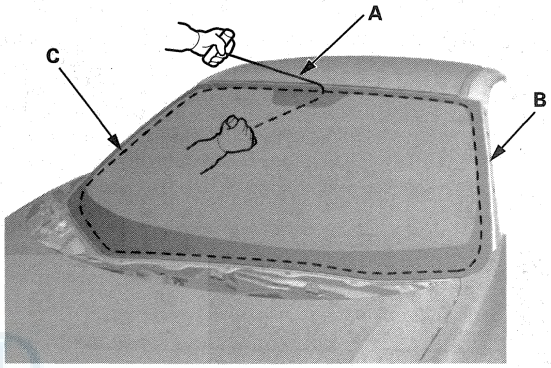


Windshield Replacement

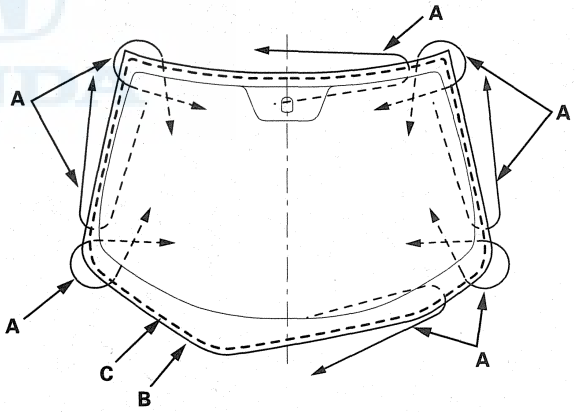
NOTE:
- Put on gloves to protect your hands.
- Wear eye protection while cutting the glass adhesive with a piano wire.
- Use seat covers to avoid damaging the seats.
- Glass adhesive can be efficiently cut with a commercially available auto glass tool. See the tool manufacturer's instructions for details.

1. Remove these items:
   - Windshield side trims, both sides (see page 20-155)
   - Hood hinge cover (see page 20-154)
   - Rearview mirror (see page 20-26)
   - Front pillar trims, both sides (see page 20-54)
   - Roof moldings, both sides (see page 20-156)
2. Remove the windshield molding (see page 20-32).
3. If the old windshield will be reinstalled, make alignment marks across the windshield and the body with a grease pencil.
4. Pull down the front area of the headliner (see page 20-73). Take care not to bend the headliner excessively, or you may crease or break it.
5. Apply protective tape along the edge of the dashboard and the body. Make a hole with an awl through the rubber dam and the adhesive from inside the vehicle at a corner of the windshield. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.
6. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the windshield (B) as possible to prevent damage to the body and the dashboard.

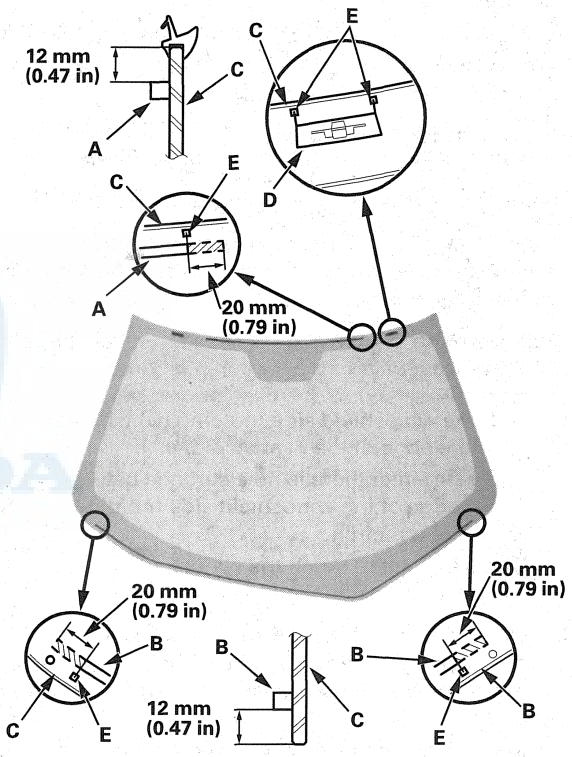
   Carefully cut through the rubber dam and the adhesive (C) around the entire windshield.



Cutting positions



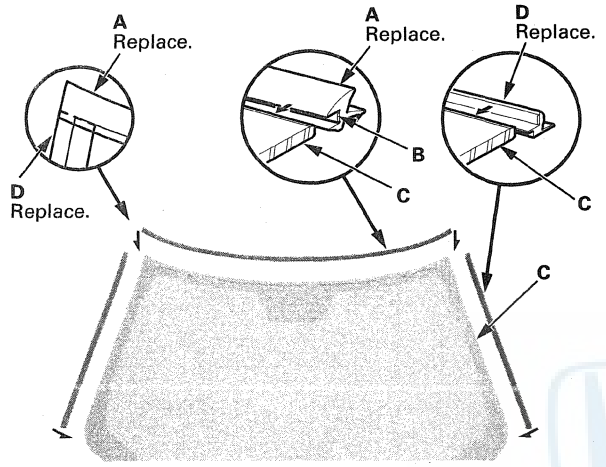
7. Carefully remove the windshield.
8. Scrape smooth the old adhesive with a knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire windshield opening flange:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove the rubber dams and the upper clips from the body.
9. Clean the body bonding surface with a shop towel dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the clean surface.
10. If the old windshield will be installed, scrape off all of the old adhesive, the upper clips and the rubber dams from the windshield with a putty knife. Clean the inside face and the edge of the windshield with isopropyl alcohol where new adhesive is to be applied. Make sure the bonding surface is kept free of water, oil, and grease.
11. Apply glass primer to the upper clips mounting areas on the windshield (C), and let it dry. Remove the adhesive backing, and attach the rubber dams A and B and the upper clips (D) to the inside of the windshield as shown:
    - Make sure the rubber dams and the upper clips line up with the alignment marks (E).
    - Be careful not to touch the windshield where adhesive will be applied.



(cont'd)

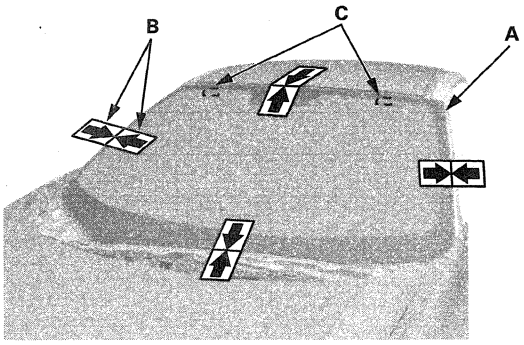
Windshield Replacement (cont'd)

12. Attach the windshield molding (A) with adhesive tape (B) to the edge of the windshield (C):
    - Make sure each corner of the molding lines up with the ones of the windshield.
    - Be careful not to touch the windshield where adhesive will be applied.



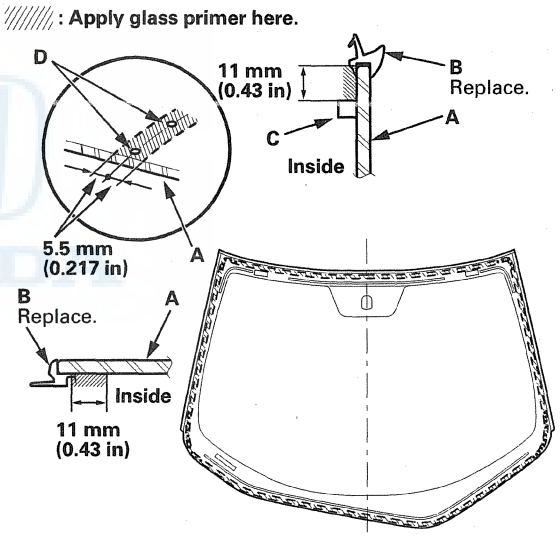
13. Attach the windshield side molding (D) with adhesive tape to the edge of the windshield:
    - Make sure that there is no clearance between the upper edge of the windshield side molding and the windshield molding.
    - Be careful not to touch the windshield where adhesive will be applied.

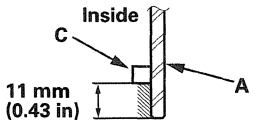
14. Set the windshield (A) in the opening, and center it. Make alignment marks (B) across the windshield and the body with a grease pencil at the four points shown:
    - Make sure the upper clips (C) contact with the edge of the body holes. Be careful not to touch the windshield where adhesive will be applied.



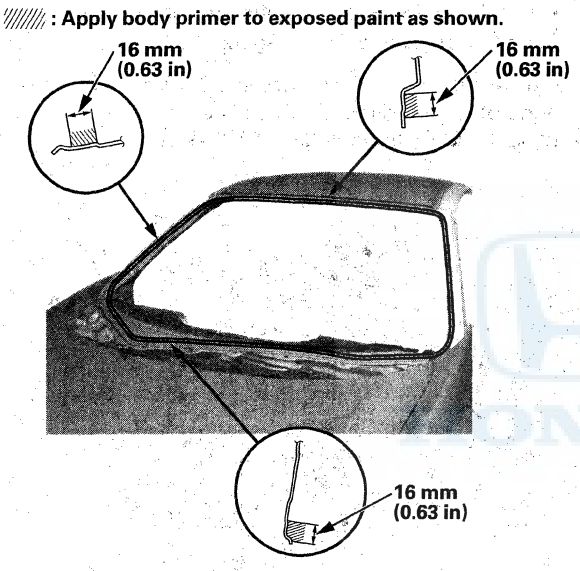
15. Remove the windshield.

16. Apply a light coat of glass primer to the windshield (A) along the edge of the molding (B) and the rubber dams (C) as shown, then lightly wipe it off with gauze or cheesecloth:
    - With the printed dots (D) on the windshield as a guide, apply glass primer to the windshield.
    - Apply glass primer to the molding.
    - Do not apply body primer to the windshield, and do not mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the windshield properly, causing a leak after the windshield is installed.
    - Keep water, dust, and abrasive materials away from the primed surface.

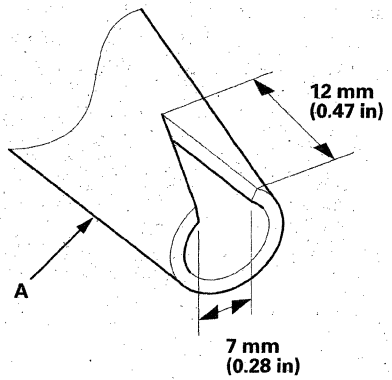




17. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where the new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any remaining original adhesive on the flange.
    - Be careful not to mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands.
    - Cover the dashboard before applying the primer.

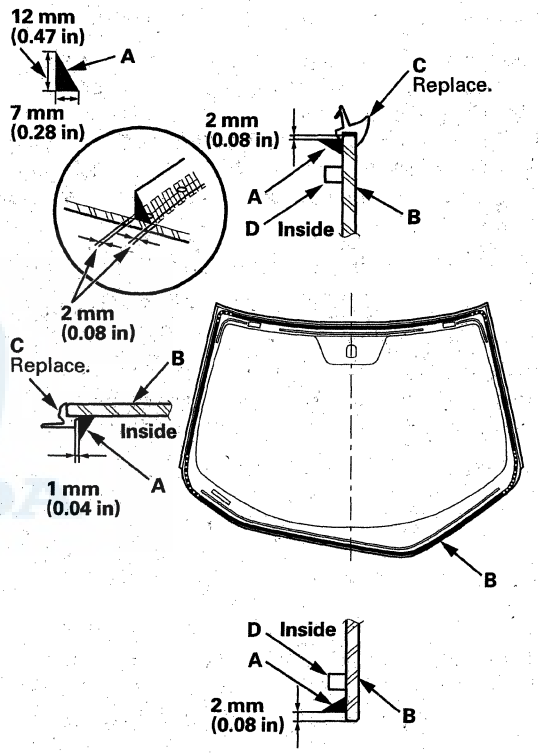


18. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.



19. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive (A) around the windshield (B) along the edge of the windshield molding (C) and the rubber dams (D) as shown:

    NOTE: Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.



(cont'd)

Windshield Replacement (cont'd)

20. Hold the windshield with suction cups over the opening, align it with the alignment marks made in step 14, and set it down on the adhesive. Lightly push on the windshield until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

21. Remove the excess adhesive with a putty knife or a shop towel dampened with isopropyl alcohol.

22. Wait at least an hour for the adhesive to dry, then spray water over the windshield and check for leaks. Mark leaking areas, and let the windshield dry, then seal with sealant. Let the vehicle stand for at least 4 hours after windshield installation. If the vehicle has to be used within the first 4 hours, it must be driven slowly.

23. Reinstall all remaining removed parts.

    NOTE: Advise the customer not to do the following things for 2 to 3 days:
    - Slam the doors with all the windows rolled up.
    - Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

Windshield Molding Replacement

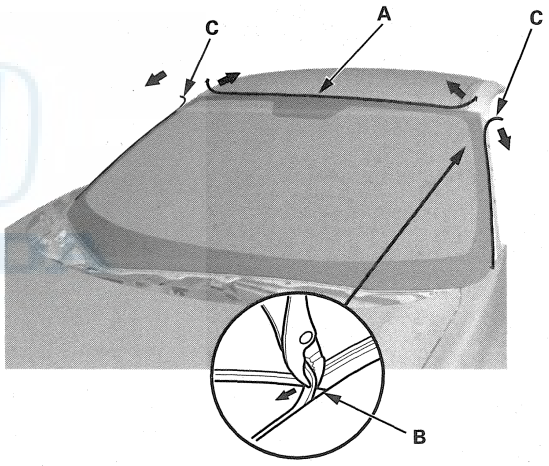
Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

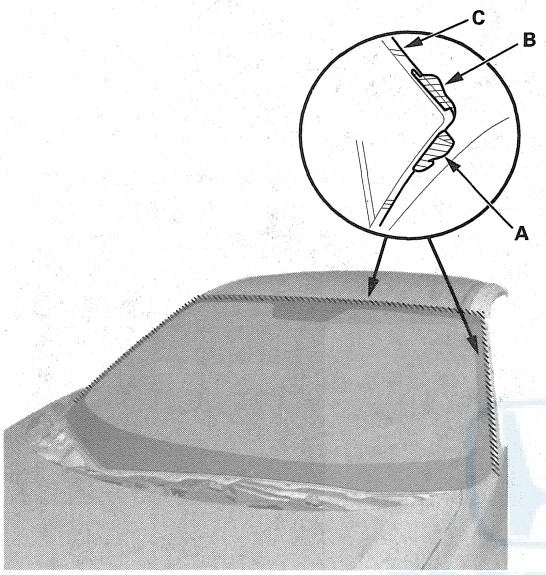
NOTE:
- Take care not to damage the body or the glass.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove these items:
   - Windshield side trims, both sides (see page 20-155)
   - Hood hinge cover (see page 20-154)
2. Remove the windshield molding (A) from the upper edge of the windshield (B). If necessary, cut the windshield molding with a utility knife.



3. Remove the windshield side molding (C) from the upper edge of the windshield. If necessary, cut the windshield side molding with a utility knife.

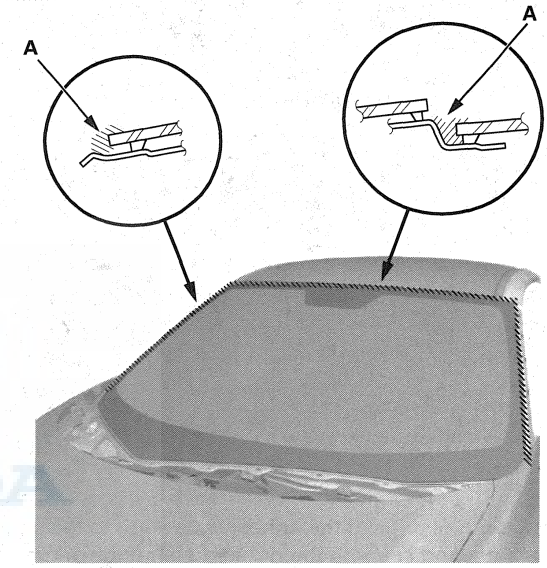
4. Scrape off the excess old adhesive (A) or remaining double-sided adhesive tape (B) from the windshield (C) with a putty knife: Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.



5. Clean the windshield attaching surface and the body with a shop towel dampened in isopropyl alcohol. Be careful not to touch the windshield where the new adhesive will be applied.

6. Apply a light coat of glass primer to the attaching surface (A) of the windshield using a 2 mm (0.08 in) nozzle, then lightly wipe it off with gauze or cheesecloth:
   - Do not apply body primer.
   - Attach the molding within 30 minutes after applying the glass primer.

: **Apply glass primer here.**

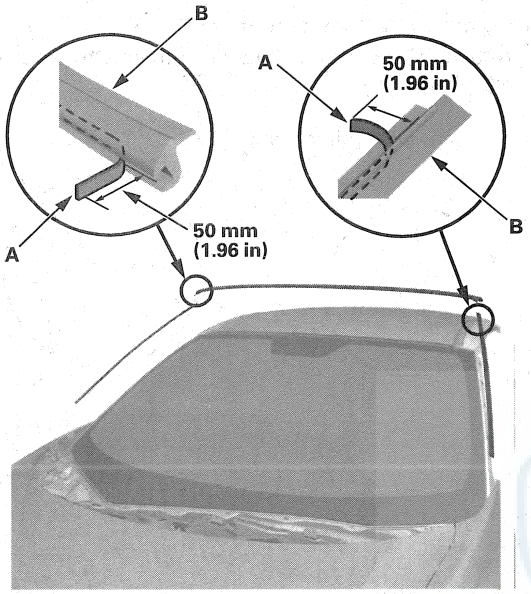


7. Apply the adhesive to the applied area of the glass primer. Attach the molding within 5 minutes after applying the adhesive.

(cont'd)

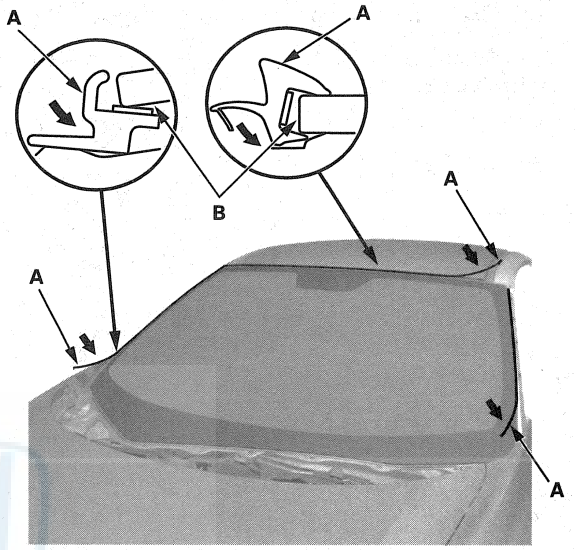
Windshield Molding Replacement (cont'd)

8. Fold back the edges of the adhesive backing (A) on the new windshield moldings (B) on each side.



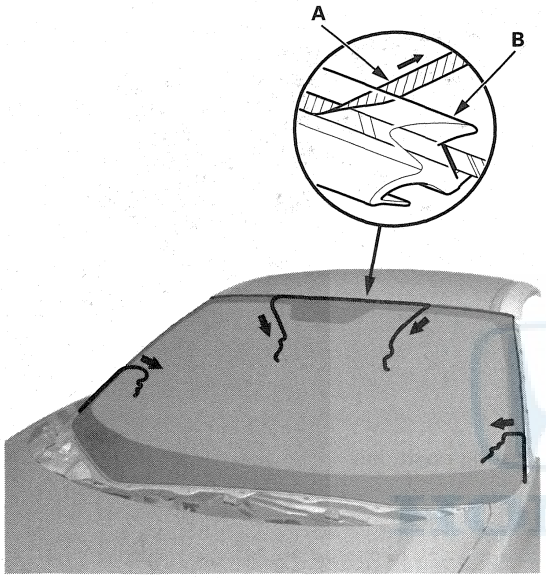
9. Pull out the edge of the adhesive backing to the outside, and set both the right and left ends of the windshield molding in position according to its angle. Then set the upper edge of the windshield side molding in position and align it with the lower edge of the windshield molding.
   - Be careful not to touch the windshield where molding adhesive tape will be applied.
   - Make sure that there is no clearance between the upper edge of the windshield side molding and the windshield molding.

10. With a plastic spatula, push the back of the molding (A) against the edge of the windshield (B) from end to end.

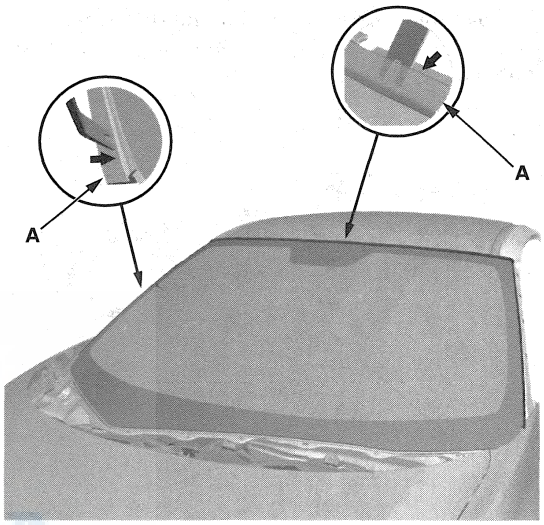


11. Carefully pull the entire adhesive backing (A) away while pulling up the edge of the moldings (B). Take care not to tear off the adhesive backing.

    NOTE: Pull while opening the lip part of the molding at the same time. Pull off the adhesive backing completely, and make sure not to tear and leave any adhesive backing.



12. Press the entire windshield molding (A) against the edge of the windshield with a plastic spatula to attach the adhesive tape. To prevent twisting, push the molding into place evenly and securely from end to end.

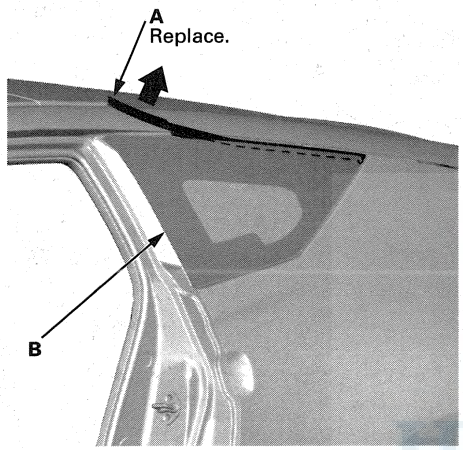


13. After installing, check the molding for kinks or twisting.
14. Reinstall all removed parts.

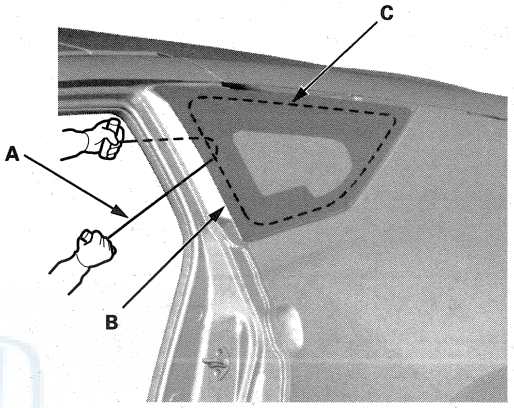
Quarter Glass Replacement

NOTE:
- Put on gloves to protect your hands.
- Wear eye protection while cutting the glass adhesive with a piano wire.
- Use seat covers to avoid damaging the seats.

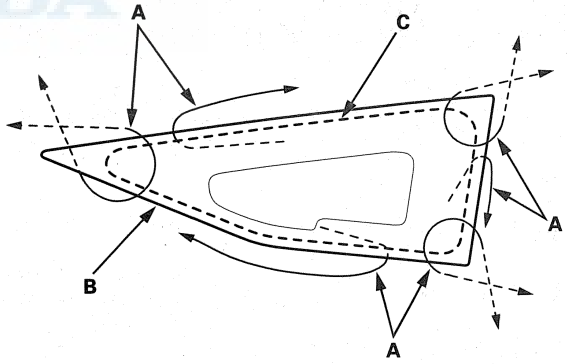
1. Remove the center pillar trim (see page 20-57).
2. Remove the quarter glass molding (A) from the edge of the quarter glass (B). If necessary, cut the molding with a utility knife.



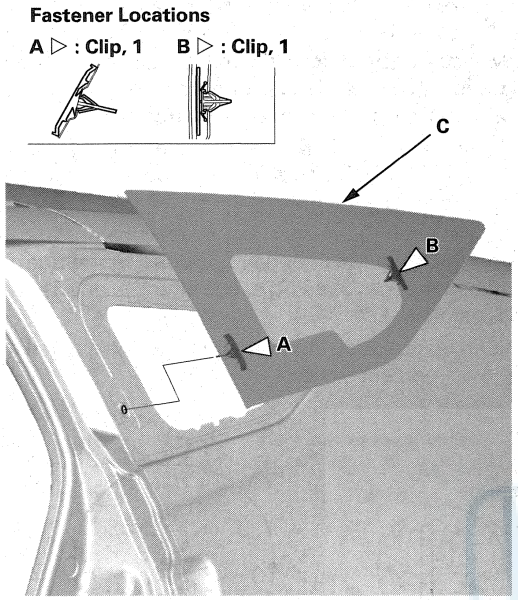
3. Apply protective tape to along the inside and outside edges of the body. Make a hole with an awl through the adhesive from inside the vehicle. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.
4. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the quarter glass (B) as possible to prevent damage to the body, and carefully cut through the adhesive (C) around the entire quarter glass.



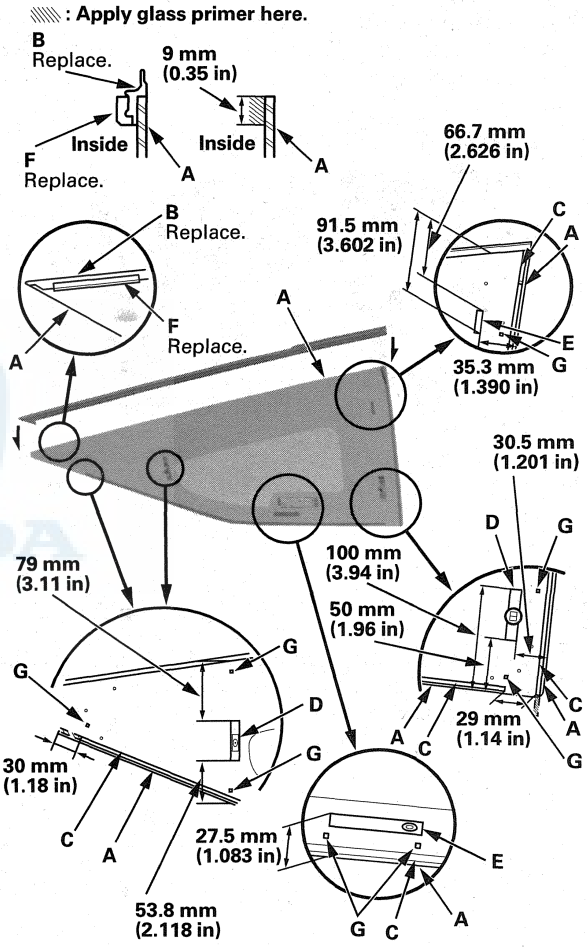
Cutting positions



5. With a helper on the out side, hold the quarter glass with suction cups, then detach the clips (A, B).



6. Carefully remove the quarter glass (C).
7. Scrape smooth the old adhesive with a putty knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire quarter glass opening flange:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove the clips, the fasteners, and the rubber dams from the body.
8. Clean the body bonding surface with a shop towel dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the clean surface.
9. If the old quarter glass will be installed, scrape off the old adhesive and the rubber dam from the quarter glass with a putty knife. Clean the bonding surface on the inside face and the edge of the quarter glass with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil, and grease.
10. Apply glass primer to the edge of the quarter glass (A), and let it dry. Remove the adhesive backing and attach the quarter glass molding (B) to the inside of the quarter glass.
    - Be careful not to touch the quarter glass where the adhesive will be applied.



11. Apply glass primer to the clips mounting areas on the quarter glass, and let it dry. Remove the adhesive backing, and attach the rubber dam (C), the clips (D), the fasteners (E) and the seal (F) to the inside of the quarter glass as shown.
    - Make sure the rubber dams, the fasteners, and the clips line up with the alignment marks (G).
    - Be careful not to touch the quarter glass where the adhesive will be applied.

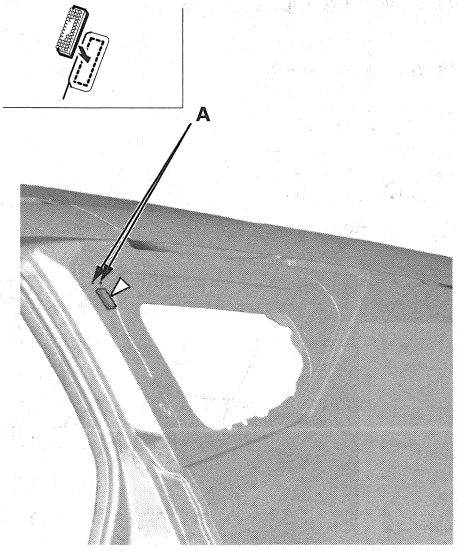
(cont'd)

Quarter Glass Replacement (cont'd)

12. Attach the fastener with adhesive tape to the body as shown. Make sure the fastener aligns with the alignment mark (A).

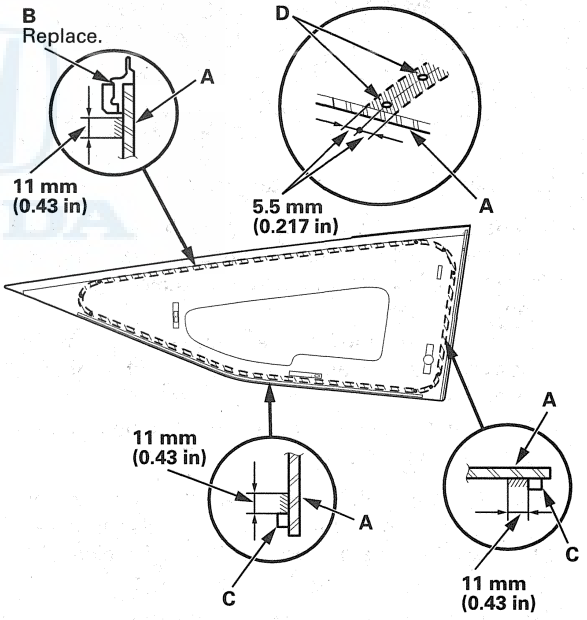
Fastener Location

▷: Fastener, 1



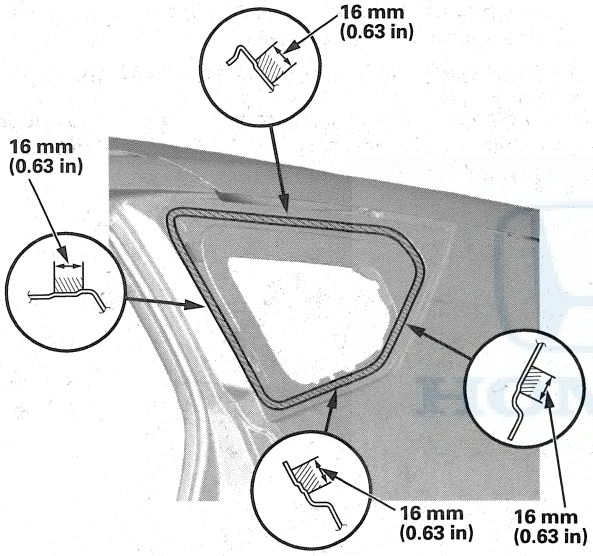
13. Apply a light coat of glass primer along the edge of the quarter glass (A), the molding (B), and the rubber dam (C) as shown, then lightly wipe it off with gauze or cheesecloth:
    - With the printed dots (D) on the quarter glass as a guide, apply the glass primer to the upper, lower, and rear corner portions of the quarter glass.
    - Do not apply body primer to the quarter glass, and do not mix up the body primer applicators and glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the quarter glass properly, causing a leak after the quarter glass is installed.
    - Keep water, dust, and abrasive materials away from the primed surfaces.

: Apply glass primer here.

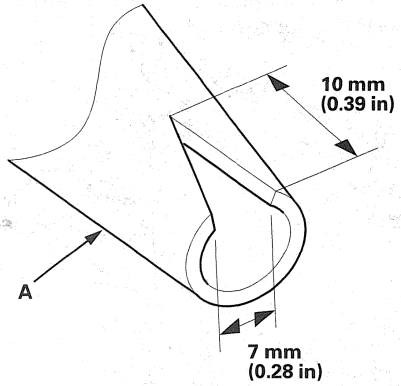


14. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any remaining original adhesive on the flange.
    - Be careful not to mix up the body primer applicators and glass primer applicators.
    - Never touch the primed surfaces with your hands.
    - Cover the interior parts before applying the primer.

    ////: Apply body primer to any exposed paint as shown.

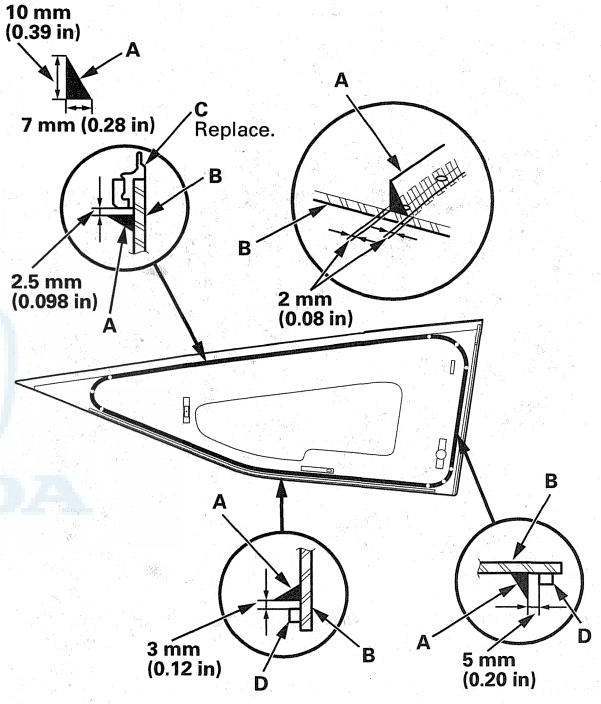


15. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.



16. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a caulking gun, and run a continuous bead of adhesive (A) around the edge of the quarter glass (B) and along the molding (C) and the rubber dam (D) as shown.

    NOTE: Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.



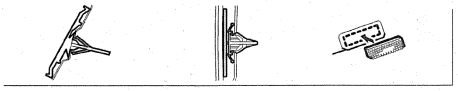
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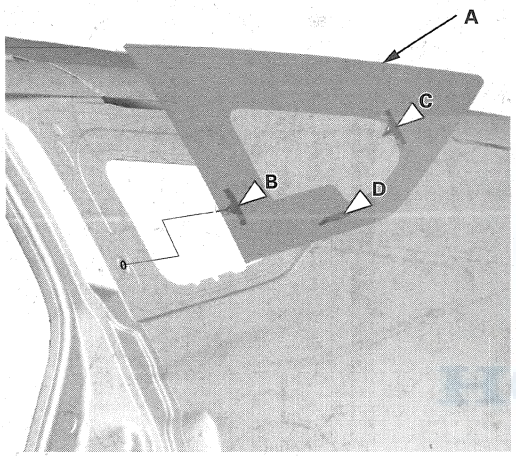
Quarter Glass Replacement (cont'd)

17. Hold the quarter glass (A) over the opening with suction cups, align it with the clips (B, C) and the fastener (D), and set it down on the adhesive. Lightly push on the quarter glass until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

Fastener Locations
B ▷: Clip, 1 C ▷: Clip, 1 D ▷: Fastener, 1





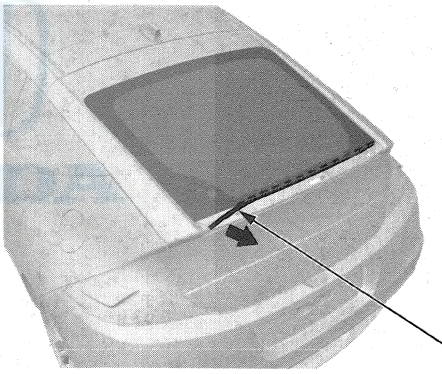
18. Remove the excess adhesive with a putty knife or a shop towel dampened with isopropyl alcohol.
19. Wait at least one hour for the adhesive to dry, then spray water over the quarter glass and check for leaks. Mark leaking areas, and let the quarter glass dry, then seal with sealant. Let the vehicle stand for at least 4 hours after quarter glass installation. If the vehicle has to be used within the first 4 hours, it must be driven slowly.
20. Reinstall all remaining removed parts.

    NOTE: Advise the customer not to do the following things for 2 to 3 days:
    - Slam the doors with all the windows rolled up.
    - Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

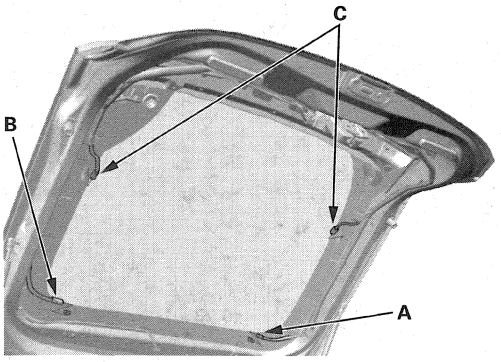
Upper Rear Window Replacement

NOTE:
- Put on gloves to protect your hands.
- Wear eye protection while cutting the glass adhesive with a piano wire.
- Use seat covers to avoid damaging any surfaces.
- Glass adhesive can be efficiently cut with a commercially available auto glass tool. See the tool manufacturer's instructions for details.
- Do not damage the upper rear window defogger grid lines and terminals.

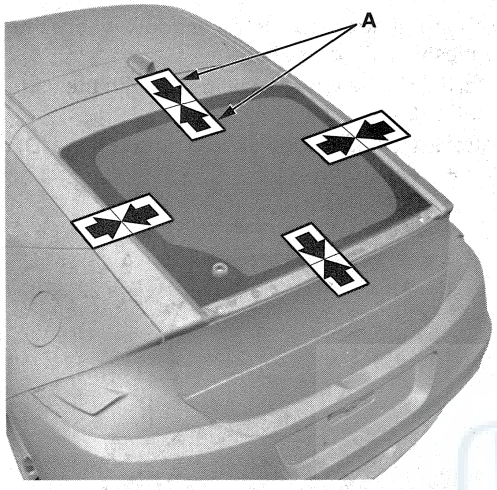
1. Remove these items:
    - Hatch upper trim (see page 20-66)
    - Hatch spoiler (see page 20-157)
    - Rear window wiper motor (see page 22-310)
2. Remove the lower seal (A) from the edge of the upper rear window. If necessary, cut the lower seal with a utility knife.



3. Disconnect the window antenna connector (A), the hatch ground connector (B), and the upper rear window defogger connectors (C).

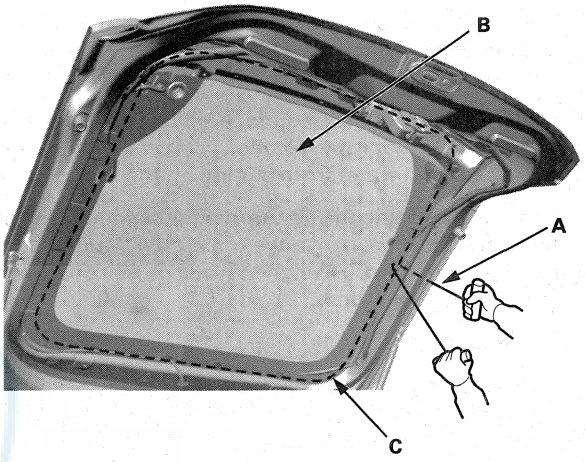


4. If the old upper rear window will be reinstalled, make alignment marks (A) across the glass and the body with a grease pencil.

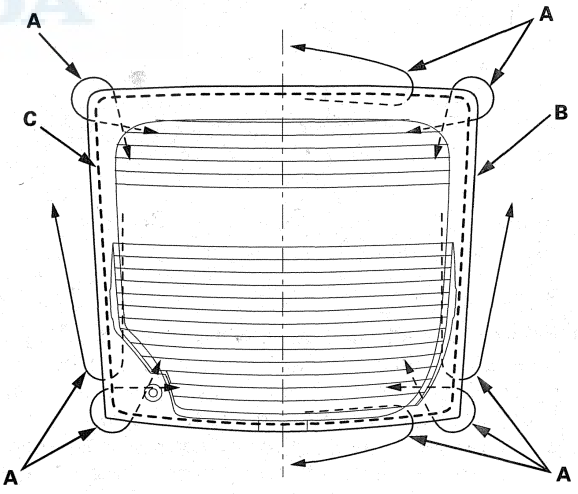


5. Apply protective tape along the inside and outside edges of the hatch. Make a hole with an awl through the adhesive from inside the vehicle at a corner portion of the upper rear window. Push the piano wire through the hole, and wrap each end around a piece of wood.

6. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the upper rear window (B) as possible to prevent damage to the hatch, and carefully cut through the adhesive (C) around the entire upper rear window.



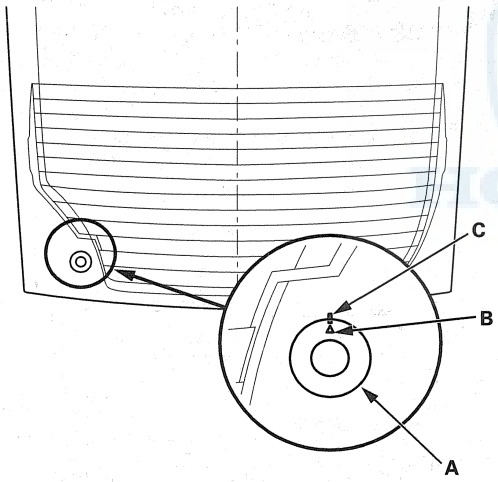
Cutting positions



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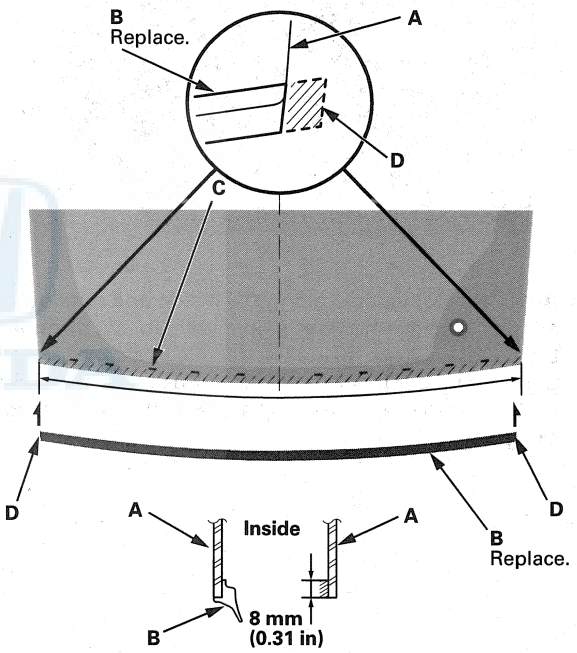
Upper Rear Window Replacement (cont'd)

7. Carefully remove the upper rear window.
8. Scrape smooth the old adhesive with a putty knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire upper rear window opening flange:
   - Do not scrape down to the painted surface of the body; damaged paint will interface with proper bonding.
   - Remove the fasteners and rubber dam from the hatch.
9. Clean the body bonding surface with a shop towel dampened in isopropyl alcohol. After cleaning, keep oil, grease and water from getting on the surface.
10. If you are installing the new upper rear window, install the rear wiper seal (A) on the upper rear window with its alignment mark (B) aligned with the mark (C) on the upper rear window.

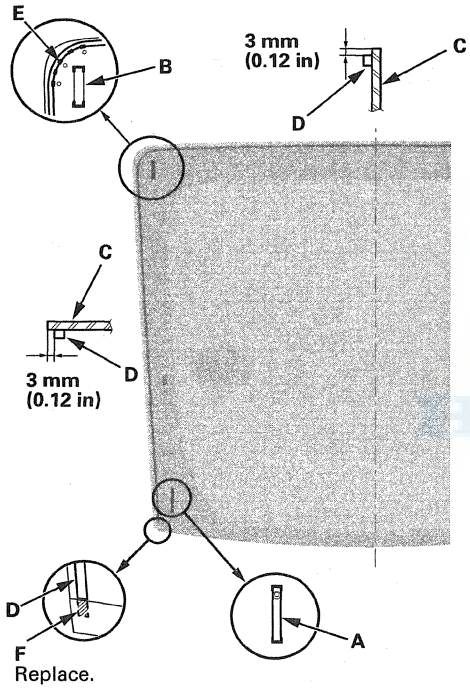


11. If the old upper rear window will be installed, scrape off all of the old adhesive, the fasteners, and the rubber dams from the upper rear window with a putty knife. Clean the bonding surfaces on the inside face and the edge of the upper rear window with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil, and grease.
12. Apply glass primer to the edge of the upper rear window (A) where the new lower seal (B) will be attached as shown. Attach the lower seal with adhesive tape to the lower edge of the upper rear window:
   - Be careful not to touch the window where the adhesive will be applied.
   - Make sure the lower seal line up with the alignment marks (C).
   - After installing the lower seal, cut the ends (D) of the lower seal as shown.

: **Apply glass primer here.**

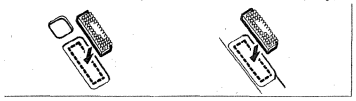


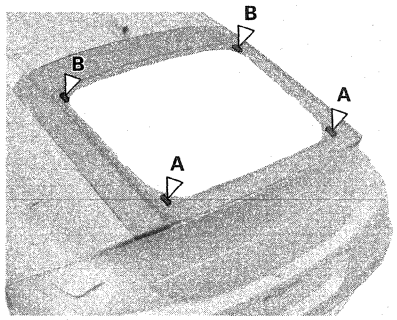
13. Apply glass primer to the fasteners (A, B) mounting areas on the upper rear window (C), and let it dry. Attach the rubber dam (D) and the fasteners with the adhesive tape to the inside face of the upper rear window as shown.
    - Make sure the rubber dam and the fasteners align with the alignment marks (E).
    - Be careful not to touch the upper rear window where adhesive will be applied.
    - Make sure the rubber dam contacts with the lower seal (F). If necessary, cut the excess rubber dam.



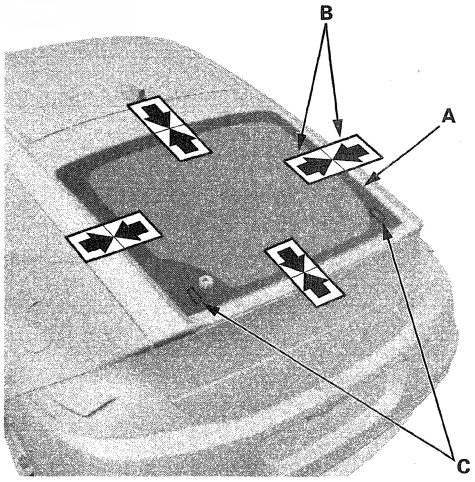
14. Attach the fasteners (A, B) to the hatch as shown.

Fastener Locations
A ▷: Fastener, 2 B ▷: Fastener, 2





15. Set the upper rear window (A) in the opening, and center it. Make alignment marks (B) across the upper rear window and the body with a grease pencil at the four points shown. Be careful not to touch the upper rear window where the adhesive will be applied. Match both fasteners (C) with the body holes on the upper rear window glass.

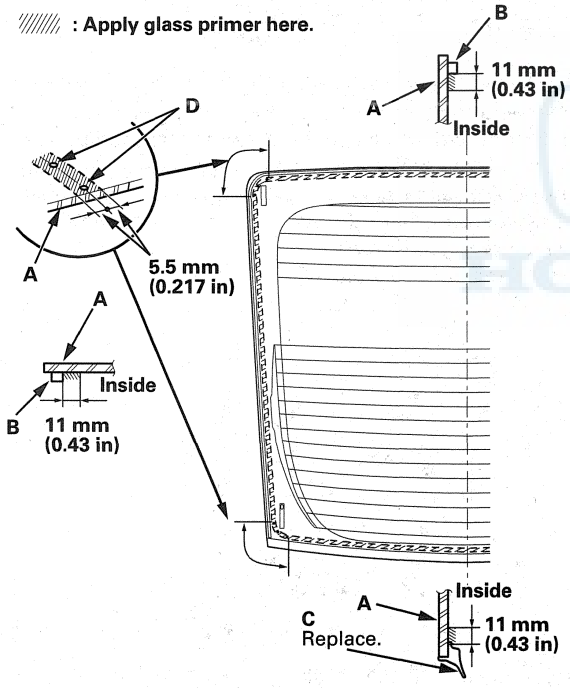


16. Remove the upper rear window.

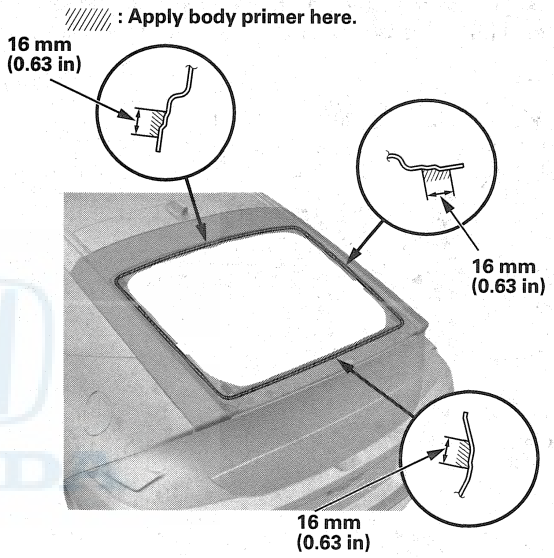
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Upper Rear Window Replacement (cont'd)

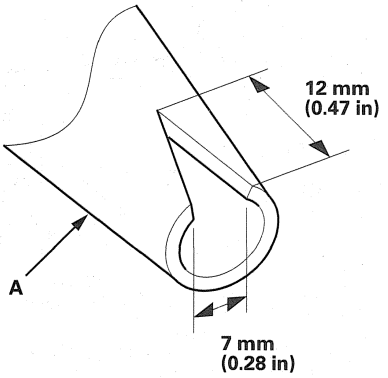
17. Apply a light coat of glass primer to the upper rear window (A) along the edge of the rubber dams (B) and lower seal (C) as shown, then lightly wipe it off with gauze or cheesecloth:
    - Apply the glass primer to the corner areas of the upper rear window using the printed dots (D) on the upper rear window as a guide.
    - Do not apply body primer to the upper rear window, and do not mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the upper rear window properly, causing a leak after the upper rear window is installed.
    - Keep water, dust, and abrasive materials away from the primed surfaces.



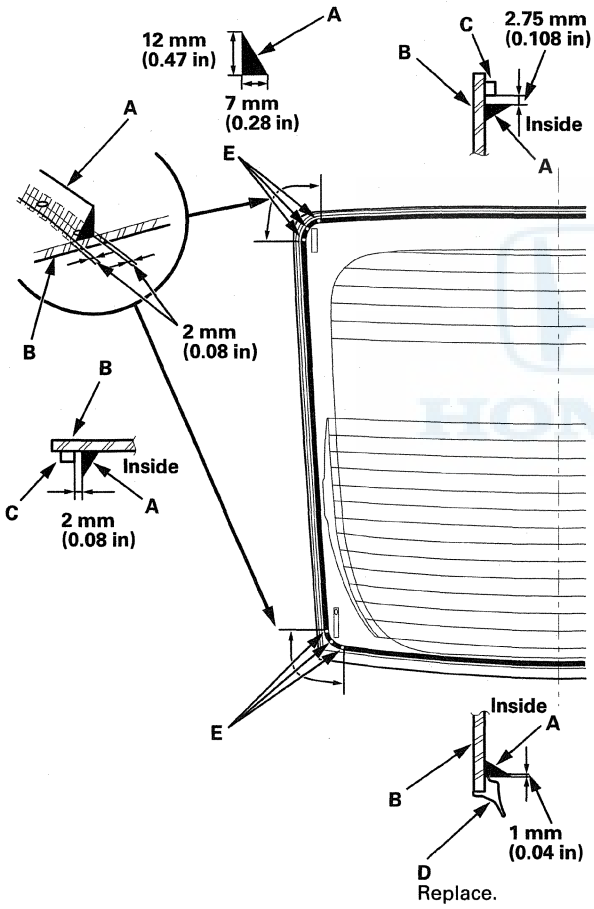
18. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any remaining original adhesive on the flange.
    - Be careful not to mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands.



19. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.



20. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a caulking gun, and run a bead of adhesive (A) to the upper rear window (B) along the edge of the rubber dams (C) and the lower seal (D) as shown:
    - With the printed dots (E) on the upper rear window as a guide, apply the adhesive to both side portions of the upper rear window.
    - Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.



21. Hold the upper rear window with suction cups over the opening, align it with the alignment marks you made in step 15, and set it down on the adhesive. Lightly push on the upper rear window until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

22. Remove the excess adhesive with a putty knife or a shop towel dampened in isopropyl alcohol.

23. Wait at least an hour for the adhesive to dry, then spray water over the upper rear window and check for leaks. Mark the leaking areas, let the upper rear window dry, then seal with sealant. Let the vehicle stand for at least 4 hours after upper rear window installation. If the vehicle has to be used within the first 4 hours, it must be driven slowly.

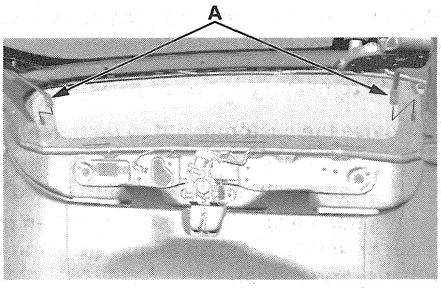
24. Reinstall all remaining removed parts.

    NOTE: Advise the customer not to do the following things for 2 to 3 days:
    - Slam the doors with all the windows rolled up.
    - Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

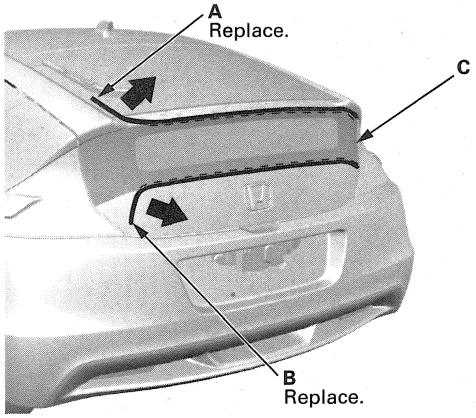
Lower Rear Window Replacement

NOTE:
- Put on gloves to protect your hands.
- Wear eye protection while cutting the glass adhesive with piano wire.
- Use seat covers to avoid damaging any surface.
- Glass adhesive can be efficiently cut with a commercially available auto glass tool. See the tool manufacturer's instructions for details.
- Do not damage the lower rear window defogger grid lines and terminals.

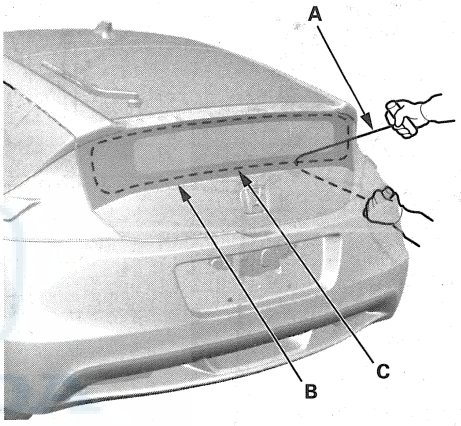
1. Remove the hatch spoiler (see page 20-157).
2. Disconnect the lower rear window defogger connectors (A).



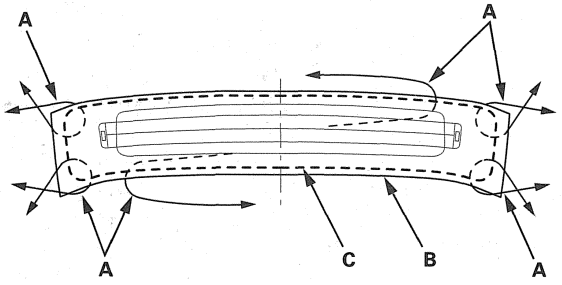
3. Remove the rubber dam (A, B) from the edge of the lower rear window (C). If necessary, cut off the rubber dam with a utility knife.



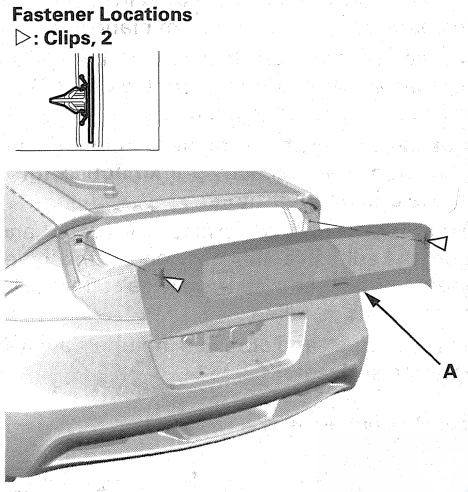
4. Apply protective tape along the inside and outside edges of the hatch. Make holes with an awl through the adhesive from inside the vehicle at a corner of the lower rear window. Push a piece of piano wire through the hole and wrap each end around a piece wood.
5. With a helper on the outside, pull the piano wire (A) back and forth in a sawing motion. Hold the piano wire as close to the lower rear window (B) as possible to prevent damage to the body, and carefully cut through the adhesive (C).



Cutting positions



6. Detach the clips that hold the lower rear window (A), then carefully remove the lower rear window.



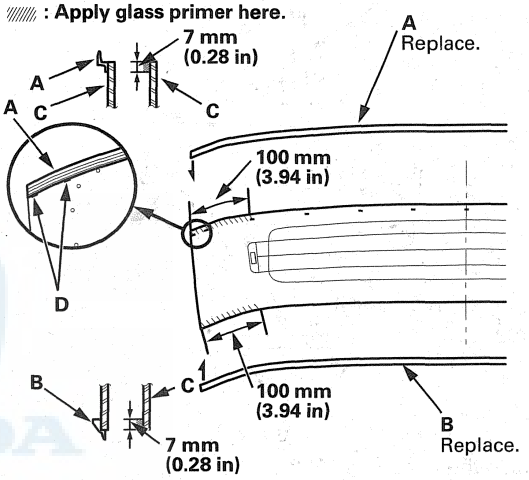
7. Scrape smooth the old adhesive with a putty knife until there is a thickness of about 2 mm (0.08 in) on the bonding surface around the entire lower rear window opening flange.

   NOTE: Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.

8. Clean the body bonding surface with a shop towel dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.

9. If the old window will be installed, scrape off all of old adhesive, the clips, and the rubber dam from the lower rear window with a putty knife. Clean the bonding surfaces on the inside face and the edge of the lower rear window with isopropyl alcohol. Make sure the bonding surface is kept free of water, oil, and grease.

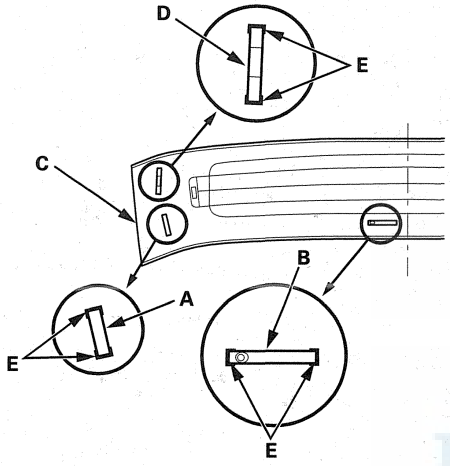
10. Remove the adhesive backing, and attach the rubber dam (A, B) to the inside of the lower rear window (C) as shown:
    - Make sure the rubber dams line up with the alignment marks (D).
    - Be careful not to touch the lower rear window where the adhesive will be applied.
    - After installing the rubber dams, cut the ends of the rubber dam along the edge of the lower rear window.



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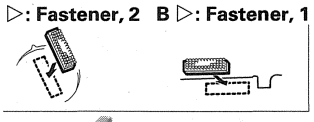
Lower Rear Window Replacement (cont'd)

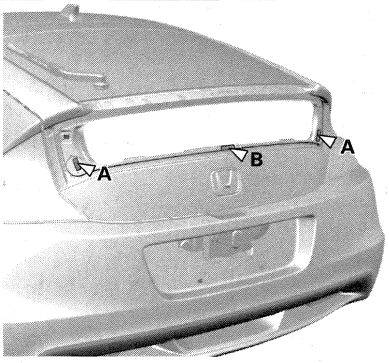
11. Apply glass primer to the clip mounting areas on the lower rear window (C), and let it dry. Attach the fasteners (A, B) and the clips (D) with the adhesive tape to the inside face of the lower rear window as shown:
    - Be careful not to touch the lower rear window where the adhesive will be applied.
    - Make sure the fasteners and the clips line up with the alignment marks (E).



12. Attach the fasteners (A, B).

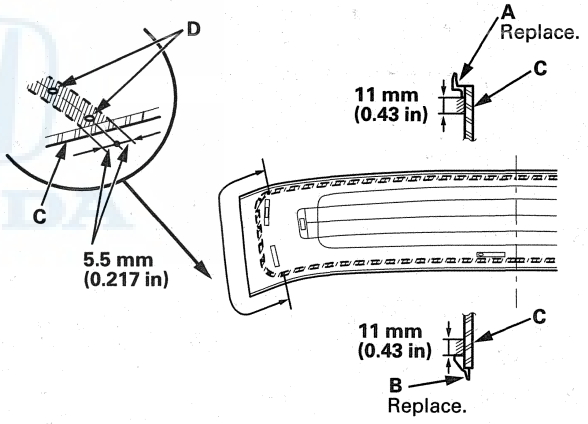
Fastener Locations
A ▷: Fastener, 2 B ▷: Fastener, 1



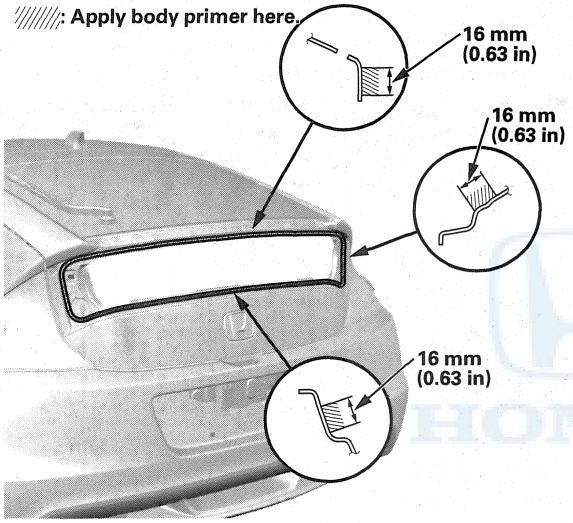


13. Apply a light coat of glass primer to the lower rear window (C) along the edge of the rubber dam (A, B) as shown, then lightly wipe it off with gauze or cheesecloth:
    - Apply the glass primer to the corner areas of the lower rear window using the printed dots (D) on the lower rear window as a guide.
    - Do not apply body primer to the lower rear window, and do not mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the lower rear window properly, causing a leak after the lower rear window is installed.
    - Keep water, dust, and abrasive materials away from the primed surfaces.

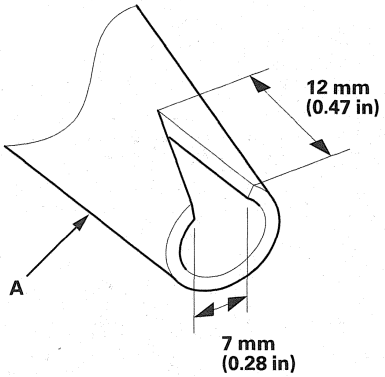
▨ : Apply glass primer here.



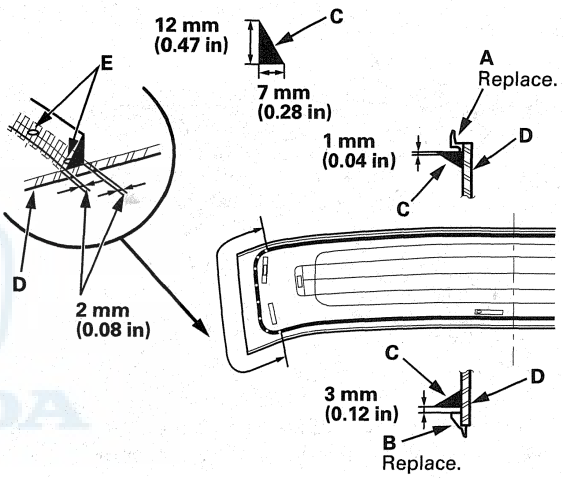
14. Carefully apply a light coat of body primer to any exposed paint or metal around the flange where the new adhesive will be applied. Let the body primer dry for at least 10 minutes:
    - Do not apply body primer to any remaining old adhesive on the flange.
    - Be careful not to mix up the body primer applicators and the glass primer applicators.
    - Never touch the primed surfaces with your hands.
    - Cover the interior parts before applying the primer.



15. Cut a "V" in the end of the nozzle (A) on the adhesive cartridge as shown.



16. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a caulking gun, and run a continuous bead of adhesive (C) around the lower rear window (D) along the edge of the rubber dam (A, B) as shown:
    - Use the printed dots (E) as a guide when you apply the adhesive to the corners of the lower rear window.
    - Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.



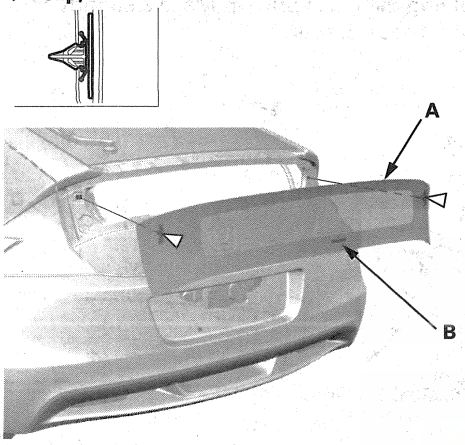
(cont'd)

Lower Rear Window Replacement (cont'd)

17. Hold the lower rear window (A) with suction cups over the opening, align the clips and fastener (B), and set it down on the adhesive. Lightly push on the lower rear window until its edges are fully seated on the adhesive all the way around.

    NOTE: Do not open or close any of the doors for about an hour until the adhesive is dry.

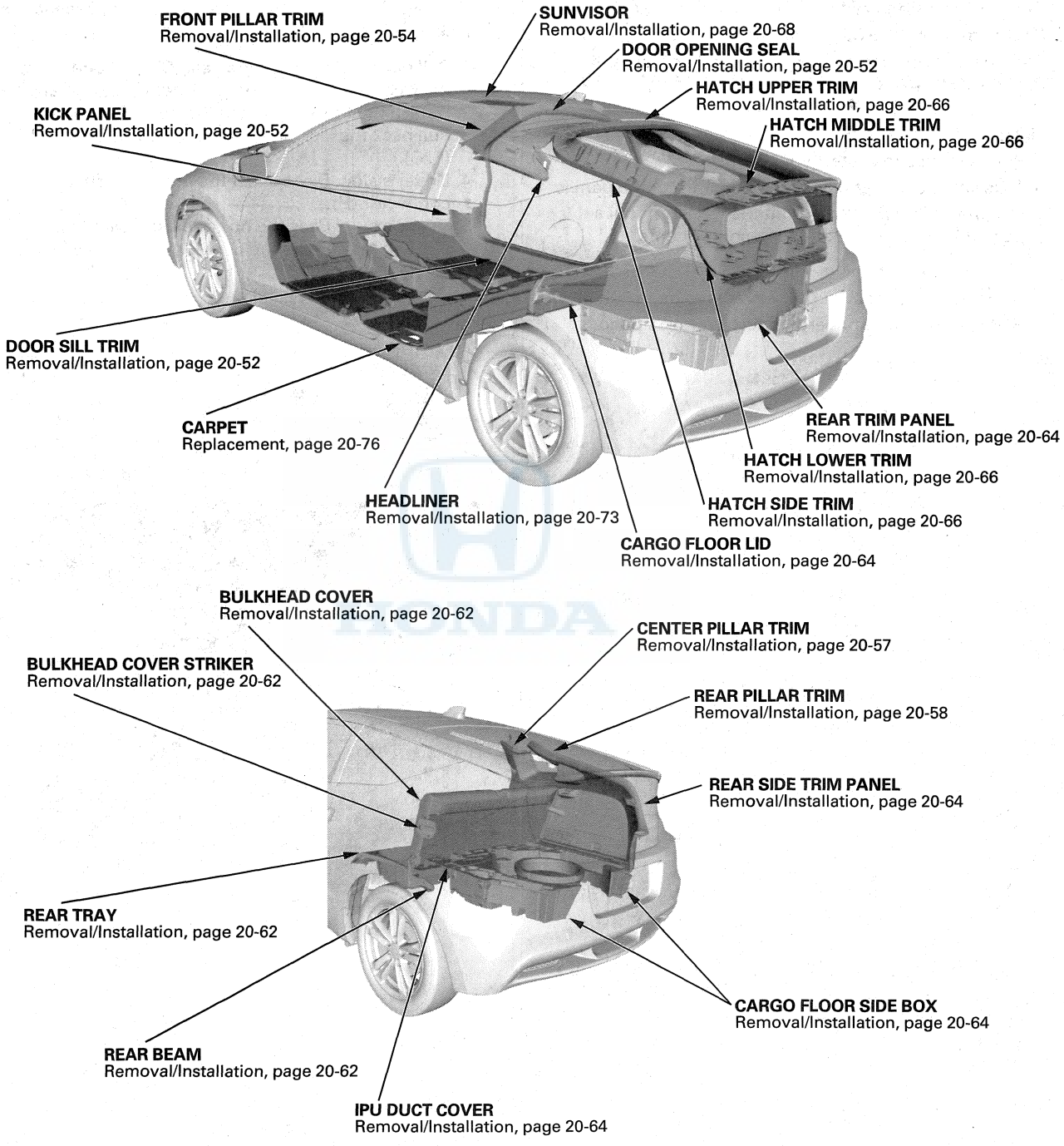
Fastener Locations
▷: Clip, 2



18. Remove the excess adhesive with a putty knife or a shop towel dampened in isopropyl alcohol.
19. Wait at least an hour for the adhesive to dry, then spray water over the lower rear window and check for leaks. Mark the leaking areas, let the lower rear window dry, then seal with sealant. Let the vehicle stand for at least 4 hours after lower rear window installation. If the vehicle has to be used within the first 4 hours, it must be driven slowly.
20. Reinstall all removed parts.

    NOTE: Advise the customer not to do the following things for 2 to 3 days:
    - Slam the doors with all the windows rolled up.
    - Twist the body excessively (such as when going in and out of driveways at an angle or driving over rough, uneven roads).

Component Location Index



Trim Removal/Installation - Door Areas

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim or the panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

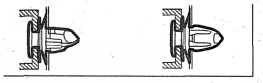
1. Remove these items:
   - Driver's dashboard undercover (see page 20-86)
   - Passenger's dashboard undercover (see page 20-94)

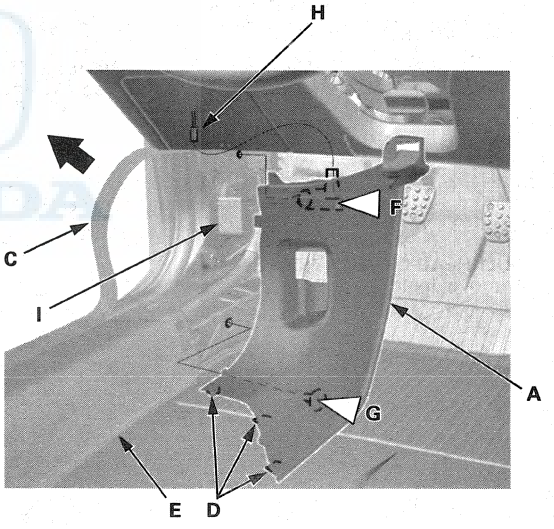
2. Remove the driver's kick panel (A) or the passenger's kick panel (B).

-1. Pull out the door opening seal (C) as needed from the kick panel hooks and the door opening flange.
-2. Detach the hooks (D) from the door sill trim (E).
-3. Pull back the kick panel by hand to detach the clips (F, G).
-4. Driver's side: Disconnect the footwell light connector (H).
-5. Driver's side: Pass the hood release handle (I) through the hole in the panel, then remove it.

Driver's side

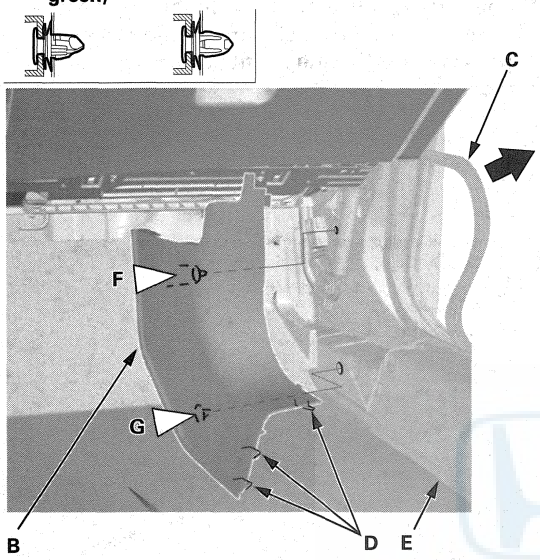
Fastener Locations
F ▷ : Clip, 1 (Light green) G ▷ : Clip, 1 (Green)





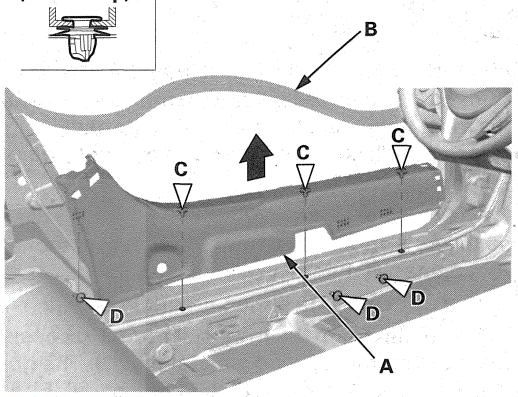
Passenger's side

Fastener Locations
F ▷ : Clip, 1 (Light green) **G ▷ : Clip, 1 (Green)**

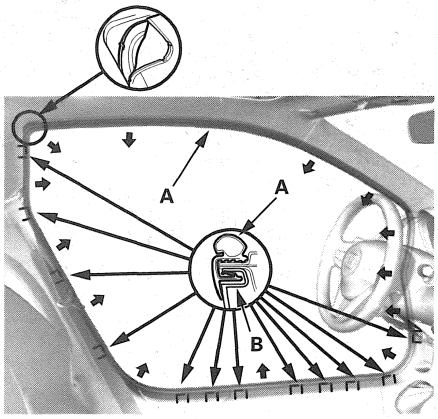


3. Slide the seat forward fully.
4. Remove the driver's seat belt lower anchor bolt (see step 3 on page 24-4).
5. Remove the rear side trim panel (see page 20-64).
6. Remove the door sill trim (A).
   -1. Pull out the door opening seal (B) as needed from the door sill trim.
   -2. Pull up the door sill trim by hand to detach the clips (C, D), then remove the trim. The clips (D) will stay in the body holes.
   -3. Remove the clips from the body holes, then install the clips to the door sill trim.

Fastener Locations
C, D ▷ : Clip, 6



7. Pull out the door opening seal (A) from the trim hooks (B) and around the door opening flange, then remove the seal.



8. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

Trim Removal/Installation - Pillar Areas

Special Tools Required

KTC Trim Tool Set SOJATP2014*

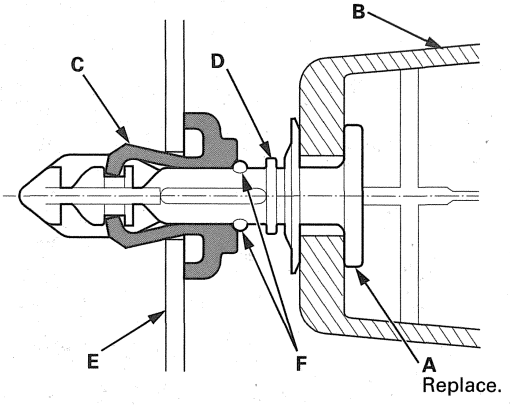
*Available through the Honda Tool and Equipment Program, 888-424-6857

Front Pillar Trim

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

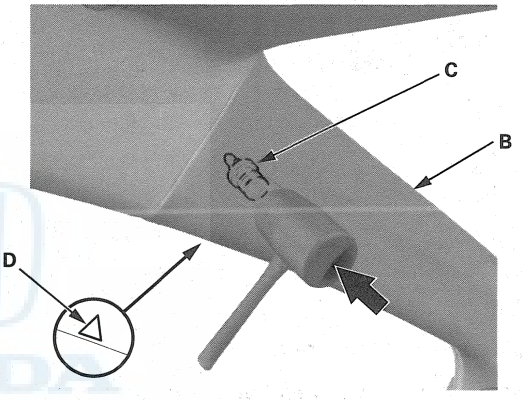
NOTE:

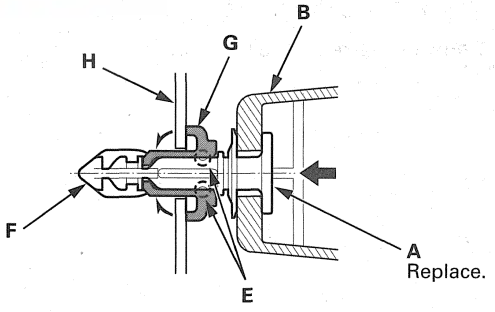
- If side airbags and/or side curtain airbags have deployed, the affected pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see page 24-163).
- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the trim or the panels.
- The upper clip (A) in the front pillar trim (B) consists of a plastic grommet (C) and a metal pin (D). The groove in the grommet secures it to the body panel (E). The projection (F) on the grommet is broken during removal, so the clip must be replaced with a new one when the trim is reinstalled.



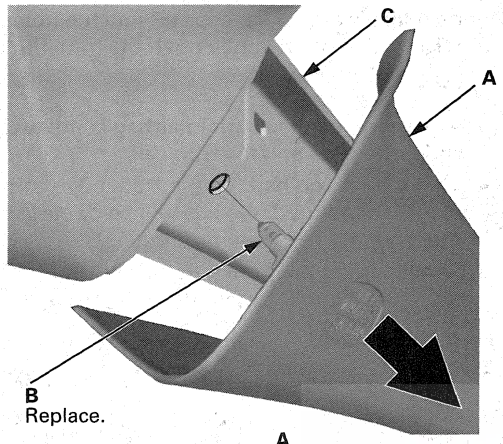
1. Pull the door opening seal away from the front pillar as needed (see step 7 on page 20-53).
2. Hit the upper clip (A) in the front pillar trim (B) with a rubber mallet. The clip is located under point (C) where the triangle mark (D) on the edge of the trim indicates. Hitting the clip breaks the projections (E) on the pin (F) and pushes it into the grommet (G) on the body (H).

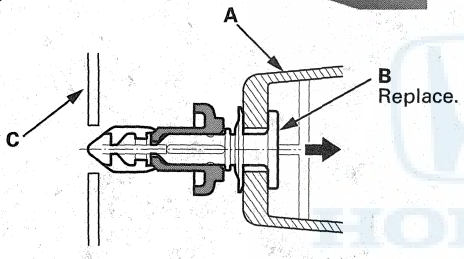
   NOTE: The upper clip must be replaced with a new one when the front pillar trim is reinstalled.





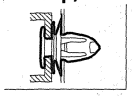
3. Pull back the top of the front pillar trim (A) by hand to remove the upper clip (B) from the body (C).

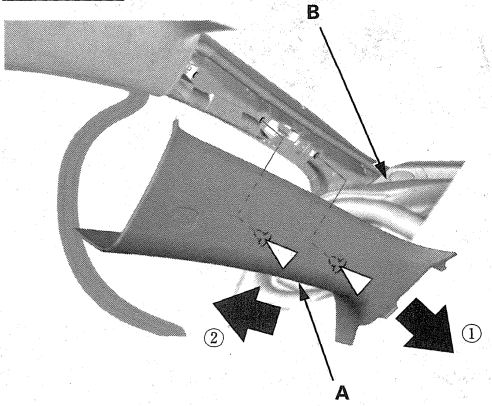




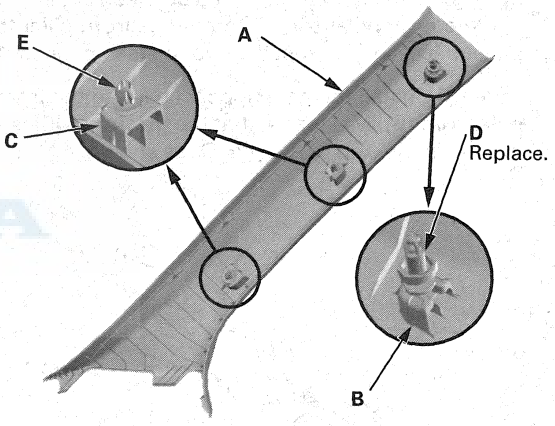
4. Pull out the front pillar trim (A) by hand to detach the clips. Pull up the trim from the dashboard (B), then remove the trim.

Fastener Locations
▷ : Clip, 2





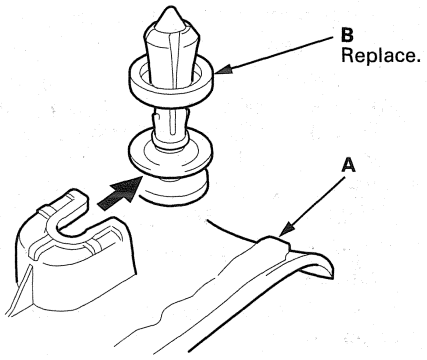
5. If the side curtain airbag has been deployed, replace the front pillar trim, along with the other parts listed for side curtain airbag deployment (see page 24-163).
6. If the side curtain airbag has not been deployed, check the front pillar trim (A) and note the following items:
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the front pillar trim and replace it with a new one if it has any of the following damage:
     - Any cracks, deformations, or stress-whitened areas in the front pillar trim
     - Any cracks or stress-whitening in the clip seating surfaces (B, C)
   - Replace the upper clip (D) with a new one after checking the overlap.
   - If the clips (E) are damaged or stress-whitened, replace them with new ones.



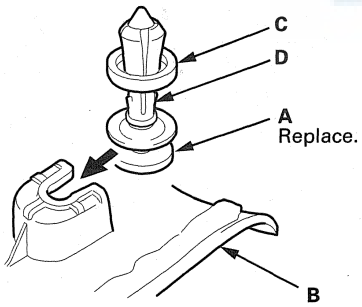
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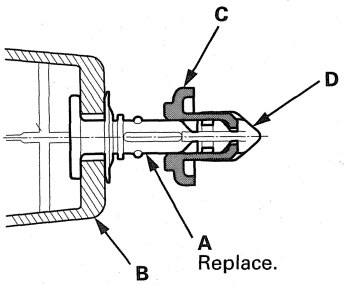
Trim Removal/Installation - Pillar Areas (cont'd)

7. Before installing the front pillar trim (A), carefully remove the new upper clip (B).



8. Temporarily install the front pillar trim (without the upper clip) to check the overlap between the headliner and the front pillar trim. Remove the front pillar trim and if necessary, adjust the overlap (see page 24-165).
9. Carefully install the new upper clip (A) to the front pillar trim (B). Make sure that the grommet (C) is nearest to the top of the pin (D) as shown.

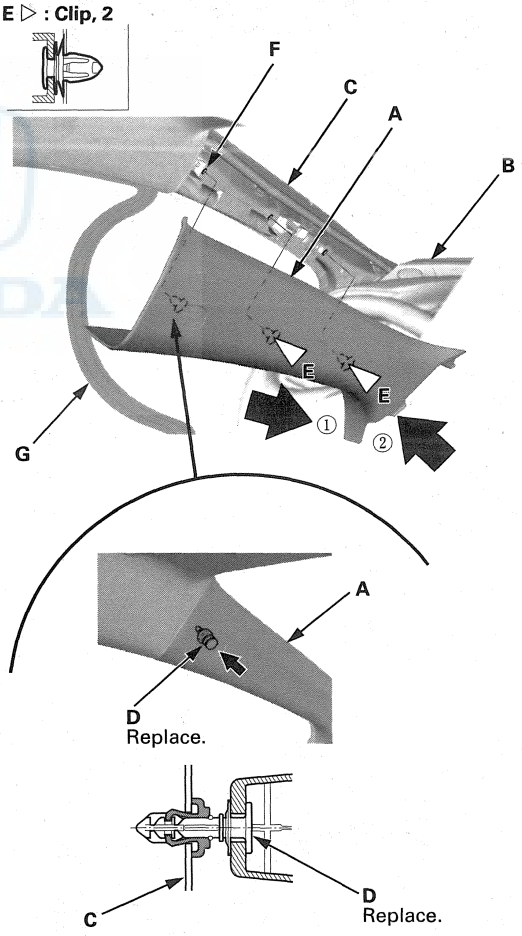




10. Reinstall the front pillar trim (A).
    -1. Insert the bottom of the trim into the dashboard (B).
    -2. Place the trim over the front pillar (C), and fit its upper clip (D) and lower clips (E) into the holes (F) in the front pillar, then lightly push the trim into place.

    NOTE:
    - Make sure the side curtain airbag is not tucked under the clips and the trim ribs.
    - Do not push too hard on the front pillar trim. If you push too hard, the clip will be damaged, and it will not hold the trim properly.
    - Gently tug on the front pillar trim to verify that all clips are securely fastened.

Fastener Locations
E ▷ : Clip, 2



11. Reinstall the door opening seal (G).

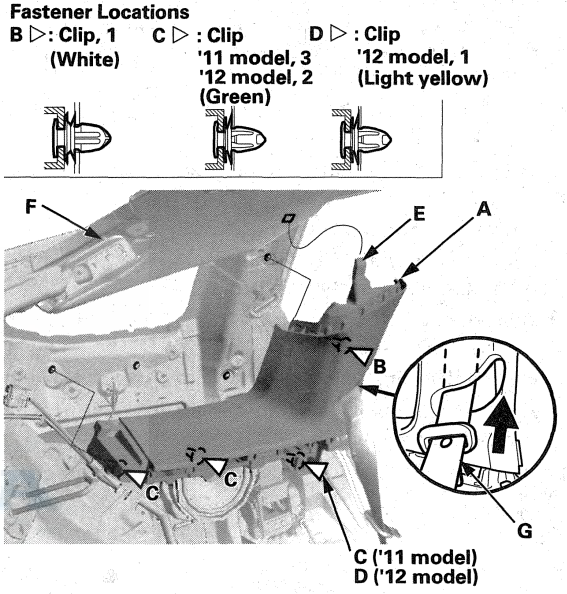
Center Pillar Trim

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

- If side airbags and/or side curtain airbags have deployed, the affected pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see page 24-163).
- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim or the panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

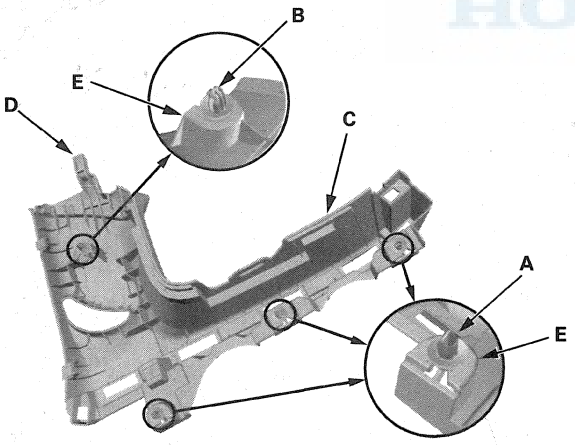
1. Remove these items:
   - Door opening seal, as needed (see step 7 on page 20-53)
   - Rear pillar trim
2. Slide the seat forward fully.
3. Remove the driver's seat belt lower anchor bolt (see step 3 on page 24-4).
4. Remove the center pillar trim (A).
   -1. Pull back the trim by hand to detach the clips (B, C) and clip (D) ('12 model).
   -2. Pull down the trim to release the upper hook (E) from the hole in the body, and remove it from the headliner (F).
   -3. Pass the seat belt (G) out through the hole in the trim, then remove the center pillar trim.



(cont'd)

Trim Removal/Installation - Pillar Areas (cont'd)

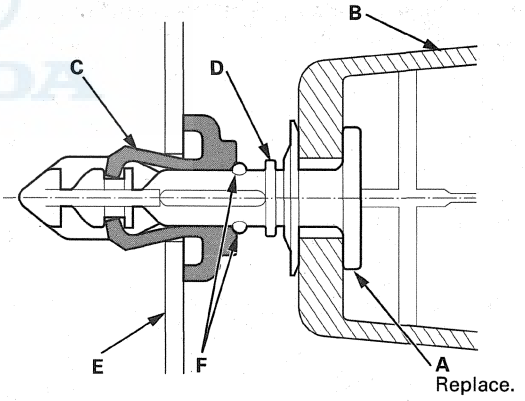
5. Install the trim in the reverse order of removal, and note these items:
   - If the clips (A, B) are damaged or stress-whitened replace them with new ones.
   - If the side curtain airbag has deployed, replace the center pillar trim and all clips on the trim, along with the other parts listed for side curtain airbag deployment (see page 24-163).
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the trim and replace it with a new one if it has any of the following damage:
     - Any cracks or deformations in the center pillar trim (C) or the upper hook (D)
     - Any cracks or stress-whitened areas in the clip seating surfaces (E)
   - Replace any damaged parts with new ones.
   - Make sure the top of the trim overlaps with the headliner correctly (see page 24-165).
   - Make sure the upper hook is installed into the hole in the body securely.
   - Push the clips and hook into place securely.
   - Before installing the anchor bolt, make sure there are no twists or kinks in the seat belt.



Rear Pillar Trim

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

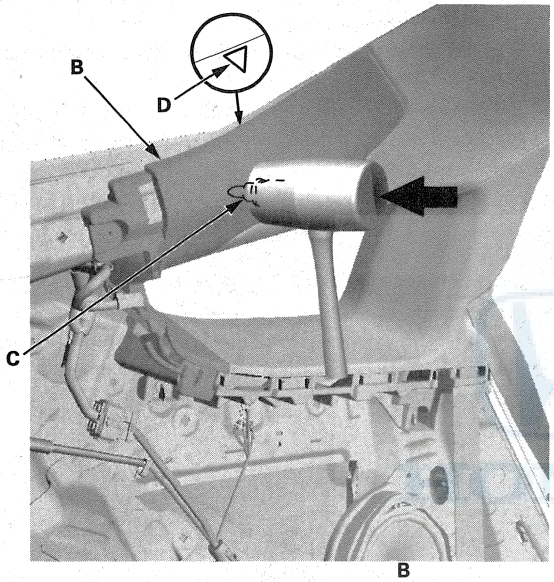
NOTE:
- If side airbags and/or side curtain airbags have deployed, the affected pillar area trim and attachment clips must be replaced. Refer to Component Replacement/Inspection After Deployment (see page 24-163).
- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to bend or scratch the trim or the panels.
- The upper clip (A) in the rear pillar trim (B) consists of a grommet (C) and a pin (D). The groove in the grommet secures it to the body panel (E). The projection (F) on the grommet is broken during removal, so the clip must be replaced with a new one when the trim is reinstalled.

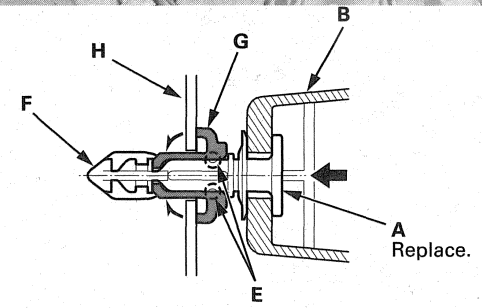


1. Remove these items:
   - Hatch weatherstrip, as needed (see page 20-142).
   - Rear side trim panel (see page 20-64).

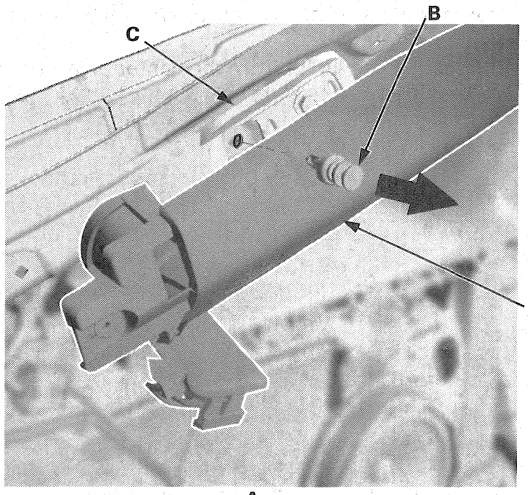
2. Hit the upper clip (A) in the rear pillar trim (B) with a rubber mallet. The clip is located under the point (C) where the triangle mark (D) on the edge of the trim indicates. Hitting the clip breaks the projections (E) on the pin (F) and pushes it into the grommet (G) on the body (H).

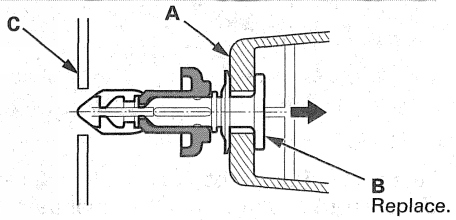
   NOTE: The upper clip must be replaced with a new one when the rear pillar trim is reinstalled.





3. Pull back the top of the rear pillar trim (A) by hand to remove the upper clip (B) from the body (C).





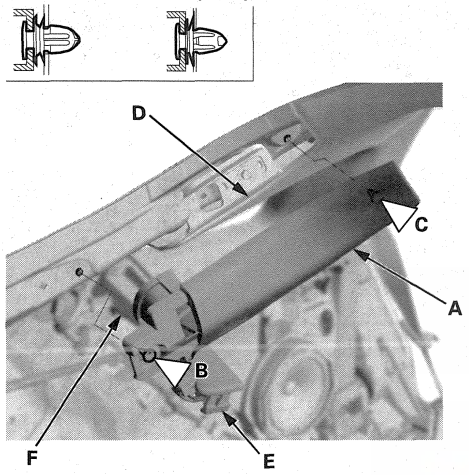
(cont'd)

Trim Removal/Installation - Pillar Areas (cont'd)

4. Remove the rear pillar trim (A).
   -1. Pull out the trim by hand to detach the clips (B, C) from the holes in the body, and remove it from the headliner (D).
   -2. Detach the hooks (E) from the center pillar trim (F).

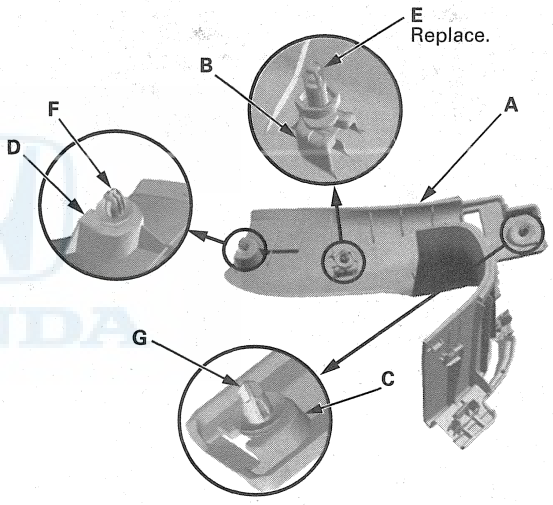
Fastener Locations

B ▷: Clip, 1 (Yellow) **C ▷ : Clip, 1 (Pink)**

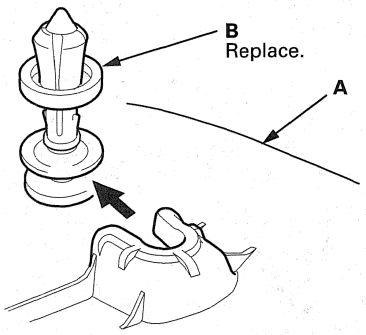


5. If the side curtain airbag has deployed, replace the rear pillar trim, along with the other parts listed for side curtain airbag deployment (see page 24-163).

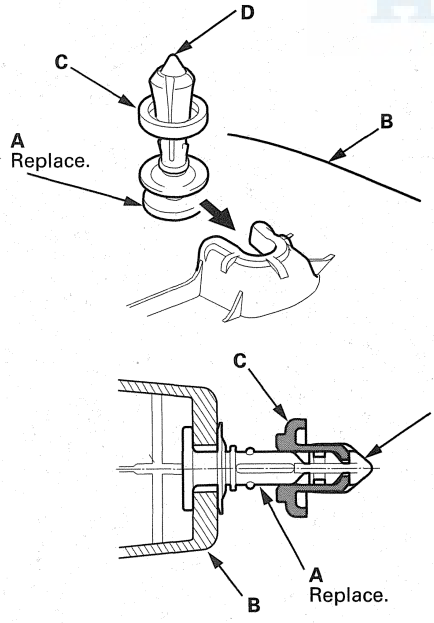
6. If the side curtain airbag has not been deployed, check the rear pillar trim (A) and note the following items:
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the rear pillar trim and replace it with a new one if it has any of the following damage:
     - Any cracks, deformations, or stress-whitened areas in the rear pillar trim
     - Any cracks or stress-whitening in the clip seating surfaces (B, C, D)
   - Replace the upper clip (E) with a new one after checking the overlap.
   - If the clips (F, G) are damaged or stress-whitened, replace them with new ones.



7. Before installing the rear pillar trim (A), carefully remove the new upper clip (B).



8. Temporarily install the rear pillar trim (without the upper clip) to check the overlap between the headliner and the rear pillar trim. Remove the rear pillar trim and if necessary, adjust the overlap.
9. Carefully install the new upper clip (A) to the rear pillar trim (B). Make sure that the grommet (C) is nearest to the top of the pin (D) as shown.

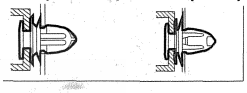


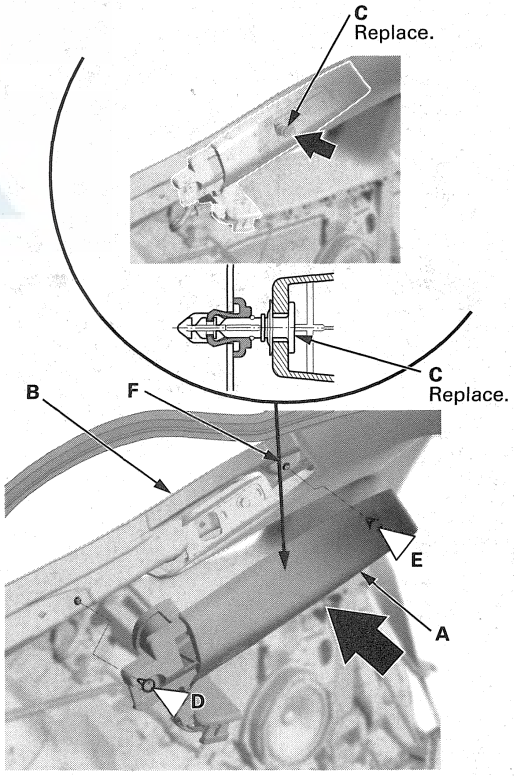
10. Place the rear pillar trim (A) over the rear pillar (B), and fit its upper clip (C) and the clips (D, E) into the holes (F) in the rear pillar, then lightly push the trim into place.

NOTE:

- Make sure the side curtain airbag is not tucked under the clips and the trim ribs.
- Do not push too hard on the rear pillar trim. If you push too hard, the clip will be damaged, and it will not hold the trim properly.
- Gently tug on the rear pillar trim to verify that all clips are securely fastened.

Fastener Locations
D ▷: Clip, 1 (Yellow) E ▷: Clip, 1 (Pink)





11. Reinstall the removed parts.

Trim Removal/Installation - Rear Tray Area

Special Tools Required

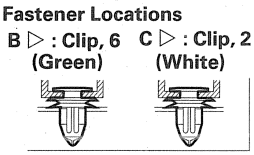
KTC Trim Tool Set SOJATP2014*

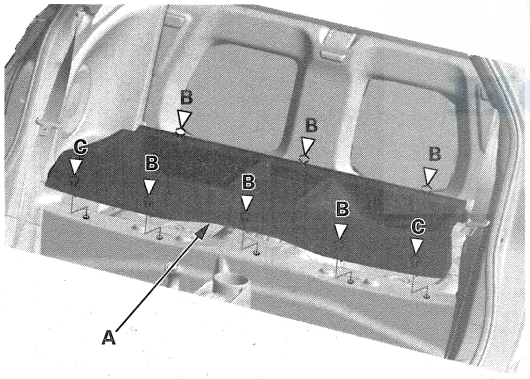
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the bulkhead cover and the rear beam.
- Take care not to scratch the trim or the panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

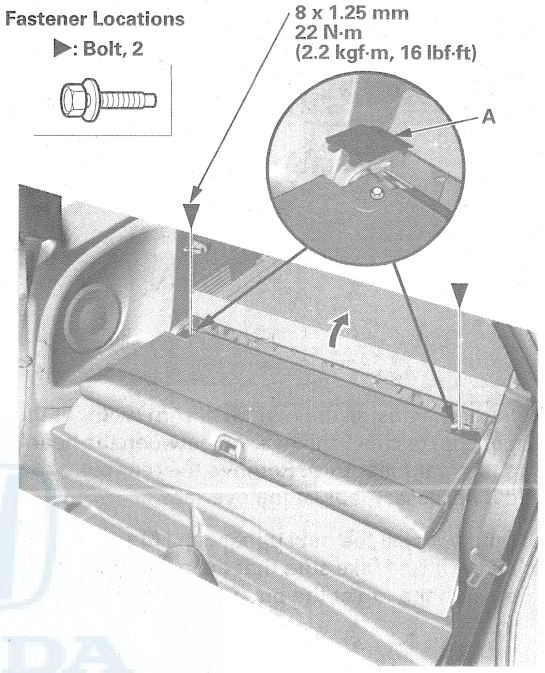
1. Pull up the rear tray (A) to detach the clips (B, C), then remove it.



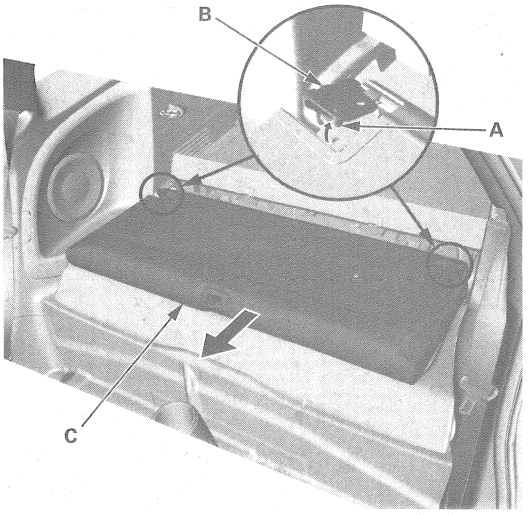


2. Fold down the bulkhead cover.

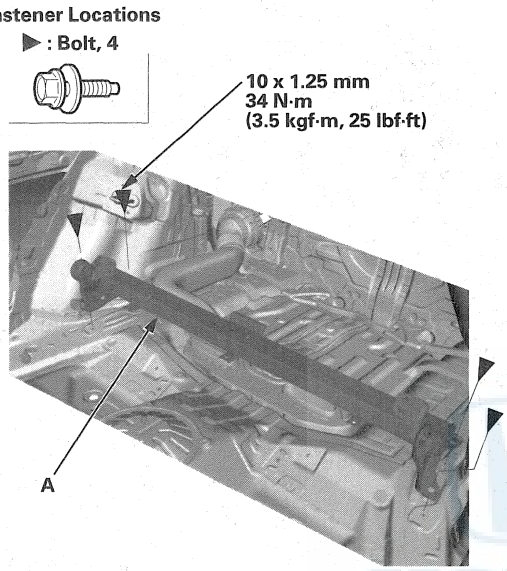
3. Remove the bulkhead cover lids (A), then remove the bolts.



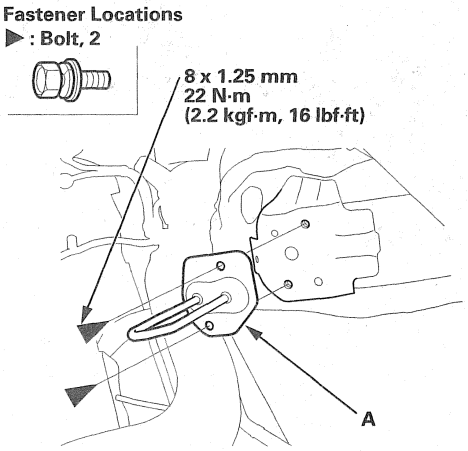
4. Pull out the alignment pins (A) of the rear beam (B) from the bulkhead cover frame both sides, then remove the bulkhead cover (C).



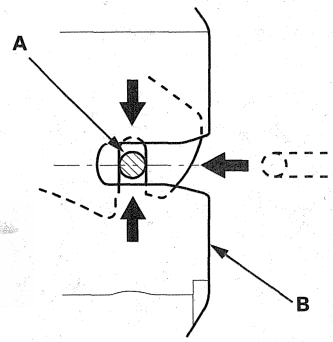
5. Remove these items:
   - IPU module air duct (see page 12-220)
   - Rear side trims, both sides (see page 20-64).
6. Remove the bolts, then remove the rear beam (A).



7. If necessary, remove the bolts, then remove the bulkhead cover striker (A).



8. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips, hooks, and pins into place securely.
   - Make sure the alignment pin fits into the bulkhead cover frame correctly.
   - Move the striker (A) up or down until it is centered in the bulkhead cover latch (B).



HONDA

Trim Removal/Installation - Cargo Area

Special Tools Required

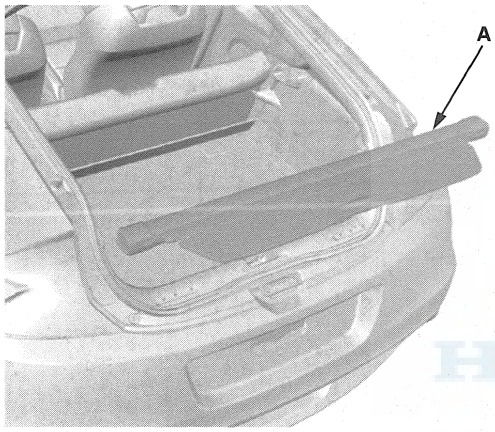
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

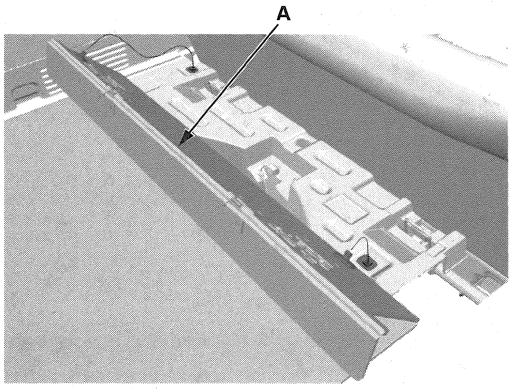
NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim or the panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

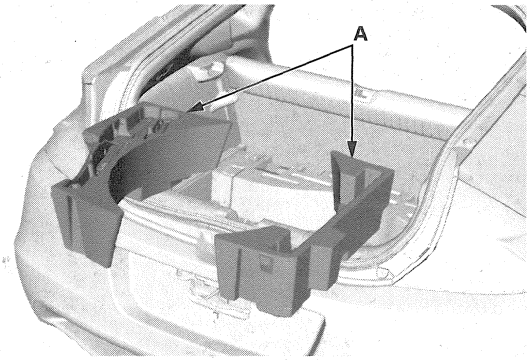
1. Remove the tonneau cover (A).



2. Remove the rear tray (see page 20-62).
3. Remove the cargo floor lid (A).



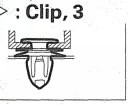
4. Remove the spare tire.
5. Remove the cargo floor side boxes (A).

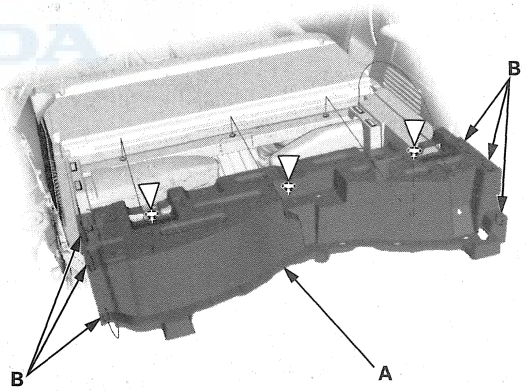


6. Pull up the IPU duct cover (A) by hand to detach the clips and the hooks (B), then remove the IPU duct cover.

Fastener Locations

▷ : Clip, 3

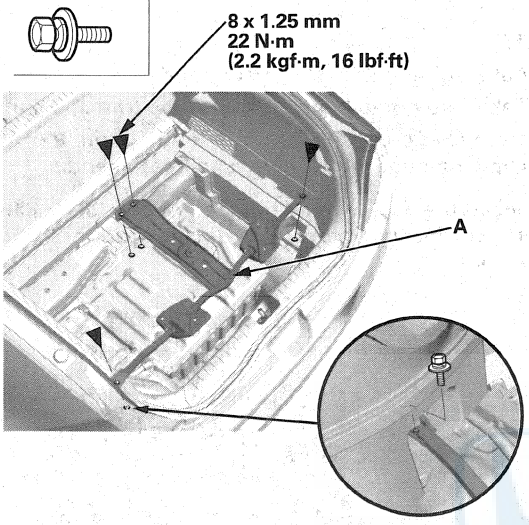




7. If necessary, remove the bolts, then remove the spare tire beam (A).

Fastener Locations

▶: Bolt, 4



8. Remove the hatch weatherstrip as needed.

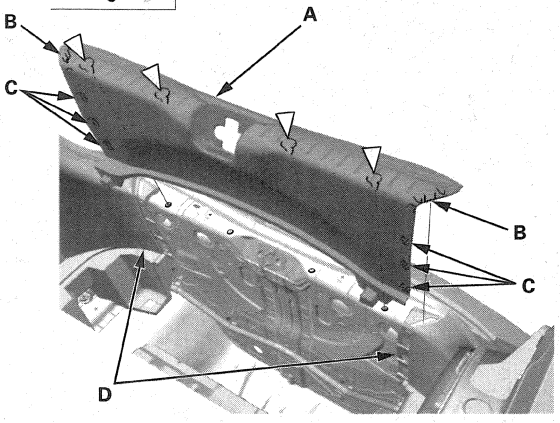
9. Remove the rear trim panel (A).

-1. Detach the hooks (B, C) on both sides from both rear side trim panels (D).

-2. Pull up the rear trim panel by hand to detach the clips.

Fastener Locations

▷: Clip, 4



10. Remove these items:
- Rear tray light (see page 22-269)
- Door opening seal as needed (see step 7 on page 20-53)
- Hatch weatherstrip as needed (see page 20-142)

11. Remove the rear side trim panel (A).

-1. Pull out the top of the trim by hand to detach hooks (B) from the center pillar trim (C) and the rear pillar trim (D).

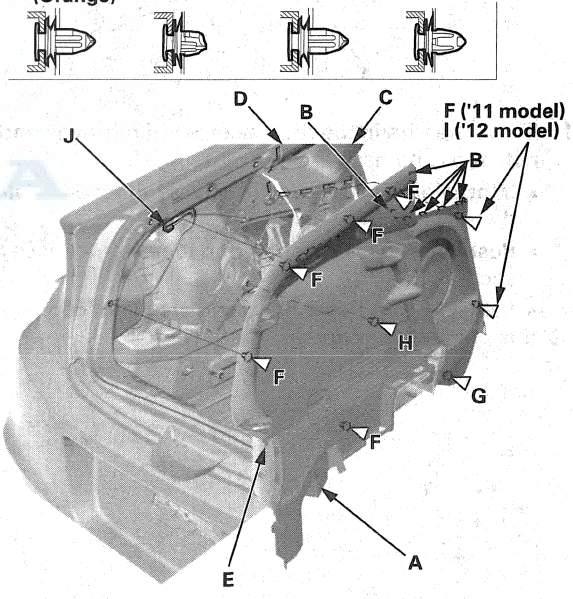
-2. Release the pin (E) of the rear edge of the trim panel from the hole in the body.

-3. Pull back the trim panel by hand to detach the clips (F, G, H) and clips (I) ('12 model).

-4. Disconnect the cargo area light connector (J) on the left side.

Fastener Locations

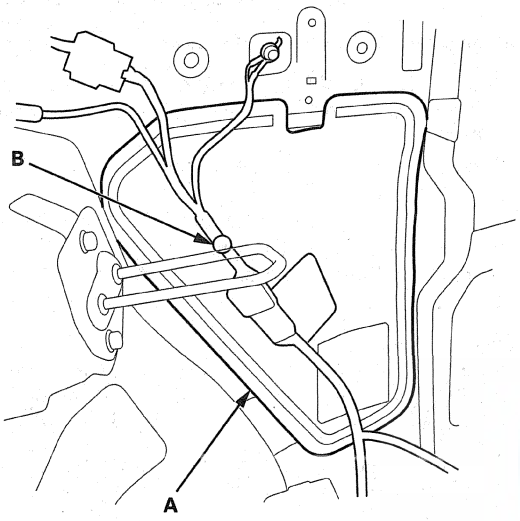
F ▷: Clip '11 model, 7 '12 model, 5 (Orange) G ▷: Clip, 1 (Brown) H ▷: Clip, 1 (Pink) I ▷: Clip '12 model, 2 (Light yellow)



(cont'd)

Trim Removal/Installation - Cargo Area (cont'd)

12. If necessary, remove the quarter hole seal (A).
    -1. Remove the rear speaker (see page 23-122).
    -2. Detach the harness clip (B).



13. Install the trim in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips, the hooks, and the pin into place securely.
    - Left side: Make sure the cargo area light connector is plugged in properly.

Trim Removal/Installation - Hatch Area

Special Tools Required

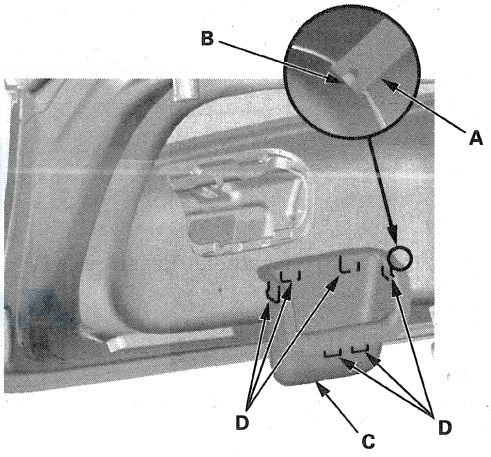
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim and panels.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

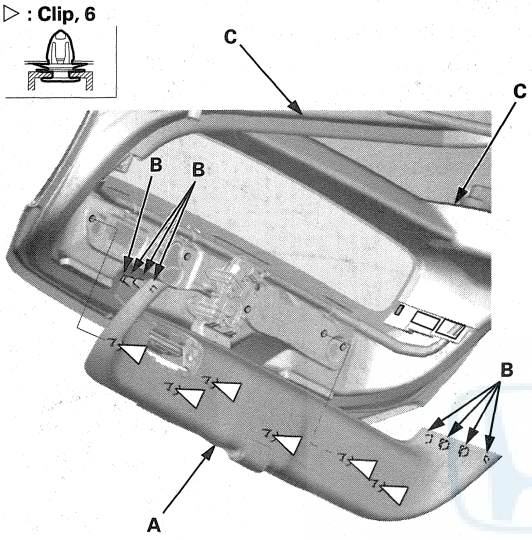
1. Insert the appropriate trim tool (A) into the notch (B). Pry up the pull pocket (C) to detach the hooks (D), then remove it.



2. Remove the hatch lower trim (A).

-1. Detach the hooks (B) from both hatch side trims (C).
-2. Pull the hatch lower trim back by hand to detach the clips, then remove it.

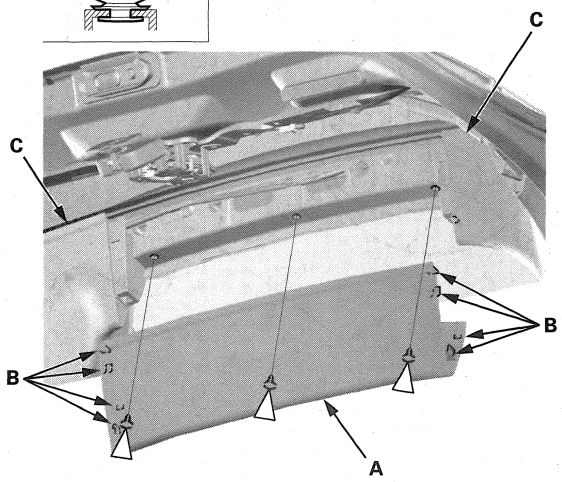
Fastener Locations
▷ : Clip, 6



3. Remove the hatch middle trim (A).

-1. Detach the hooks (B) from both hatch side trims (C).
-2. Pull out the hatch middle trim by hand to detach the clips, then remove it.

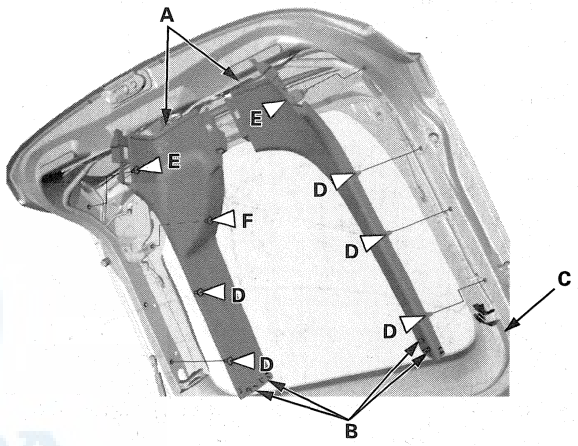
Fastener Locations
▷ : Clip, 3



4. Remove the hatch side trims (A).

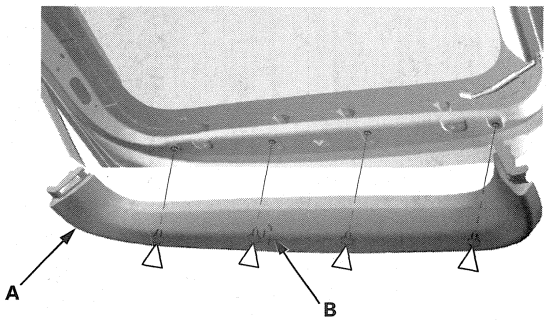
-1. Detach the hooks (B) from the hatch upper trim (C).
-2. Pull out the hatch side trims by hand to detach the clips (D, E, F), then remove them.

Fastener Locations
D ▷ : Clip, 5 (Green) E ▷ : Clip, 2 (Orange) F ▷ : Clip, 1 (Purple)



5. Pull out the hatch upper trim (A) by hand to detach the clips and the pin (B), then remove it.

Fastener Locations
▷ : Clip, 4



6. Install the trim in the reverse order of removal, and note these items:

- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips, the pin, and the hooks into place securely.

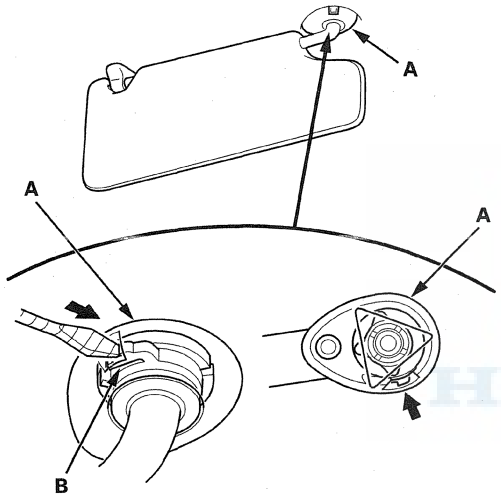
Sunvisor Removal/Installation

'11 model

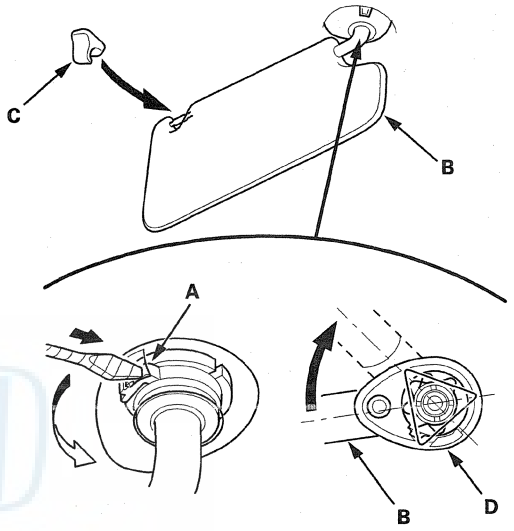
NOTE:

- Put on gloves to protect your hands.
- Take care not to damage the sunvisor or the headliner.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Insert a flat-tip screwdriver through the hole in the front side of the bracket cover (A), and push the hook (B). Make sure the hook is unlocked.

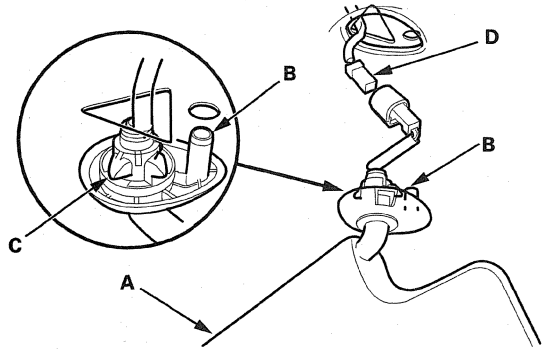


2. While pushing in the hook (A) with the flat-tip screwdriver, release the sunvisor (B) from the holder (C), and rotate the sunvisor backward about 45 °. Make sure the hook slides into the bracket cover (D) as you rotate the sunvisor.



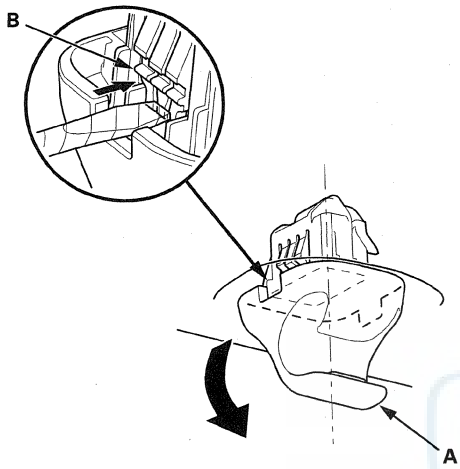
3. Pull down the sunvisor (A) to release the pin (B) and the bracket (C) from the holes in the body. Then pull out the vanity mirror light connector (D) and disconnect it, if equipped.

NOTE: If the sunvisor cannot be pulled down, the hook has not rotated into the bracket cover. Repeat step 2 to rotate the hook.



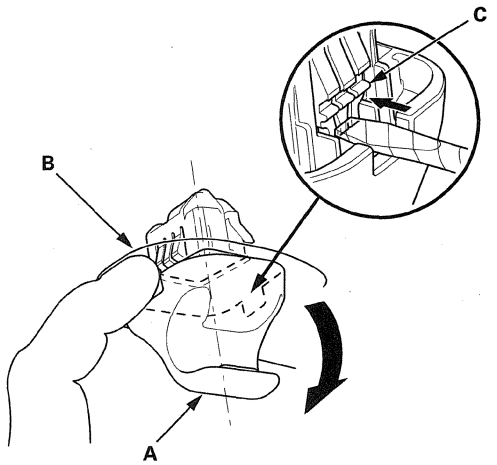
4. Insert the flat-tip screwdriver into one of the notches on the holder (A), and push the hooks (B) of the holder, then pull down the one side of the holder.

   NOTE: Push all of the hooks with the flat-tip screwdriver.



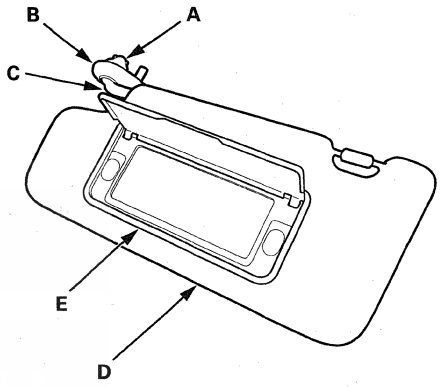
5. While inserting a finger in the gap of the holder (A) and the headliner (B), insert the flat-tip screwdriver into the other notch to detach the hooks (C). Then remove the holder from the body.

   NOTE: If the holder is damaged or stress-whitened, replace it with new one.

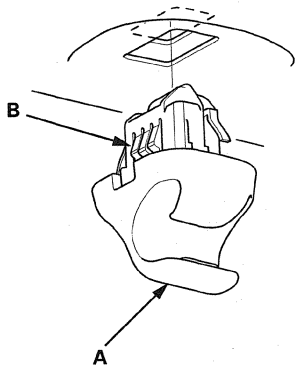


6. If the side curtain airbag has deployed, replace the sunvisor with a new one.

7. If the side curtain airbag has not deployed, inspect the sunvisor for damage. A damaged sunvisor may cause the side curtain airbags to deploy improperly, possibly causing injury. Replace the sunvisor if it has any of the following damage:
   - Any cracks in the sunvisor bracket (A)
   - Any cracks in the sunvisor bracket cover (B)
   - Any bends or cracks in the sunvisor shaft (C)
   - Any cracks in the sunvisor base (D)
   - Any cracks in the vanity mirror base (E)



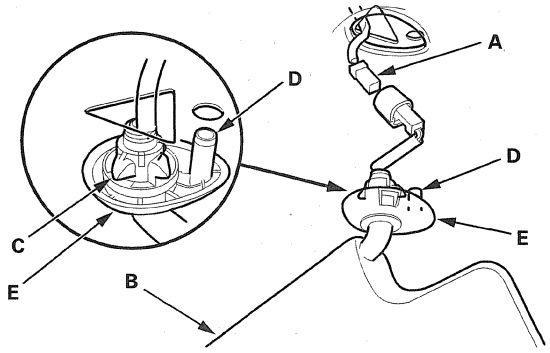
8. Install the holder (A) to the body by pushing it until the hooks (B) snap into place securely.



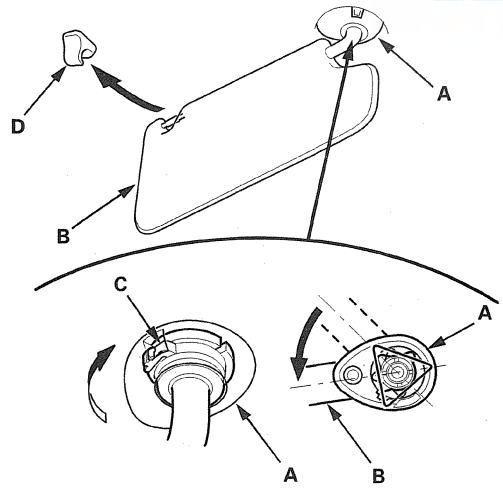
(cont'd)

Sunvisor Removal/Installation (cont'd)

9. Connect the vanity mirror light connector (A), if equipped.



10. Install the sunvisor (B) by inserting the bracket (C) and the pin (D) of the bracket cover (E) into the holes in the body.
11. While holding the bracket cover (A), rotate the sunvisor (B) forward until the hook (C) snaps into place. Gently pull down on the sunvisor to make sure it is properly secured in the body. Rotate the sunvisor into the holder (D).

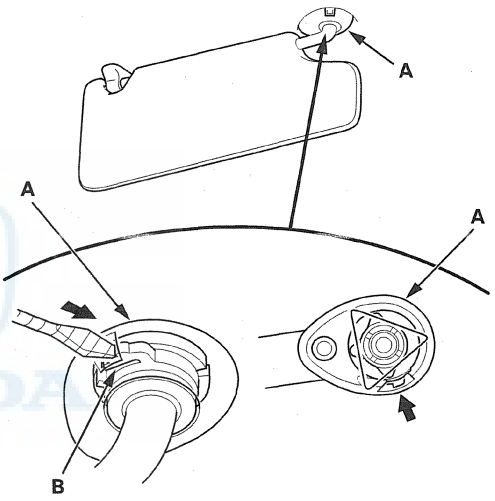


'12 model

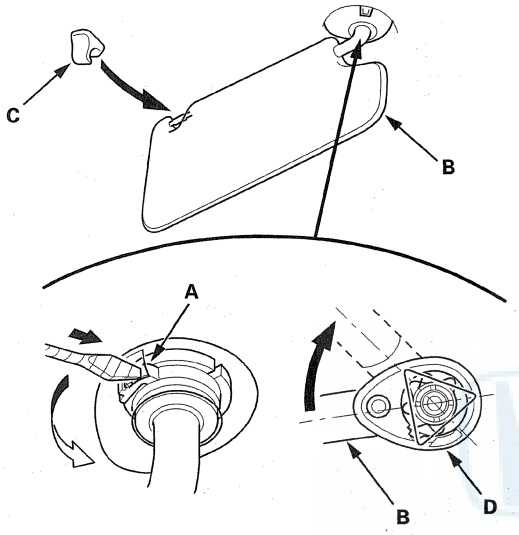
NOTE:

- Put on gloves to protect your hands.
- Take care not to damage the sunvisor or the headliner.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Insert a flat-tip screwdriver through the hole in the front side of the bracket cover (A), and push the hook (B). Make sure the hook is unlocked.

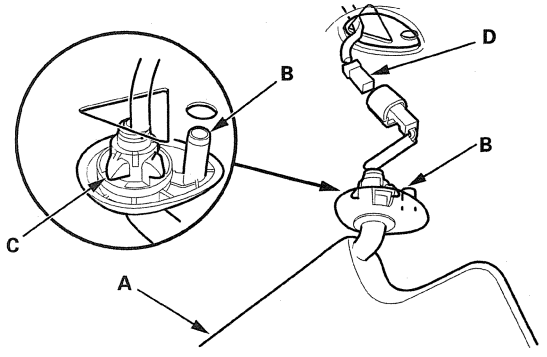


2. While pushing in the hook (A) with the flat-tip screwdriver, release the sunvisor (B) from the holder (C), and rotate the sunvisor backward about 45 °. Make sure the hook slides into the bracket cover (D) as you rotate the sunvisor.

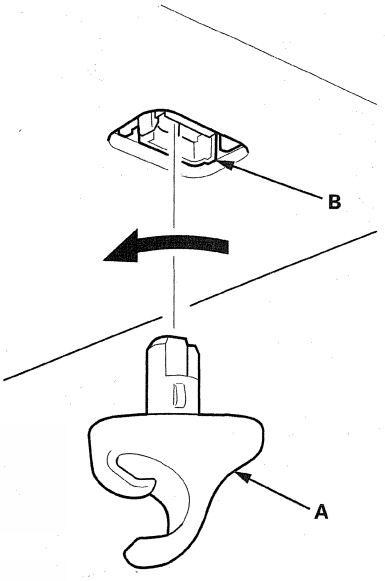


3. Pull down the sunvisor (A) to release the pin (B) and the bracket (C) from the holes in the body. Then pull out the vanity mirror light connector (D) and disconnect it, if equipped.

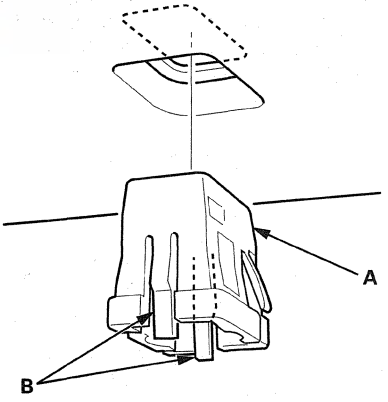
NOTE: If the sunvisor cannot be pulled down, the hook has not rotated into the bracket cover. Repeat step 2 to rotate the hook.



4. Turn the holder (A) 45 ° counterclockwise, and pull it down to remove it from the holder grommet (B).



5. Pry out the holder grommet (A) from the body by pinching its hooks (B).

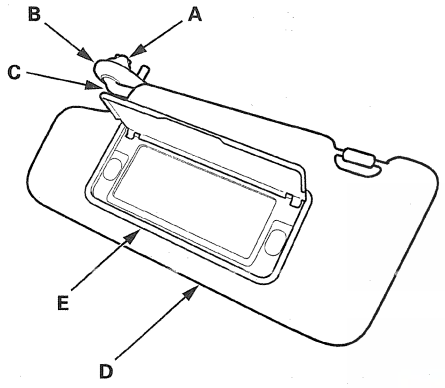


6. If the side curtain airbag has deployed, replace the sunvisor with a new one.

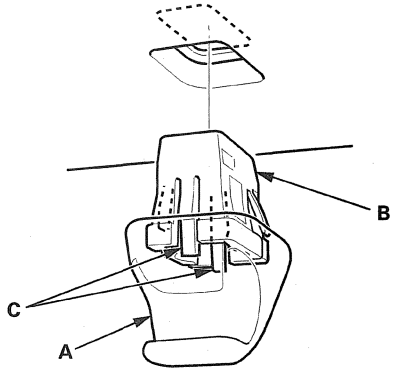
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Sunvisor Removal/Installation (cont'd)

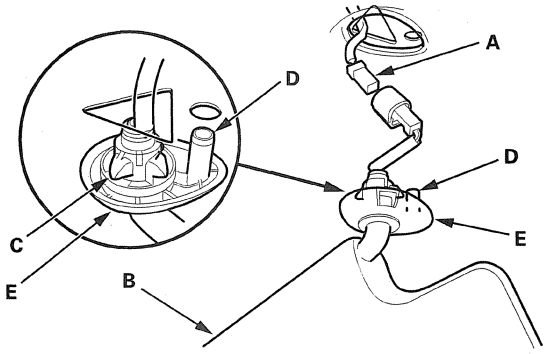
7. If the side curtain airbag has not deployed, inspect the sunvisor for damage. A damaged sunvisor may cause the side curtain airbags to deploy improperly, possibly causing injury. Replace the sunvisor if it has any of the following damage:
   - Any cracks in the sunvisor bracket (A)
   - Any cracks in the sunvisor bracket cover (B)
   - Any bends or cracks in the sunvisor shaft (C)
   - Any cracks in the sunvisor base (D)
   - Any cracks in the vanity mirror base (E)



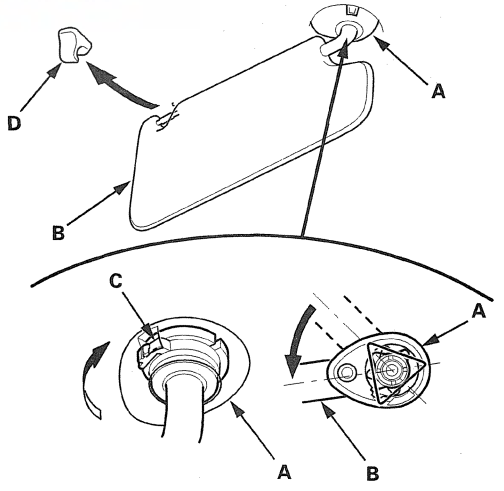
8. Install the holder (A) into the holder grommet (B) by turning it 45 ° clockwise, and install them into the body as an assembly by pushing it until the hooks (C) snap securely into place.



9. Connect the vanity mirror light connector (A), if equipped.



10. Install the sunvisor (B) by inserting the bracket (C) and the pin (D) of the bracket cover (E) into the holes in the body.
11. While holding the bracket cover (A), rotate the sunvisor (B) forward until the hook (C) snaps into place. Gently pull down on the sunvisor to make sure it is properly secured in the body. Rotate the sunvisor into the holder (D).



Headliner Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

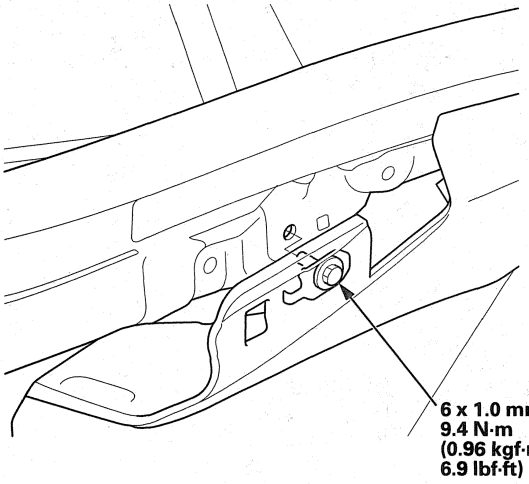
SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the headliner.
- Be careful not to damage the dashboard or other interior trim.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove these items:
   - Front pillar trims, both sides (see page 20-54)
   - Center pillar trims, both sides (see page 20-57)
   - Individual map light (see page 22-263)
   - Sunvisors and holders, both sides (see page 20-68)
2. Slide the both seats all the way forward, then recline the seat-back fully.
3. Remove the bolt from the end of the headliner on each side.

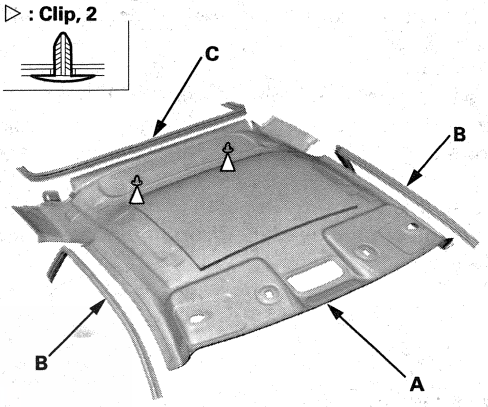
   NOTE: Left side is shown, right side is similar.



4. Lower the headliner (A).
   -1. Remove the door opening seals (B) and the hatch weatherstrip (C) from each roof portion.
   -2. Detach the clips from the body.
   -3. With the help of an assistant, lower the headliner.

Fastener Locations

▷ : Clip, 2



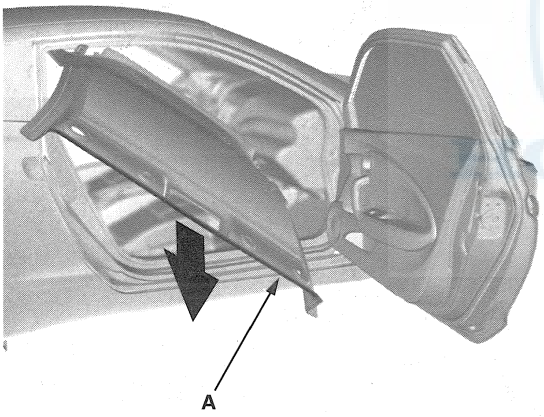
(cont'd)

Headliner Removal/Installation (cont'd)

5. With the help of an assistant, pull out the headliner (A) through the passenger's door opening.

   NOTE: Do not bend the headliner. Bending the headliner will crease and damage it.

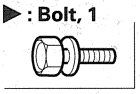
   -1. M/T model: Position the shift lever in reverse.
   -2. CVT model: Move the shift lever to D.
   -3. Match the center pillar part of the headliner with the passenger's door opening.
   -4. Turn the headliner inside and face the front edge of the headliner to the passenger's seat side.
   -5. Pull out the headliner by avoiding the driver side front edge to be in contact with front side of the passenger's side door panel.
   -6. Close the right and left width of the headliner a little and pull out the headliner from the passenger's door opening.

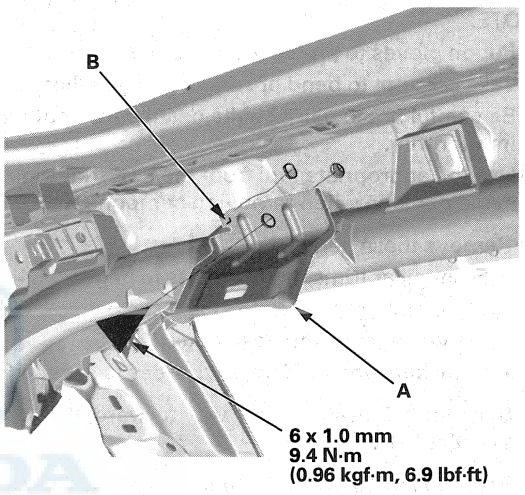


Roof side bracket replacement

6. If necessary, remove the bolt, then remove the roof side bracket (A) from each side by releasing the hook (B).

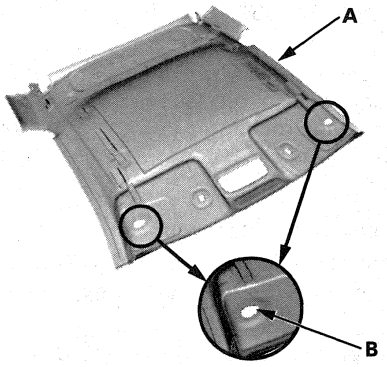
Fastener Location
▶ : Bolt, 1



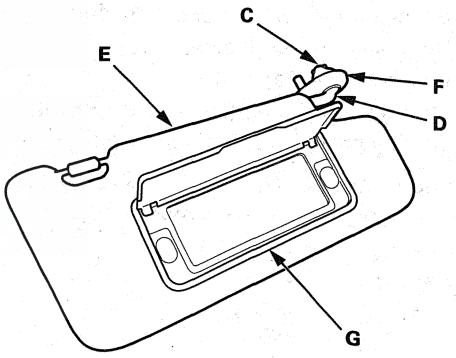


7. Install the headliner in the reverse order of removal, and note these items:
   - If the side curtain airbag has deployed, replace the headliner, along with the other parts listed for side curtain airbag deployment (see page 24-163).
   - To prevent the side curtain airbags from deploying improperly and possibly causing injury, inspect the headliner and all removed trim. Replace any pieces with the following damage:
     - Any creases or tears in the headliner (A)
     - Any damage around the sunvisor holes (B) in the headliner
     - Any cracks in the sunvisor bracket (C)
     - Any bends or cracks in the sunvisor shaft (D)
     - Any cracks in the sunvisor base (E)
     - Any cracks in the sunvisor bracket cover (F)
     - Any cracks or breaks in the vanity mirror base (G)
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - Check that both sides of the headliner are securely attached to the trim.
   - Make sure the headliner overlaps the trim pieces correctly (see page 24-165).
   - When reinstalling the headliner through the passenger's door opening, be careful not to fold or bend it. Also, be careful not to scratch the body.
   - Make sure each connector is plugged in properly.

Headliner



Sunvisor



Carpet Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

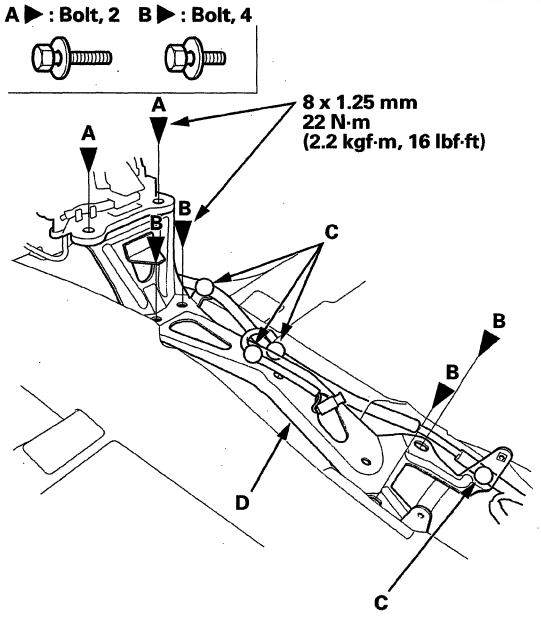
SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

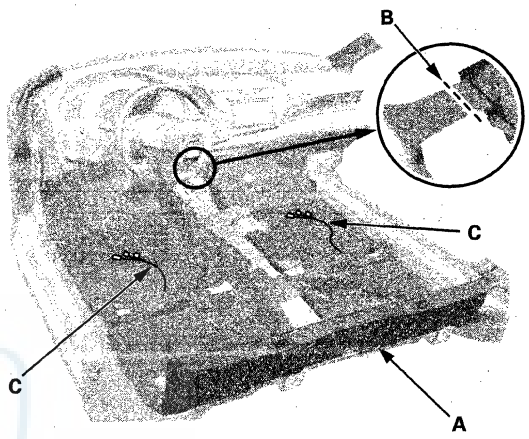
- Put on gloves to protect your hands.
- Take care not to damage, wrinkle or twist the carpet.
- Be careful not to damage the dashboard or the interior trim.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove these items:
   - Seats, both sides (see page 20-109)
   - Door sill trims, both sides (see page 20-52)
   - Rear tray (see page 20-62)
   - Steering joint cover (see step 6 on page 17-13)
   - Parking brake lever (see page 19-39)
2. Remove the bolts (A, B) and detach the harness clips (C), then remove the base bracket (D).

Fastener Locations
A ▶ : Bolt, 2 B ▶ : Bolt, 4



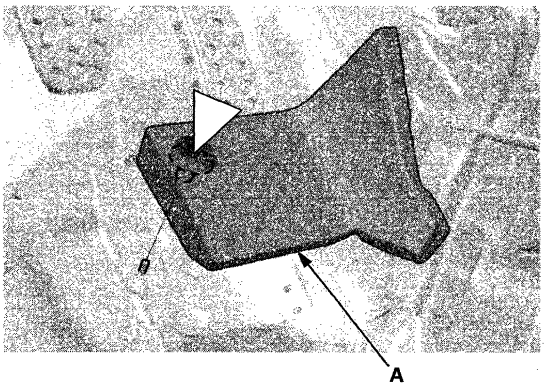
3. Remove the carpet (A).
   -1. Cut the carpet in the area (B) as shown.
   -2. Pull out the floor wire harnesses (C) through the holes in the carpet.
   -3. Fold the carpet lightly, and pull out it through the door opening.



Heel stopper replacement

4. If necessary, detach the clip, then remove the heel stopper (A).

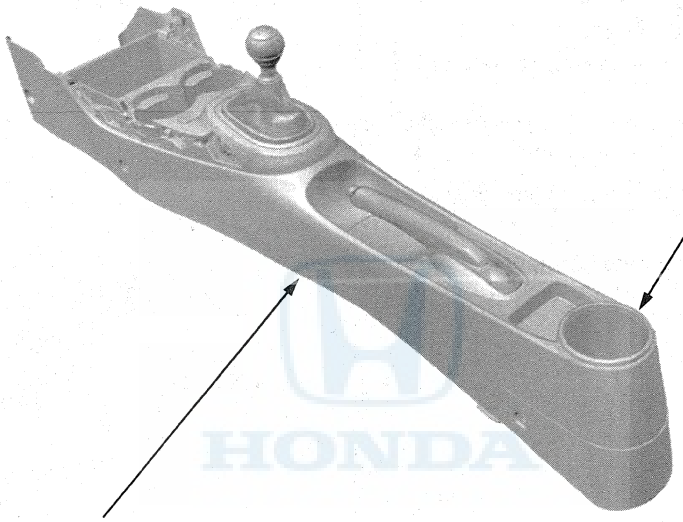
Fastener Location
▷ : Clip, 1



5. Install the carpet in the reverse order of removal, and note these items:
   - Take care not to damage, wrinkle, or twist the carpet.
   - Make sure the floor wire harnesses are routed correctly.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - Make sure each connector is plugged in properly.

Consoles

Component Location Index



REAR CONSOLE
Removal/Installation, page 20-81

CENTER CONSOLE
Removal/Installation, page 20-79

Center Console Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

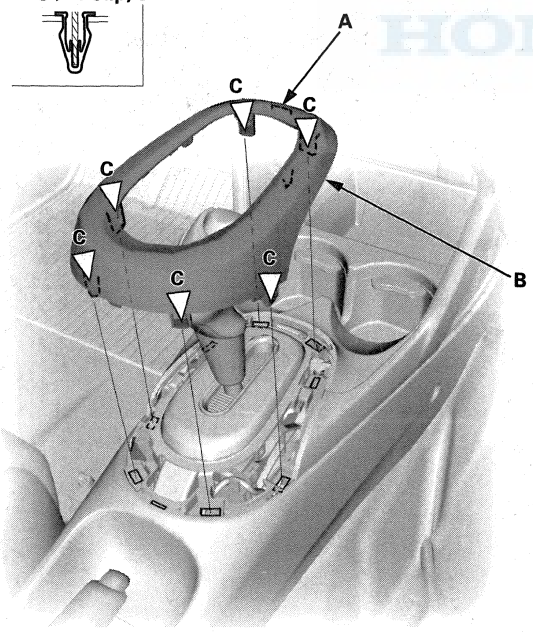
SRS components are located in this area. Review the SRS component locations (see page 24-11) and precautions and procedures (see page 24-13) before doing repair or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the seat, the dashboard, or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

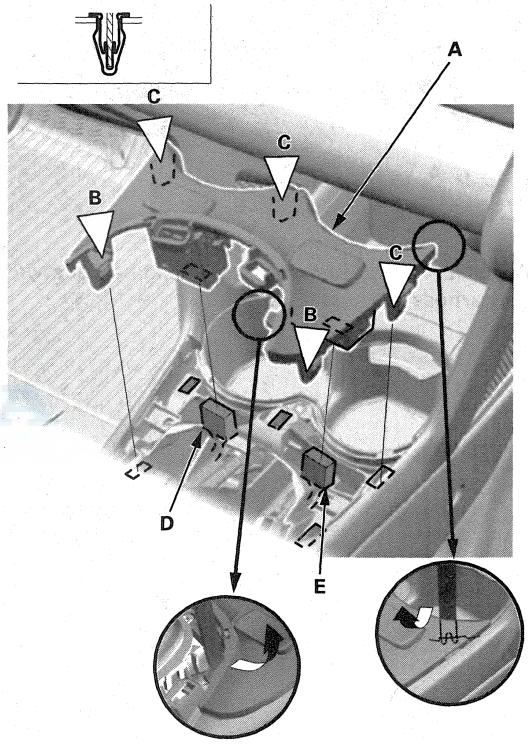
1. M/T model: Remove the shift lever trim (see page 13-97).
2. CVT model: Insert the appropriate trim tool to the groove (A) at front of the A/T gear position indicator panel trim (B) to detach the clips (C), then remove the A/T gear position indicator panel trim.

Fastener Locations
C ▷ : Clip, 6



3. Remove the center console panel (A).
   -1. Pry up on the rear edge of the center console panel with the appropriate trim tool to detach the clips (B).
   -2. Insert the appropriate trim tool in the groove at front of the center console panel to detach the clips (C).
   -3. With seat heater: Disconnect the driver's seat heater switch connector (D) and the passenger's seat heater switch connector (E).

Fastener Locations
B, C ▷ : Clip, 5

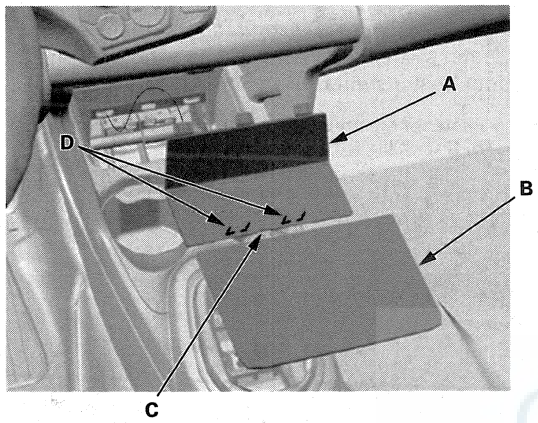


4. Remove the dashboard center lower trim (see page 20-88).

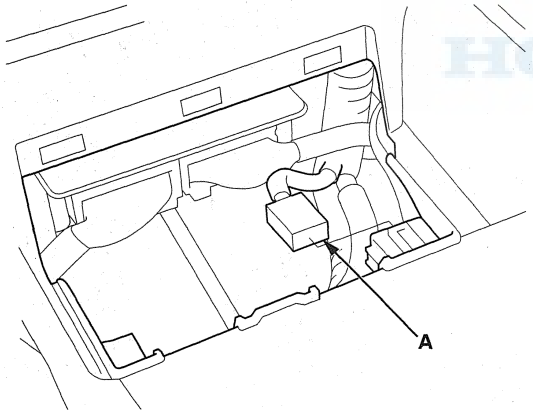
(cont'd)

Center Console Removal/Installation (cont'd)

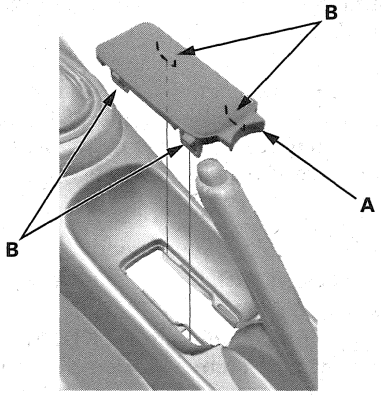
5. Remove the center console lid (A).
   -1. Remove the front console mat (B).
   -2. Insert the appropriate trim tool into the notch (C) of the center console lid to detach the hooks (D).



6. With seat heater: Disconnect the seat heater switch subharness connector (A).

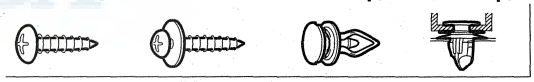


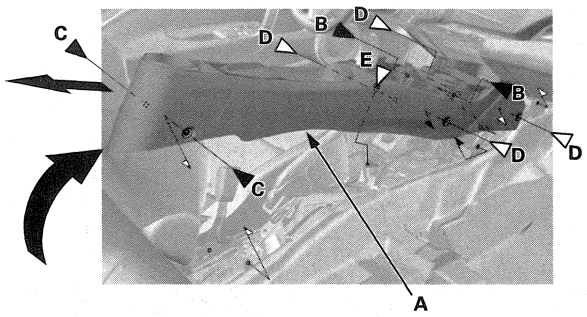
7. Pry up on the rear edge of the parking brake cover lid (A) to detach the hooks (B), then remove it.



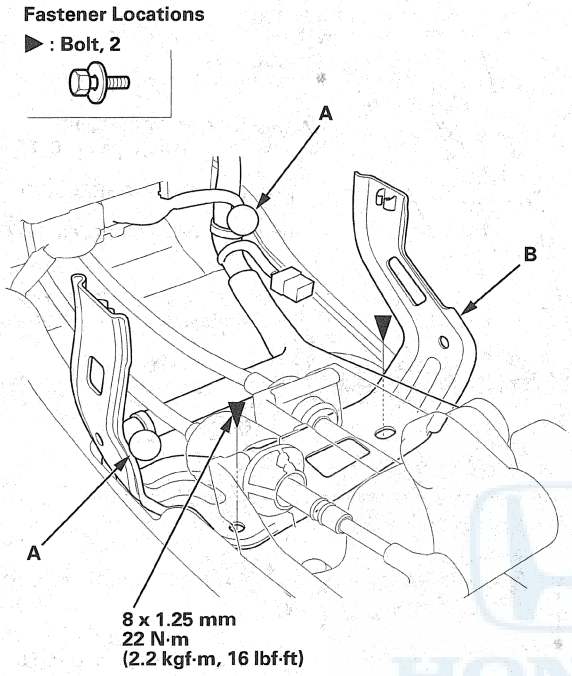
8. Remove the center console (A).
   -1. Slide both seats forward fully.
   -2. Remove the screws (B, C), and detach the clips (D).
   -3. Pry up the rear portion of the center console to detach the clip (E).
   -4. Pull out the front portion of the center console from the dashboard.

Fastener Locations
B ▶ : Screw, 2 C ▶ : Screw, 2 D ▷ : Clip, 4 E ▷ : Clip, 1





9. If necessary, detach the harness clips (A) and remove the bolts, then remove the center console bracket (B).



10. Install the console in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new once.
    - Push the clips and the hooks into place securely.
    - Make sure the wire harness is not pinched.
    - Make sure each connector is plugged in properly.

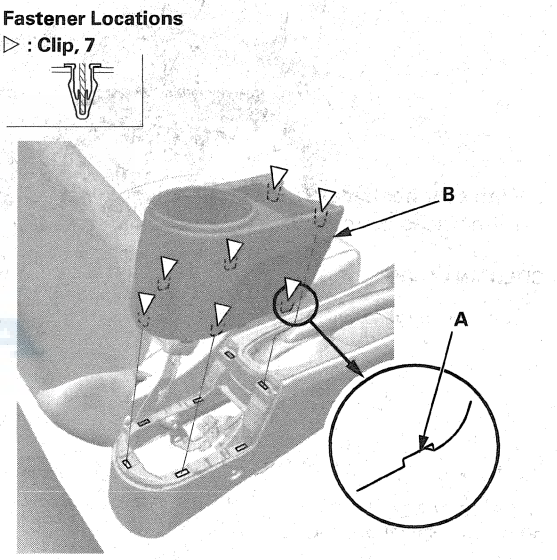
Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the center console or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

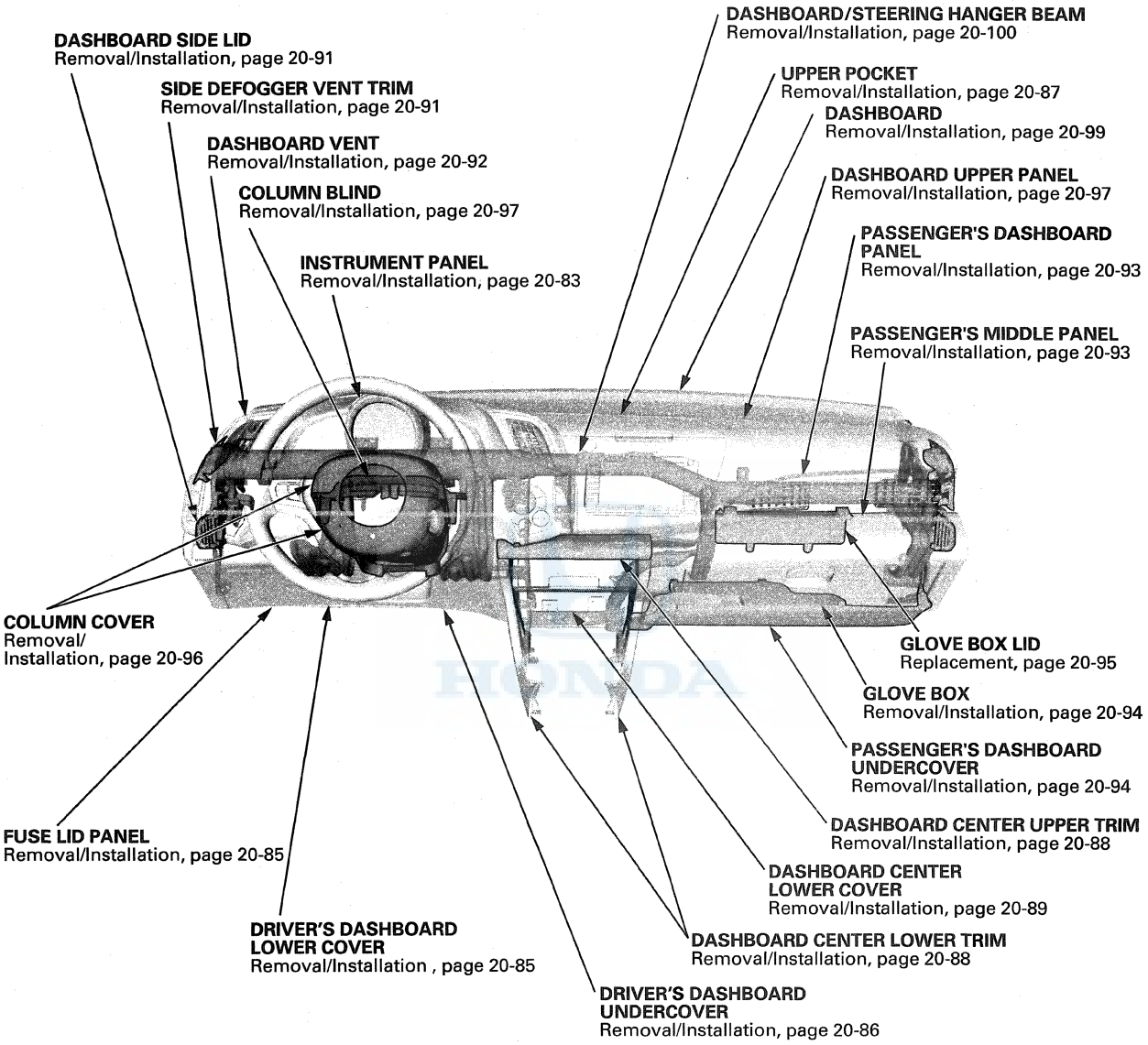
1. Insert the appropriate trim tool into the notch (A) of the rear console (B) to detach the clips, then remove it.



2. Install the console in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips into place securely.

Dashboard

Component Location Index



Instrument Panel Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

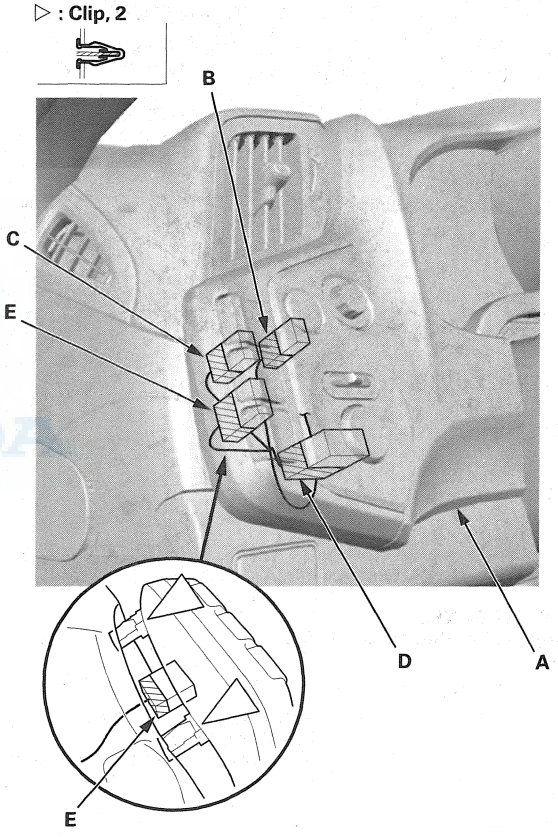
1. Release the tilt/telescopic lever, tilt the steering column all the way down, and pull it all the way out.

2. Disconnect the switch connectors from the instrument panel (A).

-1. Remove the fuse lid panel (see page 20-85).
-2. Disconnect the connectors (B, C) at the driver's dashboard lower cover opening.
-3. Gently pull out the left side edge of the panel to detach the clips.
-4. Disconnect the connectors (D, E) at the gap of the instrument panel and the dashboard.

Fastener Locations

▷ : **Clip, 2**

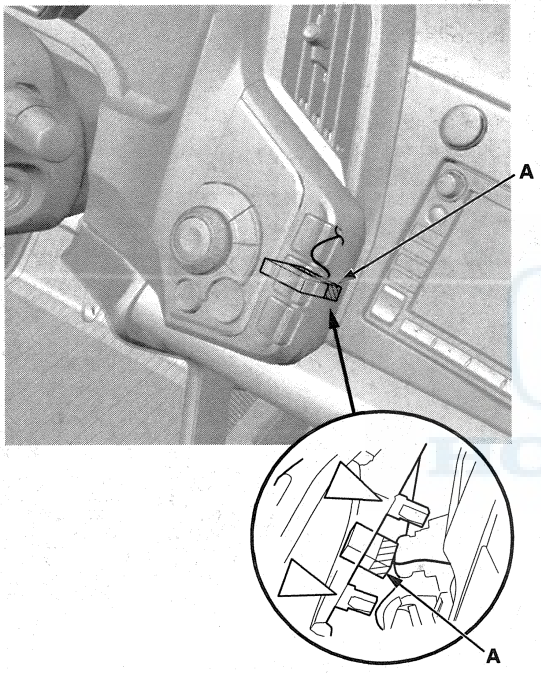


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Instrument Panel Removal/Installation (cont'd)

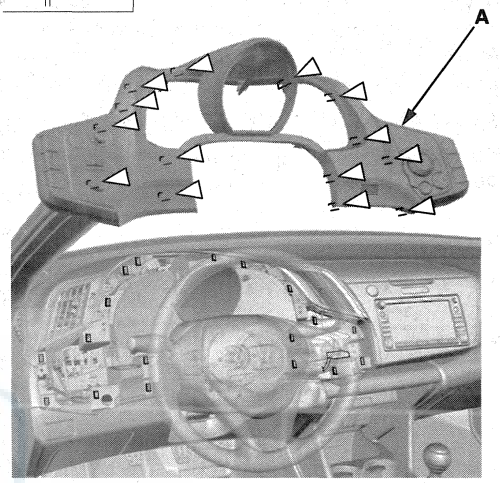
3. Disconnect the climate control unit connector (A).
   -1. Gently pull out the right side edge of the panel to detach the clips.
   -2. Disconnect the connector at the gap of the instrument panel and the dashboard.

Fastener Locations
▷ : **Clip, 2**



4. Gently pull out along the edge of the instrument panel (A) to detach the clips, then remove it.

Fastener Locations
▷ : **Clip, 14**



5. Install the panel in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - Make sure each connector is plugged in properly.

Fuse Lid Panel Removal/Installation

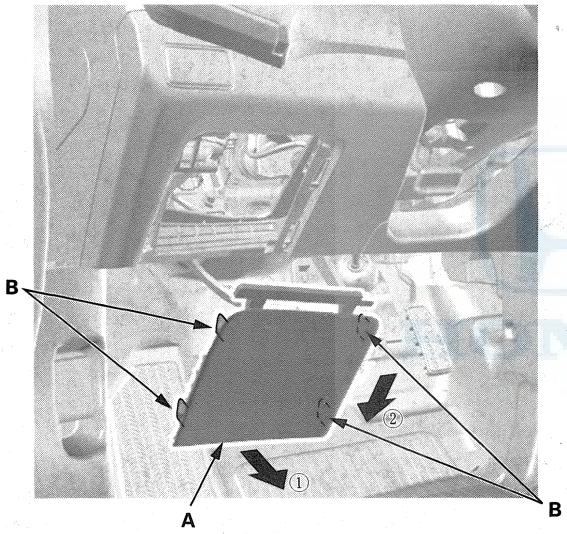
Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Pull out the bottom edge of the fuse lid panel (A), then remove it from the bottom to the top to detach the hooks (B).



2. Install the lid panel in the reverse order of removal, and push the hooks into place securely.

Driver's Dashboard Lower Cover Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

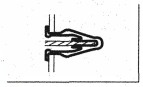
NOTE:

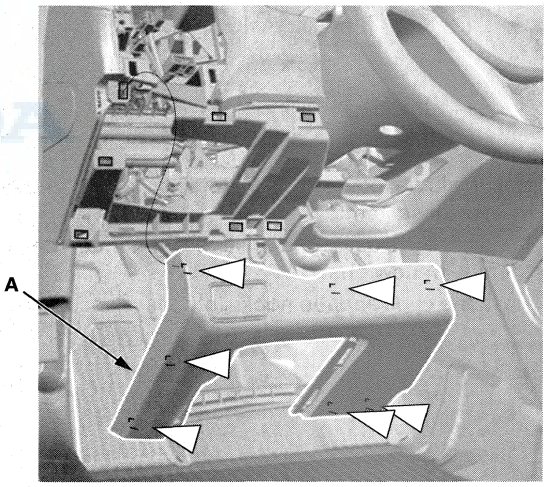
- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the instrument panel (see page 20-83).
2. Remove the fuse lid panel (see page 20-85).
3. Pull out along edge of the driver's dashboard lower cover (A) to detach the clips, then remove the cover.

Fastener Locations

▷ : Clip, 7





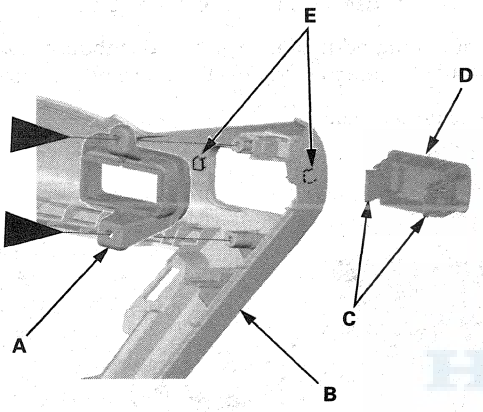
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Driver's Dashboard Lower Cover Removal/Installation (cont'd)

Switch trim replacement

4. Remove the switch trim (A) from the driver's dashboard lower cover (B).
   -1. Detach the hooks (C), then remove the switch lid (D).
   -2. Remove the screws and detach the hooks (E), then remove the trim.

Fastener Locations
▶ : Screw, 2



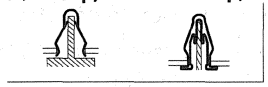
5. Install the lower cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

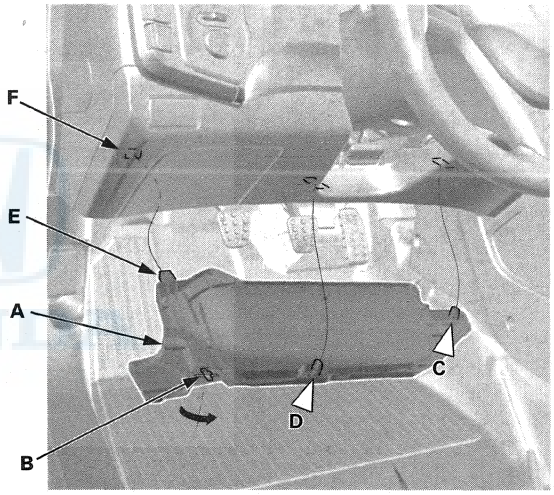
Driver's Dashboard Undercover Removal/Installation

NOTE: Take care not to scratch the dashboard or the related parts.

1. Remove the driver's dashboard undercover (A).
   -1. Turn the lock knob (B) 90 °.
   -2. Gently pull down the front edge to detach the clips (C, D).
   -3. Pull away the undercover to release the pin (E) from the hole in the kick panel (F).

Fastener Locations
C ▷ : Clip, 1 D ▷ : Clip, 1





2. Install the undercover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and pin into place securely.

Upper Pocket Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

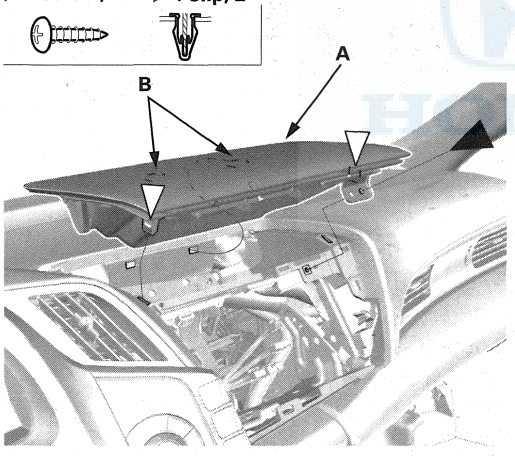
NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

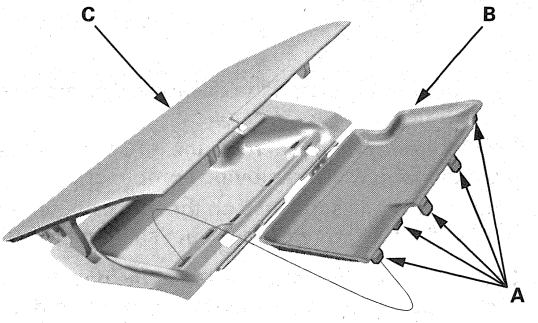
1. Remove these items:
   - Audio unit (without navigation) (see page 23-119)
   - Audio-navigation unit (with navigation) (see page 23-232)
2. Remove the upper pocket (A).
   -1. Remove the screw.
   -2. Pull out the upper pocket slightly toward you, and detach the clips and the pins (B).

Fastener Locations

▶: Screw, 1 ▷: Clip, 2



3. If necessary, detach the hooks (A), then remove the mat (B) from the upper pocket (C).



4. Install the upper pocket in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips, hooks, and pins into place securely.

Dashboard Center Trim Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

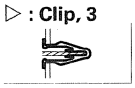
*Available through the Honda Tool and Equipment Program, 888-424-6857

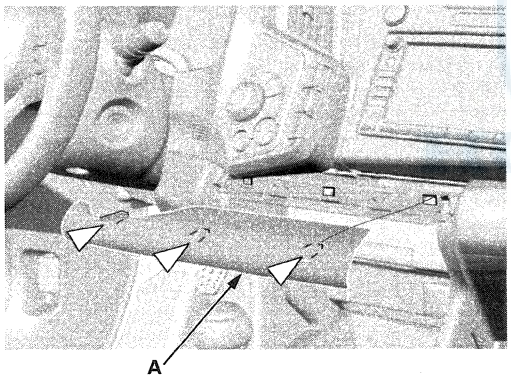
NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- If there are small scratches on the film trim, remove them with an extra fine plastic polishing compound.

1. Gently pull out the bottom edge of the dashboard center upper trim (A) by hand toward you to detach the clips, then remove it.

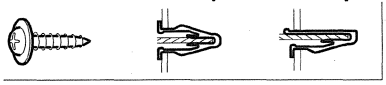
Fastener Locations
▷ : Clip, 3

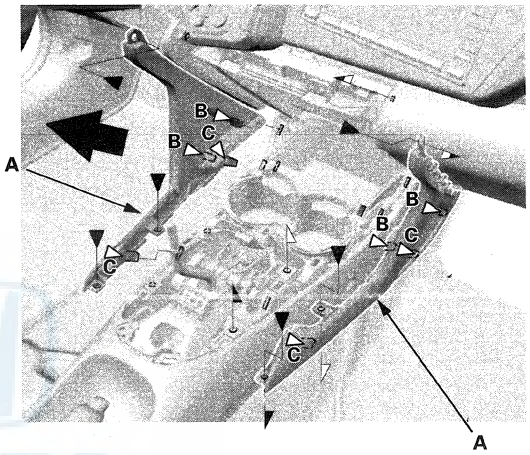




2. Remove the dashboard center lower trims (A).
   -1. Remove the screws.
   -2. Pull the dashboard center lower trim diagonally up toward you to detach the clips (B, C).

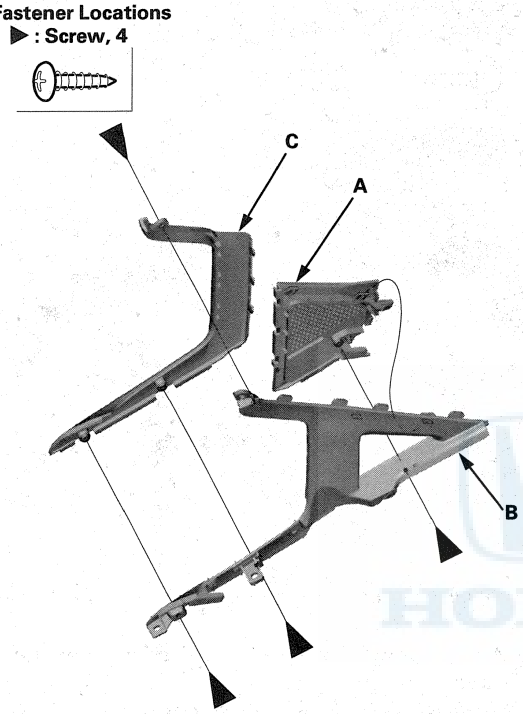
Fastener Locations
▶ : Screw, 6 B ▷ : Clip, 4 C ▷ : Clip, 4





Mesh panel/support replacement

3. Remove the screws, then separate the mesh panel (A) and the support (B) from the dashboard center lower trim (C).



4. Install the trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Dashboard Center Lower Cover Removal/Installation

Special Tools Required

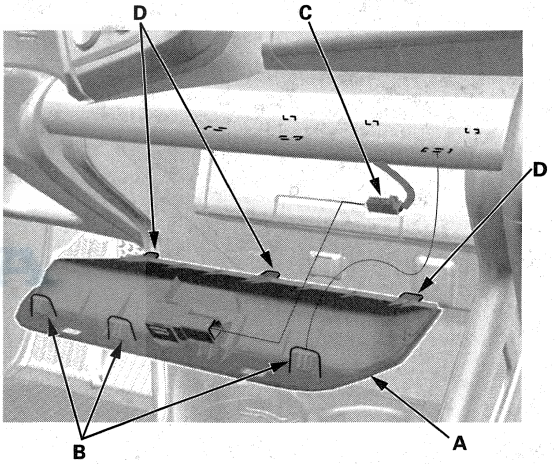
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the center lower lid (A).
   -1. Pull down the front edge of the lid by hand to detach the hooks (B).
   -2. Disconnect the console box light connector (C).
   -3. Pull out the lid to detach the tabs (D).

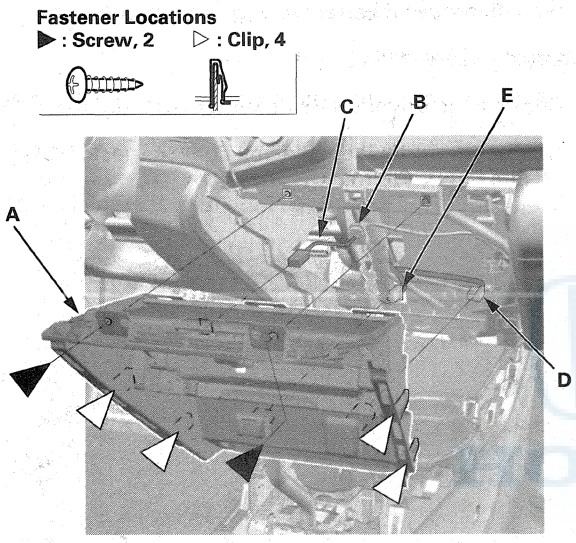


2. Remove the dashboard center trim (see page 20-88).

(cont'd)

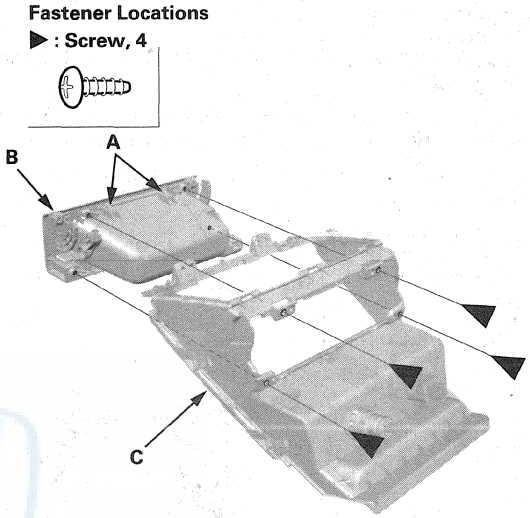
Dashboard Center Lower Cover Removal/Installation (cont'd)

3. Remove the dashboard center lower cover (A).
   -1. Remove the screws.
   -2. Grab the bottom of the lower cover and pull it out, then detach the clips.
   -3. Remove the grommet (B), then pass the USB adaptor harness (C) through the hole in the cover.
   -4. Disconnect the accessory power socket connector (D) and the auxiliary jack assembly connector (E), if equipped.



Center pocket replacement

4. Remove the screws and detach the hooks (A), then remove the center pocket (B) from the dashboard center lower cover (C).



5. Install the cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips, the hooks, and the tabs into place securely.
   - Make sure the wire harnesses are not pinched.
   - Make sure each connector is plugged in properly.

Dashboard Side Lid Removal/Installation

Special Tools Required

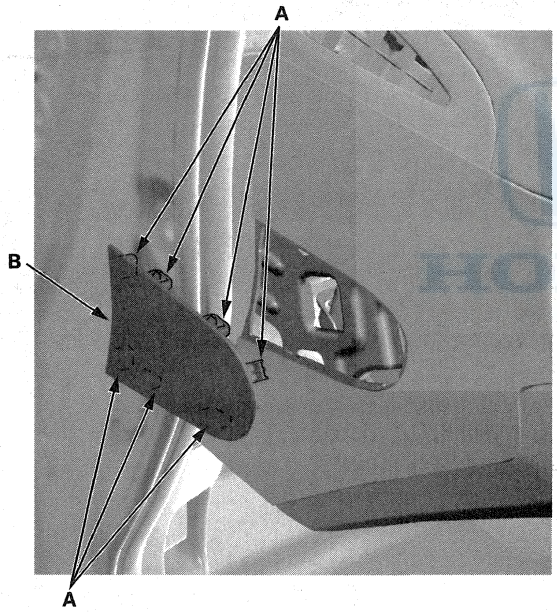
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Driver's dashboard side lid is shown; Passenger's dashboard side lid is similar.

1. Gently pry the edge of the lid with the appropriate trim tool to detach the hooks (A), then remove the dashboard side lid (B).



2. Install the lid in the reverse order of removal, and push the hooks into place securely.

Side Defogger Vent Trim Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

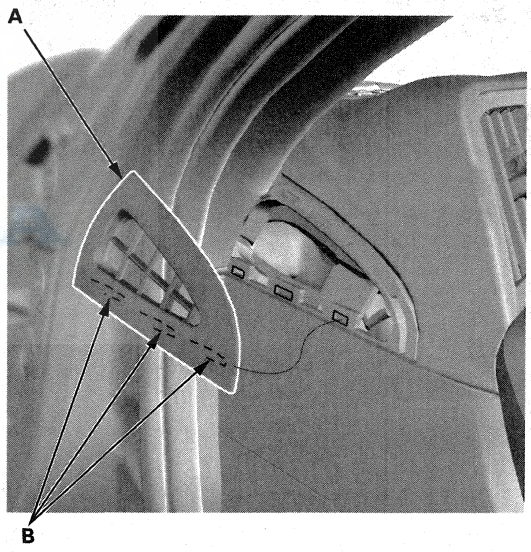
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

Driver's side

1. Remove the driver's side defogger vent trim (A).
   -1. Pry out the rear edge of the trim to detach the hooks (B) with the appropriate trim tool.
   -2. Pull out the upper edge of the trim, then pull it out.



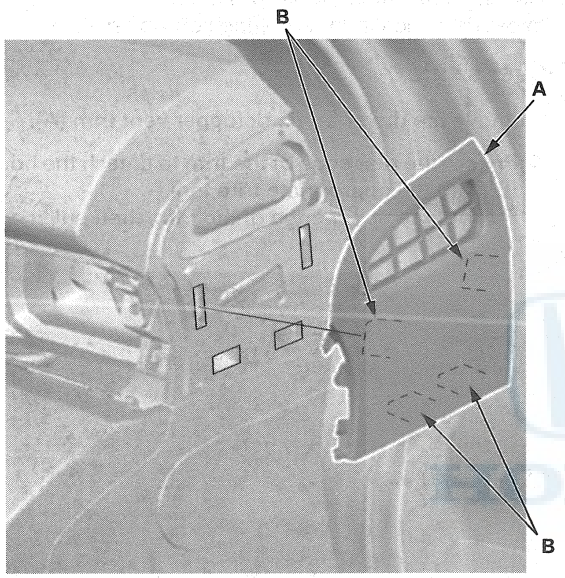
2. Install the trim in the reverse order of removal, and push the hooks into place securely.

(cont'd)

Side Defogger Vent Trim Removal/Installation (cont'd)

Passenger's side

1. Remove the passenger's dashboard panel (see page 20-93).
2. Remove the passenger's side defogger vent trim (A).
   -1. Pry the rear edge of the trim to detach the hooks (B) with the appropriate trim tool.
   -2. Pull the panel rearward.



3. Install the trim in the reverse order of removal, and push the hooks into place securely.

Dashboard Vent Removal/Installation

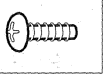
NOTE:

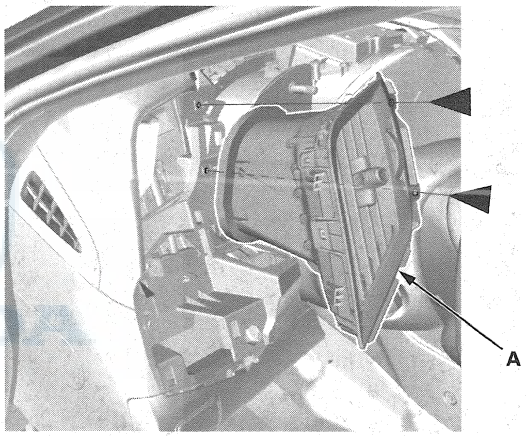
- Take care not to scratch the dashboard or the related parts.
- Driver's outside vent is shown; driver's inside vent is similar.

1. Remove the instrument panel (see page 20-83).
2. Remove the screws, then pull out on the dashboard vent (A).

Fastener Locations

▶ : Screw, 2





3. Install the dashboard vent in the reverse order of removal.

Passenger's Dashboard Panel Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

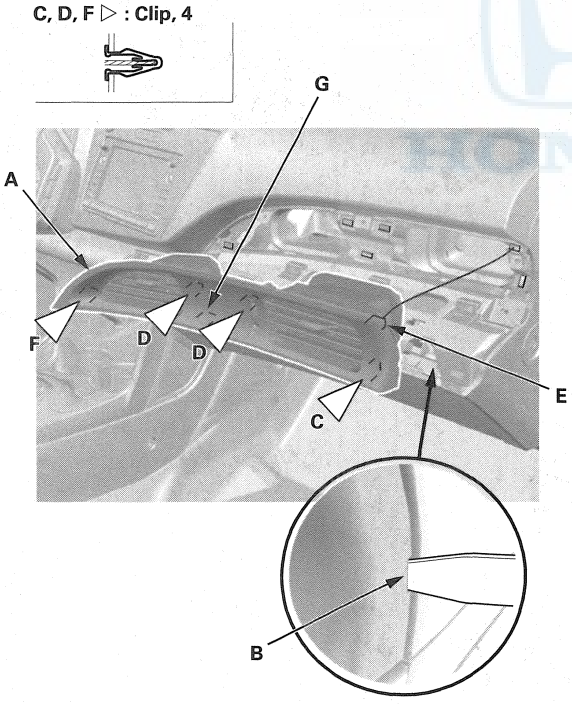
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the passenger's dashboard panel (A).
   -1. Insert the appropriate trim tool into the notch (B) in the panel, and pull out the panel partially to detach the clips (C).
   -2. Gently pull out along the upper edge of the panel to detach the clips (D) and the hook (E).
   -3. Gently pull out along the lower edge of the panel to detach the clip (F) and the hook (G).

Fastener Locations
C, D, F ▷ : Clip, 4



2. Install the panel in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and hooks into place securely.

Passenger's Middle Panel Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

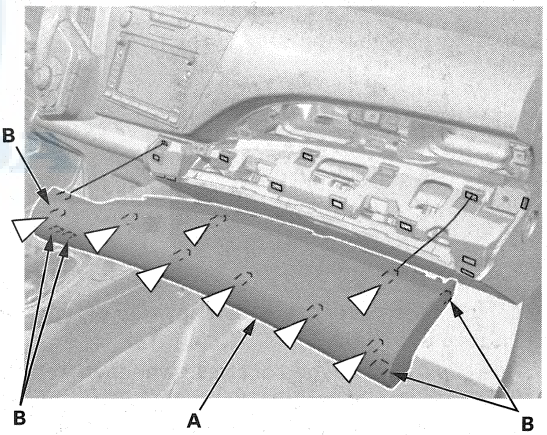
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Take care not to scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the passenger's dashboard panel (see page 20-93).
2. Pull out the passenger's middle panel (A) by hand to detach the clips and the tabs (B), then remove it.

Fastener Locations
▷ : Clip, 8



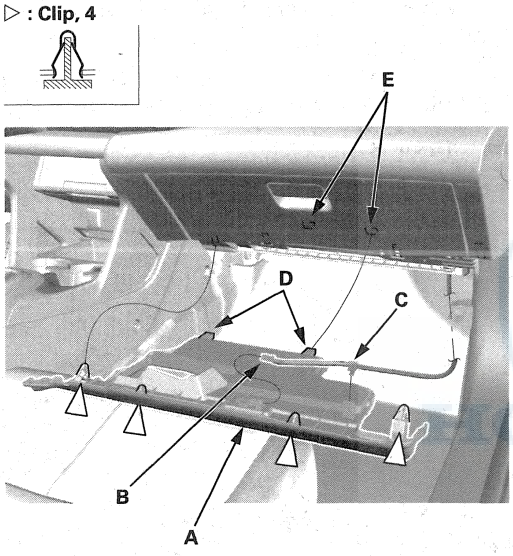
3. Install the panel in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the tabs into place securely.

Passenger's Dashboard Undercover Removal/Installation

NOTE: Take care not to scratch the dashboard or the related parts.

1. Remove the passenger's dashboard undercover (A).
   -1. Gently pull down the front edge of the cover to detach the clips.
   -2. Disconnect the footwell light connector (B) and detach the harness clip (C), if equipped.
   -3. Pull the cover away to release the pins (D), from the holders (E).

Fastener Locations
▷ : Clip, 4



2. Install the undercover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the pins into place securely.
   - Make sure the foot light connector is plugged in properly, if equipped.

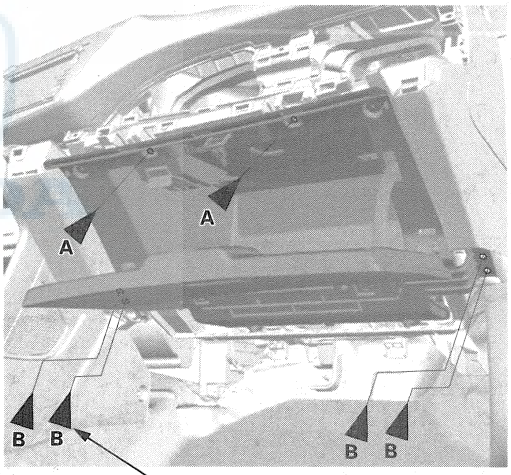
Glove Box Removal/Installation

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE: Take care not to scratch the dashboard or the related parts.

1. Remove these items:
   - Passenger's middle panel (see page 20-93)
   - Passenger's dashboard undercover (see page 20-94)
2. Open the glove box.
3. Remove the screws (A) and the bolts (B).

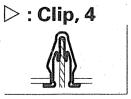
Fastener Locations
A ▶ : Screw, 2 B ▶ : Bolt, 4

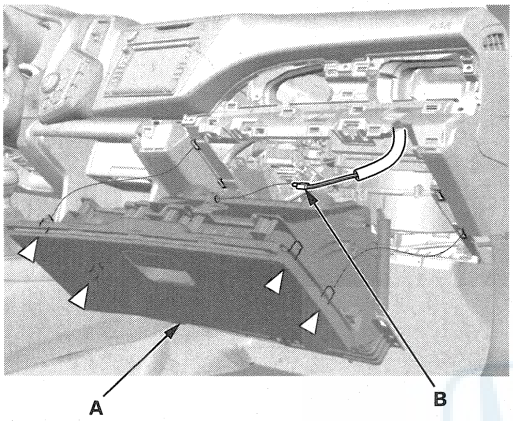


4. Close the glove box.

5. Pull out the glove box (A) by hand to detach the clips.

Fastener Locations
▷ : Clip, 4

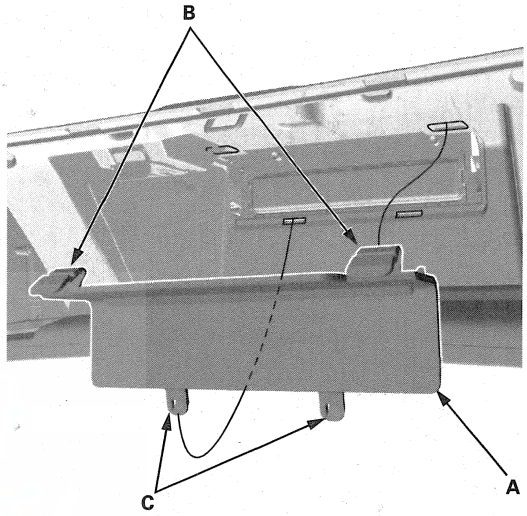




6. Disconnect the glove box light connector (B), then remove the glove box.

Glove box lid replacement

7. If necessary, open the glove box.
8. Remove the glove box lid (A).
   -1. Detach the upper hooks (B) of the lid.
   -2. Detach the lower hooks (C) of the lid.

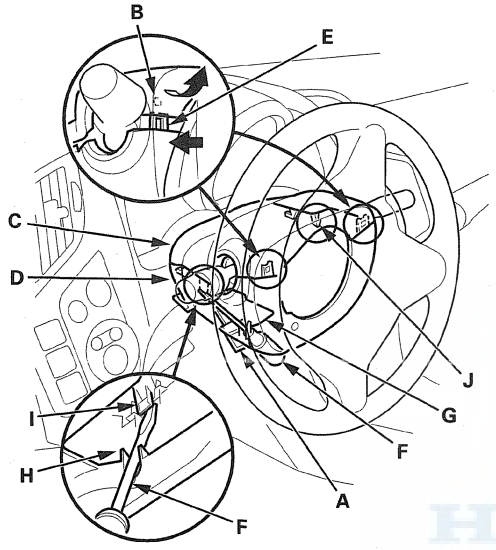


9. Install the box in the reverse order of removal, and note these items:
   - Push the clips and the hooks into place securely.
   - Make sure the connector is plugged in properly.

Column Cover Removal/Installation

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the column cover.
- Do not pry the cover surface with any tools.

1. Release the tilt/telescopic lever (A), tilt the steering column all the way down, and pull it all the way out.



2. Release the tabs (B) of the upper column cover (C) by pushing in on the lower column cover (D) from the front side.

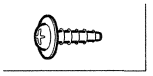
NOTICE

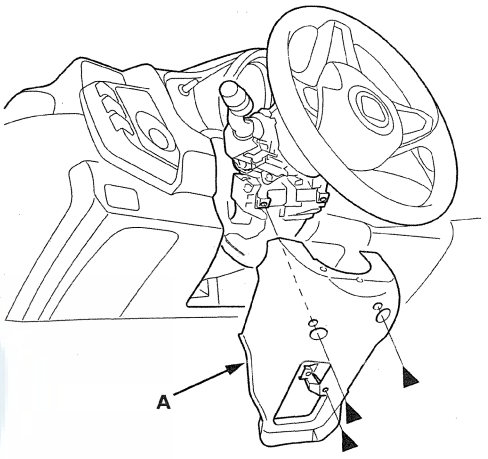
Carefully release the tabs, and note the hooks (E) may break when the upper column cover is pulled up too hard.

3. Insert a suitable sized screwdriver or equivalent tool (F) into the lever hole (G) in the lower column cover along the guide rib (H).
4. Release the hook (I) located on the left side of the upper column cover. The right side hook (J) of the upper column cover cannot be released from the inside.
5. Remove the upper column cover by lightly pulling it up by releasing the right side hook of the cover.
6. Remove the screws, then remove the lower column cover (A).

Fastener Locations

▶ : Screw, 3



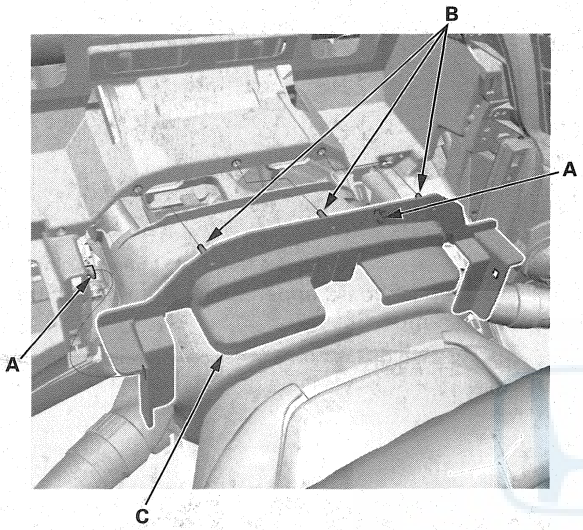


7. Install the upper and the lower column covers in the reverse order of removal, and push the hooks into place securely.

Column Blind Removal/Installation

NOTE: Take care not to scratch the dashboard or the related parts.

1. Remove the gauge control module (see page 22-354).
2. Detach the hooks (A) and the pins (B), then remove the column blind (C).



3. Install the blind in the reverse order of removal, and push the hooks and the pins into place securely.

Dashboard Upper Panel Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

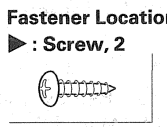
- Put on gloves to protect your hands.
- Take care not to bend or scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Have an assistant help you when removing and installing the dashboard upper panel.

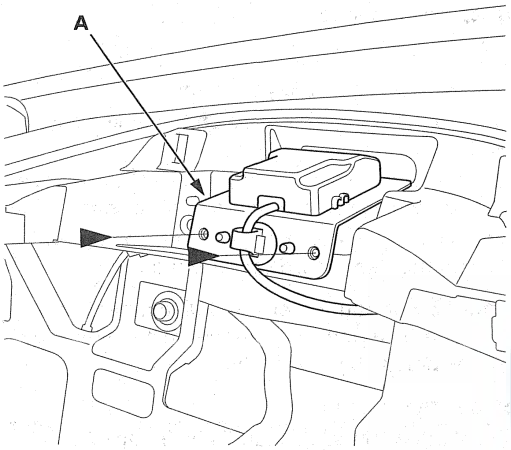
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before beginning work.
2. Remove these items:
   - Front pillar trims, both sides (see page 20-54)
   - Side defogger vent trims, both sides (see page 20-91)
   - Gauge control module (see page 22-354)
   - Upper pocket (see page 20-87)
   - Audio unit (without navigation) (see page 23-119)
   - Audio-navigation unit (with navigation) (see page 23-232)
   - Dashboard center lower trim (see page 20-88)
   - Passenger's dashboard panel (see page 20-93)
   - Glove box (see page 20-94)

(cont'd)

Dashboard Upper Panel Removal/Installation (cont'd)

3. With navigation: Remove the screws securing the GPS antenna bracket (A).

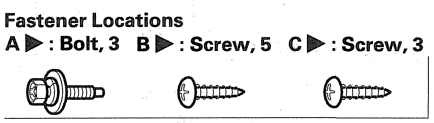


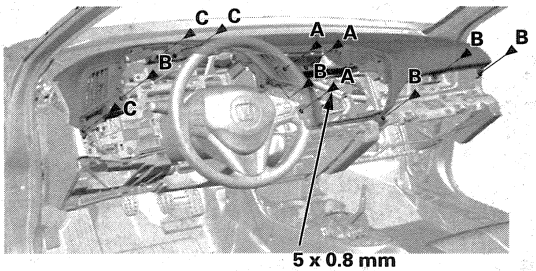


4. If the front passenger's airbag has deployed, disconnect the front passenger's airbag 4P connector, and remove the bolts securing the front passenger's airbag (see page 24-167).

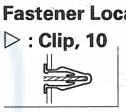
5. If the front passenger's airbag has not deployed, remove the front passenger's airbag (see page 24-167).

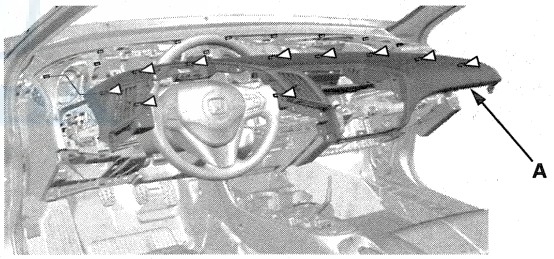
6. Remove the bolts (A) and the screws (B, C).





7. Pull out the dashboard upper panel (A) to detach the clips, then remove it.





8. Install the panel in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - Make sure the wire harnesses are not pinched.
   - Make sure the connectors are plugged in properly.
   - Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Dashboard Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

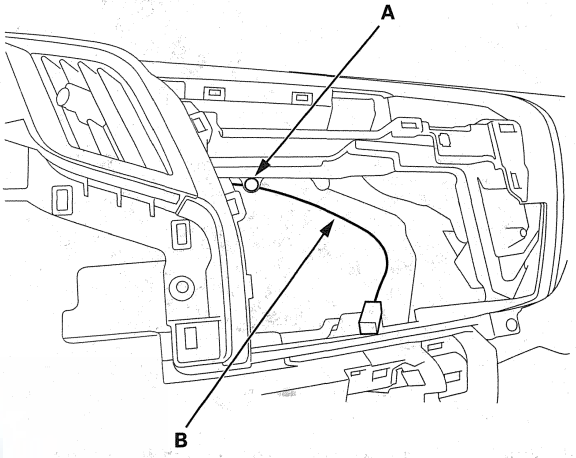
*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

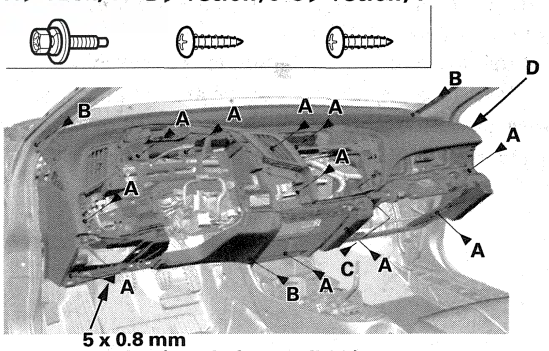
- Put on gloves to protect your hands.
- Take care not to bend or scratch the dashboard or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Have an assistant help you when removing and installing the dashboard.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before beginning work.
2. Remove these items:
   - Front pillar trims, both sides (see page 20-54)
   - Side defogger vent trims, both sides (see page 20-91)
   - Gauge control module (see page 22-354)
   - Driver's dashboard lower cover (see page 20-85)
   - Humidity/in-car temperature sensor (see page 21-109)
   - Upper pocket (see page 20-87)
   - Audio unit (without navigation) (see page 23-119)
   - Audio-navigation unit (with navigation) (see page 23-232)
   - Dashboard center lower trim (see page 20-88)
   - Dashboard center lower cover (see page 20-89)
   - Sunlight sensor (see page 21-110)
   - Passenger's dashboard panel (see page 20-93)
   - Glove box (see page 20-94)
   - Steering column (see page 17-9)
3. With navigation: Detach the harness clip (A) of the GPS antenna lead (B).



4. Remove the bolts (A) and the screws (B, C) securing the dashboard (D).

Fastener Locations
A ▶ : Bolt, 11 B ▶ : Screw, 3 C ▶ : Screw, 1

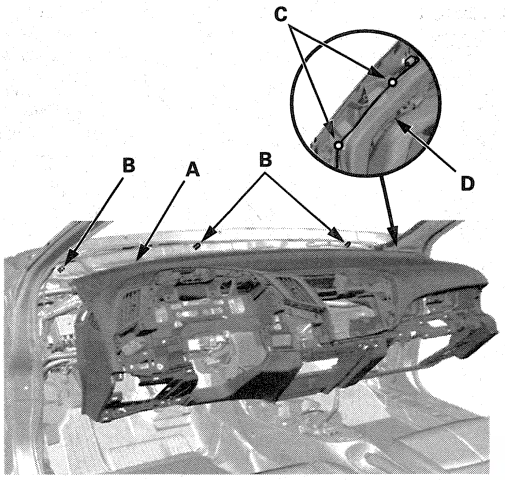


5 x 0.8 mm
4.4 N·m (0.45 kgf·m, 3.2 lbf·ft)

(cont'd)

Dashboard Removal/Installation (cont'd)

5. Lift up on the dashboard (A) to release it from the guide pins (B).



6. While holding the dashboard, detach the harness clips (C) of the sunlight sensor harness from the dashboard duct (D).
7. Carefully remove the dashboard through the door opening.
8. Install the dashboard in the reverse order of removal, and note these items:
   - Push the harness clips into place securely.
   - Make sure the wire harnesses are not pinched.
   - Make sure the connectors are plugged in properly.
   - Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Dashboard/Steering Hanger Beam Removal/Installation

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

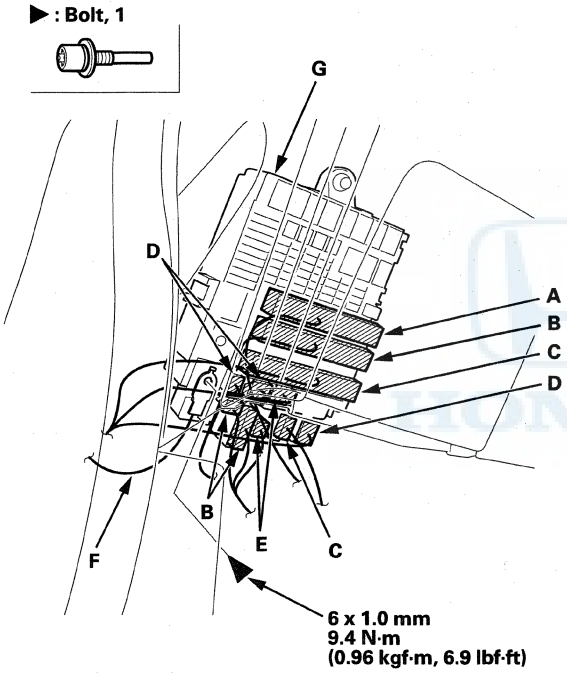
NOTE:
- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the dashboard/steering hanger beam.
- Take care not to scratch the dashboard, the body, or the related parts.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before beginning work.
2. Remove these items:
   - Kick panels, both sides (see page 20-52)
   - Center console (see page 20-79)
   - Front pillar trims, both sides (see page 20-54)
   - Steering column (see page 17-9)
   - Front pillar corner trims, both sides (see page 20-152).

Driver's side

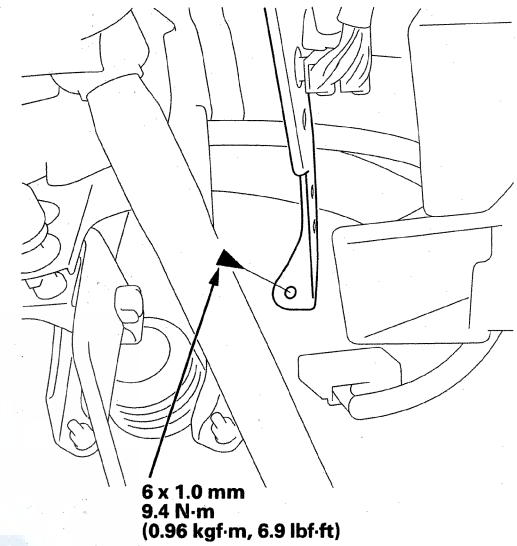
3. From under the dash, disconnect the right engine compartment wire harness connector (A), the left engine compartment wire harness connectors (B), the driver's side wire harness connectors (C), the driver's door wire harness connectors (D), the roof wire harness connectors (E), and remove the bolt with a TORX T30 bit, then release the left engine compartment wire harness (F) from the under-dash fuse/relay box (G).

Fastener Locations
▶ : Bolt, 1



4. From under the dash, remove the bolt.

Fastener Locations
▶ : Bolt, 1

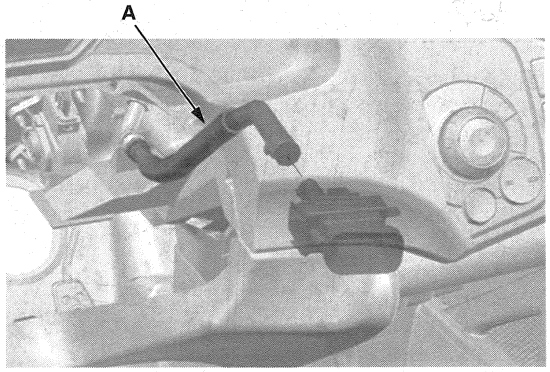


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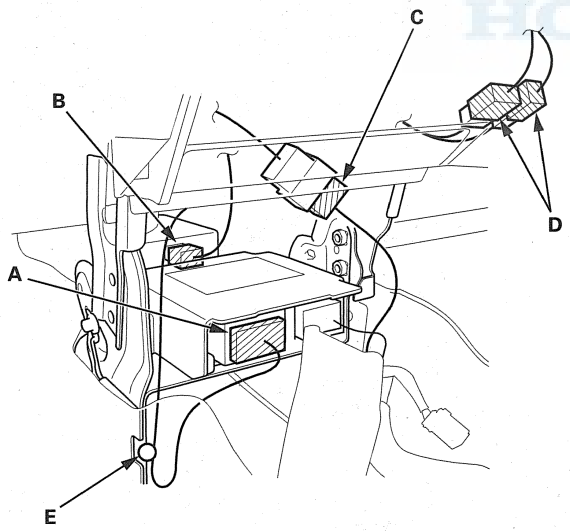
Dashboard/Steering Hanger Beam Removal/Installation (cont'd)

Center

5. From under the dash, disconnect the air hose (A), then remove it.

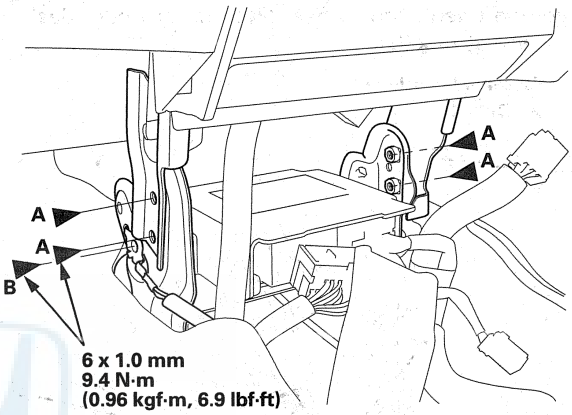


6. From under the dash, disconnect the SRS unit connector (A), the yaw rate-acceleration sensor (B), the floor wire harness connector (C), and the A/C wire harness connectors (D). Detach the harness clip (E).



7. Remove the bolts (A).

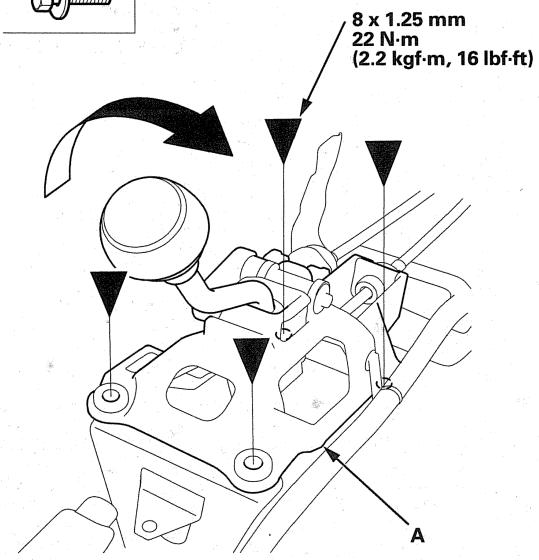
Fastener Locations
A ▶ : Bolt, 4 **B ▶ : Bolt, 1**



8. Remove the ground bolt (B) with a TORX T30 bit.

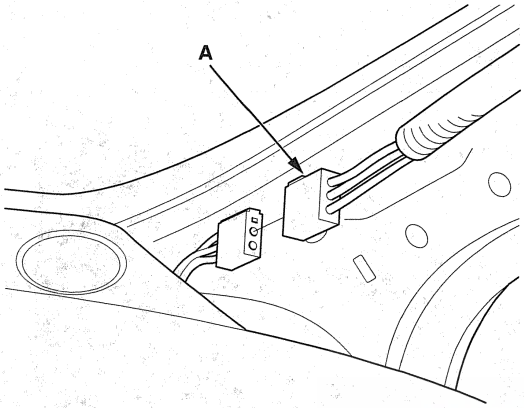
9. Remove the bolts, then lay the shift lever assembly (A) down on its side.

Fastener Locations
▶ : Bolt, 4

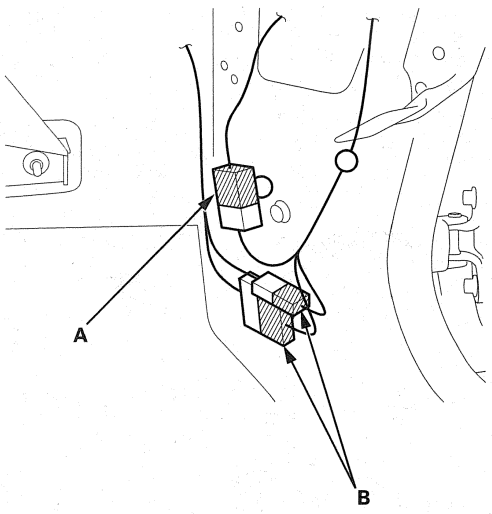


Passenger's side

10. Disconnect the antenna lead connector (A).



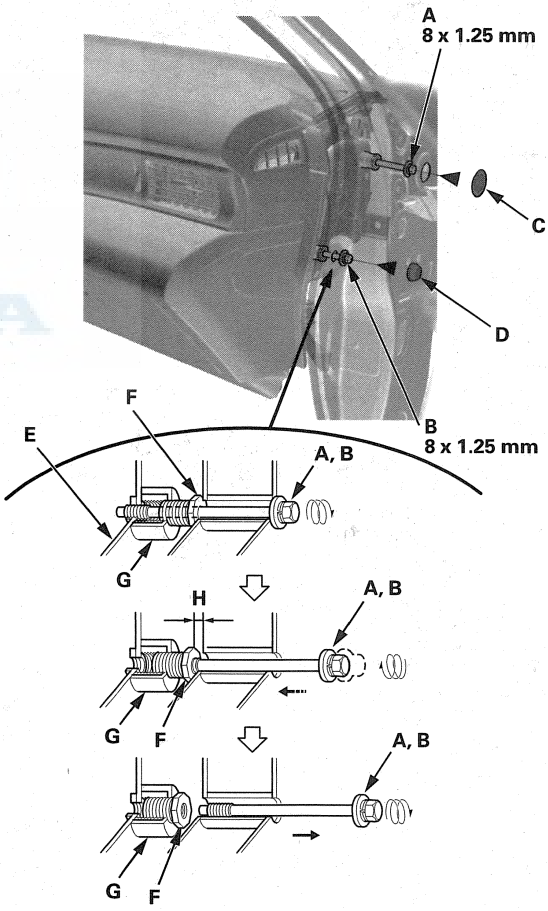
11. From under the dash, disconnect the passenger's door wire harness connector (A) and the the right engine compartment wire harness connectors (B).



12. Detach all of the harness and the connector clips.

13. Remove the special bolts (A, B) from outside the passenger's door.

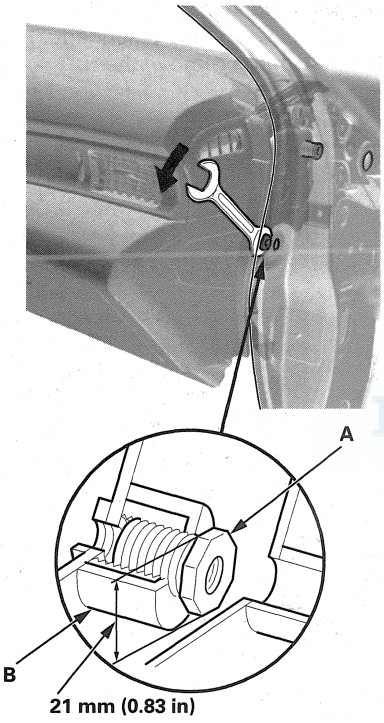
-1. Remove the caps (C, D).
-2. Loosen the special bolts until they disengage from the threads on the hanger beam side bracket (E), and engage the inside threads of the collar bolts (F). The thread lock on the special bolts makes the special bolts and the collar bolts turn together.
-3. Continue loosening the special bolts to turn the collar bolts into the space adjusters (G) until the nuts bottom out. This creates a gap (H) between the collar bolts and the body.
-4. Loosen the special bolts to disengage them from the collar bolts, then remove them.



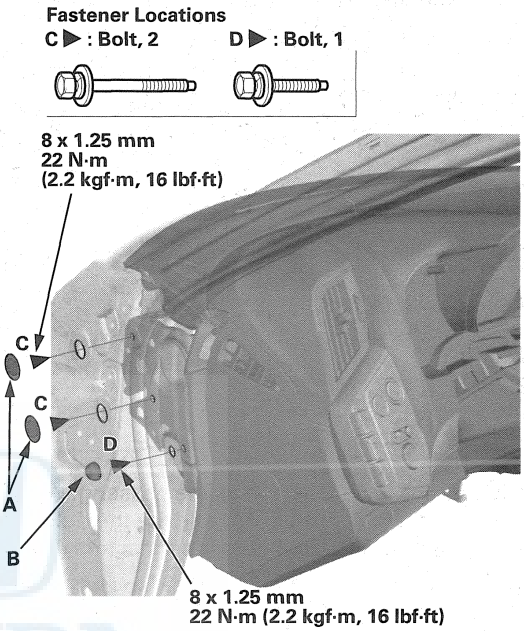
(cont'd)

Dashboard/Steering Hanger Beam Removal/Installation (cont'd)

14. Check that the collar bolts (A) are seated in the fixed space adjuster (B).
    -1. Insert a 21 mm open-end wrench to the collar bolt.
    -2. Gently turn the wrench counterclockwise.
    If the wrench turns easily, continue turning the collar bolt.
    -3. If the wrench does not turn easily, the collar bolt is seated.
    NOTE: If either collar bolt was not seated, replace the special bolts.

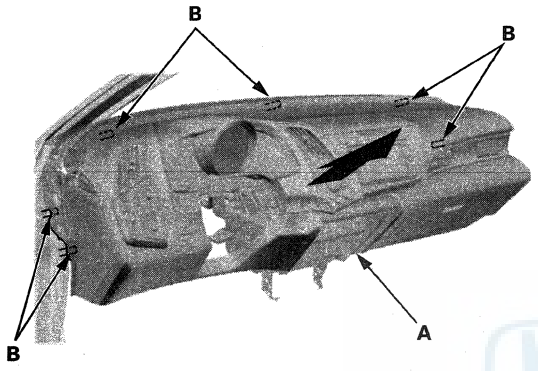


15. From outside the driver's door, remove the caps (A, B), then remove the dashboard mounting bolts (C, D).



16. Lift up on the dashboard (A) to release it from the guide pins (B). Carefully remove the dashboard through the door opening. Take care not to scratch the body with the collar bolts on the passenger's side.

    NOTE: Do not rest the dashboard on its lower center cover opening, or it may be damaged. Lay it on its front or back.

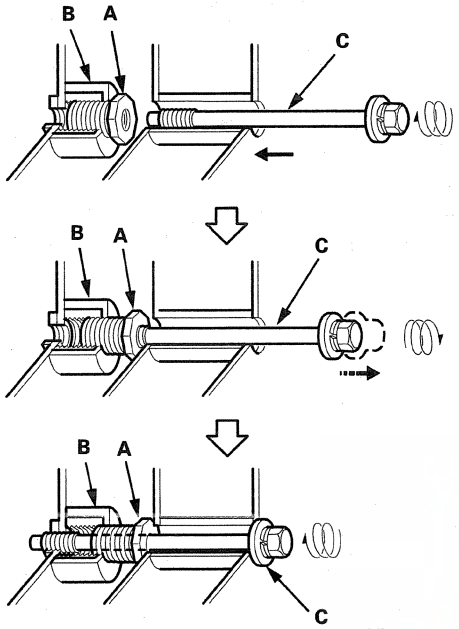


17. Install the dashboard in the reverse order of removal, and note these items:
    - Make sure the dashboard fits onto the guide pins correctly.
    - Before tightening the bolts, make sure the wire harnesses are not pinched.
    - Make sure the connectors and the air hose are plugged in properly.
    - Before reinstalling the dashboard, be sure the collar bolts (A) on the passenger's side can be screwed/unscrewed lightly by hand, and then screw them into the space adjuster (B) fully by hand. Do not tighten them with any tools.
    - Before reinstalling the dashboard, screw the special bolts (C) into the collar bolts, and check that they turn together. If they do not turn together, replace the special bolts.
    - After setting the dashboard in the body, reinstall all of the mounting bolts but do not tighten them. First tighten the driver's side mounting bolts to the specified torque. Next, tighten the special bolts. As you tighten the bolts, the collar bolts screw out of the space adjuster until they contact the body. Continue tightening the special bolts to the specified torque.
    - Tighten all remaining mounting bolts to the specified torque.
    - After tightening both side bracket mounting bolts, tighten the center frame mounting bolts.
    - Do the 12 volt battery terminal reconnection procedure (see page 22-86).

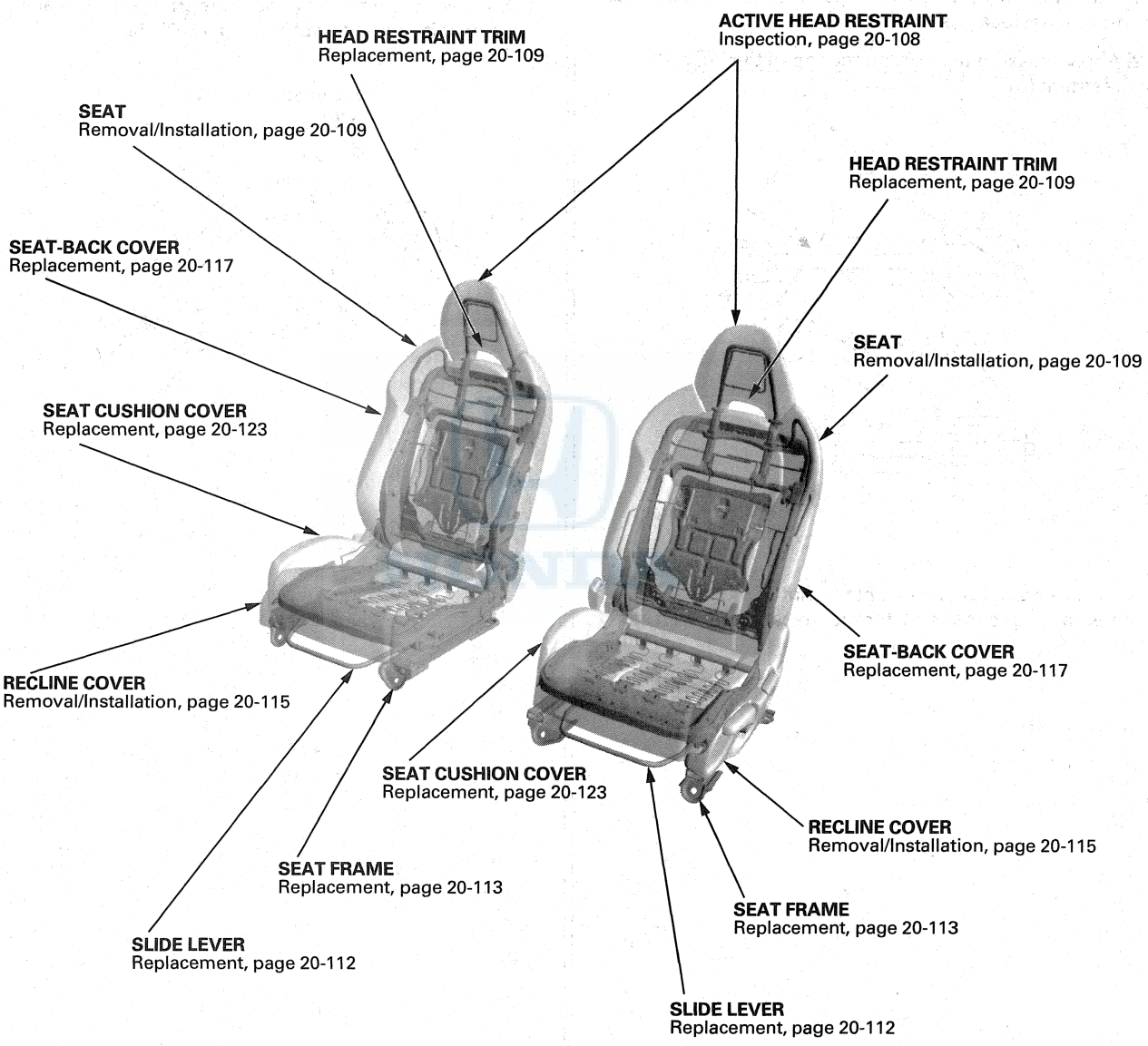
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Dashboard/Steering Hanger Beam Removal/Installation (cont'd)

Special bolt tightening on passenger's side



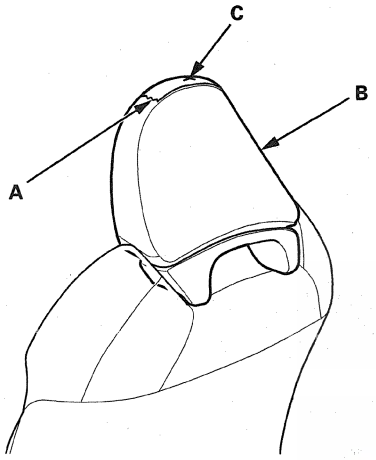
Component Location Index



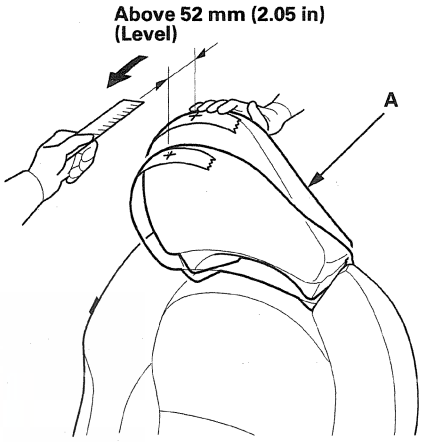
Active Head Restraint Inspection

NOTE: If the vehicle has been in a collision, always inspect the active head restraint, even if they appear reusable, by doing the following procedure.

1. Fold the seat-back forward, then recline the seat-back to the first lock position.
2. Apply masking tape (A) on the top of the head restraint (B).



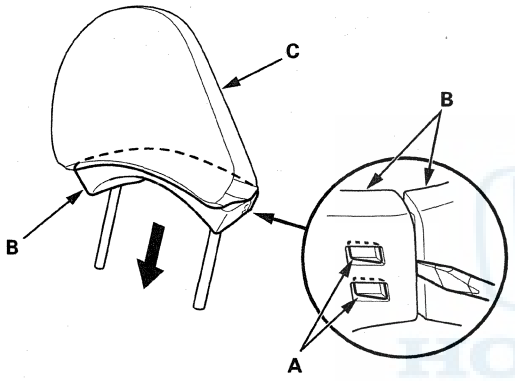
3. Make a mark (C) at the center point of the head restraint. Use the mark for the measurements in step 4.
4. Push the head restraint (A) forward, and measure the horizontal head restraint movement. The head restraint should move more than 52 mm (2.05 in) without resistance. If it is less than 52 mm (2.05 in), or the head restraint does not move smoothly, replace the seat frame assembly (see page 20-113).



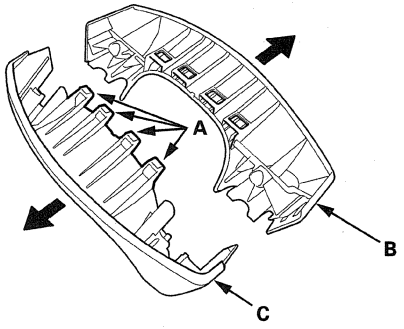
Head Restraint Trim Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the head restraint or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the head restraint (see step 7 on page 20-111).
2. Detach the hooks (A) of the head restraint trim (B) with a flat-tip screwdriver, then remove the trim from the head restraint (C).



3. Detach the hooks (A), then separate the head restraint trim (B) and the rear head restraint trim (C).



4. Install the trim in the reverse order of removal, and push the hooks into place securely.

Seat Removal/Installation

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

Do the ODS unit initialization (see page 24-26) after passenger's seat replacement.

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or tear the seat covers.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before removing the seat.
2. Adjust the steering column to the full tilt up position, and to the full telescopic in position.
3. Passenger's seat: Remove the passenger's seat belt lower anchor (see page 24-8).
4. Slide the seat about half way to the rear so you can access the seat mounting bolts. If you remove the manual height adjustable seat, fully raise the seat.

(cont'd)

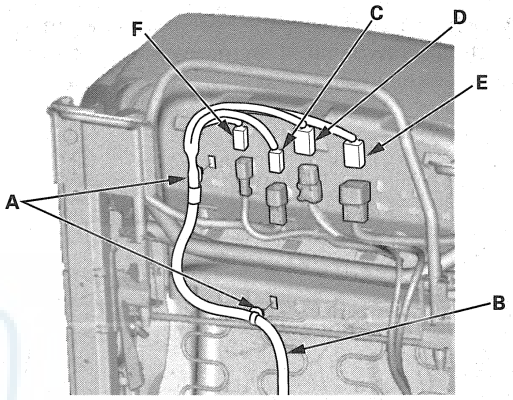
Seat Removal/Installation (cont'd)

5. Detach the fastener (A), then remove the bolts.

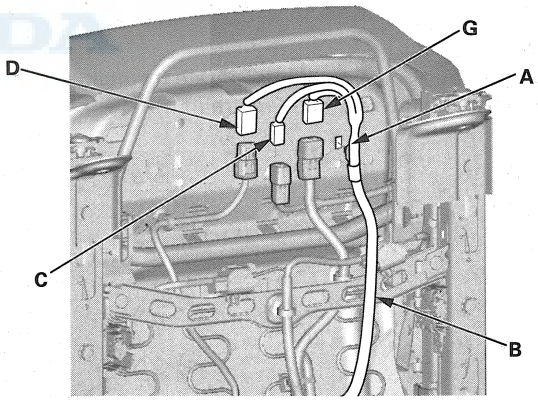


6. Lift up the seat, then detach the harness clips (A) of the floor wire harness (B), and disconnect the seat belt buckle switch connector (C), the side airbag connector (D), the seat heater wire harness connector (with seat heater) (E), and driver's seat position sensor (F). On the passenger's seat, disconnect the ODS unit harness connector (G).

Driver's seat

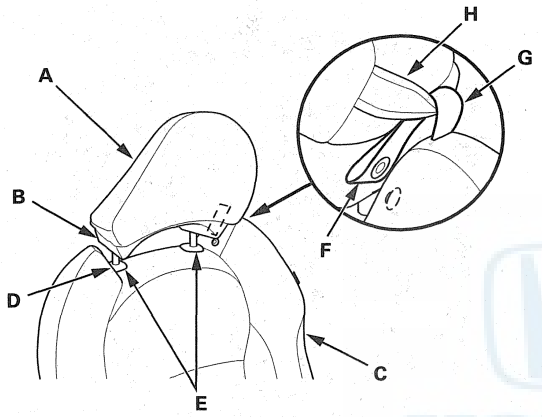


Passenger's seat



7. Remove the head restraint (A).

-1. Spread apart the gap between the head restraint trim (B) and the seat-back (C), and pull up the head restraint a little by pressing the release tab (D) of the head restraint guide (E).
-2. Detach the magnet (F) from the seat-back side strap (G), and pull it out from the head restraint side strap (H).
-3. Pull out the head restraint from the head restraint guide.



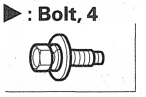
8. With the help of an assistant, carefully remove the seat through the door opening.

9. Install the seat in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
- When reinstalling the head restraint, connect the seat-back side strap through the head restraint side strap, then attach the magnet.
- Tighten the seat mounting bolts to the specified torque in the sequence shown. Slide the seat all the way back and tighten ① and ②, then slide it forward and tighten ③ and ④.
- Make sure each connector is plugged in properly.
- Push the clips into place securely.
- Tighten the bolts by hand first, then tighten them to specification with a torque wrench.
- Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Driver's seat

Fastener Locations

▶ : Bolt, 4



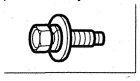


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Seat Removal/Installation (cont'd)

Passenger's seat

Fastener Locations
▶ : Bolt, 4

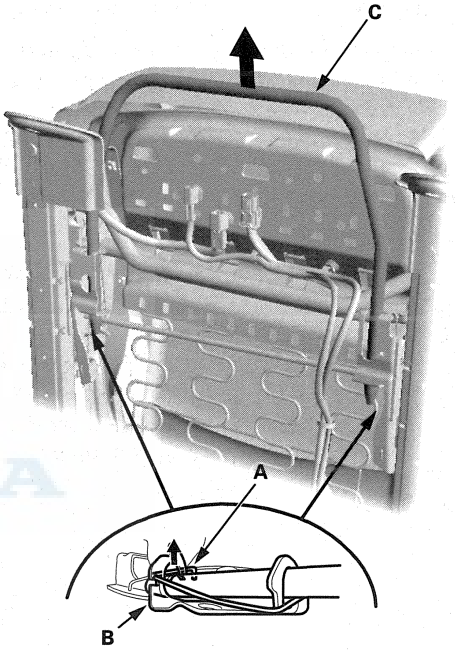




Slide Lever Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the seat covers or the related parts.

1. Remove the seat (see page 20-109).
2. Detach the spring (A) from the lever holder (B), then remove the slide lever (C).



3. Install the lever in the reverse order of removal, and push the spring into place securely.

Seat Frame Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations and the precautions and procedures before doing repairs or service.

Driver's Seat

Check the operation of the driver's seat position sensor after any of these actions (see page 24-30):

- Driver's seat position sensor replacement
- Cover plate (front side of driver's seat slide rail) replacement

NOTE

- Put on gloves to protect your hands.
- Apply oil to the pivot portions of the slide locks.
- Apply multipurpose grease to the sliding portions of the seat tracks.
- If the side airbag has deployed, replace the seat frame and related parts with new ones (see page 24-163).
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to tear or damage the seat covers.

1. Remove the seat (see page 20-109).
2. Remove these items:
   - Recline covers (see page 20-115)
   - Seat belt buckle (see page 24-6)
   - Seat-back cover/pad (see page 20-117)
   - Seat cushion cover/pad (see page 20-123)
   - Side airbag module (see page 24-171)
   - Driver's seat position sensor (see page 24-192)



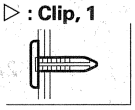
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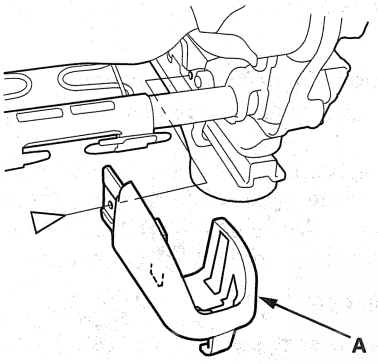
Seat Frame Replacement (cont'd)

3. Detach the clip, then remove the upper rail inner cover (A) and the upper rail outer cover (B).

Upper rail inner cover

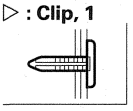
Fastener Location
▷ : Clip, 1

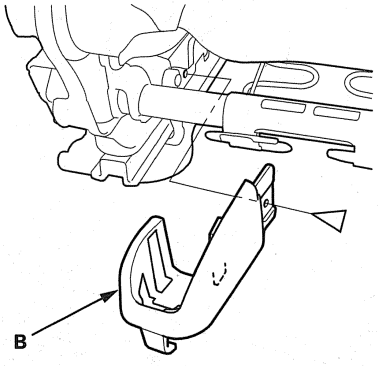




Upper rail outer cover

Fastener Location
▷ : Clip, 1





4. Install the new seat frame in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clip into place securely.

Passenger's Seat

Do the front passenger's weight sensor initialization (see page 24-27) after passenger's seat frame replacement.

NOTE
- Put on gloves to protect your hands.
- Apply oil to the pivot portions of the slide locks.
- Apply multipurpose grease to the sliding portions of the seat tracks.
- If the side airbag has deployed, replace the seat frame and related parts with new ones (see page 24-163).

1. Remove the seat (see page 20-109).
2. Remove these items:
   - Recline covers (see page 20-115)
   - Seat belt buckle (see page 24-6)
   - Seat-back cover/pad (see page 20-117)
   - Seat cushion cover/pad (see page 20-123)
   - Side airbag module (see page 24-171)
   - ODS unit (see page 24-190)

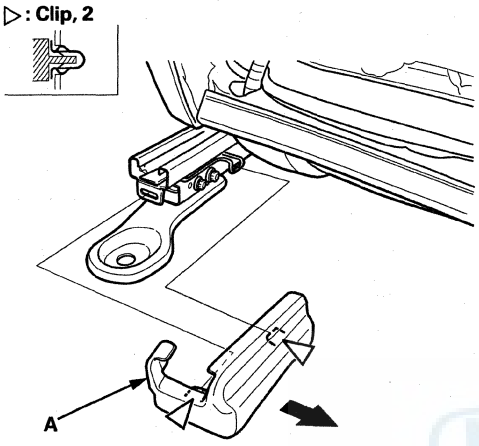


3. Detach the clips, then remove the upper rail inner cover (A) and the upper rail outer cover (B).

Upper rail inner cover

Fastener Location

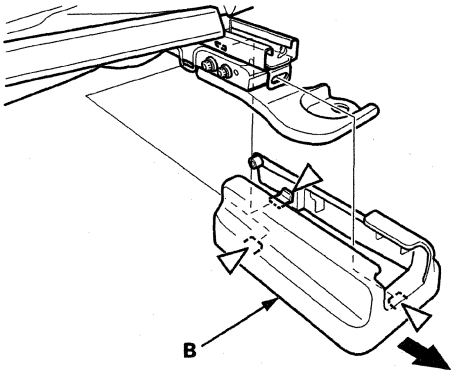
▷: Clip, 2



Upper rail outer cover

Fastener Location

▷: Clip, 3



4. Install the new seat frame in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clip into place securely.

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

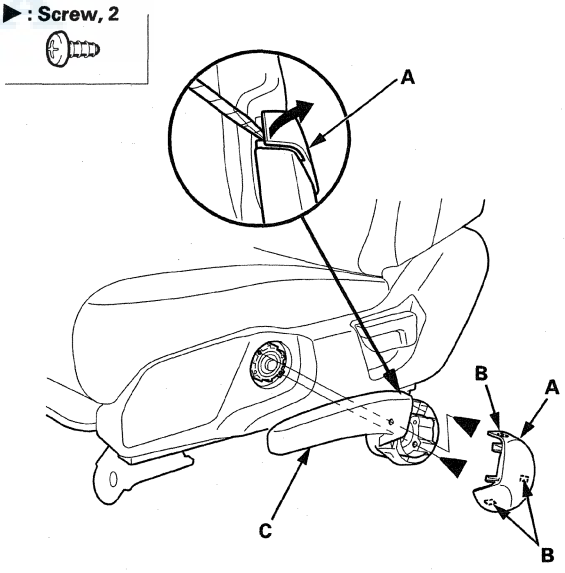
- Put on gloves to protect your hands.
- Take care not to tear the seams or damage the seat covers.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

Outer recline cover

1. Remove the seat (see page 20-109).
2. Driver's seat: Pull back the cap (A) to release the hooks (B), and remove the screws, then remove the height adjustment handle (C).

Fastener Locations

▶: Screw, 2



(cont'd)

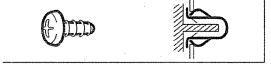
Recline Cover Removal/Installation (cont'd)

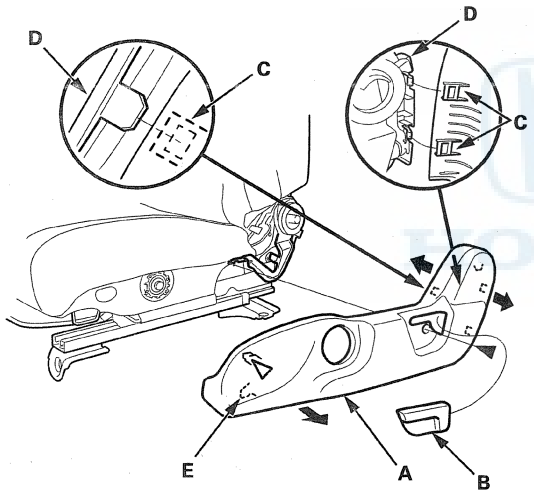
3. Remove the outer recline cover (A).

-1. Recline the seat-back fully.
-2. Remove the recline knob (B), and remove the screw.
-3. Using the appropriate trim tool, release the hooks (C) of the outer recline cover from the inner recline cover (D).
-4. Detach the clip and hook (E) by pulling the outer recline cover back by hand.
-5. Gently pull out the outer recline cover and remove it.

Driver's outer recline cover

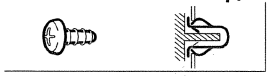
Fastener Locations
▶ : Screw, 1 ▷ : Clip, 1

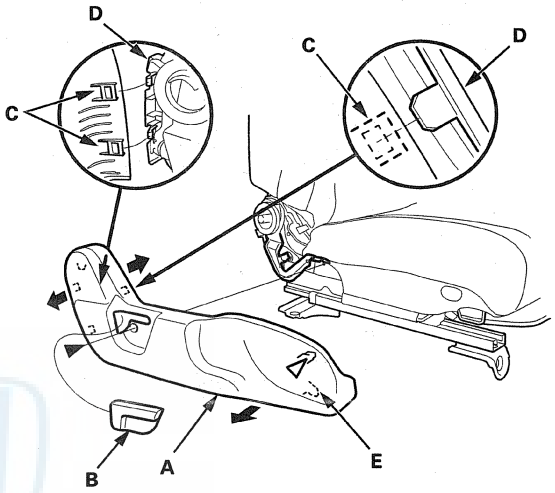




Passenger's outer recline cover

Fastener Locations
▶ : Screw, 1 ▷ : Clip, 1



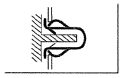


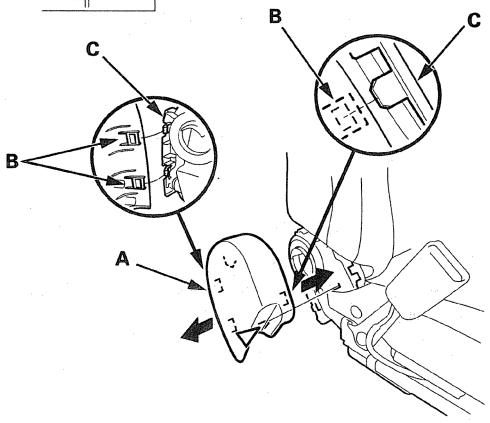
Center recline cover

4. Remove the center recline cover (A).

-1. Using the appropriate trim tool, release the hooks (B) of the center recline cover from the inner recline cover (C).
-2. Detach the clip, then remove the center recline cover.

Fastener Location
▷ : Clip, 1



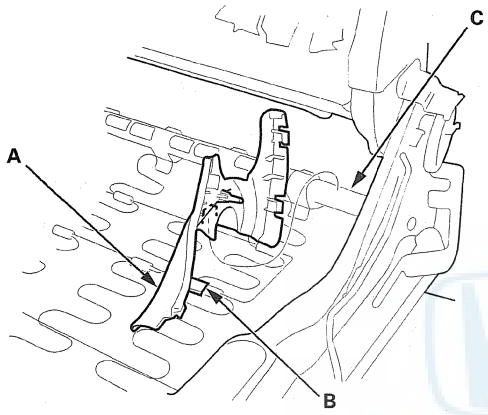


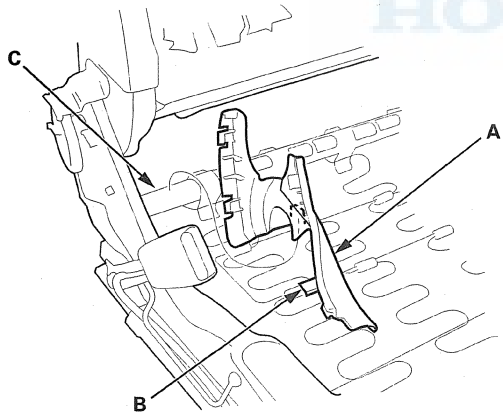
Inner recline cover

5. Remove the inner recline cover (A).

-1. Remove these items:
- Seat cushion cover/pad (see page 20-123)
- Seat-back cover/pad (see page 20-117)

-2. Detach the hooks (B), then remove the inner recline covers from the seat cushion frame pipe (C).





6. Install the recline cover in the reverse order of removal, and note these items:
- If the clips are damaged or stress-whitened, replace them with new ones.
- Push the clips and hooks into place securely.

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

Do the OPDS sensor initialization (see page 24-26) after passenger's seat-back cover replacement.

NOTE:
- Do not repair any tears or frayed spots of the seat-back cover. If necessary, replace the seat-back cover.
- Take care not to tear the seams or damage the seat covers.
- Put on gloves to protect your hands.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Passenger's seat: Do not touch the OPDS sensor in the seat-back cover/pad, and keep it away from oil. Oil can corrode the sensor causing it to fail.

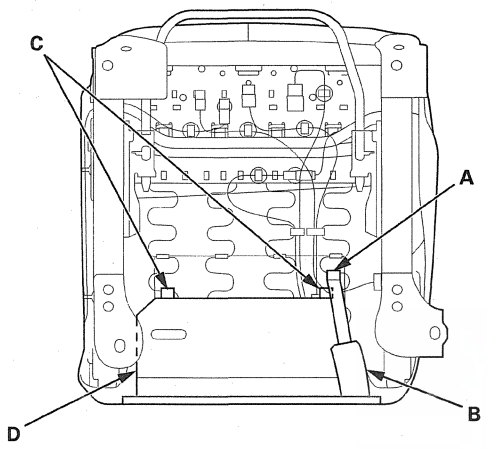
1. Remove the seat (see page 20-109).

(cont'd)

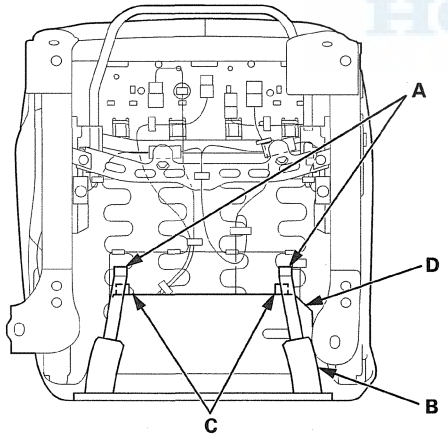
Seat-Back Cover Replacement (cont'd)

2. From under the seat cushion, release the hook strap (s) (A) of the seat-back cover (B) and the hooks (C) of the seat cushion cover (D) from the seat cushion frame spring.

Driver's seat

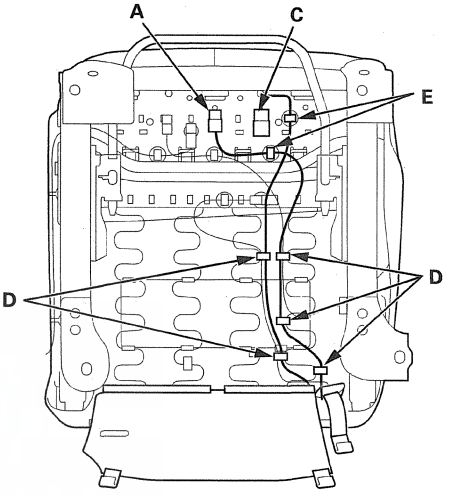


Passenger's seat

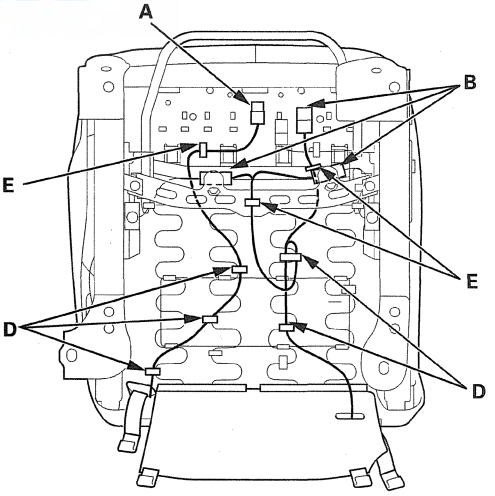


3. From under the seat cushion, disconnect the side airbag connector (A) , the ODS harness connectors (B) , and the seat heater connector (with seat heater) (C), remove the wire ties (D), and detach the wire harness clips (E), then pull it outside of the seat.

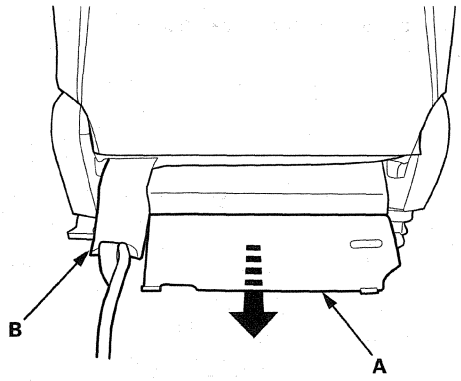
Driver's seat



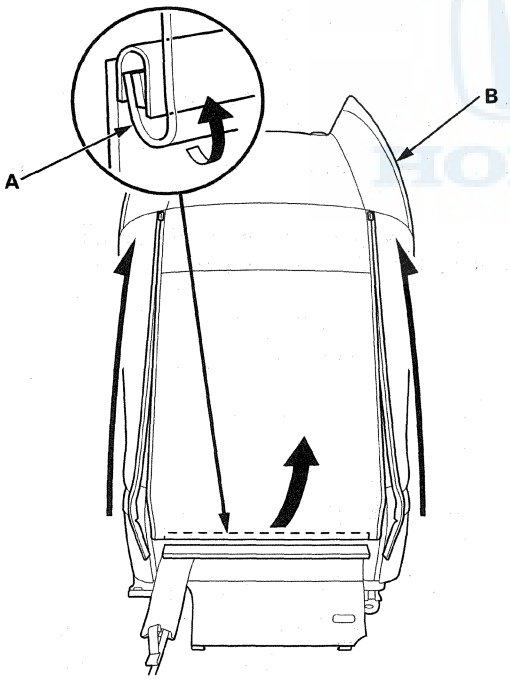
Passenger's seat



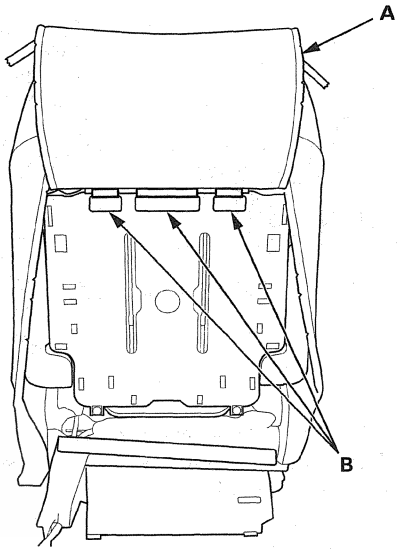
4. Pull back the seat cushion cover (A) and the seat-back cover (B).



5. From behind the seat-back, release the hook (A), and unzip the seat-back cover (B).



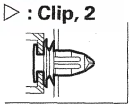
6. Pull back the seat-back cover (A), then release the hook strips (B) from the seat-back frame.

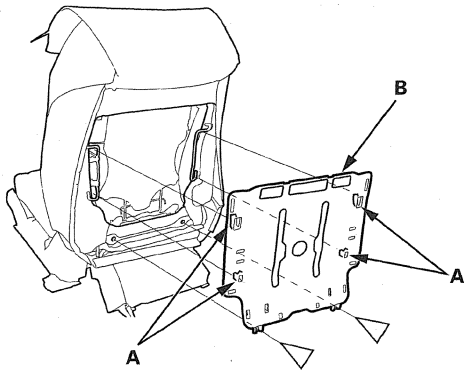


7. Detach the clips and the hooks (A), then pull down the protect board (B).

Fastener Locations

▷ : Clip, 2

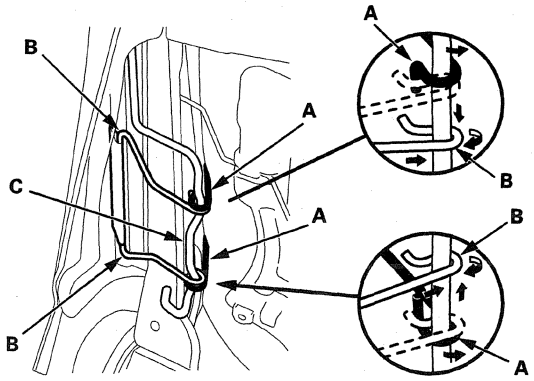




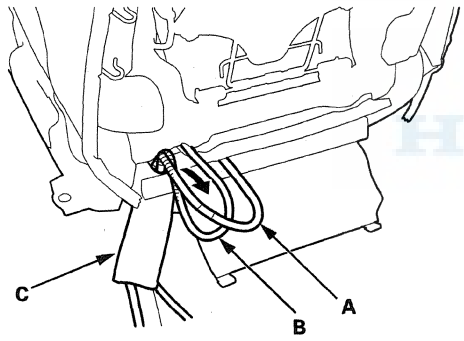
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Seat-Back Cover Replacement (cont'd)

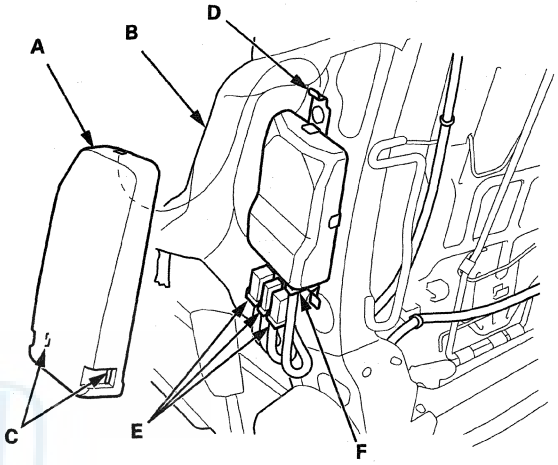
8. Release airbag attachment wire A and airbag attachment wire B from the seat-back frame (C).



9. Driver's seat: Pull the side airbag harness (A) and the seat heater harness (with seat heater) (B) out through the seat-back cover (C).



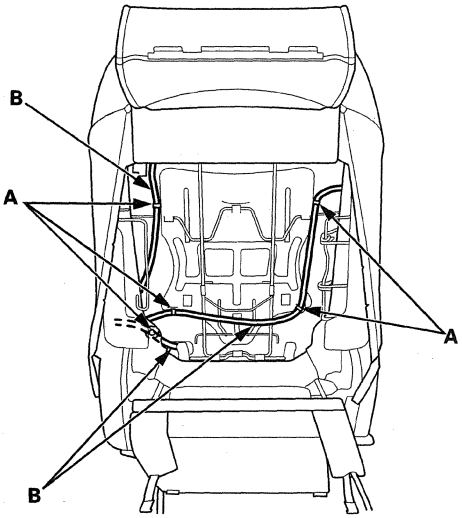
10. Passenger's seat: Remove the ODS unit cover (A).
    -1. Turn over the seat-back cover (B) as needed.
    -2. Release the cover from the lower hooks (C).
    -3. Pull the cover upward to release it from the upper hook (D).



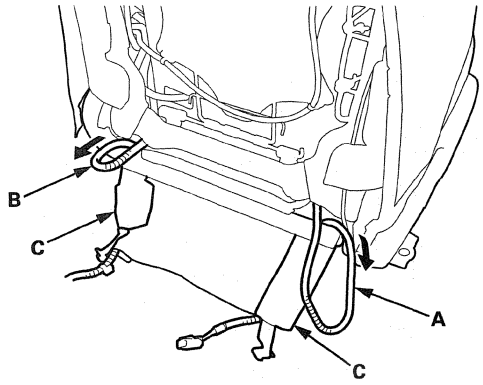
11. Passenger's seat: Disconnect the OPDS sensor connectors (E).

    NOTE: Do not disconnect the ODS unit 18P connector (F).

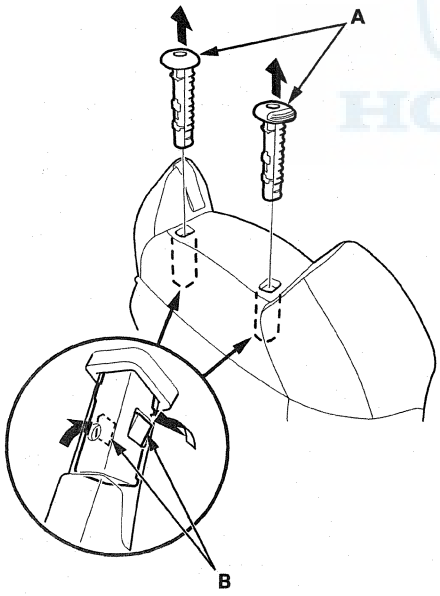
12. Passenger's seat: Detach the harness clips (A) fastening the OPDS sensor harness (B).



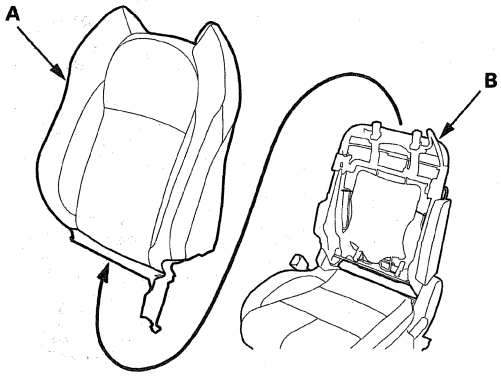
13. Passenger's seat: Pull out the side airbag harnesses (A) and the OPDS sensor harness (B) through the seat-back cover (C).



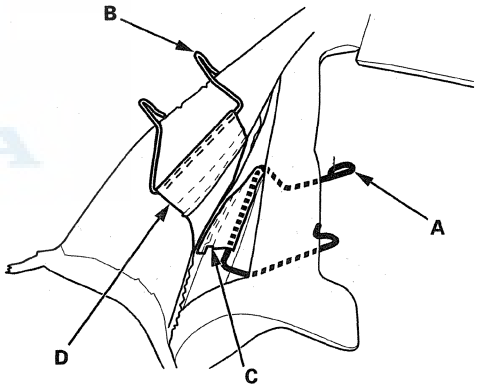
14. Pull out the head restraint guides (A) while pinching the tabs (B) on the middle of the guides, and remove them.



15. Remove the seat-back cover/pad (A) from the seat-back frame (B).



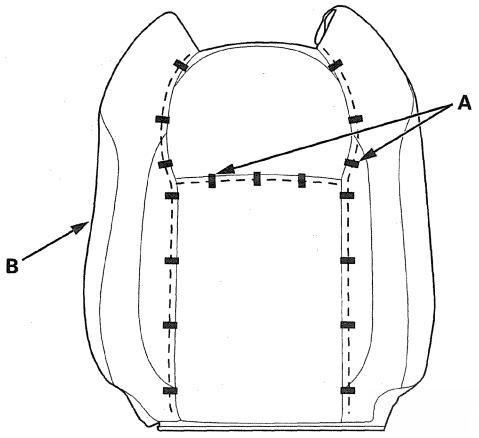
16. Remove airbag attachment wire A from the inside reinforcing cloth (C) and airbag attachment wire B from the outside reinforcing cloth (D).



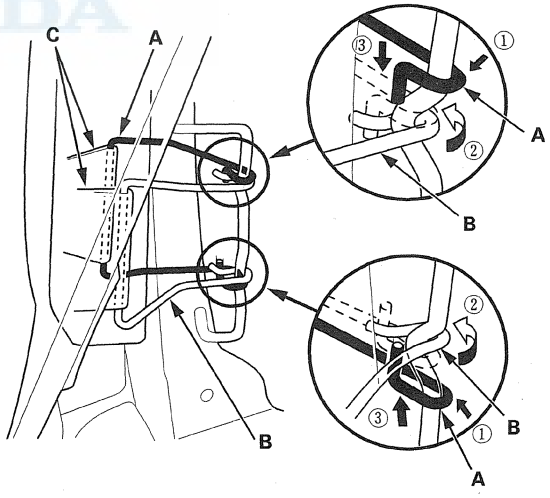
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Seat-Back Cover Replacement (cont'd)

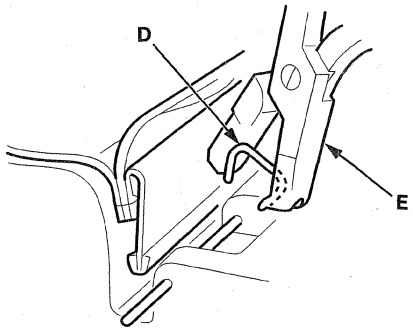
17. Pull back the edge of the seat-back cover all the way around, and release the upholstery rings (A), then remove the seat-back cover (B).



18. Install the seat-back cover in the reverse order of removal, and note these items:
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the clips, the hooks, and the hook strips.
    - Before installing the seat-back cover, make sure the airbag attachment wires (A, B) are installed in the reinforcing cloths (C) correctly.
    - Reinstall the airbag attachment wires (A, B) securely to the seat-back frame as shown.
    - Replace any upholstery rings (D) you removed with new ones. Install them with commercially available upholstery ring pliers (E).
    - Make sure the side airbag harness and the OPDS sensor harness (passenger's seat) are routed properly.
    - Use only original Honda replacement seat-back covers.
    - Push the clips and hooks into place securely.
    - Make sure the the seat heater harness (if equipped) are routed properly.



Seat Cushion Cover Replacement



Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

SRS components are located in this area. Review the SRS component locations (see page 24-11)and the precautions and procedures (see page 24-13) before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to tear the seams or damage the seat covers.
- Do not repair any tear or frayed spots of the seat cushion cover. If necessary, replace the seat cushion cover.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- On the passenger's seat, do not touch the OPDS sensor in the seat-back pad, and keep it away from oil. Oil can corrode the sensor causing it to fail.

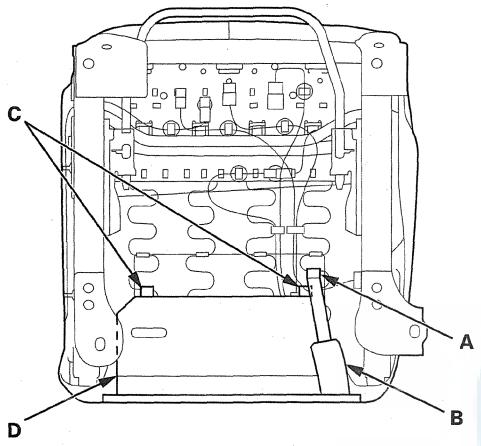
1. Remove the seat (see page 20-109).
2. Remove the recline cover (see page 20-115).

(cont'd)

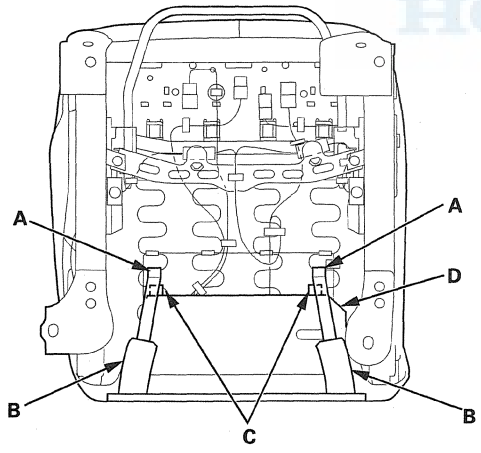
Seat Cushion Cover Replacement (cont'd)

3. From under the seat cushion, release the hook strap (s) (A) of the seat-back cover (B) and the hooks (C) of the seat cushion cover (D) from the seat cushion frame spring.

Driver' seat

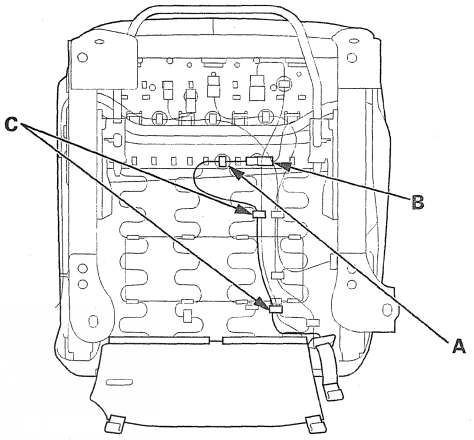


Passenger's seat



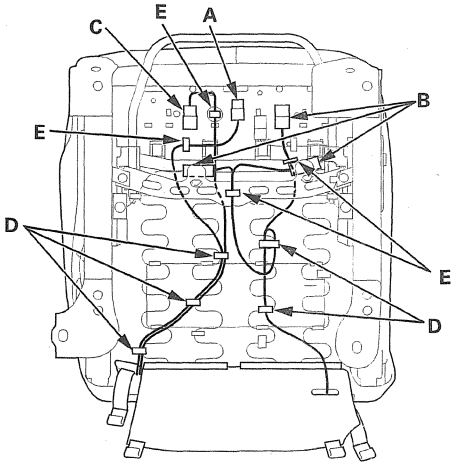
4. From under driver's seat cushion, detach the wire harness clips (A) , the seat heater connectors (with seat heater) (B) , and wire ties (C), then pull it to out side of the seat.

Driver' seat

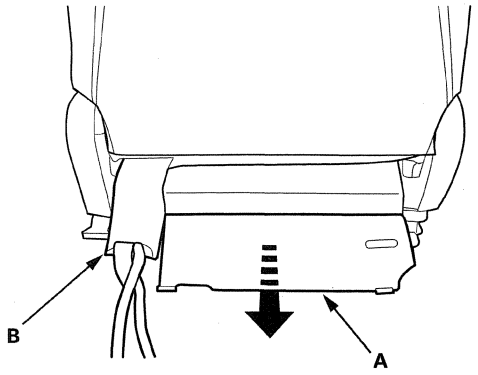


5. From under the seat cushion, disconnect the side airbag connector (A) the ODS harness connectors (B) and the Seat heater connector (with Seat heater) (C), remove the wire ties (D), and detach the wire harness clips (E), then pull it outside of the seat.

Passenger's seat



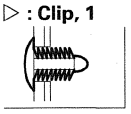
6. Pull back the seat cushion cover (A) and the seat-back cover (B).

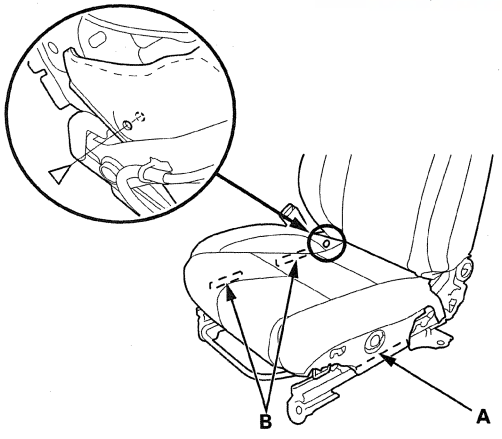


7. Remove the clip, then release the hook strips (A, B) from the seat cushion frame.

Driver's seat

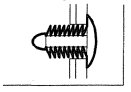
Fastener Location
▷ : Clip, 1

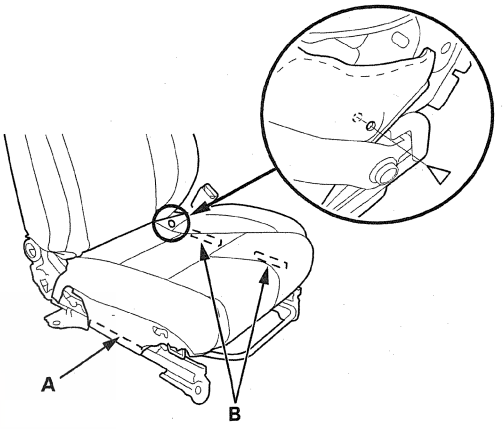




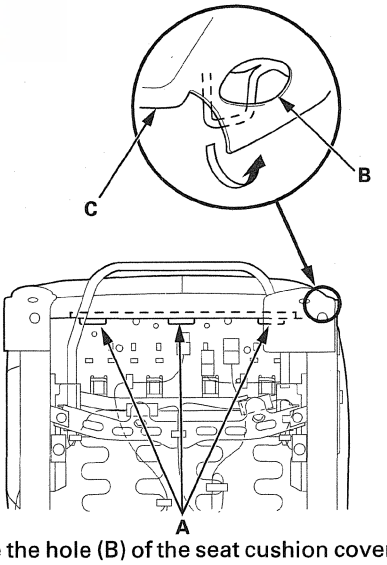
Passenger's seat

Fastener Location
▷ : Clip, 1





8. From under the seat cushion, release the hook strips (A) from the seat cushion frame.

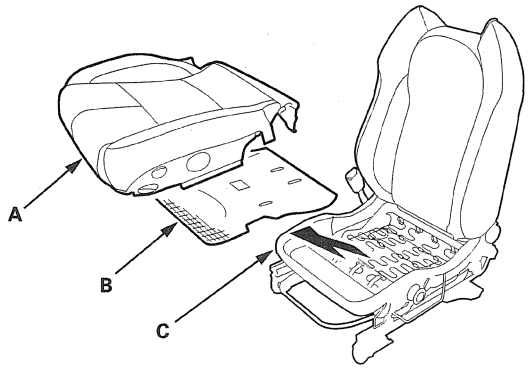


9. Release the hole (B) of the seat cushion cover (C) from the seat frame.

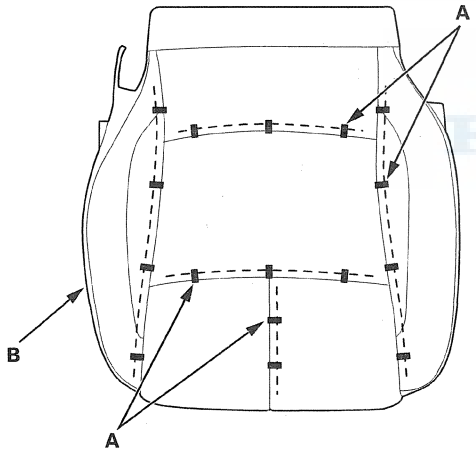
(cont'd)

Seat Cushion Cover Replacement (cont'd)

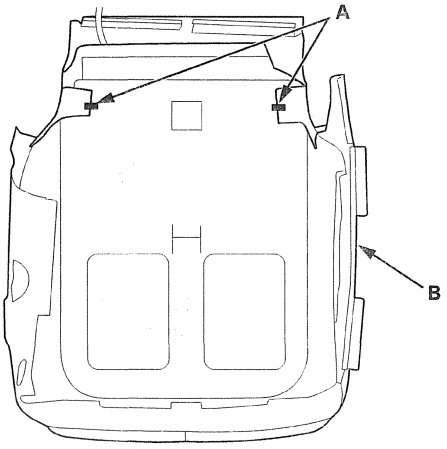
10. Remove the seat cushion cover/pad (A) and the silencer (B) from the seat frame (C).



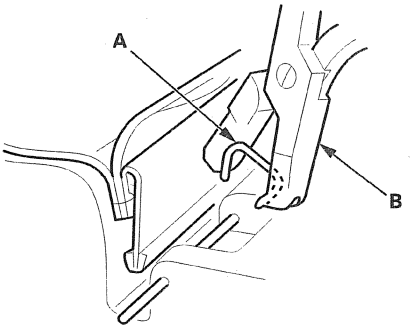
11. Pull back the edge of the seat cushion cover all the way around, and release the upholstery rings (A), then remove the seat cushion cover (B).



12. Release the upholstery rings (A) from under the seat cushion (B).

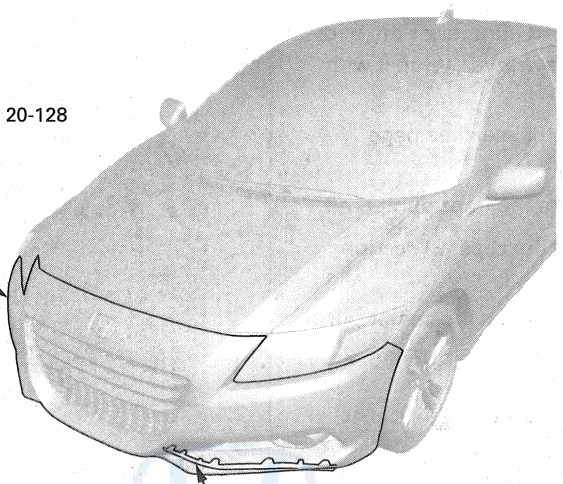


13. Install the cover in the reverse order of removal, and note these items:
    - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the clips, the hooks, and the hook strips.
    - Replace any upholstery rings (A) you removed with new ones. Install them with commercially available upholstery ring pliers (B).
    - If the clips are damaged or stress-whitened, replace them with new ones.
    - Push the clips into place securely.
    - Make sure the the seat heater harness (if equipped) are routed properly.

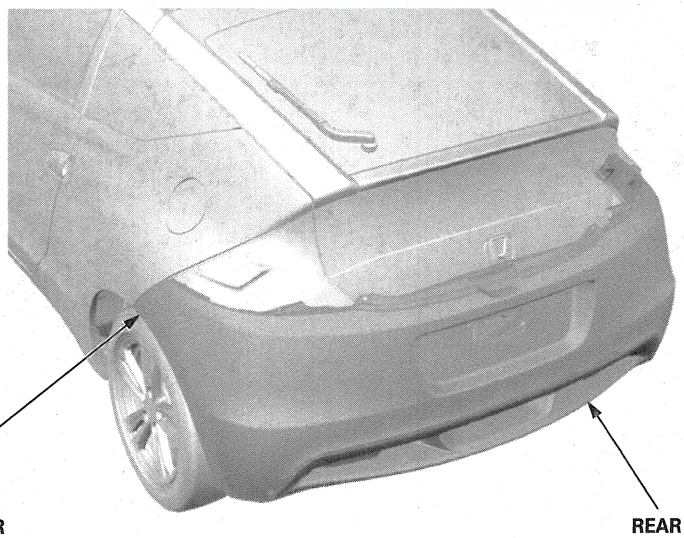


Component Location Index

Front



Rear



Front Bumper Removal/Installation

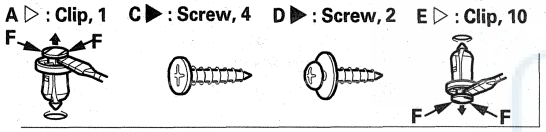
NOTE:
- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the front bumper.
- Take care not to scratch the front bumper or the body.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

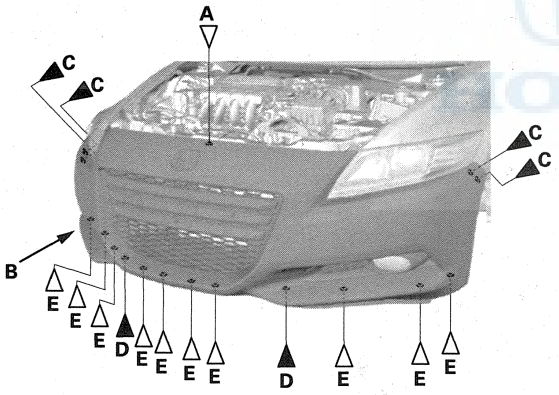
1. Remove the front bumper center seal (see page 20-149).
2. Remove the upper clip (A) from the front bumper (B).
3. Remove the screws (C, D) and the clips (E) securing the front bumper.

   NOTE: To release the clips, pry up on the center pin at the notch (F).

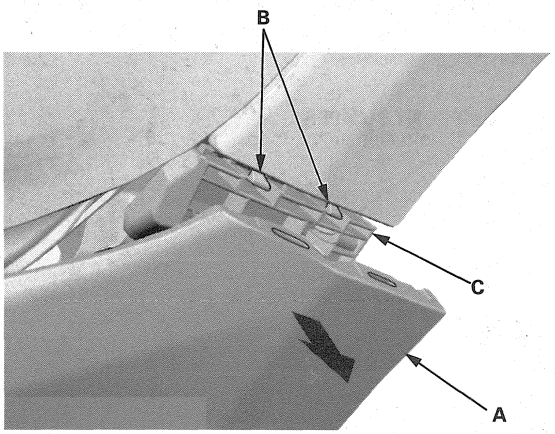
Fastener Locations

A ▷ : Clip, 1 C ▶ : Screw, 4 D ▶ : Screw, 2 E ▷ : Clip, 10

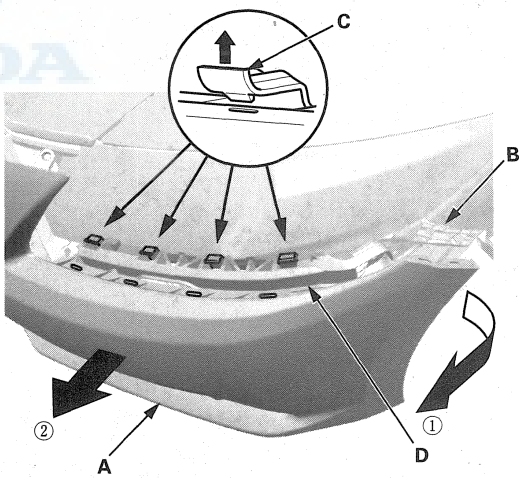




4. Pull out the front bumper (A) at the wheel arch areas to release it from the hooks (B) on the side spacers (C).

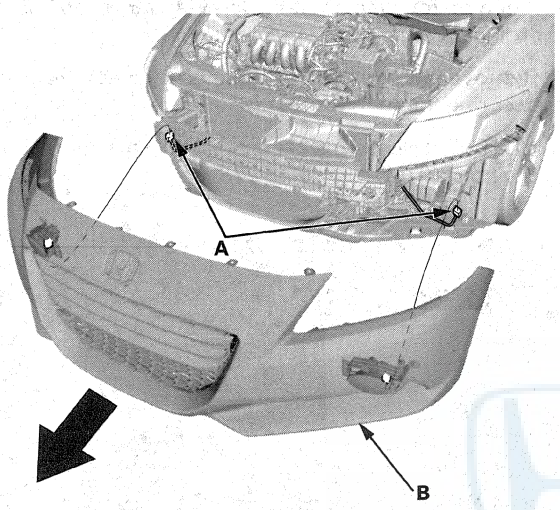


5. With the help of an assistant, pull both sides of the front bumper (A) away from the side spacer (B). Then pull out the front bumper to release the hooks (C) on the upper beam (D).



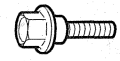
6. Disconnect the fog light connectors (A), then remove the front bumper (B).

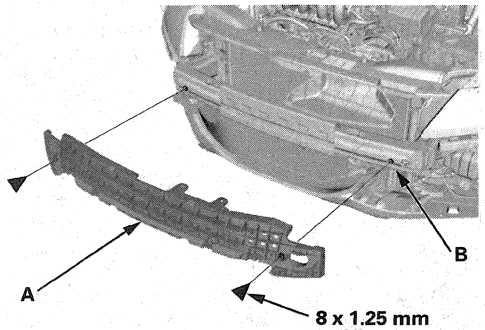
NOTE: If you are only removing the front bumper, go to step 9. If you are doing further disassembly, proceed to step 7.



7. If necessary, remove the bolts, then remove the front bumper absorber (A) from the front bumper beam (B).

Fastener Locations
▶ : Bolt, 2



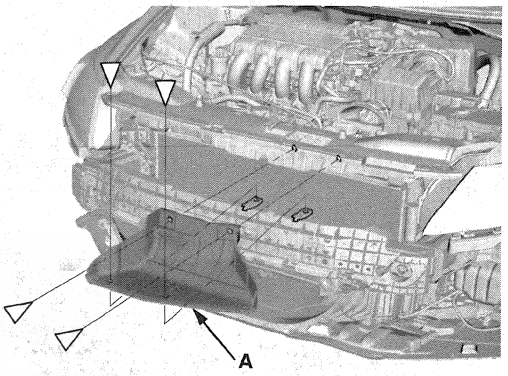


Cooling guide replacement

8. If necessary, remove the clips, then remove the cooling guide (A) from the body.

Fastener Locations
▷ : Clip, 4





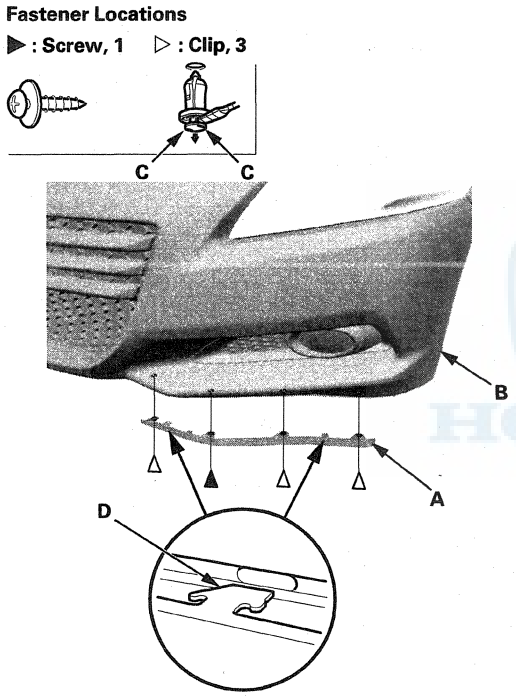
9. Install the bumper in the reverse order of removal, and note these items:
   - Make sure the fog light connectors are plugged in properly.
   - Make sure the front bumper engages the hooks (of both upper beams and side spacers) on each side securely.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and hooks into place securely.

Front Air Spoiler Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the front bumper.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the screw and the clips securing the front air spoiler (A) from under the front bumper (B).

   NOTE: To release the clips, pry up on the center pin at the notch (C).



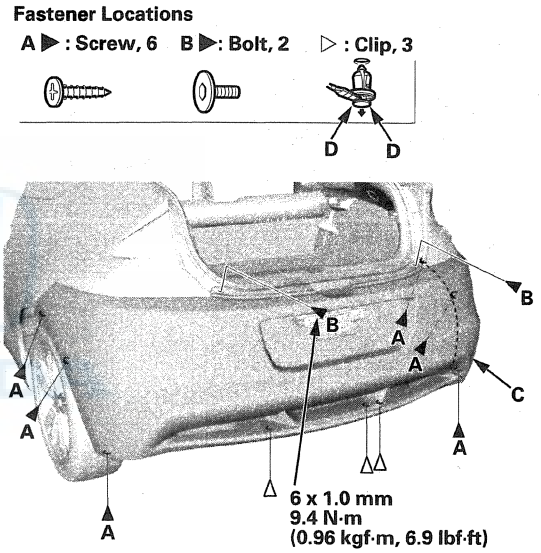
2. Pull back the front air spoiler to detach the hooks (D) and remove the spoiler.
3. Install the front air spoiler in the reverse order of removal:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

Rear Bumper Removal/Installation

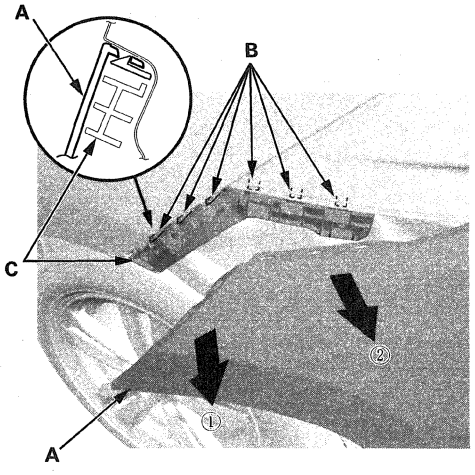
NOTE:
- Put on gloves to protect your hands.
- Have an assistant help you when removing and installing the rear bumper.
- Take care not to scratch the rear bumper or the body.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the screws (A), the bolts (B), and the clips securing the rear bumper (C).

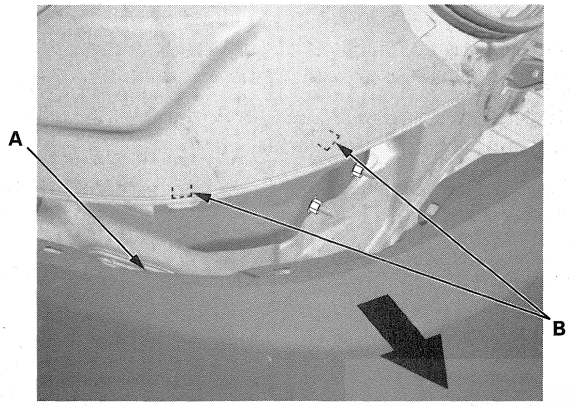
   NOTE: To release the clips, pry up on the center pin at the notch (D).



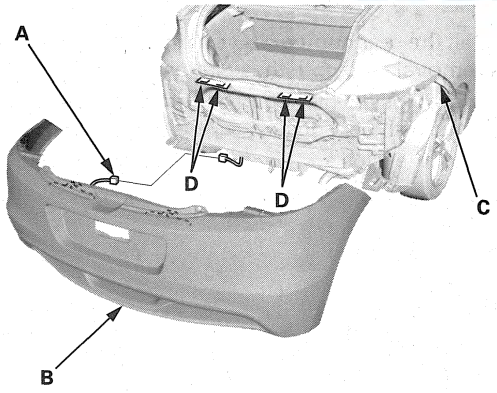
2. Pull out one side of the rear bumper (A) to release the hooks (B) on the side spacer (C) as shown. Repeat this step on the opposite side.



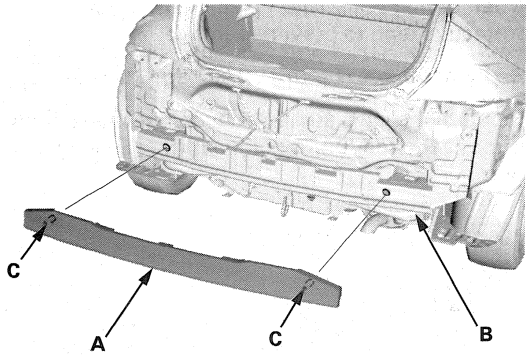
3. Pull out one side of the rear bumper (A) to release the hooks (B) on the body as shown. Repeat this step on the opposite side.



4. Disconnect the license subharness connector (A) from under the rear bumper (B). With the help of an assistant, while pulling the wheel arch portion away from the side spacer (C), pull out the rear bumper to release the hooks (D) on the body.



5. If necessary, remove the rear bumper absorber (A) from the rear bumper beam (B) by pulling the absorber to release the projections (C) on both sides.



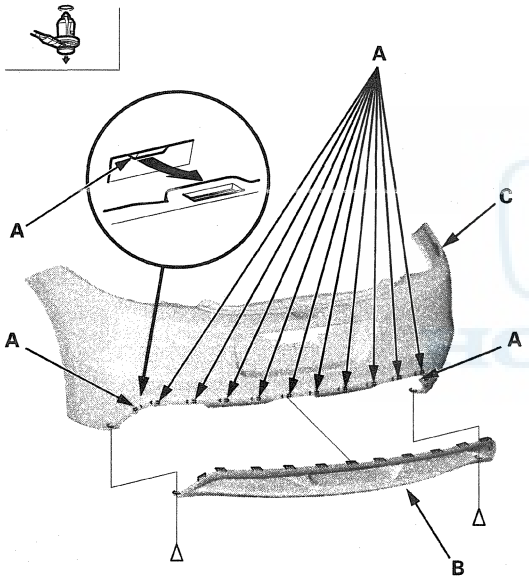
6. Install the bumper in the reverse order of removal, and note these items:
   - Make sure the rear bumper engages the hooks (of both the side spacers) on each side securely.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips, the hooks, and the projections into place securely.
   - Make sure the connector is plugged in properly.

Rear Bumper Lower Trim Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

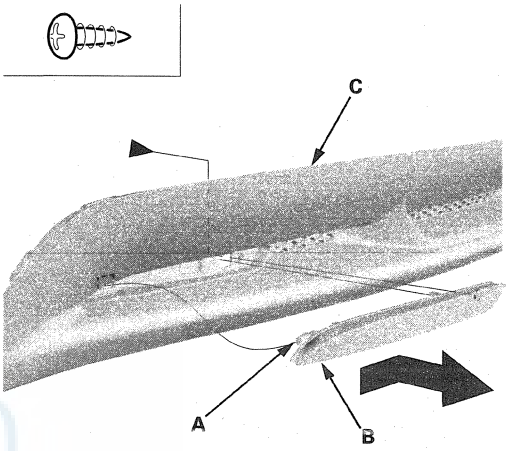
1. Remove the rear bumper (see page 20-130).
2. Remove the clips and detach the hooks (A), then remove the rear bumper lower trim (B) from the rear bumper (C).

Fastener Locations
▷ : Clip, 2



3. If necessary, remove the screw and detach the hook (A), then remove the rear bumper diffuser (B) from the rear bumper lower trim (C).

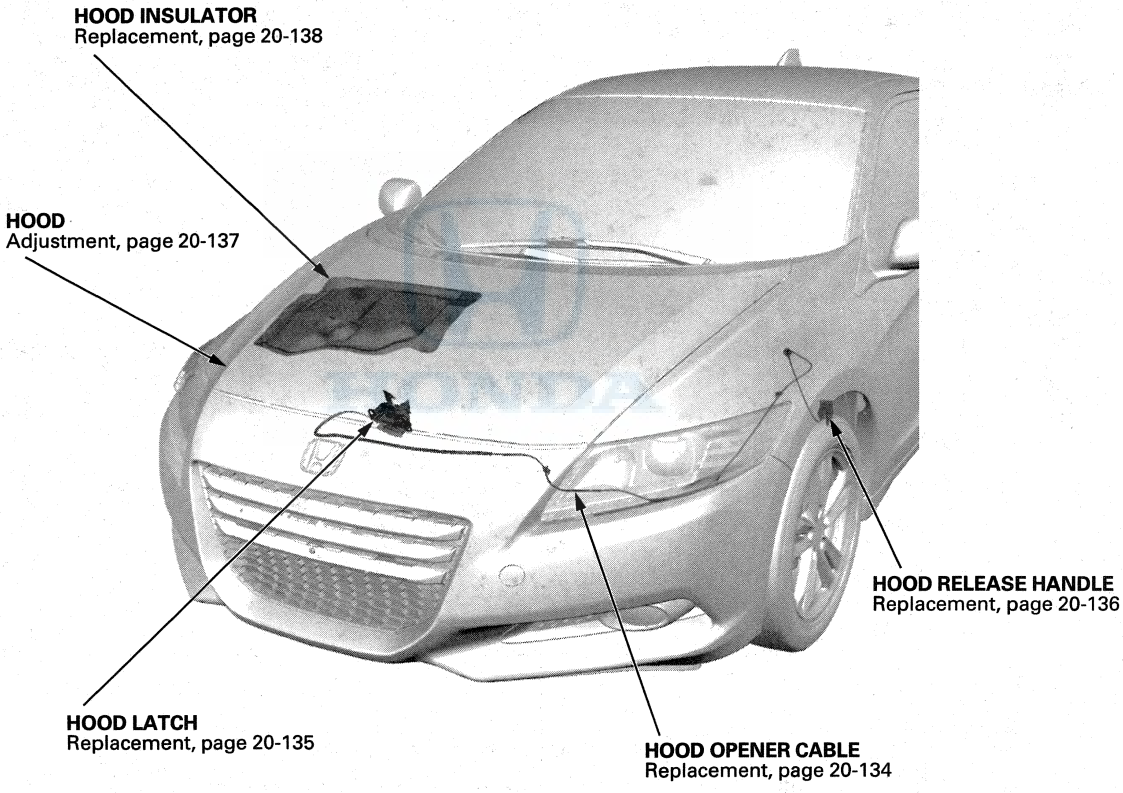
Fastener Locations
▶ : Screw, 1



4. Install the rear bumper lower trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

Hood

Component Location Index



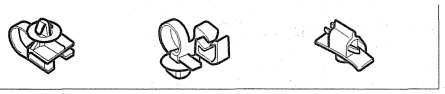
Hood Opener Cable Replacement

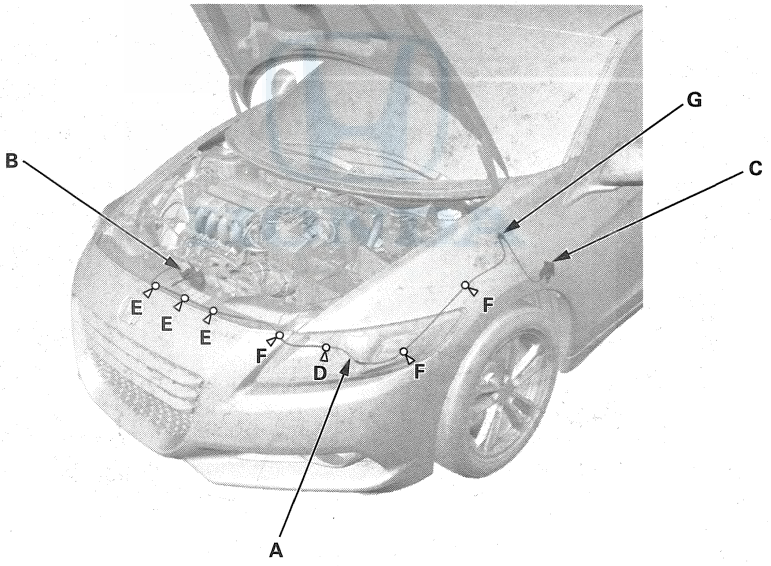
NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- Take care not to kink the hood opener cable.

1. Remove these items:
   - Left front inner fender (see page 20-162)
   - Kick panel, driver's side (see page 20-52)
2. Disconnect the hood opener cable (A) from the hood latch (B), and disconnect the hood opener cable from the hood release handle (C).

Fastener Locations

D ▷ : Clip, 1 **E ▷ : Clip, 3** **F ▷ : Clip, 3**



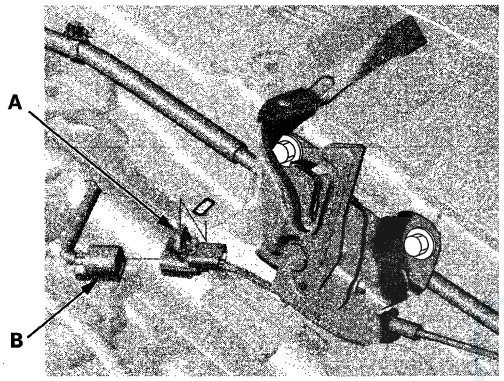


3. Detach the clips (D, E, F) with a clip remover, and remove the grommet (G) from the body.
4. Install the cable in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure the cable is connected properly.
   - Make sure the hood opens properly and locks securely.
   - Push the clips into place securely.

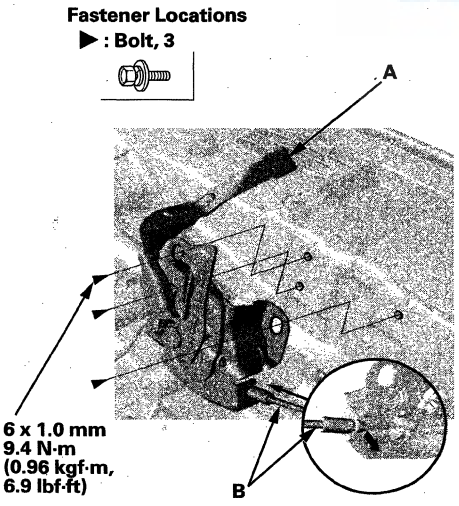
Hood Latch Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- Take care not to kink the cable.

1. Detach the connector clip (A), then disconnect the security hood switch connector (B).

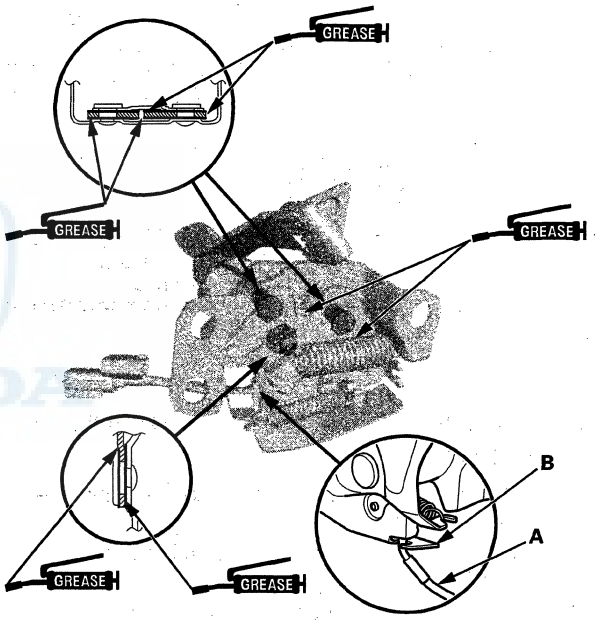


2. Remove the bolts, then remove the hood latch (A) from the body.



3. Disconnect the hood opener cable (B) from the hood latch.

4. Install the latch in the reverse order of removal, and note these items:
   - Apply multipurpose grease to each location of the hood latch indicated by the arrows.
   - Make sure the hood opener cable is connected properly and the hood latch switch connector is plugged in properly.
   - Adjust the hood latch alignment (see page 20-137).
   - Make sure the hood opens properly and locks securely.
   - Route the security hood switch harness (A) through the hook (B) correctly as shown.

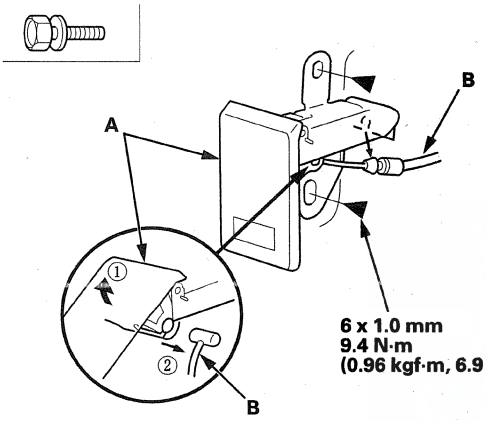


Hood Release Handle Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body.
- Take care not to kink the cable.

1. Remove the kick panel, driver's side (see page 20-52).
2. Remove the bolts, then remove the hood release handle (A).

Fastener Locations
▶ : Bolt, 2

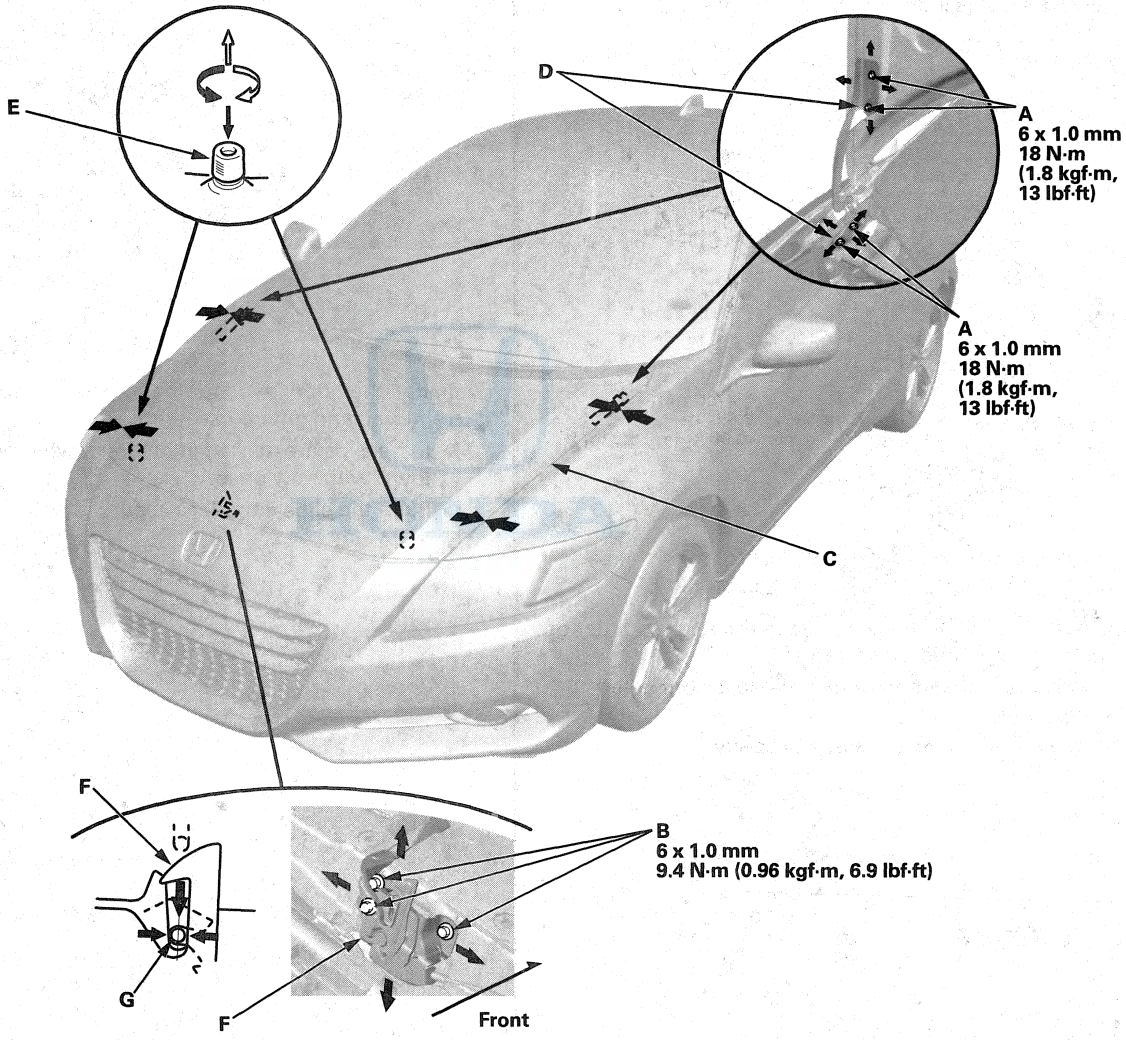


3. Disconnect the hood opener cable (B) from the hood release handle.
4. Install the hood release handle in the reverse order of removal, and note these items:
   - Make sure the hood opener cable is connected properly.
   - Make sure the hood opens properly.

Hood Adjustment

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the hood, the body, or the related parts.

1. Remove the hood hinge cover (see page 20-153).
2. Slightly loosen the hood hinge mounting bolts (A) and the hood latch mounting bolts (B).

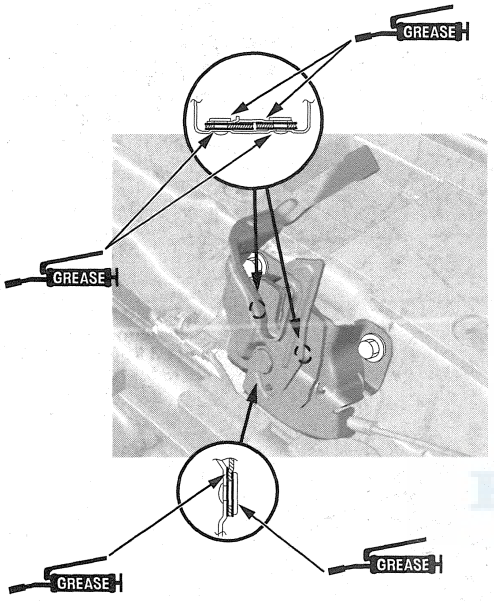


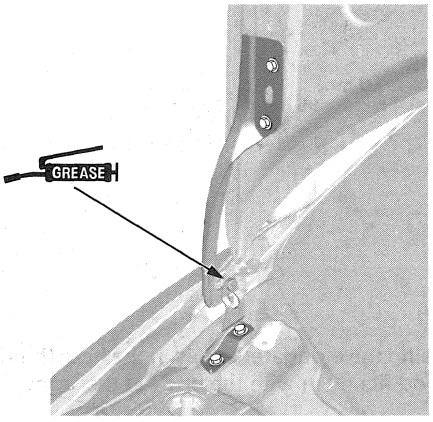
3. Adjust the hood (C) alignment in the following sequence:
   - Adjust the hood right and left, as well as forward and rearward, by using the elongated holes in the hood hinges (D).
   - Turn the hood edge cushions (E), as necessary, to make sure the hood fits flush with the body at the front and side edges.
4. Adjust the hood latch (F) to obtain the proper height at the forward edge, and move the hood latch right or left until the striker (G) is centered in the hood latch.

(cont'd)

Hood Adjustment (cont'd)

5. Tighten the bolts to the specified torque.
6. Check that the hood opens properly and closes securely.
7. Apply touch-up paint to the hinge mounting bolts and around the hinges, and let the paint dry.
8. Apply multipurpose grease to the hood latch and the hood hinges as indicated by the arrows.





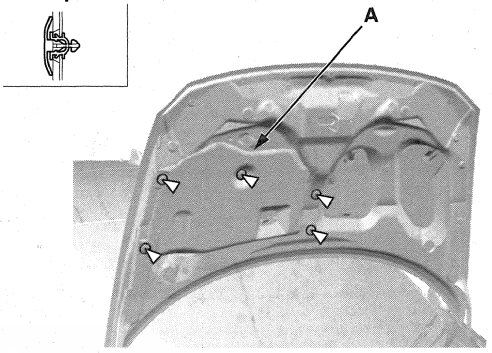
9. Reinstall all removed parts.

Hood Insulator Replacement

NOTE: Take care not to scratch the hood.

1. Detach the clips with a clip remover, then remove the hood insulator (A).

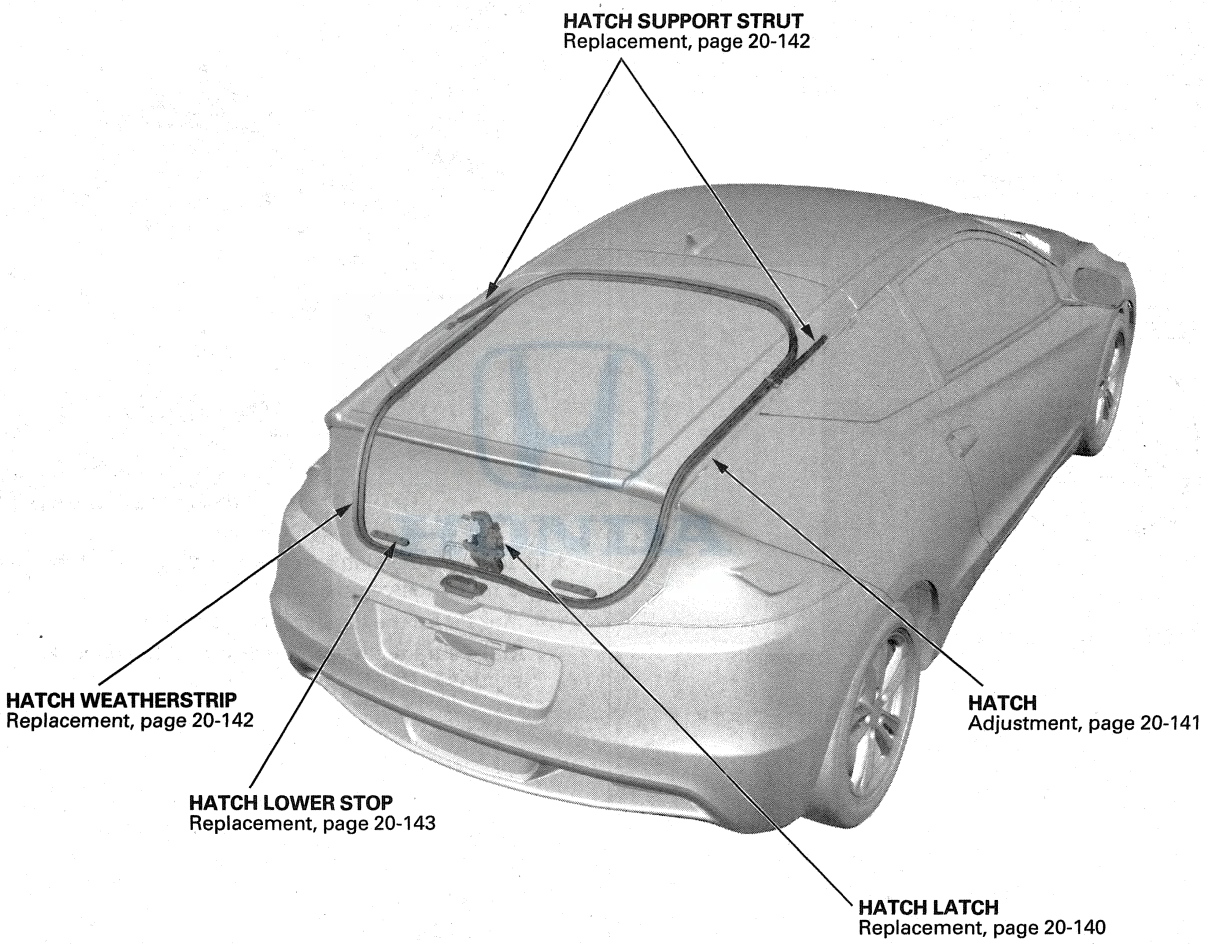
Fastener Locations
▷ : Clip, 5



2. Install the hood insulator in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

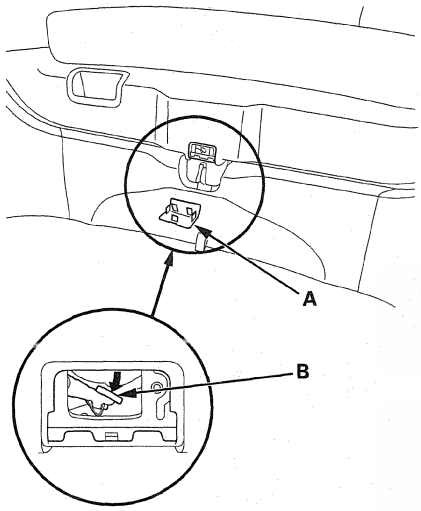
Hatch

Component Location Index



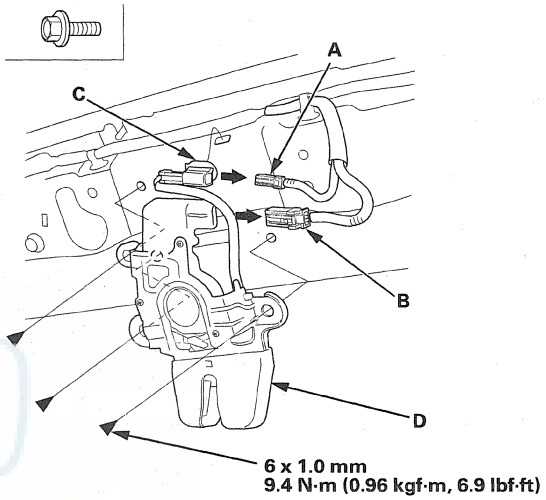
Hatch Latch Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the hatch or the related parts.
- If the hatch latch cannot be unlocked by using the hatch outer handle switch, remove the maintenance lid (A) from the hatch lower trim, then unlock the hatch latch by turning the lock lever (B) as shown.



1. Remove the hatch lower trim (see page 20-66).
2. Disconnect the hatch latch switch connector (A) and the hatch release actuator connector (B) and detach the connector clip (C), then remove the bolts securing the hatch latch (D) from the hatch.

Fastener Locations
▶ : Bolt, 3

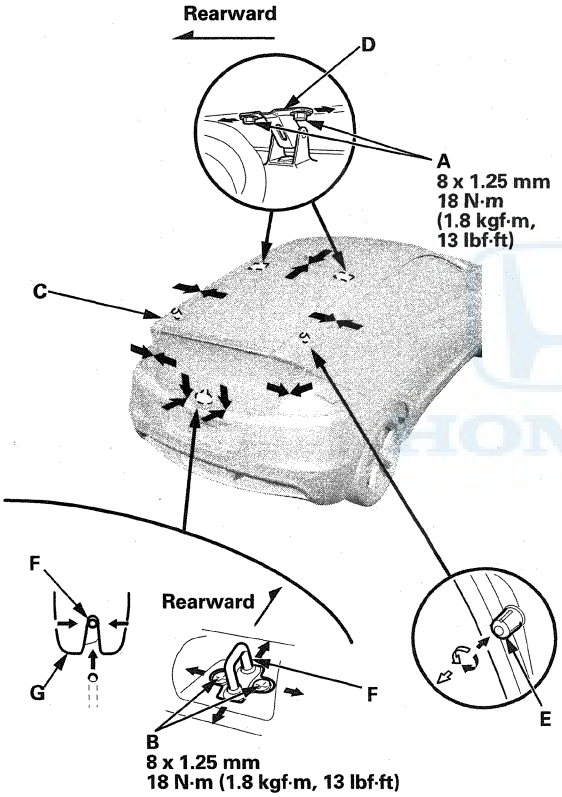


3. Install the hatch latch in the reverse order of removal, and note these items:
   - Make sure the connectors are plugged in properly.
   - Make sure the hatch opens properly and locks securely.

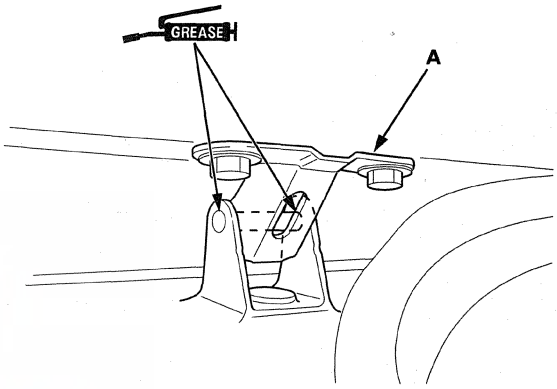
Hatch Adjustment

NOTE:
- Have an assistant help you when adjusting the hatch.
- Take care not to scratch the hatch, the body, or the related parts.
- Put on gloves to protect your hands.

1. Remove the hatch support struts on both sides (see page 20-142).
2. Slightly loosen the hatch hinge mounting bolts (A) and the striker mounting bolts (B).



3. Adjust the hatch (C) alignment in the following sequence:
   - Adjust the hatch hinges (D) right and left by using the elongated hole in the hatch hinges.
   - Turn the hatch edge cushions (E), in or out as necessary, to make sure the hatch fits flush with the body at the side edges.
   - Adjust the fit between the hatch and hatch opening by moving the striker (F), and adjust the striker right or left until it is centered in the hatch latch (G).
4. Tighten each bolt to the specified torque.
5. Make sure the hatch opens properly and locks securely.
6. Reinstall the support strut on both sides securely.
7. Apply touch-up paint to the hinge mounting bolts and around the hinges and let the paint dry.
8. Apply multipurpose grease to the pivot area of the hatch hinges (A) as indicated by the arrows.

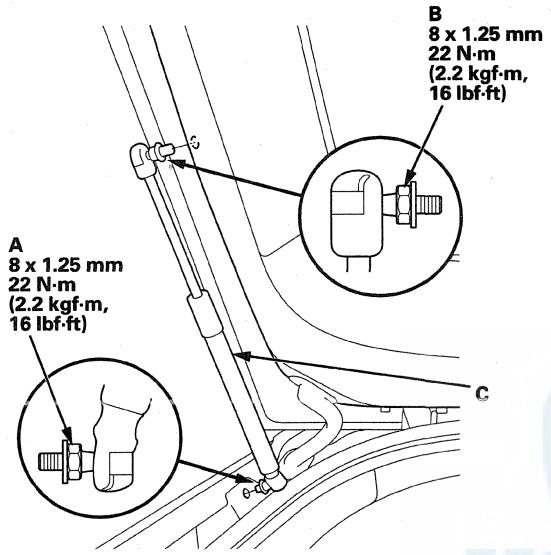


9. Reinstall all removed parts.

Hatch Support Strut Replacement

NOTE:
- Have an assistant help you when removing and installing the hatch support strut.
- Take care not to scratch the body or the hatch.

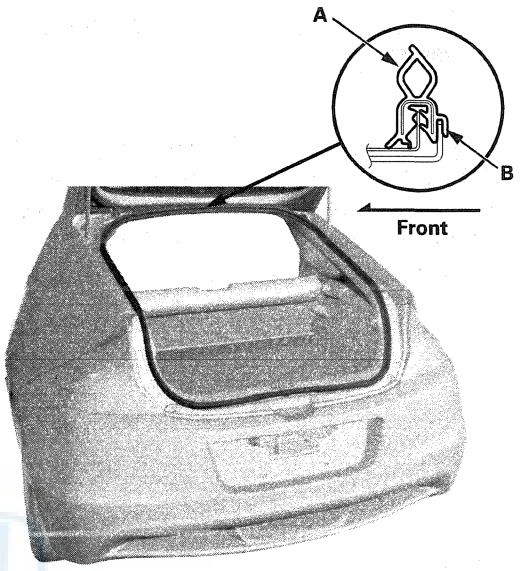
1. Remove the pivot bolt (A) from the body.



2. Remove the pivot bolt (B), then remove the support strut (C) from the hatch.
3. Install the upper pivot bolt into the hatch first, then install the lower pivot bolt into the body, and position the support strut properly.

Hatch Weatherstrip Replacement

1. Remove the hatch weatherstrip (A) by pulling it out.



2. Locate the painted alignment mark (B) on the hatch weatherstrip. Align the painted mark with the alignment tab in the center of the hatch opening, then install the hatch weatherstrip all the way around.

   NOTE:
   - Make sure it's seated completely and facing in the direction shown.
   - Make sure there are no wrinkles in the weatherstrip.

3. Check for water leaks (see step 8 on page 20-19).

Hatch Lower Stop Replacement

Special Tools Required

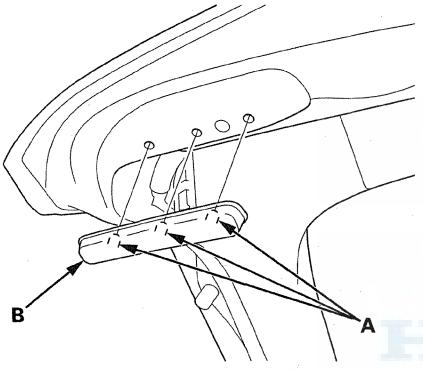
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the hatch or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

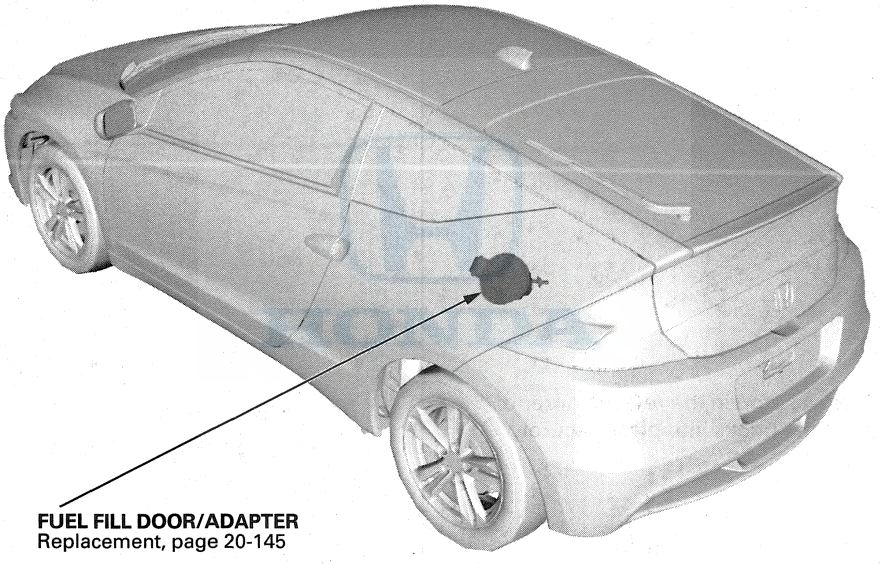
1. Detach the hooks (A) with a clip remover, then remove the hatch lower stop (B).



2. Install the hatch lower stop in the reverse order of removal, and push the hooks into place securely.

Fuel Fill Door

Component Location Index



FUEL FILL DOOR/ADAPTER
Replacement, page 20-145

Fuel Fill Door/Adapter Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

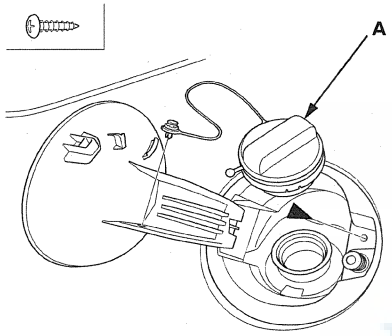
NOTE:

- Take care not to scratch the body.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

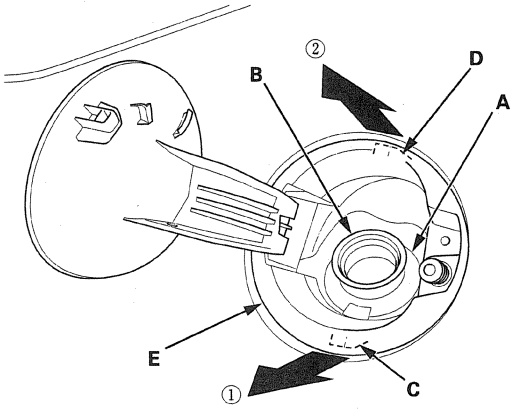
1. Remove the fuel cap (A) by turning it counterclockwise, and remove the screw.

Fastener Location

▶ : Screw, 1

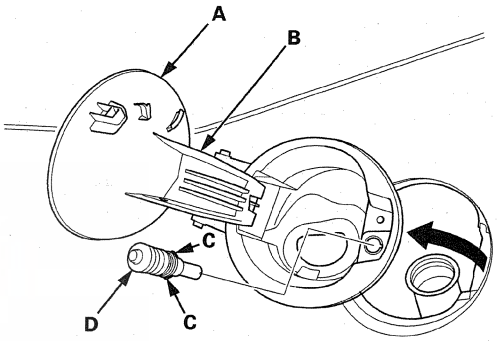


2. Remove the left rear wheel, remove the fuel fill pipe cover (see page 20-167), then lower the fuel fill pipe as needed (see page 11-308).
3. Carefully pull the fuel fill door/adapter lip (A) off of the fuel fill pipe (B).



4. Detach the hooks (C, D), then pull out the fuel fill door/adapter (E) toward you.
5. Remove the fuel fill door/adapter (A).
   -1. Pull out the portion (B) of the hinge from inside the body.
   -2. If necessary, release the hooks (C), then remove the fuel fill door push lifter (D) from the fuel fill door/adapter.

   NOTE: If you are only removing the fuel fill door/adapter, go to step 7. If you are doing further disassembly, proceed to step 6.



HONDA

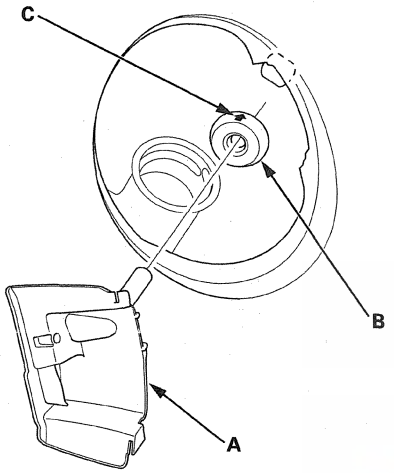
(cont'd)

Fuel Fill Door/Adapter Replacement (cont'd)

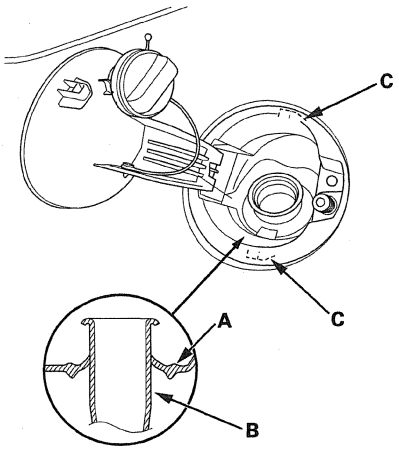
Fuel fill adapter bracket replacement

6. If necessary, pull out the fuel fill adapter bracket (A) and the fuel fill adapter lock grommet (B).

   NOTE: When reinstalling the packing, be sure the arrow mark (C) on the packing is the upper side of the packing.

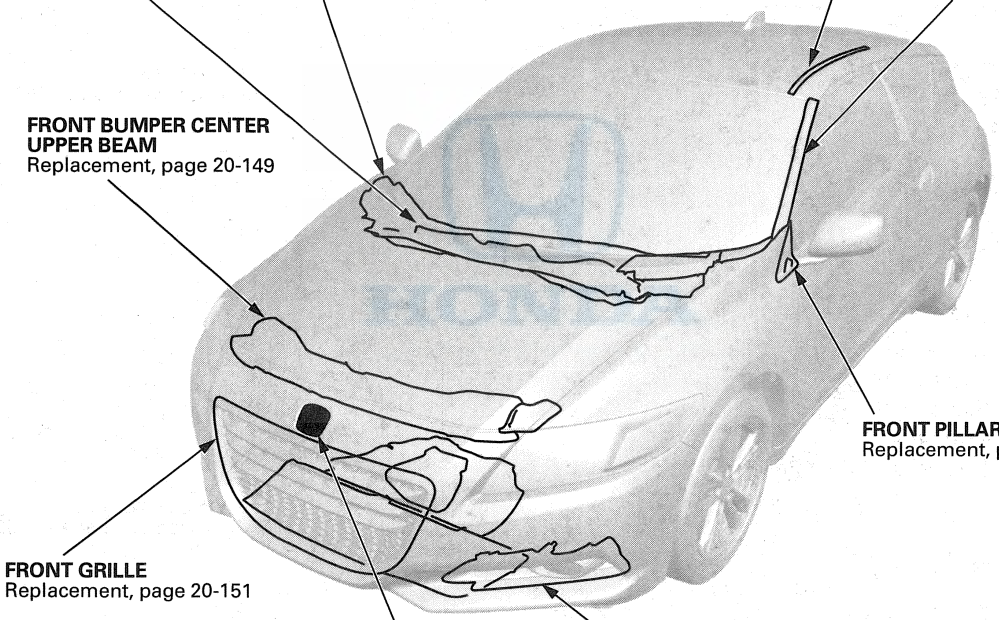


7. Install the fuel fill door/adapter in the reverse order of removal, and note these items:
   - Make sure the adapter lip (A) is fully seated on the fuel fill pipe (B).
   - Push the hooks (C) into place securely.



Component Location Index

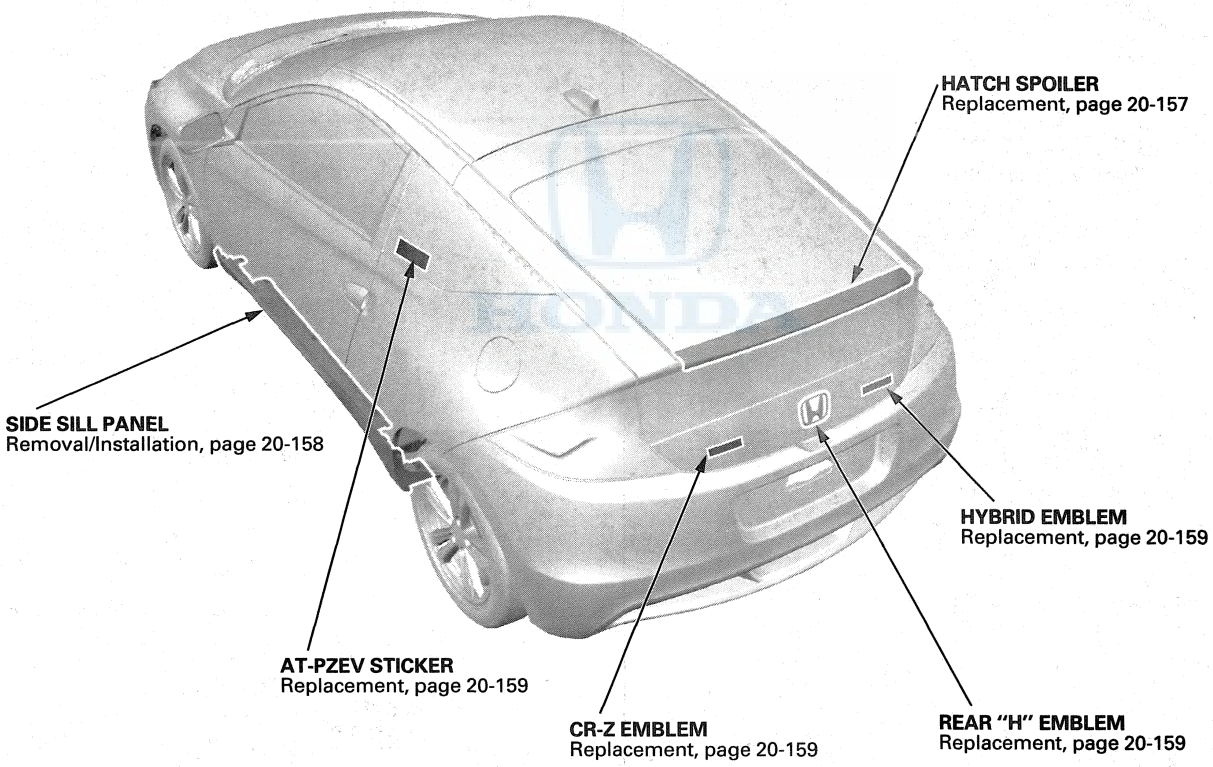
Front



(cont'd)

Component Location Index (cont'd)

Rear



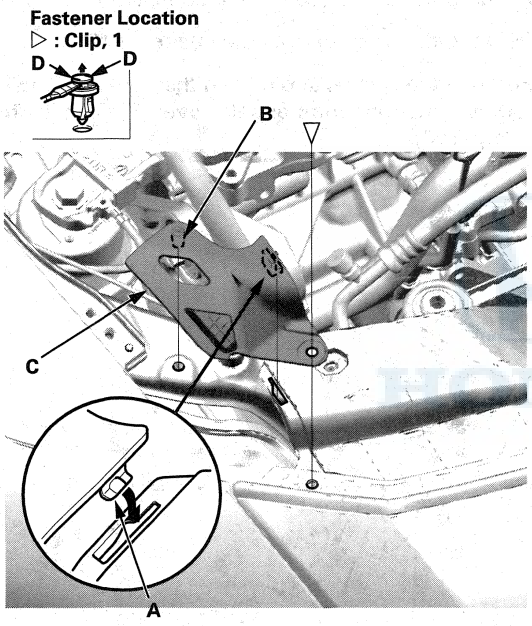
Front Bumper Center Upper Beam Replacement

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the front bumper or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

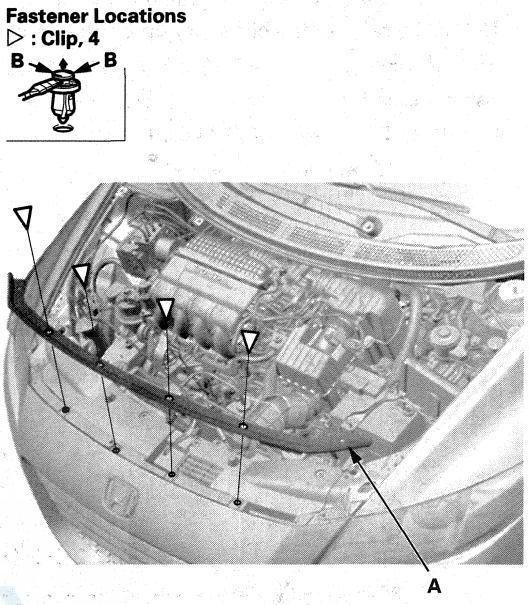
1. Remove the clip, detach the hook (A) and the pin (B), then remove the front bumper side cover (C). Repeat this step on the opposite side.

   NOTE: To release the clip, pry up on the center pin at the notch (D).



2. Remove the clips, then remove the front bumper center seal (A).

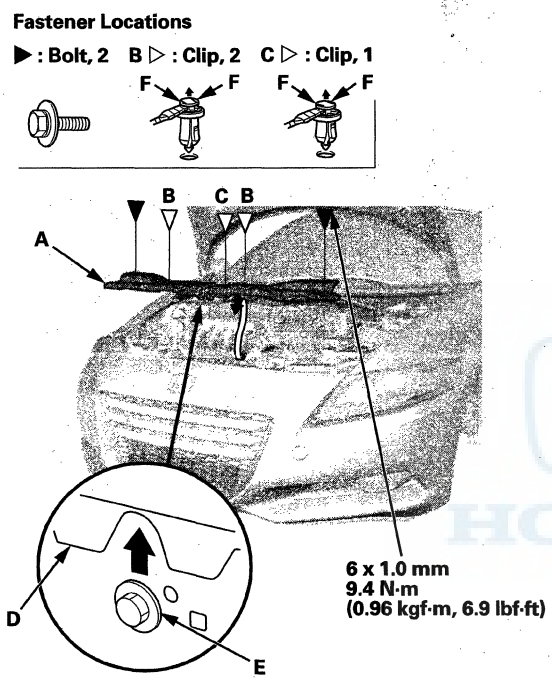
   NOTE: To release the clips, pry up on the center pin at the notch (B).



(cont'd)

Front Bumper Center Upper Beam Replacement (cont'd)

3. Remove the front bumper center upper beam (A).
   -1. Remove the bolts and the clips (B, C).
   -2. Move the beam upward, and take the tab (D) of the bottom of the beam off the insertion parts (E).
   -3. Bend the beam slightly and pull it upward.
   NOTE: To release the clips, pry up on the center pin at the notch (F).



4. Install the beam in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the tab into place securely.

Front Bumper Side Cover Replacement

Special Tools Required

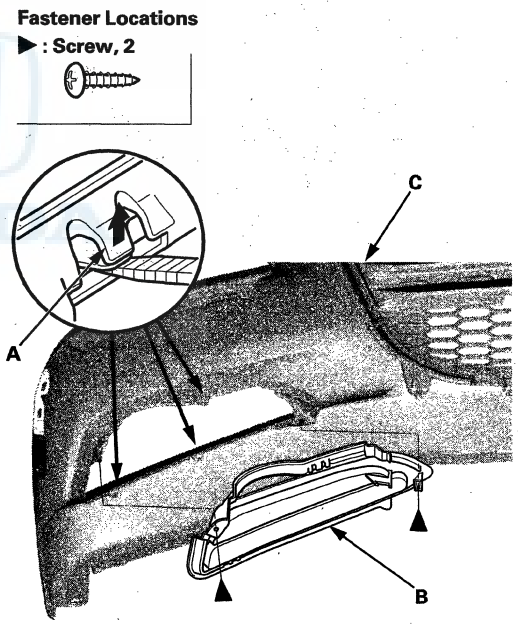
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

For some models

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the front bumper or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the front bumper (see page 20-128).
2. Remove the screws and detach the hooks (A), then remove the front bumper side cover (B) from the front bumper (C).



3. Install the front bumper side cover in the reverse order of removal, and push the hooks into place securely.

Front Grille Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

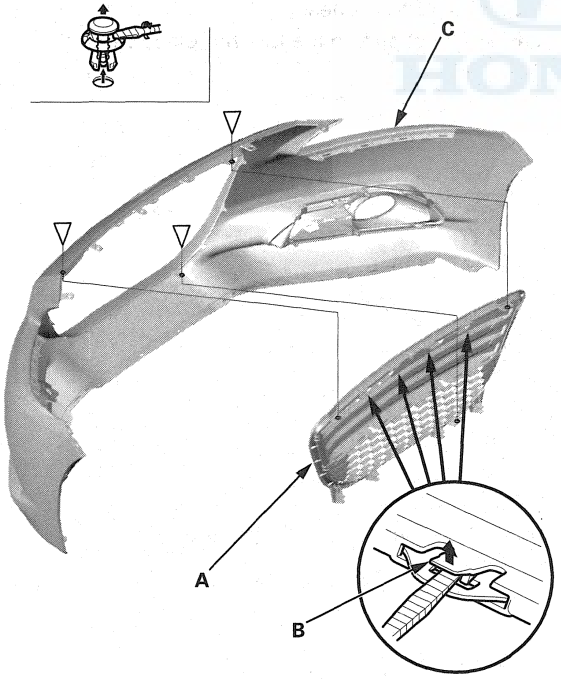
NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the front bumper or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the front bumper (see page 20-128).
2. Remove the front grille (A).
   -1. Remove the clips.
   -2. Detach the hooks (B), then pull out the front grille from the front bumper (C).

Fastener Locations

▷ : Clip, 3



3. Install the grille in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

Front Bumper Fog Light Cover Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

For some models

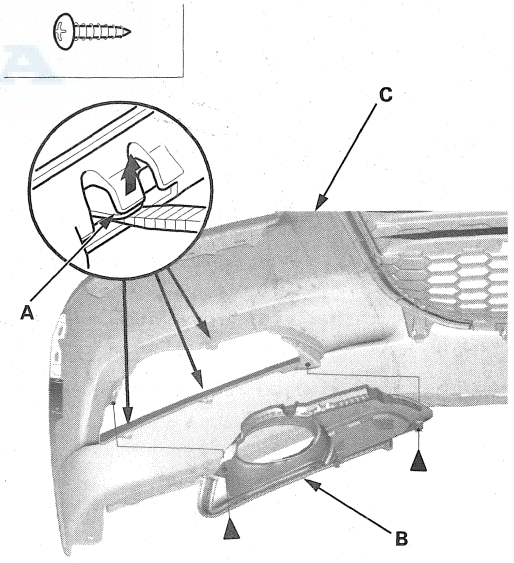
NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the front bumper or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the front bumper (see page 20-128).
2. Remove the fog light (see page 22-244).
3. Remove the screws and detach the hooks (A), then remove the front bumper fog light cover (B) from the front bumper (C).

Fastener Locations

▶ : Screw, 2



4. Install the front bumper fog light cover in the reverse order of removal, and push the hooks into place securely.

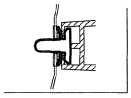
Front Pillar Corner Trim Replacement

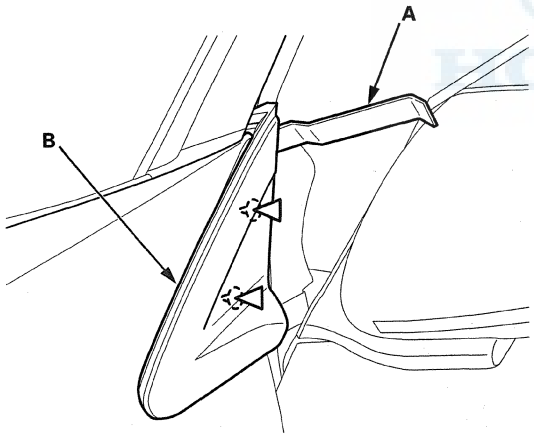
Special Tools Required
KTC Trim Tool Set SOJATP2014*
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the corner trim or the body.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Put a shop towel into the gap between the trim and the body to prevent scratches.

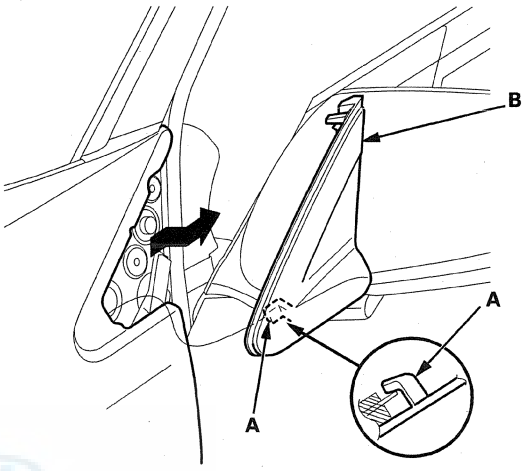
1. Open the door.
2. Carefully insert the appropriate trim tool (A) next to the body, and detach the clips by prying on the front pillar corner trim (B).

Fastener Locations
▷ : **Clip, 2**





3. While sliding the front pillar corner trim rearward in the direction shown, detach the tab (A) from the body, then remove the trim (B).



4. Install the front pillar corner trim in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the tab into place securely.

Cowl Cover Replacement

Special Tools Required

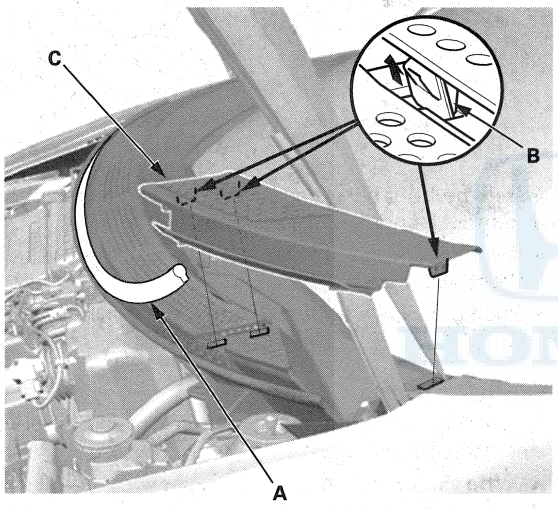
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to scratch the body or the related parts.

1. Pull out the hood rear seal (A) as needed. Detach the hooks (B), then remove the wiper pivot cover (C).

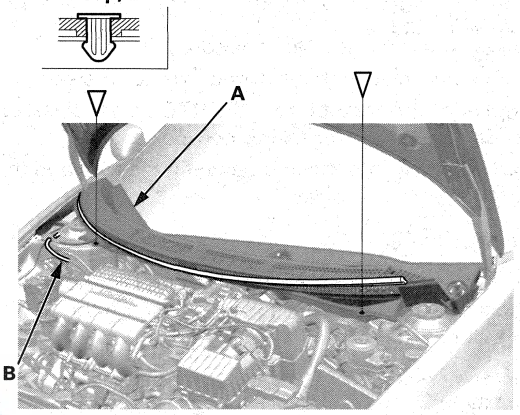


2. Remove the windshield wiper arms (see page 22-311).

3. Detach the clips with a clip remover from the cowl cover (A), then disconnect the windshield washer tube (B).

Fastener Locations

▷ : **Clip, 2**

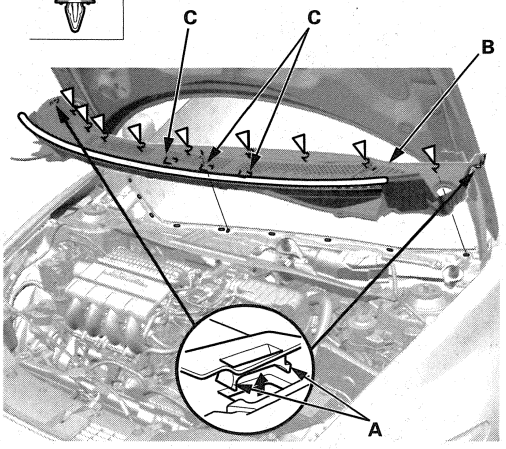


4. Detach the clips and the hooks (A) by carefully pulling the windshield side edge of the cowl cover (B) upward, and release the forward hooks (C) by pulling the cowl cover forward, then remove the cover.

NOTE: If you are only removing the cowl cover, go to step 8. If you are doing further disassembly, proceed to step 5.

Fastener Locations

▷ : **Clip, 9**



(cont'd)

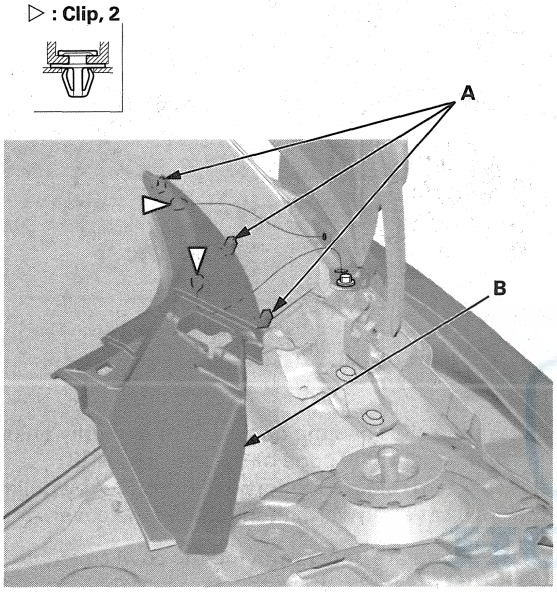
Cowl Cover Replacement (cont'd)

Hood hinge cover replacement

5. If necessary, detach the clips and the hooks (A), then remove the hood hinge cover (B).

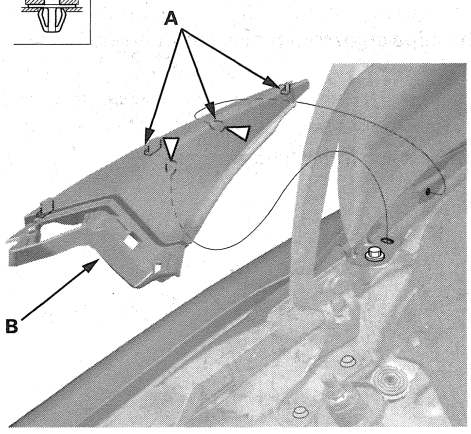
Left side

Fastener Locations
▷ : Clip, 2



Right side

Fastener Locations
▷ : Clip, 2

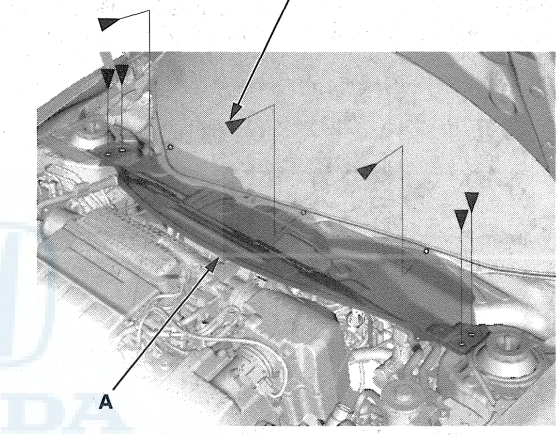


Under-cowl panel replacement

6. If necessary, remove the windshield wiper motor (see page 22-309).
7. Remove the bolts, then remove the under-cowl panel (A).

Fastener Locations
▶ : Bolt, 7

8 x 1.25 mm
22 N·m (2.2 kgf·m, 16 lbf·ft)



8. Install the cowl cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.
   - Make sure the washer tube is connected securely.

Windshield Side Trim Replacement

Special Tools Required

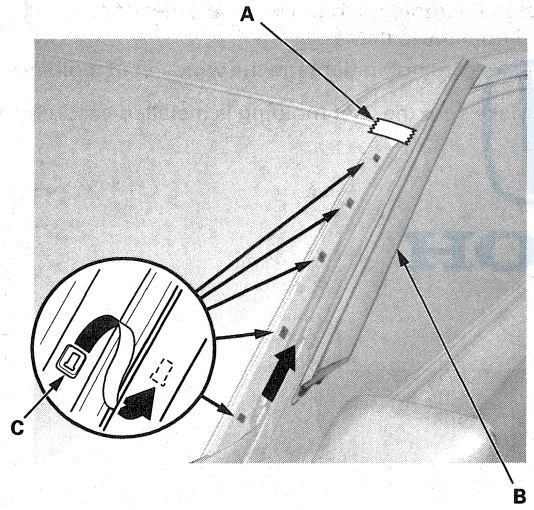
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.
- Take care not to damage the windshield.
- Do not use any metallic tools to remove the windshield area of the windshield side trim, or you may chip or crack the windshield.

1. Apply protective tape (A) to the body.

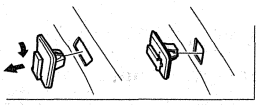


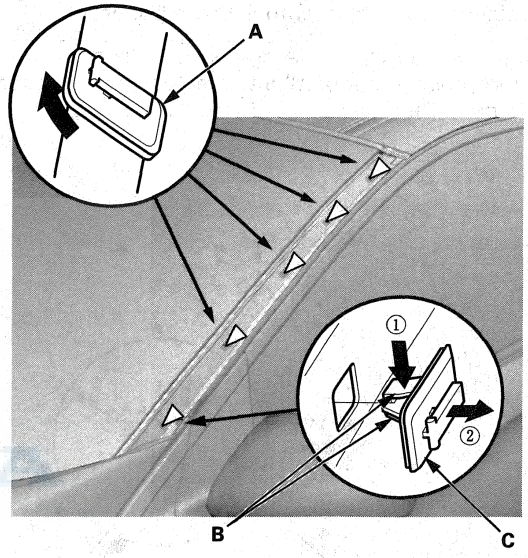
2. Pull up the upper portion of the windshield side trim (B) and slide it upward along the front pillar to remove the clips (C). The clips will stay in the body holes.

3. Remove the clips (A) from the body by turning them 90 °.

Fastener Locations

A ▷ : Clip, 4 C ▷ : Clip, 1





4. Detach the hooks (B), then remove the clip (C) from the body.

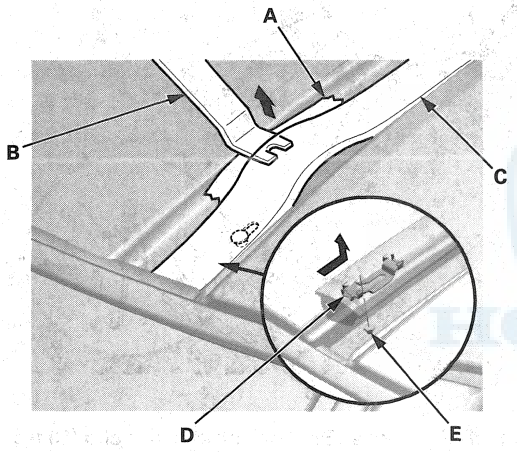
5. Install the clips on the windshield side trim, and fit the clips into the hole in the body. Then push on the trim until the clips snap into place securely, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Roof Molding Replacement

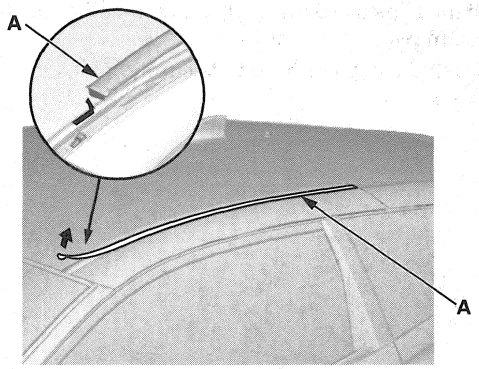
Special Tools Required
KTC Trim Tool Set SOJATP2014*
*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:
- Take care not to scratch the body.
- Take care not to bend the roof molding.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

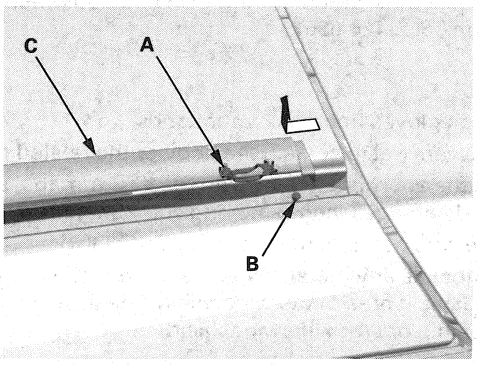
1. Apply protective tape (A) to the body. Insert the appropriate trim tool (B) into the body and the roof molding (C).



2. Pull up and slide the roof molding to release the front bracket (D) from the pin (E).
3. Pull up the front portion of the roof molding (A).



4. Pull up and release the rear bracket (A) from the pin (B), then remove the roof molding (C).



5. Install the molding in the reverse order of removal, and note these items:
   - Take care not to damage the windshield molding.
   - Make sure the roof molding is installed securely.

Hatch Spoiler Replacement

Special Tools Required

KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

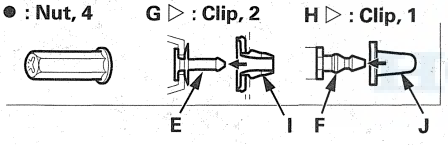
NOTE:

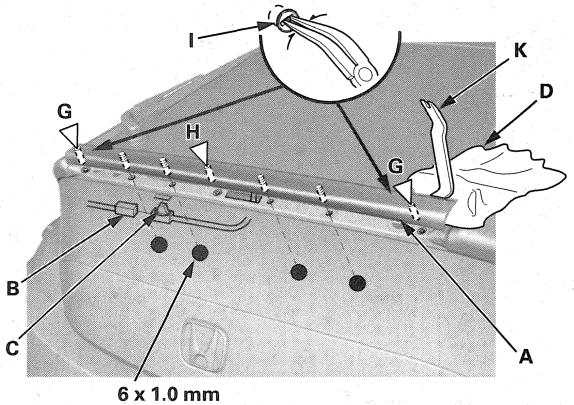
- Put on gloves to protect your hands.
- Take care not to scratch the hatch or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the hatch middle trim (see page 20-66).
2. Remove the hatch spoiler (A).
   -1. Disconnect the high mount brake light harness connector (B), then remove the nuts and detach the harness clip (C) from inside the hatch.
   -2. Close the hatch. Put a shop towel (D) in the opening between the hatch spoiler and the upper rear window to prevent scratches. Detach the pins (E, F) of the clips (G, H) from the grommets (I, J) with the appropriate trim tool (K).

Fastener Locations

● : Nut, 4 G ▷ : Clip, 2 H ▷ : Clip, 1





6 x 1.0 mm
9.4 N·m (0.96 kgf·m, 6.9 lbf·ft)

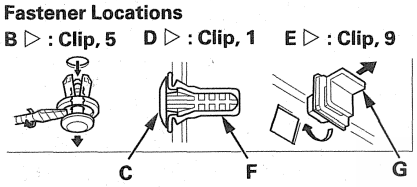
3. If necessary, remove the grommets from the hatch with snap ring pliers.
4. Install the grommets on the pins by pushing them into place.
5. Install the hatch spoiler in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
   - If the grommets and pins are damaged or stress-whitened, replace grommets and pins as an assembly with new ones.
   - Make sure the connector is plugged in properly.

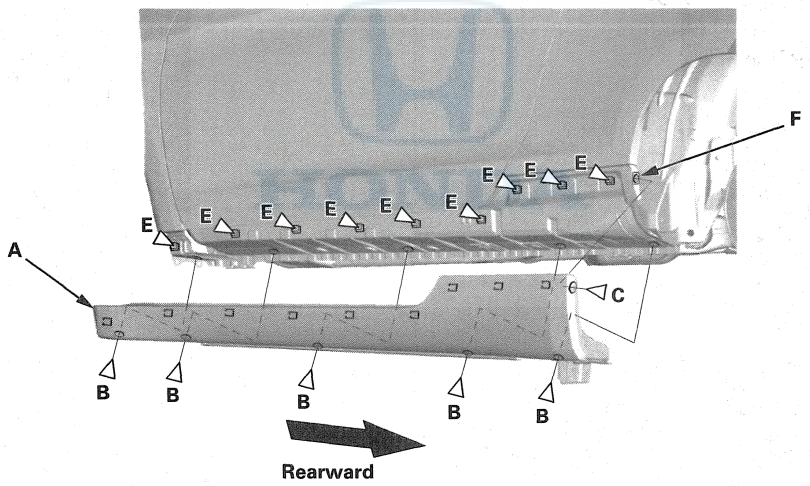
Side Sill Panel Removal/Installation

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

Side sill panel replacement

1. Remove the side sill panel (A).
   -1. Remove the clips (B) from under the panel.
   -2. On the rear wheel arch, remove the pin (C) of the clip (D) from the panel.
   -3. Slide the side sill panel rearward and remove it. The side clips (E) will stay in the body.
   -4. Remove the side clips (E) from the body by turning them 90 °.
   -5. If necessary, remove the grommet (F) from the body.





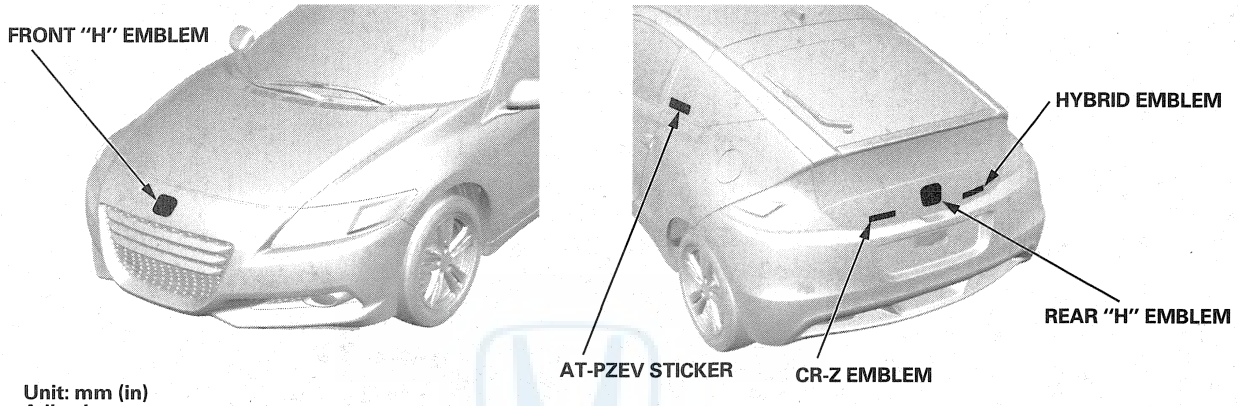
Side sill panel installation

1. Install the side sill panel (A).
   -1. Install the side clips (E) on the side sill panel.
   -2. If necessary, install the grommet (F) to the body.
   -3. Hold the panel up, and fit all the side clips into the holes in the body, then push on the panel until the clips snap into place.
   -4. Install the clips (B) and the pin (C) of the clip (D) to the panel.
   NOTE:
   - When reinstalling the side clips, the tab (G) on the clip is facing to the upper side.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - If the grommet and pin are damaged or stress-whitened, replace the grommet and pin as an assembly with new one.
   - Push the clips and the pin into place securely.

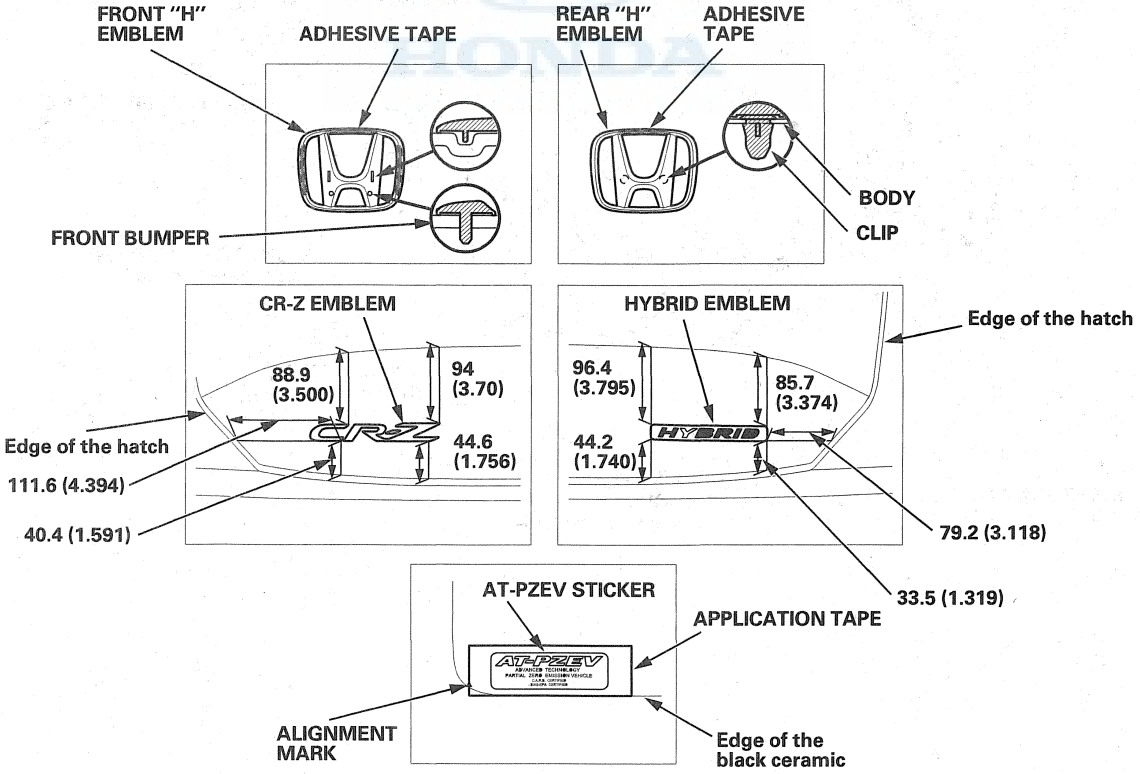
Emblem/Sticker Replacement

NOTE: When removing the emblems/sticker, take care not to scratch the body.

1. Clean the body surface with a sponge dampened in isopropyl alcohol. After cleaning, keep oil, grease, and water from getting on the surface.
2. When installing the AT-PZEP sticker on the inside surface of the left quarter glass, align the sticker with the edge of the black ceramic as shown, then press the sticker into place and remove the application tape.
3. Apply the emblems/sticker where shown.



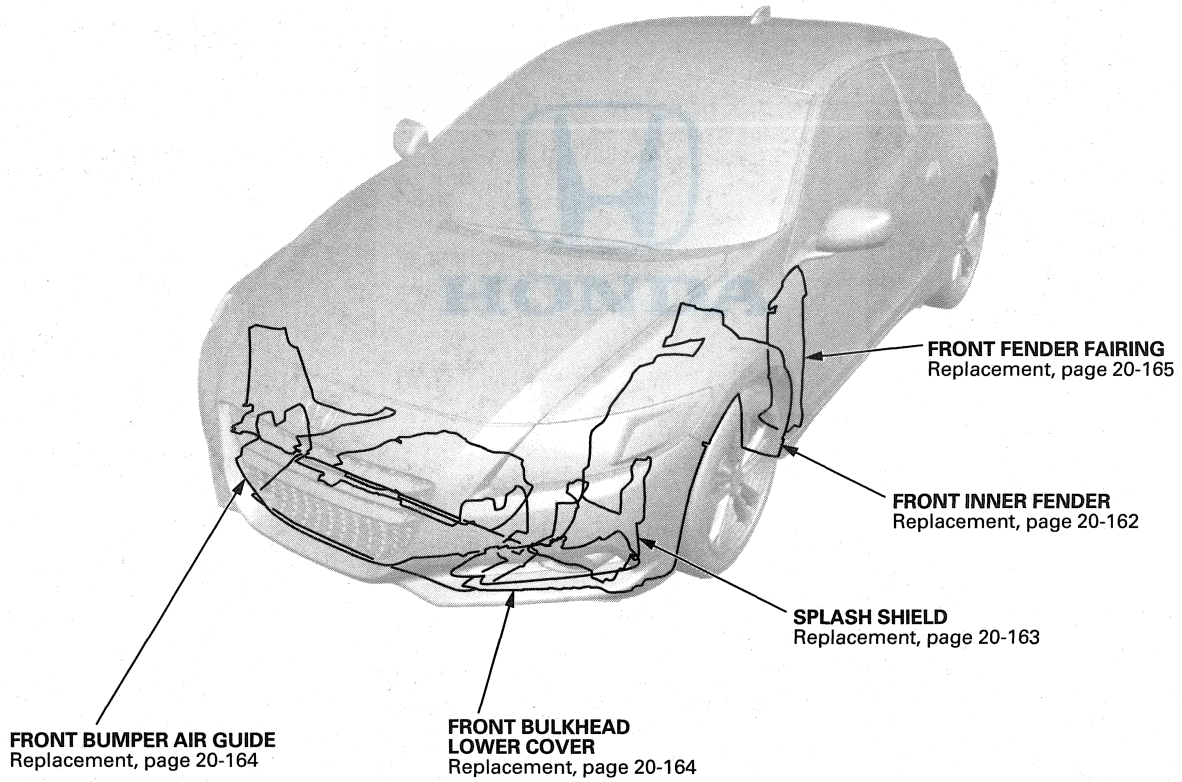
Unit: mm (in)
Adhesive tape:
Thickness 0.8 mm (0.031 in)



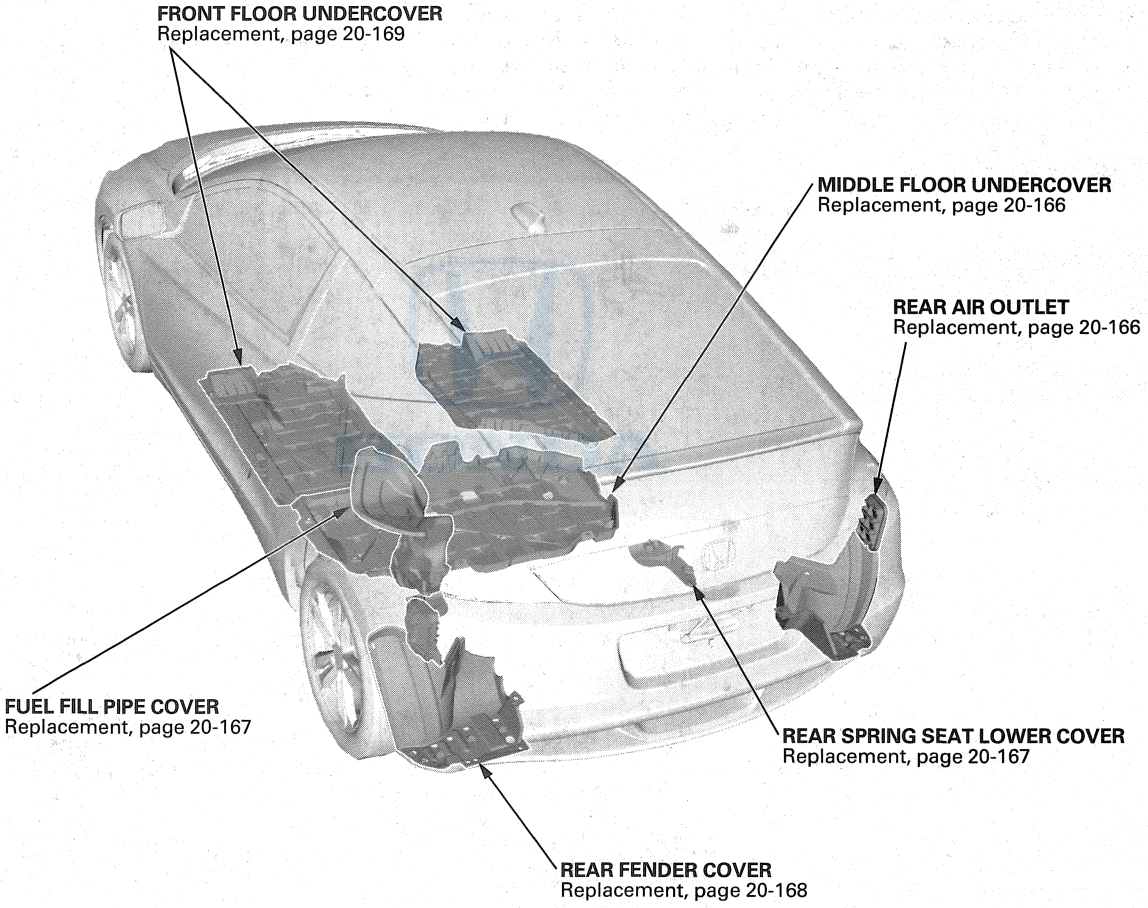
Fenderwell

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Front



Rear


FRONT FLOOR UNDERCOVER
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MIDDLE FLOOR UNDERCOVER
Replacement, page 20-166
REAR AIR OUTLET
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FUEL FILL PIPE COVER
Replacement, page 20-167
REAR SPRING SEAT LOWER COVER
Replacement, page 20-167
REAR FENDER COVER
Replacement, page 20-168

Fenderwell

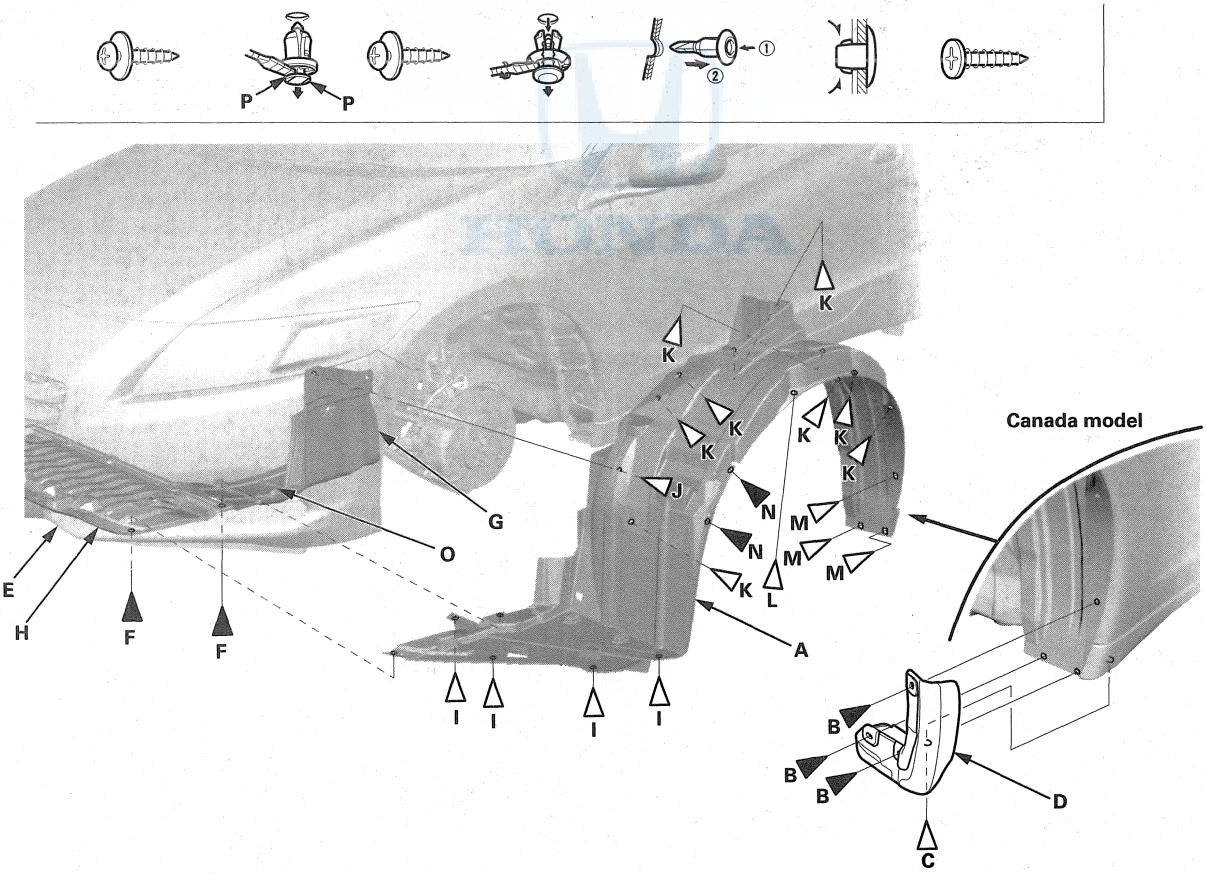
Front Inner Fender Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrapped it with protective tape to prevent damage.

1. Remove the front wheel.
2. Remove the front inner fender (A).
   -1. Canada models: On the back of the wheel arch, remove the screws (B) and the clip (C), then remove the front splash guard (D).
   -2. From under the front bumper (E), remove the screws (F) that secure the front bumper, the splash shield (G), the front bulkhead lower cover (H), and the front inner fender to the body.
   -3. Remove the clips (I), that secure the front bumper and the front inner fender.
   -4. From the wheel arch, remove the clip (J) that secure the splash shield and the front inner fender.
   -5. From the wheel arch, remove the clips (K, L, M) and the screws (N).
   -6. Release the hook (O) of the splash shield, then pull out the front inner fender.
   NOTE: To release the clips (C, I, J), pry up on the center pin at the notch (P).

Fastener Locations

B ▶ : Screw, 3 C, I, J ▷ : Clip, 6 F ▶ : Screw, 2 K ▷ : Clip, 8 L ▷ : Clip, 1 M ▷ : Clip, 3 N ▶ : Screw, 2



3. Install the front inner fender in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hook into place securely.
4. Reinstall the front wheel.

Splash Shield Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrapped it with protective tape to prevent damage.

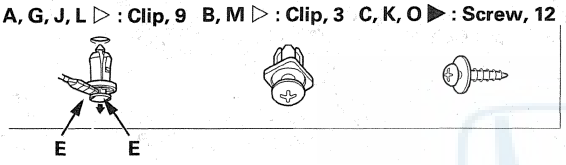
1. From under the body, remove the clips (A, B) and the screws (C), then remove the engine undercover (D).

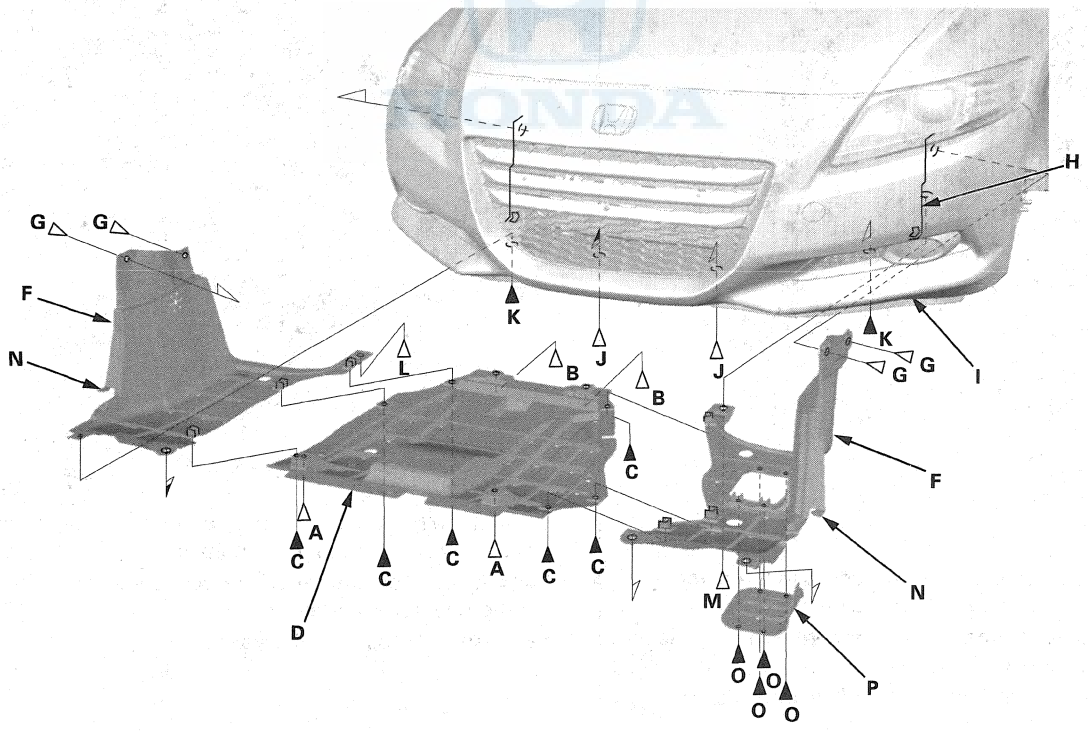
   NOTE: To release the clips (A), pry up on the center pin at the notch (E).

2. Remove the splash shield (F).

   -1. From the wheel arch on both sides, remove the clips (G) that secure the splash shield and the front inner fender (H) to the body.
   -2. From under the front bumper (I), remove the clips (J) and the screws (K).
   -3. From under the body, remove the clips (L, M) that secure the splash shield to the body.
   -4. Release the hooks (N) of the splash shield from the front inner fender, then pull out the splash shield.
   -5. If necessary, remove the screws (O) from the splash shield, then remove the maintenance lid (P).
   NOTE: To release the clips (G, J, L), pry up on the center pin at the notch (E).

Fastener Locations
A, G, J, L ▷ : Clip, 9 B, M ▷ : Clip, 3 C, K, O ▶ : Screw, 12





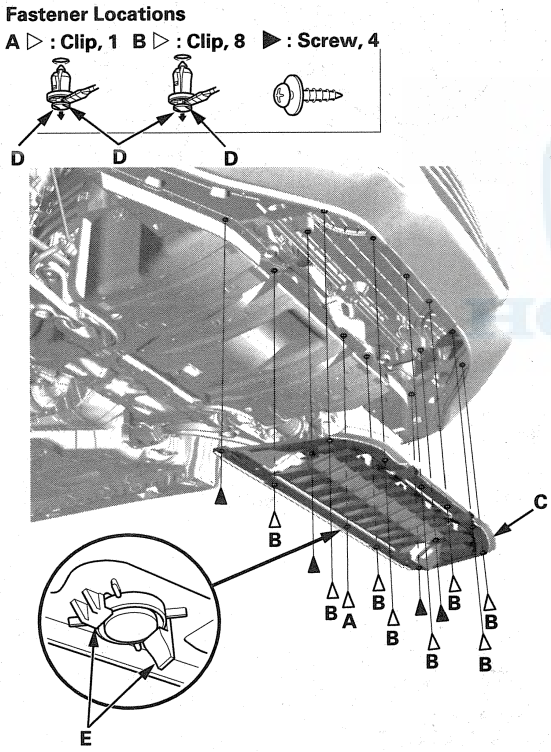
3. Install the splash shield in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and the hooks into place securely.

Front Bulkhead Lower Cover Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrapped it with protective tape to prevent damage.

1. Remove the clips (A, B) and the screws, then remove the front bulkhead lower cover (C) from the front bulkhead.

   NOTE:
   - To release the clips, pry up on the center pin at the notch (D).
   - If necessary, release the hooks (E), then remove the clip.



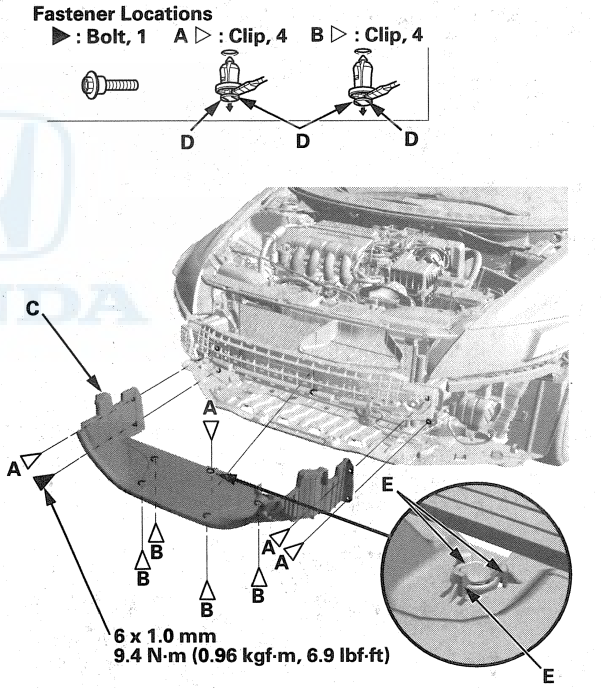
2. Install the front bulkhead lower cover in the reverse order of removal, and note these items.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips and hooks into place securely.

Front Bumper Air Guide Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrapped it with protective tape to prevent damage.

1. Remove the front bumper (see page 20-128).
2. Remove the bolt and the clips (A, B), then remove the front bumper air guide (C).

   NOTE:
   - To release the clips, pry up on the center pin at the notch (D).
   - If necessary, release the hooks (E), then remove the clip.



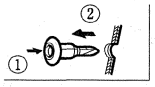
3. Install the front bumper air guide in the reverse order of removal, and note these items.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

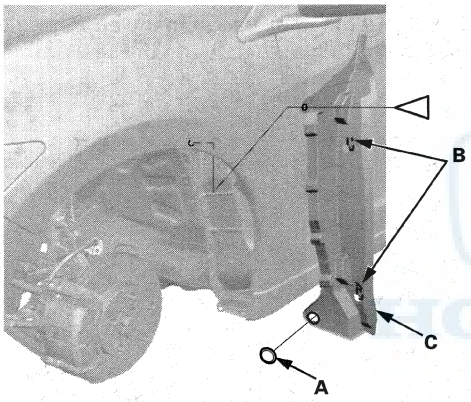
Front Fender Fairing Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.

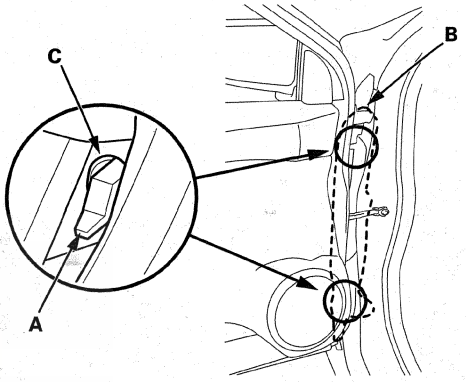
1. Remove the front inner fender as needed (see page 20-162).
2. From the wheel arch, remove the clip and the maintenance plug (A).

Fastener Location
▷ : Clip, 1





3. Release the hooks (B) of the front fender fairing (C) from the holes in the front fender, and pull the fender fairing out, then remove it.
4. Install the front fender fairing in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Before installing the clip, make sure the hooks (A) of the front fender fairing (B) is installed into the holes (C) in the front fender securely.
   - Push the clip into place securely.



HONDA

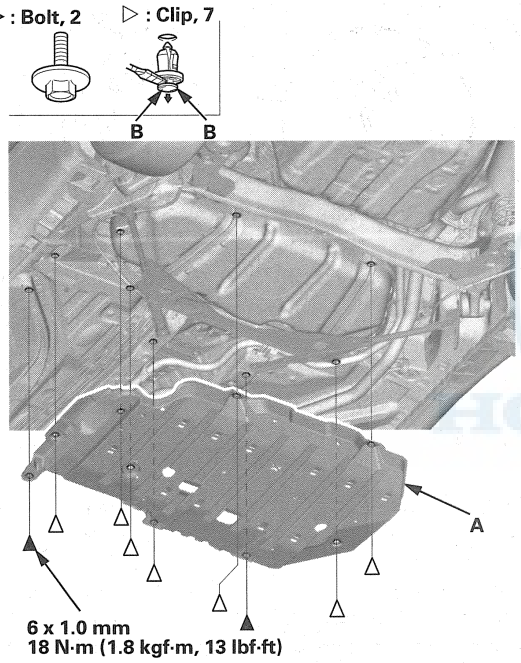
Middle Floor Undercover Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrapped it with protective tape to prevent damage.

1. Remove the bolts and clips, then remove the middle floor undercover (A).

   NOTE: To release the clips, pry up on the center pin at the notch (B).

Fastener Locations



2. Install the middle floor undercover in the reverse order of removal.
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Rear Air Outlet Replacement

Special Tools Required

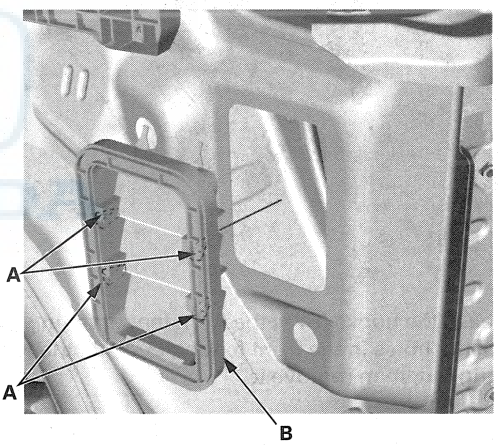
KTC Trim Tool Set SOJATP2014*

*Available through the Honda Tool and Equipment Program, 888-424-6857

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- Use the appropriate tool from the KTC trim tool set to avoid damage when removing components.

1. Remove the rear bumper (see page 20-130).
2. Detach the hooks (A), then remove the rear air outlet (B).

   NOTE: Pull out the hook part with the appropriate trim tool, being careful not to damage the seal or the body area.



3. Install the air outlet by pushing on the hook portions until the hooks snap into place.
4. Reinstall the rear bumper (see page 20-130).

Rear Spring Seat Lower Cover Replacement

NOTE:

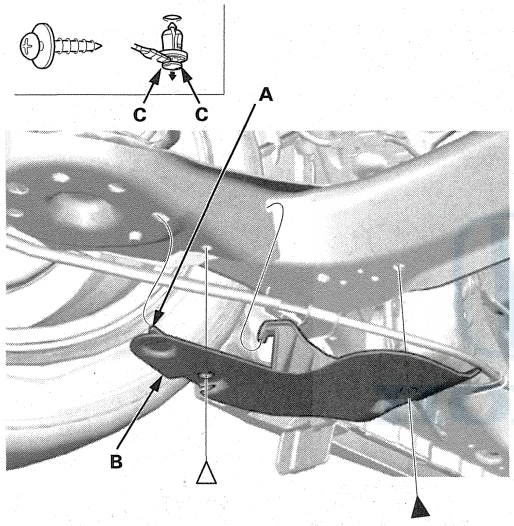
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the screw, the clip and detach the hook (A), then remove the rear spring seat lower cover (B).

   NOTE: To release the clip, pry up on the center pin at the notch (C).

Fastener Location

▶ : Screw, 1 ▷ : Clip, 1



2. Install the cover in the reverse order of removal, and note these items:
   - If the clip is damaged or stress-whitened, replace it with a new one.
   - Push the clip and the hook portions into place securely.

Fuel Fill Pipe Cover Replacement

NOTE:

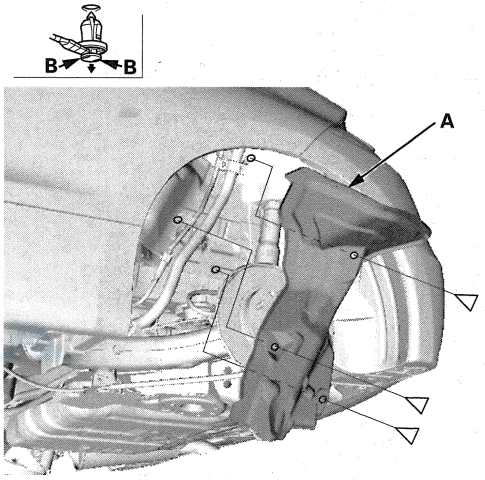
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the left rear wheel.
2. Remove the clips, then remove the fuel fill pipe cover (A).

   NOTE: To release the clip, pry up on the center pin at the notch (B).

Fastener Locations

▷ : Clip, 3



3. Install the fuel fill pipe cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.
4. Reinstall the left rear wheel.

Rear Fender Cover Replacement

Left side

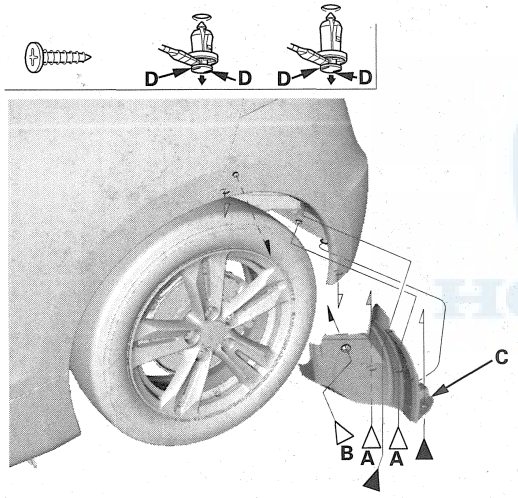
NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the screws and the clips (A, B), then remove the rear fender cover (C).

   NOTE: To release the clips, pry up on the center pin at the notch (D).

Fastener Locations

▶ : Screw, 2 A ▷ : Clip, 2 B ▷: Clip, 1



2. Install the rear fender cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Right side

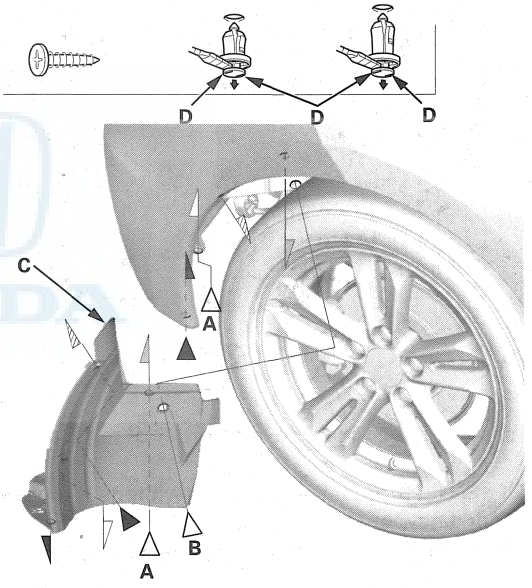
NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the rear bumper or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the screws and the clips (A, B), then remove the rear fender cover (C).

   NOTE: To release the clips, pry up on the center pin at the notch (D).

Fastener Locations

▶ : Screw, 2 A ▷ : Clip, 2 B ▷ : Clip, 1



2. Install the rear fender cover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

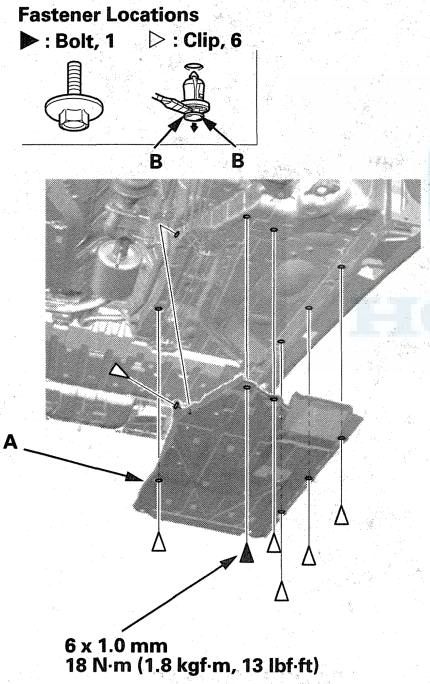
Front Floor Undercover Replacement

Left side

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Remove the middle floor undercover (see page 20-166).
2. Remove the bolt and the clips, then remove the left front floor undercover (A).

   NOTE: To release the clips, pry up on the center pin at the notch (B).



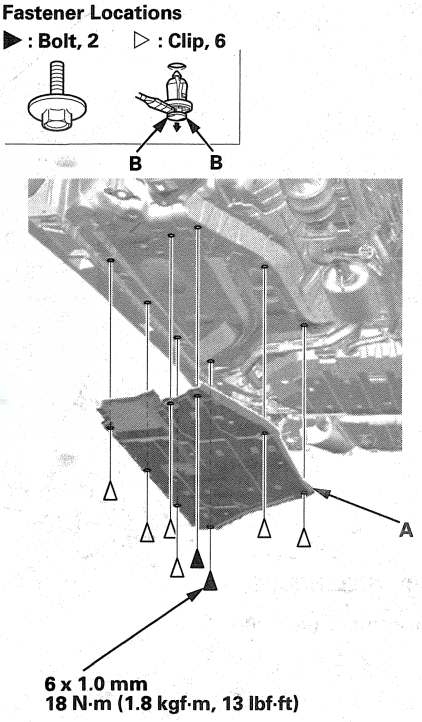
3. Install the left front floor undercover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Right side

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

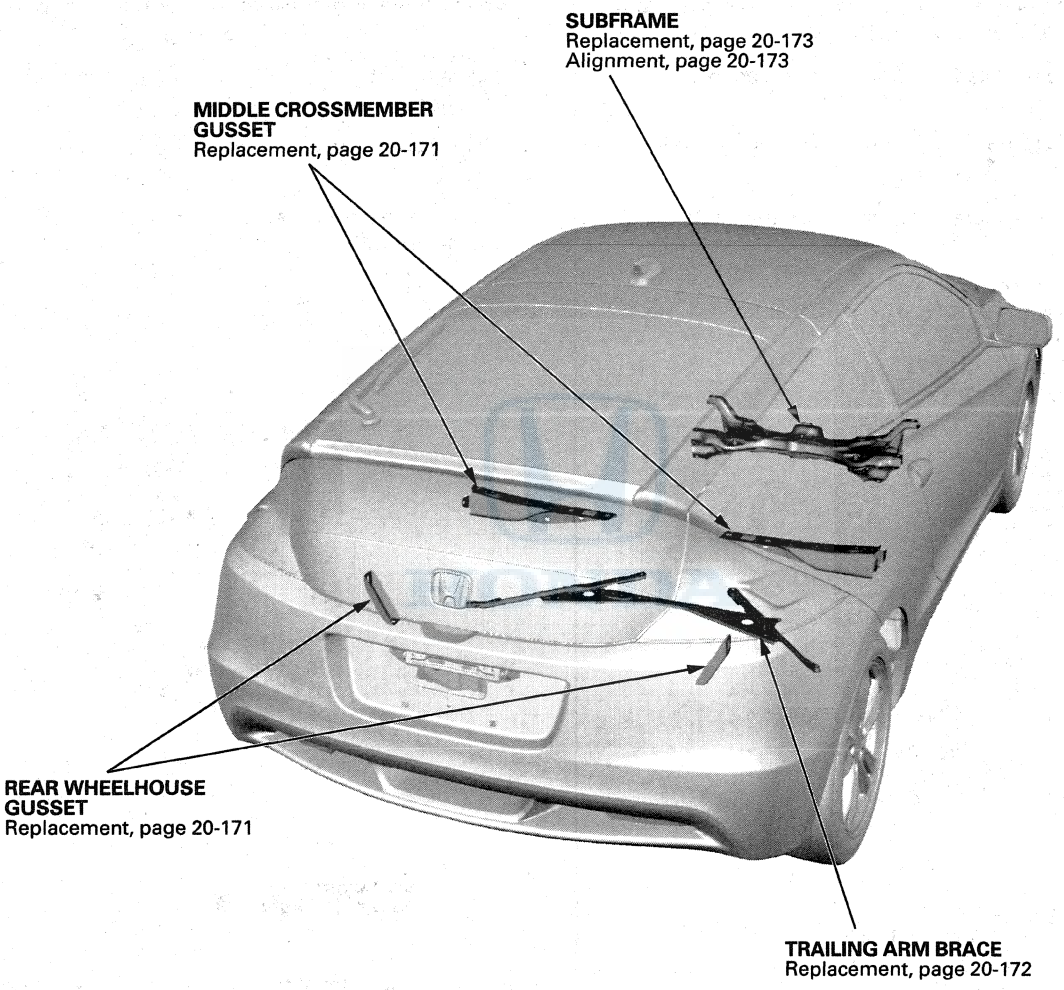
1. Remove the bolts and clips, then remove the right front floor undercover (A).

   NOTE: To release the clips, pry up on the center pin at the notch (B).



2. Install the right front floor undercover in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Push the clips into place securely.

Component Location Index

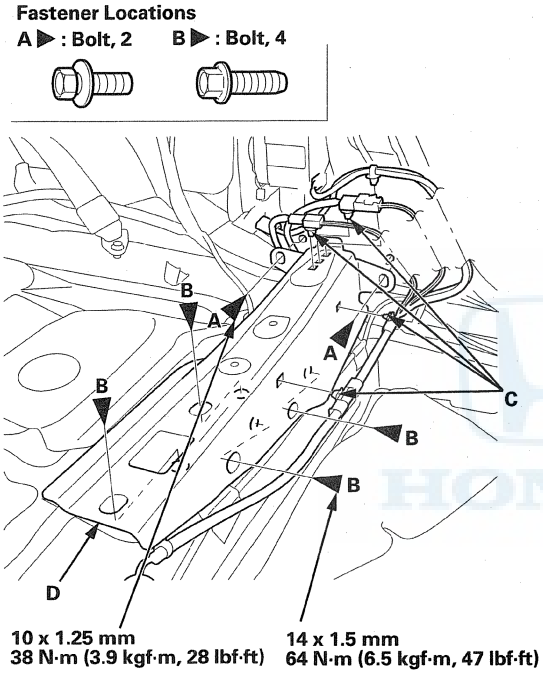


Middle Crossmember Gusset Replacement

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.

1. Remove the rear side trim panel (see page 20-64).
2. Remove the carpet as needed, remove the bolts (A, B) and detach the harness clips (C), then remove the middle crossmember gusset (D).

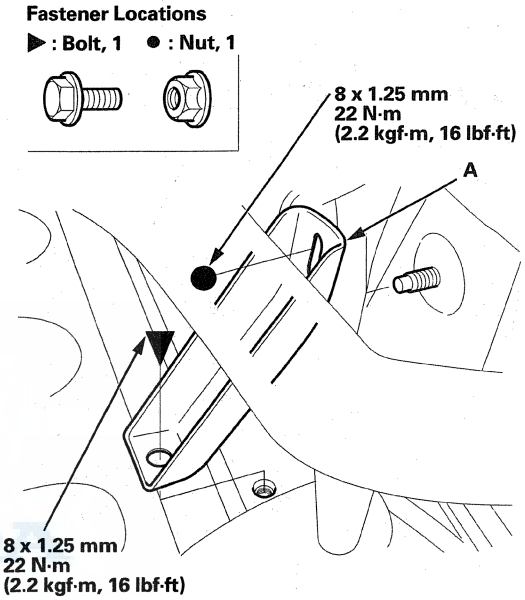


3. Install the gusset in the reverse order of removal and push the clips into place securely.

Rear Wheelhouse Gusset Replacement

NOTE: Take care not to scratch the body or the related parts.

1. Remove the rear side trim panel (see page 20-64).
2. Remove the bolt and the nut, then remove the rear wheelhouse gusset (A).

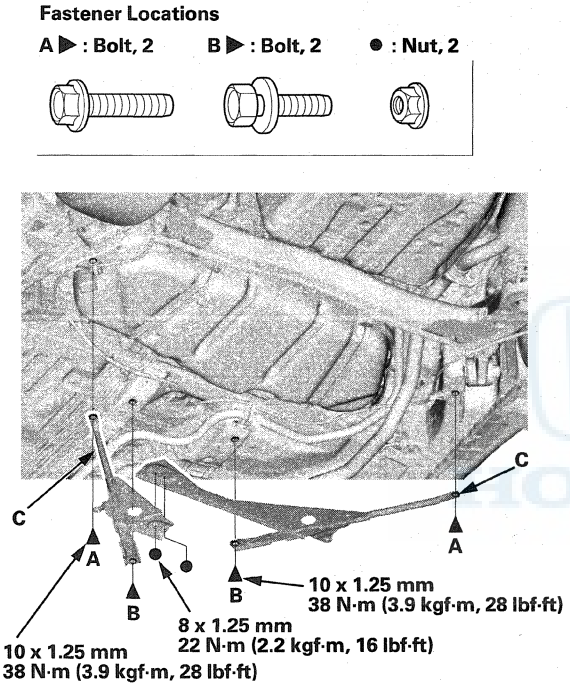


3. Install the gusset in the reverse order of removal.

Trailing Arm Brace Replacement

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the body or the related parts.

1. Remove the middle floor undercover (see page 20-166).
2. Remove the bolts (A, B) and the nuts, then remove the trailing arm brace (C) from the body.

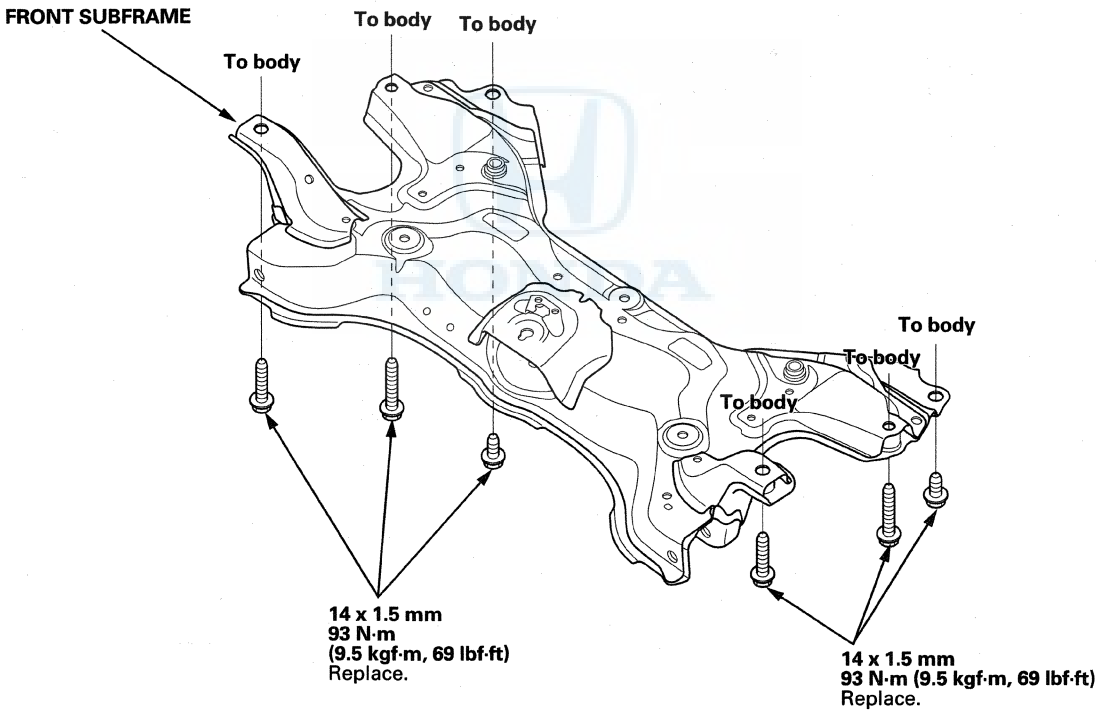


3. Install the trailing arm brace in the reverse order of removal.

Subframe Replacement

Front Subframe Torque

NOTE:
- After loosing the subframe mounting bolts, be sure to replace them with new ones.
- After reinstalling the subframe, check and adjust the front wheel alignment (see page 18-5).



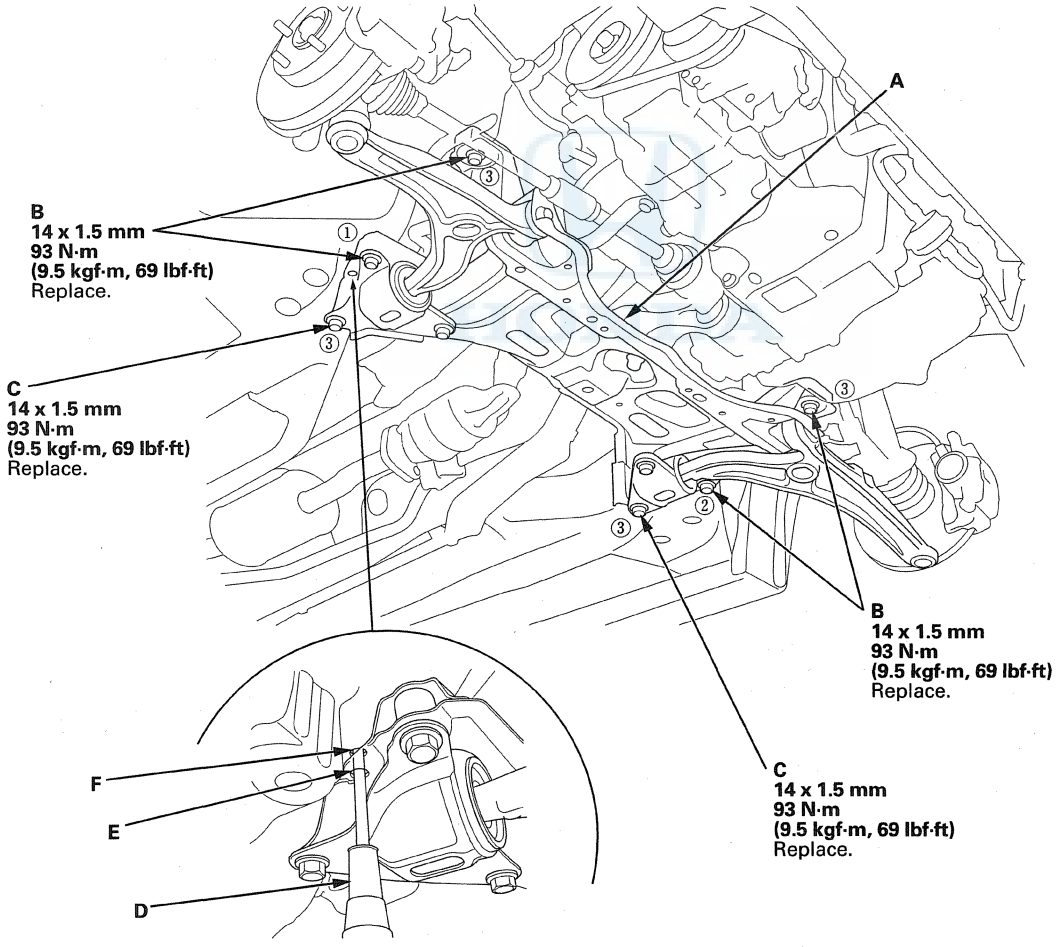
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Subframe Replacement (cont'd)

Front Subframe Alignment

NOTE: Align the front subframe using a screwdriver or tapered punch as a guide.

1. Align the front subframe (A) in the following sequence.
   -1. Lift the front subframe up to the body, and loosely install the new subframe mounting bolts (B).
   -2. Loosely install the new subframe mounting bolts (C).
   -3. Insert a screwdriver (D) through the right side positioning hole (E) on the subframe, and into the positioning hole (F) on the body, then loosely tighten the right subframe mounting bolt.
   -4. Insert a screwdriver through the left side positioning hole on the subframe, and into the positioning hole on the body, then loosely tighten the left subframe mounting bolt.
   -5. Tighten the subframe mounting bolts to the specified torque values stating with the right subframe mounting bolt. Use the screwdriver when tightening the right subframe mounting bolts.
   -6. Check all of the subframe mounting bolts, and retightening if necessary.
   NOTE: Tighten the bolts in the sequence as shown.



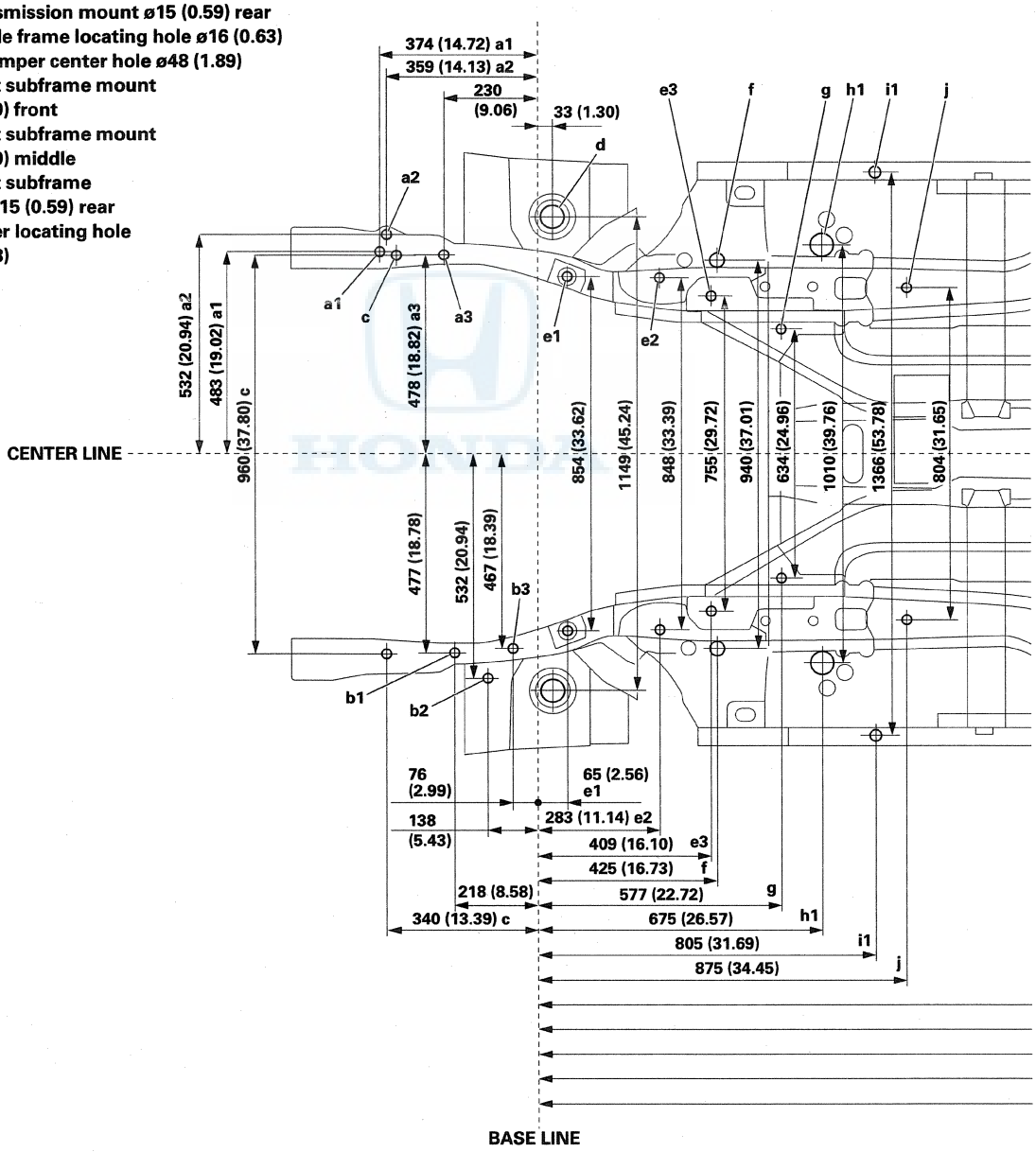
2. After reinstalling all removed parts, check and adjust the front wheel alignment.

Frame Repair Chart

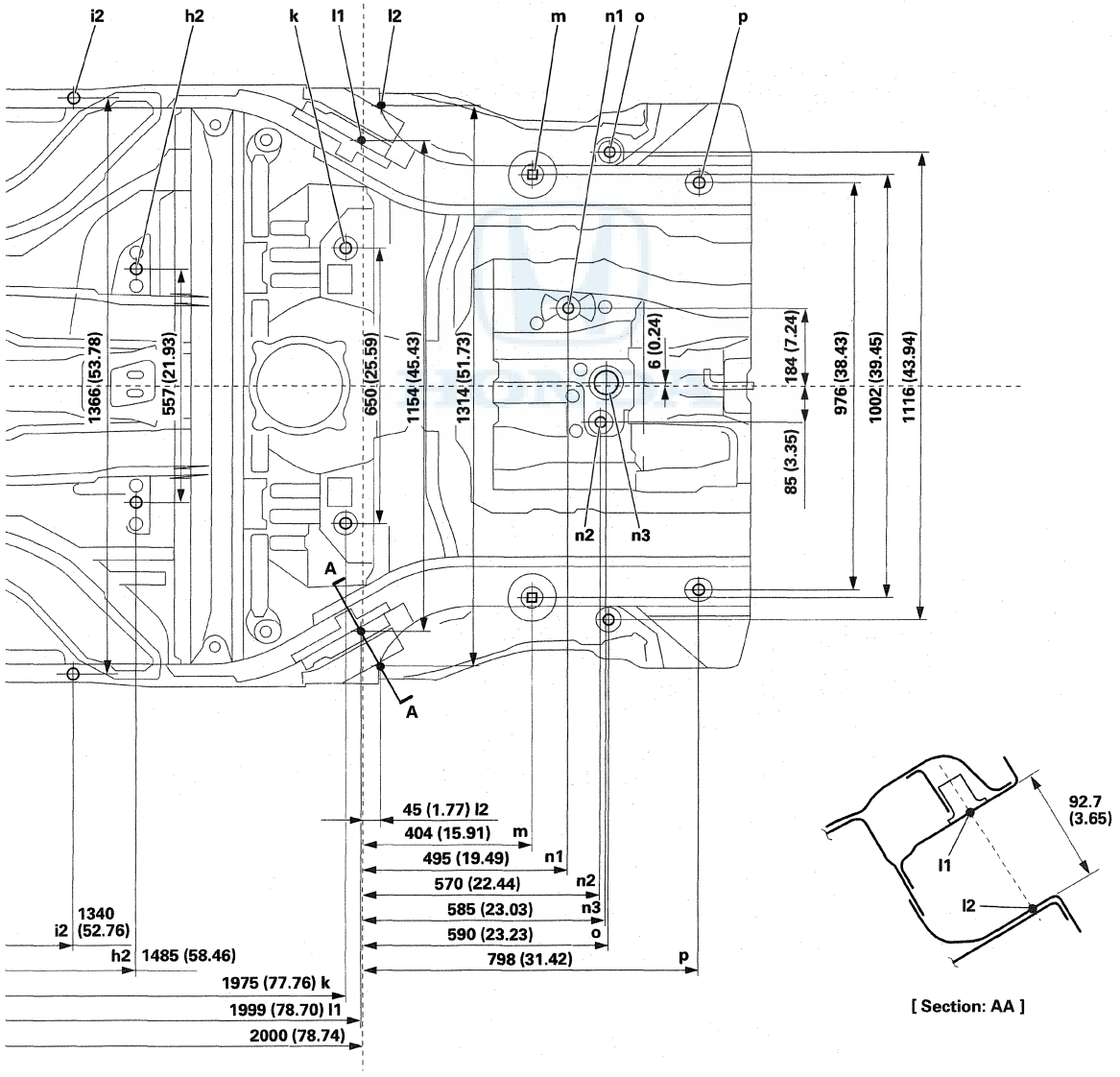
Top View

Unit: mm (in)
ø: Inner diameter

- a1 For engine side mount ø15 (0.59) front
- a2 For engine side mount ø15 (0.59) outer
- a3 For engine side mount ø15 (0.59) rear
- b1 For transmission mount ø15 (0.59) front
- b2 For transmission mount ø15 (0.59) wheelhouse side
- b3 For transmission mount ø15 (0.59) rear
- c Front side frame locating hole ø16 (0.63)
- d Front damper center hole ø48 (1.89)
- e1 For front subframe mount ø15 (0.59) front
- e2 For front subframe mount ø15 (0.59) middle
- e3 For front subframe mount ø15 (0.59) rear
- f Outrigger locating hole ø25 (0.98)
- g Front side crossmember locating hole ø11 (0.43)
- h1 Front floor locating hole ø50 (1.97) front
- i1 Inside sill locating hole ø25 (0.98) front
- j Front floor frame locating hole ø25 (0.98)



i2 Inside sill locating hole ø25 (0.98) rear
h2 Front floor locating hole ø25 (0.98) rear
k Middle floor front locating hole ø25 (0.98)
l1 For trailing arm mount ø15 (0.59) inner
l2 For trailing arm mount ø17 (0.67) outer
m For spring base locating hole 15 (0.59) x 15 (0.59) square
n1 Rear floor rear locating hole ø25 (0.98)
n2 Rear floor rear locating hole ø25 (0.98)
n3 Rear floor rear locating hole ø50 (1.97)
o Rear damper center hole ø24 (0.94)
p Rear frame B locating hole ø20 (0.79)



[Section: AA]

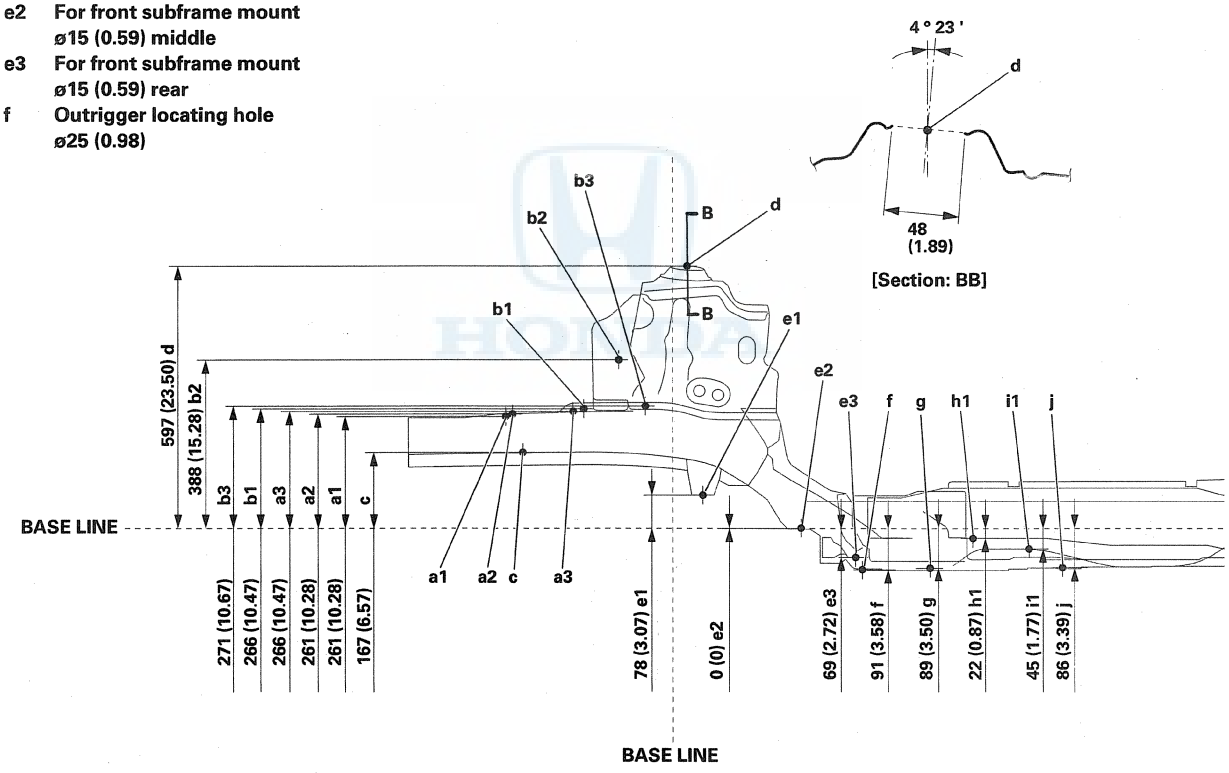
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Frame Repair Chart (cont'd)

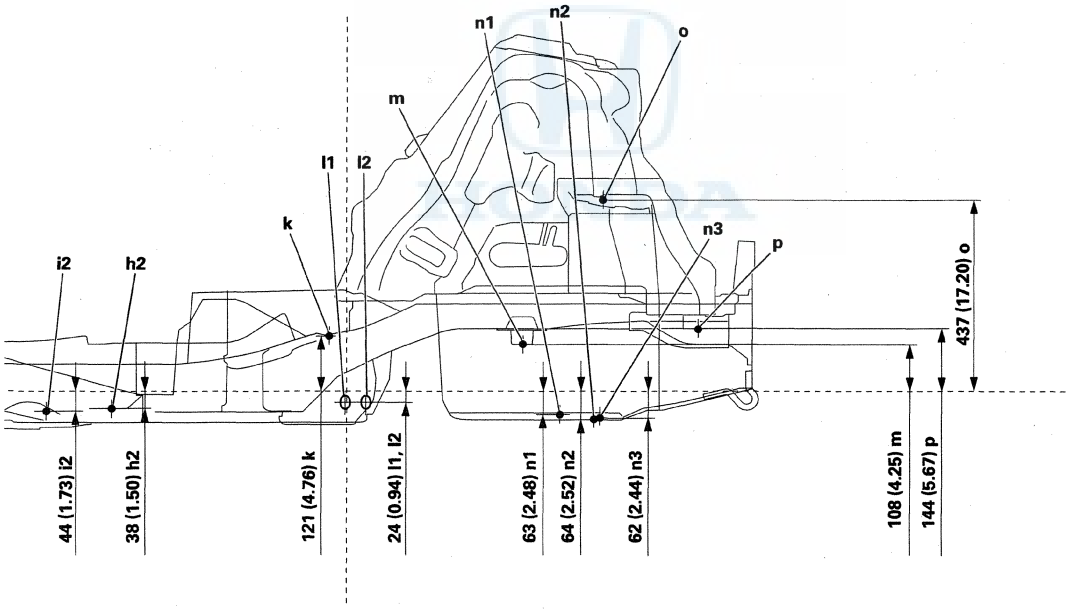
Side View

Unit: mm (in)
ø: Inner diameter

- a1 For engine side mount ø15 (0.59) front
- a2 For engine side mount ø15 (0.59) outer
- a3 For engine side mount ø15 (0.59) rear
- b1 For transmission mount ø15 (0.59) front
- b2 For transmission mount ø15 (0.59) wheelhouse side
- b3 For transmission mount ø15 (0.59) rear
- c Front side frame locating hole ø16 (0.63)
- d Front damper center hole ø48 (1.89)
- e1 For front subframe mount ø15 (0.59) front
- e2 For front subframe mount ø15 (0.59) middle
- e3 For front subframe mount ø15 (0.59) rear
- f Outrigger locating hole ø25 (0.98)
- g Front side crossmember locating hole ø11 (0.43)
- h1 Front floor locating hole ø50 (1.97) front
- i1 Inside sill locating hole ø25 (0.98) front
- j Front floor frame locating hole ø25 (0.98)



i2 Inside sill locating hole ø25 (0.98) rear
h2 Front floor locating hole ø25 (0.98) rear
k Middle floor front locating hole ø25 (0.98)
l1 For trailing arm mount ø15 (0.59) inner
l2 For trailing arm mount ø17 (0.67) outer
m For spring base locating hole 15 (0.59) x 15 (0.59) square
n1 Rear floor rear locating hole ø25 (0.98)
n2 Rear floor rear locating hole ø25 (0.98)
n3 Rear floor rear locating hole ø50 (1.97)
o Rear damper center hole ø24 (0.94)
p Rear frame B locating hole ø20 (0.79)



SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If HVAC maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If HVAC maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

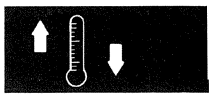
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HVAC (Heating, Ventilation, and Air Conditioning)

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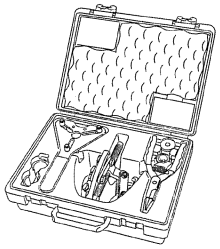
Climate Control

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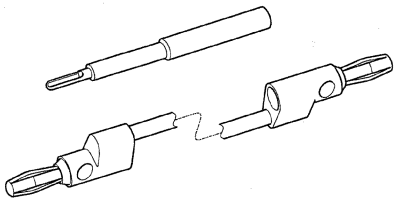


Special Tools

Ref.No.	Tool Number	Description	Qty
①	07AAF-000A150	A/C Compressor Kit	1
②	07SAZ-001000A	Backprobe Set	2

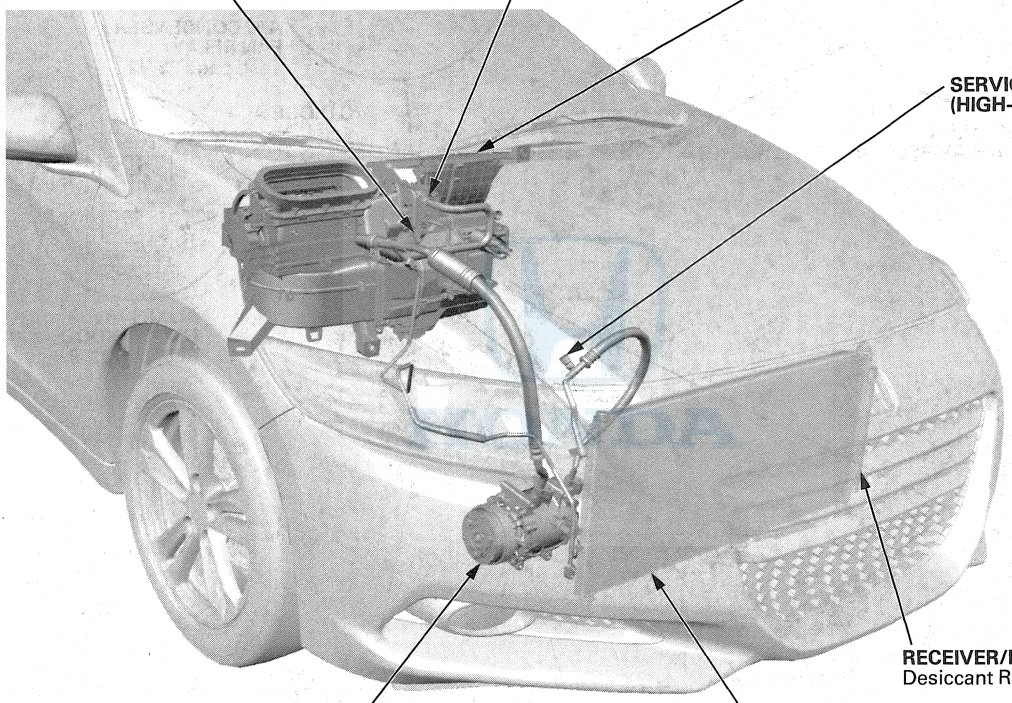


①



②

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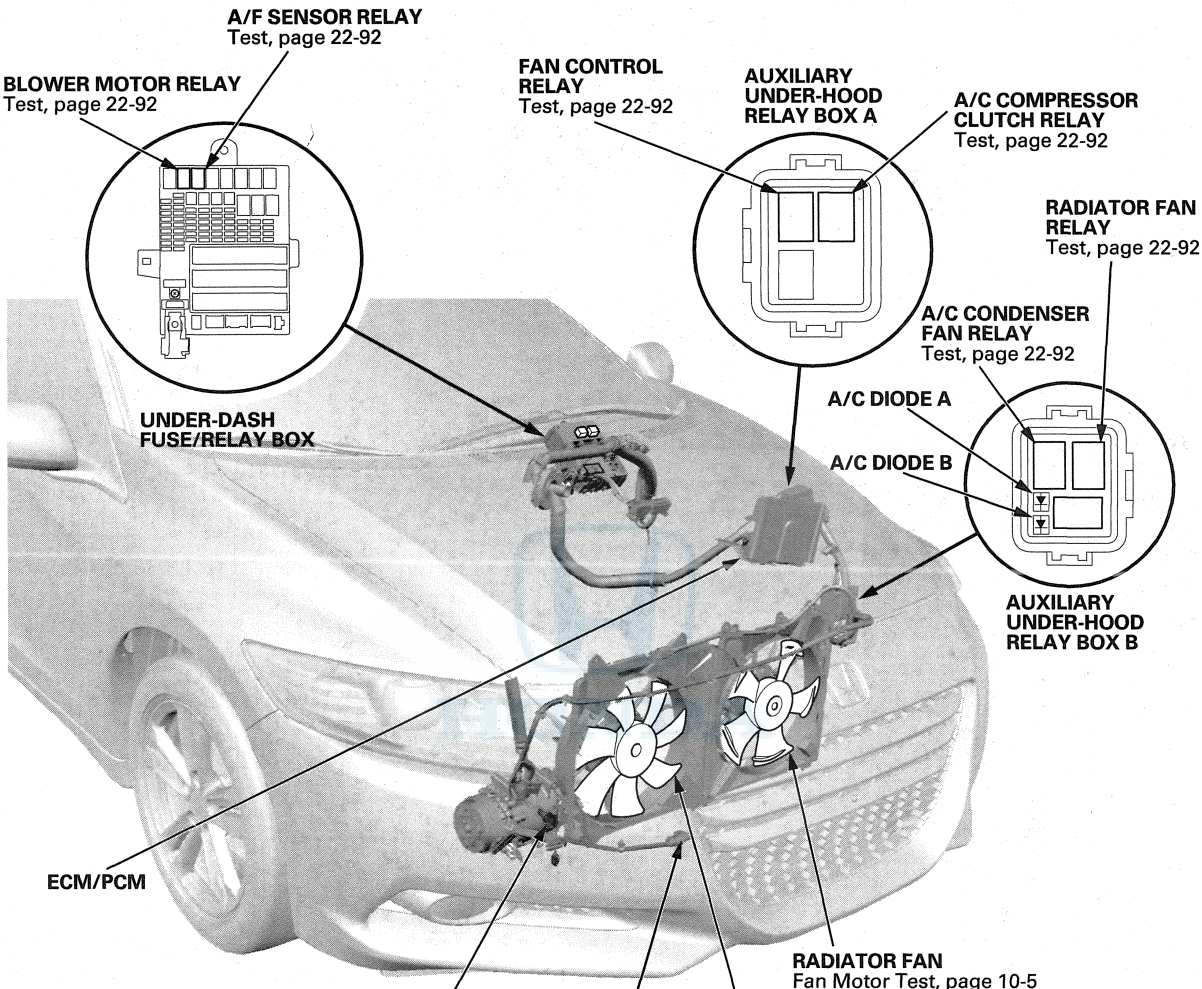
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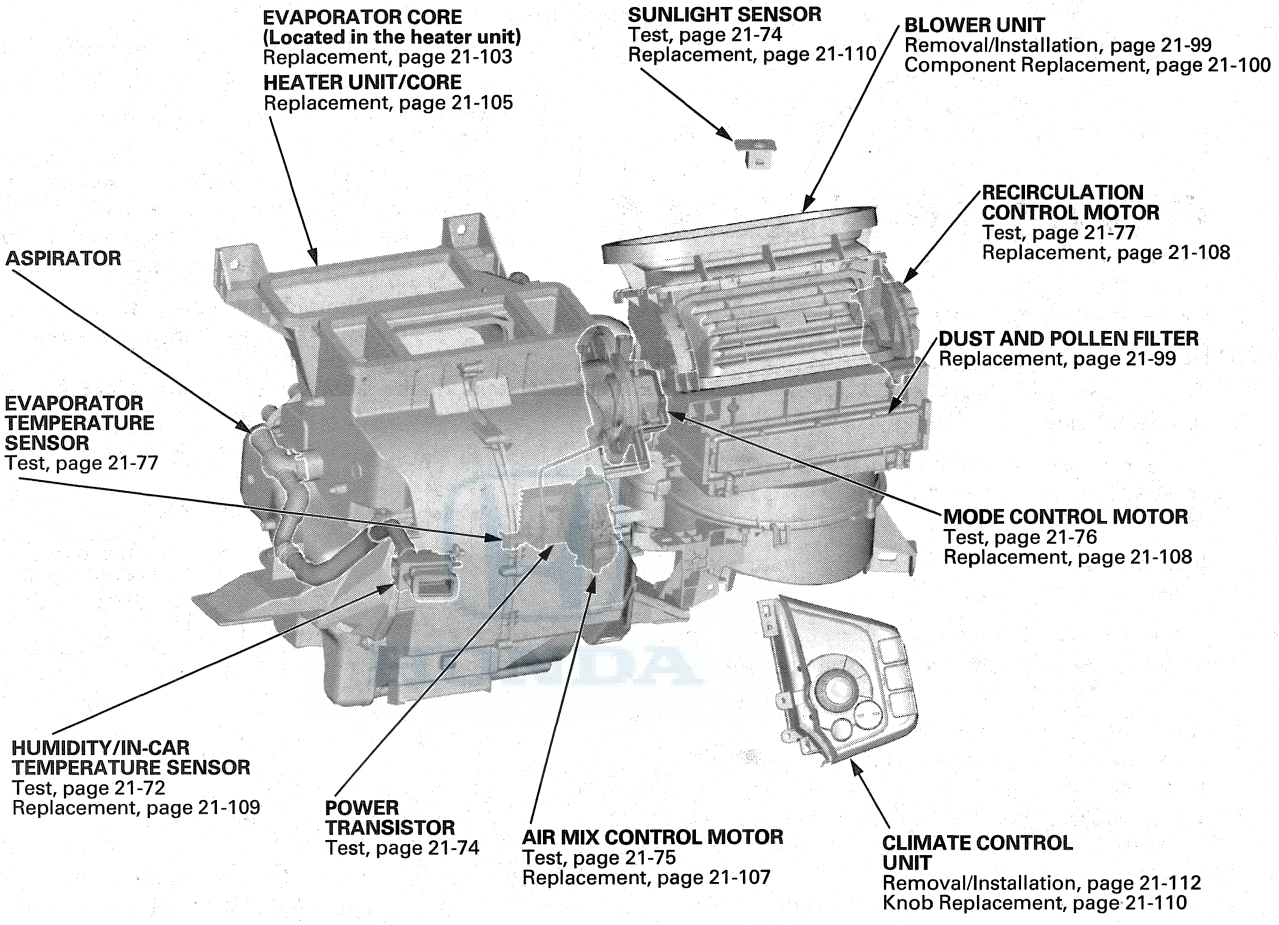
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A/C Service Tips and Precautions

⚠ WARNING

- Compressed air mixed with the R-134a forms a combustible vapor.
- The vapor can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

⚠ CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil.

Use only service equipment that is U.L.-listed and is certified to meet the requirements of SAE J2788 to remove R-134a from the air conditioning system.

If accidental system discharge occurs, ventilate the work area before resuming service.

R-134a service equipment or vehicle air conditioning systems should not be pressure tested or leak tested with compressed air.

Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

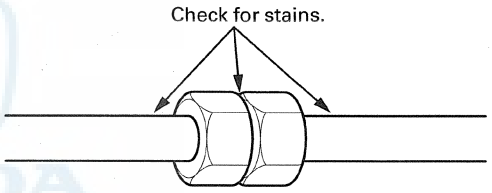
- Always disconnect the negative cable from the 12 volt battery (see page 22-86) whenever replacing air conditioning parts.
- Keep moisture and dirt out of the system. When disconnecting any lines, plug or cap the fittings immediately; do not remove the caps or plugs until just before you reconnect each line.
- Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
- When tightening or loosening a fitting, use a second wrench to support the matching fitting.
- When discharging the system, use an R-134a refrigerant recovery/recycling/charging station; do not release refrigerant into the atmosphere.

A/C System Inspection

NOTE: For A/C system noise, go to the A/C System Noise Check (see page 21-84).

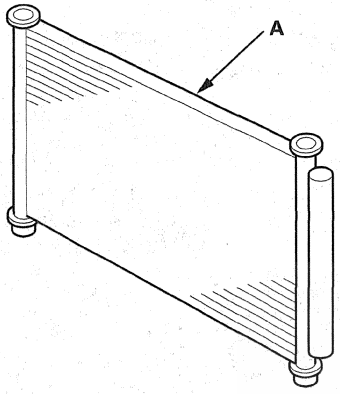
Before troubleshooting any problem with the air conditioning system, other than noise, do the following:

1. Check that the HVAC air intake plenum at the base of the windshield is not blocked by leaves or debris. Remove any blockage.
2. Check for kinks or sharp bends in the A/C lines and hoses (which can greatly reduce system performance). If any of the A/C lines and hoses are kinked or bent, replace them (see page 21-98).
3. Inspect the A/C components, the pressure lines, and the hoses for stains that may indicate a refrigerant or an A/C compressor oil leak. If there is any indication of leaks, do the Refrigerant Leak Check (see page 21-79) to confirm the leak(s).

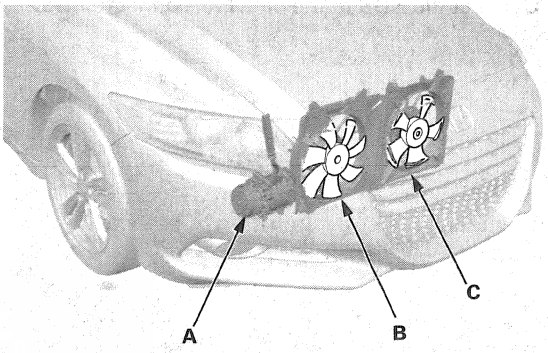


4. Inspect the drive belt for physical damage or signs of slippage (see page 10-17). If the drive belt is damaged or shows signs of slippage, replace it and recheck.

5. Check the A/C condenser (A) for material clogging the fins (dirt, insects, etc.). If the A/C condenser is clogged or restricted, carefully clean any material from the A/C condenser fins with water and detergent. If deeper cleaning is required, clean the fins with HondaBrite cleaner (P/N 08732-0020B). Do not perform pressure test until the A/C condenser completely dry.



6. Check the A/C condenser for fin damage (bent fins). If any of the A/C condenser fins are bent, try to comb them straight. Do the Refrigerant Leak Check (see page 21-79) to check for leaks if there is visible damage to the A/C condenser. If the A/C condenser is leaking or the fins cannot be straightened, replace the A/C condenser.
7. Check the dust and pollen filter. If the dust and pollen filter is clogged or restricted, replace it (see page 21-99).
8. Check for climate control DTCs using the Self-Diagnostic Function (see page 21-9). If there are any DTCs, go to the appropriate troubleshooting (see page 21-15).
9. Start the engine, turn the air conditioning system on, and allow it to run for a few minutes and reach stable operation.
10. Check that the A/C operates at each position of the fan control switch (except OFF). If the A/C does not operate at all fan control switch positions, refer to the symptom troubleshooting (see page 21-16).
11. Check that the A/C compressor clutch armature plate (A) is rotating at the same speed as the rotor pulley and is engaging. If the A/C compressor clutch does not engage, go to A/C Compressor Clutch Circuit Troubleshooting (see page 21-66).



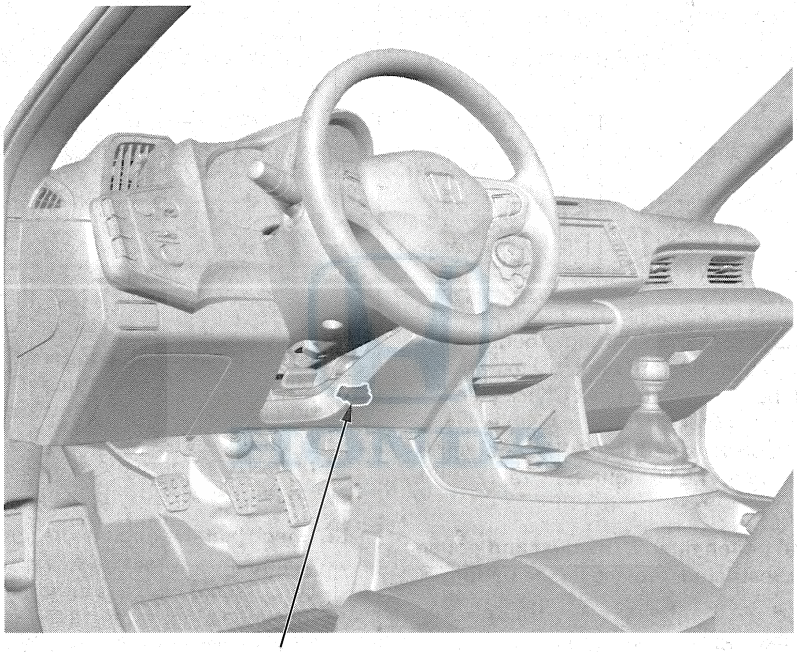
12. Check that the A/C condenser fan (B) and the radiator fan (C) operate when the A/C compressor clutch is engaged and blow air toward the engine compartment. If one or both of the fans is not working properly, refer to the symptom troubleshooting (see page 21-16).
13. Check that the engine idle speed is correctly maintained when the A/C is switched on and off, (A/C compressor clutch is engaged and disengaged). If the idle speed increases more than 100 rpm when the A/C compressor engages, confirm that the A/C compressor is the cause of the idle speed increase. Replace the A/C compressor (see page 21-94), if necessary.

General Troubleshooting Information

How to Check for DTCs With the HDS

NOTE:
- There are three methods used to check for DTCs. The recommended method is to use the Honda Diagnostic System (HDS) with the appropriate software, plugged into the data link connector (DLC).
- The second method is to run the self-diagnostic function built into the climate control unit.
- The third method is to use the B-CAN system diagnosis test mode A (see page 22-126).

1. Make sure the ignition switch is in LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, troubleshoot the DLC circuit (see page 11-383).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select DTCs in the HVAC/CLIMATE CONTROL menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting. If no DTCs are indicated, refer to symptom troubleshooting (see page 21-16).

   NOTE:
   - After troubleshooting, clear the DTCs with the HDS.
   - For specific operations, refer to the user's manual that came with the HDS.

How to Use the Self-Diagnostic Function With the HDS

1. Make sure the ignition switch is in LOCK (0).
2. Connect the HDS to the DLC.
3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the climate control unit. If it does not, troubleshoot the DLC circuit (see page 11-383).
5. Select HVAC/CLIMATE CONTROL in the BODY ELECTRICAL menu.
6. Select DTCs in the HVAC/CLIMATE CONTROL menu.
7. Select CLIMATE CONTROL SELF TEST in the INSPECTION menu.
8. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting.

   NOTE:
   - After troubleshooting, clear the DTCs with the HDS.
   - For specific operations, refer to the user's manual that came with the HDS.

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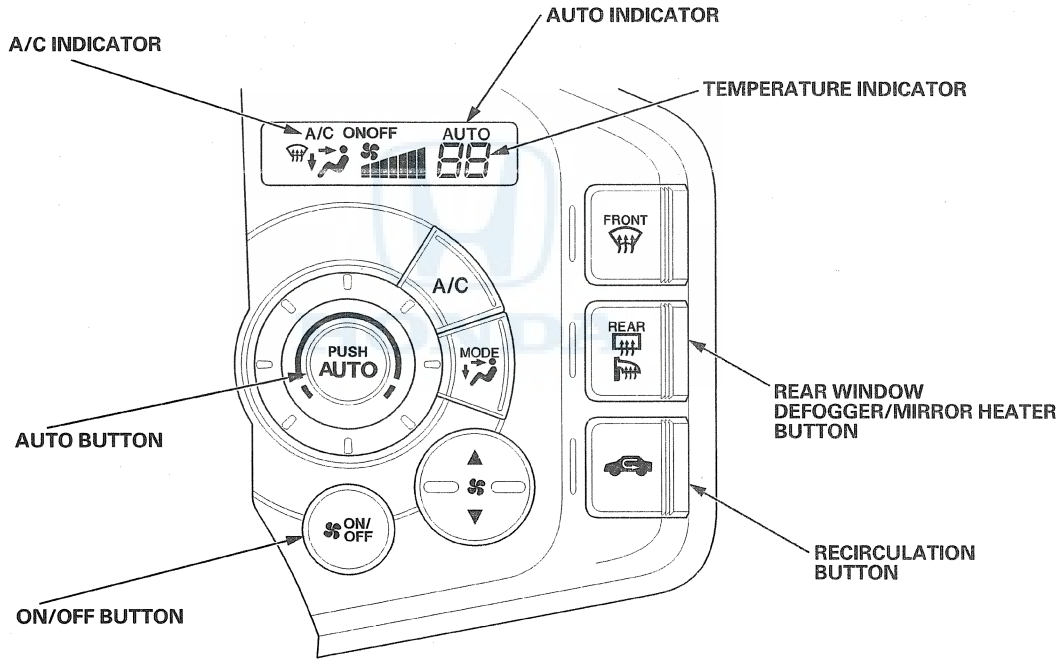
General Troubleshooting Information (cont'd)

How to Use the Self-Diagnostic Function Without the HDS

The climate control unit has a self-diagnostic function. To run the self-diagnostic function, do the following:

1. Turn the ignition switch to LOCK (0), and then back to ON (II).
2. Press and hold the ON/OFF button, then within 10 seconds press and release the REAR WINDOW DEFOGGER/MIRROR HEATER button five times. Release the ON/OFF button, then the self-diagnostic begins.

NOTE:
- The blower motor will run at various speeds regardless of what the panel is displaying.
- If there is a problem with the system, it will flash 88, or 88 AUTO or 88 A/C, and one or more of the 14 indicator segments (A through P). Refer to checking for DTCs.
- If there is more than one DTC, they are displayed one at a time in sequence followed by a pause (all the display indicator segments illuminate) between the DTCs.
- If there are no problems detected, the segments will not illuminate, and the system will appear to be turned off.



Canceling the Self-Diagnostic Function

3. Turn the ignition switch to LOCK (0) to cancel the self-diagnostic function. After completing repair work, run the self-diagnostic function again to make sure that there are no other DTCs.

Trouble Code Memory Function

The trouble code that the climate control unit memorizes is displayed. To run the trouble code memory function, do the following:

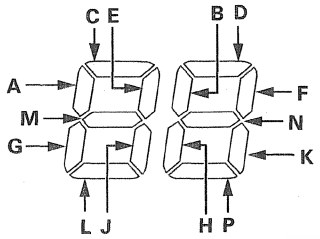
1. Turn the ignition switch to LOCK (0), and then back to ON (II).
2. Press and hold the AUTO button, then press and hold the ON/OFF button.
3. The trouble code memorized in the climate control unit is displayed.

Checking for DTCs

The temperature display indicates single or multiple DTCs. If no DTCs are present, the indicator remains blank.

NOTE: If indicator segments A, C, D, E, G, J, and the AUTO indicator or the A/C indicator are on at the same time, there may be an open in the climate control unit ground circuit.

TEMPERATURE INDICATOR AUTO INDICATOR A/C INDICATOR



AUTO A/C

DTC (Temperature Indicator Segment, AUTO and A/C Indicator)	Detection Item
A and AUTO	An open in the in-car temperature sensor circuit (see page 21-36)
B and AUTO	A short in the in-car temperature sensor circuit (see page 21-37)
C and AUTO	An open in the outside air temperature sensor circuit (see page 21-38)
D and AUTO	A short in the outside air temperature sensor circuit (see page 21-39)
E and AUTO	An open in the sunlight sensor circuit (see page 21-40)
F and AUTO	A short in the sunlight sensor circuit (see page 21-42)
G and AUTO	An open in the evaporator temperature sensor circuit (see page 21-43)
H and AUTO	A short in the evaporator temperature sensor circuit (see page 21-44)
J and AUTO	An open in the humidity sensor circuit (see page 21-55)
K and AUTO	A short in the humidity sensor circuit (see page 21-56)
A and A/C	An open in the air mix control motor circuit (see page 21-45)
B and A/C	A short in the air mix control motor circuit (see page 21-46)
C and A/C	A problem in the air mix control motor circuit, linkage, door, or motor (see page 21-47)
D and A/C	An open or short in the mode control motor circuit (see page 21-49)
E and A/C	A problem in the mode control motor circuit, linkage, door, or motor (see page 21-51)
F and A/C	A problem in the blower motor circuit (see page 21-52)
A	Climate control unit internal error (see page 21-34)
B	Climate control unit lost communication with gauge control module (VSP/NE message) (see page 21-34)
C	Climate control unit lost communication with gauge control module (coolant temp message) (see page 21-34)
D	Climate control unit lost communication with gauge control module (illumination message) (see page 21-34)
E	Communication bus line error (BUS-OFF) (see page 22-139)

(cont'd)

General Troubleshooting Information (cont'd)

Displaying Sensor Inputs at the Climate Control Unit

The climate control unit has a mode that displays sensor inputs it receives. This mode shows you what the climate control unit is receiving from each of the sensors, one at a time, and it can help you determine if a sensor is faulty.

Checks Before Using the Sensor Input Display Mode

1. Turn the ignition switch to ON (II), and check the recirculation door function; press the recirculation button to switch from FRESH to RECIRC. The air volume and sound should change slightly.
2. Set the temperature control knob to the desired test temperature. When selecting the test temperature, note these items:
   - "Lo" temperature setting will default to MAX COOL, VENT, and RECIRC (A/C ON) or FRESH (A/C OFF).
   - "Hi" temperature setting will default to MAX HOT, HEAT or HEAT/DEF (switches between HEAT, HEAT/DEF according to the outside air temperature sensor reading), and FRESH.
   - 57 through 87 °F (or 18 through 32 °C) settings will use the automatic climate control logic.
3. Turn the ignition switch to LOCK (0).

Run the Sensor Input Display Mode

1. Turn the ignition switch to LOCK (0).
2. Press and hold both the AUTO and RECIRCULATION buttons, then start the engine.
3. After the engine starts, release both buttons. The display panel control unit will flash the sensor number and then the value for that sensor. Record the value displayed.
4. To advance to the next sensor, press the REAR WINDOW DEFOGGER/MIRROR HEATER button.

NOTE:
- The sensor values will be displayed in degrees Celsius (°C) or an alphanumeric code. Use the chart to convert the value to degrees Fahrenheit (°F).
- If the sensor value displays "Er", this indicates there is an open or short in the circuit or sensor. Check for DTCs using the HDS, or use the climate control self-diagnostic function.
- If necessary, compare the sensor input display to a known-good vehicle under the same test conditions.
- If the sensor displayed value is out of the normal range, refer to the sensor test or substitute a known-good sensor, and recheck.

Sensor	Item	Displayed Value
1	Mode positioning	BIT
2	In-car temperature	°C
3	Outside air temperature	°C
4	Solar radiation sensor value: dark = 00, flashlight = 04, cloudy = 10, sunny = 65	10 kcal/m²·h
5	Evaporator outlet air temperature	°C
6	Air mix opening (low value indicates cooler air distribution, higher value indicates warmer air distribution)	% of opening
7	Vehicle speed (vehicle must be driven to display speed)	10 km/h
8	Engine coolant temperature	°C
9	Vent temperature air out (TAO)	°C
A	Humidity sensor value	%
b	Illumination duty	Step
C	Auto idle stop prohibit flag	———
d	Software version	———

Celsius to Fahrenheit Conversion Table

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0	32	10	50	20	68	30	86	40	104
1	34	11	52	21	70	31	88	41	106
2	36	12	54	22	72	32	90	42	108
3	37	13	55	23	73	33	91	43	109
4	39	14	57	24	75	34	93	44	111
5	41	15	59	25	77	35	95	45	113
6	43	16	61	26	79	36	97	46	115
7	45	17	63	27	81	37	99	47	117
8	46	18	64	28	82	38	100	48	118
9	48	19	66	29	84	39	102	49	120

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
50	122	60	140	70	158	80	176	90	194
51	124	61	142	71	160	81	178	91	196
52	126	62	144	72	162	82	180	92	198
53	127	63	145	73	163	83	181	93	199
54	128	64	147	74	165	84	183	94	201
55	131	65	149	75	167	85	185	95	203
56	133	66	151	76	169	86	187	96	205
57	135	67	152	77	170	87	188	97	207
58	136	68	154	78	172	88	190	98	208
59	139	69	158	79	174	89	192	99	210

Alphanumeric Conversion Table

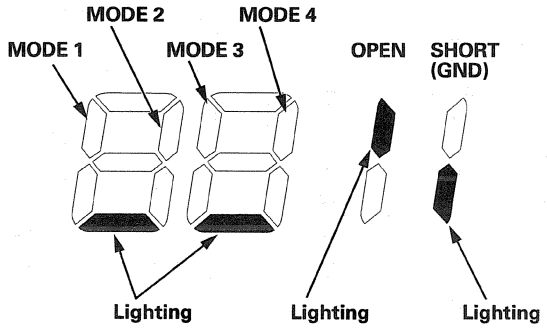
Display Reading (Alphanumeric)	°C	°F	%
A1 thru A9	−1 thru −9	30 thru 16	−1 thru −9
B0 thru B9	−10 thru −19	14 thru −2	−10 thru −19
C0 thru C9	−20 thru −29	−4 thru −20	−20 thru −29
D0 thru D9	−30 thru −39	−22 thru −38	−30 thru −39
E0 thru E9	−40 thru −49	−40 thru −56	−40 thru −49
F0 thru F9	———	———	+100 thru +109

(cont'd)

General Troubleshooting Information (cont'd)

Mode Motor Code Information

Code information on the mode motor is displayed by combining regulated segments.



Mode motor code signal 0: Open, 1: Short (GND)				Mode position
Mode 1	Mode 2	Mode 3	Mode 4	
1	0	0	0	OVER VENT
1	0	0	1	VENT
0	0	0	1	VENT-HEAT/VENT
0	0	1	1	HEAT/VENT
0	0	1	0	HEAT/VENT-HEAT
0	1	1	0	HEAT
0	1	0	0	HEAT-HEAT/DEF
1	1	0	0	HEAT-DEF
1	1	1	0	HEAT/ DEF-DEF
1	0	1	0	DEF
1	0	1	1	OVER DEF

Display of Auto Idle Stop Prohibit Flag

Permission: 00
prohibit: 01

Permission and prohibit of the auto idle stop are displayed in the preset temperature indicator.

5. To cancel the sensor input display mode, press the AUTO button or turn the ignition switch to LOCK (0).

DTC Troubleshooting Index

Checking the DTCs with the HDS

DTC	Detection Item or Symptom	ECU	DTC type	Page
B1200	Communication bus line error (BUS-OFF)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 22-139)
B1205	Climate control unit lost communication with gauge control module (VSP/NE message)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-34)
B1206	Climate control unit lost communication with gauge control module (coolant temp message)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-34)
B1207	Climate control unit lost communication with gauge control module (illumination message)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-34)
B1225	An open in the in-car temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-36)
B1226	A short in the in-car temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-37)
B1227	An open in the outside air temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-38)
B1228	A short in the outside air temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-39)
B1229	An open in the sunlight sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-40)
B1230	A short in the sunlight sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-42)
B1231	An open in the evaporator temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-43)
B1232	A short in the evaporator temperature sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-44)
B1233	An open in the air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-45)
B1234	A short in the air mix control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-46)
B1235	A problem in the air mix control motor circuit, linkage, door, or motor	Climate control unit	Signal error	DTC Troubleshooting (see page 21-47)
B1239	An open or short in the mode control motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-49)
B1240	A problem in the mode control motor circuit, linkage, door, or motor	Climate control unit	Signal error	DTC Troubleshooting (see page 21-51)
B1241	A problem in the blower motor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-52)
B2967	An open in the humidity sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-55)
B2968	A short in the humidity sensor circuit	Climate control unit	Signal error	DTC Troubleshooting (see page 21-56)
B2969	Climate control unit lost communication with MICU (WIPSW message)	Climate control unit	Loss of communication	DTC Troubleshooting (see page 21-57)

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
The recirculation control doors do not change between Fresh and Recirculate	Probable cause: Recirculation control motor circuit malfunction Do the recirculation control motor circuit troubleshooting (see page 21-58)	• Blown fuse No. B10 (7.5 A) in the under-dash fuse/relay box • Poor or loose connections at the terminals
The blower and heater controls and the A/C system do not work	Probable cause: The climate control unit malfunction Do the climate control power and ground circuit troubleshooting (see page 21-59)	• Climate control DTCs (see page 21-8) • Powertrain DTCs (see page 11-3) • Blown fuse No. B10 (7.5 A) and No. B57 (30 A) in the under-dash fuse/ relay box • Poor ground at G501 (see page 22-40) and G502 (see page 22-44) • Poor or loose connections at the terminals
The A/C compressor clutch and the A/C condenser/radiator fans are inoperative, but the blower and heater controls work	Probable cause: A/C pressure sensor circuit malfunction Troubleshoot the A/C pressure sensor circuit: • A/C pressure sensor circuit low voltage (see page 11-266) • A/C pressure sensor circuit high voltage (see page 11-268) NOTE: The A/C pressure sensor can malfunction without setting a DTC.	• Climate control DTCs (see page 21-8) • Blown fuse No. B30 (30 A) and No. B47 (30 A) in the under-dash fuse/relay box • Poor or loose connections at the terminals
The A/C compressor clutch does not engage, but the A/C condenser/radiator fans operate, and the blower and heater controls work	Probable cause: • No power to the A/C compressor clutch. Do the A/C compressor clutch circuit troubleshooting (see page 21-66) • Low speed idle • High engine coolant temperature (ECT)	• Climate control DTCs (see page 21-8) • Blown fuse No. B10 (7.5 A) and No. B43 (7.5 A) in the under-dash fuse/relay box • A/C system pressure is normal • Poor or loose connections at the terminals
The A/C condenser fan and/or the radiator fan do not run with the A/C on	Probable cause: A/C condenser/radiator fan low speed circuit malfunction Do the radiator and A/C condenser fan low speed circuit troubleshooting (see page 21-60)	• Climate control DTCs (see page 21-8) • Powertrain DTCs (see page 11-3) • Blown fuse No. B30 (30 A) and No. B10 (7.5 A) in the under-dash fuse/relay box • Poor ground at G401 (see page 22-36) • Poor or loose connections at the terminals
The A/C condenser/radiator fans do not run at high speed, but do run at low speed	Probable cause: Malfunction in the fan high speed circuit(s). Do the following troubleshooting as needed: • A/C condenser fan high speed circuit troubleshooting (see page 21-64) • Radiator fan high speed circuit troubleshooting (see page 10-32)	• Climate control DTCs (see page 21-8) • Powertrain DTCs (see page 11-3) • Blown fuse No. B30 (30 A) and No. B47 (30A) in the under-dash fuse/relay box • Poor ground at G401 (see page 22-36) • Poor or loose connections at the terminals

Symptom	Diagnostic procedure	Also check for
Voice commands do not work	Probable cause: Communication problem between the climate control unit and the audio-navigation unit Do the navigation communication line circuit troubleshooting (see page 21-71)	• Climate control DTCs (see page 21-8) • Navigation link • Poor or loose connections at the terminals
Blower fan runs slower than expected in cold weather (when in AUTO mode) NOTE: It is normal for the blower fan to run slowly until the coolant temperature rises when in AUTO mode	Probable cause: Engine coolant temperature (ECT) circuit malfunction Troubleshoot the ECT sensor circuit: • ECT sensor 2 circuit low voltage (see page 11-172) • ECT sensor 2 circuit high voltage (see page 11-173)	• Climate control DTCs (see page 21-8) • Powertrain DTCs (see page 11-3) • Manual blower motor operation
The A/C compressor clutch cycles rapidly on and off	Probable cause: A/C system is very low on refrigerant, indicating a possible leak • Check low idle first, then check data list A/C pressure sensor • Do the refrigerant leak check (see page 21-79) and repair any leaks. Replace the receiver/dryer (see page 21-93), then recharge the system to specifications (see page 21-114)	• Climate control DTCs (see page 21-8) • If there is no leak and the refrigerant level is normal, do the A/C compressor clutch circuit troubleshooting (see page 21-66), and look for an intermittent problem
The A/C compressor clutch does not disengage when the A/C switch is off	Probable cause: The A/C compressor clutch circuit is on (energized) continuously, shorted to ground, stuck A/C compressor clutch relay, or the A/C compressor clutch is mechanically jammed • Do the A/C compressor clutch circuit troubleshooting (see page 21-66), and repair any circuit problems • If the A/C compressor clutch circuit is OK, then do the A/C compressor clutch check (see page 21-78), and repair any problems with the A/C compressor clutch	The A/C compressor relief valve. If it has vented refrigerant to the atmosphere, correct the problem with the A/C compressor clutch or clutch circuit, then replace the relief valve (see page 21-96).
The A/C compressor relief valve has vented refrigerant NOTE: This indicates the A/C system pressure was very high	Probable cause: A high-side restriction, the A/C condenser/radiator fans are inoperative, or the A/C compressor clutch is not disengaging • If the fans and A/C compressor clutch operate normally, recover refrigerant (see page 21-113), and check for restrictions • If the A/C compressor clutch will not disengage, troubleshoot the A/C compressor clutch circuit (see page 21-66), and check for mechanical problems (see page 21-78) • If the fans are inoperative, troubleshoot the fan circuits (see page 21-60)	Powertrain DTCs (see page 11-3)
HDS does not communicate with the climate control unit or the vehicle	Troubleshoot the DLC circuit (see page 11-383)	

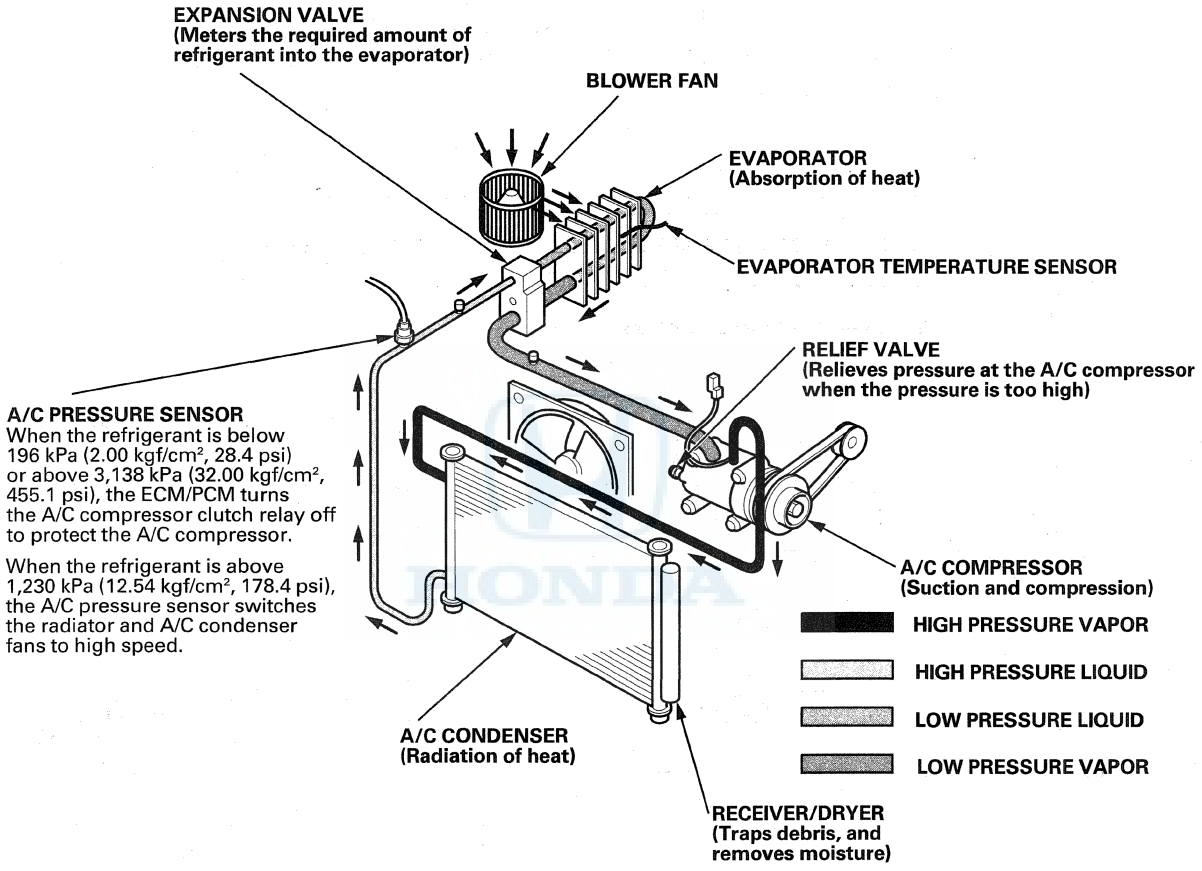
(cont'd)

Symptom Troubleshooting Index (cont'd)

Symptom	Diagnostic procedure	Also check for
Insufficient heating	1. Check the coolant level (see page 10-8) 2. Check the radiator cap (see page 10-4) 3. Check the coolant temperature during normal operation 4. Check the heater core inlet hose temperature: • If it is COLD, check for restrictions in the hose, a damaged or leaking thermostat, or a damaged or leaking water pump • If it is HOT, check for restrictions in the heater core. Back flush or replace the heater core 5. Do the air mix control motor test (see page 21-75) 6. Check the blower motor unit for obstructions 7. Check for air leaks around the ducts and vents	• Climate control DTCs (see page 21-8) • Damaged cylinder head gasket

System Description

The air conditioning (A/C) system removes heat from the passenger compartment by transferring heat from the ambient air to the evaporator. The A/C system refrigerant expands in the evaporator, and the evaporator becomes very cold and absorbs the heat from the ambient air. The blower fan pushes air across the evaporator where the heat is absorbed, and then it blows the cool air into the passenger compartment.



This vehicle uses HFC-134a (R-134a) refrigerant, which does not contain chlorofluorocarbons. Pay attention to the following service items:

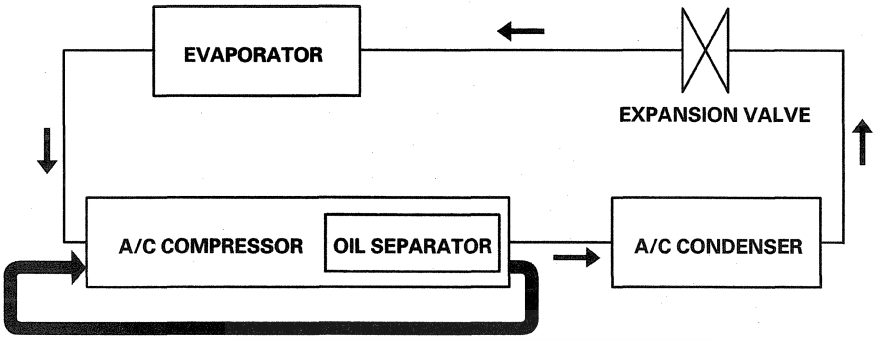
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (SP-10) designed for the R-134a A/C compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in A/C compressor failure.
- All A/C system parts (A/C compressor, discharge line, suction line, evaporator, A/C condenser, receiver/dryer, expansion valve, O-rings for joints) are designed for refrigerant R-134a.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- Use only a recovery/recycling/charging station for refrigerant R-134a.
- Always recover refrigerant R-134a with an approved recovery/recycling/charging station before disconnecting any A/C fitting.

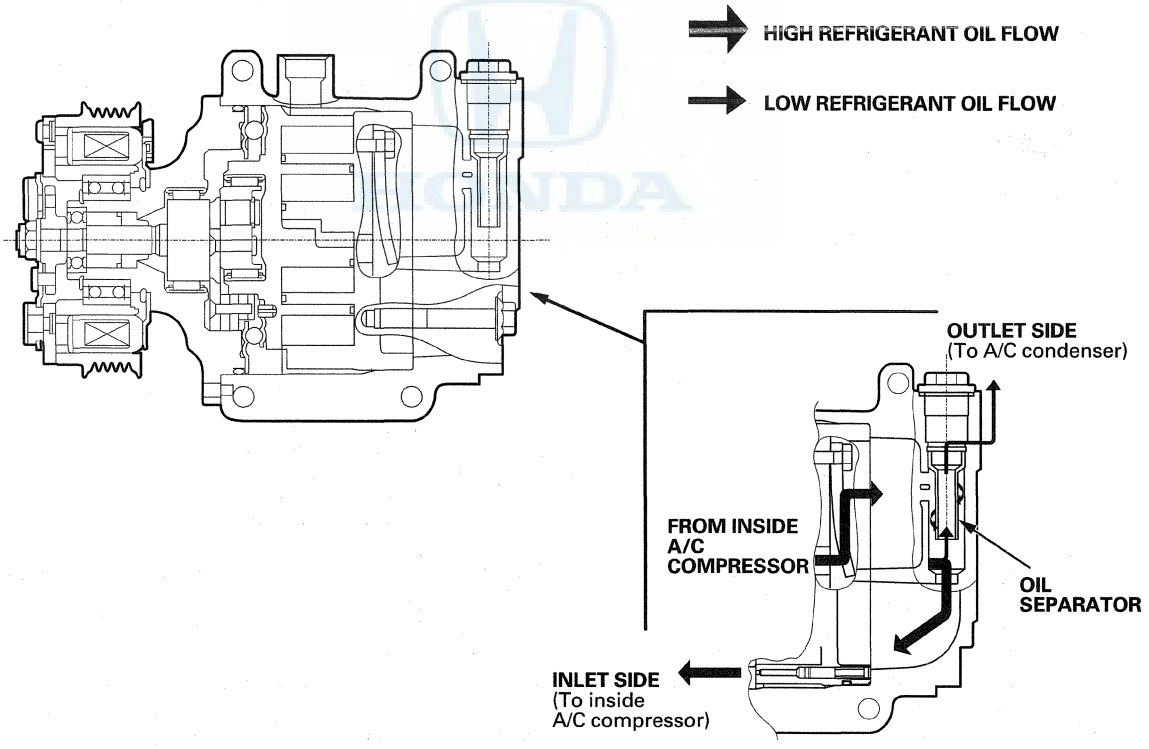
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System Description (cont'd)

Oil Separator

Oil emission from the A/C compressor to the A/C line is reduced by placing the oil separator in the A/C compressor. This results in a thinner oil film inside of the heat exchangers (A/C condenser and evaporator). Air conditioning efficiency is increased without sacrificing engine performance.



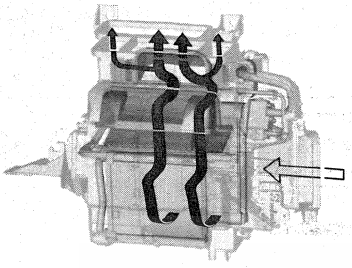


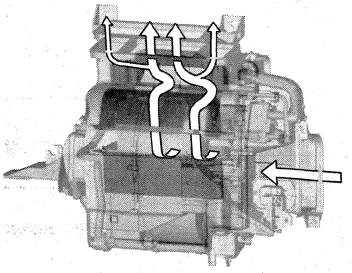
Climate Control Door Positions

HOT

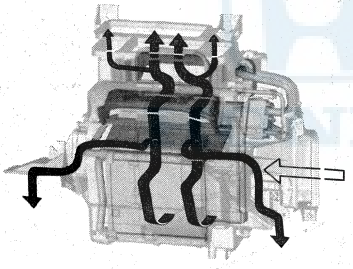
COOL

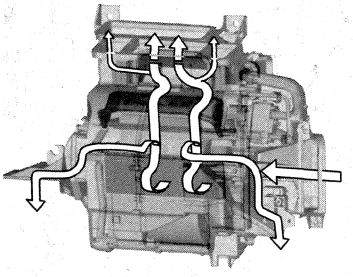
(VENT)



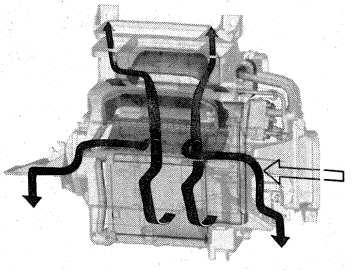


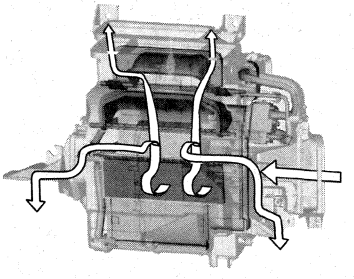
(HEAT/VENT)





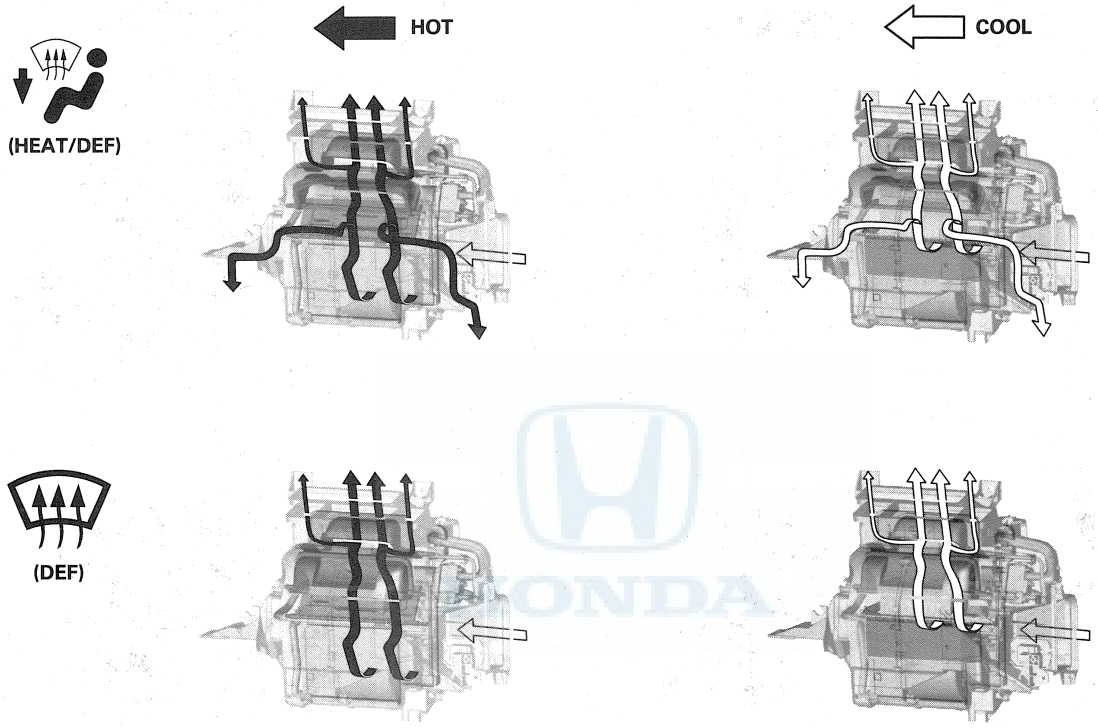
(HEAT)





(cont'd)

System Description (cont'd)



Air Conditioning System Control in the ECON Mode

At an outside air temperature of 73 °F (23 °C) or higher in ECON mode, the air conditioning system controls the following functions to reduce power consumption.

Switching to recirculation mode

Compared to outside air intake, the recirculation of air inside the vehicle reduces compressor operation frequency and air volume.

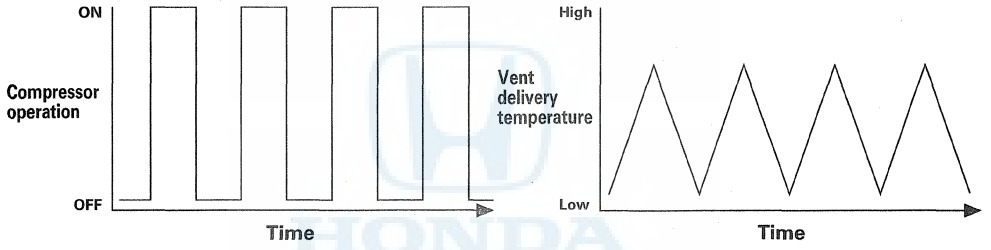
Reducing compressor operation frequency

Compared to the normal control, the climate control unit shortens the A/C compressor operation time, which reduces power consumption.

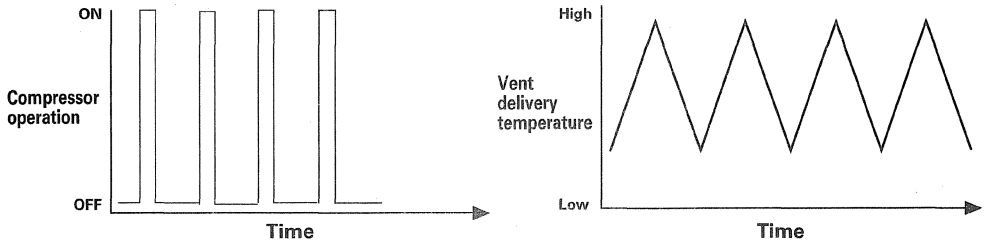
Reducing air volume

Compared to the normal control, blower fan operation is suppressed and power consumption is reduced.

Except ECON MODE (Normal control)



ECON MODE



Conditions that prevent ECON mode control

The air conditioning system does not switch to ECON mode control under the following conditions:

- When the mode position is not in VENT or HEAT/VENT.
- When the driver selects MAX HOT or MAX COOL.
- Outside air temperature is less than 73 °F (23 °C).
- When the driver selects A/C OFF mode.

(cont'd)

System Description (cont'd)

Conditions that cancel the ECON mode control

The air conditioning system cancels the ECON mode control under the following conditions:

- When the mode positions get are other than VENT and HEAT/VENT.
- When the driver selects MAX HOT or MAX COOL.
- Outside air temperature is less than 73 °F (23 °C)
- When the driver selects A/C OFF mode.
- When the driver selects FRESH mode manually.
- When the driver selects DEF mode manually.

Auto Idle Stop System Control During A/C Use

The climate control unit calculates the duration of the auto idle stop while the vehicle is stopped, based on sensor inputs, considering the passenger's comfort and visibility.

Passenger comfort
The duration of the auto idle stop is the time when the passenger's do not feel a sudden change of the in-car temperature and humidity.

Visibility
To avoid windows fogging, the climate control unit disables the auto idle stop when it determines that the windows are likely to be fogged, based on the humidity sensor value and the drive signal input from the wiper. The calculation of the duration of the auto idle stop varies between NORMAL and SPORT modes and ECON mode. In ECON mode, the climate control unit considers only visibility (prevention of window fogging). In NORMAL and SPORT modes, the unit also considers the comfortable environment inside the vehicle. ECON mode can extend the duration of the auto idle stop, which can improve fuel economy.

When the windows get fogged during auto idle stop, the engine restarts when DEF mode is turned on.

If the climate control unit detects a sensor malfunction, or if the ECM/PCM detect a problem with the communication line to the climate control unit during A/C use, auto idle stop is disabled, and the IMA indicator comes on to alert the driver of the problem. The climate control unit may disable auto idle stop under other conditions as well. For more information, refer to the IMA section.

How a comfortable in-car environment is determined

In NORMAL and SPORT modes, the climate control unit calculates the upper and lower limits for a comfortable in-car temperature, keeping the A/C stable to avoid abrupt changes. Auto idle stop is disabled when the upper or lower limits are exceeded. In ECON mode, the priority is not the in-car environment; it is in keeping auto idle stop enable as long as possible.

How window fogging is determined

The climate control unit estimates the temperature on the window, based on the outside air temperature, the vehicle speed, and the in-car temperature and humidity, then calculates a threshold for window fogging. According to this threshold, the climate control unit determines that the window is likely to be fogged, or will not fog, then calculates the duration of auto idle stop.

Shortening of the auto idle stop duration

The climate control unit determines that the humidity will rise, based on the humidity sensor value and the drive signal input from the wipers, and shortens the duration of the auto idle stop.

Engine restart request signal to the gauge control module

When the duration of auto idle stop calculated by the climate control unit has expired or when selecting DEF mode during auto idle stop, the climate control unit sends a signal to the gauge control module to blink the auto idle stop indicator rapidly, reminding the driver to restart the engine.

(cont'd)

System Description (cont'd)

Auto Idle Stop Disable Conditions

The air conditioning system disables auto idle stop under any one of the following conditions. But the climate control unit enables auto idle stop when the blower motor is off.

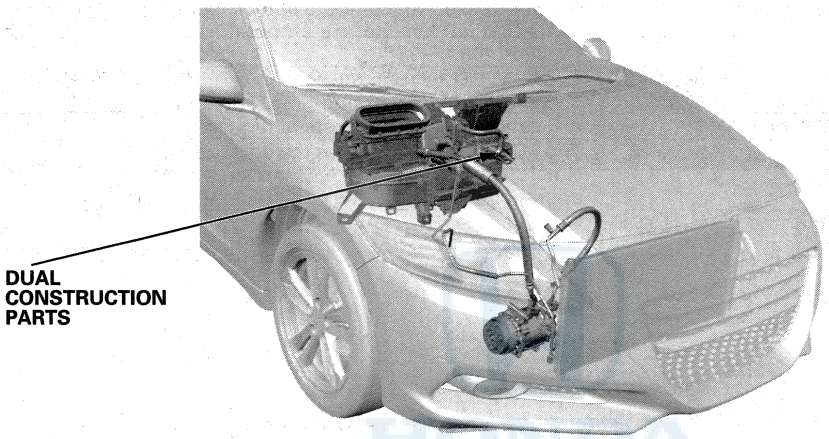
• Outside air temperature is less than −4 °F (−20 °C)
• When the driver selects DEF mode manually
• Climate control unit lost communication with gauge control module (coolant temp message)
• Climate control unit lost communication with gauge control module (VSP/NE message)
• Outside air temperature sensor malfunction
• Humidity sensor malfunction
• Sunlight sensor malfunction
• Evaporator temperature sensor malfunction

The following conditions also disable auto idle stop when the A/C is ON, in NORMAL or SPORT mode, or when the A/C is OFF, in NORMAL or SPORT mode and HEAT or HEAT/DEF is selected.

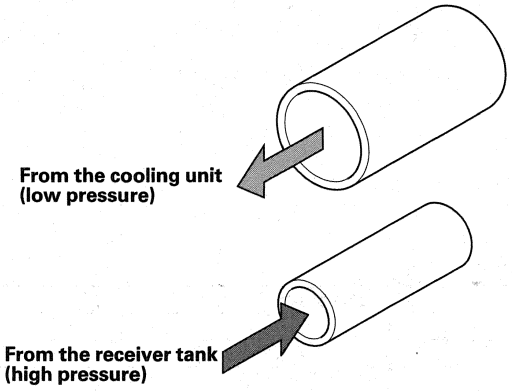
• When the driver selects MAX COOL or MAX HOT
• When the fan operates at the specified voltage of the terminal of the blower fan (8 V or more)
• When HEAT or HEAT/DEF is selected – Outside air temperature is less than 32 °F (0 °C) – When the engine coolant temperature is less than 158 °F (70 °C)

Dual Construction A/C Line

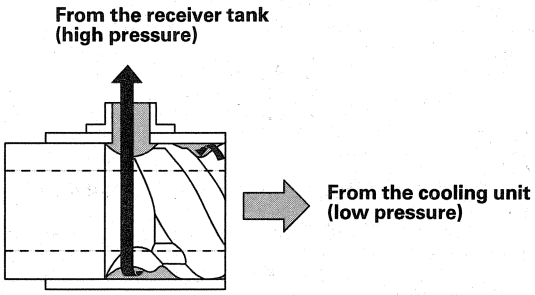
The A/C line unit installed between the engine compartment and the evaporator is the dual construction type.
The discharge line (high pressure) is built inside the suction line (low pressure).
This design is effective for lowering refrigerant temperatures in the discharge line, which helps to improve cooling performance.



Existing Design



Dual Construction



(cont'd)

System Description (cont'd)

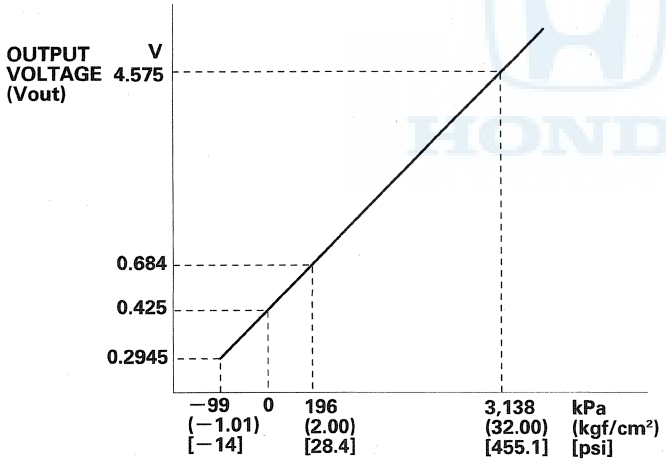
A/C Pressure Sensor

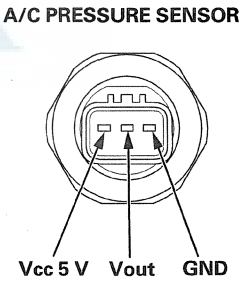
The A/C pressure sensor converts A/C pressure into electrical signals to the ECM/PCM.

A/C System Pressure*	Sensor Output Voltage (V out)	System Operation	HDS PGM-FI Data List
Abnormally low pressure: Below 196 kPa (2.00 kgf/cm², 28.4 psi)	Below 0.685 V	The ECM/PCM disengages the compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.	FAN HIGH CONTROL: ON, OFF FAN LOW CONTROL: ON, OFF A/C PRESSURE SENSOR: V, kPa (kgf/cm2)
Normal operating pressure: • Above 196 kPa (2.00 kgf/cm², 28.4 psi) • Below 1,230 kPa (12.54 kgf/cm², 178.4 psi)	0.686 V to 1.944 V	The ECM/PCM cycles the compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at low speed unless the engine coolant temperature exceeds 206 °F (97 °C).	
High operating pressure: • Above 1,230 kPa (12.54 kgf/cm², 178.4 psi) • Below 3,138 kPa (32.00 kgf/cm², 455.1 psi)	1.945 V to 4.575 V	The ECM/PCM cycles the compressor clutch based on cooling demand. The radiator and A/C condenser fans operate at high speed.	
Abnormally high pressure: More than 3,138 kPa (32.00 kgf/cm², 455.1 psi)	Above 4.575 V	The ECM/PCM disengages the compressor clutch. The radiator and A/C condenser fans operate based on engine coolant temperature.	

*: The A/C system pressure can be monitored in the HDS PGM-FI Data List

The response of the A/C pressure sensor is shown in the graph.





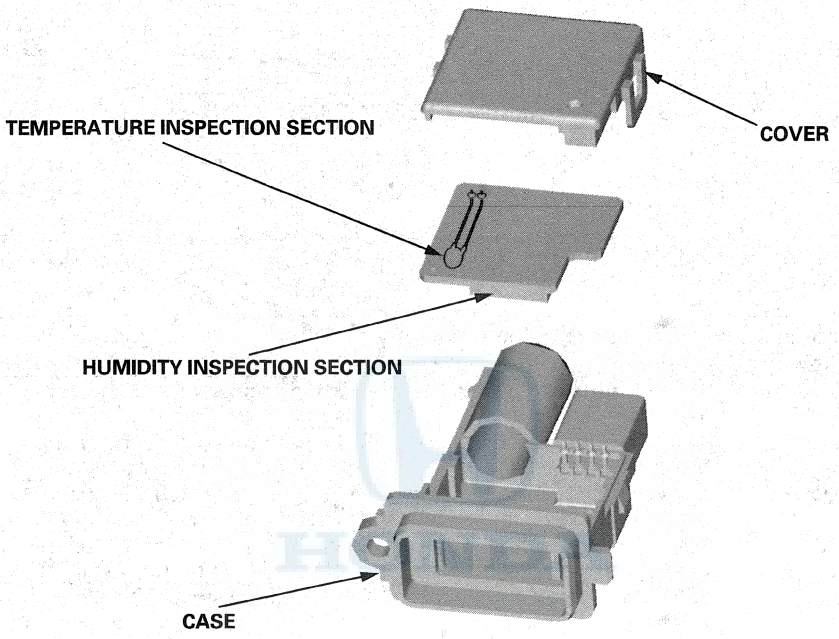
HDS PGM FI Data List Information (as it relates to A/C)

The A/C system data that can be monitored to HDS PGM-FI Data List.

Item	Displayed value
ECT SENSOR 2	°F (°C)
A/C SW (ACS)	ON/OFF
A/C CLUTCH	ON/OFF
A/C PRESSURE SENSOR	0-5 V, 300-2500 kPa (3.06-25.49 kgf/cm2)
FAN HIGH CTRL	ON/OFF
FAN LOW CTRL	ON/OFF
AUTO IDLE STOP DOES NOT OCCUR(A/C)	EXIST/NONE

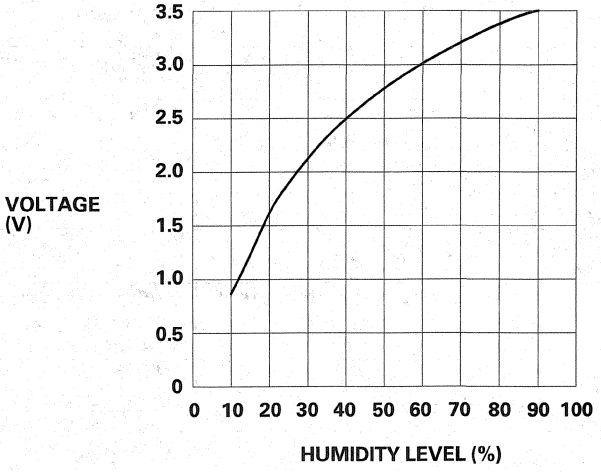
Humidity/In-Car Temperature Sensor

The humidity sensor consists of two sensors. One is for humidity detection, and the other is for in-car temperature detection. When the climate control unit receives the signals about the in-car condition from the humidity sensor, and judges that the humidity in the vehicle is very low, the climate control unit reduces the compressor runtime. Engine power loss is kept to a minimum, and fuel economy is increased.



Humidity/In-Car Temperature Sensor Quality

The capacitance of the humidity sensor changes by the adsorption and the evaporation of moisture. The resistance change of the humidity sensor changes the output voltage.

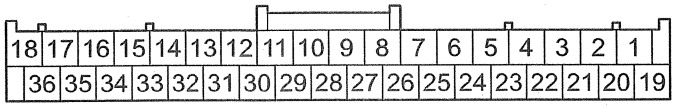


(cont'd)

System Description (cont'd)

Climate Control Unit Inputs and Outputs

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

36P CONNECTOR

Cavity	Wire color	Terminal name	Description	Signal
1	PNK	MODE 1	Mode control motor position feedback 1 signal	With ignition switch ON (II): about 5 V (depending on motor position)
2	YEL	MODE 2	Mode control motor position feedback 2 signal	With ignition switch ON (II): about 5 V (depending on motor position)
3	WHT	MODE 3	Mode control motor position feedback 3 signal	With ignition switch ON (II): about 5 V (depending on motor position)
4	GRY	MODE 4	Mode control motor position feedback 4 signal	With ignition switch ON (II): about 5 V (depending on motor position)
5	LT BLU	BLW-V	Feedback signal of power transistor drain voltage	With ignition switch ON (II): about 0 V — battery voltage (depending on blower motor speed)
6	ORN	BLW-G	Outputs power transistor gate voltage	With ignition switch ON (II) and fan control switch OFF: less than 0.5 V. With ignition switch ON (II) and fan control switch ON: about 4.0 V — battery voltage (depending on blower motor control)
7	GRN	B-CAN	B-CAN communication signal	With ignition switch ON (II): pulses
8*	GRY	AC-CLK	Communication signal from audio-navigation unit	With ignition switch ON (II): pulses
9*	WHT	AC-SI	Communication signal to audio-navigation unit	With ignition switch ON (II): pulses
10*	YEL	AC-SO	Communication signal from audio-navigation unit	With ignition switch ON (II): pulses
11	BLK	Not used	———	———
12	ORN	SENS-COM	Sensor ground	Less than 0.2 V at all times
13	Not used	Not used	———	———
14	RED	AMD-P	Detects potentiometer signal of air mix control motor	With ignition switch ON (II): about 0.5—4.0 V (depending on air mix control motor position)
15	YEL	Tam	Detects outside air temperature sensor signal	With ignition switch ON (II): about 1.0—4.0 V (depending on outside air temperature)
16	PNK	Teva	Detects evaporator temperature sensor signal	With ignition switch ON (II): about 1.0—4.0 V (depending on evaporator temperature)

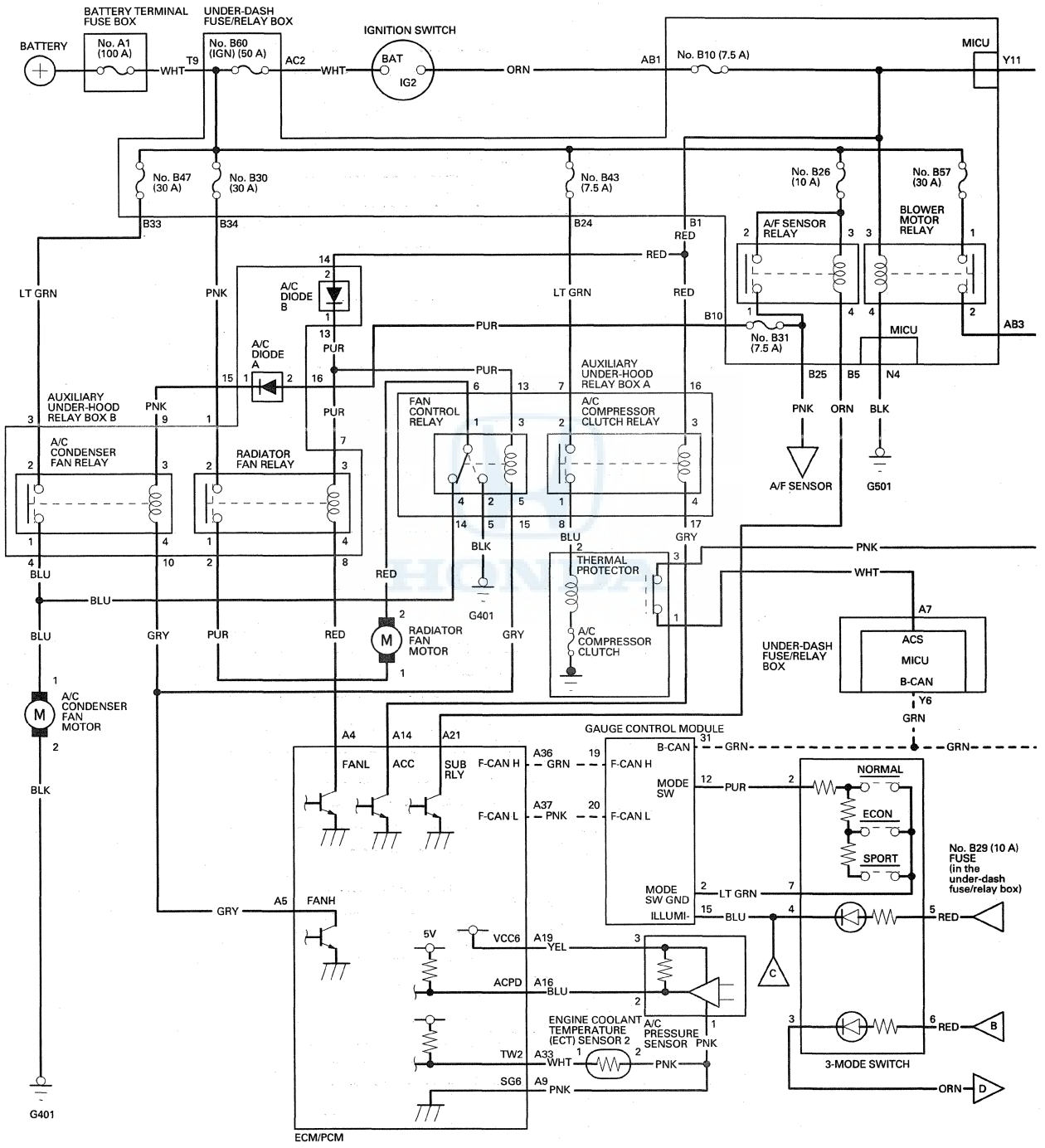
*:With navigation

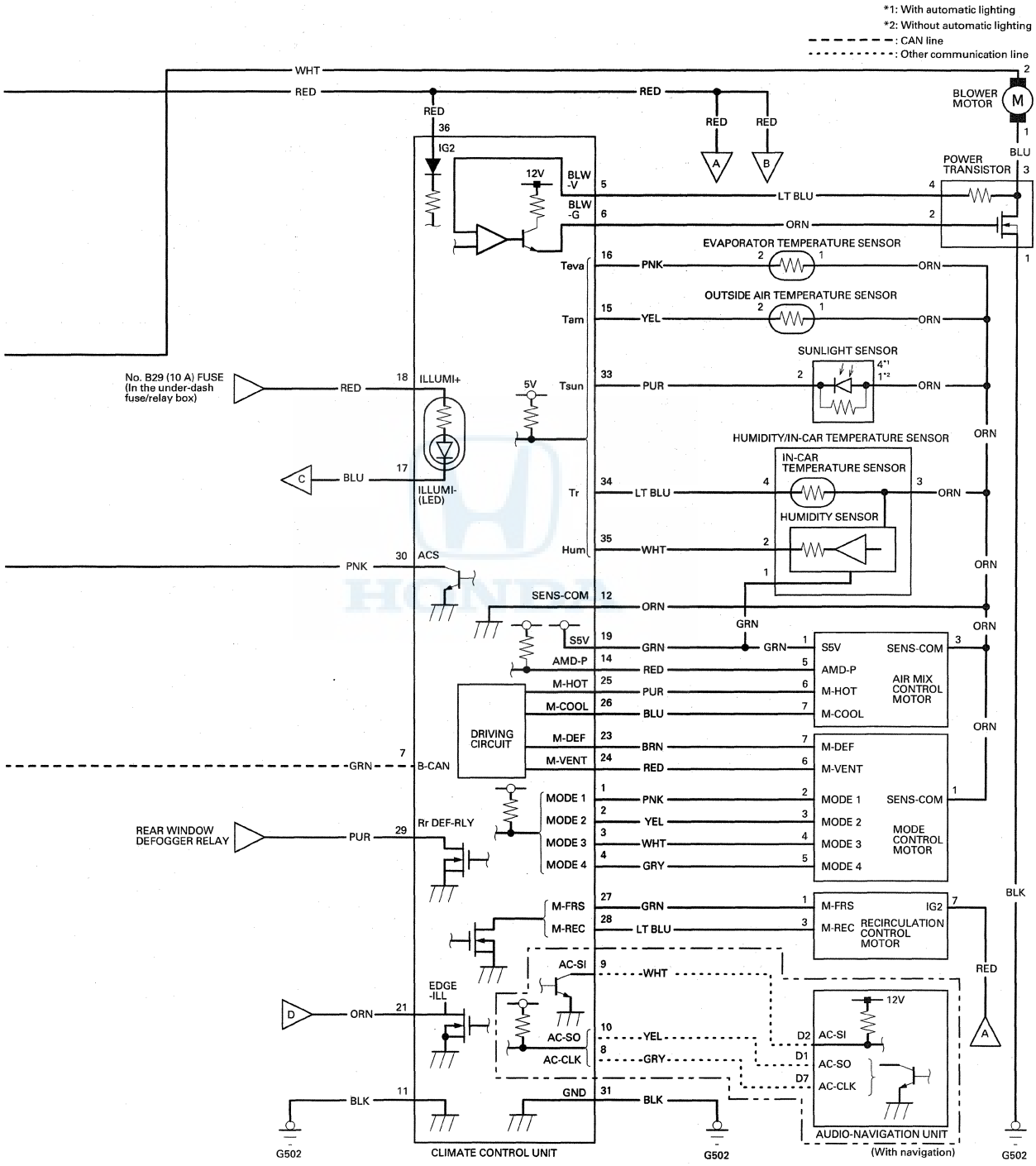
36P CONNECTOR (cont'd)

Cavity	Wire color	Terminal name	Description	Signal
17	BLU	ILLUMI- (LED)	Detects illumination control signal	With illumination switch ON: changed voltage (depending on dashlights brightness controller)
18	RED	ILLUMI+	Inputs voltage for illumination	With combination light switch ON: battery voltage
19	GRN	S5V	Outputs sensor 5 V	With ignition switch ON (II): about 5 V
20	Not used	Not used	———	———
21	ORN	EDGE -ILL	Detects EDGE illumination control signal	With illumination switch ON: changed voltage (depending on dashlights brightness controller)
22	Not used	Not used	———	———
23	BRN	M-DEF	Outputs to drive mode control motor to DEF side	With ignition switch ON (II) and mode control motor moving to DEF: battery voltage
24	RED	M-VENT	Outputs to drive mode control motor to VENT side	With ignition switch ON (II) and mode control motor moving to VENT: battery voltage
25	PUR	M-HOT	Output to drive air mix control motor to HOT side	With ignition switch ON (II) and air mix control motor moving to HOT: battery voltage
26	BLU	M-COOL	Output to drive air mix control motor to COOL side	With ignition switch ON (II) and air mix control motor moving to COOL: battery voltage
27	GRN	M-FRS	Output to drive recirculation control motor to FRESH side	With ignition switch ON (II) and recirculation control motor in position RECIRCU: battery voltage
28	LT BLU	M-REC	Output to drive recirculation control motor to RECIRCULATE side	With ignition switch ON (II) and recirculation control motor in position FRESH: battery voltage
29	PUR	Rr DEF-RLY	Input rear window defogger relay	With defogger switch OFF: battery voltage With defogger switch ON: 0 V
30	PNK	ACS	Outputs A/C on/off signal	With ignition switch ON (II), normal A/C pressure, and A/C switch ON: less than 0.5 V With ignition switch ON (II), normal A/C pressure, and A/C switch OFF: battery voltage
31	BLK	GND	Ground for climate control unit (G502)	Less than 0.2 V at all times
32	Not used	Not used	———	———
33	PUR	Tsun	Detects sunlight sensor signal	With ignition switch ON (II) and no sunlight or the sensor covered up: 3.56 V With ignition switch ON (II) and sunlight on the sensor: less than 3.56 V (depending on sunlight intensity)
34	LT BLU	Tr	Detects in-car temperature sensor signal	With ignition switch ON (II): about 1.0—4.0 V (depending on in-car temperature)
35	WHT	Hum	Detects humidity sensor signal	With ignition switch ON (II): about 1.0—4.0 V (depending on humidity)
36	RED	IG2	IG2 power source	With ignition switch ON (II): battery voltage

*:With navigation

Circuit Diagram




*1: With automatic lighting
*2: Without automatic lighting
: CAN line
: Other communication line
WHT
RED
BLOWER MOTOR
POWER TRANSISTOR
BLU
LT BLU
ORN
EVAPORATOR TEMPERATURE SENSOR
Teva
PNK
OUTSIDE AIR TEMPERATURE SENSOR
Tam
YEL
SUNLIGHT SENSOR
Tsun
PUR
HUMIDITY/IN-CAR TEMPERATURE SENSOR
IN-CAR TEMPERATURE SENSOR
HUMIDITY SENSOR
Tr
Hum
WHT
No. B29 (10 A) FUSE (In the under-dash fuse/relay box)
ILLUMI+
ILLUMI- (LED)
ACS
SENS-COM
S5V
AMD-P
M-HOT
M-COOL
M-DEF
M-VENT
DRIVING CIRCUIT
B-CAN
GRN
MODE 1
MODE 2
MODE 3
MODE 4
PNK
YEL
WHT
GRY
AIR MIX CONTROL MOTOR
MODE CONTROL MOTOR
REAR WINDOW DEFOGGER RELAY
Rr DEF-RLY
M-FRS
M-REC
BRN
LT BLU
RECIRCULATION CONTROL MOTOR
IG2
BLK
EDGE -ILL
AC-SI
AC-SO
AC-CLK
GND
12V
D1
D2
D7
AUDIO-NAVIGATION UNIT
(With navigation)
CLIMATE CONTROL UNIT
G502
G502
G502

DTC Troubleshooting

DTC indicator A: Climate Control Unit Internal Error

NOTE: Check the 12 volt battery condition (see page 22-85) and the charging system (see page 12-200).

1. Turn the ignition switch to LOCK (0), and then back to ON (II).
2. Do the Self-Diagnostic Function with the climate control unit (see page 21-10).
3. Check for DTCs.

   Is DTC A indicated?

   YES–The climate control unit is faulty, replace the climate control unit (see page 21-112).■

   NO–Intermittent failure, the climate control unit is OK at this time.■

DTC B1205 or DTC indicator B: Climate Control Unit Lost Communication with Gauge Control Module (VSP/NE message)

DTC B1206 or DTC indicator C: Climate Control Unit Lost Communication with Gauge Control Module (coolant temp message)

DTC B1207 or DTC indicator D: Climate Control Unit Lost Communication with Gauge Control Module (illumination message)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check the DTCs.

   Is DTC B1205 or B, and/or B1206 or C, and/or B1207 or D indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the gauge control module and climate control unit circuit.■

5. Select B-CAN Control Units Information in the BODY ELECTRICAL menu.
6. Select Check Connected Control Units in the B-CAN Control Units Information menu.

   Is the gauge control module detected?

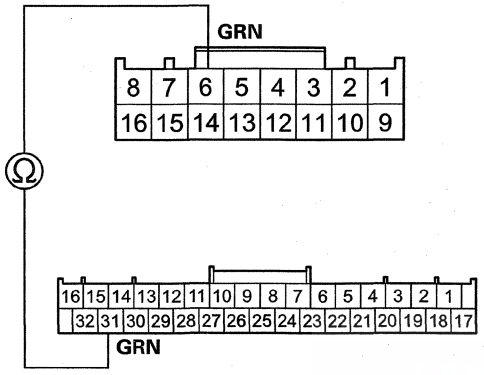
   YES–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

   NO–Go to step 7.

7. Disconnect under-dash fuse/relay box connector Y (16P).
8. Disconnect the gauge control module 32P connector.

9. Check for continuity between under-dash fuse/relay box connector Y (16P) terminal No. 6 and gauge control module 32P connector terminal No. 31.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

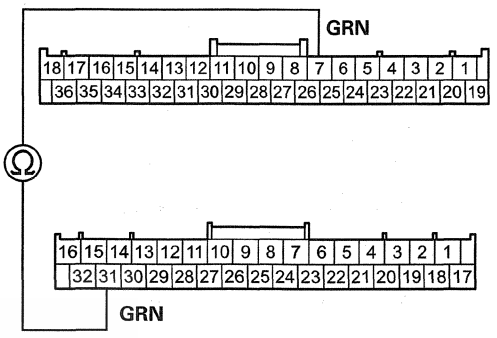
YES–Go to step 10.

NO–Repair an open in the wire between the MICU and the gauge control module.■

10. Disconnect the climate control unit 36P connector.

11. Check for continuity between gauge control module 32P connector terminal No. 31 and climate control unit 36P connector terminal No. 7.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to gauge control module input test (see page 22-347).■

NO–Repair an open in the wire between the gauge control module and the climate control unit.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1225 or DTC indicator A and AUTO: An Open in the In-Car Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1225 or A and AUTO indicated?

   YES–Go to step 5.

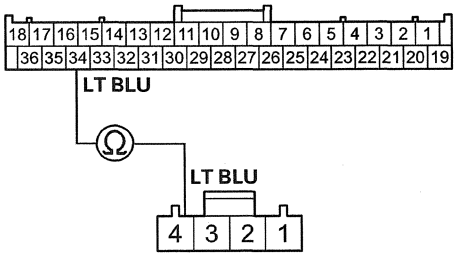
   NO–Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see page 21-109), and test it (see page 21-72).

   Is the in-car temperature sensor OK?

   YES–With the humidity/in-car temperature sensor disconnected, go to step 7.

   NO–Replace the humidity/in-car temperature sensor (see page 21-109).■
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 34 and humidity/in-car temperature sensor 4P connector terminal No. 4.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR
Wire side of female terminals

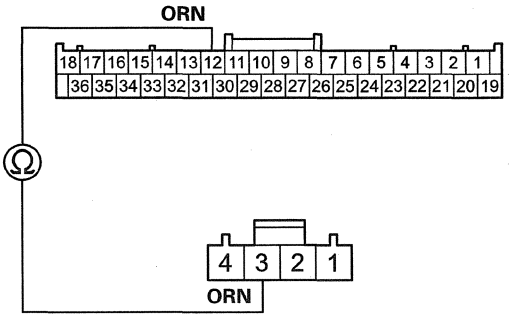
Is there continuity?

YES–Go to step 9.

NO–Repair an open in the wire between the climate control unit and the in-car temperature sensor.■

9. Check for continuity between climate control unit 36P connector terminal No. 12 and humidity/in-car temperature sensor 4P connector terminal No. 3.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the humidity/in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire between the climate control unit and the in-car temperature sensor.■

DTC B1226 or DTC indicator B and AUTO: A Short in the In-Car Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1226 or B and AUTO indicated?

   YES–Go to step 5.

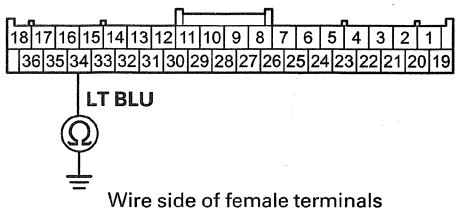
   NO–Intermittent failure. Check for loose wires or poor connections on the in-car temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see page 21-109), and test it (see page 21-72).

   Is the in-car temperature sensor OK?

   YES–With the humidity/in-car temperature sensor disconnected, go to step 7.

   NO–Replace the humidity/in-car temperature sensor (see page 21-109).■
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 34 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

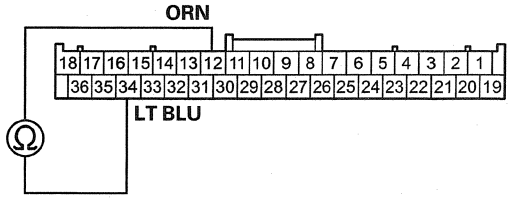
Is there continuity?

YES–Repair a short to body ground in the wire between the climate control unit and the in-car temperature sensor.■

NO–Go to step 9.

9. Check for continuity between climate control unit 36P connector terminals No. 12 and No. 34.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires between the climate control unit and the in-car temperature sensor.■

NO–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1227 or DTC indicator C and AUTO: An Open in the Outside Air Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1227 or C and AUTO indicated?

   YES–Go to step 5.

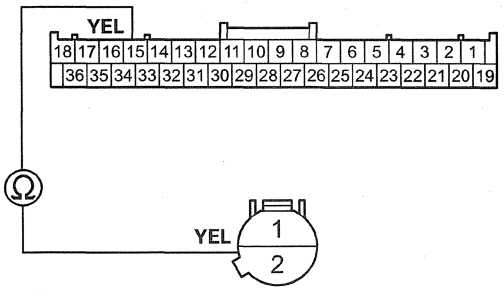
   NO–Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the outside air temperature sensor (see page 21-109), and test it (see page 21-73).

   Is the outside air temperature sensor OK?

   YES–With the outside air temperature sensor disconnected, go to step 7.

   NO–Replace the outside air temperature sensor (see page 21-109).■
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 15 and outside air temperature sensor 2P connector terminal No. 2.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

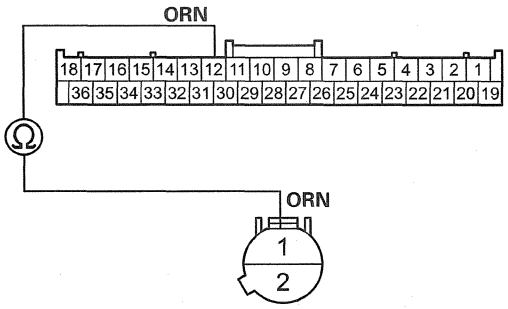
Is there continuity?

YES–Go to step 9.

NO–Repair an open in the wire between the climate control unit and the outside air temperature sensor.■

9. Check for continuity between climate control unit 36P connector terminal No. 12 and outside air temperature sensor 2P connector terminal No. 1.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



OUTSIDE AIR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the outside air temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire between the climate control unit and the outside air temperature sensor.■

DTC B1228 or DTC indicator D and AUTO: A Short in the Outside Air Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1228 or D and AUTO indicated?

   YES–Go to step 5.

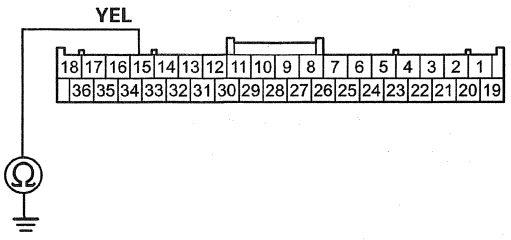
   NO–Intermittent failure. Check for loose wires or poor connections on the outside air temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the outside air temperature sensor (see page 21-109), and test it (see page 21-73).

   Is the outside air temperature sensor OK?

   YES–With the outside air temperature sensor disconnected, go to step 7.

   NO–Replace the outside air temperature sensor (see page 21-109).■
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 15 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

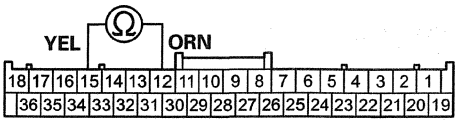
Is there continuity?

YES–Repair a short to body ground in the wire between the climate control unit and the outside air temperature sensor.■

NO–Go to step 9.

9. Check for continuity between climate control unit 36P connector terminals No. 15 and No. 12.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires between the climate control unit and the outside air temperature sensor.■

NO–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1229 or DTC indicator E and AUTO: An Open in the Sunlight Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

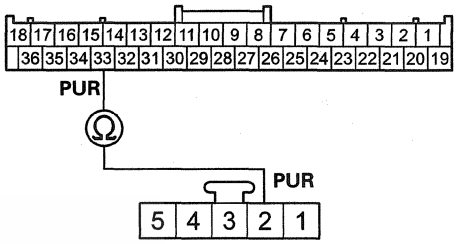
   Is DTC B1229 or E and AUTO indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the sunlight sensor 5P connector (with automatic lighting) or 2P connector (without automatic lighting).
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 33 and sunlight sensor 5P connector terminal No. 2 (with automatic lighting) or sunlight sensor 2P connector terminal No. 2 (without automatic lighting).

With automatic lighting

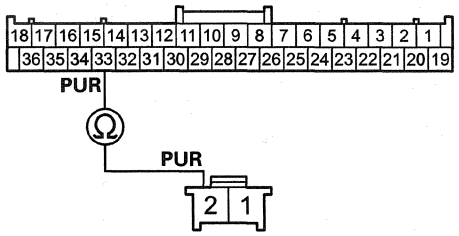
CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



SUNLIGHT SENSOR 5P CONNECTOR
Wire side of female terminals

Without automatic lighting

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



SUNLIGHT SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

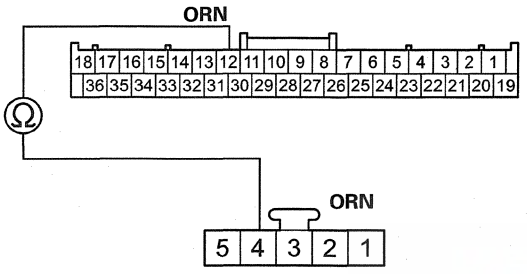
YES–Go to step 9.

NO–Repair an open in the wire between the climate control unit and the sunlight sensor.■

9. Check for continuity between climate control unit 36P connector terminal No. 12 and sunlight sensor 5P connector terminal No. 4 (with automatic lighting) or sunlight sensor 2P connector terminal No. 1 (without automatic lighting).

With automatic lighting

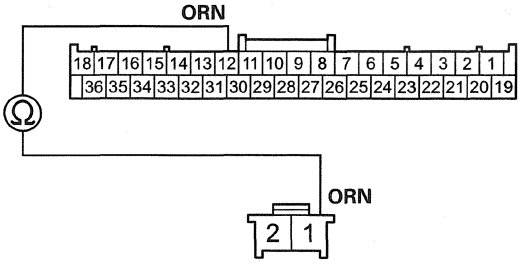
CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



SUNLIGHT SENSOR 5P CONNECTOR
Wire side of female terminals

Without automatic lighting

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



SUNLIGHT SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire between the climate control unit and the sunlight sensor.■

10. Reconnect the sunlight sensor 5P connector (with automatic lighting) or the sunlight sensor 2P connector (without automatic lighting).

11. Reconnect the climate control unit 36P connector.

12. Test the sunlight sensor (see page 21-74).

Is the sunlight sensor OK?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the sunlight sensor 5P connector (with automatic lighting) or the sunlight sensor 2P connector (without automatic lighting). If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Replace the sunlight sensor (see page 21-110).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1230 or DTC indicator F and AUTO: A Short in the Sunlight Sensor Circuit

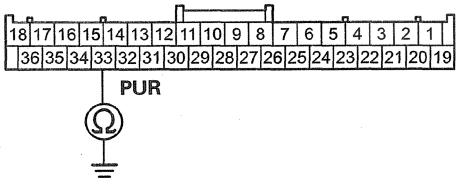
1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1230 or F and AUTO indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the sunlight sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the sunlight sensor 5P connector (with automatic lighting) or 2P connector (without automatic lighting).
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 33 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

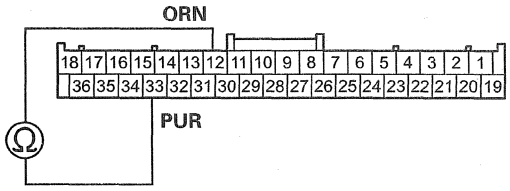
Is there continuity?

YES–Repair a short to body ground in the wire between the climate control unit and the sunlight sensor.■

NO–Go to step 9.

9. Check for continuity between climate control unit 36P connector terminals No. 12 and No. 33.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires between the climate control unit and the sunlight sensor.■

NO–Go to step 10.

10. Reconnect the sunlight sensor 5P connector (with automatic lighting) or the sunlight sensor 2P connector (without automatic lighting).
11. Reconnect the climate control unit 36P connector.
12. Test the sunlight sensor (see page 21-74).

    Is the sunlight sensor OK?

    YES–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

    NO–Replace the sunlight sensor (see page 21-110).■

DTC B1231 or DTC indicator G and AUTO: An Open in the Evaporator Temperature Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1231 or G and AUTO indicated?

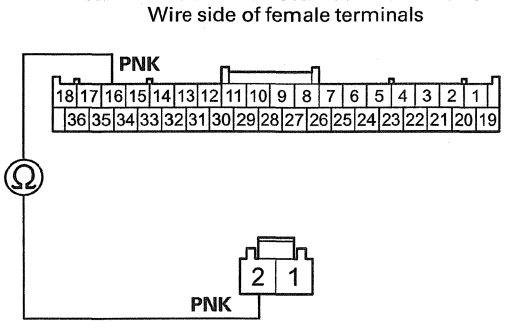
   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the evaporator temperature sensor (see page 21-103), and test it (see page 21-77).

   Is the evaporator temperature sensor OK?

   YES–With the evaporator temperature sensor disconnected, go to step 7.

   NO–Replace the evaporator temperature sensor (see page 21-103).■
7. Disconnect the climate control unit 36P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 16 and evaporator temperature sensor 2P connector terminal No. 2.



Is there continuity?

YES–Go to step 9.

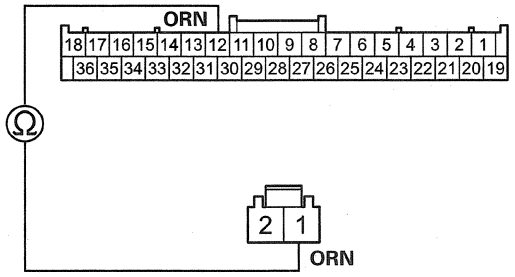
NO–Repair an open in the wire between the climate control unit and the evaporator temperature sensor.■

(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between climate control unit 36P connector terminal No. 12 and evaporator temperature sensor 2P connector terminal No. 1.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



EVAPORATOR TEMPERATURE SENSOR 2P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the evaporator temperature sensor 2P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire between the climate control unit and the evaporator temperature sensor.■

DTC B1232 or DTC indicator H and AUTO: A Short in the Evaporator Temperature Sensor Circuit

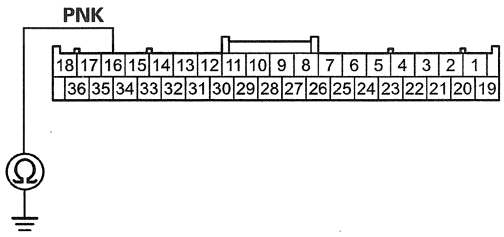
1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1232 or H and AUTO indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the evaporator temperature sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the climate control unit 36P connector.
7. Disconnect the evaporator temperature sensor 2P connector.
8. Check for continuity between climate control unit 36P connector terminal No. 16 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

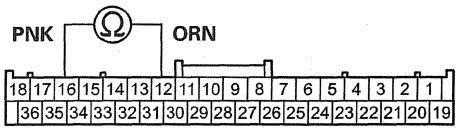
Is there continuity?

YES–Repair a short to body ground in the wire between the climate control unit and the evaporator temperature sensor.■

NO–Go to step 9.

9. Check for continuity between climate control unit 36P connector terminals No. 12 and No. 16.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires between the climate control unit and the evaporator temperature sensor.■

NO–Go to step 10.

10. Remove the evaporator temperature sensor (see page 21-103), and test it (see page 21-77).

Is the evaporator temperature sensor OK?

YES–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Replace the evaporator temperature sensor (see page 21-103).■

DTC B1233 or DTC indicator A and A/C: An Open in the Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

Is DTC B1233 or A and A/C indicated?

YES–Go to step 5.

NO–Intermittent failure. Check for loose wires or poor connections on the air mix control motor circuit.■

5. Turn the ignition switch to LOCK (0).
6. Test the air mix control motor (see page 21-75).

Is the air mix control motor OK?

YES–Go to step 7.

NO–Replace the air mix control motor (see page 21-107).■

7. Disconnect the air mix control motor 7P connector.
8. Disconnect the climate control unit 36P connector.

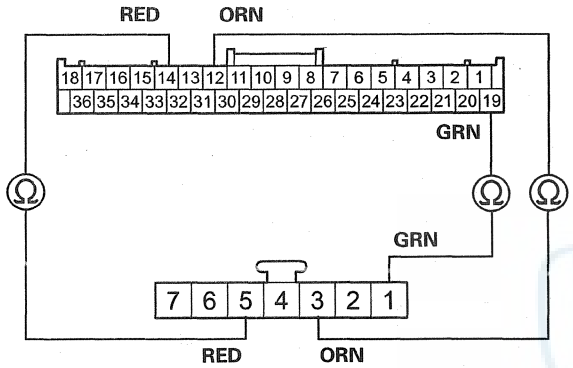
(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between the following terminals of the climate control unit 36P connector and the air mix control motor 7P connector.

36P:	7P:
No. 12	No. 3
No. 14	No. 5
No. 19	No. 1

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



AIR MIX CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the air mix control motor 7P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire(s) between the climate control unit and the air mix control motor.■

DTC B1234 or DTC indicator B and A/C: A Short in the Air Mix Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1234 or B and A/C indicated?

   YES–Go to step 5.

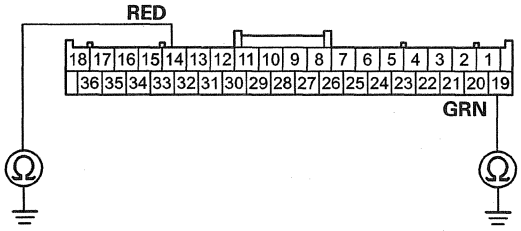
   NO–Intermittent failure. Check for loose wires or poor connections on the air mix control motor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Test the air mix control motor (see page 21-75).

   Is the air mix control motor OK?

   YES–Go to step 7.

   NO–Replace the air mix control motor (see page 21-107).■
7. Disconnect the air mix control motor 7P connector and the humidity/in-car temperature sensor 4P connector.
8. Disconnect the climate control unit 36P connector.
9. Check for continuity between body ground and climate control unit 36P connector terminals No. 14 and No. 19 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

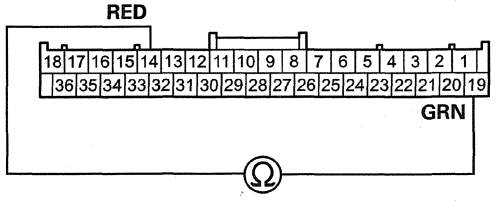
Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the air mix control motor.■

NO–Go to step 10.

10. Check for continuity between climate control unit 36P connector terminals No. 14 and No. 19.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

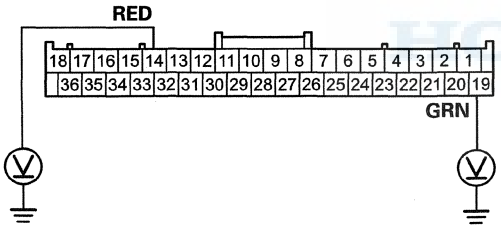
Is there continuity?

YES–Repair a short in the wires between the climate control unit and the air mix control motor.■

NO–Go to step 11.

11. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there any voltage?

YES–Repair a short to power in the wire(s) between the climate control unit and the air mix control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.■

NO–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

DTC B1235 or DTC indicator C and A/C: A Problem in the Air Mix Control Motor Circuit, Linkage, Door, or Motor

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1235 or C and A/C indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the driver's air mix control motor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Test the air mix control motor (see page 21-75).

   Is the air mix control motor OK?

   YES–Go to step 7.

   NO–Replace the air mix control motor (see page 21-107), or repair the air mix control linkage or door.■
7. Disconnect the air mix control motor 7P connector.
8. Disconnect the climate control unit 36P connector.

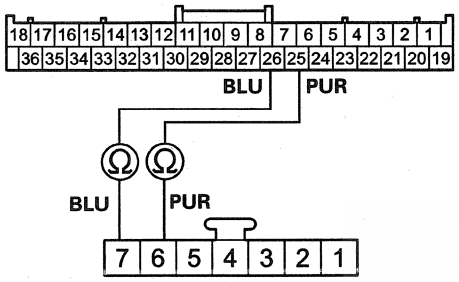
(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between the following terminals of the climate control unit 36P connector and the air mix control motor 7P connector.

36P:	7P:
No. 25	No. 6
No. 26	No. 7

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



AIR MIX CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

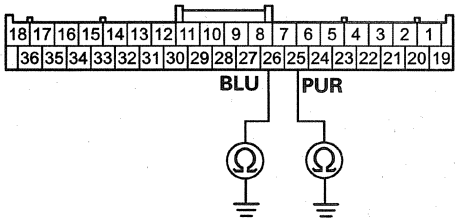
Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire(s) between the climate control unit and the air mix control motor.■

10. Check for continuity between body ground and climate control unit 36P connector terminals No. 25 and No. 26 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the air mix control motor.■

NO–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

DTC B1239 or DTC indicator D and A/C: An Open or Short in the Mode Control Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1239 or D and A/C indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the mode control motor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Test the mode control motor (see page 21-76).

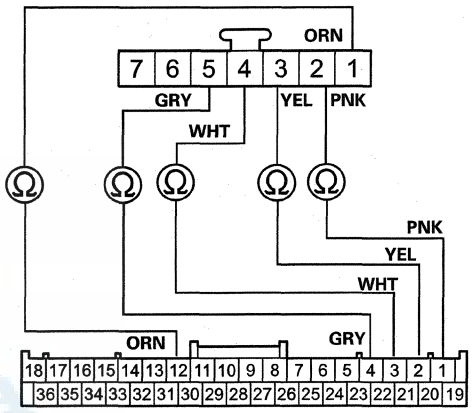
   Is the mode control motor OK?

   YES–Go to step 7.

   NO–Replace the mode control motor (see page 21-108).■
7. Disconnect the mode control motor 7P connector.
8. Disconnect the climate control unit 36P connector.
9. Check for continuity between the following terminals of the climate control unit 36P connector and the mode control motor 7P connector.

7P:	36P:
No. 1	No. 12
No. 2	No. 1
No. 3	No. 2
No. 4	No. 3
No. 5	No. 4

MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals



CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 10.

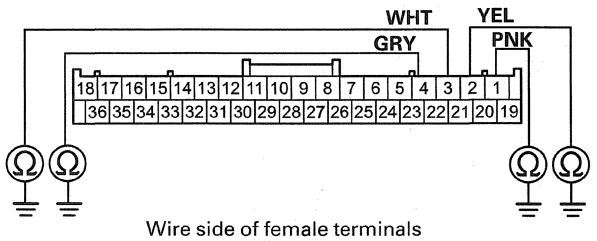
NO–Repair an open in the wire(s) between the climate control unit and the mode control motor.■

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between body ground and climate control unit 36P connector terminals No. 1, 2, 3, and No. 4 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the mode control motor.■

NO–Go to step 11.

11. Check for continuity between the climate control unit 36P connector terminals as follows.

From terminal	To terminals
1	2, 3, 4
2	3, 4
3	4

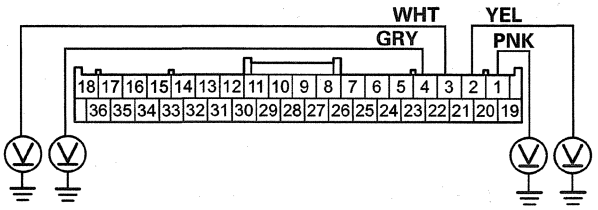
Is there continuity between any of the terminals?

YES–Repair a short in the wires.■

NO–Go to step 12.

12. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there any voltage?

YES–Repair a short to power in the wire(s) between the climate control unit and the mode control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.■

NO–Check for loose wires or poor connections at the climate control unit 36P connector and at the mode control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

DTC B1240 or DTC indicator E and A/C: A Problem in the Mode Control Motor Circuit, Linkage, Door, or Motor

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1240 or E and A/C indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the mode control motor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Test the mode control motor (see page 21-76).

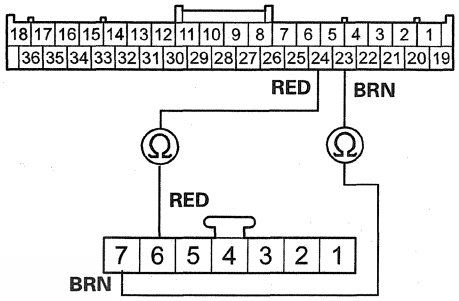
   Is the mode control motor OK?

   YES–Go to step 7.

   NO–Replace the mode control motor (see page 21-108), or repair the mode control linkage or doors.■
7. Disconnect the mode control motor 7P connector.
8. Disconnect the climate control unit 36P connector.
9. Check for continuity between the following terminals of the climate control unit 36P connector and the mode control motor 7P connector.

36P:	7P:
No. 23	No. 7
No. 24	No. 6

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



MODE CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

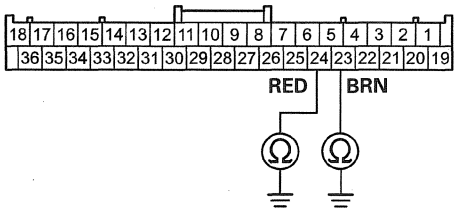
Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire(s) between the climate control unit and the mode control motor.■

10. Check for continuity between body ground and climate control unit 36P connector terminals No. 23 and No. 24 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the mode control motor.■

NO–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1241 or DTC indicator F and A/C: A Problem in the Blower Motor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B1241 or F and A/C indicated?

   YES–Go to step 5.

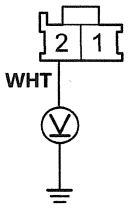
   NO–Intermittent failure. Check for loose wires or poor connections on the blower motor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Check the No. B10 (7.5 A) and No. B57 (30 A) fuses in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 7.

   NO–Replace the fuse(s), and recheck. If fuse(s) blow again, check for a short in the No. B10 (7.5 A) and No.B57 (30 A) fuses circuit.■
7. Disconnect the blower motor 2P connector.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between blower motor 2P connector terminal No. 2 and body ground.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

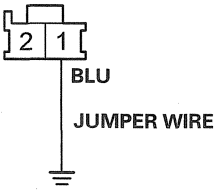
Is there battery voltage?

YES–Go to step 10.

NO–Go to step 30.

10. Turn the ignition switch to LOCK (0).
11. Reconnect the blower motor 2P connector.
12. Connect blower motor 2P connector terminal No. 1 to body ground with a jumper wire.

BLOWER MOTOR 2P CONNECTOR



Wire side of female terminals

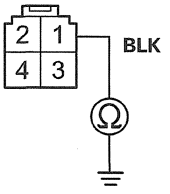
13. Turn the ignition switch to ON (II).

    Do the blower motor run?

    YES–Go to step 14.

    NO–Replace the blower motor (see page 21-100).■
14. Turn the ignition switch to LOCK (0).
15. Disconnect the jumper wire.
16. Disconnect the power transistor 4P connector.
17. Check for continuity between power transistor 4P connector terminal No. 1 and body ground.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

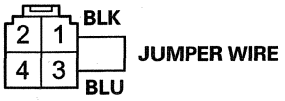
Is there continuity?

YES–Go to step 18.

NO–Check for an open in the BLK wire between the power transistor and body ground. If the wire is OK, check for poor body ground at G502 (see page 22-44).■

18. Connect power transistor 4P connector terminals No. 1 and No. 3 with a jumper wire.

POWER TRANSISTOR 4P CONNECTOR



Wire side of female terminals

19. Turn the ignition switch to ON (II).

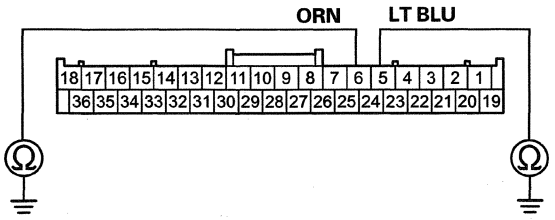
Do the blower motor run at high speed?

YES–Go to step 20.

NO–Repair an open in the BLU wire between the power transistor and the blower motor.■

20. Turn the ignition switch to LOCK (0).
21. Disconnect the jumper wire.
22. Disconnect the climate control unit 36P connector.
23. Check for continuity between body ground and climate control unit 36P connector terminals No. 5 and No. 6 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

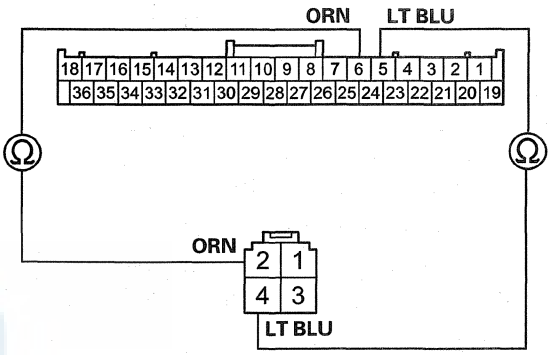
YES–Repair a short to body ground in the wire(s) between the climate control unit and the power transistor.■

NO–Go to step 24.

24. Check for continuity between the following terminals of the climate control unit 36P connector and the power transistor 4P connector.

36P:	4P:
No. 5	No. 4
No. 6	No. 2

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



POWER TRANSISTOR 4P CONNECTOR
Wire side of female terminals

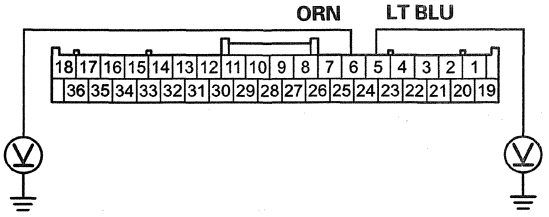
Is there continuity?

YES–Go to step 25.

NO–Repair an open in the wire(s) between the climate control unit and the power transistor.■

25. Turn the ignition switch to ON (II).
26. Measure the voltage between body ground and climate control unit 36P connector terminals No. 5 and No. 6 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there voltage?

YES–Repair a short to power in the wire(s).■

NO–Go to step 27.

27. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

28. Reconnect the climate control unit 36P connector.
29. Test the power transistor (see page 21-74).

    Is the power transistor OK?

    YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the power transistor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

    NO–Replace the power transistor (see page 21-74).■

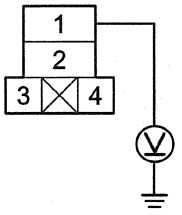
    NOTE: If the power transistor is faulty, check the blower motor for damage. If necessary, replace the blower motor (see page 21-100).
30. Turn the ignition switch to LOCK (0).
31. Remove the blower motor relay from the under-dash fuse/relay box, and test it (see page 22-92).

    Is the relay OK?

    YES–Go to step 32.

    NO–Replace the blower motor relay.■
32. Measure the voltage between blower motor relay 4P socket terminal No. 1 and body ground.

UNDER-DASH FUSE/RELAY BOX
BLOWER MOTOR RELAY 4P SOCKET



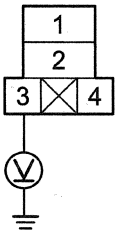
Is there battery voltage?

YES–Go to step 33.

NO–Replace the under-dash fuse/relay box.
- USA models (see page 22-82)■
- Canada models (see page 22-83)■

33. Turn the ignition switch to ON (II).
34. Measure the voltage between blower motor relay 4P socket terminal No. 3 and body ground.

UNDER-DASH FUSE/RELAY BOX
BLOWER MOTOR RELAY 4P SOCKET



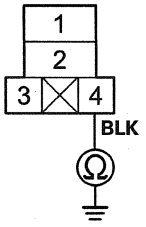
Is there battery voltage?

YES–Go to step 35.

NO–Replace the under-dash fuse/relay box.
- USA models (see page 22-82)■
- Canada models (see page 22-83)■

35. Turn the ignition switch to LOCK (0).
36. Check for continuity between blower motor relay 4P socket terminal No. 4 and body ground.

UNDER-DASH FUSE/RELAY BOX
BLOWER MOTOR RELAY 4P SOCKET



Is there continuity?

YES–Repair an open in the WHT wire between the blower motor relay and the blower motor.■

NO–Check for an open in the wire between the blower motor relay and body ground. If the wire is OK, check for poor ground at G501 (see page 22-40).■

DTC B2967 or DTC indicator J and AUTO: An Open in the Humidity Sensor Circuit

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B2967 or J and AUTO indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the humidity sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the humidity/in-car temperature sensor (see page 21-109), and test it (see page 21-72).

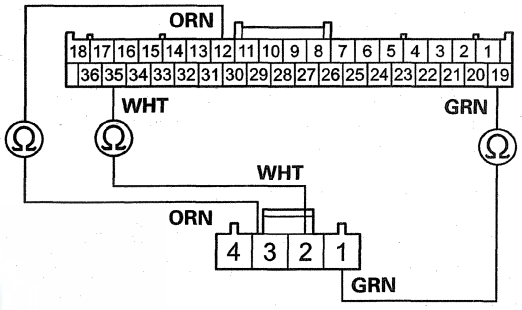
   Is the humidity sensor OK?

   YES–With the humidity/in-car temperature sensor disconnected, go to step 7.

   NO–Replace the humidity/in-car temperature sensor (see page 21-109).■
7. Disconnect the climate control unit 36P connector.
8. Disconnect the humidity/in-car temperature sensor 4P connector and air mix control motor 7P connector.
9. Check for continuity between the following terminals of the climate control unit 36P connector and the humidity/in-car temperature sensor 4P connector.

36P:	4P:
No. 12	No. 3
No. 19	No. 1
No. 35	No. 2

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



HUMIDITY/IN-CAR TEMPERATURE SENSOR 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the humidity/in-car temperature sensor 4P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire(s) between the climate control unit and the humidity sensor.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B2968 or DTC indicator K and AUTO: A Short in the Humidity Sensor Circuit

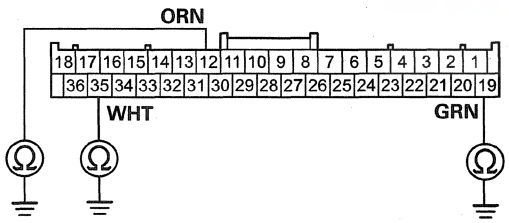
1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B2968 or K and AUTO indicated?

   YES–Go to step 5.

   NO–Intermittent failure. Check for loose wires or poor connections on the humidity sensor circuit.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the climate control unit 36P connector.
7. Disconnect the humidity/in-car temperature sensor 4P connector and air mix control motor 7P connector.
8. Check for continuity between body ground and climate control unit 36P connector terminals No. 12, 19, and No. 35 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the humidity sensor.■

NO–Go to step 9.

9. Check for continuity between terminals of the climate control unit 36P connector as follows.

From terminal	To terminals
12	19, 35
19	35

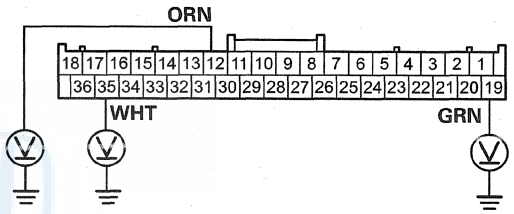
Is there continuity between any of the terminals?

YES–Repair a short in the wires.■

NO–Go to step 10.

10. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there any voltage?

YES–Repair a short to power in the wire(s) between the climate control unit and the humidity sensor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.■

NO–Go to step 11.

11. Reconnect the humidity/in-car temperature sensor 4P connector and air mix control motor 7P connector.
12. Reconnect the climate control unit 36P connector.
13. Test the humidity sensor (see page 21-72).

    Is the humidity temperature sensor OK?

    YES–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

    NO–Replace the humidity/in-car temperature sensor (see page 21-109).■

DTC B2969: Climate Control Unit Lost Communication with MICU (WIPSW message)

1. Clear the DTC with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).
4. Check for DTCs.

   Is DTC B2969 indicated?

   YES–Go to step 5.

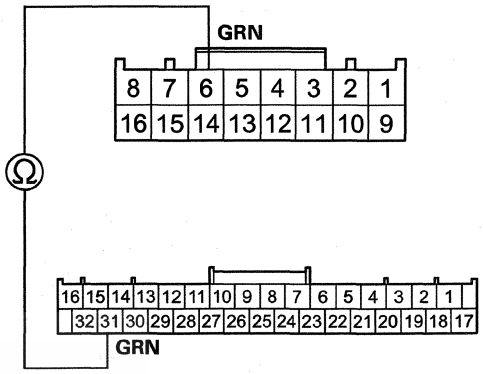
   NO–Intermittent failure. Check for loose wires or poor connections at the gauge control module and in the climate control unit circuit.■
5. Select B-CAN Control Units Information in the BODY ELECTRICAL menu.
6. Select Check Connected Control Units in the B-CAN Control Units Information menu.

   Is the gauge control module detected?

   YES–Substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

   NO–Go to step 7.
7. Disconnect under-dash fuse/relay box connector Y (16P).
8. Disconnect the gauge control module 32P connector.
9. Check for continuity between under-dash fuse/relay box connector Y (16P) terminal No. 6 and gauge control module 32P connector terminal No. 31.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to the gauge control module input test (see page 22-347).■

NO–Repair an open in the wire between the MICU and the gauge control module.■

Recirculation Control Motor Circuit Troubleshooting

1. Check the No. B10 (7.5 A) fuse in the under-dash fuse/relay box.

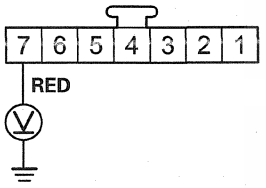
   Is the fuse OK?

   YES–Go to step 2.

   NO–Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. B10 (7.5 A) fuse circuit.■

2. Disconnect the recirculation control motor 7P connector.
3. Turn the ignition switch to ON (II).
4. Measure the voltage between recirculation control motor 7P connector terminal No. 7 and body ground.

RECIRCULATION CONTROL MOTOR 7P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 5.

NO–Repair an open in the wire between the No. B10 (7.5 A) fuse in the under-dash fuse/relay box and the recirculation control motor.■

5. Turn the ignition switch to LOCK (0).
6. Test the recirculation control motor (see page 21-77).

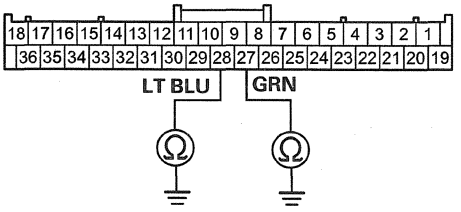
   Is the recirculation control motor OK?

   YES–Go to step 7.

   NO–Replace the recirculation control motor (see page 21-108), or repair the recirculation control linkage or door.■

7. Disconnect the climate control unit 36P connector.
8. Check for continuity between body ground and climate control unit 36P connector terminals No. 27 and No. 28 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

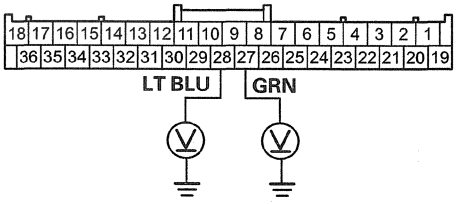
Is there continuity?

YES–Repair a short to body ground in the wire(s) between the climate control unit and the recirculation control motor.■

NO–Go to step 9.

9. Turn the ignition switch to ON (II), and check the same terminals for voltage to body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there any voltage?

YES–Repair a short to power in the wire(s) between the climate control unit and the recirculation control motor. This short may also damage the climate control unit. Repair the short to power before replacing the climate control unit.■

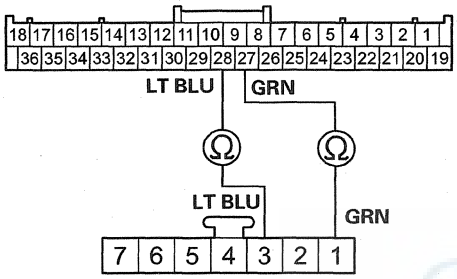
NO–Go to step 10.

10. Turn the ignition switch to LOCK (0).

11. Check for continuity between the following terminals of the climate control unit 36P connector and the recirculation control motor 7P connector.

36P:	7P:
No. 27	No. 1
No. 28	No. 3

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



RECIRCULATION CONTROL MOTOR 7P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the recirculation control motor 7P connector. If the connections are good, substitute a known-good climate control unit, and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Repair an open in the wire(s) between the climate control unit and the recirculation control motor.■

Climate Control Power and Ground Circuit Troubleshooting

1. Check the No. B10 (7.5 A) fuse in the under-dash fuse/relay box.

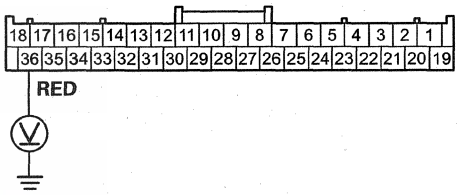
   Is the fuse OK?

   YES–Go to step 2.

   NO–Replace the fuse, and recheck. If the fuse blows again, check for a short in the No. B10 (7.5 A) fuse circuit.■

2. Disconnect the climate control unit 36P connector.
3. Turn the ignition switch to ON (II).
4. Measure the voltage between climate control unit 36P connector terminal No. 36 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 5.

NO–Repair an open in the wire between the No. B10 (7.5 A) fuse in the under-dash fuse/relay box and the climate control unit.■

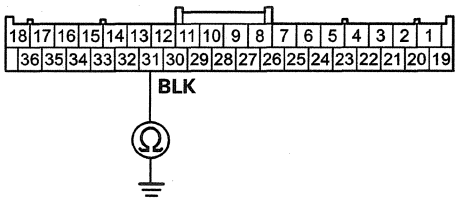
5. Turn the ignition switch to LOCK (0).

(cont'd)

Climate Control Power and Ground Circuit Troubleshooting (cont'd)

6. Check for continuity between climate control unit 36P connector terminal No. 31 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Check for loose wires or poor connections at the climate control unit 36P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Check for an open in the wire between the climate control unit and body ground. If the wire is OK, check for poor ground at G502 (see page 22-44).■

Radiator and A/C Condenser Fan Low Speed Circuit Troubleshooting

NOTE:

- Do not use this troubleshooting procedure if the A/C compressor is inoperative. Refer to the symptom troubleshooting index.
- Before doing symptom troubleshooting, check for powertrain DTCs (see page 11-3).

1. Check the No. B10 (7.5 A) and the No. B30 (30 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 2.

   NO–Replace the fuse, and recheck. If the fuse blow again, check for a short in the No.B10 (7.5 A) fuse and the No. B30 (30 A) fuse circuits.■

2. Remove the radiator fan relay from auxiliary under-hood relay box B, and test it (see page 22-92).

   Is the relay OK?

   YES–Go to step 3.

   NO–Replace the radiator fan relay.■

3. Connect the HDS to the DLC.
4. Turn the ignition switch to ON (II).
5. Turn on the A/C.
6. Check the FAN LOW CTRL in the PGM-FI Data List with the HDS.

   Is the FAN LOW CTRL on?

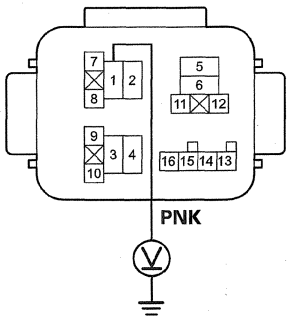
   YES–Go to step 7.

   NO–Substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away with a known-good ECM/PCM, replace the original ECM/PCM (see page 11-209).■

7. Turn the A/C switch and the fan control switch OFF, then turn the ignition switch to LOCK (0)

8. Measure the voltage between radiator fan relay 4P socket terminal No. 1 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 9.

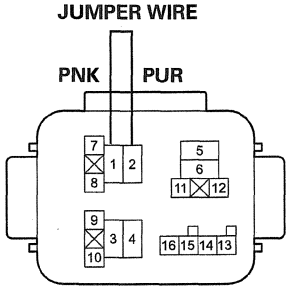
NO–Replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

9. Connect radiator fan relay 4P socket terminals No. 1 and No. 2 with a jumper wire.

AUXILIARY UNDER-HOOD RELAY BOX B

JUMPER WIRE



Terminal side of female terminals

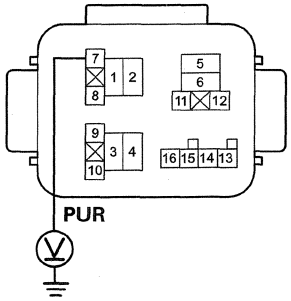
Do the radiator and A/C condenser fans run?

YES–Go to step 10.

NO–Go to step 19.

10. Disconnect the jumper wire.
11. Turn the ignition switch to ON (II).
12. Measure the voltage between radiator fan relay 4P socket terminal No. 7 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 13.

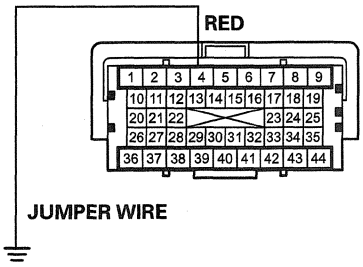
NO–Repair an open in the wire between the No. B10 (7.5 A) fuse in the under-dash fuse/relay box, A/C diode B, and the radiator fan relay.■

13. Turn the ignition switch to LOCK (0).
14. Reinstall the radiator fan relay.
15. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the ECM/PCM from damage.

16. Disconnect ECM/PCM connector A (44P).
17. Connect ECM/PCM connector A (44P) terminal No. 4 to body ground with a jumper wire.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

(cont'd)

Radiator and A/C Condenser Fan Low Speed Circuit Troubleshooting (cont'd)

18. Turn the ignition switch to ON (II).

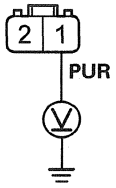
    Do the radiator and A/C condenser fans run on LO?

    YES–Check for loose wires or poor connection at ECM/PCM connector A (44P). If the connection is good, substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209), then do the ECM/PCM idle learn procedure (see page 11-274).■

    NO–Repair an open in the wire between the radiator fan relay and the ECM/PCM.■

19. Disconnect the jumper wire.
20. Reinstall the radiator fan relay.
21. Disconnect the radiator fan 2P connector.
22. Turn the ignition switch to ON (II), then turn the A/C switch and the fan control switch ON.
23. Measure the voltage between radiator fan 2P connector terminal No. 1 and body ground.

RADIATOR FAN 2P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 24.

NO–Repair an open in the wire between the radiator fan relay and the radiator fan.■

24. Turn the A/C switch and the fan control switch OFF, then turn the ignition switch to LOCK (0).
25. Remove the fan control relay from auxiliary under-hood relay box A, and test it (see page 22-92).

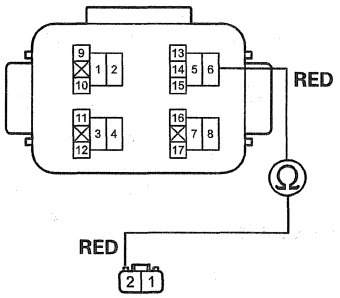
    Is the relay OK?

    YES–Go to step 26.

    NO–Replace the fan control relay.■

26. Check for continuity between radiator fan 2P connector terminal No. 2 and fan control relay 5P socket terminal No. 6.

AUXILIARY UNDER-HOOD RELAY BOX A
Terminal side of female terminals



RADIATOR FAN 2P CONNECTOR
Wire side of female terminals

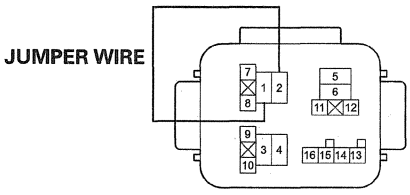
Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between the radiator fan and the fan control relay.■

27. Remove the radiator fan relay.
28. Connect radiator fan relay 4P socket terminal No. 1 and No. 2 with a jumper wire.

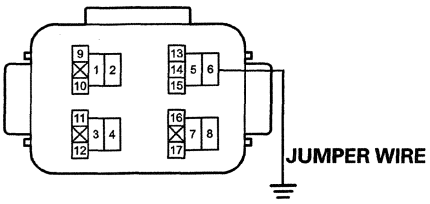
AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

29. Connect fan control relay 5P socket terminal No. 6 to body ground with a jumper wire.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

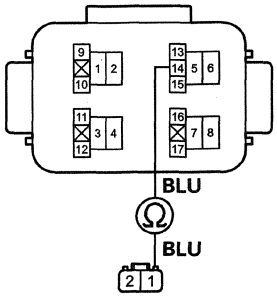
Do the radiator fan run on high?

YES–Go to step 30.

NO–Replace the radiator fan motor (see page 10-21).■

30. Disconnect the jumper wires.
31. Disconnect the A/C condenser fan 2P connector.
32. Check for continuity between fan control relay 5P socket terminal No. 14 and A/C condenser fan 2P connector terminal No. 1.

AUXILIARY UNDER-HOOD RELAY BOX A
Terminal side of female terminals



A/C CONDENSER FAN 2P CONNECTOR
Wire side of female terminals

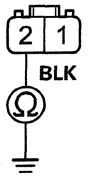
Is there continuity?

YES–Go to step 33.

NO–Repair an open in the wire between the fan control relay and the A/C condenser fan.■

33. Check for continuity between A/C condenser fan 2P connector terminal No. 2 and body ground.

A/C CONDENSER FAN 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Replace the A/C condenser fan motor (see page 10-21).■

NO–Check for an open in the wire between the A/C condenser fan and body ground. If the wire is OK, check for poor ground at G401 (see page 22-36).■

A/C Condenser Fan High Speed Circuit Troubleshooting

NOTE:
- Do not use this troubleshooting procedure if the radiator fan and/or the A/C compressor is inoperative. Refer to the symptom troubleshooting index.
- Before doing symptom troubleshooting, check for powertrain DTCs (see page 11-3).

1. Check the No. B31 (7.5 A) and the No. B47 (30 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 2.

   NO–Replace the fuse, and recheck. If the fuse blow again, check for a short in the No. B31 (7.5 A) or No. B47 (30 A) fuse circuits.■

2. Remove the fan control relay from auxiliary under-hood relay box A, and test it (see page 22-92).

   Is the relay OK?

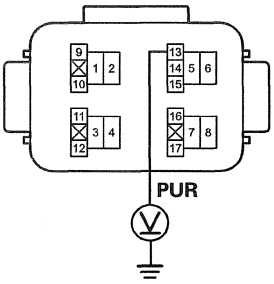
   YES–Go to step 3.

   NO–Replace the fan control relay.■

3. Turn the ignition switch to ON (II).

4. Measure the voltage between fan control relay 5P socket terminal No. 13 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

Is there battery voltage?

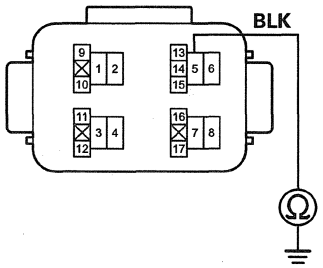
YES–Go to step 5.

NO–Go to step 14.

5. Turn the ignition switch to OFF.

6. Check for continuity between fan control relay 5P socket terminal No. 5 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

Is there continuity?

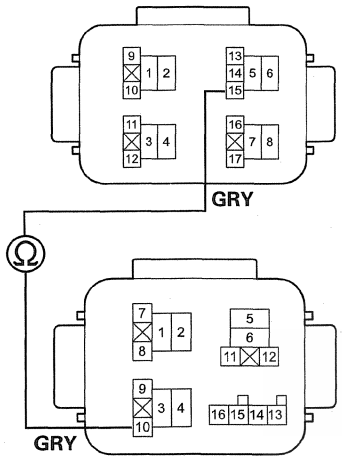
YES–Go to step 7.

NO–Check for an open in the wire between the fan control relay and body ground. If the wire is OK, check for poor ground at G401 (see page 22-36).■

7. Remove the A/C condenser fan relay from auxiliary under-hood relay box B.

8. Check for continuity between fan control relay 5P socket terminal No. 15 and A/C condenser fan relay 4P socket terminal No. 10.

AUXILIARY UNDER-HOOD RELAY BOX A
Terminal side of female terminals



AUXILIARY UNDER-HOOD RELAY BOX B
Terminal side of female terminals

Is there continuity?

YES–Go to step 9.

NO–Repair an open in the wire between the fan control relay and the A/C condenser fan relay.■

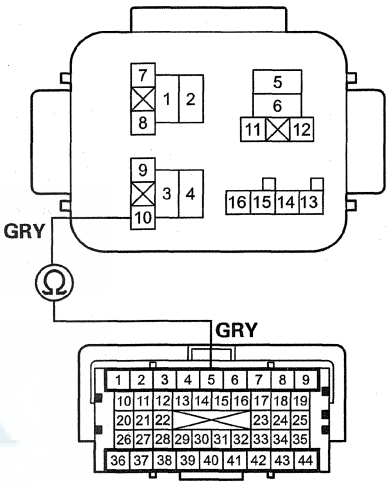
9. Jump the SCS line with the HDS.

NOTE: This step must be done to protect the ECM/PCM from damage.

10. Disconnect ECM/PCM connector A (44P).

11. Check for continuity between A/C condenser fan relay 4P socket terminal No. 10 and ECM/PCM connector A (44P) terminal No. 5.

AUXILIARY UNDER-HOOD RELAY BOX B
Terminal side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Go to step 12.

NO–Repair an open in the wire between the A/C condenser fan relay and the ECM/PCM.■

12. Reconnect ECM/PCM connector A (44P).

(cont'd)

A/C Condenser Fan High Speed Circuit Troubleshooting (cont'd)

13. Check the DTCs by selecting the DTC MENU (DTCs) from the HDS (see page 11-3).

    Is DTC P0532, P0533, P2184 and/ or P2185 indicated?

    YES–

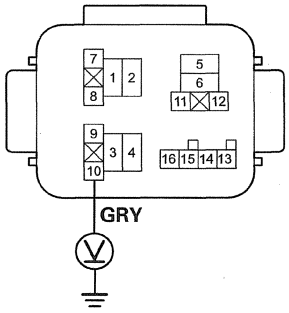
    - DTC P0532 indicated: Go to A/C pressure sensor circuit low voltage troubleshooting (see page 11-266).■
    - DTC P0533 indicated: Go to A/C pressure sensor circuit high voltage troubleshooting (see page 11-268).■
    - DTC P2184 indicated: Go to ECT sensor 2 circuit low voltage troubleshooting (see page 11-172).■
    - DTC P2185 indicated: Go to ECT sensor 2 circuit high voltage troubleshooting (see page 11-173).■

    NO–Check for loose wires or poor connections at ECM/PCM connector A (44P). If the connections are good, substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209).■

14. Remove the A/C condenser fan relay from auxiliary under-hood relay box B.

15. Measure the voltage between A/C condenser fan relay 4P socket terminal No. 10 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX B



Terminal side of female terminals

Is there battery voltage?

YES–Repair an open in the wire between the A/C condenser fan relay and the fan control relay.■

NO–Repair an open in the wire between the No. B31 fuse in the under-dash fuse/relay box, A/C diode A and the A/C condenser fan relay.■

A/C Compressor Clutch Circuit Troubleshooting

NOTE:

- It is normal for the A/C compressor to turn off under certain conditions, such as low idle, high engine coolant temperature, or hard acceleration.
- Do not use this troubleshooting procedure if the fans are also inoperative with the A/C on. Refer to the symptom troubleshooting index.
- Before doing any symptom troubleshooting, check for powertrain DTCs (see page 11-3).

1. Check the No. B10 (7.5 A) and the No. B43 (7.5 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 2.

   NO–Replace the fuse, and recheck. If the fuses blow again, check for a short in the No. B10 (7.5 A) and No. B43 (7.5 A) fuse circuits.■

2. Connect the HDS to the DLC.

3. Start the engine.

4. Turn on the A/C.

5. Check the A/C switch in the PGM-FI Data List with the HDS.

   Is the A/C switch on?

   YES–Go to step 7.

   NO–Go to step 6.

6. Using the HDS, confirm the following values in the PGM-FI Data List at idle.

TP sensor	About 0.5 V at idle
RPM	700–800
ECT SENSOR 2	176–212 °F (80–100 °C)
A/C SWITCH	ON
A/C CLUTCH	ON
A/C PRESSURE SENSOR	196–3,138 kPa (2.00–32.00 kgf/cm²) [28.4–455.1 psi]

   Are all the values within specifications?

   YES–Go to step 7.

   NO–Troubleshoot the value that is not within the specifications.■

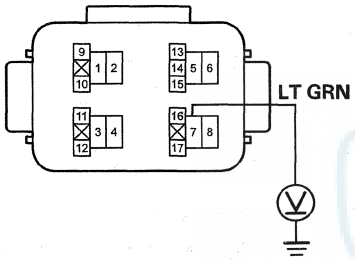
7. Turn the ignition switch to LOCK (0).
8. Remove the A/C compressor clutch relay from auxiliary under-hood relay box A, and test it (see page 22-92).

   Is the relay OK?

   YES–Go to step 9.

   NO–Replace the A/C compressor clutch relay.■
9. Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 7 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A



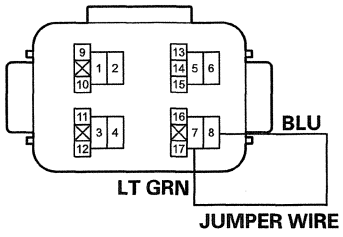
Terminal side of female terminals

Is there battery voltage?

YES–Go to step 10.

NO–Repair an open in the wire between the No. B43 (7.5 A) fuse in the under-dash fuse/relay box and the A/C compressor clutch relay.■
10. Connect A/C compressor clutch relay 4P socket terminals No. 7 and No. 8 with a jumper wire.

AUXILIARY UNDER-HOOD RELAY BOX A



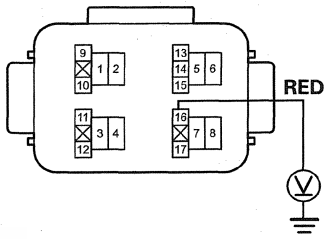
Terminal side of female terminals

Do the A/C compressor clutch click?

YES–Go to step 11.

NO–Go to step 22.
11. Disconnect the jumper wire.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between A/C compressor clutch relay 4P socket terminal No. 16 and body ground.

AUXILIARY UNDER-HOOD RELAY BOX A



Terminal side of female terminals

Is there battery voltage?

YES–Go to step 14.

NO–Repair an open in the wire between the No. B10 (7.5 A) fuse in the under-dash fuse/relay box and the A/C compressor clutch relay.■
14. Turn the ignition switch to LOCK (0).
15. Reinstall the A/C compressor clutch relay.
16. Make sure the A/C switch is OFF.
17. Jump the SCS line with the HDS.

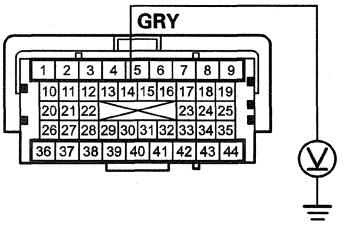
    NOTE: This step must be done to protect the engine control module (ECM)/powertrain control module (PCM) from damage.
18. Disconnect ECM/PCM connector A (44P).

(cont'd)

A/C Compressor Clutch Circuit Troubleshooting (cont'd)

19. Measure the voltage between ECM/PCM connector A (44P) terminal No. 14 and body ground.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

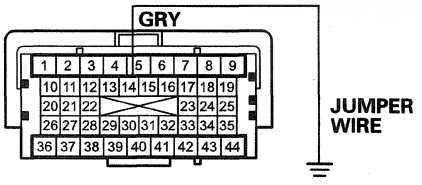
Is there 0.5 V or less?

YES–Faulty A/C compressor clutch relay or short to power on the BLU wire. Repair the faulty part or repair the short, then replace the ECM/PCM (see page 11-209).

NO–Go to step 20.

20. Connect ECM/PCM connector A (44P) terminal No. 14 to body ground with a jumper wire.

ECM/PCM CONNECTOR A (44P)



Terminal side of female terminals

21. Turn the ignition switch to ON (II).

Do the A/C compressor click?

YES–Check for loose wires or poor connections at ECM/PCM connector A (44P). If the connections are good, substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209).■

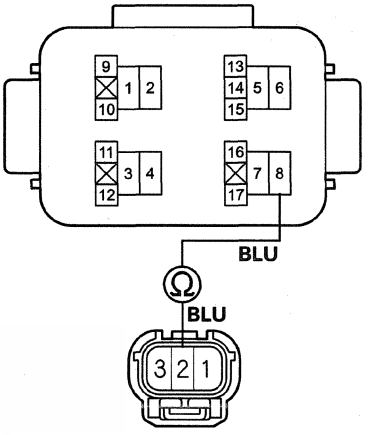
NO–Repair an open in the wire between the A/C compressor clutch relay and the ECM/PCM.■

22. Disconnect the jumper wire.

23. Disconnect the A/C compressor clutch 3P connector.

24. Check for continuity between A/C compressor clutch relay 4P socket terminal No. 8 and A/C compressor clutch 3P connector terminal No. 2.

AUXILIARY UNDER-HOOD RELAY BOX A
Terminal side of female terminals



A/C COMPRESSOR CLUTCH 3P CONNECTOR
Terminal side of male terminals

Is there continuity?

YES–Check the A/C compressor clutch clearance, the thermal protector circuit, and the A/C compressor clutch field coil (see page 21-78).■

NO–Repair an open in the wire between the A/C compressor clutch relay and the A/C compressor clutch.■

A/C Signal Circuit Troubleshooting

NOTE:
- Do not use this troubleshooting procedure if any of the following items are operative: A/C condenser fan, radiator fan, A/C compressor. Refer to the symptom troubleshooting index.
- Do not use this troubleshooting procedure if the A/C system pressure is abnormal (see page 21-28).
- Before doing symptom troubleshooting, check for powertrain DTCs (see page 11-3) and B-CAN DTCs (see page 22-126).

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the DLC.
3. Turn the ignition switch to ON (II).
4. Check that the blower motor operates at all speeds.

   Do the blower motor operate at all speeds?

   YES–Go to step 5.

   NO–Repair the problem in the blower motor circuit.■
5. Start the engine.
6. Turn on the A/C.
7. Check the A/C switch in the PGM-FI Data List with the HDS.

   Is the A/C switch on?

   YES–The A/C signal is OK at this time.

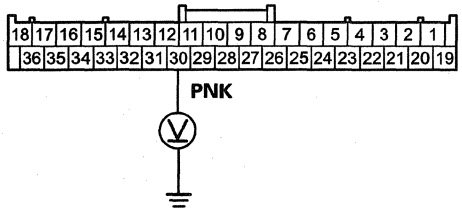
   NO–Go to step 8.
8. Check the A/C pressure sensor in the data list.

   Is the A/C pressure sensor within specification?

   YES–Go to step 9.

   NO–Check for poor or loose connections at the A/C pressure sensor. If the connections are OK, replace the A/C pressure sensor.
9. Turn the ignition switch to LOCK (0).
10. Disconnect the climate control unit 36P connector.
11. Turn the ignition switch to ON (II)
12. Measure the voltage between climate control unit 36P connector terminal No. 30 and body ground.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

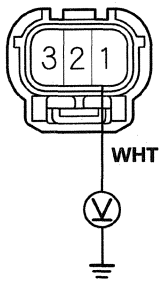
Is there battery voltage?

YES–Go to step 19.

NO–Go to step 13.

13. Turn the ignition switch to LOCK (0).
14. Disconnect the A/C compressor clutch 3P connector.
15. Turn the ignition switch to ON (II).
16. Measure the voltage between A/C compressor clutch 3P connector terminal No. 1 and body ground.

A/C COMPRESSOR CLUTCH 3P CONNECTOR



Terminal side of male terminals

Is there battery voltage?

YES–Go to step 17.

NO–Repair an open in the wire between the A/C compressor and the under-dash fuse/relay box. If the wire is OK, substitute a known-good under-dash fuse/relay box, and recheck. If the symptom goes away, replace the original under-dash fuse/relay box.■

(cont'd)

A/C Signal Circuit Troubleshooting (cont'd)

17. Test the A/C compressor thermal protector (see page 21-78).

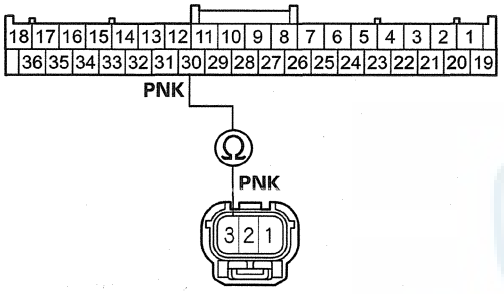
    Is the A/C compressor thermal protector OK?

    YES–Go to step 18.

    NO–Replace the A/C compressor thermal protector (see page 21-97).■

18. Check for continuity between climate control unit 36P connector terminal No. 30 and A/C compressor clutch 3P connector terminal No. 3.

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



A/C COMPRESSOR CLUTCH 3P CONNECTOR
Terminal side of male terminals

Is there continuity?

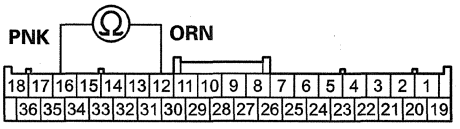
YES–Check for loose wires or poor connections at the climate control unit 36P connector and at the A/C compressor clutch 3P connector.■

NO–Repair an open in the wire between the climate control unit and A/C compressor.■

19. Turn the ignition switch to LOCK (0).

20. Measure the evaporator temperature sensor resistance between climate control unit 36P connector terminals No. 12 and No. 16.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is the resistance less than 24 kΩ?

YES–Check for loose wires or poor connections at climate control unit 36P connector. If the connections are good, substitute a known-good climate control unit and recheck. If the symptom/indication goes away, replace the original climate control unit (see page 21-112).■

NO–Test the evaporator temperature sensor (see page 21-77).■

Navigation Communication Line Circuit Troubleshooting

1. Operate the climate control system in several modes.

   Is the climate control system OK?

   YES–Go to step 2.

   NO–Do the Self-Diagnostic Function with the HDS (see page 21-9) or the climate control unit (see page 21-10).■

2. Do the System Links in Navigation System Diagnostic Mode (see page 23-174).

   Is the A/C icon red?

   YES–Go to step 3.

   NO–Go to step 9.

3. Turn the ignition switch to LOCK (0).

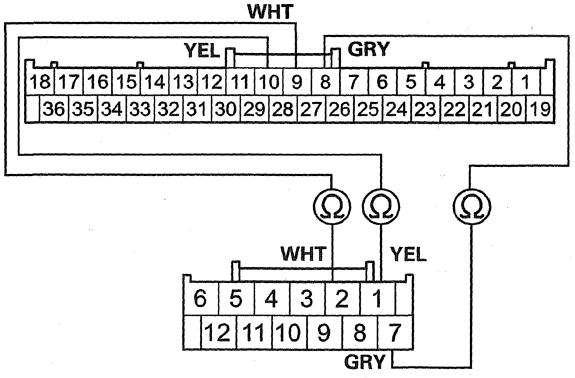
4. Disconnect audio-navigation unit connector D (12P).

5. Disconnect climate control unit 36P connector.

6. Check for continuity between the following terminals of climate control unit 36P connector and audio-navigation unit connector D (12P).

36P:	12P:
No. 8	No. 7
No. 9	No. 2
No. 10	No. 1

CLIMATE CONTROL UNIT 36P CONNECTOR
Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR D (12P)
Wire side of female terminals

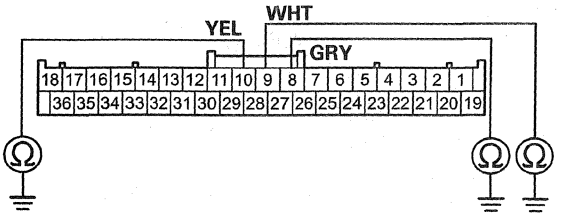
Is there continuity?

YES–Go to step 7.

NO–Repair an open in the wire(s) between the climate control unit and the audio-navigation unit.■

7. Check for continuity between body ground and climate control unit 36P connector terminals No. 8, No. 9, and No. 10 individually.

CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

Is there continuity?

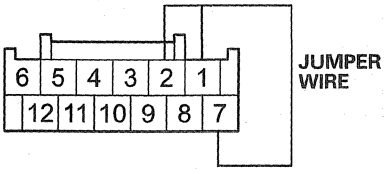
YES–Repair a short to body ground in the wire(s) between the climate control unit and the audio-navigation unit.■

NO–Go to step 8.

8. Reconnect climate control unit 36P connector.

9. Connect audio-navigation unit connector D (12P) terminals No. 1, No. 2, and No. 7 with jumper wires.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



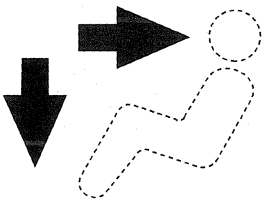
Wire side of female terminals

10. Turn the ignition switch to ON (II).

(cont'd)

Navigation Communication Line Circuit Troubleshooting (cont'd)

11. Press and hold the AUTO button, then press and hold the ON/OFF button.



Is the HEAT/VENT indicator solid with the remaining icons blinking?

YES–Do the unit check with the navigation (see page 23-182).■

NO–Substitute a known-good climate control unit, and recheck. If the symptom goes away, replace the original climate control unit (see page 21-112).■

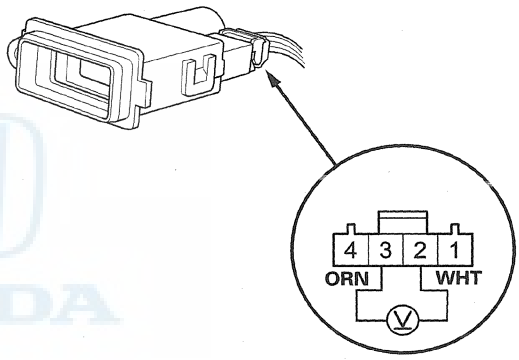
Humidity/In-Car Temperature Sensor Test

Humidity Sensor Test

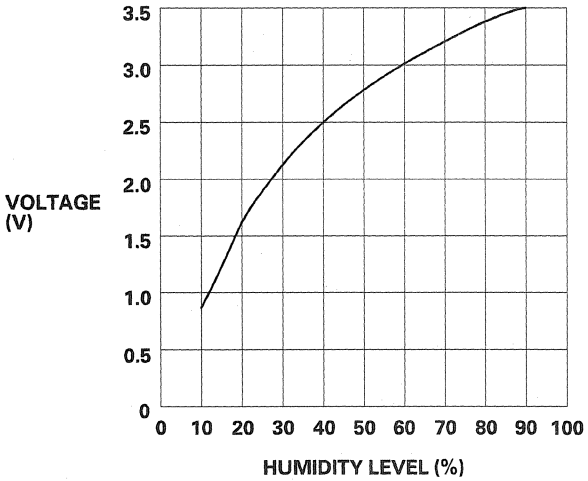
NOTE: Before testing the sensor, check for climate control DTCs (see page 21-8).

1. Remove the humidity/in-car temperature sensor (see page 21-109).
2. Connect the humidity/in-car temperature sensor 4P connector.
3. Turn the ignition switch to ON (II). Measure the voltage between the terminals with the (+) probe on terminal No. 2 and the (−) probe on terminal No. 3 with the connector connected.

HUMIDITY/IN-CAR TEMPERATURE SENSOR



Wire side of female terminals



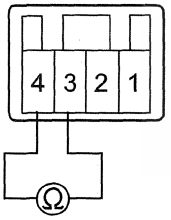
4. If the voltage is not as specified, replace the humidity/in-car temperature sensor (see page 21-109).

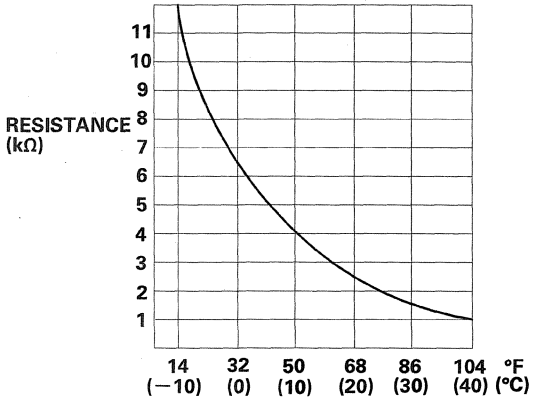
In-Car Temperature Sensor Test

NOTE: Before testing the sensor, check for climate control DTCs (see page 21-8).

1. Remove the humidity/in-car temperature sensor (see page 21-109).
2. Test the humidity/in-car temperature sensor while holding it in front of the dashboard center vent.
   - Measure the resistance with the system set to Max Cool.
   - Measure the resistance with the system set to Max Hot.
3. Compare the resistance reading between humidity/in-car temperature sensor terminals No. 3 and No. 4 with the specifications shown in the graph; the resistance should be within the specifications.

HUMIDITY/IN-CAR TEMPERATURE SENSOR





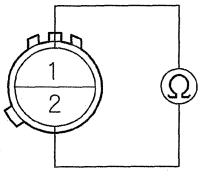
4. If the resistance is not as specified, replace the humidity/in-car temperature sensor (see page 21-109).
5. Clear any DTCs set when you disconnected the humidity/in-car temperature sensor.

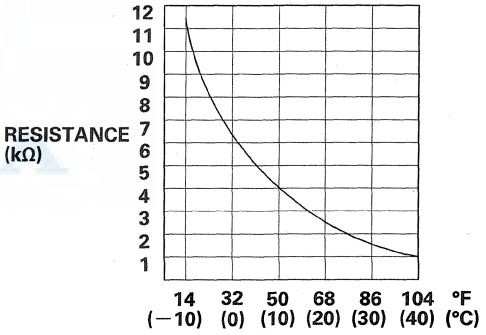
Outside Air Temperature Sensor Test

NOTE: Before testing the sensor, check for climate control DTCs (see page 21-8).

1. Remove the outside air temperature sensor (see page 21-109).
2. Dip the sensor in ice water, and measure the resistance. Then pour warm water on the sensor, and check for a change in resistance.
3. Compare the resistance reading between outside air temperature sensor terminals No. 1 and No. 2 with the specifications shown in the graph; the resistance should be within the specifications.

OUTSIDE AIR TEMPERATURE SENSOR





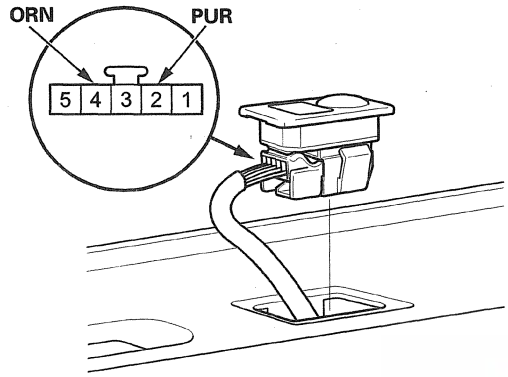
4. If the resistance is not as specified, replace the outside air temperature sensor (see page 21-109).

Sunlight Sensor Test

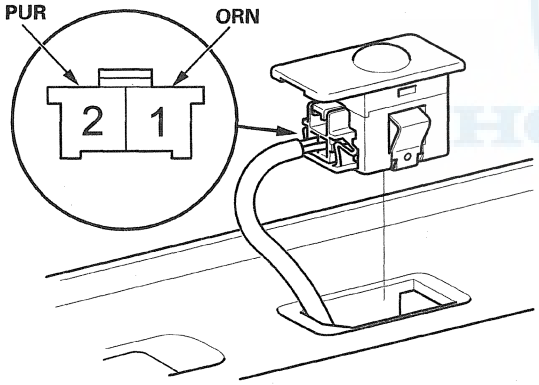
NOTE: Before testing the sensor, check for climate control DTCs (see page 21-8).

1. Remove the sunlight sensor (see page 21-110).

With automatic lighting



Without automatic lighting



2. Turn the ignition switch to ON (II). Measure the voltage between the terminals with the (+) probe on terminal No. 2 and the (−) probe on terminal No. 4 (with automatic lighting) or No.1 (without automatic lighting) with the connector connected.

   NOTE: The voltage readings will not change under the light of a flashlight or a fluorescent lamp.

   Voltage should be:
   - 3.56 V with no sunlight or sensor covered up.
   - Less than 3.56 V with sunlight on sensor (depending on sunlight intensity).

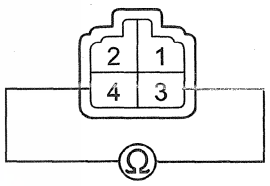
3. If the voltage is not as specified, replace the sunlight sensor (see page 21-110).

Power Transistor Test

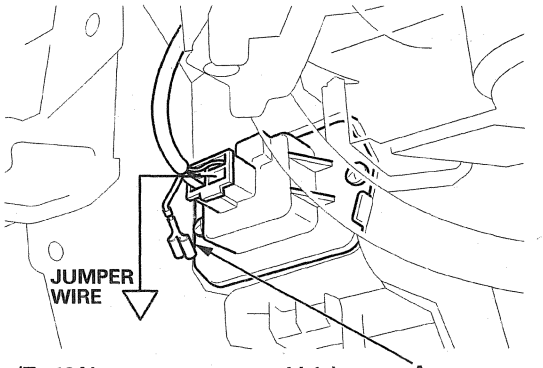
1. Remove the passenger's dashboard undercover (see page 20-94).
2. Disconnect the 4P connector from the power transistor.
3. Measure the resistance between power transistor terminals No. 3 and No. 4. It should be about 1.5 kΩ.
   - If the resistance is within the specifications, go to step 4.
   - If the resistance is not within the specifications, replace the power transistor.

   NOTE: Also check the blower motor. Power transistor failure can be caused by a defective blower motor.

POWER TRANSISTOR



4. Carefully release the lock tab on terminal No. 2 (ORN) (A) in the 4P connector, then remove the terminal and insulate it from body ground.



5. Reconnect the 4P connector to the power transistor.
6. Make sure the ORN wire is completely isolated, then supply 12 V to the No. 2 cavity with a jumper wire.
7. Turn the ignition switch to ON (II), and check that the blower motor runs.
   - If the blower motor does not run, replace the power transistor.
     NOTE: A faulty blower motor can cause the power transistor to fail. If the power transistor is replaced, also check the blower motor for binding, and replace it if necessary.
   - If the blower motor runs, the power transistor is OK.

Air Mix Control Motor Test

Special Tools Required
Backprobe Set 07SAZ-001000A (2)

NOTE: Before testing the motor, check for climate control DTCs (see page 21-8).

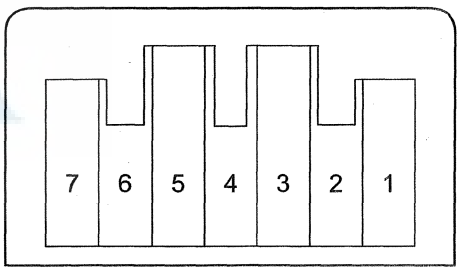
1. Disconnect the 7P connector from the air mix control motor.

   NOTICE

   Incorrectly applying power and ground to the air mix control motor will damage it. Follow the instructions carefully.

2. Connect battery power to air mix control motor terminal No. 7, and ground terminal No. 6; the air mix control motor should run, and stop at Max Cool. If it does not, reverse the connections; the air mix control motor should run, and stop at Max Hot. When the air mix control motor stops running, disconnect battery power immediately.

AIR MIX CONTROL MOTOR



3. If the air mix control motor did not run in step 2, remove it, then check the air mix control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the air mix control motor (see page 21-107).
   - If the linkage or door sticks or binds, repair them as needed.
   - If the air mix control motor runs smoothly, go to step 4.

(cont'd)

Air Mix Control Motor Test (cont'd)

4. Measure the resistance between terminals No. 1 and No. 3. It should be between 4.2 to 7.8 kΩ.
5. Reconnect the air mix control motor 7P connector, then turn the ignition switch to ON (II).
6. Using the backprobe set, measure the voltage between terminals No. 3 and No. 5.

   Max Cool: About 1.0 V
   Max Hot: About 4.0 V
7. If either the resistance or voltage readings are not as specified, replace the air mix control motor (see page 21-107).

Mode Control Motor Test

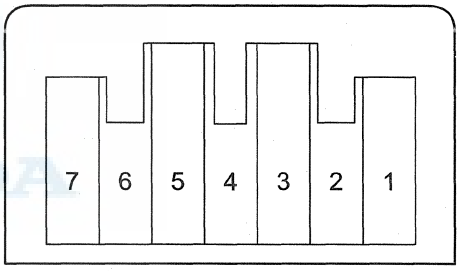
NOTE: Before testing the motor, check for climate control DTCs (see page 21-8).

1. Disconnect the 7P connector from the mode control motor.

   NOTICE

   Incorrectly applying power and ground to the mode control motor will damage it. Follow the instructions carefully.
2. Connect battery power to mode control motor terminal No. 6, and ground terminal No. 7; the mode control motor should run smoothly, and stop at Vent. If it does not, reverse the connections; the mode control motor should run smoothly, and stop at Defrost. When the mode control motor stops running, disconnect battery power immediately.

MODE CONTROL MOTOR



3. If the mode control motor did not run in step 2, remove it (see page 21-108), then check the mode control linkage and doors for smooth movement.
   - If the linkage and doors move smoothly, replace the mode control motor (see page 21-108).
   - If the linkage or doors stick or bind, repair them as needed.
   - If the mode control motor runs smoothly, go to step 4.
4. Use a digital multimeter with an output of 1 mA or less at the 20 kΩ range. With the mode control motor running as in step 2, check for continuity between terminals No. 1, No. 2, No. 3, and No. 4 and terminal No. 5 individually. There should be continuity for a moment at each terminal as the motor moves past the switch's terminal.
5. If there is no continuity for a moment at each terminal, replace the mode control motor (see page 21-108).

Recirculation Control Motor Test

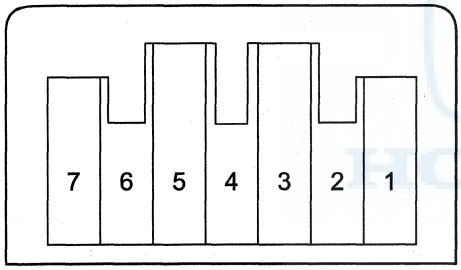
1. Disconnect the 7P connector from the recirculation control motor.

NOTICE

Incorrectly applying power and ground to the recirculation control motor will damage it. Follow the instructions carefully.

2. Connect battery power to recirculation control motor terminal No. 7, and ground terminals No. 1 and No. 3; the recirculation control motor should run smoothly. To avoid damaging the recirculation control motor, do not reverse power and ground. Disconnect terminal No. 1 or No. 3 from ground; the recirculation control motor should stop at Fresh (when terminal No. 3 is disconnected) or Recirculate (when terminal No. 1 is disconnected). Do not cycle the recirculation control motor for a long time.

RECIRCULATION CONTROL MOTOR

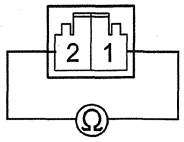


3. If the recirculation control motor did not run in step 2, remove it (see page 21-108), then check the recirculation control linkage and door for smooth movement.
   - If the linkage and door move smoothly, replace the recirculation control motor (see page 21-108).
   - If the linkage or door sticks or binds, repair them as needed.

Evaporator Temperature Sensor Test

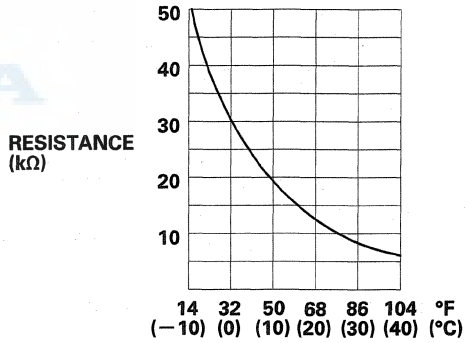
1. Remove the evaporator core and the evaporator temperature sensor (see page 21-103).
2. Dip the sensor in ice water, and measure the resistance between its terminals.

EVAPORATOR TEMPERATURE SENSOR



Terminal side of male terminals

3. Pour warm water on the sensor, and measure the resistance.
4. Compare the resistance readings with the specifications shown in the graph; the resistance should be within the specifications.

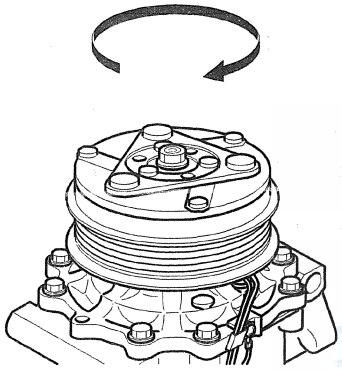


5. If the resistance is not as specified, replace the evaporator temperature sensor (see page 21-103).

A/C Compressor Clutch Check

1. Check the armature plate for discoloration, peeling, or other damage. If there is damage, replace the clutch set (see page 21-95).
2. Check the rotor pulley bearing play and drag by rotating the rotor pulley by hand. Replace the clutch set with a new one if it is noisy or has excessive play/drag (see page 21-95).

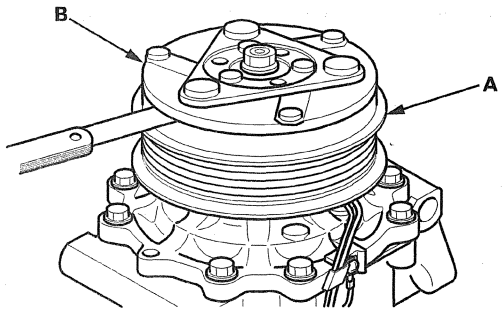
   NOTE: The rotor pulley and the armature plate were mated at the factory by a burnishing operation. Always replace the rotor pulley and the armature plate as a set. Replacing only one part of the clutch set will cause clutch slippage.



3. Measure the clearance between the rotor pulley (A) and the armature plate (B) all the way around. If the clearance is not within specified limits, remove the armature plate (see page 21-95) and add or remove shims as needed to increase or decrease clearance.

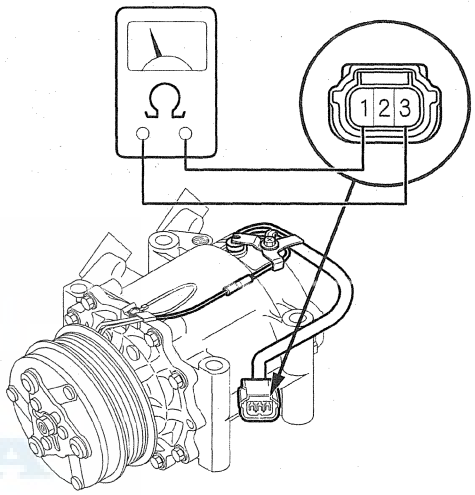
   Clearance: 0.35—0.65 mm (0.014—0.025 in)

   NOTE: The shims are available in four thicknesses: 0.1 mm, 0.2 mm, 0.4 mm, and 0.5 mm.

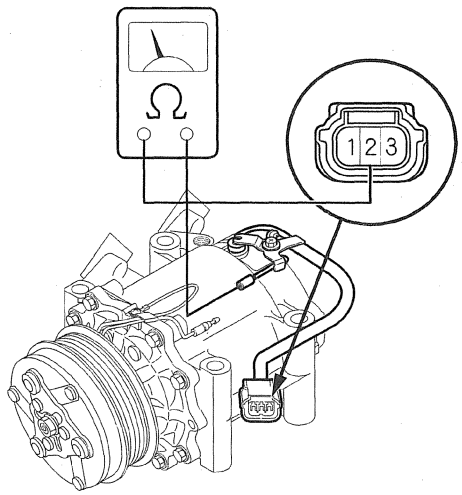


4. Check the thermal protector for continuity between A/C compressor clutch 3P connector terminals No. 1 and No. 3. If there is no continuity, replace the thermal protector (see page 21-97).

   NOTE: The thermal protector will have no continuity above 252 to 262 °F (122 to 128 °C). When the temperature drops below 241 to 219 °F (116 to 104 °C), the thermal protector will have continuity.

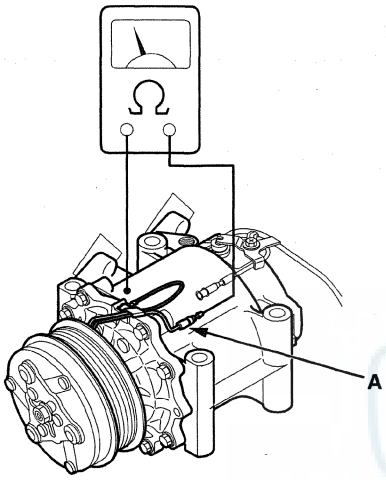


5. Release the field coil connector from the holder, then disconnect it. Check for continuity between A/C compressor clutch 3P connector terminal No. 2 and the 1P connector. If there is no continuity, replace the thermal protector (see page 21-97).



6. Disconnect the field coil connector (A). Check resistance of the field coil. If resistance is not within specifications, replace the field coil (see page 21-95).

Field Coil Resistance: 3.15—3.45 Ω at 68 °F (20° C) ('11 model)
Field Coil Resistance: 3.35—3.45 Ω at 68 °F (20° C) ('12 model)



Refrigerant Leak Check

Special Tools Required
- Leak Detector YGK-H-10PM*
- Leak Detector HLD-100*
- Leak Detector TIFZX-1*
- OPTIMAX Jr. A/C Leak Detection Kit TRP124893*

*These tools are available through the Honda Tool and Equipment Program; call 888-424-6857

⚠CAUTION
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.
- Do not operate the leak detector near flammable vapors. Its sensor operates at high temperatures, and could ignite the vapors, resulting in personal injury and/or damage to the equipment.
- IMA components are located near A/C system components. Make sure you have read the IMA service precautions before doing repairs or service.

NOTE:
- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- Check the system for leaks using an R-134a refrigerant leak detector with an accuracy of 14 g (0.5 oz) per year or better

(cont'd)

Refrigerant Leak Check (cont'd)

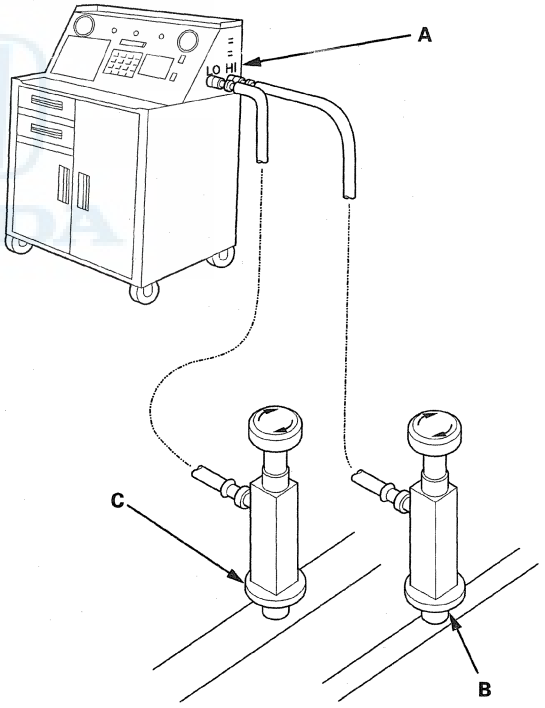
Leak Detector Usage Tips (Refer to the Operator's Manual for complete operating instructions)

- Position the vehicle in a wind-free work area. This will aid in detecting small leaks.
- When using the leak detector for the first time, allow it to warm up for 2 minutes with the probe in a clean atmosphere. This lets the temperature sensor in the detector stabilize.
- The calibration check should be done in the "Search 2" mode. Once that is done, the other check modes do not need calibrating.
- When leak checking through the HVAC module drain hose, avoid drawing water into the probe. Water can damage the internal pump and sensor.
- Avoid creasing the flexible probe extension. Creases can restrict air flow and give false readings.
- Because the detector recalibrates itself for ambient gases, it may be necessary to move the detector away from the leak to clear the sensor. Once the sensor has cleared, recheck the suspected leak.
- When removing the clear probe tip, be careful not to lose the flow ball.
- R-134a is heavier than air; always check below and to the sides of all potential leak sources.
- Halogen leak detectors are sensitive to chemicals: windshield washing solutions, solvents/cleaners, and some vehicle adhesives. Keep these chemicals out of the area when doing leak detection.

Fluorescent Dye Usage Tips

- Use only Tracer-Stick signal dose fluorescent dye capsules from Tracerline®. Other dyes contain solvents that may contaminate the refrigerant oil, leading to component failure.
- Adding excessive amounts of dye can damage the A/C compressor.
- PAG oil is water soluble, so condensation on the evaporator core or the refrigerant lines may wash the PAG oil and fluorescent dye away from the actual leak. Condensation may also carry dye through the HVAC module drain.
- After checking and repairing leaks, thoroughly clean any residual dye from the areas where leaks were found. Use GLO-AWAY dye cleaner, from Tracerline®, and hot water to remove the dye (follow the instructions on the bottle). Residual dye stains can cause misdiagnosis of any future A/C system leaks.
- If any refrigerant dye contacts an exterior paint surface, remove it by doing this:
  - Carefully wash the affected surfaces to remove any dirt, and to prevent paint scratching.
  - Mix water and isopropyl alcohol in a 50/50 mixture. Soak a soft 100 % cotton towel with the water/alcohol mixture, and place the cloth on the affected areas to remove the dye.
  - After removing the dye with the water/alcohol-soaked cloth, carefully wash the affected areas, and check that there is no remaining dye.

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Recover refrigerant from the A/C system (see page 21-113), and evacuate the system (see page 21-113). If the system achieves a vacuum of approximately 93.3 kPa (700 mmHg, 27.55 inHg) in 15 minutes, and holds the vacuum for 15 minutes, then the system does not have a leak at this time. If the system cannot achieve or hold a vacuum, continue the refrigerant leak check.

3. Open the high pressure valve to charge the system to the specified capacity. Select the appropriate units of measure for your refrigerant charging station.

Refrigerant Capacity:
450 to 500 g
0.45 to 0.50 kg
0.99 to 1.10 lbs
15.8 to 17.6 oz

(cont'd)

Refrigerant Leak Check (cont'd)

4. With the engine OFF, use a halogen leak detector first to detect the leak source. Follow a continuous path in order to ensure that you will not miss any possible leaks. Test the following areas of system for leaks:

Possible Leak Area	Diagnostic Procedure with the Leak Detector	Notes
Service ports	• Check the service ports with the detector. • If the detector "sniffs" a leak, use fluorescent dye to confirm it.	When capping the service ports, ensure that the seals on the port caps are in place, and that the caps are tight. The caps are used as the final seals in the system.
A/C condenser	If the detector "sniffs" a leak, use fluorescent dye to confirm it.	• Check for joints or connections coated with oily dust. • Check for damaged and corroded areas. • Check all fittings, couplings, brazed/welded areas and areas around attachment points. • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak. • If you detected a leak, blow compressed air over the area, then recheck for leaks. For large leaks, clearing the area with compressed air may help you pinpoint the leak source.
Evaporator	• Check at the evaporator drain hose. • Check at the passenger's side vent and turn the blower on at low speed.	
A/C lines (low pressure side)	• Wiggle the hose when checking crimped metal ends. • If the detector "sniffs" a leak, use fluorescent dye to confirm it.	• Check all fittings, couplings, pressure switches, brazed/welded areas, and areas around attachment points on A/C lines and components. • Check for damaged and corroded areas. • Move the probe slowly (1 inch/second or less), and keep it within 1/4 inch of the component being checked. This maximizes the chance of detecting a leak.

5. Close the quick coupler valves, then disconnect the quick couplers from the vehicle service ports.
6. Attach the universal connect set, from the Optimax Jr. Leak Detection Kit, to the service valve fitting. Close the control valve (the black knob on the connect set).
7. Attach the charging station low pressure hose quick coupler to the service valve fitting, and open the quick coupler valve. Evacuate the connect set using the charging station vacuum pump, then close the quick coupler valve.
8. Detach the universal connect set, and install a Tracer-Stick® dye capsule between the connect set and the service valve fitting (see the manufacturer's instructions for more detail).
9. Attach the quick coupler on the universal connect set to the low pressure service port on the vehicle. Open the charging station low pressure hose quick coupler valve, but do not open the control valve.
10. Start the engine, and set the A/C system to maximum cooling. Open the control valve to let refrigerant and the dye enter the A/C system through the low pressure service port. Close the control valve when the Tracer-Stick® dye capsule is empty.

11. Run the engine and A/C system for 15 minutes to thoroughly circulate the dye. Then shut the engine off, and inspect the following areas of the system for leaks.

NOTE:
- Check for leaks in a dark work area, and use the UV light and the special glasses from the leak check kit. Other UV lights may not work well with the Tracer-Stick® dye.
- Small leaks may take up to 1 week of vehicle operation (with normal A/C use) to become visible.

Possible Leak Area	Diagnostic Procedure with Fluorescent Dye
Service ports	If a leak is found, replace the Schrader valve on the service port.
A/C lines	• Use a permanent marker pen to circle the leak area. • If a leak is found, remove and replace the A/C line (see page 21-98).
A/C condenser	• If a leak is found, remove the A/C condenser (see page 21-92). • Determine whether leak is in the A/C condenser or the receiver/dryer. • Use a permanent marker pen to circle the leak area. • Replace either the receiver/dryer (see page 21-93), or the A/C condenser (see page 21-92), depending upon which is leaking.
A/C compressor	• Check for leaks at all of the A/C compressor joints, the clutch center, the A/C compressor front housing bolts, and the scroll bolts on the back of the A/C compressor. • If a leak is found, use a permanent marker pen to circle the leak area. • If the A/C compressor relief valve appears to be leaking, determine whether the leak is coming from the relief valve, or the joint between the A/C compressor casing and the valve. If the leak is from the relief valve, check the A/C system pressures, and refer to the pressure test in the A/C System Test (see page 21-86). If the leak is from the casing/valve joint, replace the A/C compressor relief valve (see page 21-96). • If the leak is coming from the suction hose and/or discharge hose fittings on the A/C compressor, clean the A/C fittings and replace the suction/discharge fitting O-rings. • For all other A/C compressor leaks, remove and replace the A/C compressor (see page 21-94).
Evaporator	• Start checking for evaporator leaks by illuminating the evaporator drain tube area. • If a leak is found, remove the evaporator core (see page 21-103). • Determine whether leak is from evaporator or expansion valve. • Use a permanent marker pen to circle the leak area. • Replace the expansion valve (see page 21-101), or the evaporator core (see page 21-103), depending upon which is leaking.

A/C System Noise Check

⚠CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant vapor.
- IMA components are located near A/C system components. Make sure you have read the IMA service precautions (see page 12-3) before doing repairs or service.

The A/C system noise check will help you determine the source of abnormal A/C system noise.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- Identify the conditions when the noise occurs. The weather, the vehicle speed, the vehicle being in gear or in neutral, the engine temperature, or other conditions may be factors in determining the noise source.
- Do the A/C system inspection (see page 21-6), and correct any problems found prior to diagnosing abnormal noises.
- Abnormal A/C noises can be misleading. For example, a sound similar to a failed bearing may be caused by loose fasteners, loose mounting brackets, or a faulty A/C compressor clutch assembly.

1. Inspect the air inlet grille in the cowl cover for debris. If debris is present, remove it.
2. Sit inside the vehicle, close the doors and windows, and turn the ignition switch to ON (II), but do not start the engine. Cycle the HVAC system through all blower speeds and all air distribution modes to determine where and when the noise occurs.
3. Operate the blower at each speed with the engine and A/C off, and check for unusual noises and excessive vibration. If noise and/or vibration are present, do the following checks:

   -1. If the noise or vibration occurs only in a specific mode or setting, then check these items:
   - Operation of the mode control motor, door, and linkage.
   - Operation of the air mix control motor, door, and linkage.
   - Operation of the recirculation control motor, door, and linkage.

   -2. If there is a squeaking or chirping noise, but no unusual vibration, replace the blower motor (see page 21-100).

   -3. Remove the blower unit (see page 21-99), and check for foreign material (leaves or twigs, for example) on the blower motor and fan. If foreign material is present, remove it, and recheck for noise. If you do not find any foreign material, remove the blower motor (see page 21-100), and check these items:
   - Check if the fan blades are cracked or broken.
   - Make sure the fan retainer is tight.
   - Inspect the fan alignment on the blower motor shaft.

   Replace the blower motor if any problems are present.
4. Set up the vehicle for the running A/C checks:
   - Select a quiet area for testing.
   - Apply the parking brake.
   - Shift the vehicle to PARK or Neutral.
   - Start the engine.
   - Set the temperature control dial to Max Cool.
   - Set the mode control switch to Vent.
   - Set the fan switch to minimum (but not OFF).
   - Turn the A/C switch ON.

   Switch the A/C compressor on and off several times to clearly identify the sound during A/C compressor operation. Listen to the noise while the A/C compressor clutch is engaged and disengaged. Probe the A/C system with a stethoscope to pinpoint the noise.

   NOTE: If the noise does not change when the A/C compressor clutch engages or disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.

5. Turn the ignition switch to LOCK (0), and check the drive belt for excessive wear, oil contamination, improper routing (see page 10-17), or a faulty belt tensioner (see page 10-18). Correct any problems found. Start the engine, run the A/C system, and check if the noise is coming from the drive belt, the belt tensioner, or any of the pulleys. Repair or replace any faulty components.
6. Listen for noises coming from the A/C lines, the A/C hoses, the A/C condenser, the evaporator, the receiver-dryer, or the expansion valve, and check these items:
   - Noises caused by A/C components touching other components or the body. Reroute or insulate the A/C component(s) as needed, and recheck for noise.
   - Loose, damaged or excessively worn A/C components or mounting hardware. Repair or replace the faulty component(s) or hardware, and recheck for noise.
   - A moaning noise coming from the A/C suction line. If there is a moaning noise, check the system refrigerant charge (see page 21-114). If the refrigerant charge is OK, replace the receiver/dryer.
7. Check the operation of the A/C compressor clutch:
   - Make sure A/C compressor clutch engages without slipping. If the clutch does not engage, troubleshoot the A/C compressor clutch circuit (see page 21-66). If the A/C compressor clutch slips, replace the A/C complete clutch assembly (see page 21-95).
   - Make sure the A/C compressor clutch disengages. If the clutch does not disengage, do the A/C compressor clutch check (see page 21-78). If the A/C compressor clutch is OK, replace the A/C compressor (see page 21-94).
   - Make sure the A/C compressor clutch cycles normally. If the A/C compressor clutch is cycling rapidly, the A/C system is probably low on refrigerant due to a leak. Do the refrigerant leak check (see page 21-79). If the refrigerant charge is OK, and there are no leaks, troubleshoot the A/C compressor clutch circuit (see page 21-66).
8. Listen with a stethoscope for noises coming from the A/C compressor, and check these items:
   - The noise changes when the A/C compressor clutch disengages. If the noise does not change when the A/C compressor disengages, the noise may be caused by an engine-related component. Probe the engine area with a stethoscope to pinpoint the noise.
   - The A/C system operating pressures are normal. If the system pressures are abnormal, troubleshoot the problem using the pressure test table in the A/C system test (see page 21-90). Correct the pressure-related problem(s), and recheck for noise.
   - The A/C compressor hose connections, mounting brackets, and fasteners are in good condition. If any of these components are loose, damaged, or excessively worn, repair or replace the faulty component(s), and recheck for noise. If these components are in good condition, and the noise is still present, replace the A/C compressor (see page 21-94).

A/C System Test

Special Tools Required
- Throttle Pedal Depressor Tool B240B, commercially available
- Big Digit Hygro-Thermometer PYR445703, commercially available

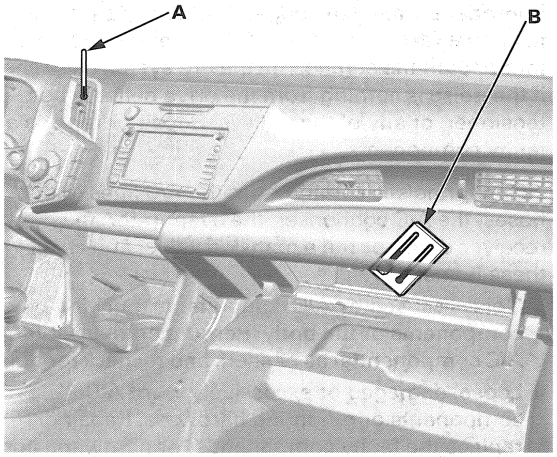
Performance Test

⚠CAUTION
- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

The performance test will help determine if the A/C system is operating within specifications.

NOTE:
- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Do the A/C system inspection (see page 21-6), and correct any problems found.
2. Connect an R-134a refrigerant recovery/recycling/charging station to the high-pressure service port and the low-pressure service port, following the equipment manufacturer's instructions.
3. Determine the relative humidity and air temperature.
4. Open the glove box and the glove box lid (see step 1 on page 21-99).
5. Insert a thermometer (A) in the center vent.



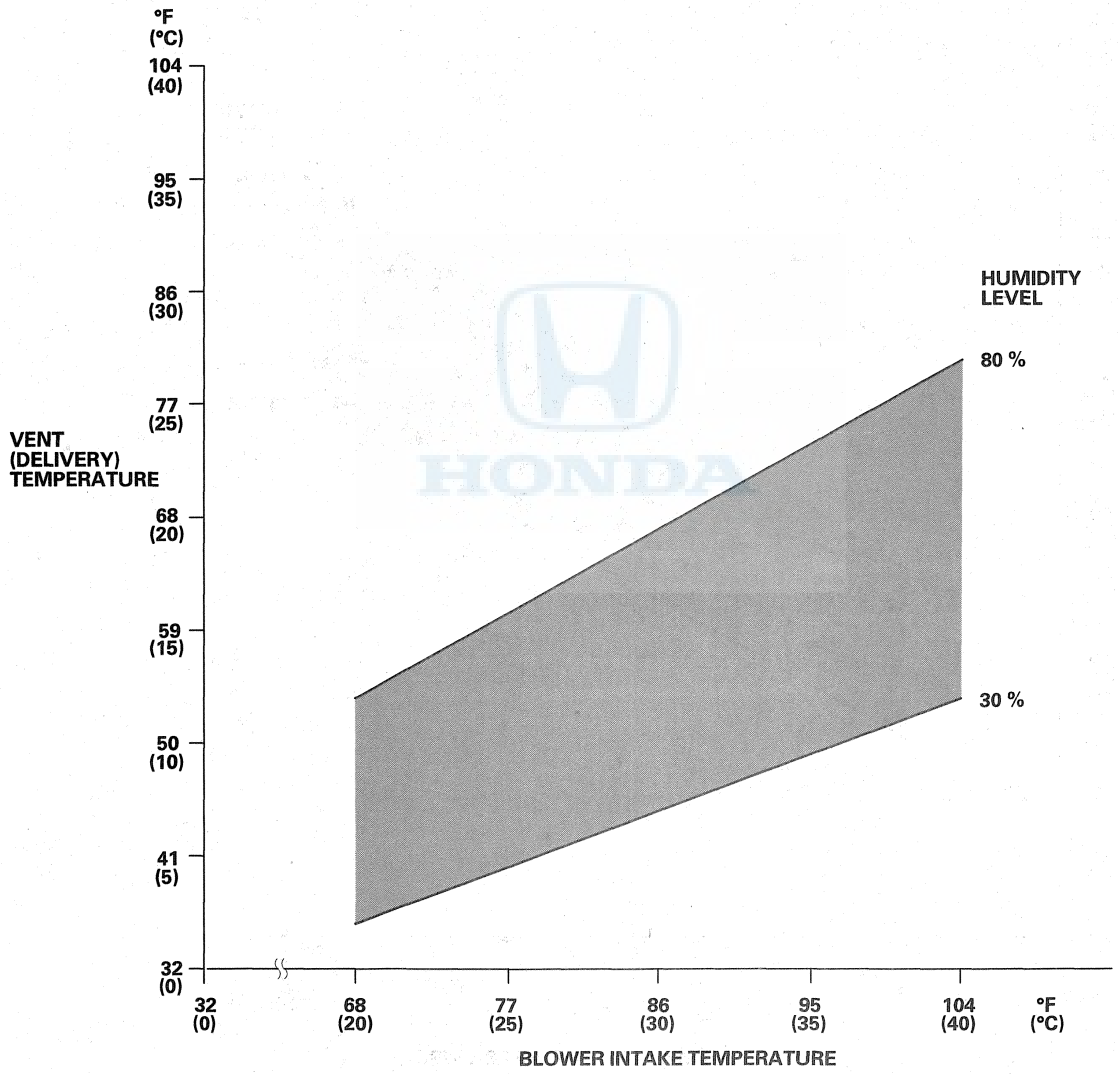
6. Place another thermometer (B) near the blower unit's recirculation inlet duct.
7. Test conditions:
   - Move the vehicle out of direct sunlight and let it cool down to the surrounding (ambient) temperature. If necessary, wash the vehicle to cool it down more quickly.
   - The blower intake temperature must be at least 68 °F (20 °C).
   - Open the hood.
   - Open the front doors.
   - Start the engine. Set the temperature control dial to Max Cool, the mode control button to Vent, and the recirculation control button to Recirculate.
   - Turn the A/C switch ON and the fan control switch to Max.
   - Hold the engine speed at 1,500 rpm.
   - No driver or passengers in the vehicle.
8. Inspect the A/C components for the following conditions:
   - A/C compressor clutch not engaged.
   - Abnormal frost areas.
   - Unusual noises.

   If you observe any of these conditions, refer to the Symptom Troubleshooting Index.
9. After running the air conditioning for 10 minutes under the above test conditions, read the delivery temperature from the thermometer in the center vent, the intake temperature near the blower unit, and the high and low system pressure from the A/C gauges.

10. To complete the vent (delivery)/blower intake temperature chart:
    - Mark the vent (delivery) temperature on the vertical line.
    - Mark the blower intake temperature on the bottom line.
    - Draw a vertical line from the blower intake temperature mark.
    - Draw a horizontal line from the vent (delivery) temperature mark until it intersects the vertical line.

    NOTE: The vent temperature and the blower intake temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.

Blower Intake Temperature vs. Vent (Delivery) Temperature

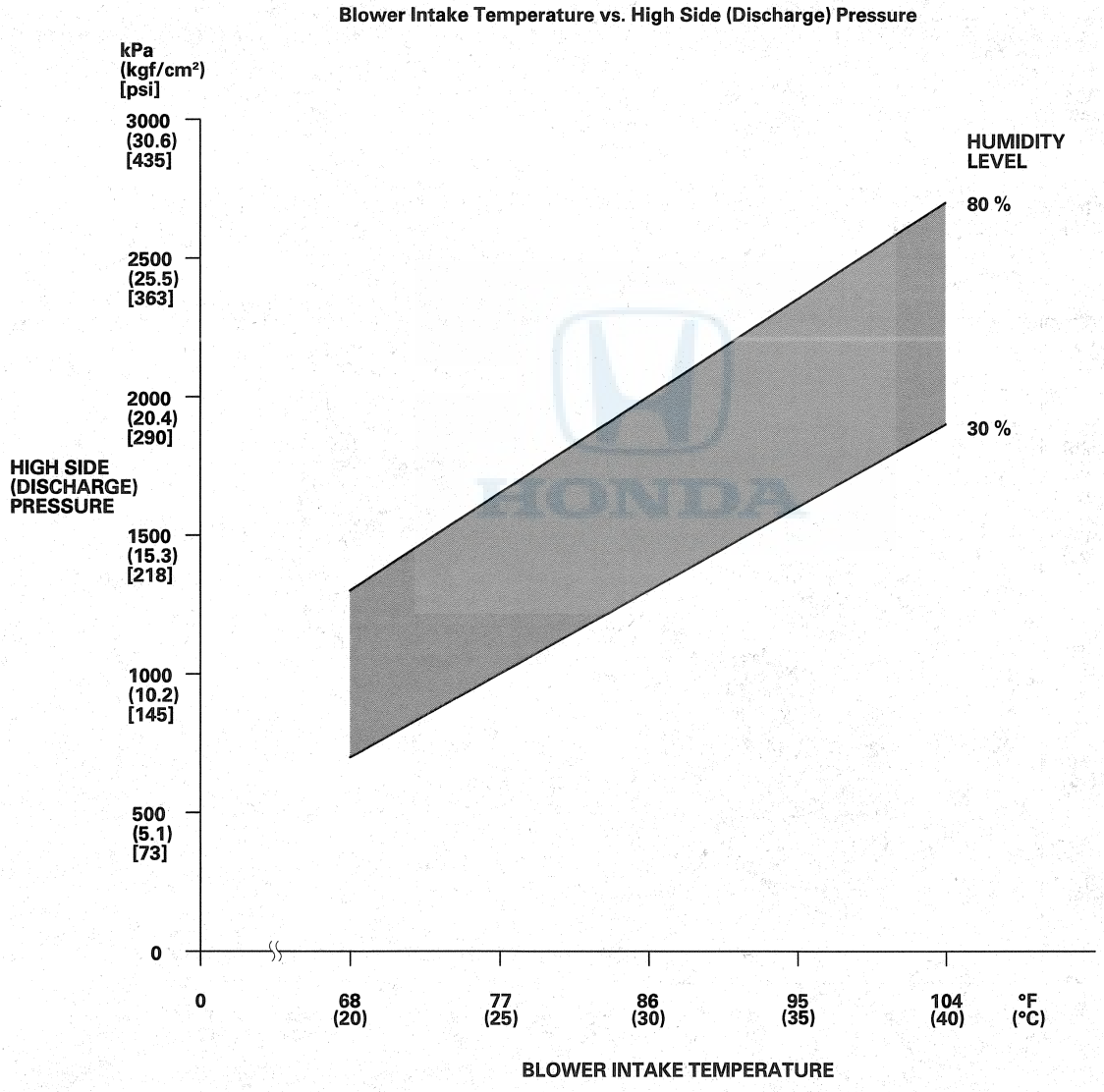


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A/C System Test (cont'd)

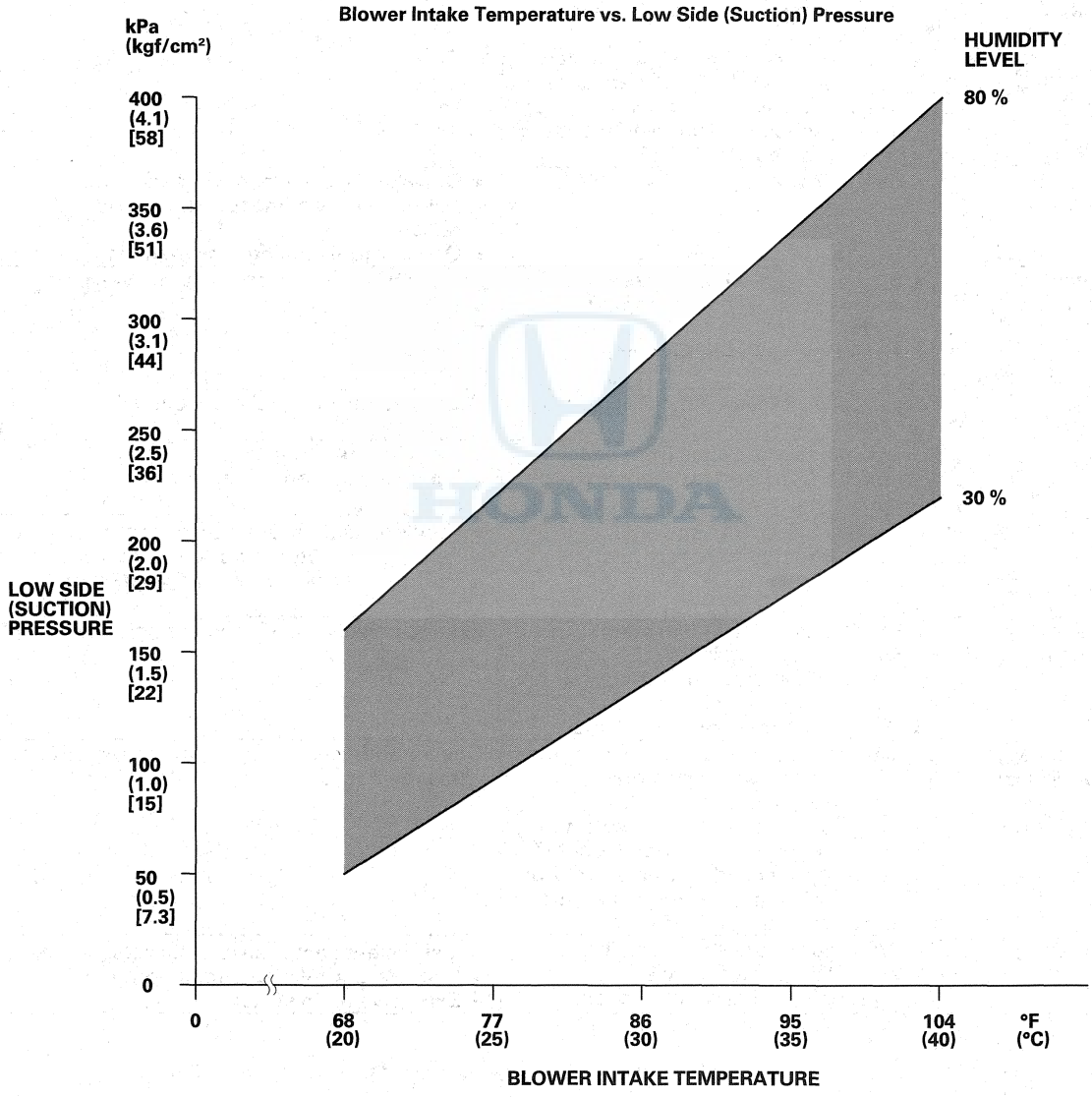
11. To complete the high side (discharge) pressure/blower intake temperature chart:
    - Mark the high side (discharge) pressure on the vertical line.
    - Mark the blower intake temperature on the bottom line.
    - Draw a vertical line from the blower intake temperature mark.
    - Draw a horizontal line from the high side (discharge) pressure mark until it intersects the vertical line.

    NOTE: The high side pressure and the blower intake temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.



12. To complete the low side (suction) pressure/blower intake temperature chart:
    - Mark the low side (suction) pressure along the vertical line.
    - Mark the blower intake temperature along the bottom line.
    - Draw a vertical line from the blower intake temperature mark.
    - Draw a horizontal line from the low side (suction) pressure mark until it intersects the vertical line.

    NOTE: The low side pressure and the blower intake temperature should intersect in the shaded area. Any measurements outside the area may indicate the need for further inspection.



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A/C System Test (cont'd)

Pressure Test

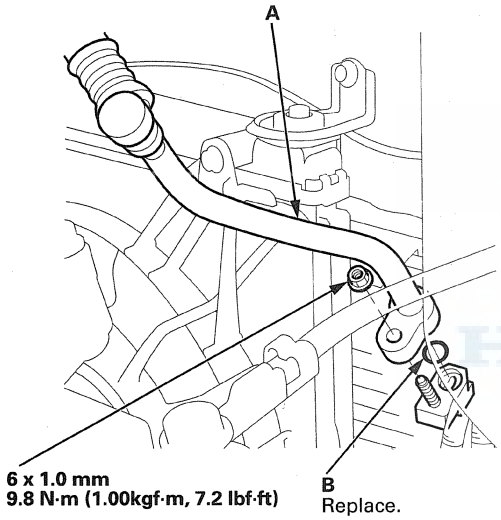
Test results	Related symptoms	Probable cause
Driver and passenger's side A/C vent temperatures may vary by approx. 52 °F (11 °C) or more.	Suction pressure may be low.	• Low refrigerant charge. • Expansion valve not opening sufficiently.
Discharge pressure abnormally high.	• Discharge pressure reduced when A/C condenser cooled with water spray. • With doors open, fresh air selected and radiator and A/C condenser fan run on high speed, temperature drop across A/C condenser inlet to outlet is less than about 41 °F (5 °C).	Significant refrigerant overcharge.
	Restricted/weak airflow through A/C condenser.	• Dirty A/C condenser or damaged fins. • Debris between A/C condenser and radiator. • One or more cooling fans malfunctioning.
Discharge pressure abnormally low.	• Suction and discharge pressures equalize rapidly after stopping compressor. • Suction pressure higher than normal.	Faulty A/C compressor discharge valve or seal.
Suction pressure abnormally low.	Weak or insufficient airflow across evaporator.	Restricted blower intake or pollen filter.
	Suction pressure varies from near normal to a vacuum, as moisture freezes in expansion valve orifice.	• Moisture in the system. • Faulty expansion valve.
	• Reduced airflow from vents. • Vent temperature is very low.	• Condensation freezing on evaporator. • Faulty evaporator temp sensor (check DTC). • Faulty expansion valve or compressor relay.
Suction pressure abnormally high.	• Lack of slight suction pressure variation at 1,500 RPM when "Recirculated" airflow is switched to "Fresh Air." • Discharge pressure near normal.	Expansion valve stuck open or open too long.
Suction and discharge pressures abnormally high.	• Sheet of paper does not stick to front of A/C condenser surface with cooling fans on. • With doors open, fresh air selected and radiator and A/C condenser fan run on high speed, temperature drop across A/C condenser inlet to outlet is less than about 41 °F (5 °C)	One (or both) cooling fan motor inoperative or wires reversed.
	• A/C ompressor clutch remains engaged during off cycle. • Pressure relief valve may open.	• Insufficient compressor clutch clearance. • Compressor relay or circuit problem. • Excessive air in system.

Test results	Related symptoms	Probable cause
Suction and discharge pressures abnormally low.	Suction line from expansion valve to compressor is not cold.	Excessively low refrigerant charge.
	Lack of slight suction pressure variation at 1,500 RPM when "Recirculated" airflow is switched to "Fresh Air."	Expansion valve clogged with debris/desiccant, stuck closed, or not opening sufficiently.
	More than 50 - 60 °F (10 - 16 °C) temperature drop across A/C condenser inlet to outlet pipes.	Blocked or restricted A/C condenser internal passages or lines/components restricting refrigerant flow.
	Significant temperature difference along high or low side A/C lines or components. NOTE: Some restrictions may not show up until 3,000 RPM.	Restriction in A/C suction or discharge lines or components (check temperatures to isolate).
Suction pressure high and discharge pressure low.	• Excessive A/C compressor noise. • Pressures equalize quickly and noise after compressor turns off.	A/C compressor internal damage (Check for A/C system debris contamination).
Suction and discharge pressures normal (or near normal).	Vent temperature too high.	• Slightly low refrigerant charge. • Excessive refrigerant oil in system. • Heater valve (if equipped) misadjusted. • Air mix door sticking, misadjusted or inoperative.
	Static pressures high with A/C system equalized. (After engine is off 4 - 12 hours).	• Air/non-condensable gasses in system. • Contaminated or incorrect refrigerant.

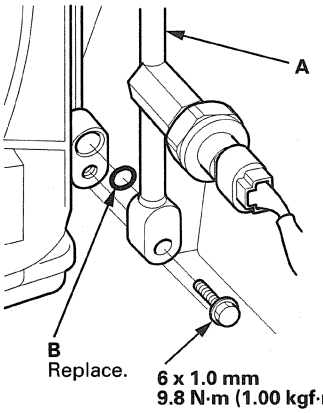
HONDA

A/C Condenser Replacement

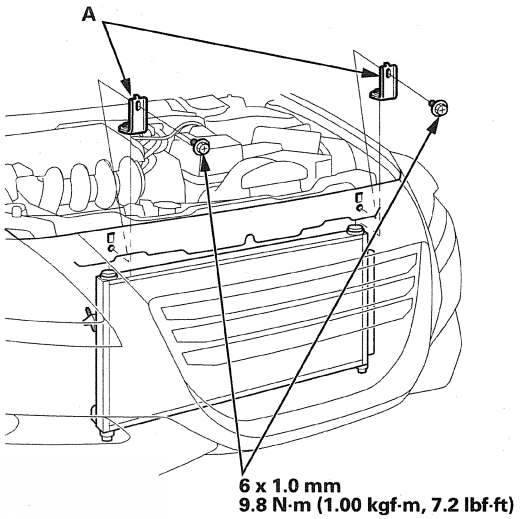
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
2. Remove the front bumper center upper beam (see page 20-149).
3. Remove the cooling guide.
4. Remove the hood latch (see page 20-135).
5. Remove the horn (see page 22-206).
6. Remove the nut, then disconnect the discharge hose (A) from the A/C condenser. Remove the O-ring (B) from the discharge hose.



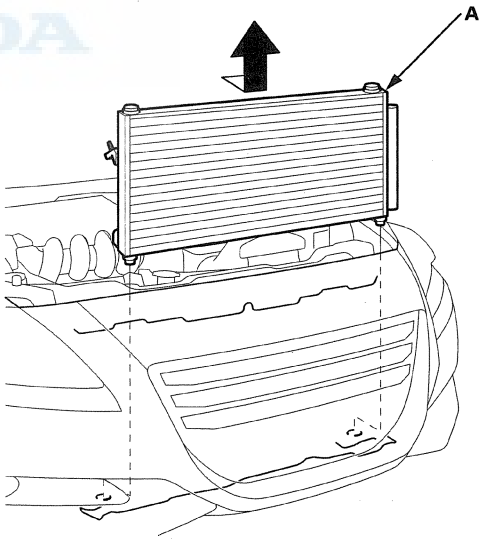
7. Remove the bolt, then disconnect the receiver pipe (A) from the A/C condenser. Remove the O-ring (B) from the receiver pipe.



8. Remove the bolts and the A/C condenser brackets (A).



9. Remove the A/C condenser (A) by lifting it up. Be careful not to damage the radiator or A/C condenser fins when removing the A/C condenser.

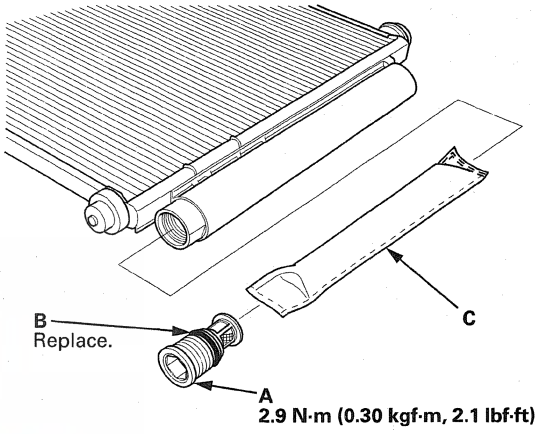


10. Install the A/C condenser in the reverse order of removal, and note these items:
    - If you're installing a new A/C condenser, add refrigerant oil (SP-10) (see page 21-97).
    - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
    - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
    - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
    - Be careful not to damage the radiator or the A/C condenser fins when installing the A/C condenser.
    - Charge the system (see page 21-114).

Receiver/Dryer Desiccant Replacement

NOTE: Install the receiver/dryer as quickly as possible to prevent the system from absorbing moisture from the air.

1. Remove the A/C condenser (see page 21-92).
2. Remove the cap (A) from the bottom of the A/C condenser. Remove the O-ring (B) and the desiccant (C).

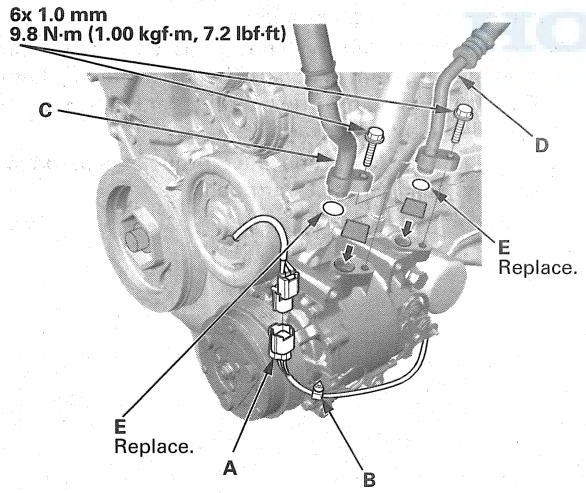


3. Install the receiver/dryer in the reverse order of removal, and note these items:
    - Replace the O-rings with new ones, and apply a thin coat of refrigerant oil (SP-10) before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
    - Install the cap to the specified torque. It is made of resin and can be easily stripped.

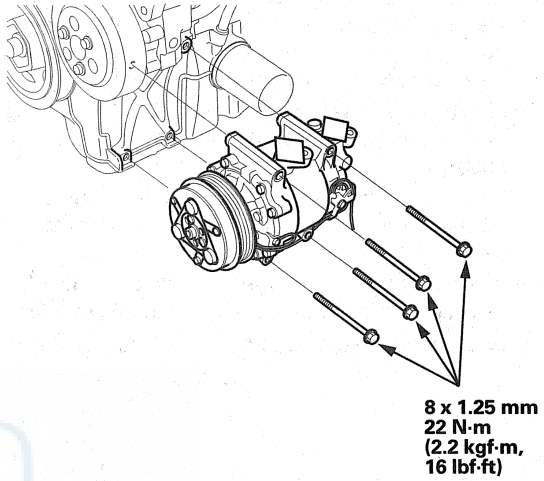
A/C Compressor Replacement

NOTE: Do not install an A/C compressor into a system unless you are completely sure that the system is free of contamination. Installing the A/C compressor into a contaminated system can result in premature A/C compressor failure.

1. If the A/C compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
3. Raise the vehicle on the lift.
4. Remove the splash shield (see page 20-163).
5. Remove the drive belt (see page 10-17).
6. Remove the compressor clutch connector (A). Remove the harness clip (B) from the A/C condenser fan shroud, then disconnect the connector. Remove the bolts, then disconnect the suction line (C) and the discharge line (D) from the A/C compressor, and remove the O-rings (E). Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



7. Remove the mounting bolts, and remove the A/C compressor downward. Be careful not to damage the radiator fins when removing the A/C compressor. Do not drop the A/C compressor.



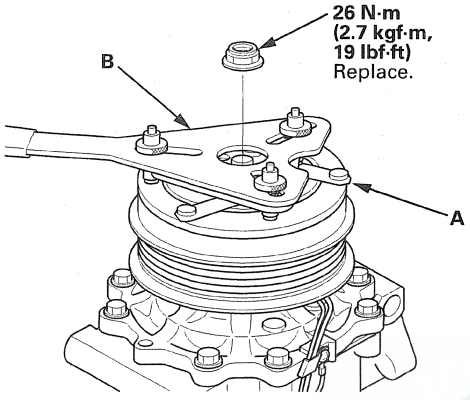
8. Install the A/C compressor in the reverse order of removal, and note these items:
   - Inspect the A/C lines for any signs of contamination.
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Use refrigerant oil (SP-10) for HFC-134a KEIHIN spiral type A/C compressor only.
   - To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Charge the system (see page 21-114).
9. Lower the vehicle on the lift.

A/C Compressor Clutch Overhaul

Special Tools Required

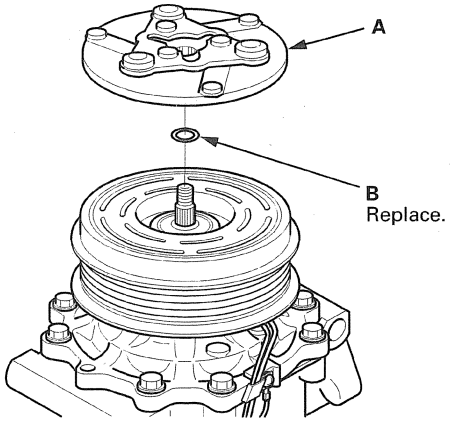
A/C Compressor Kit 07AAF-000A150

1. Remove the center nut while holding the armature plate (A) with the A/C clutch holder (B).

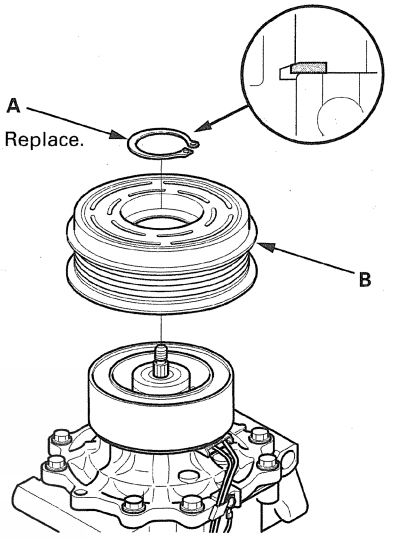


2. Remove the armature plate (A) and the shim(s) (B), taking care not to lose the shim(s). If the clutch needs adjustment, increase or decrease the number and thickness of shims as necessary, then reinstall the armature plate, and recheck its clearance (see page 21-78).

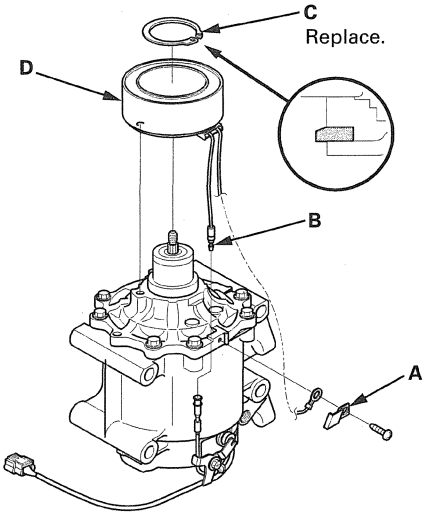
   NOTE: The shims are available in four thicknesses: 0.1 mm, 0.2 mm, 0.4 mm, and 0.5 mm.



3. If you are replacing the field coil, remove the snap ring (A) with snap ring pliers, then remove the rotor pulley (B). Be careful not to damage the rotor pulley and A/C compressor.



4. Remove the bolt and holder (A), then disconnect the field coil connector (B). Remove the snap ring (C) with snap ring pliers, then remove the field coil (D). Be careful not to damage the field coil and A/C compressor.



(cont'd)

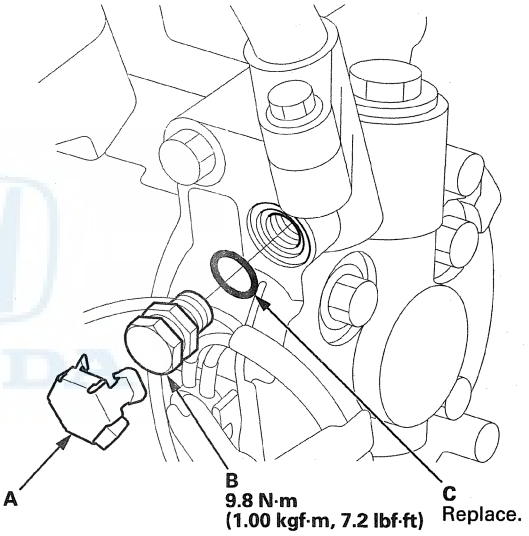
A/C Compressor Clutch Overhaul (cont'd)

5. Reassemble the clutch in the reverse order of disassembly, and note these items:
   - Install the field coil with the wire side facing down, and align the boss on the field coil with the hole in the A/C compressor.
   - Clean the rotor pulley and A/C compressor friction surfaces with contact cleaner or other non-petroleum solvent.
   - Install new snap rings, note the installation direction, and make sure they are fully seated in the groove.
   - Make sure that the rotor pulley turns smoothly after it's reassembled.
   - Route and clamp the wires properly or they can be damaged by the rotor pulley.

A/C Compressor Relief Valve Replacement

NOTE: If the A/C compressor relief valve released refrigerant to the atmosphere, determine and correct the cause of the excessive system pressure, then replace the relief valve.

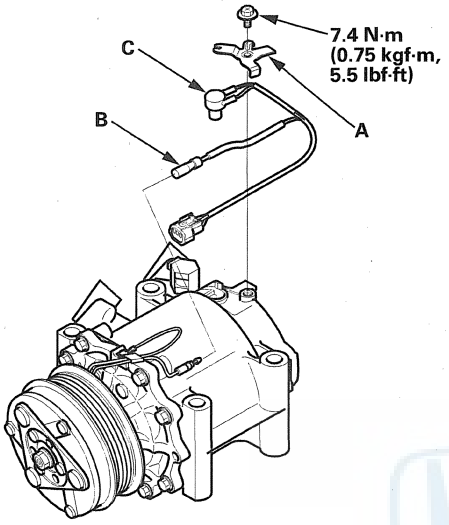
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
2. Remove the relief valve cover (A), the relief valve (B), and the O-ring (C). Plug the opening to keep foreign matter from entering the system and the A/C compressor oil from running out.



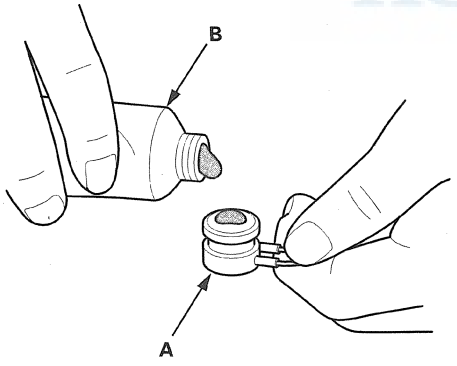
3. Clean the mating surfaces.
4. Replace the O-ring with a new one at the relief valve, and apply a thin coat of refrigerant oil before installing it.
5. Remove the plug, and install and tighten the relief valve.
6. Charge the system (see page 21-114).

A/C Compressor Thermal Protector Replacement

1. Remove the bolt and the holder (A). Disconnect the field coil connector (B), then remove the thermal protector (C).



2. Replace the thermal protector (A) with a new one, and apply silicone sealant (B) to the bottom of the thermal protector.



NOTE: Make sure not to get any silicone sealant on the terminal part of the connectors and switches, especially if you have silicone sealant on your hands or gloves.

3. Install the thermal protector in the reverse order of removal.

A/C Refrigerant Oil Replacement

Special Tools Required

Oil Injector Tool Robinair ROB16256, commercially available

*This tool is available through the Honda Tool and Equipment Program; call 888-424-6857

Recommended PAG oil: SP-10

- P/N 38897-P13-A01AH: 120 mL (4 fl·oz)

It is important to have the correct amount of refrigerant oil in the A/C system to ensure proper lubrication of the A/C compressor.

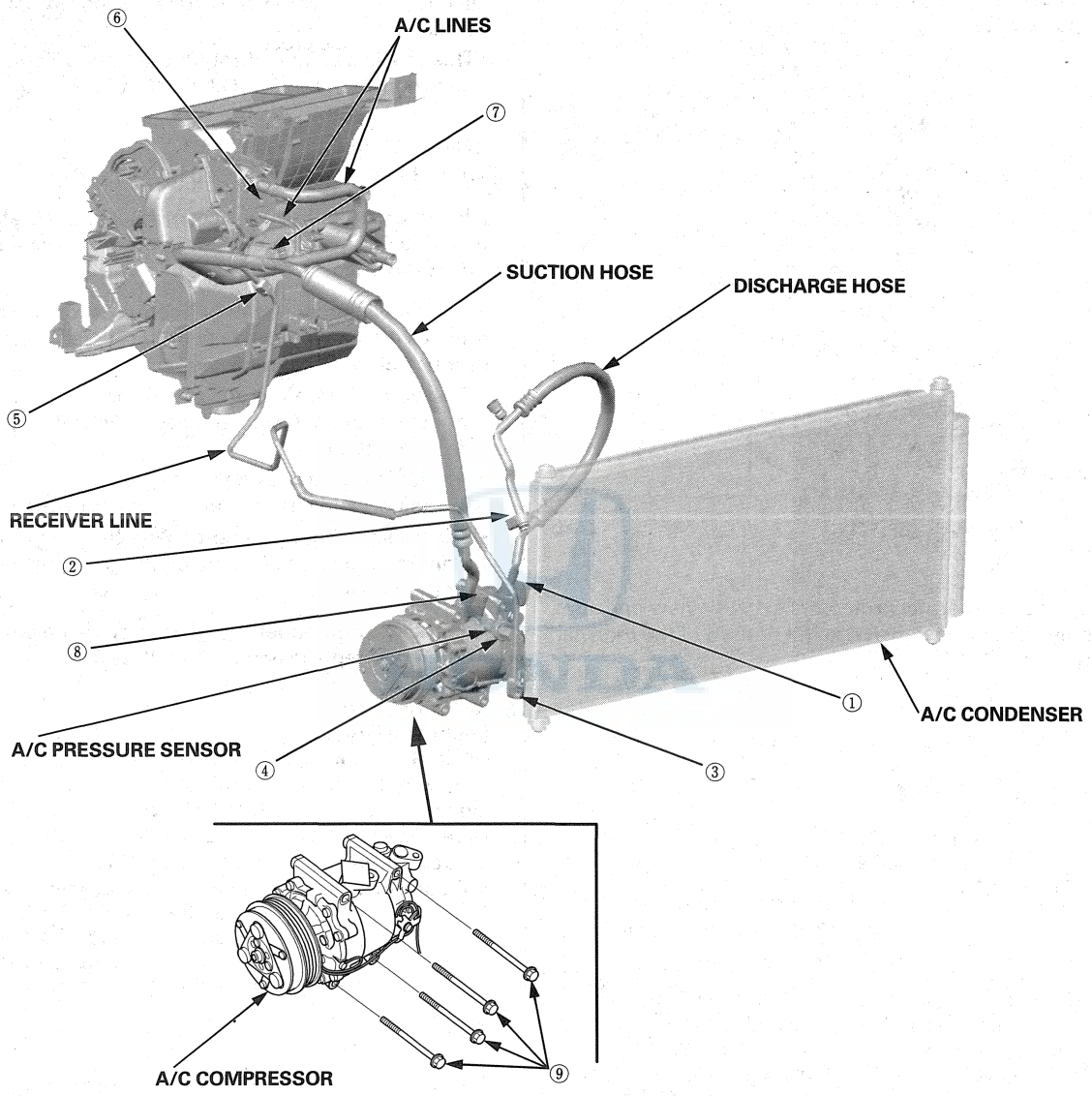
Too little oil damages the A/C compressor; too much oil reduces the cooling capacity of the system, and can produce high vent temperatures.

- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
- Do not spill the refrigerant oil on the vehicle; it may damage the paint; if it gets on the paint, wash it off immediately.

Add the recommended refrigerant oil in the amount listed if you replace any of the following parts.

A/C condenser (including Dryer Desiccant)	25 mL (5/6 fl·oz)
Evaporator	35 mL (1 1/6 fl·oz)
Line or hose	10 mL (1/3 fl·oz)
Dryer Desiccant	10 mL (1/3 fl·oz)
Leakage repair	25 mL (5/6 fl·oz)
A/C compressor	Since the oil separator is equipped inside the compressor for this vehicle, oil drainage is unnecessary at the time of compressor replacement.

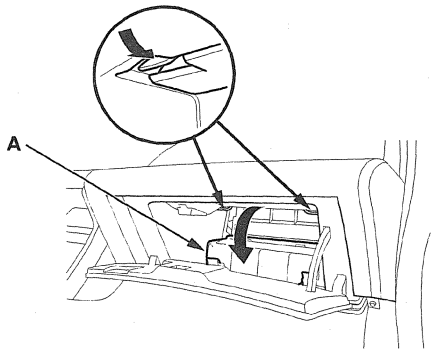
A/C Line Replacement



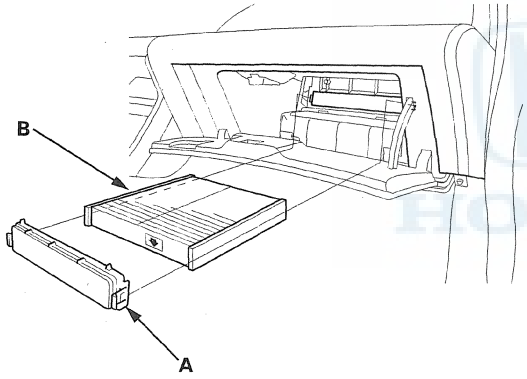
① Discharge hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
② Discharge hose to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
③ Receiver line to the A/C condenser (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
④ A/C pressure sensor to receiver line (11 x 1.0 mm): 11 N·m (1.1 kgf·m, 8.1 lbf·ft)
⑤ Receiver line to the A/C line (16 x 1.5 mm): 13 N·m (1.3 kgf·m, 10 lbf·ft)
⑥ A/C lines to the evaporator (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
⑦ A/C line to the suction hose (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
⑧ Suction hose to the A/C compressor (6 x 1.0 mm): 9.8 N·m (1.00 kgf·m, 7.2 lbf·ft)
⑨ A/C compressor to the engine block (8 x 1.25 mm): 22 N·m (2.2 kgf·m, 16 lbf·ft)

Dust and Pollen Filter Replacement

1. Open the glove box, then open the glove box lid (A).



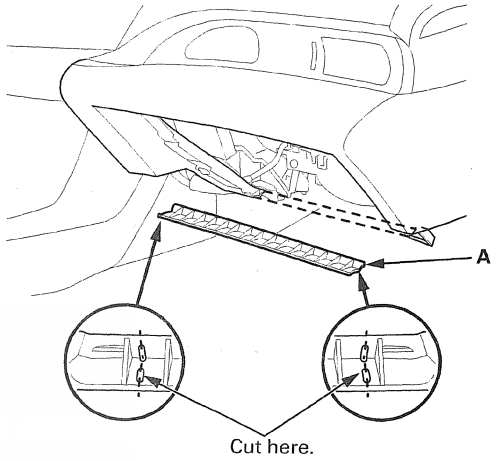
2. Remove the lid (A) from the blower unit.



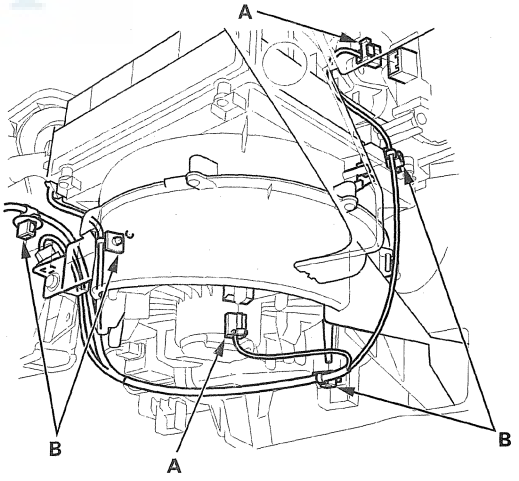
3. Pull out the dust and pollen filter (B).
4. Install the filter in the reverse order of removal. Make sure that there is no air leaking out of the blower unit.
5. If the Maintenance Minder required replacing the dust and pollen filter, reset the Maintenance Minder (see page 3-4), and this procedure is complete. If the Maintenance Minder did not require the dust and pollen filter replacement, go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Connect the HDS to the DLC (see step 2 on page 11-3).
8. Turn the ignition switch to ON (II).
9. Make sure the HDS communicates with the vehicle and ECM/PCM. If it does not communicate, troubleshoot the DLC circuit (see page 11-383).
10. Go to the Individual Maintenance Item Reset (see page 3-6), and do the MAINTENANCE SUB ITEM 2 RESET.

Blower Unit Removal/Installation

1. Remove the passenger's dashboard undercover (see page 20-94) and the glove box (see page 20-94).
2. Cut the plastic cross brace (A) in the glove box opening with diagonal cutters in the area shown, and discard it.



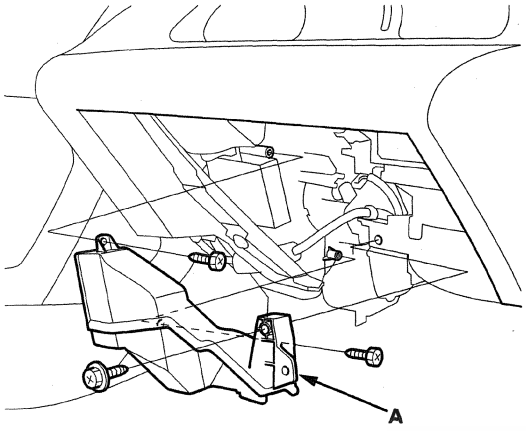
3. Disconnect these connectors (A) from the blower motor and the recirculation control motor. Remove the wire harness clips (B).



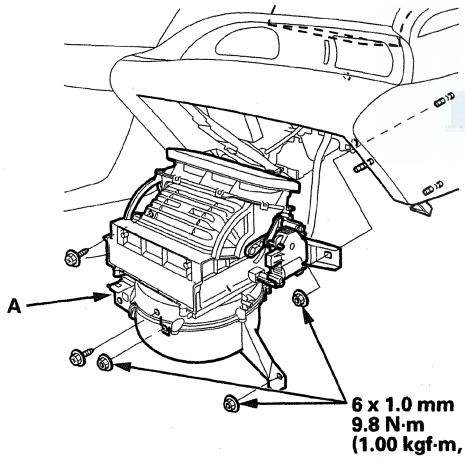
(cont'd)

Blower Unit Removal/Installation (cont'd)

4. Remove the self-tapping screws and the duct (A).



5. Remove the self-tapping screws, the mounting nuts, and the blower unit (A).

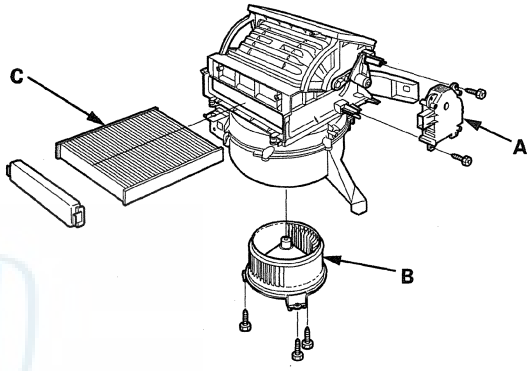


6. Install the unit in the reverse order of removal. Make sure that there is no air leakage.

Blower Unit Component Replacement

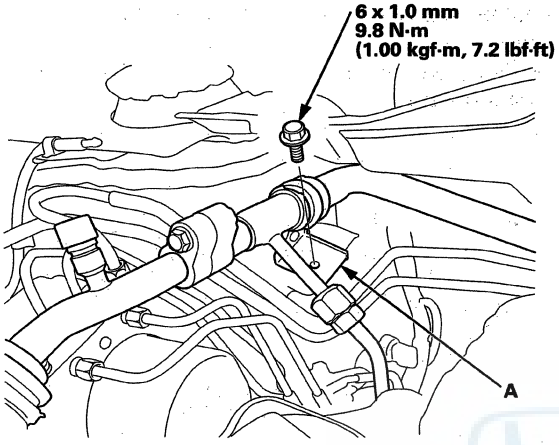
Note these items when overhauling the blower unit:

- The recirculation control motor (A), the blower motor (B), and the dust and pollen filter (C) can be replaced without removing the blower unit.
- Before reassembly, make sure that the recirculation control linkage and door move smoothly without binding.
- After reassembly, make sure the recirculation control motor runs smoothly.

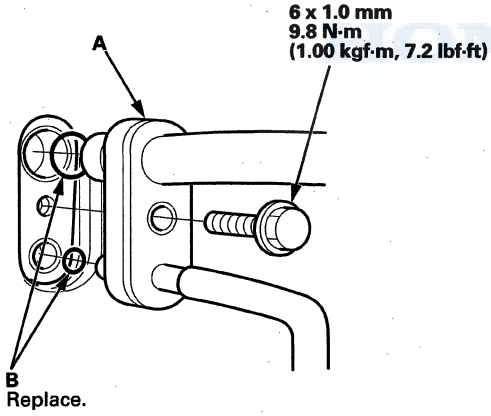


Expansion Valve Replacement

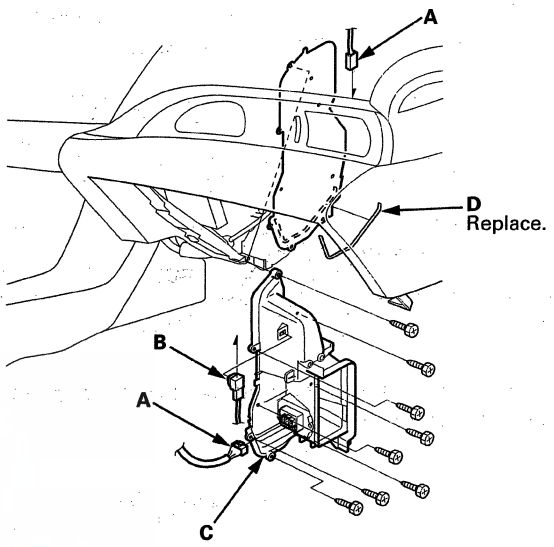
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
2. Remove the bolt from the A/C line clamp (A).



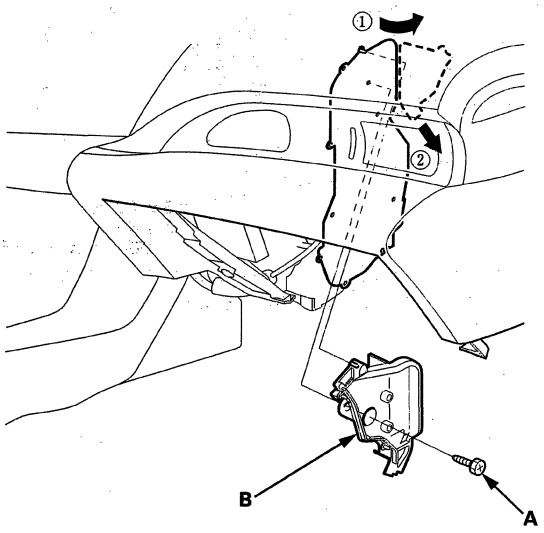
3. Remove the bolt, then disconnect the A/C line (A) from the evaporator core, and remove the O-rings (B).



4. Remove the blower unit (see page 21-99).
5. Disconnect the connectors (A) from the evaporator temperature sensor and the power transistor, then remove the connector clip (B). Remove the self-tapping screws, the expansion valve cover (C), and the seal (D).



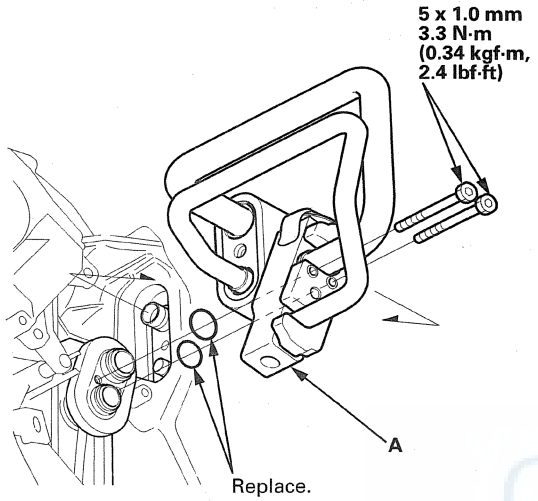
6. Remove the self-tapping screw (A), push the upper cover (B) toward the front of the vehicle, then remove the upper cover.



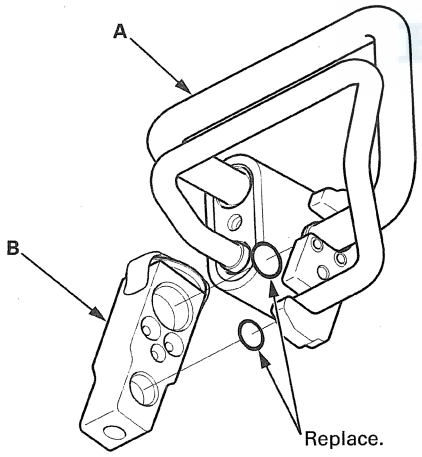
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Expansion Valve Replacement (cont'd)

7. Remove the bolts and the expansion valve (A) and the inlet/outlet lines from the evaporator core assembly without bending the lines.



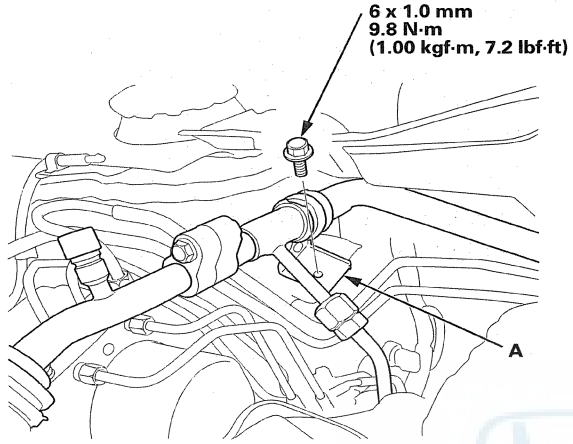
8. Remove the inlet/outlet lines (A) from the expansion valve (B).



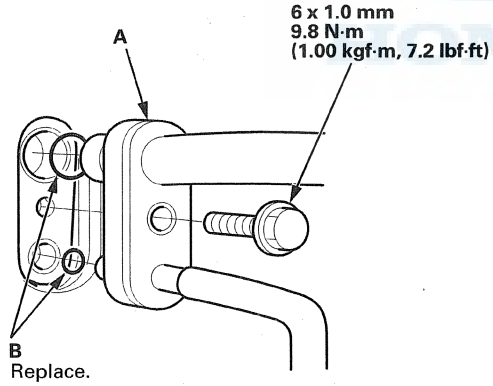
9. Install the expansion valve in the reverse order of removal, and note these items:
   - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
   - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
   - Make sure that there is no air leakage.
   - Charge the system (see page 21-114).

Evaporator Core Replacement

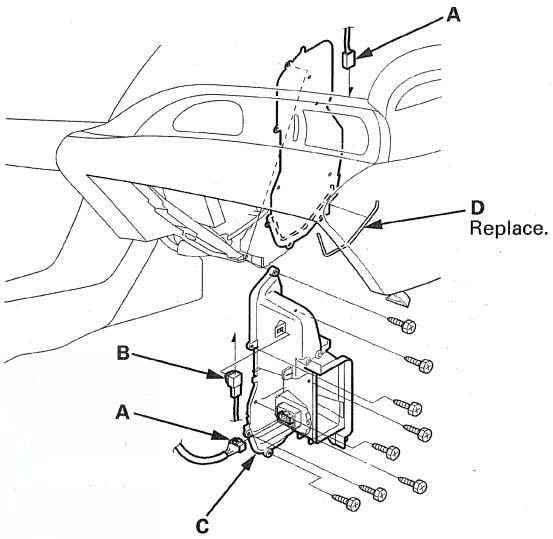
1. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
2. Remove the bolt from the A/C line clamp (A).



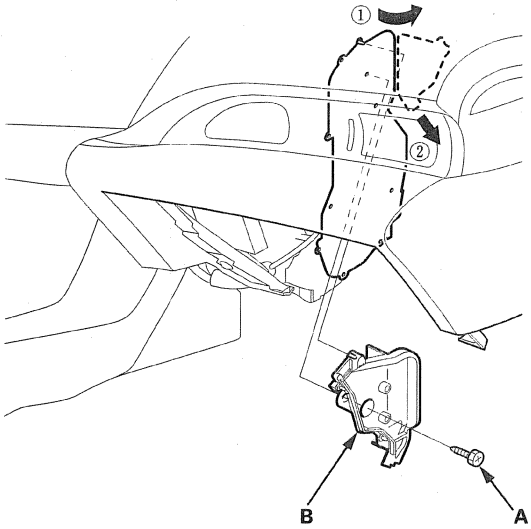
3. Remove the bolt, then disconnect the A/C line (A) from the evaporator core, and the O-rings (B).



4. Remove the blower unit (see page 21-99).
5. Disconnect the connectors (A) from the evaporator temperature sensor and the power transistor, then remove the connector clip (B). Remove the self-tapping screws, the expansion valve cover (C), and the seal (D).



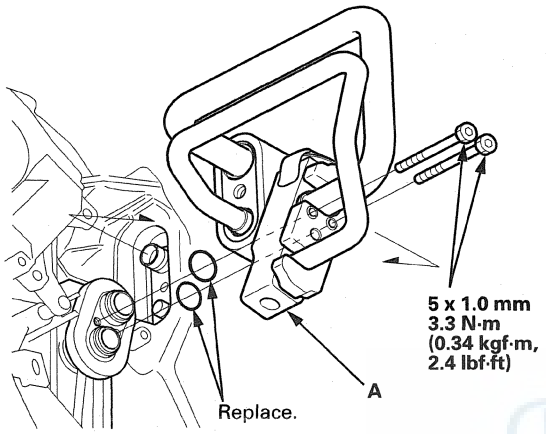
6. Remove the self-tapping screw (A), push the upper cover (B) toward the front of the vehicle, then remove the upper cover.



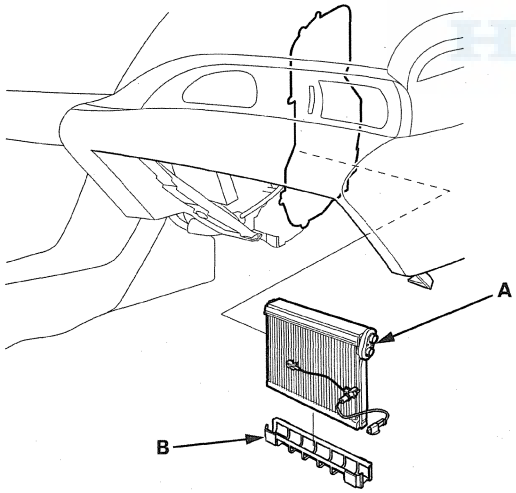
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Evaporator Core Replacement (cont'd)

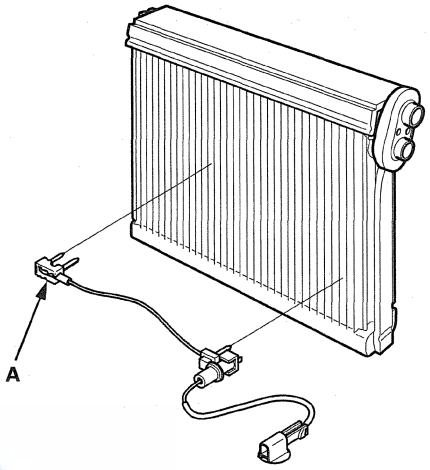
7. Remove the bolts and the expansion valve (A) and the inlet/outlet lines from the evaporator core assembly without bending the lines.



8. Carefully pull out the evaporator core assembly (A), then remove the plate (B).

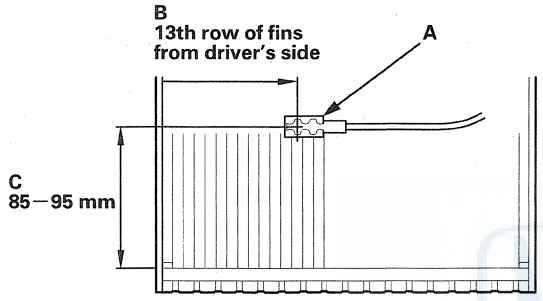


9. Pull out the evaporator temperature sensor (A) from the evaporator core.

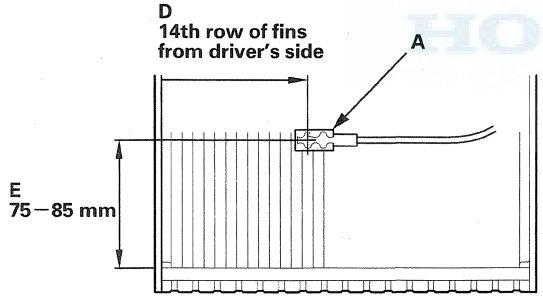


10. Install the evaporator temperature sensor in the evaporator core, and note these items:
    - When the evaporator temperature sensor (A) is installed into the new evaporator core, set the sensor into the factory-preset position (B, C).
    - When the evaporator temperature sensor is reinstalled into the original evaporator core, set the sensor into the new position (D, E) because the fin may be deforming by the previous installation.

Installing into the factory-preset position



Installing into the new position

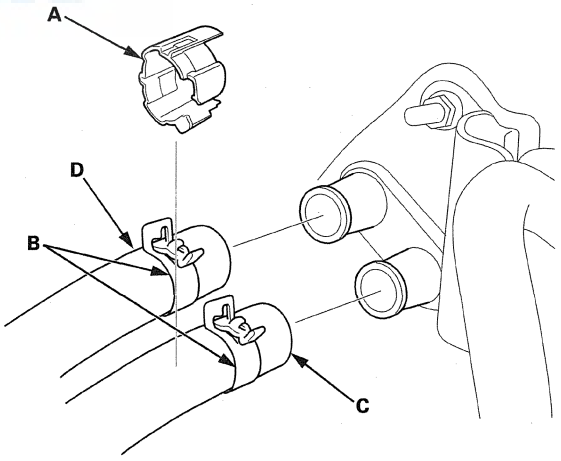


11. Install the core in the reverse order of removal and note these items:
    - If you're installing a new evaporator core, add refrigerant oil (SP-10) (see page 21-97).
    - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
    - Immediately after using the oil, reinstall the cap on the container, and seal it to avoid moisture absorption.
    - Do not spill the refrigerant oil on the vehicle; it may damage the paint; if the refrigerant oil contacts the paint, wash it off immediately.
    - Make sure that there is no air leakage.
    - Charge the system (see page 21-114).

SRS components are located in this area. Review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13) before doing repairs or service.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Recover the refrigerant with a recovery/recycling/charging station (see page 21-113).
3. Disconnect the A/C line from the evaporator core (see page 21-103).
4. Drain the engine coolant from the radiator (see page 10-8).
5. From the inlet heater hose, remove the clip (A). Slide the hose clamps (B) back, then disconnect the inlet heater hose (C) and the outlet heater hose (D) from the heater unit. Note the layout of the hoses. Engine coolant will run out when the hoses are disconnected; drain it into a clean drip pan. Be sure not to let coolant spill on the electrical parts or the painted surfaces. If any coolant spills, rinse it off immediately.

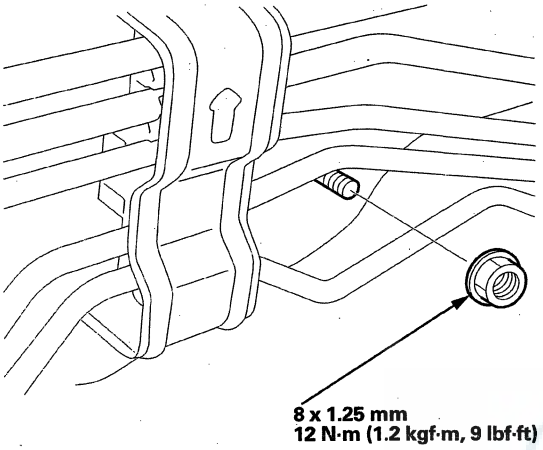
   NOTE: Discard the removed clip (A) because it is unnecessary at the time of heater hose installation.



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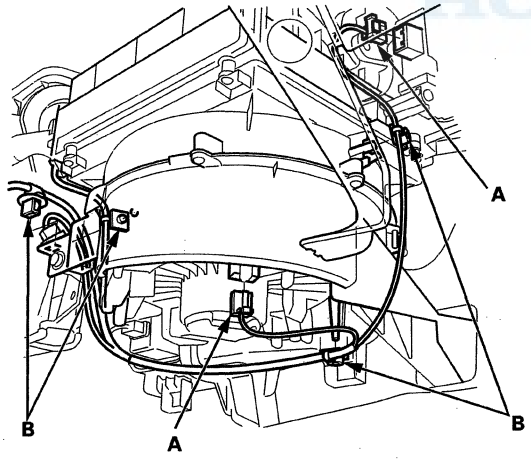
Heater Unit/Core Replacement (cont'd)

6. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel lines or the brake lines, etc.

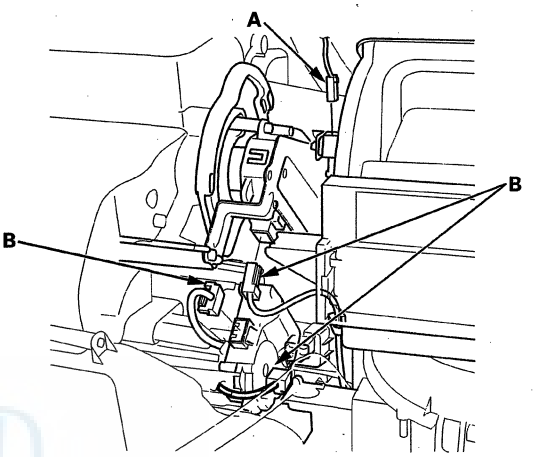


7. Remove the dashboard (see page 20-99).

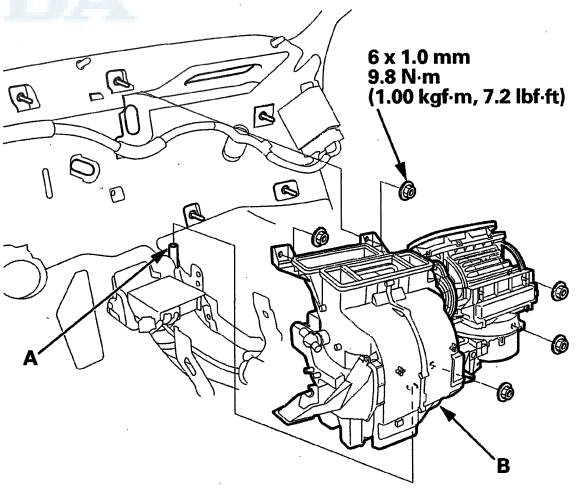
8. Disconnect these connectors (A) from the blower motor and the recirculation control motor. Remove the wire harness clips (B).



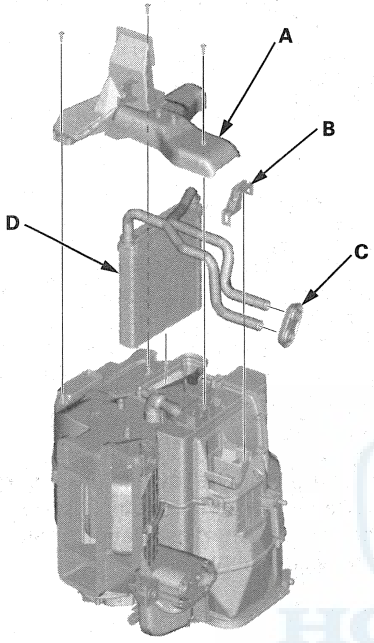
9. Disconnect the connector (A) from the evaporator temperature sensor. Disconnect these connectors (B) from the mode control motor, the power transistor and the air mix control motor, then remove the A/C wire harness.



10. Remove the drain hose (A). Remove the mounting nuts and the blower-heater unit (B).



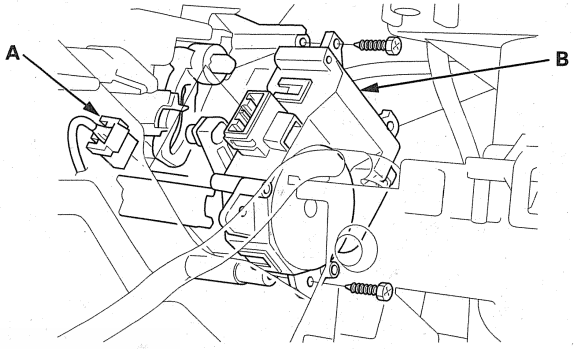
11. Remove the self-tapping screws and the heater core cover (A), the cap (B), and the grommet (C), then carefully pull out the heater core (D).



12. Install the heater core and the evaporator core in the reverse order of removal.
13. Install the heater unit in the reverse order of removal, and note these items:
    - Do not interchange the inlet and outlet heater hoses, and install the hose clamps securely.
    - Refill the cooling system with engine coolant (see page 10-8).
    - Make sure that there is no coolant leakage.
    - Make sure that there is no air leakage.
    - Refer to the evaporator core replacement (see page 21-103).
14. Do the 12 volt battery terminal reconnection procedure (see page 22-86).

Air Mix Control Motor Replacement

1. Remove the glove box (see page 20-94).
2. Disconnect the 7P connector (A) from the air mix control motor (B). Remove the self-tapping screws and the air mix control motor from the heater unit.

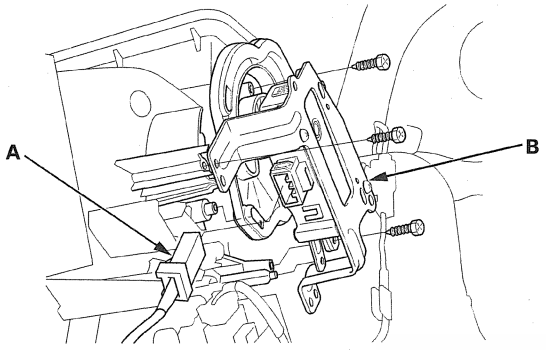


3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

HONDA

Mode Control Motor Replacement

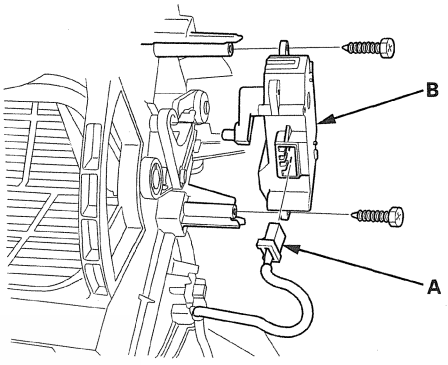
1. Remove the blower unit (see page 21-99).
2. Disconnect the 7P connector (A) from the mode control motor (B). Remove the self-tapping screws and the mode control motor from the heater unit.



3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

Recirculation Control Motor Replacement

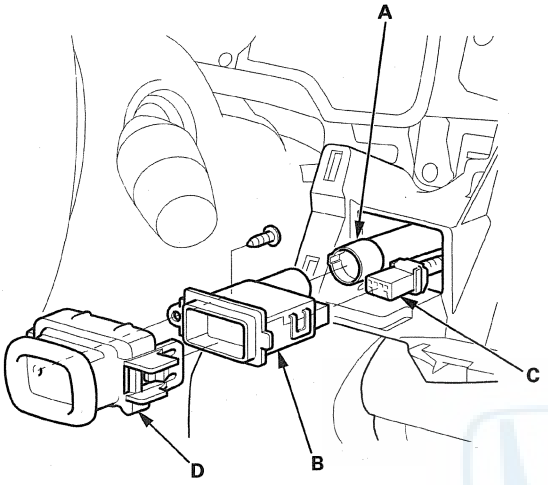
1. Remove the glove box (see page 20-94).
2. Disconnect the 7P connector (A) from the recirculation control motor (B). Remove the self-tapping screws and the recirculation control motor from the blower unit.



3. Install the motor in the reverse order of removal. Make sure the pin on the motor is properly engaged with the linkage. After installation, make sure the motor runs smoothly.

Humidity/In-Car Temperature Sensor Replacement

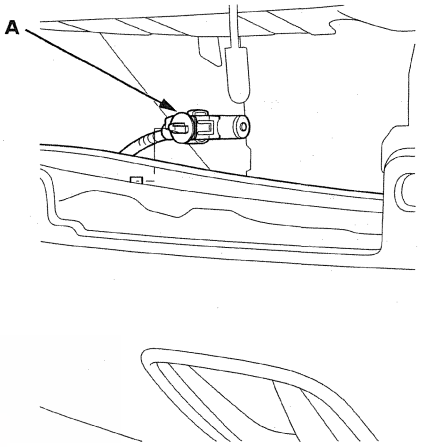
1. Remove the instrument panel (see page 20-83).
2. Remove the aspirator air hose (A) from the humidity/in-car temperature sensor (B), and disconnect the 4P connector (C).



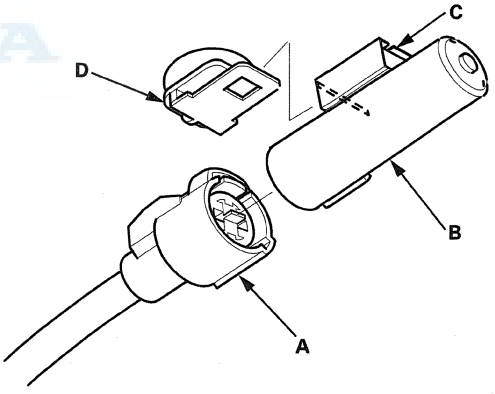
3. Remove the self-tapping screw and humidity/in-car temperature sensor from the humidity/in-car temperature sensor trim (D).
4. Install the sensor in the reverse order of removal. Be sure to connect the aspirator air hose securely.

Outside Air Temperature Sensor Replacement

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the outside air temperature sensor clip (A) from front bumper beam.



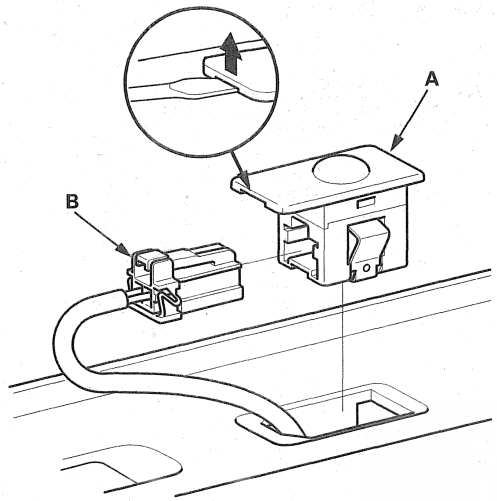
3. Disconnect the 2P connector (A) from the outside air temperature sensor (B).



4. Lift the tab (C) to release the lock, then remove the outside air temperature sensor from the clip (D).
5. Install the sensor in the reverse order of removal.

Sunlight Sensor Replacement

1. Pull out the sunlight sensor (A) from the dashboard, then disconnect the connector (B). Be careful not to damage the sensor and the dashboard.



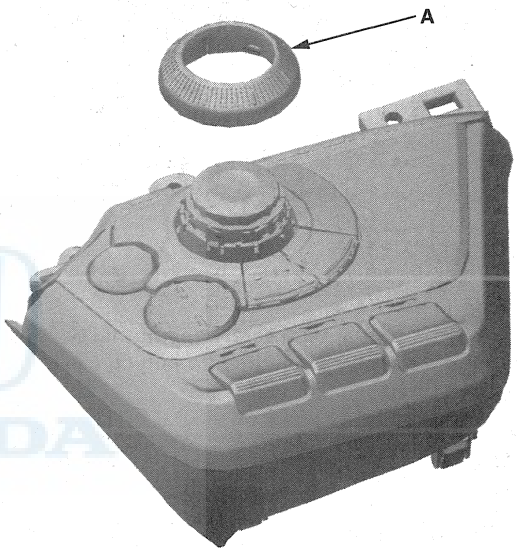
2. Install the sensor in the reverse order of removal.

Climate Control Unit Knob Replacement

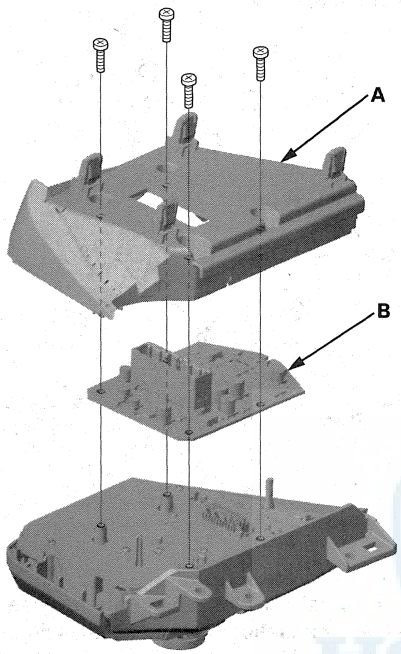
NOTE:

- Do not work in a dusty or dirty place.
- Do not work with dusty hands.
- Discharge static electricity from your body before and during the work.
- Do not touch the circuit board(s) with your bare hands.

1. Remove the climate control unit (see page 21-112).
2. Remove the dial (A).

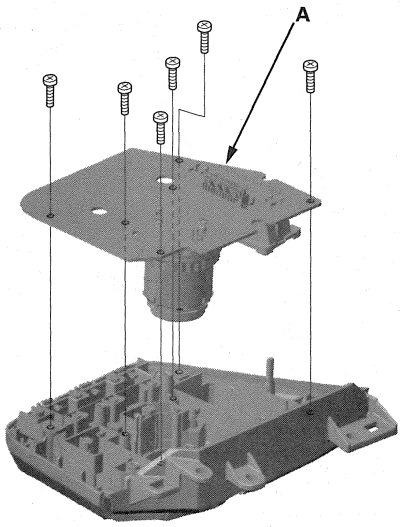


3. Remove the self-tapping screws, then remove the cover (A) from the climate control unit.

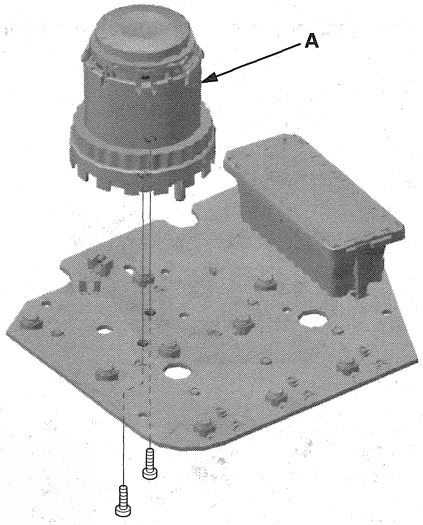


4. Remove the circuit board (B).

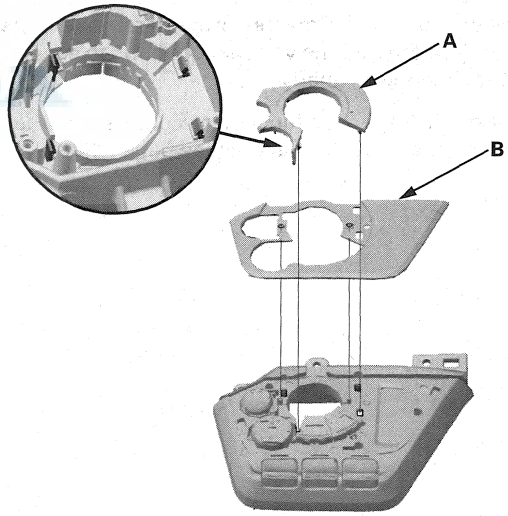
5. Remove the self-tapping screws and the circuit board (A).



6. Remove the self-tapping screws and the knob (A).



7. Remove the trim (A) and the panel (B).

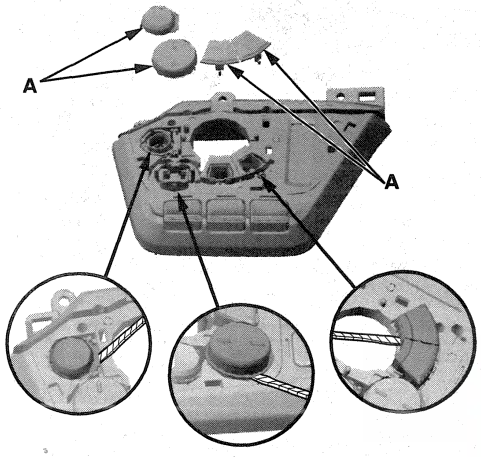


(cont'd)

Climate Control Unit Knob Replacement (cont'd)

8. Remove the knobs (A) using the flat-tip screwdriver wrapped in protective tape.

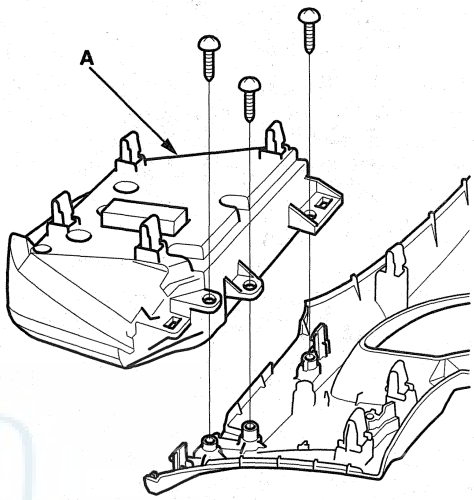
   NOTE Take care not to scratch the climate control unit.



9. Install the knob in the reverse order of removal. After installation, operate the various functions to see whether it works properly.
10. Run the self-diagnostic function to confirm that there are no problems in the system (see page 21-10).

Climate Control Unit Removal/Installation

1. Remove the instrument panel (see page 20-83).
2. Remove the self-tapping screws and the climate control unit (A).



3. Install the climate control unit in the reverse order of removal. After installation, operate the climate control unit in various functions to confirm that it works properly.
4. Run the self-diagnostic function to confirm that there are no problems in the system (see page 21-10).

Refrigerant Recovery

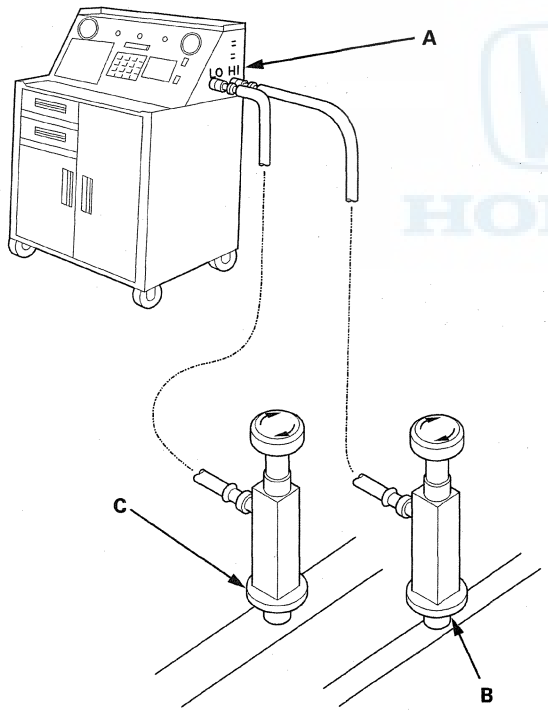
⚠CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Measure the amount of refrigerant oil removed from the A/C system after the recovery process is completed. Be sure to put the same amount of new refrigerant oil back into the A/C system before charging.

System Evacuation

Special Tools Required

Compact Electronic Vacuum Gauge Robinair ROB14777, commercially available

*This tool is available through the Honda Tool and Equipment Program; call 888-424-6857

⚠CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.
- Do not allow moisture to contaminate the A/C system oil. Moisture in the oil is difficult to remove, and it can damage the A/C compressor.
- Using a thermistor vacuum gauge may decrease the required evacuation time because you can measure actual moisture removal with this tool.

A more efficient way to measure moisture removal is with a special tool called a thermistor vacuum gauge, measuring vacuum levels in microns.

Connect the tool according to the manufacturers instructions, and allow the vacuum pump to run until the gauge reads 700 - 750 microns (29.89 inHg).

Shut off and isolate the vacuum pump, then observe the gauge reading:

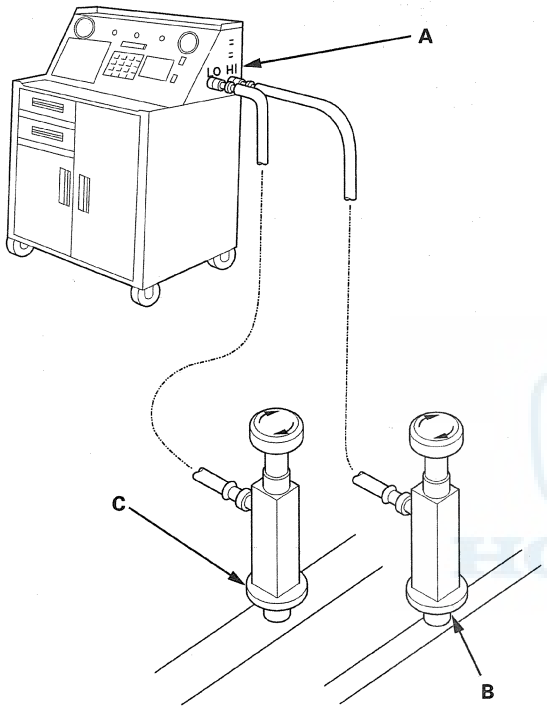
- If the vacuum level remains stable for at least 3 minutes, all moisture in the system has been removed.
- A slow increase in the micron reading means there is still moisture boiling out of the system. Restart the vacuum pump and continue evacuating.
- A quicker increase of micron levels indicates a leak is present in the system or your service equipment. Determine the cause and correct the leak before continuing.

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using an R-134a refrigerant recovery/recycling/charging station. If the system has been open for several days, the receiver/dryer should be replaced, refrigerant oil should be drained and replaced with new oil, and the system should be evacuated for several hours.

(cont'd)

System Evacuation (cont'd)

2. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions. Recover the refrigerant, if any, from the A/C system (see page 21-113).



3. Evacuate the system. The vacuum pump should run for a minimum of 30 minutes to eliminate all moisture from the system. When the suction gauge reads −93.3 kPa (−700 mmHg, −27.55 inHg) for at least 30 minutes, close all valves, and turn off the vacuum pump.
4. If the suction gauge does not reach approximately −93.3 kPa (−700 mmHg, −27.55 inHg) in 15 minutes, there is probably a large leak in the system. Partially charge the system, and check for leaks (see page 21-79).

System Charging

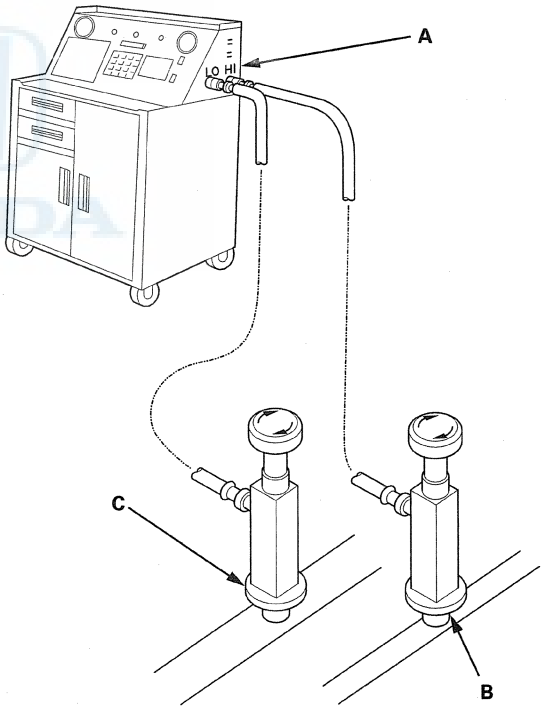
⚠CAUTION

- Air conditioning refrigerant or lubricant vapor can irritate your eyes, nose, or throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapor.

NOTE:

- If accidental system discharge occurs, ventilate the work area before resuming service.
- Additional health and safety information may be obtained from the refrigerant and lubricant manufacturers.

1. Connect an R-134a refrigerant recovery/recycling/charging station (A) to the high-pressure service port (B) and the low-pressure service port (C), as shown, following the equipment manufacturer's instructions.



2. Recover the refrigerant in the A/C system (see page 21-113).
3. Evacuate the system (see page 21-113). If the system cannot reach a vacuum of −93.3 kPa (−700 mmHg, −27.55 inHg) in 15 minutes, or cannot hold a vacuum for at least 15 minutes, there is probably a large leak. Do the refrigerant leak check (see page 21-79), and repair any leaks before charging the system.
4. Add the same amount of new refrigerant oil to the system that was removed during recovery. Use only SP-10 refrigerant oil.
5. Charge the system with the specified amount of R-134a refrigerant. Do not overcharge the system; the A/C compressor will be damaged.

   Select the appropriate units of measure for your refrigerant charging station.

   Refrigerant Capacity:
   450 to 500 g
   0.45 to 0.50 kg
   0.99 to 1.10 lbs
   15.8 to 17.6 oz
6. Check for refrigerant leaks (see page 21-79).
7. Check for system performance (see page 21-86).

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If body electrical maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

INTEGRATED MOTOR ASSIST (IMA) SYSTEM (If electrical maintenance is required)

IMA components are located in this area. The IMA is a high-voltage system. The high voltage cables and their covers are identified by orange coloring. The safety labels are attached to high voltage and other related parts (see page 1-7). You must be familiar with the IMA system before working around it. Make sure you have read the Service Precautions in the IMA section before doing repairs or service (see page 12-3).

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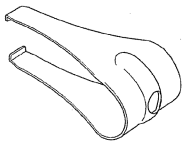
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* Seat Heater Replacement 22–386

Rear Window Defogger

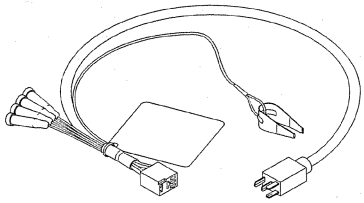
Component Location Index 22–387
Circuit Diagram 22–388
Function Test 22–389
Defogger Wire Repair 22–390

Special Tools

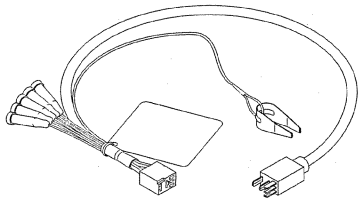
Ref.No.	Tool Number	Description	Qty
①	07AAC-000A1A0 or 07AAC-000A2A1	Relay Puller	1
②	07AGK-000A1A0	Relay Socket Extension (4 Pin)	1
③	07AGK-000A2A0	Relay Socket Extension (5 Pin)	1
④	07TAZ-001020A	Back Probe Adapter, 17 mm	2
⑤	07WAZ-001010A	MPCS (MCIS) Service Connector	1



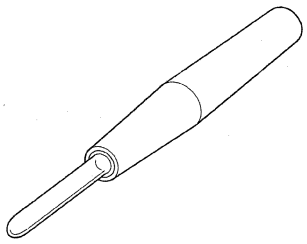
①



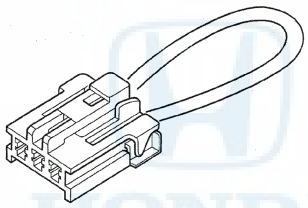
②



③



④



⑤

General Troubleshooting Information

Tips and Precautions

Special Tools Required

Back Probe Adapter 07TAZ-001020A

Before Troubleshooting

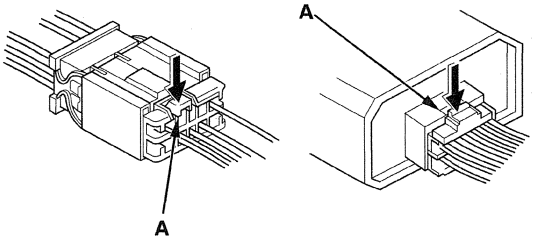
1. Check applicable fuses in the appropriate fuse/relay box.
2. Check the 12 volt battery for damage, state of charge, and clean and tight connections.

NOTICE

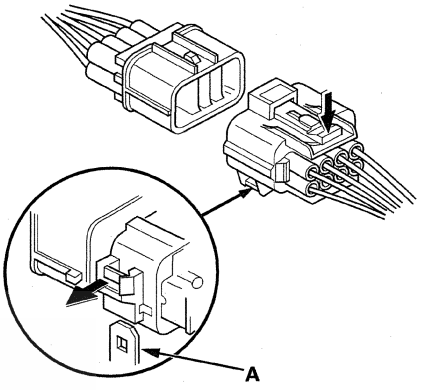
- Do not quick-charge a 12 volt battery unless the battery ground cable has been disconnected, otherwise you will damage the alternator diodes.
- Do not attempt to crank the engine with the 12 volt battery ground cable loosely connected or you will severely damage the wiring.

Handling Connectors

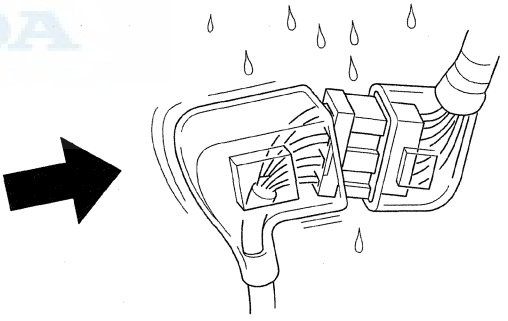
- Make sure the connectors are clean and have no loose wire terminals.
- Make sure multiple cavity connectors are packed with dielectric grease (except waterproof connectors).
- All connectors have push-down release type locks (A).



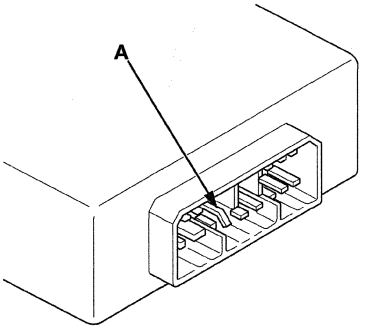
- Some connectors have a clip on their side used to attach them to a mount bracket on the body or on another component. This clip has a pull type lock.
- Some mounted connectors cannot be disconnected unless you first release the lock and remove the connector from its mount bracket (A).



- Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
- Always reinstall plastic covers.



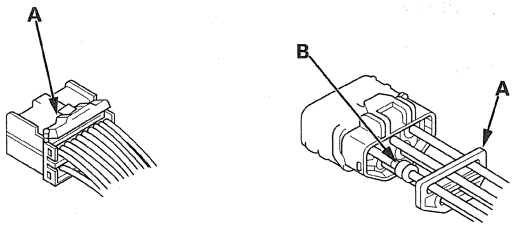
- Before connecting connectors, make sure the terminals (A) are in place and not bent.



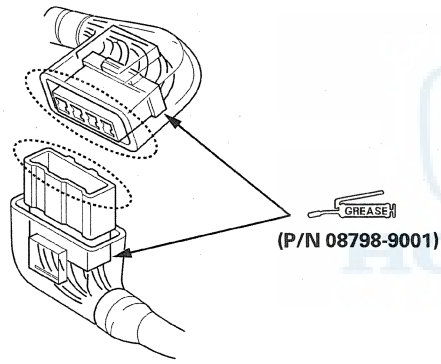
(cont'd)

General Troubleshooting Information (cont'd)

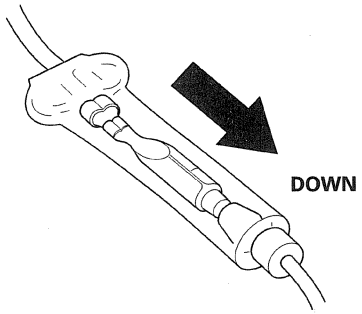
- Check for loose retainers (A) and rubber seals (B).



- The backs of some connectors are packed with dielectric grease. Add grease if necessary. If the grease is contaminated, replace it.

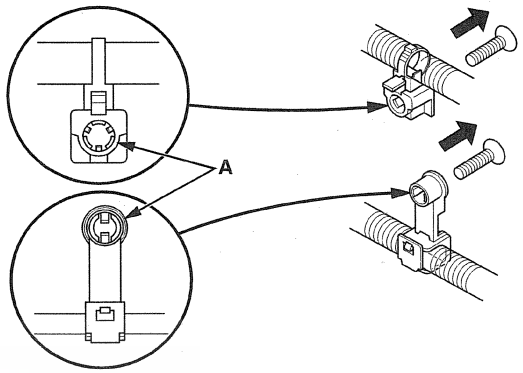


- Insert the connector all the way and make sure it is securely locked.
- Position wires so that the open end of the cover faces down.

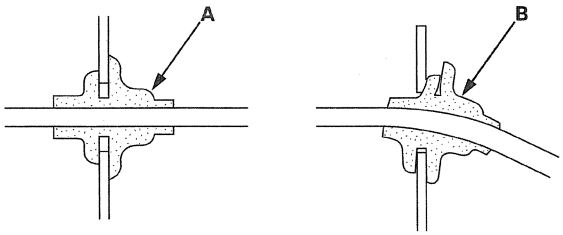


Handling Wires and Harnesses

- Secure wires and wire harnesses to the frame with their respective wire ties at the designated locations.
- Remove clips carefully; don't damage their locks (A).

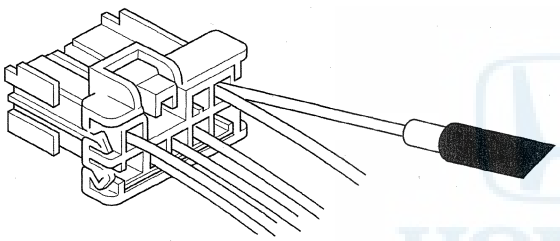


- After installing harness clips, make sure the harness doesn't interfere with any moving parts.
- Keep wire harnesses away from exhaust components and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.
- Seat grommets in their grooves properly (A). Do not leave grommets distorted (B).

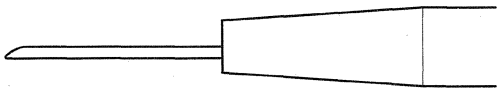


Testing and Repairs

- Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape or shrink tubing.
- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage to the SRS wiring or terminals, replace the harness.
- After installing parts, make sure that no wires are pinched under them.
- When using electrical test equipment, follow the manufacturer's instructions and those described in this manual.
- If possible, insert the probe of the tester from the wire side (except waterproof connectors).



- Use back probe adaptor 07TAZ-001020A.



- Refer to the instructions in the Honda Terminal Kit for identification and replacement of connector terminals.

Five-Step Troubleshooting

1. Verify The Complaint:

   Turn on all the components in the problem circuit to verify the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.

2. Analyze The Schematic:

   Look up the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power feed through the circuit components to ground. If several circuits fail at the same time, the fuse or a ground is a likely cause.

   Based on the symptoms and your understanding of the circuit operation, identify one or more possible causes of the problem.

3. Isolate The Problem By Testing The Circuit:

   Make circuit tests to check the diagnosis you made in step 2. Keep in mind that a logical, simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

4. Fix The Problem:

   Once the specific problem is identified, make the repair. Be sure to use proper tools and safe procedures.

5. Make Sure The Circuit Works:

   Turn on all components in the repaired circuit in all modes to make sure you've fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on the fuse. Make sure no new problems turn up and the original problem does not recur.

(cont'd)

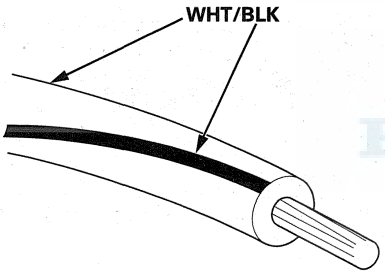
General Troubleshooting Information (cont'd)

Wire Color Codes

The following abbreviations are used to identify wire colors in the circuit schematics:

WHT	White
YEL	Yellow
BLK	Black
BLU	Blue
GRN	Green
RED	Red
ORN	Orange
PNK	Pink
BRN	Brown
GRY	Gray
PUR	Purple
TAN	Tan
LT BLU	Light Blue
LT GRN	Light Green

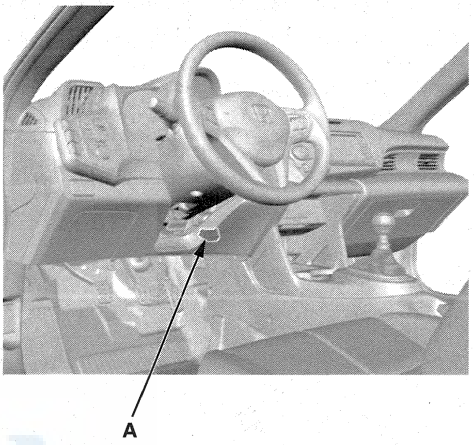
The wire insulation has one color or one color with another color stripe. The second color is the stripe.



How to Check for DTCs with the Honda Diagnostic System (HDS)

NOTE: For specific operation, refer to the user's manual that came with the Honda Diagnostic System (HDS). Make sure the HDS is loaded with the latest software.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



2. Turn the ignition switch to ON (II).
3. Make sure the HDS communicates with the vehicle; if it does not, troubleshoot the DLC circuit (see page 11-383).
4. Enter BODY ELECTRICAL, then select the desired SYSTEM MENU.
5. Check for DTCs with the HDS.

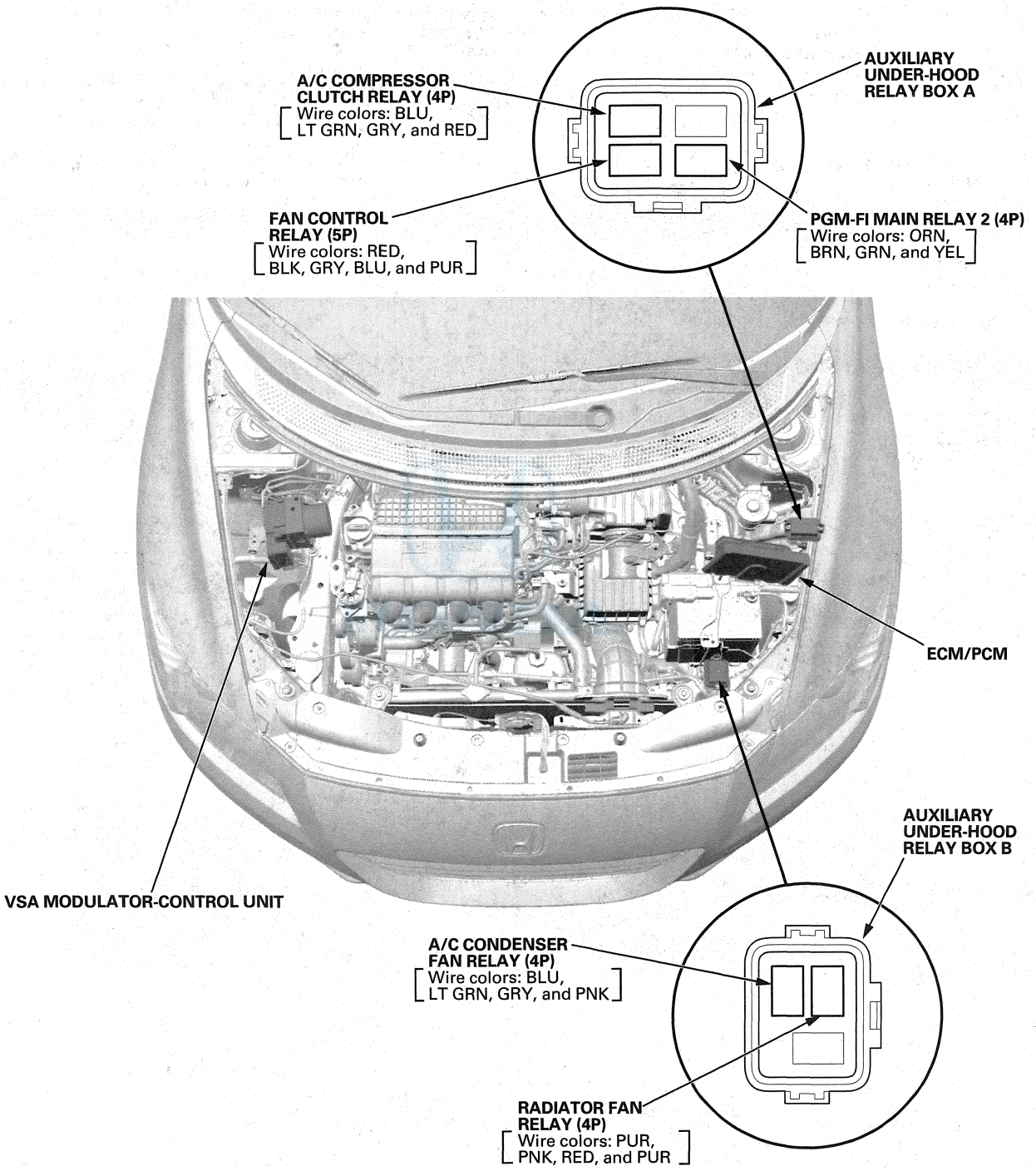
   NOTE: If the DTCs do not pertain to the selected menu, select the All DTC Check icon to view all Body Electrical DTCs.

6. If any DTCs are indicated, note them, and go to the indicated DTCs troubleshooting.

Relay and Control Unit Locations

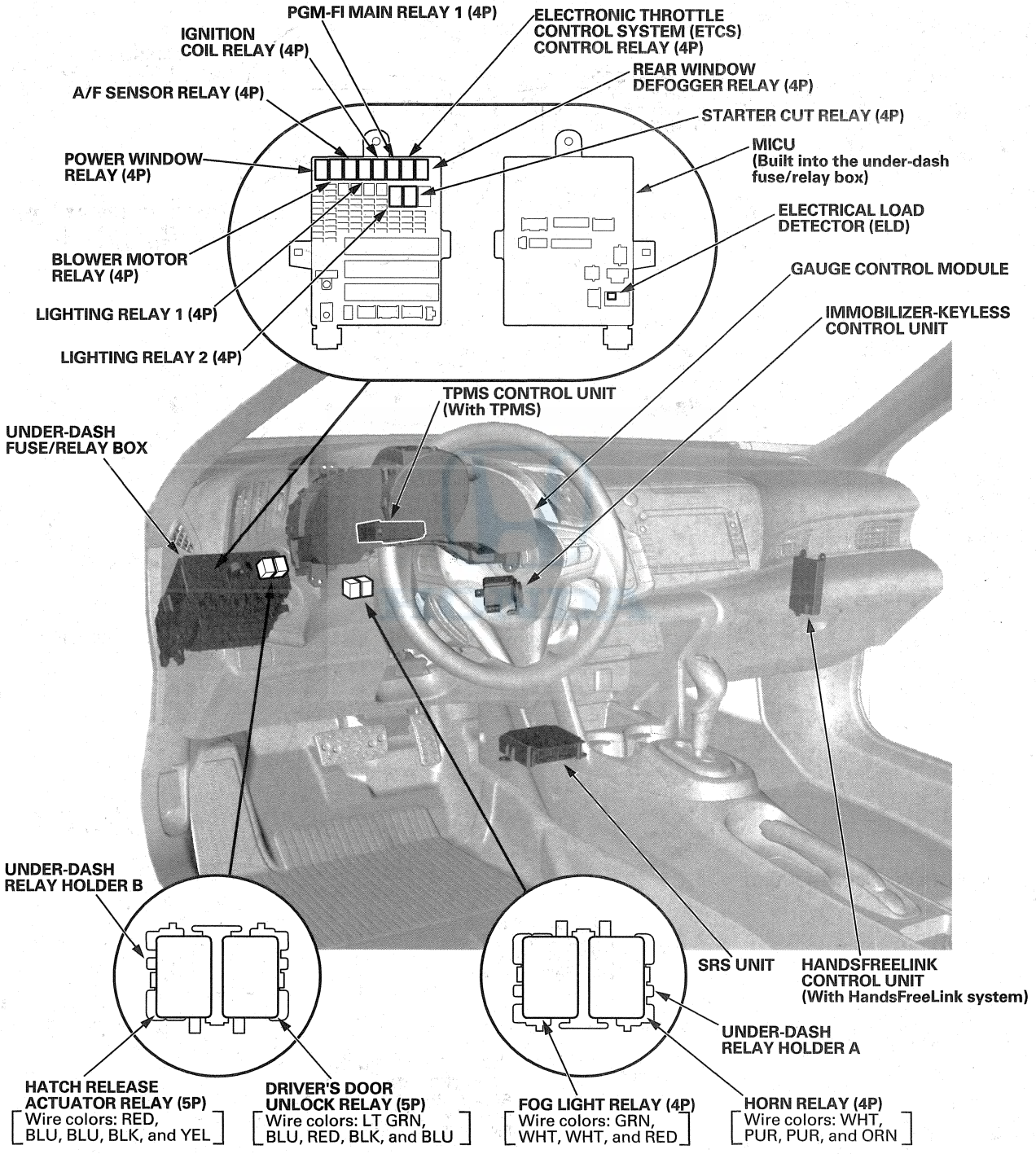
BODY

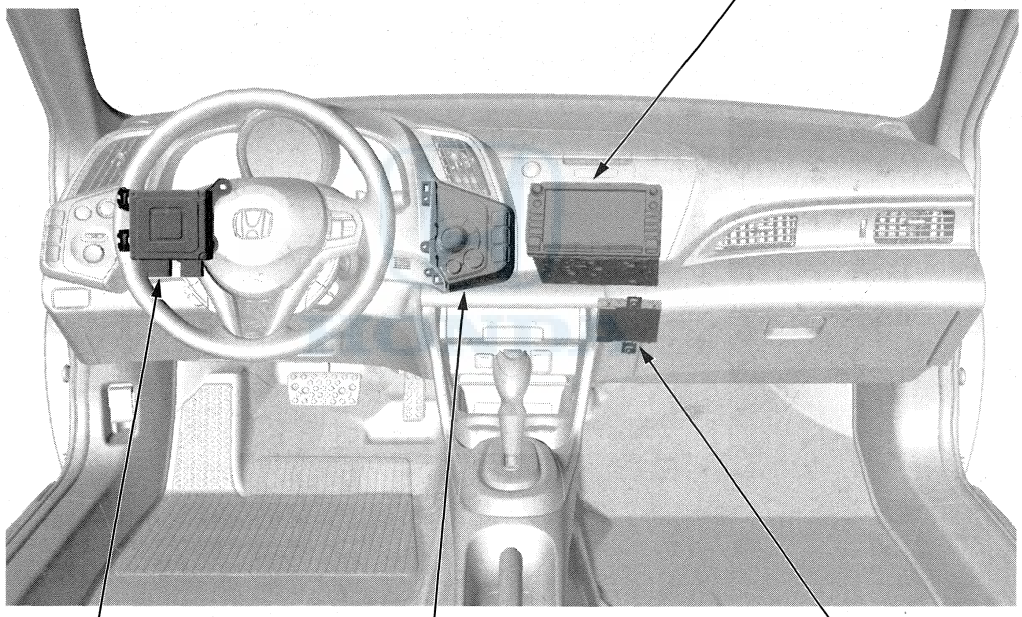
Engine Compartment



Relay and Control Unit Locations

Dashboard

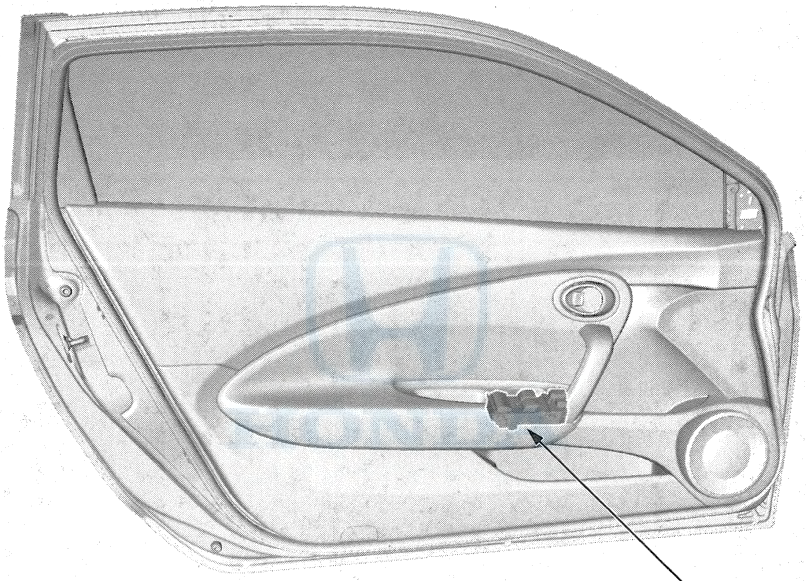



AUDIO UNIT (Without navigation)
AUDIO-NAVIGATION UNIT (With navigation)
EPS CONTROL UNIT
CLIMATE CONTROL UNIT
USB ADAPTER CONTROL UNIT

Relay and Control Unit Locations

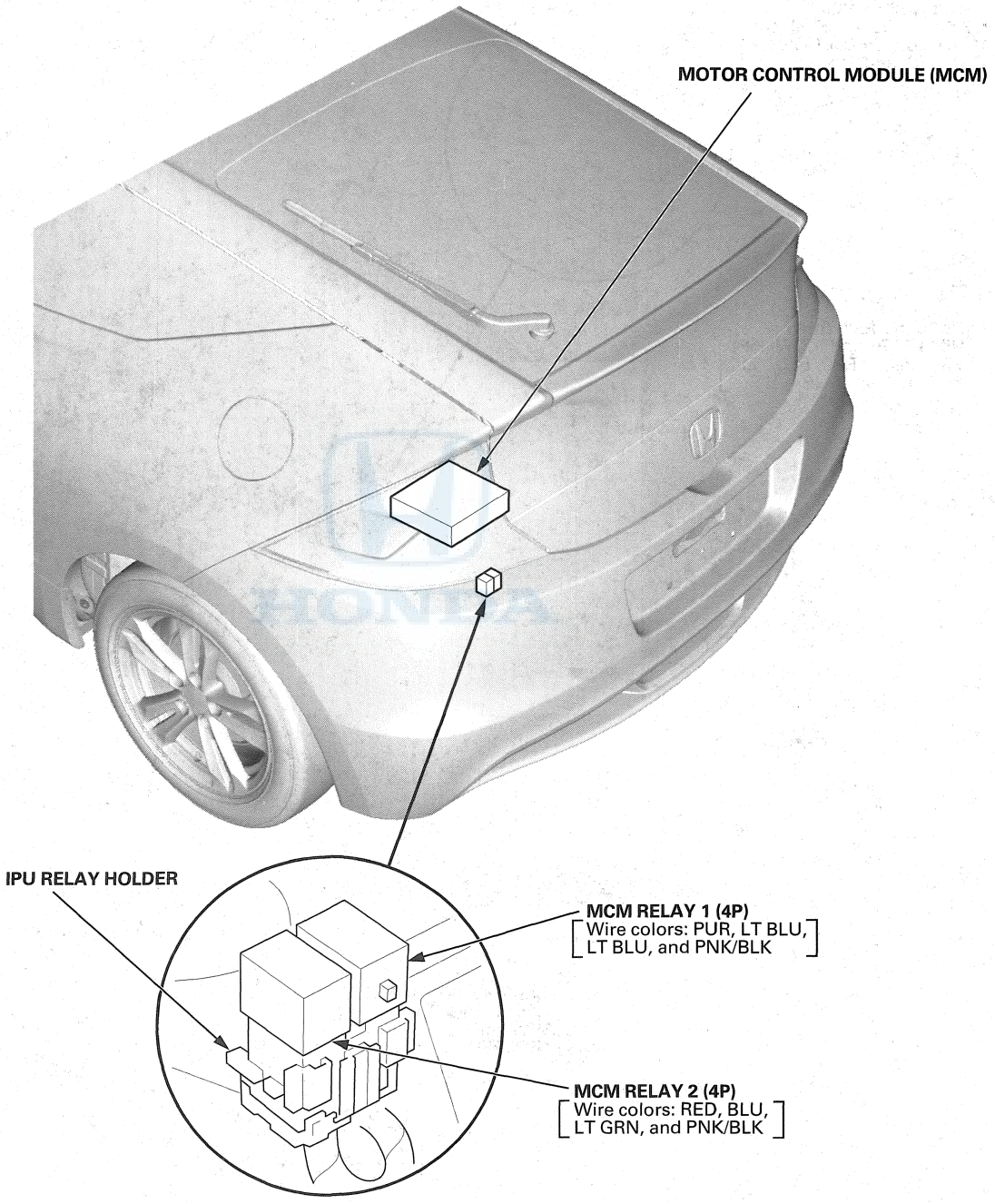
Door and Rear

Driver's Door



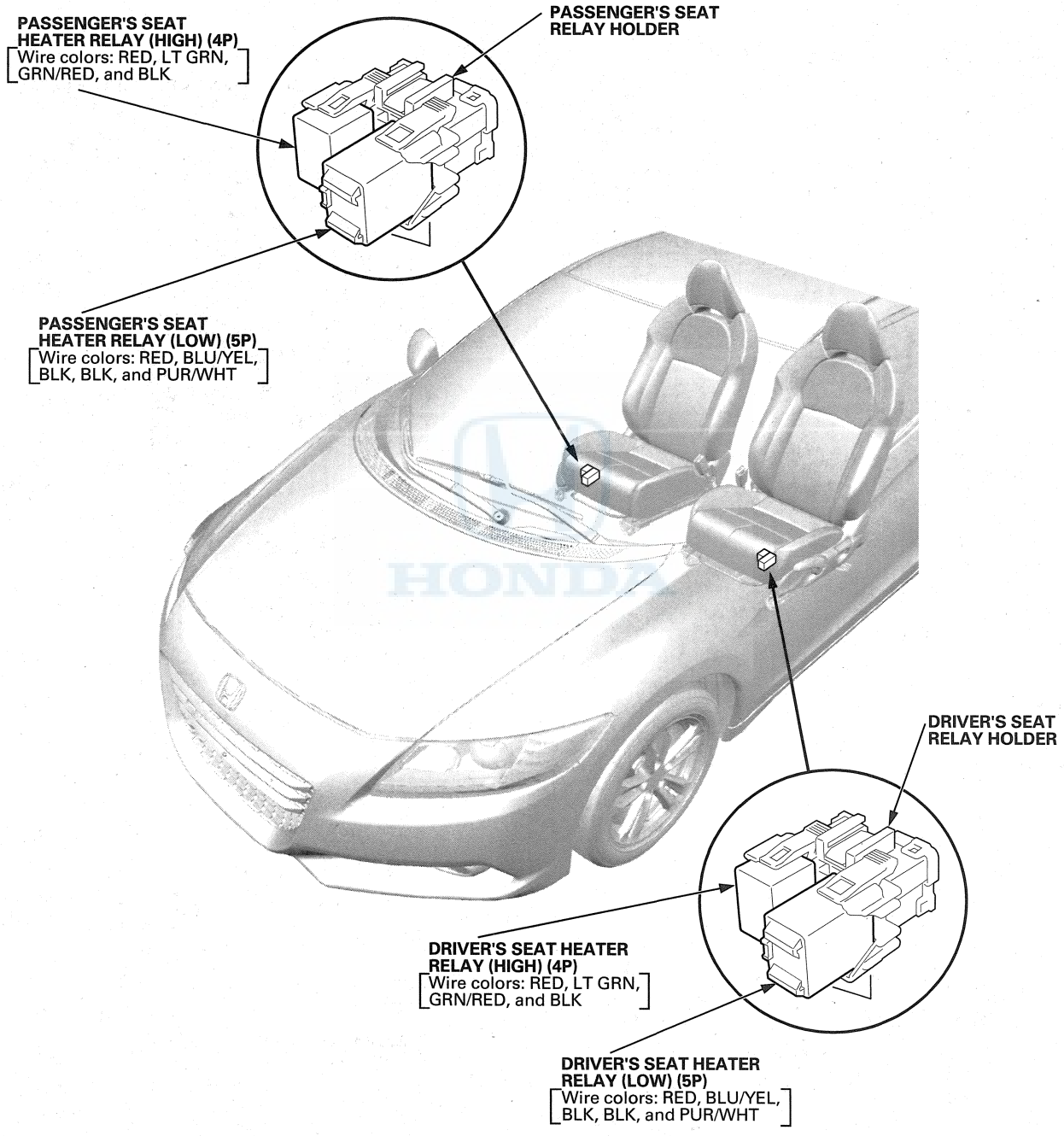
DOOR MULTIPLEX CONTROL UNIT
(Built into the power window master switch)

Rear

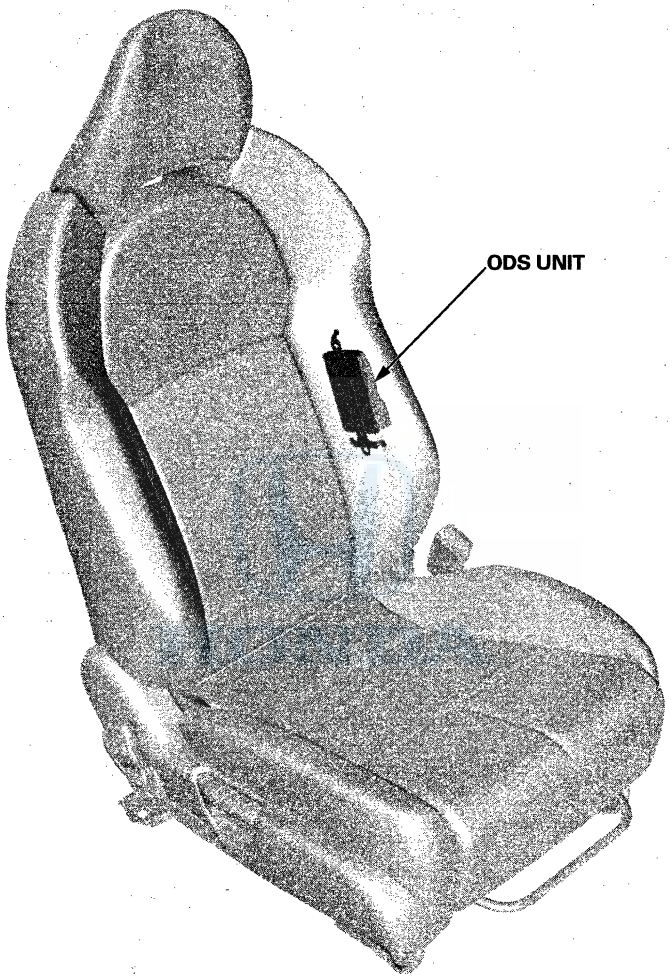

MOTOR CONTROL MODULE (MCM)
IPU RELAY HOLDER
MCM RELAY 1 (4P)
Wire colors: PUR, LT BLU, LT BLU, and PNK/BLK
MCM RELAY 2 (4P)
Wire colors: RED, BLU, LT GRN, and PNK/BLK

Relay and Control Unit Locations

Seat



Passenger's Seat



Connectors and Harnesses

Connector Index

Identification numbers have been assigned to in-line connectors, junction connectors, terminals, and thermal joints. The number is preceded by the letter "C" for connectors, "G" for ground terminals and "T" for non-ground terminals.

Harness	Harness Code	Location			Notes
		Engine Compartment	Dashboard	Others (Floor, Door, Trunk, and Roof)	
A/C wire harness	(BL)		C113, C117		Connector to harness (see page 22-67)
Battery ground cable	(GA)	(−), G1			Connector to harness: • M/T model (see page 22-16) • CVT model (see page 22-18)
Cable reel subharness	(AA)			T10	Connector to harness (see page 22-68)
CKP sensor subharness	(JA)	C202			Connector to harness: • M/T model (see page 22-22) • CVT model (see page 22-26)
Dashboard wire harness (view of middle)	(BD)		C113, C115, C117, C119, C120, C121, G502, G503, G504		Connector to harness (see page 22-42)
Dashboard wire harness (view of driver's side)	(BD)		C106, C112, C114, C116, C118, C122, G501		Connector to harness (see page 22-38)
Dashboard wire harness (view of passenger's side)	(BD)		C101, C103, C123		Connector to harness (see page 22-46)
DC-DC converter ground cable	(GC)			T18, G4	Connector to harness (see page 22-54)
Driver's door wire harness	(DA)		C114		Connector to harness (see page 22-60)
Driver's seat position sensor subharness	(SC)			C501	Connector to harness (see page 22-62)
Driver's seat wire harness	(SJ)			C504	Connector to harness (see page 22-64)
Driver's side wire harness	(BB)			C106, C107, C109, C110, C111, G701, G702, G703	Connector to harness (see page 22-50)
Engine ground cable	(GD)	G2, T7			Connector to harness: • M/T model (see page 22-16) • CVT model (see page 22-18)
Engine wire harness (M/T)	(EB)	C124, C127, C202, C203, C204, G101			Connector to harness (see page 22-20)
Engine wire harness (CVT) (engine section)	(EB)	C124, C127, C202, C203, C204, G101			Connector to harness (see page 22-24)
Engine wire harness (CVT) (transmission section)	(EB)	C201			Connector to harness (see page 22-28)

Harness	Harness Code	Location			Notes
		Engine Compartment	Dashboard	Others (Floor, Door, Trunk, and Roof)	
Floor wire harness	(SA)			C115, C501, C502, C503, C504, G601, G602	Connector to harness (see page 22-48)
Front fog light subharness (Canada model)	(BI)	C104			Connector to harness (see page 22-30)
Hatch wire harness	(BC)			C107, G801	Connector to harness (see page 22-58)
IMA motor power cable (cargo area branch)	(IA)			T11, T12, T13, T14, G5	Connector to harness (see page 22-54)
IMA motor power cable (engine compartment branch)	(IA)	T2, T15, T16, T17			Connector to harness (see page 22-52)
IPU wire harness	(IB)			C111, C401, C402, C403	Connector to harness (see page 22-54)
Left engine compartment wire harness	(BF)	C124, C127, C128, T3, T4, T5, G401	C102, C110, C112, C122, C125, C126, T9, G402, G403		Connector to harness (see page 22-32)
License subharness	(BG)			C109	Connector to harness (see page 22-58)
ODS unit harness	(SB)			C502, C557	Connector to harness (see page 22-63)
Passenger's door wire harness	(DB)		C123		Connector to harness (see page 22-61)
Passenger's seat wire harness	(SK)			C557	Connector to harness (see page 22-65)
PCU wire harness	(IC)			C401, C403, G901	Connector to harness (see page 22-54)
Right engine compartment wire harness	(BA)	C104, G201, G202	C101, C102, C103		Connector to harness (see page 22-30)
Roof wire harness	(BK)		C116		Connector to harness (see page 22-56)
Seat heater switch subharness	(CB)			C503	Connector to harness (see page 22-66)
Solenoid wire harness (CVT model)	(EA)	C201			Connector to harness (see page 22-28)
Starter cable	(EF)	(+), T1, T6			Connector to harness: • M/T model (see page 22-16) • CVT model (see page 22-18)
Transmission ground cable	(GB)	G3, T8			Connector to harness: • M/T model (see page 22-16) • CVT model (see page 22-18)
Torque sensor subharness	(JO)	C128			Connector to harness (see page 22-36)
Visor switch subharness	(BE)		C118		Connector to harness (see page 22-40)

Connector to Harness Index

Starter Cable (M/T) (EF)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(+)	4		Left side of engine compartment	Battery positive terminal	
T1	3		On the battery	Battery terminal fuse box	
T6	2		Middle of engine compartment	Starter solenoid	

Battery Ground Cable (M/T) (GA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(−)	8		Left side of engine compartment	Battery negative terminal	
G1	7		Left side of engine compartment	Body ground, via battery ground cable	

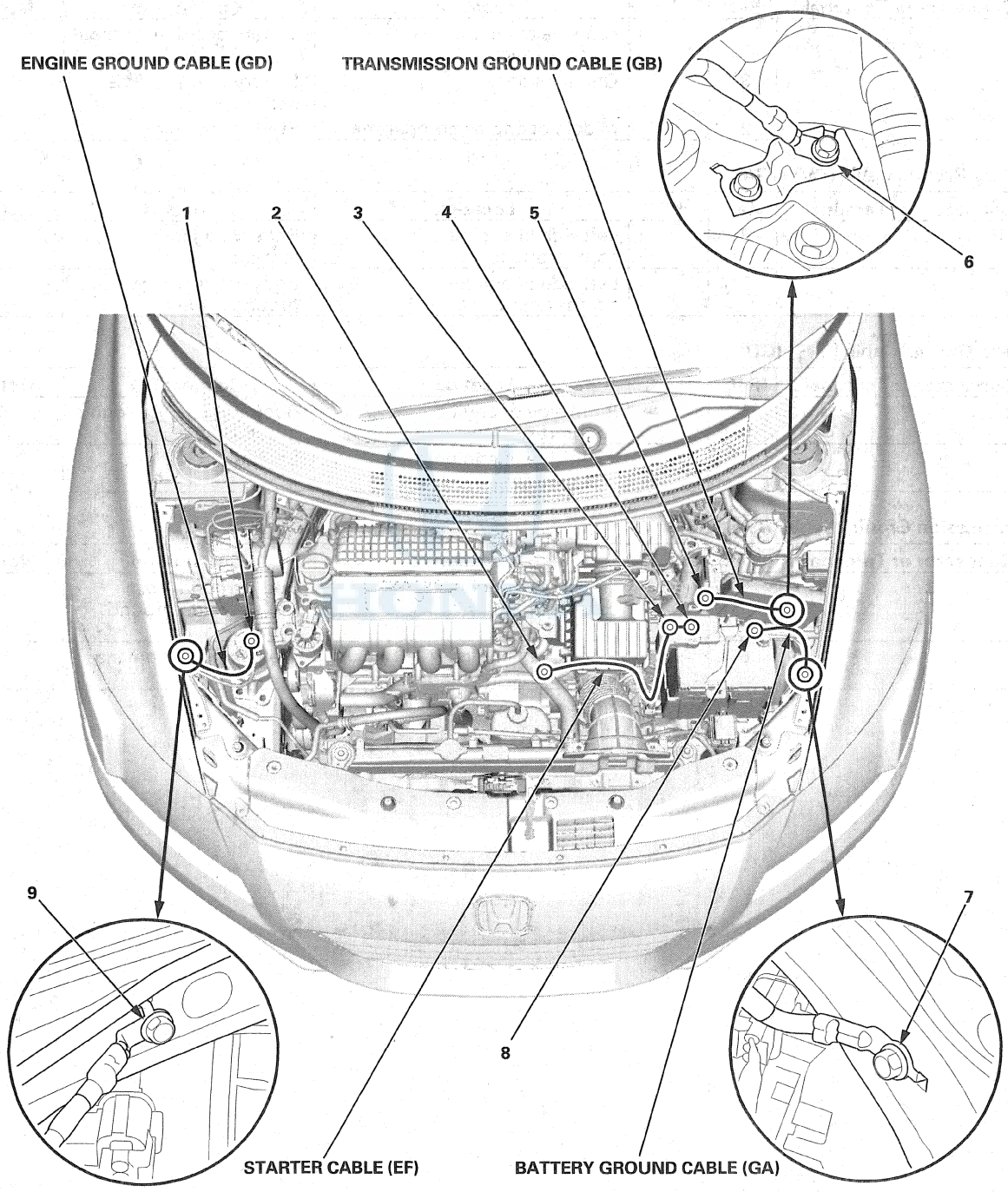
Engine Ground Cable (M/T) (GD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
G2	9		Right side of engine compartment	Body ground, via engine ground cable	
T7	1		Right side of engine compartment	Engine	

Transmission Ground Cable (M/T) (GB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
G3	6		Left side of engine compartment	Body ground, via transmission ground cable	
T8	5		Left side of engine compartment	Transmission housing	

M/T model



(cont'd)

Connector to Harness Index (cont'd)

Starter Cable (CVT) (EF)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(+)	4		Left side of engine compartment	Battery positive terminal	
T1	3		On the battery	Battery terminal fuse box	
T6	2		Middle of engine compartment	Starter solenoid	

Battery Ground Cable (CVT) (GA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
(−)	8		Left side of engine compartment	Battery negative terminal	
G1	7		Left side of engine compartment	Body ground, via battery ground cable	

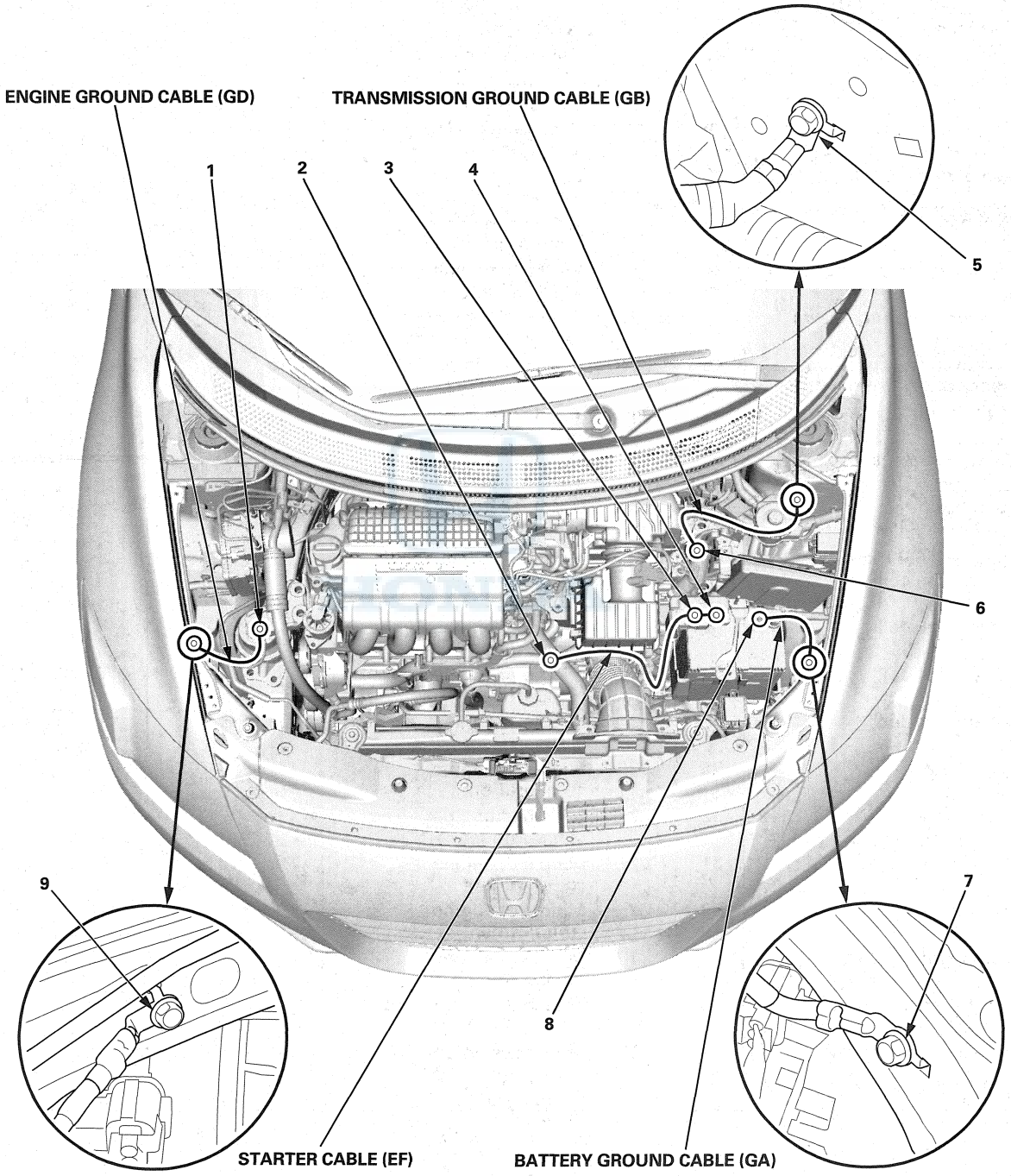
Engine Ground Cable (CVT) (GD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
G2	9		Right side of engine compartment	Body ground, via engine ground cable	
T7	1		Right side of engine compartment	Engine	

Transmission Ground Cable (CVT) (GB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
G3	5		Left side of engine compartment	Body ground, via transmission ground cable	
T8	6		Left side of engine compartment	Transmission housing	

CVT model



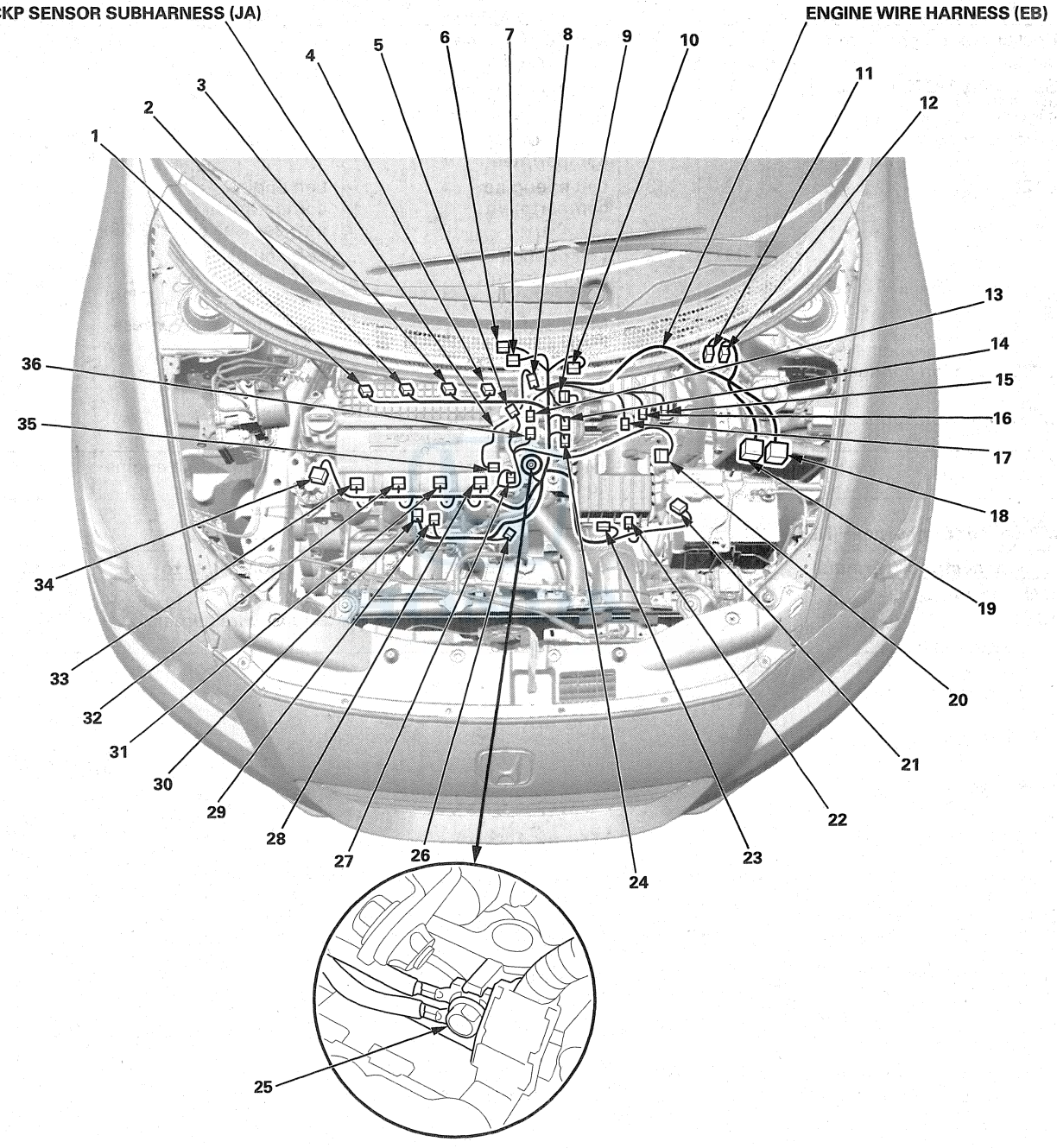
(cont'd)

Connector to Harness Index (cont'd)

Engine Wire Harness (M/T) (EB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/F sensor (sensor1)	7	4	Exhaust manifold		
Back-up light switch	22	2	Transmission housing		
CMP sensor	9	3	Middle of engine compartment		
ECM connector B	18	44	Left of engine compartment		
ECM connector C	19	44	Left of engine compartment		
ECT sensor 1	13	2	Middle of engine compartment		
EGR valve/EGR valve position sensor	34	5	Middle of engine compartment		
EVAP canister purge valve	36	2	Middle of engine compartment		
IMA motor rotor position sensor	15	6	Transmission housing		
Knock sensor	30	1	Middle of engine compartment		
MAF sensor/IAT sensor	20	5	Middle of engine compartment		
MAP sensor	5	3	Middle of engine compartment		
Neutral position switch	21	2	Transmission housing		
No.1 ignition coil	1	3	Middle of engine compartment		
No.2 ignition coil	2	3	Middle of engine compartment		
No.3 ignition coil	3	3	Middle of engine compartment		
No.4 ignition coil	4	3	Middle of engine compartment		
No.1 injector	33	2	Middle of engine compartment		
No.2 injector	32	2	Middle of engine compartment		
No.3 injector	31	2	Middle of engine compartment		
No.4 injector	28	2	Middle of engine compartment		
Oil pressure switch	29	1	Middle of engine compartment		
Output shaft (countershaft) speed sensor	16	3	Transmission housing		
Reverse lockout solenoid	17	2	Transmission housing		
Rocker arm oil control solenoid	27	2	Middle of engine compartment		

M/T model



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Connector to Harness Index (cont'd)

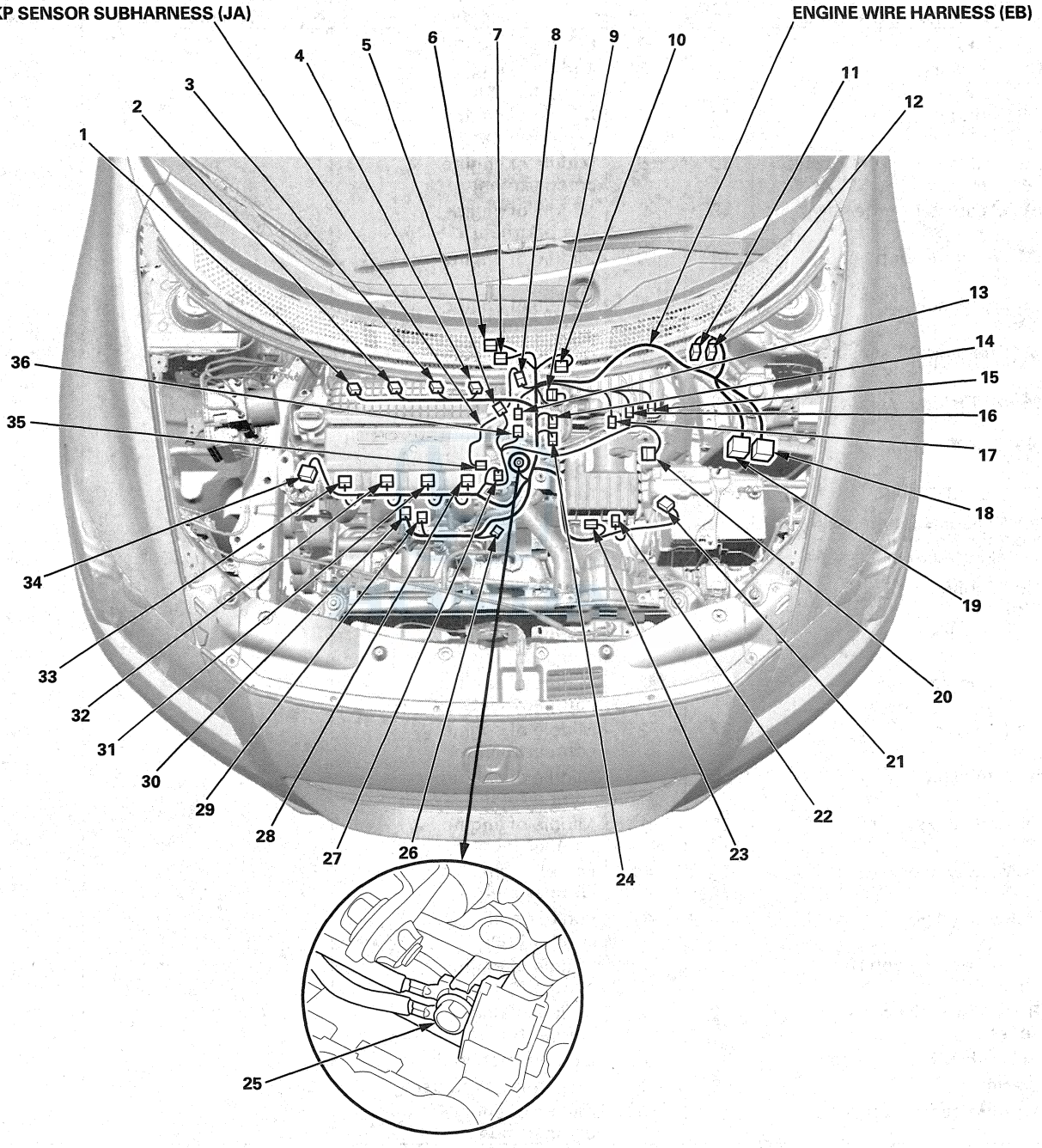
Engine Wire Harness (M/T) (EB) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Rocker arm oil pressure sensor	26	2	Middle of engine compartment		
Secondary HO2S (sensor2)	6	4	Exhaust manifold		
Starter	23	1	Transmission housing		
Throttle body	10	6	Middle of engine compartment		
C124	12	13	Left of engine compartment	Left engine compartment wire harness (see page 22-36)	
C127	11	12	Left of engine compartment	Left engine compartment wire harness (see page 22-36)	
C202	8	3	Middle of engine compartment	CKP sensor subharness	
C203 (Junction connector)	24	24	Middle of engine compartment		
C204 (Junction connector)	14	12	Middle of engine compartment		
G101	25		Middle of engine compartment	Body ground, via engine wire harness	

CKP Sensor Subharness (M/T) (JA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
CKP sensor	35	3	Under the engine		
C202	8	3	Middle of engine compartment	Engine wire harness	

M/T model



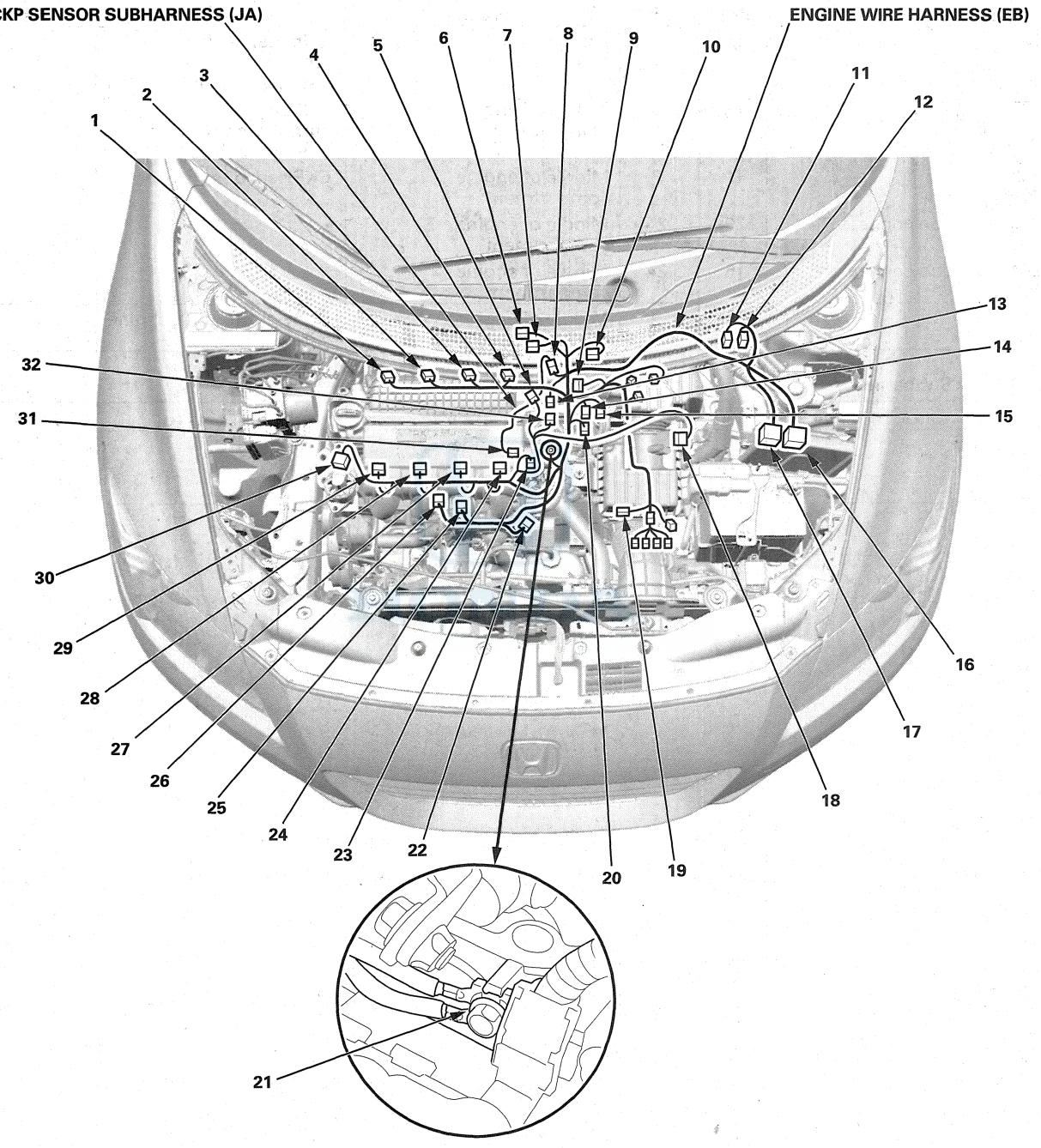
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Connector to Harness Index (cont'd)

Engine Wire Harness (CVT) (engine section) (EB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/F sensor (sensor1)	7	4	Exhaust manifold		
CMP sensor	9	3	Middle of engine compartment		
ECT sensor 1	13	2	Middle of engine compartment		
EGR valve/EGR valve position sensor	30	5	Middle of engine compartment		
EVAP canister purge valve	32	2	Middle of engine compartment		
IMA motor rotor position sensor	14	6	Middle of engine compartment		
Knock sensor	26	1	Middle of engine compartment		
MAF sensor/IAT sensor	18	5	Middle of engine compartment		
MAP sensor	5	3	Middle of engine compartment		
No.1 ignition coil	1	3	Middle of engine compartment		
No.2 ignition coil	2	3	Middle of engine compartment		
No.3 ignition coil	3	3	Middle of engine compartment		
No.4 ignition coil	4	3	Middle of engine compartment		
No.1 injector	29	2	Middle of engine compartment		
No.2 injector	28	2	Middle of engine compartment		
No.3 injector	27	2	Middle of engine compartment		
No.4 injector	24	2	Middle of engine compartment		
Oil pressure switch	25	1	Middle of engine compartment		
PCM connector B	16	44	Left of engine compartment		
PCM connector C	17	44	Left of engine compartment		
Rocker arm oil control solenoid	23	2	Middle of engine compartment		
Rocker arm oil pressure sensor	22	2	Middle of engine compartment		
Secondary HO2S (sensor2)	6	4	Exhaust manifold		
Starter	19	1	Transmission housing		
Throttle body	10	6	Middle of engine compartment		

CVT model



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Connector to Harness Index (cont'd)

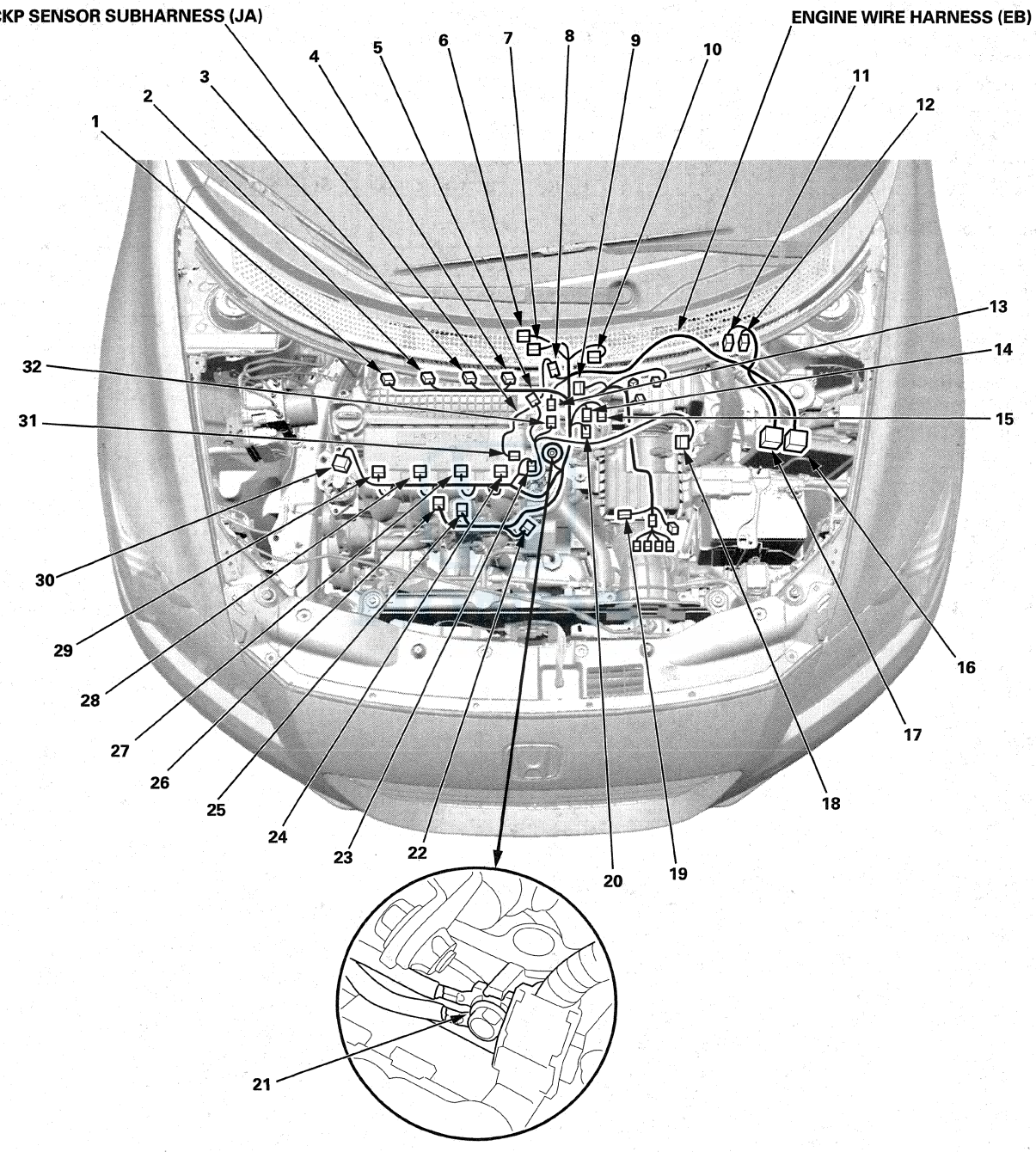
Engine Wire Harness (CVT) (engine section) (EB) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C124	12	13	Left of engine compartment	Left engine compartment wire harness (see page 22-36)	
C127	11	6	Left of engine compartment	Left engine compartment wire harness (see page 22-36)	
C202	8	3	Middle of engine compartment	CKP sensor subharness	
C203 (Junction connector)	20	24	Middle of engine compartment		
C204 (Junction connector)	15	24	Middle of engine compartment		
G101	21		Middle of engine compartment	Body ground, via engine wire harness	

CKP Sensor Subharness (CVT) (JA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
CKP sensor	31	3	Under the engine		
C202	8	3	Middle of engine compartment	Engine wire harness	

CVT model



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Connector to Harness Index (cont'd)

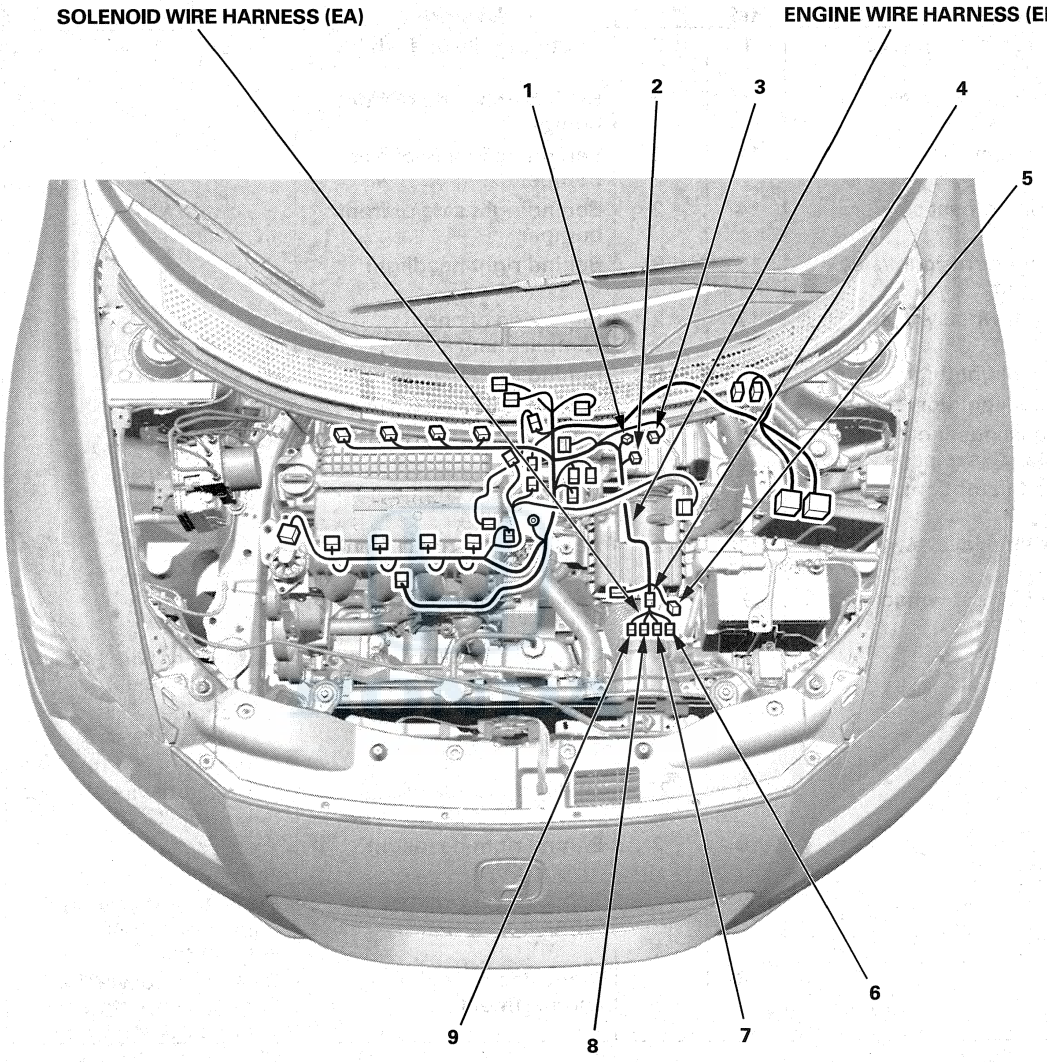
Engine Wire Harness (CVT) (transmission section) (EB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
CVT input shaft (drive pulley) speed sensor	5	3	Transmission housing		
CVT output shaft (driven pulley) speed sensor	1	3	Transmission housing		
Vehicle speed sensor	3	3	Transmission housing		
Transmission range switch	2	8	Transmission housing		
C201	4	8	On transmission housing	Solenoid wire harness	

Solenoid Wire Harness (CVT) (EA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
CVT clutch pressure control solenoid valve	7	2	In the transmission		
CVT drive pulley pressure control solenoid valve	6	2	In the transmission		
CVT driven pulley pressure control solenoid valve	8	2	In the transmission		
Inhibitor solenoid	9	2	In the transmission		
C201	4	7	On transmission housing	Engine wire harness	

CVT model



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Connector to Harness Index (cont'd)

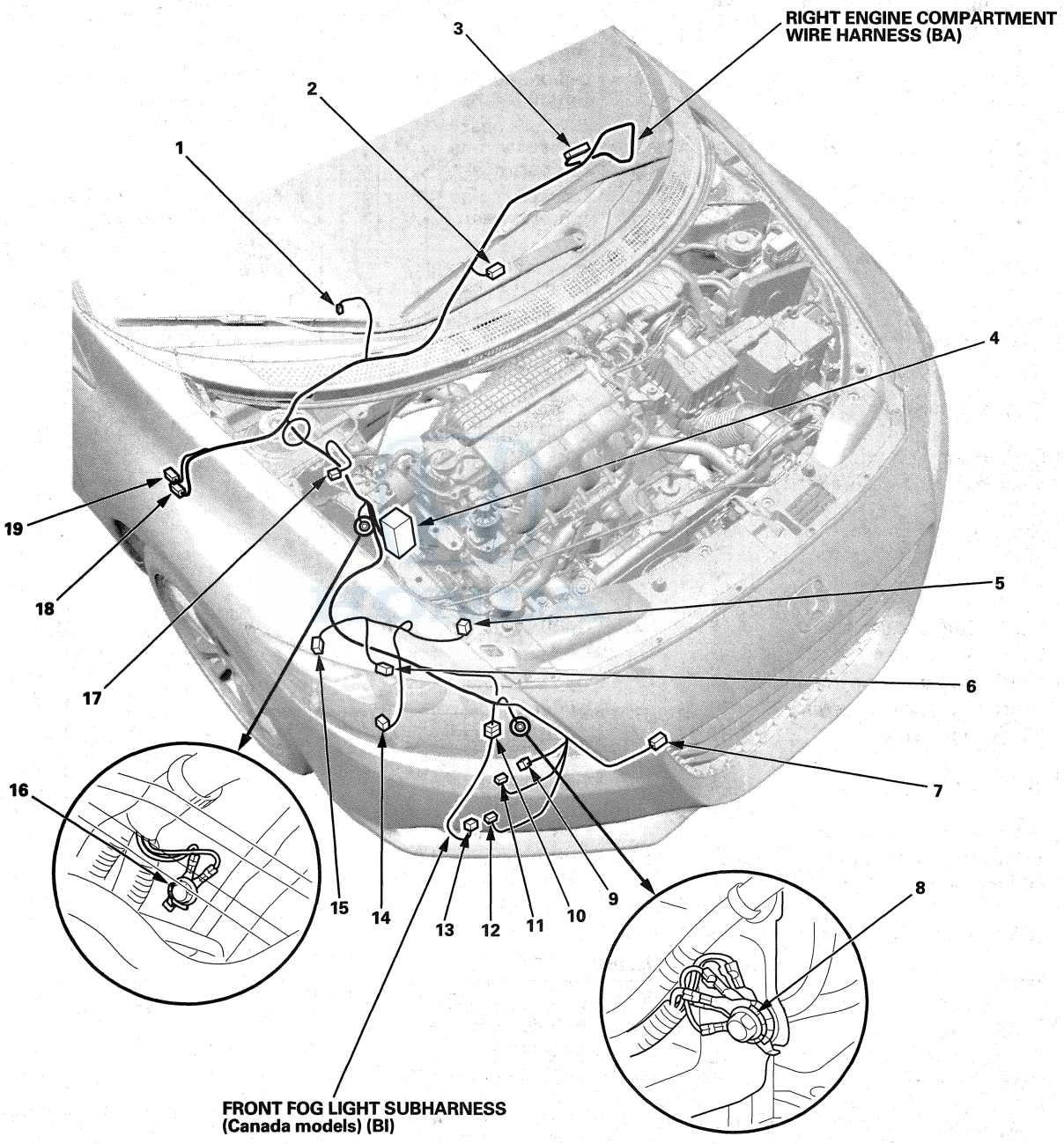
Right Engine Compartment Wire Harness (BA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Evaporator temperature sensor	1	2	Under middle of dash		
Outside air temperature sensor	7	2	Behind right side of front bumper		
Right fog light	12	2	Behind right side of front bumper		*
Right front impact sensor	14	2	Behind right side of front bumper		
Right front turn signal/side marker light	15	3	Behind right headlight		
Right-front wheel speed sensor	17	2	Right side of engine compartment		
Right headlight (high beam)	5	2	Behind right headlight		
Right headlight (low beam)	6	2	Behind right headlight		
Under-dash fuse/relay box connector A (see page 22-70)	3	36	Under left side of dash		
VSA modulator-control unit	4	2	Right side of engine compartment		
Washer fluid level switch	11	2	Behind right side of front bumper		Canada models
Windshield/rear window washer motor	9	2	Behind right side of front bumper		
C101	18	4	Under right side of dash	Dashboard wire harness (see page 22-46)	
C102	2	13	Under middle of dash	Left engine compartment wire harness (see page 22-36)	
C103	19	20	Under right side of dash	Dashboard wire harness (see page 22-46)	
C104	10	2	Behind right headlight	Front fog light subharness	Canada models
G201	8		Behind right side of front bumper	Body ground, via right engine compartment wire harness	
G202	16		Right side of engine compartment	Body ground, via right engine compartment wire harness	

*: With fog lights

Front Fog Light Subharness (Canada models) (BI)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Right fog light	13	2	Behind right side of front bumper		
C104	10	2	Behind right headlight	Right engine compartment wire harness	


RIGHT ENGINE COMPARTMENT WIRE HARNESS (BA)
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FRONT FOG LIGHT SUBHARNESS (Canada models) (BI)

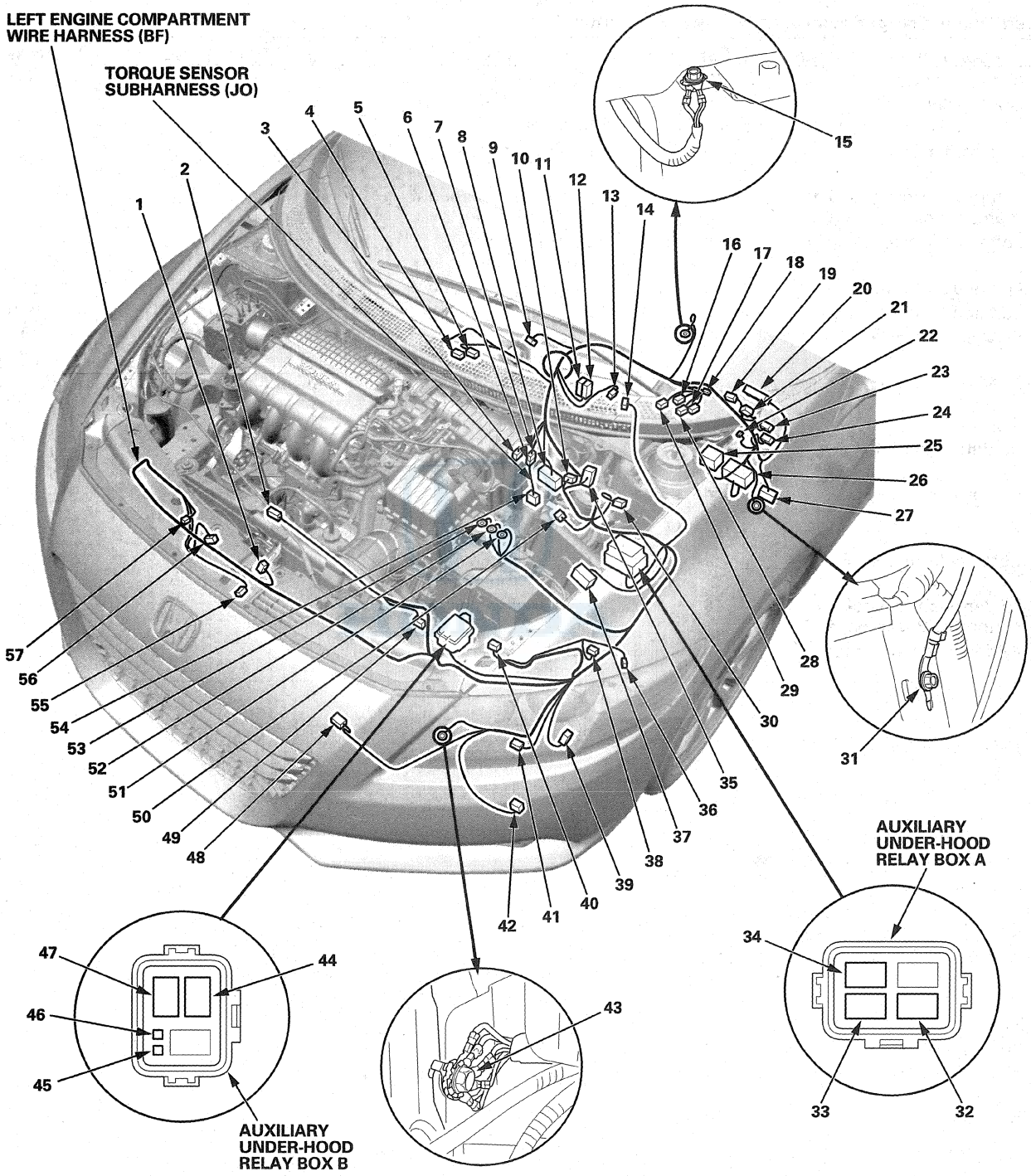
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Connector to Harness Index (cont'd)

Left Engine Compartment Wire Harness (BF)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
A/C compressor	56	3	Front of engine compartment		
A/C compressor clutch relay	34	4	Left of engine compartment	In auxiliary under-hood relay box A (see page 22-72)	
A/C condenser fan motor	2	2	Front of engine compartment		
A/C condenser fan relay	47	4	Front of engine compartment	In auxiliary under-hood relay box B (see page 22-73)	
A/C diode A	46	2	Front of engine compartment	In auxiliary under-hood relay box B (see page 22-73)	
A/C diode B	45	2	Front of engine compartment	In auxiliary under-hood relay box B (see page 22-73)	
A/C pressure sensor	57	3	Front of engine compartment		
APP sensor	13	6	Under middle of dash		
Brake booster pressure sensor A	5	3	Middle of engine compartment		
Brake booster pressure sensor B	4	3	Middle of engine compartment		
Brake fluid level switch	50	2	Left of engine compartment		
Brake pedal position switch	16	4	Under left side of dash		
Clutch pedal position switch A	17	2	Under left side of dash		M/T
Clutch pedal position switch B	18	2	Under left side of dash		M/T
Clutch pedal position switch C	28	2	Under left side of dash		M/T
ECM connector A	37	44	Left of engine compartment		M/T
ECT sensor 2	55	2	Front of engine compartment		
EPS control unit connector A	25	11	Under left side of dash		
EPS control unit connector B	26	16	Under left side of dash		
EPS motor	8	3	Left of engine compartment		
EPS motor angle sensor	3	8	Left of engine compartment		
Fan control relay	33	5	Left of engine compartment	In auxiliary under-hood relay box A (see page 22-72)	
Fog light relay	12	4	Under middle of dash		*
Horn (high)/security horn	41	1	Behind left side of front bumper		
Horn (low)	48	1	Front of engine compartment		
Horn relay	11	4	Under middle of dash		

*: With fog lights


LEFT ENGINE COMPARTMENT WIRE HARNESS (BF)
TORQUE SENSOR SUBHARNESS (JO)
AUXILIARY UNDER-HOOD RELAY BOX A
AUXILIARY UNDER-HOOD RELAY BOX B
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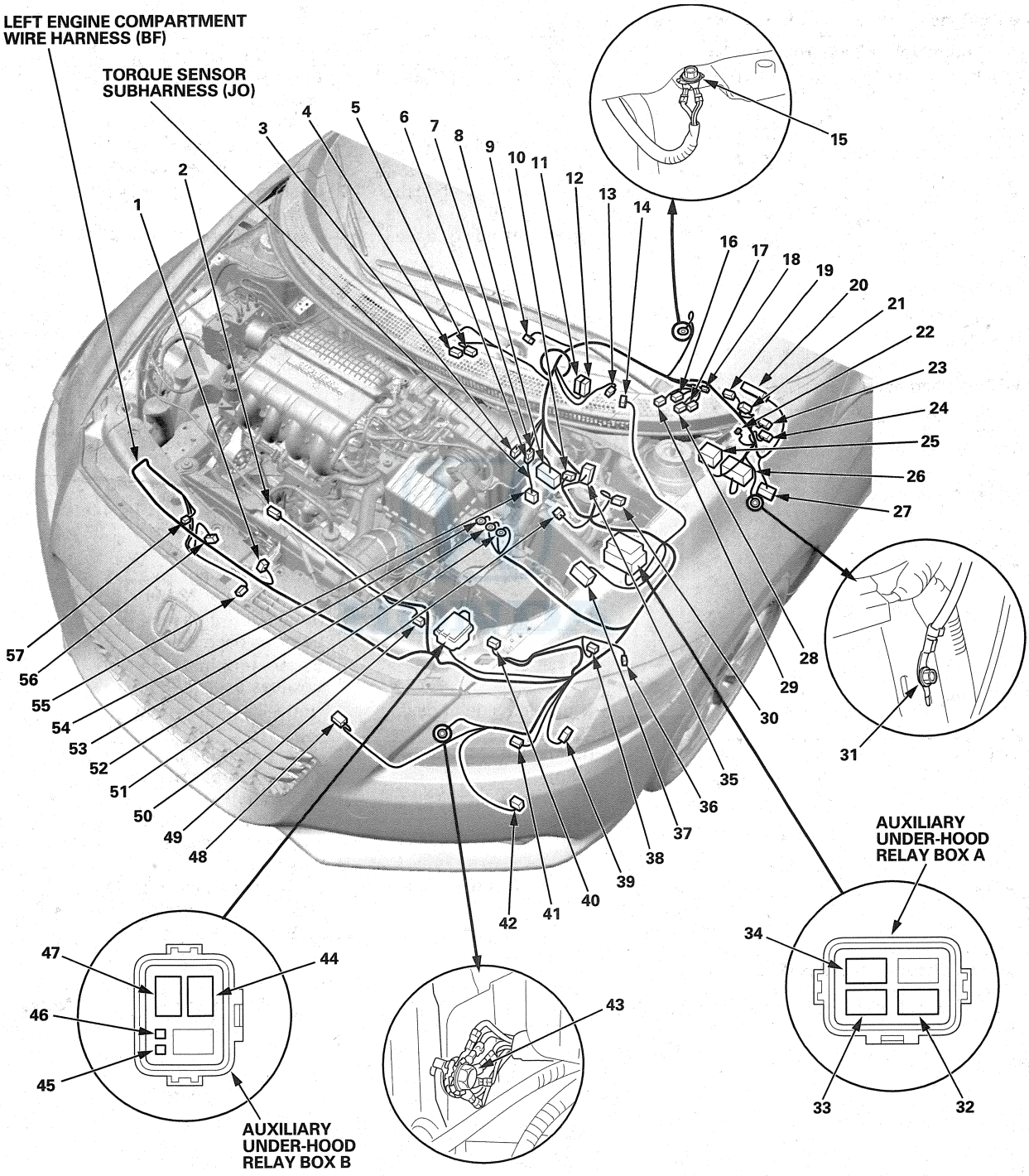
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Connector to Harness Index (cont'd)

Left Engine Compartment Wire Harness (BF) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Idle stop switch	29	2	Under left side of dash		CVT
Left fog light	42	2	Behind left side of front bumper		*
Left front impact sensor	39	2	Behind left side of front bumper		
Left front turn signal/side marker light	36	3	Behind left headlight		
Left-front wheel speed sensor	30	2	Left of engine compartment		
Left headlight (high beam)	40	2	Behind left headlight		
Left headlight (low beam)	38	2	Behind left headlight		
PCM connector A	37	44	Left of engine compartment		CVT
PGM-FI main relay 2	32	4	Left of engine compartment	In auxiliary under-hood relay box A (see page 22-72)	
Radiator fan motor	49	2	Front of engine compartment		
Radiator fan relay	44	4	Front of engine compartment	In auxiliary under-hood relay box B (see page 22-73)	
Security hood switch	1	2	Front of engine compartment		
Under-dash fuse/relay box connector B (see page 22-70)	20	36	Under left side of dash		
Windshield wiper motor	14	5	Left of engine compartment		

*: With fog lights


LEFT ENGINE COMPARTMENT WIRE HARNESS (BF)
TORQUE SENSOR SUBHARNESS (JO)
AUXILIARY UNDER-HOOD RELAY BOX A
AUXILIARY UNDER-HOOD RELAY BOX B
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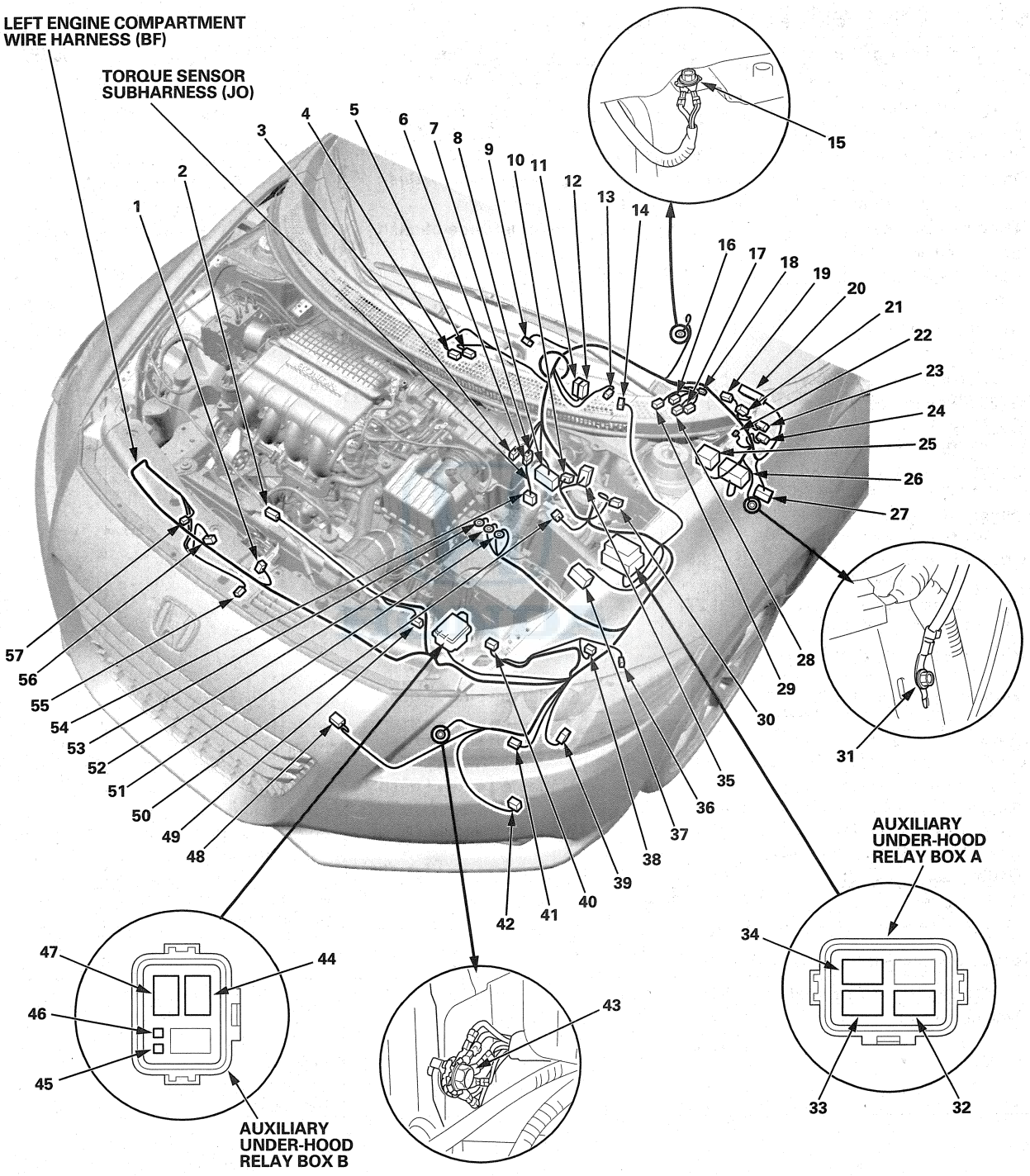
Connector to Harness Index (cont'd)

Left Engine Compartment Wire Harness (BF) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C102	9	13	Under middle of dash	Right engine compartment wire harness (see page 22-30)	
C110	27	20	Under left side of dash	Driver's side wire harness (see page 22-50)	
C112	24	4	Under left side of dash	Dashboard wire harness (see page 22-40)	
C122	23	20	Under left side of dash	Dashboard wire harness (see page 22-40)	
C124	10	13	Left of engine compartment	Engine wire harness • M/T model (see page 22-22) • CVT model (see page 22-26)	
C125 (Junction connector)	19	12	Under left side of dash		
C126 (Junction connector)	21	12	Under left side of dash		
C127	35	12	Left of engine compartment	Engine wire harness (see page 22-22)	M/T
C127	35	6	Left of engine compartment	Engine wire harness (see page 22-26)	CVT
C128	7	6	Left of engine compartment	Torque sensor subharness	
T3	53		On battery	Battery terminal fuse box (see page 22-69)	
T4	52		On battery	Battery terminal fuse box (see page 22-69)	
T5	51		On battery	Battery terminal fuse box (see page 22-69)	
T9	22		Under left side of dash	Under-dash fuse/relay box	
G401	43		Behind left side of front bumper	Body ground, via left engine compartment wire harness	
G402	31		Under left side of dash	Body ground, via left engine compartment wire harness	
G403	15		Under left side of dash	Body ground, via left engine compartment wire harness	

Torque Sensor Subharness (JO)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Torque sensor	54	6	Left of engine compartment		
C128	6	6	Left of engine compartment	Left engine compartment wire harness	


LEFT ENGINE COMPARTMENT WIRE HARNESS (BF)
TORQUE SENSOR SUBHARNESS (JO)
AUXILIARY UNDER-HOOD RELAY BOX A
AUXILIARY UNDER-HOOD RELAY BOX B
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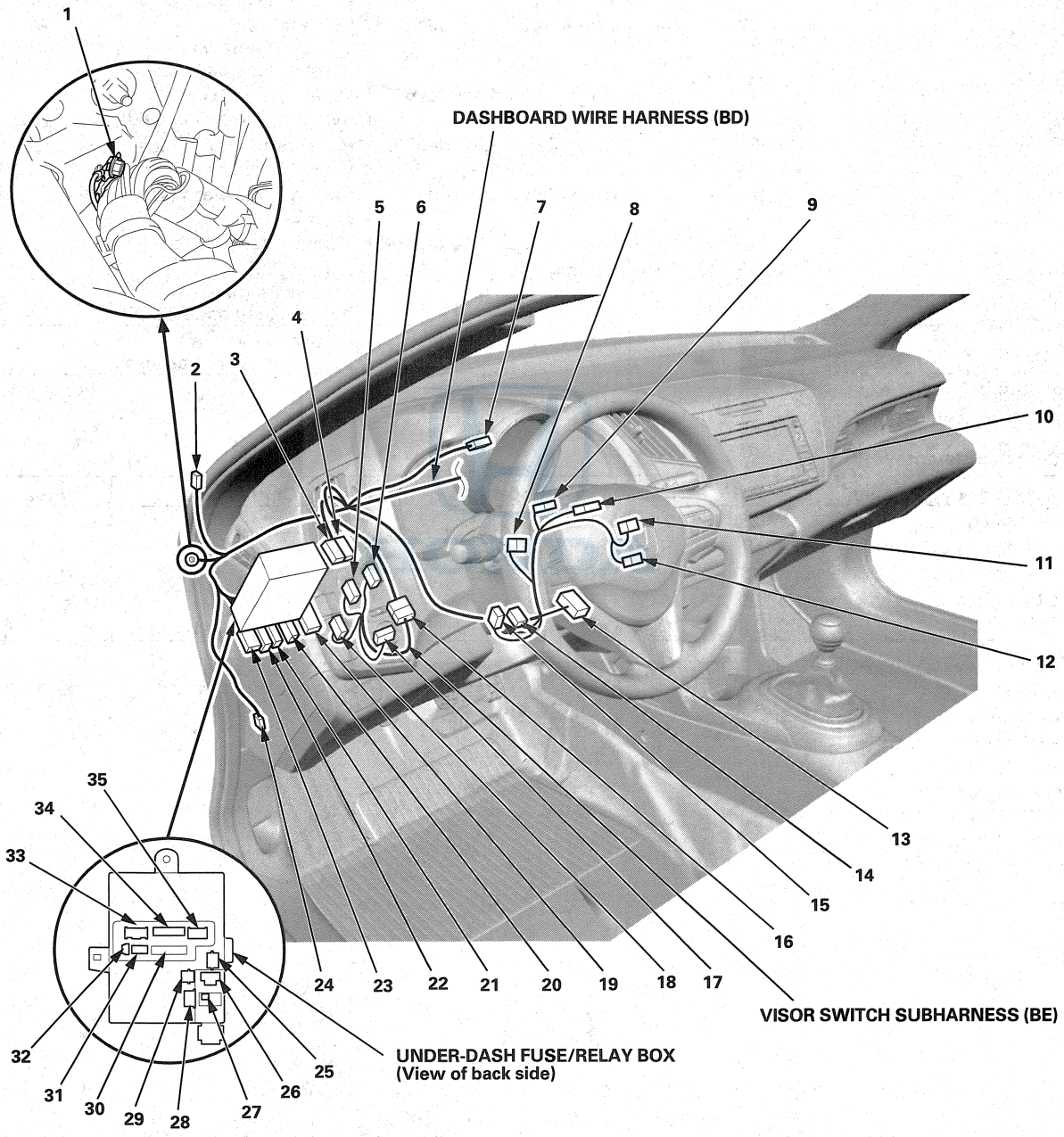
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Connector to Harness Index (cont'd)

Dashboard Wire Harness (view of driver's side) (BD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cable reel	9	10	In steering column		
Combination light switch	11	12	In steering column		
Driver's airbag inflator	10	4	In steering column		
Driver's door unlock relay	4	5	Under left side of dash		
Driver's footwell light	24	2	Under left side of dash		*
Gauge control module	7	32	Behind gauge		
Hatch release actuator relay	3	5	Under left side of dash		
Ignition switch	15	7	In steering column		
Immobilizer-keyless control unit	14	7	In steering column		
Left tweeter	2	2	Left side of dash		
Steering angle sensor	12	5	In steering column		
Steering lock	13	6	In steering column		
Under-dash fuse/relay box connector AA (see page 22-70)	30	28	Under left side of dash		
Under-dash fuse/relay box connector AB (see page 22-70)	25	3	Under left side of dash		
Under-dash fuse/relay box connector AC (see page 22-70)	26	2	Under left side of dash		
Under-dash fuse/relay box connector AD (see page 22-70)	29	1	Under left side of dash		
Under-dash fuse/relay box connector AE (see page 22-70)	28	3	Under left side of dash		
Under-dash fuse/relay box connector AF (see page 22-70)	27	3	Under left side of dash		
Under-dash fuse/relay box connector N (see page 22-70)	33	10	Under left side of dash		
Under-dash fuse/relay box connector Q (see page 22-70)	34	34	Under left side of dash		
Under-dash fuse/relay box connector R (see page 22-70)	35	8	Under left side of dash		
Under-dash fuse/relay box connector T (see page 22-70)	32	4	Under left side of dash		
Under-dash fuse/relay box connector Y (see page 22-70)	31	16	Under left side of dash		
Wiper/washer switch	8	8	In steering column		

*: With footwell light


DASHBOARD WIRE HARNESS (BD)
VISOR SWITCH SUBHARNESS (BE)
UNDER-DASH FUSE/RELAY BOX
(View of back side)
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Connector to Harness Index (cont'd)

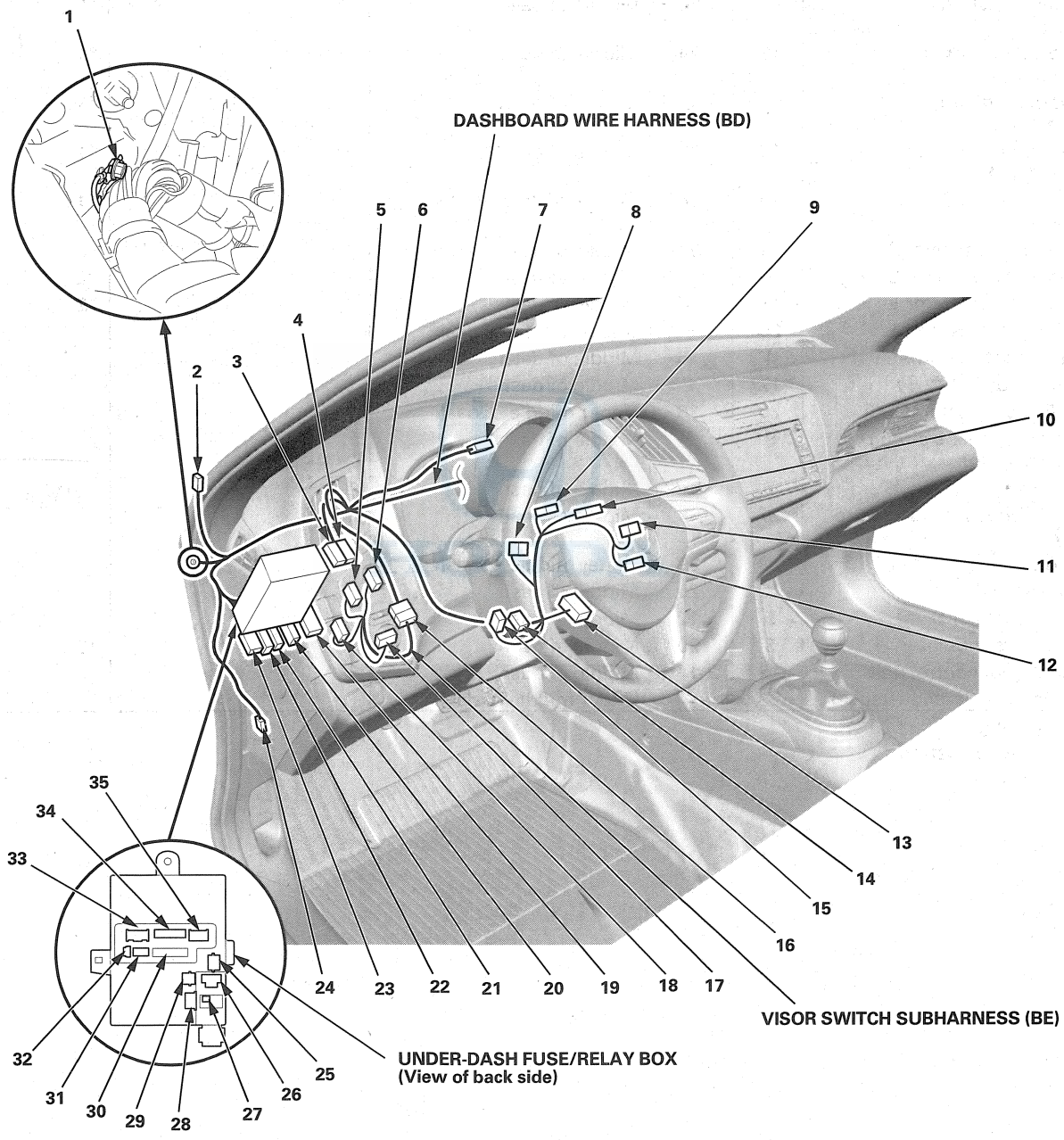
Dashboard Wire Harness (view of driver's side) (BD) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C106	20	12	Under left side of dash	Driver's side wire harness (see page 22-50)	
C112	23	4	Under left side of dash	Left engine compartment wire harness (see page 22-36)	
C114	19	18	Under left side of dash	Driver's door wire harness (see page 22-60)	
C116	21	13	Under left side of dash	Roof wire harness (see page 22-56)	*1
C116	21	2	Under left side of dash	Roof wire harness (see page 22-56)	*2
C118	16	24	Under left side of dash	Visor switch subharness	
C122	22	20	Under left side of dash	Left engine compartment wire harness (see page 22-36)	
G501	1		Under left side of dash	Body ground, via dashboard wire harness	

*1: With ambient light
*2: Without ambient light

Visor Switch Subharness (BE)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
3-Mode switch	18	7	Left side of dash		
Km/h, mph change switch	6	5	Left side of dash		
Power mirror switch	17	13	Left side of dash		
VSA OFF switch	5	5	Left side of dash		
C118	16	24	Under left side of dash	Dashboard wire harness	


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VISOR SWITCH SUBHARNESS (BE)
UNDER-DASH FUSE/RELAY BOX
(View of back side)

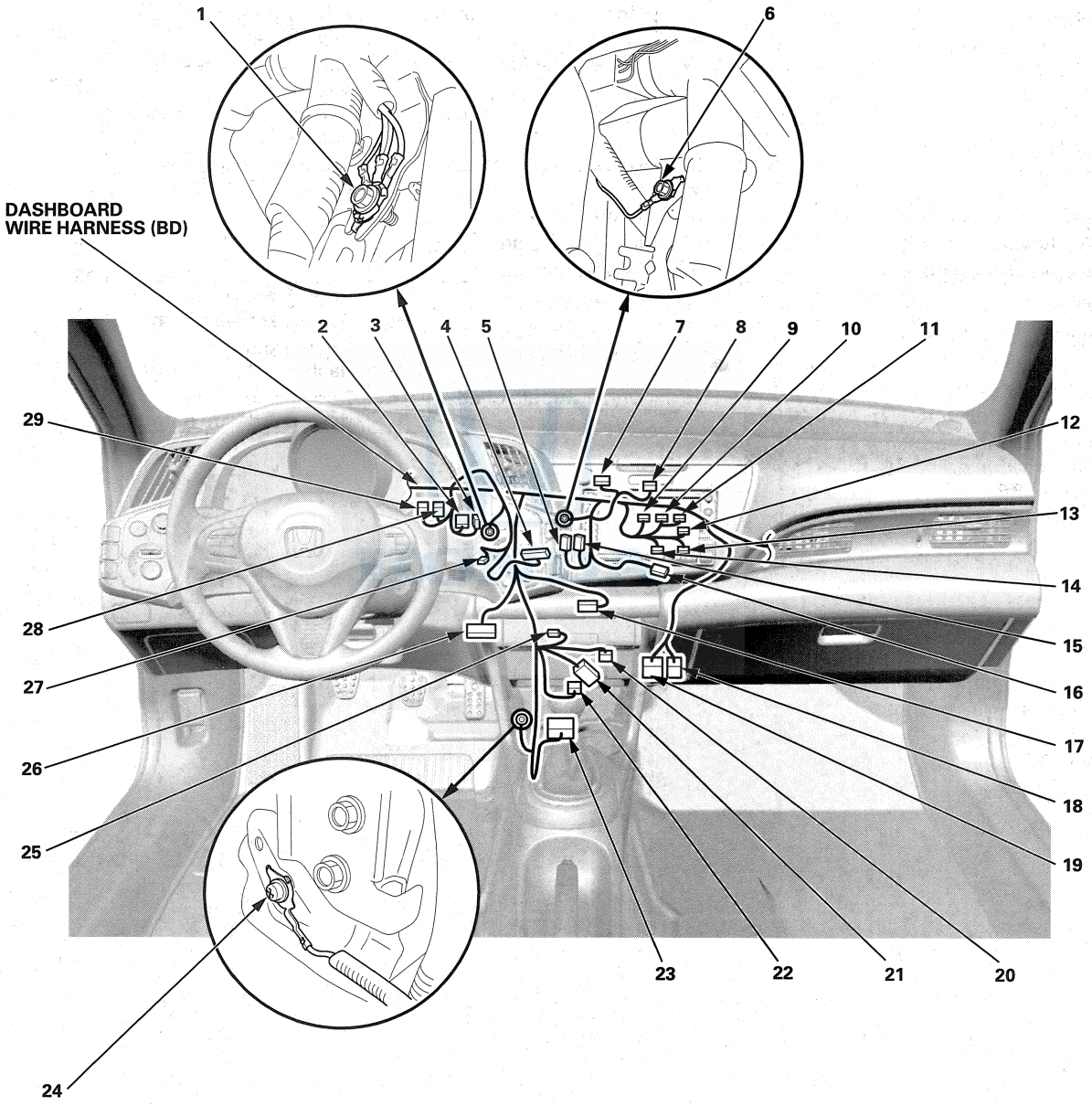
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Connector to Harness Index (cont'd)

Dashboard Wire Harness (view of middle) (BD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Accessory power socket	20	2	Under middle of dash		
Audio-navigation unit connector A	14	24	Middle of dash		*1
Audio-navigation unit connector B	12	24	Middle of dash		*1
Audio-navigation unit connector C	11	8	Middle of dash		*1
Audio-navigation unit connector D	10	12	Middle of dash		*1
Audio-navigation unit connector E	13	14	Middle of dash		*1
Audio unit connector A	14	24	Middle of dash		*2
Audio unit connector D	9	12	Middle of dash		*2
Audio unit connector E	13	14	Middle of dash		*2
Auxiliary jack assembly	25	5	Under middle of dash		
Climate control unit	4	36	Middle of dash		
Console box light	17	2	Middle of dash		
Data link connector (DLC)	26	16	Under middle of dash		
Front passenger's airbag cutoff indicator	8	5	Middle of dash		
Hazard warning switch	7	5	Middle of dash		
Humidity/in-car temperature sensor	27	4	Middle of dash		
SRS unit	23	39	Under middle of dash		
Stereo amplifier A	15	20	Middle of dash		
Stereo amplifier B	5	12	Middle of dash		
TPMS control unit	3	20	Middle of dash		*3
USB adapter control unit	16	14	Middle of dash		
Yaw rate-acceleration sensor	22	4	Under middle of dash		

*1: With navigation
*2: Without navigation
*3: With TPMS

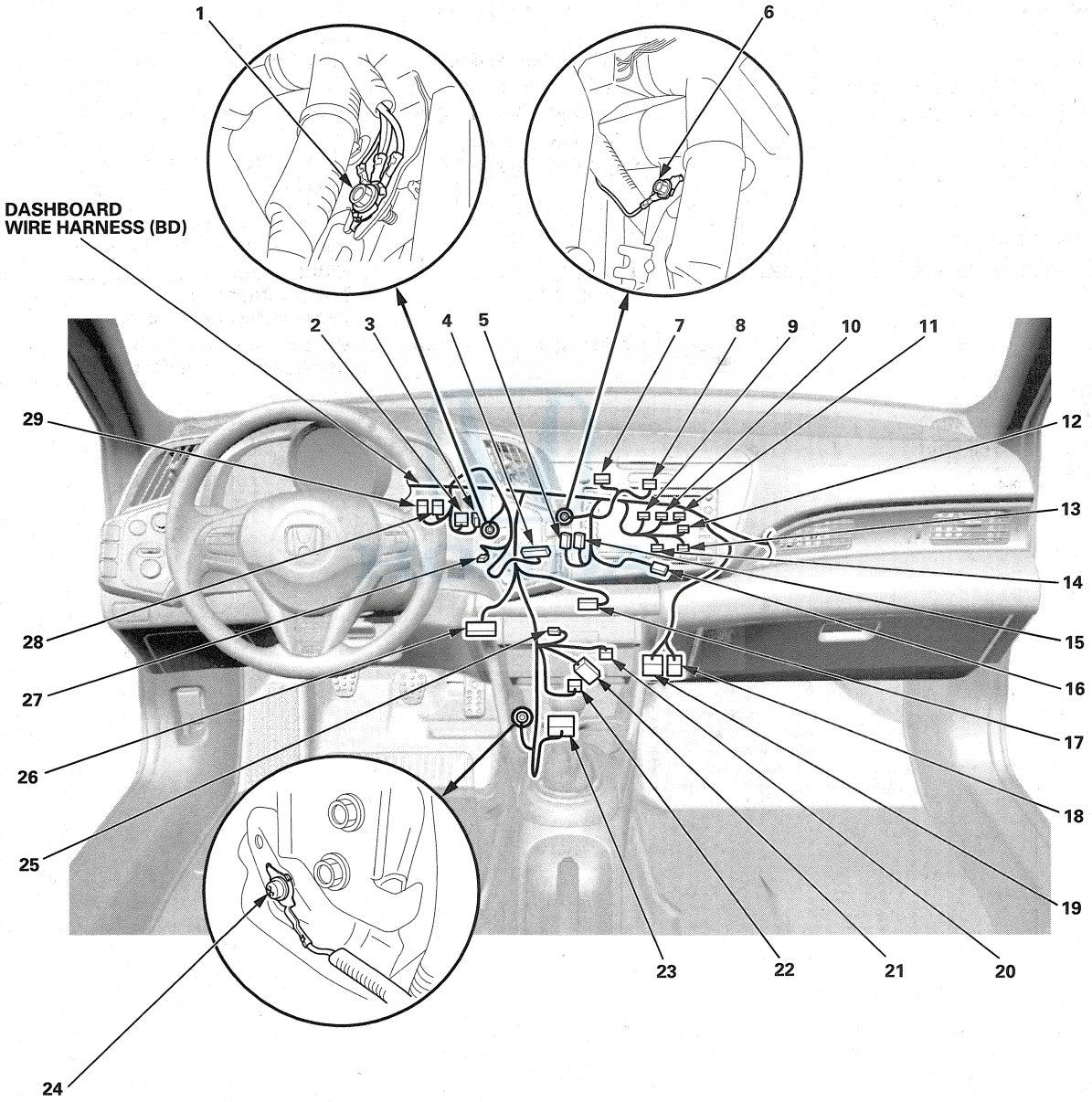

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WIRE HARNESS (BD)
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Connector to Harness Index (cont'd)

Dashboard Wire Harness (view of middle section) (BD) (cont'd)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
C113	18	2	Under middle of dash	A/C wire harness (see page 22-67)	
C115	21	18	Under middle of dash	Floor wire harness (see page 22-48)	'11 model (CVT)
C115	21	13	Under middle of dash	Floor wire harness (see page 22-48)	'11 model (M/T)
C115	21	23	Under middle of dash	Floor wire harness (see page 22-48)	'12 model
C117	19	16	Under middle of dash	A/C wire harness (see page 22-67)	
C119 (Junction connector)	28	12	Middle of dash		
C120 (Junction connector)	2	12	Middle of dash		
C121 (Junction connector)	29	12	Middle of dash		
G502	1		Middle of dash	Body ground, via dashboard wire harness	
G503	6		Middle of dash	Body ground, via dashboard wire harness	
G504	24		Under middle of dash	Body ground, via dashboard wire harness	


DASHBOARD
WIRE HARNESS (BD)
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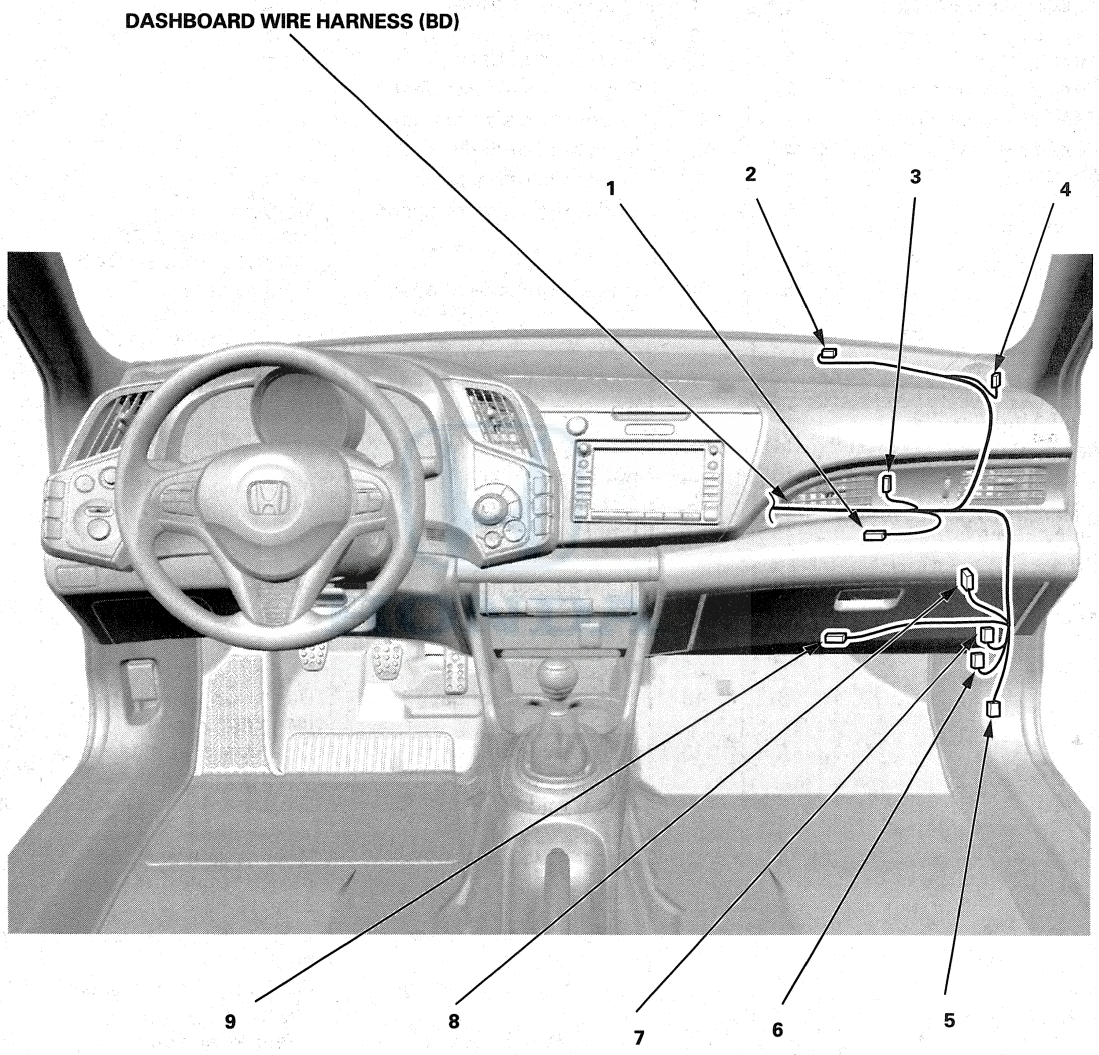
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Connector to Harness Index (cont'd)

Dashboard Wire Harness (view of passenger's side) (BD)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Automatic lighting/Sunlight sensor	2	5	Right side of dash		*1
Front passenger's airbag inflator	3	4	Right side of dash		
Glove box light	1	2	Right side of dash		
HandsFreeLink control unit	8	28	Under right side of dash		*4
Passenger's footwell light	9	2	Under right side of dash		*3
Right tweeter	4	2	Right side of dash		
Sunlight sensor	2	2	Right side of dash		*2
C101	6	4	Under right side of dash	Right engine compartment wire harness (see page 22-30)	
C103	5	20	Under right side of dash	Right engine compartment wire harness (see page 22-30)	
C123	7	23	Under right side of dash	Passenger's door wire harness (see page 22-61)	

*1: With auto light
*2: Without auto light
*3: With footwell light
*4: With HandsFreeLink system

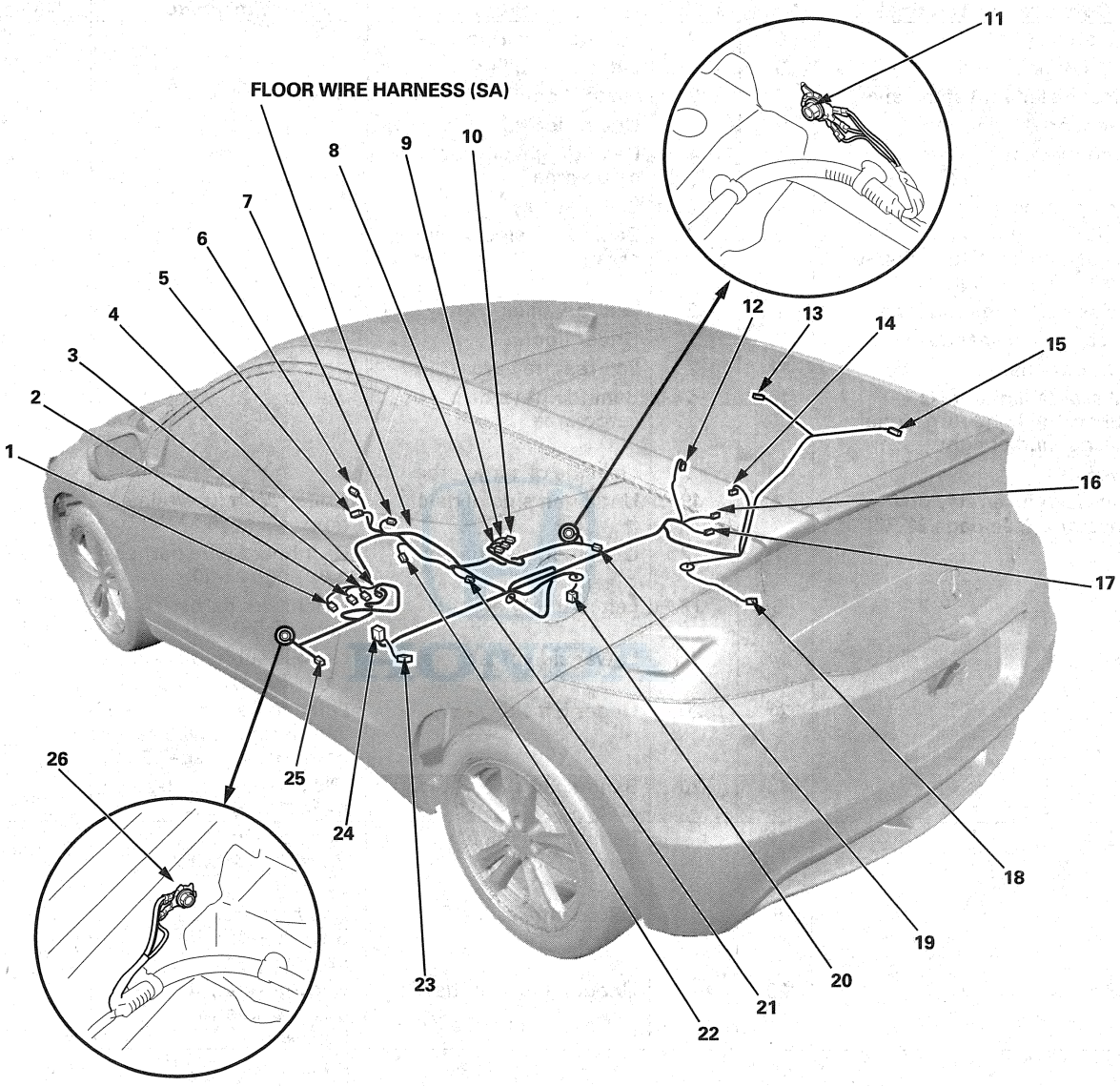


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Connector to Harness Index (cont'd)

Floor Wire Harness (SA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat belt buckle switch	3	2	Under driver's seat		
Driver's seat belt tensioner	24	4	Left rear tray area		
Driver's side airbag inflator	2	2	Under driver's seat		
Front passenger's seat belt buckle switch	9	2	Under passenger's seat		
Front passenger's seat belt tensioner	16	4	Right rear tray area		
Front passenger's side airbag inflator	10	2	Under passenger's seat		
Fuel pump	20	4	Under floor		
Left side impact sensor (first)	25	4	Left side of floor		
Left side impact sensor (second)	23	2	Left rear tray area		
Park pin switch/shift lock solenoid/A/T gear position indicator panel light	22	6	Under center console		CVT
Parking brake switch	21	1	Under center console		
Passenger's door switch	12	1	Right center pillar		
Right rear speaker	14	2	Right rear tray area		
Right rear tray light	13	2	Right rear pillar		
Right-rear wheel speed sensor	18	2	Under floor		
Right side curtain airbag inflator	15	2	Right rear pillar		
Right side impact sensor (first)	19	4	Right side of floor		
Right side impact sensor (second)	17	2	Right rear tray area		
SRS unit	5	39	Under middle of dash		
C115	6	18	Under middle of dash	Dashboard wire harness (see page 22-44)	'11 model (CVT)
C115	6	13	Under middle of dash	Dashboard wire harness (see page 22-44)	'11 model (M/T)
C115	6	23	Under middle of dash	Dashboard wire harness (see page 22-44)	'12 model
C501	4	2	Under driver's seat	Driver's seat position sensor subharness (see page 22-62)	
C502	8	4	Under passenger's seat	ODS unit harness (see page 22-63)	'11 model
C502	8	8	Under passenger's seat	ODS unit harness (see page 22-63)	'12 model
C503	7	12	Under center console	Seat heater switch subharness (see page 22-66)	With seat heater
C504	1	5	Under driver's seat	Driver's seat wire harness (see page 22-64)	With seat heater
G601	11		Right side of floor	Body ground, via floor wire harness	
G602	26		Left side of floor	Body ground, via floor wire harness	

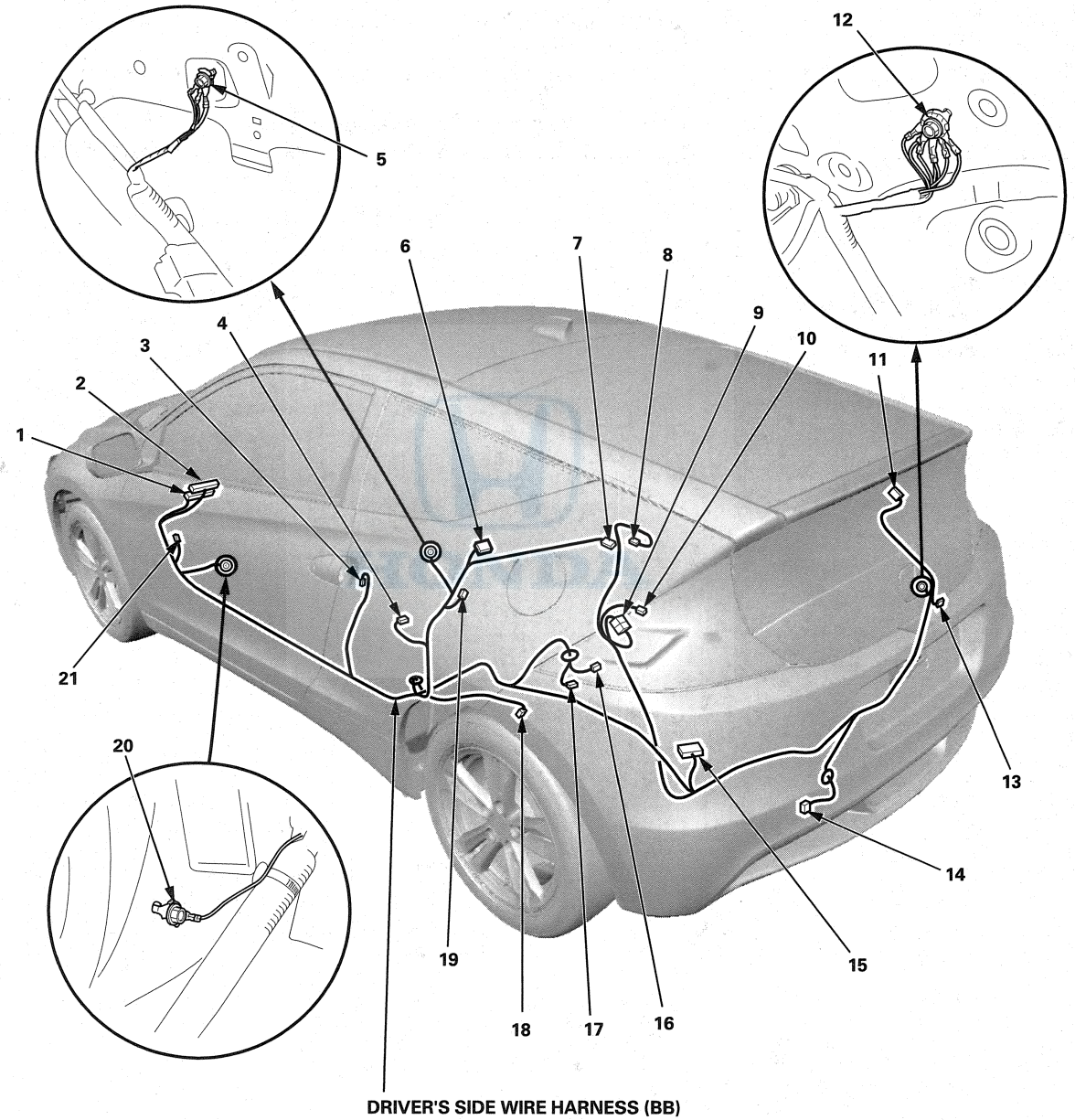

FLOOR WIRE HARNESS (SA)
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Connector to Harness Index (cont'd)

Driver's Side Wire Harness (BB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Cargo area light	8	2	Left side of cargo area		
Driver's door switch	3	1	Left center pillar		
EVAP canister vent shut valve	17	2	Under floor		
FTP sensor	16	3	Under floor		
IPU module fan	13	4	Behind right side of cargo area		
Left rear speaker	4	2	Left rear tray area		
Left rear taillight/brake light/back-up light/ turn signal light/side marker light	9	6	Behind left side of cargo area		
Left side curtain airbag inflator	7	2	Left rear pillar		
Left-rear wheel speed sensor	18	2	Under floor		
Noise condenser	19	2	Left rear tray area		
Right rear taillight/brake light/back-up light/ turn signal light/side marker light	11	6	Behind right side of cargo area		
Subwoofer	10	2	Left side of cargo area		
Under-dash fuse/relay box connector D (see page 22-70)	2	49	Under left side of dash	Under-dash fuse/relay box	
C106	1	12	Under left side of dash	Dashboard wire harness (see page 22-40)	
C107	6	12	Left rear tray area	Hatch wire harness (see page 22-58)	
C109	14	2	Lower side of tailgate	License subharness (see page 22-58)	
C110	21	20	Under left side of dash	Left engine compartment wire harness (see page 22-36)	
C111	15	20	Behind left side of cargo area	IPU wire harness (see page 22-54)	
G701	12		Behind right side of cargo area	Body ground, via driver's side wire harness	
G702	5		Left rear tray area	Body ground, via driver's side wire harness	
G703	20		Under left side of dash	Body ground, via driver's side wire harness	

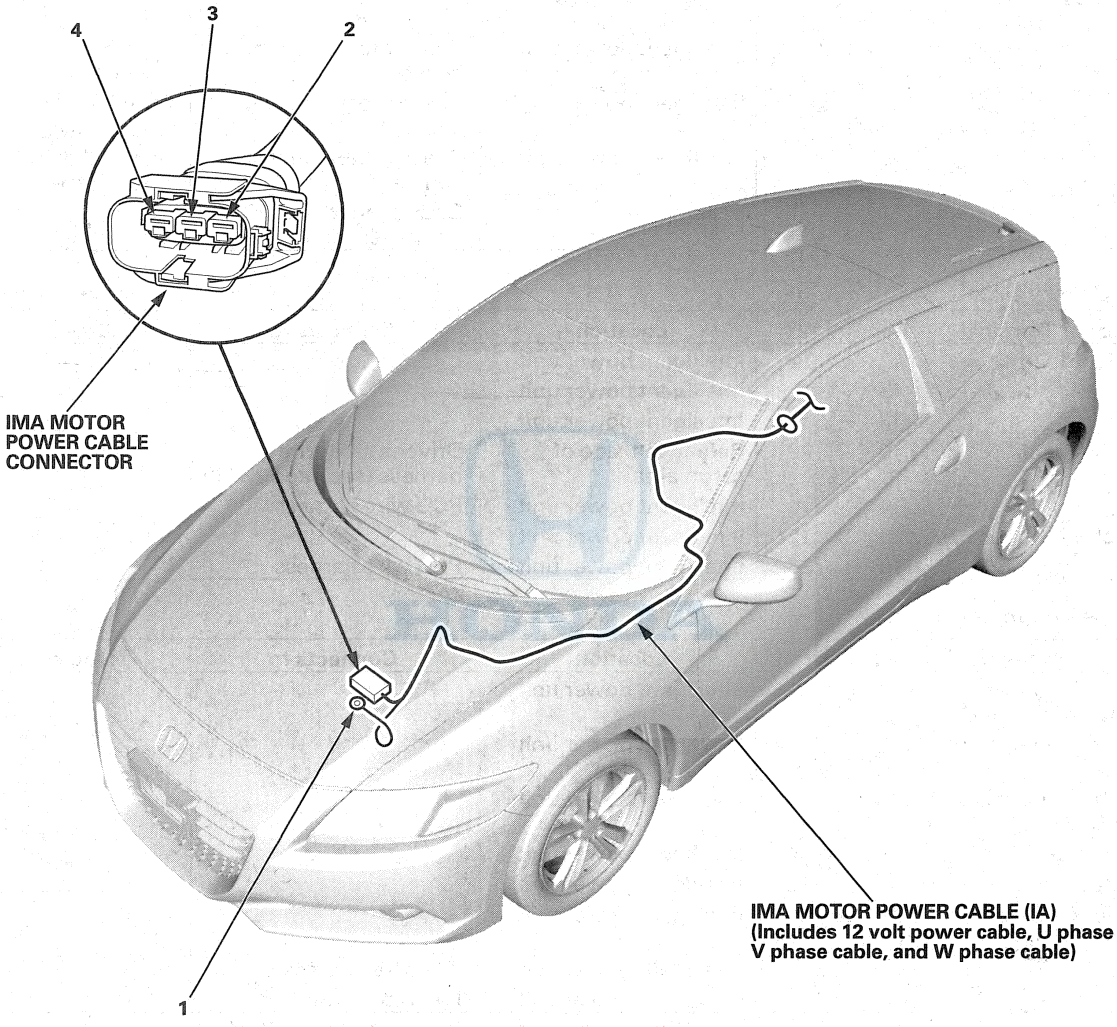

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DRIVER'S SIDE WIRE HARNESS (BB)

(cont'd)

Connector to Harness Index (cont'd)

IMA Motor Power Cable (engine compartment branch) (IA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T2	1		Left side of engine compartment	Battery terminal fuse box (see page 22-69)	Terminal of DC-DC converter cable
T15	4		Under air cleaner	IMA motor	Terminal of U phase cable
T16	3		Under air cleaner	IMA motor	Terminal of V phase cable
T17	2		Under air cleaner	IMA motor	Terminal of W phase cable


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IMA MOTOR
POWER CABLE
CONNECTOR
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IMA MOTOR POWER CABLE (IA)
(Includes 12 volt power cable, U phase cable,
V phase cable, and W phase cable)

(cont'd)

Connector to Harness Index (cont'd)

IMA Motor Power Cable (cargo area branch) (IA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T11	13		Intelligent power unit	DC-DC converter	Terminal of DC-DC converter cable
T12	8		Intelligent power unit	Phase motor current sensor	Terminal of U phase cable
T13	9		Intelligent power unit	Phase motor current sensor	Terminal of V phase cable
T14	10		Intelligent power unit	Phase motor current sensor	Terminal of W phase cable
G5	11		Intelligent power unit	Body ground, via DC-DC converter cable	

IPU Wire Harness (IB)

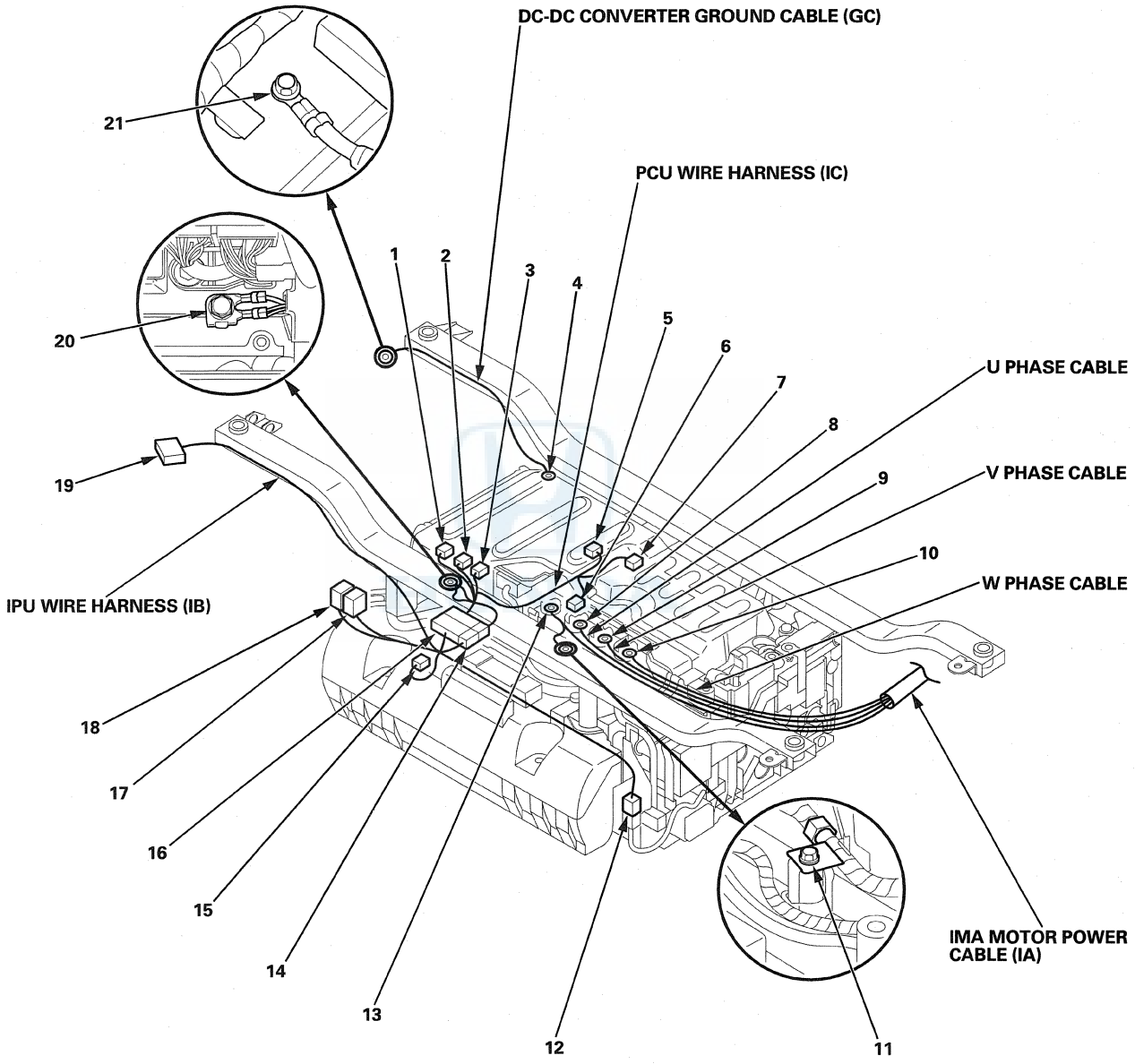
Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Junction board	12	12	Intelligent power unit		
MCM relay 1	17	4	Intelligent power unit		
MCM relay 2	18	4	Intelligent power unit		
C111	19	20	Behind left side of cargo area	Driver's side wire harness (see page 22-50)	
C401	14	4	Intelligent power unit	PCU wire harness	
C402 (Junction connector)	15	12	Intelligent power unit		
C403	16	28	Intelligent power unit	PCU wire harness	

PCU Wire Harness (IC)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Motor control module connector A	1	31	Intelligent power unit		
Motor control module connector B	2	24	Intelligent power unit		
Motor control module connector C	3	22	Intelligent power unit		
DC-DC converter	5	4	Intelligent power unit		
MPI module	7	12	Intelligent power unit		
Phase motor current sensor	6	9	Intelligent power unit		
C401	14	4	Intelligent power unit	IPU wire harness	
C403	16	28	Intelligent power unit	IPU wire harness	
G901	20		Intelligent power unit	Body ground, via PCU wire harness	

DC-DC Converter Ground Cable (GC)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
T18	4		Intelligent power unit	DC-DC converter	
G4	21		Intelligent power unit	Body ground, via DC-DC converter ground cable	


DC-DC CONVERTER GROUND CABLE (GC)
PCU WIRE HARNESS (IC)
U PHASE CABLE
V PHASE CABLE
W PHASE CABLE
IPU WIRE HARNESS (IB)
IMA MOTOR POWER CABLE (IA)
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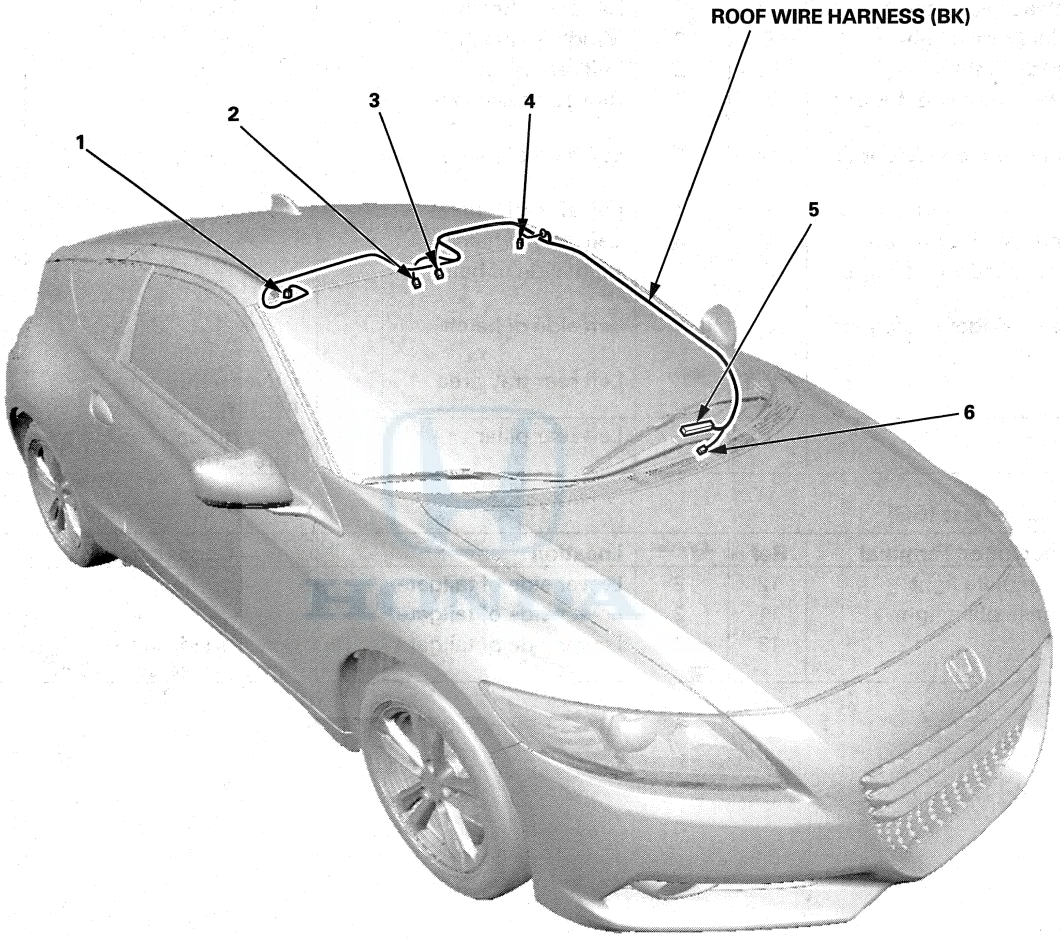
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Connector to Harness Index (cont'd)

Roof Wire Harness (BK)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's vanity mirror light	4	2	Front of roof		*1
Passenger's vanity mirror light	1	2	Front of roof		*1
Individual map light	3	3	Front of roof		
Interior light switch	2	10	Front of roof		*2
Interior light switch	2	4	Front of roof		*3
Under-dash fuse/relay box connector H (see page 22-70)	6	8	Under left side of dash	Under-dash fuse/relay box	
C116	5	13	Under left side of dash	Dashboard wire harness (see page 22-40)	*2
C116	5	2	Under left side of dash	Dashboard wire harness (see page 22-40)	*3

*1: With vanity mirror light
*2: With ambient light
*3: Without ambient light



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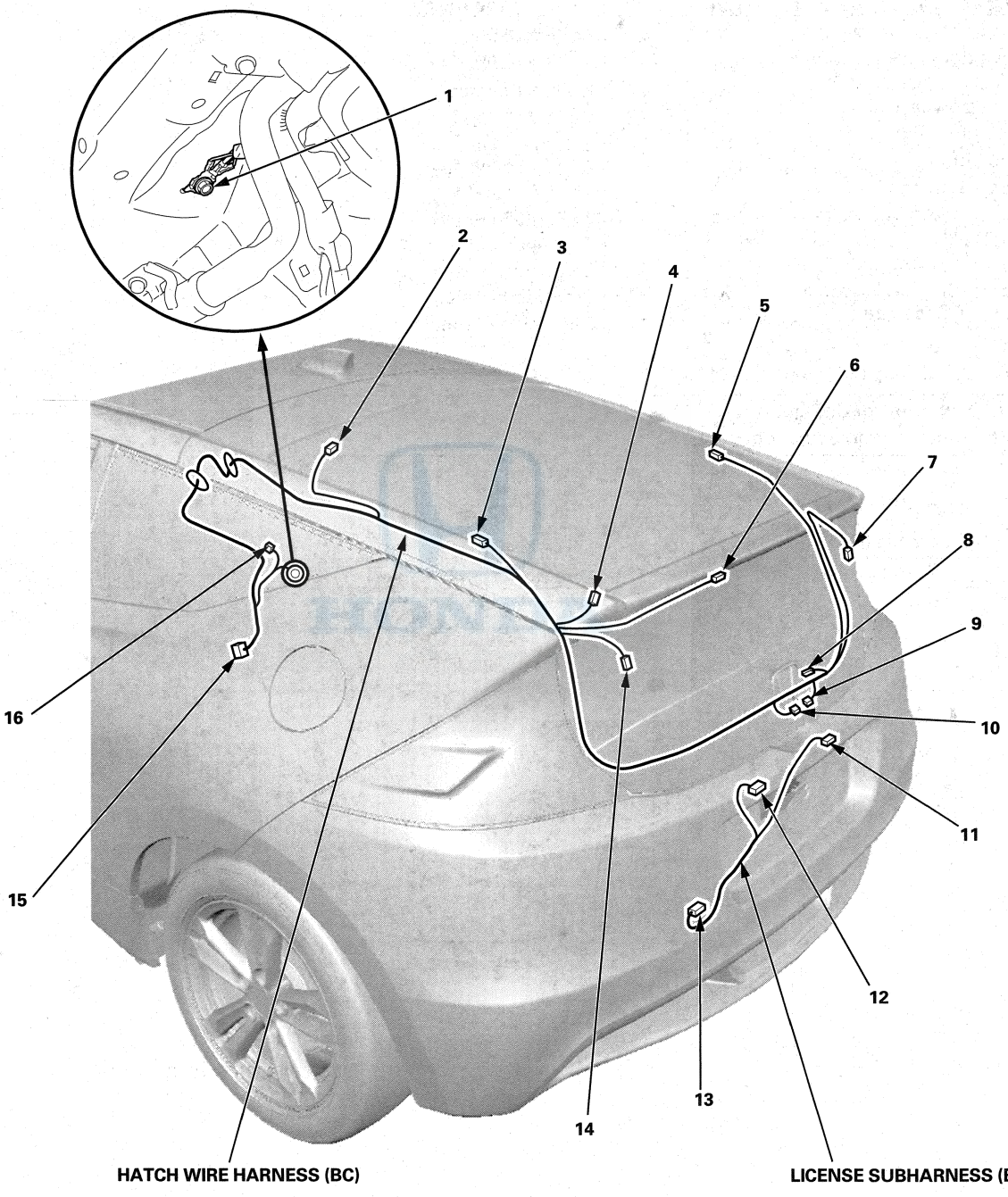
Connector to Harness Index (cont'd)

Hatch Wire Harness (BC)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Hatch latch switch	9	2	Middle of hatch		
Hatch outer handle switch	8	2	Middle of hatch		
Hatch release actuator	10	2	Middle of hatch		
High mount brake light	6	2	Middle of hatch		
Left rear tray light	16	2	Left rear pillar		
Lower rear window defogger (−)	7	1	Right side of hatch		
Lower rear window defogger (+)	14	1	Left side of hatch		
Rear antenna ground	2	1	Left side of hatch		
Rear window wiper motor	4	4	Left side of hatch		
Upper rear window defogger (−)	5	1	Right side of hatch		
Upper rear window defogger (+)	3	1	Left side of hatch		
C107	15	12	Left rear tray area	Driver's side wire harness (see page 22-50)	
G801	1		Left rear pillar	Body ground, via Hatch wire harness	

License Subharness (BG)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Left license plate light	12	2	Lower side of tailgate		
Right license plate light	11	2	Lower side of tailgate		
C109	13	2	Lower side of tailgate	Driver's side wire harness (see page 22-50)	


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HATCH WIRE HARNESS (BC)
LICENSE SUBHARNESS (BG)

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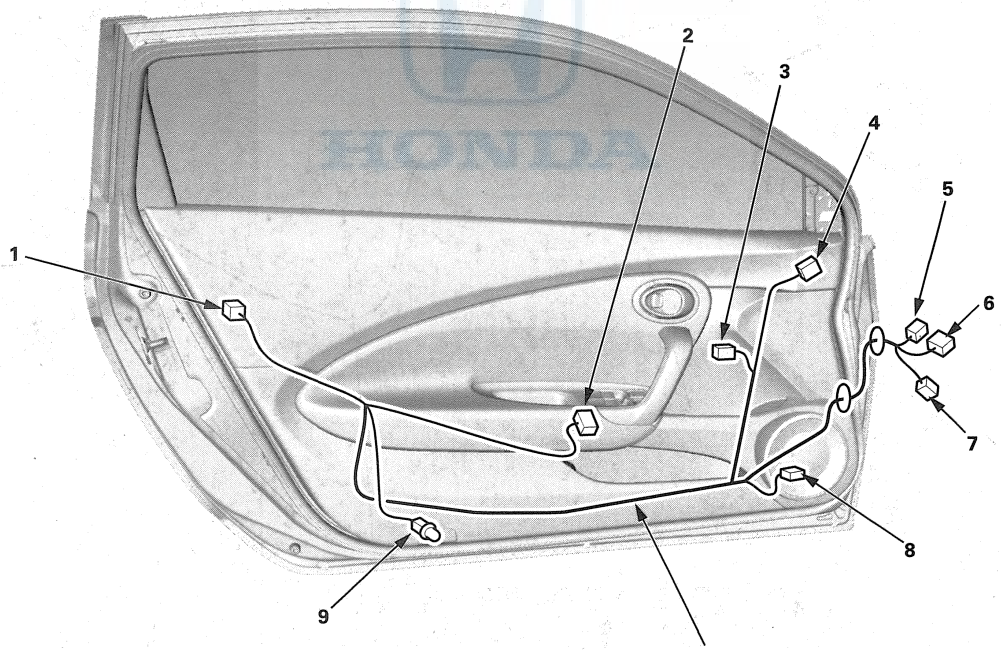
Connector to Harness Index (cont'd)

Driver's Door Wire Harness (DA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's door courtesy light	9	2	Driver's door		
Driver's door lock actuator/knob switch	1	10	Driver's door		
Driver's power window motor	3	6	Driver's door		
Driver's door speaker	8	2	Driver's door		
Left power mirror	4	13	Driver's door		*1
Left power mirror	4	6	Driver's door		*2
Power window master switch	2	22	Driver's door		
Under-dash fuse/relay box connector F (see page 22-70)	5	12	Under left side of dash	Under-dash fuse/relay box	
Under-dash fuse/relay box connector G (see page 22-70)	6	6	Under left side of dash	Under-dash fuse/relay box	
C114	7	18	Under left side of dash	Dashboard wire harness (see page 22-40)	

*1: With power mirror defogger

*2: Without power mirror defogger

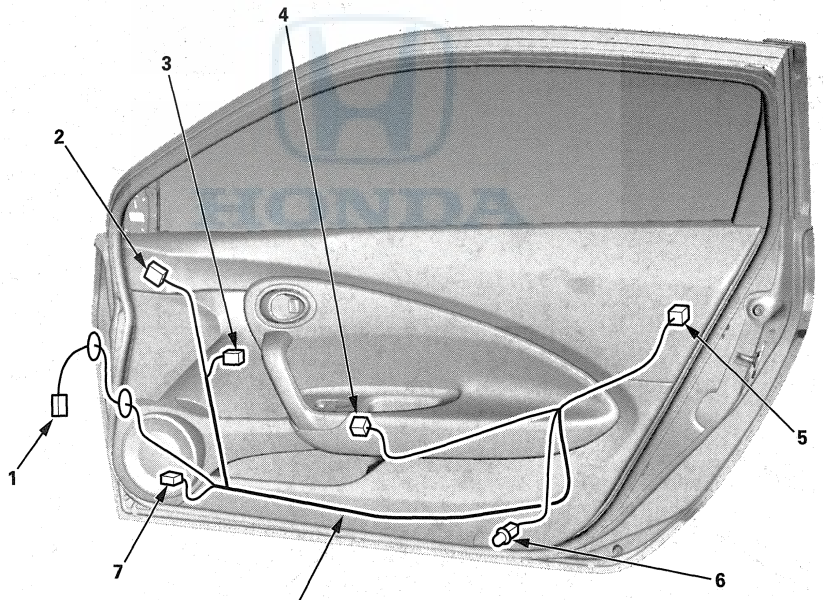


DRIVER'S DOOR WIRE HARNESS (DA)

Passenger's Door Wire Harness (DB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Passenger's door courtesy light	6	2	Passenger's door		
Passenger's door lock actuator/knob switch	5	10	Passenger's door		
Passenger's power window motor	3	2	Passenger's door		
Passenger's power window switch	4	8	Passenger's door		
Passenger's door speaker	7	2	Passenger's door		
Right power mirror	2	13	Passenger's door		*1
Right power mirror	2	6	Passenger's door		*2
C123	1	23	Under right side of dash	Dashboard wire harness (see page 22-46)	

*1: With power mirror defogger
*2: Without power mirror defogger



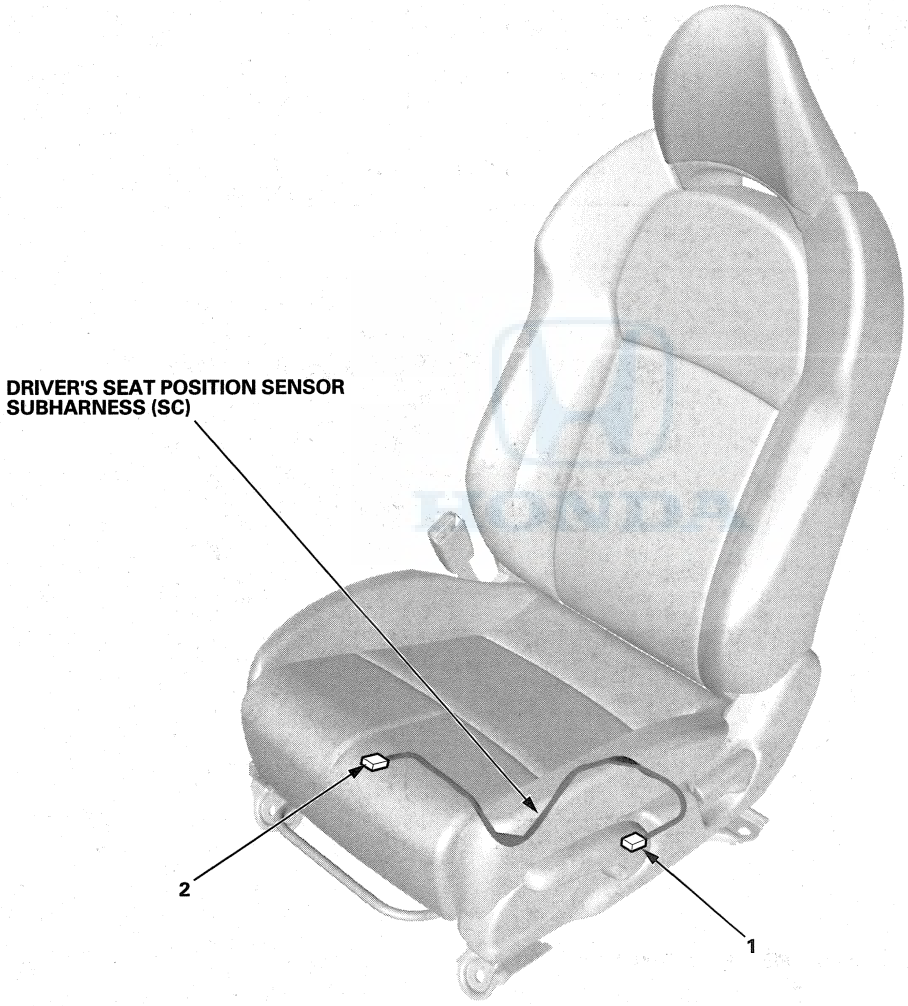
PASSENGER'S DOOR WIRE HARNESS (DB)

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Connector to Harness Index (cont'd)

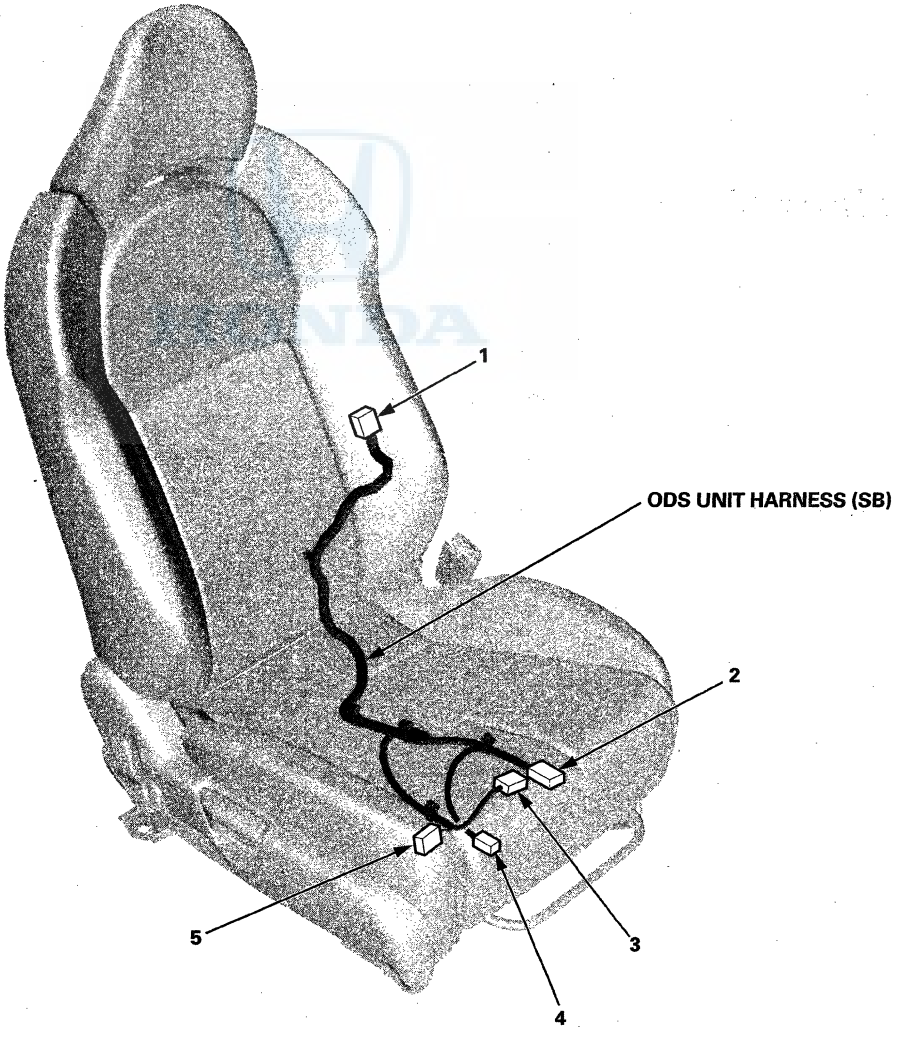
Driver's Seat Position Sensor Subharness (SC)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat position sensor	1	2	Driver's seat		
C501	2	2	Under driver's seat	Floor wire harness (see page 22-48)	



ODS Unit Harness (SB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Inner side front passenger's weight sensor	3	2	Under passenger's seat		
ODS unit	1	18	Left side of passenger's seat		
Outer side front passenger's weight sensor	5	3	Under passenger's seat		
C502	2	4	Under passenger's seat	Floor wire harness (see page 22-48)	'11 model
C502	2	8	Under passenger's seat	Floor wire harness (see page 22-48)	'12 model
C557	4	5	Under passenger's seat	Passenger's seat wire harness (see page 22-65)	With seat heater

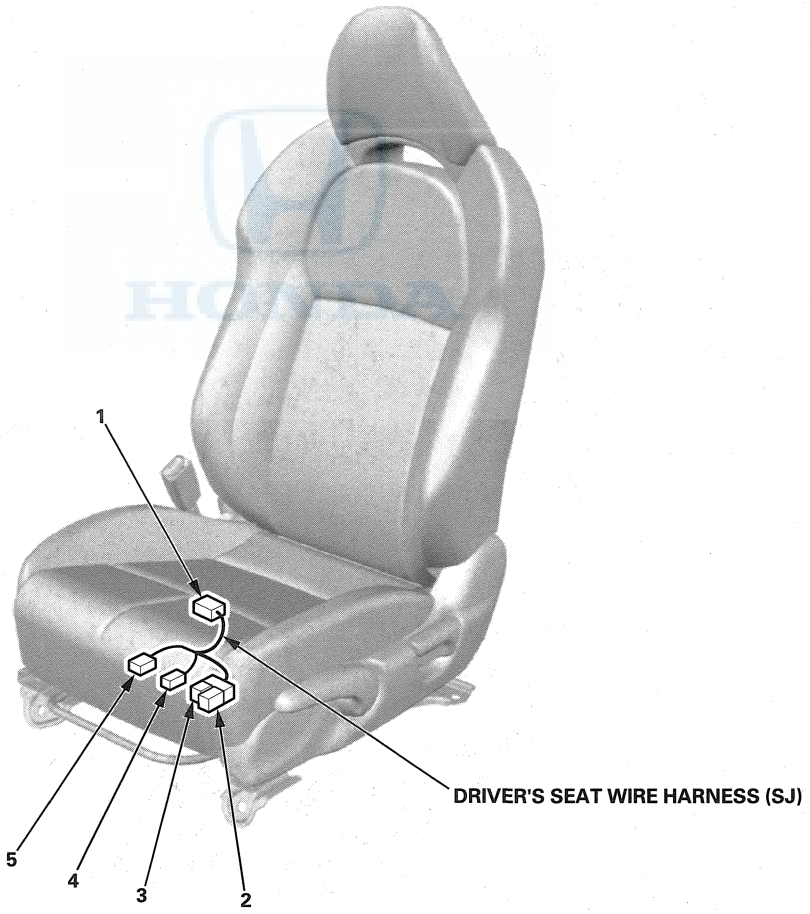


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Connector to Harness Index (cont'd)

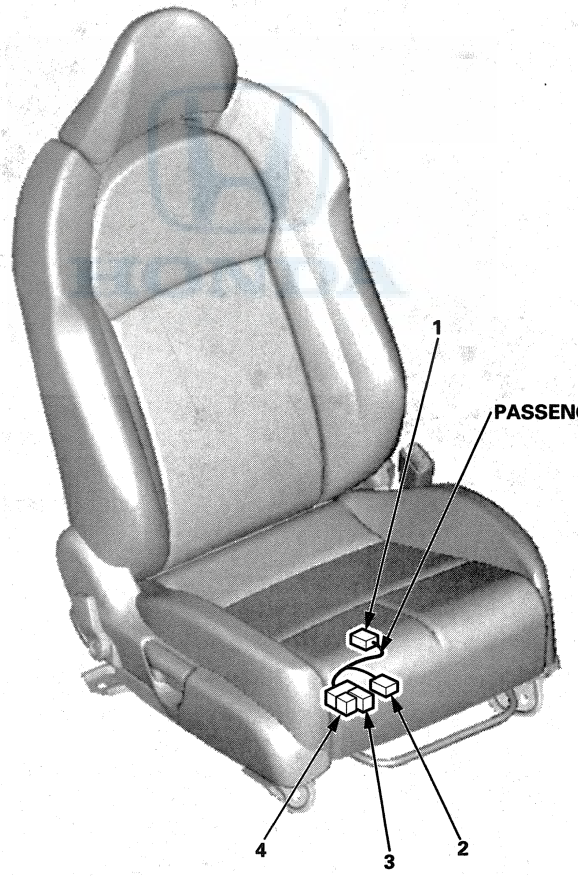
Driver's Seat Wire Harness (SJ)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat cushion heater	4	4	Under driver's seat		
Driver's seat heater relay (high)	3	4	Under driver's seat		
Driver's seat heater relay (low)	2	5	Under driver's seat		
Driver's seat-back heater	1	2	Under driver's seat		
C504	5	5	Under driver's seat	Floor wire harness (see page 22-48)	



Passenger's Seat Wire Harness (SK)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Passenger's seat cushion heater	1	4	Under passenger's seat		
Passenger's seat heater relay (high)	4	4	Under passenger's seat		
Passenger's seat heater relay (low)	3	5	Under passenger's seat		
C557	2	5	Under passenger's seat	ODS unit harness (see page 22-63)	

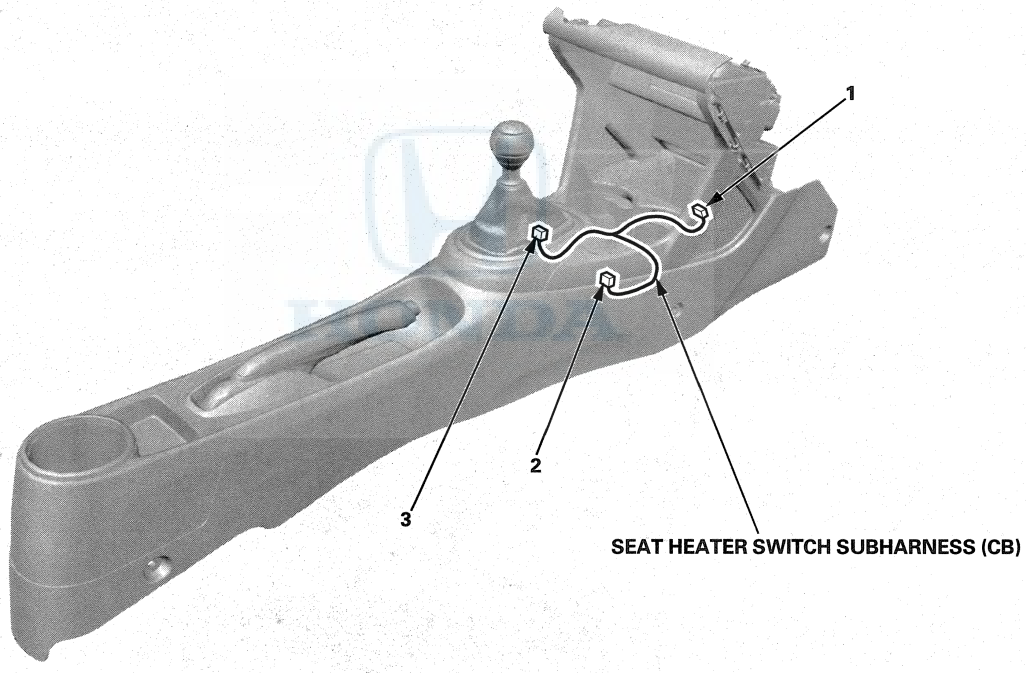


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Connector to Harness Index (cont'd)

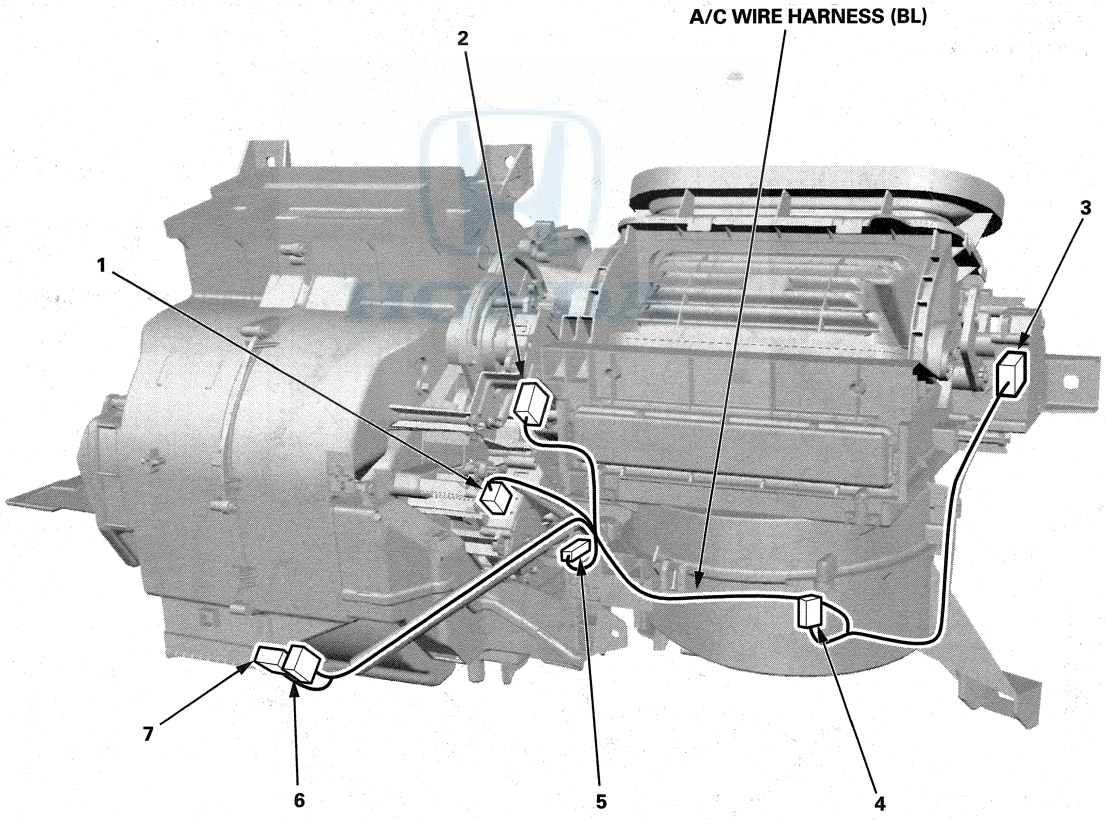
Seat Heater Switch Subharness (CB)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Driver's seat heater switch	3	6	Under center console		
Passenger's seat heater switch	2	7	Under center console		
C503	1	12	Under center console	Floor wire harness (see page 22-48)	



A/C Wire Harness (BL)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Air mix control motor	1	7	Under middle of dash		
Blower motor	4	2	Under right side of dash		
Mode control motor	2	7	Under middle of dash		
Power transistor	5	4	Under middle of dash		
Recirculation control motor	3	7	Under right side of dash		
C113	6	2	Under middle of dash	Dashboard wire harness (see page 22-44)	
C117	7	16	Under middle of dash	Dashboard wire harness (see page 22-44)	



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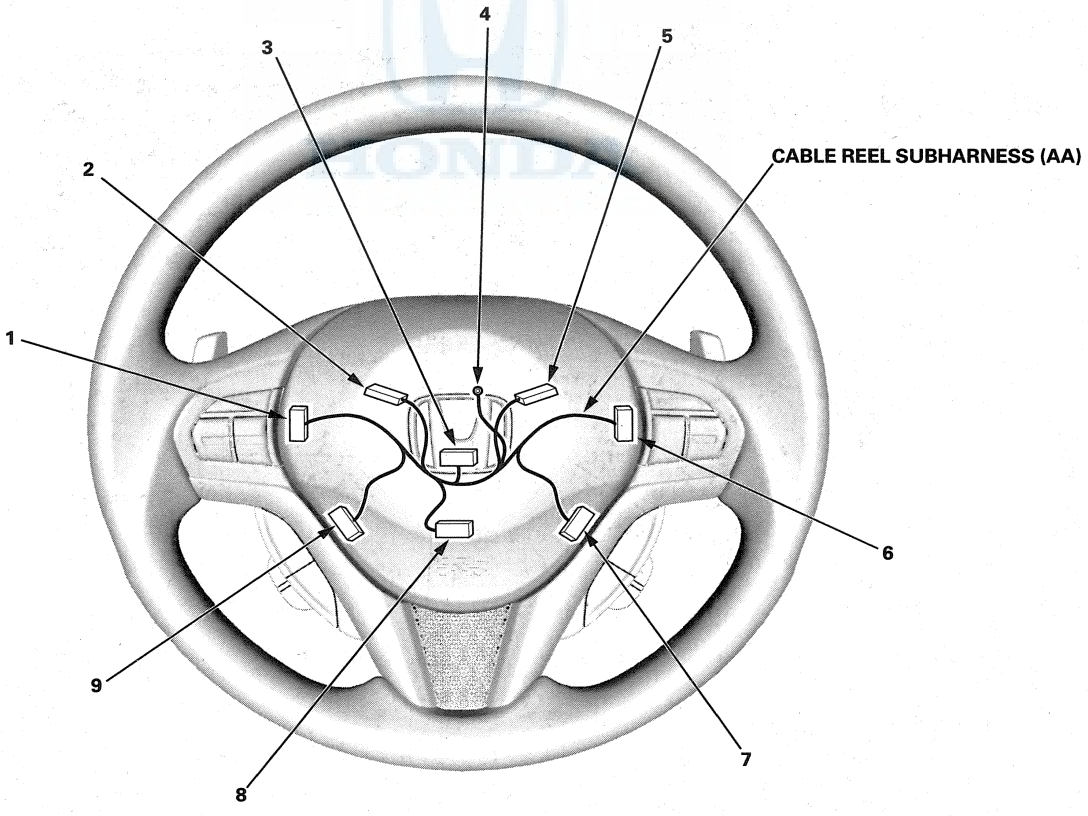
Connector to Harness Index (cont'd)

Cable Reel Subharness (AA)

Connector or Terminal	Ref	Cavities	Location	Connects to	Notes
Audio remote switch	1	12	Steering wheel		
Cable reel	3	20	Steering wheel		
Cruise control combination switch	6	12	Steering wheel		
HFL-navigation voice control switch	9	5	Steering wheel		*1
HFL switch	9	5	Steering wheel		*2
Horn switch	8	1	Steering wheel		
Multi-information switch	7	6	Steering wheel		
Paddle shifter − (Downshift switch)	2	4	Steering wheel		CVT
Paddle shifter + (Upshift switch)	5	4	Steering wheel		CVT
T10	4	1	Steering wheel		

*1: With navigation

*2: With HandsFreeLink system

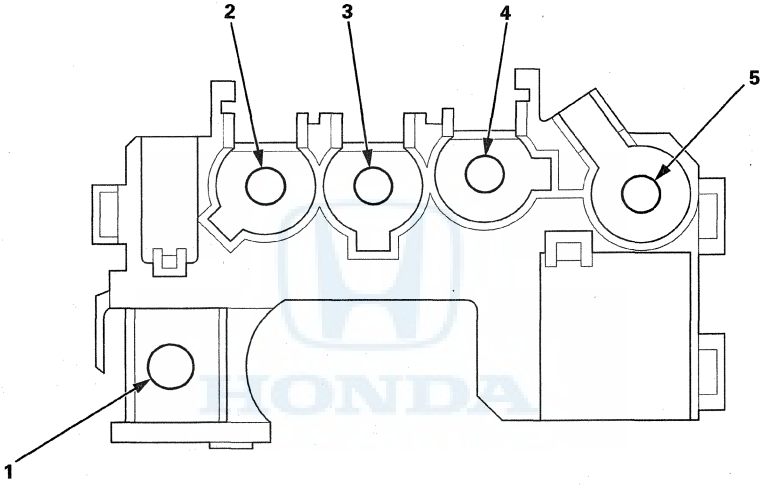


Fuse/Relay Boxes

Connector to Fuse/Relay Box Index

Battery Terminal Fuse Box

Socket	Ref	Terminal	Connects to
T1	1	———	Battery terminal, Starter M/T (see page 22-16) CVT (see page 22-18)
T2	2	———	DC-DC converter cable (included in the IMA motor power cable) (see page 22-52)
T3	3	———	Left engine compartment wire harness (see page 22-36)
T4	4	———	Left engine compartment wire harness (see page 22-36)
T5	5	———	Left engine compartment wire harness (see page 22-36)

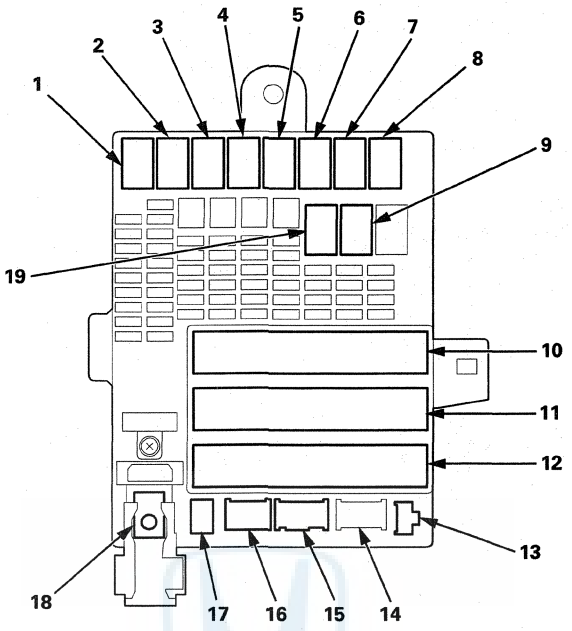


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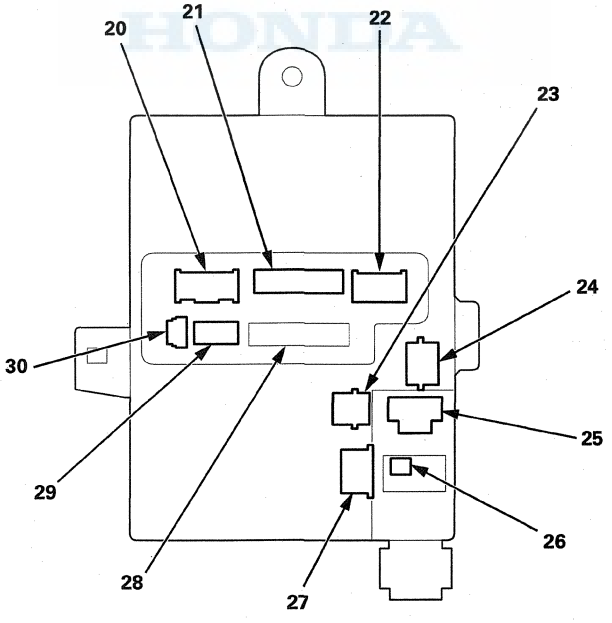
Connector to Fuse/Relay Box Index (cont'd)

Under-Dash Fuse/Relay Box

Socket	Ref	Terminals	Connects to
A	10	36	Right engine compartment wire harness (see page 22-30)
A/F sensor relay	3	4	
B	11	36	Left engine compartment wire harness (see page 22-34)
Blower motor relay	2	4	
D	12	49	Driver's side wire harness (see page 22-50)
Electronic throttle control system (ETCS) control relay	7	4	
F	17	12	Driver's door wire harness (see page 22-60)
G	16	6	Driver's door wire harness (see page 22-60)
H	15	8	Roof wire harness (see page 22-56)
Ignition coil relay	5	4	
J (optional connector)	14	8	Not used
Lighting relay 1	4	4	
Lighting relay 2	19	4	
M (MICU service check connector)	13	3	
N	20	10	Dashboard wire harness (view of driver's side) (see page 22-38)
PGM-FI main relay 1	6	4	
Power window relay	1	4	
Q	21	34	Dashboard wire harness (view of driver's side) (see page 22-38)
R	22	8	Dashboard wire harness (view of driver's side) (see page 22-38)
Rear window defogger relay	8	4	
Starter cut relay	9	4	
T (SRS)	30	4	Dashboard wire harness (view of driver's side) (see page 22-38)
Y	29	16	Dashboard wire harness (view of driver's side) (see page 22-38)
AA	28	28	Dashboard wire harness (view of driver's side) (see page 22-38)
AB	24	3	Dashboard wire harness (view of driver's side) (see page 22-38)
AC	25	2	Dashboard wire harness (view of driver's side) (see page 22-38)
AD	23	1	Dashboard wire harness (view of driver's side) (see page 22-38)
AE	27	3	Dashboard wire harness (view of driver's side) (see page 22-38)
AF (Electrical load detector)	26	3	Dashboard wire harness (view of driver's side) (see page 22-38)
T9	18	——	Left engine compartment wire harness (see page 22-36)



View of front side



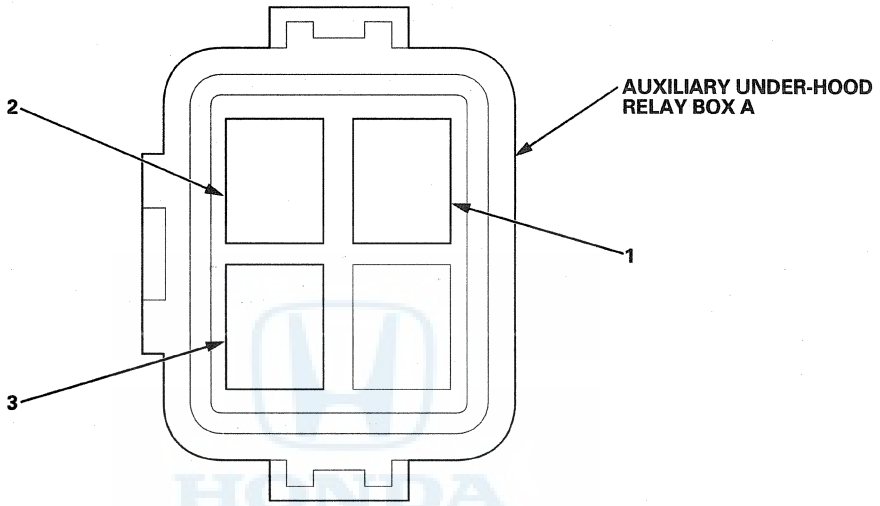
View of back side

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Connector to Fuse/Relay Box Index (cont'd)

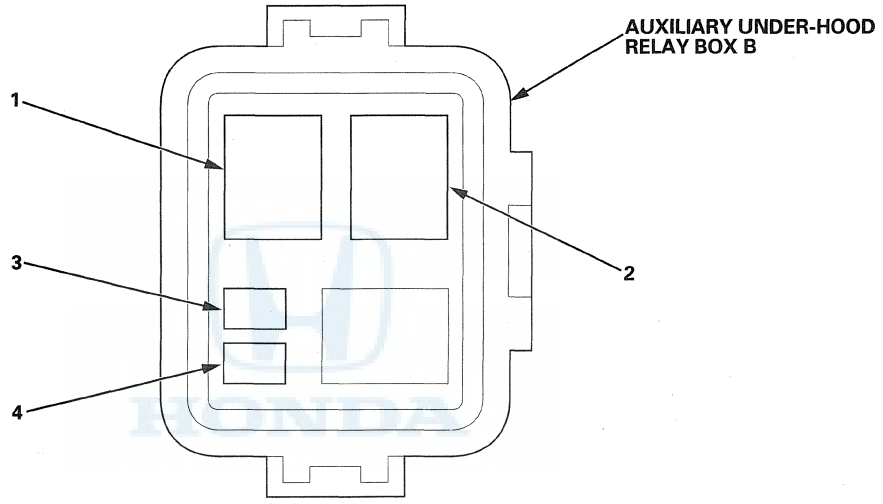
Auxiliary Under-Hood Relay Box A

Socket	Ref	Terminals	Connects to
A/C compressor clutch relay	1	4	Left engine compartment wire harness (see page 22-32)
Fan control relay	2	5	Left engine compartment wire harness (see page 22-32)
PGM-FI main relay 2	3	4	Left engine compartment wire harness (see page 22-34)



Auxiliary Under-Hood Relay Box B

Socket	Ref	Terminals	Connects to
A/C condenser fan relay	1	4	Left engine compartment wire harness (see page 22-32)
Radiator fan relay	2	4	Left engine compartment wire harness (see page 22-34)
A/C diode A	3	2	Left engine compartment wire harness (see page 22-32)
A/C diode B	4	2	Left engine compartment wire harness (see page 22-32)

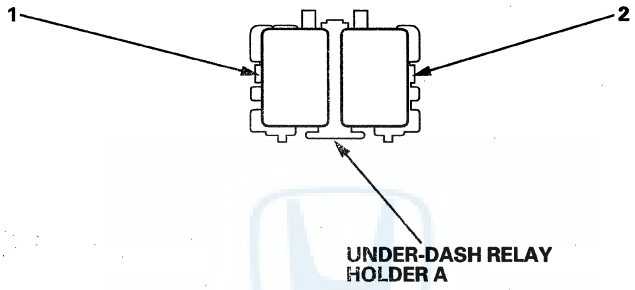


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Connector to Fuse/Relay Box Index (cont'd)

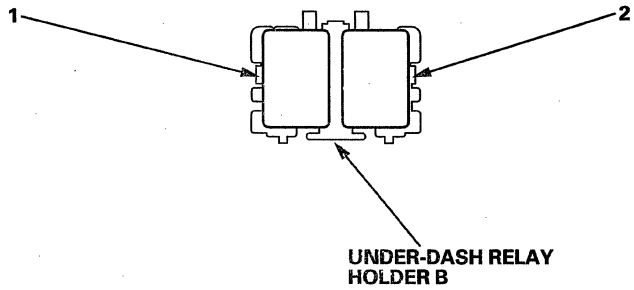
Under-Dash Relay Holder A

Socket	Ref	Terminal	Connects to
Fog light relay	1	4	Left engine compartment wire harness (see page 22-32)
Horn relay	2	4	Left engine compartment wire harness (see page 22-32)



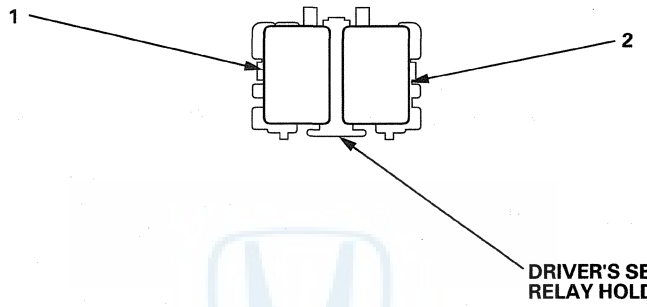
Under-Dash Relay Holder B

Socket	Ref	Terminal	Connects to
Driver's door unlock relay	1	5	Dashboard wire harness (view of driver's side) (see page 22-38)
Hatch release actuator relay	2	5	Dashboard wire harness (view of driver's side) (see page 22-38)



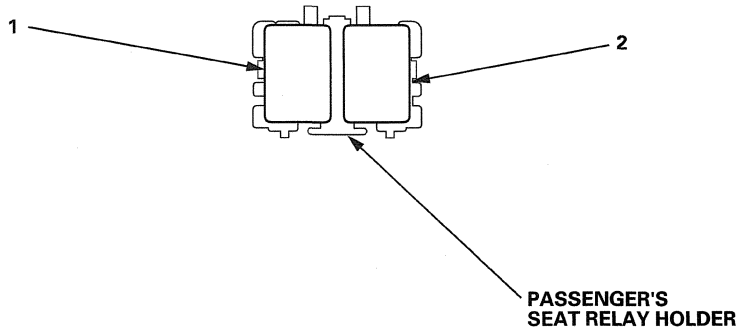
Driver's Seat Relay Holder

Socket	Ref	Terminal	Connects to
Driver's seat heater relay (high)	1	4	Driver's seat wire harness (see page 22-64)
Driver's seat heater relay (low)	2	5	Driver's seat wire harness (see page 22-64)



Passenger's Seat Relay Holder

Socket	Ref	Terminal	Connects to
Passenger's seat heater relay (high)	1	4	Passenger's seat wire harness (see page 22-65)
Passenger's seat heater relay (low)	2	5	Passenger's seat wire harness (see page 22-65)



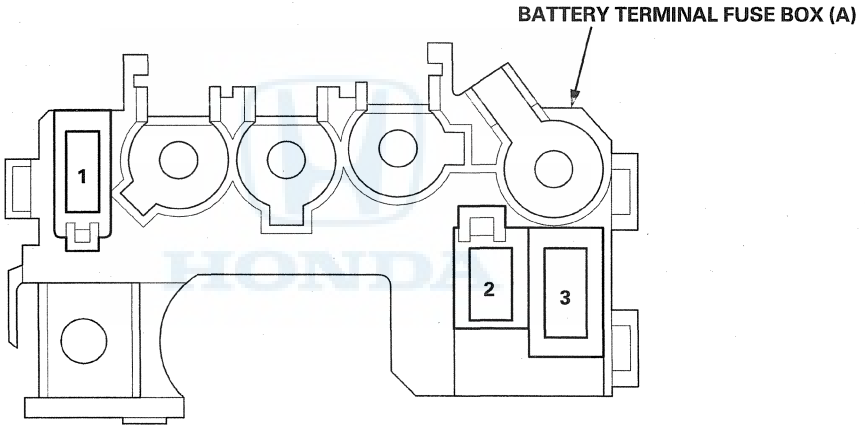
Fuse to Components Index

Battery Terminal Fuse Box (A)

Fuse Number	Amps	Component(s) or Circuit(s) Protected
A1	100 A	DC-DC converter, Under-dash fuse/relay box fuses No. B1, No. B2, No. B3, No. B9*1, No. B17 (Via power window relay), No. B25, No. B26, No. B27, No. B28*2, No. B29, No. B30, No. B32 (Via lighting relay), No. B33, No. B34 (Via lighting relay), No. B37, No. B39, No. B40*3,No. B42, No. B43, No. B45, No. B47, No. B48 (Via lighting relay), No. B51 (Via lighting relay), No. B52, No. B53, No. B57, No. B58, No. B59, and No. B60, Lighting relay 1, Lighting relay 2, Power window relay
A2	70 A	EPS control unit
A3	20 A	No. B23 and No. B24 fuses in the under-dash fuse/relay box

*1: With fog light
*2: With HID
*3: With Seat heater

NOTE: These fuses are not serviceable; replace the battery terminal fuse box as an assembly.



Under-Dash Fuse/Relay Box (B)

Fuse Number	Amps	Component(s) or Circuit(s) Protected
B1	15 A	Audio-navigation unit*1, Audio unit*2, Cargo area light, Data link connector (DLC), Driver's vanity mirror light (With vanity mirror light), Passenger's vanity mirror light (With vanity mirror light), Driver's door courtesy light (Via courtesy light diode), Passenger's door courtesy light (Via courtesy light diode), Left rear tray light, Right rear tray light, Gauge control module, Immobilizer-keyless control unit, HandsFreeLink control unit*3, Individual map light, MICU (+B BACK UP), Motor control module (MCM)
B2	7.5 A	TPMS control unit*4
B3	20 A	Power window master switch
B4	———	Not used
B5	10 A	Audio-navigation unit*1, Back-up light switch (M/T), Back-up lights (M/T), ECM (BACK LT) (M/T), Transmission range switch (CVT), MICU (BACK LT)
B6	10 A	SRS unit (VB)
B7	10 A	PCM (MISS SOL) (CVT)
B8	7.5 A	ODS unit, Front passenger's airbag cutoff indicator, SRS unit (VA)
B9	20 A	Fog light relay*5, Fog lights (Via fog light relay)*5
B10	7.5 A	A/C compressor clutch relay, Blower motor relay, Climate control unit, Driver's seat heater relay (HIGH) (Via Driver's seat heater switch)*6, Driver's seat heater relay (LOW) (Via Driver's seat heater switch)*6, Fan control relay (Via A/C diode B), Optional connector, Passenger's seat heater relay (HIGH) (Via Passenger's seat heater switch)*6, Passenger's seat heater relay (LOW) (Via Passenger's seat heater switch)*6, Power mirror switch, Radiator fan relay (Via A/C diode B), Rear window defogger relay, Recirculation control motor, Seat heater switch indicators*6, 3-mode switch
B11	7.5 A	EPS control unit, VSA modulator-control unit (MTR), Yaw rate-acceleration sensor
B12	10 A	Brake pedal position switch (M/T), Idle stop switch (CVT), DC-DC converter, EVAP canister purge valve, Reverse lockout solenoid (M/T), MAF sensor, Secondary HO2S (sensor 2)
B13	20 A	Accessory power socket
B14	7.5 A	Audio-navigation unit*1, Audio unit*2, Key interlock solenoid, HandsFreeLink control unit*3, MICU (ACC), Optional connector
B15	7.5 A	MICU (IG2 DAY LT)
B16	10 A	Rear window wiper motor
B17	20 A	Power window master switch, Passenger's power window motor (Via Passenger's power window switch)
B18	———	Not used
B19	———	Not used
B20	15 A	Immobilizer-keyless control unit, ECM/PCM (IG1)

*1: With navigation
*2: Without navigation
*3: With HandsFreeLink system
*4: With TPMS
*5: With fog lights
*6: With seat heater

(cont'd)

Fuse to Components Index (cont'd)

Under-Dash Fuse/Relay Box (B)

Fuse Number	Amps	Component(s) or Circuit(s) Protected
B21	15 A	MICU (IG1 WASHER MTR)
B22	7.5 A	Electrical load detector (ELD), Gauge control module, Motor control module (MCM) (IG1), Shift lock solenoid (CVT), TPMS control unit*5
B23	10 A	MICU (+B HAZARD) (Via hazard warning switch)
B24	10 A	High mount brake light (Via brake pedal position switch), Brake lights (Via brake pedal position switch), MICU (+B HORN), ECM/PCM (BKSW) (Via brake pedal position switch), Low horn (Via horn relay), Horn relay
B25	20 A	Stereo amplifier*1
B26	10 A	A/F sensor (Via A/F sensor relay), A/F sensor relay, No. 31 (7.5 A) fuse (Via A/F sensor relay)
B27	20 A	MICU (+B DOOR LOCK)
B28	20 A	MICU (+B H/L MAIN)
B29	10 A	MICU (+B PARKING LT)
B30	30 A	Radiator fan motor (Via radiator fan relay)
B31	7.5 A	Engine oil level sensor, A/C condenser fan relay (Via A/C diode A)
B32	15 A	Right HID unit*2
	10 A	Right headlight (Low beam)*3
B33	15 A	Ignition coil relay, Ignition coils (Ignition coil relay)
B34	10 A	Left headlight (High beam)*2, Left headlight (Low beam)*3
B35	7.5 A	Passenger's door lock actuator
B36	10 A	Driver's door lock actuator
B37	30 A	VSA modulator-control unit (FSR+B)
B38	———	Not used
B39	15 A	CKP sensor*4, CMP sensor*4, Electronic throttle control system (ETCS) control relay*4, Injectors*4, ECM/PCM(IGP)*4, PGM-FI main relay 1 (FI MAIN), PGM-FI main relay 2 (FUEL PUMP)*4
B40*6	10 A	Driver's seat heater (Via driver's seat heater relay), Passenger's seat heater (Via passenger's seat heater relay)

*1: With stereo amplifier
*2: With HID
*3: Without HID
*4: Via PGM-FI main relay 1
*5: With TPMS
*6: With seat heater

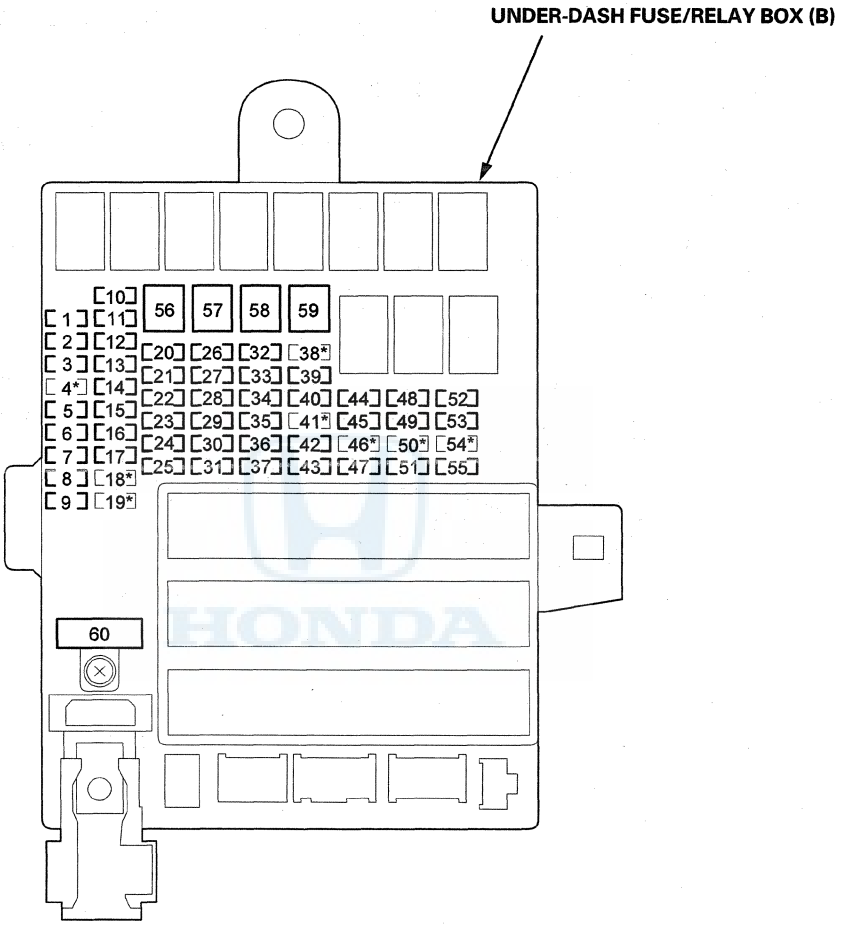
Under-Dash Fuse/Relay Box (B)

Fuse Number	Amps	Component(s) or Circuit(s) Protected
B41	———	Not used
B42	7.5 A	Motor control module (MCM) (Via MCM relay 1), MCM relay 1, MCM relay 2 (Via MCM relay 1)
B43	7.5 A	A/C compressor clutch (Via A/C compressor clutch relay)
B44	7.5 A	Starter cut relay (ST CUT), PCM (STS)
B45	7.5 A	Hatch release actuator relay, Hatch release actuator (Via hatch release actuator relay)
B46	———	Not used
B47	30 A	A/C condenser fan motor (Via A/C condenser fan relay)
B48	15 A	Left HID unit*1
	10 A	Left headlight (High beam)*2
B49	7.5 A	Passenger's door lock actuator
B50	———	Not used
B51	10 A	Right headlight (High beam)
B52	15 A	ECM/PCM (IG1ETCS) (Via electronic throttle control system (ETCS) control relay)
B53	15 A	IPU module fan (Via MCM relay 2), Motor power inverter module (Via MCM relay 2)
B54	———	Not used
B55	10 A	Left power mirror defogger*3, Right power mirror defogger*3
B56	30 A	MICU (IG1FR WIPER)
B57	30 A	Blower motor (Via blower motor relay)
B58	30 A	VSA modulator-control unit (MR+B)
B59	30 A*4	Upper rear window defogger*5 , Lower rear window defogger*5, Noise reduction condenser*5, No. 55 (10 A) fuse in the under-dash fuse/relay box*5
	40 A*3	
B60	(IGN) 50 A	Ignition switch

*1: With HID
*2: Without HID
*3: With power mirror defogger
*4: Without power mirror defogger
*5: Via rear window defogger relay

(cont'd)

Fuse to Components Index (cont'd)



*: Not used

Ground Distribution

Ground to Components Index

Ground	Component(s) or circuit(s) grounded
G1	Battery
G2	Engine
G3	Transmission housing
G4	DC-DC converter
G5	Shielding between the DC-DC converter and the battery terminal fuse box
G101	CKP sensor (LG1), CMP sensor (LG1), CVT clutch pressure control solenoid valve*1, CVT drive pulley pressure control solenoid valve*1, CVT driven pulley pressure control solenoid valve*1, Data link connector (DLC), EGR valve/EGR valve position sensor, Immobilizer-keyless control unit, Ignition coils, ECM/PCM (LG1, LG2, PG1, PG2), Rocker arm oil control solenoid, Transmission range switch*1, Neutral position switch*2 Shielding between the IMA motor rotor position sensor and the Motor control module (MCM) Shielding between the ECM/PCM and the knock sensor Shielding between the ECM/PCM and the secondary HO2S (sensor 2)
G201	Right HID unit*3, Right front side marker/turn signal light, Right headlight (High beam)*3, Right headlight (Low beam)*4, Right fog light (With fog light), Windshield washer motor, Washer fluid level switch (Canada models)
G202	VSA modulator-control unit (FSR GND, MTR GND)
G401	A/C condenser fan motor, Fan control relay, Left HID unit*3, Left front side marker/turn signal light, Left headlight (High beam)*3, Left headlight (Low beam)*4, Windshield wiper motor, Left fog light (With fog light)
G402	EPS control unit
G403	Brake fluid level switch, Security hood switch, Clutch pedal position switch A*2, Clutch pedal position switch B *2, Clutch pedal position switch C*2
G501	Blower motor relay, Driver's door lock actuator/knob switch, Driver's door unlock relay, ELD, Gauge control module (PG, SG), Hatch release actuator relay, Interior light switch, Km/h, mph change switch, Left power mirror defogger (With power mirror defogger), Left side turn signal light, MICU (PG, SG), Power mirror switch, Power window master switch, VSA OFF switch, Individual map light, Driver's vanity mirror light (With vanity mirror light), Passenger's vanity mirror light (With vanity mirror light), Left rear tray light, Right rear tray light
G502	Accessory power socket, Climate control unit, Cruise control combination switch (Via cable reel), Data link connector (DLC), Passenger's door lock actuator/knob switch, Glove box light, Ignition key switch, MICU (PG, SG), Paddle shifter +/− (Via cable reel)*1, Power transistor, Right power mirror defogger (With power mirror defogger), Right side turn signal light, Stereo amplifier (With stereo amplifier), TPMS control unit (With TPMS), Yaw rate-acceleration sensor
G503	Audio-navigation unit (With navigation), Audio unit (Without navigation), HandsFreeLink control unit (With HandsFreeLink system) Shielding between the Audio-navigation unit (Without navigation), Audio unit (Without navigation) and the Stereo amplifier (With stereo amplifier)
G504	SRS unit (SRS GND 1, 2)
G601	Driver's seat heater switch*5, Front passenger's seat belt buckle switch, ODS unit, Park pin switch*1, Passenger's seat heater*5, Passenger's seat heater relay (HIGH)*5, Passenger's seat heater relay (LOW)*5, Passenger's seat heater relay (LOW)*5, Passenger's seat heater switch*5
G602	Driver's seat belt buckle switch, Driver's seat heater*5, Driver's seat heater relay (HIGH)*5, Driver's seat heater relay (LOW)*5, Passenger's seat heater relay (LOW)*5, Driver's seat position sensor, Fuel pump
G701	IPU module fan, Left license plate light, Right back-up light, Right brake light/taillight, Right license plate light, Right rear side marker light, Right rear turn signal light
G702	Left back-up light, Left brake light/taillight, Left rear side marker light, Left rear turn signal light, Noise condenser
G703	Shielding between the ECM/PCM and the Motor control module (MCM)
G801	Hatch latch switch, Hatch outer handle switch, Hatch release actuator, High mount brake light, Lower rear window defogger, Rear antenna ground, Rear window wiper motor, Upper rear window defogger
G901	Motor control module (MCM), MPI module

*1: CVT model
*2: M/T model
*3: With HID
*4: Without HID
*5: With seat heater

Under-Dash Fuse/Relay Box

Removal and Installation

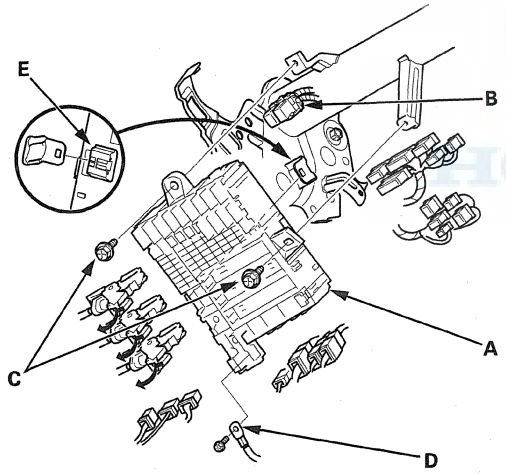
USA models

SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before doing repairs or servicing.

Removal

NOTE: The imoes unit is built into the MICU which is part of the under-dash fuse/relay box. You must register the imoes unit when replacing the under-dash fuse/relay box, or the engine will not start.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the connectors from the front side of the under-dash fuse/relay box (A).



4. Release the lock on the under-dash relay holder B (B), then slide it forward to release it from the under-dash fuse/relay box.
5. Remove the mounting bolts (C) and the terminal (D).
6. Release the lock (E), and pull the fuse/relay box away from the body.
7. Disconnect the connectors from the back side of the under-dash fuse/relay box, then remove the under-dash fuse/relay box.
8. Using the relay puller, carefully remove the relays by prying under the base of the relay (see page 22-92).

   NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start or cause other functions to fail.

Installation

9. Install the relays and connect the connectors to the under-dash fuse/relay box, then install the under-dash fuse/relay box in the reverse order of removal.
10. Install the removed parts in the reverse order of removal.
11. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
12. If the under-dash fuse/relay box is being replaced, do the following with the HDS.
    -1. Have a all registered keys and the ECM/PCM code.
    -2. Connect the HDS to the data link connector (DLC).
    -3. Turn the ignition switch to ON (II).
    -4. Select IMMOBI from the System Selection Menu, then select IMMOBILIZER SETUP.
    -5. Select REPLACE MPCS/MICU/IMOES.
    -6. Do the registration according to the instructions on the HDS screen.
13. Confirm that all systems work properly.

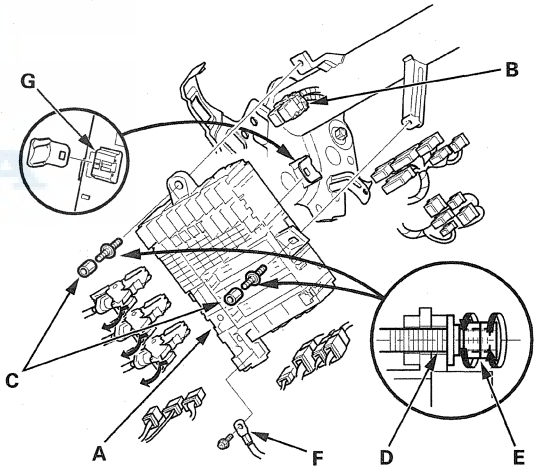
Canada models

SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before doing repairs or servicing.

Removal

NOTE: The imoes unit is built into the MICU which is part of the under-dash fuse/relay box. You must register the imoes unit when replacing the under-dash fuse/relay box, or the engine will not start.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the connectors from the front side of the under-dash fuse/relay box (A).



4. Release the lock on the under-dash relay holder B (B), then slide it forward to release it from the under-dash fuse/relay box.
5. Remove the nuts (C), remove the stud bolts (D) using double nuts (E), then remove the terminal (F).
6. Release the lock (G), and pull the fuse/relay box away from the body.
7. Disconnect the connectors from the back side of the under-dash fuse/relay box, then remove the under-dash fuse/relay box.

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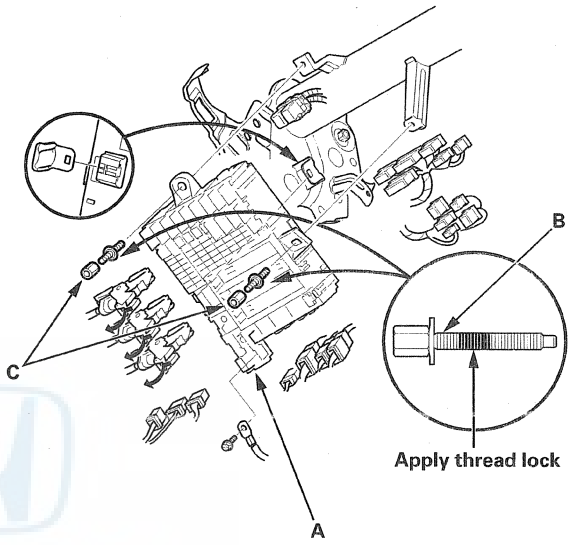
Removal and Installation (cont'd)

8. Using the relay puller, carefully remove the relays by prying under the base of the relay (see page 22-92).

   NOTE: Do not use pliers. Pliers will damage the relays, which could cause the engine to stall or not start or cause other functions to fail.

Installation

9. Install the relays and connect the connectors to the under-dash fuse/relay box (A), then install the under-dash fuse/relay box in the reverse order of removal.



10. Remove the double nuts from stud bolts (B), then install the nuts (C) to the stud bolts.

    NOTE: Apply high strength type liquid thread lock (Loctite 277 or equivalent) to the stud bolts before reinstallation.

11. Install the removed parts in the reverse order of removal.
12. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
13. If the under-dash fuse/relay box is being replaced, do the following with the HDS.

    -1. Have a all registered keys and the ECM/PCM code.
    -2. Connect the HDS to the data link connector (DLC).
    -3. Turn the ignition switch to ON (II).
    -4. Select IMMOBI from the System Selection Menu, then select IMMOBILIZER SETUP.
    -5. Select REPLACE MPCS/MICU/IMOES.
    -6. Do the registration according to the instructions on the HDS screen.

14. Confirm that all systems work properly.

12 Volt Battery Test

⚠ WARNING

A battery can explode if you do not follow the proper procedure, causing serious injury to anyone nearby.

Follow all procedures carefully and keep sparks and open flames away from the battery.

Special Tools Required

Honda Electrical System Analyzer (ED-18 Battery Tester): Model Number INB17191840*

Honda Battery Diagnostic Station (GR8): Model Number MTRGR81100P*

*To order, go to the Honda Tool and Equipment catalog on the iN, or call 888-424-6857

Software Version

Make sure you have the latest software for the ED-18 and GR8.

To check the version on the ED-18, do this:

- Press the POWER button.
- Read the version number on the screen. It should appear for about 3 seconds.
- Or you can select: Language> Options> Info> Version. The version number will appear near the top of the screen.

Write down the version number, then call Midtronics at 800-776-1995 to verify you have the latest software version.

To check the version on the GR8, do this:

- Press the POWER button.
- Read the version number on the screen. It should appear for about 5 seconds.
- Or from the Main Menu, select: Options> Info> I Version. The version number will appear on the screen.

Write down the version number, then call Midtronics at 800-776-1995 to verify you have the latest software version.

Using the ED-18 Battery Tester

NOTE: For set up, customization, and other available features, refer to the ED-18 user's manual.

1. Connect the leads to the positive and negative terminal of the battery.
2. Use the arrow keys to select the battery test, then press ENTER, then follow the prompts.

   NOTE:
   - Make sure to enter the correct cold cranking ampere (CCA) rating of the battery. You can find the CCA printed on the label on the top of the battery. If the CCA rating is not entered correctly, the test result will not be accurate.
   - Make sure you select FLOODED for the battery type.
3. Here are the four possible battery conditions:
   - Good-Battery: The battery has at least 60 percent of its charge and requires no action.
   - GR8 Diagnostic Needed: The battery voltage is below 60 percent of its state-of-charge, and the condition of the battery is unknown. Use the GR8 to charge the battery and properly diagnose it.
   - Replace Battery: The battery condition is poor. Replace it.
   - Bad Cell: There is an internal problem with the battery. Replace it.

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12 Volt Battery Test (cont'd)

Using the GR8 Battery Diagnostic Station

NOTE:

- For set up, customization, and other available features, refer to the GR8 user's manual.
- On the GR8, you can select two modes: DEALER INVENTORY or CUSTOMER VEHICLE.
  - DEALER INVENTORY: Use this mode for vehicles in dealer inventory. The GR8 charges the battery to 80% of its state-of-charge. If the battery condition is OK, the GR8 states the battery is GOOD. If you leave the GR8 attached to the battery, it changes to Top Off mode, and continues to charge the battery until it is at 100% of its state-of-charge.
  - CUSTOMER VEHICLE: In order to give a waiting customer quicker service, the GR8 charges the battery to 60% of its state-of-charge. If the battery condition is OK, the GR8 states the battery is GOOD. If you leave the GR8 attached to the battery, it changes to Top Off mode, and continues to charge the battery until it is at 100% of its state-of-charge.

1. Connect the leads to the positive and negative terminal of the battery.
2. Use the arrow keys to select Diagnostic, and follow the prompts.

   NOTE:
   - Make sure to enter the correct cold cranking ampere (CCA) rating of the battery. You can find the CCA printed on the label on the top of the battery. If the CCA rating is not entered correctly, the test result will not be accurate.
   - Make sure you select FLOODED for the battery type.
3. Here are the three possible battery conditions:
   - Good-Battery: The battery state of health is good and state of charge is at least 60%.
   - Replace Battery: The battery condition is poor. Replace it.
   - Bad Cell: There is a problem with the battery. Replace it.

12 Volt Battery Terminal Disconnection and Reconnection

Disconnection

NOTE: Some systems store data in memory that is lost when the battery is disconnected. Do the following procedures before disconnecting the battery.

1. Make sure you have the anti-theft code for the audio system or the audio-navigation unit.
2. Make sure the ignition switch is in LOCK (0).
3. Disconnect and isolate the negative cable from the battery.

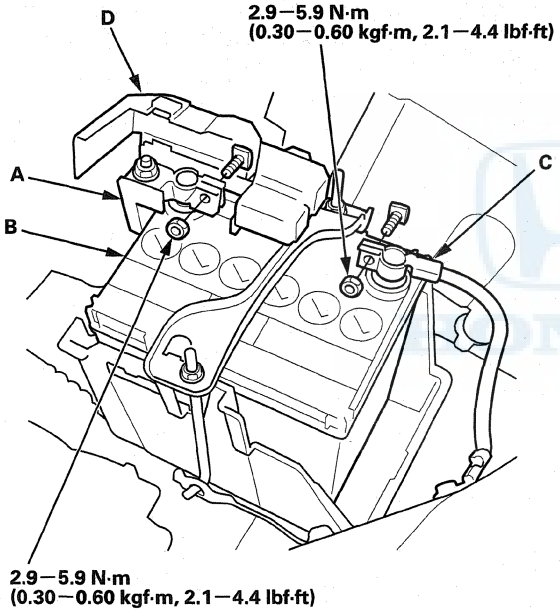
   NOTE: Always disconnect the negative battery cable from the battery first.
4. Disconnect the positive cable from the battery.

Reconnection

NOTE: Some systems store data in memory that is lost when the battery is disconnected. Do the following procedures to restore the system back to normal operation.

1. Clean the battery terminals.
2. Test the battery (see page 22-85).
3. Reconnect the positive cable (A) to the battery (B) first, then reconnect the negative cable (C) to the battery.

   NOTE: Always connect the positive cable to the battery first.



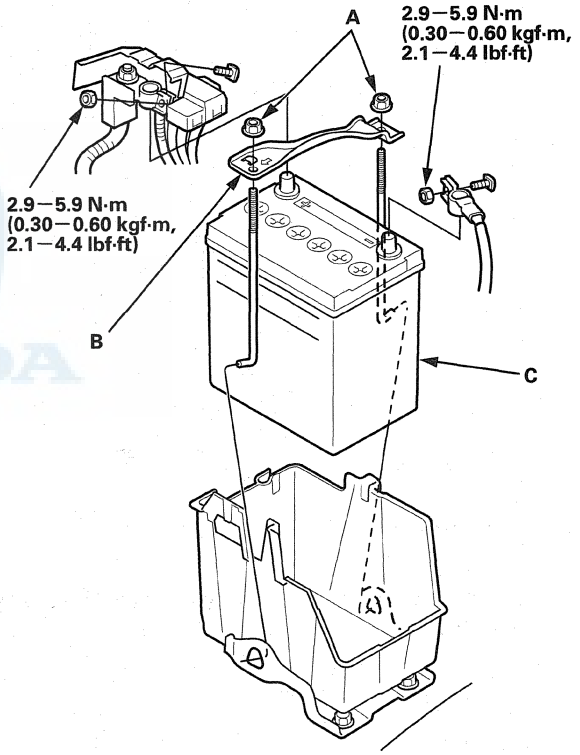
4. Apply multipurpose grease to the terminals to prevent corrosion.
5. Install the terminal cover (D).
6. Enter the anti-theft code for the audio system or audio-navigation unit.
7. Set the clock (for vehicles without navigation).

12 Volt Battery Removal and Installation

NOTE: The 12 volt battery terminal disconnection/reconnection (see page 22-86) procedure must be done before and after doing this procedure. Some systems store data in memory that is lost when the battery disconnected.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the two nuts (A) securing the battery setting plate (B), then remove the battery setting plate and the battery (C).

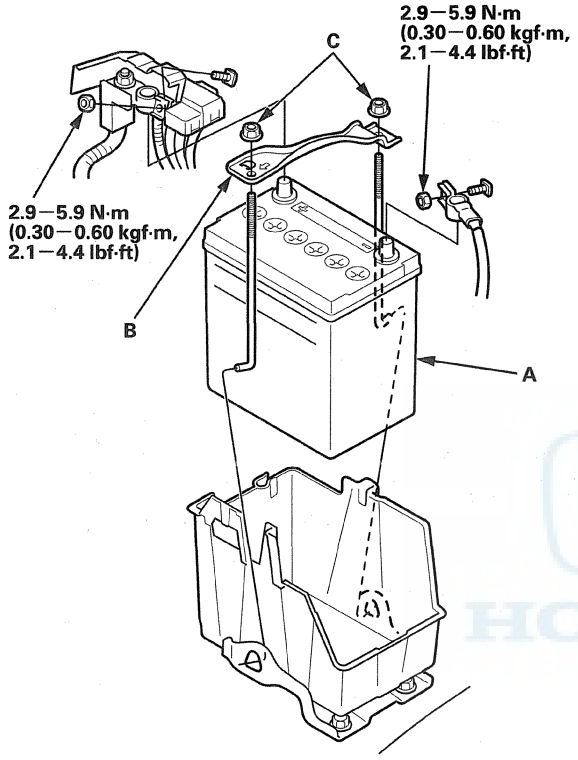


(cont'd)

12 Volt Battery Removal and Installation (cont'd)

Installation

1. Install the battery (A), then install the battery setting plate (B).



2. Tighten the two nuts (C) equally until the battery is stable.

   NOTE: Do not deform the battery hold down plate by over-tightening the nuts.

3. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

   NOTE: Make sure the battery is installed correctly, and the positive terminal and the negative terminal are not connected in reverse.

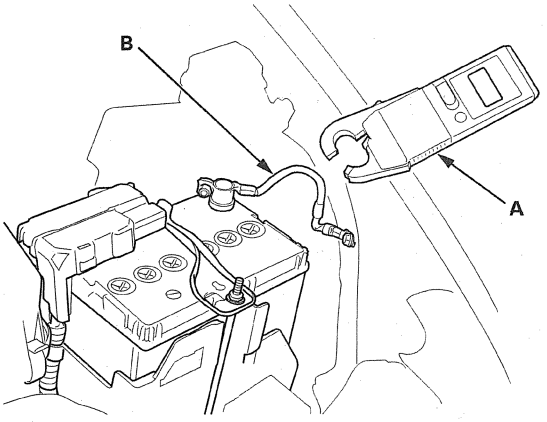
Parasitic Draw Check

Special Tools Required

LH41 AC/DC low current clamp meter, FLULH41A*
*: Available through the Honda Tool and Equipment Program, 888-424-6857

1. Make sure the battery is fully charged, and that all the vehicle's electrical accessories are turned off.
2. Open the hood.
3. Disconnect the security hood switch 2P connector to allow the security system to arm itself with the hood open.
4. Turn the ignition switch to ON (II).
5. Turn the ignition switch to LOCK (0), and remove the ignition key from the ignition switch.
6. Get out of the vehicle, and close all the doors.
7. Lock the doors with the keyless transmitter.
8. Make sure the map lights are turned off and the security alarm system is armed by confirming that the security indicator is flashing.
9. Wait at least 20 minutes.
10. Attach the LH41 AC/DC low current clamp meter (A) to the battery ground cable (B). Follow the equipment manufacturer's instructions, then measure the parasitic draw.

    NOTE: If you are using a digital multimeter, go to step 11.



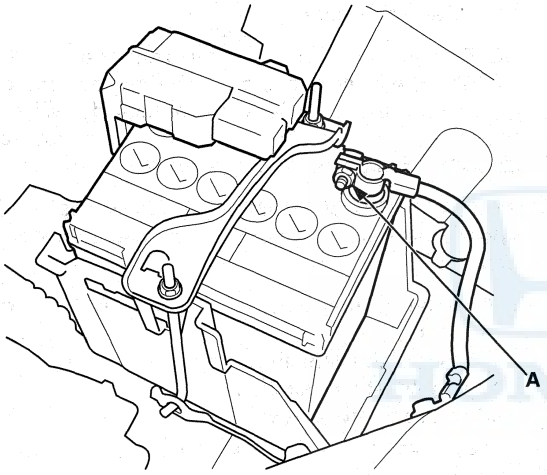
Is the parasitic draw 30 mA or less?

YES–Go to step 17.

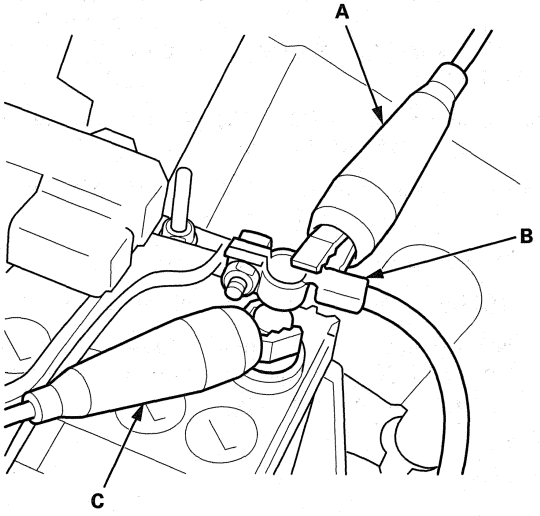
NO–Go to step 11.

11. Check the following items before measuring:
    - The multimeter dial is set to the DCA (direct current amps) range.
    - The red test probe is plugged into the red A (Amps) jack, and the black test probe is plugged into the COM jack.
    - To avoid blowing an input fuse, start by setting the range above 10 A.
12. Loosen the nut (A) of the battery negative terminal.

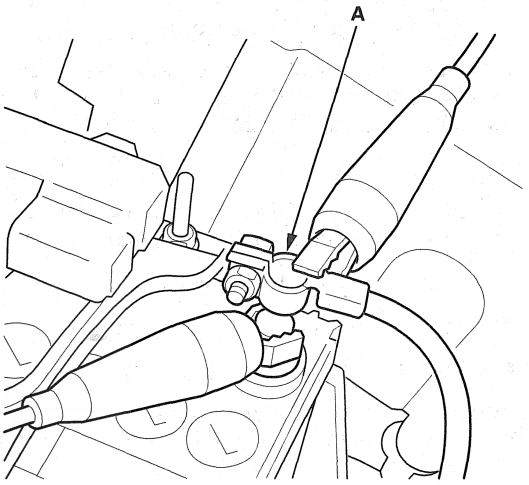
    NOTE: Be careful not to disconnect the battery ground cable terminal from the battery negative terminal.



13. Connect the red (+) test lead (A) to the negative terminal (B) of the battery ground cable.



14. Slide the negative terminal of the battery ground cable upwards from the battery negative terminal post to avoid misconnection. Then connect the black (−) test lead (C) to the battery negative terminal post.
15. Disconnect the negative terminal (A) of the battery ground cable from the battery negative terminal.



16. Measure the parasitic draw.

    Is the parasitic draw 30 mA or less?

    YES–The system is normal at this time.■

    NO–Go to step 17.
17. Check if there are any aftermarket electrical accessories installed on the vehicle.

    Are there any aftermarket electrical accessories installed?

    YES–Go to step 18.

    NO–Go to step 20.
18. Make sure that the aftermarket electrical accessories have been properly installed.

    Are the aftermarket electrical accessories installed correctly?

    YES–Go to step 19.

    NO–Repair, reinstall, or remove the aftermarket accessories, then recheck.■

(cont'd)

Parasitic Draw Check (cont'd)

19. Disconnect the aftermarket electrical accessories one at a time, then measure the parasitic draw.

    -1. Turn the ignition switch to ON (II), and then back to LOCK (0).
    -2. Get out of the vehicle and close all doors.
    -3. Wait at least 40 seconds.
    -4. Measure the parasitic draw.

    Is the parasitic draw 30 mA or less?

    YES–Replace or repair the aftermarket electrical accessory that reduced the parasitic draw to 30 mA or less when disconnected.■

    NO–Go to step 20.

20. Remove the No. B1 (15 A) fuse in the under-dash fuse/relay box, then measure the parasitic draw.

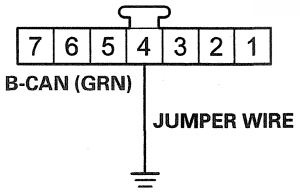
    Is the parasitic draw 19 mA or less?

    YES–Go to step 21.

    NO–Go to step 23.

21. Connect immobilizer-keyless control unit 7P connector terminal No. 4 and body ground with a jumper wire.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

22. Install the No. B1 (15 A) fuse to the under-dash fuse/relay box, then measure the parasitic draw.

    -1. Turn the ignition switch to ON (II), and then back to LOCK (0).
    -2. Get out of the vehicle and close all doors.
    -3. Wait at least 40 seconds.
    -4. Measure the parasitic draw.

    Is the parasitic draw 30 mA or less?

    YES–Disconnect the control units from the B-CAN circuit one at a time, perform steps 1—4 above, then measure the parasitic draw. Do the input test for the control unit that reduced the parasitic draw to 30 mA or less when disconnected.■

    NO–Disconnect the control units from the No. B1 (15 A) fuse circuit one at a time, perform steps 1—4 above, then measure the parasitic draw. Replace the control unit that reduced the parasitic draw to 30 mA or less when disconnected.■

23. Remove the No. B60 (IGN) (50 A) fuse in the under-dash fuse/relay box, then measure the parasitic draw.

    -1. Turn the ignition switch to ON (II), and then back to LOCK (0).
    -2. Get out of the vehicle and close all doors.
    -3. Wait at least 40 seconds.
    -4. Measure the parasitic draw.

    Is the parasitic draw 30 mA or less?

    YES–Go to step 24.

    NO–Remove the fuses from the fuse box one at a time, perform steps 1—4 above then, measure the parasitic draw in order to isolate the circuit which contains the fault. If all circuit are OK, check the starter circuits and do the starter performance test (see page 4-9).■

24. Install the No. No. B60 (IGN) (50 A) fuse in the under-dash fuse/relay box.

25. Disconnect the ignition switch 7P connector, then measure the parasitic draw.

    Is the parasitic draw 30 mA or less?

    YES–Replace the ignition switch (see page 22-100).■

    NO–Repair a short to ground in the wire between the No. B60 (IGN) (50 A) fuse in the under-dash fuse/relay box and ignition switch.■

Symptom Troubleshooting

Low or Dead Battery

NOTE: A battery might be discharged under these conditions:

- Driving a vehicle 6 miles (10 km) or less per day.
- Leaving a vehicle parked without removing the ignition key from the ignition switch.
- Leaving the vehicle idling high electrical loads such as headlight, seat heaters, wipers, rear window defogger, etc.
- Parking the vehicle with the hood unlatched prevents the security system from arming, which causes excessive parasitic draw.

1. Check the battery (see page 22-85). Recharge or replace the battery (see page 22-87) if necessary.
2. Start the engine, and check the charging system indicator.

   Does the charging system indicator go off with the engine running?

   YES–Go to step 3.

   NO–Do the charging system indicator stays on symptom troubleshooting (see page 12-200).■
3. Check the following items:
   - The hazard warning switch is off.
   - The individual map light and interior light switches are off.
   - All of the doors, hood, and hatch are closed.
   - The brake pedal is not pressed.

   Are all of the check items OK?

   YES–Go to step 4.

   NO–Turn off the applicable switch, and check the parasitic draw (see page 22-88).■
4. Lock the doors with the remote transmitter LOCK button. Make sure the security alarm system arms by confirming that the security indicator is flashing slowly, about once every 3 seconds.

   Is the security alarm system armed?

   YES–Go to step 5.

   NO–Go to the symptom troubleshooting for the security alarm system (see page 22-160).■
5. Check the following items with the ignition key removed from the ignition switch:
   - The brake lights are off when the brake pedal is not pressed.
   - The courtesy lights are off with all doors closed.
   - The cargo area light is off with the hatch closed.
   - The radiator and condenser fans are not running.
   - The audio unit (including navigation) is off.
   - There is no operating sound from the VSA modulator-control unit.
   - The rear window defogger and the power mirror defoggers are off.

   Are all of the check items OK?

   YES–Check the parasitic draw (see page 22-88).■

   NO–Troubleshoot and repair the affected circuits.■

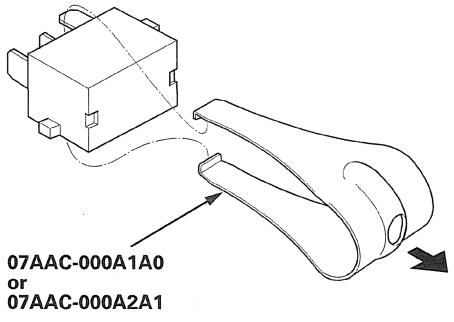
Power Relay Test

Special Tools Required
- Relay Puller 07AAC-000A1A0 or 07AAC-000A2A1
- Relay Socket Extension (4 Pin) 07AGK-000A1A0
- Relay Socket Extension (5 Pin) 07AGK-000A2A0

Use this chart to identify the type of relay, then do the test listed for it.

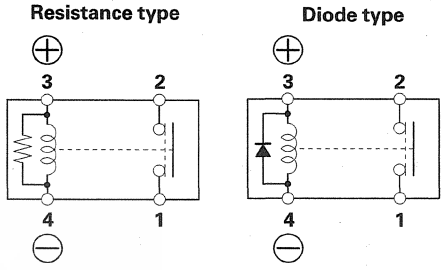
Relay	Test
A/C compressor clutch relay	Normally-open four-terminal type
A/C condenser fan relay	
A/F sensor relay	
Blower motor relay	
Electronic throttle control system (ETCS) control relay	
Fog light relay*	
Horn relay*	
Ignition coil relay	
Lighting relay 1	
Lighting relay 2	
MCM relay 1*	
MCM relay 2*	
PGM-FI main relay 1	
PGM-FI main relay 2	
Power window relay	
Radiator fan relay	
Rear window defogger relay	
Starter cut relay	
Driver's seat heater relay (high)*	
Passenger's seat heater relay (high)*	
Driver's door unlock relay*	Five-terminal type
Fan control relay	
Driver's seat heater relay (low)*	
Passenger's seat heater relay (low)*	
Hatch release actuator relay*	

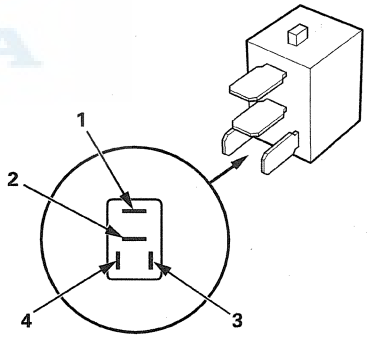
*: Use the relay puller to carefully remove the relay from the relay box. Do not use pliers. Pliers will damage the relay.



Normally-Open Four-Terminal Type

Check for continuity between the terminals:
- There should be continuity between terminals No. 1 and No. 2 when battery power is connected to terminal No. 3, and body ground is connected to terminal No. 4.
- There should be no continuity between terminals No. 1 and No. 2 when power is disconnected.

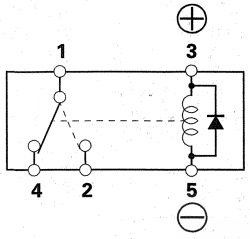


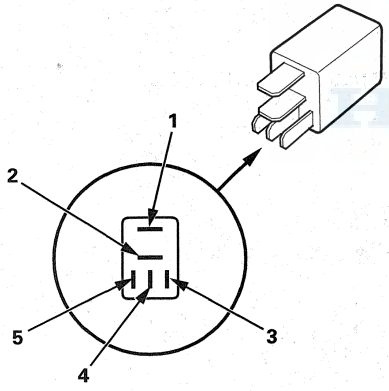


Five-Terminal Type

Check for continuity between the terminals:

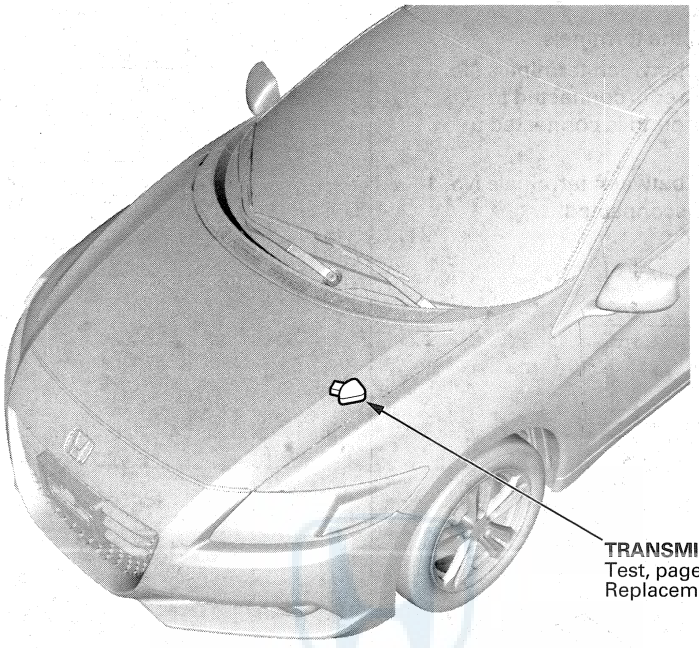
- There should be continuity between terminals No. 1 and No. 2 when battery power is connected to terminal No. 3, and body ground is connected to terminal No. 5.
- There should be continuity between terminals No. 1 and No. 4 when power is disconnected.





Ignition Switch

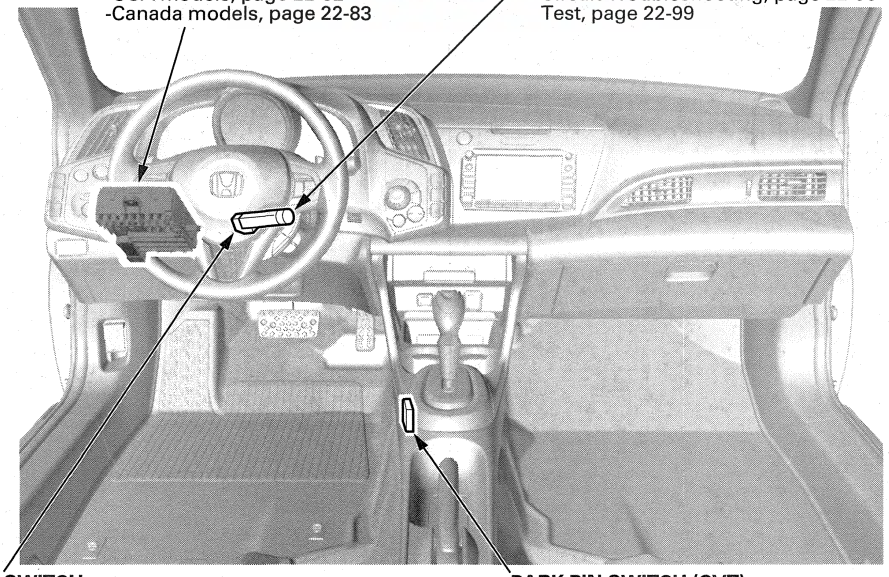
Component Location Index



TRANSMISSION RANGE SWITCH (CVT)
Test, page 14-199
Replacement, page 14-200

UNDER-DASH FUSE/RELAY BOX
Removal and installation
-USA models, page 22-82
-Canada models, page 22-83

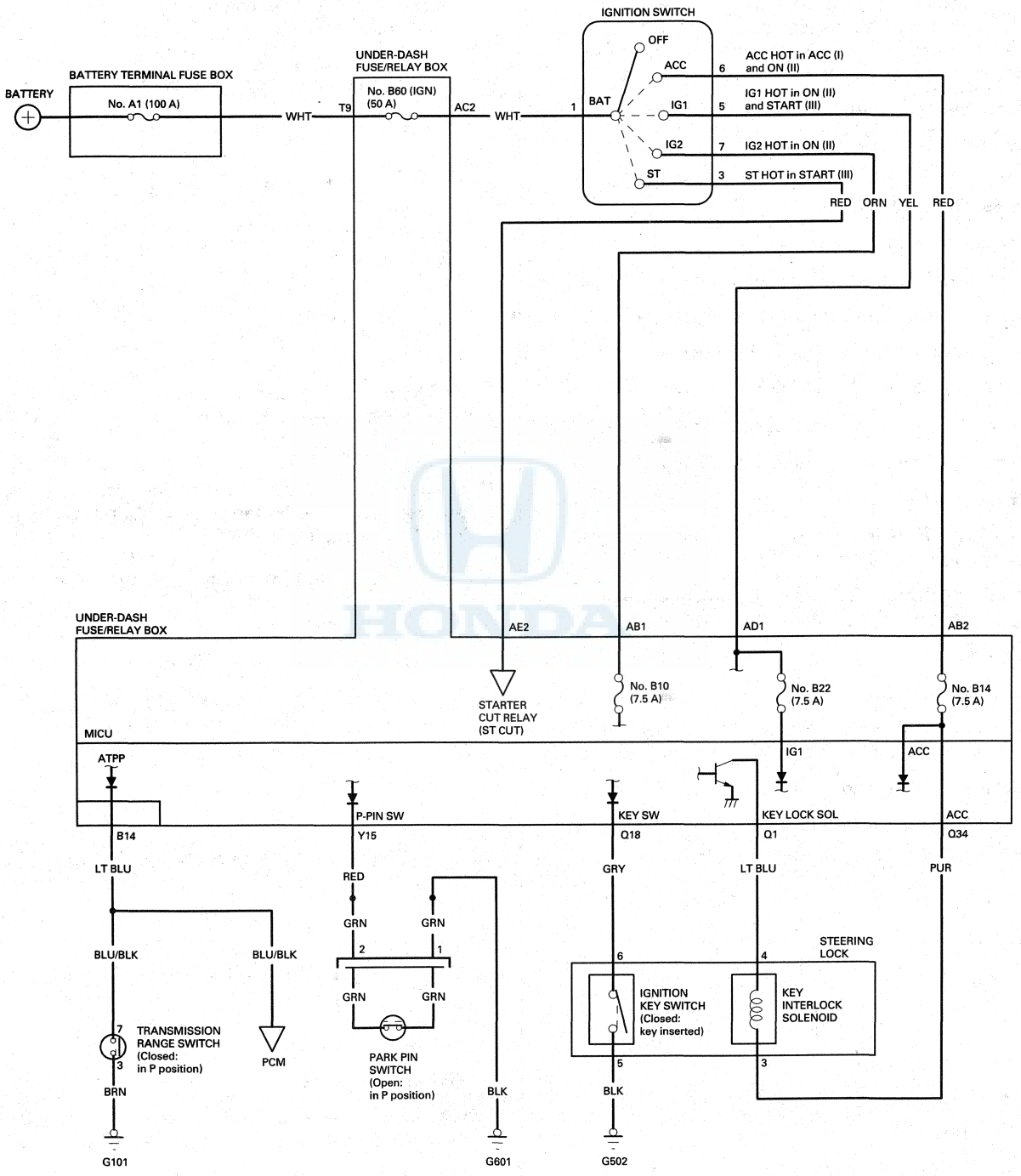
KEY INTERLOCK SOLENOID (CVT)
(Built into the steering lock)
Circuit Troubleshooting, page 22-96
Test, page 22-99



IGNITION SWITCH
Test, page 22-100
Replacement, page 22-100

PARK PIN SWITCH (CVT)
Test, page 22-99
Replacement, page 14-225

Circuit Diagram



Key Interlock System Circuit Troubleshooting

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or servicing.

1. Check the A/T system DTCs with the HDS.

   Are DTCs P0705 and/or P0706 indicated?

   YES–Go to DTC troubleshooting P0705 (see page 14-89), P0706 (see page 14-90).■

   NO–Go to step 2.

2. Move the shift lever to P and set the parking brake.
3. Remove the steering column covers (see page 20-96).
4. Disconnect the steering lock 6P connector.
5. Turn the ignition switch to ACCESSORY (I).
6. Check if the ignition switch can be turned to LOCK (0).

   Can the ignition switch be turned to LOCK (0)?

   YES–Go to step 7.

   NO–Replace the ignition key cylinder/steering lock (see page 17-17).■

7. Check the No. B14 (7.5A) fuse in the under-dash fuse/relay box.

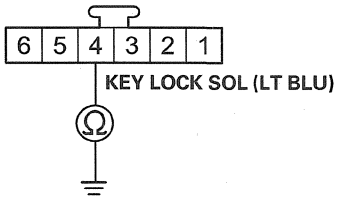
   Is the fuse OK?

   YES–Go to step 8.

   NO–Replace the fuse. If the fuse blows again, repair a short to ground in the No. B14 (7.5A) fuse circuit.

8. Make sure the ignition switch is turned to LOCK (0).
9. Disconnect under-dash fuse/relay box connector Q (34P).
10. Check for continuity between steering lock 6P connector terminal No. 4 and body ground.

STEERING LOCK 6P CONNECTOR



Wire side of female terminals

Is there continuity?

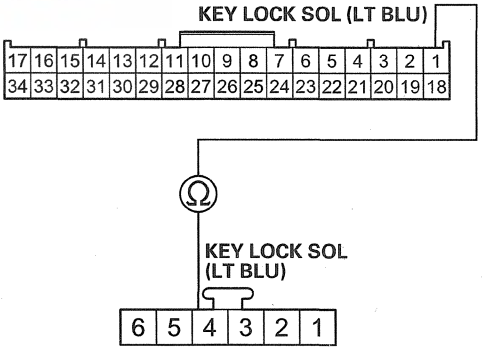
YES–Repair a short to body ground in the wire between the key interlock solenoid and the MICU.■

NO–Go to step 11.

11. Check for continuity between under-dash fuse/relay box connector Q (34P) terminal No. 1 and steering lock 6P connector terminal No. 4

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)

Wire side of female terminals



STEERING LOCK 6P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 12.

NO–Repair an open or high resistance in the wire between the key interlock solenoid and the MICU.■

12. Move the shift lever to P.
13. Remove the center console (see page 20-79).

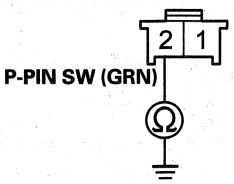
14. Disconnect the park pin switch 2P connector, and disconnect under-dash fusel/relay box connector Y (16P).
15. Do the park pin switch test (see page 22-99).

    Is switch OK?

    YES–Go to step 16.

    NO–Check the park pin switch installation. If the switch installation is OK, replace the switch (see page 14-225) and retest.■
16. Check for continuity between park pin switch 2P connector terminal No. 2 and body ground.

PARK PIN SWITCH 2P CONNECTOR



Wire side of female terminals

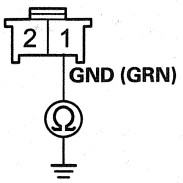
Is there continuity?

YES–Repair a short to body ground in the wire between park pin switch 2P connector terminal No. 2 and the MICU.■

NO–Go to step 17.

17. Check for continuity between park pin switch 2P connector terminal No. 1 and body ground.

PARK PIN SWITCH 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 18.

NO–Repair an open or high resistance in the wire between the park pin switch and body ground (G601).■

18. Check the A/T system Data List with the HDS.

    Is the transmission range switch indicated ON when the shift lever is in P, and is the transmission range switch indicated OFF when the shift lever is shifted to any position other than P?

    YES–Go to step 20.

    NO–Go to step 19.
19. Do the transmission range switch test (see page 14-199).

    Is switch OK?

    YES–Go to step 20.

    NO–Check the transmission range switch installation. If the switch installation is OK, replace the transmission range switch (see page 14-200) and retest.■
20. Disconnect under-dash fuse/relay box connector B (36P).
21. Disconnect the transmission range switch 8P connector.

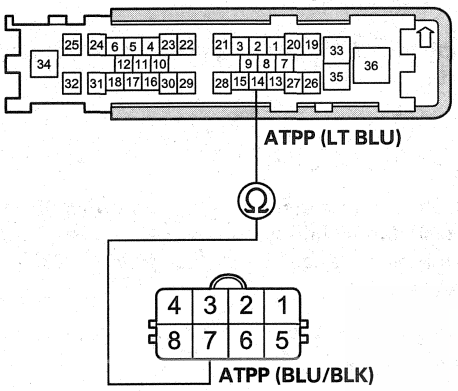
(cont'd)

Key Interlock System Circuit Troubleshooting (cont'd)

22. Check for continuity between under-dash fuse/relay box connector B (36P) terminal No. 14 and transmission range switch 8P connector terminal No. 7.

UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)

Wire side of female terminals



TRANSMISSION RANGE SWITCH 8P CONNECTOR

Wire side of female terminals

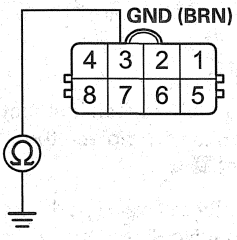
Is there continuity?

YES–Go to step 23.

NO–Repair an open or high resistance in the wire between the under-dash fuse/relay box and the transmission range switch.■

23. Check for continuity between transmission range switch 8P connector terminal No. 3 and body ground.

TRANSMISSION RANGE SWITCH 8P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Faulty MICU, replace the under-dash fuse/relay box.■

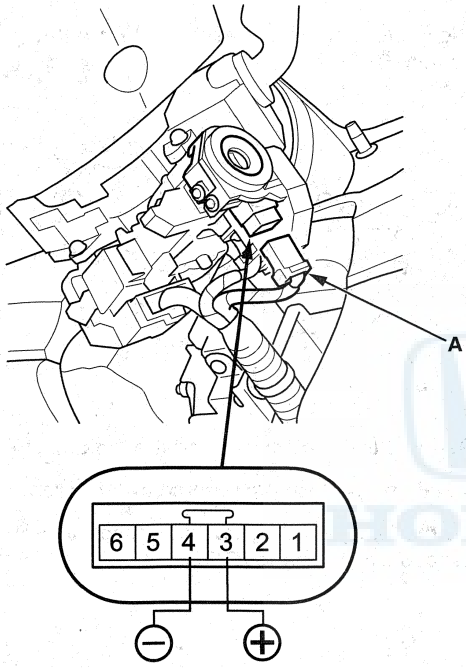
- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the wire between the transmission range switch and body ground (G101).■

Key Interlock Solenoid Test

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or servicing.

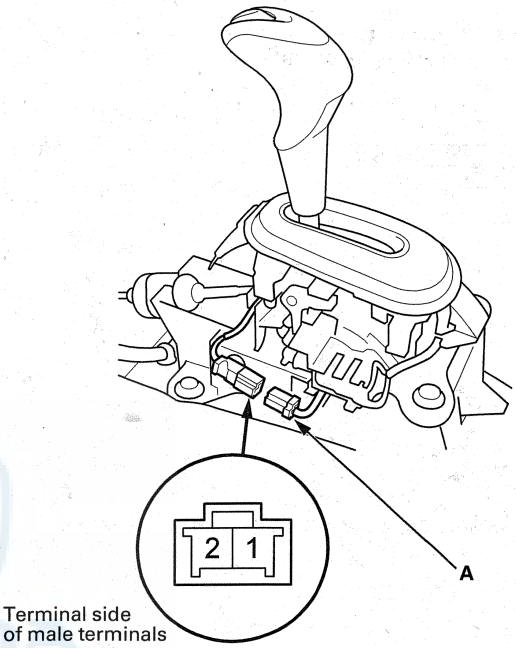
1. Remove the steering column covers (see page 20-96).
2. Disconnect the steering lock 6P connector (A).



3. Insert the ignition key in the key cylinder, then turn the ignition key to ACCESSORY (I).
4. Connect the positive battery terminal to steering lock assembly connector terminal No. 3, and connect the negative battery terminal to terminal No. 4. Check that the ignition key cannot be turned to LOCK (0). Release the battery terminals, and check that the key can be turned to the LOCK (0) position and removed from the cylinder.
5. If the key interlock solenoid works improperly, replace the ignition key cylinder/steering lock (see page 17-17).

Park Pin Switch Test

1. Remove the center console (see page 20-79).
2. Disconnect the park pin switch 2P connector (A).



3. Check for continuity between connector terminals No. 1 and No. 2.
   - There should be continuity when the shift lever button is pressed or the shift lever is moved out of P.
   - There should be no continuity when the shift the shift lever is moved to P and the shift lever button is released.
4. If the continuity is not as specified, check the shift cable adjustment (see page 14-193). If the cable adjustment is OK, go to step 5.

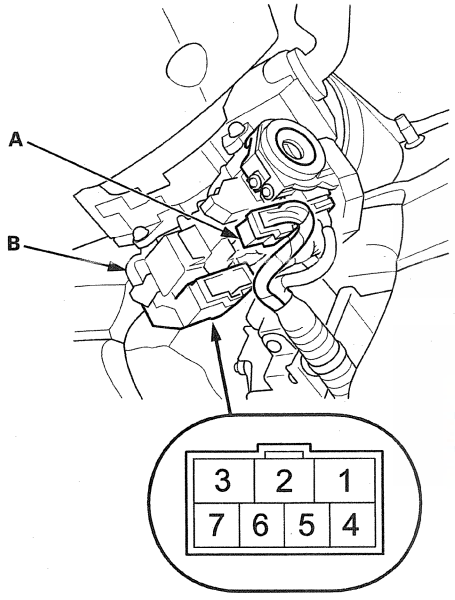
   If the continuity is not as specified, replace the park pin switch (see page 14-225).
5. Install the parts in the reverse order of removal.

Ignition Switch

Ignition Switch Test

SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before doing repairs or servicing.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the steering column covers (see page 20-96).
3. Disconnect the 7P connector (A) from the ignition switch (B).



4. Check for continuity between the terminals in each switch position according to the table.

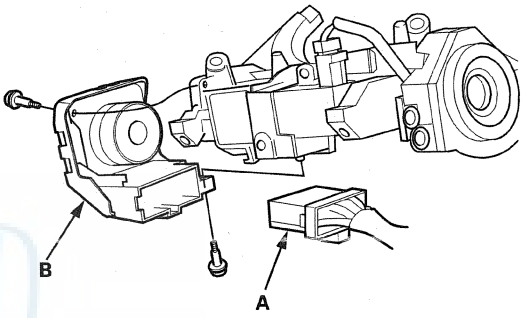
Terminal / Position	6 (ACC)	1 (BAT)	5 (IG1)	7 (IG2)	3 (ST)
0 (LOCK)					
I (ACCESSORY)	○	○			
II (ON)	○	○	○	○	
III (START)		○	○		○

5. If the continuity is not as specified, replace the ignition switch (see page 22-100).
6. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

Ignition Switch Replacement

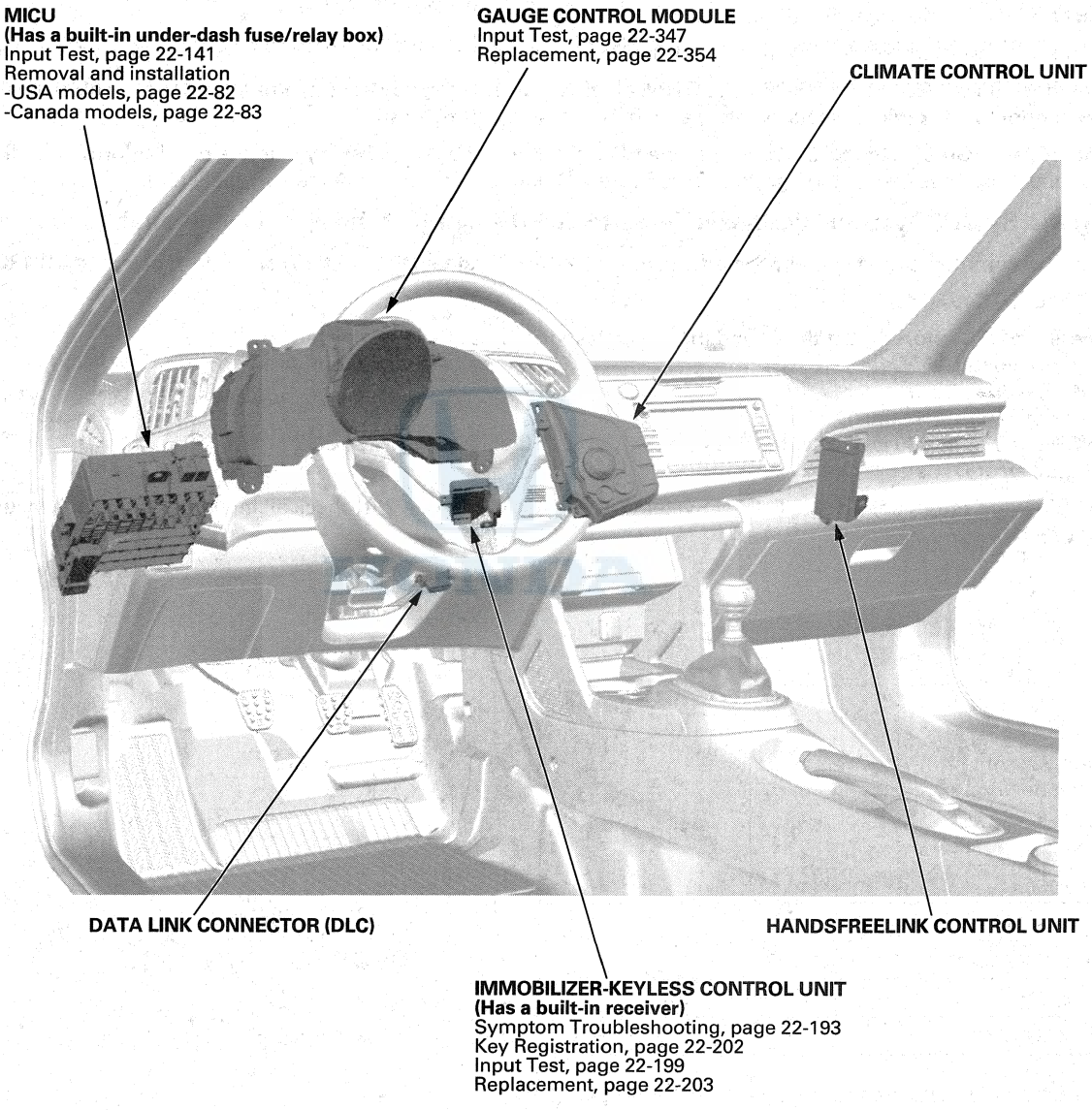
SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before doing repairs or servicing.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
2. Remove the steering column covers (see page 20-96).
3. Disconnect the 7P connector (A) from the ignition switch (B).



4. Remove the two screws and the ignition switch.
5. Install the parts in the reverse order of removal.
6. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

Component Location Index



General Troubleshooting Information

Troubleshooting CAN Circuit Related Problems

NOTE: Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see page 11-3) or F-CAN loss of communication errors first.

Using the HDS (Preferred method)

Connect the HDS to the Data Link Connector (DLC).

There are two ways to read B-CAN code with the HDS:

First method: On the HDS, select BODY ELECTRICAL, then select the subsystem that relates to the problem (for example: door locks, keyless, security, etc.), and then last, select the DTCs.

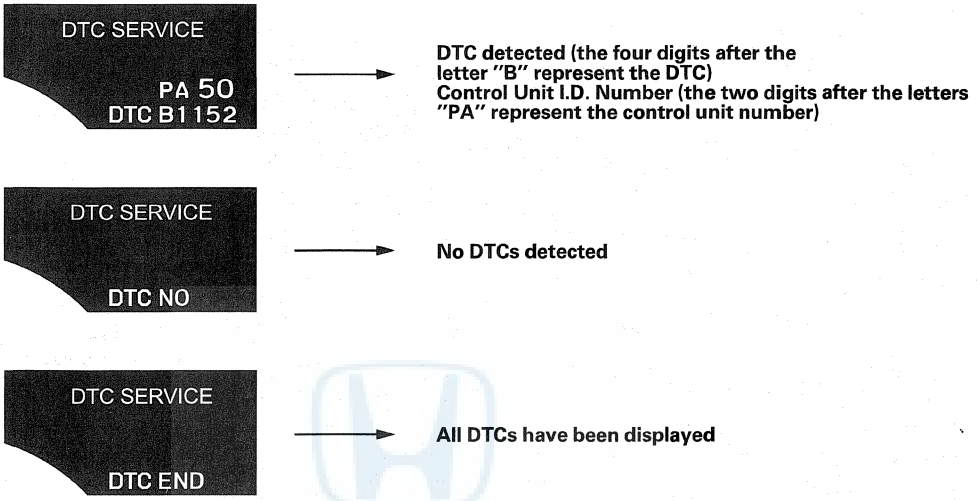
Second method: Ground the SCS circuit with the HDS, then read the DTCs displayed in the multi-information display (MID) in the gauge assembly, then go to B-CAN System Diagnosis Test Mode A (see page 22-126).

Using the B-CAN System Diagnosis Test Mode 1 (Use only if the HDS is unavailable)

1. Check for communication circuit problems using the B-CAN System Diagnostic Test Mode 1 (see page 22-130).
2. Check for DTCs.
3. If there are DTCs stored, sort them, and then troubleshoot the DTCs in this order.
   -1. Battery voltage DTCs
   -2. Internal error DTCs
   -3. Loss of communication DTCs
   NOTE: If DTC B1000 is stored, troubleshoot DTC B1000 first (see page 22-135).
   -4. Signal error DTCs
4. If no DTCs are retrieved, use the B-CAN System Diagnostic Test Mode 2 to check all inputs related to the failure (see page 22-130).

How to Display DTCs on the MID of the Gauge Control Module

Enter the B-CAN System Diagnosis Test Mode 1 (see page 22-130). While in Test Mode 1, the DTCs which have been detected and stored individually by various B-CAN (Body-Controller Area Network) units are shown one by one on the multi-information display when communication between the MICU and the gauge control module is normal. To scroll through the DTCs, press the SELECT/RESET knob.



The control unit that has stored the code can be identified by the number shown after the letters "PA" on the multi-information display (MID).

Control Unit	Control Unit I.D. Number
MICU	10
Gauge control module	50
Climate control unit	51
HandsFreeLink control unit	94
Immobilizer-keyless control unit	96

How to Clear DTCs

1. Enter the B-CAN System Diagnosis Test Mode 1 (see page 22-130).
2. While in Test Mode 1, press and hold down the SELECT/RESET knob for at least 10 seconds to clear the DTCs.

(cont'd)

General Troubleshooting Information (cont'd)

Loss of Communication DTC Cross-Reference Chart

When an ECU on the CAN circuit is unable to communicate with other ECUs on the CAN circuit, the other control units set loss of communication DTCs. Use this chart to find the control unit that is not communicating with the other control units on the CAN circuit.

1. Find the Transmitting Control Unit that is in the same row as all of the loss of communication DTCs retrieved.
2. Do the input test for the transmitting control unit.

BUS-OFF and Internal Error Codes

DTC type	Related Unit				
	MICU	Gauge Control Module	Climate Control Unit	Immobilizer-Keyless Control Unit	HandsFreeLink Control Unit
BUS-OFF	B1000	U1280	B1200	B1900	U1280
ECU (EEPROM) Error	B1002	B1152		B1902	

Transmitting Control Unit	Message	Receiving Unit/Loss of Communication DTC				
		MICU	Gauge Control Module	Climate Control Unit	Immobilizer-Keyless Control Unit	HandsFreeLink Control Unit
MICU	WIPSW			B2969		
	MICU		U1281			
	DRLOCKSW				B1905	
Gauge Control Module	VSP/NE	B1011		B1205		
	A/T				B1906	
	ENGTEMP			B1206		
	ILLUMI			B1207		
ECM/PCM	ENG		U0100			
VSA Modulator-Control Unit	VSA/ABS		U0122			
EPS Control Unit	EPS		U0131			
Motor Control Module (MCM)	BATT		U0111			
SRS unit	SRS		U0151			
TPMS control unit	TPMS		U0127			

DTC Troubleshooting Index

NOTE: Record all DTCs, and sort them by DTC type using the following DTC troubleshooting indexes, then troubleshoot the DTC(s) in this order:

- Battery voltage DTCs
- Internal error DTCs
- Loss of communication DTCs (beginning with the lowest number first; for example, if B1011 and B1028 are retrieved, troubleshoot B1011 first).
- Signal error DTCs

MICU

DTC	Description	DTC type	Page
B1000	Communication circuit error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-135)
B1002	MICU internal error (EEPROM error)	Internal error	DTC Troubleshooting (see page 22-136)
B1011	MICU lost communication with gauge control module (VSP/NE message)	Loss of communication	DTC Troubleshooting (see page 22-137)
B1028	Rear wiper motor (Park) signal error	Signal error	DTC Troubleshooting (see page 22-295)
B1036	IG1 Power supply circuit malfunction	Signal error	DTC Troubleshooting (see page 22-138)
B1077	Windshield wiper motor (Park) signal error	Signal error	DTC Troubleshooting (see page 22-297)
B1078	Daytime running light for Canada circuit malfunction	Bulb failure	DTC Troubleshooting (see page 22-220)
B1079	Daytime running light for USA circuit malfunction	Bulb failure	DTC Troubleshooting (see page 22-220)
B1127	Driver's door key cylinder switch input circuit malfunction (Simultaneous input of lock and unlock signal)	Signal error	DTC Troubleshooting (see page 22-152)
B1128	Driver's door remote switch input circuit malfunction (Simultaneous input of lock and unlock signal)	Signal error	DTC Troubleshooting (see page 22-153)
B1129	Driver's door knob switch input circuit malfunction (Simultaneous input of lock and unlock signal)	Signal error	DTC Troubleshooting (see page 22-154)
B1275	Headlight switch OFF position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-222)
B1276	Headlight switch PARKING position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-222)
B1277	Headlight switch AUTO position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-222)
B1278	Headlight switch ON position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-222)
B1279	Dimmer switch circuit malfunction	Signal error	DTC Troubleshooting (see page 22-224)
B1280	Turn signal switch circuit malfunction	Signal error	DTC Troubleshooting (see page 22-252)
B1281	Front wiper MIST position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-299)
B1282	Front wiper INT (AUTO) position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-299)
B1283	Front wiper LOW position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-299)
B1284	Front wiper HIGH position circuit malfunction	Signal error	DTC Troubleshooting (see page 22-299)

(cont'd)

DTC Troubleshooting Index (cont'd)

MICU (cont'd)

DTC	Description	DTC type	Page
B1575	Auto light sensor circuit malfunction	Signal error	DTC Troubleshooting (see page 22-226)

Gauge Control Module

DTC	Description	DTC type	Page
B1152	Gauge control module internal (EEPROM) error	Internal error	DTC Troubleshooting (see page 22-333)
B1175	Fuel level sensor (Fuel gauge sending unit) circuit malfunction	Signal error	DTC Troubleshooting (see page 22-333)
B1176	Fuel level sensor (Fuel gauge sending unit) circuit short	Signal error	DTC Troubleshooting (see page 22-334)
U0029	F-CAN communication line error (BUS OFF)	Loss of communication	DTC Troubleshooting (see page 22-335)
U0100	Gauge control module lost communication with ECM/PCM	Loss of communication	DTC Troubleshooting (see page 22-337)
U0111	Gauge control module lost communication with motor control module (BATT message)	Loss of communication	DTC Troubleshooting (see page 22-338)
U0122	Gauge control module lost communication with VSA modulator-control unit (VSA message)	Loss of communication	DTC Troubleshooting (see page 22-339)
U0127	Gauge control module lost communication with the TPMS control unit (TPMS message)	Loss of communication	DTC Troubleshooting (see page 22-340)
U0131	Gauge control module lost communication with EPS unit (EPS message)	Loss of communication	DTC Troubleshooting (see page 22-341)
U0151	Gauge control module lost communication with SRS unit (SRS message)	Loss of communication	DTC Troubleshooting (see page 22-342)
U1280	Communication bus line error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-140)
U1281	Lost communication with MICU (MICU frame)	Loss of communication	DTC Troubleshooting (see page 22-343)

Immobilizer-Keyless Control Unit

DTC	Description	DTC type	Page
B1900	Communication circuit error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-139)
B1901	Immobilizer unit internal error (CPU error)	Internal error	DTC Troubleshooting (see page 22-188)
B1902	Immobilizer unit internal error (EEPROM error)	Internal error	DTC Troubleshooting (see page 22-188)
B1905	Immobilizer unit lost communication with MICU (door lock switch message)	Loss of communication	DTC Troubleshooting (see page 22-188)
B1906	Immobilizer unit lost communication with gauge control module (A/T message)	Loss of communication	DTC Troubleshooting (see page 22-189)

HandsFreeLink Control Unit

DTC	Description	DTC type	Page
B1775	Microphone input/output shorted to power (with navigation)	Signal error	DTC Troubleshooting (see page 23-259)
	Microphone input/output shorted to power (without navigation)	Signal error	DTC Troubleshooting (see page 23-260)
B1776	Microphone input/output shorted to ground or open (with navigation)	Signal error	DTC Troubleshooting (see page 23-261)
	Microphone input/output shorted to ground or open (without navigation)	Signal error	DTC Troubleshooting (see page 23-263)
B1779	HandsFreeLink steering wheel switch failure (with navigation)	Signal error	DTC Troubleshooting (see page 23-264)
	HandsFreeLink steering wheel switch failure (without navigation)	Signal error	DTC Troubleshooting (see page 23-266)
B1780	HandsFreeLink steering wheel switch line short (with navigation)	Signal error	DTC Troubleshooting (see page 23-268)
	HandsFreeLink steering wheel switch line short (without navigation)	Signal error	DTC Troubleshooting (see page 23-269)
B1792	HandsFreeLink control module error	Internal error	DTC Troubleshooting (see page 23-270)
U1280	Communication bus line error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-140)

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DTC Troubleshooting Index (cont'd)

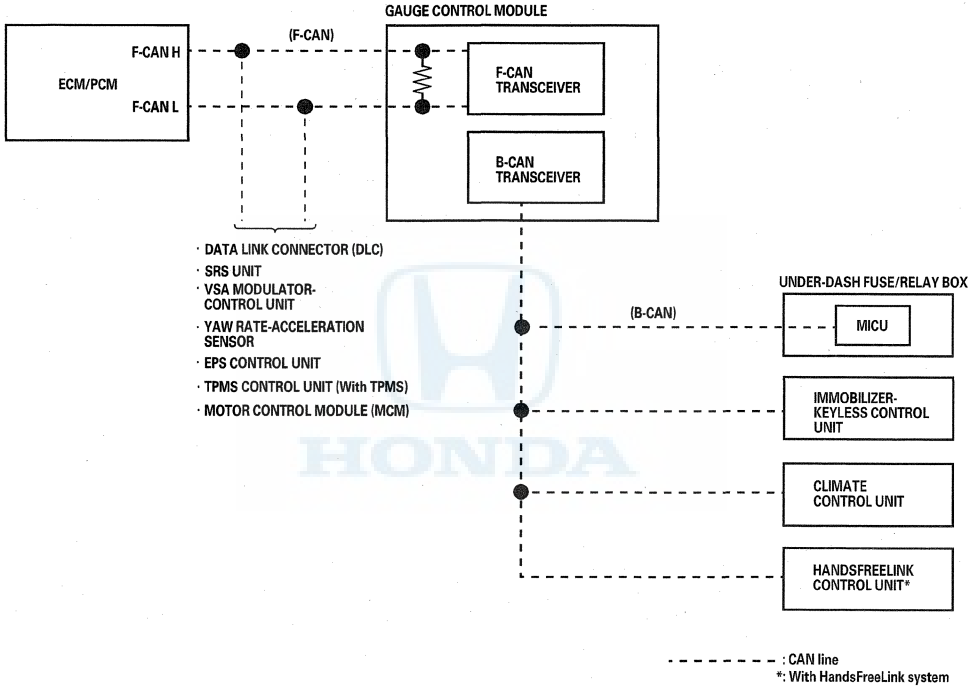
Climate Control Unit

DTC	Detection Item or Symptom	DTC type	Page
B1200	Communication bus line error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-139)
B1205	Climate control unit lost communication with gauge control module (VSP/NE message)	Loss of communication	DTC Troubleshooting (see page 21-34)
B1206	Climate control unit lost communication with gauge control module (coolant temp message)	Loss of communication	DTC Troubleshooting (see page 21-34)
B1207	Climate control unit lost communication with gauge control module (illumination message)	Loss of communication	DTC Troubleshooting (see page 21-34)
B1225	An open in the in-car temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-36)
B1226	A short in the in-car temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-37)
B1227	An open in the outside air temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-38)
B1228	A short in the outside air temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-39)
B1229	An open in the sunlight sensor circuit	Signal error	DTC Troubleshooting (see page 21-40)
B1230	A short in the sunlight sensor circuit	Signal error	DTC Troubleshooting (see page 21-42)
B1231	An open in the evaporator temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-43)
B1232	A short in the evaporator temperature sensor circuit	Signal error	DTC Troubleshooting (see page 21-44)
B1233	An open in the air mix control motor circuit	Signal error	DTC Troubleshooting (see page 21-45)
B1234	A short in the air mix control motor circuit	Signal error	DTC Troubleshooting (see page 21-46)
B1235	A problem in the air mix control motor circuit, linkage, door, or motor	Signal error	DTC Troubleshooting (see page 21-47)
B1239	An open or short in the mode control motor circuit	Signal error	DTC Troubleshooting (see page 21-49)
B1240	A problem in the mode control motor circuit, linkage, door, or motor	Signal error	DTC Troubleshooting (see page 21-51)
B1241	A problem in the blower motor circuit	Signal error	DTC Troubleshooting (see page 21-52)
B2967	An open in the humidity sensor circuit	Signal error	DTC Troubleshooting (see page 21-55)
B2968	A short in the humidity sensor circuit	Signal error	DTC Troubleshooting (see page 21-56)
B2969	Climate control unit lost communication with MICU (WIPSW message)	Loss of communication	DTC Troubleshooting (see page 21-57)

System Description

Body Controller Area Network (B-CAN) and Fast Controller Area Network (F-CAN)

The body controller area network (B-CAN) and the fast controller area network (F-CAN) share information between multiple electronic control units (ECUs). B-CAN communication moves at a slower speed (33.33 kbps) for convenience related items and for other functions. F-CAN information moves at a faster speed (500 kbps) for "real time" functions such as fuel and emissions data. To allow both systems to share information, the gauge control module translates information from B-CAN to F-CAN and from F-CAN to B-CAN. This is called the Gateway Function.

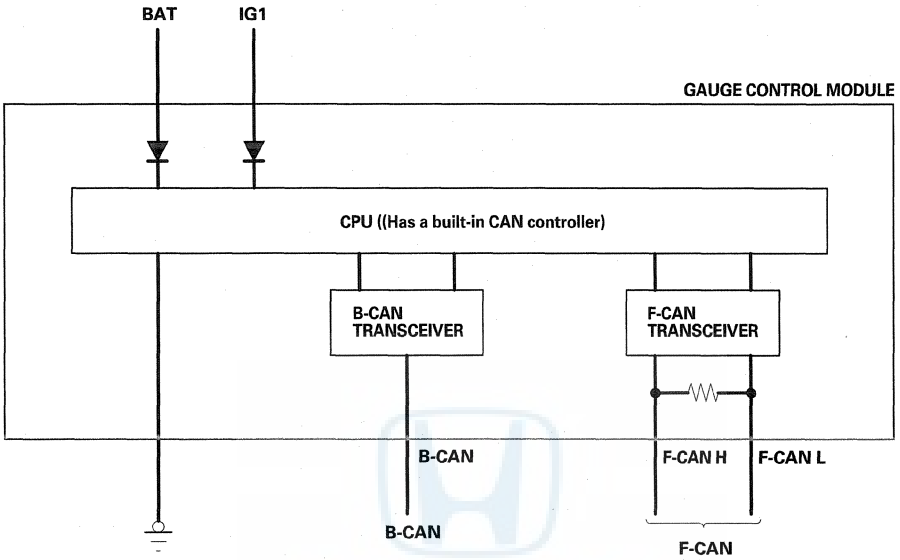


(cont'd)

System Description (cont'd)

Gateway Function

The gauge control module acts as a gateway to allow both systems to share information. The gauge control module translates and relays the information from B-CAN to F-CAN and from F-CAN to B-CAN.



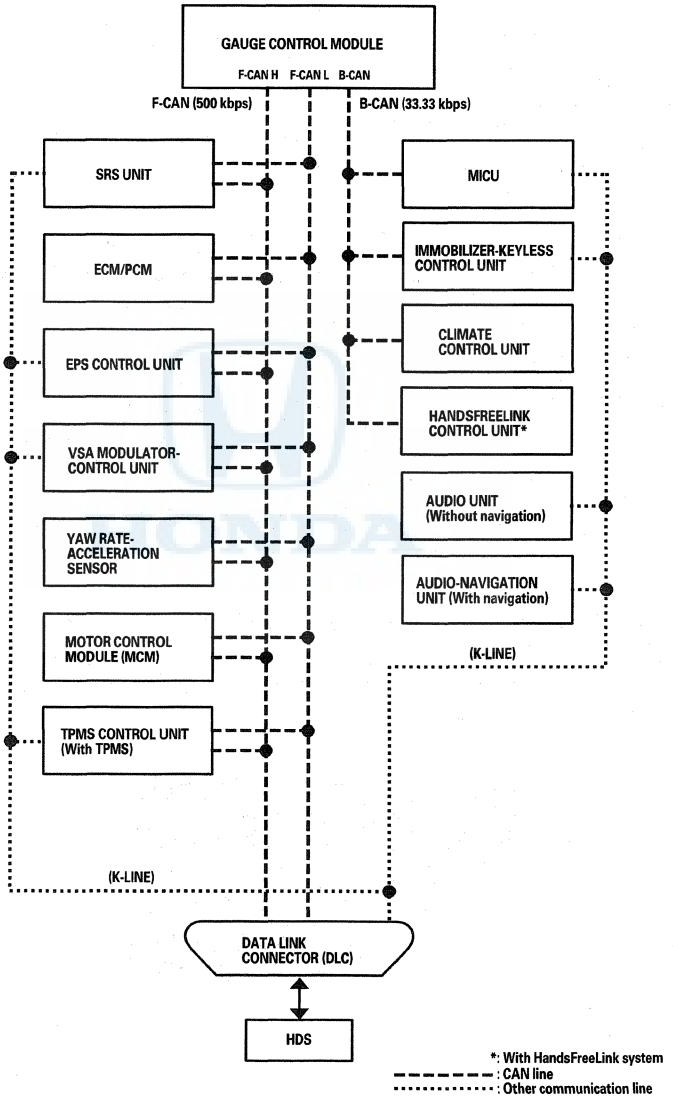
Network "Loss of Communication" Error Checking Function

The ECUs on the CAN circuit send messages to each other. If there are any communication malfunctions on the network, the multi-information display (MID) on the gauge control module can indicate the error messages by entering the gauge control module self-diagnostic function (see page 22-325).



Self-Diagnostic Function (On-Board Diagnosis)

By connecting the HDS to the data link connector (DLC), the HDS can retrieve the diagnostic information from the MICU via a diagnostic line called K-LINE. The K-LINE is separate from the CAN lines, and is connected to the CAN related ECUs. The MICU is a gateway between the HDS and B-CAN related ECUs, and it sends B-CAN diagnostic information to the HDS. When doing a function test with the HDS, the HDS sends an output signal through the K-LINE to the MICU. The MICU either relays the request to another ECU or commands the function itself.



(cont'd)

System Description (cont'd)

Wake-Up and Sleep Function

The multiplex integrated control system has wake-up and sleep functions to decrease parasitic draw on the battery when the ignition switch is at LOCK (0).

- In the sleep mode, the multiplex integrated control system stops functioning (communication and CPU control) when it is not necessary for the system to operate.
- As soon as any operation is requested (for example, a door is unlocked), the related control units in the sleep mode immediately wake-up and begin to function.
- When the ignition switch is turned to LOCK (0) with all the doors and the hatch closed, and the driver's door is opened, then closed, there is a delay of about 40 seconds before the control unit goes from the wake-up mode to the sleep mode.
- The sleep mode will not function if any door or the hatch is open or if a key is in the ignition switch.
- Electrical draw is reduced from 200 mA to less than 35 mA when in sleep mode.

NOTE: Sleep and Wake-Up Mode Test (see page 22-132).

Fail-Safe Function

To prevent improper operation, the MICU has a fail-safe function. In the fail-safe mode, the output signal is fixed when any part of the system malfunctions (for example, a faulty control unit or communication line).
Each control unit has a hardware fail-safe function that fixes the output signal when there is a CPU malfunction, and a software fail-safe function that ignores the signal from a malfunctioning control unit, which allows the system to continue operating normally.

Hardware Fail-Safe Control

Fail-safe function

When a CPU problem or an abnormal power supply voltage is detected, the MICU moves to the hardware fail-safe mode, and each system output load is set to the pre-programmed fail-safe value.

Software Fail-Safe Control

When any of the data from the B-CAN circuit cannot be received within a specified time, or an unusual combination of data is recognized, the MICU moves to the software fail-safe mode. The data that was not received is forced to a pre-programmed value.

Power Supply Voltage Monitoring Function

The MICU monitors the power supply voltage (back-up voltage). If the voltage drops below 10 V, the MICU does not store DTCs.

	Input	Output
MICU	Battery voltage (VBU)	
B-CAN		MICU (UNDER 10 V) message

Combination Light Switch

The MICU controls the lighting system based on inputs from the combination light switch.

	Input	Output
MICU	IG1 power supply Combination light switch (PARKING) Combination light switch (OFF) Combination light switch (ON) Combination light switch (DIMMER) Combination light switch (PASSING)	Headlights (LO) Headlights (HI) Side marker lights License plate lights Taillights
B-CAN		Combination light switch (PARKING) message Combination light switch (HLLO) message Combination light switch (HLHI) message Combination light switch (PASSING) message

Fog Lights

The MICU controls the fog lights based on inputs from the fog light switch.

	Input	Output
MICU	IG1 power supply Combination light switch (OFF) Combination light switch (ON) Combination light switch (FOG)	Fog light relay
B-CAN		Combination light switch (FRFOG) message RM (FRFOGRLY) message

Turn Signal/Hazard Warning Light

The MICU controls the turn signal/hazard warning lights based on inputs from the turn signal switch and the hazard warning switch.

	Input	Output
MICU	IG1 power supply Hazard warning switch Turn signal switch (LEFT) Turn signal switch (RIGHT)	Turn signal lights (LEFT) Turn signal lights (RIGHT)
B-CAN		MICU (HAZARDSW) message MICU (TURNRLY) message Turn signal switch (TURNL) message Turn signal switch (TURNR) message

(cont'd)

System Description (cont'd)

Entry Light

The MICU controls the interior light based on inputs from each switch and B-CAN signals.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Passenger's door switch Driver's door lock knob switch (LOCK/UNLOCK)	Individual map lights Rear tray lights
B-CAN	Keyless door lock signal	

Automatic Lighting

The MICU controls the automatic lighting system based on inputs from the automatic lighting sensor and B-CAN signal.

	Input	Output
MICU	IG1 power supply Automatic lighting sensor (SIO) signal Ignition key switch	Headlights (LO) Headlights (HI) Side maker lights License plate lights Taillights
B-CAN	MICU (IG1) signal	AUTOLT signal

Cargo Area Light

The MICU controls the cargo area light based on inputs from the hatch latch switch.

	Input	Output
MICU	Hatch latch switch	Cargo area light

Daytime Running Lights

The MICU controls the headlights as daytime running lights based on inputs from each switch and B-CAN signals.

	Input	Output
MICU	IG2 power supply Combination light switch (OFF) Combination light switch (ON) Combination light switch (DIMMER) Combination light switch (PASSING)	Headlights (LO) Headlights (HI) Side maker lights License plate lights Taillights
B-CAN	Parking brake switch signal IG1 METER signal Automatic lighting signal (ALPARKING) Automatic lighting signal (ALHLLO)	

Windshield Wiper/Washer (Normally Operation)

The MICU controls the windshield wiper motor and the windshield washer motor based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Windshield wiper switch (INT/LO) Windshield wiper switch (LO/HI) Windshield wiper switch (MIST) Windshield washer switch Wiper switch intermittent dwell time controller Windshield wiper motor (AUTO STOP)	Windshield wiper motor (INT) Windshield wiper motor (HI) Windshield washer motor
B-CAN	IG1 METER signal	Windshield wiper switch (FRINT) message Windshield wiper switch (FRWIPLO) message Windshield wiper switch (FRWIPHI) message Windshield washer switch (FRWASH) message Windshield wiper switch (FRMIST) message Windshield wiper motor (FRWIPAS) message Windshield wiper switch (FRONTVR) message

Windshield Wiper/Washer (Vehicle Speed Operation)

The MICU controls the windshield wiper motor and the windshield washer motor based on inputs from each switch and B-CAN signals.

	Input	Output
MICU	IG1 power supply Brake pedal position switch Windshield wiper switch (INT/LO) Windshield wiper switch (HI/LO) Windshield wiper switch (MIST) Windshield washer switch Wiper switch intermittent dwell time controller Windshield wiper motor (AUTO STOP) Transmission range switch (P) position (CVT)	Windshield wiper motor (INT) Windshield wiper motor (HI) Windshield washer motor
B-CAN	Parking brake switch signal Vehicle speed pulse signal	Windshield wiper switch (FRINT) message Windshield wiper switch (FRWIPLO) message Windshield wiper switch (FRWIPHI) message Windshield washer switch (FRWASH) message Windshield wiper switch (FRMIST) message Windshield wiper switch (FRONTVR) message

(cont'd)

System Description (cont'd)

Rear Window Wiper/Washer (With Reverse Linked Rear Wiper)

The MICU controls the rear window wiper motor and the rear window washer motor based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Back-up light switch (M/T) Transmission range switch (R) position (CVT) Windshield washer motor switch Rear window washer motor switch Rear window wiper switch Windshield wiper switch (INT) Windshield wiper switch (LO) Windshield wiper switch (HI)	Rear window wiper motor Rear window washer motor
B-CAN		Rear window wiper switch (RRWIP) message Rear window washer switch (RRWASH) message

Windshield/Rear Window Washer

The MICU controls the windshield washer and the rear window washer motor based on inputs from each switch.

	Input	Output
MICU	Rear window washer motor switch Windshield washer motor switch IG1 power supply	Rear window washer motor Windshield washer motor
B-CAN		Windshield washer switch (FRWASH) message Rear window washer switch (RRWASH) message

Power Window Timer (Key-Off Operation)

The MICU controls the power window key-off operation based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Passenger's door switch	Power window timer

Collision Detection Signal (CDS)

The MICU controls the door lock actuators based on IG1 and SRS (CDS) inputs.

	Input	Output
MICU	IG1 power supply	Door lock actuators (LOCK/UNLOCK)
B-CAN	SRS (CDSFR) message SRS (CDSSD) message SRS (CDSRR) message SRS (CDSRO) message	

Power Door Locks

The MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Passenger's door switch Hatch latch switch Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (UNLOCK) Driver's door lock knob switch (LOCK)	Door lock actuator (LOCK/UNLOCK) Driver's door lock actuator (UNLOCK)

Door Lock Response Operation

The MICU controls the door lock actuators based on B-CAN signals.

	Input	Output
MICU		Door lock actuators (LOCK/UNLOCK) Driver's door lock actuator (UNLOCK) Hatch release actuator
B-CAN	Door lock signal	

Keyless Entry System*

The MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Passenger's door switch Hatch latch switch Driver's door lock knob switch (LOCK/UNLOCK) Driver's door lock switch (LOCK/UNLOCK) Driver's door key cylinder switch (LOCK/UNLOCK)	Door lock actuators (LOCK/UNLOCK) Driver's door lock actuator (UNLOCK) Hatch release actuator
B-CAN	Keyless door lock signal	Relock message

*: This system can be customized in the multi-information display (MID) to suit the customer's needs. For more information about the system options, refer to the Owner's Manual.

Key-in Reminder

The MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
MICU	Ignition key switch Driver's door switch Driver's door lock knob switch (UNLOCK)	Door lock actuators (LOCK/UNLOCK) Driver's door lock actuator (UNLOCK)

(cont'd)

System Description (cont'd)

Key Interlock (CVT)

The MICU controls the key interlock solenoid based on inputs from each switch.

	Input	Output
MICU	Ignition switch (ACCESSORY) Transmission range switch (P) position Park-pin switch	Key interlock solenoid

Security Alarm System

The MICU controls the exterior lights and the horn based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Audio switch Hatch latch switch Driver's door switch Passenger's door switch Driver's door key cylinder switch (LOCK/UNLOCK) Driver's door lock knob switch (UNLOCK) Passenger's door lock knob switch (UNLOCK) Security hood switch	Headlights (LO) Side marker lights Taillights License plate lights Horn
B-CAN	Keyless door lock signal Door lock signal	MICU (SET1) message MICU (SET2) message ALARM (ACTION) message

Security Answer Back

The MICU controls the exterior lights and the horn based on keyless signals sent by B-CAN.

	Input	Output
MICU		Side marker lights Taillights License plate lights Horn

Answer Back Response Operation*

The MICU controls the lighting system and the horn based on keyless signals sent by B-CAN.

	Input	Output
MICU		Side marker lights Taillights License plate lights Horn
B-CAN	Answer back (PARKING) signal Answer back (HLLO) signal Answer back (HORN) signal	

*: This system can be customized in the multi-information display (MID) to suit the customer's needs. For more information about the system options, refer to the Owner's Manual.

Hatch Outer Handle Switch Operation

The MICU controls the hatch release actuator based on inputs from each switch.

	Input	Output
MICU	Hatch outer handle switch Driver's door lock knob switch (LOCK/UNLOCK) Passenger's door lock knob switch (UNLOCK)	Hatch release actuator

Auto Door Lock

The MICU controls the door lock actuators based on inputs from each switch and B-CAN signals.

	Input	Output
MICU	IG1 power supply Driver's door switch Passenger's door switch Hatch latch switch Driver's door lock knob switch (UNLOCK) Passenger's door lock knob switch (UNLOCK) Right rear door lock knob switch (UNLOCK) Transmission range switch (P) position Brake pedal position switch	Door lock actuators (LOCK)
B-CAN	Vehicle speed signal Engine speed signal	

Auto Door Unlock

The MICU controls the door lock actuators based on inputs from each switch.

	Input	Output
MICU	IG1 power supply Ignition key switch Driver's door switch Passenger's door switch Hatch latch switch Driver's door lock knob switch (UNLOCK) Passenger's door lock knob switch (UNLOCK) Transmission range switch (P) position Brake pedal position switch	Door lock actuators (UNLOCK) Driver's door lock actuator (UNLOCK)
B-CAN		

Keyless Panic Function

The MICU controls the keyless PANIC function based on PANIC signals sent by B-CAN.

	Input	Output
MICU		Headlights (LO) Side marker lights Taillights License plate lights Horn
B-CAN	PANIC signals	

(cont'd)

System Description (cont'd)

HDS Inputs and Function Tests

Certain inputs happen so quickly that the HDS cannot update fast enough. Hold the switch that is being tested while monitoring the Data List. This should give the HDS time to update the signal on the Data List.

Because the HDS software is updated to support the release for newer vehicles, it is not uncommon to see system function tests that are not supported.

Make sure that the most current HDS software is loaded.

Input

System Menu	Data List	Data List Indication
Lighting	Driver's Door Switch	OFF/ON
	Hazard Warning Switch	OFF/ON
	Headlight Switch (OFF)	OFF/ON
	Headlight Switch (PARKING)	OFF/ON
	Headlight Switch (HEADLIGHT)	OFF/ON
	Headlight Switch (AUTO)	OFF/ON
	Headlight Switch (High Beam)	OFF/ON
	Headlight Switch (PASSING)	OFF/ON
	Turn Signal Switch (LEFT)	OFF/ON
	Turn Signal Switch (RIGHT)	OFF/ON
	Fog Light Switch	OFF/ON
	Rear Fog Light Switch	OFF/ON
	Autolight Sensor Input Voltage	V
	Autolight Sensor Malfunction Detection Voltage Max	V
	Autolight Sensor Malfunction Detection Voltage Min	V
	Door Switch Interior Light Command	OFF/ON
	Left Turn Signal Command	OFF/ON
	Right Turn Signal Command	OFF/ON
	Rear Fog Light Command	OFF/ON
	Cargo Light Command	OFF/ON
	Autolight Parking Command	OFF/ON
	Autolight Headlight Command	OFF/ON
	Autolight Warning Command	OFF/ON
	Autolight Headlight Backup Line Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Fog Light Command	OFF/ON
	DRL Command	OFF/ON

Input

System Menu	Data List	Data List Indication
Gauges	Cruise Control Main Switch (ACC switch)	OFF/ON
	Cruise Control Set Switch	OFF/ON
	Cruise Control Resume Switch	OFF/ON
	Washer Fluid Level Switch	OFF/ON
	Gauge Select/Reset Switch	OFF/ON
	VSA off Switch	OFF/ON
	Parking Brake Switch	OFF/ON
	Brake Fluid Level Switch	OFF/ON
	Select/Reset Switch	OFF/ON
	INFO Previous Switch	OFF/ON
	INFO or Next Switch	OFF/ON
	km/h mph Select Switch	OFF/ON
	ECON Switch	OFF/ON
	SPORT Switch	OFF/ON
	NORMAL Switch	OFF/ON
	Fuel Sending Unit Input 1	———
	Fuel Sending Unit Input 2	V
	Judging Equipment of CLOCK Display	OFF/ON
	ABS Indicator	OFF/ON
	EBD Indicator (Electronic Brake Distribution)	OFF/ON
	Cruise Control Main Switch Indicator	OFF/ON
	MIL Indicator	OFF/ON
	VSA Off Indicator	OFF/ON
	VSA Indicator	OFF/ON
	Low Oil Pressure Indicator	OFF/ON
	Charging System Indicator	OFF/ON
	Cruise Main Switch ON Indicator	OFF/ON
	High Beam Indicator	OFF/ON
	Parking Light ON Indicator	OFF/ON

(cont'd)

System Description (cont'd)

Input

System Menu	Data List	Data List Indication
Gauges	ECON Indicator	OFF/ON
	Low Fuel Warning Indicator	OFF/ON
	Security Indicator	OFF/ON
	Fog Light Indicator	OFF/ON
	Master Warning Indicator	OFF/ON
	Seatbelt Indicator	OFF/ON
	Tire Pressure Warn	OFF/ON
	IMA Auto-stop Indicator	OFF/ON
	IMA Indicator	OFF/ON
	IMA Battery Level	(Number of segment to turn on)
	IMA Assist/Charge Indicator	A/B/C (Neutral and Charge/Neutral/Neutral and Assist)
	Door Open warn Multi Information Display	OFF/ON
	Maintenance Minder change oil indicator	OFF/ON
	Fuel fill cap caution Multi Information Display	OFF/ON
	A/T system trouble warn Multi Information Display	OFF/ON
	SRS system trouble warn Multi Information Display	OFF/ON
	Side Airbag Cutoff Indication Multi Information Display	OFF/ON
	Trunk Open Indicator Warn Multi Information Display	OFF/ON
	Normal Mode Indication Multi Information Display	OFF/ON
	Speed Indicator (km/h) Command	km/h
	Speed Indicator (mph) Command	MPH
	A/T Gear Position Switch (R)	OFF/ON
	A/T Gear Position Switch (P)	OFF/ON
	EPS/ECPS System Trouble Warn Multi Information Display	OFF/ON
	Driver's Seat Belt Buckle Switch	OFF/ON

Input

System Menu	Data List	Data List Indication
Door Locks	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command (Individual)	OFF/ON
Wiper	Brake Pedal Position Switch	OFF/ON
	Rear Wiper Auto Stop Switch	ON/OFF
	Windshield Wiper Switch (LOW)	OFF/ON
	Windshield Wiper Switch (HIGH)	OFF/ON
	Windshield Wiper Switch (MIST)	OFF/ON
	Rear Wiper Switch	OFF/ON
	Windshield Wiper Switch (INT)	OFF/ON
	Windshield Washer Switch	OFF/ON
	Rear Washer Switch	OFF/ON
	Windshield Wiper Motor PARK Switch	OFF/ON
	Rear Wiper Command	OFF/ON
	Rear Washer Command	OFF/ON
	Windshield Wiper Motor HI Command	OFF/ON
	Windshield Wiper Motor LO Command	OFF/ON
	Windshield Washer Motor Command	OFF/ON
Keyless Transmitter	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Trunk Knob Sw. (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Trunk Handle Switch	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command (Individual)	OFF/ON
	Trunk Lid Release Command	OFF/ON

(cont'd)

System Description (cont'd)

Input

System Menu	Data List	Data List Indication
Security	Ignition Key Cylinder Switch	OFF/ON
	Driver's Door Switch	OFF/ON
	Front Passenger's Door Switch	OFF/ON
	Driver's Rear Door Switch	OFF/ON
	Passenger's Rear Door Switch	OFF/ON
	Trunk Lid/Tailgate Switch	OFF/ON
	Front Passenger's Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Driver's Rear Door Lock Knob Switch (UNLOCK)	OFF/ON
	Passenger's Rear Door Lock Knob Sw. (UNLOCK)	OFF/ON
	Trunk Knob Sw. (UNLOCK)	OFF/ON
	Trunk Key Cylinder (UNLOCK)	OFF/ON
	Trunk Handle Switch	OFF/ON
	Radio Harness Connected	OFF/ON
	Hazard warning switch	OFF/ON
	Security Hood Switch	OFF/ON
	Driver's Door Key Cylinder Switch (LOCK)	OFF/ON
	Driver's Door Key Cylinder Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Switch (LOCK)	OFF/ON
	Driver's Door Lock Switch (UNLOCK)	OFF/ON
	Driver's Door Lock Knob Switch (LOCK)	OFF/ON
	Driver's Door Lock Knob Switch (UNLOCK)	OFF/ON
	Door LOCK Command	OFF/ON
	Door UNLOCK Command	OFF/ON
	Driver's Door UNLOCK Command (Individual)	OFF/ON
	Trunk Lid Release Command	OFF/ON
	Headlight Command	OFF/ON
	Headlight High Beam Command	OFF/ON
	Parking Light Command	OFF/ON
	Horn Command	OFF/ON
HVAC/Climate Control	A/C Pressure Switch/Thermal Protector	OFF/ON

HDS Inputs and Function Tests

Function Test

System Menu	HDS Description	Note
Door Locks	LOCK all doors	Outputs LOCK signal 1 time (for 0.6 seconds) to all door
	UNLOCK driver's side door	Outputs UNLOCK signal 1 time (for 0.6 seconds) to driver's side door
	UNLOCK all doors	Outputs UNLOCK signal 1 time (for 0.6 seconds) to all door
Lighting	Ignition Key Cylinder Light Command	Illuminates for 30 seconds
	Interior Light Command	Illuminates for 30 seconds
	Foot Light Command	Illuminates for 30 seconds
	Left Turn Signal Command	Blinks for 5 seconds
	Right Turn Signal Command	Blinks for 5 seconds
	Hazard Flasher	Blinks turn signal (left and right) for 15 seconds
	Headlight Command	Operates headlight (low) for 15 seconds
	Headlight High Beam Command	Operates headlight (high) for 15 seconds
	Parking Lights Command	Operates Parking Light for 15 seconds
	Cargo Area Light	Illuminates for 30 seconds
	Floor Light (Rear Door Ashtray Light)	Illuminates for 30 seconds
Keyless Transmitter	Release Trunk Lid/Tailgate	Outputs UNLOCK signal 1 time (for 0.9 seconds) to trunk
	Keyless Buzzer	Operates keyless buzzer 1 time
Security	Horn Command	Operates horn for 1 second
Wiper	Windshield Wiper Motor Low Command	Operates windshield wiper for 5 seconds (low speed)
	Windshield Wiper Motor High Command	Operates windshield wiper for 5 seconds (high speed)
	Windshield Washer Command	Operates windshield washer for 5 seconds
	Rear Wiper Motor	Operates for 5 seconds
	Rear Wiper Washer	Operates for 5 seconds

Troubleshooting - B-CAN System Diagnosis Test Mode A

Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see page 11-3) or F-CAN loss of communication errors first, then do this diagnosis if the symptom is related to the B-CAN system.

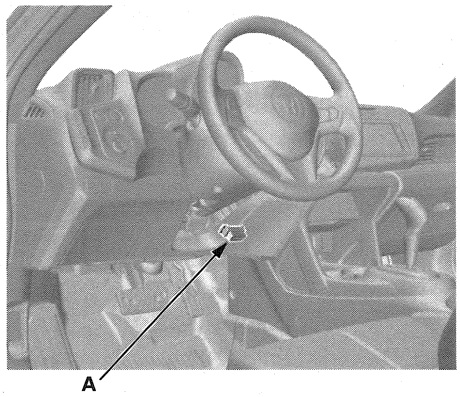
1. Compare the symptom with this list of B-CAN related systems:
   - Gauge control module
   - Immobilizer
   - Climate control
   - HandsFreeLink
   - Exterior lights
   - Entry light control
   - Turn signal/hazard warning lights
   - Horn (security and panic)
   - Wiper/washer
   - Power windows
   - Security
   - Keyless entry
   - Power door locks
   - Key interlock

   Is the symptom related to the B-CAN system?

   YES–Go to step 2.

   NO–Go to the system troubleshooting for the system with the symptom.■

2. Connect the HDS to the data link connector (DLC) (A), then turn the ignition switch to ON (II).



3. From the BODY ELECTRICAL menu, select B-CAN CONTROL UNITS INFORMATION, and then select CONNECTED UNITS listed to see if the following control units are communicating with the HDS.
   - MICU
   - Gauge control module
   - Immobilizer-keyless control unit
   - Climate control unit
   - HandsFreeLink control unit

   NOTE:
   - If a unit is communicating with the HDS, DETECT is displayed.
   - If a unit is not communicating or the vehicle is not equipped, "Not Available" is displayed.
   - The HDS only checks the connected units status one time when BODY ELECTRICAL is selected. To recheck the status after repair, reboot the HDS and repeat step 3.

   Are all control units communicating with the HDS?

   YES–Go to step 4.

   NO–If any of the control units are not communicating, go to B-CAN System Diagnosis Test Mode B (see page 22-127). If all units are not communicating or only the MICU is communicating, go to DTC B1000 troubleshooting (see page 22-135).■

4. Select the system that has the problem from the BODY ELECTRICAL menu, then select DTCs.

   Are any DTCs indicated?

   YES–Go to step 6.

   NO–If the problem is related to one of the following items and the system that is malfunctioning does not stop or turn off, go to B-CAN System Diagnosis Test Mode C (see page 22-128). If the problem is related to one of the following items and the system that is malfunctioning does not work or turn on, go to B-CAN System Diagnosis Test Mode D (see page 22-129).
   - Exterior lights
   - Entry light control
   - Horn (security and panic)
   - Wiper/washer
   - Power windows
   - Power door locks
   - Turn signal/hazard warning lights
   - Key interlock

   If the problem is related to one of the following items, go to the troubleshooting for that individual system.■
   - Gauge control module
   - Immobilizer
   - Climate control
   - HandsFreeLink
   - Security
   - Keyless entry

5. Record the DTCs, and sort them by DTC type.
6. Troubleshoot the DTC(s) in this order:
   - Battery voltage DTCs.
   - Internal error DTCs.
   - Loss of communication DTCs.
   - Signal error DTCs.

Troubleshooting - B-CAN System Diagnosis Test Mode B

Do this diagnosis if any of the control units are not communicating (Not Available is displayed on the HDS) as found by the B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Using the HDS, select the system that has the symptom from the BODY ELECTRICAL menu.
2. Select the DTCs, and then check for loss of communication DTCs.

   Are any loss of communication DTCs indicated?

   YES–Go to step 3.

   NO–Faulty MICU; replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

3. Do the power, ground, and communication part of the input test for the unit(s) not communicating with the HDS.

Unit not communicating
MICU (see page 22-141)
Gauge control module (see page 22-347)
Immobilizer-keyless control unit (see page 22-199)
Climate control unit (see page 21-30)
HandsFreeLink control unit* (see page 23-282)

*: With HandsFreeLink system

Troubleshooting - B-CAN System Diagnosis Test Mode C

Do this diagnosis if a component that is controlled by the B-CAN system does not stop or turn off.

NOTE:

- If the component does not run or turn on, go to B-CAN System Diagnosis Test Mode D (see page 22-129).
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and control the output devices (see page 22-120).

1. Check for DTCs by selecting the MODE MENU from the HDS.

   Are any DTCs indicated?

   YES–Go to B-CAN System Diagnosis Test Mode A (see page 22-126).■

   NO–Go to step 2.

2. Turn off the switch that controls the malfunctioning component.

3. Select the applicable system from the system MODE MENU, then select DATA LIST, and check the input of the switch that controls the component.

   Does the HDS indicate the switch is OFF?

   YES–Go to step 4.

   NO–Go to step 6.

4. In the DATA LIST, check the output signal of the malfunctioning component.

   Is the output signal OFF?

   YES–Go to step 5.

   NO–Replace the control unit that controls the device that will not turn OFF.■

5. Check the relay that does not stop or turn off, if applicable, then check for a short in the wire between the relay and the component, the relay and control unit, or the component and control unit.

   Are the relay and the wire harness OK?

   YES–Replace the control unit that controls the component that will not stop or turn OFF.■

   NO–Replace the relay or repair/replace the wire harness.■

6. Check the switch, then check for a short in the wire between the switch and the control unit that monitors the switch.

   Are the switch and wire harness OK?

   YES–Replace the control unit that monitors the switch.■

   NO–Replace the switch, or repair/replace the wire harness.■

Troubleshooting - B-CAN System Diagnosis Test Mode D

Do this diagnosis if a component that is controlled by the B-CAN system does not work or come on.

NOTE:

- If the component does not turn off or stop, go to B-CAN System Diagnosis Test Mode C (see page 22-128).
- See the B-CAN system unit input/output index for a list of input and output devices and the control units that monitor the input and control the output devices (see page 22-120).

1. Check the fuse of the malfunctioning output device.

   Is the fuse OK?

   YES–Go to step 2.

   NO–Replace the fuse. If the fuse blows again, repair a short to ground on the fuse circuit of the malfunctioning device.■

2. Check for DTCs by selecting the MODE MENU from the HDS.

   Are any DTCs indicated?

   YES–Go to B-CAN System Diagnosis Test Mode A (see page 22-126).■

   NO–Go to step 3.

3. Turn ON the switch that controls the malfunctioning component.

4. Select the applicable system from the system MODE MENU, then select DATA LIST, and check output signal for the malfunctioning component.

   Is there an output signal?

   YES–Go to step 5.

   NO–Go to step 9.

5. Check the relay and ground, then check for an open or a short in the circuit for the malfunctioning component.

   Is the relay and the circuit OK?

   YES–Go to step 6.

   NO–Replace the relay, or repair the circuit.■

6. Do the function test for the malfunctioning component.

   Does the output device pass the function test?

   YES–Go to step 7.

   NO–Replace the component.■

7. With the malfunctioning output device connected, connect a voltmeter between the malfunctioning output device input and the ground wire that the control unit uses to control the output device circuit.

8. Select FUNCUTIONAL TEST from the MODE MENU, and do the forced operation test of the malfunctioning component.

   Is there a change in voltage (12 V to 0 V or 0 V to 12 V)?

   YES–Inspect the ground for the component. If OK, replace the component.■

   NO–Replace the control unit that controls the malfunctioning component.■

9. Select DATA LIST from the system MODE MENU, and make sure the switch signal input for the malfunctioning system indicates a change when operated

   Does the switch input indicate ON when the switch is ON?

   YES–Replace the control unit that controls the malfunctioning component.■

   NO–Go to step 10.

10. Check the switch and its ground (if applicable), then check for an open or a short in the wire between the switch and the control unit that monitors it.

    Is the switch and the wire harness OK?

    YES–Replace the control unit that monitors the switch.■

    NO–Replace the switch, or repair/replace the wire harness.■

Troubleshooting - B-CAN System Diagnosis Test Mode 1 and Test Mode 2 (without the HDS)

Special Tools Required
MPCS (MCIS) Service Connector 07WAZ-001010A

Test Mode 1

Check the ECM/PCM for DTCs and troubleshoot ECM/PCM (see page 11-3) or F-CAN loss of communication errors first, then do this diagnosis if the HDS is not available.

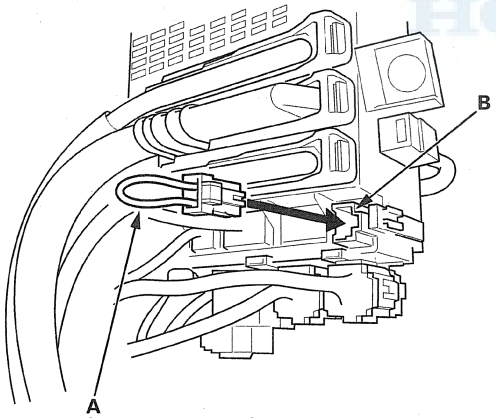
1. Check the No. B1 (15 A) and the No. B22 (7.5 A) fuses in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 2.

   NO–Replace the fuses. If the fuse blows again, repair the short to ground on the fuse circuit(s).■

2. Remove the fuse lid panel (see page 20-85).
3. Turn the ignition switch to ON (II), and move the interior light switch to the DOOR position.
4. Connect the MPCS service connector (A) to the multiplex control inspection connector socket (B) in the under-dash fuse/relay box.



5. Wait 5 seconds, and watch the individual map lights. When the individual map lights flashes quickly once and then goes off, the system is in Test Mode 1.
6. Check for B-CAN DTCs indicated by the multi-information display (MID) on the gauge control module while still in Test Mode 1. Press the SELECT/RESET knob to display the next code. After you get to the last code, the display shows END. If no DTCs are stored, the display will read NO. (see page 22-103)

   NOTE: If the test times out, remove the MPCS service connector, turn the ignition switch to LOCK (0), and repeat steps 3 and 4.

   Are any DTCs indicated?

   YES–Go to step 7.

   NO–Go to step 9.

7. Record all DTCs and troubleshoot them in this order:
   - Battery voltage DTCs
   - Internal error DTCs
   - Loss of communication DTCs
   - Signal error DTCs
8. Clear the DTCs by pressing and holding the SELECT/RESET knob for at least 10 seconds.
9. You will hear a beep to confirm the codes have been cleared. Operate the devices that failed, and recheck for codes.

Test Mode 2

10. Remove the MPCS service connector from the under-dash fuse/relay box multiplex control inspection connector socket for 5—10 seconds, then re-insert it to enter Mode 2. When the system enters Mode 2, the individual map lights flash two times quickly and then goes off.

    NOTE: If the MPCS service connector is disconnected for too short or too long of a time, or the ignition switch is turned to LOCK (0), the system returns to Test Mode 1.

11. The following table lists the circuits that can be checked in Test Mode 2. Operate the switch that is most closely related to the problem. If the circuit is OK, the individual map lights blink once. If the circuit is faulty, there is no indication.

MICU

Item
Brake pedal position switch
Driver's door switch
Hatch latch switch
Windshield wiper switch (LOW)
Windshield wiper switch (HIGH)
Windshield wiper switch (INT)
Windshield wiper switch (MIST)
Rear wiper switch
Windshield washer switch
Rear washer switch
Wiper intermittent dwell time controller
Turn signal switch (LEFT)
Turn signal switch (RIGHT)
Hazard warning switch
Headlight switch (OFF)
Headlight switch (PARKING)
Headlight switch (HEADLIGHT)
Headlight switch (High Beam)
Headlight switch (PASSING)
Hatch outer handle switch
Transmission range switch (P) (CVT)
Ignition key cylinder switch
Security hood switch
Back-up light switch
Windshield wiper motor PARK switch
Passenger's door switch
Audio unit or Audio-navigation unit connected
Driver's door lock switch (UNLOCK)
Driver's door lock switch (LOCK)
Driver's door lock knob switch (UNLOCK)
Driver's door lock knob switch (LOCK)
Driver's door key cylinder switch (UNLOCK)*
Driver's door key cylinder switch (LOCK)*
Passenger's door lock knob switch (UNLOCK)

* A second key is necessary to check the key cylinder inputs. Be sure to rotate the key cylinder switch two times to each position (lock and lock, unlock and unlock) to ensure the door lock knob switch is in the appropriate position.

Do the individual map lights work properly in all switch positions?

YES–Go to function and input test for the system related to the failure.■

NO–Repair the open, or short, or replace the faulty switch.■

Sleep and Wake-Up Mode Test

1. Shift to the sleep mode:

   Close all doors. Turn the ignition switch to LOCK (0), and remove the key, then open and close the driver's door. If the MICU receives no signals from the inputs listed below, it will go into sleep mode in less than 40 seconds.

2. Confirm the sleep mode:

   NOTE: Check any official Honda service website for more service information about parasitic draw at the battery.

   Check the parasitic draw at the battery after 40 seconds; amperage should change to less than 30 mA in less than 40 seconds.

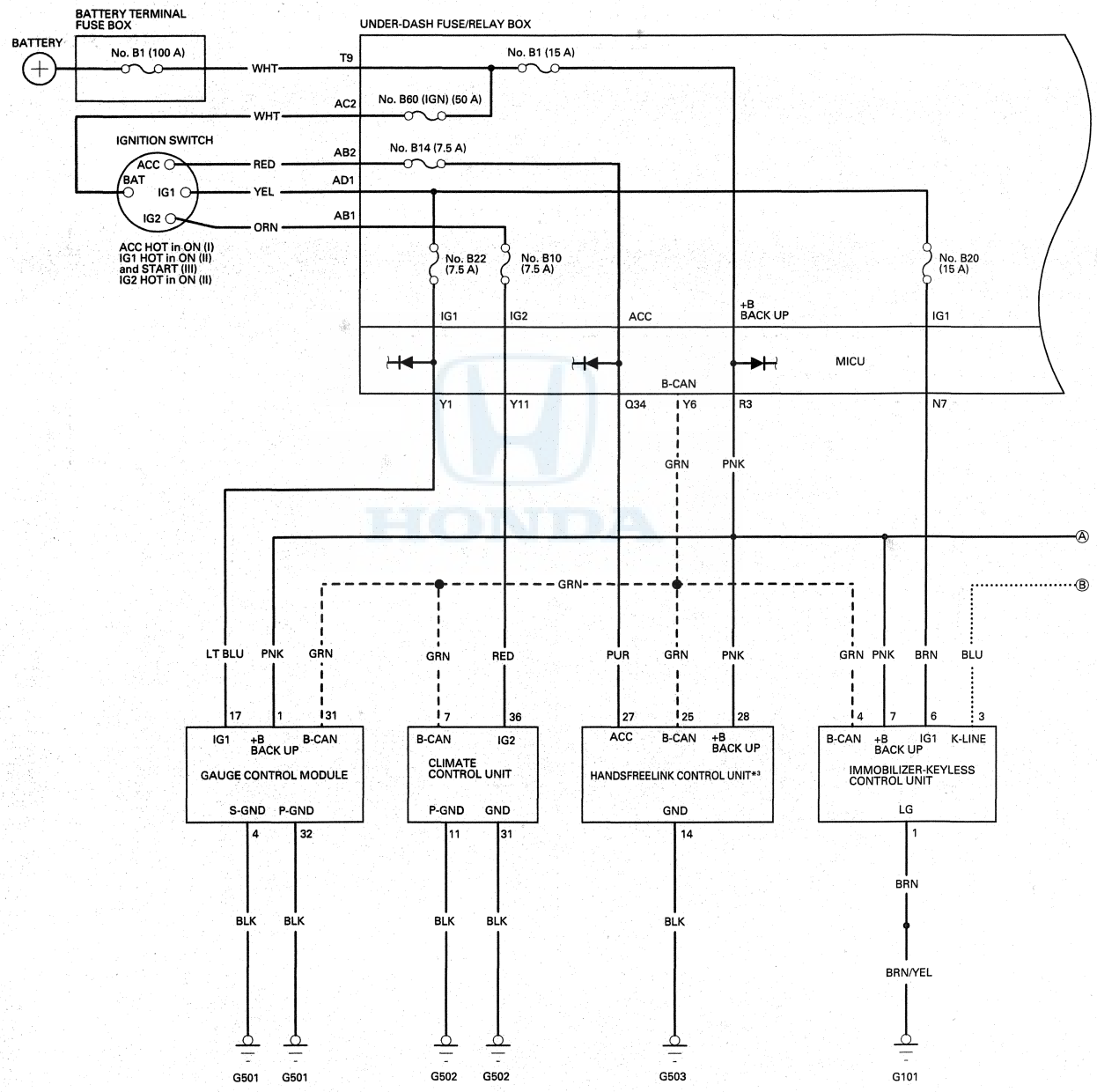
3. Shift to the wake up mode:

   When the ignition switch is turned to ON (II), the MICU, gauge control module, immobilizer-keyless control unit, climate control unit, HandsFreeLink control unit, and ECM/PCM wake up at the same time without "talking" to each other through the communication lines. When any switch in the multiplex integrated control system is turned on, it wakes up its related control unit which, in turn, wakes up the other units. After confirming the sleep mode, look in the following table for the switch most related to the problem. Operate that switch and see if its control unit wakes up.

   NOTE: If any control unit is faulty and will not wake up, several circuits in the system will malfunction at the same time. Below is a list of the switches and the input signals that wake them up.

   - Driver's door switch (door open)
   - Hatch latch switch (hatch open)
   - Hatch outer handle switch (switch pressed)
   - Security hood switch (hood open)
   - Hazard warning switch (ON)
   - Combination light switch (Parking, Headlight, High Beam, Passing)
   - Ignition key switch (key inserted)
   - Audio unit or audio-navigation unit switch (switch pressed)
   - Driver's door key cylinder switch (LOCK/UNLOCK)
   - Passenger's door lock knob (UNLOCK)
   - Driver's door lock switch (LOCK/UNLOCK)
   - Passenger's door switch (door open)

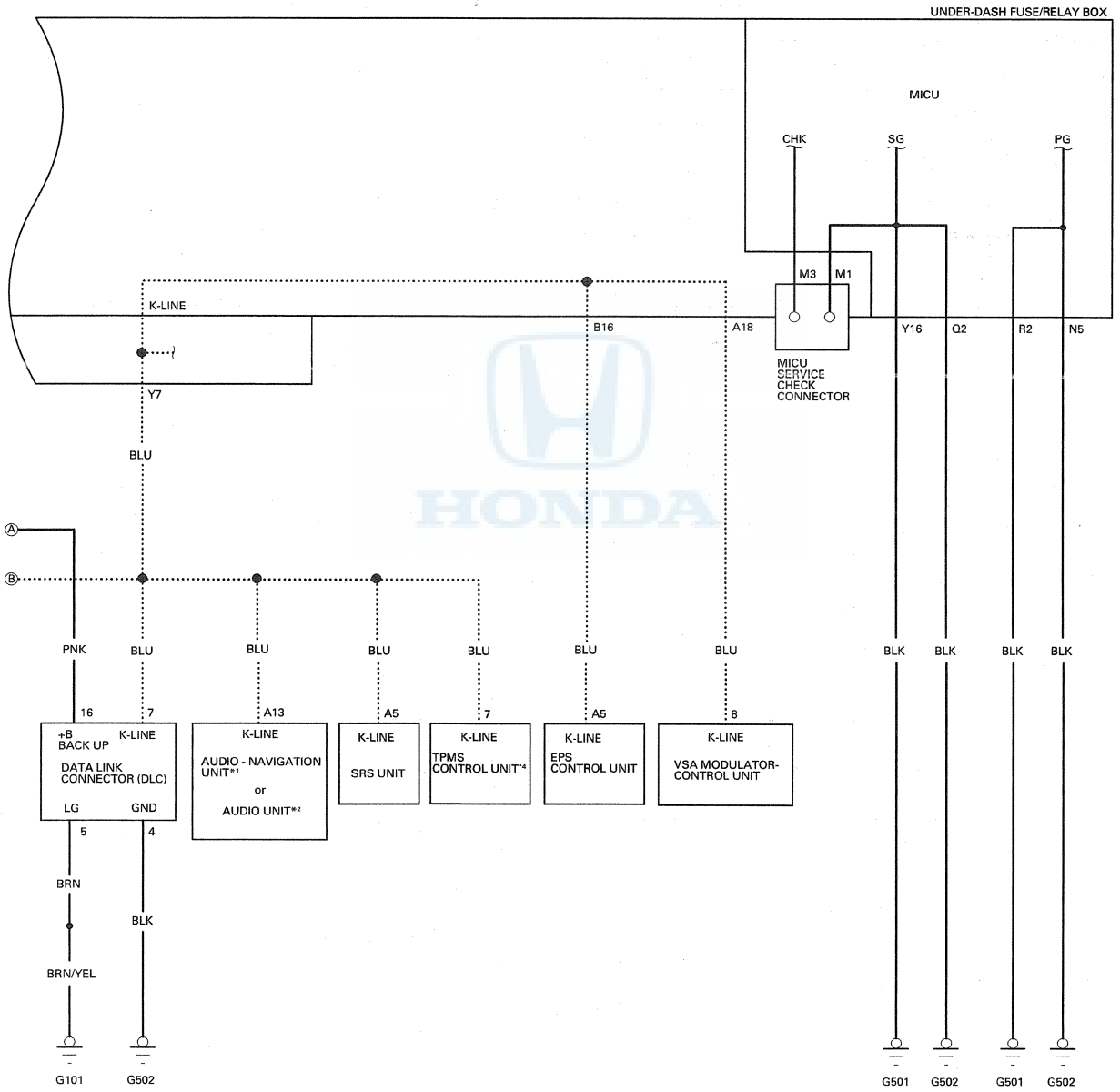
Circuit Diagram



(cont'd)

Circuit Diagram (cont'd)

*1 : With navigation
*2 : Without navigation
*3 : With HandsFreeLink control unit
*4 : With TPMS
- - - - - : B-CAN line
..... : Other communication line



DTC Troubleshooting

DTC B1000: Communication Circuit Error (BUS-OFF)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1000 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections, or worn/shorted wires. If the connections are good, check the 12 volt battery condition (see page 22-85) and the charging system.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the appropriate connector at each control unit in the table.

Unit	Connector
Gauge control module	32P connector
Climate control unit	36P connector
HandsFreeLink control unit*	28P connector
Immobilizer-keyless control unit	7P connector

*: With HandsFreeLink system

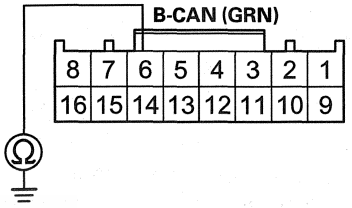
7. Turn the ignition switch to ON (II).
8. Clear the DTCs with the HDS.
9. Turn the ignition switch to LOCK (0), and then back to ON (II).
10. Wait for at least 6 seconds.
11. Check for DTCs with the HDS.

    Is DTC B1000 indicated?

    YES–Go to step 12.

    NO–Turn the ignition switch to LOCK (0), then go to step 15.
12. Turn the ignition switch to LOCK (0).
13. Disconnect the under-dash fuse/relay box connector Y (16P).
14. Check for continuity between under-dash fuse/relay box connector Y (16P) terminal No. 6 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire between the under-dash fuse/relay box connector and the affected control unit.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

15. Reconnect the gauge control module 32P connector.
16. Turn the ignition switch to ON (II).
17. Clear the DTCs with the HDS.
18. Turn the ignition switch to LOCK (0), and then back to ON (II).
19. Wait for at least 6 seconds.
20. Check for DTCs with the HDS.

    Is DTC B1000 indicated?

    YES–Replace the gauge control module (see page 22-354).■

    NO–Go to step 21.

(cont'd)

DTC Troubleshooting (cont'd)

21. Reconnect the climate control unit 36P connector.
22. Turn the ignition switch to ON (II).
23. Clear the DTCs with the HDS.
24. Turn the ignition switch to LOCK (0), and then back to ON (II).
25. Wait for at least 6 seconds.
26. Check for DTCs with the HDS.

    Is DTC B1000 indicated?

    YES–Replace the climate control unit (see page 21-112).■

    NO–

    - With HandsFreeLink system: go to step 27.
    - Without HandsFreeLink system: Replace the immobilizer-keyless control unit (see page 22-203).■

27. Reconnect the HandsFreeLink control unit 28P connector.
28. Turn the ignition switch to ON (II).
29. Clear the DTCs with the HDS.
30. Turn the ignition switch to LOCK (0), and then back to ON (II).
31. Wait for at least 6 seconds.
32. Check for DTCs with the HDS.

    Is DTC B1000 indicated?

    YES–Replace the HandsFreeLink control unit (see page 23-282).■

    NO–Replace the immobilizer-keyless control unit (see page 22-203).■

DTC B1002: MICU Internal Error (EEPROM Error)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1002 indicated?

   YES–Faulty MICU; replace the under-dash fuse/relay box.■

   - USA models (see page 22-82)
   - Canada models (see page 22-83)

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections. If the connections are good, check the 12 volt battery condition (see page 22-85) and the charging system.■

DTC B1011: MICU Lost Communication With Gauge Control Module (VSP/NE Message)

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- Before troubleshooting, check the No. B1 (15 A) and No. B22 (7.5 A) fuse in the under-dash fuse/relay box.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

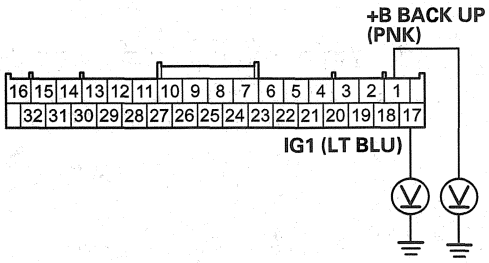
   Is DTCs B1011 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections of the gauge control module 32P connector and at the under-dash fuse/relay box connector Y (16P). If the connections are good, check the 12 volt battery condition (see page 22-85) and the charging system.■

5. Measure the voltage between gauge control module 32P connector terminals No. 1 and No. 17 and body ground individually.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Go to step 8.

NO–Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Check the No. B1 (15 A) and the No. B22 (7.5 A) fuses in the under-dash fuse/relay box.

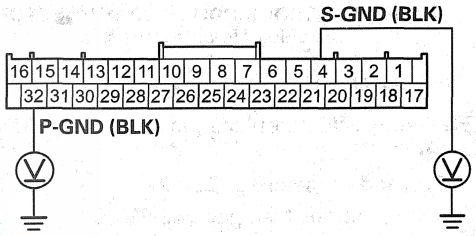
   Are the fuses OK?

   YES–Repair an open or high resistance in the No. B1 (15 A) and/or No. B22 (7.5 A) fuse circuit.■

   NO–Replace the fuse(s). If the fuse blows again, repair a short to ground in the No. B1 (15 A) and/or No. B22 (7.5 A) fuse circuit■

8. Measure the voltage between gauge control module 32P connector terminals No. 4 and No. 32 and body ground individually.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 9.

NO–Repair an open or high resistance in the ground wire or poor ground (G501).■

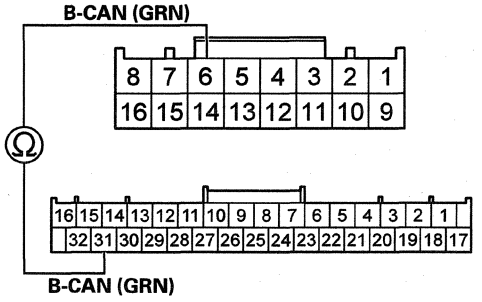
9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector Y (16P).
11. Disconnect the gauge control module 32P connector.

(cont'd)

DTC Troubleshooting (cont'd)

12. Check for continuity between under-dash fuse/relay box connector Y (16P) terminal No. 6 and gauge control module 32P connector terminal No. 31.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair open or high resistance in the wire between the under-dash fuse/relay box and the gauge control module.■

DTC B1036: IG1 Power Supply Circuit Malfunction

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- Before troubleshooting, make sure the No. B22 (7.5 A) fuse in the under-dash fuse/relay box is OK.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

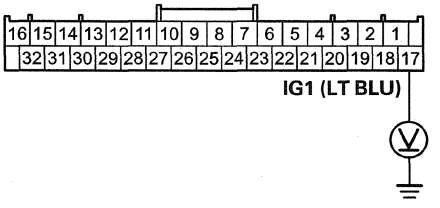
   Is DTC B1036 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections at the gauge control module 32P connector and at under-dash fuse/relay box connector Y (16P). If the connections are good, check the 12 volt battery condition (see page 22-85) and the charging system.■

5. Measure the voltage between gauge control module 32P connector terminal No. 17 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there battery voltage?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the wire between the under-dash fuse/relay box and the gauge control module.■

DTC B1200: Communication Bus Line Error (BUS-OFF)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1200 indicated?

   YES–Troubleshoot DTC B1000 (see page 22-135).■

   NO–Intermittent failure, the system is OK at this time.■

DTC B1900: Communication Circuit Error (BUS-OFF)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1900 indicated?

   YES–Troubleshoot DTC B1000 (see page 22-135).■

   NO–Intermittent failure, the system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC U1280: Communication Bus Line Error (BUS-OFF)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1280 indicated?

   YES–Troubleshoot DTC B1000 (see page 22-135).■

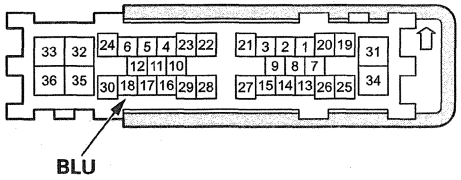
   NO–Intermittent failure, the system is OK at this time.■

MICU Input Test

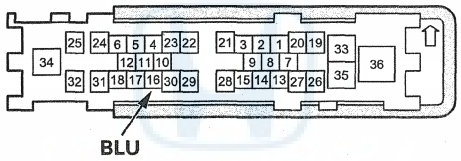
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors A, B, N, Q, R, and Y.

   NOTE: All connector views are wire side of female terminals.

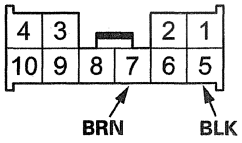
CONNECTOR A (36P)



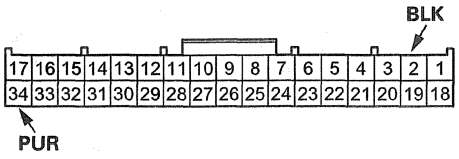
CONNECTOR B (36P)



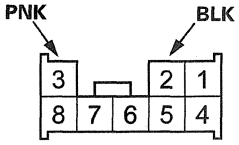
CONNECTOR N (10P)



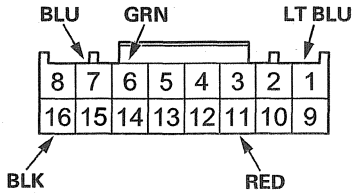
CONNECTOR Q (34P)



CONNECTOR R (8P)



CONNECTOR Y (16P)



4. Inspect the connector and socket terminals to make sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.

(cont'd)

MICU Input Test (cont'd)

5. With the connectors still disconnected, make these input tests at the connectors.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A18	BLU	VSA modulator-control unit 32P connector disconnected	Check for continuity between terminal A18 and VSA modulator-control unit 32P connector terminal No. 8: There should be continuity.	An open or high resistance in the wire
B16	BLU	EPS control unit connector A (11P) disconnected	Check for continuity between terminal B16 and EPS control unit connector terminal A5: There should be continuity.	An open or high resistance in the wire
Y7	BLU	Under all conditions	Check for continuity between terminal Y7 and data link connector (DLC) (16P) connector terminal No. 7: There should be continuity.	An open or high resistance in the wire
Y7	BLU	Immobilizer-keyless control unit 7P connector disconnected	Check for continuity between terminal Y7 and immobilizer-keyless control unit 7P connector terminal No. 3 : There should be continuity.	An open or high resistance in the wire
Y7*1	BLU	Audio-navigation unit connector A (24P) disconnected	Check for continuity between terminal Y7 and audio-navigation unit connector terminal A13: There should be continuity.	An open or high resistance in the wire
Y7*2	BLU	Audio unit connector A (24P) disconnected	Check for continuity between terminal Y7 and audio unit connector terminal A13: There should be continuity.	An open or high resistance in the wire
Y7	BLU	SRS unit connector A (39P) disconnected	Check for continuity between terminal Y7 and SRS unit connector terminal A5: There should be continuity.	An open or high resistance in the wire
Y7*3	BLU	TPMS control unit 20P connector disconnected	Check for continuity between terminal Y7 and TPMS control unit 20P connector terminal No. 7: There should be continuity.	An open or high resistance in the wire
Y6	GRN	Immobilizer-keyless control unit 7P connector disconnected	Check for continuity between terminal Y6 and immobilizer-keyless control unit 7P connector terminal No. 4 : There should be continuity.	An open or high resistance in the B-CAN wire
Y6	GRN	Gauge control module 32P connector disconnected	Check for continuity between terminal Y6 and gauge control module 32P connector terminal No. 31: There should be continuity.	An open or high resistance in the B-CAN wire

*1: With navigation
*2: Without navigation
*3: With TPMS

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Y6	GRN	Climate control unit 36P connector disconnected	Check for continuity between terminal Y6 and climate control unit 36P connector terminal No. 7: There should be continuity.	An open or high resistance in the wire
Y6*1	GRN	HandsFreeLink control unit 28P connector disconnected	Check for continuity between terminal Y6 and HandsFreeLink control unit 28P connector terminal No. 25: There should be continuity.	An open or high resistance in the wire
A18	BLU	Disconnect VSA modulator control unit 47P connector	Check for continuity to ground: There should be no continuity.	A short to ground in the wire
B16	BLU	Disconnect EPS control unit connector A (11P)	Check for continuity to ground: There should be no continuity.	A short to ground in the wire
Y7	BLU	Disconnect these connectors: • Immobilizer-keyless control unit 7P connector • TPMS control unit 20P connector*2 • Audio-navigation unit connector A (24P)*3 • Audio unit connector A (24P)*4 • SRS unit connector A (39P)	Check for continuity to ground: There should be no continuity.	A short to ground in the wire
Y6	GRN	Disconnect these connectors: • Immobilizer-keyless control unit 7P connector • Gauge control module 32P connector • Climate control unit 36P connector • HandsFreeLink control unit 28P connector*1	Check for continuity to ground: There should be no continuity.	A short to ground in the wire

*1: With HandsFreeLink system
*2: With TPMS
*3: With navigation
*4: Without navigation

(cont'd)

MICU Input Test (cont'd)

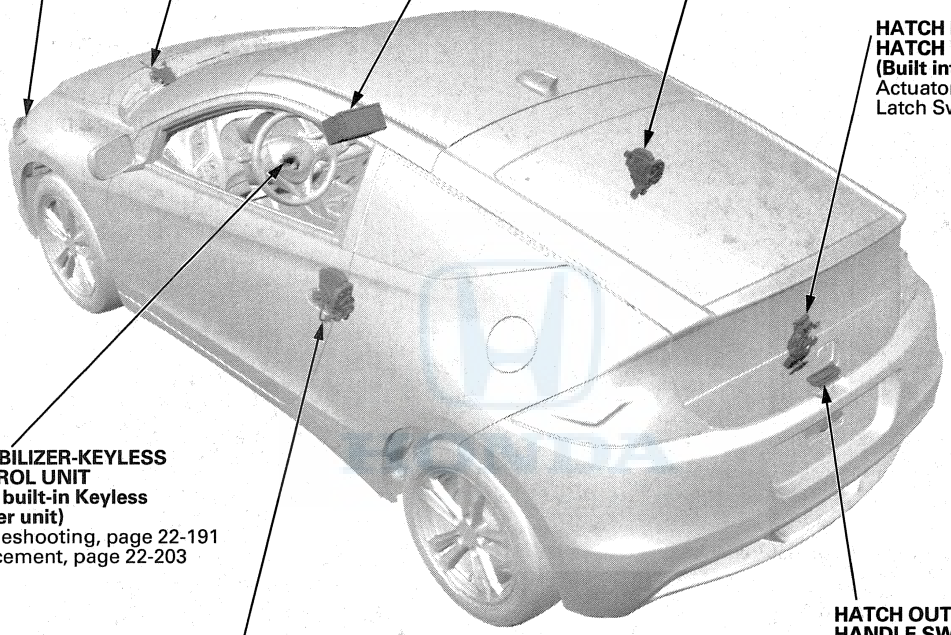
6. Reconnect the connectors to the under-dash fuse/relay box, and make these input tests at the connector.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
R3	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire
Q34	PUR	Ignition switch ACCESSORY (I)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B14 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire
N7	BRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B20 (15 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire
Y1	LT BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B22 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire
Y11	RED	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B10 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire

7. If multiple failures are found on more than one control unit, replace the under-dash fuse/relay box (includes the MICU).
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

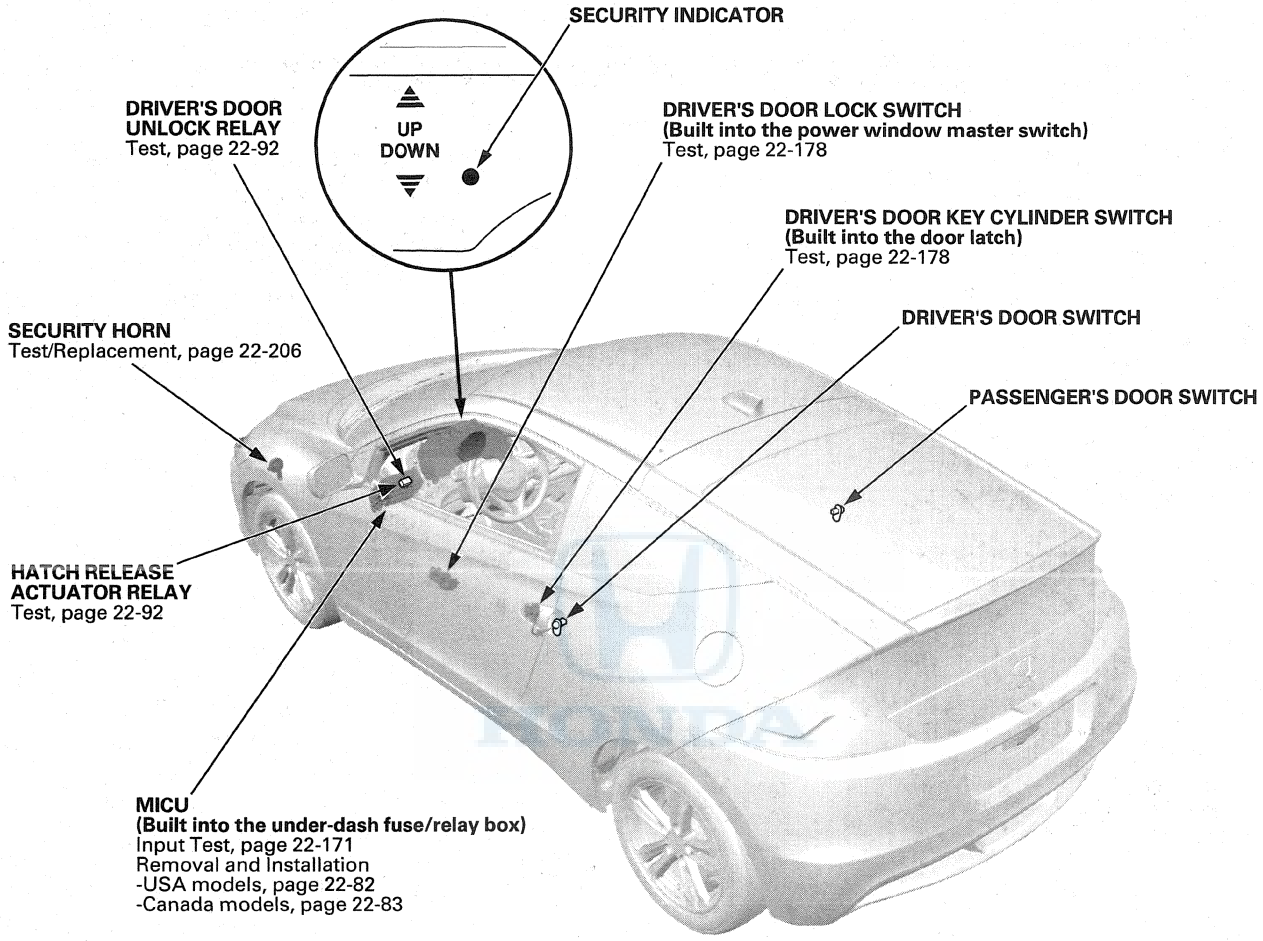
   If input failures are related to a particular control unit, replace the control unit.

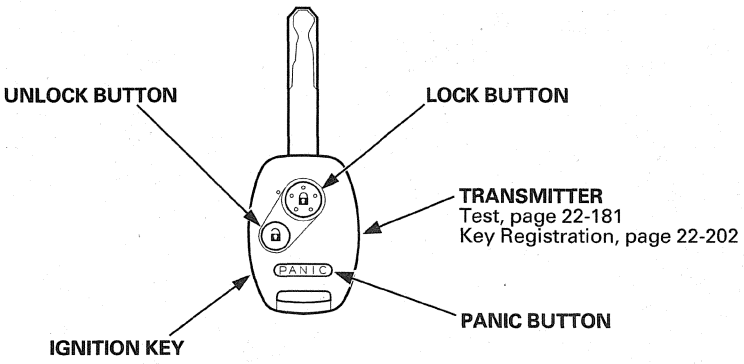
Component Location Index



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Component Location Index (cont'd)





System Description

Security Alarm System

The security alarm system automatically arms after the doors, hood, and hatch are closed and locked. For the system to arm, the ignition switch must be in the LOCK (0), the key must be removed from the ignition switch, and the MICU must receive inputs that the doors, hood, and hatch are closed and locked. The alarm can be disarmed at any time by unlocking the driver door with the key or pressing the UNLOCK button on the transmitter.

When everything is closed and locked, the only inputs that are grounded, and have 0 V, are the driver's door lock knob switch (LOCK position) input and the audio unit or audio-navigation unit (if equipped) security input. In other words, all of the other switches are open, and have about 10 to 12 V, including the key cylinder switches. The security indicator in the gauge control module begins to flash immediately after the vehicle is completely closed and locked, and 15 seconds later, the security system arms. If the security indicator does not flash after the doors are locked, the system is not arming.

If one of the switches is misadjusted or shorted internally, or there is a short in one of the keyless/ power door lock/security circuits, the security system will not arm. A switch that is slightly misadjusted can cause the alarm to sound for no apparent reason. In this case, a significant change in outside air temperature, the vibration of a passing truck, or someone bumping into the vehicle could cause the alarm to sound.

NOTE: There is no glass breakage or motion detection feature.

The system sounds the alarm when any of these occur:

- A door or the hatch is forced open.
- A door is unlocked without using the key or the transmitter.
- The hood is opened.
- The audio unit or audio-navigation unit (if equipped) is disconnected.
- The transmitter PANIC button is pressed.

When the system sounds the alarm, the horn sounds and the exterior lights flash for 2 minutes. The alarm can be stopped at any time by unlocking the driver's door by pressing the UNLOCK button on the transmitter.

NOTE: The security system can be customized in the multi-information display (MID) to suit the customer's needs. For more information about keyless/security system options, refer to the Owner's Manual.

Keyless Entry System

The keyless entry system is integrated with the multiplex integrated control system. The multiplex integrated control unit (MICU) receives LOCK, UNLOCK, and PANIC signals from the immobilizer-keyless control unit (keyless receiver).

The keyless entry system allows you to lock and unlock the vehicle with the transmitter. When you press the LOCK button, all doors lock. When you press the UNLOCK button once, only the driver's door unlocks. The other doors will unlock when you press the button a second time. (Depending on the settings in the MID, all the doors may unlock when you press the button the first time.) The doors will not lock with the transmitter if a door is not fully closed, or if the key is in the ignition switch.

When the switch for the ceiling light is in the middle (DOOR) position, it comes on when the UNLOCK button is pressed. If a door is not opened, the light goes off and the doors will relock in about 30 seconds. If the doors are locked with the transmitter within 30 seconds, the light goes off immediately.

NOTE: The keyless entry system can be customized in the multi-information display (MID) to suit the customer's needs. For more information about keyless/security system options, refer to the Owner's Manual.

Panic Mode

The panic mode sounds the alarm in order to attract attention. When the PANIC button on the transmitter is pressed and held for 2 seconds, the horns sound and the exterior lights flash for about 20 seconds.

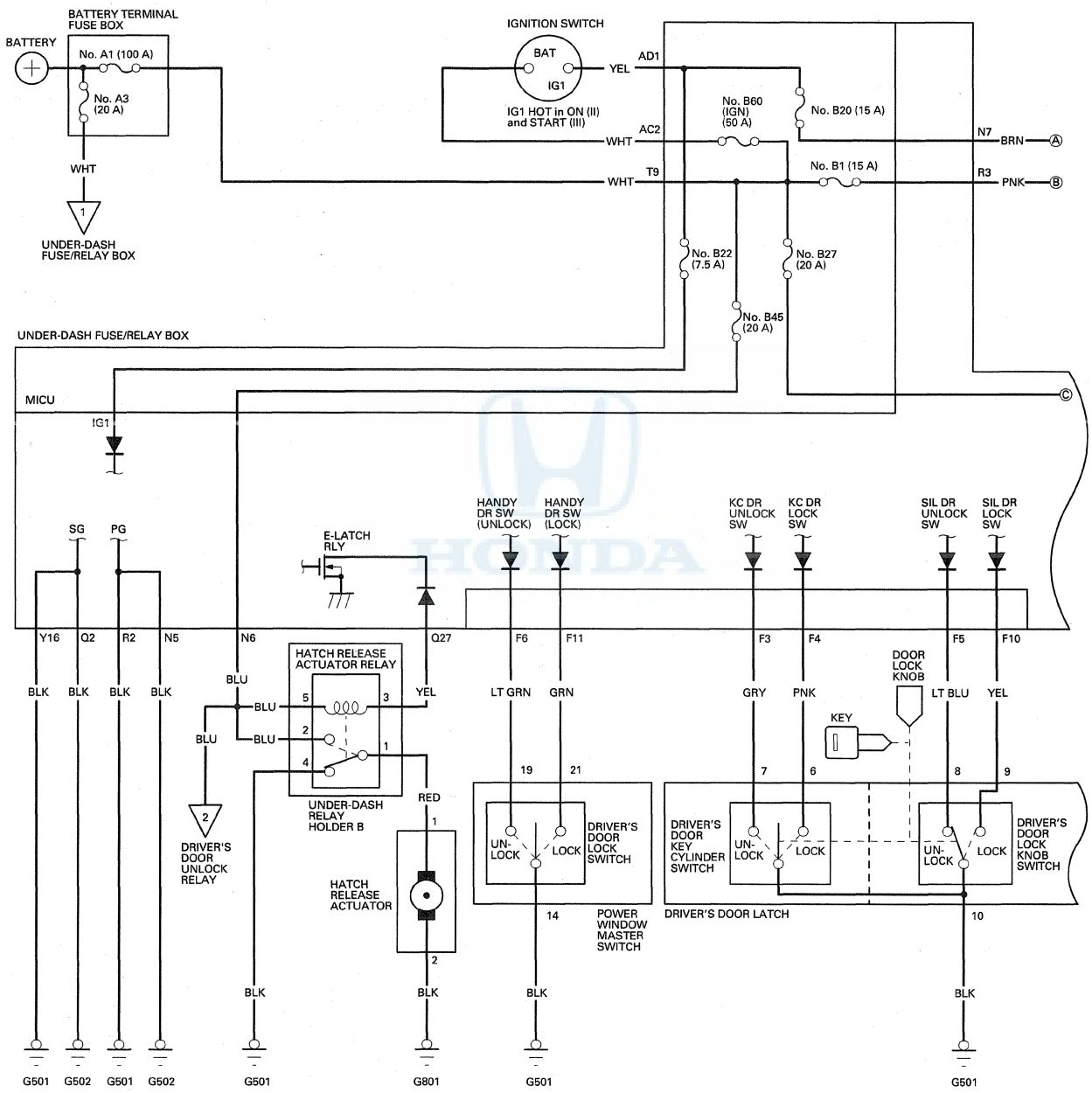
The panic mode can be canceled at anytime by pressing any button on the transmitter or by turning the ignition switch to ON (II). The panic mode will not function if the ignition switch is in ON (II).

Door Lock System

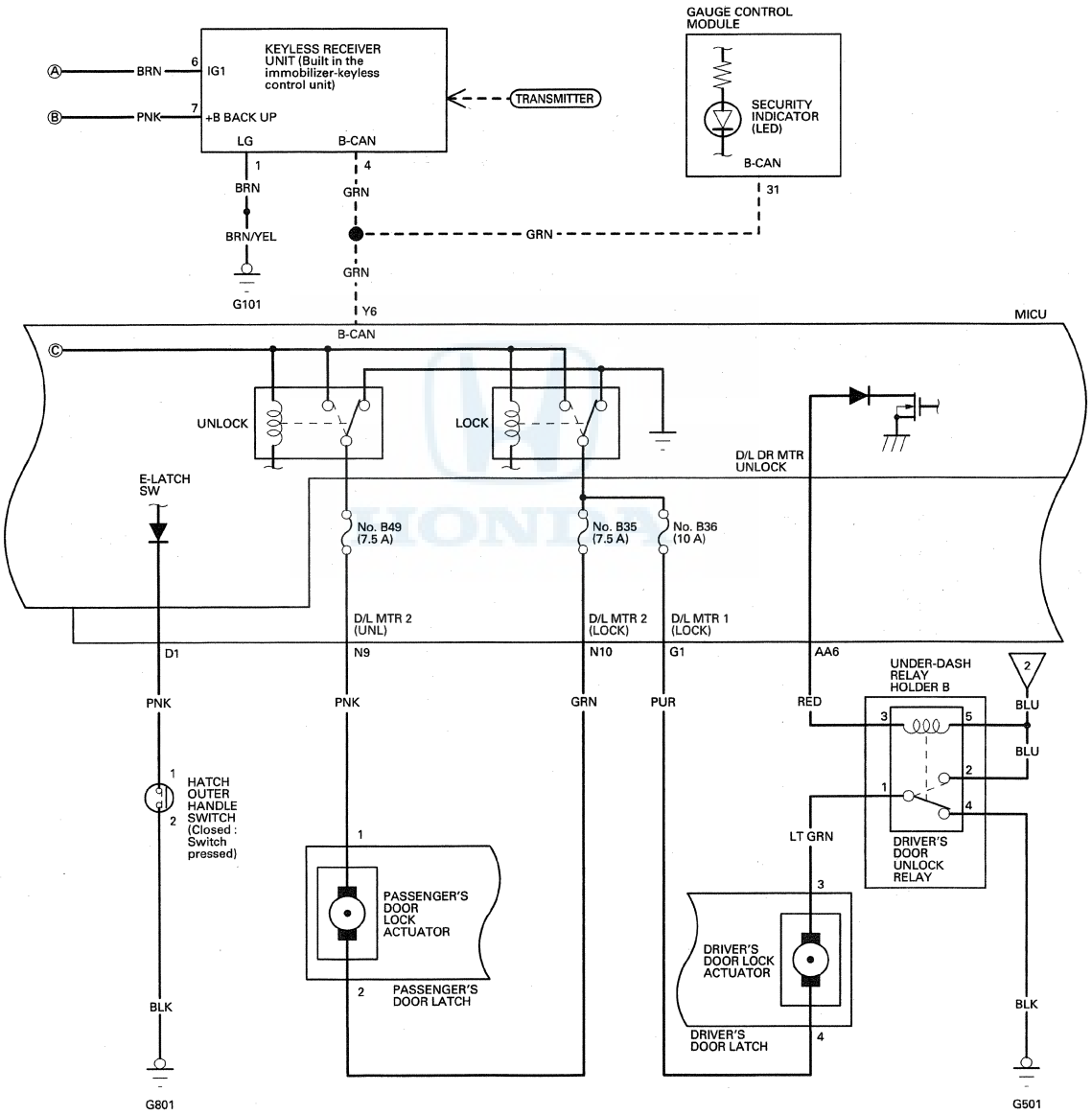
The system has a pair of circuits between door lock actuators and the MICU to improve safety of the system. One is for driver's side door lock actuators, and another is for passenger's side door lock actuators. Each circuit has two fuses, and even if one of the fuses is blown, at least the driver's side, or the passenger's side actuators continue to work normally. When one fuse is blown, another fuse in the same circuit must be checked (for example, when the under-dash fuse/relay box No. B35 fuse is blown, the No. B49 fuse also must be checked).

Keyless/Power Door Locks/Security System

Circuit Diagram

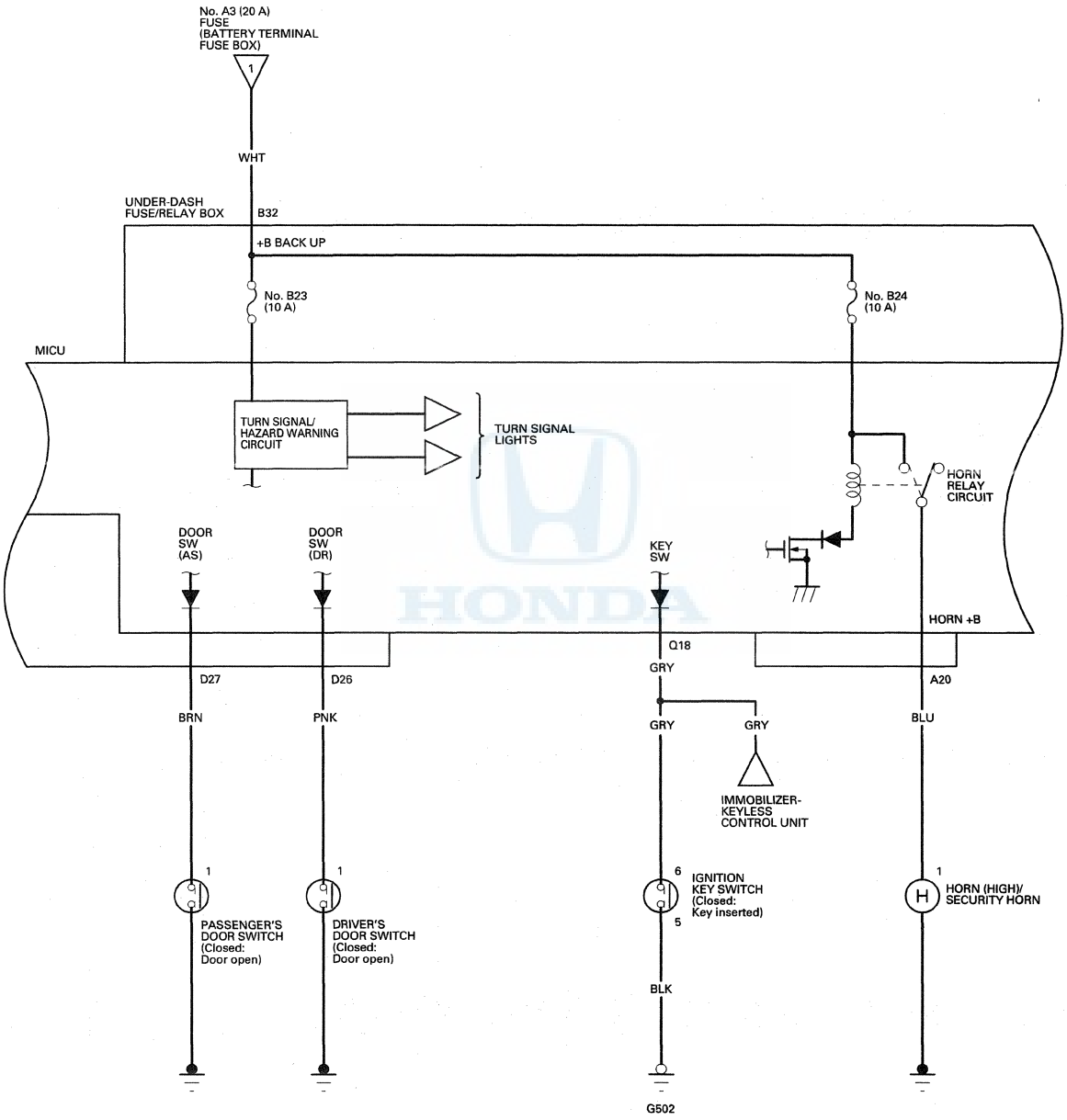


- - - - - - - : B-CAN line

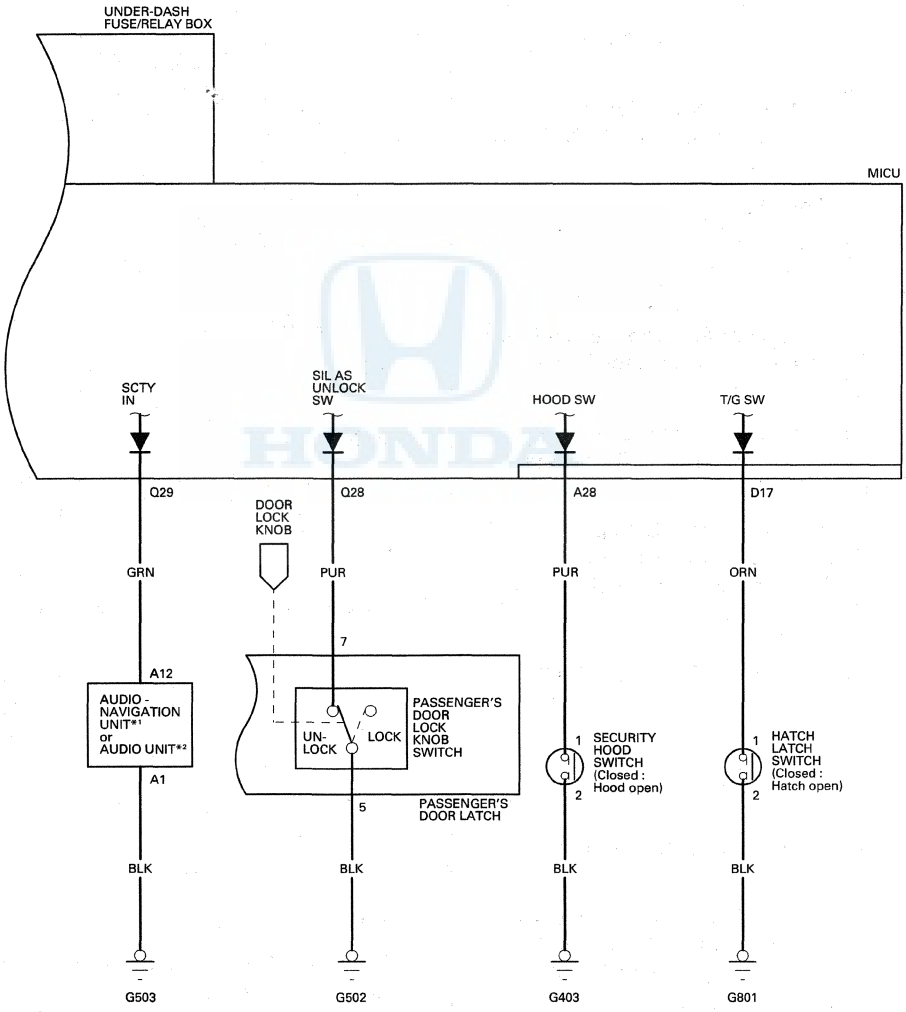


(cont'd)

Circuit Diagram (cont'd)



*1 : With navigation
*2 : Without navigation



DTC Troubleshooting

DTC B1127: Driver's Door Key Cylinder Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- You will need two keys to do this troubleshooting.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Insert the ignition key into the driver's door key cylinder, and turn the key to the LOCK and UNLOCK positions at least 10 times.
4. Check for DTCs with the HDS.

   Is DTC B1127 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the driver's door key cylinder switch system is OK at this time. Check for loose or poor connections.■
5. With the driver's door key cylinder in the neutral position, select KEYLESS TRANSMITTER with the HDS, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES–The MICU is faulty. Replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

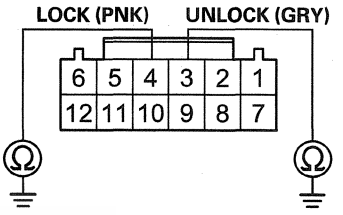
   NO–Go to step 7.
7. Disconnect the driver's door lock actuator/knob switch 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) and DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES–Faulty driver's door key cylinder switch; replace the driver's door latch (see page 20-11).■

   NO–Go to step 9.
9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector F (12P).
11. Check for continuity between body ground and under-dash fuse/relay box connector F (12P) terminals No. 3 (UNLOCK) and No. 4 (LOCK) individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

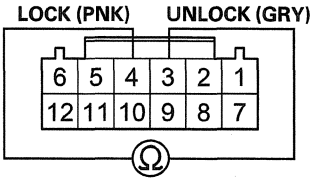
Is there continuity?

YES–Repair a short to ground in the LOCK or UNLOCK wire.■

NO–Go to step 12.

12. Check for continuity between under-dash fuse/relay box connector F (12P) terminals No. 3 (UNLOCK) and No. 4 (LOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the LOCK and UNLOCK wires.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

DTC B1128: Driver's Door Remote Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Lock and unlock the driver's door with the driver's door lock switch.
3. Check for DTCs with the HDS.

   Is DTC B1128 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the driver's door lock switch system is OK at this time. Check for loose or poor connections.■
4. With the driver's door lock switch in the neutral position, select KEYLESS TRANSMITTER from the HDS and enter the DATA LIST.
5. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES–The MICU is faulty. Replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

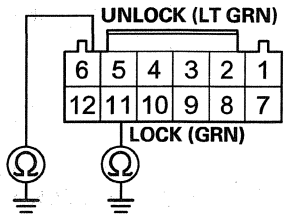
   NO–Go to step 6.
6. Disconnect the power window master switch connector.
7. Check the ON/OFF information of the DRIVER'S DOOR LOCK SWITCH (LOCK) and DRIVER'S DOOR LOCK SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES–Faulty door lock switch; replace the power window master switch (see page 22-289).■

   NO–Go to step 8.
8. Turn the ignition switch to LOCK (0).
9. Disconnect under-dash fuse/relay box connector F (12P).
10. Check for continuity between body ground under-dash fuse/relay box connector F (12P) terminals No. 11 (LOCK) and No. 6 (UNLOCK) individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

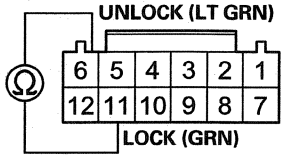
Is there continuity?

YES–Repair a short to ground in the LOCK or UNLOCK wire.■

NO–Go to step 11.

11. Check for continuity between under-dash fuse/relay box connector F (12P) terminals No. 11 (LOCK) and No. 6 (UNLOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the LOCK and UNLOCK wires.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1129: Driver's Door Knob Switch Input Circuit Malfunction (Simultaneous input of lock and unlock signal)

NOTE: If you are troubieshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Operate the driver's door lock knob switch several times.
4. Check for DTCs with the HDS.

   Is DTC B1129 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the driver's door lock knob switch is OK at this time. Check for loose or poor connections.■
5. Select KEYLESS TRANSMITTER from the BODY ELECTRICAL menu, and enter the DATA LIST.
6. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK).

   Are the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator ON and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator OFF with the driver's door lock knob switch in LOCK position, and are the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) information indicator OFF and the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) information indicator ON with the driver's door lock knob switch in UNLOCK position?

   YES–Faulty MICU; replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

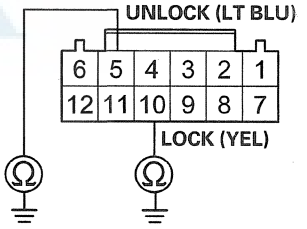
   NO–Go to step 7.
7. Disconnect the driver's door lock actuator/knob switch 10P connector.
8. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (LOCK) and DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Are both information indicators OFF?

   YES–Check for an open in the driver's door lock knob switch (LOCK) wire or the driver's door lock knob switch (UNLOCK) wire between the MICU and the driver's door lock knob switch. If OK, replace the driver's door latch (see page 20-11).■

   NO–Go to step 9.
9. Turn the ignition switch to LOCK (0).
10. Disconnect under-dash fuse/relay box connector F (12P).
11. Check for continuity between body ground under-dash fuse/relay box connector F (12P) terminals No. 5 (UNLOCK) and No. 10 (LOCK) individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

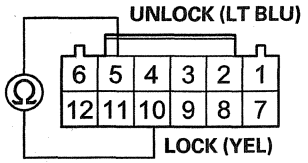
Is there continuity?

YES–Repair a short to ground in the LOCK or UNLOCK wire.■

NO–Go to step 12.

12. Check for continuity between under-dash fuse/relay box connector F (12P) terminals No. 5 (UNLOCK) and No. 10 (LOCK).

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wire between the LOCK wire and UNLOCK wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

Symptom Troubleshooting Index

Power Door Locks/Keyless

1. Check for B-CAN DTCs. If any B-CAN DTCs are indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and resolve them first.
2. If the door lock system and the keyless operation do not work, troubleshoot the door locks first.

   NOTE: The system does not function when the ignition switch is ON (II).

Symptom	Check Items	Also check for
The security system sounds randomly while the doors are locked.	Tripped sensor history (see page 22-183)	
Both doors will not lock or unlock with the door lock switch or the transmitter. Driver's door will lock and unlock with the door key cylinder switch.	• Poor ground (G501, G502) or an open in the ground wire • Blown No. B27 (20 A) and/or No. B45 (20A) fuse in the under-dash fuse/relay box • Blown No. B35 (7.5A), No. B36 (10A) and/or No. B49 (7.5A) fuse in the under-dash fuse/relay box • Door switch test (check the door switch ON/OFF information with the HDS) • Door lock switch test (check the door switch ON/OFF information with the HDS) • MICU input test (see page 22-171)	Faulty door lock actuator (see page 22-176)
Driver's door will not lock or unlock.	• Poor ground (G501, G502) or an open in the ground wire • Blown No. B27 (20 A) fuse in the under-dash fuse/relay box • Blown No. B36 (10 A) and/or No. B45 (20A) fuse in the under-dash fuse/relay box • MICU input test (see page 22-171)	Faulty door lock actuator (see page 22-176)
Passenger's door will not lock or unlock.	• Poor ground (G501, G502) or an open in the ground wire • Blown No. B27 (20 A) fuse in the under-dash fuse/relay box • Blown No. B35 (7.5 A) and/or No. B49 (7.5 A) fuse in the under-dash fuse/relay box • Driver's door key cylinder switch test (see page 22-178) • MICU input test (see page 22-171)	Faulty door lock actuator (see page 22-176)
Hatch will not release.	• Poor ground (G501, G502, G801) • Blown No. B45 (20 A) fuse in the under-dash fuse/relay box • Hatch outer handle switch test (check the trunk lid/tailgate switch ON/OFF information with the HDS) • MICU input test (see page 22-171)	Faulty hatch release actuator (see page 22-179)
Keyless operation does not work (LOCK, UNLOCK, PANIC).	Symptom troubleshooting (see page 22-158)	
Doors will not unlock with the transmitter, but will unlock with the door lock switch and the door key cylinder switch.	• Symptom troubleshooting (see page 22-159) • Door lock switch test (check the door switch ON/OFF information with the HDS)	
Doors will not lock with the transmitter, but will lock with the door lock switch and the door key cylinder switch.	• Symptom troubleshooting (see page 22-159) • Door lock switch test (check the door switch ON/OFF information with the HDS)	

Symptom	Check Items	Also check for
Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened.	Symptom troubleshooting (see page 22-158)	
Only driver's door will unlock or door locks relock immediately after unlocking with the remote.	Driver's door lock knob switch test (see page 22-177)	
Keyless operation will work even though the ignition key is in the ignition switch.	Ignition key switch test (see page 22-276)	
The horn does not sound when the PANIC button on the transmitter is pressed.	Symptom troubleshooting (see page 22-159)	
Security alarm system will not arm	Symptom troubleshooting (see page 22-160)	

HONDA

Symptom Troubleshooting

Doors automatically relock 30 seconds after being unlocked with the transmitter even though a door has been opened

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.

1. Place the individual map light switch in the DOOR position.
2. Turn the ignition switch to ON (II).
3. Watch the individual map light and the door indicators on the gauge control module.

   Do the individual map light and door indicators come on when the door is open, and go off when the door is closed?

   YES–Substitute a known-good under-dash fuse/relay box and recheck. If the symptom goes away, replace the original under-dash fuse/relay box.■

   NO–Repair an open or high resistance in the wire between the MICU and each door switch. If the wire is OK, replace the door switch.■

Keyless operation does not work (LOCK, UNLOCK, PANIC)

NOTE:

- If the LOCK and UNLOCK buttons work OK, but the PANIC button does not, see the troubleshooting for The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed (see page 22-159).
- Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.

1. Insert the key into the ignition switch, but leave the switch in LOCK (0).
2. Open the driver's door, and listen for the key-in reminder beeper.

   Does the beeper sound?

   YES–Go to step 3.

   NO–Do the ignition switch test (see page 22-100).■
3. Turn the ignition switch to ON (II).
4. Try to start the engine.

   Does the engine start?

   YES–The immobilizer system is OK, go to step 5.

   NO–Go to the immobilizer symptom troubleshooting (see page 22-193).■
5. Turn the ignition switch to LOCK (0).
6. Do the transmitter test. (see page 22-181)

   Is the transmitter OK?

   YES–Replace the immobilizer-keyless control unit (see page 22-203).■

   NO–Replace the transmitter.■

Doors will not unlock (or lock) with the transmitter, but will unlock (or lock) with the door lock switch and the door key cylinder switch

NOTE:

- Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.
- The security system can be customized in the multi-information display (MID) to suit the customer's needs. For more information about keyless/security system options, refer to the Owner's Manual.

1. Turn the ignition switch to LOCK (0).
2. Remove the ignition key from the ignition switch.
3. Close and lock the doors.
4. Try to lock/unlock the doors with the keyless transmitter.

   Do the door lock actuators work normally?

   YES–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■

   NO–Go to step 5.
5. Open the driver's door.

   Does the key-in reminder beeper sound?

   YES–Faulty ignition key switch, or a short to ground on the ignition switch wire. Repair the wire as needed.■

   NO–Go to step 6.
6. Do the transmitter test. (see page 22-181)

   Is the transmitter OK?

   YES–Substitute a known-good immobilizer-keyless control unit, and recheck. If the problem goes away, replace the original immobilizer-keyless control unit (see page 22-203).■

   NO–Replace the transmitter.■

The horn does not sound and/or the headlights do not flash when the PANIC button on the transmitter is pressed

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.

1. Press the PANIC button.

   Does the horn sound?

   YES–Go to step 3.

   NO–Go to step 2.
2. Press the horn button.

   Does the horn sound?

   YES–Go to step 3.

   NO–Test the horn switch and its circuit (see page 22-207).■
3. Turn the headlight switch ON.

   Do the headlights come on?

   YES–Go to step 4.

   NO–Check the lighting circuit (see page 22-213).■
4. Do the transmitter test (see page 22-181).

   Is the transmitter OK ?

   YES–Substitute a known-good under-dash fuse/relay box, and recheck.■

   NO–Replace the transmitter.■

(cont'd)

Symptom Troubleshooting (cont'd)

Security alarm system will not arm

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.

1. Turn the ignition switch to ON (II).
2. Select SECURITY from the BODY ELECTRICAL menu, and enter the DATA LIST with the HDS.
3. Check the ON/OFF information in the DATA LIST when each switch is operating.
   - TRUNK LID/TAILGATE SWITCH
   - SECURITY HOOD SWITCH
   - DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK)
   - FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK)
   - DRIVER'S DOOR SWITCH
   - FRONT PASSENGER'S DOOR SWITCH
   - DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK)
   - DRIVER'S DOOR KEY CYLINDER SWITCH (UNLOCK)

   Is the each switches information OK?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Troubleshoot the indicated circuit.■
   - Hatch latch switch circuit troubleshooting (see page 22-160).
   - Security hood switch circuit troubleshooting (see page 22-162).
   - Driver's door lock knob switch circuit troubleshooting (see page 22-163).
   - Passenger's door lock knob switch circuit troubleshooting (see page 22-165).
   - Driver's door switch circuit troubleshooting (see page 22-167).
   - Passenger's door switch circuit troubleshooting (see page 22-168).
   - Driver's door key cylinder switch circuit troubleshooting (see page 22-170).

Hatch latch switch circuit troubleshooting

1. Turn the ignition switch to ON (II).
2. With the hatch closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the TRUNK LID/TAIL GATE SWITCH in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 4.

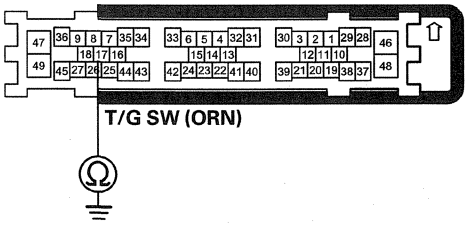
   NO–Go to step 8.
4. Disconnect the hatch latch switch 2P connector.
5. Check the ON/OFF information of the TRUNK LID/TAIL GATE SWITCH in the DATA LIST.

   Is data list value indicated OFF?

   YES–Faulty hatch latch switch, replace the hatch latch (see page 20-140).■

   NO–Go to step 6.
6. Disconnect under-dash fuse/relay box connector D (49P).
7. Check for continuity between under-dash fuse/relay box connector D (49P) terminal No. 17 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

Is there continuity?

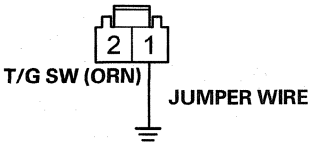
YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

8. Disconnect the hatch latch switch 2P connector.

9. Connect hatch latch switch 2P connector terminal No. 1 and body ground with a jumper wire.

HATCH LATCH SWITCH 2P CONNECTOR



Wire side of female terminals

10. Check the ON/OFF information of the TRUNK LID/TAIL GATE SWITCH in the DATA LIST.

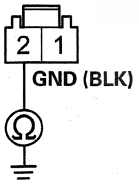
Is data list value indicated ON?

YES–Go to step 11.

NO–Go to step 12.

11. Check for continuity between hatch latch switch 2P connector terminal No. 2 and body ground.

HATCH LATCH SWITCH 2P CONNECTOR



Wire side of female terminals

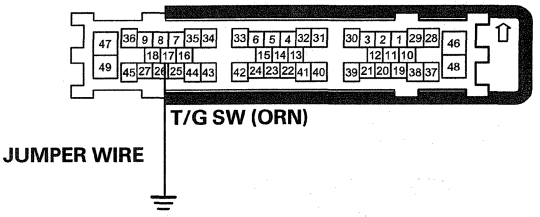
Is there continuity?

YES–Faulty hatch latch switch; replace the hatch latch (see page 20-140).■

NO–Repair an open or high resistance in the wire or poor ground (G801).■

12. Connect under-dash fuse/relay box connector D (49P) terminal No. 17 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

13. Check the ON/OFF information of the TRUNK LID/TAIL GATE SWITCH in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

(cont'd)

Symptom Troubleshooting (cont'd)

Security hood switch circuit troubleshooting

1. Turn the ignition switch to ON (II).
2. With the hood closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 4.

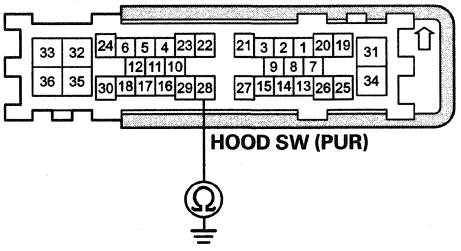
   NO–Go to step 8.
4. Disconnect the security hood switch 2P connector.
5. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

   Is data list value indicated OFF?

   YES–Faulty security hood switch; replace the hood latch (see page 20-135).■

   NO–Go to step 6.
6. Disconnect under-dash fuse/relay box connector A (36P).
7. Check for continuity between under-dash fuse/relay box connector A (36P) terminal No. 28 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR A (36P)



Wire side of female terminals

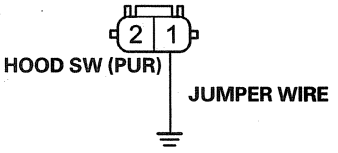
Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

8. Disconnect the security hood switch 2P connector.
9. Connect security hood switch 2P connector terminal No. 1 and body ground with a jumper wire.

SECURITY HOOD SWITCH 2P CONNECTOR



Wire side of female terminals

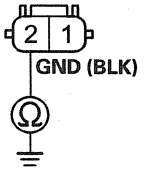
10. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

    Is data list value indicated ON?

    YES–Go to step 11.

    NO–Go to step 12.
11. Check for continuity between security hood switch 2P connector terminal No. 2 and body ground.

SECURITY HOOD SWITCH 2P CONNECTOR



Wire side of female terminals

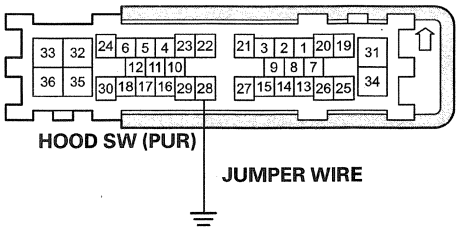
Is there continuity?

YES–Faulty security hood switch; replace the hood latch (see page 20-135).■

NO–Repair an open or high resistance in the wire or poor ground (G403).■

12. Connect under-dash fuse/relay box connector A (36P) terminal No. 28 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR A (36P)



Wire side of female terminals

13. Check the ON/OFF information of the SECURITY HOOD SWITCH in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

Driver's door lock knob switch circuit troubleshooting

1. Turn the ignition switch to ON (II).
2. With the driver's door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 4.

   NO–Go to step 8.
4. Disconnect the driver's door lock actuator/knob switch 10P connector.
5. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is data list value indicated OFF?

   YES–Faulty driver's door lock knob switch; replace the door latch (see page 20-11).■

   NO–Go to step 6.
6. Disconnect under-dash fuse/relay box connector F (12P).
7. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

   Is data list value indicated OFF?

   YES–Repair a short to ground in the wire.■

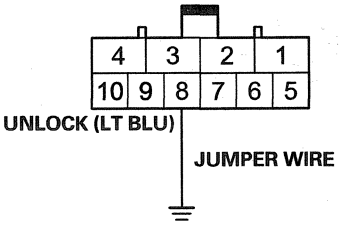
   NO–Faulty MICU; replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)
8. Disconnect the driver's door lock actuator/knob switch 10P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

9. Connect driver's door lock actuator/knob switch 10P connector terminal No. 8 and body ground with a jumper wire.

DRIVER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



Wire side of female terminals

10. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

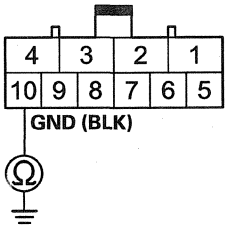
Is data list value indicated ON?

YES–Go to step 11.

NO–Go to step 12.

11. Check for continuity between driver's door lock actuator/knob switch 10P connector terminal No. 10 and body ground.

DRIVER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



Wire side of female terminals

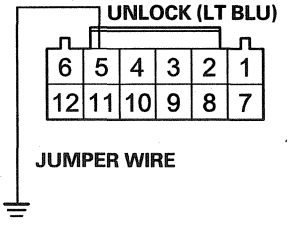
Is there continuity?

YES–Faulty driver's door lock knob switch; replace the door latch (see page 20-11).■

NO–Repair an open or high resistance in the wire or poor ground (G501).■

12. Connect under-dash fuse/relay box connector F (12P) terminal No. 5 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

13. Check the ON/OFF information of the DRIVER'S DOOR LOCK KNOB SWITCH (UNLOCK) in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

Passenger's door lock knob switch circuit troubleshooting

1. Turn the ignition switch to ON (II).
2. With the passenger's door lock knob switch in LOCK position, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK) in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 4.

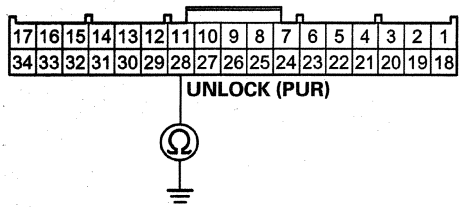
   NO–Go to step 8.
4. Disconnect the passenger's door lock actuator/knob switch 10P connector.
5. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK) in the DATA LIST.

   Is data list value indicated OFF?

   YES–Faulty passenger's door lock knob switch; replace the door latch (see page 20-11).■

   NO–Go to step 6.
6. Disconnect under-dash fuse/relay box connector Q (34P).
7. Check for continuity between under-dash fuse/relay box connector Q (34P) terminal No. 28 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

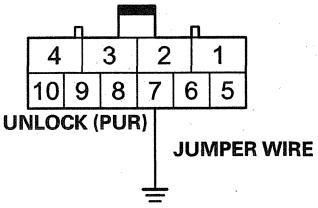
8. Disconnect the passenger's door lock actuator/knob switch 10P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

9. Connect passenger's door lock actuator/knob switch 10P connector terminal No. 7 and body ground with a jumper wire.

PASSENGER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



Wire side of female terminals

10. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK) in the DATA LIST.

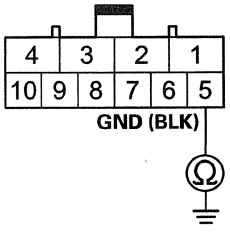
Is data list value indicated ON?

YES–Go to step 11.

NO–Go to step 12.

11. Check for continuity between passenger's door lock actuator/knob switch 10P connector terminal No. 5 and body ground.

PASSENGER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



Wire side of female terminals

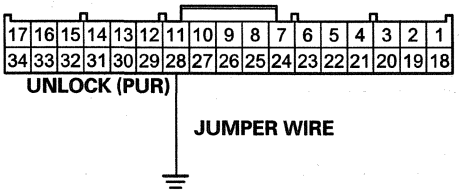
Is there continuity?

YES–Faulty passenger's door lock knob switch; replace the door latch (see page 20-11).■

NO–Repair an open or high resistance in the wire or poor ground (G502).■

12. Connect under-dash fuse/relay box connector Q (34P) terminal No. 28 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

13. Check the ON/OFF information of the FRONT PASSENGER'S DOOR LOCK KNOB SW (UNLOCK) in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

Driver's door switch circuit troubleshooting

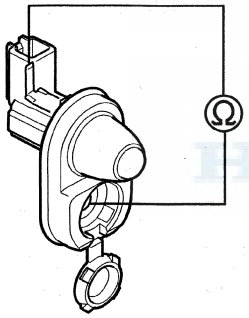
1. Turn the ignition switch to ON (II).
2. With the driver's door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the DRIVER'S DOOR SWITCH in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 4.

   NO–Go to step 9.
4. Remove the driver's door switch.
5. Disconnect the driver's door switch 1P connector.
6. Check for continuity between driver's door switch 1P connector and switch ground.

DRIVER'S DOOR SWITCH



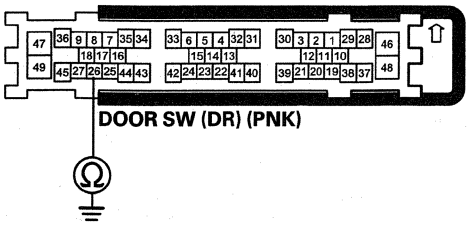
Is there no continuity when the switch is pushed and is there continuity when the switch is released?

YES–Go to step 7.

NO–Faulty driver's door switch; replace the driver's door switch.■

7. Disconnect under-dash fuse/relay box connector D (49P).
8. Check for continuity between under-dash fuse/relay box connector D (49P) terminal No. 26 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

Is there continuity?

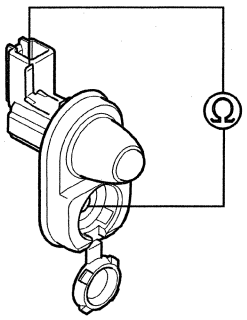
YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

9. Remove the driver's door switch.
10. Disconnect the driver's door switch 1P connector.
11. Check for continuity between the driver's door switch 1P connector and switch ground.

DRIVER'S DOOR SWITCH



Is there no continuity when the switch is pushed and is there continuity when the switch is released?

YES–Go to step 12.

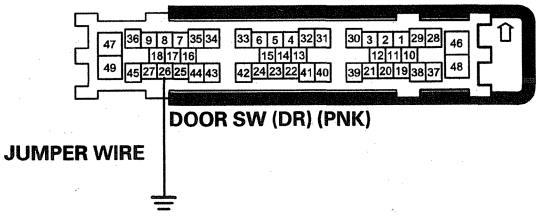
NO–Faulty driver's door switch; replace the driver's door switch.■

(cont'd)

Symptom Troubleshooting (cont'd)

12. Connect under-dash fuse/relay box connector D (49P) terminal No. 26 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

13. Check the ON/OFF information of the DRIVER'S DOOR SWITCH in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

Passenger's door switch circuit troubleshooting

1. Turn the ignition switch to ON (II).
2. With the passenger's door closed, select SECURITY with the HDS, and enter the DATA LIST.
3. Check the ON/OFF information of the FRONT PASSENGER'S DOOR SWITCH in the DATA LIST.

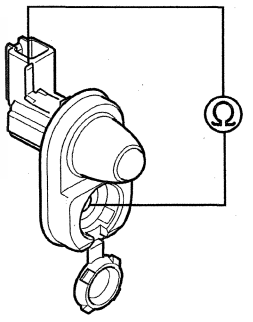
Is data list value indicated ON?

YES–Go to step 4.

NO–Go to step 9.

4. Remove the passenger's door switch.
5. Disconnect the passenger's door switch 1P connector.
6. Check for continuity between passenger's door switch 1P connector and switch ground.

PASSENGER'S DOOR SWITCH



Is there no continuity when the switch is pushed and is there continuity when the switch is released?

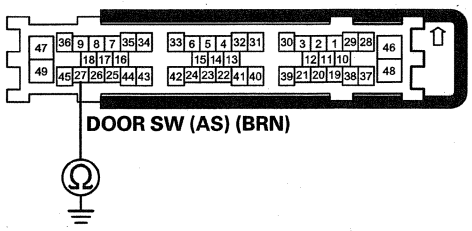
YES–Go to step 7.

NO–Faulty passenger's door switch; replace the passenger's door switch.■

7. Disconnect under-dash fuse/relay box connector D (49P).

8. Check for continuity between under-dash fuse/relay box connector D (49P) terminal No. 27 and body ground.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

Is there continuity?

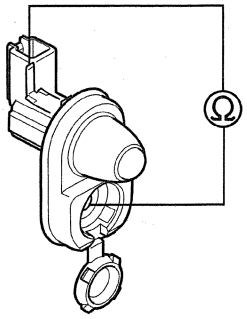
YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

9. Remove the passenger's door switch.
10. Disconnect the passenger's door switch 1P connector.
11. Check for continuity between passenger's door switch 1P connector and switch ground.

PASSENGER'S DOOR SWITCH



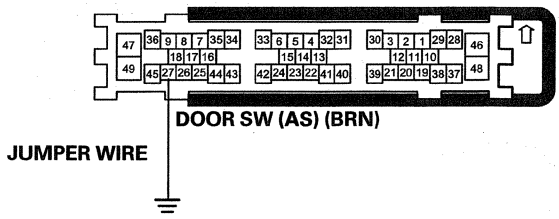
Is there no continuity when the switch is pushed and is there continuity when the switch is released?

YES–Go to step 12.

NO–Faulty passenger's door switch; replace the passenger's door switch.■

12. Connect under-dash fuse/relay box connector D (49P) terminal No. 27 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)



Wire side of female terminals

13. Check the ON/OFF information of the FRONT PASSENGER'S DOOR SWITCH in the DATA LIST.

Is data list value indicated ON?

YES–Repair an open or high resistance in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

(cont'd)

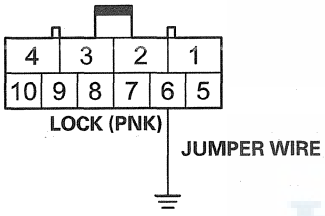
Symptom Troubleshooting (cont'd)

Driver's door key cylinder switch circuit troubleshooting

NOTE: Before troubleshooting, check the B-CAN DTCs. If any DTC is indicated, refer to the B-CAN System Diagnosis Test Mode A (see page 22-126), and troubleshoot the indicated DTCs first.

1. Turn the ignition switch to ON (II).
2. Disconnect the 10P connector from the driver's door lock actuator/knob switch.
3. Connect driver's door lock actuator/knob switch 10P connector terminal No. 6 and body ground with a jumper wire.

DRIVER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



Wire side of female terminals

4. Select SECURITY with the HDS, and enter the DATA LIST.
5. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) in the DATA LIST.

   Is data list value indicated ON?

   YES–Go to step 6.

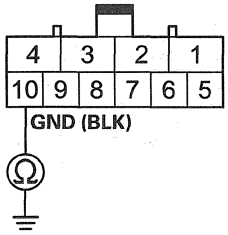
   NO–Go to step 8.
6. Test the door key cylinder switch (see page 22-178).

   Is the switch OK?

   YES–Go to step 7.

   NO–Faulty driver's door key cylinder switch; replace the door latch (see page 20-11).■
7. Check for continuity between driver's door lock actuator/knob switch 10P connector terminal No. 10 and body ground.

DRIVER'S DOOR LOCK ACTUATOR/KNOB SWITCH 10P CONNECTOR



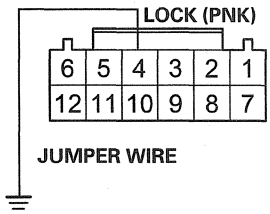
Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the wire or poor ground (G501).■
8. Connect under-dash fuse/relay box connector F (12P) terminal No. 4 and body ground with a jumper wire.

UNDER-DASH FUSE/RELAY BOX CONNECTOR F (12P)



Wire side of female terminals

9. Check the ON/OFF information of the DRIVER'S DOOR KEY CYLINDER SWITCH (LOCK) in the DATA LIST.

   Is data list value indicated ON?

   YES–Repair an open or high resistance in the wire.■

   NO–Faulty MICU; replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

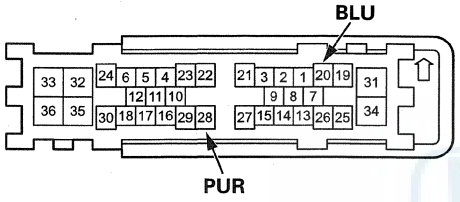
MICU Input Test

NOTE:
- Before testing, make sure the turn signal/hazard warning lights work properly.
- Before testing, check the No. B1 (15 A), No. B20 (15 A), No. B22 (7.5 A), No. B23 (10A), No. B24 (10A), No. B27 (20 A), No. B35 (7.5 A), No. B36 (10 A), No. B45 (20 A), No. B49 (7.5 A), and No. B60 (50 A) fuses in the under-dash fuse/relay box.
- There are two circuits that each have a pair of fuses (No. 35 and No. 49 fuses, No. 36 and No. 45 fuses). If one fuse is blown, make sure to check the other fuse in the same circuit. If necessary, replace the blown fuse(s).

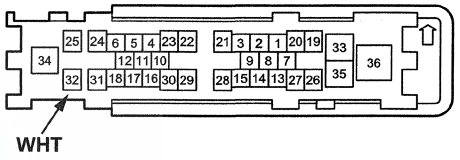
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors A, B, D, F, G, N, Q, R, Y, AA, and AD.

   NOTE: All connector views are wire side of female terminals.

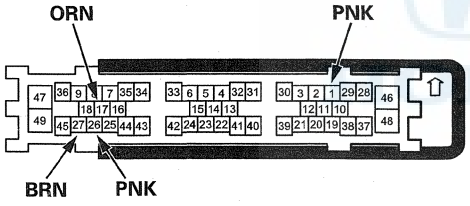
CONNECTOR A (36P)



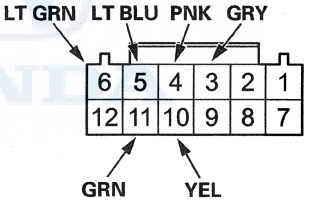
CONNECTOR B (36P)



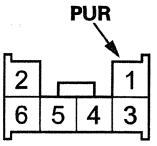
CONNECTOR D (49P)



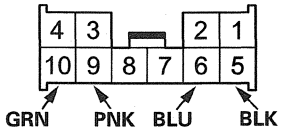
CONNECTOR F (12P)



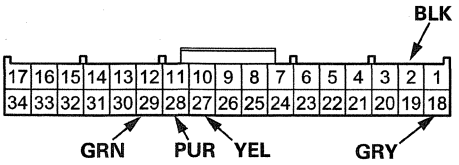
CONNECTOR G (6P)



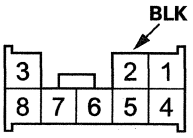
CONNECTOR N (10P)



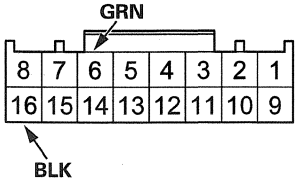
CONNECTOR Q (34P)



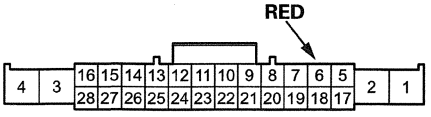
CONNECTOR R (8P)



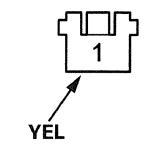
CONNECTOR Y (16P)



CONNECTOR AA (28P)



CONNECTOR AD (1P)



(cont'd)

MICU Input Test (cont'd)

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
N6 AA6 G1	BLU RED PUR	Connect the battery positive terminal to terminal N6, and connect terminal AA6 and G1 to body ground	Check actuator operation: The driver's door lock actuator should unlock.	• Faulty driver's door lock actuator • An open or high resistance in the wire • Faulty driver's door unlock relay • Poor ground (G501) or an open in the ground wire
G1	PUR	Connect the battery positive terminal to terminal G1	Check actuator operation: The driver's door lock actuator should lock.	• Faulty driver's door lock actuator • An open or high resistance in the wire • Faulty driver's door unlock relay • Poor ground (G501) or an open in the ground wire
N10 N9	GRN PNK	Connect the battery positive terminal to terminal N10 (N9), and connect terminal N9 (N10) to body ground	Check actuator operation: The left rear door lock actuator should lock (or unlock).	• Faulty passenger's door lock actuator • An open or high resistance in the wire
N6 Q27	BLU YEL	Connect the battery positive terminal to terminal N6, and connect terminal Q27 to body ground	Check actuator operation: The hatch release actuator should work.	• Faulty hatch release actuator • An open or high resistance in the wire • Faulty hatch release actuator relay • Poor ground (G801) or an open in the ground wire
A20	BLU	Under all conditions	Connect terminal A20 and terminal B32 with a jumper wire: The horn should sound.	• Faulty horn • An open or high resistance in the wire • Poor ground

6. Reconnect the connectors to the under-dash fuse/relay box, and do the following input tests.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box:
     - USA models (see page 22-82)
     - Canada models (see page 22-83)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Q29	GRN	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.*3	• Poor ground (G503) or an open in the ground wire • Faulty audio-navigation unit*1 or audio unit*2 • An open or high resistance in the wire
D1	PNK	Hatch outer handle switch pressed	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G801) or an open in the ground wire • An open or high resistance in the wire • Faulty hatch outer handle switch
B32	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. A3 (20 A) fuse in the battery terminal fuse box • An open or high resistance in the wire
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. A1 (100 A) fuse in the battery terminal fuse box • Blown No. B60 (IGN) (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire

*1: With navigation
*2: Without navigation
*3: If the factory-installed audio unit or audio-navigation unit is removed from the vehicle, this voltage will be between 10—12V.

(cont'd)

MICU Input Test (cont'd)

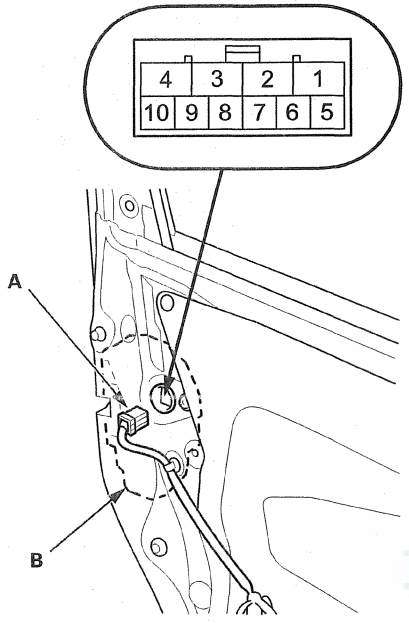
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
D26	PNK	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door switch • A short to ground in the wire
D27	BRN	Passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty passenger's door switch • Faulty passenger's door switch ground • An open or high resistance in the wire
		Passenger's door closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty passenger's door switch • A short to ground in the wire
D17	ORN	Hatch open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty hatch latch switch • Poor ground (G801) or an open in the ground wire • An open or high resistance in the wire
		Hatch closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty hatch latch switch • A short to ground in the wire
A28	PUR	Hood open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty security hood switch • Poor ground (G403) or an open in the ground wire • An open or high resistance in the wire
		Hood closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty security hood switch • A short to ground in the wire
F10	YEL	Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door lock knob switch • An open or high resistance in the wire
		Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire
F5	LT BLU	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door lock knob switch • An open or high resistance in the wire
		Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q28	PUR	Passenger's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) or an open in the ground wire • Faulty passenger's door lock knob switch • An open or high resistance in the wire
		Passenger's door lock knob switch in LOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty passenger's door lock knob switch • A short to ground in the wire
Q18	GRY	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) or an open in the ground wire • Faulty ignition key switch • An open or high resistance in the wire
		Ignition switch in LOCK (0), and the ignition key removed from the ignition switch	Measure the voltage to ground: There should be at least 5 V.	• Faulty ignition key switch • A short to ground in the wire
F4	PNK	Driver's door key cylinder switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door key cylinder switch • An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or UNLOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door key cylinder switch • A short to ground in the wire
F3	GRY	Driver's door key cylinder switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door key cylinder switch • An open or high resistance in the wire
		Driver's door key cylinder switch in neutral or LOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door key cylinder switch • A short to ground in the wire
F11	GRN	Driver's door lock switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty door lock switch • An open or high resistance in the wire
		Driver's door lock switch in neutral or UNLOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty door lock switch • A short to ground in the wire
F6	LT GRN	Driver's door lock switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty door lock switch • An open or high resistance in the wire
		Driver's door lock switch in neutral or LOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty door lock switch • A short to ground in the wire

Door Lock Actuator Test

Driver's Door

1. Remove the driver's door panel (see page 20-4).
2. Disconnect the 10P connector (A) from the door latch (B).



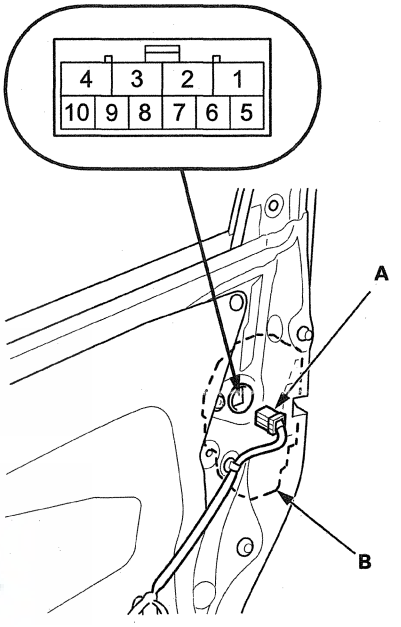
3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Position \ Terminal	4	3
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, the actuator is faulty; replace the driver's door latch (see page 20-11).

Passenger's Door

1. Remove the passenger's door panel (see page 20-4).
2. Disconnect the 10P connector (A) from the door latch (B).



3. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

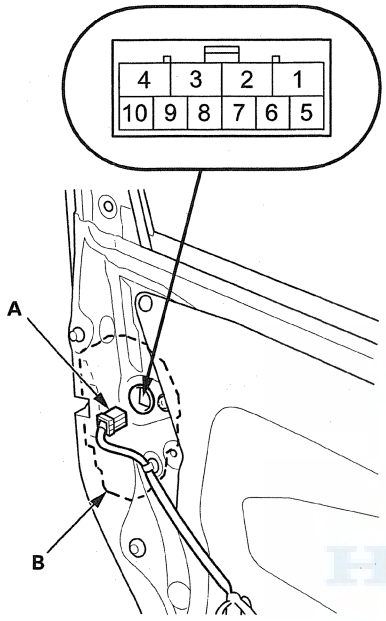
Position \ Terminal	2	1
LOCK	⊕	⊖
UNLOCK	⊖	⊕

4. If the actuator does not operate as specified, the actuator is faulty; replace the passenger's door latch (see page 20-11).

Door Lock Knob Switch Test

Driver's Door

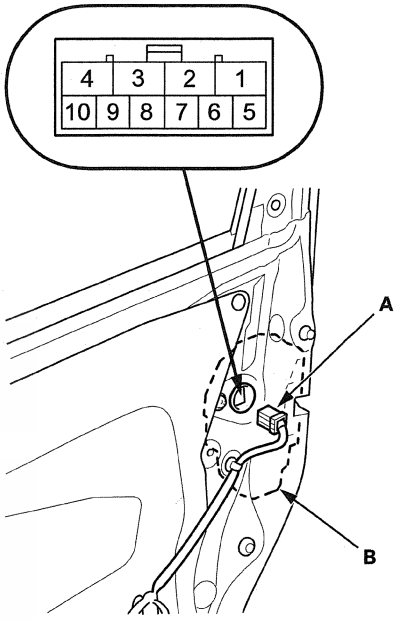
1. Remove the driver's door panel (see page 20-4).
2. Disconnect the 10P connector (A) from the door latch (B).



3. Check for continuity between the terminals.
   - There should be continuity between terminals No. 9 and No. 10 when the door lock knob switch is in the LOCK position, and no continuity when the switch is in the UNLOCK position.
   - There should be continuity between terminals No. 8 and No. 10 when the door lock knob switch is in the UNLOCK position, and no continuity when the switch is in the LOCK position.
   - Check for continuity between terminals No. 9 and No. 8 of door lock knob switch. There should be no continuity in either the LOCK or UNLOCK positions.
4. If the continuity is not as specified, the switch is faulty; replace the driver's door latch (see page 20-11).

Passenger's Door

1. Remove the passenger's door panel (see page 20-4).
2. Disconnect the 10P connector (A) from the door latch (B).

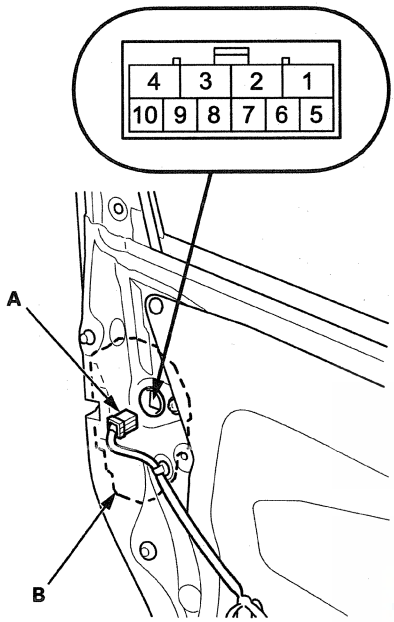


3. Check for continuity between the terminals.

   There should be continuity between terminals No. 7 and No. 5 when the door lock knob switch in the UNLOCK position, and no continuity when the switch is in the LOCK position.
4. If the continuity is not as specified, the switch is faulty; replace the passenger's door latch (see page 20-11).

Door Key Cylinder Switch Test

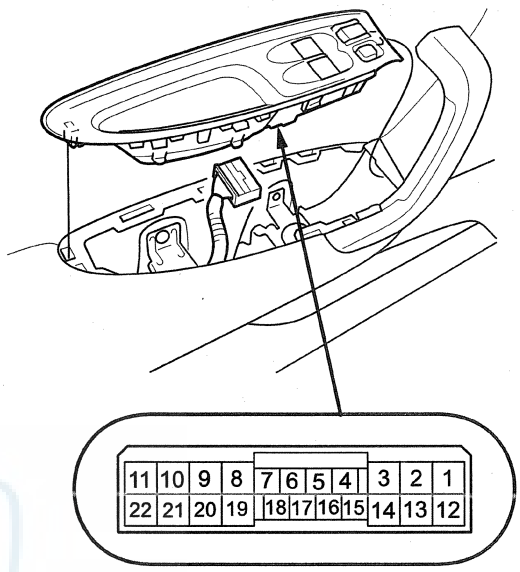
1. Remove the driver's door panel (see page 20-4).
2. Disconnect the 10P connector (A) from the door latch (B).



3. Check for continuity between the terminals.
   - There should be continuity between terminals No. 7 and No. 10 when the door key cylinder switch is in the UNLOCK position.
   - There should be no continuity between terminals No. 7 and No. 10 when the door key cylinder switch is in the neutral or LOCK position.
   - There should be continuity between terminals No. 6 and No. 10 when the door key cylinder switch is in the LOCK position.
   - There should be no continuity between terminals No. 6 and No. 10 when the door key cylinder switch is in the neutral or UNLOCK position.
   - There should be no continuity between terminals No. 7 and No. 6 when the key is in the neutral position.
4. If the continuity is not as specified, the switch is faulty; replace the driver's door latch (see page 20-11).

Driver's Door Lock Switch Test

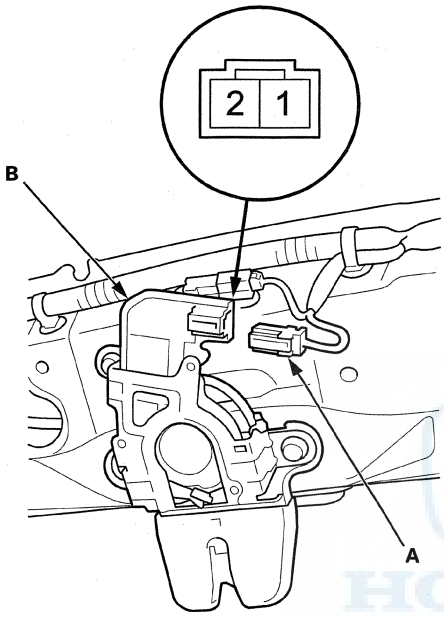
1. Remove the power window master switch, and disconnect its connector (see page 22-289).



2. Check for continuity between the power window master switch 22P connector terminals.
   - There should be continuity between terminals No. 21 and No. 14 when the door lock switch is in the LOCK position.
   - There should be no continuity between the terminals No. 21 and No. 14 when the door lock switch is in the neutral or UNLOCK position.
   - There should be continuity between the terminals No. 19 and No. 14 when the door lock switch is in the UNLOCK position.
   - There should be no continuity between the terminals No. 19 and No. 14 when the door lock switch is in the neutral or LOCK position.
   - There should never be continuity between terminals No. 19 and No. 21 in any door lock switch position.
3. If the continuity is not as specified, the switch is faulty; replace the power window master switch (see page 22-289).

Hatch Release Actuator Test

1. Open the hatch.
2. Remove the hatch lower trim (see page 20-66).
3. Disconnect the 2P connector (A) from the hatch release actuator (B).



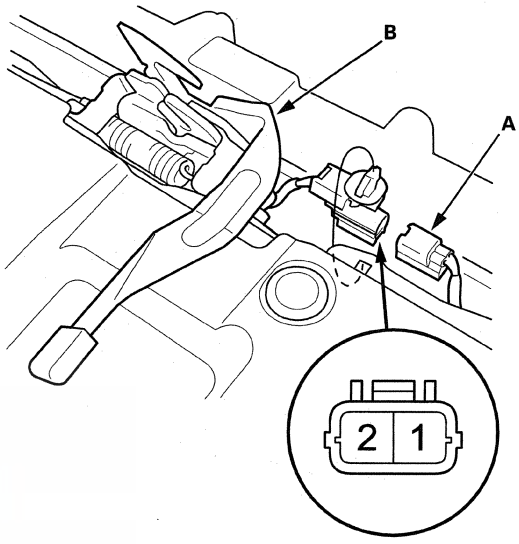
4. Check actuator operation by connecting power and ground according to the table. To prevent damage to the actuator, apply battery voltage only momentarily.

Terminal / Position	2	1
UNLOCK	⊖	⊕

5. If the actuator does not work, the tailgate lock actuator is faulty; replace the hatch latch (see page 20-140).

Security Hood Switch Test

1. Open the hood.
2. Disconnect the 2P connector (A) from the security hood switch (B).

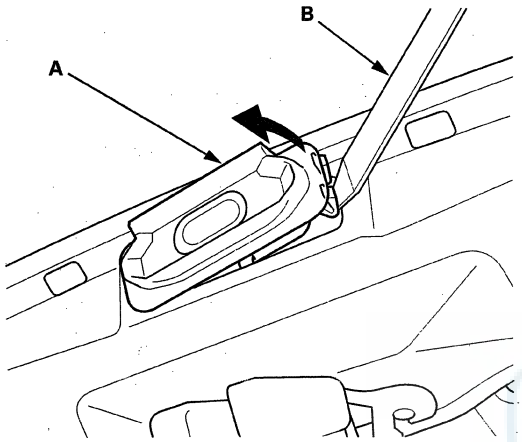


3. Check for continuity between the terminals.
   - There should be continuity between the terminals No. 1 and No. 2 when the hood is opened (lever released).
   - There should be no continuity between the terminals No. 1 and No. 2 when the hood is closed (lever pushed down).
4. If the continuity is not as specified, the switch is faulty; replace the hood latch (see page 20-135).

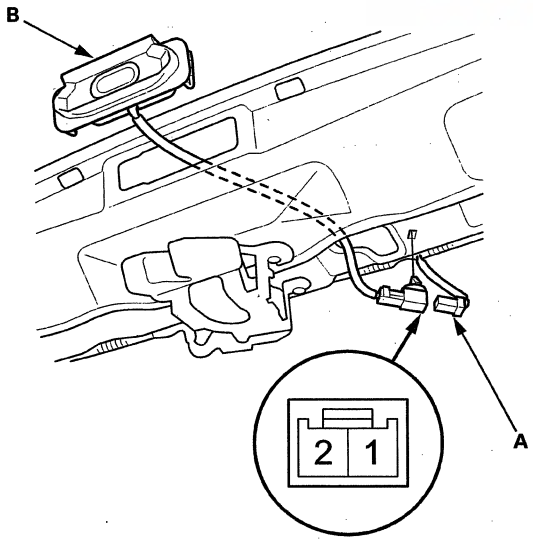
Hatch Outer Handle Switch Test/Replacement

1. Open the hatch, and remove the hatch lower trim (see page 20-66).
2. Remove the hatch outer handle switch (A) from the hatch by plastic tool (B).

   NOTE: Take care not to scratch the seal.



3. Disconnect the 2P connector (A) from the hatch outer handle switch (B).



Terminal side of male terminals

4. Check for continuity between tailgate outer handle switch 2P connector terminals No. 1 and No. 2.
   - There should be continuity when the hatch outer handle switch is pressed.
   - There should be no continuity when the hatch outer handle switch is released.
5. If the continuity is not as specified, the switch is faulty; replace the hatch outer handle switch.
6. Install the switch in the reverse order of removal.

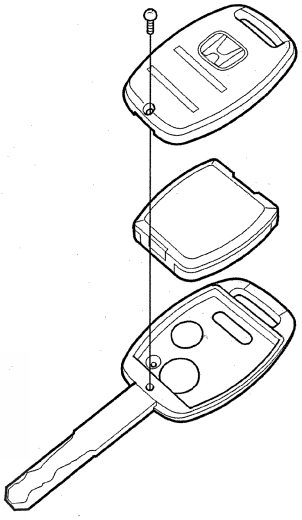
Transmitter Test

NOTE:
- If the doors unlock or lock with the transmitter, but the LED on the transmitter does not come on, the LED is faulty; replace the transmitter.
- If any door is open, you cannot lock the doors with the transmitter.
- If you unlocked the doors with the transmitter, but do not open any of the doors within 30 seconds, the doors relock automatically.
- The doors do not lock or unlock with the transmitter if the ignition key is inserted in the ignition switch.

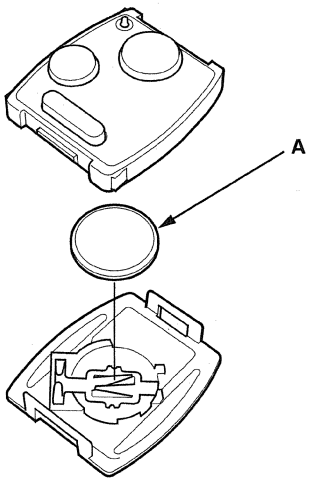
With HDS

1. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
   - If the locks work, the transmitter is OK.
   - If any of the transmitter buttons do not work, replace the transmitter, then register the transmitter programming (see page 22-202).
   - If the locks don't work, go to step 2.
2. Connect the HDS to the data link connector (DLC).
3. Select the KEYLESS TRANSMITTER from the BODY ELECTRICAL, next select INSPECTION, then enter the KEYLESS CHECK.
4. Follow the screen prompts to check each button operation.

   NOTE: The door lock actuators may or may not cycle when receiving input from the transmitter.
   - If KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is OK.
   - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is working but not registered to the vehicle. If necessary, reprogram and register the transmitter (see page 22-202).
   - If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, go to step 5.
5. Open the transmitter, and check for water damage.
   - If you find any water damage, replace the transmitter, then register the new transmitter.
   - If there is no water damage, go to step 6.



6. Replace the transmitter battery (A) with a new one, and press the lock or unlock button and check the receive condition on the screen of the HDS.
   - If KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, the transmitter is OK.
   - If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, go to step 7.



(cont'd)

Transmitter Test (cont'd)

7. Use a different known-good keyless transmitter assembly, and repeat steps 3 and 4.

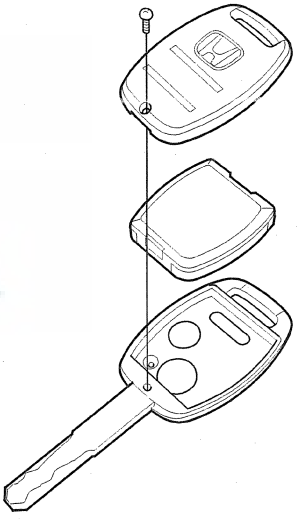
   NOTE: The keyless transmitter does not need to be programmed to the vehicle for this test.

   - If DIFFERENT KEYLESS ENTRY TRANSMITTER CODE WAS RECEIVED is indicated, replace the keyless transmitter, and do the immobilizer system registration (see page 22-202).
   - If KEYLESS ENTRY TRANSMITTER CODE WAS NOT RECEIVED is indicated, the immobilizer-keyless control unit is faulty, replace it, and do the immobilizer system registration (see page 22-202).

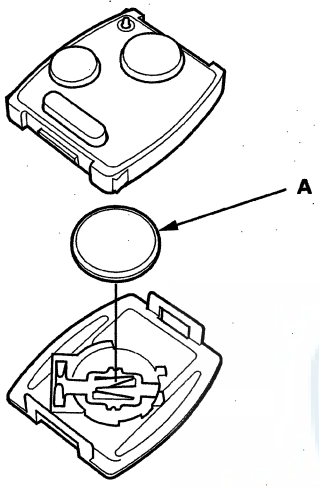
   NOTE: The keyless transmitter is combined with the immobilizer transponder, so when the transponder is registered by the HDS, the keyless transmitter is also registered automatically.

Without HDS

1. Start the engine.
   - If the engine does not start, go to the immobilizer system troubleshooting (see page 22-195).
   - If the engine starts, go to step 2.
2. Press the transmitter lock or unlock button at least 10 times to reset the transmitter.
   - If the locks work, the transmitter is OK.
   - If the locks don't work, go to step 3.
3. Open the transmitter, and check for water damage.
   - If you find any water damage, replace the transmitter and register the new transmitter.
   - If there is no water damage, go to step 4.



4. Replace the transmitter battery (A) with a new one, and try to lock and unlock the doors with the transmitter by pressing the lock or unlock button at least 10 times.
   - If the doors lock and unlock, the transmitter is OK.
   - If the doors don't lock and unlock, go to step 5.



5. Reprogram and register the transmitter (see page 22-202), then try to lock and unlock the doors.
   - If the doors lock and unlock, the transmitter is OK.
   - If the doors do not lock and unlock, substitute a known-good transmitter, register it (see page 22-202) and recheck. If still not operating, replace the immobilizer-keyless control unit (see page 22-203).

Tripped Sensor History

The security system stores information on the last tripped sensor if the security system has been actuated. The information can be retrieved using the HDS.

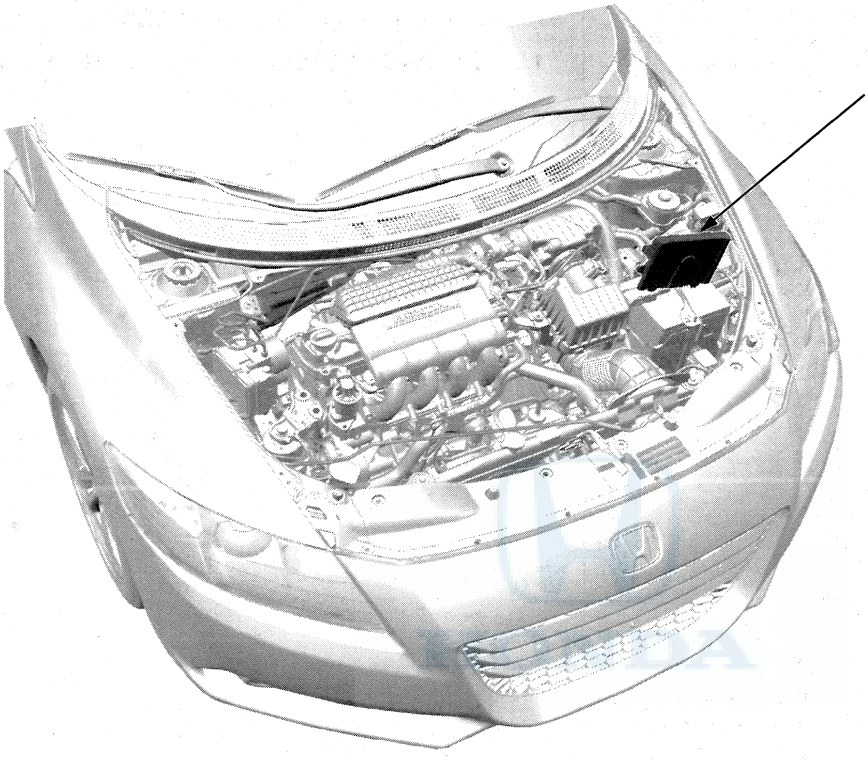
To retrieve the last tripped sensor data, do this:

1. Select HISTORY DATA from the SECURITY MODE MENU.
2. Scroll through the data list.
   - Sensors that were actuated will indicate ON.
   - Sensors that were not actuated will indicate NONE.
3. Inspect the ON circuit for these problems:
   - Misadjusted or damaged switch.
   - Loose or corroded connections.
   - Intermittent short to ground.

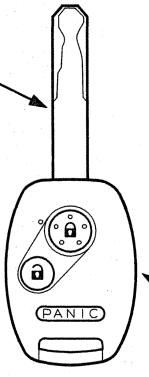
   NOTE: If PANIC Frame Reception is indicated ON, inform the customer that it could have been set by something pressing the panic button of one of the registered remotes while in a pocket or purse, under a stack of papers, etc.

Immobilizer System

Component Location Index

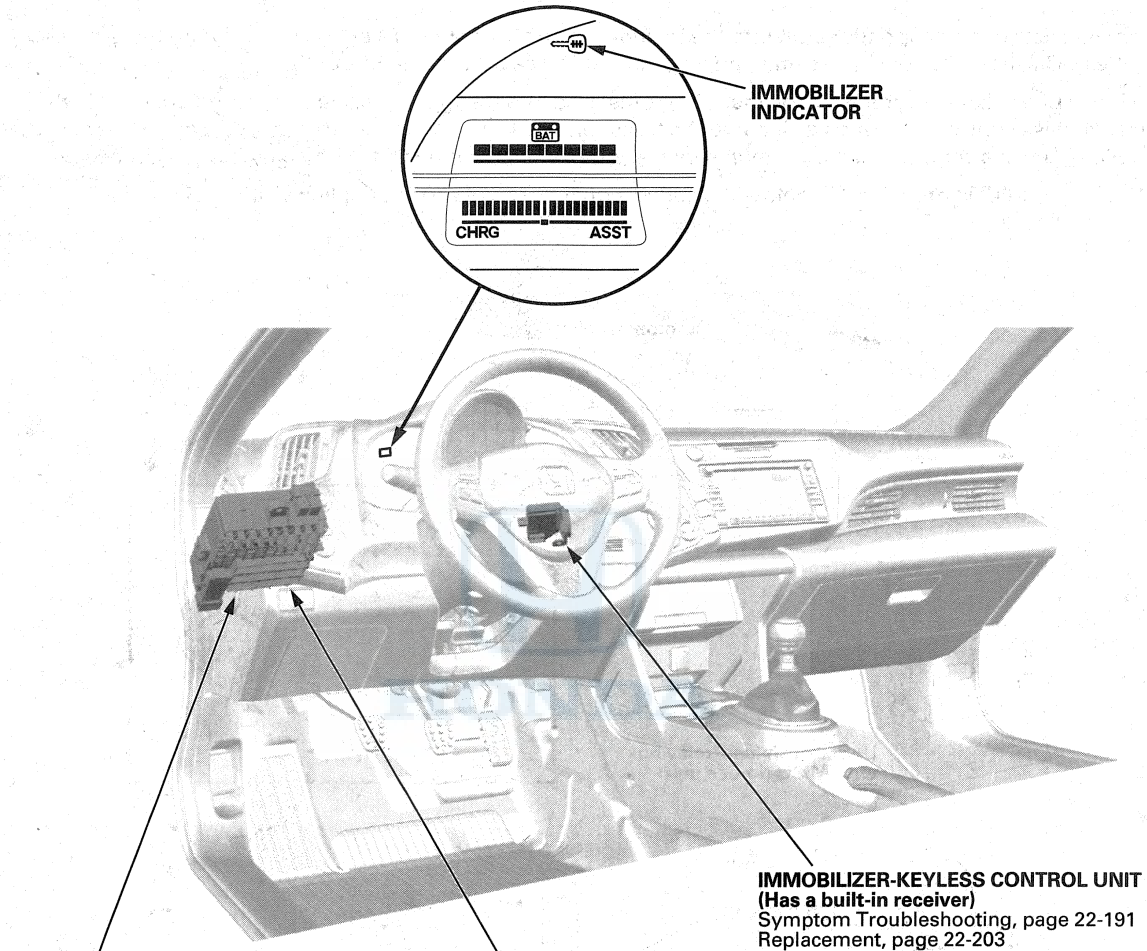


ECM/PCM
Replacement, page 11-209
Substituting the ECM/PCM, page 11-7



IGNITION KEY

TRANSPONDER
(Built into the transmitter)
Registration, page 22-202


IMMOBILIZER INDICATOR
BAT
CHRG
ASST
IMMOBILIZER-KEYLESS CONTROL UNIT
(Has a built-in receiver)
Symptom Troubleshooting, page 22-191
Replacement, page 22-203
Registration, page 22-202
Input Test, page 22-199
UNDER-DASH FUSE/
RELAY BOX
(Has a built-in MICU)
IMOES UNIT (Built into the MICU)
Removal and Installation
-USA models, page 22-82
-Canada models, page 22-83

Immobilizer System

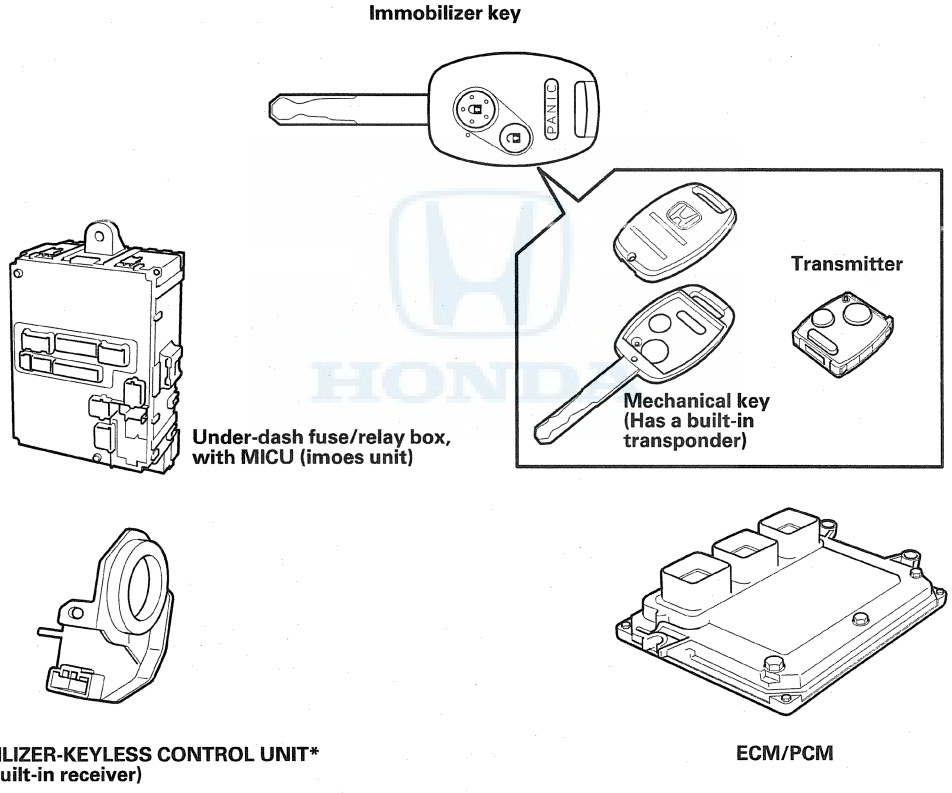
System Description

The vehicle is equipped with a Type VI immobilizer system that disables the vehicle unless a programmed ignition key is used.

This system consists of a transponder built into the ignition key, an immobilizer-keyless control unit (has a built-in receiver), the MICU (has a built-in imoes unit), an immobilizer indicator, and the ECM/PCM.

When the immobilizer key (programmed by the HDS) is inserted into the ignition switch and turned to ON (II), the immobilizer-keyless control unit sends a signal to the transponder. The transponder then sends a coded signal back to the immobilizer-keyless control unit, which then sends a coded signal to the ECM/PCM and the MICU (imoes unit).

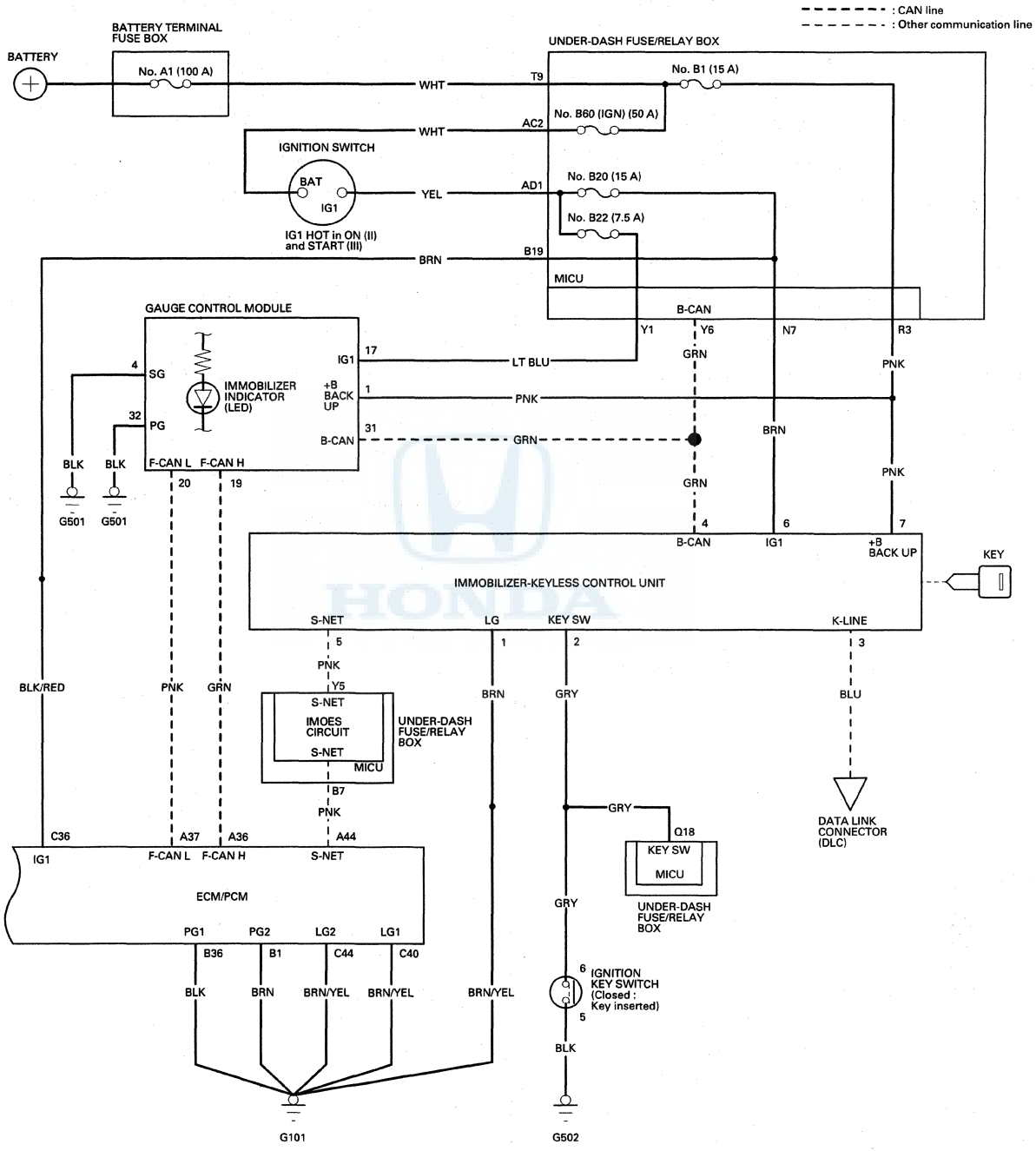
The ECM/PCM and MICU (imoes unit) identify this coded signal, then voltage is supplied to the fuel pump.



***: The immobilizer-keyless control unit can store up to 6 immobilizer keys per vehicle; the original 2 keys that came with the vehicle, and up to four more keys can be added.**

If the wrong key is used or the code was not received or recognized, the indicator flashes once, then it blinks until the ignition switch is turned to LOCK (0). When the ignition switch is turned to the LOCK (0) position, the indicator blinks 10 times to signal that unit has reset correctly, then the indicator goes off.

Circuit Diagram



DTC Troubleshooting

DTC B1901: Immobilizer Unit Internal Error (CPU Error)

DTC B1902: Immobilizer Unit Internal Error (EEPROM Error)

NOTE: If you are troubleshooting multiple DTCs be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1901 or B1902 indicated?

   YES–Replace the immobilizer-keyless control unit (see page 22-203).■

   NO–Intermittent failure, the system is OK at this time.■

DTC B1905: Immobilizer Unit Lost Communication With MICU (Door Lock Switch Message)

NOTE: If you are troubleshooting multiple DTCs be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1905 indicated?

   YES–Faultyimmobilizer-keyless control unit; replace the immobilizer-keyless control unit (see page 22-203).

   NO–Intermittent failure, the immobilizer-keyless control unit is OK at this time. Check for loose or poor connections between the immobilizer-keyless control unit and the MICU.■

DTC B1906: Immobilizer Unit Lost Communication With Gauge Control Module (A/T Message)

NOTE: If you are troubleshooting multiple DTCs be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1906 indicated?

   YES–Go to step 5.

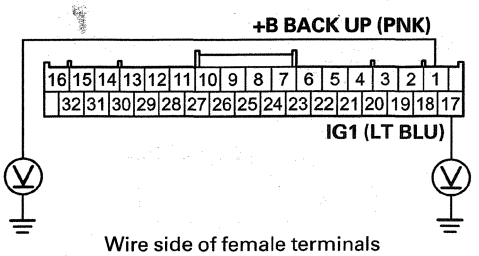
   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the immobilizer-keyless control unit.■
5. From the BODY ELECTRICAL SYSTEM SELECT menu, select B-CAN CONTROL UNITS INFORMATION, and then select CHECK CONNECTED CONTROL UNITS.

   Is the gauge control module detected?

   YES–Go to step 8.

   NO–Go to step 6.
6. Measure the voltage between body ground and gauge control module 32P connector terminals No. 1 and No. 17 individually.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

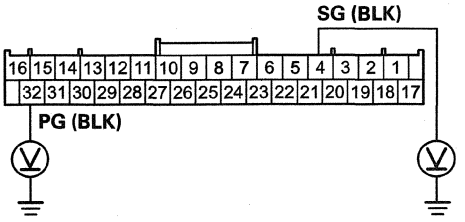
Is there battery voltage?

YES–Go to step 7.

NO–Check the No. B1 (15 A) and the No. B22 (7.5 A) fuses in the under-dash fuse/relay box. If the fuse is blown, replace the fuse and recheck the DTCs. If the fuses are OK, repair an open in the wire between the under-dash fuse/relay box and the gauge control module.■

7. Measure the voltage between body ground and gauge control module 32P connector terminals No. 4 and No. 32 individually.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 8.

NO–Repair an open or high resistance in the wire or poor ground (G501).■

8. Turn the ignition switch to LOCK (0).
9. Disconnect under-dash fuse/relay box connector Y (16P).

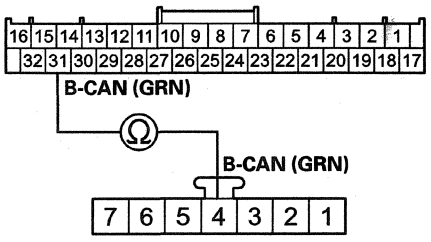
(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between immobilizer-keyless control unit 7P connector terminal No. 4 and gauge control module 32P connector terminal No. 31.

GAUGE CONTROL MODULE 32P CONNECTOR

Wire side of female terminals



IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Replace the gauge control module (see page 22-354).■

NO–Repair an open or high resistance in the wire.■

Symptom Troubleshooting Information

General Check Before Troubleshooting

Before troubleshooting the immobilizer system, check the following general items and solve any applicable system issues:

- The battery is low; charge the battery fully, then troubleshoot the immobilizer system.
- The ignition key is not a genuine Honda part; use a Honda-approved key blank, register the key, then troubleshoot the immobilizer system.
- A key ring, keys, or a key case is used; remove the key from it, and troubleshoot the immobilizer system with the key only.
- An aftermarket electrical part is installed; remove it, then troubleshoot the immobilizer system.

Symptom Troubleshooting Using the Immobilizer Indicator Lighting Pattern

The pattern of the immobilizer indicator can help troubleshoot the condition of the immobilizer system. Here are descriptions of the four possible patterns:

Normal operation

If the immobilizer code is identified, the immobilizer indicator quickly flashes once when the ignition switch is turned to ON (II).

The immobilizer indicator does not come on when the ignition switch is turned to LOCK (0).

Immobilizer code is not identified

If the immobilizer code is not identified, the immobilizer indicator quickly flashes once, then blinks until the ignition switch is turned to LOCK (0). When the ignition switch is turned to LOCK (0), the indicator blinks 10 times, then goes OFF to show the system has correctly reset.

The state of the immobilizer key registration and the S-NET line can be checked by doing a SYSTEM CHECK (see page 22-196) and STATUS LOG (see page 22-198) with the HDS.

Immobilizer indicator does not come on

If the immobilizer indicator does not come on after turning the ignition switch to ON (II), there is an open or short in the F-CAN lines between the ECM/PCM and the gauge control module. Watch the malfunction indicator lamp (MIL). If the MIL stays on, go to the PGM-FI system troubleshooting (see page 11-3).

Immobilizer indicator does not go off

If the immobilizer indicator does not go off after turning the ignition switch to ON (II), do the gauge control module self-diagnostic function (see page 22-325). If the indicator drive circuit is OK, do the SYSTEM CHECK (see page 22-196) and STATUS LOG (see page 22-198) with the HDS.

(cont'd)

Symptom Troubleshooting Information (cont'd)

Symptom Troubleshooting Using Malfunctioning Circuit Functions

If a malfunction occurs in the immobilizer circuit, use the table to cross-reference the malfunction criteria to the line(s) that should be checked in the table:

Function / Line Error		Immobilizer Indicator	Engine Start	Key Registration	Tester Communication	Keyless Operation
Terminal No. (Wire Color)	Cause of Malfunction					
7 (PNK)	+B line open or short	Comes on, then goes off.	Possible	Possible	Possible	Impossible
6 (BRN)	IG1 line open or short	Blinking	Impossible	Impossible	Impossible	Possible
5 (PNK)	S-NET line open or short	Blinking	Impossible	Impossible	Impossible	Possible
4 (GRN)	B-CAN line open or short	Comes on, then goes off.	Possible	Impossible	Immobilizer: Possible Keyless: Impossible	Impossible
3 (BLU)	K-LINE line open or short	Comes on, then goes off.	Possible	Impossible	Impossible	Possible
2 (GRY)	KEYSW line open	Comes on, then goes off.	Possible	Possible	Possible	Possible (even with the key in the ignition switch)
	KEYSW line short to ground					Impossible
1 (BRN)	GND (LG) line open	Blinking	Impossible	Impossible	Impossible	Impossible

System Check (Current status) and Status Log (History log if the immobilizer system kept engine from running)

NOTE: The HDS can be used to:
- Check the state of the immobilizer key registration and the S-NET line by doing a SYSTEM CHECK.
- Check the number of times the immobilizer-keyless control unit did not permit the engine to run by checking the STATUS LOG.

1. Connect the HDS to the data link connector (DLC), then turn the ignition switch to ON (II) and follow the prompts to the SYSTEM SELECTION MENU.

   NOTE: If the HDS does not communicate with the vehicle, go to DLC circuit troubleshooting (see page 11-383).

2. At SYSTEM SELECTION MENU, enter IMMOBI, then select the IMMOBILIZER SETUP.
3. Do the SYSTEM CHECK. If there is a system check number, do the troubleshooting for the item indicated.
4. Check the STATUS LOG using the HDS (see page 22-198). Troubleshoot the line with the highest counts first. If all the lines are 0 (zero), the problem may not be caused by the immobilizer system; check for ignition or fuel problems. Refer to PGM-FI System Symptom Troubleshooting (see page 12-5).

   NOTE: Once repaired, clear the status log by removing the No. B1 (15 A) fuse in the under-dash fuse/relay box or disconnecting the battery.

Symptom Troubleshooting Index

Troubleshoot the immobilizer system in the order shown:

Order of Priority	Symptom	Possible cause
1	Immobilizer indicator blinks.	Symptom troubleshooting (see page 22-194).
2	Engine does not start with the immobilizer key.	Symptom troubleshooting (see page 22-195).
3	Immobilizer indicator does not come on.	Check the MIL indication. • If the MIL comes on, go to the PGM-FI System MIL circuit troubleshooting (see page 11-187). • If the MIL does not come on, go to the gauge control module self-diagnostic function (see page 22-325).
4	Immobilizer indicator does not go off.	Symptom troubleshooting (see page 22-195).

HONDA

Symptom Troubleshooting

Immobilizer indicator blinks

NOTE: Before troubleshooting, check the items listed in General Check before Troubleshooting (see page 22-191).

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS, then turn the ignition switch to ON (II).
3. From the SYSTEM SELECTION MENU, enter IMMOBI, select IMMOBILIZER SETUP, then select System Check, Number of Keys, and Status Log.
4. Select the SYSTEM CHECK.

   Is SYSTEM CHECK indicated?

   YES–Troubleshoot the immobilizer system according to the result of the SYSTEM CHECK (see page 22-196) and STATUS LOG (see page 22-198).■

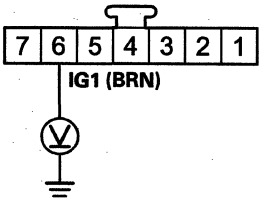
   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Enter the vehicle, and remove the ignition key from the ignition switch, then close all doors.
7. Operate the keyless transmitter LOCK and UNLOCK several times in the vehicle.

   Do the door lock actuators work normally?

   YES–Go to step 8.

   NO–Check for a poor ground (G101) and/or an open or high resistance in the wire between immobilizer-keyless control unit 7P connector terminal No. 1 and body ground (G101).■
8. Turn the ignition switch to ON (II).
9. Back-probe and measure the voltage between immobilizer-keyless control unit 7P connector terminal No. 6 and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

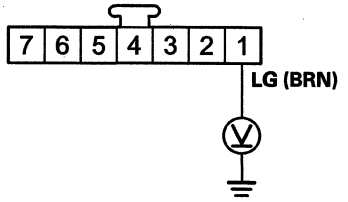
Is there battery voltage?

YES–Go to step 10.

NO–Check for a blown No. B20 (15 A) fuse in the under-dash fuse/relay box. If the fuse is OK, repair an open in the BRN wire between the under-dash fuse/relay box and the immobilizer-keyless control unit.■

10. Back-probe and measure the voltage between immobilizer-keyless control unit 7P connector terminal No. 1 and body ground.

IMMOBILIZER-KEYLESS CONTROL UNIT 7P CONNECTOR



Wire side of female terminals

Is there less than 0.2 V?

YES–Replace the immobilizer-keyless control unit (see page 22-203).■

NO–Repair a poor connection or an open or high resistance between immobilizer-keyless control unit 7P connector terminal No. 1 and body ground (G101).■

Engine does not start with the immobilizer key

NOTE: Before troubleshooting, check the items listed in General Check before Troubleshooting (see page 22-191).

1. Try to start the engine.

   Does the engine start?

   YES–Intermittent failure, the vehicle is OK at this time Check STATUS LOG (see page 22-198) and check the line indicated table.■

   NO–Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Turn the ignition switch to ON (II), and check the immobilizer indicator.

   Does the indicator blink once, then stay off?

   YES–Go to step 4.

   NO–Go to the immobilizer indicator blinks troubleshooting (see page 22-194).■

4. Turn the ignition switch to START (III).

   Does the starter motor run?

   YES–Go to step 5.

   NO–Go to Starting System, and check the starter motor (see page 4-3).■

5. Try to start the engine with the immobilizer key.

   Does the engine start?

   YES–Go to step 6.

   NO–Go to the PGM-FI System Symptom Troubleshooting (see page 11-3).■

6. Wait for a few minutes with the engine running.

   Does the engine stop?

   YES–Go to the PGM-FI System Symptom Troubleshooting (see page 11-3).■

   NO–The system is OK at this time.■

Immobilizer indicator does not go off

1. Turn the ignition switch to LOCK (0).
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. From the SYSTEM SELECTION MENU, enter IMMOBI, select IMMOBILIZER SET UP, then select SYSTEM CHECK, NUMBER OF KEY, and STATUS LOG.

   NOTE: If the HDS does not communicate with the immobilizer-keyless control unit, check the power, ground, and K-line connectors.

5. Do the SYSTEM CHECK with the HDS.

   Is N-1 indicated?

   YES–Do the indicator drive circuit check (see page 22-325). If the indicator does not go off; replace the gauge control module (see page 22-354).■

   NO–Substitute a known-good immobilizer-keyless control unit, then register it and recheck. If the symptom goes away, replace the original immobilizer-keyless control unit (see page 22-203).■

System Check

1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II).
3. Monitor the SYSTEM CHECK in the IMMOBILIZER INFO with the HDS.

   NOTE: If the HDS does not communicate with the immobilizer keyless control unit, check the power, ground, and K-line connectors.
4. If the HDS displays NORMAL N-1, the immobilizer system is OK at this time, refer to the STATUS LOG. If the HDS displays any other messages, check as follows:

System Check No.	Status Log. Indication	System Check	Possible Failures
A-1	Possible	The key is not registered	• This key is not registered in the immobilizer-keyless control unit. Try to register keys using the HDS. • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys. • Low battery voltage.
A-2	Possible	Communication error between the key and immobilizer-keyless control unit	• Intermittent interruption between transponder and immobilizer-keyless control unit. • The immobilizer key type is different. It is not for this vehicle but for another one or for another company's one. • Key failure. (transponder failure) • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys. • Low battery voltage.
A-3	Possible	No communication between the key and immobilizer-keyless control unit	• The ignition switch was turned to ON (II) with a non-immobilizer key. • The immobilizer key type is different. It is not for this vehicle but for another one or for another company's one. • Key failure. (transponder failure) • No communication between the antenna and the immobilizer key because of interference from metal such as key chains/key rings/other keys. • Low battery voltage. • Immobilizer-keyless control unit failure.
B-1	Possible	The ECM/PCM is not registered	• The ECM/PCM was not registered. Try to register the ECM/PCM using the HDS. • No communication between the ECM/PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the ECM/PCM because of electrical interference. • Open in the IG1 line
B-2	Possible	Error of communication format in ECM/PCM	• The ECM/PCM was not registered. Try to register the ECM/PCM using the HDS. • No communication between the ECM/PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the ECM/PCM because of electrical interference.

System Check No.	Status Log. Indication	System Check	Possible Failures
C-1	Possible	Imoes unit is not registered	• Imoes unit was not registered. • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Try to register the imoes unit with the HDS.
C-2	Possible	Error of communication format between Imoes unit.	• Imoes unit was not registered. • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Try to register the imoes unit with the HDS.
D-1	Possible	S-NET line short	• Harness short from the ECM/PCM to the immobilizer-keyless control unit. (S-NET line short) • No communication between the ECM/PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless unit and the ECM/PCM because of electrical interference. • Immobilizer-keyless control unit failure. • ECM/PCM failure.
D-2	Possible	No communication between imoes unit and immobilizer-keyless control unit (S-NET line)	• Blown fuse. • Harness open from the imoes unit to the immobilizer-keyless control unit. (S-NET line open) • No communication between the imoes unit and the immobilizer-keyless control unit because of low battery voltage. • No communication between the imoes unit and the immobilizer-keyless control unit because of electrical interference. • Immobilizer-keyless control unit failure. • Imoes unit failure.
D-3	Possible	No communication between the ECM/PCM and immobilizer-keyless control unit (S-NET)	• Blown fuse. • Harness open from the ECM/PCM to the immobilizer-keyless control unit. • No communication between the ECM/PCM and the immobilizer-keyless control unit because of low battery voltage. • No communication between the immobilizer-keyless control unit and the ECM/PCM because of electrical interference. • Immobilizer-keyless control unit failure. • ECM/PCM failure.
E-1 E-2 E-3 E-4 E-5	——	Initial registration of immobilizer-keyless control unit is not completed	The immobilizer-keyless control unit is not registered. Try to register the immobilizer-keyless control unit using the HDS.
F-1 F-2 F-3 F-4 F-5	——	Special Mode	Turn the ignition switch to ON (II) and to LOCK (0) with the registered key.

Status Log

If you suspect there is a immobilizer system problem, check the STATUS LOG in the HDS.

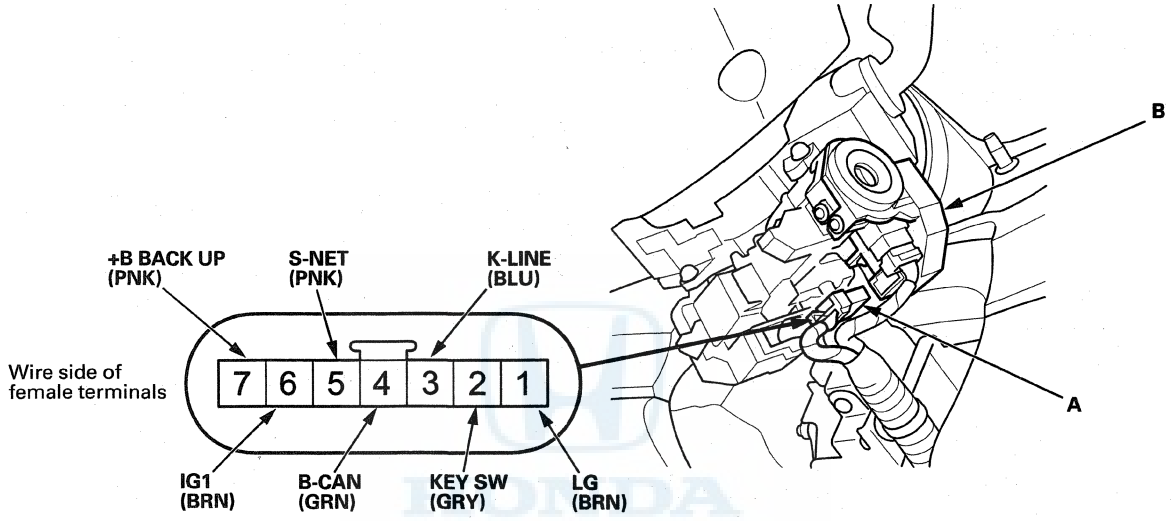
1. Connect the HDS to the data link connector (DLC).
2. Turn the ignition switch to ON (II).
3. On the HDS screen, at SYSTEM SELECTION MENU, enter IMMOBI, then select IMMOBILIZER SETUP, select SYSTEM CHECK, NUMBER OF KEYS and STATUS LOG, then select STATUS LOG.
4. Check the STATUS LOG count. Troubleshoot the status with the highest count first. If no counts are listed, the immobilizer system is OK. Continue with normal symptom troubleshooting.

Status Log No.	Detected Item	Probable Cause
A-1	KEY CODE MISMATCH① (Code format normal, but code data is mismatched)	• The key was not registered • Interference from metal such as key chains • Low battery voltage
A-2	KEY CODE MISMATCH② (Code format failure)	• Ignition switch was turned to ON (II) with another type of immobilizer key or aftermarket key • Interference from metal such as key chains • Low battery voltage
A-3	KEY CODE MISMATCH③ (No key code or non-immobilizer key)	• Ignition switch was turned to ON (II) with another type of immobilizer key or aftermarket key • Interference from metal such as key chains • Low battery voltage • Key failure • Immobilizer-keyless control unit failure
B-1	ECM/PCM CODE MISMATCH① (Code format normal, but code data is mismatched)	• ECM/PCM was not registered correctly • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit • Communication line electrical noise
B-2	ECM/PCM MISMATCH② (Code format failure)	• ECM/PCM was not registered correctly • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit • Communication line electrical noise
C-1	IMOES UNIT MISMATCH① (Code format normal, but data is mismatched)	• Imoes unit was not registered • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise
C-2	IMOES UNIT MISMATCH② (Code format failure)	• Imoes unit was not registered correctly • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise
D-1	S-NET LINE PROBLEM① (Short to ground)	• Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit and the ECM/PCM • Communication line electrical noise
D-2	S-NET LINE PROBLEM② (No communication)	• Blown fuse • Harness open from imoes unit to immobilizer-keyless control unit • The communication was not good between imoes unit and immobilizer-keyless control unit by battery voltage low • The communication was not good between imoes unit and immobilizer-keyless control unit by influence of some noise • Imoes unit failure • Immobilizer-keyless control unit failure
D-3	S-NET LINE PROBLEM③ (Open line or ECM/PCM failure)	• Open or short in the harness from the ECM/PCM to the immobilizer-keyless control unit • Low battery voltage • Poor or loose terminal connections at the immobilizer-keyless control unit and the ECM/PCM • Communication line electrical noise • Poor S-NET data communication due to electrical interference

Immobilizer-Keyless Control Unit Input Test

NOTE:
- SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.
- Before testing, troubleshoot the multiplex integrated control unit first, using B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Remove the steering column covers (see page 20-96).
2. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).



3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.

(cont'd)

Immobilizer-Keyless Control Unit Input Test (cont'd)

4. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if desired result is not obtained
4	GRN	B-CAN	Disconnect the gauge control module 32P connector	Check for continuity between the terminal No. 4 and the gauge control module 32P connector terminal No. 31: There should be continuity.	An open or high resistance in the wire
			Disconnect under-dash fuse/relay box connector Y (16P)	Check for continuity between the terminal No. 4 and under-dash fuse/relay box connector Y (16P) terminal No. 6: There should be continuity.	An open or high resistance in the wire
5	PNK	S-NET	Disconnect ECM/PCM connector A (44P)* (see page 11-6)	Measure the voltage to ground: There should be about 5 V.	• A short to ground in the wire • An open or high resistance in the wire
			Disconnect the battery negative terminal	Measure the resistance between the terminal No. 5 and body ground: There should be more than 50 kΩ.	• Faulty imoes unit (built into the MICU) • Faulty under-dash fuse/relay box • An open or high resistance in the S-NET wire
			Disconnect ECM/PCM connector A (44P)* (see page 11-6)	Check for continuity between the terminal No. 5 and ECM/PCM connector A (44P) terminal No. 44: There should be continuity.	An open or high resistance in the wire

*: To disconnect the ECM/PCM connectors, turn the ignition switch to LOCK (0) and jump the SCS line with the HDS.

5. Reconnect the connector to the immobilizer-keyless control unit, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the immobilizer-keyless control unit (see page 22-203).

   NOTE: After replacing the immobilizer-keyless control unit, do the immobilizer registration (see page 22-202).

Cavity	Wire	Terminal name	Test condition	Test: Desired result	Possible cause if desired result is not obtained
7	PNK	+B BACK UP	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
6	BRN	IG1	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B20 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
2	GRY	KEY SW	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • Faulty ignition key switch • An open or high resistance in the wire
1	BRN	LG	In all ignition switch position	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G101) • An open or high resistance in the wire
3	BLU	K-LINE	Under all conditions	Measure the voltage to ground: There should be pulse voltage (digital signal).	• Faulty control unit on the K-line • Short to ground in the K-line wire

Immobilizer Key Registration

NOTE:
- The HDS is required for registration of the immobilizer keys.
- Programming the immobilizer also programs the keyless transmitter.
- Check for aftermarket electrical equipment that can cause problems with transponder operation.
- The immobilizer-keyless control unit can store up to six immobilizer keys.

Add One New Key/Keyless Transmitter

1. Have a registered key, a new immobilizer key, and the first password from the iN system.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the System Selection Menu, then select IMMOBILIZER SETUP.
5. Select Add and Delete keys, then Add 1 key.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started with the newly registered key check that the door locks operate using the immobilizer key transmitter.

Add and Delete keys/Keyless Transmitters, Then Select Delete or Add keys

1. Have all registered keys, all new keys, and the first password from the iN system.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the System Selection Menu, then select IMMOBILIZER SETUP.
5. Select Add and Delete Keys, or Delete or Add Multiple Keys.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started with all the registered keys check that the door locks operate using the immobilizer key transmitter.

All Keys are Lost

1. Prepare all new keys and have the immobilizer ECM/PCM code.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the System Selection Menu, then select IMMOBILIZER SETUP.
5. Select Add and Delete keys, then All keys lost.
6. Do the registration according to the instructions on the HDS screen.
7. Check if the engine can be started using all the registered keys , and check that the door locks operate using the immobilizer key transmitter.

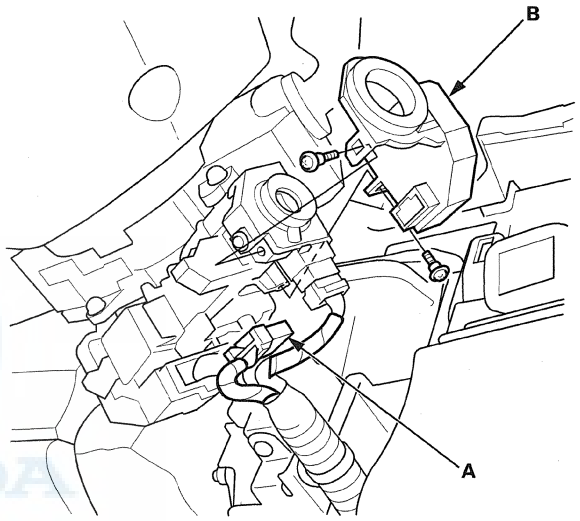
Registration for Immobilizer System

1. Have all registered keys and the ECM/PCM code.
2. Connect the HDS to the data link connector (DLC).
3. Turn the ignition switch to ON (II).
4. Select IMMOBI from the SYSTEM SELECTION MENU, then select IMMOBILIZER SETUP.
5. Select REPLACE IMMOBILIZER RECEIVER/CONTROL UNIT.
6. Do the registration according to the instructions on the HDS screen.
7. Check that the engine can be started with all registered keys, check that the door locks operate using the immobilizer key transmitter.

Immobilizer-Keyless Control Unit Replacement

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.

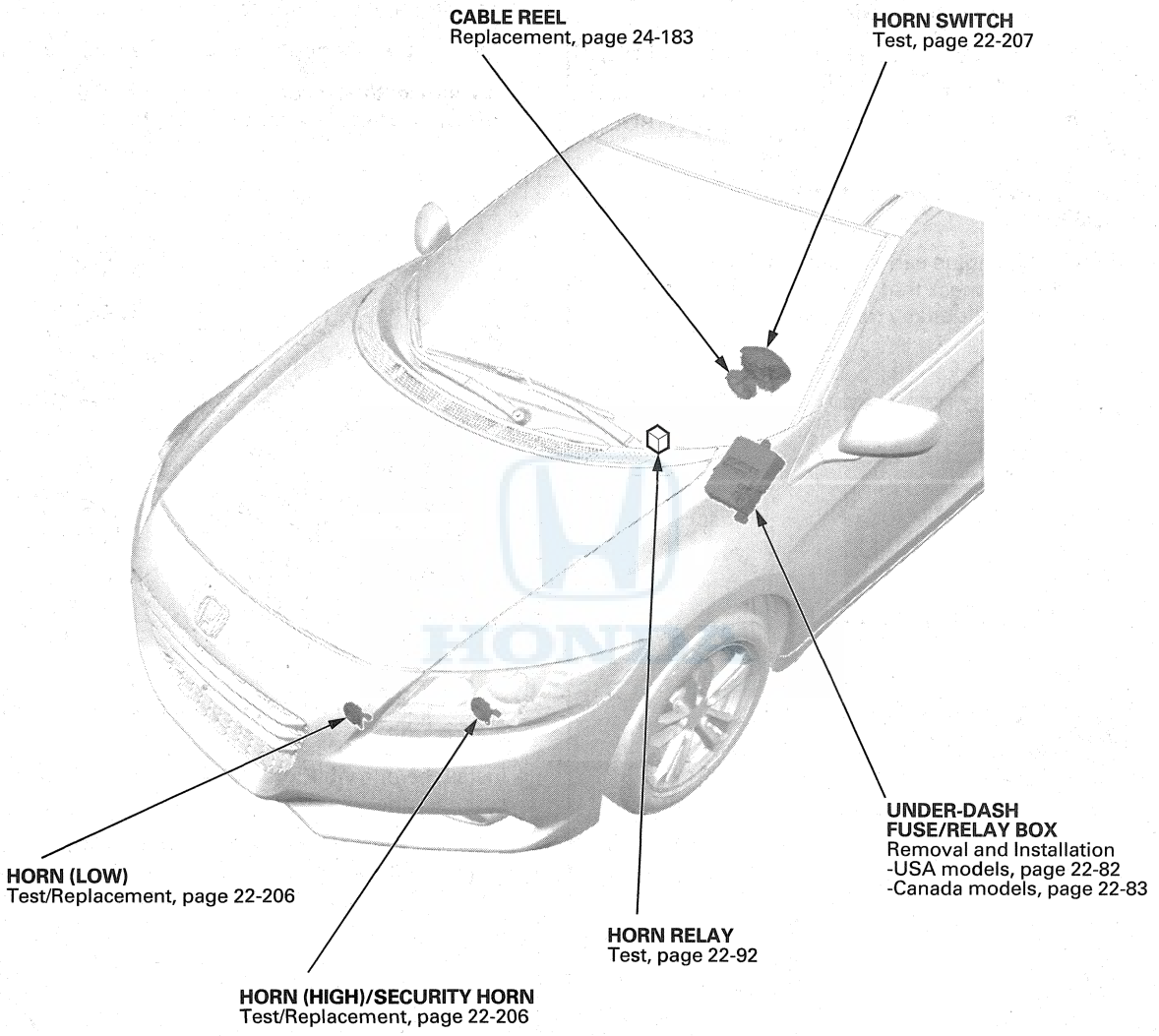
1. Remove the steering column covers (see page 20-96).
2. Disconnect the 7P connector (A) from the immobilizer-keyless control unit (B).



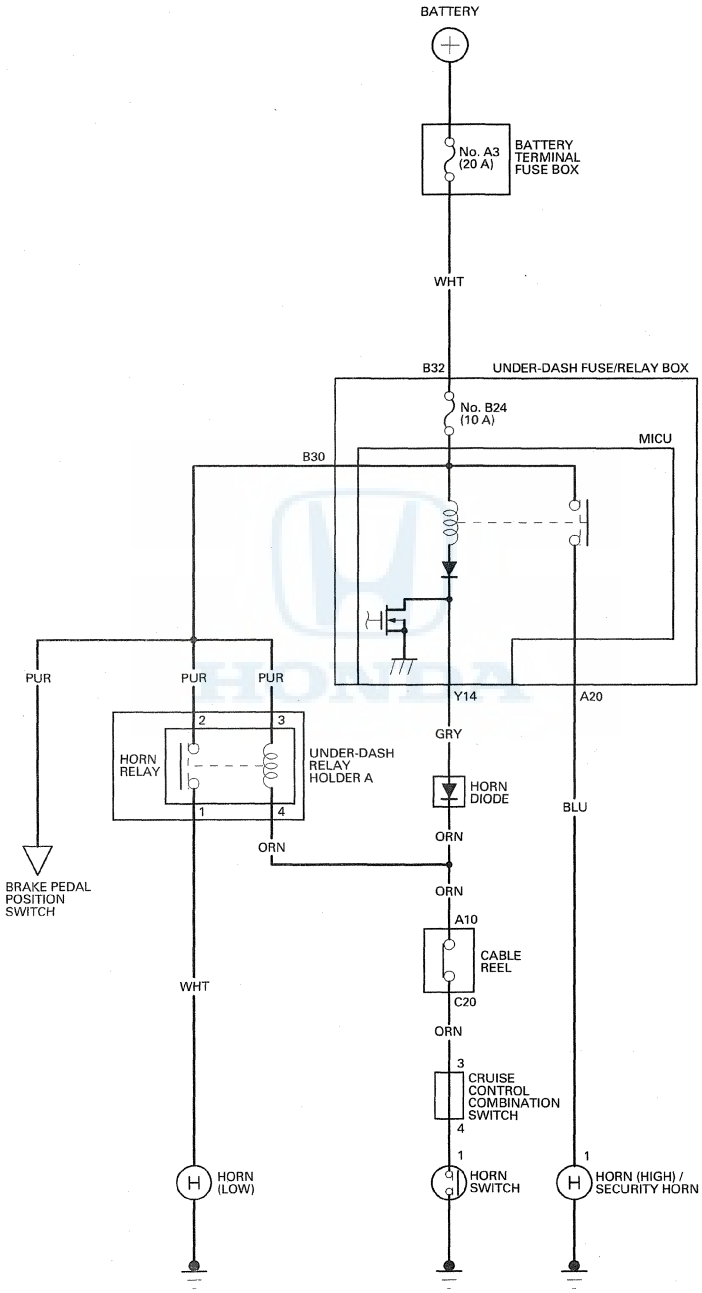
3. Remove the two screws and the immobilizer-keyless control unit.
4. Install the immobilizer-keyless control unit in the reverse order of removal.
5. After replacement, register the immobilizer-keyless control unit (see page 22-203), and make sure the immobilizer system works properly.

Horns

Component Location Index



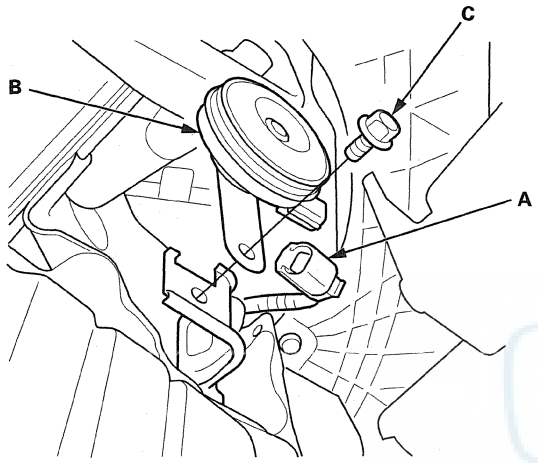
Circuit Diagram



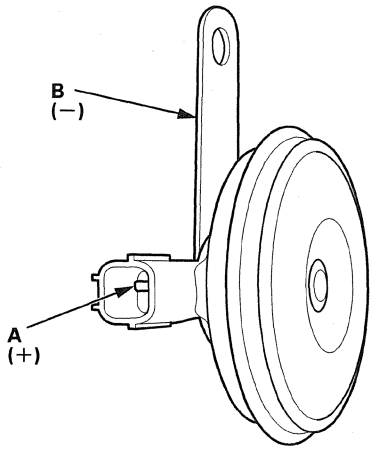
Horn Test/Replacement

Horn (High)/Security Horn

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the front bumper (see page 20-128).
3. Disconnect the 1P connector (A) from the horn (B), then remove the bolt.



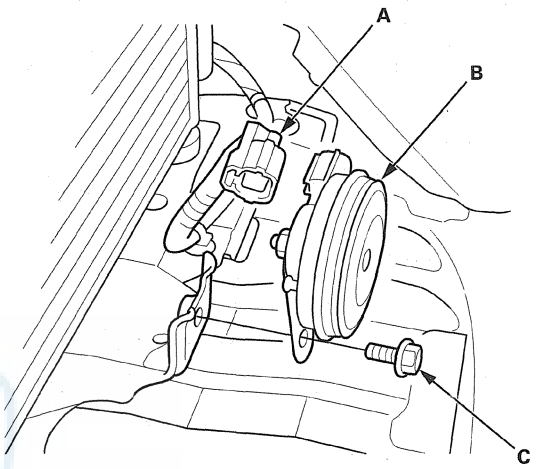
4. Remove the bolt (C).
5. Test the horn by connecting battery power to the terminal (A) and body ground to the bracket (B). The horn should sound.



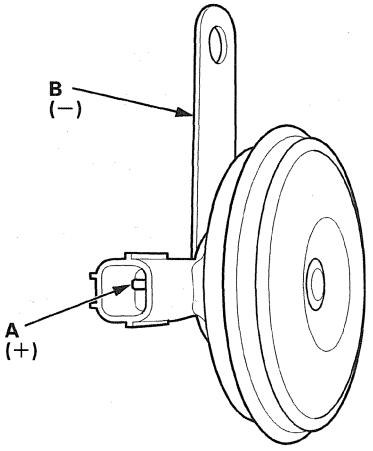
6. If the horn fails to sound, replace it.

Horn (Low)

1. Remove the front bumper center upper beam (see page 20-149).
2. Disconnect the 1P connector (A) from the horn (B), then remove the bolt.



3. Remove the bolt (C).
4. Test the horn by connecting battery power to the terminal (A) and body ground to the bracket (B). The horn should sound.

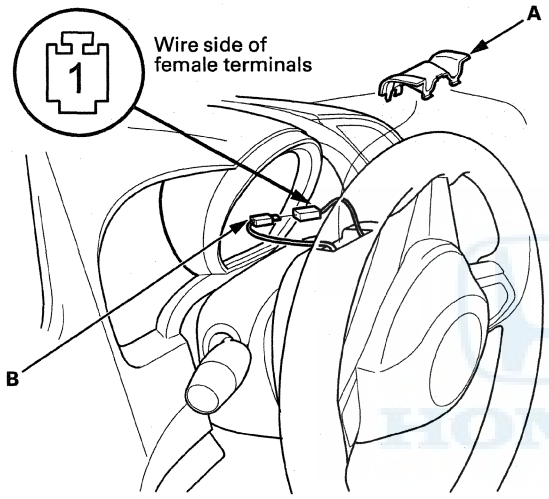


5. If the horn fail to sound, replace it.

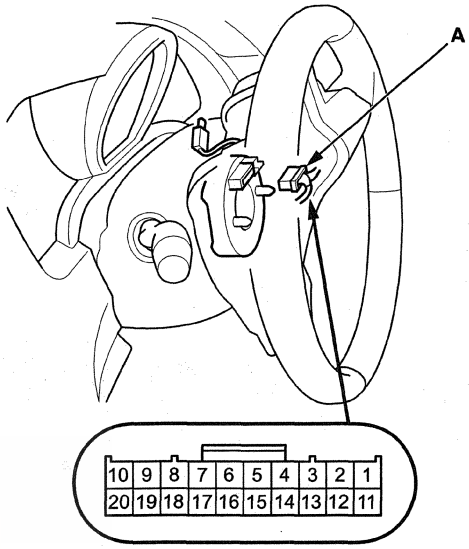
Horn Switch Test

NOTE:
- SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.
- Check for a blown No. B24 (10 A) fuse in the under-dash fuse/relay box. If it is blown, check for a faulty horn relay.

1. Turn the steering wheel 180 degrees from the center position and remove the cover (A).



2. Disconnect the horn switch 1P connector (B).
3. Connect the horn switch 1P connector terminal No. 1 and body ground with a jumper wire.
   - If the horns does not sound, go to step 4.
   - If the horns sound, go to step 11.
4. Remove the jumper wire from the horn switch 1P connector.
5. Remove the driver's airbag assembly (see page 24-166).
6. Disconnect the cable reel subharness 20P connector (A) to the cable reel.

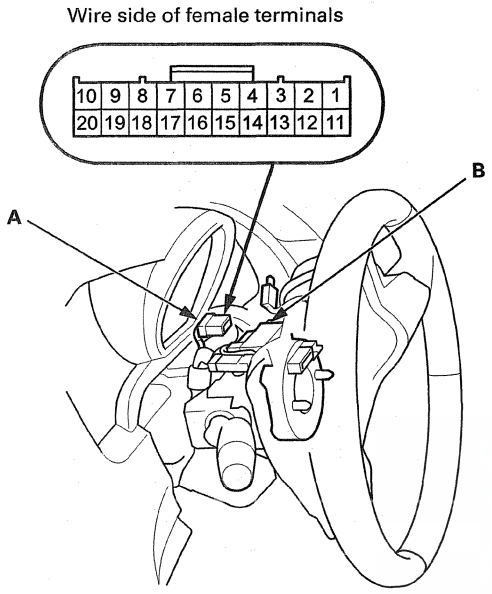


7. Check for continuity between the cable reel subharness 20P connector terminal No. 20 and horn switch 1P connector terminal No. 1.
   - If there is continuity, go to step 8.
   - If there is no continuity, repair an open in the wire or faulty cruise control combination switch.
8. Remove the steering column covers (see page 17-9).

(cont'd)

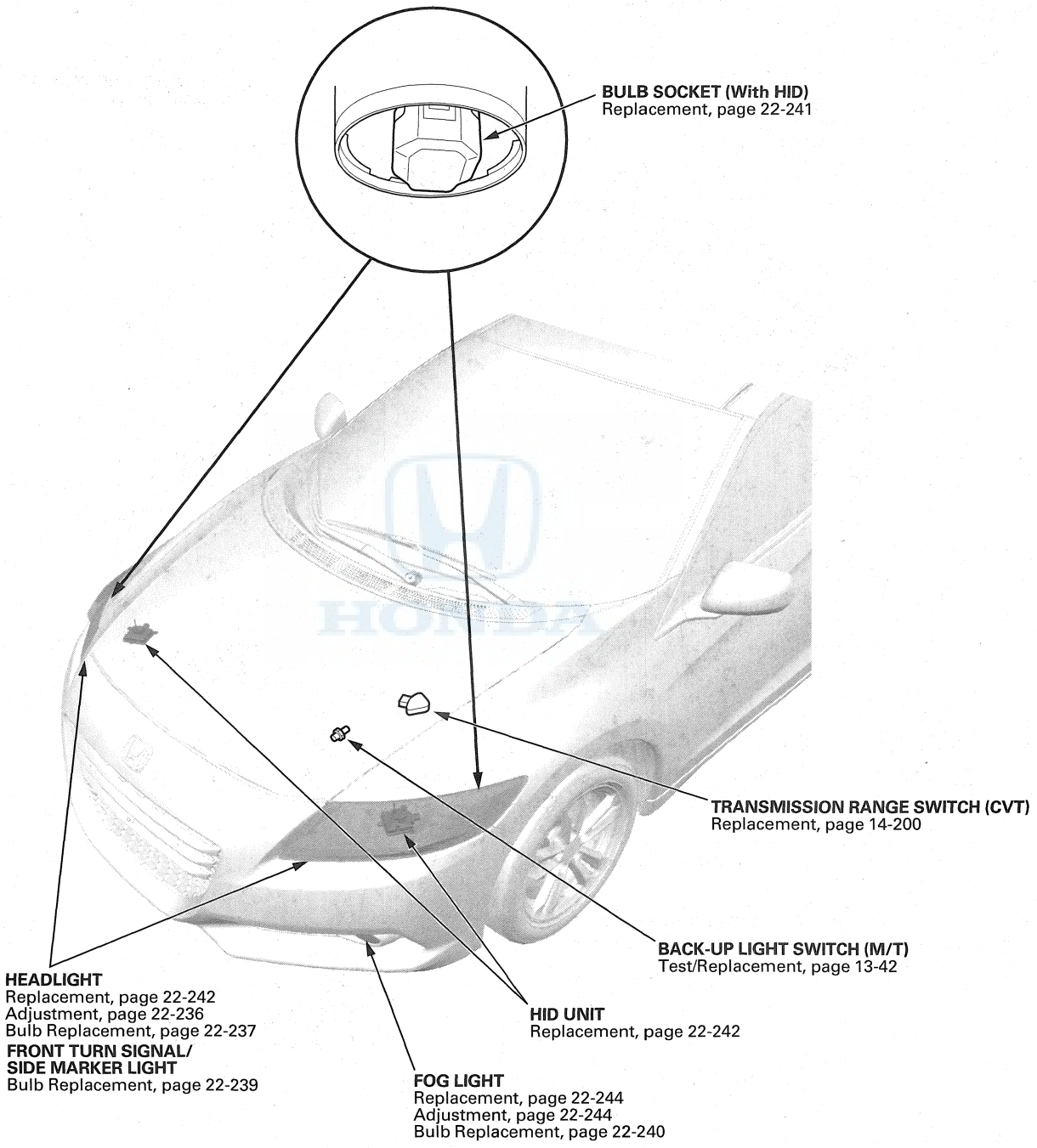
Horn Switch Test (cont'd)

9. Disconnect the dashboard wire harness 20P connector (A) from the cable reel (B).



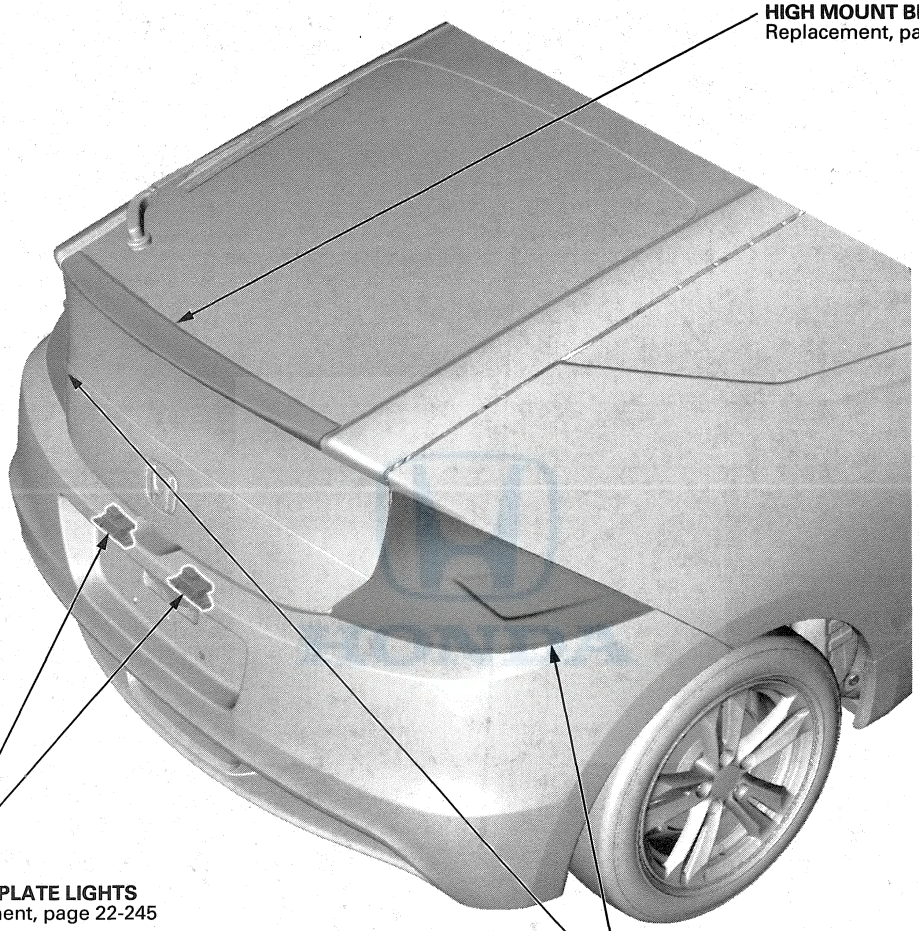
10. Connect the dashboard wire harness 20P connector terminal No. 10 and body ground with a jumper wire. The horns should sound.
    - If the horns does not sound, check these items. If OK, faulty MICU.
      - Horn.
      - Horn relay, horn diode.
      - An open or high resistance in the wire.
    - If the horns sounds, replace the cable reel (see page 24-183).
11. Remove the driver's airbag assembly (see page 24-166).
12. Check the installation of the driver's airbag assembly and the steering wheel. If OK, replace the driver's airbag assembly (see page 24-166).

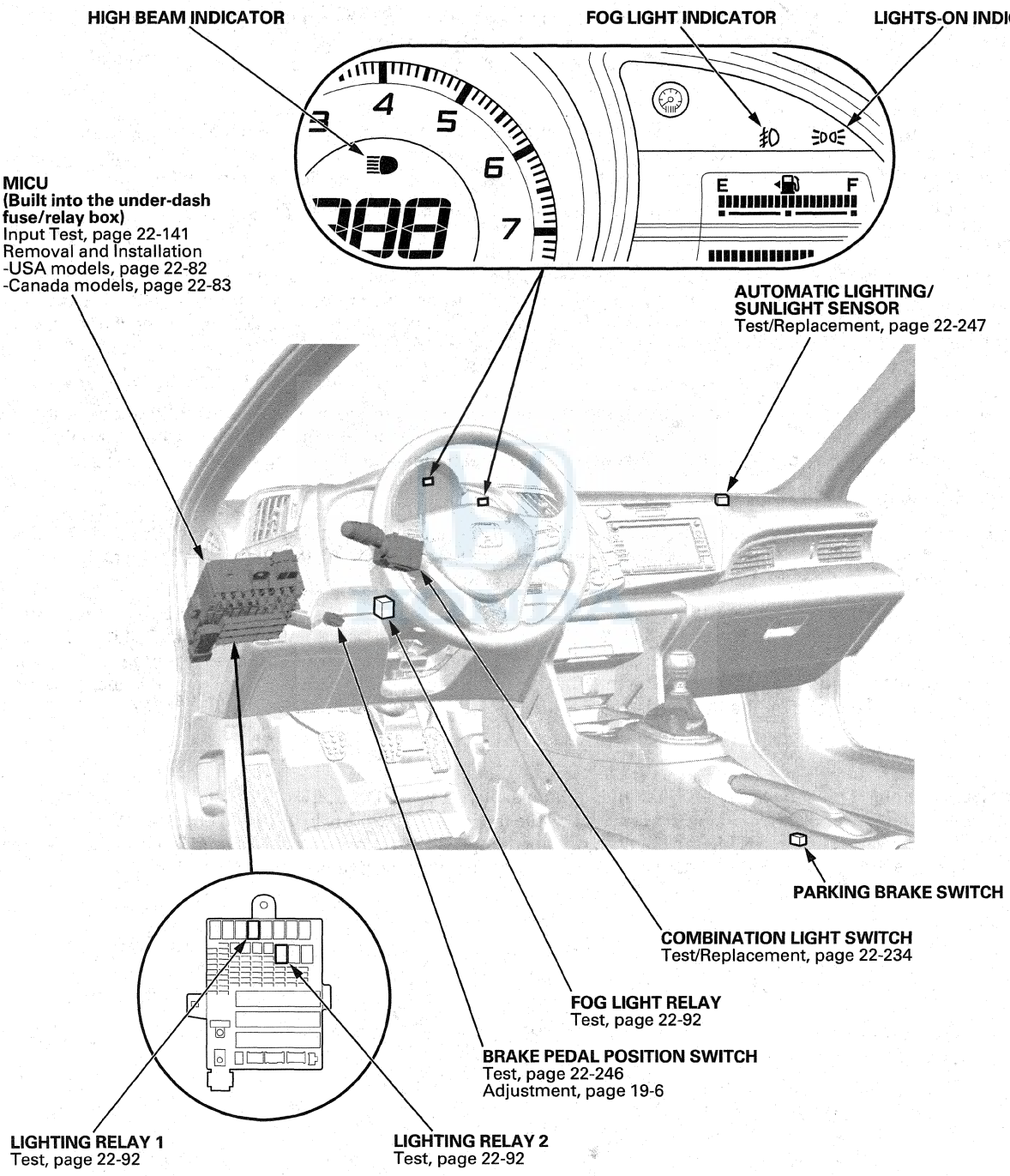
Component Location Index



(cont'd)

Component Location Index (cont'd)




HIGH BEAM INDICATOR
FOG LIGHT INDICATOR
LIGHTS-ON INDICATOR
MICU
(Built into the under-dash fuse/relay box)
Input Test, page 22-141
Removal and Installation
-USA models, page 22-82
-Canada models, page 22-83
AUTOMATIC LIGHTING/ SUNLIGHT SENSOR
Test/Replacement, page 22-247
PARKING BRAKE SWITCH
COMBINATION LIGHT SWITCH
Test/Replacement, page 22-234
FOG LIGHT RELAY
Test, page 22-92
BRAKE PEDAL POSITION SWITCH
Test, page 22-246
Adjustment, page 19-6
LIGHTING RELAY 1
Test, page 22-92
LIGHTING RELAY 2
Test, page 22-92

System Description

Headlights System Description

The headlight system is composed of the MICU, the headlight and dimmer/flash-to-pass switches (inside the combination light switch), the left and right headlights, and the high beam indicator.
The MICU controls the side marker lights, the headlights, the taillights, and the license plate lights.

Low Beams

When you move the headlight switch to the ON position and the dimmer/flash-to-pass switch to the low position, a ground signal is supplied to terminal No. 13 of under-dash fuse/relay box connector Q (34P). The MICU then energizes the low beam control circuit, supplying battery voltage to the low beam of the headlights, turning them on.

NOTE: If there is a B-CAN communication failure, the headlight high beam indicator will not come on.

High Beams

When you move the headlight switch to the ON position and the dimmer/flash-to-pass switch to the high position, ground signals are supplied to terminals No. 13 and No. 15 of under-dash fuse/relay box connector Q (34P). The MICU then energizes the high beam headlight control circuits, supplying battery voltage to the high beam headlights, turning them on.

Flash-to-Pass

When you pull the dimmer/flash-to-pass switch to the passing position, a ground signal is supplied to under-dash fuse/relay box (MICU) connector Q (34P) terminal No. 14. The MICU then energizes the high beam control circuits for as long as the switch is held, supplying battery voltage to the high beam headlights, turning them on.

Daytime Running Lights (DRL) System Description

The daytime running lights system includes the MICU, the left and right high beam headlights, and the parking brake switch. The daytime running lights operate with the ignition switch turned to ON (II), the headlights off (headlight switch OFF or in the parking position), and the parking brake released.

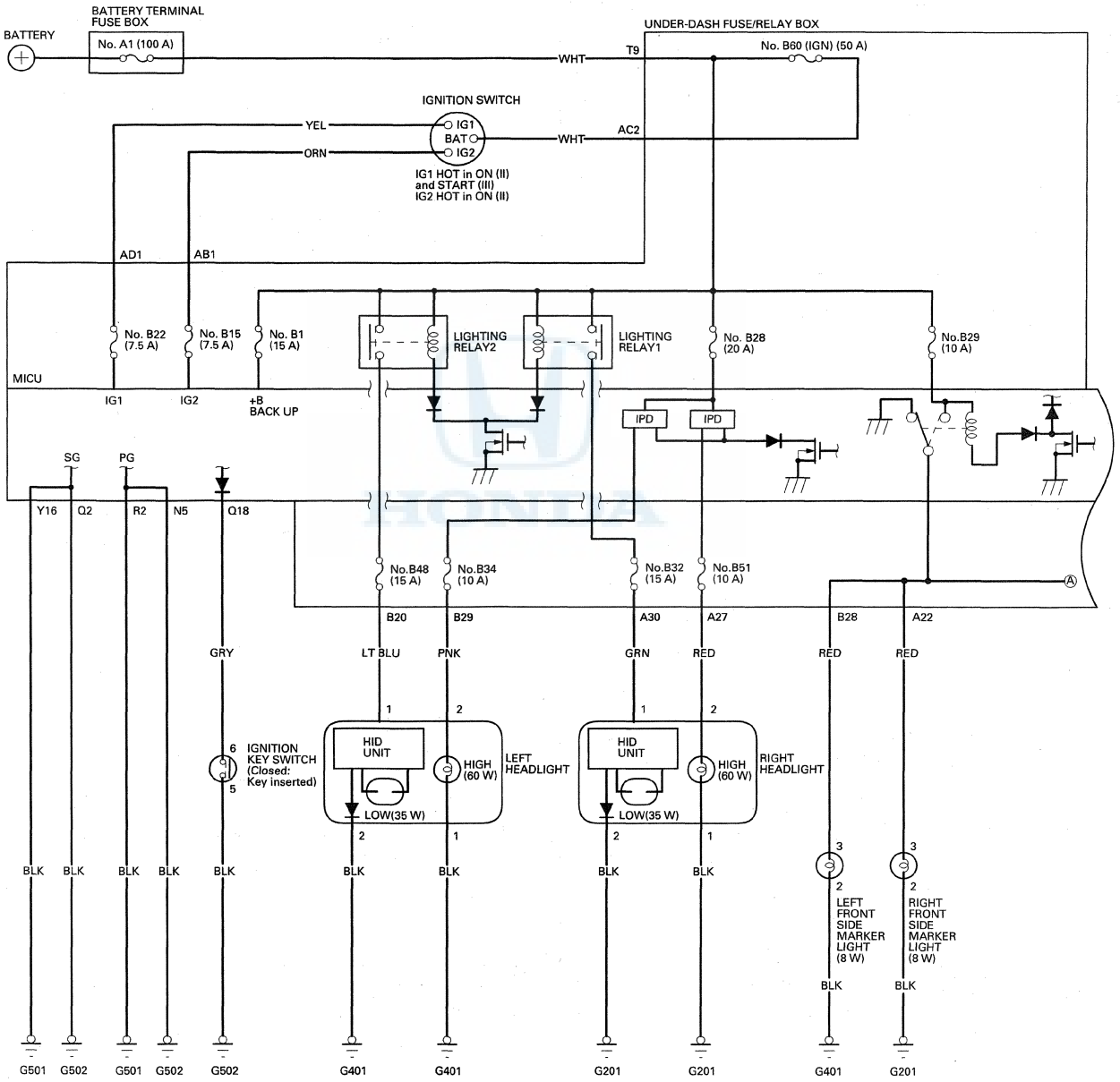
When the daytime running lights are on, the MICU turns the high beam headlight control circuit on and off (duty cycle), which provides a reduced voltage (approximately 4-8 volts) to the high beam headlights (via the No. B34 [No. B48] and No. B51 fuses in the under-dash fuse/relay box; the high beam headlights come on with reduced brightness. If there is a problem with the daytime running lights system, the MICU sends a signal to the gauge control module, and the word "CHECK DRL SYSTEM" shows on the multi-information display (MID).

[ ]: Without HID

NOTE:
- The daytime running lights are disabled when the ignition switch is turned to LOCK (0). To keep the daytime running lights from coming on, apply the parking brake switch while the ignition switch is in LOCK (0) position. When you then turn the ignition switch back to ON (II), the daytime running lights will not come on until the parking brake is released.
- The headlights revert to normal operation when you turn them on with the headlight switch.

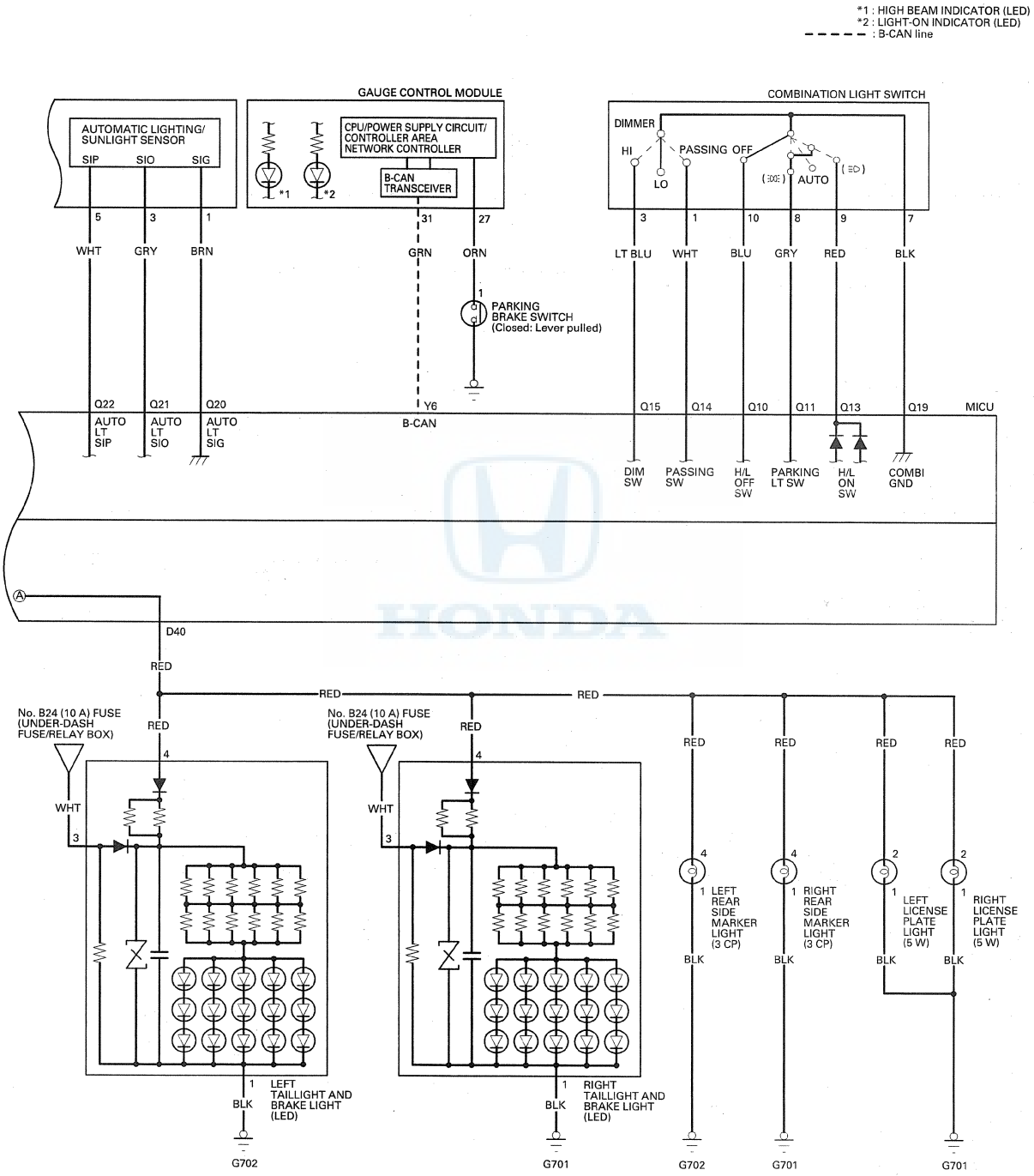
Circuit Diagram - Headlights

With HID

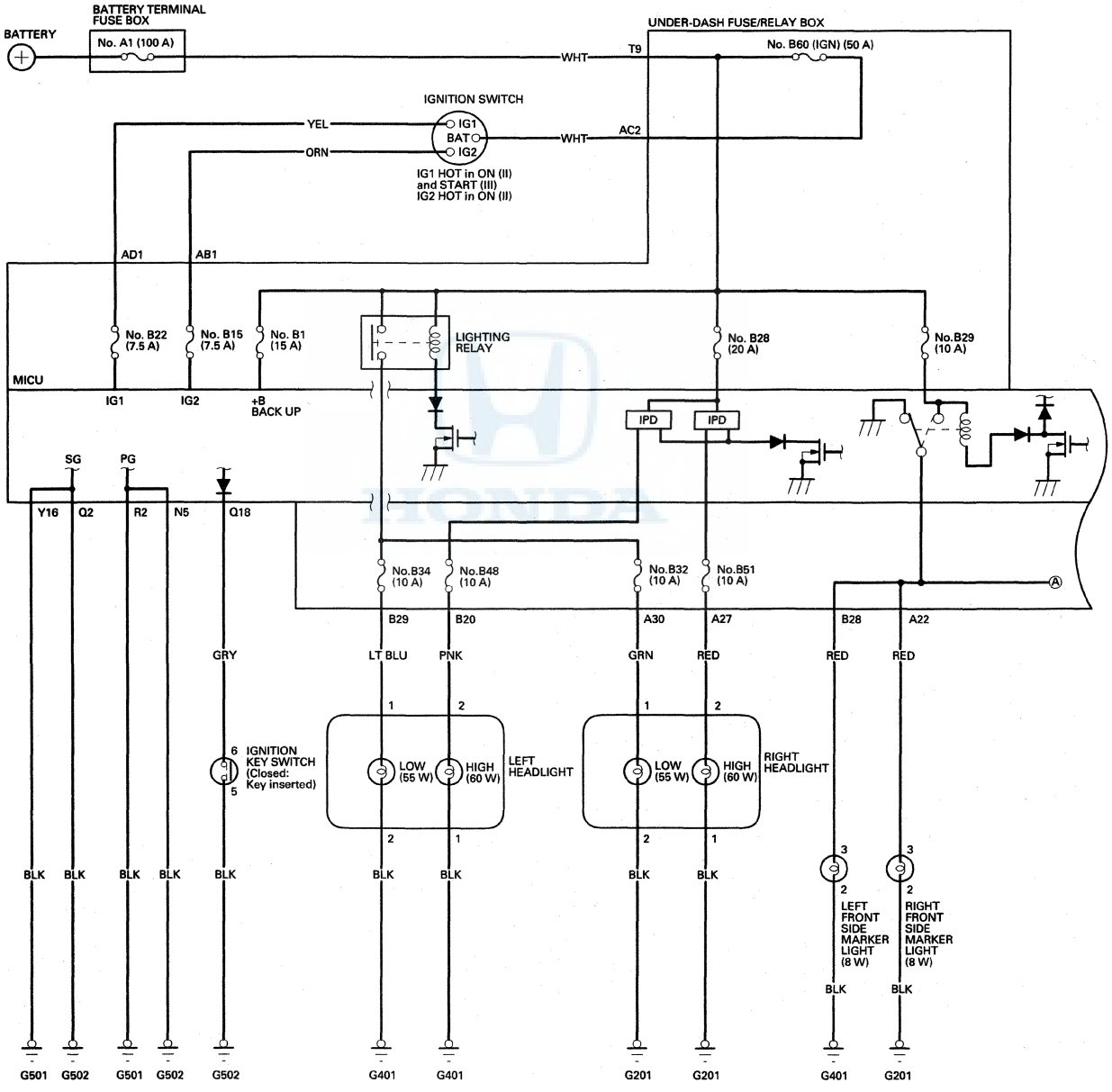


(cont'd)

Circuit Diagram - Headlights (cont'd)



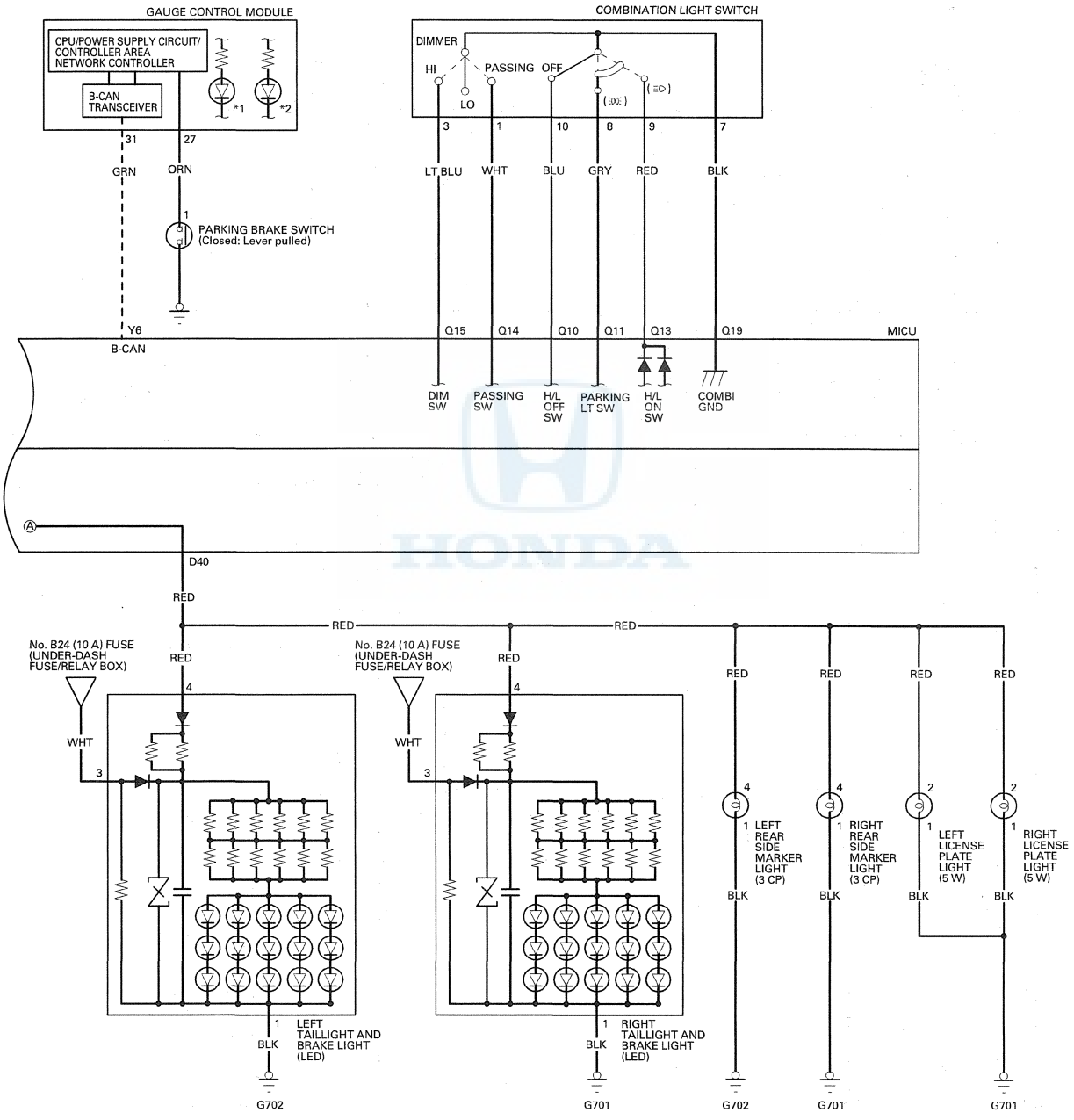
Without HID



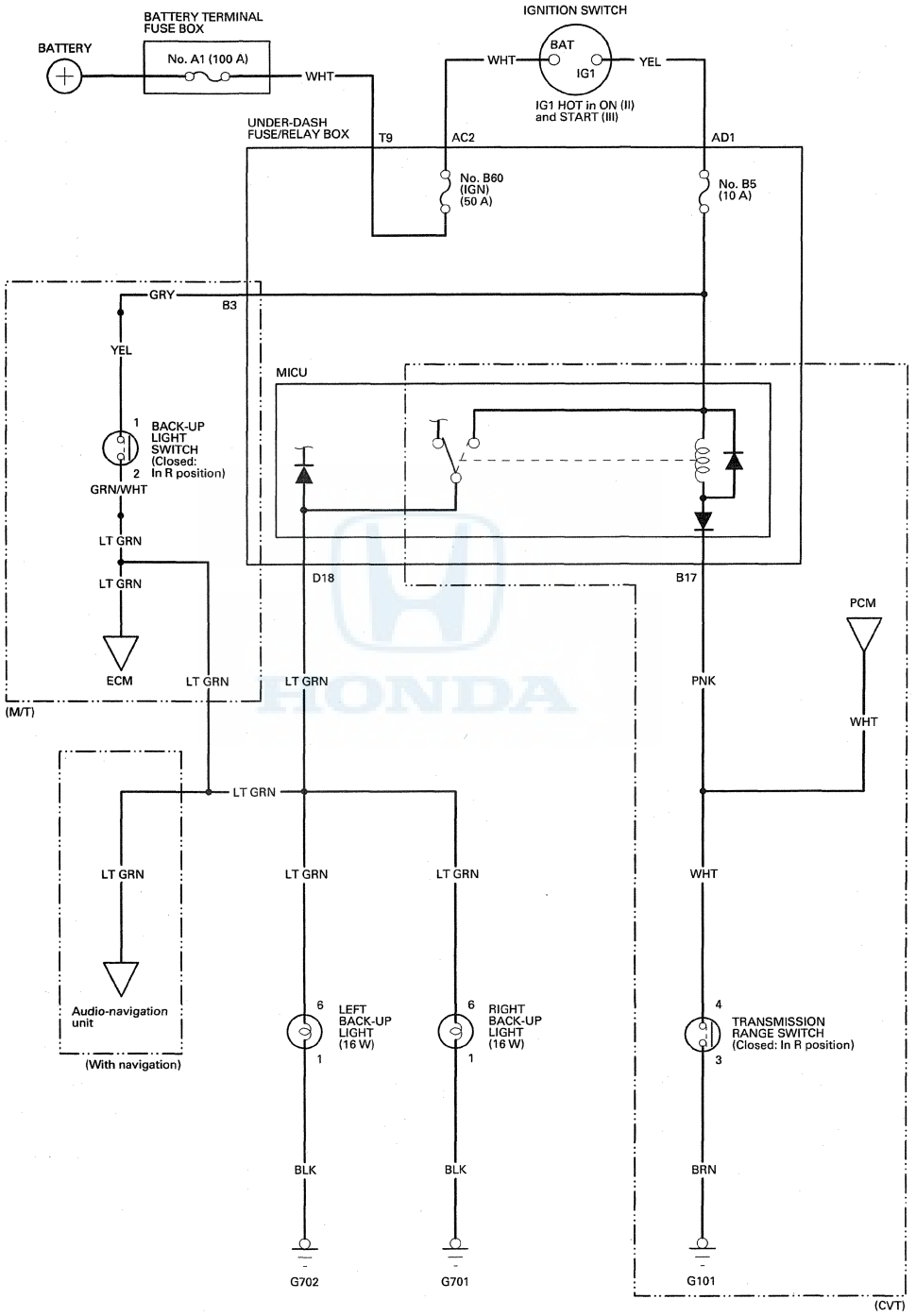
(cont'd)

Circuit Diagram - Headlights (cont'd)

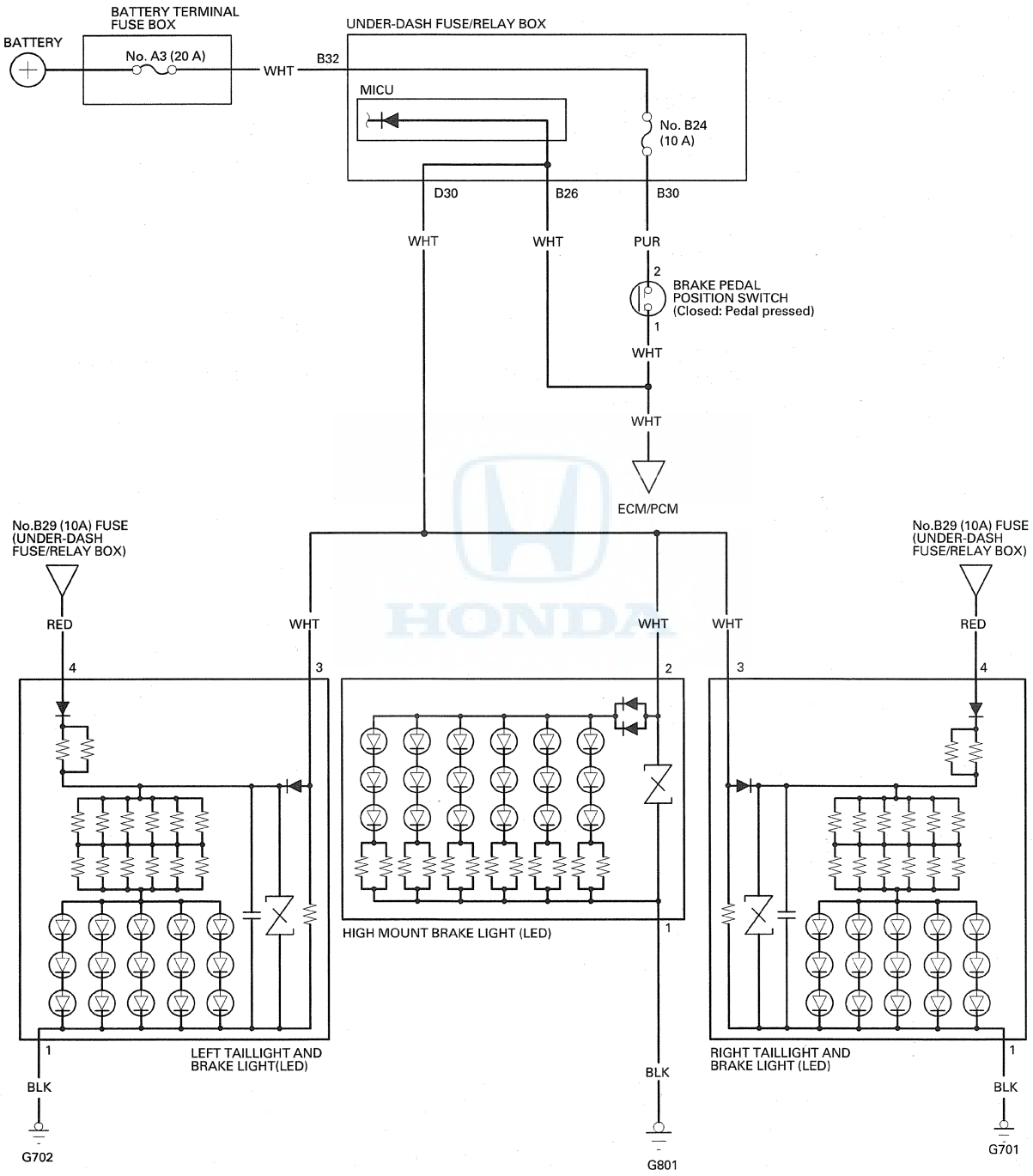
*1 : HIGH BEAM INDICATOR (LED)
*2 : LIGHT-ON INDICATOR (LED)
– – – – – : B-CAN line



Circuit Diagram - Back-up Lights

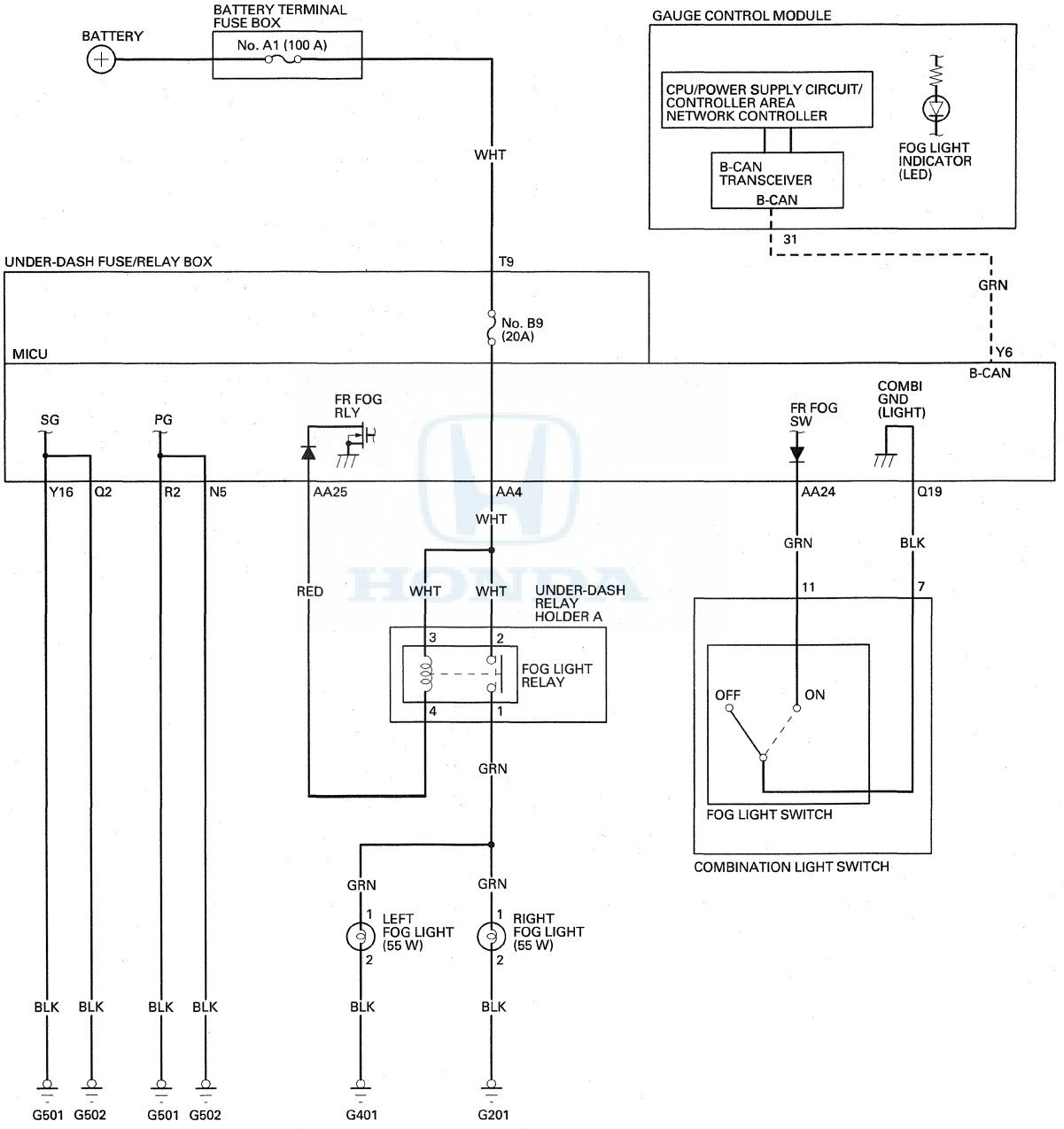


Circuit Diagram - Brake Lights



Circuit Diagram - Fog Lights

- - - - - : CAN line



DTC Troubleshooting

DTC B1078: Daytime Running Light for Canada Circuit Malfunction

DTC B1079: Daytime Running Light for USA Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Turn the ignition switch to ON (II).
2. Pull the parking brake lever.
3. Clear the DTCs with the HDS.
4. Release the parking brake lever.
5. Turn the ignition switch to LOCK (0), and then back to ON (II).
6. Check for DTCs with the HDS.

   Is DTC B1078 or B1079 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
7. Turn the ignition switch to LOCK (0), and turn the headlight switch OFF.
8. Check the No. B28, No. B34 [No. B48], and No. B51 fuses in the under-dash fuse/relay box.

   [ ]: Without HID

   Are all fuses OK?

   YES–Go to step 9.

   NO–Replace the blown fuse, and recheck. If the No. B28 (20 A) fuse is blown again, replace the under-dash fuse/relay box. If the No. B34 (10A) [No. B48 (10 A)] or No. B51 (10 A) fuse is blown again, repair a short in the wire between the under-dash fuse/relay box and the appropriate headlight (high beam).■
9. Check the headlight bulbs.

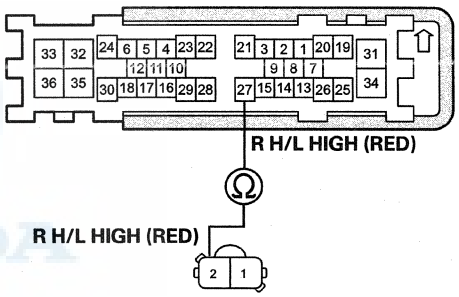
   Are the headlight bulbs OK?

   YES–Go to step 10.

   NO–Replace the bulb and recheck.■
10. Disconnect under-dash fuse/relay box connectors A (36P) and B (36P).
11. Disconnect both of the headlight (high beam) 2P connectors.
12. Check for continuity between right headlight (high beam) 2P connector terminal No. 2 and under-dash fuse/relay box connector A (36P) terminal No. 27.

UNDER-DASH FUSE/RELAY BOX CONNECTOR A (36P)

Wire side of female terminals



RIGHT HEADLIGHT (HIGH BEAM) 2P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Go to step 13.

NO–Repair an open or high resistance in the wire between the right headlight (high beam) and the under-dash fuse/relay box.■

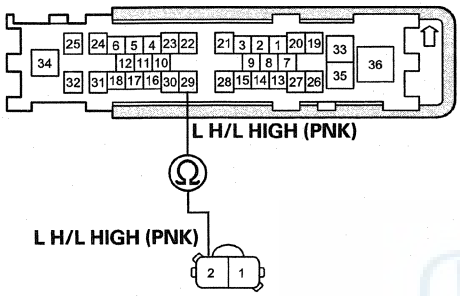
13. Check for continuity between left headlight (high beam) 2P connector terminal No. 2 and under-dash fuse/relay box connector B (36P) terminal No. 29 [No. 20].

[ ]: Without HID

With HID

UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)

Wire side of female terminals



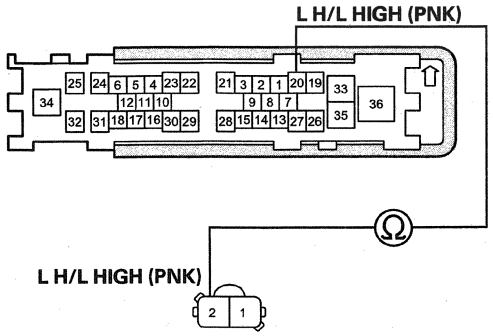
LEFT HEADLIGHT (HIGH BEAM) 2P CONNECTOR

Wire side of female terminals

Without HID

UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)

Wire side of female terminals



LEFT HEADLIGHT (HIGH BEAM) 2P CONNECTOR

Wire side of female terminals

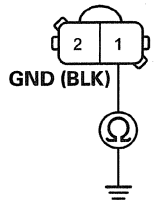
Is there continuity?

YES–Go to step 14.

NO–Repair an open or high resistance in the wire between the left headlight (high beam) and the under-dash fuse/ relay box.■

14. Check for continuity between each headlight (high beam) 2P connector terminal No. 1 and body ground.

HEADLIGHT (HIGH BEAM) 2P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the BLK wire or poor ground (G201-right side, G401-left side).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1275: Headlight switch OFF Position Circuit Malfunction

DTC B1276: Headlight Switch PARKING Position Circuit Malfunction

DTC B1277: Headlight switch AUTO Position Circuit Malfunction

DTC B1278: Headlight switch ON Position Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Turn the combination light switch to the PARKING, AUTO, and ON (low beam) positions for at least 6 seconds in each position, and then to the OFF position.
4. Check for DTCs with the HDS.

   Is DTC B1275, B1276, B1277, or B1278 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■

5. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
6. Check each combination light switch position value with the DATA LIST menu.

When the combination light switch is turned OFF

Data List	Value
Headlight Switch (OFF)	ON
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

When the combination light switch is turned to PARKING

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

When the combination light switch is turned to AUTO

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	ON
Headlight Switch (HEADLIGHT)	OFF

When the combination light switch is turned ON (HEADLIGHT)

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	ON
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	ON

Are all data list values correct?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Go to step 7.

7. Turn the ignition switch to LOCK (0).
8. Disconnect the combination light switch 12P connector.
9. Turn the ignition switch to ON (II).
10. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
11. Check each combination light switch position value with the DATA LIST menu.

Data List	Value
Headlight Switch (OFF)	OFF
Headlight Switch (PARKING)	OFF
Headlight Switch (AUTO)	OFF
Headlight Switch (HEADLIGHT)	OFF

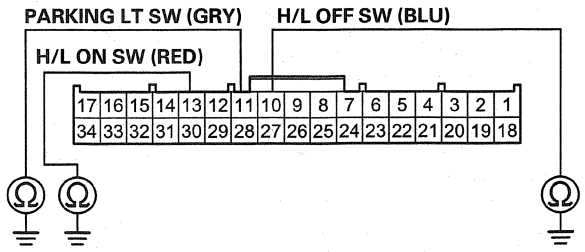
Are all data list values indicated OFF?

YES–Go to step 15.

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Disconnect under-dash fuse/relay box connector Q (34P).
14. Check for continuity between body ground and under-dash fuse/relay box connector Q (34P) terminals No. 10, No.11, and No. 13 individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

15. Turn the ignition switch to LOCK (0).
16. Do the combination light switch test (see page 22-234).

Is the combination light switch OK?

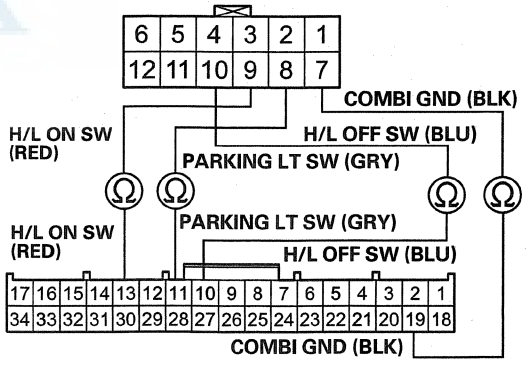
YES–Go to step 17.

NO–Replace the combination light switch.■

17. Disconnect under-dash fuse/relay box connector Q (34P).
18. Check for continuity between the under-dash fuse/relay box connector Q (34P) terminals and the combination light switch 12P connector terminals as shown:

Under-dash fuse/relay box connector Q (34P)	Combination light switch 12P connector
19	7
11	8
13	9
10	10

COMBINATION LIGHT SWITCH 12P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)
Wire side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Repair an open or high resistance in the wire.■

(cont'd)

DTC Troubleshooting (cont'd)

19. Check for continuity between the under-dash fuse/relay box connector Q (34P) terminals as shown:

From terminal	To terminal
10	11, 13, 14, 15
11	13, 14, 15

Is there continuity?

YES–Repair a short between the wires.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

DTC B1279: Dimmer Switch Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Turn the combination light (headlight) switch ON.
4. Change the dimmer switch from low beam to high beam.
5. Turn the combination light switch OFF and then to the passing position.
6. Check for DTCs with the HDS.

   Is DTC B1279 indicated?

   YES–Go to step 7.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
7. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
8. Check each combination light switch position value with the DATA LIST menu.

   When the passing switch is operated

Data List	Value
Headlight Switch (PASSING)	ON
Headlight Switch (High beam)	OFF

   When the headlight switch is turned ON, and the dimmer switch is changed from low beam to high beam

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	ON
Headlight Switch (HEADLIGHT)	ON

   Are all data list values correct?

   YES–Faulty MICU; replace the under-dash fuse/relay box.■

   - USA models (see page 22-82)
   - Canada models (see page 22-83)

   NO–Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the combination light switch 12P connector.
11. Turn the ignition switch to ON (II).
12. Select LIGHTING from the BODY ELECTRICAL system select menu, and enter the DATA LIST.
13. Check each combination light switch position value with the DATA LIST menu.

Data List	Value
Headlight Switch (PASSING)	OFF
Headlight Switch (High beam)	OFF
Headlight Switch (HEADLIGHT)	OFF

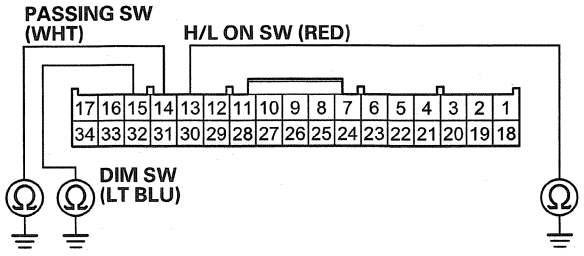
Are all data list values indicated OFF?

YES–Go to step 17.

NO–Go to step 14.

14. Turn the ignition switch to LOCK (0).
15. Disconnect under-dash fuse/relay box connector Q (34P).
16. Check for continuity between body ground and under-dash fuse/relay box connector Q (34P) terminals No. 13, No. 14, and No. 15 individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

17. Turn the ignition switch to LOCK (0).
18. Do the combination light switch test (see page 22-234).

Is the combination light switch OK?

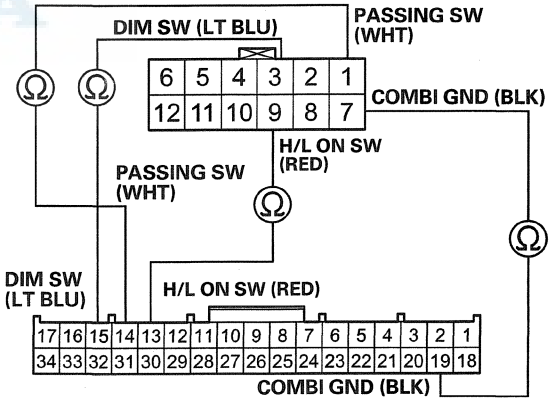
YES–Go to step 19.

NO–Replace the combination light switch (see page 22-234).■

19. Disconnect under-dash fuse/relay box connector Q (34P).
20. Check for continuity between the under-dash fuse/relay box connector Q (34P) terminals and the combination light switch 12P connector terminals as shown:

Under-dash fuse/relay box connector Q (34P)	Combination light switch 12P connector
14	1
15	3
19	7
13	9

COMBINATION LIGHT SWITCH 12P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)
Wire side of female terminals

Is there continuity?

YES–Go to step 21.

NO–Repair an open or high resistance in the wire.■

(cont'd)

DTC Troubleshooting (cont'd)

21. Check for continuity between the under-dash fuse/relay box connector Q (34P) terminals as shown:

From terminal	To terminal
10	14, 15
11	10, 14, 15
13	10, 11, 14, 15

Is there continuity?

YES–Repair a short between the wires.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

DTC B1575: Auto Light Sensor Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1575 indicated?

   YES–Go to step 4.

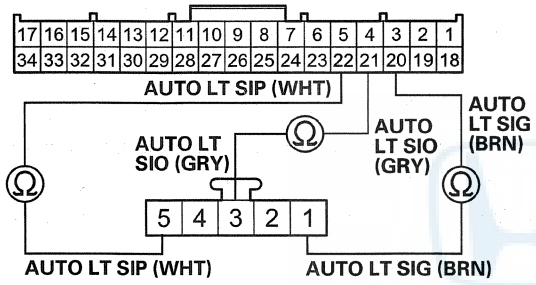
   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect automatic lighting/sunlight sensor 5P connector.
6. Disconnect under-dash fuse/relay box connector Q (34P).

7. Check for continuity between the under-dash fuse/relay box connector Q (34P) terminals and the automatic lighting/sunlight sensor 5P connector terminals as shown:

Under-dash fuse/relay box connector Q (34P)	Automatic lighting/sunlight sensor 5P connector
22	5
21	3
20	1

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)

Wire side of female terminals



AUTOMATIC LIGHTING/SUNLIGHT SENSOR 5P CONNECTOR

Wire side of female terminals

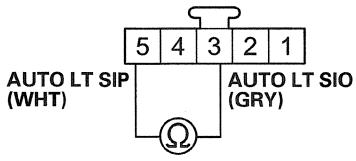
Is there continuity?

YES–Go to step 8.

NO–Repair an open or high resistance in the wire.■

8. Check for continuity between automatic lighting/sunlight sensor 5P connector terminals No. 3 and No. 5.

AUTOMATIC LIGHTING/SUNLIGHT SENSOR 5P CONNECTOR



Wire side of female terminals

Is there continuity?

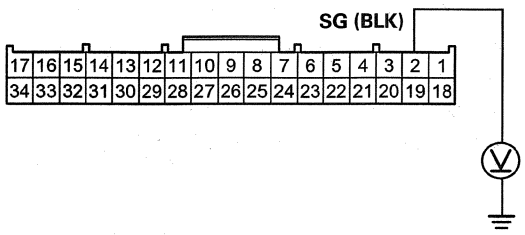
YES–Repair a short in the wire.■

NO–Go to step 9.

9. Reconnect under-dash fuse/relay box connector Q (34P).

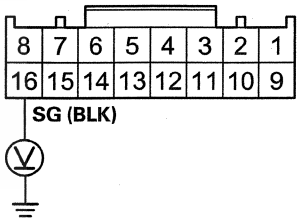
10. Measure the voltage between body ground and under-dash fuse/relay box connector Q (34P) terminal No. 2, and between body ground and under-dash fuse/relay box connector Y (16P) terminal No. 16.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 11.

NO–Repair an open or high resistance in the wire or poor ground (G501, G502).■

11. Reconnect automatic lighting/sunlight sensor 5P connector.

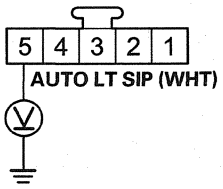
12. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

13. Measure the voltage between automatic lighting/sunlight sensor 5P connector terminal No. 5 and body ground.

AUTOMATIC LIGHTING/SUNLIGHT SENSOR 5P CONNECTOR



Wire side of female terminals

Is there about 5 V?

YES–Replace the automatic lighting/sunlight sensor (see page 22-247).■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

MICU Input Test

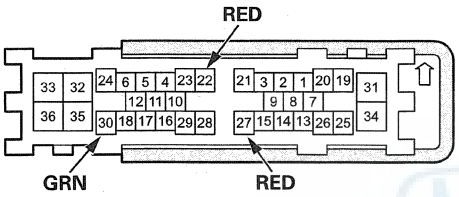
NOTE: Before doing the input tests, check the No. B1 (15A), No. B5 (10A), No. B9 (20A), No. B15 (7.5A), No. B22 (7.5A), No. B24 (10A), No. B28 (20A), No. B29 (10A), No. B32 (15A) [10A], No. B34 (10A), No. B48 (15A) [10A], No. B51 (10A), and No. B60 (50A) fuses in the under-dash fuse/relay box.

[ ]: Without HID

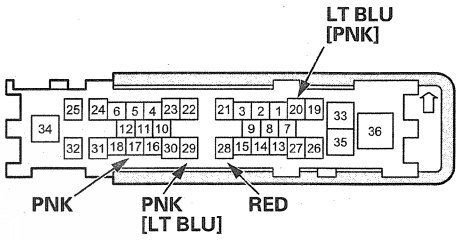
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors A, B, D, N, Q, R, Y, AA, AB, and AD.

   NOTE: All connector views are wire side of female terminals.

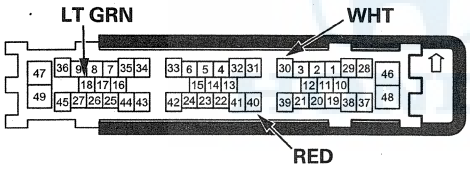
CONNECTOR A (36P)



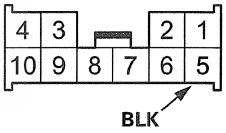
CONNECTOR B (36P)



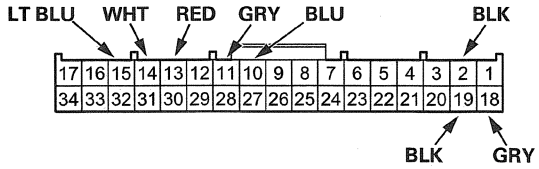
CONNECTOR D (49P)



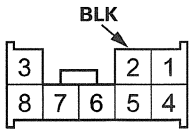
CONNECTOR N (10P)



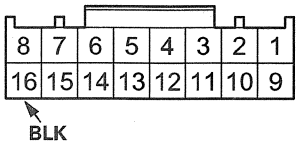
CONNECTOR Q (34P)



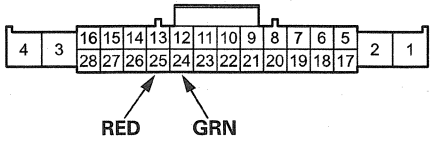
CONNECTOR R (8P)



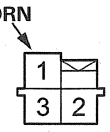
CONNECTOR Y (16P)



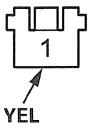
CONNECTOR AA (28P)



CONNECTOR AB (3P)



CONNECTOR AD (1P)



[ ]: Without HID

(cont'd)

MICU Input Test (cont'd)

4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
A30	GRN	Ignition switch ON (II)	Connect terminals AD1 and A30 with a jumper wire: The right headlight (low beam) should come on.	• Blown bulb • Faulty HID unit*1 • Poor ground (G201) or an open in the ground wire • An open or high resistance in the wire
A27	RED	Ignition switch ON (II)	Connect terminals AD1 and A27 with a jumper wire: The right headlight (high beam) should come on.	• Blown bulb • Poor ground (G201) or an open in the ground wire • An open or high resistance in the wire
B29	PNK*1	Ignition switch ON (II)	Connect terminals AD1 and B29 with a jumper wire: The left headlight (high beam) should come on.	• Blown bulb • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
	LT BLU*2		Connect terminals AD1 and B29 with a jumper wire: The left headlight (low beam) should come on.	• Blown bulb • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
B20	LT BLU*1	Ignition switch ON (II)	Connect terminals AD1 and B20 with a jumper wire: The left headlight (low beam) should come on.	• Blown bulb • Faulty HID unit*1 • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
	PNK*2		Connect terminals AD1 and B20 with a jumper wire: The left headlight (high beam) should come on.	• Blown bulb • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
A22	RED	Ignition switch ON (II)	Connect terminals AD1 and A22 with a jumper wire: The right front turn signal/side marker light should come on.	• Blown bulb • Poor ground (G201) or an open in the ground wire • An open or high resistance in the wire

*1:With HID
*2:Without HID

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
B28	RED	Ignition switch ON (II)	Connect terminals AD1 and B28 with a jumper wire: The left front turn signal/side marker light should come on.	• Blown bulb • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
D40	RED	Ignition switch ON (II)	Connect terminals AD1 and D40 with a jumper wire: The taillights, rear side marker lights, and license plate lights should come on.	• Blown bulb • Faulty LED • Poor ground (G701, G702) or an open in the ground wire • An open or high resistance in the wire
D18	LT GRN	Ignition switch ON (II)	Connect terminals AD1 and D18 with a jumper wire: The back-up lights should come on.	• Blown bulb • Poor ground (G701, G702) or an open in the ground wire • An open or high resistance in the wire
D30	WHT	Ignition switch ON (II)	Connect terminals AD1 and D30 with a jumper wire: The brake lights and the high mount brake light should come on.	• Faulty LED • Poor ground (G701, G702, G801) or an open in the ground wire • An open or high resistance in the wire

(cont'd)

MICU Input Test (cont'd)

6. Reconnect the connectors to the under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box:
     - USA models (see page 22-82)
     - Canada models (see page 22-83)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Q18	GRY	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) or an open in the ground wire • Faulty ignition key switch • An open or high resistance in the wire
		Ignition switch in LOCK (0) position and ignition key removed from the ignition switch	Measure the voltage to ground: There should be at least 5 V.	• Faulty ignition key switch • A short to ground in the wire
AB1	ORN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
Q10 · Q19	BLU · BLK	Combination light switch OFF	Measure the voltage between terminals Q10 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch in any other position than OFF	Measure the voltage between terminals Q10 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short in the wire
Q11 · Q19	GRY · BLK	Combination light switch (PARKING) ON	Measure the voltage between terminals Q11 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals Q11 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short in the wire
Q13 · Q19	RED · BLK	Combination light switch (headlight) ON	Measure the voltage between terminals Q13 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals Q13 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short in the wire
Q14 · Q19	WHT · BLK	Combination light switch lever pulled (Passing)	Measure the voltage between terminals Q14 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch lever released (OFF)	Measure the voltage between terminals Q14 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short in the wire

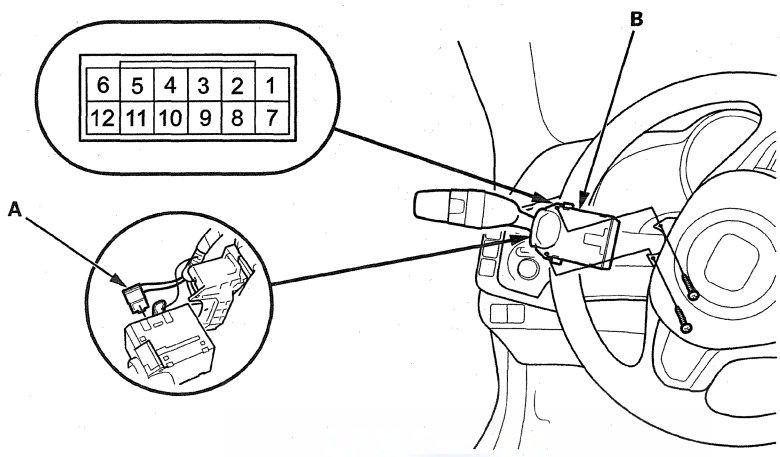
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
Q15 · Q19	LT BLU · BLK	Combination light switch (Dimmer) in high beam position	Measure the voltage between terminals Q15 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch (Dimmer) in low beam position	Measure the voltage between terminals Q15 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short in the wire
AA24* · Q19	GRN · BLK	Fog light switch ON	Measure the voltage between terminals AA24 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Fog light switch OFF	Measure the voltage between terminals AA24 and Q19: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
AA25*	RED	Under all condition	Connect the terminal AA25 and body ground: The fog lights should come on.	• Blown No. B9 (20 A) fuse in the under-dash fuse/relay box • Blown bulb • Faulty fog light relay • An open or high resistance in the wire
B17	PNK	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty MICU • Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Blown No. B5 (10A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire

*:With fog lights

HONDA

Combination Light Switch Test/Replacement

1. Remove the steering column covers (see page 20-96).
2. Disconnect the 12P connector (A) from the combination light switch (B).



3. Remove the two screws, then slide out the combination light switch.

4. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, check for continuity between the terminals in each switch position according to the tables.
     - If the continuity is not as specified, replace the switch.

Light switch (With automatic lighting system)

Position		Terminal 3	10	9	1	7	8
Headlight switch	OFF		○			○	
	≡◇≡					○	○
	AUTO						
	≡D LOW			○		○	○
	≡D HIGH	○		○		○	○
Passing switch	OFF						
	ON				○	○	

Light switch (Without automatic lighting system)

Position		Terminal 3	10	9	1	7	8
Headlight switch	OFF		○			○	
	≡◇≡					○	○
	≡D LOW			○		○	○
	≡D HIGH	○		○		○	○
Passing switch	OFF						
	ON				○	○	

Turn signal switch

Position \ Terminal	6	5	7
LEFT		○	○
NEUTRAL			
RIGHT	○		○

Fog light switch

Position \ Terminal	7	11
OFF		
ON	○	○

Headlight Adjustment

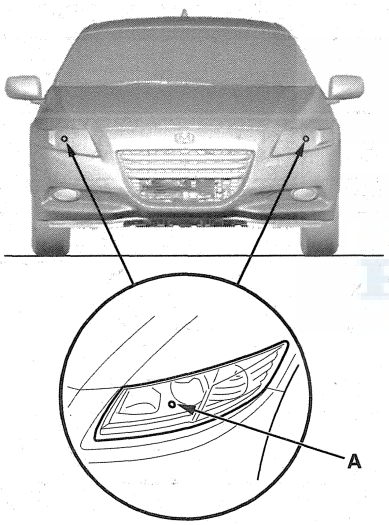
⚠CAUTION

Headlights become very hot during use; do not touch them or any attaching hardware immediately after they have been turned off.

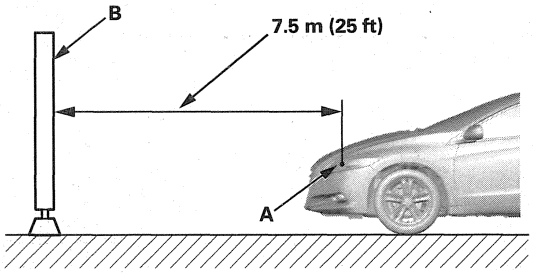
Before adjusting the headlights:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat (or an equivalent amount of weight).
- Unload the vehicle.

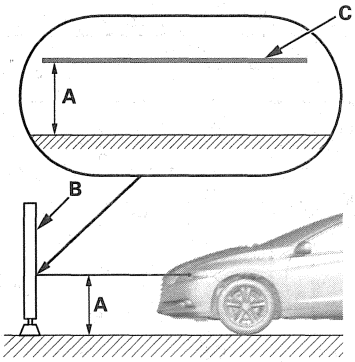
1. Clean the outer lens so that you can see the center mark (A) of the headlights.



2. Park the vehicle so that the center mark of the headlight (A) is 7.5 m (25 ft) away from a wall or screen (B).

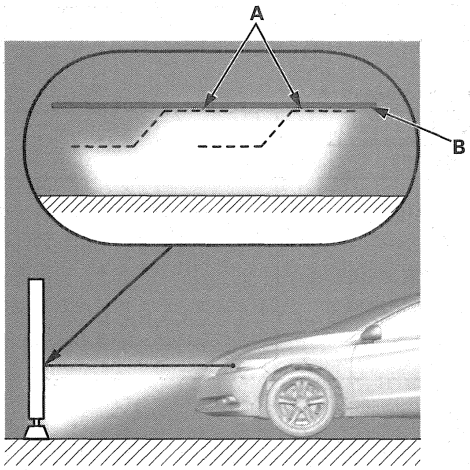


3. Measure the height of the headlight's center mark (A), then on the wall or screen (B), mark the same height of the headlights with masking tape in a straight horizontal line (C).



4. Turn on the low beam headlights.
5. To see if the headlights are adjusted properly, observe the beams of light projected on the wall or screen. The highest edge or "cut line" (A) of the headlights should be equal with the masking tape (B).

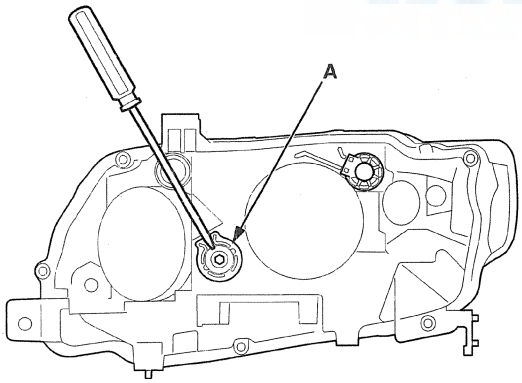
   NOTE: To help determine which headlight is out of adjustment, block one of the beams with a large piece of cardboard or equivalent, and observe the other beam on the wall or screen. Repeat this for the other headlight.



Bulb Replacement

6. If necessary, open the hood and adjust the headlights by turning the adjuster (A).



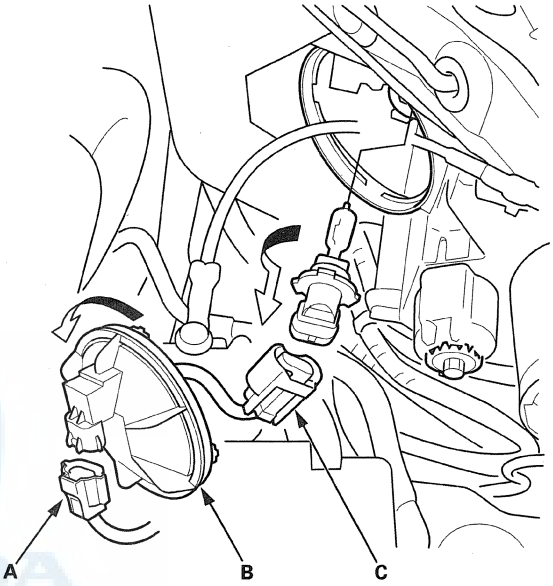


The illustration is shown from back side of right headlight.

Headlight (High Beam)

1. Disconnect the 2P connector (A) from the cover (B).

   Headlight (High Beam): 60W



2. Turn the cover 30° counterclockwise to remove it from the headlight assembly.
3. Disconnect the 2P connector (C) from the bulb socket.
4. Turn the bulb socket 45° counterclockwise to remove the bulb.
5. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.

   NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.

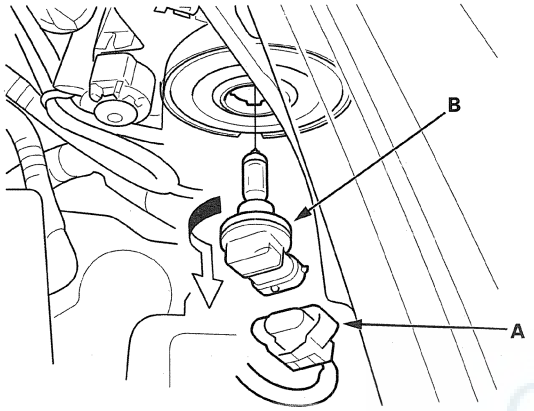
(cont'd)

Bulb Replacement (cont'd)

Headlight (Low Beam) (Without HID)

1. Disconnect the 2P connector (A) from the bulb socket.

   Headlight (Low Beam): 55W



2. Turn the bulb socket 45° counterclockwise to remove the bulb (B).
3. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.

   NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.

HID Bulb (Headlight Low Beam)

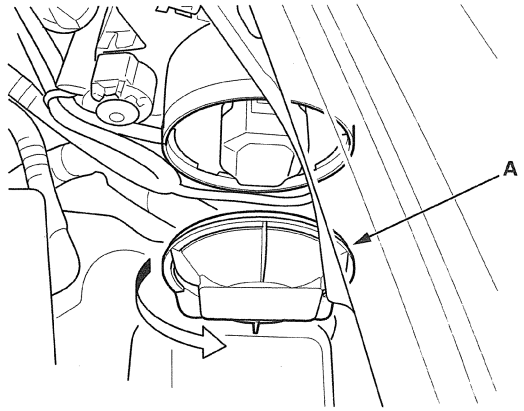
⚠ WARNING

A transient high tension (25,000 V) occurs at the bulb sockets of the high intensity discharge (HID) lamps when the combination light switch is turned ON, that may cause serious electrical shock or electrocution if you do not observe the cautions.

⚠ CAUTION

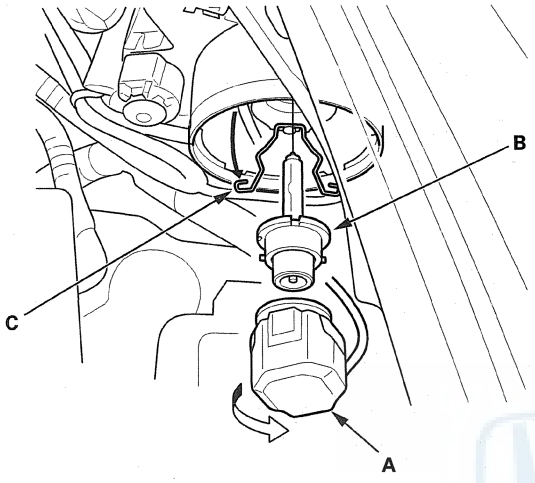
- Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the headlight assembly.
- Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.
- Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.
- Do not disassemble the inverter unit and the igniter unit.
- Do not turn on the HID bulb by using a power source other than the battery mounted on your vehicle.

1. Turn the combination light switch OFF.
2. Turn the ignition switch to LOCK (0).
3. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
4. Turn the cover (A) 30 ° counterclockwise to remove it from the headlight assembly.



5. Turn the bulb socket (A) 45 ° counterclockwise to remove it from the bulb (B).

Headlight: 35W



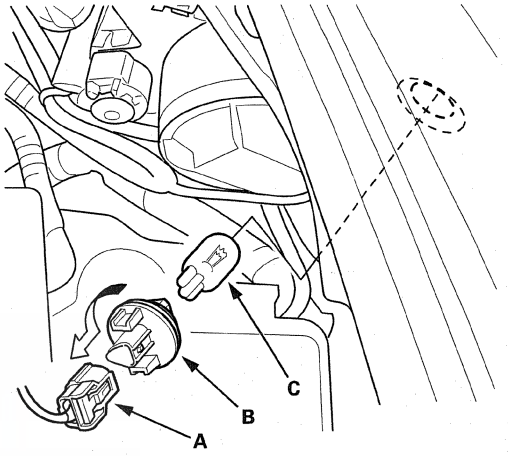
6. Pull the retaining spring (C) away from the bulb, then remove the bulb.
7. Install a new bulb in the reverse order of removal. Make sure the notches in the bulb align with the tabs in the headlight.

   NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.
8. Install the parts in the reverse order of removal.
9. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

Front Turn Signal/Side Marker Light

1. Disconnect the 3P connector (A) from the front turn signal light.

Front Turn Signal/Side Marker Light: 28/ 8W



2. Turn the bulb socket (B) 45° counterclockwise to remove the bulb (C).
3. Install a new bulb in the reverse order of removal.

(cont'd)

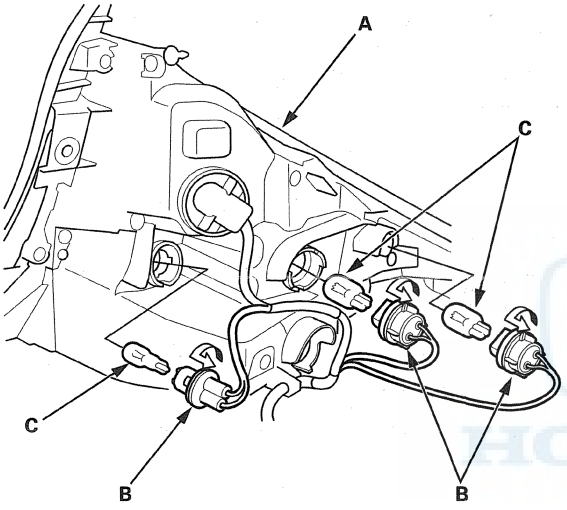
Bulb Replacement (cont'd)

Taillight

1. Remove the taillight (A) (see page 22-243).

Brake Light/Taillight:	**(LED)**
Rear Turn Signal Light:	**21 W**
Back-up Light:	**16 W**
Rear Side Marker Light:	**3 CP**

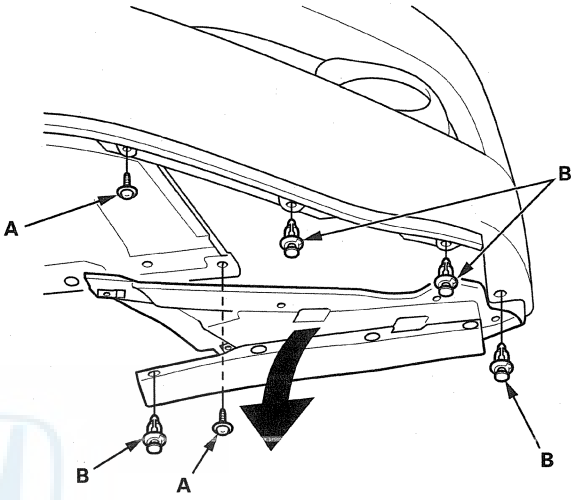
NOTE: The brake light/taillight (LED) is a part of the taillight assembly, and it cannot be replaced by itself.



2. Turn the bulb sockets (B) 45° counterclockwise to remove the bulbs (C).
3. Install new bulb(s) in the reverse order of removal.

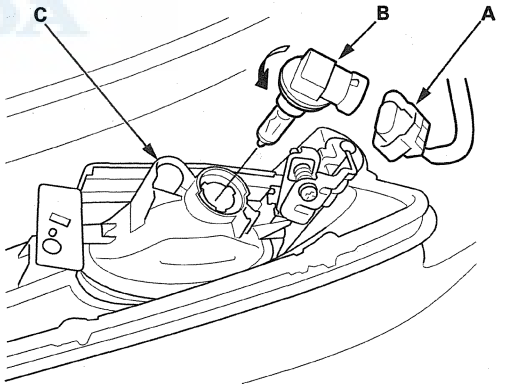
Fog Light Bulb Replacement

1. Remove the screws (A) and clips (B), and pull down the front section of the inner fender.



2. Disconnect the 2P connector (A) from the fog light.

Fog Light: 55W



3. Turn the bulb (B) 45 ° counterclockwise to remove it from the housing (C).
4. Install a new bulb in the reverse order of removal.

NOTE: Do not touch the glass of the bulb with your hands. If necessary, clean the glass area with alcohol.

Bulb Socket Replacement

With HID

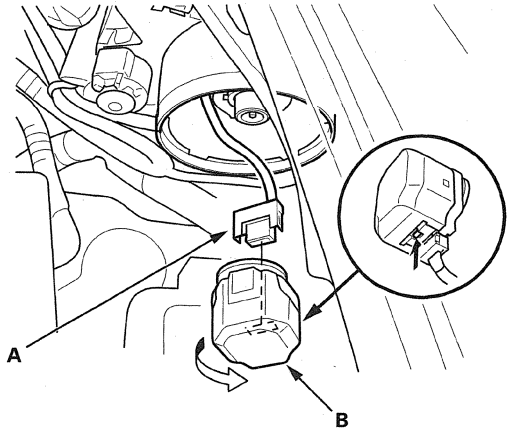
⚠ WARNING

A transient high tension (25,000 V) occurs at the bulb sockets of the high intensity discharge (HID) lamps when the combination light switch is turned ON, that may cause serious electrical shock or electrocution if you do not observe the cautions.

⚠ CAUTION

- Never turn on the combination light switch before fitting the HID bulbs to their bulb sockets and completing the reassembly of the headlight assembly.
- Do not service the headlights assembly in wet conditions, such as rain or snow, near a sprinkler system, or when your hands are wet to prevent electrocution.
- Do not touch the surface of the HID bulbs with your bare hands and do not stain it with any oils and fats.
- Do not disassemble the inverter unit and the igniter unit.
- Do not turn on the HID bulb by using a power source other than the battery mounted on your vehicle.

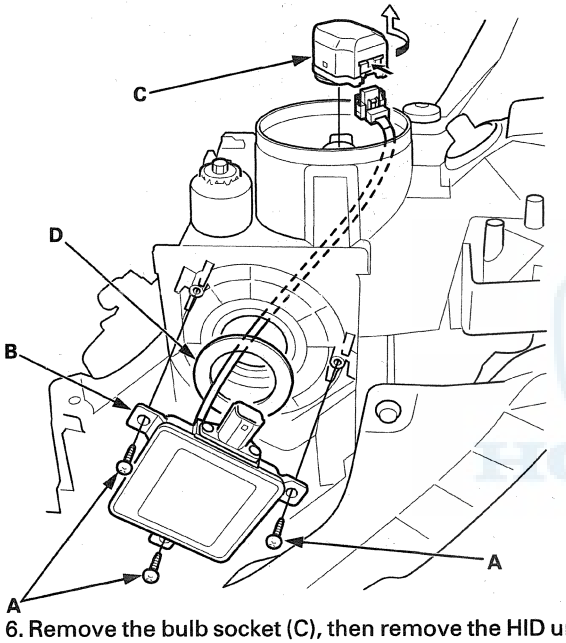
1. Turn the combination light switch OFF.
2. Turn the ignition switch to LOCK (0).
3. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
4. Turn the cover 30 ° counterclockwise to remove it from the headlight assembly.
5. Turn the bulb socket 45 ° counterclockwise to remove it from the bulb.
6. Disconnect the cord (A) from the bulb socket (B).



7. Install the parts in the reverse order of removal.
8. Do the 12 volt battery terminal reconnection procedure (see page 22-87).

HID Unit Replacement

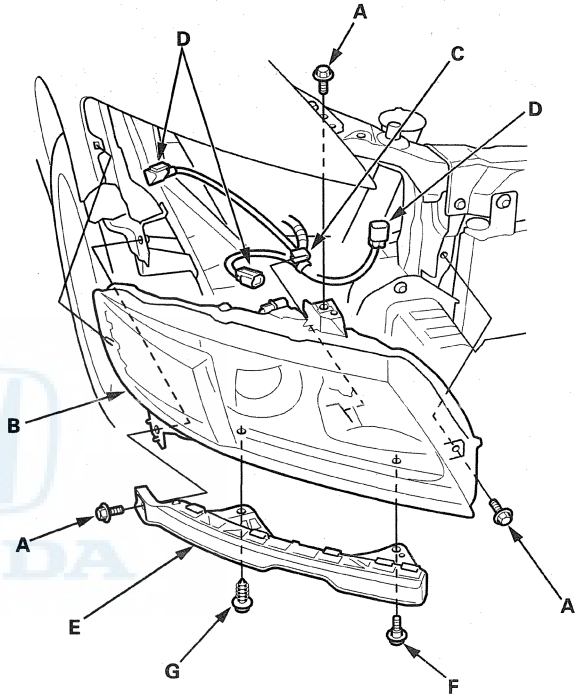
1. Turn the combination light switch OFF.
2. Turn the ignition switch to LOCK (0).
3. Do the 12 volt battery terminal disconnection procedure (see page 22-86).
4. Remove the headlight assembly (see page 22-242).
5. Remove the three mounting screws (A) from the HID unit (B).



6. Remove the bulb socket (C), then remove the HID unit.
7. Inspect the gasket (D) for damage. If damaged, replace it.
8. Install the HID unit in the reverse order of removal.
9. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
10. After replacement, adjust the headlight (see page 22-236).

Headlight Replacement

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the front bumper (see page 20-128).
3. Remove the three bolts (A), and pull the headlight (B) out slightly.



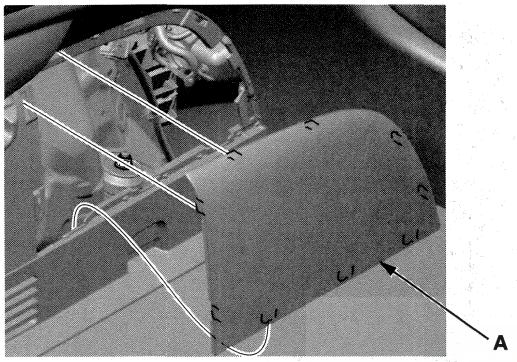
4. Remove the harness clip (C) from the headlight housing, and disconnect the connectors (D) from the bulb sockets.
5. Remove the headlight with the corner upper beam (E).

   NOTE: Be careful not to scratch the headlight lens and the fender.
6. Remove the bolt (F) and the screw (G), then separate the corner upper beam and the headlight.
7. Install the headlight in the reverse order of removal.
8. After replacement, adjust the headlight (see page 22-236).

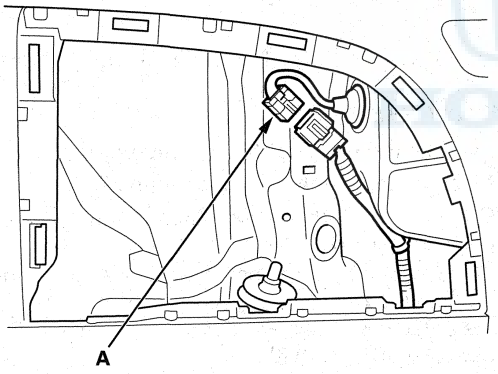
Taillight Replacement

NOTE: When replacing the bulb for the back-up light or the rear turn signal light, skip steps 2 and 3.

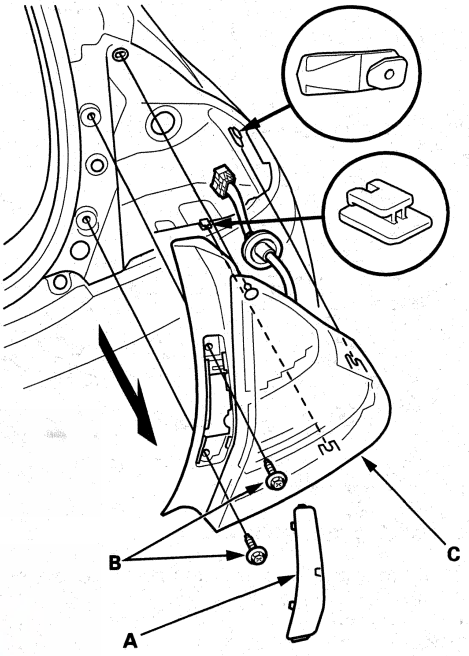
1. Open the hatch.
2. Remove the damper maintenance lid (A).



3. Disconnect the taillight 6P connector (A).



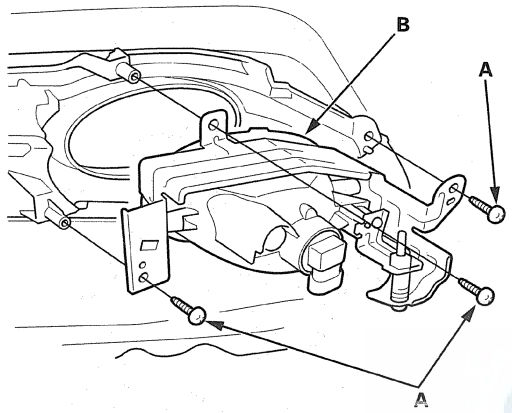
4. Release the bezel cover (A), and remove the two bolts (B).



5. Pull to remove the taillight (C).
6. Install the taillight in the reverse order of removal.

Fog Light Replacement

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the front bumper (see page 20-128).
3. Remove the three screws (A).



4. Remove the fog light (B).
5. Install the fog light in the reverse order of removal.
6. After replacement, adjust the fog light (see page 22-244).

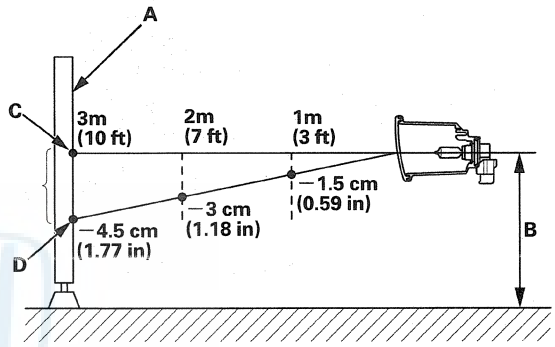
Fog Light Adjustment

Before adjusting the fog lights:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat.
- Unload the vehicle.

The fog lights should aim down slightly. To check for proper adjustment:

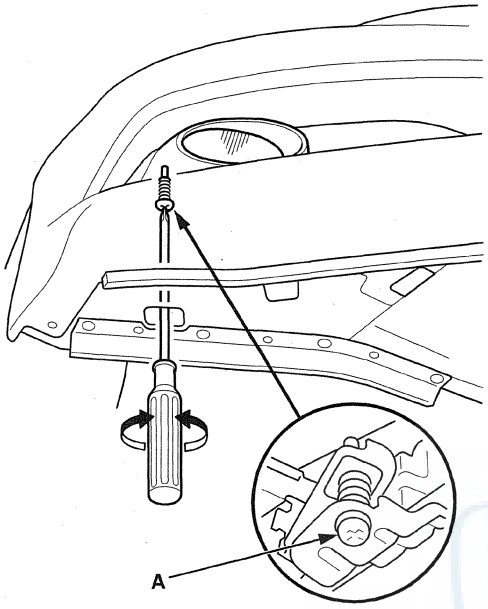
1. Park the vehicle in front of a wall (A).



2. Turn the fog lights on.
3. Determine if the fog lights are aimed properly:
   - Measure the height of the fog lights (B).
   - On the wall, mark the height of the fog lights with a piece of tape (C).
   - Check each fog light beam's height. Adjust them both so they are approximately 4.5 cm (1.77 in) lower (D) than the height of the fog lights at a distance of 3 m (10 ft).

   For example, if the vehicle is parked 3 m (10 ft) from the screen, the top of the fog light beam should be 4.5 cm (1.77 in) below the tape mark.

4. Adjust each fog light by turning the adjuster (A).

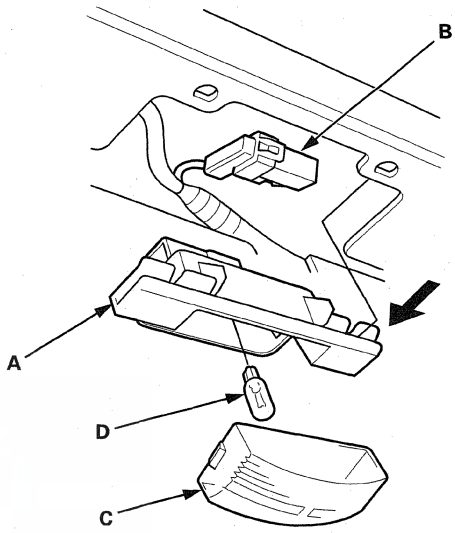


NOTE: Adjust the fog lights to illuminate lower than the specified value of height.

License Plate Light Replacement

1. Slide out the license plate light (A) from the rear bumper.

License Plate Light: 5 W

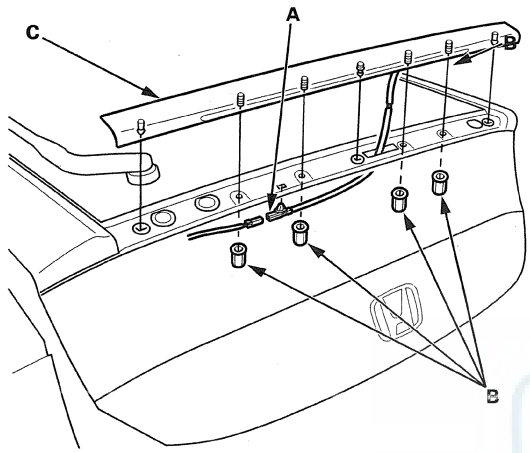


2. Disconnect the 2P connector (B) from the license plate light.
3. Separate the lens (C) and the housing, then remove the bulb (D).
4. Install the license plate light in the reverse order of removal.

High Mount Brake Light Replacement

1. Open the hatch.
2. Remove the hatch lower trim (see page 20-66).
3. Disconnect the 2P connector (A).

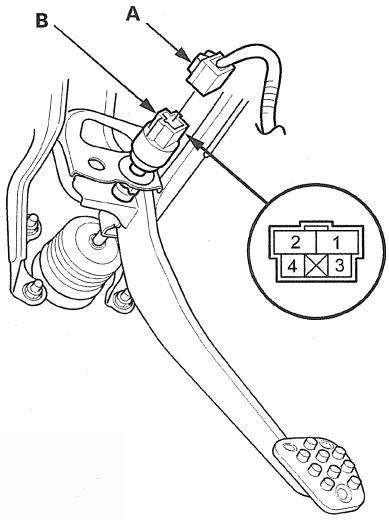
High Mount Brake Light: LED



4. Remove the four nuts (B) and high mount brake light (C).
5. Install the high mount brake light in the reverse order of removal.

Brake Pedal Position Switch Test

1. Disconnect the 4P connector (A) from the brake pedal position switch (B).

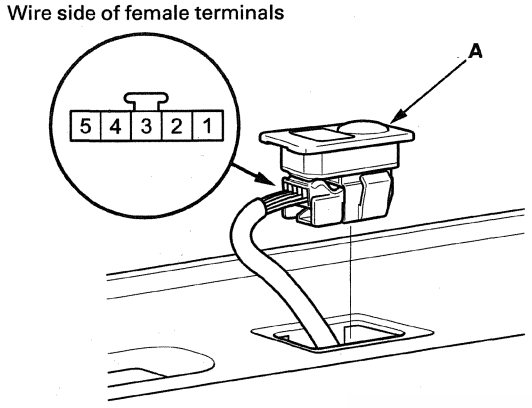


2. Check for continuity between the terminals No. 1 and No. 2.
   - There should be no continuity when the brake pedal is released.
   - There should be continuity when the brake pedal is pressed.
3. Check for continuity between the terminals No. 3 and No. 4.
   - There should be no continuity when the brake pedal is pressed.
   - There should be continuity when the brake pedal is released.
4. If the test results are not as specified ,adjust the switch or adjust the pedal height (see page 19-6). If the results are still not as specified, replace the switch.

Automatic Lighting Sensor Test/Replacement

NOTE: Take care not to scratch the dashboard.

1. Pop out the automatic lighting/sun light sensor (A).

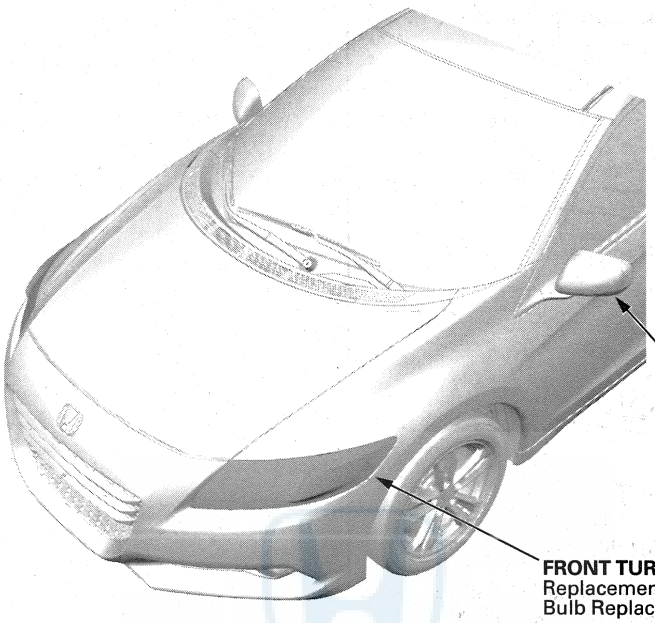


2. Turn the ignition switch to ON (II).
3. Measure the voltage between automatic lighting sensor 5P connector terminals No. 1 and No. 3.
   - About 3.6 V in direct sunlight.
   - About 0.2 V when the sensor is covered up.
4. If the voltage is not as specified, replace the sensor.

   NOTE: In auto mode, the headlights should turn on at about 1.4 V or less, and turn off at about 2.2 V or more.

Turn Signal/Hazard Warning Lights

Component Location Index

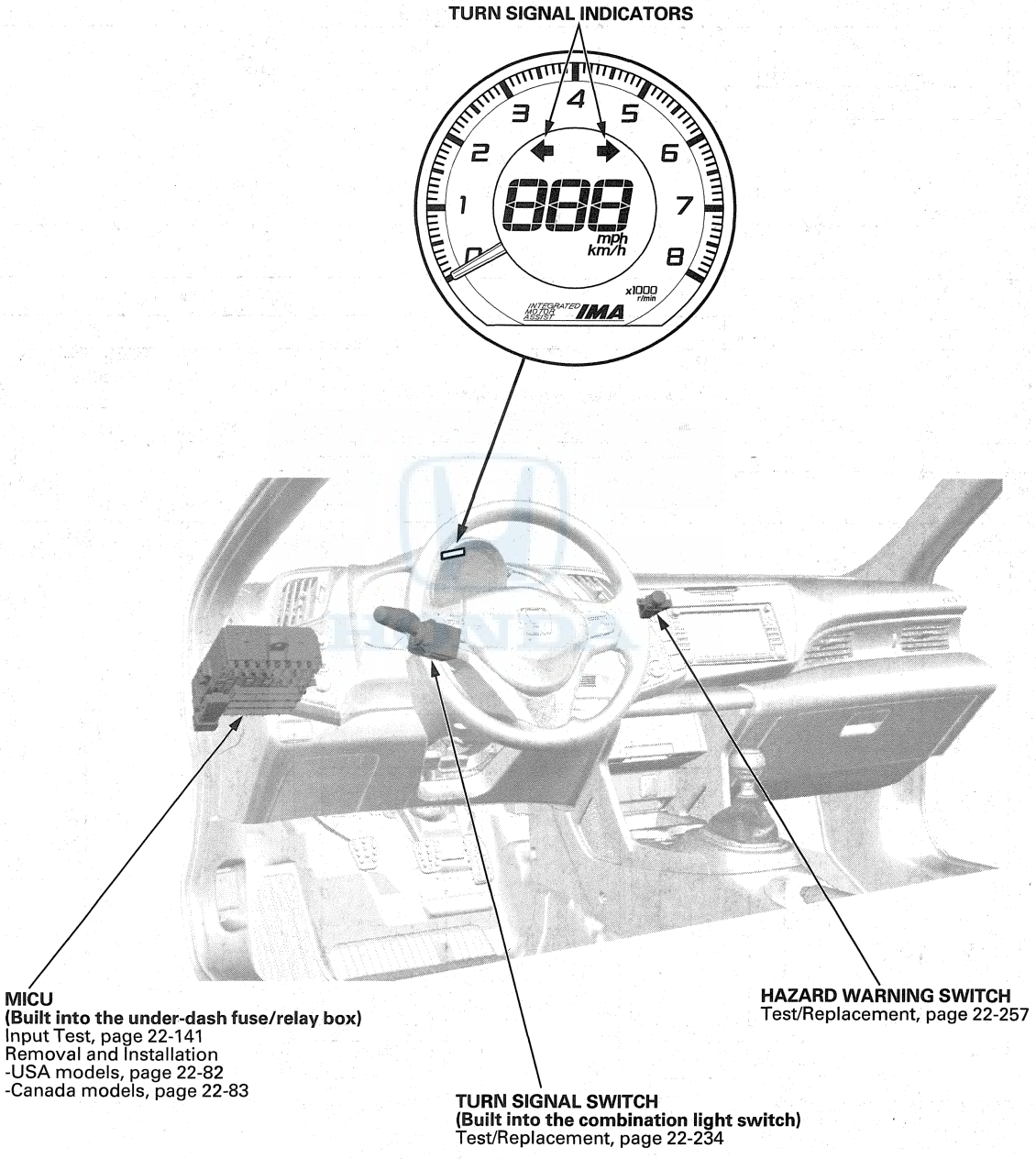


SIDE TURN SIGNAL LIGHT
Replacement, page 22-257

FRONT TURN SIGNAL LIGHT
Replacement, page 22-242
Bulb Replacement, page 22-239

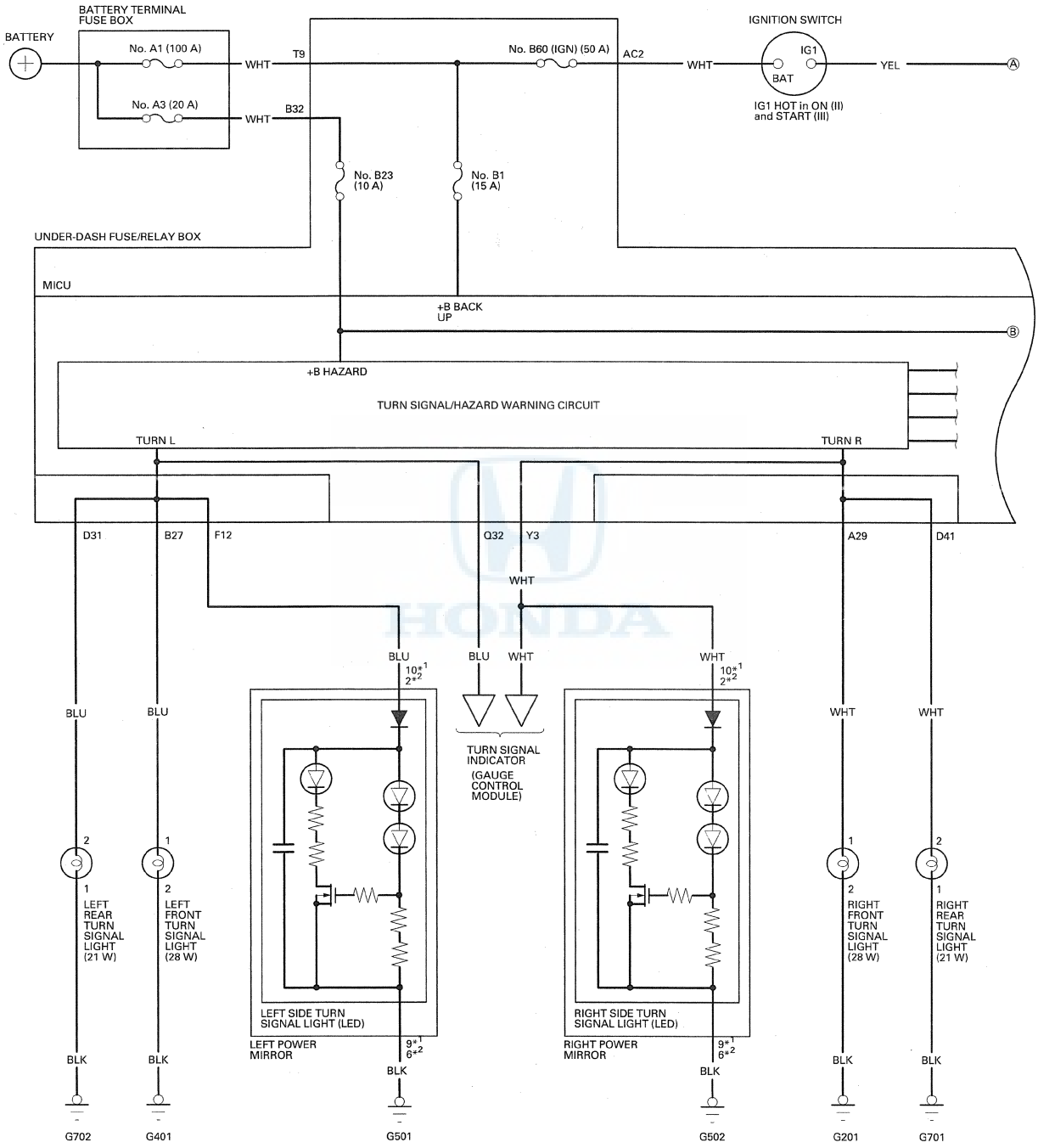


REAR TURN SIGNAL LIGHT
Replacement, page 22-243
Bulb Replacement, page 22-240

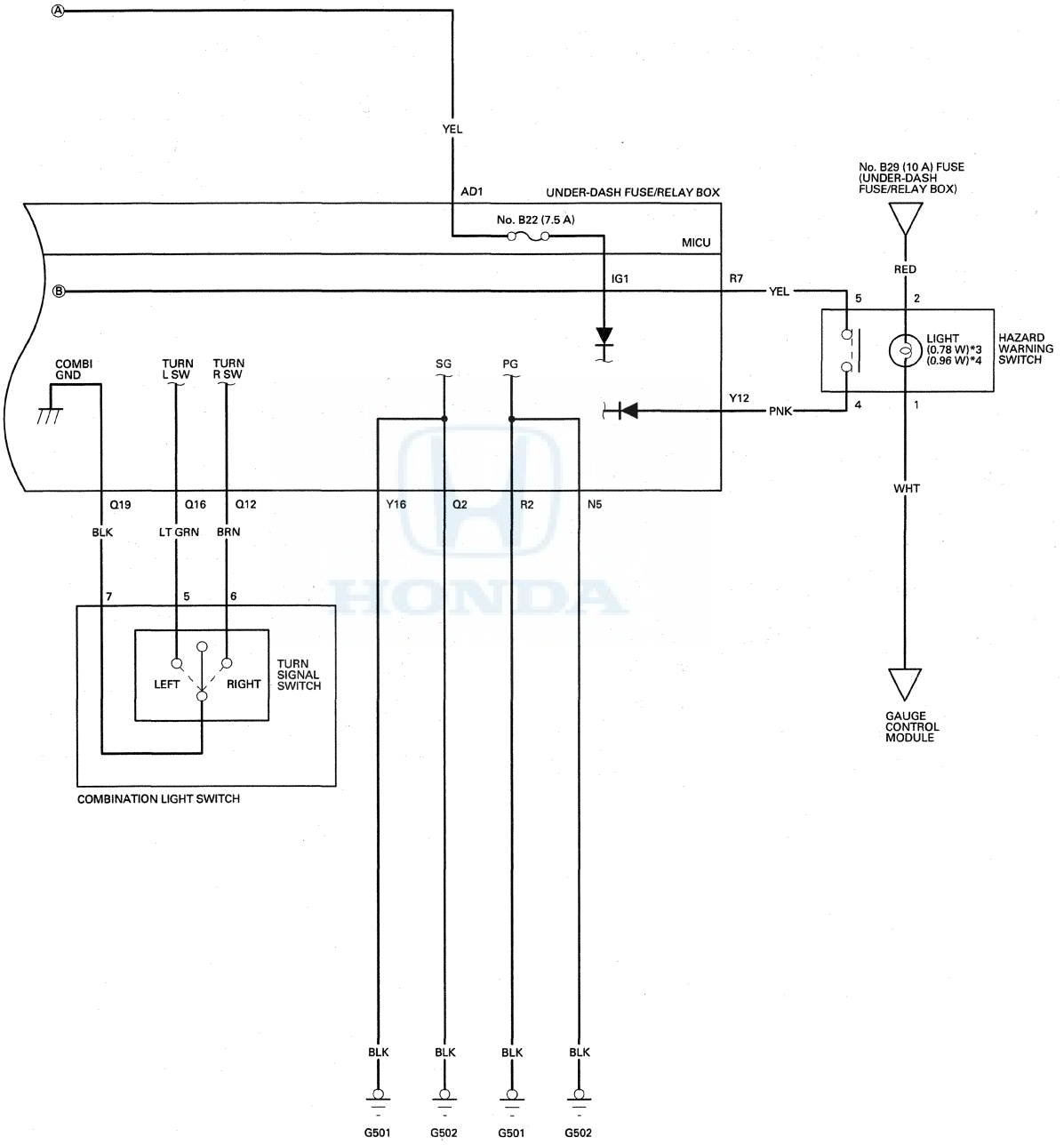

TURN SIGNAL INDICATORS
mph
km/h
x1000
r/min
INTEGRATED MOTOR ASSIST
IMA
MICU
(Built into the under-dash fuse/relay box)
Input Test, page 22-141
Removal and Installation
-USA models, page 22-82
-Canada models, page 22-83
TURN SIGNAL SWITCH
(Built into the combination light switch)
Test/Replacement, page 22-234
HAZARD WARNING SWITCH
Test/Replacement, page 22-257

Turn Signal/Hazard Warning Lights

Circuit Diagram



*1 : With power mirror defogger
*2 : Without power mirror defogger
*3 : With navigation
*4 : Without navigation



DTC Troubleshooting

DTC B1280: Turn Signal Switch Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Operate the turn signal switch in the left and the right positions, and wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1280 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
5. Select LIGHTING from the BODY ELECTRICAL SYSTEM SELECT menu, then enter the DATA LIST.
6. Check each turn signal switch position value with the DATA LIST menu.

   When the turn signal switch is in left position:

Data List	Value
Turn Signal Switch (LEFT)	ON
Turn Signal Switch (RIGHT)	OFF

   When the turn signal switch is in right position:

Data List	Value
Turn Signal Switch (LEFT)	OFF
Turn Signal Switch (RIGHT)	ON

   Are all data list values correct?

   YES–Faulty MICU; replace the under-dash fuse/relay box.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)

   NO–Go to step 7.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the combination light switch 12P connector.
9. Turn the ignition switch to ON (II).
10. Select the BODY ELECTRICAL system select menu, then enter the LIGHTING SYSTEM.
11. Check each turn signal switch position value with the DATA LIST menu.

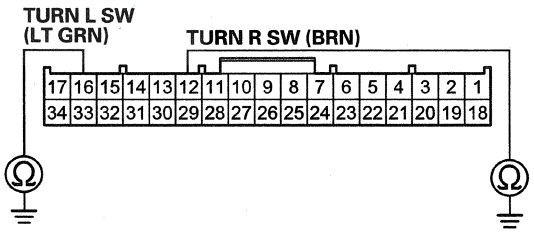
Data List	Value
Turn Signal Switch (LEFT)	OFF
Turn Signal Switch (RIGHT)	OFF

    Are both data list values indicated OFF?

    YES–Go to step 15.

    NO–Go to step 12.
12. Turn the ignition switch to LOCK (0).
13. Disconnect under-dash fuse/relay box connector Q (34P).
14. Check for continuity between body ground and under-dash fuse/relay box connector Q (34P) terminals No. 12 and No. 16 individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■
- USA models (see page 22-82)
- Canada models (see page 22-83)

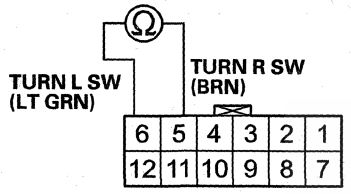
15. Turn the ignition switch to LOCK (0).
16. Do the combination light switch test (see page 22-234).

    Is the combination light switch OK?

    YES–Go to step 17.

    NO–Replace the combination light switch (see page 22-234).■
17. Check for continuity between combination light switch 12P connector terminals No. 5 and No. 6.

COMBINATION LIGHT SWITCH 12P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the wires.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

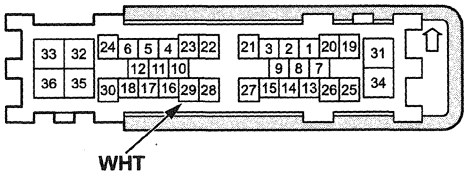
MICU Input Test

NOTE: Before testing, check the No. B1 (15 A), No. B22 (7.5 A), and No. B23 (10 A) fuse in the under-dash fuse/relay box.

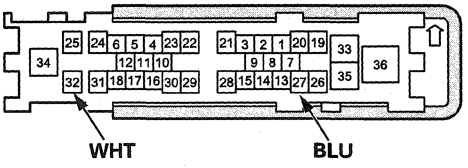
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the under-dash fuse/relay box connectors A, B, D, F, N, Q, R, Y, and AD.

   NOTE: All connector views are wire side of female terminals.

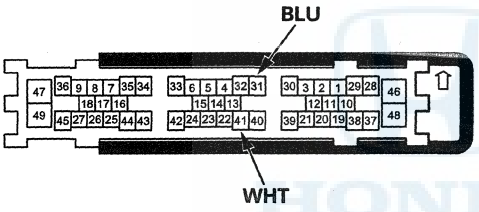
CONNECTOR A (36P)



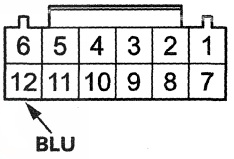
CONNECTOR B (36P)



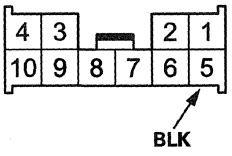
CONNECTOR D (49P)



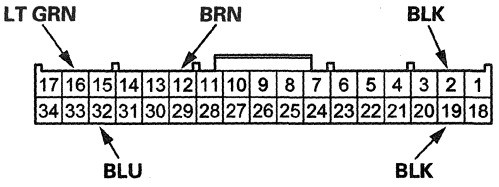
CONNECTOR F (12P)



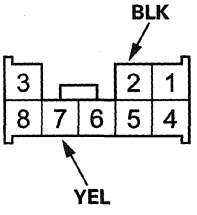
CONNECTOR N (10P)



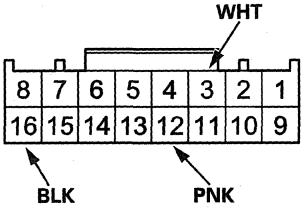
CONNECTOR Q (34P)



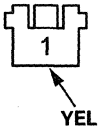
CONNECTOR R (8P)



CONNECTOR Y (28P)



CONNECTOR AD (1P)



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.
5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
B32	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. A3 (20 A) fuse in the battery terminal fuse box • An open or high resistance in the wire
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
B27	BLU	Under all conditions	Connect terminals B27 and B32 with a jumper wire: The left front turn signal light should come on.	• Poor ground (G401) or an open in the ground wire • Blown bulb • An open or high resistance in the wire
D31	BLU	Under all conditions	Connect terminals B32 and D31 with a jumper wire: The left rear turn signal light should come on.	• Poor ground (G702) or an open in the ground wire • Blown bulb • An open or high resistance in the wire
A29	WHT	Under all conditions	Connect terminals A29 and B32 with a jumper wire: The right front turn signal light should come on.	• Poor ground (G201) or an open in the ground wire • Blown bulb • An open or high resistance in the wire
D41	WHT	Under all conditions	Connect terminals B32 and D41 with a jumper wire: The right rear turn signal light should come on.	• Poor ground (G701) or an open in the ground wire • Blown bulb • An open or high resistance in the wire
Q32	BLU	Under all conditions	Connect terminals B32 and Q32 with a jumper wire: The left turn signal indicator should come on.	• Faulty gauge control module • An open or high resistance in the wire • Poor ground (G501)
Y3	WHT	Under all conditions	Connect terminals B32 and Y3 with a jumper wire: The right turn signal indicator and right side turn signal light should come on.	• Faulty gauge control module • Faulty LED • An open or high resistance in the wire • Poor ground (G501, G502)
F12	BLU	Under all conditions	Connect terminals B32 and F12 with a jumper wire: The left side turn signal light should come on.	• Faulty LED • An open or high resistance in the wire • Poor ground (G501)

(cont'd)

MICU Input Test (cont'd)

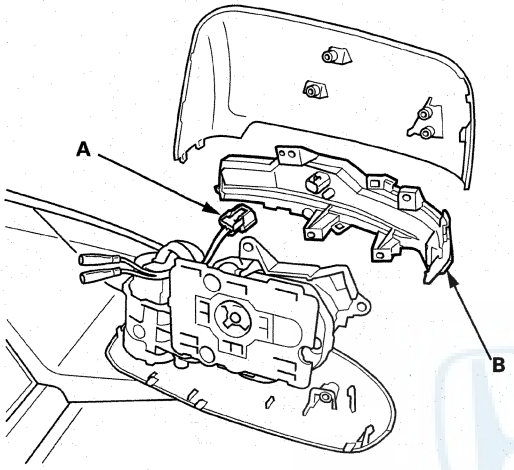
6. Reconnect the connectors to the under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box:
     - USA models (see page 22-82)
     - Canada models (see page 22-83)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
R7	YEL	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Faulty under-dash fuse/relay box • A short to ground in the wire
Y12	PNK	Hazard warning switch pressed	Measure the voltage to ground: There should be battery voltage.	• Faulty hazard warning switch • An open or high resistance in the wire
Q16 · Q19	LT GRN · BLK	Ignition switch ON (II), turn signal switch in left position	Measure the voltage between terminals Q16 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Ignition switch ON (II), turn signal switch in right or neutral position	Measure the voltage between terminals Q16 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short to ground in the wire
Q12 · Q19	BRN · BLK	Ignition switch ON (II), turn signal switch in right position	Measure the voltage between terminals Q12 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Ignition switch ON (II), turn signal switch in left or neutral position	Measure the voltage between terminals Q12 and Q19: There should be at least 5 V.	• Faulty combination light switch • A short to ground in the wire

Side Turn Signal Light Replacement

1. Remove the mirror holder (see page 20-24).
2. Remove the mirror housing.
3. Disconnect the 2P connector (A) from the side turn signal light (B).

Side Turn Signal Light: LED

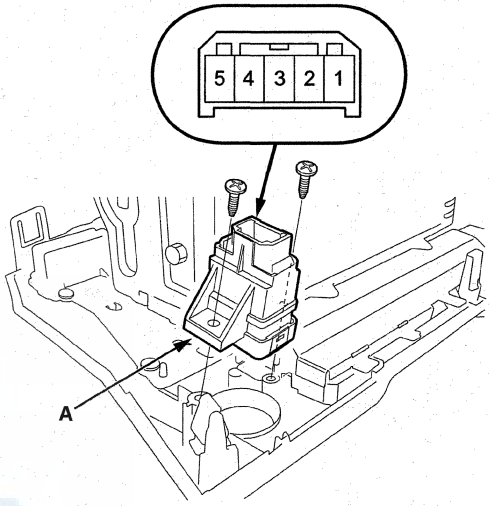


4. Install the light in the reverse order of removal.

Hazard Warning Switch Test/Replacement

1. Remove the center panel:
   - With audio-navigation unit (see page 23-232)
   - With audio unit (see page 23-119)
2. Remove the two screws and the hazard warning switch (A).

NOTE : The illustration shows with audio unit.



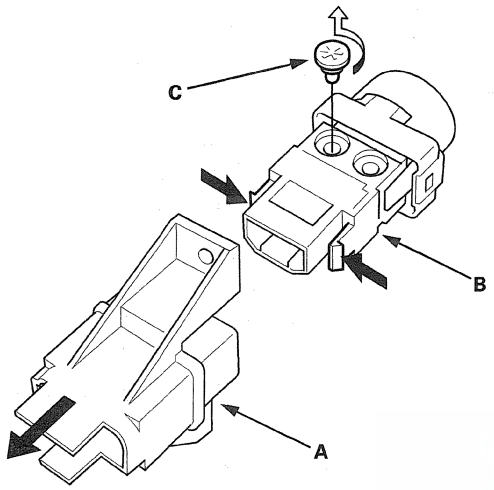
3. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	4	5	1		2
OFF			○	○	○
ON	○	○	○	○	○

(cont'd)

Hazard Warning Switch Test/Replacement (cont'd)

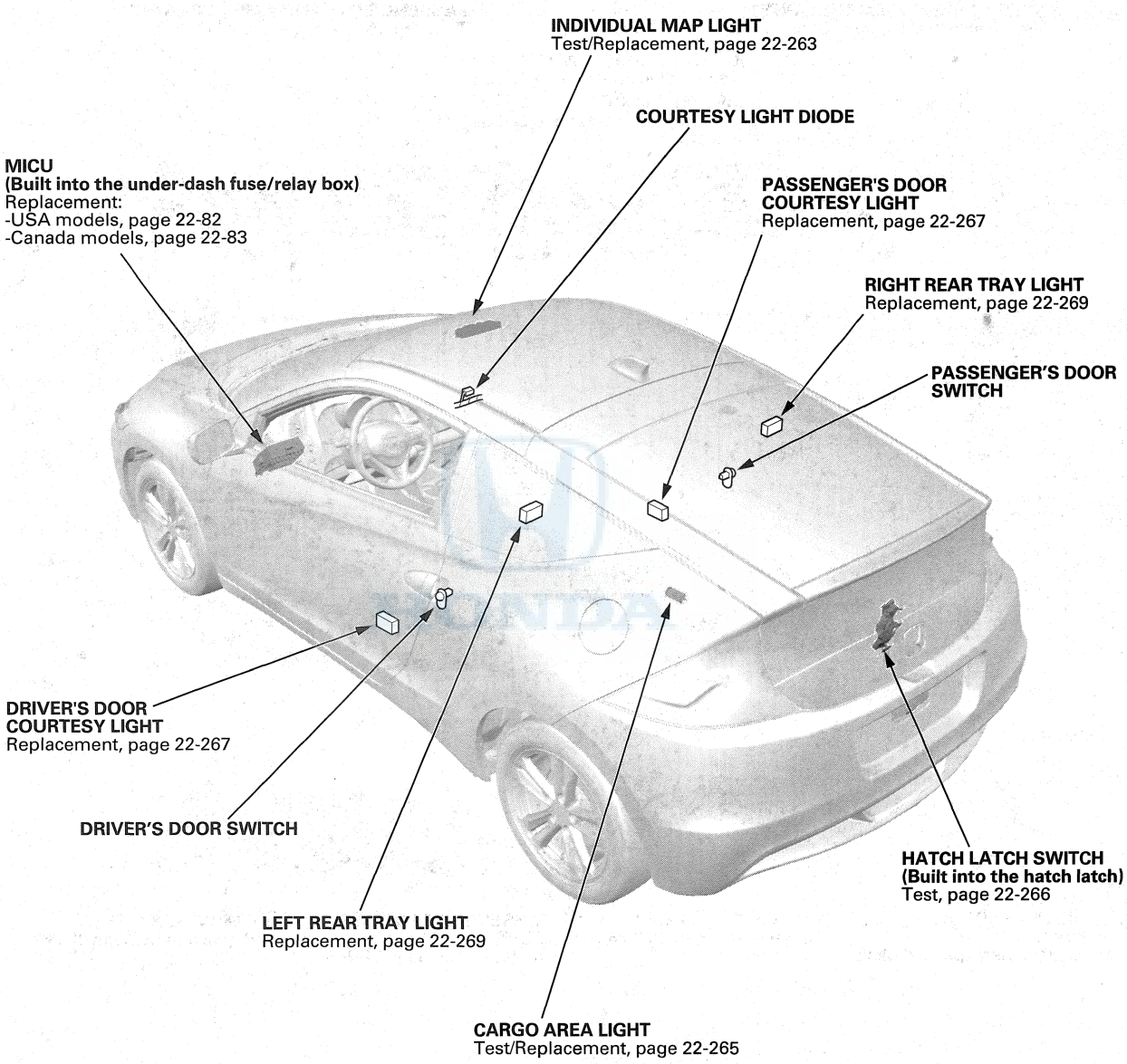
4. If the continuity is not as specified, remove the cover (A), and replace the switch (B) or bulb (C).



5. Install the switch in the reverse order of removal.

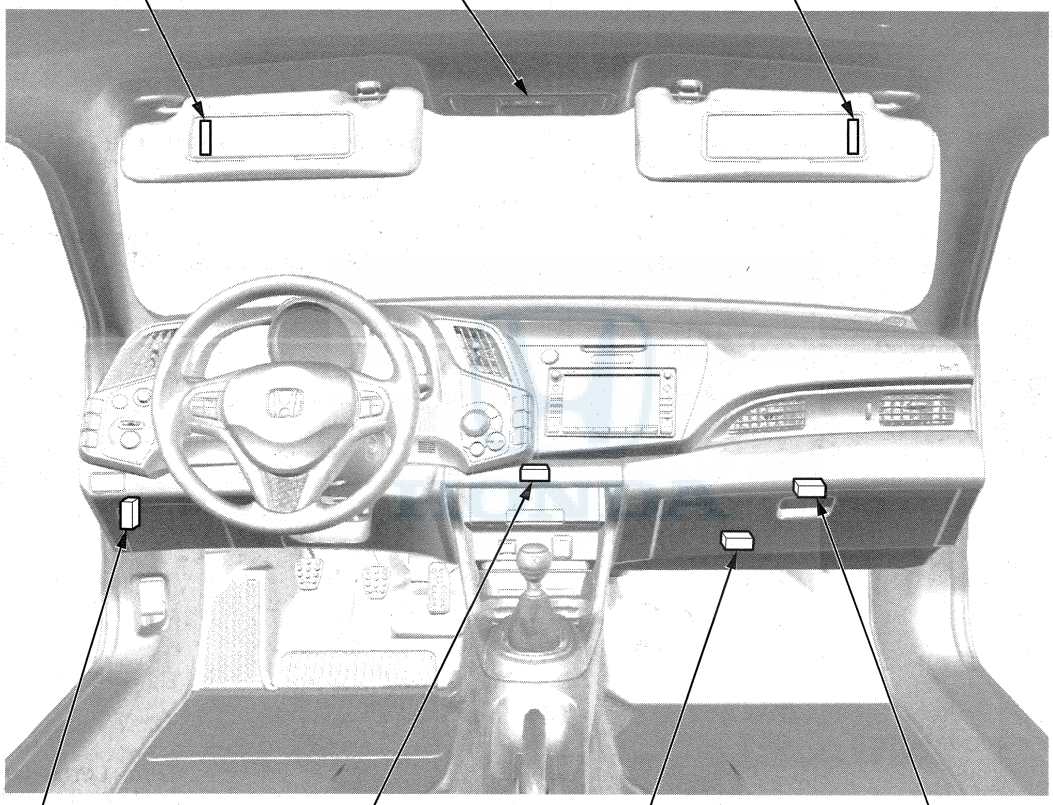
Interior Lights

Component Location Index

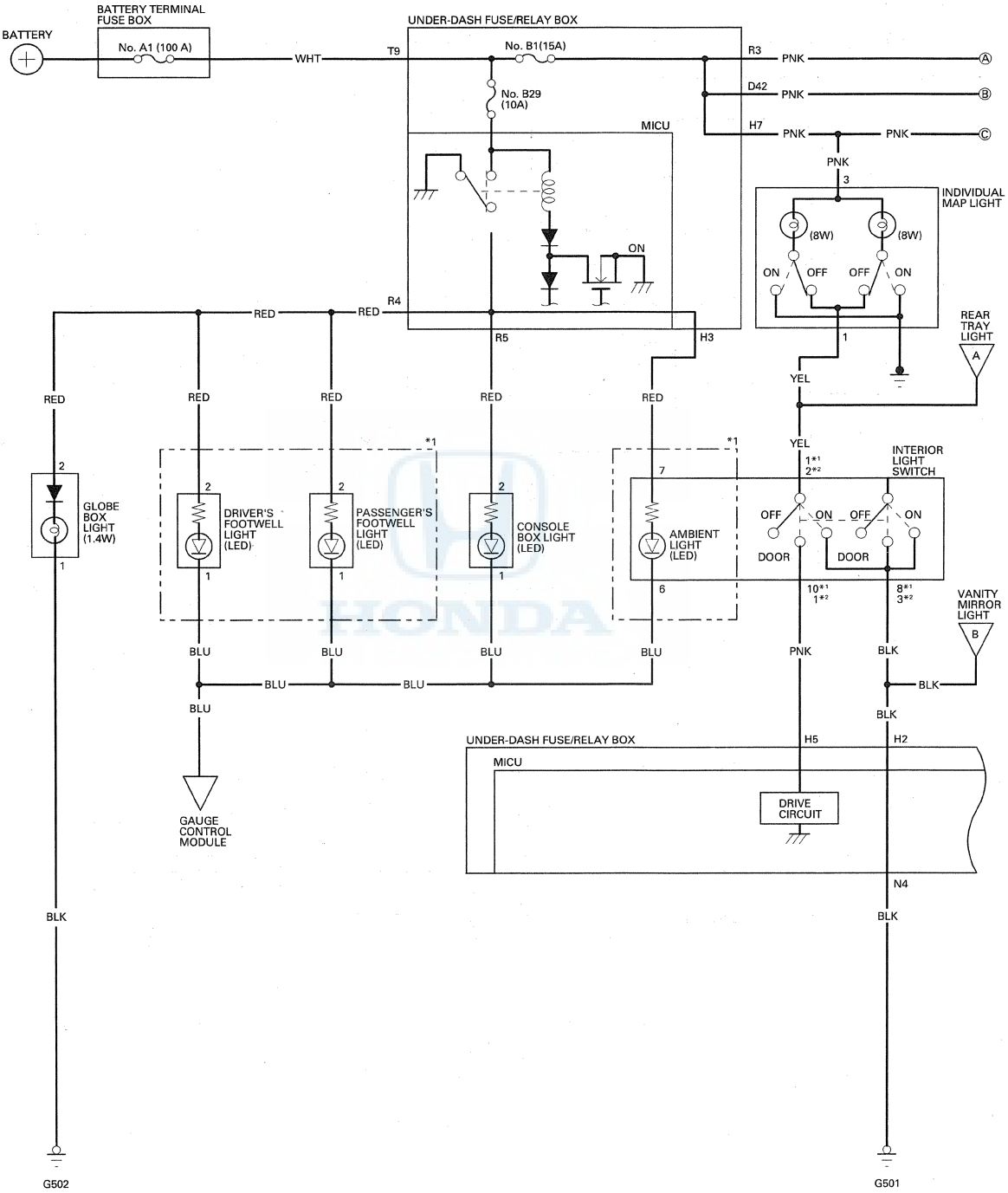


(cont'd)

Component Location Index (cont'd)

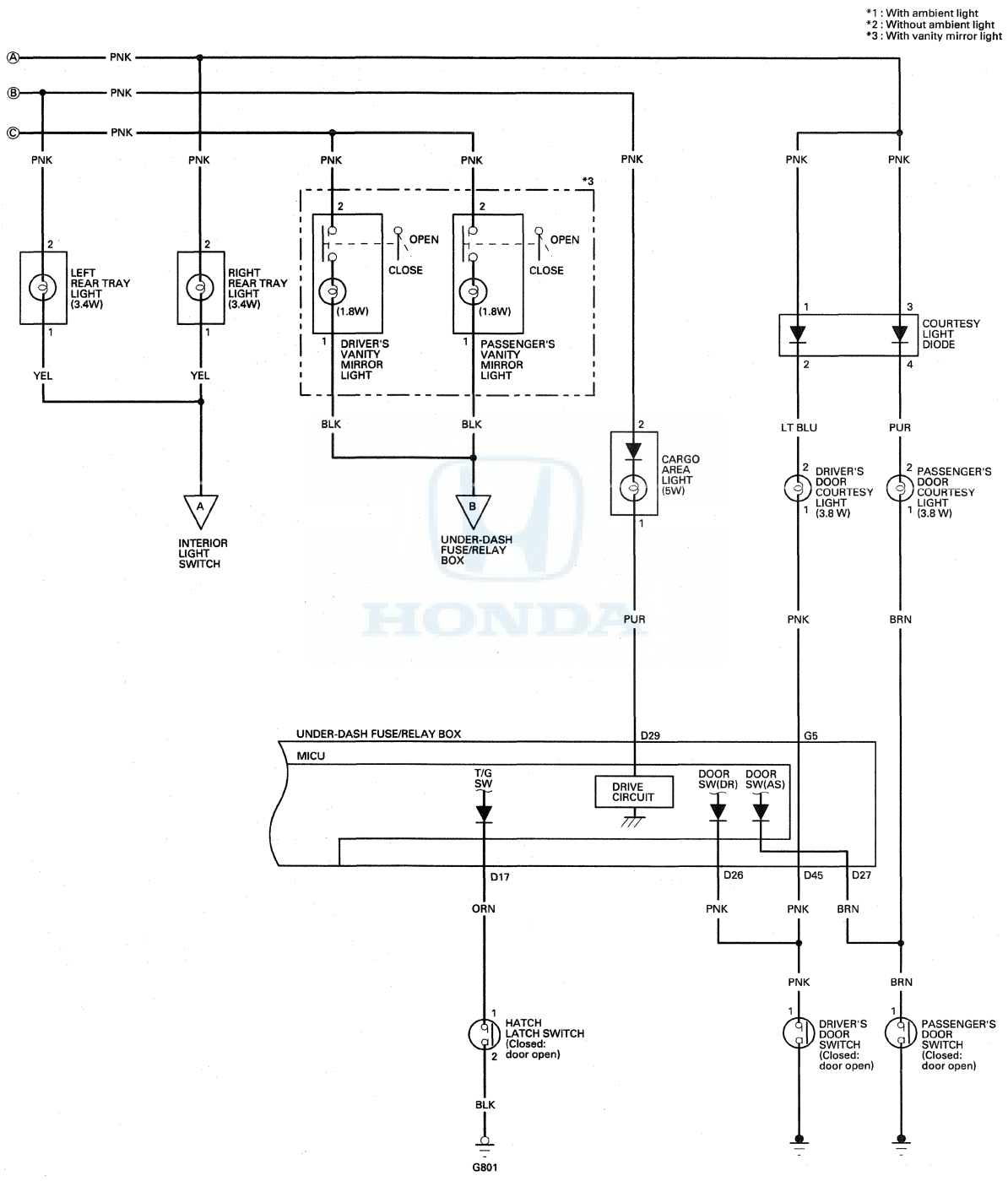


Circuit Diagram



(cont'd)

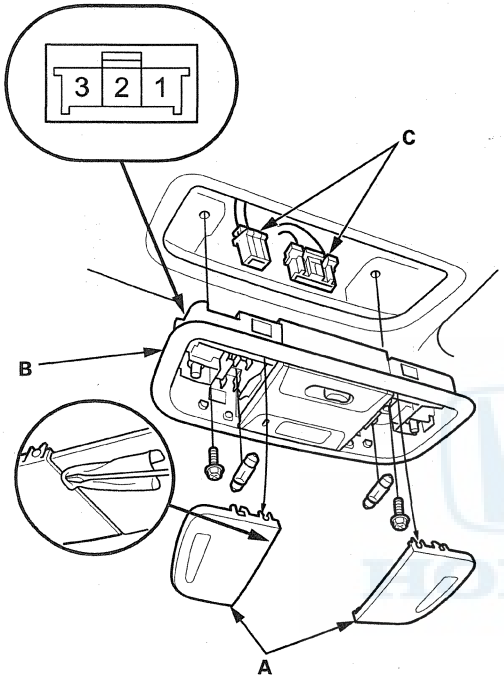
Circuit Diagram (cont'd)



Individual Map Light Test/Replacement

1. Turn the individual map light switch OFF.
2. Carefully pry off the lens (A).

Individual Map Light: 8W x 2

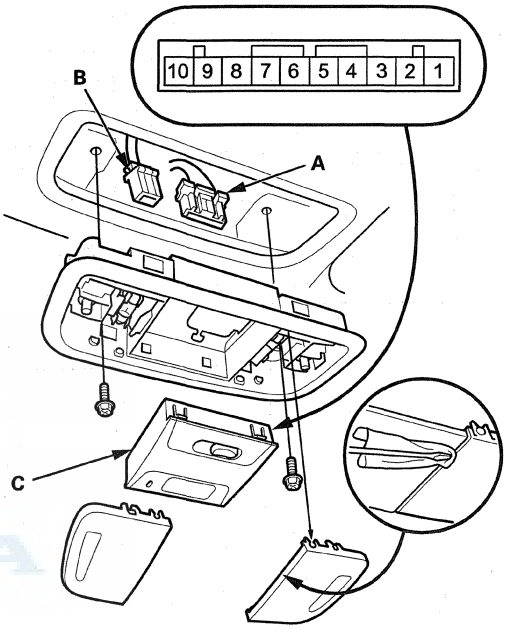


3. Remove the two screws, then remove the individual map light (B).
4. Disconnect the connectors (C) from the individual map light.
5. Check for continuity between the terminals.
   - There should be continuity between the terminal No. 3 and ground terminal with the switch in the ON position.
   - There should be no continuity between the terminal No. 3 and ground terminal with the switch in the OFF position.
6. If the continuity is not as specified, check the bulb. If the bulb is OK, replace the individual map light.
7. Install the light in the reverse order of removal.

Interior Light Switch Test/Replacement

With ambient light

1. Remove the individual map light (see page 22-263).
2. Disconnect the interior light switch 10P connector (A) and the map light 3P connector (B).



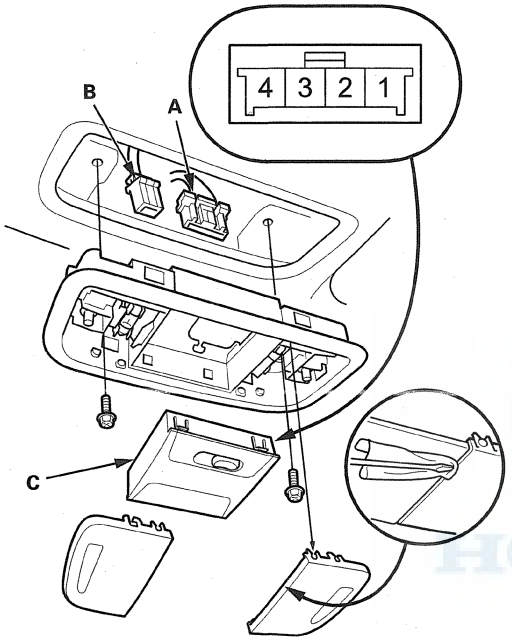
3. Remove the interior light switch (C) from the map light housing.
4. At the interior light switch 10P connector, check for continuity between terminals No. 1 and No. 10, and between terminals No. 1 and No. 8.
   - There should be continuity between terminals No. 1 and No. 10 when the interior light switch is in the DOOR position.
   - There should be continuity between terminals No. 1 and No. 8 when the interior light switch is in the ON position.
   - There should be no continuity when the interior light switch is in the OFF position.
5. If the continuity is not as specified, replace the interior light switch assembly.
6. Install the light in the reverse order of removal.

(cont'd)

Interior Light Switch Test/Replacement (cont'd)

Without ambient light

1. Remove the individual map light (see page 22-263).
2. Disconnect the interior light switch 4P connector (A) and the map light 3P connector (B).

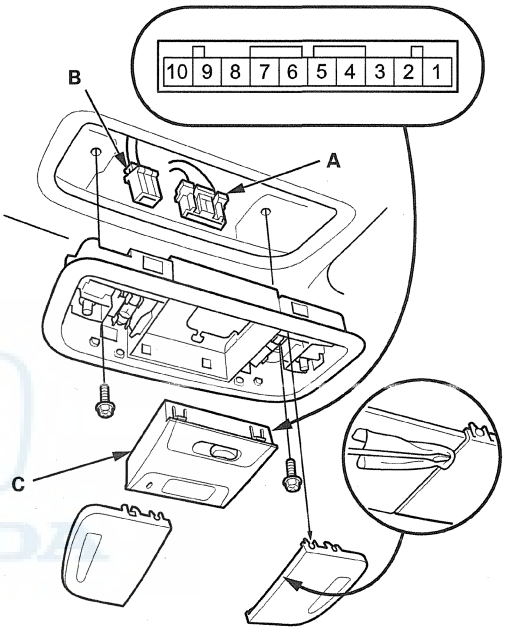


3. Remove the interior light switch (C) from the map light housing.
4. At the interior light switch 4P connector, check for continuity between terminals No. 2 and No. 3, and between terminals No. 2 and No. 1.
   - There should be continuity between terminals No. 2 and No. 3 when the interior light switch is in the DOOR position.
   - There should be continuity between terminals No. 2 and No. 1 when the interior light switch is in the ON position.
   - There should be no continuity when the interior light switch is in the OFF position.
5. If the continuity is not as specified, replace the interior light switch assembly.
6. Install the light in the reverse order of removal.

Ambient Light Test/Replacement

NOTE: The ambient light is built into the interior light switch.

1. Remove the individual map light (see page 22-263).
2. Disconnect the interior light switch 10P connector (A) and the map light 3P connector (B).

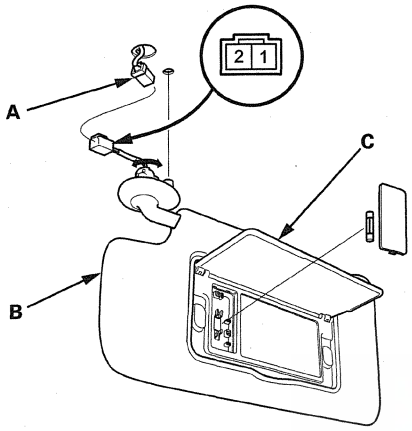


3. Remove the interior light switch (C) from the map light housing.
4. At the interior light switch 10P connector, check the light by connecting battery power to terminal No. 7 and ground to terminal No. 6. The ambient light should come on. If the light does not come on, replace the interior light switch assembly.
5. Install the light in the reverse order of removal.

Vanity Mirror Light Test/Replacement

1. Remove the sunvisor (see page 20-68).
2. Disconnect the 2P connector (A) from the sunvisor (B).

Vanity Mirror Light: 1.8 W



3. Check for continuity between the terminals in each vanity mirror cover (C) position according to the table.

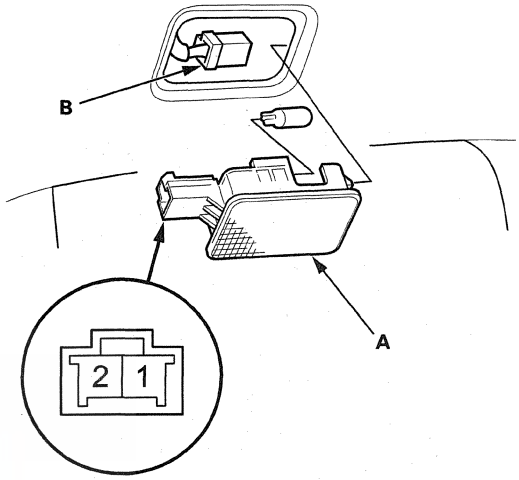
Terminal / Position	1		2
Open	○	∩	○
Closed			

4. If the continuity is not as specified, check the bulbs (D). If the bulbs are OK, replace the sunvisor (see page 20-68).
5. Install the parts in the reverse order of removal.

Cargo Area Light Test/Replacement

1. Open the hatch.
2. Carefully pry out the cargo area light (A).

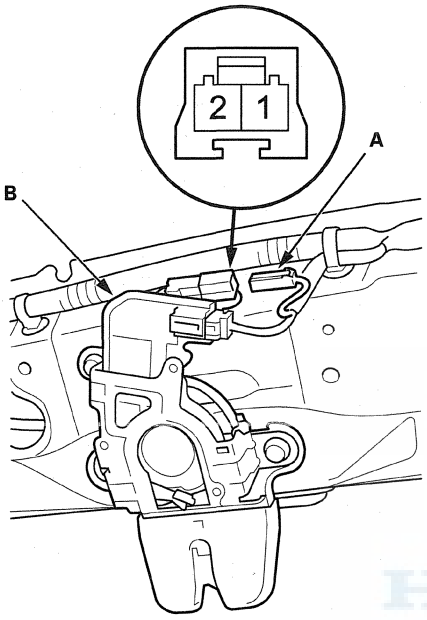
Cargo Area Light: 5 W



3. Disconnect the 2P connector (B) from the cargo area light.
4. Check for continuity between the terminals No. 2 (+) and No. 1 (−). There should be continuity. If there is no continuity, check the bulb. If the bulb is OK, replace the cargo area light assembly.
5. Install the light in the reverse order of removal.

Hatch Latch Switch Test

1. Open the hatch.
2. Remove the hatch lower trim (see page 20-66).
3. Disconnect the 2P connector (A) from the hatch latch (B).

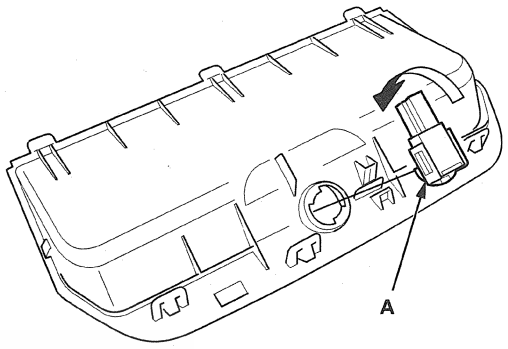


4. Check for continuity between the terminals No. 1 and No. 2.
   - There should be continuity with the hatch open.
   - There should be no continuity with the hatch closed.
5. If the continuity is not as specified, faulty hatch latch switch; replace the hatch latch (see page 20-140).

Console Box Light Replacement

1. Remove the center lower lid (see page 20-89).
2. Turn the console box light (A) counterclockwise to remove it.

   Console Box Light: LED

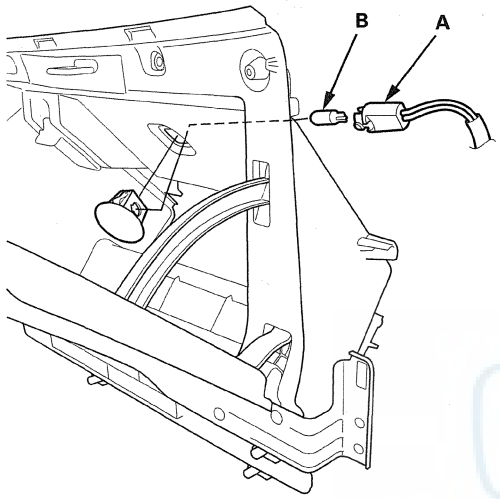


3. Install the light in the reverse order of removal.

Glove Box Light Replacement

1. Remove the glove box (see page 20-94).
2. Turn the bulb socket (A) 45° counterclockwise to remove it.

   Glove Box Light: 1.4 W

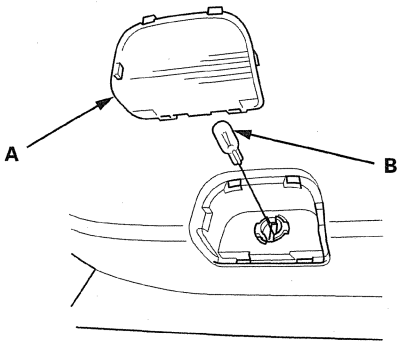


3. Remove the bulb (B) from the socket.
4. Install the light in the reverse order of removal.

Courtesy Light Replacement

1. Carefully pry off the lens (A).

   Courtesy Light: 3.8 W



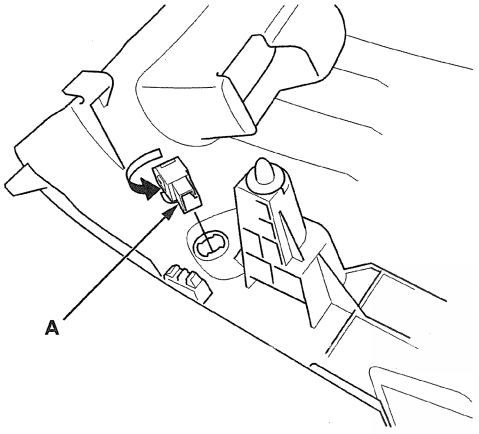
2. Remove the bulb (B) from the socket.
3. Install the light in the reverse order of removal.

Footwell Light Replacement

Driver's

1. Remove the driver's kick panel (see page 20-52).
2. Turn the driver's footwell light (A) counterclockwise to remove it.

   Footwell Light: LED

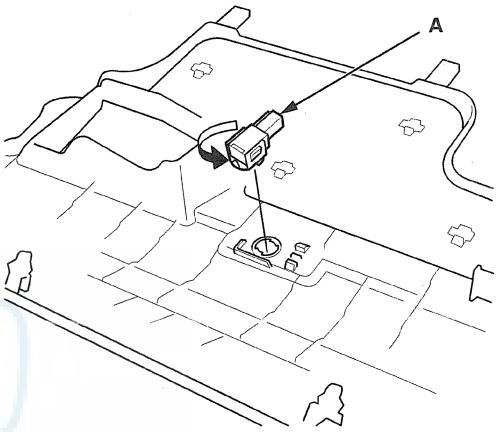


3. Remove the light.
4. Install the light in the reverse order of removal.

Passenger's

1. Remove the passenger's dashboard undercover (see page 20-94).
2. Turn the passenger's footwell light (A) counterclockwise to remove it.

   Footwell Light: LED

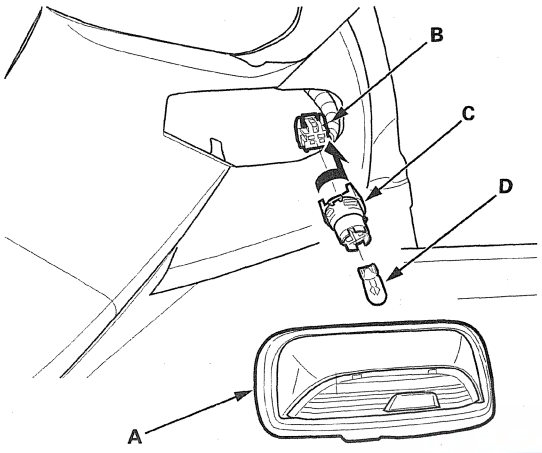


3. Remove the light.
4. Install the light in the reverse order of removal.

Rear Tray Light Replacement

1. Remove the rear tray light (A).

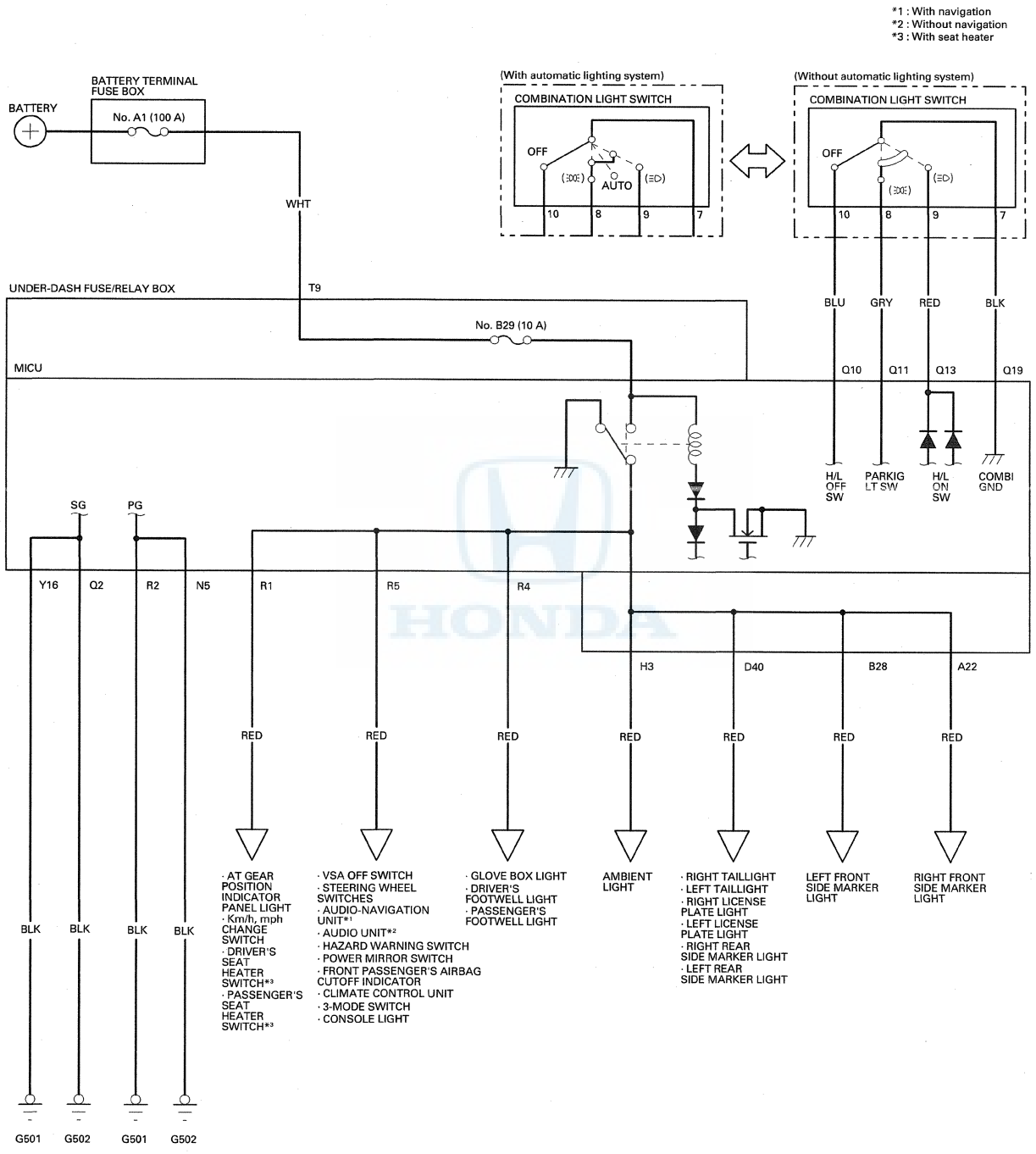
   Rear Tray Light: 3.4 W



2. Disconnect the 2P connector (B) from the rear tray light.
3. Turn the bulb socket (C) counterclockwise to remove it.
4. Remove the bulb (D) from the socket.
5. Install the light in the reverse order of removal.

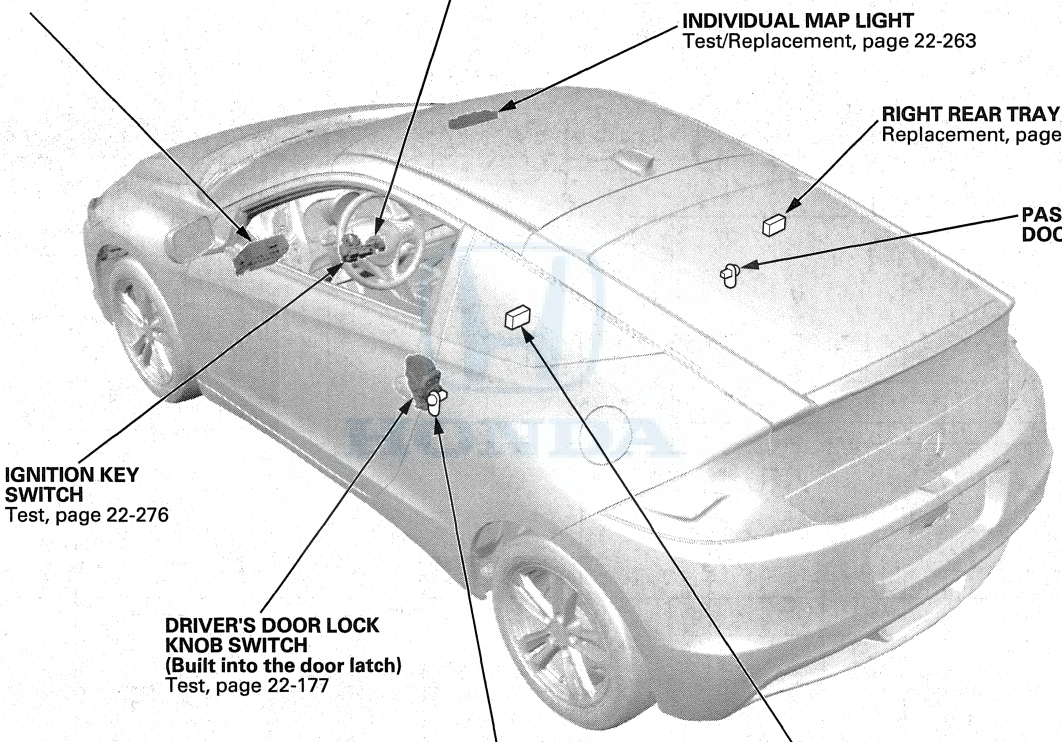
Dashlights

Circuit Diagram



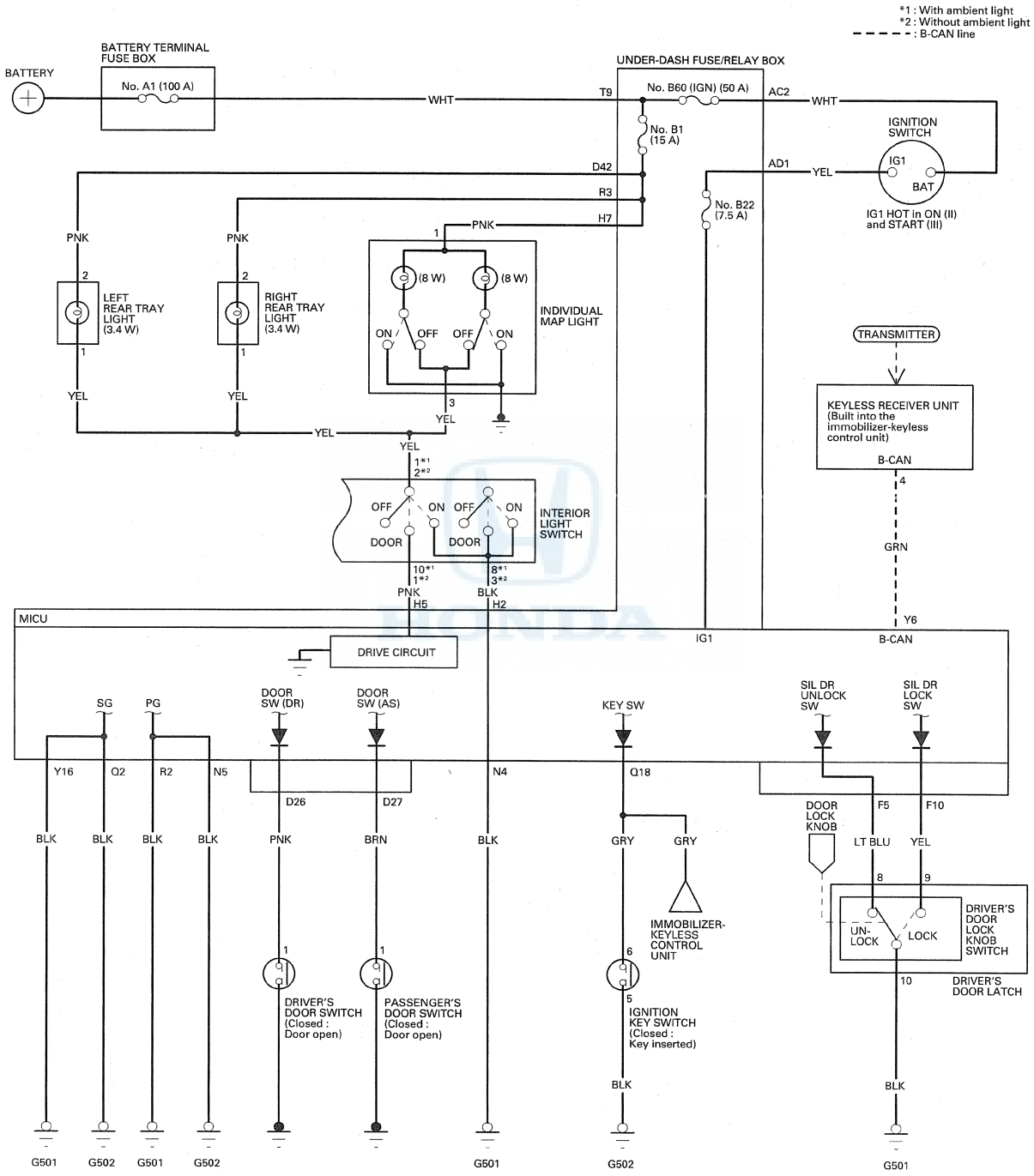
Entry Lights Control System

Component Location Index



Entry Lights Control System

Circuit Diagram



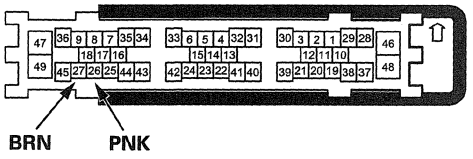
MICU Input Test

NOTE: Before testing, check the No. B1 (15 A) and No. B22 (7.5 A) fuse in the under-dash fuse/relay box.

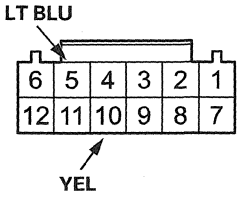
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect the under-dash fuse/relay box connectors D, F, H, N, Q, R, Y, and AD.

   NOTE: All connector views are wire side of female terminals.

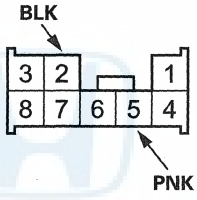
CONNECTOR D (49P)



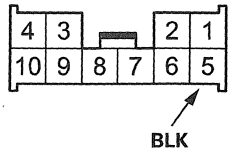
CONNECTOR F (12P)



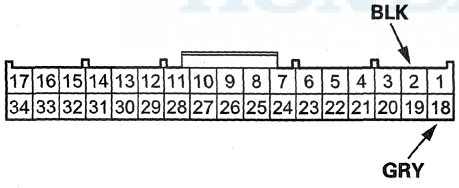
CONNECTOR H (8P)



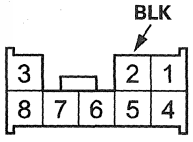
CONNECTOR N (10P)



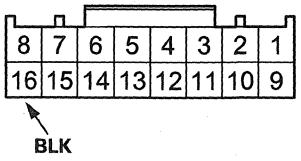
CONNECTOR Q (34P)



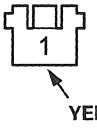
CONNECTOR R (8P)



CONNECTOR Y (16P)



CONNECTOR AD (1P)



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.

(cont'd)

MICU Input Test (cont'd)

5. Reconnect the connectors to the under-dash fuse/relay box, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box:
     - USA models (see page 22-82)
     - Canada models (see page 22-83)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (IGN)(50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
D26	PNK	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door switch • A short to ground in the wire
D27	BRN	Passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty passenger's door switch • Faulty passenger's door switch ground • An open or high resistance in the wire
		Passenger's door closed	Measure the voltage to ground: There should be at least 5 V.	• Faulty passenger's door switch • A short to ground in the wire
Q18	GRY	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) or an open in the ground wire • Faulty ignition key switch • An open or high resistance in the wire
		Ignition switch in LOCK (0), and the ignition key removed from the ignition switch	Measure the voltage to ground: There should be at least 5 V.	• Faulty ignition key switch • A short to ground in the wire
F5	LT BLU	Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door lock knob switch • An open or high resistance in the wire
		Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire

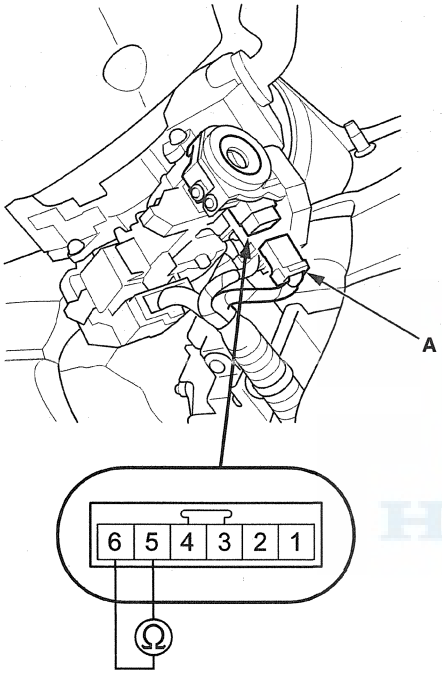
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
F10	YEL	Driver's door lock knob switch in LOCK	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) or an open in the ground wire • Faulty driver's door lock knob switch • An open or high resistance in the wire
		Driver's door lock knob switch in UNLOCK	Measure the voltage to ground: There should be at least 5 V.	• Faulty driver's door lock knob switch • A short to ground in the wire
H5	PNK	Interior light switch in DOOR position	Connect terminal H5 and body ground with a jumper wire: The ceiling light should come on.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • Faulty individual map light • Faulty interior light switch • Blown bulb • An open or high resistance in the wire
H2	BLK	Interior light switch in ON position	Connect terminal H2 and body ground with a jumper wire: The cargo area light should come on.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • Faulty individual map light • Faulty interior light switch • Blown bulb • An open or high resistance in the wire

HONDA

Ignition Key Switch Test

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before repairing or servicing.

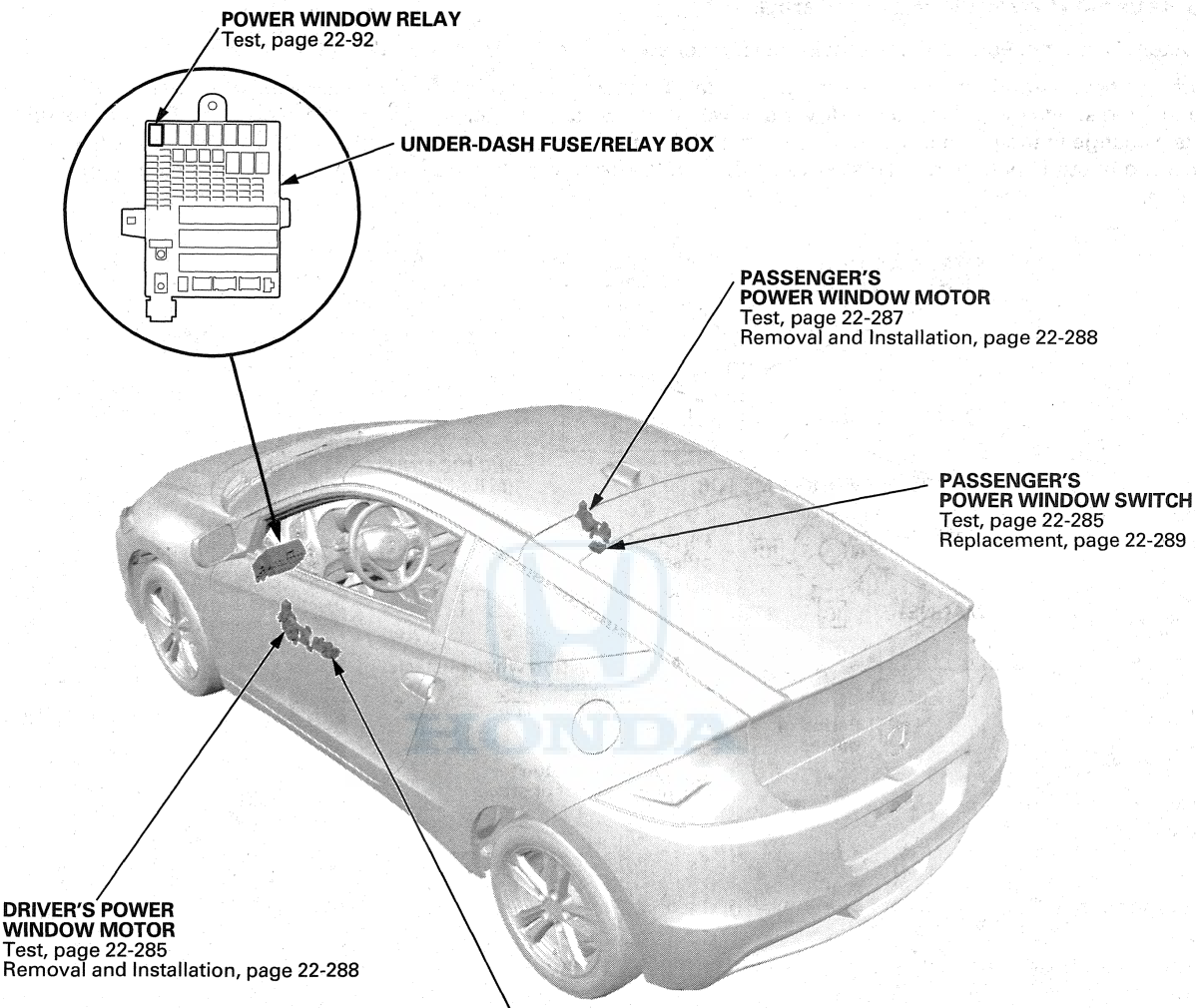
1. Remove the steering column covers (see page 20-96).
2. Disconnect the steering lock 6P connector (A).



3. Check for continuity between the terminals No. 5 and No. 6.
   - There should be continuity with the key in the ignition switch.
   - There should be no continuity with the key removed.
4. If the continuity is not as specified, the ignition key switch is faulty; replace the steering lock (see page 17-17).

Power Windows

Component Location Index



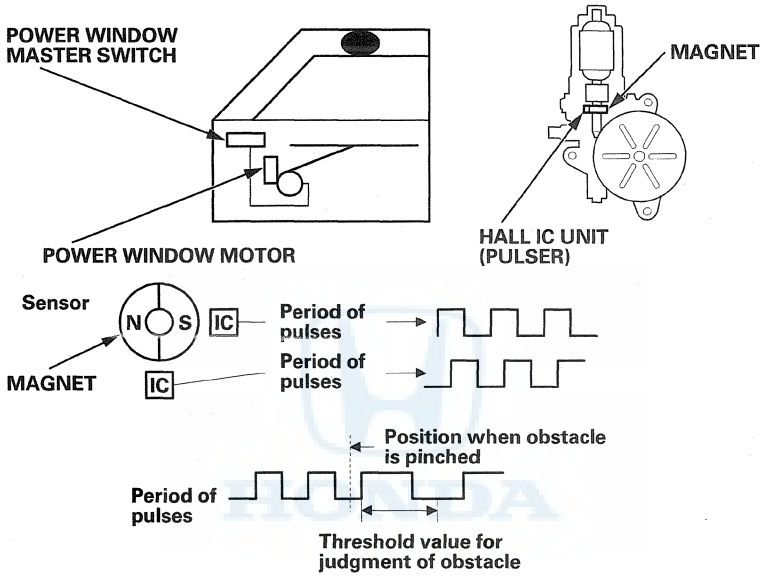
Power Windows

System Description

Auto Reverse Power Window Operation

The system is composed of the power window master switch and the driver's power window motor.

The driver's power window motor incorporates a Hall IC unit (pulser) which generates pulses during the motor's operation and sends the pulses to the driver's power window control unit. As soon as the power window control unit detects a change in the pulse frequency from the Hall IC unit (pulser), the power window control unit makes the power window motor stop and reverse. This prevents the window from pinching your hand or fingers during auto-up operation.

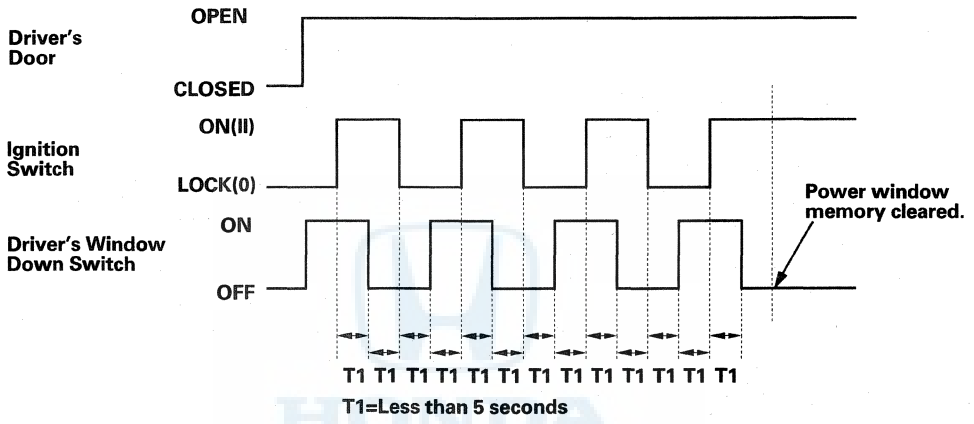


Resetting the Power Window Control Unit

Reset the power window control unit after doing any of the following:
- Power window regulator replacement or repair
- Power window motor replacement or repair
- Window run channel replacement or repair
- Driver's door glass replacement or repair

1. Turn the ignition switch to ON (II).
2. Move the driver's window all the way down by using the driver's window DOWN switch.
3. Open the driver's door.

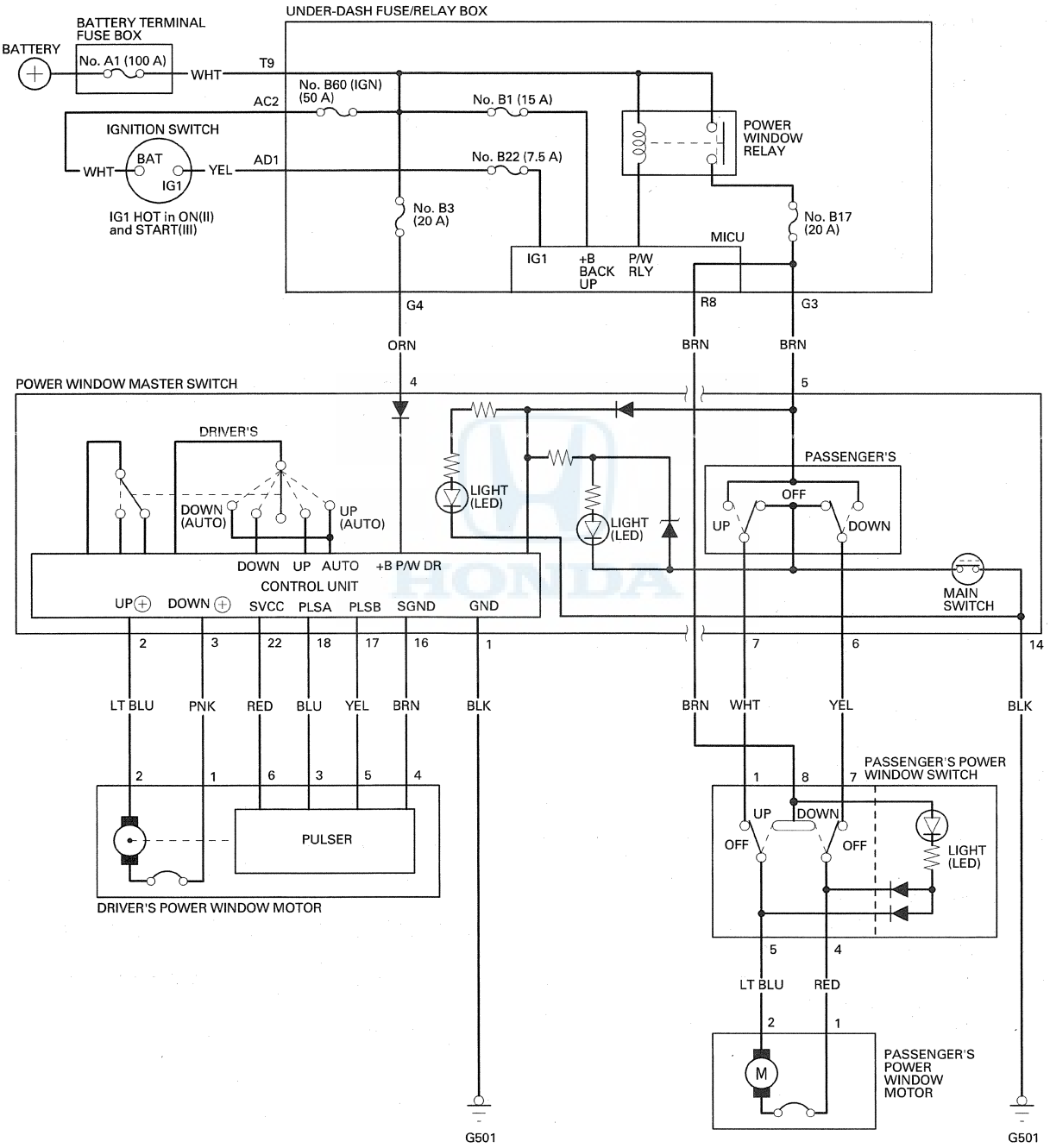
   NOTE: Steps 4—7 must be done within 5 seconds of each other.



4. Turn the ignition switch to LOCK (0).
5. Push and hold the driver's window DOWN switch.
6. Turn the ignition switch to ON (II).
7. Release the driver's window DOWN switch.
8. Repeat step 4—7 three more times.
9. Wait at least 1 second.
10. Confirm that AUTO UP and AUTO DOWN do not work. If AUTO UP and DOWN work, go back to step 1.
11. Move the driver's window all the way down by using the driver's window DOWN switch.
12. Pull up and hold the driver's window UP switch until the window reaches the fully closed position, then continue to hold the switch for at least 1 second.
13. Confirm that the power window control unit is reset by using the driver's window AUTO UP and AUTO DOWN functions.
    - If the window still does not work in AUTO, repeat the procedure several times, paying close attention to the 5 second time limit between steps.
    - If the window still does not work, refer to the master switch input test (see page 22-281).

Power Windows

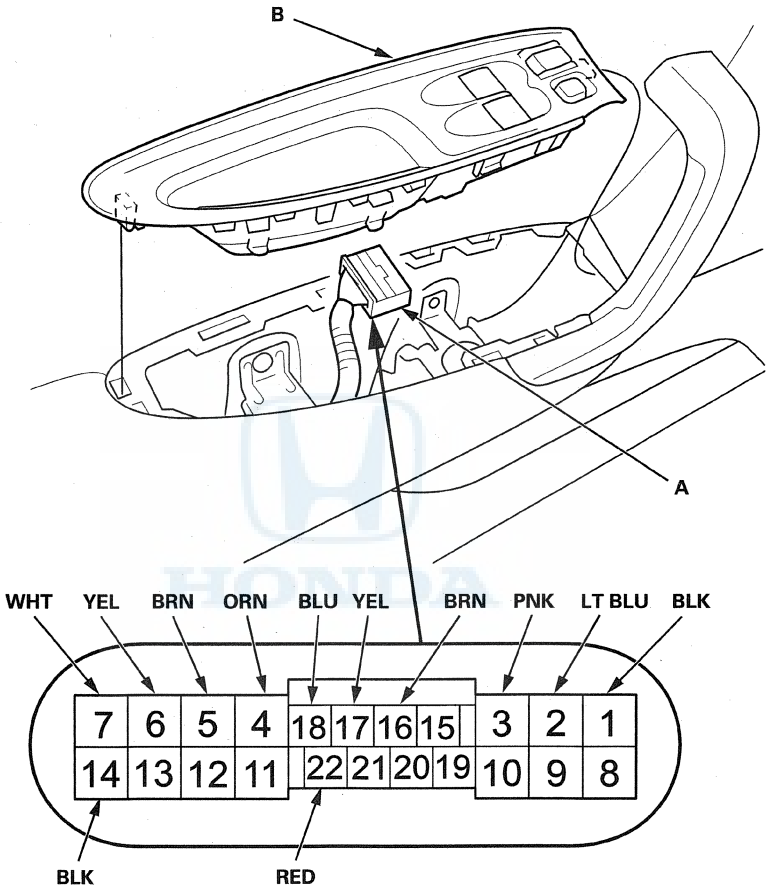
Circuit Diagram



Power Window Master Switch Input Test

NOTE: The power window control unit is built into the power window master switch.

1. Remove the power window master switch (see page 22-289).
2. Disconnect the 22P connector (A) from the power window master switch (B).



Wire side of female terminals

3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 4.

(cont'd)

Power Window Master Switch Input Test (cont'd)

4. Reconnect the connector to the power window master switch, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the ground wire
14	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the ground wire
4	ORN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B3 (20 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
5	BRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B17 (20 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
22	RED	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty power window master switch • An open or high resistance in the wire
16	BRN	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G501) • Faulty power window master switch • An open or high resistance in the wire
17	YEL	Ignition switch ON (II), and driver's window switch moving up or down.	Measure the voltage between the terminals No. 16 and No. 17: There should be 0 V—about 5 V—0 V— about 5 V repeatedly (a digital voltmeter should read about 2.5 V while the window moves).	• Faulty power window master switch • Faulty driver's power window motor • An open or high resistance in the wire • A short to ground in the wire
18	BLU	Ignition switch ON (II), and driver's window switch moving up or down.	Measure the voltage between the terminals No. 16 and No. 18: There should be 0 V—about 5 V—0 V— about 5 V repeatedly (a digital voltmeter should read about 2.5 V while the window moves).	

5. Turn the ignition switch to LOCK (0), then disconnect the 22P connector from the power window master switch again.
6. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, replace the power window master switch (see page 22-289).

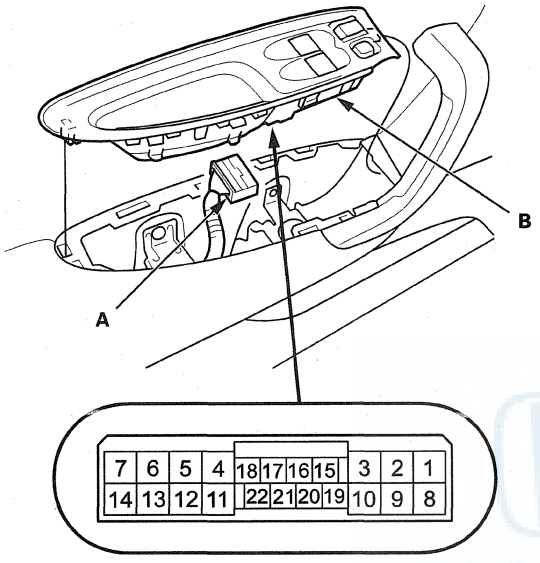
   NOTE: After replacing the power window master switch, reset the power window control unit (see page 22-279).

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
2	LT BLU	Connect the terminals No. 4 and No. 2 and the terminals No. 3 and No. 1 with jumper wires	Check driver's power window motor operation: The window should go up.	• Faulty driver's power window motor • Faulty driver's power window switch • An open or high resistance in the wire
3	PNK	Connect the terminals No. 4 and No. 3 and the terminals No. 2 and No. 1 with jumper wires	Check driver's power window motor operation: The window should go down.	
7	WHT	Ignition switch ON (II), connect the terminals No. 7 and No. 5 and the terminals No. 6 and No. 14 with jumper wires	Check passenger's power window motor operation: The window should go up.	• Faulty passenger's power window motor • Faulty passenger's power window switch • An open or high resistance in the wire
6	YEL	Ignition switch ON (II), connect the terminals No. 6 and No. 5 and the terminals No. 7 and No. 14 with jumper wires	Check passenger's power window motor operation: The window should go down.	

HONDA

Power Window Master Switch Test

1. Remove the power window master switch (see page 22-289).
2. Disconnect the 22P connector (A) from the power window master switch (B).



3. Check for continuity between the terminals in each position according to the table.

Driver's Switch

The drivers switch is combined with the control unit so you cannot isolate the switch to test it.

Instead, run the power window master switch input test procedures (see page 22-281). If the tests are normal, the driver's switch must be faulty; replace the power window master switch (see page 22-289).

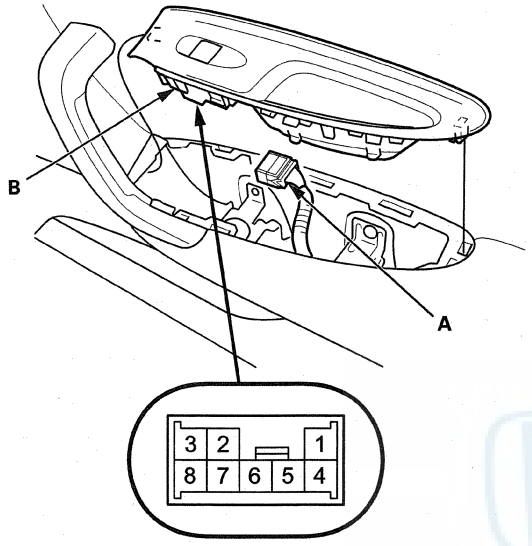
Passenger's Switch

Position	Main Switch \ Terminal	5	6	7	14
OFF	ON		○—○	○—○	
	OFF		○—○		
UP	ON	○—○		○—○	
	OFF	○—○			
DOWN	ON	○—○		○—○	
	OFF	○—○			

4. If the continuity is not as specified, replace the switch (see page 22-289).

Passenger's Power Window Switch Test

1. Remove the passenger's power window switch (see page 22-289).
2. Disconnect the 8P connector (A) from the passenger's power window switch (B).



3. Check for continuity between the terminals in each position according to the table.

Position \ Terminal	1	4	5	7	8
OFF	○	○	○	○	
UP		○	○	○	○
DOWN	○	○	○		○

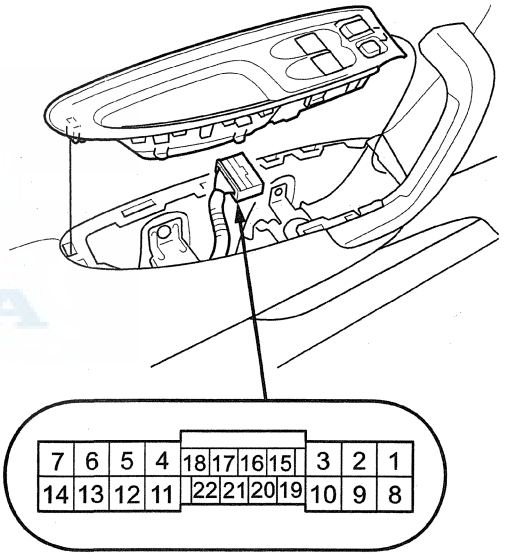
4. Connect battery power to terminal No. 8 and ground terminal No. 4 (or No. 5). The switch light should come on.
5. If the continuity is not as specified, replace the switch (see page 22-289).

Driver's Power Window Motor Test

Motor Test

1. Remove the power window master switch (see page 22-289).
2. Test the motor in each direction by connecting battery power and ground to the power window master switch 22P connector according to the table.

Direction \ Terminal	2	3
UP	⊕	⊖
DOWN	⊖	⊕



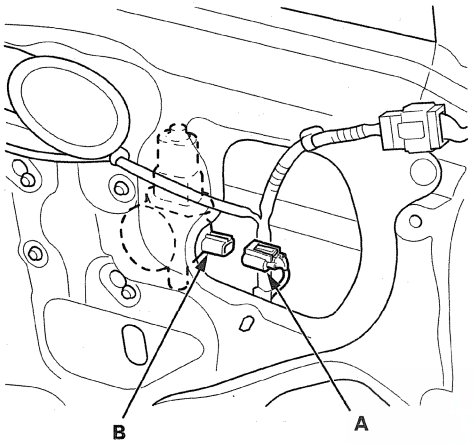
Wire side of female terminals

3. If the motor does not run or fails to run smoothly, go to step 4.

(cont'd)

Driver's Power Window Motor Test (cont'd)

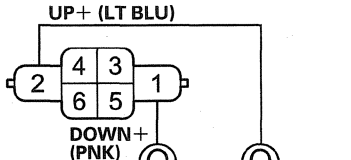
4. Remove the driver's door panel (see page 20-4).
5. Disconnect the 6P connector (A) from the driver's power window motor (B).

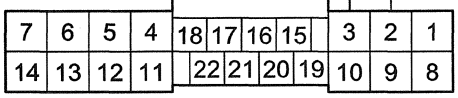


6. Check for continuity between the power window master switch 22P connector terminals and the driver's power window motor 6P connector terminals as shown:

Power window master switch 22P connector	Driver's power window motor 6P connector
2	2
3	1

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR
Wire side of female terminals





POWER WINDOW MASTER SWITCH 22P CONNECTOR
Wire side of female terminals

7. If the wire harness is OK, the driver's power window motor is faulty; replace the driver's power window motor (see page 22-288).

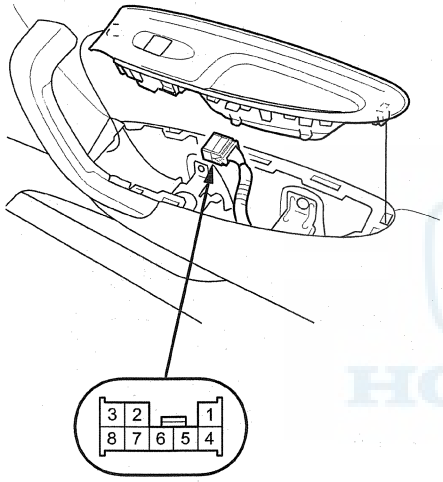
Pulser Test

8. Do the power window master switch input test for terminals No. 16, No. 17, No. 18, and No. 22 (see page 22-281).

Passenger's Power Window Motor Test

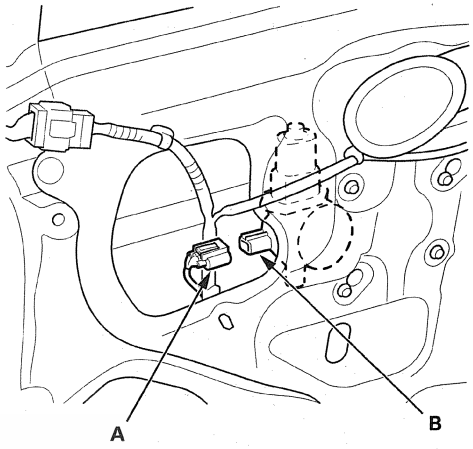
1. Remove the passenger's power window switch (see page 22-289).
2. Test the motor in each direction by connecting battery power and ground to the passenger's power window switch 8P connector according to the table.

Direction \ Terminal	4	5
UP	⊖	⊕
DOWN	⊕	⊖



Wire side of female terminals

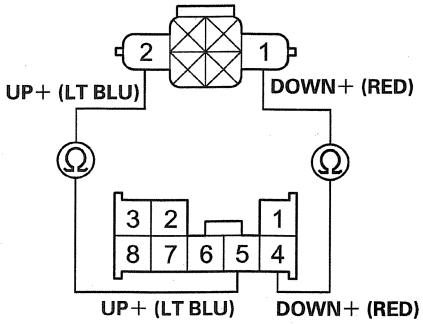
3. If the motor does not run or fails to run smoothly, go to step 4.
4. Remove the passenger's door panel (see page 20-4).
5. Disconnect the 2P connector (A) from the passenger's power window motor (B).



6. Check for continuity between the passenger's power window switch 8P connector terminals and the passenger's power window motor 2P connector terminals as shown.

Passenger's power window switch 8P connector	Passenger's power window motor 2P connector
4	1
5	2

PASSENGER'S POWER WINDOW MOTOR 2P CONNECTOR
Wire side of female terminals



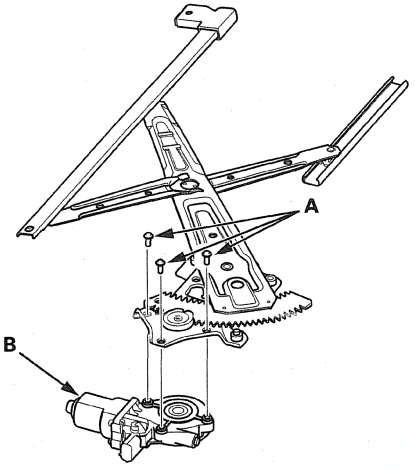
PASSENGER'S POWER WINDOW SWITCH 8P CONNECTOR
Wire side of female terminals

7. If the wire harness is OK, replace the passenger's power window motor (see page 22-288).

Power Window Motor Removal and Installation

Removal

1. Remove the door panel (see page 20-4).
2. Remove the door glass and regulator (see page 20-13).
3. Remove the three screws (A), then remove the power window motor (B).

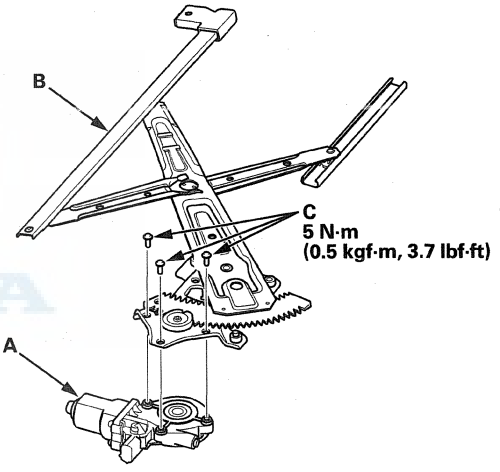


Installation

NOTE: The holes for the mounting screws (C) in a new power window motor (A) are not threaded. The screws cut threads in the holes the first time they are installed.

1. Install the power window motor (A) onto the regulator (B) as shown, and tighten the screws (C) until the screw head contacts with the linkage.

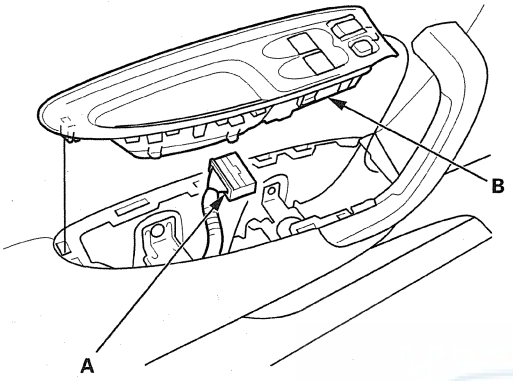
   NOTE:
   - Keep the screws (C) perfectly straight while screwing them in.
   - Do not use the air tool and impact wrench.
   - Do not use any other screws; these screws (C) are designed to cut the threads.



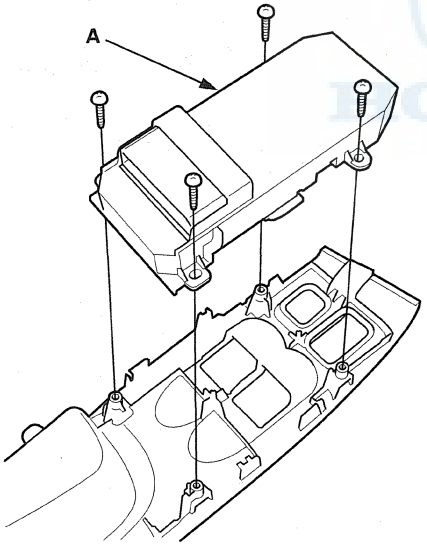
2. Loosen the screws (C), and retighten the screws to specified torque.
3. Install the door glass and regulator (see page 20-13).
4. Install the door panel (see page 20-4).
5. After replacement, reset the power window control unit (see page 22-279).

Power Window Master Switch Replacement

1. Remove the pocket cap (see page 20-4).
2. Remove the switch panel from the door panel.
3. Disconnect the 22P connector (A) from the power window master switch (B).



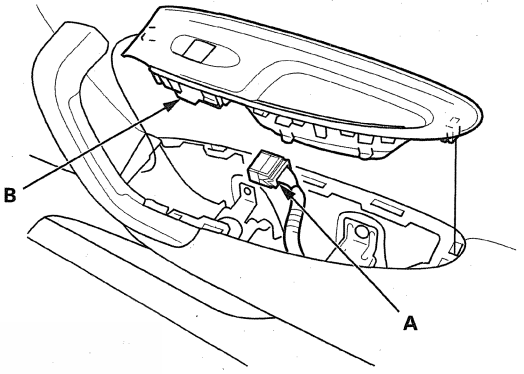
4. Remove the four screws and the power window master switch (A).



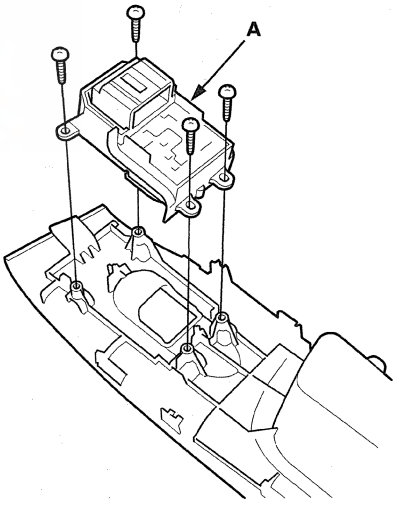
5. Install the switch in the reverse order of removal.
6. After replacement, reset the power window control unit (see page 22-279).

Passenger's Power Window Switch Replacement

1. Remove the pocket cap (see page 20-4).
2. Remove the switch panel from the door panel.
3. Disconnect the 8P connector (A) from the passenger's power window switch (B).

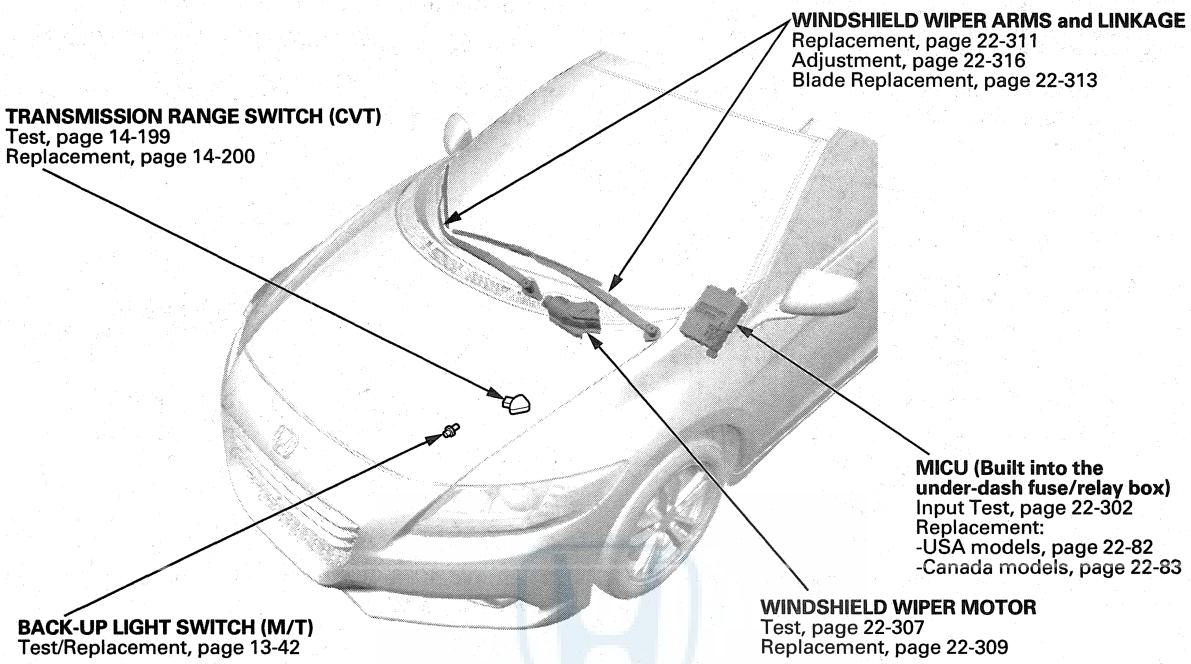


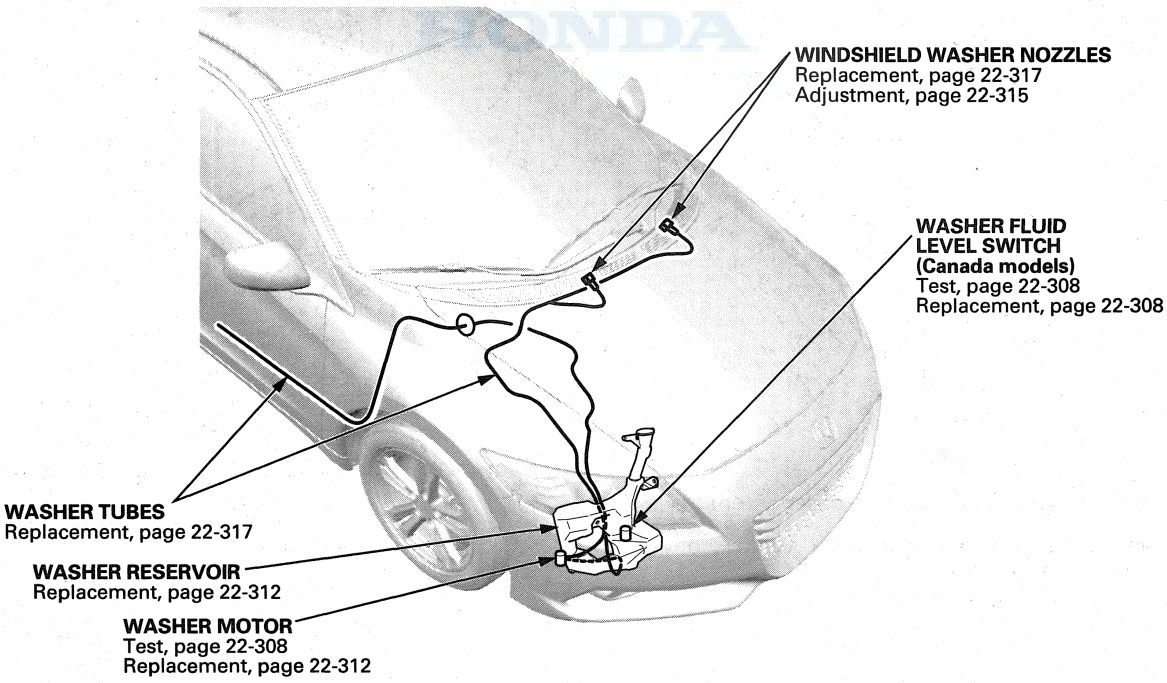
4. Remove the four screws and the passenger's power window switch (A).

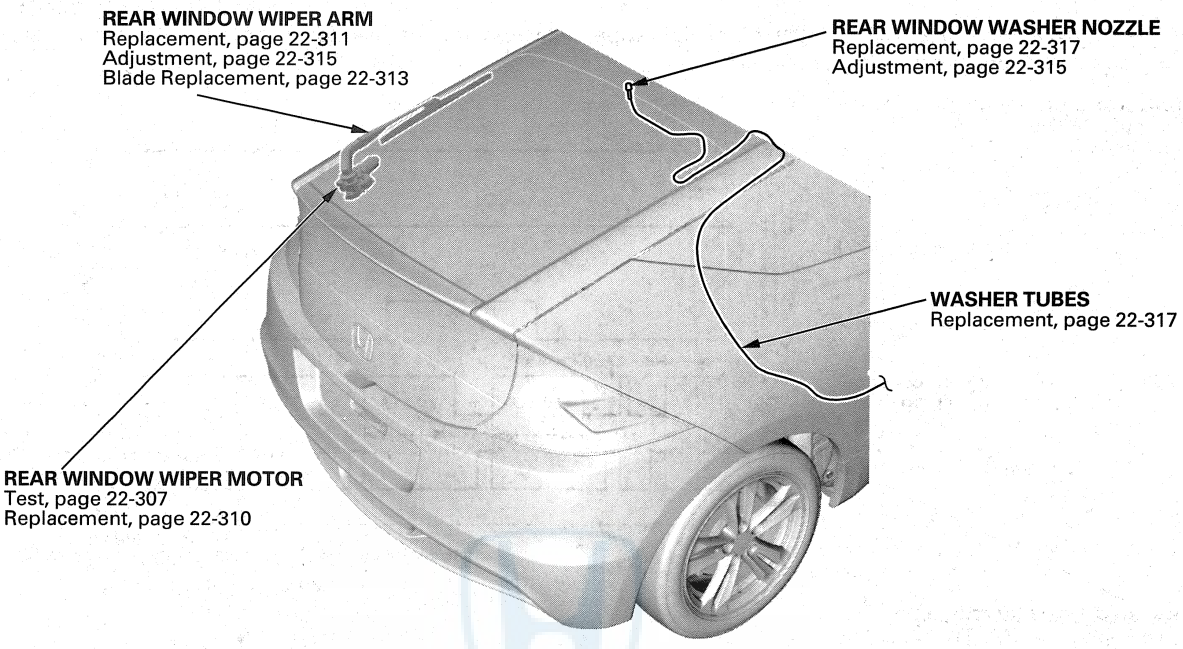


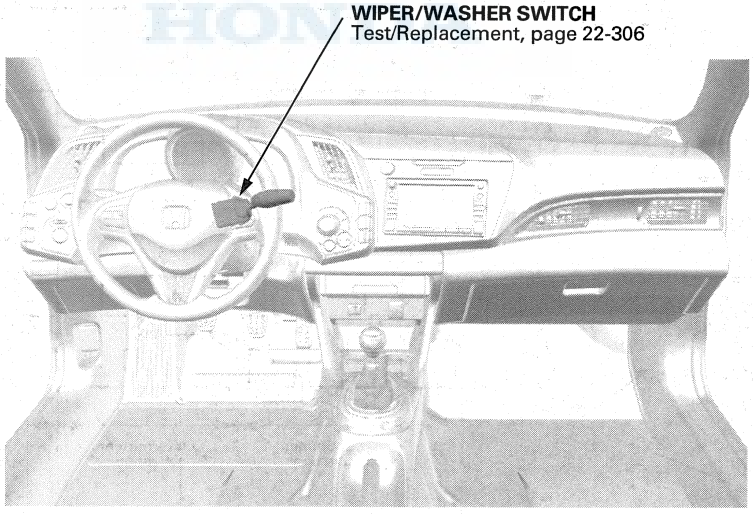
5. Install the switch in the reverse order of removal.

Component Location Index






REAR WINDOW WIPER ARM
Replacement, page 22-311
Adjustment, page 22-315
Blade Replacement, page 22-313
REAR WINDOW WASHER NOZZLE
Replacement, page 22-317
Adjustment, page 22-315
WASHER TUBES
Replacement, page 22-317
REAR WINDOW WIPER MOTOR
Test, page 22-307
Replacement, page 22-310

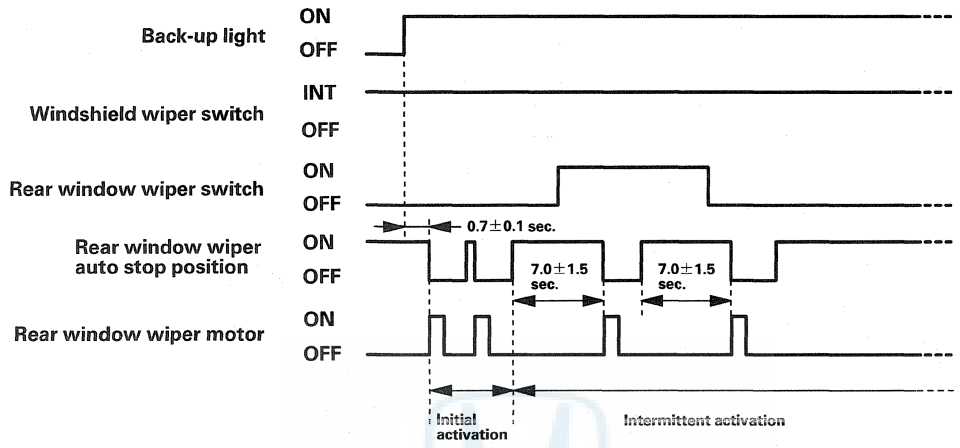

WIPER/WASHER SWITCH
Test/Replacement, page 22-306

System Description

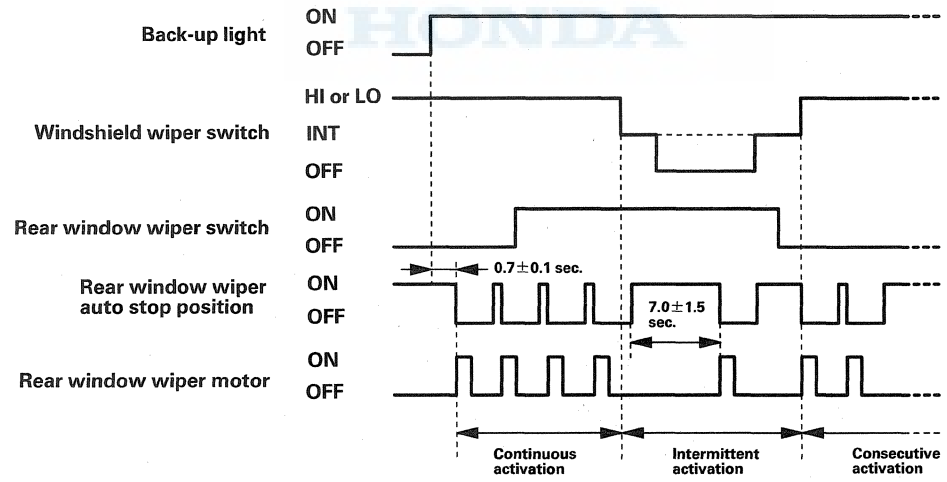
Reverse (Gear Position) Linked Rear Wiper

When the shift lever is shifted to R with the windshield wiper activated, the rear window wiper operates automatically even if the rear window wiper switch is off.

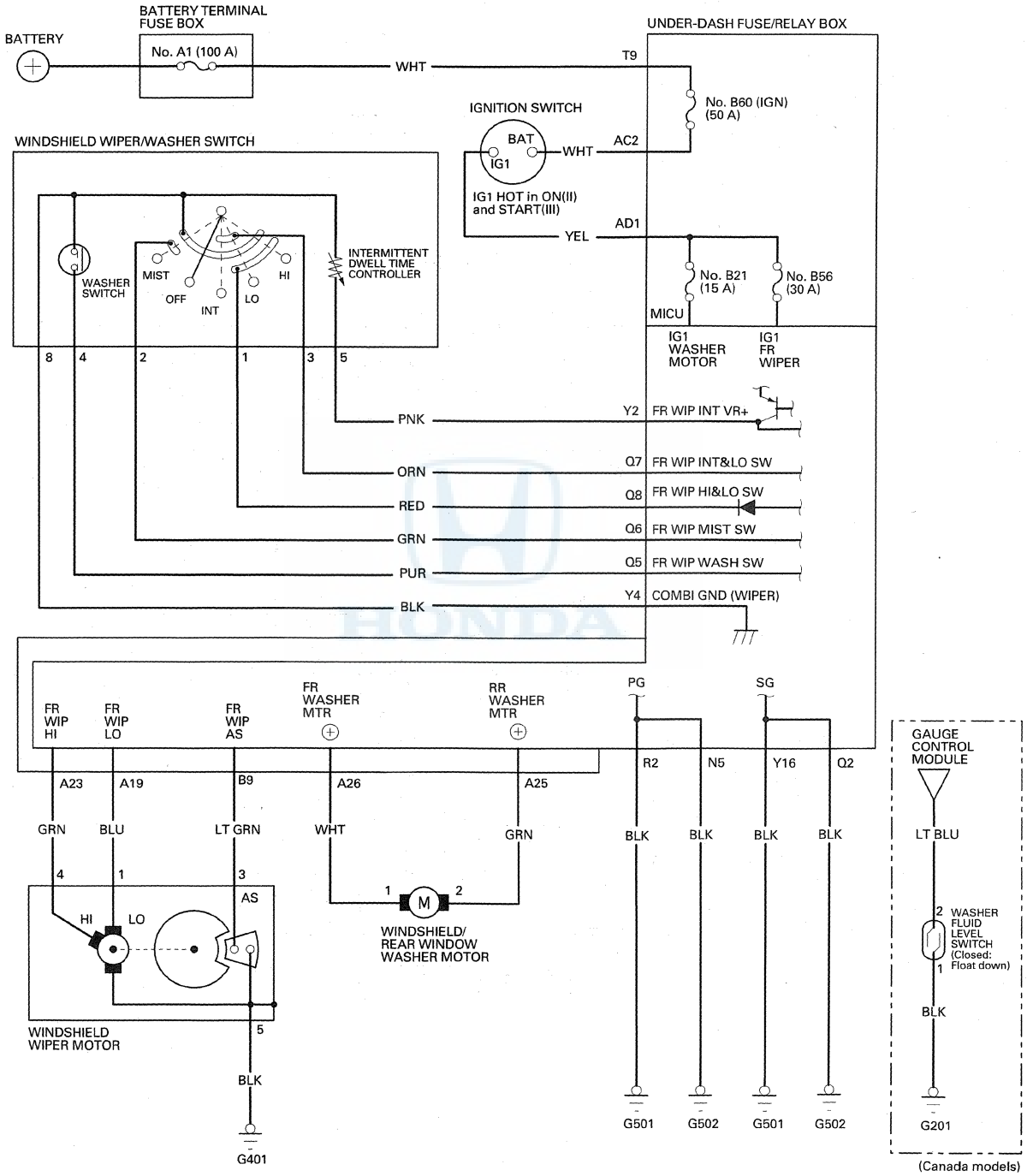
Intermittent operation (Basic)



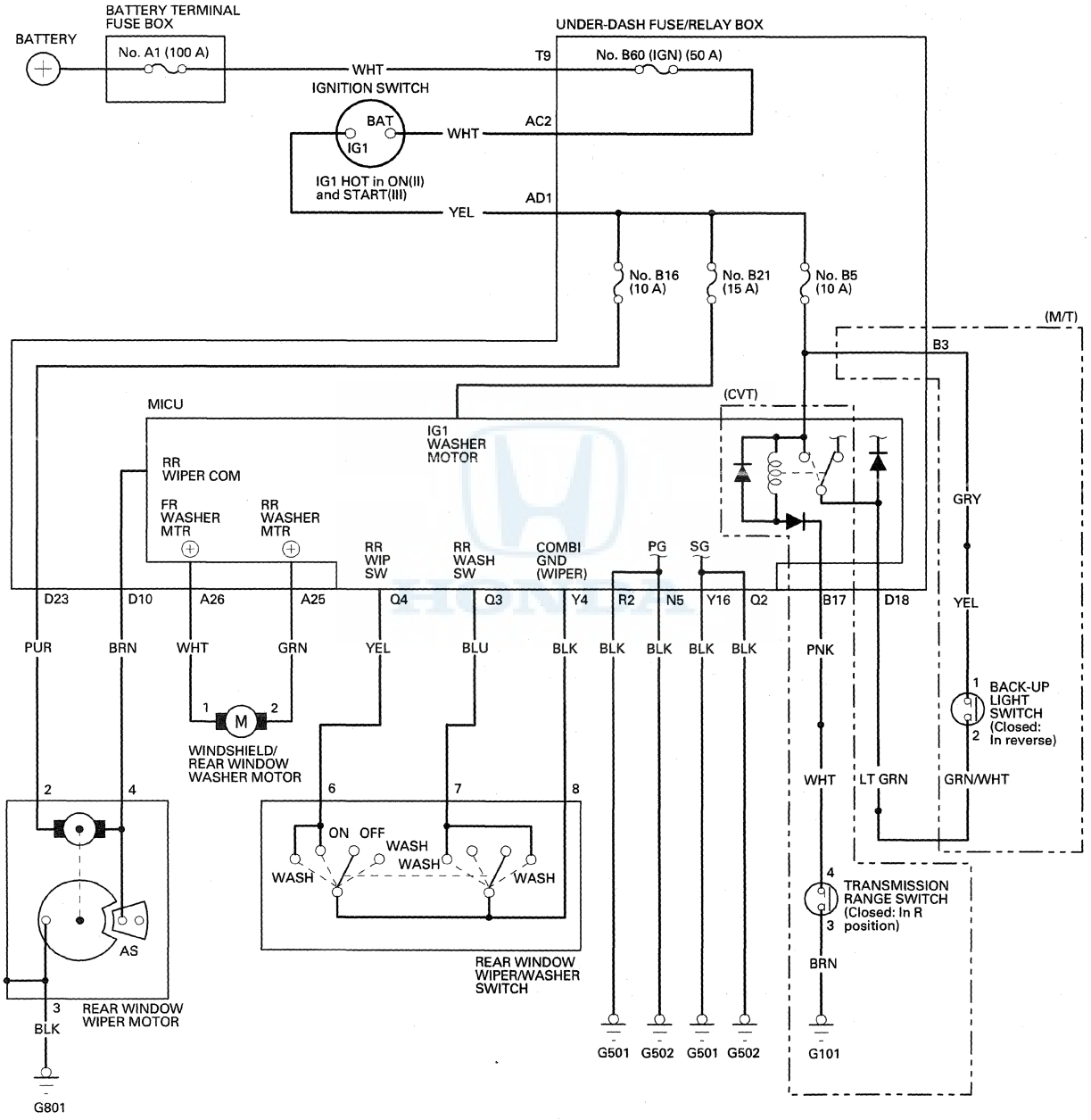
Continuous operation (Basic)



Circuit Diagram - Windshield



Circuit Diagram - Rear Window



DTC Troubleshooting

DTC B1028: Rear Wiper Motor (Park) Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Operate the rear window wiper for at least 15 seconds, then turn the rear window wiper switch OFF.
4. Check for DTCs with the HDS.

   Is DTC B1028 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
5. Do the rear window wiper motor test (see page 22-307).

   Is the rear window wiper motor OK?

   YES–Go to step 6.

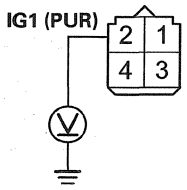
   NO–Replace the rear window wiper motor (see page 22-310).■
6. Check the No. B16 (10 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 7.

   NO–Replace the fuse, and recheck the system.■
7. Disconnect the rear window wiper motor 4P connector.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between rear window wiper motor 4P connector terminal No. 2 and body ground.

REAR WINDOW WIPER MOTOR 4P CONNECTOR



Wire side of female terminals

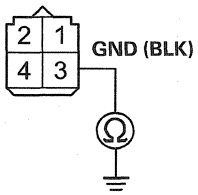
Is there battery voltage?

YES–Go to step 10.

NO–Repair an open or high resistance in the wire between the under-dash fuse/relay box and the rear window wiper motor.■

10. Check for continuity between rear window wiper motor 4P connector terminal No. 3 and body ground.

REAR WINDOW WIPER MOTOR 4P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Go to step 11.

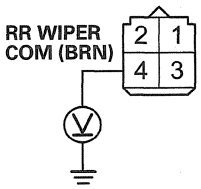
NO–Repair an open or high resistance in the wire between rear window wiper motor 4P connector terminal No. 3 and body ground (G801).■

(cont'd)

DTC Troubleshooting (cont'd)

11. Disconnect the under-dash fuse/relay box connector D (49P).
12. Measure the voltage between rear window wiper motor 4P connector terminal No. 4 and body ground.

REAR WINDOW WIPER MOTOR 4P CONNECTOR



Wire side of female terminals

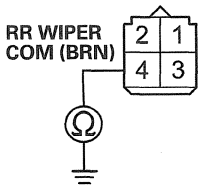
Is there battery voltage?

YES–Repair a short to power in the wire between the rear window wiper motor and the under-dash fuse/relay box.■

NO–Go to step 13.

13. Check for continuity between rear window wiper motor 4P connector terminal No. 4 and body ground.

REAR WINDOW WIPER MOTOR 4P CONNECTOR



Wire side of female terminals

Is there continuity?

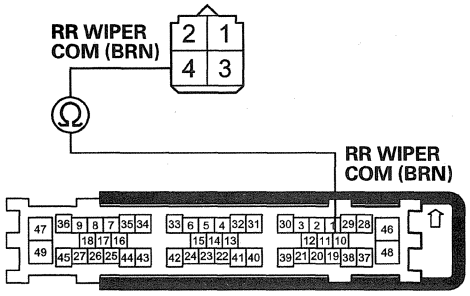
YES–Repair a short to ground in the wire between the rear window wiper motor and the under-dash fuse/relay box.■

NO–Go to step 14.

14. Check for continuity between under-dash fuse/relay box connector D (49P) terminal No. 10 and rear window wiper motor 4P connector terminal No. 4.

REAR WINDOW WIPER MOTOR 4P CONNECTOR

Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR D (49P)

Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the wire between the rear window wiper motor and the under-dash fuse/relay box.■

DTC B1077: Windshield Wiper Motor (Park) Signal Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Turn the windshield wiper switch to LOW or HIGH for at least 15 seconds, then turn the switch OFF.

   Does the wiper motor work?

   YES–Go to step 4.

   NO–Go to step 13.
4. Check for DTCs with the HDS.

   Is DTC B1077 indicated?

   YES–Go to step 5.

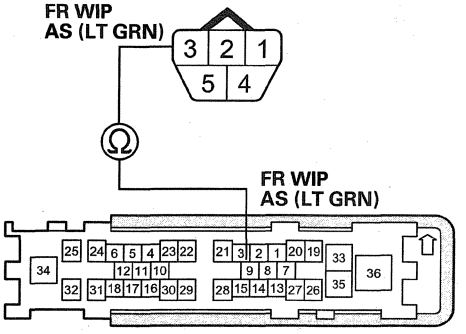
   NO–Intermittent failure, the windshield wiper system is OK at this time. Check for loose or poor connections.■
5. Turn the ignition switch to LOCK (0).
6. Do the windshield wiper motor test (see page 22-307).

   Does the wiper motor run and does it pulse normally?

   YES–Go to step 7.

   NO–Replace the windshield wiper motor (see page 22-309), and recheck.■
7. Disconnect the windshield wiper motor 5P connector.
8. Disconnect the under-dash fuse/relay box connector B (36P).
9. Check for continuity between windshield wiper motor 5P connector terminal No. 3 and under-dash fuse/relay box connector B (36P) terminal No. 9.

WINDSHIELD WIPER MOTOR 5P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR B (36P)
Wire side of female terminals

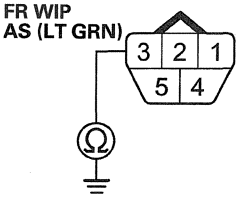
Is there continuity?

YES–Go to step 10.

NO–Repair an open or high resistance in the wire.■

10. Check for continuity between windshield wiper motor 5P connector terminal No. 3 and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Go to step 11.

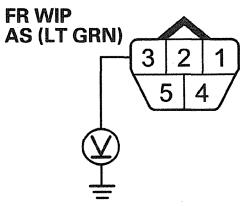
11. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

12. Measure the voltage between windshield wiper motor 5P connector terminal No. 3 and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there voltage?

YES–Repair a short to power in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

13. Turn the ignition switch to LOCK (0).
14. Check the No. B56 (30 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES–Go to step 15.

NO–Replace the fuse, and recheck the system.■

15. Do the windshield wiper motor test (see page 22-307).

Does the wiper motor run normally?

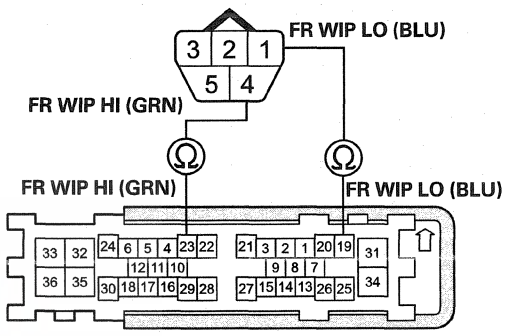
YES–Go to step 16.

NO–Replace the windshield wiper motor (see page 22-309), and recheck.■

16. Disconnect the under-dash fuse/relay box connector A (36P) and the windshield wiper motor 5P connector.
17. Check for continuity between under-dash fuse/relay box connector A (36P) terminals and windshield wiper motor 5P connector terminals as shown:

Under-dash fuse/relay box connector A (36P)	Windshield wiper motor 5P connector
19	1
23	4

WINDSHIELD WIPER MOTOR 5P CONNECTOR
Wire side of female terminals



UNDER-DASH FUSE/RELAY BOX CONNECTOR A (36P)
Wire side of female terminals

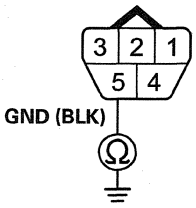
Is there continuity?

YES–Go to step 18.

NO–Repair an open or high resistance in the BLU (low) or GRN (high) wire.■

18. Check for continuity between windshield wiper motor 5P connector terminal No. 5 and body ground.

WINDSHIELD WIPER MOTOR 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open in the wire or poor ground (G401).■

DTC B1281: Front Wiper MIST Position Circuit Malfunction

DTC B1282: Front Wiper INT (AUTO) Position Circuit Malfunction

DTC B1283: Front Wiper LOW Position Circuit Malfunction

DTC B1284: Front Wiper HIGH Position Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Operate each windshield wiper switch position, then turn the wiper/washer switch OFF.
4. Check for DTCs with the HDS.

   Is DTC B1281, B1282, B1283, or B1284 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections.■
5. Select WIPER from the BODY ELECTRICAL menu.
6. Check each windshield wiper switch position value with the DATA LIST menu.

   When the windshield wiper switch is OFF:

Data List	Value
Windshield Wiper Switch (LOW)	OFF
Windshield Wiper Switch (HIGH)	OFF
Windshield Wiper Switch (MIST)	OFF
Windshield Wiper Switch (INT)	OFF

   Are all data list values indicated OFF?

   YES–Go to step 15.

   NO–Go to step 7.

(cont'd)

DTC Troubleshooting (cont'd)

7. Turn the ignition switch to LOCK (0).
8. Disconnect the wiper/washer switch 8P connector.
9. Turn the ignition switch to ON (II).
10. Select WIPER from the BODY ELECTRICAL menu.
11. Check each windshield wiper switch position value with the DATA LIST menu.

Data List	Value
Windshield Wiper Switch (LOW)	OFF
Windshield Wiper Switch (HIGH)	OFF
Windshield Wiper Switch (MIST)	OFF
Windshield Wiper Switch (INT)	OFF

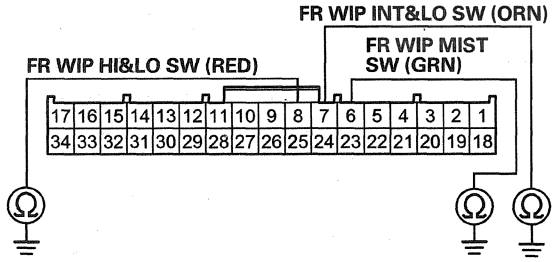
Are all data list values indicated OFF?

YES–Replace the wiper/washer switch (see page 22-306).■

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Disconnect the under-dash fuse/relay box connector Q (34P).
14. Check for continuity between body ground and under-dash fuse/relay box connector Q (34P) terminals No. 6, No. 7, and No. 8 individually.

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

15. Check each windshield wiper switch position value with the DATA LIST menu.

When the windshield wiper switch is ON (LOW):

Data List	Value
Windshield Wiper Switch (LOW)	ON

When the windshield wiper switch is ON (HIGH):

Data List	Value
Windshield Wiper Switch (HIGH)	ON

When the windshield wiper switch is MIST:

Data List	Value
Windshield Wiper Switch (MIST)	ON

When the windshield wiper switch is INT:

Data List	Value
Windshield Wiper Switch (INT)	ON

Are all data list values correct?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Go to step 16.

16. Turn the ignition switch to LOCK (0).
17. Do the wiper/washer switch test (see page 22-306).

Is the wiper/washer switch OK?

YES–Go to step 18.

NO–Replace the wiper/washer switch (see page 22-306).■

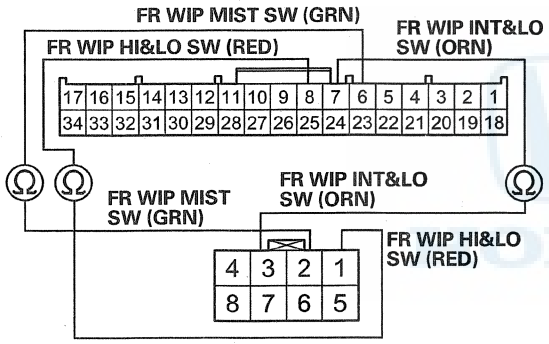
18. Disconnect under-dash fuse/relay box connectors Q (34P) and Y (16P).

19. Check for continuity between under-dash fuse/relay box connector Q (34P) and Y (16P) terminals and the wiper/washer switch 8P connector terminals as shown:

Under-dash fuse/relay box connector Q (34P)	Wiper/washer switch 8P connector
6	2
7	3
8	1

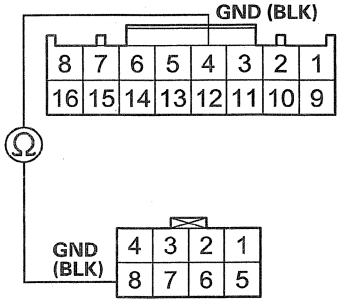
Under-dash fuse/relay box connector Y (16P)	Wiper/washer switch 8P connector
4	8

UNDER-DASH FUSE/RELAY BOX CONNECTOR Q (34P)
Wire side of female terminals



WIPER/WASHER SWITCH 8P CONNECTOR
Wire side of female terminals

UNDER-DASH FUSE/RELAY BOX CONNECTOR Y (16P)
Wire side of female terminals



WIPER/WASHER SWITCH 8P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Faulty MICU; replace the under-dash fuse/relay box.■

- USA models (see page 22-82)
- Canada models (see page 22-83)

NO–Repair an open or high resistance in the wire.■

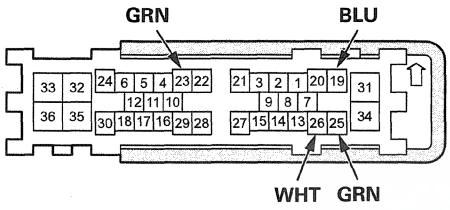
MICU Input Test

NOTE:
- Before testing, check the No. B5 (10 A), No. B16 (10 A), No. B21 (15 A), No. B56 (30 A), and No. B60 (50 A) fuses in the under-dash fuse/relay box.
- If there is a malfunction of the rear window wiper operation, and no DTCs are detected, check the rear window wiper motor and an open in the ground circuit of the rear window wiper (see step 10 on page 22-295).

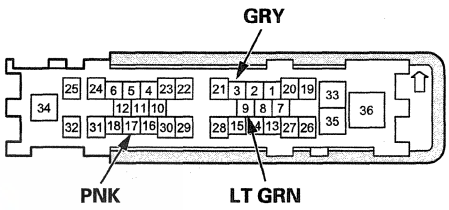
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors A, B, D, N, Q, R, Y, and AD.

   NOTE: All connector views are wire side of female terminals.

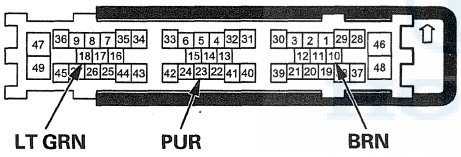
CONNECTOR A (36P)



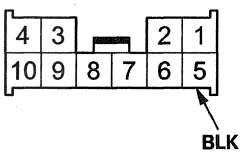
CONNECTOR B (36P)



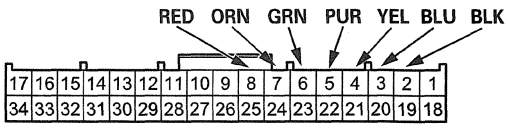
CONNECTOR D (49P)



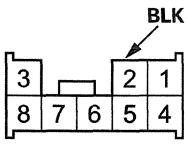
CONNECTOR N (10P)



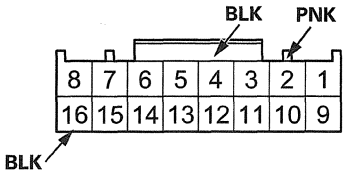
CONNECTOR Q (34P)



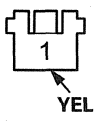
CONNECTOR R (8P)



CONNECTOR Y (16P)



CONNECTOR AD (1P)



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.

5. With the connectors still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
A23	GRN	Under all conditions	Connect terminal A23 to battery power: The windshield wiper motor should run at high speed.	• Poor ground (G401) or an open in the ground wire • Faulty windshield wiper motor • An open or high resistance in the wire
A19	BLU	Under all conditions	Connect terminal A19 to battery power: The windshield wiper motor should run at low speed.	
A26	WHT	Under all conditions	Connect terminal A26 to battery power and terminal A25 to body ground: The windshield/rear window washer motor should run.	• Faulty windshield/rear window washer motor • An open or high resistance in the wire
A25	GRN	Under all conditions	Connect terminal A25 to battery power and terminal A26 to body ground: The windshield/rear window washer motor should run.	• Faulty windshield/rear window washer motor • An open or high resistance in the wire
B9	LT GRN	The motor stops at auto-stop position.	Check for continuity to ground: There should be no continuity.	• Faulty windshield wiper motor • A short to ground in the wire
		Connect the terminal A19 to battery power momentarily, and stop the motor operation before the motor reaches the auto-stop position.	Check for continuity to ground: There should be continuity.	• Faulty windshield wiper motor • Poor ground (G401) or an open in the ground wire • An open or high resistance in the wire
Y2 · Y4	PNK · BLK	Windshield wiper/washer switch (intermittent dwell timer) turned	Check resistance between the terminals: The resistance should vary between 0 to 1 kΩ.	• Faulty windshield wiper/washer switch • An open or high resistance in the wire
D23 · D10	PUR · BRN	Connect battery power to terminal D23, then connect terminal D10 to body ground momentarily.	Check rear window wiper motor operation: The rear window wiper motor should run.	• Faulty rear window wiper motor • Poor ground (G801) or an open in the ground wire • An open or high resistance in the wire
D18 · B3*	LT GRN · GRY	Transmission shifted to reverse	Check for continuity between the terminals D18 and B3: There should be continuity.	• Faulty back-up light switch • An open or high resistance in the wire
		Transmission shifted to any position other than reverse	Check for continuity between the terminals D18 and B3: There should be no continuity.	Faulty back-up light switch

*: M/T models

(cont'd)

MICU Input Test (cont'd)

6. Reconnect the connectors to the under-dash fuse/relay box, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the MICU must be faulty; replace the under-dash fuse/relay box:
     - USA models (see page 22-82)
     - Canada models (see page 22-83)

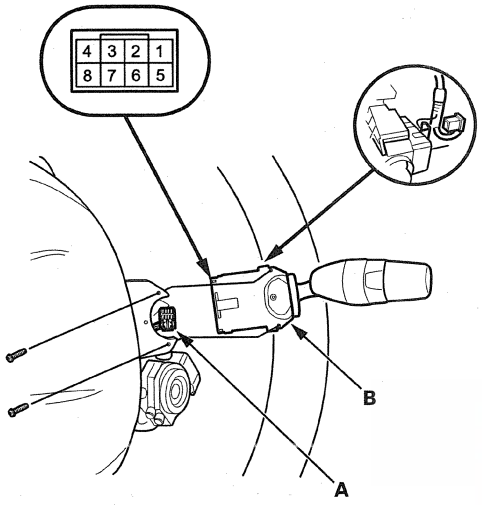
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
B17*	PNK	Transmission range switch in R	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G101) or an open in the ground wire • Faulty or improperly installed transmission range switch • An open or high resistance in the wire
		Transmission range switch in any position other than R	Measure the voltage to ground: There should be at least 5 V.	• Faulty or improperly installed transmission range switch • A short to ground in the wire
Q8 · Y4	RED · BLK	Windshield wiper/washer switch (LO or HI) ON	Measure the voltage between terminals Q8 and Y4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Windshield wiper/washer switch OFF	Measure the voltage between terminals Q8 and Y4: There should be at least 5 V.	Faulty windshield wiper/washer switch
Q7 · Y4	ORN · BLK	Windshield wiper/washer switch (INT or LO) ON	Measure the voltage between terminals Q7 and Y4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Windshield wiper/washer switch OFF	Measure the voltage between terminals Q7 and Y4: There should be at least 5 V.	Faulty windshield wiper/washer switch

*: CVT models

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
Q6 · Y4	GRN · BLK	Windshield wiper/washer switch (MIST) ON	Measure the voltage between terminals Q6 and Y4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Windshield wiper/washer switch OFF	Measure the voltage between terminals Q6 and Y4: There should be at least 5 V.	Faulty windshield wiper/washer switch
Q5 · Y4	PUR · BLK	Washer switch ON	Measure the voltage between terminals Q5 and Y4: There should be less than 0.2 V.	• Faulty windshield wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Washer switch OFF	Measure the voltage between terminals Q5 and Y4: There should be at least 5 V.	Faulty windshield wiper/washer switch
Q4 · Y4	YEL · BLK	Rear window wiper/washer switch (RRWIPER) ON	Measure the voltage between terminals Q4 and Y4: There should be less than 0.2 V.	• Faulty rear window wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Rear window wiper/washer switch OFF	Measure the voltage between terminals Q4 and Y4: There should be at least 5 V.	Faulty rear window wiper/washer switch
Q3 · Y4	BLU · BLK	Rear window wiper/washer switch (RRWASH) ON	Measure the voltage between terminals Q3 and Y4: There should be less than 0.2 V.	• Faulty rear window wiper/washer switch • Poor ground (G501, G502) or an open in the ground wire • An open or high resistance in the wire
		Rear window wiper/washer switch OFF	Measure the voltage between terminals Q3 and Y4: There should be at least 5 V.	Faulty rear window wiper/washer switch

Wiper/Washer Switch Test/Replacement

1. Remove the steering column covers (see page 20-96).
2. Disconnect the 8P connector (A) from the wiper/washer switch (B).



3. Remove the two screws, then slide out the wiper/washer switch.
4. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 5.
5. Check for continuity between the terminals in each switch position according to the table.

Windshield

Position \ Terminal	1	2	3	4	5		8
OFF							
INT			○				○
LO	○		○				○
HI	○						○
Mist ON		○					○
Washer ON				○			○
Intermittent dwell time controller turned					○	∿	○

Rear window

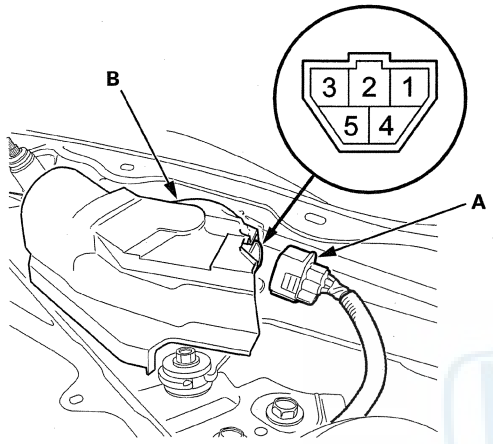
Position \ Terminal	6	7	8
Washer switch ON, wiper switch OFF		○	○
OFF			
Wiper switch ON, washer switch OFF	○		○
Wiper and washer switch ON	○	○	○

6. If the continuity is not as specified, replace the switch.
7. Install the switch in the reverse order of removal.

Wiper Motor Test

Windshield

1. Remove the wiper arms (see page 22-311) and the cowl cover (see page 20-153).
2. Disconnect the 5P connector (A) from the windshield wiper motor (B).

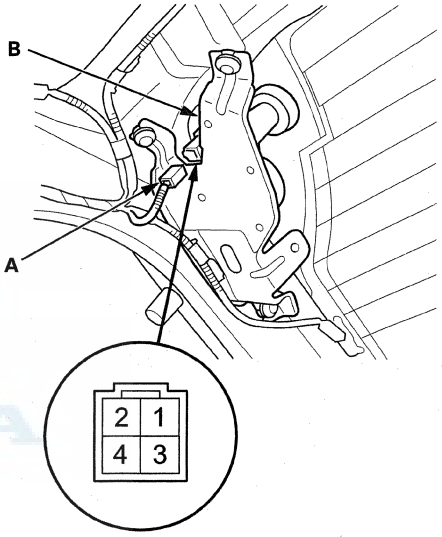


3. Test the motor by connecting battery power to terminal No. 1 and ground terminal No. 5 of the wiper motor 5P connector. The motor should run at low speed. If the motor does not run, or fails to run smoothly, replace the motor.
4. Test the motor by connecting battery power to terminal No. 4 and ground terminal No. 5 of the wiper motor 5P connector. The motor should run at high speed. If the motor does not run, or fails to run smoothly, replace the motor.
5. Connect an analog ohmmeter to terminals No. 3 and No. 5, and run the motor at low or high speed. The needle of the ohmmeter should pulse. If it does not, replace the motor.

Rear Window

NOTE: If there is malfunction of rear window wiper operation, and no DTCs are stored, check the rear window wiper motor and an open in the ground circuit of the rear window wiper (see step 10 on page 22-295).

1. Open the hatch, and remove the hatch lower trim panel (see page 20-66).
2. Disconnect the 4P connector (A) from the wiper motor (B).

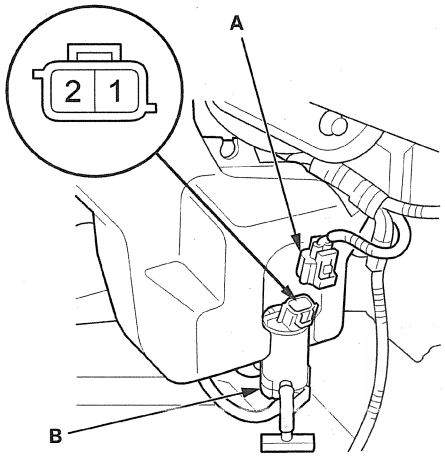


3. Test the motor by connecting battery power to terminal No. 2 and ground terminal No. 4 of the wiper motor. The motor should run. If the motor does not run or fails to run smoothly, replace the motor.
4. Connect an analog ohmmeter between rear window wiper motor 4P connector terminals No. 3 and No. 4. The ohmmeter should indicate continuity and no continuity alternately. If it does not, replace the motor.

Washer Motor Test

1. Remove the right front inner fender (see page 20-162).
2. Disconnect the 2P connector (A) from the washer motor (B).

   NOTE: The illustration shows USA models.



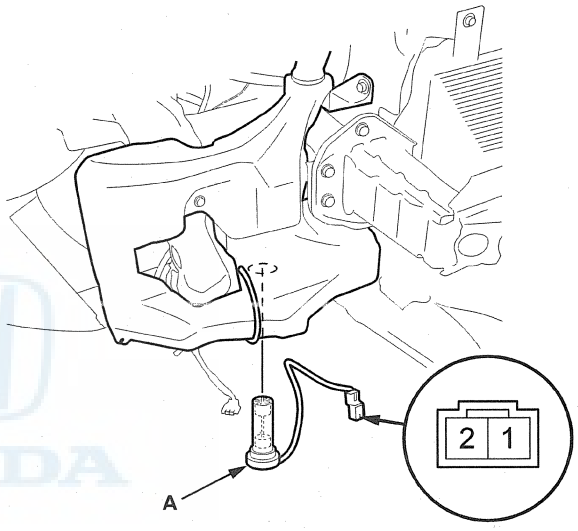
3. Test the motor by connecting battery power to terminal No. 1 and ground to the terminal No. 2 of the washer motor. The motor should run.
   - If the motor does not run or fails to run smoothly, replace the motor (see page 22-312).
   - If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged washer motor outlet.

Washer Fluid Level Switch Test

Canada models

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the front bumper (see page 20-128).
3. Remove the washer fluid level switch (A) from the washer reservoir.

   NOTE: Fluid may flow out of the opening.



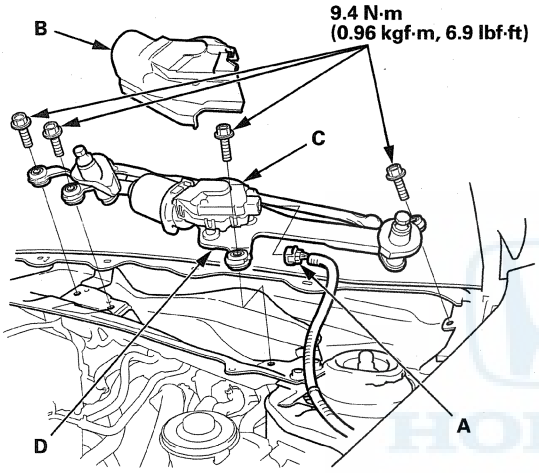
4. Check for continuity between terminals No. 1 and No. 2 in each float position.
   - There should be continuity when the float is down.
   - There should be no continuity when the float is up.
5. If the continuity is not as specified, replace the switch.

Windshield Wiper Motor Replacement

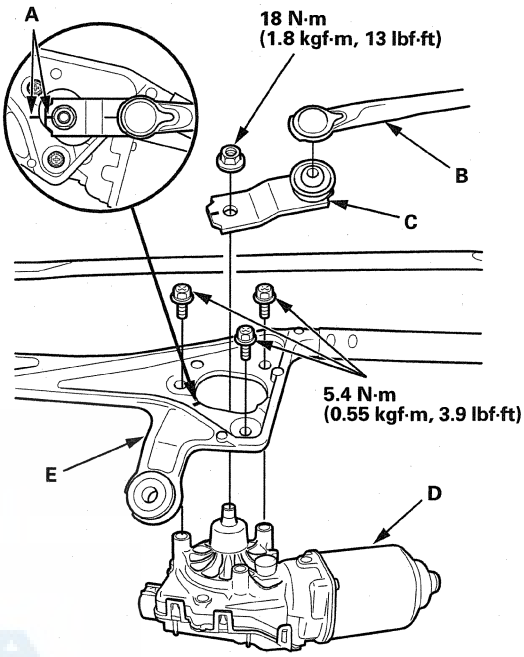
Removal

NOTE: Be careful not to scratch or damage the hood and the body.

1. Remove the windshield wiper arms (see page 22-311).
2. Remove the under-cowl panel and the hood hinge cover (see page 20-153).
3. Disconnect the 5P connector (A), and remove the cover (B) from the windshield wiper motor (C).



4. Remove the four bolts and the wiper linkage assembly (D).
5. Mark lines (A) to show the original adjustment, then remove the connection rod (B) from the linkage (C).



6. Remove the nut, and separate the linkage from the windshield wiper motor (D).
7. Remove the three bolts, and separate the windshield wiper motor from the linkage assembly (E) through the hole.

(cont'd)

Windshield Wiper Motor Replacement (cont'd)

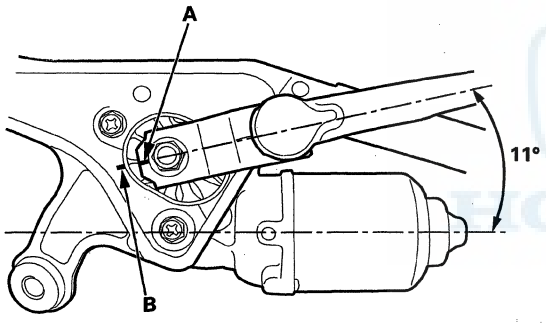
Installation

1. Before installing the motor, connect the 5P connector to the wiper motor, and turn the windshield wiper/washer switch ON to (LO) or (HI) position, then OFF to return the motor shaft to the park position.

   NOTE:
   - Do not use the windshield wiper/washer switch INT position in this step.
   - Apply multipurpose grease to the moving parts.

2. Install the wiper motor to the wiper linkage assembly in the reverse order of removal.

3. Install the linkage to the wiper motor shaft, then align the mark (A) of the linkage and the mark (B) of the wiper linkage assembly.



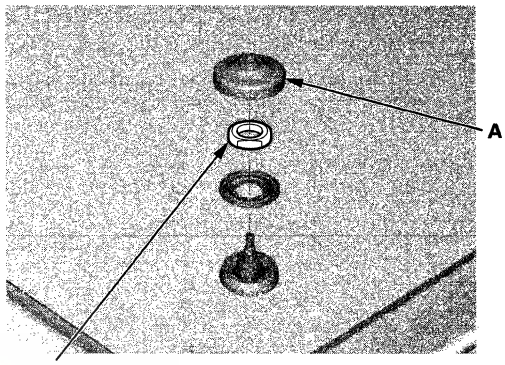
4. After installation, adjust the wiper arms (see page 22-315).

Rear Window Wiper Motor Replacement

NOTE: Be careful not to scratch or damage the hatch.

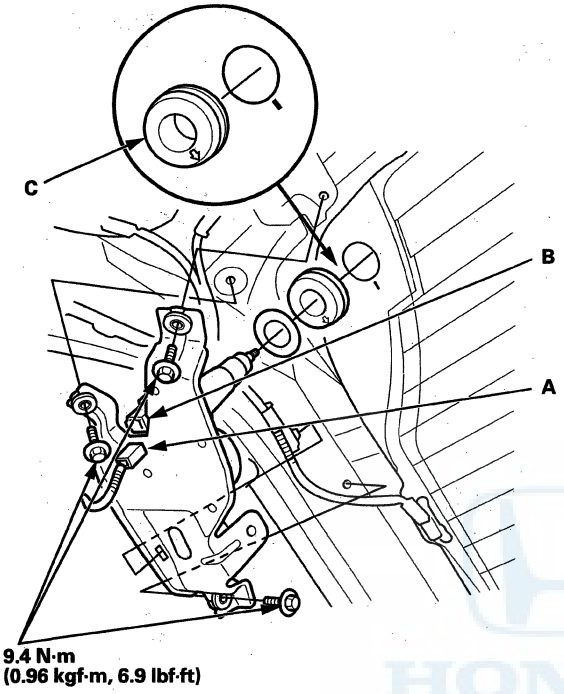
1. Remove the wiper arm (see page 22-311).

2. Remove the cap (A) and the mounting nut (B).



3. Open the hatch, and remove the hatch lower trim panel (see page 20-66).

4. Disconnect the 4P connector (A) from the rear window wiper motor (B).



5. Remove the three bolts and the rear window wiper motor.

6. Install the parts in the reverse order of removal, and note these items:
   - Grease the moving parts.
   - Before reinstalling the wiper arm, turn the rear window wiper switch ON, then OFF to return the wiper shaft to the park position.
   - Check the wiper motor operation.
   - Align the position marks when installing the seal (C).

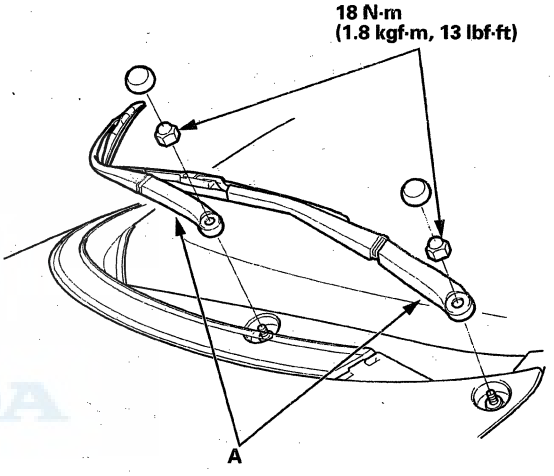
Wiper Arm Replacement

NOTE: Set the wiper arms to the auto-stop position before removal and installation.

Windshield

NOTE: Always pull up the driver's side wiper blade first.

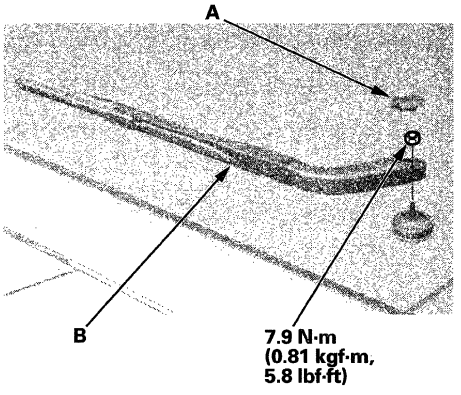
1. Remove the wiper pivot cover (see step 1 on page 20-153).
2. Close the hood.
3. Remove the caps, the nuts, and the wiper arms (A).



Rear Window

NOTE: Be careful not to damage the hatch.

1. Remove the cover (A), the nut, and the wiper arm (B).

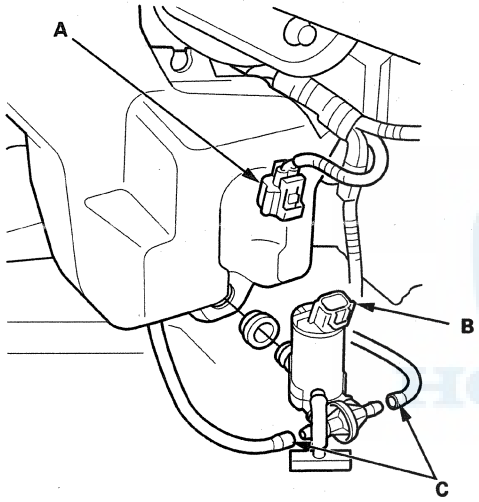


Washer Reservoir Replacement

1. Remove the front bumper center upper beam (see page 20-149).
2. Remove the front bumper (see page 20-128).
3. Remove the headlight (see page 22-242).
4. Disconnect the 2P connector (A) from the washer motor (B).

   Washer Reservoir Capacity:
   2.5 L (2.6 US qt): USA models
   4.85 L (5.1 US qt): Canada models

   NOTE: The illustration shows USA models.

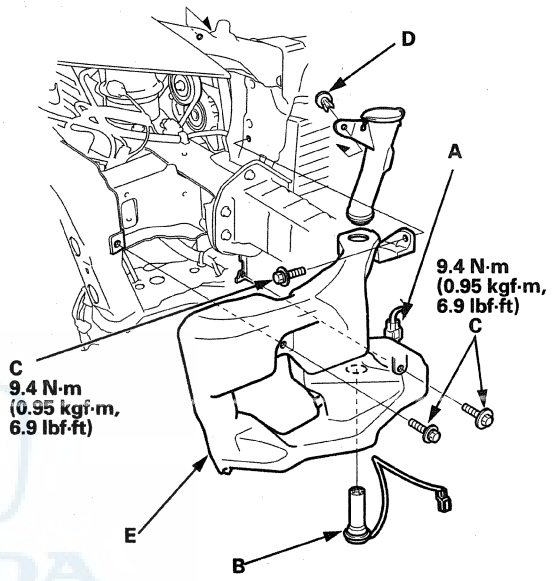


5. Disconnect the washer tubes (C) from the washer motor.

   NOTE: Fluid may flow out of the opening.

6. Canada models:

   Disconnect the 2P connector (A) from the washer fluid level switch (B), and remove the washer fluid level switch.

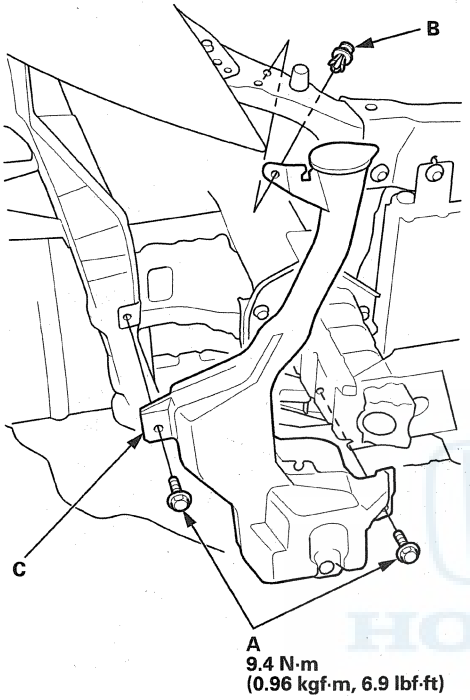


7. Remove the three bolts (C) and the clip (D), then remove the washer reservoir (E).

Wiper Blade Replacement

8. USA models:

   Remove the two bolts (A) and clip (B), then remove the washer reservoir (C).



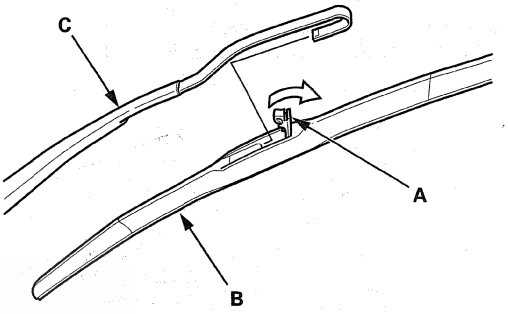
9. Install the washer reservoir in the reverse order of removal. Check the washer motor operation.

Windshield

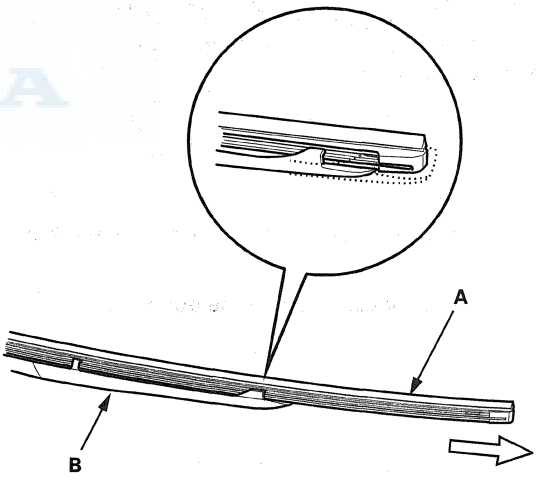
1. Lift the wiper arms from the windshield.

   NOTE: Lift the driver's side first.

2. Gently pry up the lock (A) of the wiper blade assembly (B), and remove the wiper blade assembly from the wiper arm (C).



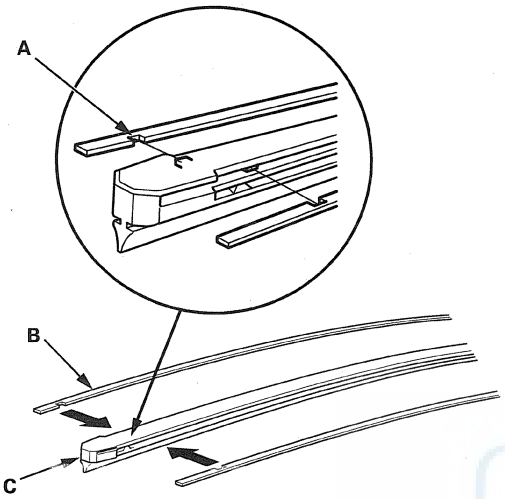
3. Slide the blade (A) out from the wiper blade holder (B).



(cont'd)

Wiper Blade Replacement (cont'd)

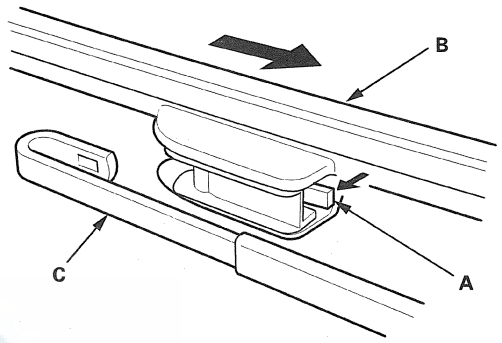
4. Align the groove (A) of each rail (B) with the tabs in a new blade (C), then install the blade and the rails into the blade holder in the reverse order of removal.



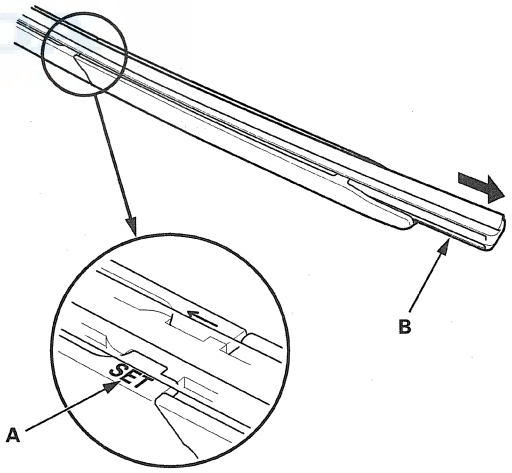
5. Install the wiper blade assembly onto the wiper arms in the reverse order of removal.
6. Check the wiper operation. If the blades slip, turn the wiper switch OFF, and reinstall the blades securely.

Rear Window

1. Lift the wiper arm off the rear window.
2. Push the lock (A) of the wiper blade assembly (B), and remove the wiper blade assembly from the wiper arm (C).



3. Locate the word SET (A) and the arrow on the wiper blade holder, then pull the blade (B) in the opposite direction of the arrow to remove it.

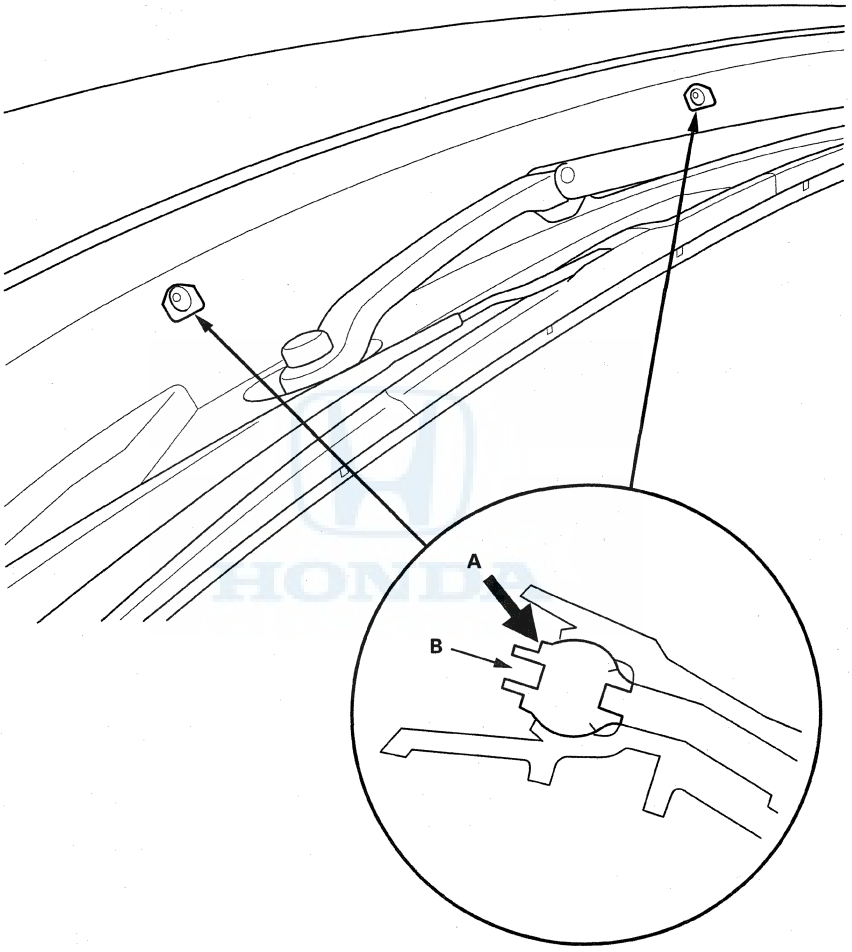


4. Install a new blade in the reverse order of removal.
5. Install the wiper blade assembly onto the wiper arm in the reverse order of removal.
6. the wiper operation. If the blade slips, turn the wiper switch OFF, and reinstall the blade securely.

Wiper Arm/Nozzle Adjustment

NOTICE

- When you adjust the washer nozzles, carefully move the outside of the washer nozzles (A).
- Do not insert tools into the nozzle hole (B), as it may cause the washer fluid to spray incorrectly.



(cont'd)

Wiper Arm/Nozzle Adjustment (cont'd)

Wiper arms stop position

1. Turn the ignition switch to ON (II), then turn the wiper switch ON, and then back OFF.
2. When the wiper arms stop at the park position, make sure that they are at the correct position.

Windshield
- a: Position at about 45.9 mm (1.807 in) from the top of cowl cover (A).
- b: Position at about 31.9 mm (1.255 in) from the top of cowl cover (A).

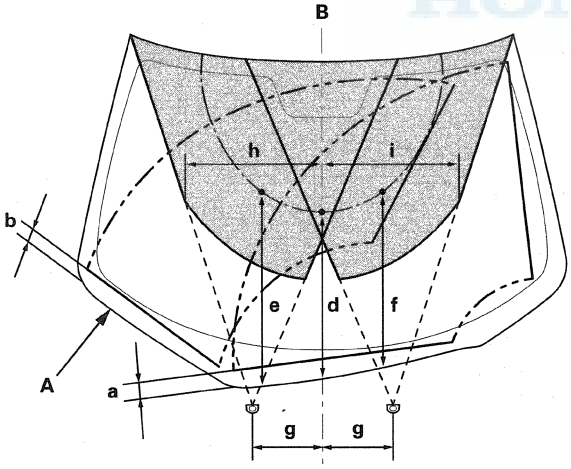
Rear Window
- c: Position at about 22.4 mm (0.881 in) from the black ceramic area (C).

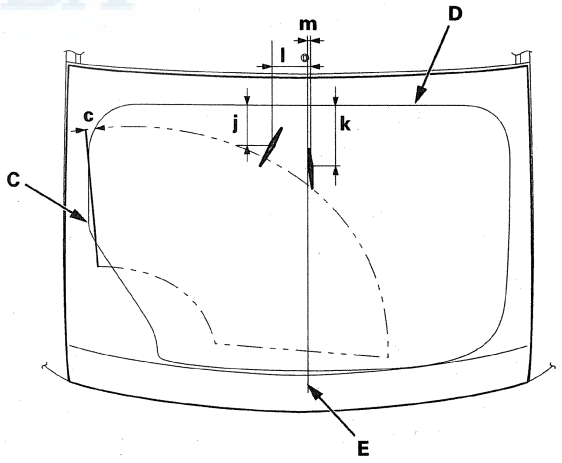
Washer nozzle position

3. When you turn on the washers, make sure 50 % or more of the washer fluid lands within the spray area. If the spray area is not within the standard positions, adjust the nozzles.

Windshield
- d: Position at about 501 mm (19.72 in) from the top of the cowl cover (A).
- e: Position at about 585 mm (23.03 in) from the top of the cowl cover (A).
- f: Position at about 532 mm (20.94 in) from the top of the cowl cover (A).
- g: 200 mm (7.87 in) from the windshield center line (B).
- h: 400 mm (15.74 in) from the windshield center line (B).
- i: 400 mm (15.74 in) from the windshield center line (B).

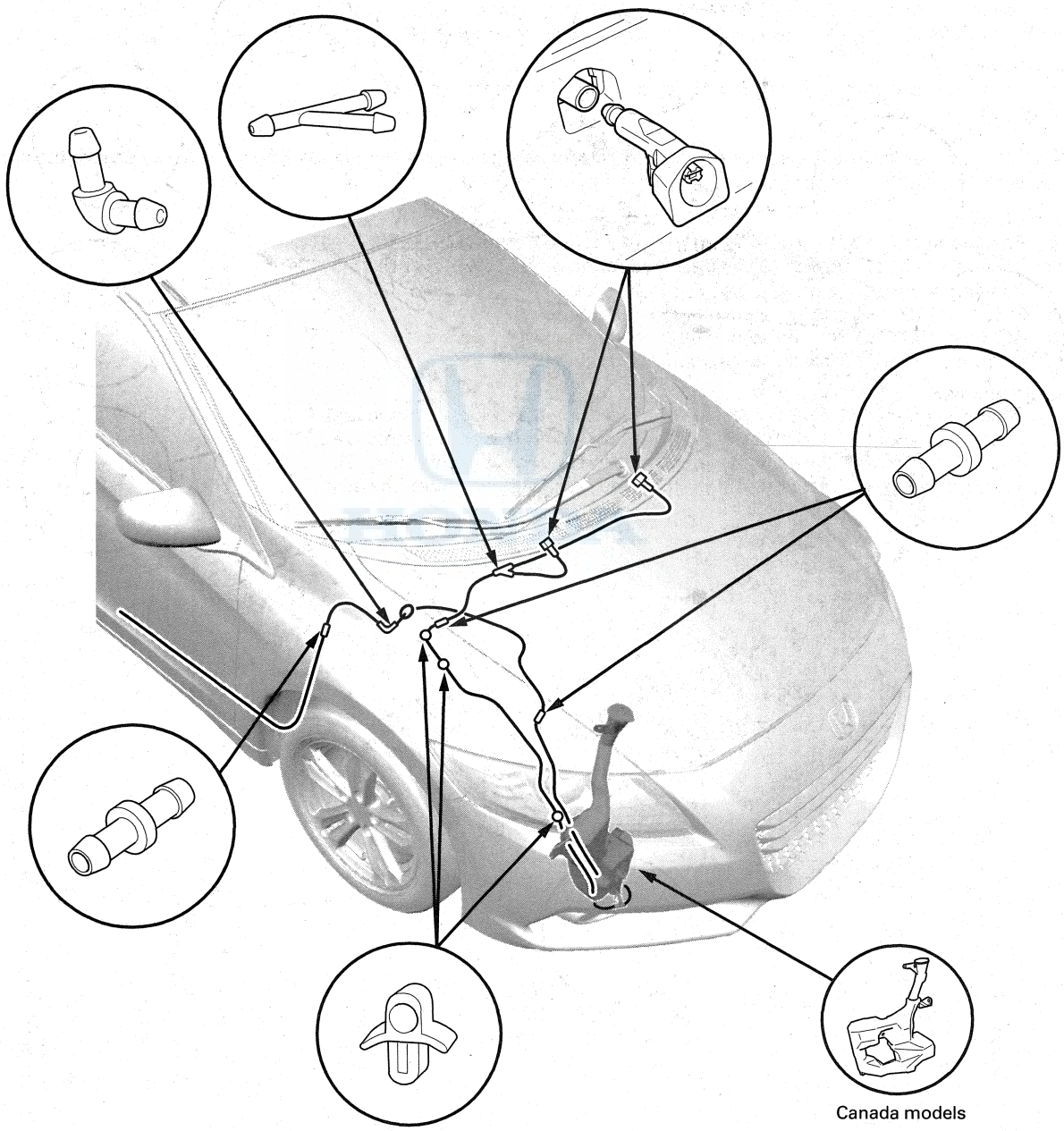
Rear Window
- j: Position at about 62.4 mm (2.456 in) from the top of the black ceramic area (D).
- k: Position at about 93.4 mm (3.677 in) from the top of the black ceramic area (D).
- l: Position at about 90.2 mm (3.551 in) from the rear window center line (E).
- m: Position at about 10.7 mm (0.421 in) from the rear window center line (E).





Washer Tube Replacement

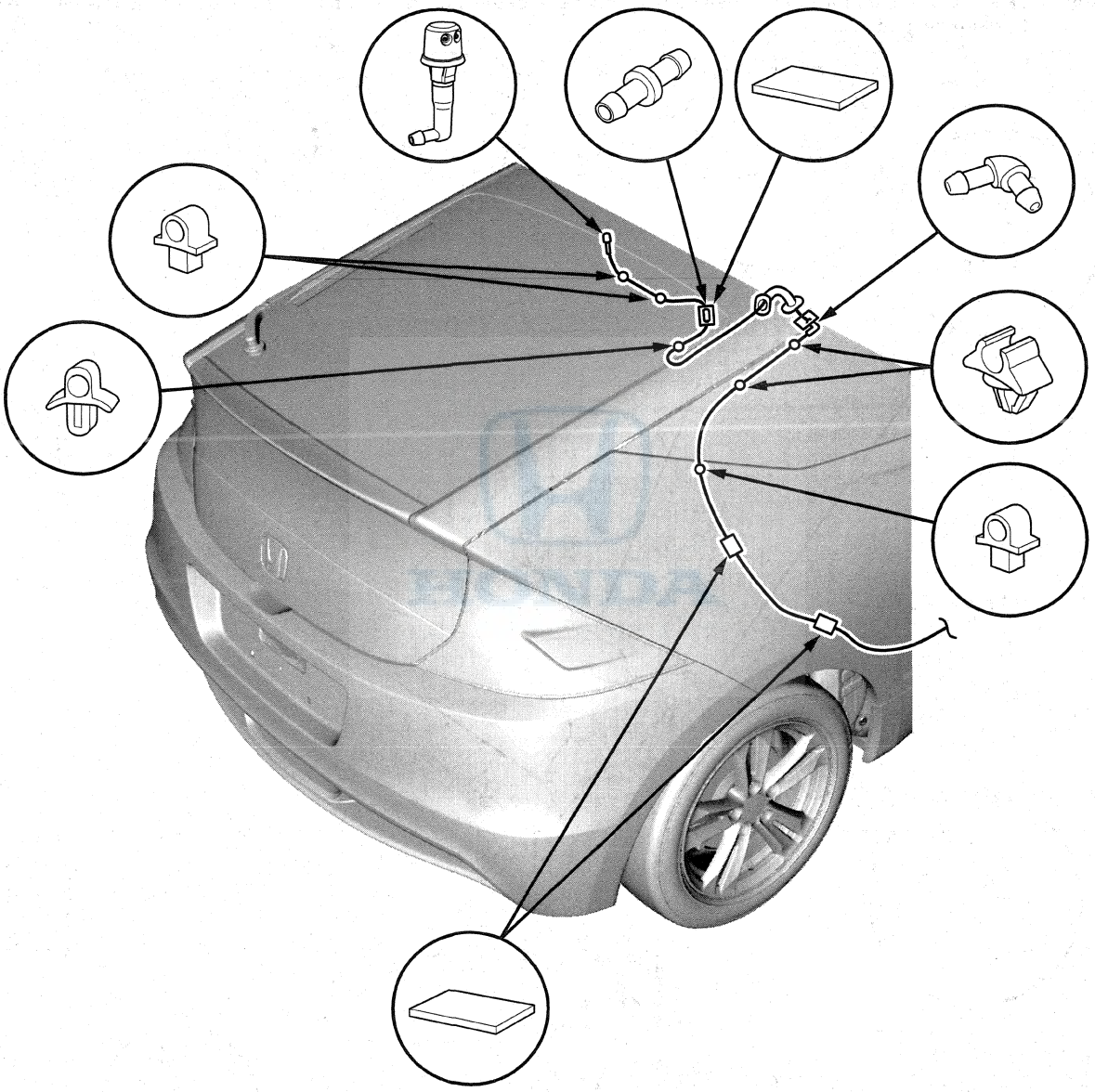
1. Remove the right inner fender (see page 20-162).
2. Remove the washer nozzles and clips, then remove the tubes.
3. To install longer washer tubes routed inside the body, remove and replace them by joining the old tube to the new washer tube with a straight washer tube joint. Then pull the other end of the old washer tube out, pulling the new washer tube into position through the body with it.



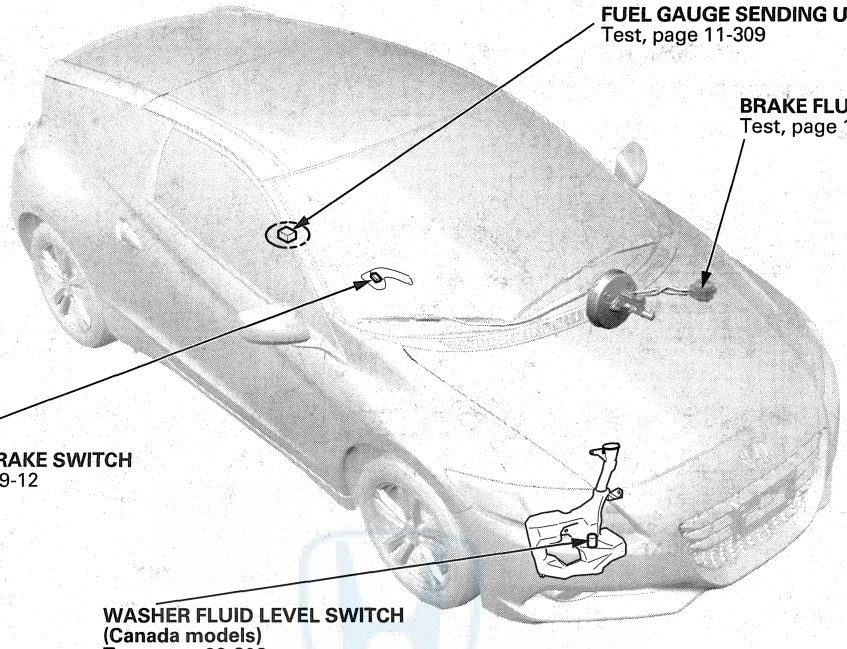
Canada models

(cont'd)

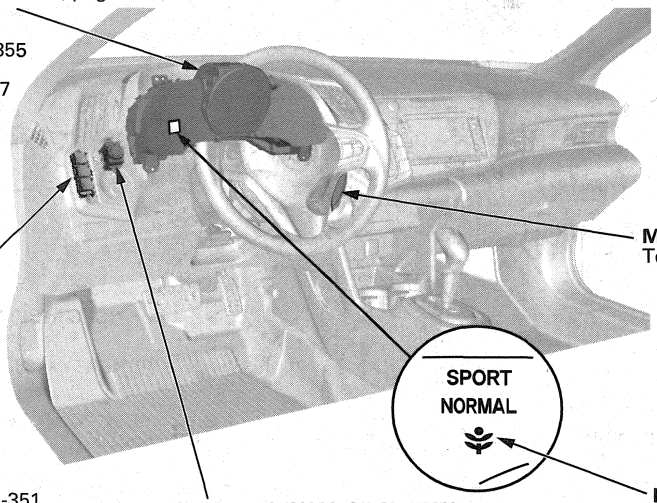
Washer Tube Replacement (cont'd)



Component Location Index



GAUGE CONTROL MODULE
Self-diagnostic Function, page 22-325
Input Test, page 22-347
Rewriting the ODO Data and
Transferring Maintenance Minder
Data to a New Gauge Control Module, page 22-353
Replacement, page 22-354
Outside Air Temperature
Indicator Calibration, page 22-355
Resetting
the Lifetime Points, page 22-357



MULTI-INFORMATION SWITCH
Test/Replacement, page 22-350

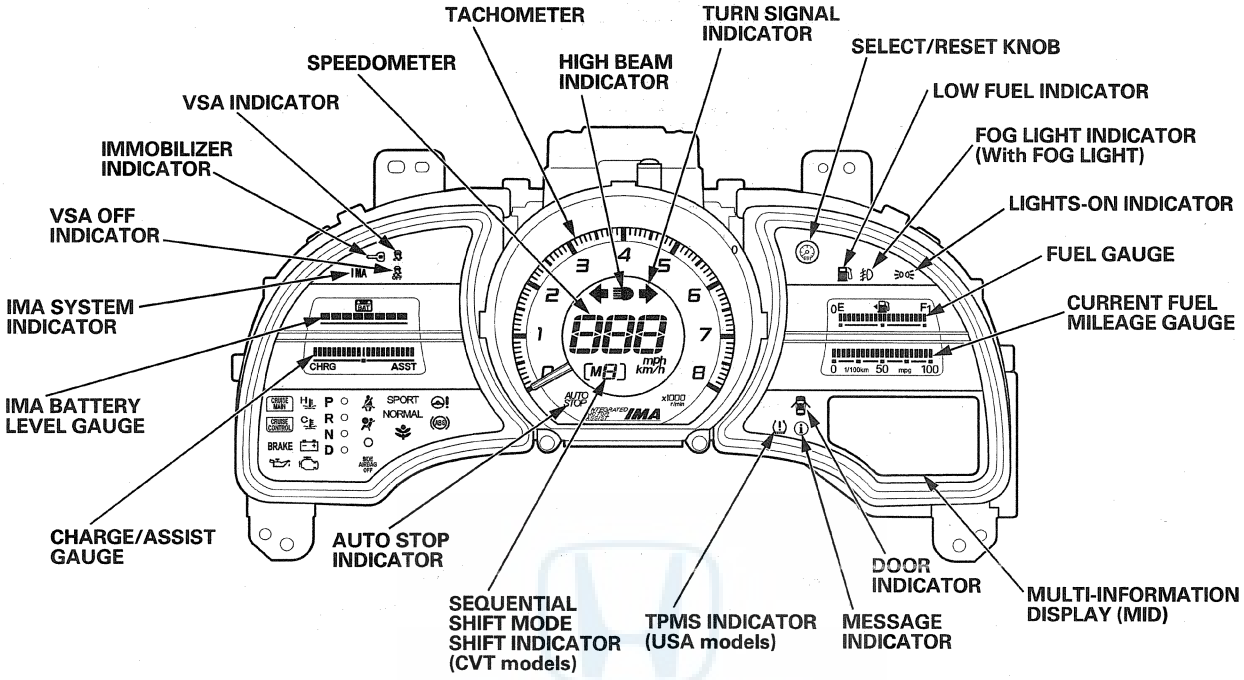
3-MODE SWITCH
Test/Replacement, page 22-351

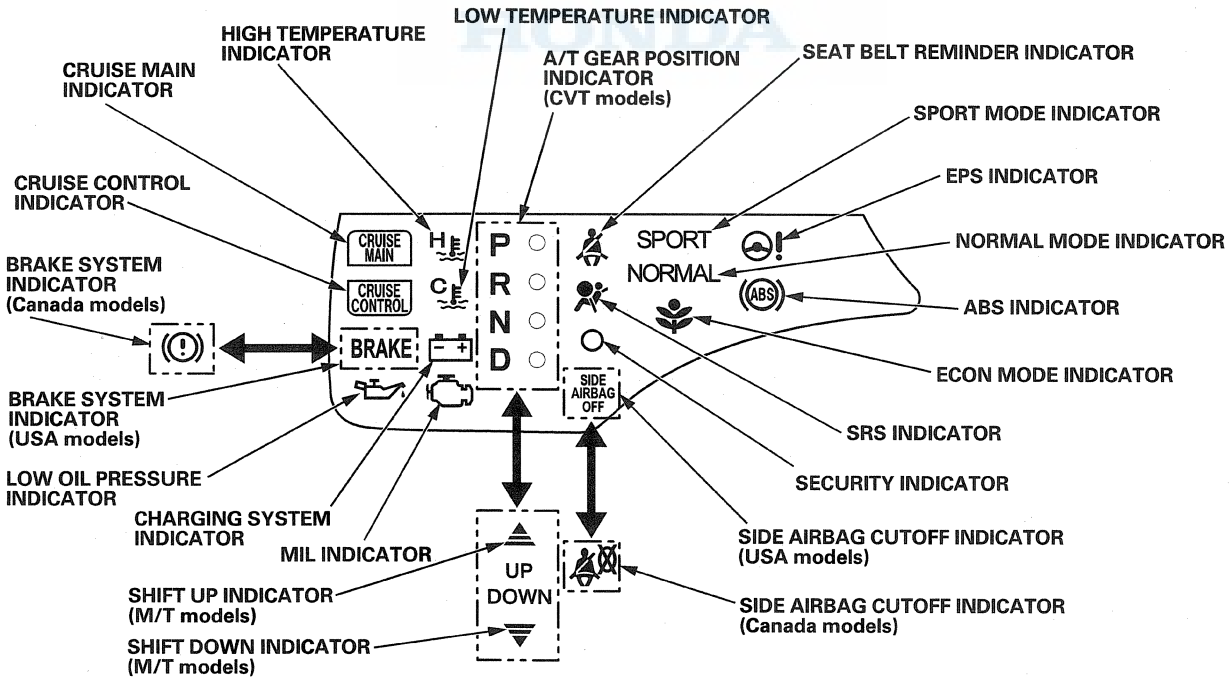
km/h, mph CHANGE SWITCH
Test/Replacement, page 22-352

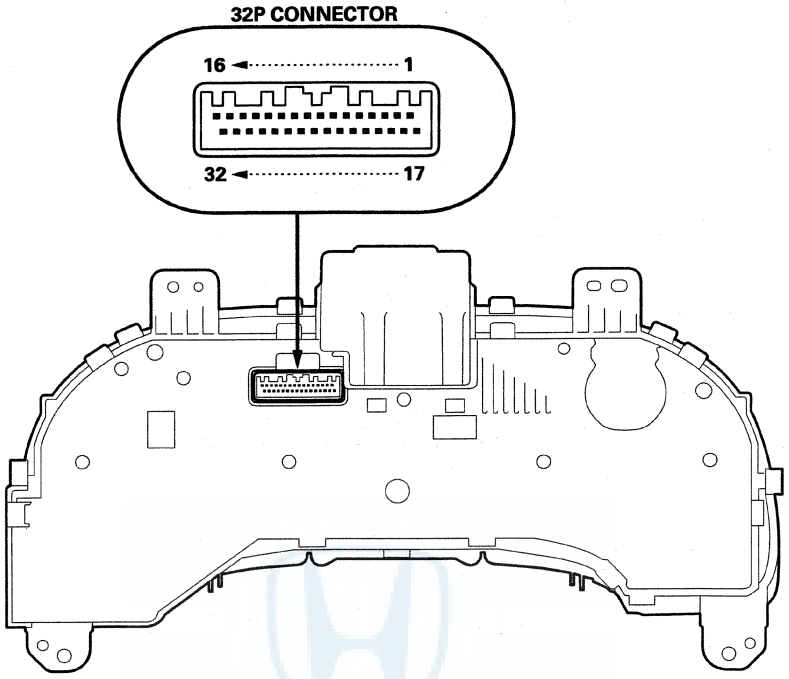
ECON MODE INDICATOR

(cont'd)

Component Location Index (cont'd)





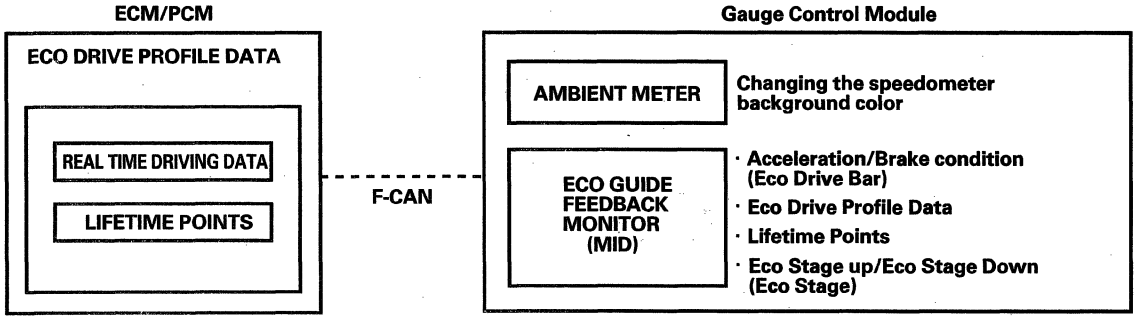

32P CONNECTOR
16
1
32
17

Gauges

System Description

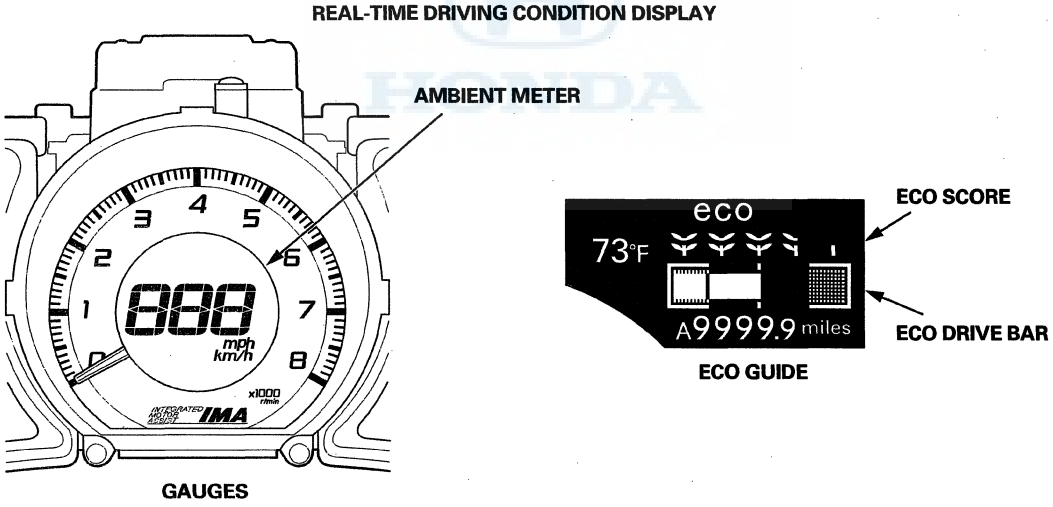
Driver Feedback System

The gauge control module receives the Eco drive profile data that is accumulated in the ECM/PCM via F-CAN (see page 11-75), and the Eco drive information is displayed on the ambient meter and the Eco guide feedback monitor.



Real-Time Driving Information Display

The real-time driving information display shows the Eco drive profile data from the ECM/PCM with the ambient meter and the Eco score and the Eco drive bar in the Eco guide feedback monitor (see page 11-77).

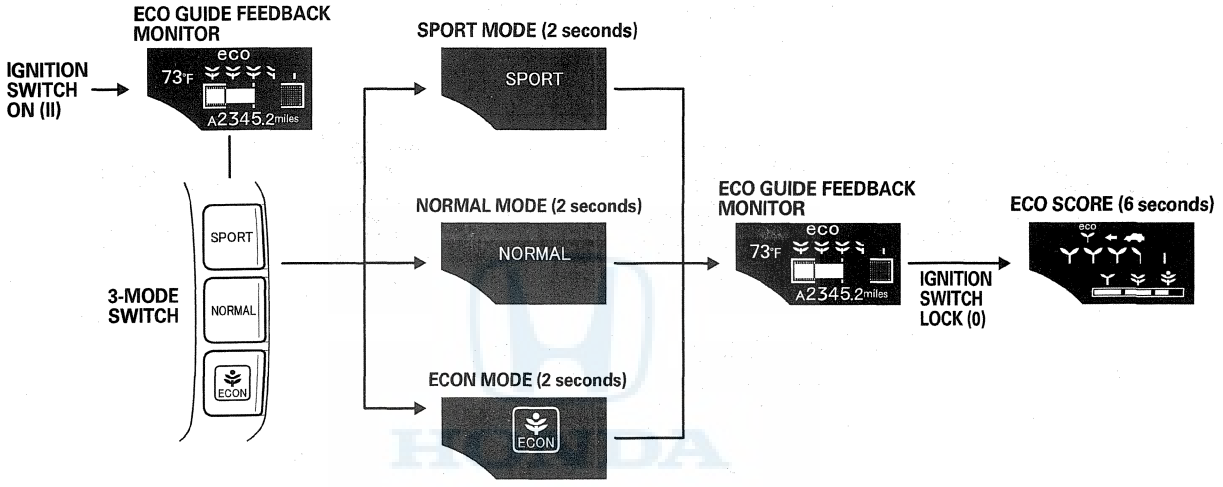


Eco Guide Feedback Monitor on the Multi-Information Display (MID)

When the 3-Mode button is pressed, the selected SPORT/NORMAL/ECON pattern indicator appears for 2 seconds in the MID and the gauge control module indicator comes on.

Then the MID screen returns to the previous screen. Turning the ignition switch to LOCK (0) displays the Eco score (Eco drive profile data) and the Eco stage indicator (Lifetime Points) for 6 seconds.

Note: The Eco score and the Eco stage indicator are not displayed unless the vehicle has idled for 3 minutes or driven at least 218 yards (200meters).

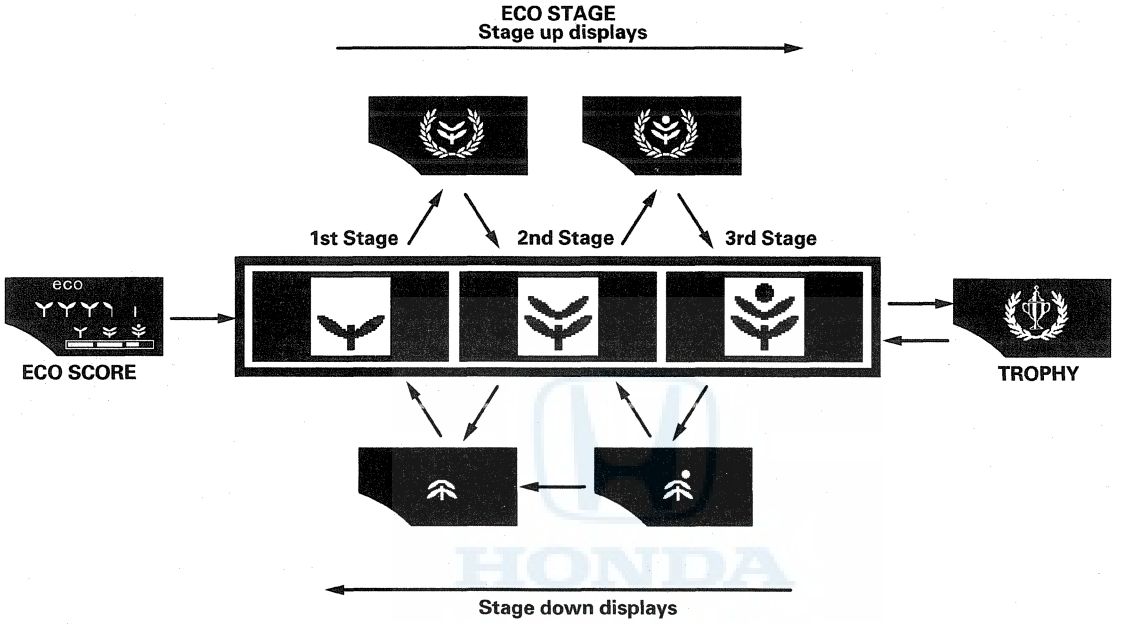


(cont'd)

System Description (cont'd)

Eco stage

When the lifetime points reach a prescribed level, the multi-information display (MID) shows the Eco stage up/down indicator for 6 seconds from when the ignition switch is turned to LOCK (0). The MID then displays the Eco score for 6 seconds. When you advance up a stage, it displays for 12 seconds.



Self-Diagnostic Function

NOTE: Before doing the self-diagnostic function, make sure the No. B1 (15 A) and the No. B22 (7.5 A) fuses in the under-dash fuse/relay box are OK.

The gauge control module has a self-diagnostic function which consists of the following checks:
- The indicator drive circuit check.
- The beeper drive circuit check.
- The ambient meter color variation check.
- The switch input test.
- The multi-information display (MID) check.
- The gauges drive circuit check (tachometer).
- The communication line check of the B-CAN (body-controller area network) communication line and the F-CAN (fast-controller area network) communication line between the gauges.

NOTE:

Indicators are also controlled via the communication lines.

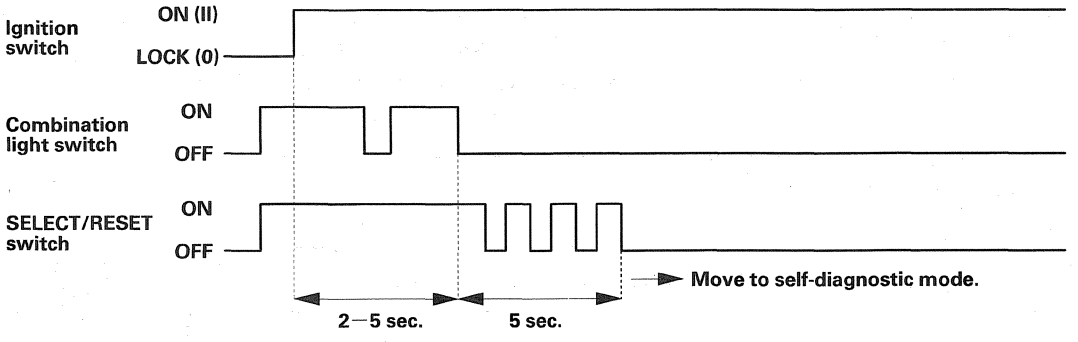
Entering the Self-Diagnostic Function With the HDS

Using the HDS, select BODY ELECTRICAL, GAUGES, then FUNCTION TESTS and do the SELF-DIAGNOSTIC FUNCTION.

Entering the Self-Diagnostic Function (Manual method)

1. Push and hold the SELECT/RESET knob.
2. Turn the combination light switch (≡DO≡) ON.
3. Turn the ignition switch to ON (II).
4. Within 2—5 sec., turn the combination light switch (≡DO≡) OFF, then ON and OFF again.
5. Within 5 sec., release the SELECT/RESET knob, and then repeatedly push and release the knob three times.

NOTE:
- While in the self-diagnostic mode, the dashlights brightness controller operates normally.
- While in the self-diagnostic mode, the SELECT/RESET knob is used to start the Beeper Drive Circuit Test and the Gauge Drive Circuit Check.
- If the vehicle speed exceeds 1 mph (2km) or the ignition switch is turned to LOCK (0), the self-diagnostic mode ends.
- The SEL/RESET button of the multi-information switch can do the same functions as the SELECT/RESET knob.



(cont'd)

Self-Diagnostic Function (cont'd)

The Indicator Drive Circuit Check

When entering the self-diagnostic mode, the following indicators (if equipped) blink:

ABS indicator, VSA OFF indicator, VSA indicator, brake system indicator, A/T gear position indicator, shift up indicator, shift down indicator, charging system indicator, cruise control indicator, cruise main indicator, EPS indicator, high beam indicator, high temperature indicator, immobilizer indicator, lights-on indicator, low temperature indicator, low oil pressure indicator, low fuel indicator, malfunction indicator lamp (MIL), seat belt reminder indicator, security indicator, door indicator, sequential shift mode shift indicator, message indicator, SRS indicator, side airbag cutoff indicator, IMA system indicator, SPORT mode indicator, NORMAL mode indicator, ECON mode indicator, auto stop indicator, low tire pressure indicator, fog light indicator.

The Ambient Meter Color Variation Check

When entering the self-diagnostic mode, the color of the ambient meter varies to red, blue, blue green, and green in that order.

The Beeper Drive Circuit Check

When entering the self-diagnostic mode, the beeper sounds 5 times.

Switch Input Check

After the beeper drive circuit check, you can check the switch input. The beeper sounds continuously when any of the following switch inputs are switched from OFF to ON:
Cruise control main, SET/DECEL, RES/ACCEL, CANCEL switches, VSA OFF switch, multi-information switch (includes SEL/RESET switch, NEXT switch, and PREVIOUS switch), 3-Mode switch, parking brake switch, km/h, mph change switch, select/reset switch.

The Multi-Information Display (MID) Check

When entering the self-diagnostic mode, the word "CHECKING NOW" shows on the MID, and blinks 5 times, then a communication check result is displayed.

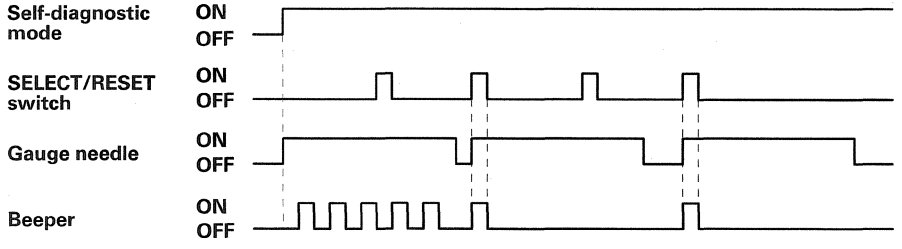
The Gauge Drive Circuit Check

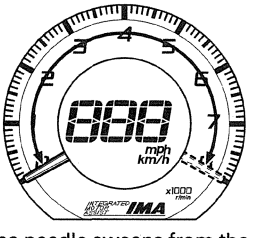
When entering the self-diagnostic mode, the tachometer needle sweeps from the minimum position to maximum position, then returns to the minimum position.

NOTE:

After the beeper stops sounding and the tachometer needle returns to the minimum position, pressing the SELECT/RESET knob starts the Beeper Drive Circuit Check (one beep) and the Gauge Drive Circuit Check again.

The check cannot be started again until the tachometer needle returns to the minimum position.





The needle sweeps from the minimum position to the maximum position, then returns to the minimum position.

If the needle fails to sweep, or the beeper does not sound, replace the gauge control module (see page 22-354).

The Communication Line Check

While in the self-diagnostic mode, the Communication Line Check starts after the Multi-Information Display (MID) Check.



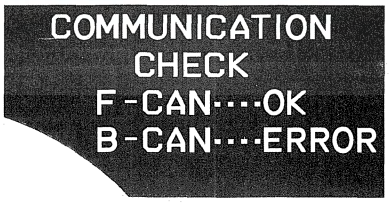
If the communication lines are OK, the word "OK" will be indicated on the multi-information display (MID). If there is a communication line error, the word "ERROR" will be indicated on the MID.

Indication pattern

There is a malfunction in the communication line between the F-CAN and the gauge control module. The B-CAN is OK at this time. Check for DTCs in the ECM/PCM, and troubleshoot any DTCs found.



There is a malfunction in the communication line between the B-CAN and the gauge control module. The F-CAN line is OK at this time.



There is a malfunction in the communication line between the gauge control module and the F-CAN and the B-CAN. Check for DTCs in the ECM/PCM, and troubleshoot any DTCs found.

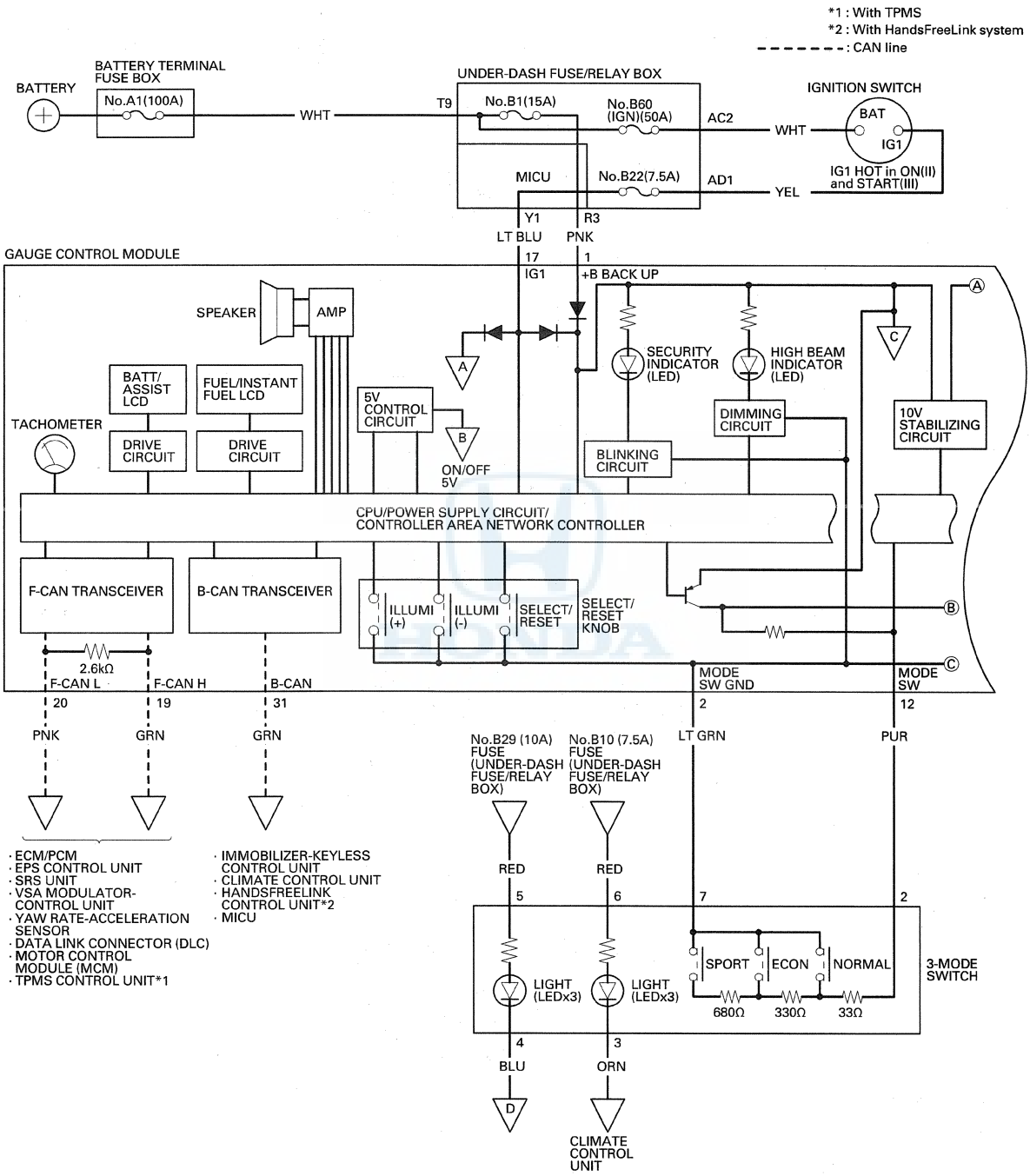


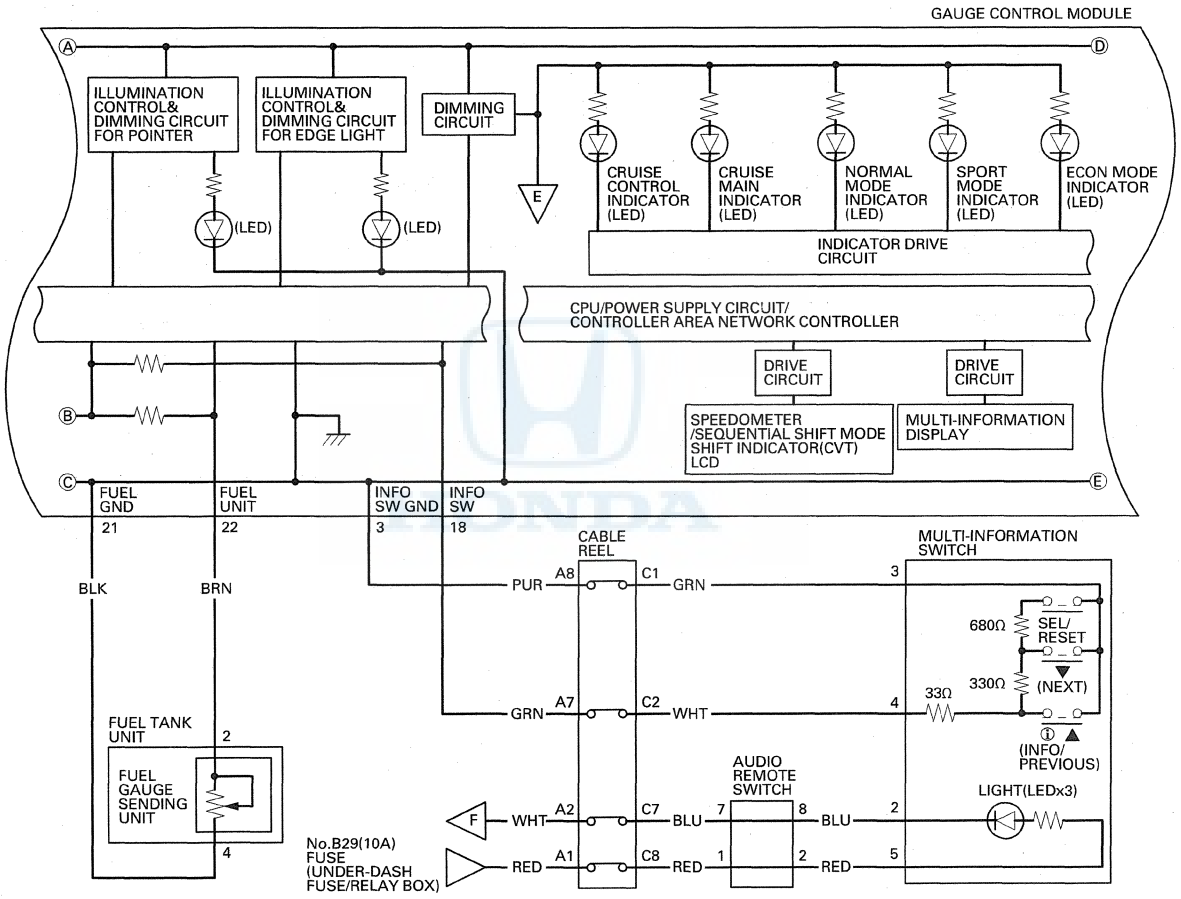
Ending the self-diagnostic function

Turn the ignition switch to LOCK (0).

NOTE: If the vehicle speed exceeds 1 mph (2 km/h), the self-diagnostic function ends.

Circuit Diagram

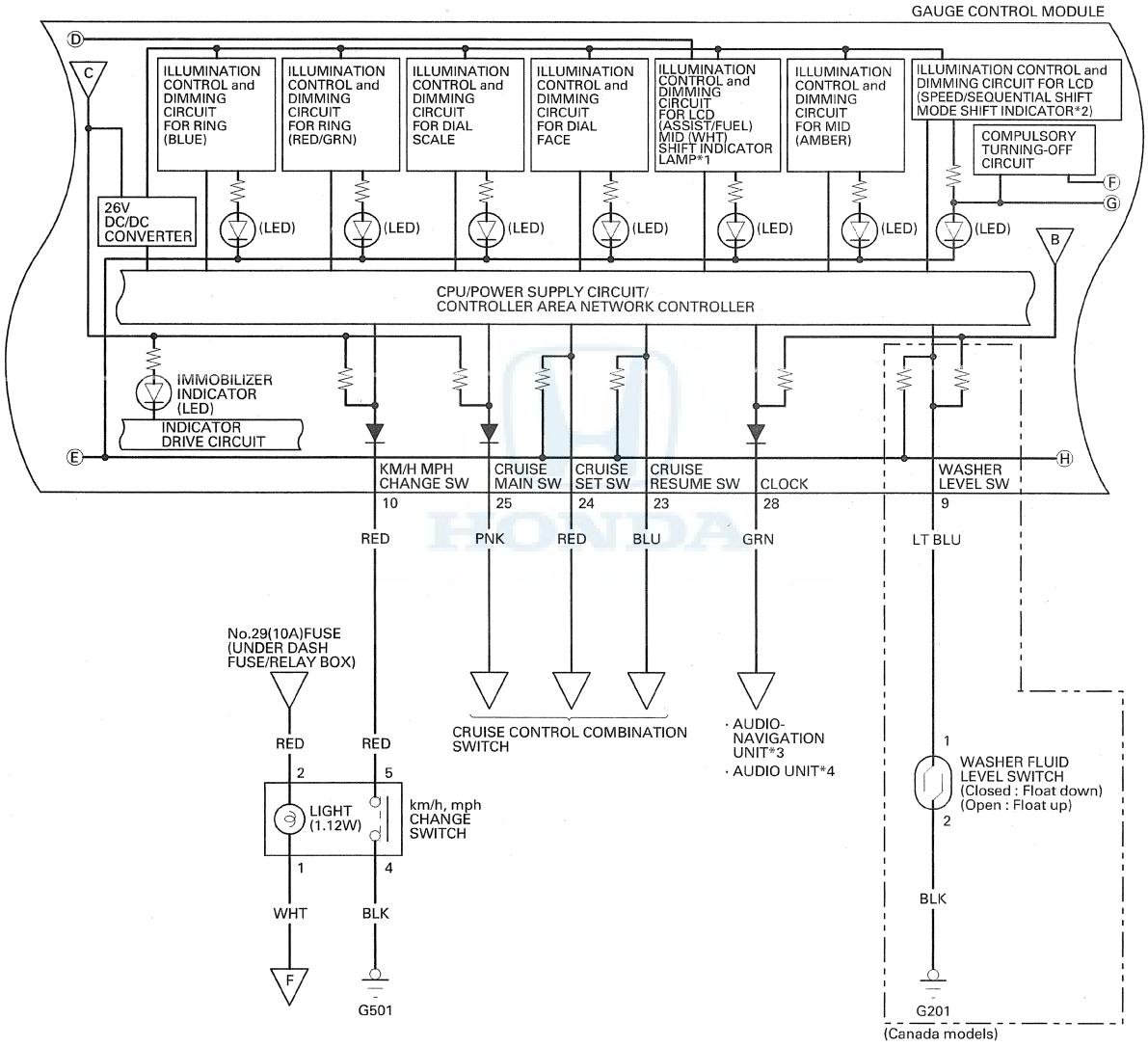



GAUGE CONTROL MODULE
ILLUMINATION CONTROL& DIMMING CIRCUIT FOR POINTER
ILLUMINATION CONTROL& DIMMING CIRCUIT FOR EDGE LIGHT
DIMMING CIRCUIT
(LED)
(LED)
CRUISE CONTROL INDICATOR (LED)
CRUISE MAIN INDICATOR (LED)
NORMAL MODE INDICATOR (LED)
SPORT MODE INDICATOR (LED)
ECON MODE INDICATOR (LED)
INDICATOR DRIVE CIRCUIT
CPU/POWER SUPPLY CIRCUIT/ CONTROLLER AREA NETWORK CONTROLLER
DRIVE CIRCUIT
DRIVE CIRCUIT
SPEEDOMETER /SEQUENTIAL SHIFT MODE SHIFT INDICATOR(CVT) LCD
MULTI-INFORMATION DISPLAY
FUEL GND
FUEL UNIT
INFO SW GND
INFO SW
21
22
3
18
BLK
BRN
CABLE REEL
MULTI-INFORMATION SWITCH
PUR
GRN
WHT
RED
BLU
680Ω
330Ω
33Ω
SEL/ RESET
(NEXT)
(INFO/ PREVIOUS)
LIGHT(LEDx3)
AUDIO REMOTE SWITCH
FUEL TANK UNIT
FUEL GAUGE SENDING UNIT
No.B29(10A) FUSE (UNDER-DASH FUSE/RELAY BOX)

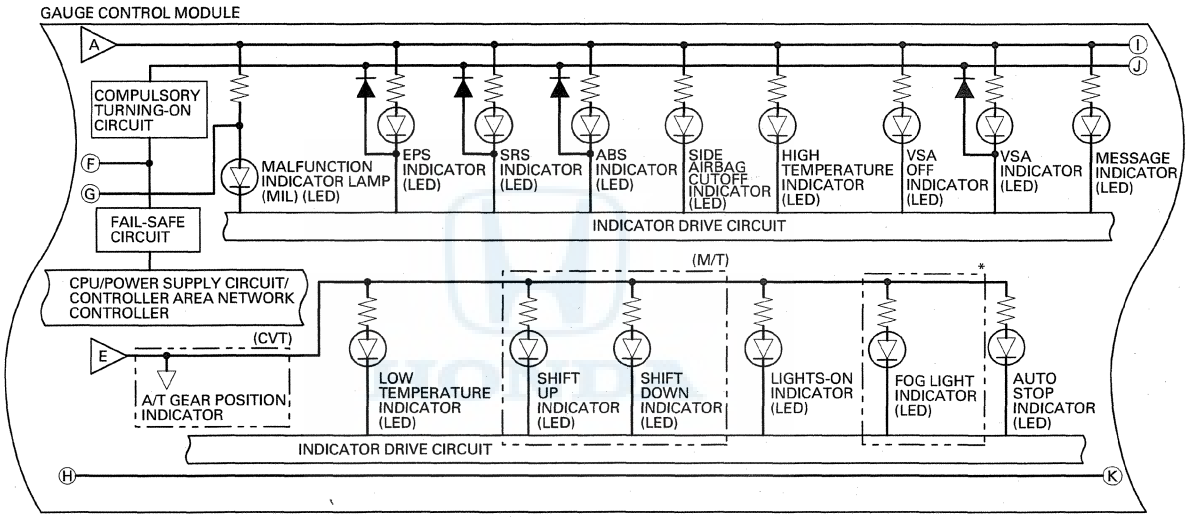
(cont'd)

Circuit Diagram (cont'd)

*1: M/T model
*2: CVT model
*3: With navigation
*4: Without navigation



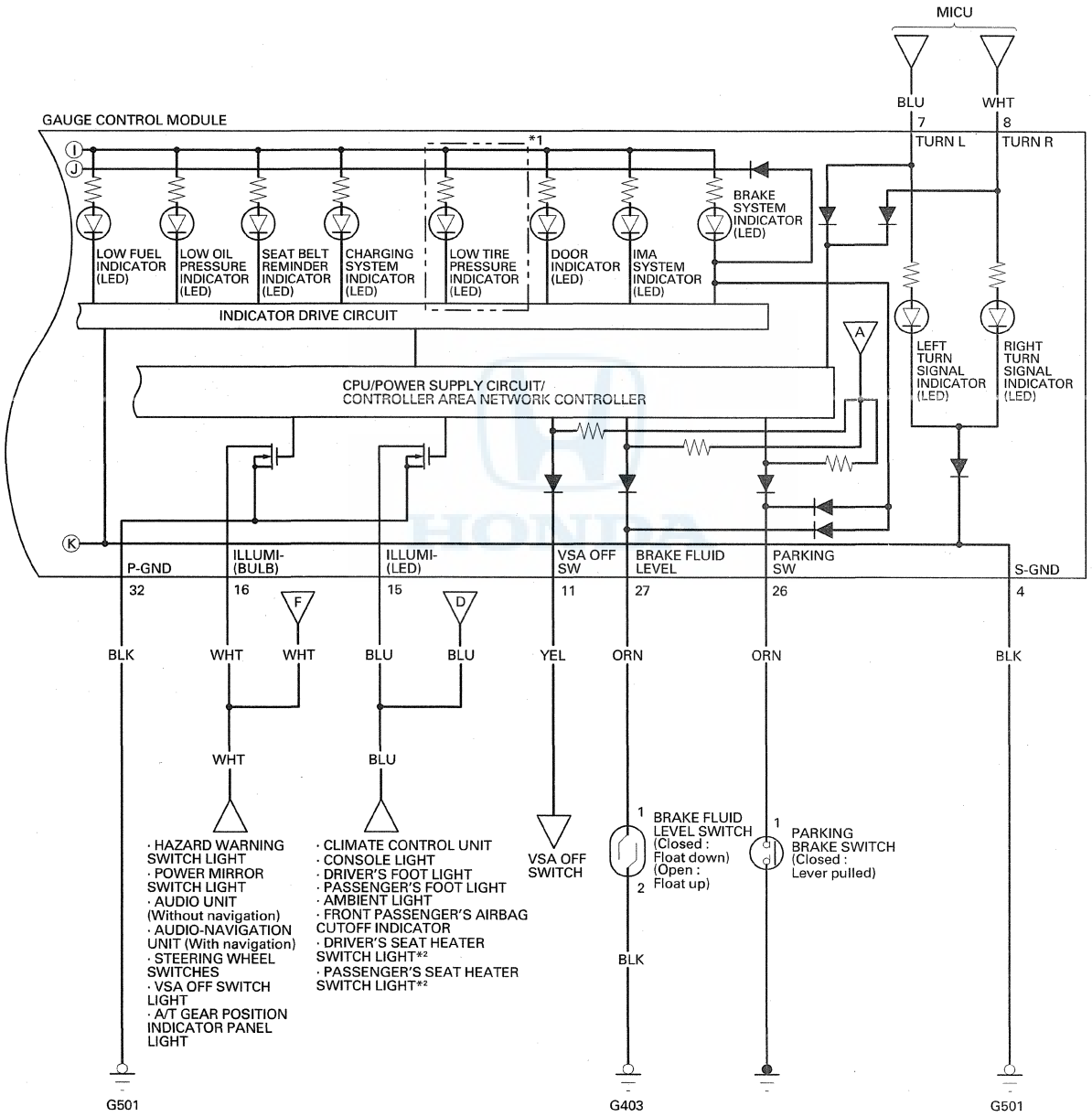
* : With fog lights



(cont'd)

Circuit Diagram (cont'd)

*1 : With TPMS
*2 : With seat heater



DTC Troubleshooting

DTC B1152: Gauge Control Module Internal (EEPROM) Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for DTCs with the HDS.

   Is DTC B1152 indicated?

   YES–Replace the gauge control module (see page 22-354).■

   NO–Intermittent failure, the gauge control module is OK at this time.■

DTC B1175: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Malfunction

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back ON (II).
3. Wait for at least 30 seconds.
4. Check for DTCs with the HDS.

   Is DTCs B1175 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the fuel tank unit.■

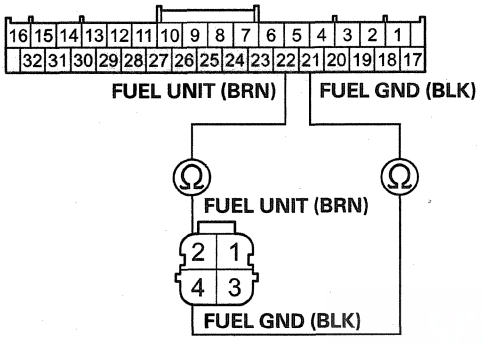
5. Turn the ignition switch to LOCK (0).
6. Disconnect the fuel tank unit 4P connector.
7. Disconnect the gauge control module 32P connector.

(cont'd)

DTC Troubleshooting (cont'd)

8. Check for continuity between gauge control module 32P connector terminals No. 21 and No. 22 and fuel tank unit 4P connector terminals No. 4 and No. 2 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



FUEL TANK UNIT 4P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 9.

NO–Repair an open or high resistance in the wire.■

9. Do the fuel gauge sending unit test (see page 11-309).

Is the fuel gauge sending unit OK?

YES–Replace the gauge control module (see page 22-354).■

NO–Replace fuel gauge sending unit (see page 11-305).■

DTC B1176: Fuel Level Sensor (Fuel Gauge Sending Unit) Circuit Short

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 30 seconds.
4. Check for DTCs with the HDS.

   Is DTC B1176 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the fuel level sensor circuit is OK at this time. Check for worn/missing insulation or an internal short in the wire.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the fuel tank unit 4P connector.
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to ON (II).
9. Wait for at least 30 seconds.
10. Check for DTCs with the HDS.

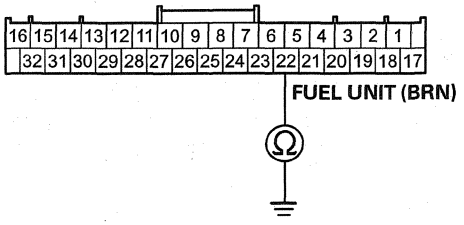
    Is DTC B1176 indicated?

    YES–Go to step 11.

    NO–Replace the fuel gauge sending unit (see page 11-305).■
11. Turn the ignition switch to LOCK (0).
12. Disconnect the gauge control module 32P connector.

13. Check for continuity between gauge control module 32P connector terminal No. 22 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

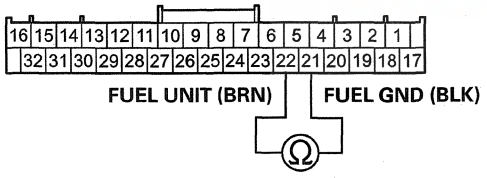
Is there continuity?

YES–Repair a short in the wire between the gauge control module and the fuel tank unit.■

NO–Go to step 14.

14. Check for continuity between gauge control module 32P connector terminals No. 21 and No. 22.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to ground in the wire between the gauge control module and the fuel gauge sending unit.■

NO–Replace the gauge control module (see page 22-354).■

DTC U0029: F-CAN Communication Line Error (BUS OFF)

NOTE:

- SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.
- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- Make sure the HDS communicates with the ECM/PCM and other vehicle systems. If it does not, go to DLC Circuit Troubleshooting (see page 11-383).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0029 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections, or worn/shorted wires. If the connections are good, check the battery condition (see page 22-85) and the charging system.■
5. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

6. Disconnect the appropriate connector at each control unit in the table one at a time. Clear the DTC, then recheck for DTCs after each unit is disconnected.

Control Unit	Connector
ECM/PCM	Connector A (44P)
SRS unit	Connector A (39P)
Gauge control module	32P connector
VSA modulator-control unit	32P connector
EPS control unit	Connector A (11P)
Yaw rate-acceleration sensor	4P connector
Motor control module (MCM)	Connector A (31P)
TPMS control unit*	20P connector

* : With TPMS

Is DTC U0029 indicated after each individual unit was disconnected?

YES–Go to step 7.

NO–Replace the control unit that was disconnected when DTC U0029 did not set.■

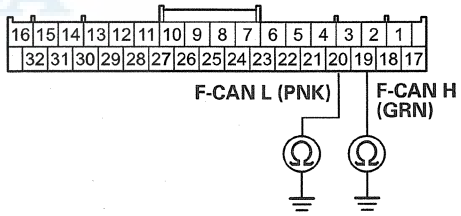
7. Turn the ignition switch to LOCK (0).
8. Disconnect all the control unit connectors in the following table.

Control Unit	Connector
ECM/PCM	Connector A (44P)
SRS unit	Connector A (39P)
Gauge control module	32P connector
VSA modulator-control unit	32P connector
EPS control unit	Connector A (11P)
Yaw rate-acceleration sensor	4P connector
Motor control module (MCM)	Connector A (31P)
TPMS control unit*	20P connector

* : With TPMS

9. Disconnect the HDS from the data link connector (DLC).
10. Check for continuity between body ground and gauge control module 32P connector terminal No. 19 and No. 20 individually.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

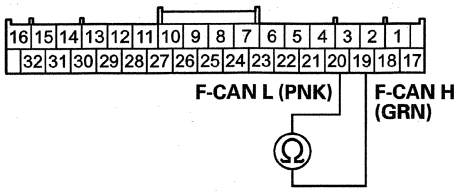
Is there continuity?

YES–Repair a short to ground in the wire.■

NO–Go to step 11.

11. Check for continuity between gauge control module 32P connector terminals No. 19 and No. 20.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short in the F-CAN wire.■

NO–Replace the gauge control module (see page 22-354).■

DTC U0100: Gauge Control Module Lost Communication With ECM/PCM

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0100 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the F-CAN communication line is OK at this time. Check for DTCs in the ECM/PCM with the HDS. If F-CAN DTCs are present, check for loose or poor connections at the gauge control module and the ECM/PCM. If the connections are good, check the battery condition (see page 22-85) and the charging system, then clear all DTCs.■■
5. Check for DTCs in the ECM/PCM with the HDS.

   Are any DTCs indicated?

   YES–Go to the ECM/PCM indicated DTCs troubleshooting, then recheck.■

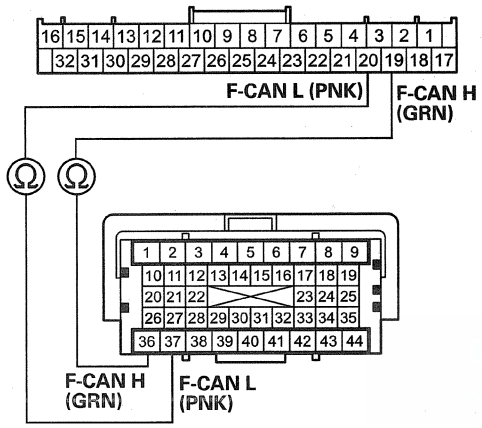
   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector.
8. Jump the SCS line with the HDS.
9. Disconnect ECM/PCM connector A (49P).

(cont'd)

DTC Troubleshooting (cont'd)

10. Check for continuity between gauge control module 32P connector terminals No. 19 and No. 20 and ECM/PCM connector A (44P) terminals No. 36 and No. 37 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Update the ECM/PCM if it does not have the latest software (see page 11-207), or substitute a known-good ECM/PCM (see page 11-7), and recheck. If the indication goes away, replace the original ECM/PCM (see page 11-209). If the DTC is still present, replace the gauge control module (see page 22-354).■

NO–Repair an open or poor connection in the wire between the ECM/PCM and the gauge control module..■

DTC U0111: Gauge Control Module Lost Communication With Motor Control Module (BATT message)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0111 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the motor control module (MCM).■
5. Check for IMA system DTCs with the HDS.

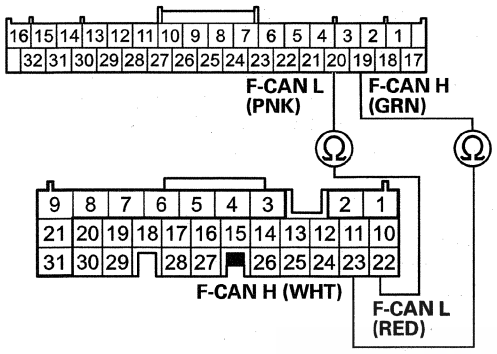
   Are any DTCs indicated?

   YES–Go to the indicated DTCs troubleshooting, then recheck.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector.
8. Disconnect motor control module (MCM) connector A (31P).

9. Check for continuity between gauge control module 32P connector terminal No. 19 and No.20 and motor control module (MCM) connector A (31P) terminal No. 23 and No. 22 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



MOTOR CONTROL MODULE (MCM) CONNECTOR A (31P)
Wire side of female terminals

Is there continuity?

YES–Go to step 10.

NO–Repair an open or poor connection in the wire between the motor control module (MCM) and the gauge control module.■

10. Reconnect the gauge control module 32P connector and motor control module (MCM) connector A (31P).
11. Clear the DTCs with the HDS.
12. Turn the ignition switch to LOCK (0) and then back to ON (II).
13. Wait for at least 6 seconds.
14. Check for DTCs with the HDS.

Is DTC U0111 indicated?

YES–Replace the gauge control module (see page 22-354).■

NO–Replace the motor control module (MCM) (see page 12-212).■

DTC U0122: Gauge Control Module Lost Communication With VSA Modulator-Control Unit (VSA Message)

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- If the HDS does not communicate with the VSA modulator-control unit, the VSA indicator stays on, and no VSA DTCs are stored, go to symptom troubleshooting for ABS indicator, brake system indicator, and VSA indicator do not go off, and no DTCs are stored (see page 19-118).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U0122 indicated?

YES–Go to step 5.

NO–Intermittent failure, the F-CAN communication line is OK at this time. Check for DTCs in the ECM/PCM and the VSA modulator-control unit with the HDS. If F-CAN DTCs are present, check for a loose VSA ground or poor connections at the VSA modulator-control unit or gauge control module. If the connections are good, check the battery condition (see page 22-85) and the charging system, then clear all DTCs.■

5. Check for VSA system DTCs with the HDS.

Are any DTCs indicated?

YES–Go to the indicated DTCs troubleshooting, then recheck.■

NO–Go to step 6.

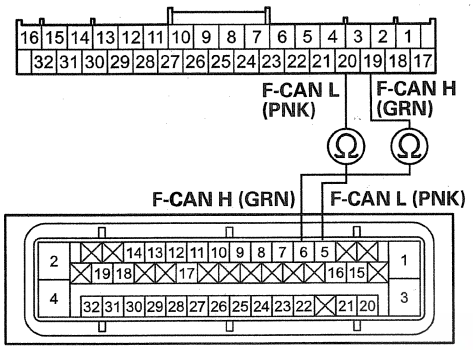
6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector.
8. Disconnect the VSA modulator-control unit 32P connector.

(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between gauge control module 32P connector terminal No. 19 and No. 20 and VSA modulator-control unit 32P connector terminal No. 6 and No. 5 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



VSA MODULATOR-CONTROL UNIT 32P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Check for poor connections, power, and ground to the VSA modulator-control unit. If the VSA modulator-control unit was updated and symptom is still present, replace the original VSA modulator-control unit. If the DTC is still present, replace the gauge control module (see page 22-354).■

NO–Repair an open or poor connection in the F-CAN wire between the VSA modulator-control unit and the gauge control module.■

DTC U0127: Gauge Control Module Lost Communication With TPMS Control Unit (TPMS message)

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- If the HDS does not communicate with the TPMS control unit, the TPMS indicator does not go off, and no TPMS DTCs are stored, go to symptom troubleshooting for TPMS indicator does not go off, and no DTCs are stored (see page 18-65).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0127 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the TPMS control unit.■
5. Check for TPMS DTCs with the HDS.

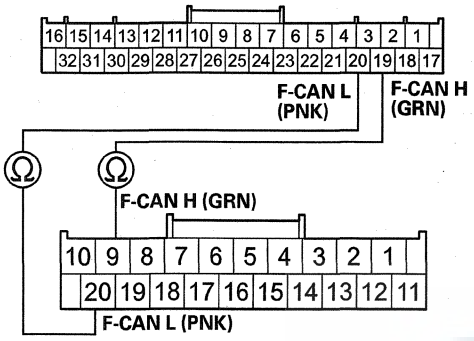
   Are any DTCs indicated?

   YES–Go to the TPMS indicated DTCs troubleshooting, then recheck.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector.
8. Disconnect the TPMS control unit 20P connector.

9. Check for continuity between gauge control module 32P connector terminals No. 19 and No. 20 and TPMS control unit 20P connector terminals No. 9 and No. 20 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



TPMS CONTROL UNIT 20P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good TPMS control unit, and recheck. If the indication goes away, replace the original TPMS control unit (see page 18-68). If the DTC is still present, replace the gauge control module (see page 22-354).■

NO–Repair an open or high resistance in the wire poor connection in the F-CAN wire between the TPMS control unit and gauge control module.■

DTC U0131: Gauge Control Module Lost Communication With EPS Unit (EPS Message)

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- If the HDS does not communicate with the EPS control unit, the EPS indicator stays on, and no EPS DTCs are stored, go to symptom troubleshooting for EPS indicator does not go off, and no DTCs are stored (see page 17-60).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0131 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the EPS control unit.■
5. Check for EPS DTCs with the HDS (see page 17-22).

   Are any DTCs indicated?

   YES–Go to the indicated DTCs troubleshooting, then recheck.■

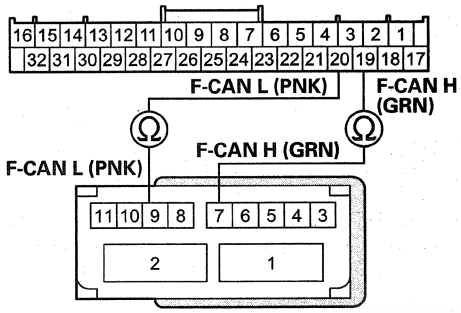
   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Disconnect the gauge control module 32P connector.
8. Disconnect EPS control unit connector A (11P).

(cont'd)

DTC Troubleshooting (cont'd)

9. Check for continuity between gauge control module 32P connector terminal No. 19 and No. 20 and EPS control unit connector A (11P) terminal No. 7 and No. 9 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



EPS CONTROL UNIT CONNECTOR A (11P)
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good EPS control unit, and recheck. If the indication goes away, replace the original EPS control unit (see page 17-80). If the DTC is still present, replace the gauge control module (see page 22-354).■

NO–Repair an open wire or poor connection in the wire between the EPS control unit and the gauge control module.■

DTC U0151: Gauge Control Module Lost Communication With SRS Unit (SRS Message)

NOTE:

- SRS components are located in this area. Review the SRS component locations (see page 24-11) and precautions and procedures (see page 24-13) before doing repairs or servicing.
- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-126).
- If the HDS does not communicate with the SRS unit, the SRS indicator stays on, go to symptom troubleshooting for SRS indicator does not go off, but no DTCs are stored, or cannot be read (see page 24-160).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

   Is DTC U0151 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the SRS unit.■
5. Check for SRS DTCs with the HDS (see page 24-23).

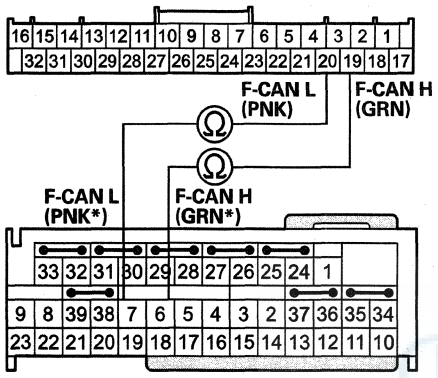
   Are any DTCs indicated?

   YES–Go to the SRS indicated DTCs troubleshooting, then recheck.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Do the battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes.
8. Disconnect the gauge control module 32P connector.
9. Disconnect SRS unit connector A (39P).

10. Check for continuity between gauge control module 32P connector terminal No. 19 and No. 20 and SRS unit connector A (39P) terminal No. 6 and No. 7 respectively.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



SRS UNIT CONNECTOR A (39P)
Wire side of female terminals

*: Wire color may be substituted for SRS circuits

Is there continuity?

YES–Substitute a known-good SRS unit, and recheck. If the indication goes away, replace the original SRS unit (see page 24-185). If the DTC is still present, replace the gauge control module (see page 22-354).■

NO–Repair an open or poor connection in the wire between the SRS unit and the gauge control module■

DTC U1281: Lost Communication With MICU (MICU frame)

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Wait for at least 6 seconds.
4. Check for DTCs with the HDS.

Is DTC U1281 indicated?

YES–Faulty gauge control module; replace the gauge control module (see page 22-354).■

NO–Intermittent failure, the system is OK at this time. Check for loose or poor connections between the gauge control module and the MICU.■

Symptom Troubleshooting Index

Symptom	Possible cause
3-Mode drive system does not change when the mode button is pressed	Symptom troubleshooting (see page 22-345)

Symptom Troubleshooting

3-Mode drive system does not change when the mode button is pressed

1. Turn the ignition switch to ON (II).
2. Check the indication of SPORT, NORMAL, and ECON mode indicators.

   Is there indication?

   YES–Go to step 4.

   NO–Go to step 3.
3. Check the indication of MID in gauge control module.

   Does the MIL and/or EPS indicated?

   YES–Go to the indicated DTCs troubleshooting.■

   NO–Go to the DTC U0100 troubleshooting (see page 22-337).■
4. Press each button of the 3-Mode switch, and check the indication in the MID.

   Is the indication changed when the switch is pressed?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 5.
5. Select GAUGES from the BODY ELECTRICAL menu, and enter the DATA LIST with the HDS.
6. Check the ON/OFF information of the SPORT SWITCH, NORMAL SWITCH, and ECON SWITCH in the DATA LIST.

   Does each switch indicate ON when it is pressed?

   YES–Replace the gauge control module (see page 22-354).■

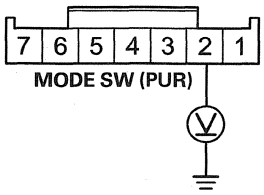
   NO–Go to step 7.
7. Turn the ignition switch to LOCK (0).
8. Do the 3-Mode switch test (see page 22-351).

   Is the 3-Mode switch OK?

   YES–Go to step 9.

   NO–Replace the 3-Mode switch (see page 22-351).■
9. Disconnect the 3-Mode switch 7P connector.
10. Measure the voltage between 3-Mode switch 7P connector terminal No. 2 and body ground.

3-MODE SWITCH 7P CONNECTOR



Wire side of female terminals

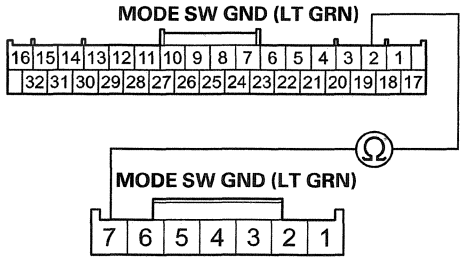
Is there battery voltage?

YES–Go to step 11.

NO–Go to step 13.

11. Disconnect the gauge control module 32P connector.
12. Check for continuity between gauge control module 32P connector terminal No. 2 and 3-Mode switch 7P connector terminal No. 7.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



3-MODE SWITCH 7P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the gauge control module (see page 22-354).■

NO–Repair an open or high resistance in the wire.■

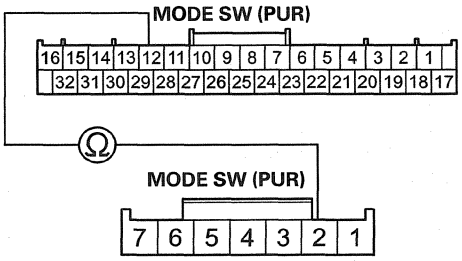
13. Disconnect the gauge control module 32P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

14. Check for continuity between gauge control module 32P connector terminal No. 12 and 3-Mode switch 7P connector terminal No. 2.

GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals



3-MODE SWITCH 7P CONNECTOR
Wire side of female terminals

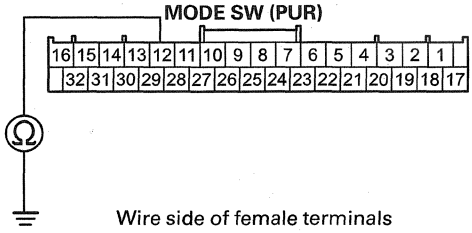
Is there continuity?

YES–Go to step 15.

NO–Repair an open or high resistance in the wire.■

15. Check for continuity between the gauge control module 32P connector terminal No. 12 and body ground.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

Is there continuity?

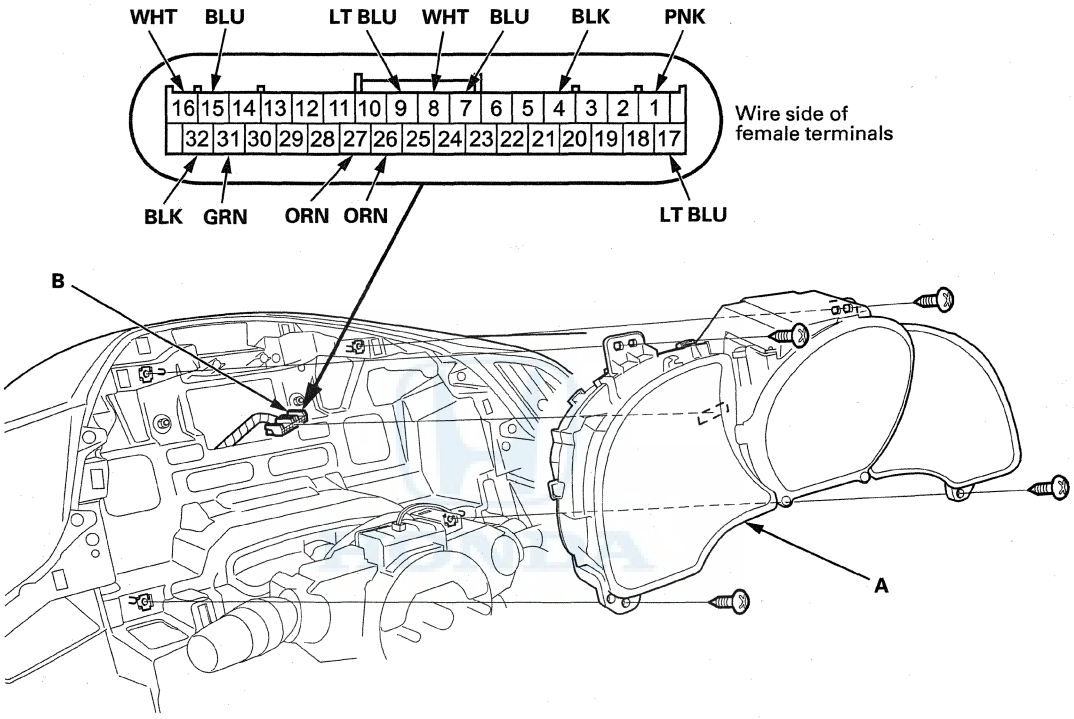
YES–Repair a short to ground in the wire.■

NO–Replace the gauge control module (see page 22-354).■

Gauge Control Module Input Test

NOTE: Before testing, do the gauge control module self-diagnostic function (see page 22-325), and make sure the B-CAN communication line is OK.

1. Turn the ignition switch to LOCK (0).
2. Remove the gauge control module (A) (see page 22-354), and disconnect the 32P connector (B) from it.



3. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 4.

(cont'd)

Gauge Control Module Input Test (cont'd)

4. With the connector still disconnected, do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 5.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
16	WHT	Combination light switch ON	Attach to ground with a jumper wire: The A/T gear position indicator panel light, hazard warning switch light, power mirror switch light, audio unit light, audio-navigation unit light (if equipped), and VSA OFF switch light should come on full bright.	• Faulty bulbs • An open or high resistance in the wire • Open or high resistance to ground (G501) to terminal No. 4
15	BLU	Combination light switch ON	Attach to ground with a jumper wire: The front passenger's airbag cutoff indicator, steering wheel switches light, and climate control unit light should come on full bright.	• Faulty LEDs • An open or high resistance in the wire • Open or high resistance to ground (G501) to terminal No. 4
8	WHT	Ignition switch ON (II), turn signal switch in RIGHT	Measure the voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty MICU • Faulty combination light switch • An open or high resistance in the wire
7	BLU	Ignition switch ON (II), turn signal switch in LEFT	Measure the voltage to ground: There should be battery voltage when the lights are flashing.	• Faulty MICU • Faulty combination light switch • An open in the wire
31	GRN	Disconnect under-dash fuse/relay box connector Y (16P)	Check for continuity between terminal No. 31 and under-dash fuse/relay box connector Y (16P) terminal No. 6: There should be continuity.	An open or high resistance in the B-CAN wire
		Disconnect the immobilizer control unit 7P connector	Check for continuity to ground: There should be no continuity.	An open or high resistance in the B-CAN wire

5. Reconnect the 32P connector to the gauge control module, and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, the gauge control module must be faulty; replace it (see page 22-354).

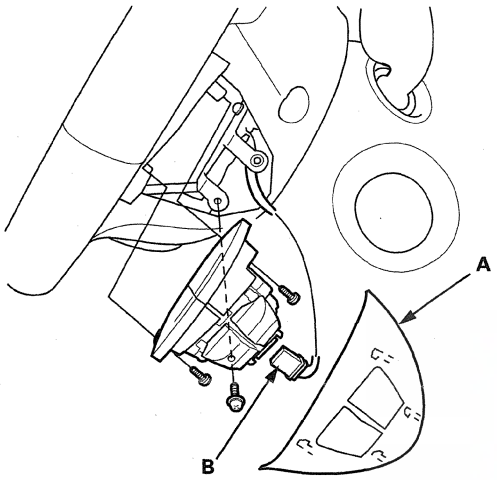
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
1	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
17	LT BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B22 (7.5 A) fuse in the under-dash fuse/relay box • Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
32	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
4	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
9*	LT BLU	Ignition switch ON (II), washer fluid is half or more in the washer reservoir	Measure the voltage to ground: There should be about 5 V.	• Faulty washer fluid level switch • A short to ground in the wire
		Ignition switch ON (II), washer fluid is empty in the washer reservoir	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G201) or an open in the ground wire • Faulty washer fluid level switch • An open or high resistance in the wire
27	ORN	Ignition switch ON (II), brake fluid is full in the reservoir	Measure the voltage to ground: There should be about 5 V.	• Faulty brake fluid level switch • A short to ground in the wire
		Ignition switch ON (II), brake fluid is low in the reservoir	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G403) or an open in the ground wire • Faulty brake fluid level switch • An open or high resistance in the wire
26	ORN	Ignition switch ON (II), parking brake lever pulled	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty parking brake switch • An open or high resistance in the wire
		Ignition switch ON (II), parking brake lever released	Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • A short to ground in the wire

*: Canada models

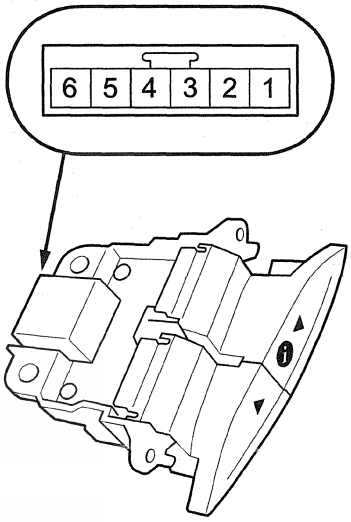
Multi-Information Switch Test/Replacement

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11) and precautions and procedures (see page 24-13) before repairing or servicing.

1. Remove the lid (A) from the steering wheel.



2. Disconnect the 6P connector (B) from the multi-information switch.
3. Remove the three screws, then remove the multi-information switch.
4. Measure the resistance between the multi-information switch 6P connector terminals No. 3 and No. 4 in each switch position according to the table.

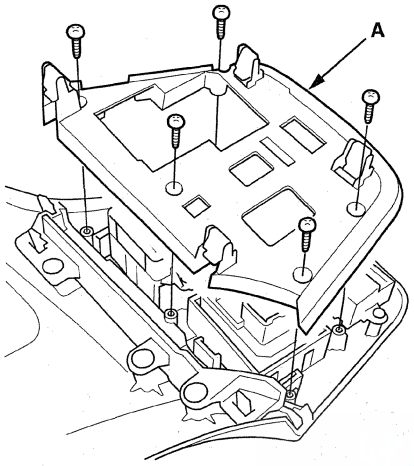


Position	Resistance
▲	About 33 Ω
SEL/RESET	About 1,043 Ω
▼	About 363 Ω

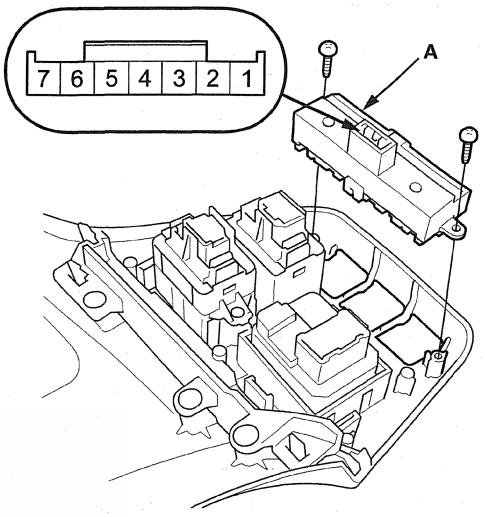
5. If the resistance is not as specified, replace the switch. If the switch is OK, but the system does not operate, check for an open in the wire between the switch and the cable reel.
6. Install the switch in the reverse order of removal.

3-Mode Switch Test/Replacement

1. Remove the instrument panel (see page 20-83).
2. Remove the five screws and the cover (A).



3. Remove the two screws, then remove the 3-Mode switch (A).



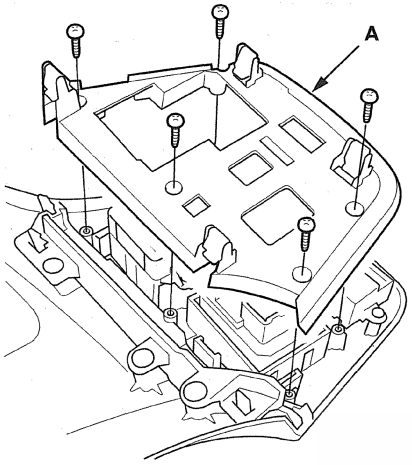
4. Measure the resistance between the 3-Mode switch 7P connector terminals No. 2 and No. 7 in each switch position according to the table.

Position	Resistance
SPORT	About 1,043 Ω
NORMAL	About 33 Ω
ECON	About 363 Ω

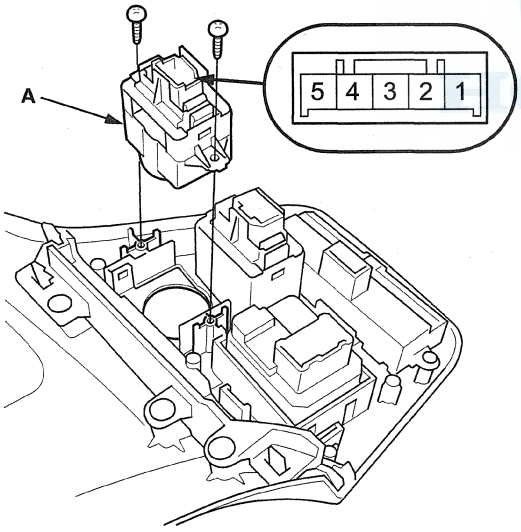
5. If the resistance is not as specified, replace the switch.
6. Install the switch in the reverse order of removal.

km/h, mph Change Switch Test/Replacement

1. Remove the instrument panel (see page 20-83).
2. Remove the five screws and the cover (A).



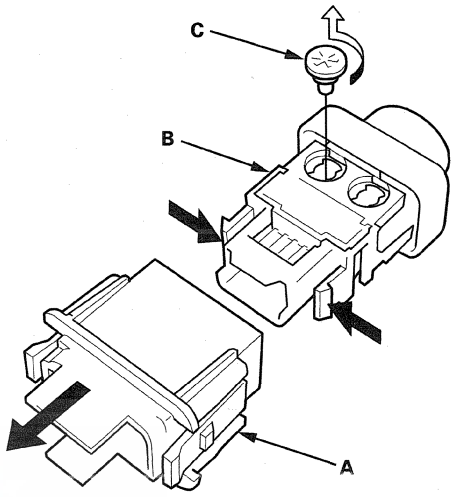
3. Remove the two screws, then remove the km/h, mph change switch (A).



4. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	4	5	1		2
OFF			○	○	○
ON	○	○	○	○	○

5. If the continuity is not as specified, remove the cover (A), and replace the switch (B) or bulb (C).



6. Install the switch in the reverse order of removal.

Rewriting the ODO Data and Transferring the Maintenance Minder™ Data to a New Gauge Control Module

NOTE:

- Obtain a new gauge control module before starting the rewriting process. Only new gauges can be rewritten.
- Rewriting is not possible on a gauge control module that will not communicate with the HDS.
- Check the official Honda website for more information on how to write odometer information to a gauge control module that will not communicate with the HDS.
- Make sure that the HDS shows the correct VIN for the vehicle you are working on.
- Once you have started this procedure, you must complete it before removing the HDS from the data link connector (DLC).
- Connect a jumper battery (do not connect a battery charger) to insure that correct battery voltage is maintained.

1. Before replacing the gauge control module, connect the HDS.
2. Select GAUGES from the BODY ELECTRICAL SYSTEM SELECT menu with the HDS.
3. Select GAUGE CONTROL MODULE REPLACEMENT (ODO Rewrite) from the ADJUSTMENT MENU, and select READ OUT DATA, and save ODO value and the Maintenance Minder data into the HDS.
4. Replace the gauge control module (see page 22-354).
5. Select WRITE DATA and follow the instructions on the HDS display, install the ODO value and the Maintenance Minder data into the replacement gauge control module. If the data transfer fails, refer to the instructions below to release the locked ODO value.

How to release locked odometer mileage to the original gauge control module

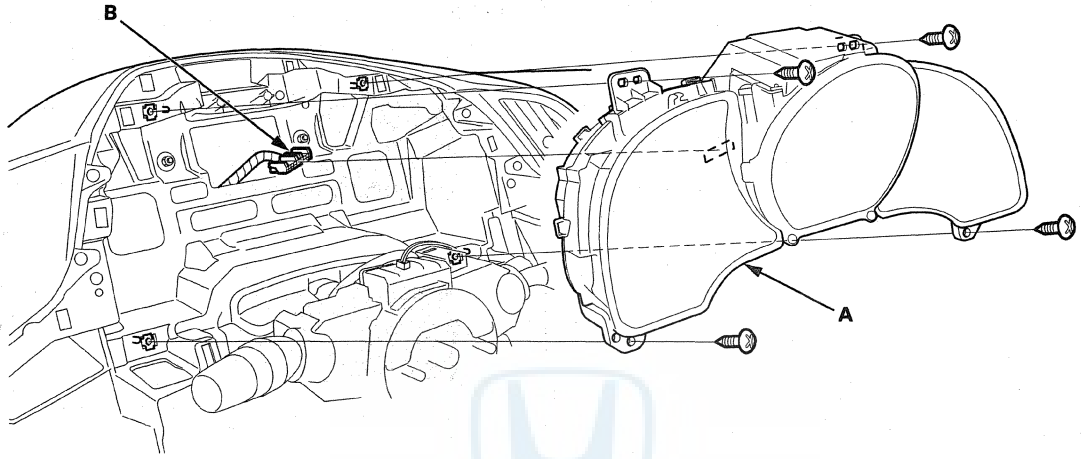
If, after you attempt to transfer mileage to a new gauge assembly, the odometer display has dashes (———), is garbled, or shows an incorrect value, the original gauge control module can be unlocked and restored to its original state In this way, it can be used again for additional attempts to transfer the mileage:

1. Confirm that you have the latest HDS version of software.
2. Make sure that the HDS shows the correct VIN for the vehicle you are working on.
3. With the ignition switch in LOCK (0), reconnect the original gauge control module.
4. Completely re-boot the HDS.
5. Clear any stored DTCs.
6. Navigate to BODY ELECTRICAL/GAUGES/ ADJUSTMENT/GAUGE CONTROL MODULE REPLACEMENT.
7. Select LOCK RELEASE.
8. Follow the prompts and the odometer mileage is restored.
9. Start over and make sure the screen prompts are followed.

Gauge Control Module Replacement

NOTE: Before replacing the gauge control module, retrieve the ODO value and the maintenance minder data from the gauge control module with the HDS (see page 22-353).

1. Remove the instrument panel (see page 20-83).
2. Remove the four screws from the gauge control module (A).



3. Disconnect the 32P connector (B) from the gauge control module.
4. Install the gauge control module in the reverse order of removal.
5. Rewrite the ODO data and transfer the maintenance minder data to the new gauge control module (see page 22-353).

   NOTE: Check the official Honda website for more information on how to write odometer information to a gauge control module that will not communicate with the HDS.

Outside Air Temperature Indicator Calibration

NOTE: To test the outside air temperature sensor, refer to the outside air temperature sensor test procedure (see page 21-73).

Description

The outside temperature sensor is located behind the middle of the front bumper. The gauge control module uses measurements from this sensor provided by the climate control unit via the B-CAN communication line to display the outside air temperature.
Because of the location of the sensor, it may be affected by heat reflection from the road, engine and radiator heat, or hot exhaust from surrounding traffic.
These conditions can soak the outside air temperature sensor in heat and cause inaccurate readings. Logic has been written into the gauge control module to help prevent abnormal or fluctuating outside air temperature indicator readings.

Outside Air Temperature Indicator Logic

Initial outside air temperature is indicated after the ignition switch is turned ON (II).

Engine coolant temperature is 140 °F (60 °C) or higher:

If the engine coolant temperature is 140 °F (60 °C) or higher when the ignition switch is turned ON (II), the outside air temperature when the last time the key was turned off is displayed regardless of the current temperature measured by the outside air temperature sensor.

Engine coolant temperature is less than 140 °F (60 °C):

If the engine coolant temperature is less than 140 °F (60 °C) or lower when the ignition switch is turned ON (II), the current temperature measured by the outside air temperature sensor is indicated.

Troubleshooting

If the indicator displays — — — °F (— — — °C) for more than 2 seconds after selecting the outside air temperature display mode, check for and resolve all B-CAN related DTCs, then check the outside air temperature sensor or the gauge control module self-diagnostic function (see page 22-325).

Fahrenheit (USA models):



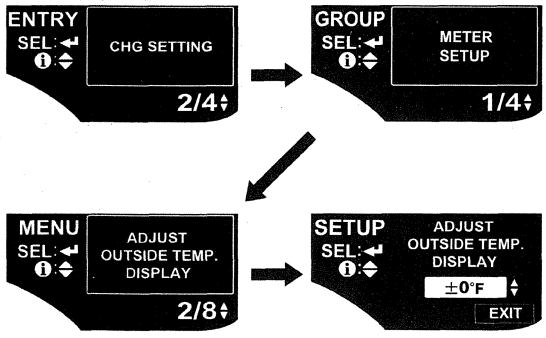
Centigrade (Canada models):



Calibration

The outside air temperature indicator's displayed temperature can be recalibrated ±5 °F (±3 °C) to meet the customer's expectations.

1. Turn the ignition switch to ON (II).
2. Push and hold the INFORMATION (NEXT or PREVIOUS) button for at least 3 seconds to enter the customizing mode.
3. While in the customizing mode, select the CHG SETTING, and enter the METER SETUP. Then select the ADJUST OUTSIDE TEMP. DISPLAY, and calibrate the value with the SEL/RESET button and the INFORMATION (NEXT or PREVIOUS) button.



(cont'd)

Outside Air Temperature Indicator Calibration (cont'd)

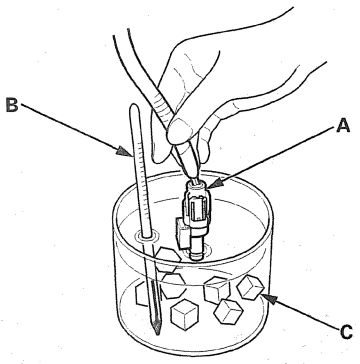
4. When the desired correction value appears on the display, release the button, and the recalibrated outside air temperature will be displayed.

   NOTE: The recalibration temperature is not the value the sensor sees.
   Therefore the temperature can only be adjusted ±5 degrees from sensors reading.

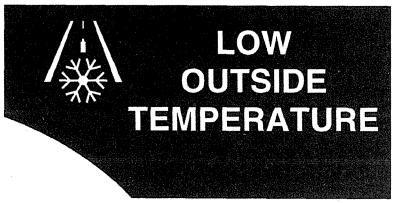
   Example:

Incorrect value	**= 68 °F (20 °C)**
Desired correction value	**= +2 °F (+1 °C)**
Correct value	**= 70 °F (21 °C)**
Desired correction value	**= -2 °F (-1 °C)**
Correct value	**= 66 °F (19 °C)**

   NOTE: To recalibrate the display to the true temperature, remove the outside air temperature sensor (A), but leave it connected. Submerge the sensor and a thermometer (B) in a container of ice water (C). Select the calibration mode as described above, then recalibrate the display to the true temperature.



5. The snow mark is displayed when the temperature is 37 °F (3 °C) or less the first time you turn the ignition switch to ON (II).



Resetting the Lifetime Points

NOTE:

- Do steps 1 through 5 within 30 seconds.
- If the ambient meter color is set to always display blue with the custom setting, cancel that setting by following the instructions in the Owner's Manual.

1. Turn the ignition switch to ON (II).
2. Confirm that the NORMAL mode or SPORT mode by the multi-information display (MID) or indicator.

   NOTE: If the ECON system is in the ECON mode, change it to the NORMAL mode or SPORT mode by pressing the NORMAL mode switch or SPORT mode switch, then turn the ignition switch to LOCK (0), then repeat this step again.
3. Press and release the brake pedal at least twice.
4. Confirm that the ambient meter color is green.

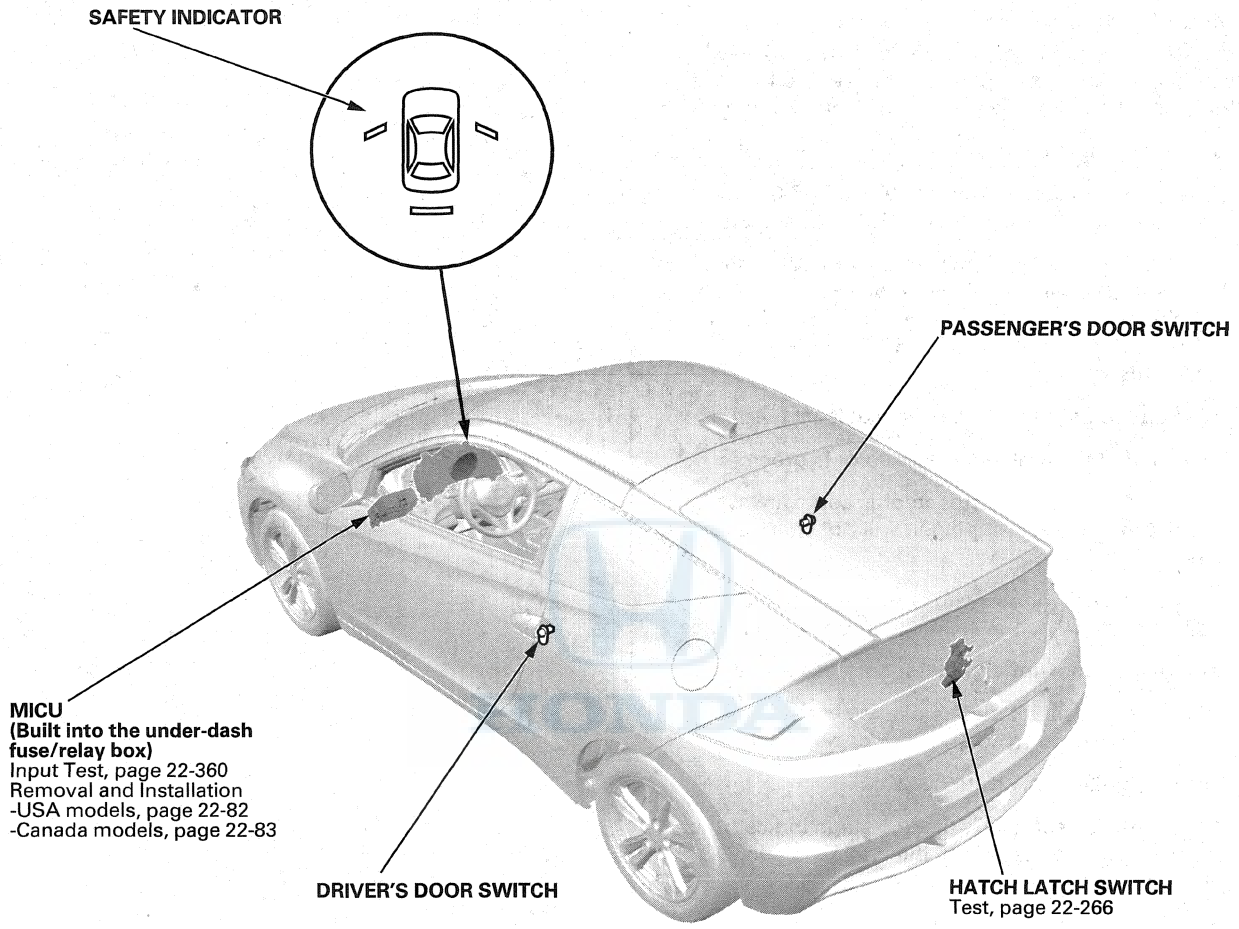
   NOTE: If the ambient meter color is set to always be blue with the custom setting, it will not change to green.
5. Press the ECON mode switch once, then press the SPORT mode switch or NORMAL mode switch once.
6. Confirm that the ambient meter color disappears.

   NOTE: If the ambient meter color is set to always be blue with the custom setting, it does not disappear.
7. Turn the ignition switch to LOCK (0).

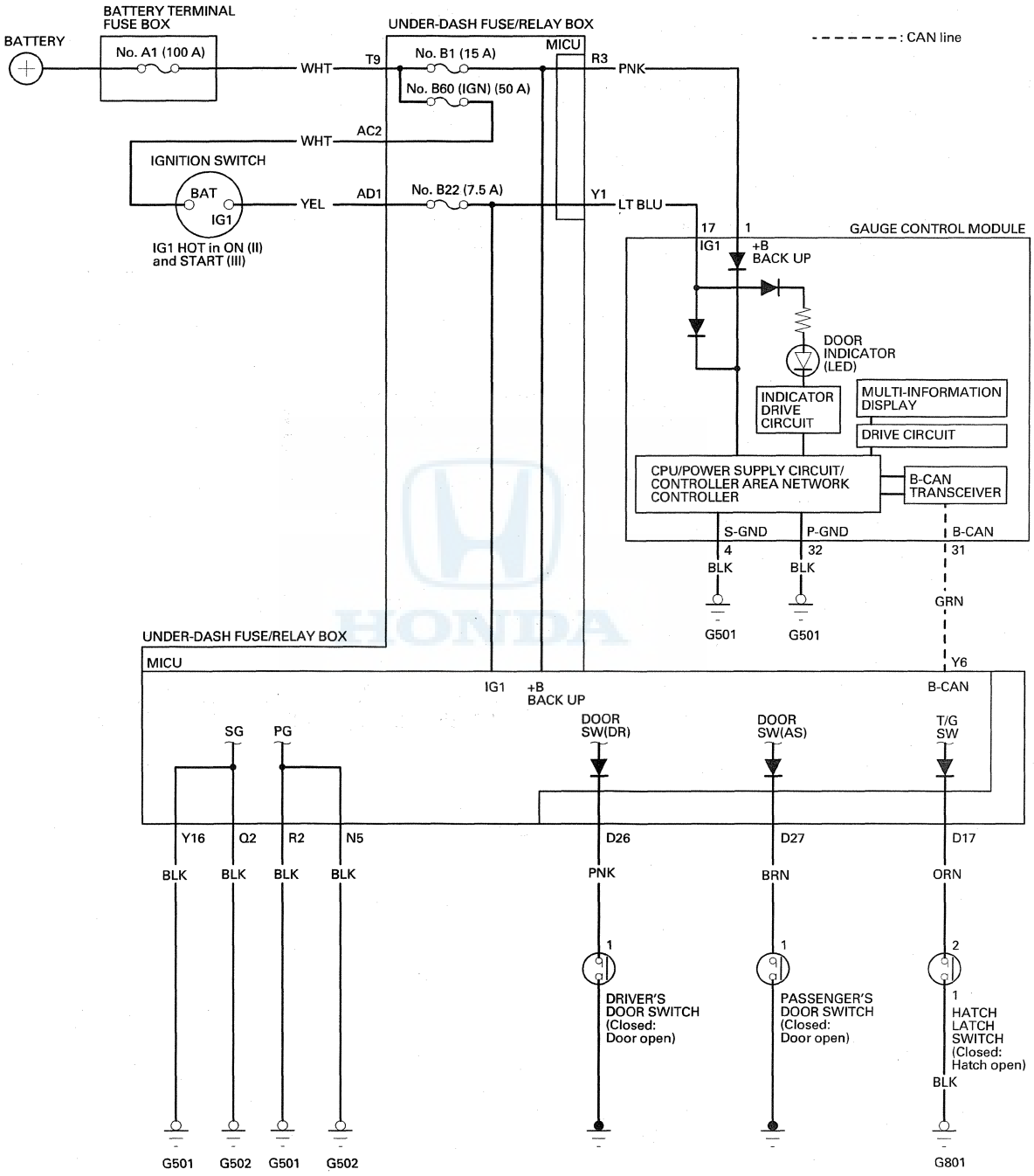
   NOTE: The Eco score and the Eco stage indicator are not displayed unless you let the engine idle for 3 minutes or drive for at least 218 yards (200 m).

Safety Indicator System

Component Location Index



Circuit Diagram



Control Unit Input Test

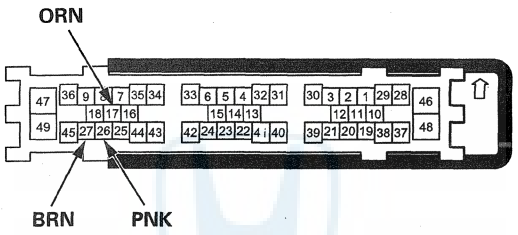
NOTE:
- Before testing, troubleshoot the multiplex integrated control system first, using B-CAN System Diagnosis Test Mode A (see page 22-126).
- Before testing, do the gauge control module self-diagnostic function (see page 22-325) to make sure the door indicator LED and the B-CAN communication line are OK.

MICU

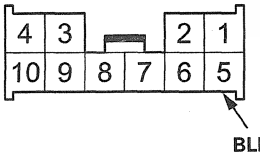
1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors D, N, Q, R, Y, and AD.

   NOTE: All connector views are wire side of female terminals.

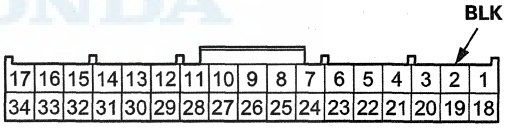
CONNECTOR D (49P)



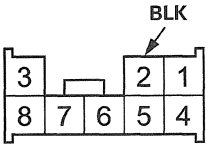
CONNECTOR N (10P)



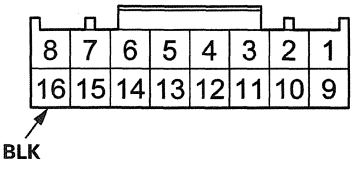
CONNECTOR Q (34P)



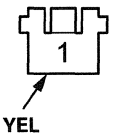
CONNECTOR R (8P)



CONNECTOR Y (16P)



CONNECTOR AD (1P)



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 5.

5. Reconnect the connectors, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
D26	PNK	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
D27	BRN	Passenger's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty passenger's door switch • Faulty passenger's door switch ground • An open or high resistance in the wire
		Passenger's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty passenger's door switch • A short to ground in the wire
D17	ORN	Hatch open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty hatch latch switch • An open or high resistance in the wire
		Hatch closed	Measure the voltage to ground: There should be about 5 V.	• Faulty hatch latch switch • Poor ground (G801) or an open in the ground wire • A short to ground in the wire

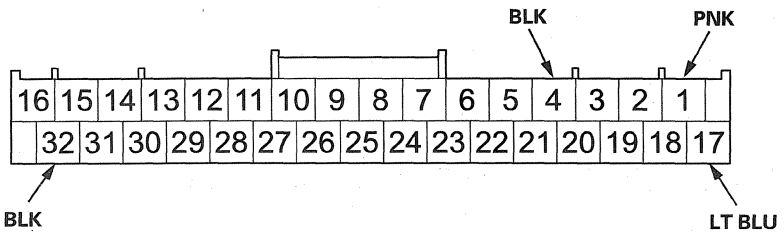
(cont'd)

Control Unit Input Test (cont'd)

Gauge control module

6. Turn the ignition switch to LOCK (0).
7. Remove the gauge control module (see page 22-354), and disconnect the 32P connector from it.

GAUGE CONTROL MODULE 32P CONNECTOR



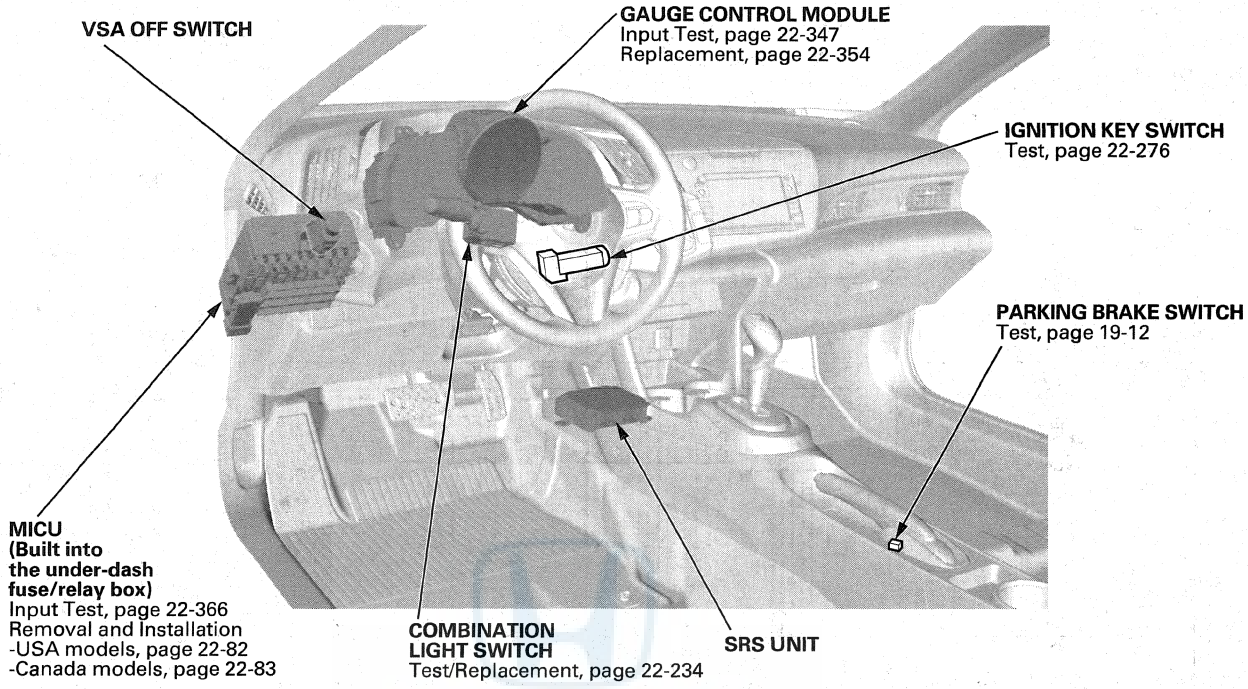
Wire side of female terminals

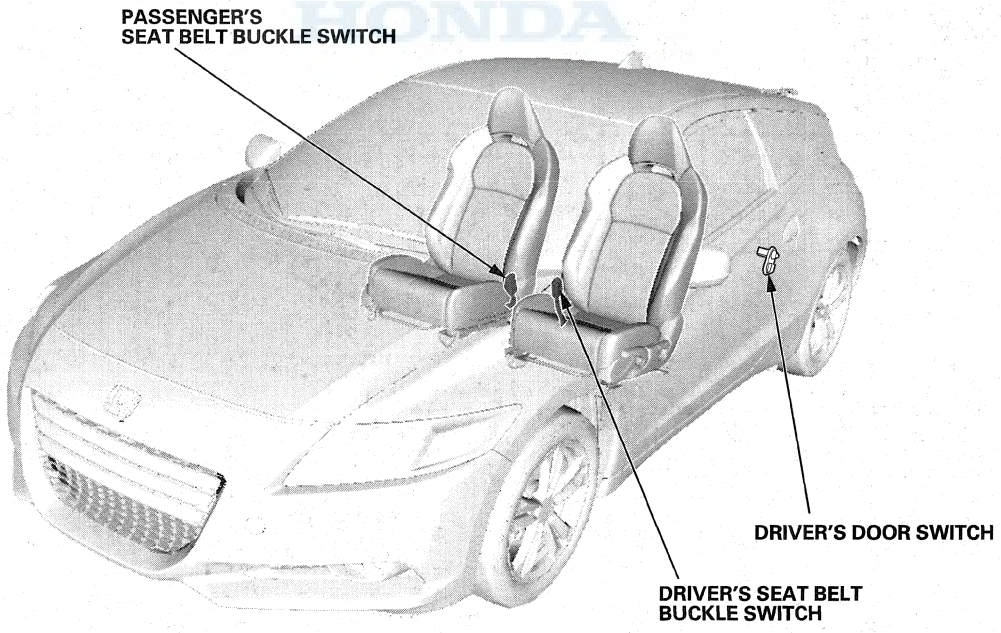
8. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, go to step 9.
9. Reconnect the connector to the gauge control module, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 10.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
4	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
32	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
17	LT BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B22 (7.5 A) fuse in the under-dash fuse/relay box • Faulty under-dash fuse/relay box • An open or high resistance in the wire
1	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire

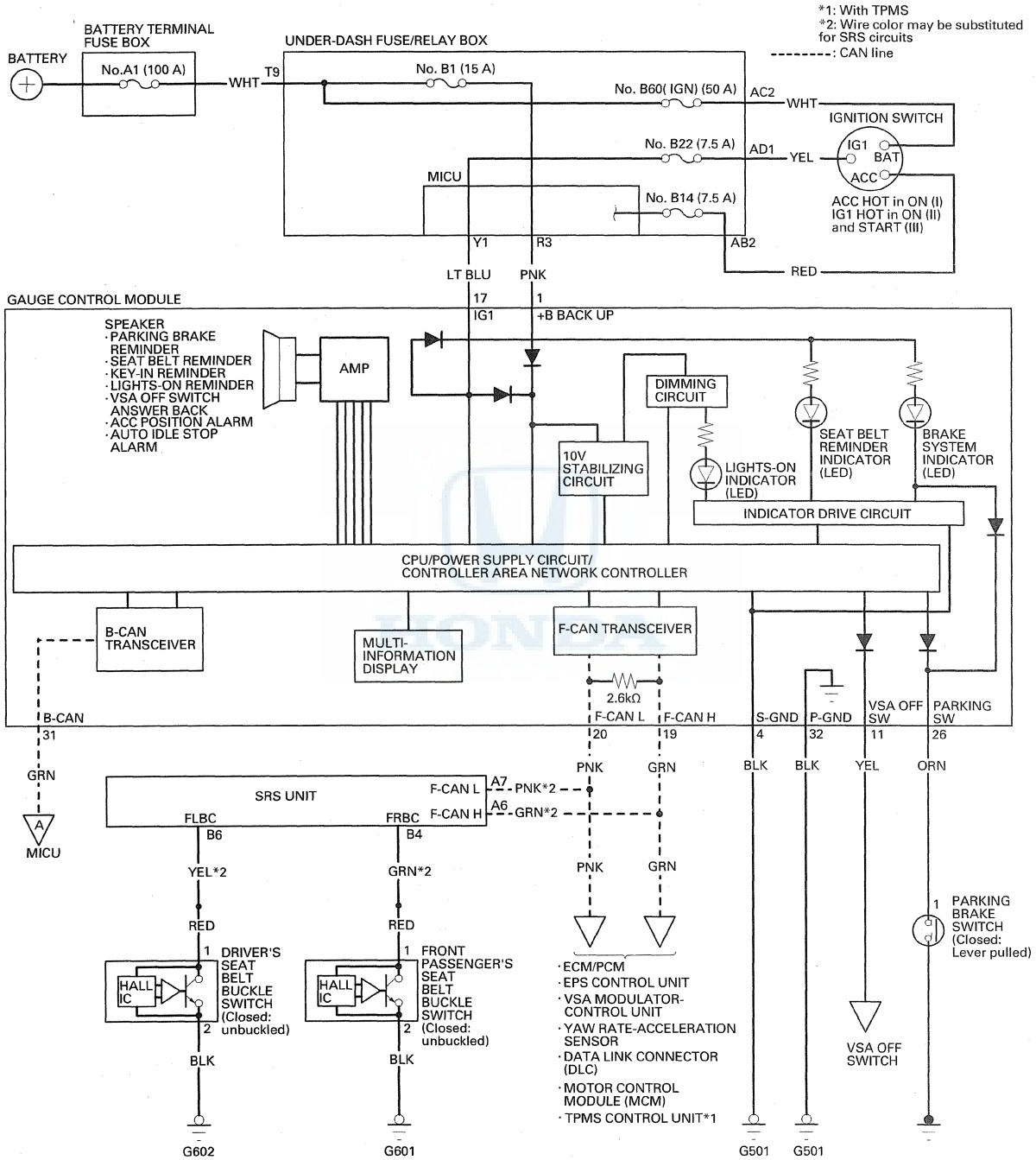
10. Substitute a known-good gauge control module, and recheck the system.
    - If the symptom is gone, the gauge control module is faulty: replace it (see page 22-354).
    - If the symptom is still present, the MICU is faulty; replace the under-dash fuse/relay box:
      - USA models (see page 22-82)
      - Canada models (see page 22-83)

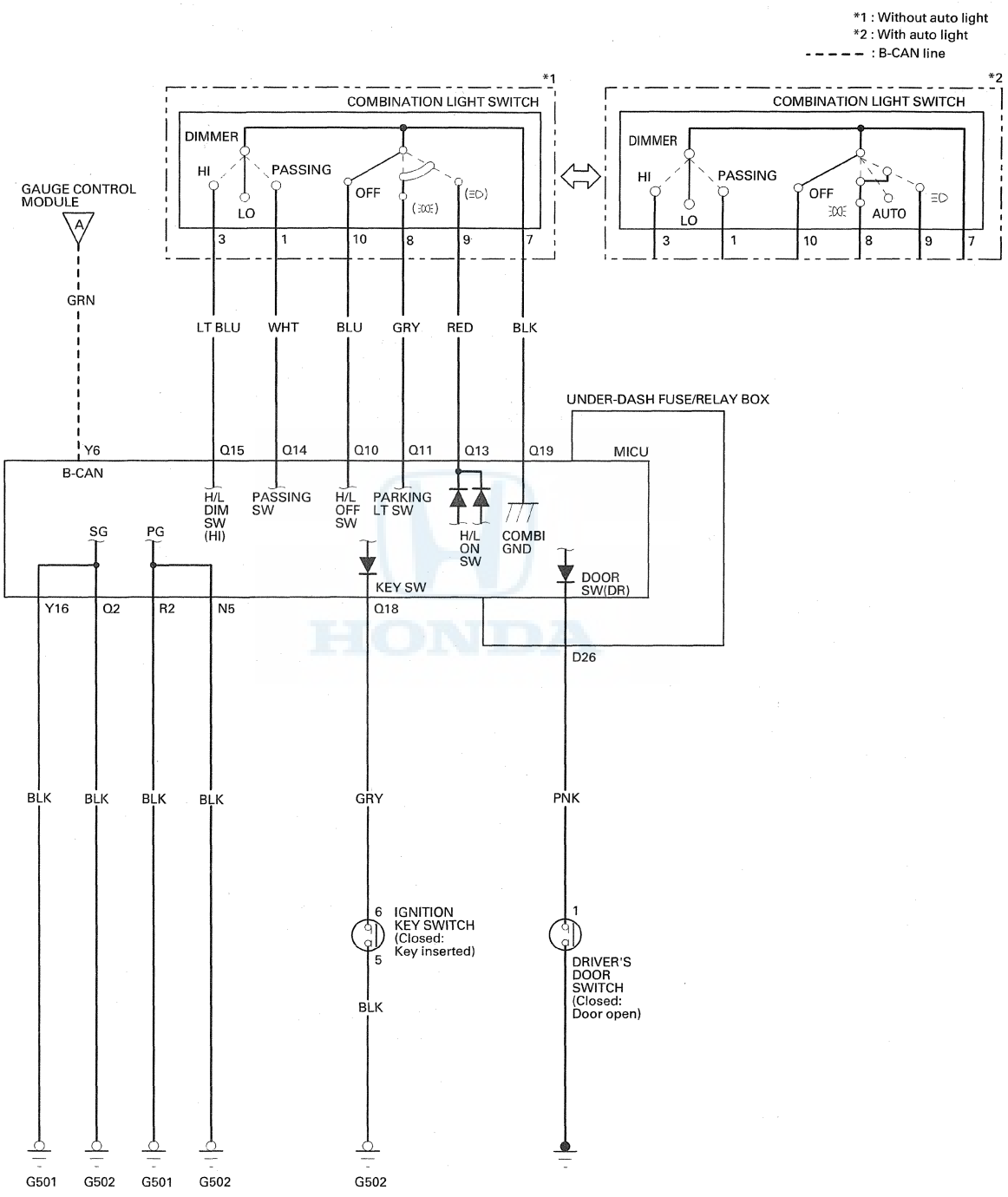
Component Location Index





Circuit Diagram




*1 : Without auto light
*2 : With auto light
- - - - - : B-CAN line
*1
COMBINATION LIGHT SWITCH
DIMMER
HI
LO
PASSING
OFF
3
1
10
8
9
7
*2
COMBINATION LIGHT SWITCH
DIMMER
HI
LO
PASSING
OFF
AUTO
3
1
10
8
9
7
GAUGE CONTROL MODULE
A
GRN
LT BLU
WHT
BLU
GRY
RED
BLK
UNDER-DASH FUSE/RELAY BOX
MICU
Y6
B-CAN
Q15
Q14
Q10
Q11
Q13
Q19
H/L DIM SW (HI)
PASSING SW
H/L OFF SW
PARKING LT SW
H/L ON SW
COMBI GND
SG
PG
KEY SW
DOOR SW(DR)
Y16
Q2
R2
N5
Q18
D26
BLK
BLK
BLK
BLK
GRY
PNK
6
IGNITION KEY SWITCH (Closed: Key inserted)
5
BLK
1
DRIVER'S DOOR SWITCH (Closed: Door open)
G501
G502
G501
G502
G502

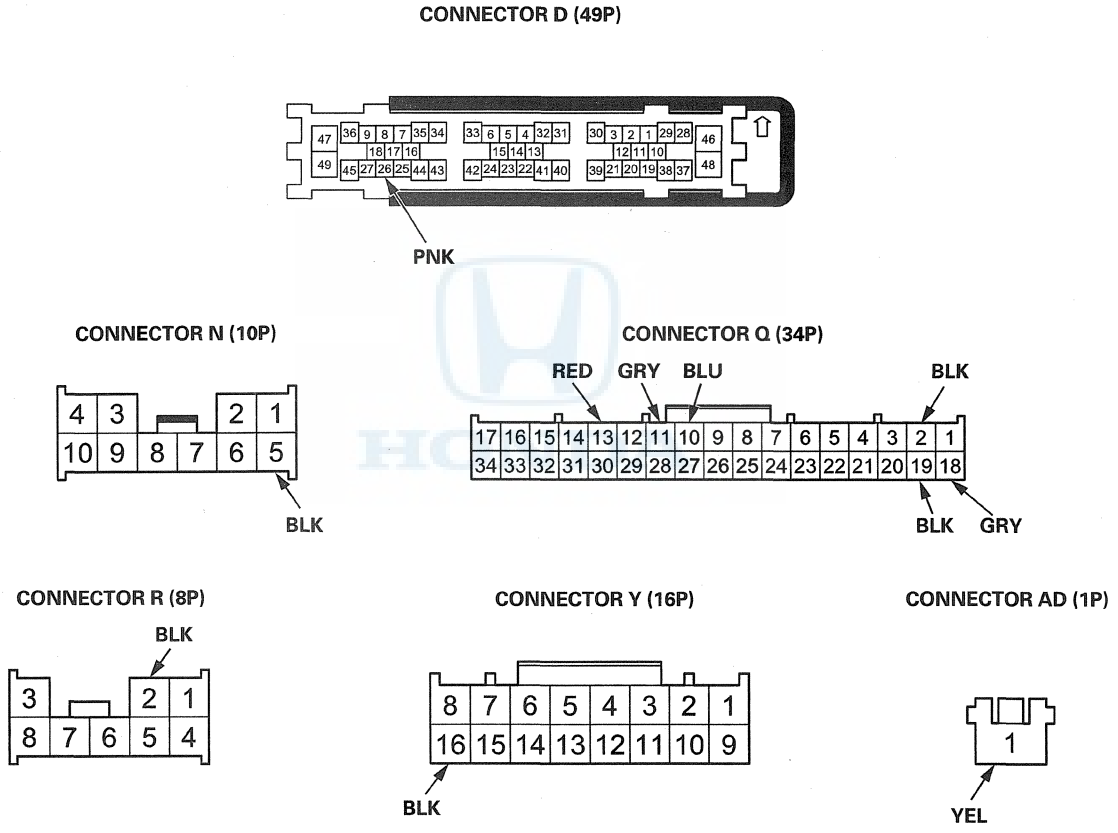
Control Unit Input Test

NOTE: Before testing, do the gauge control module self-diagnostic function (see page 22-325) to make sure the beeper and the indicators in the gauge control module work properly, and the B-CAN and F-CAN lines are OK.

MICU

1. Turn the ignition switch to LOCK (0).
2. Remove the fuse lid panel (see page 20-85), and remove the driver's dashboard lower cover (see page 20-85).
3. Disconnect under-dash fuse/relay box connectors D, N, Q, R, Y, and AD.

   NOTE: All connector views are wire side of female terminals.



4. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals are OK, go to step 5.

5. Reconnect the connectors, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
N5	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
Y16	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
R2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
Q2	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) • An open or high resistance in the wire
AD1	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B60 (50 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
D26	PNK	Driver's door open	Measure the voltage to ground: There should be less than 0.2 V.	• Faulty driver's door switch • Faulty driver's door switch ground • An open or high resistance in the wire
		Driver's door closed	Measure the voltage to ground: There should be about 5 V.	• Faulty driver's door switch • A short to ground in the wire
Q18	GRY	Ignition key inserted into the ignition switch	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G502) or an open in the ground wire • Faulty ignition key switch • An open or high resistance in the wire
		Ignition switch in LOCK (0) position and ignition key removed from the ignition switch	Measure the voltage to ground: There should be about 5 V.	• Faulty ignition key switch • A short to ground in the wire
Q10 · Q19	BLU · BLK	Combination light switch OFF	Measure the voltage between terminals Q10 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch in any other position than OFF	Measure the voltage between terminals Q10 and Q19: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
Q11 · Q19	GRY · BLK	Combination light switch (PARKING position) ON	Measure the voltage between terminals Q11 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals Q11 and Q19: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire
Q13 · Q19	RED · BLK	Combination light switch (Headlight position) ON	Measure the voltage between terminals Q13 and Q19: There should be less than 0.2 V.	• Faulty combination light switch • An open or high resistance in the wire
		Combination light switch OFF	Measure the voltage between terminals Q13 and Q19: There should be about 5 V.	• Faulty combination light switch • A short to ground in the wire

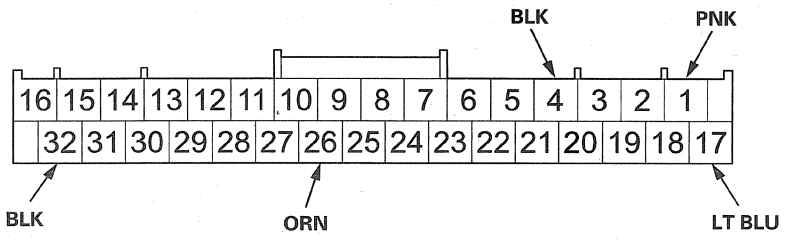
(cont'd)

Control Unit Input Test (cont'd)

Gauge Control Module

6. Turn the ignition switch to LOCK (0).
7. Remove the gauge control module (see page 22-354), and disconnect the 32P connector from it.

GAUGE CONTROL MODULE 32P CONNECTOR



Wire side of female terminals

8. Inspect the connector and socket terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals are OK, go to step 9.
9. Reconnect the connector to the gauge control module, turn the ignition switch to ON (II), and do the following input tests:
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 10.

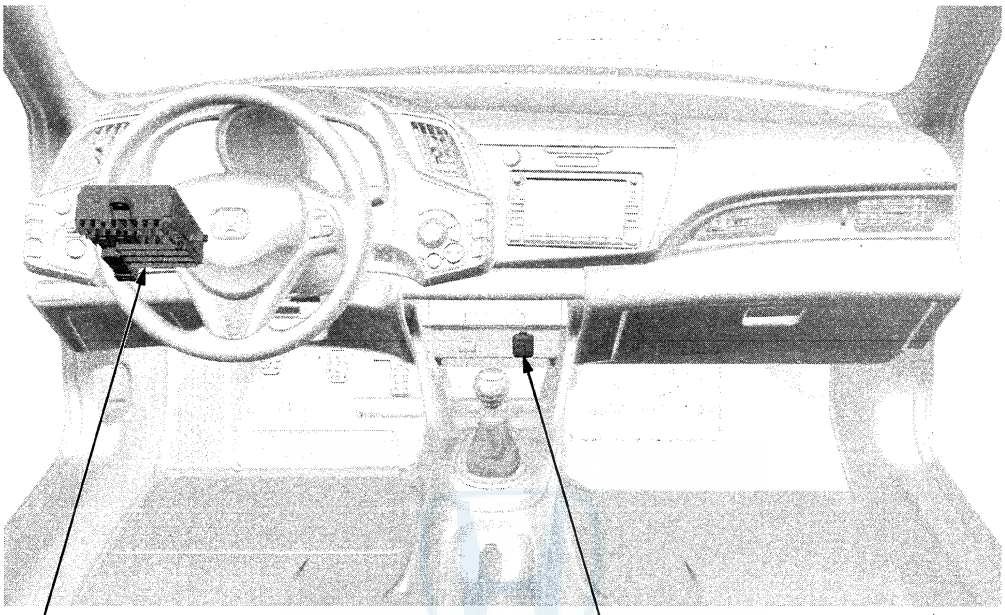
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
4	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
32	BLK	In all ignition switch positions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G501) • An open or high resistance in the wire
17	LT BLU	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. B22 (7.5 A) fuse in the under-dash fuse/relay box • Faulty ignition switch • An open or high resistance in the wire
1	PNK	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
26	ORN	Parking brake switch ON (Lever pulled)	Measure the voltage to ground: There should be less than 1 V.	• Faulty parking brake switch • An open or high resistance in the wire
		Parking brake switch OFF (Lever released)	Measure the voltage to ground: There should be about 5 V.	• Faulty parking brake switch • A short to ground in the wire

10. Do the gauge control module self-diagnostic function (see page 22-325), and check the beeper and the seat belt reminder indicator.
    - If the beeper sounds and the seat belt reminder indicator flashes, go to step 11.
    - If the beeper does not sound or the seat belt reminder indicator does not flash, replace the gauge control module (see page 22-354).
11. Substitute a known-good gauge control module, and recheck the system.
    - If the symptom is gone, the gauge control module is faulty; replace it (see page 22-354).
    - If the symptom is still present, the MICU is faulty; replace the under-dash fuse/relay box:
      - USA models (see page 22-82)
      - Canada models (see page 22-83)

HONDA

Accessory Power Socket

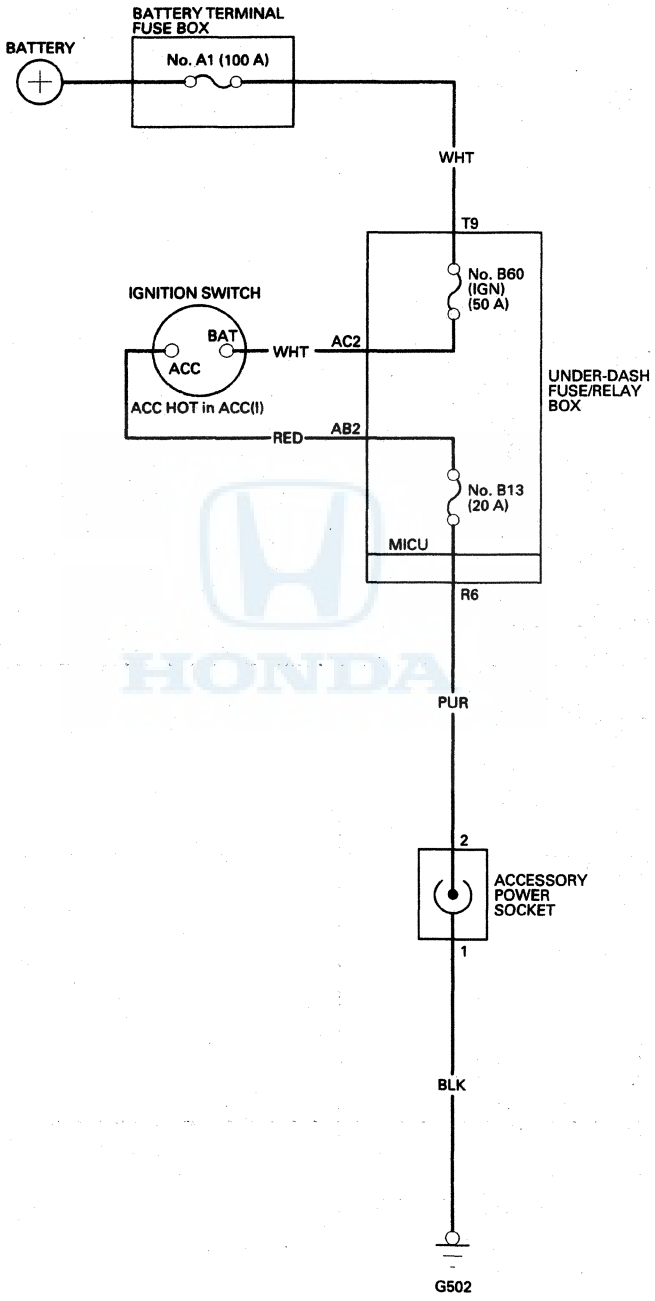
Component Location Index



UNDER-DASH FUSE/RELAY BOX

ACCESSORY POWER SOCKET
Test/Replacement, page 22-372

Circuit Diagram

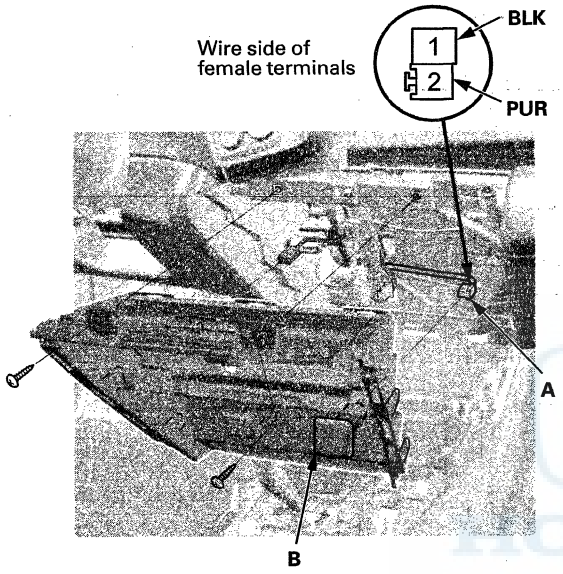


Accessory Power Socket

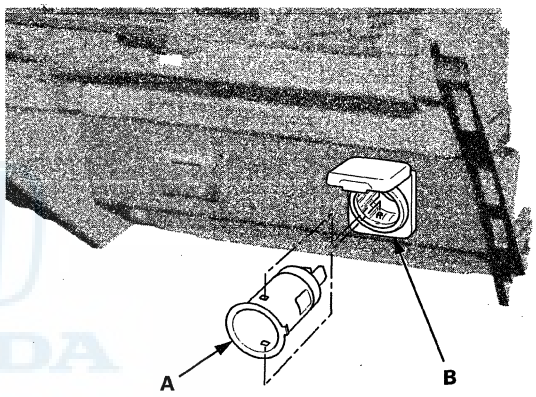
Accessory Power Socket Test/Replacement

NOTE: If the accessory power socket does not work, check the No. B13 (20 A) fuse in the under-dash fuse/relay box and ground (G502) first.

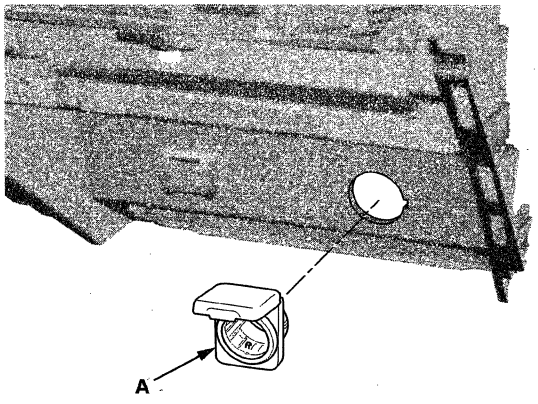
1. Remove the center lower cover (see page 20-89).
2. Disconnect the 2P connector (A) from the accessory power socket (B).



3. Inspect the connector terminals to be sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 4.
4. Turn the ignition switch to ACCESSORY (I).
5. Measure the voltage between accessory power socket 2P connector terminal No. 2 and body ground. There should be battery voltage.
   - If there is battery voltage, go to step 6.
   - If there is no voltage, check for:
     - Blown No. B13 (20 A) fuse in the under-dash fuse/relay box
     - An open or high resistance in the wire between accessory power socket 2P connector terminal No. 2 and under-dash fuse/relay box connector R (8P) terminal No. 6.
6. Check for continuity between the accessory power socket 2P connector terminal No. 1 and body ground. There should be continuity.
   - If there is continuity, replace the accessory power socket; go to step 7.
   - If there is no continuity, check for:
     - Poor ground (G502).
     - An open or high resistance in the wire between accessory power socket 2P connector terminal No. 1 and body ground (G502).
7. Remove the socket (A) from the housing (B).



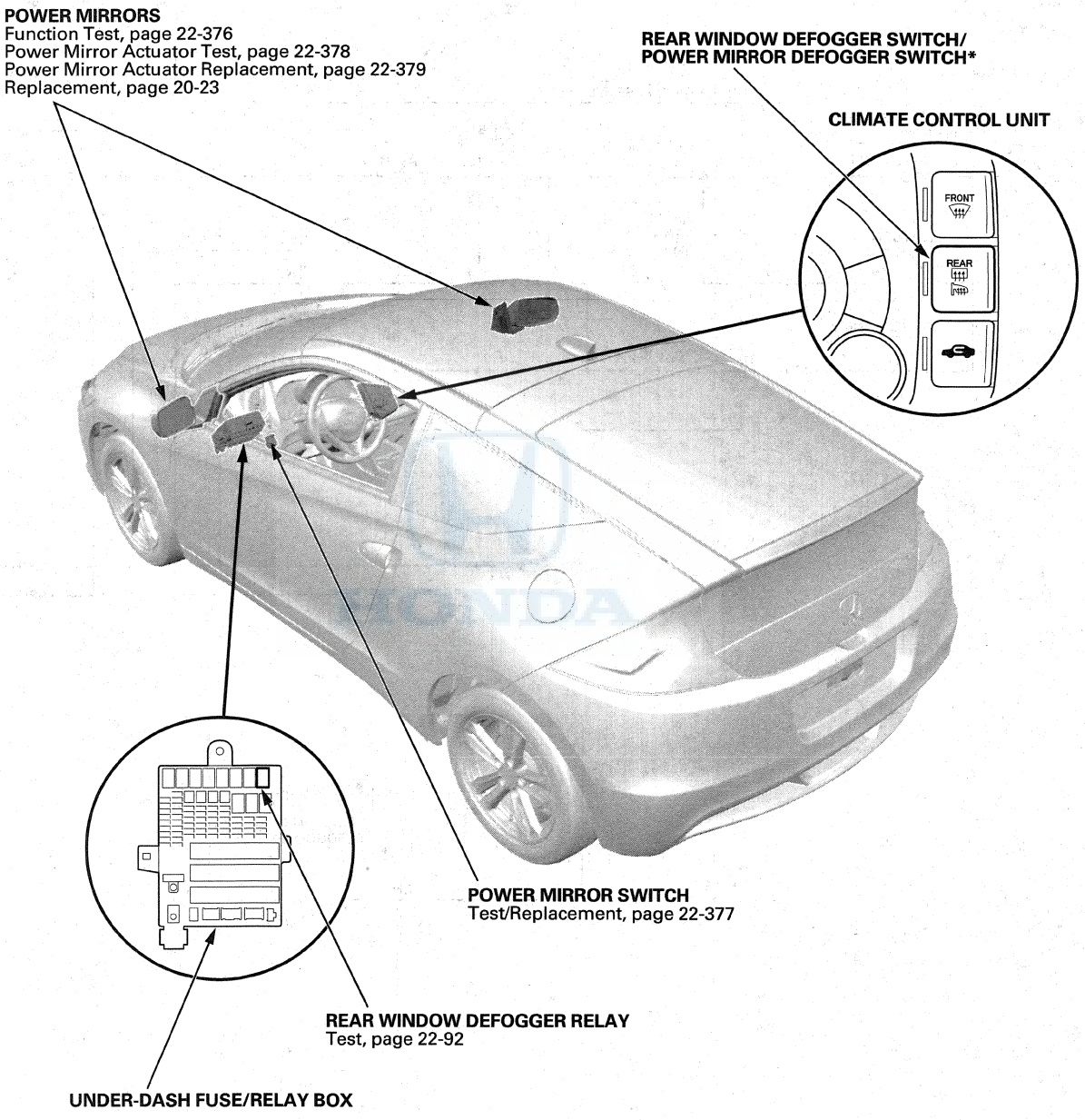
8. Remove the housing (A) from the panel.



9. Install the power socket in the reverse order of removal.

Power Mirrors

Component Location Index

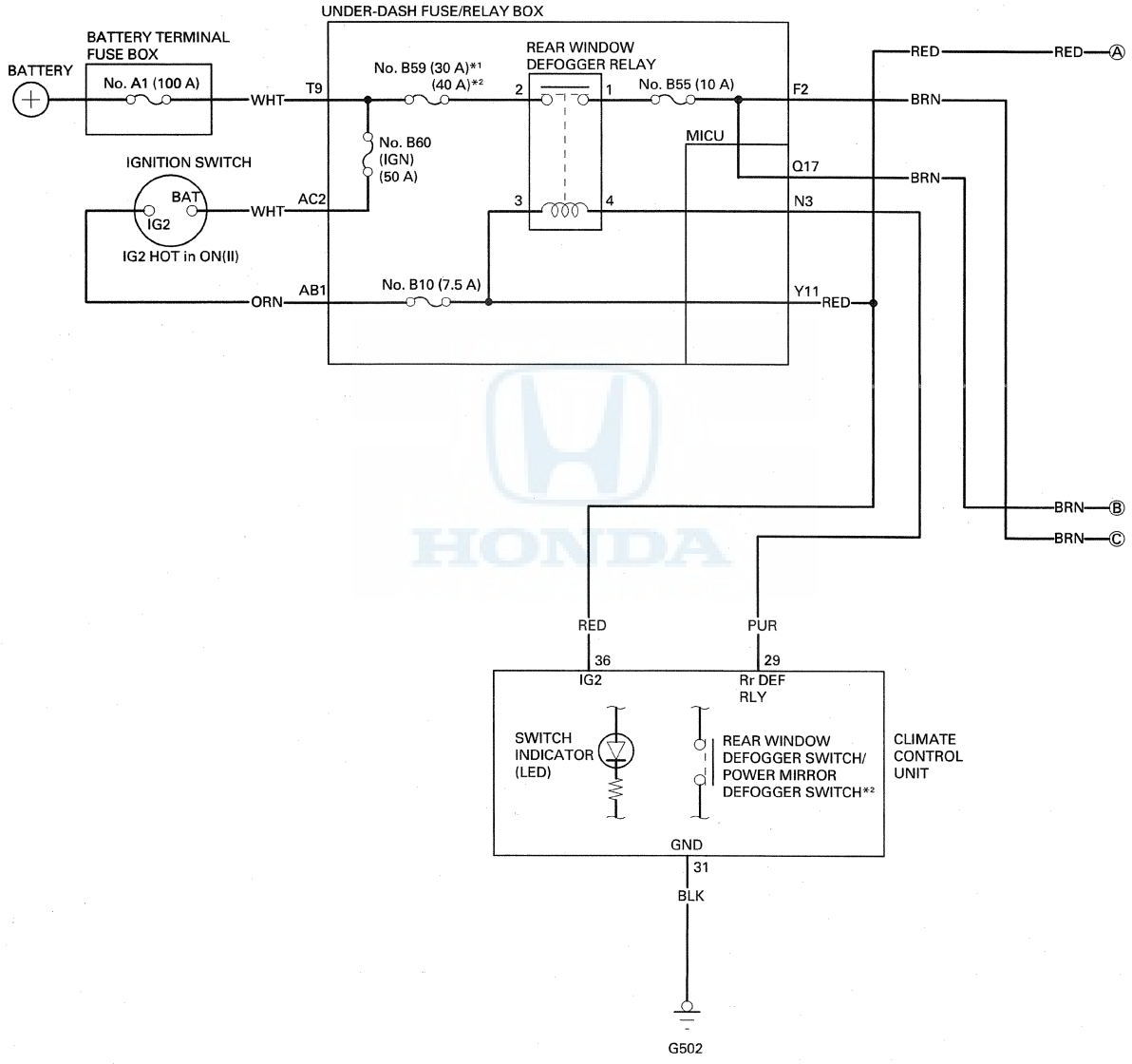


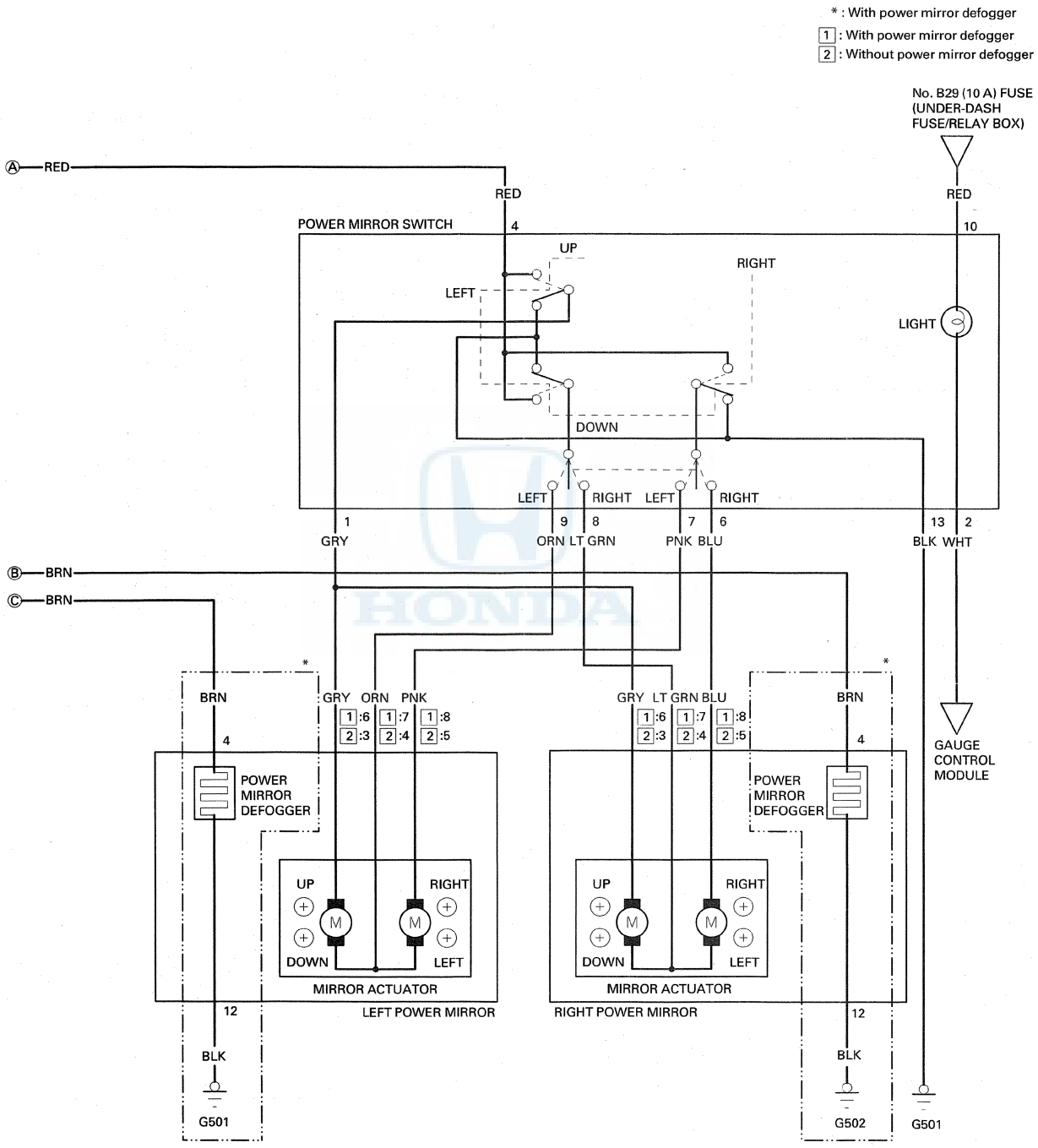
*: With power mirror defogger

Power Mirrors

Circuit Diagram

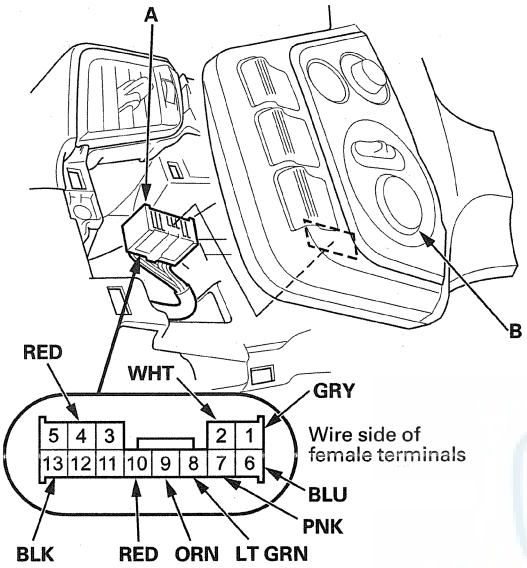
*1 : Without power mirror defogger
*2 : With power mirror defogger




* : With power mirror defogger
1 : With power mirror defogger
2 : Without power mirror defogger
No. B29 (10 A) FUSE (UNDER-DASH FUSE/RELAY BOX)
RED
RED
RED
POWER MIRROR SWITCH
4
10
UP
RIGHT
LEFT
LIGHT
DOWN
LEFT
RIGHT
LEFT
RIGHT
1
9
8
7
6
13
2
GRY
ORN
LT GRN
PNK
BLU
BLK
WHT
BRN
BRN
*
BRN
GRY ORN PNK
1:6 1:7 1:8
2:3 2:4 2:5
GRY LT GRN BLU
1:6 1:7 1:8
2:3 2:4 2:5
BRN
*
4
4
POWER MIRROR DEFOGGER
POWER MIRROR DEFOGGER
GAUGE CONTROL MODULE
UP
RIGHT
DOWN
LEFT
UP
RIGHT
DOWN
LEFT
M
MIRROR ACTUATOR
MIRROR ACTUATOR
LEFT POWER MIRROR
RIGHT POWER MIRROR
12
12
BLK
BLK
G501
G502
G501

Function Test

1. Remove the power mirror switch (see page 22-377).
2. Disconnect the 13P connector (A) from the power mirror switch (B).



3. Choose the appropriate test based on the symptom:
   - Both mirrors don't work, go to step 4.
   - Left mirror does not work, go to step 6.
   - Right mirror does not work, go to step 7.
   - Mirror defoggers don't work, go to step 8.

Both mirrors

4. Measure the voltage between power mirror switch 13P connector terminal No. 4 and body ground with the ignition switch to ON (II).
   There should be battery voltage.
   - If there is no battery voltage, check for:
     - Blown No. B10 (7.5 A) fuse in the under-dash fuse/relay box.
     - An open or high resistance in the RED wire.
   - If there is battery voltage, go to step 5.
5. Check for continuity between power mirror switch 13P connector terminal No. 13 and body ground.
   There should be continuity.
   - If there is no continuity, check for:
     - An open or high resistance in the BLK wire.
     - Poor ground (G501).
   - If there is continuity, check both mirrors individually.

Left mirror

6. Connect power mirror switch 13P connector terminals No. 4 and No. 9, and power mirror switch 13P connector terminals No. 1 (or No. 7) and No. 13 with jumper wires.
   The left mirror should tilt down (or swing left) with the ignition switch in ON (II).
   - If the left mirror does not tilt down (or does not swing left), check for an open or high resistance in the GRY (or PNK) wire between the left mirror and the 13P connector.
     If the wire is OK, check the left mirror actuator.
   - If the mirror neither tilts down nor swings left, repair the ORN wire.
   - If the mirror works properly, check the mirror switch.

Right mirror

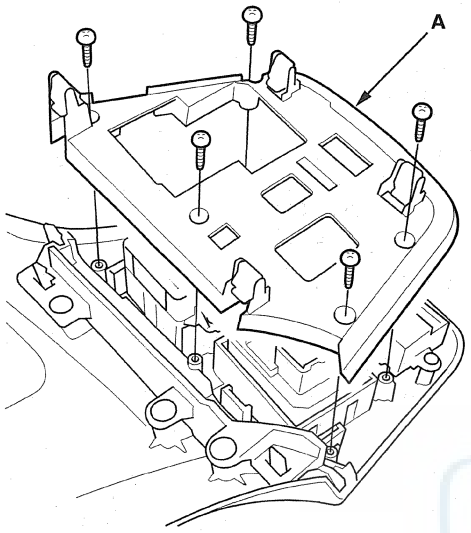
7. Connect power mirror switch 13P connector terminals No. 4 and No. 8, and power mirror switch 13P connector terminals No. 1 (or No. 6) and No. 13 with jumper wires, and the ignition switch ON (II).
   The right mirror should tilt down (or swing left) with the ignition switch in ON (II).
   - If the mirror does not tilt down (or does not swing left), check for an open or high resistance in the GRY (or BLU) wire between the right mirror and the 13P connector. If the wire is OK, check the right mirror actuator.
   - If the mirror neither tilts down nor swings left, repair the LT GRN wire.
   - If the mirror works properly, check the mirror switch.

Defogger

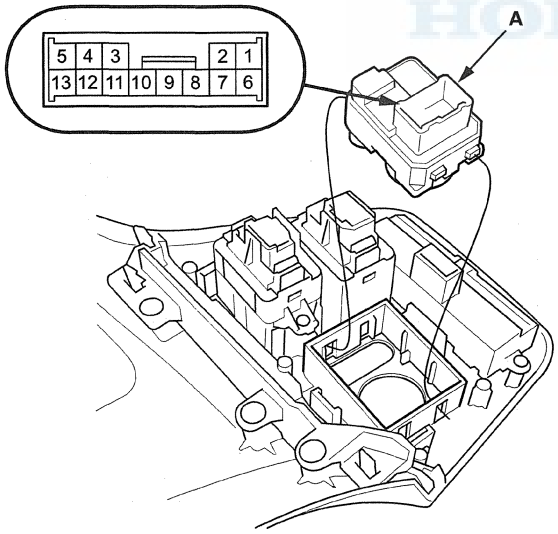
8. Connect rear window defogger relay terminals No. 1 and No. 2 with a jumper wire. Measure the voltage between terminal No. 4 of the mirror connectors and body ground. There should be battery voltage and both mirrors should warm up.
   - If there is no voltage or neither warms up, check for:
     - An open or high resistance in the BRN wire.
     - Blown No. B55 (10 A) or No. B59 (40 A) fuse in the under-dash fuse/relay box.
   - If only one fails to warm up, check:
     - Its defogger.
     - Poor ground (G501, G502).
   - If both warm up, check the defogger switch or the rear window defogger relay.

Power Mirror Switch Test/Replacement

1. Remove the instrument panel (see page 20-83).
2. Remove the five screws and the cover (A).



3. Remove the mirror switch (A) from the instrument panel.



4. Check for continuity between the terminals in each switch position according to the table.

Power Mirror Switch

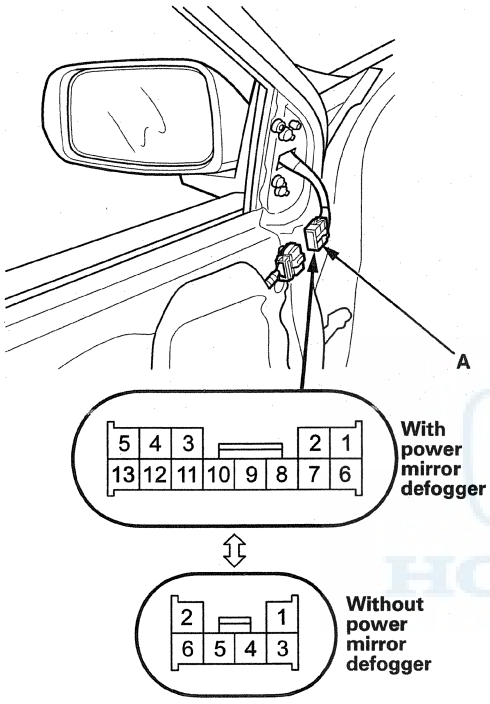
Position		Terminal 4	1	13	9	8	7	6
L	UP	○—○		○—○				
	DOWN	○	○—○		○			
	LEFT	○		○	○—○		○	
	RIGHT	○		○—○			○	
R	UP	○—○		○		○		
	DOWN	○	○—○			○		
	LEFT	○		○		○		○
	RIGHT	○		○		○		○

5. If the continuity is not as specified, replace the switch.
6. Install the parts in the reverse order of removal.

Power Mirror Actuator Test

1. Remove the door panel (see page 20-4).
2. Disconnect the power mirror 13P (or 6P)* connector (A).

   *: Without power mirror defogger



Wire side of female terminals

3. Check actuator operation by connecting power and ground according to the table.

Power Mirror Actuator

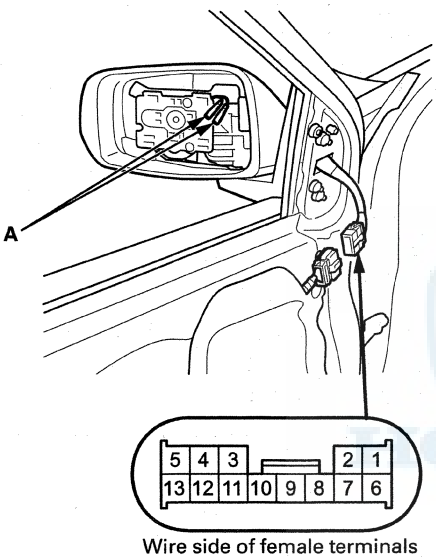
Position \ Terminal	6 [3]	7 [4]	8 [5]
TILT UP	⊕	⊖	
TILT DOWN	⊖	⊕	
SWING LEFT		⊕	⊖
SWING RIGHT		⊖	⊕

[ ]: Without power mirror defogger

4. If the mirror fails to work properly, check for an open or high resistance in the wire between the connector and the mirror holder. If the wire is OK, replace the power mirror actuator (see page 22-379).

Defogger Test

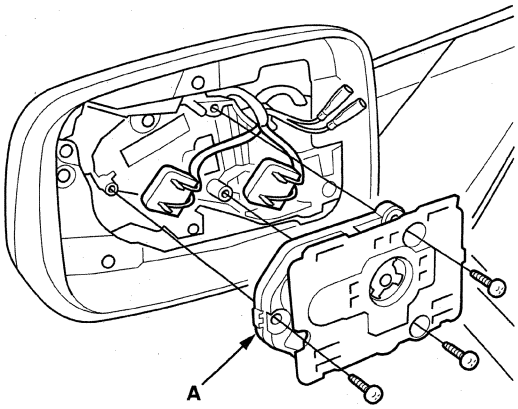
5. Check for continuity between power mirror 13P connector terminals No. 4 and No. 12. There should be continuity. If there is no continuity, remove the mirror holder (see page 20-24), and check for an open or high resistance in the wire between the power mirror 13P connector and the mirror defogger terminals (A). If the wire is OK, replace the mirror holder (see page 20-24).



Wire side of female terminals

Power Mirror Actuator Replacement

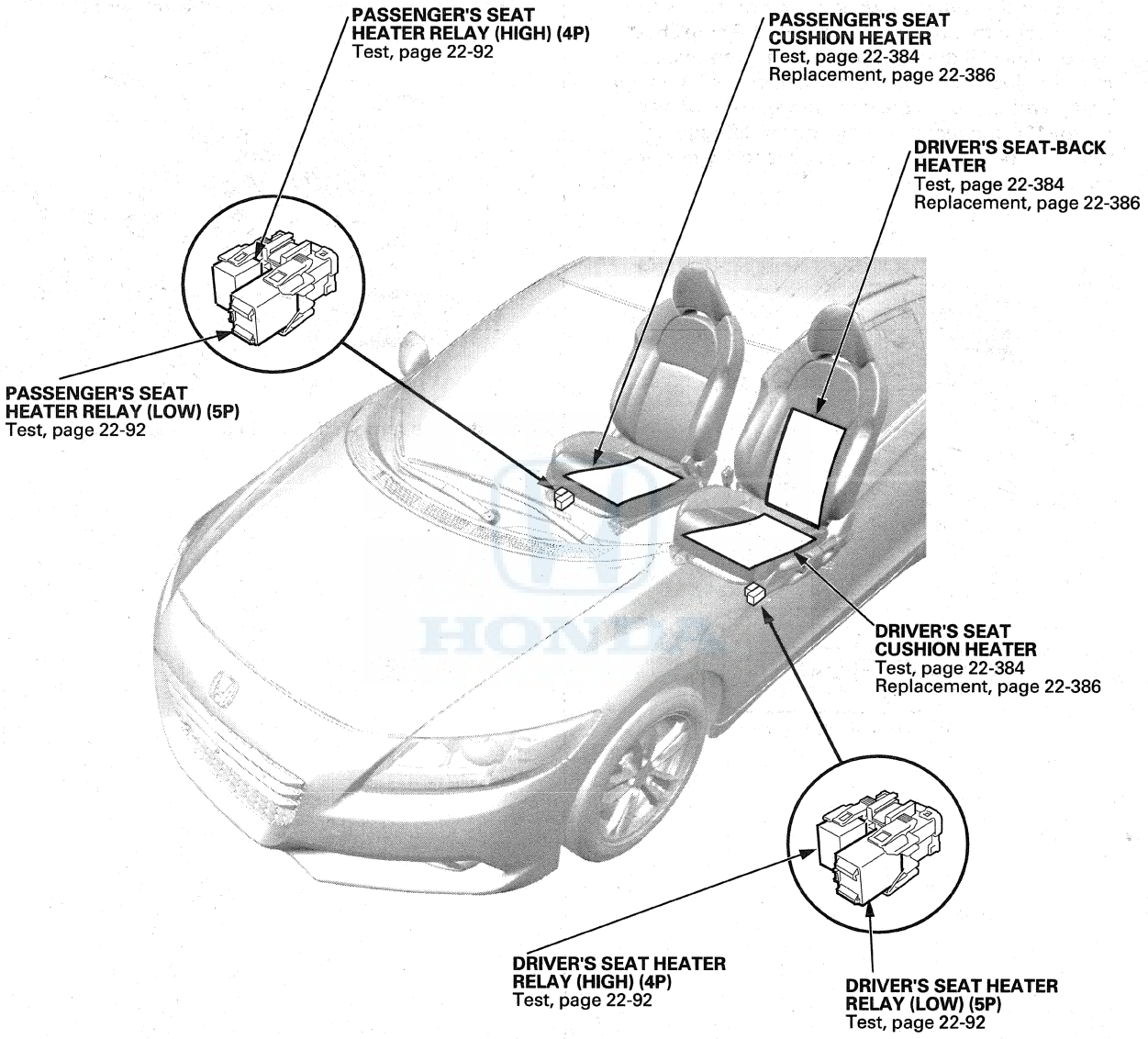
1. Remove the mirror holder (see page 20-24).
2. Remove the three screws and the actuator (A).

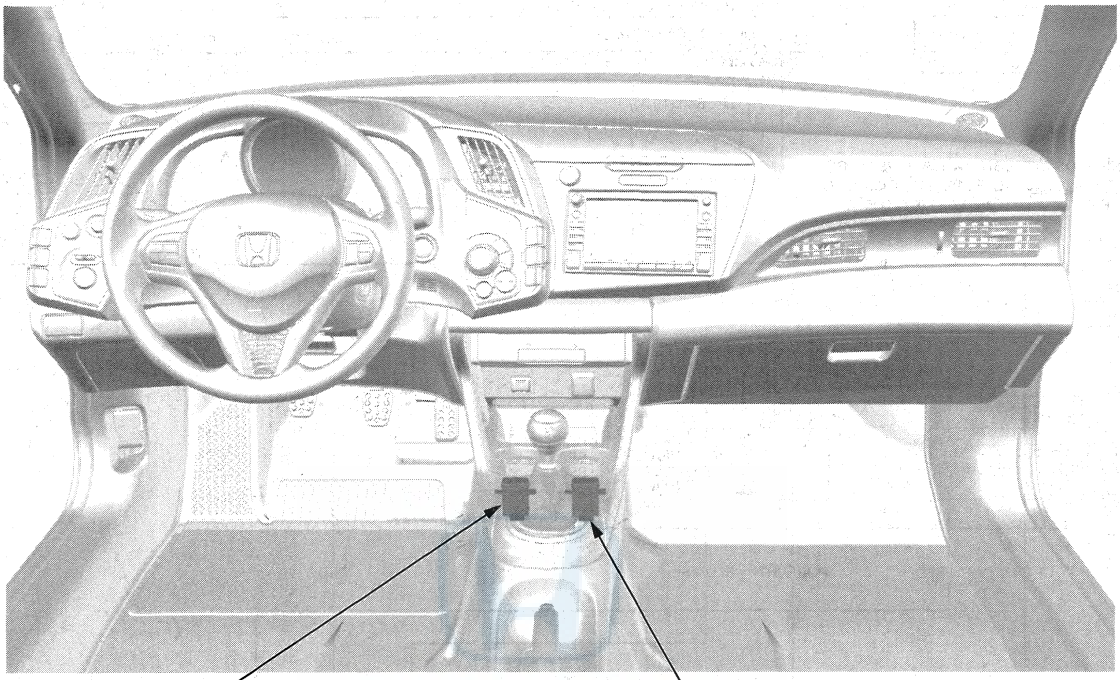


3. Install the removed parts in the reverse order of removal.

Seat Heaters

Component Location Index



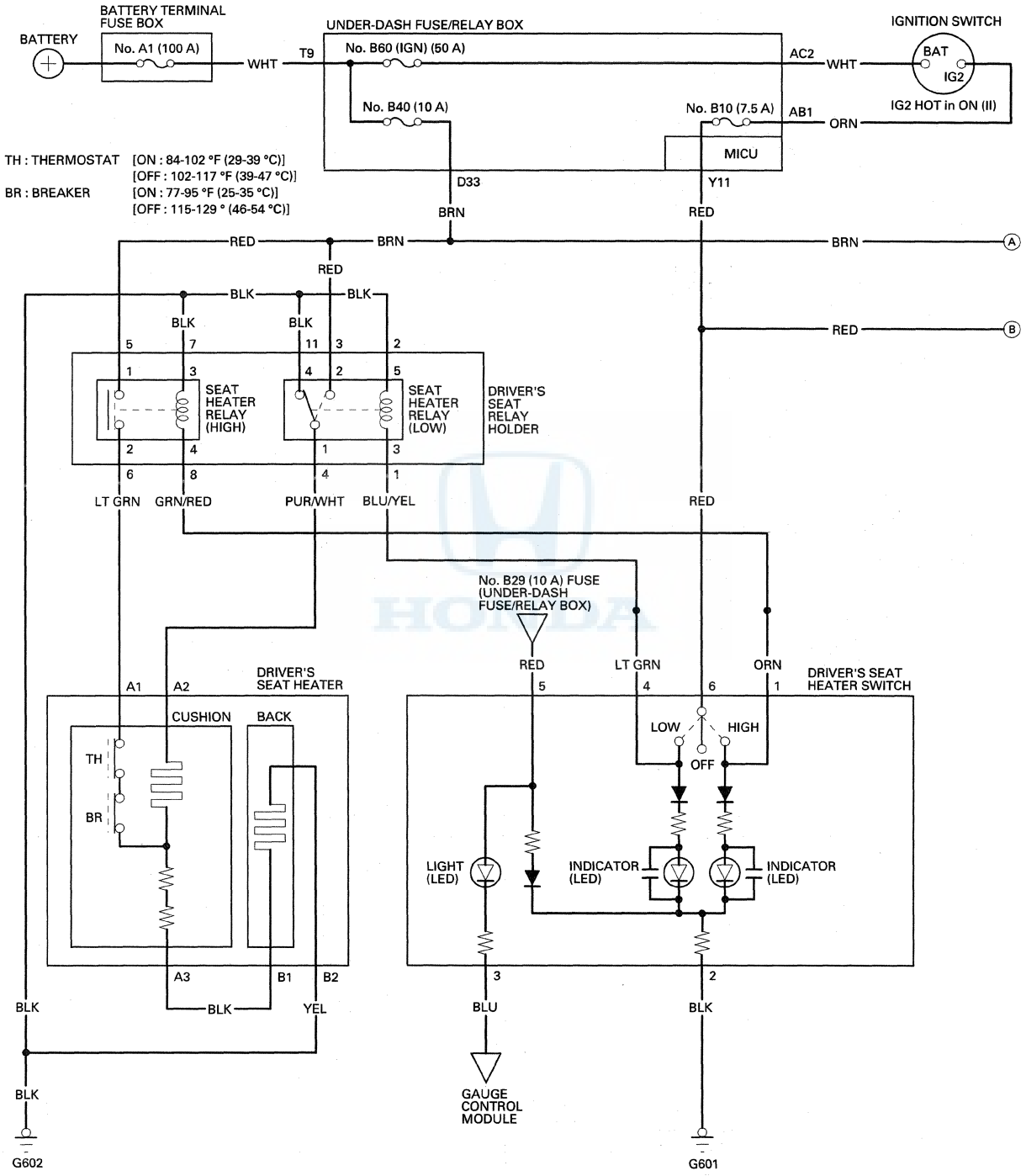


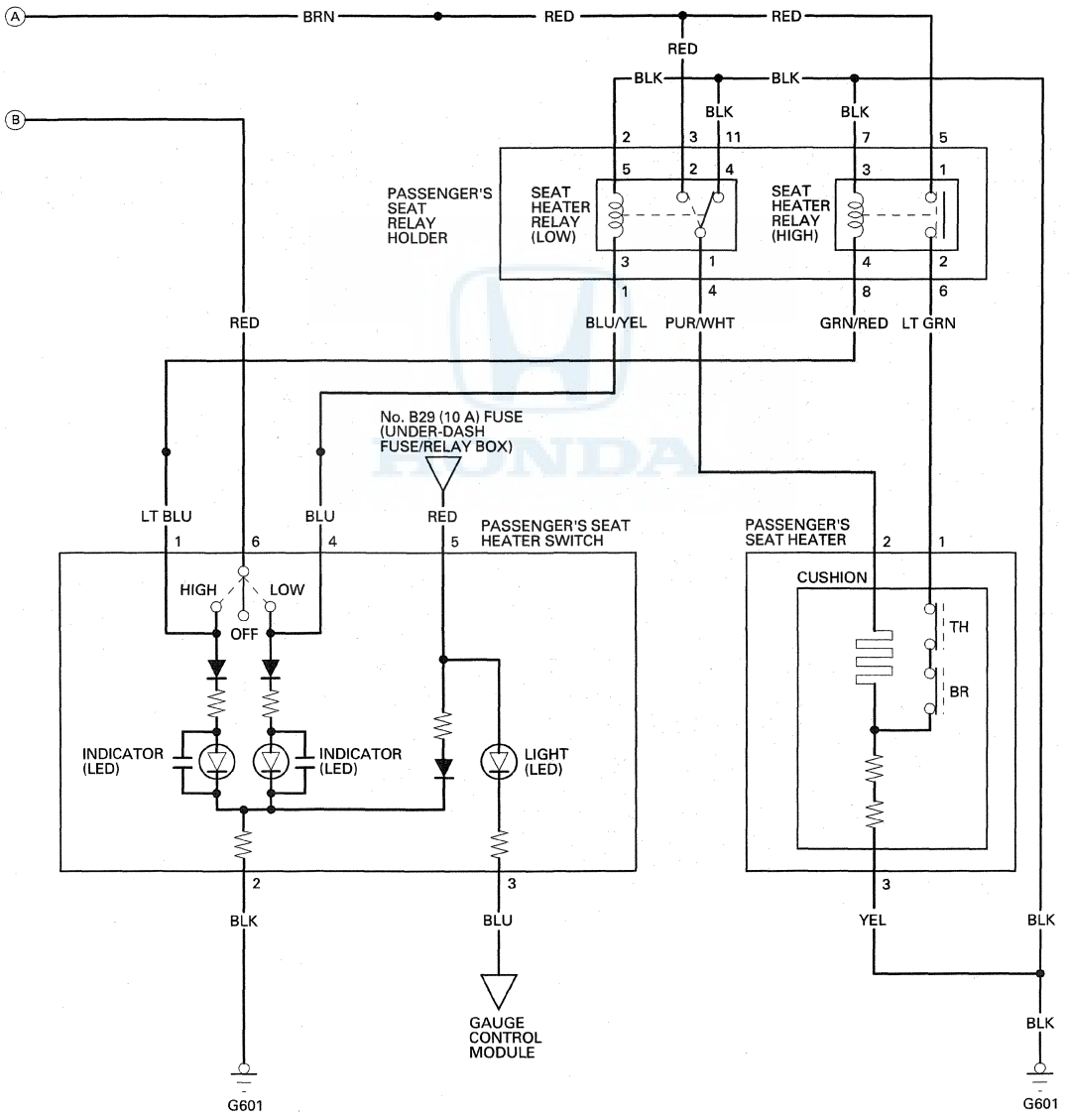
DRIVER'S SEAT HEATER SWITCH
Test/Replacement, page 22-385

PASSENGER'S SEAT HEATER SWITCH
Test/Replacement, page 22-385

Seat Heaters

Circuit Diagram




A
B
BRN
RED
RED
RED
BLK
BLK
BLK
BLK
2
3
11
7
5
5
2
4
3
1
PASSENGER'S SEAT RELAY HOLDER
SEAT HEATER RELAY (LOW)
SEAT HEATER RELAY (HIGH)
3
1
4
2
1
4
8
6
RED
BLU/YEL
PUR/WHT
GRN/RED
LT GRN
No. B29 (10 A) FUSE (UNDER-DASH FUSE/RELAY BOX)
LT BLU
BLU
RED
1
6
4
5
PASSENGER'S SEAT HEATER SWITCH
HIGH
LOW
OFF
INDICATOR (LED)
INDICATOR (LED)
LIGHT (LED)
PASSENGER'S SEAT HEATER
2
1
CUSHION
TH
BR
2
3
3
BLK
BLU
YEL
BLK
GAUGE CONTROL MODULE
BLK
G601
G601

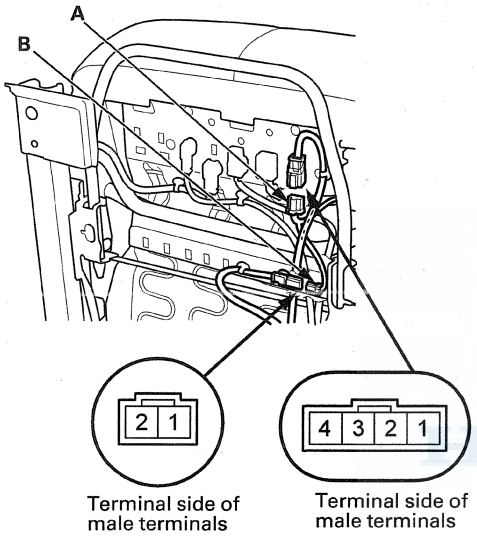
Seat Heaters

Seat Heater Test

Driver's seat

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.

1. Remove the driver's seat (see page 20-109).
2. Disconnect the connector A (4P) and connector B (2P) from the seat heaters.

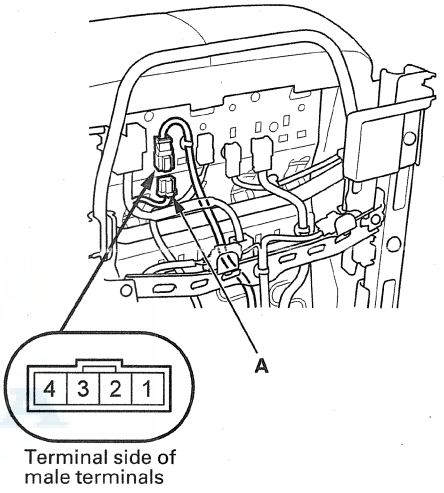


3. Check for continuity between seat heater connector B (2P) terminals No. 1 and No. 2. There should be continuity. If the continuity is not as specified, replace the seat-back heater (see page 22-386).
4. Reconnect seat heater connector B (2P) to the seat-back heater.
5. Check for continuity between seat heater connector A (4P) terminals No. 1 and No. 2, No. 2 and No. 3, and terminals No. 1 and No. 3. There should be continuity. If the continuity is not as specified, replace the seat cushion heater (see page 22-386).

Passenger's Seat

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.

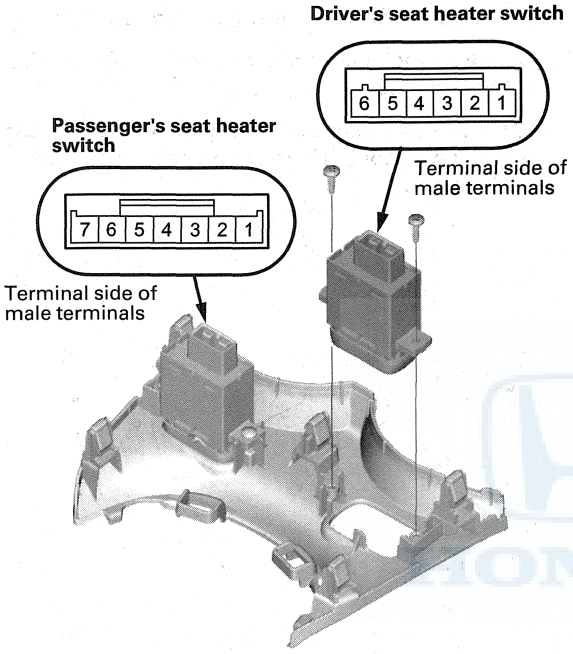
1. Remove the passenger's seat (see page 20-109).
2. Disconnect the 4P connector (A) from the seat heater.



3. Check for continuity between seat heater 4P connector terminals No. 1 and No. 2, No. 2 and No. 3, and terminals No. 1 and No. 3. There should be continuity. If the continuity is not as specified, replace the seat cushion heater (see page 22-386).

Switch Test/Replacement

1. Remove the center console (see page 20-79).
2. Disconnect the 6P (or 7P*) connector from the seat heater switch, then remove the switch.
   *: Passenger's seat heater switch



3. Check for continuity between the terminals in each switch position according to the table.

   NOTE:
   - Make sure the correct test lead (+ or −) is placed on the terminal.
   - When checking for continuity across the diode, use the diode setting (→|←) on the digital volt/ohm meter to check the diode bias.
   - Be aware of this characteristic; a diode is one that conducts fully in one direction (forward) and not at all in the opposite direction (reverse).

Terminal / Position		1	2	3	4	5	6
ON	HIGH	○	⊖	⊖		⊕	⊕
			⊖	⊖		⊕	
			⊖	⊖		⊕	
	LOW		⊖	⊖	○		○
			⊖	⊖		⊕	⊕
			⊖	⊖		⊕	
OFF			⊖	⊖		⊕	
			⊖	⊖		⊕	

4. If the continuity is not as specified, replace the switch.
5. Install the switch in the reverse order of removal.

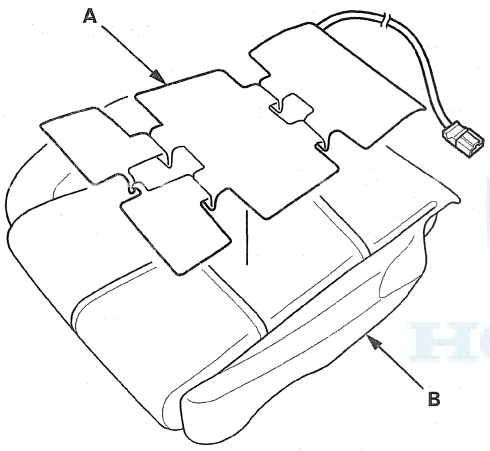
Seat Heater Replacement

Seat Cushion Heater

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.

1. Remove the seat cushion cover (see page 20-123).
2. Carefully remove the seat cushion heater (A) from the seat cushion pad (B).

   NOTE: The seat cushion heater is glued to the seat cushion pad. When removing it, take care not to damage the seat cushion pad.



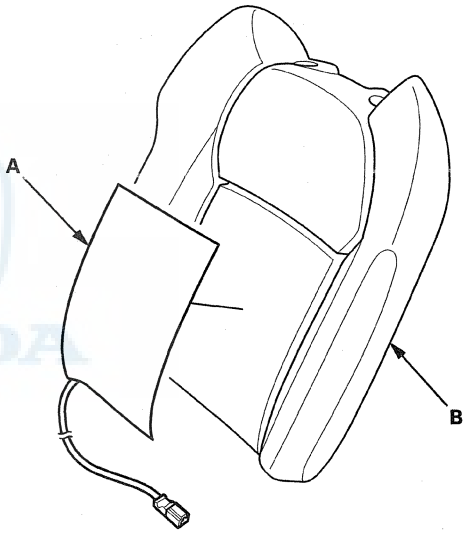
3. Install the parts in the reverse order of removal.

Seat-Back Heater

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-11), and precautions and procedures (see page 24-13) before performing repairs or servicing.

1. Remove the seat-back cover (see page 20-117).
2. Carefully remove the seat-back heater (A) from the seat back pad (B).

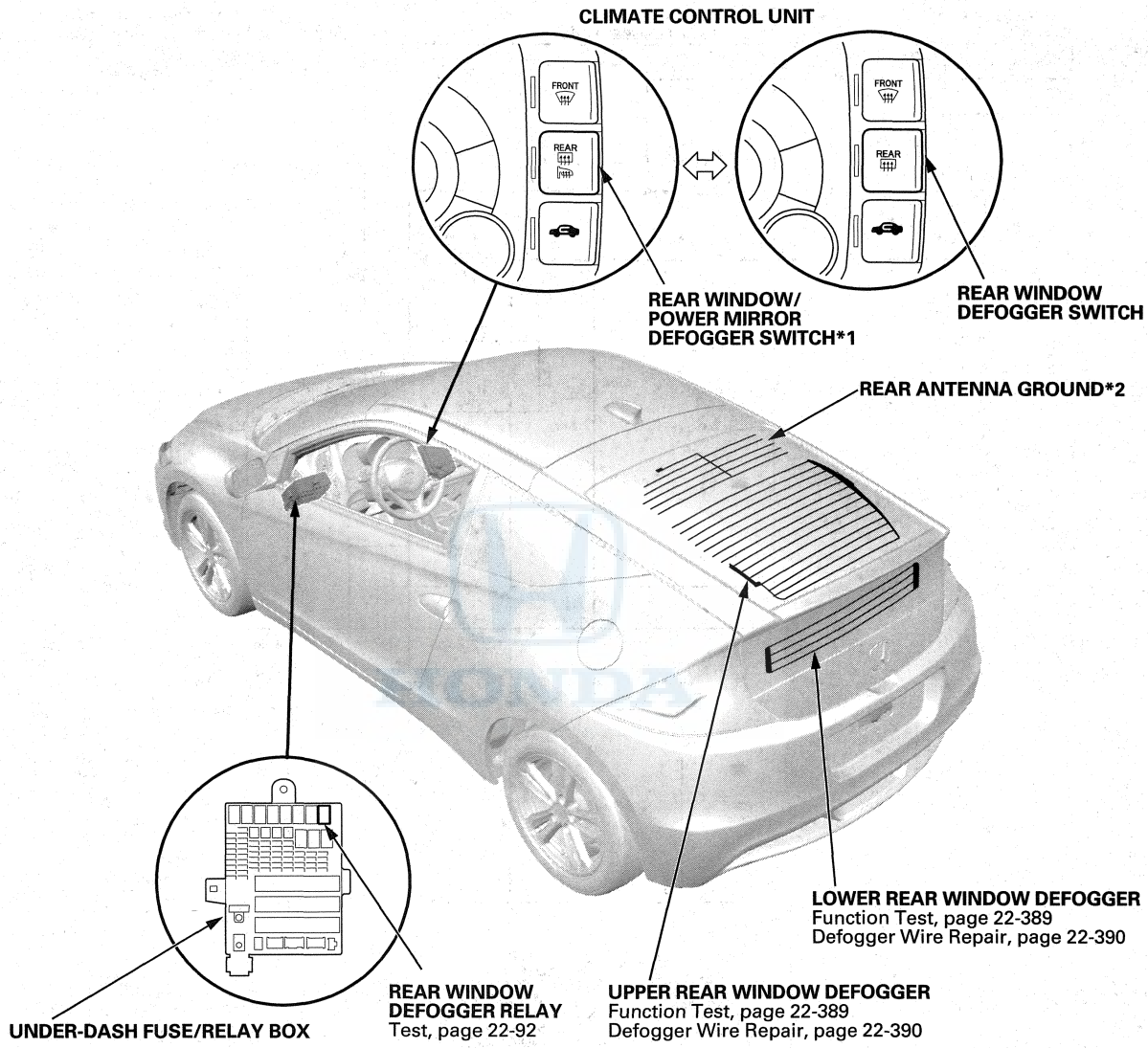
   NOTE: The seat-back heater is glued to the seat back pad. When removing it, take care not to damage the seat back pad.



3. Install the parts in the reverse order of removal.

Rear Window Defogger

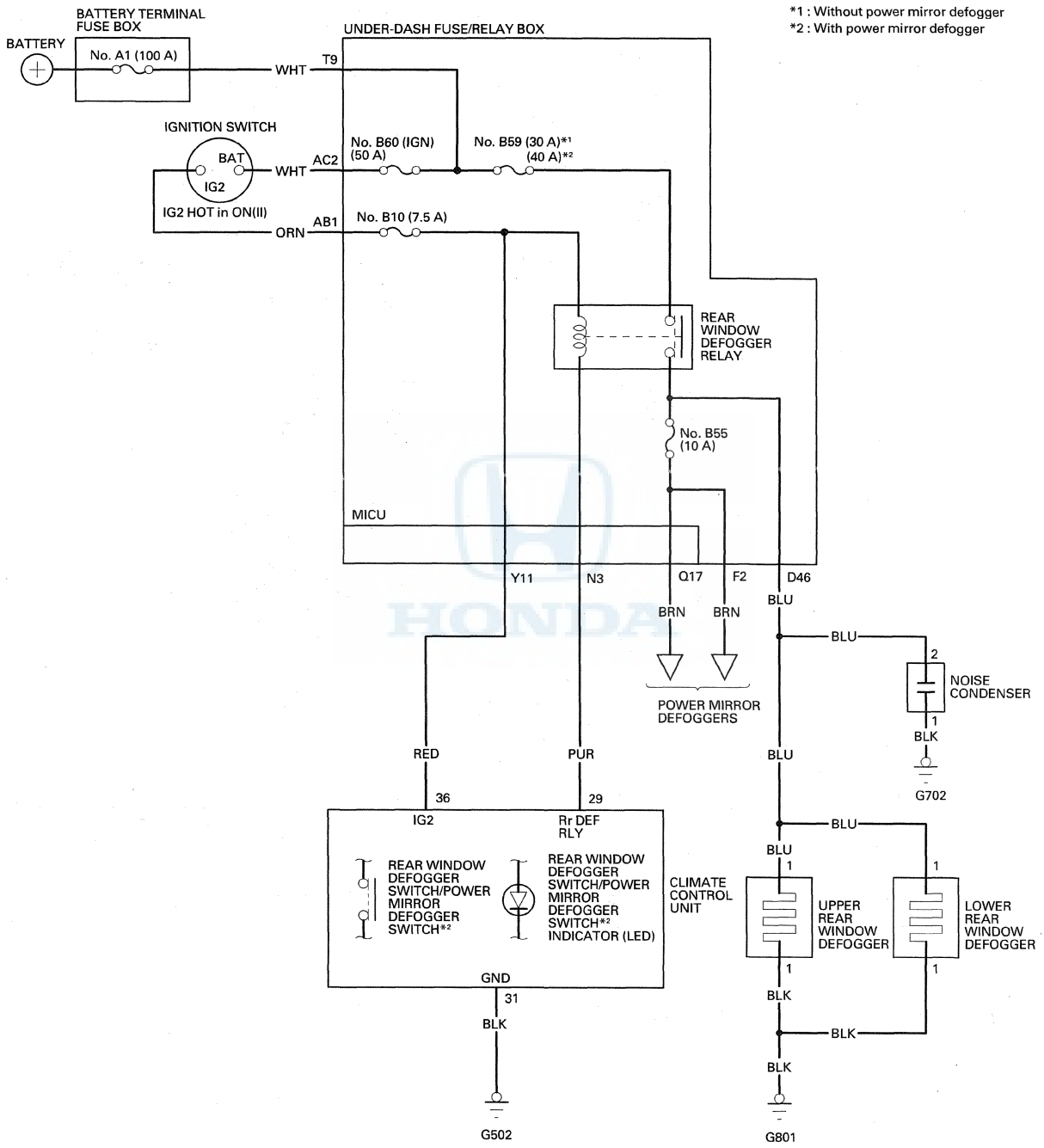
Component Location Index



***1: With power mirror defogger**
***2: The rear antenna ground eliminates electromagnetic waves from the battery module to prevent noise in the AM/FM radio, and does not have a defogger function.**

Rear Window Defogger

Circuit Diagram

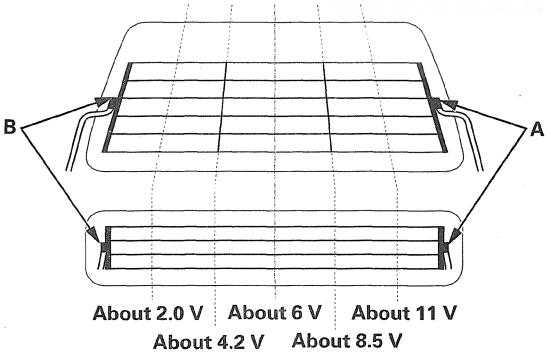


Function Test

NOTE:

- Before testing, check the No. B10 (7.5 A), No. B59 (40 A [30 A]), and No. B60 (IGN) (50 A) fuse in the under-dash fuse/relay box.
  [ ]: Without power mirror defogger
- Aftermarket window tinting should be removed before testing.
- When testing the defogger, hold a cup of hot steaming water near the glass. The steam can help diagnose a broken or under-performing defogger grid.
- Be careful not to scratch or damage the defogger wires with the tester probe.

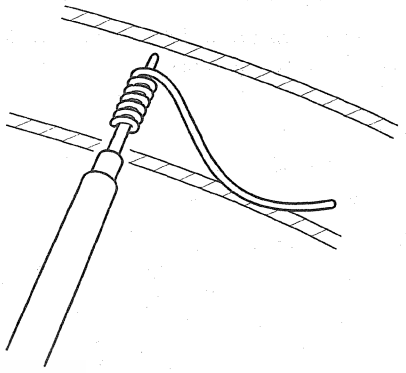
1. Turn the ignition switch to ON (II), then turn the rear window defogger switch ON.
2. Measure the voltage between rear window defogger A (1P) positive terminal and body ground. There should be battery voltage.
   - If there is no voltage, check for:
     - Faulty rear window defogger relay. (see page 22-92)
     - Faulty climate control unit.
     - An open or high resistance in the BLU wire to the positive terminal.
   - If there is battery voltage, go to step 3.



3. Measure the voltage between rear window defogger B (1P) negative terminal and body ground. There should be less than 0.2 V.

   If there is greater than 0.2 V, check for an open in the ground (BLK) wire or poor ground (G801). If there is 0.2 V or less, go to step 4.

4. To avoid damaging the defogger grid, wrap a single strand of bare copper wire or aluminum foil around the voltmeter probe. Use the foil or wire as a contact brush when moving across the defogger grid.



5. Touch the voltmeter positive probe to each point on each defogger wire, and the negative prove to the negative terminal.

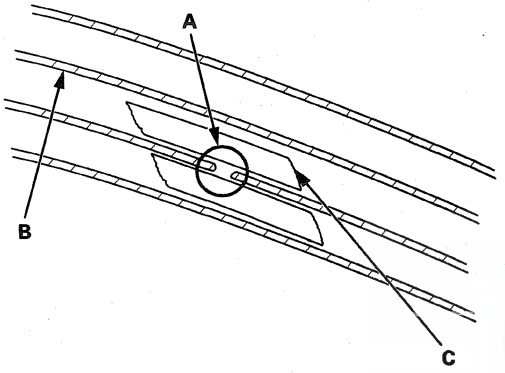
   NOTE: Touch the copper wire or aluminum foil wrapped around the probe, not the probe, to avoid damaging the defogger wires.
   - If the voltage is as specified, the defogger wire up to that point is OK.
   - If the voltage is not as specified, repair the defogger wire.
     - If voltage is more than specified at one of the points, there is a break or high resistance toward the negative half of the wire.
     - If voltage is less than specified at one of the points, there is a break or high resistance toward the positive half of the wire.

Rear Window Defogger

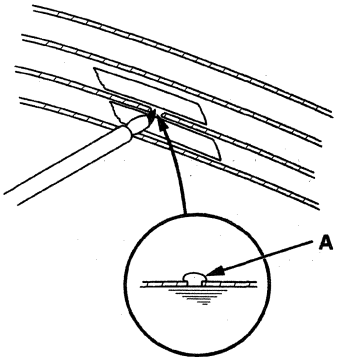
Defogger Wire Repair

NOTE:
- Aftermarket window tinting should be removed before testing.
- To make an effective repair, the broken wire section must be no longer than 25 mm (1.0 inch).

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with isopropyl alcohol.



2. Carefully mask above and below the broken portion of the defogger wire (B) with cellophane tape (C).
3. Using a small brush, apply a heavy coat of silver conductive paint (commercially available) (A) extending about 3.0 mm (0.1 in) on both sides of the break. Allow 25 minutes to dry.



4. Do the function test to confirm that the wire is repaired.
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS) (If Audio, Navigation, and Telematics maintenance is required)

The CR-Z SRS includes a driver's airbag in the steering wheel hub, a front passenger's airbag in the dashboard above the glove box, seat belt tensioners in the front seat belt retractors, side curtain airbags in the sides of the roof, and side airbags in the front seat-backs. Information necessary to safely service the SRS is included in this Service Manual. Items marked with an asterisk (*) on the contents page include or are located near SRS components. Servicing, disassembling, or replacing these items requires special precautions and tools, and should be done by an authorized Honda dealer.

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal or side collision, all SRS service work should be done by an authorized Honda dealer.
- Improper service procedures, including incorrect removal and installation of the SRS, could lead to personal injury caused by unintentional deployment of the airbags, side airbags, side curtain airbags, and/or seat belt tensioners.
- Do not bump or impact the SRS unit, front impact sensors, or side impact sensors, especially when the ignition switch is ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0); otherwise, the system may fail in a collision, or the airbags may deploy.
- SRS electrical connectors are identified by yellow color coding. Related components are located in the steering column, center console, dashboard, in the dashboard above the glove box, in the front seats, in the roof side, and around the floor. Do not use electrical test equipment on these circuits.

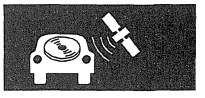
Audio, Navigation, and Telematics

Audio, Navigation, and Telematics
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Audio System
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Symptom Troubleshooting Index 23–7
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Error Codes 23–56
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* Audio Unit Removal/Installation 23–119
Stereo Amplifier Removal/Installation 23–121
Speaker Test/Replacement 23–122
* Audio Remote Switch Test 23–125
* Audio Remote Switch Replacement 23–125
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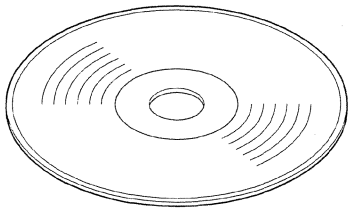
Navigation System
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DTC Troubleshooting Index ... 23–142
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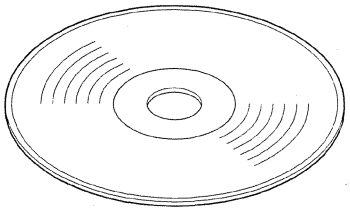


Special Tools

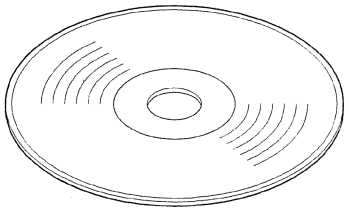
Ref.No.	Tool Number	Description	Qty
①	07AAZ-SDBA100	Diagnostic CD	1
②	07AAZ-SDBA200	Skip Test CD	1
③	07AAZ-SDBA300	Skip Test CD	1



①



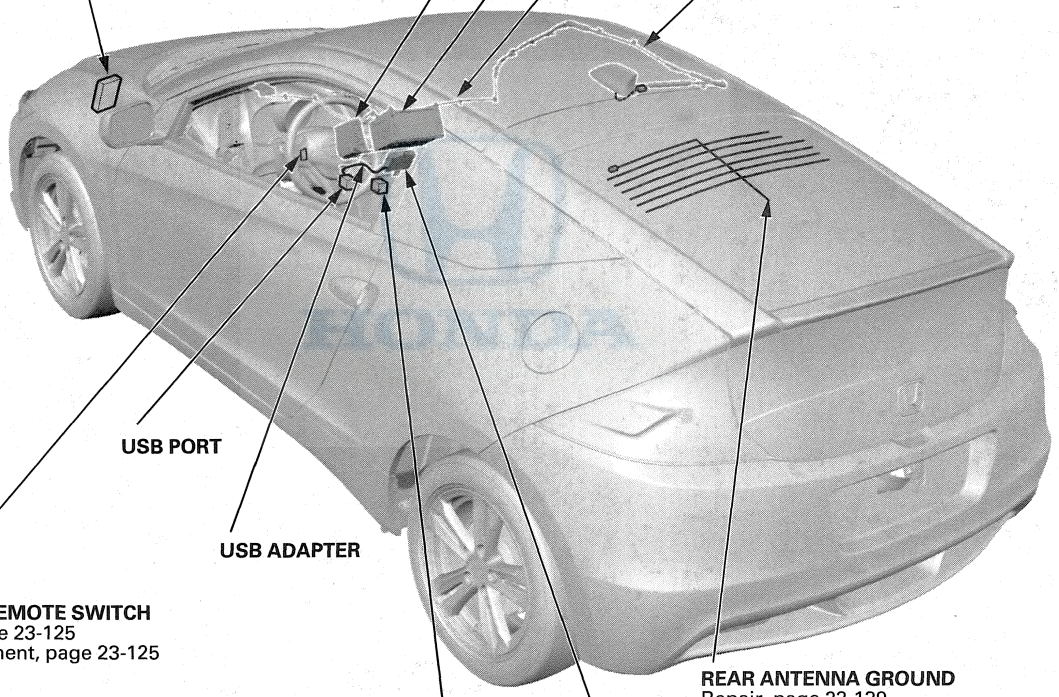
②



③

Component Location Index

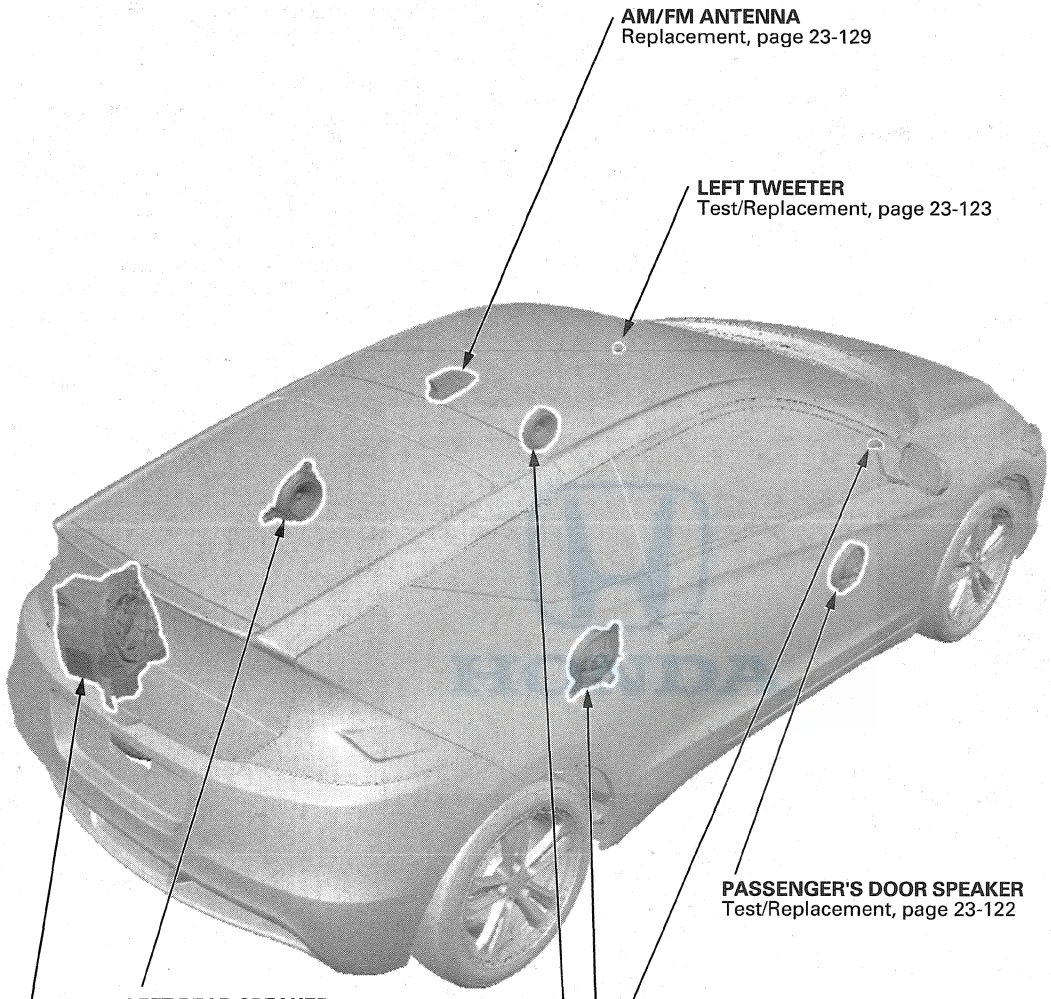
With Navigation



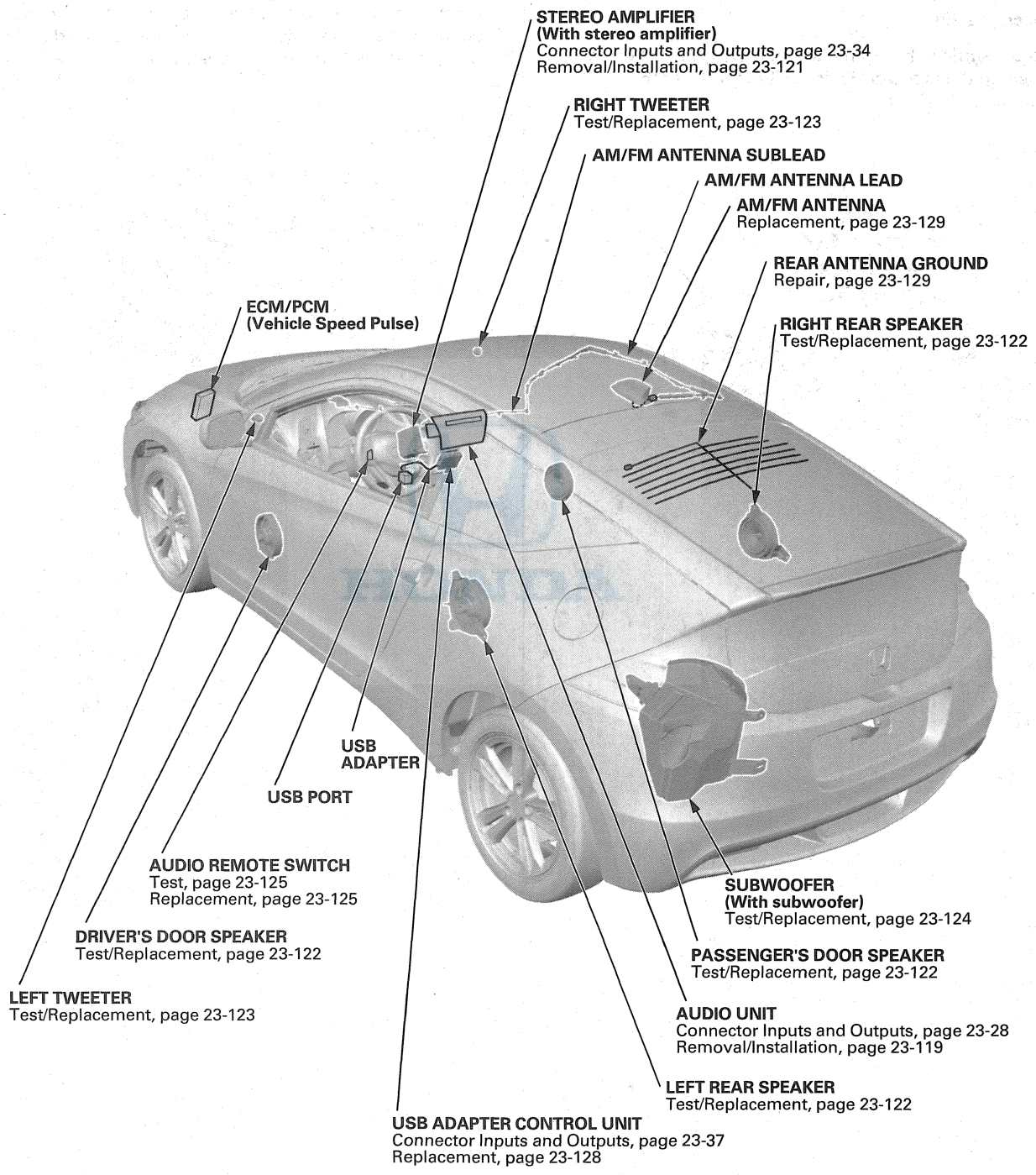
(cont'd)

Component Location Index (cont'd)

With Navigation



Without Navigation

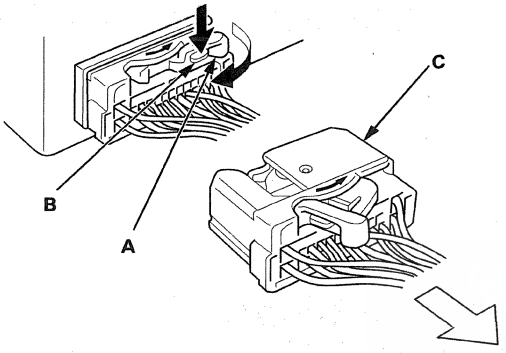


General Troubleshooting Information

Lever-Locked Connector

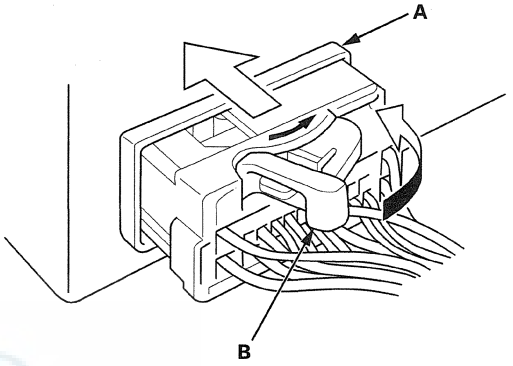
Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull out the connector (C).



Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.





Symptom Troubleshooting Index

With navigation

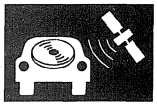
Symptom	Diagnostic procedure	Also check for
Poor AM or FM radio reception or interference	Symptom Troubleshooting (see page 23-59)	AM/FM antenna lead and/or sublead short or open in the wire
Audio-navigation unit power switch will not turn on (No information display and no sound)	Symptom Troubleshooting (see page 23-67)	
Audio-navigation unit power switch will not turn off	Symptom Troubleshooting (see page 23-70)	Coins in the CD player
No sound is heard from the speaker(s) (display is normal)	Symptom Troubleshooting (see page 23-72)	
Auxiliary input sound is low or cannot be heard	Symptom Troubleshooting (see page 23-82)	
Audio system sound is weak or distorted (display is normal)	Symptom Troubleshooting (see page 23-84)	
Radio preset memory is lost	Symptom Troubleshooting (see page 23-85)	Internal error
Volume does not change	Symptom Troubleshooting (see page 23-85)	
Volume does not increase with speed	Symptom Troubleshooting (see page 23-86)	
Volume is too high or too low when driving at freeway speeds	Symptom Troubleshooting (see page 23-88)	
Radio tuner does not change stations	Symptom Troubleshooting (see page 23-88)	
Audio-navigation unit button illumination does not work	Symptom Troubleshooting (see page 23-90)	
Audio remote switch does not work properly	Symptom Troubleshooting (see page 23-93)	
Audio disc does not load	Symptom Troubleshooting (see page 23-96)	Label on the disc
Audio disc does not eject	Symptom Troubleshooting (see page 23-96)	Label on the disc
Audio disc does not play	Symptom Troubleshooting (see page 23-97)	Unsupported format
Audio disc skips	Symptom Troubleshooting (see page 23-97)	Tire pressure (over-inflated), disc smudged, dirty, or scratched
USB device does not function	Symptom Troubleshooting (see page 23-99)	Compatibility of the USB device (see Owner's Manual)
USB input sound is low or cannot be heard	Symptom Troubleshooting (see page 23-109)	Compatibility of the USB device (see Owner's Manual)
Audio disc cannot be inserted and/or ejected	Symptom Troubleshooting (see page 23-113)	
Display can be opened and/or closed even when an audio disc is being inserted or ejected	Replace the audio-navigation unit (see page 23-232)	
PC card will not play/card icon on audio screen cannot be selected	Symptom Troubleshooting (see page 23-114)	

(cont'd)

Symptom Troubleshooting Index (cont'd)

Without navigation

Symptom	Diagnostic procedure	Also check for
Poor AM or FM radio reception or interference	Symptom Troubleshooting (see page 23-63)	AM/FM antenna lead and/or sublead short or open in the wire
Audio unit power switch will not turn on (No information display and no sound)	Symptom Troubleshooting (see page 23-69)	
Audio unit power switch will not turn off	Symptom Troubleshooting (see page 23-71)	Coins in the CD player
No sound is heard from the speaker(s) (display is normal)	Symptom Troubleshooting (see page 23-76)	
Auxiliary input sound is low or cannot be heard	Symptom Troubleshooting (see page 23-84)	
Audio system sound is weak or distorted	Symptom Troubleshooting (see page 23-84)	
Radio preset memory is lost	Symptom Troubleshooting (see page 23-85)	Internal error
Volume does not change	Symptom Troubleshooting (see page 23-85)	
Volume does not increase with speed	Symptom Troubleshooting (see page 23-87)	
Volume is too high or too low when driving at freeway speeds	Symptom Troubleshooting (see page 23-88)	
Radio tuner does not change stations	Symptom Troubleshooting (see page 23-88)	
Display does not dim or brighten with dimmer	Symptom Troubleshooting (see page 23-89)	
Audio unit button illumination does not work	Symptom Troubleshooting (see page 23-91)	
Audio remote switch does not work properly	Symptom Troubleshooting (see page 23-94)	
Audio disc does not load	Symptom Troubleshooting (see page 23-96)	Label on the disc
Audio disc does not eject	Symptom Troubleshooting (see page 23-96)	Label on the disc
Audio disc does not play	Symptom Troubleshooting (see page 23-97)	Unsupported format
Audio disc skips	Symptom Troubleshooting (see page 23-97)	Tire pressure (over-inflated), disc smudged, dirty, or scratched
Audio unit button does not work	Symptom Troubleshooting (see page 23-98)	
Audio unit disc indicator does not work	Symptom Troubleshooting (see page 23-99)	
USB device does not function	Symptom Troubleshooting (see page 23-104)	Compatibility of the USB device (see Owner's Manual)
USB input sound is low or cannot be heard	Symptom Troubleshooting (see page 23-111)	Compatibility of the USB device (see Owner's Manual)



System Description

Overview

The audio unit or audio-navigation unit acts as the processor for all audio functions. Select audio functions from the audio unit or audio-navigation unit, the audio remote switch (on the steering wheel), or by using the navigation voice control system (with navigation). The audio display provides the current audio status. For vehicles with navigation, additional audio information is available by touching the audio button on the navigation screen (see the Owner's Manual and the navigation manual for more details.).

The audio system is equipped with an auxiliary input jack (AUX) in the audio unit (without navigation), or in the dashboard center lower cover (with navigation). The system accepts auxiliary audio inputs using a 3.5 mm stereo miniplug.

The audio unit or audio-navigation unit has a built-in EEPROM (electrically erasable programmable read-only memory). This memory holds the audio presets (AM/FM radio frequency, sound settings, etc.) even when the 12 volt battery is disconnected.

For vehicles with navigation, pressing the open/close button on the navigation display allows access to the CD slot, the PC card slot, and the navigation DVD.

A security signal is daisy-chained between the audio and vehicle components for integration into the vehicle's security system.

Speed-Sensitive Volume Compensation (SVC)

The audio system is equipped with speed-sensitive volume compensation (SVC). The audio-navigation unit or audio unit receives the vehicle speed pulse (VSP) from the ECM/PCM. The system processes the speed input and increases the navigation or audio system volume level as the vehicle speed increases to compensate for the various interior noises that occur at higher speeds. When the vehicle slows down, the volume returns to its normal level. The SVC has four settings: SVC OFF, LOW, MID and HIGH that can be adjusted using the audio-navigation unit or audio unit. The SVC comes from the factory with the MID setting as the default.

To change the audio unit SVC setting, press the sound (♪/🔊) button repeatedly until the SVC is displayed, and rotate the VOL/SELECT knob to adjust the SVC to the desired setting (SVC OFF, LOW, MID, or HIGH).

To change the audio-navigation unit SVC setting, press the AUDIO button, and then select the SOUND icon on the navigation display. Press the navigation display to select the desired setting (SVC OFF, LOW, MID, or HIGH).

Radio Data System (RDS)

On the FM band, you can select a favorite station and display the program service name provided by the radio data system (RDS).

Program Service (PS) Name Display

The program service name display function shows the name of the station you are listening to. You can turn this function on or off.

Rear Antenna Ground

All models are equipped with the rear antenna ground attached to the upper rear window that is connected to the body ground. This antenna ground prevents the electromagnetic waves that are created the IMA system from interfering with the reception of the AM/FM radio frequencies.

(cont'd)

System Description (cont'd)

Muting Logic

The navigation system allows voice control of the audio, the PC card, and the CD player. Voice control commands are communicated on the GA-Net. When using the navigation TALK/BACK button, the audio is muted on all speakers and you get navigation sound on the front channels. When using the navigation or route guidance (RG), the front speakers give the navigation sound and the rear speakers continue to play. For more information, see the navigation section. The outline of the interruption function is shown in this table.

Contents	Audio output				
	Left front CH	Right front CH	Right rear CH	Left rear CH	Subwoofer CH
Pressing Navigation TALK/BACK Buttons	Navigation output	Navigation output	Muted	Muted	Muted
Route Guidance	Navigation output	Navigation output	Audio	Audio	Audio
HFL	Telephone output	Telephone output	Muted	Muted	Muted
HFL and Route Guidance	Navigation output	Telephone output	Muted	Muted	Muted

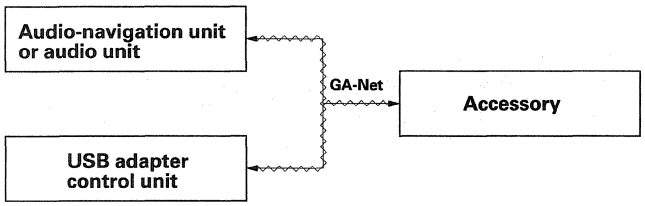
USB Adapter

The audio-navigation unit or the audio unit can play digital music from portable audio players, USB drives, etc. when the device is plugged into the USB port. The audio-navigation unit or the audio unit uses the GA-Net to allow you to control the device from the audio-navigation unit or the audio unit when searching and playing the files. Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information.

GA-Net Bus Configuration

The GA-Net bus passes audio and navigation commands throughout the navigation and audio components.

These commands include navigation touch screen and hard button signals. Because the entire bus is daisy-chained between components (see diagram), any open or short in the GA-Net bus harness will cause any or all of these functions to become inoperative. The addition of any audio accessory must maintain the continuity of the GA-Net bus by installing the Y cable included with the accessory kit.



Anti-Theft Feature

With navigation

The audio-navigation unit has a coded theft protection circuit. Make sure you have the anti-theft security code before:

- Disconnecting the 12 volt battery.
- Disconnecting the audio-navigation unit connector A (24P) and C (8P).
- Removing the No. B1 (15 A) fuse from the under-dash fuse/relay box.

When the audio-navigation unit is reconnected to the power and the ignition switch is turned to ON (II), CODE appears on the display. Enter the 4-digit anti-theft security code.

If the code cannot be found, use the interactive Network (iN) to look it up. You can view the serial number in the ECU Info diagnostic screen (see page 23-183). Alternatively, you can find the serial number on the underside label which is located on the audio-navigation unit in the dash.

When replacing the audio-navigation unit, be sure to give the customer the new anti-theft security code.

If you cannot find the code, refer to the Anti-Theft Feature in the navigation section (see page 23-131) on how to retrieve the code using the iN.

Without navigation

The audio unit has a coded theft protection circuit. Make sure you have the anti-theft security code before:

- Disconnecting the 12 volt battery.
- Disconnecting the audio unit connector A (24P).
- Removing the No. B1 (15 A) fuse from the under-dash fuse/relay box.

When the audio unit is reconnected to the power and the ignition switch is turned to ON (II), CODE appears on the display. Enter the 5-digit anti-theft security code.

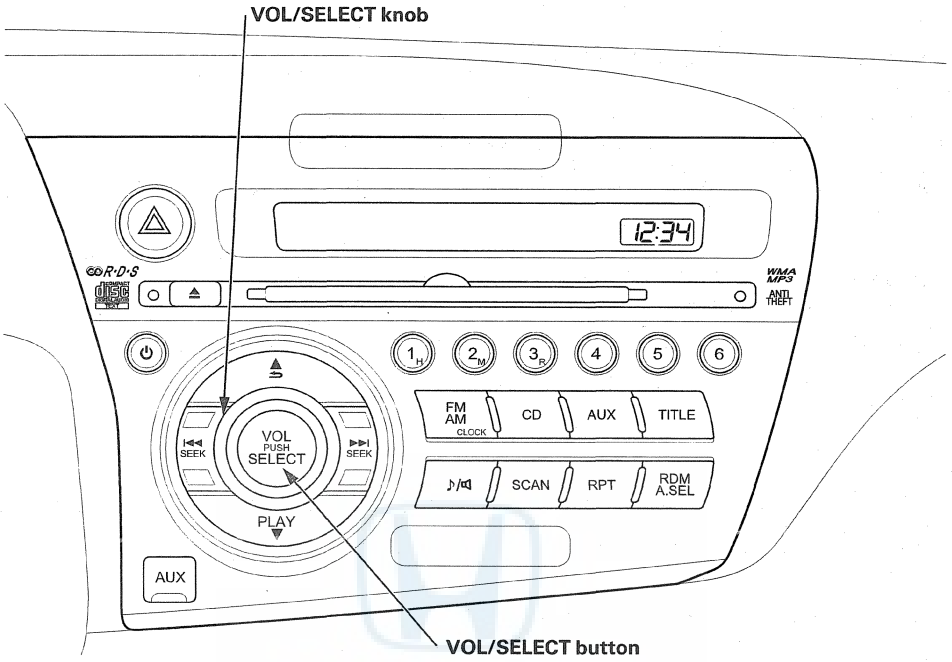
When replacing the audio unit, be sure to give the customer the new anti-theft security code.

If you cannot find the code, refer to the Self-Diagnosis Function (see page 23-49) on how to retrieve the code using the iN.

(cont'd)

System Description (cont'd)

Basic Audio Operation



1. When you press the VOL/SELECT button, the mode changes to the SELECT mode. When you are in the SELECT mode, use the following buttons or knob to navigate through the various audio inputs.

BUTTON or KNOB	RADIO	CD-DA	CD (MP3/WMA) USB	iPod
VOL/SELECT knob	TUNE	TRACK selection	FOLDER selection FILE selection	Tune retrieval*1
VOL/SELECT button	Exit SELECT mode	Start playing the selected track	When a FOLDER is selected, you move down to the next level. When a music file is selected, the file begins playing.	When a FOLDER is selected, you move down to the next level. When a music file is selected, the file begins playing.
▲	Exit SELECT mode	Exit SELECT mode	Returns to the previous level*2	Returns to the previous level*2
▼	Exit SELECT mode	Start playing the selected track	FOLDER/FILE selection and play*3	PLAY MODE selection and play*4

*1: There are four basic play modes (PLAYLISTS/ARTISTS/ALBUMS/SONGS) and the layered structure under applies to the specification for the iPod.
*2: When you are in the top hierarchy, selecting ▲ exits the SELECT mode.
*3: When ▼ is pressed with FOLDER selected, it begins playing the first music file in the FOLDER.
*4: When ▼ is pressed with PLAYLIST/ARTIST/ALBUM selected, it begins playing the first music in the selected category.

2. When any other button is pressed, the SELECT mode is canceled, and the audio unit changes per the button pressed.
3. When you are in the SELECT mode, the selected radio station or music file continues playing until you select a new input or file (for example, you can listen to the radio until you find the song you wish to play on the CD).

USB Function

Music files can be stored on portable USB devices (flash drives and approved iPod products) and played through the audio-navigation unit or the audio unit by using the USB port. Although a customer can create many different folder levels on their USB device, the audio-navigation unit or the audio unit only recognizes two levels and automatically sorts the music to meet this requirement.

To play the music files, use the dial selector to find the folder where the music file is located, then select the album or music file (see the Owner's Manual for more information about selecting and playing USB files and approved iPod products).

USB Device Requirements

- 2.0 High speed USB capable (maximum speed is 12 Mbps)
- At least 256 MB storage capacity
- USB formatted to be compatible with Windows-based operating systems
- If the USB has a security feature, like write protection, it must be turned off

There are many different USB drives, manufacturers, and configurations with new devices being released every day, which makes it impossible to test all USB devices with the audio system. Even if the USB device meets all these requirements, it may not be compatible.

To check if a USB device is compatible with the vehicle, test the USB device in a known-good vehicle of the same model and year. If the USB device does not work on the known-good vehicle, assume that it is faulty or not compatible. A USB device may work on a later year of the same model vehicle because the audio-navigation unit or the audio unit software is constantly updated.

The audio-navigation unit or the audio unit displays the folder differently than what you may see on your PC because the audio-navigation unit or the audio unit only recognizes two folder levels. The audio-navigation unit or the audio unit overwrites the data for the track order when you connect the USB device. The audio unit does not modify the music files or the structure on the USB device.

Hard disc drives do not support overwriting the data for the track order, which is why they are not recommended.

Reconnecting the USB Device

When you disconnect a USB drive, the data for the track order remains in the audio-navigation unit's or the audio unit's memory so when you reconnect the same USB drive, the audio-navigation unit or the audio unit continues playing from the location where it was disconnected. If a new USB drive is connected, the data for the track order is rewritten and you need to select the album or music file.

(cont'd)

System Description (cont'd)

USB Function List

	Item	Specifications	Remarks
MP3	Supported standards	MPEG1 Audio Layer3	
		MPEG2 Audio LSF Layer3	
	Supported extensions	.mp3/.MP3	Half-size character only
	Sampling frequency (kHz)	32/44.1/48	MPEG1
		16/22.05/24	MPEG2
	Bit rate (kbps)	32/40/48/56/64/80/96/112/128/160/192/224/256/320/VBR	MPEG1
		8/16/24/32/40/48/56/64/80/96/112/128/144/160/VBR	MPEG2
	Supported tag	ID3v2 (v2.2/v2.3/v2.4)	Prioritize v2 over v1 No guarantee for asynchronous tag
		ID3v1 (v1.0/v1.1)	
	Tag information	Title/Artist/Album	
	Max. Tag character count	Max. 64 Byte	ID3v1: Max. 30 Byte
	Partition	Top partition only	
	Max. layers	8	
WMA	Supported standards	WMA Ver7/8/9	
	Supported extensions	.wma/.WMA	Half-size character only
	DRM file	Unsupported	Count as a number of files
	Sampling frequency (kHz)	32/44.1/48	
	Bit rate (kbps)	48 — 320/VBR (Peak 384)	
	Supported tag	WMA TAG	
	Tag information	Title/Artist/Album	
	Max. Tag character count	Max. 64 Byte	
	Partition	Top partition only	
	Max. layers	8	
AAC	Supported standards	MPEG4/AAC LC	Only the file encoded with iTunes.
		MPEG2/AAC LC	
	Supported extensions	.m4a/.M4A	Half-size character only
	DRM file	Unsupported	No count as a number of files
	Sampling frequency (kHz)	8/11.025/12/16/22.05/24/32/44.1/48	
	Bit rate (kbps)	8 — 320	No guarantee for VBR file
	Supported tag	MPEG-4 header	Prioritize over ID3 tag
		ID3v1/v2	Same as MP3
	Tag information	Title/Artist/Album	
	Max. Tag character count	Max. 64 Byte	ID3v1: Max. 30 Byte
	Partition	Top partition only	
	Max. layers	8	

USB with Audio Units

When you plug in a USB drive, the audio unit automatically searches the USB drive for playable music files. See the Owner's Manual for more information about navigating USB menus and selecting music.

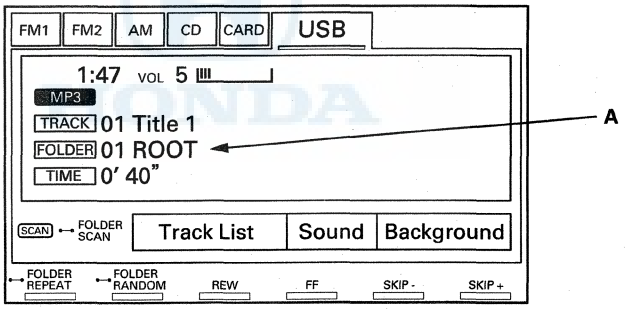
The audio unit organizes the music folders and files in a similar matrix that appears on the USB drive. The exception to this matrix is music files that are not located in a folder. The audio unit automatically creates a folder titled ROOT or FOLDER 01 and lists all these playable music files in it. If your customer complains that they can't find some songs loaded on their USB drive, recommend that they check the ROOT folder or FOLDER 01 for the missing music files.

USB with Audio-Navigation Units

When you plug in a USB drive, the audio-navigation unit automatically searches the USB drive for playable music files. See the Owner's Manual for more information about navigating USB menus, selecting music, and music file compatibility.

The audio-navigation unit organizes the playable music folders and files that appear on the USB drive. If there are any music files that are not located in a folder, the audio-navigation unit automatically creates a folder titled ROOT, and lists all these playable music files in it. If your customer complains that they can't find some songs loaded on their USB drive, recommend that they check the ROOT folder for the missing music files. If all the music files on the USB are in folders, the ROOT folder does not appear.

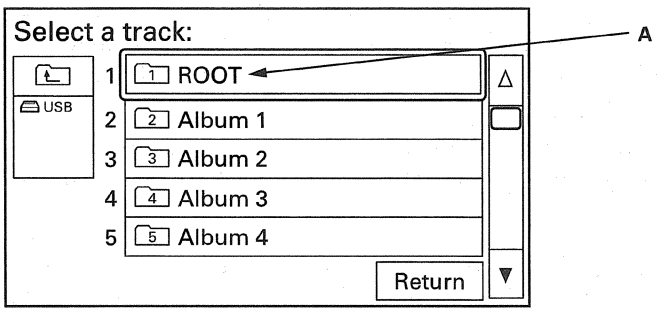
When there are music files not located in a folder, the audio-navigation automatically creates a folder named ROOT (A).



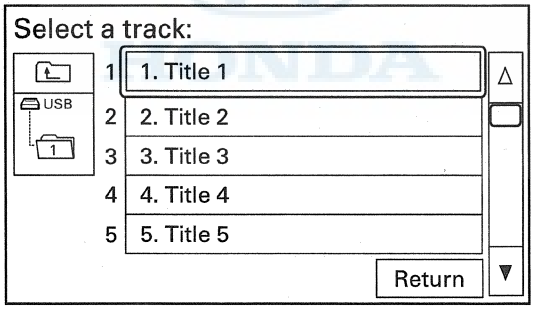
(cont'd)

System Description (cont'd)

Select the Track List button to see the ROOT folder (A) which is automatically created only when there are music files not located in folders.



All the music files not located in folders are listed under the ROOT folder.



iPod

iPod Operation with Audio Unit

When an iPod is connected to the audio unit with the USB port, you can navigate through the iPod's music files with the VOL/SELECT knob and the ⏮ ⏭ key on the audio unit. You cannot use the iPod's controls.

The AUX terminal is a sound input terminal. When you connect an iPod to the audio unit using the AUX terminal, the audio unit cannot control the iPod except for the volume control. To select and play songs, use the iPod's controls.

Because hardware and software continually change, make sure the iPod is compatible with the vehicle by referring to the applicable Owner's Manual.

iPod Operation with Audio-Navigation Unit

When an iPod is connected to the audio-navigation unit with the USB port, you can navigate through the iPod's music files with the joystick and the ⏮ ⏭ key on the audio-navigation unit. You cannot use the iPod's controls.

The AUX terminal is a sound input terminal. When you connect an iPod to the audio-navigation unit using the AUX terminal, the audio-navigation unit cannot control the iPod except for the volume control. To select and play songs, use the iPod's controls.

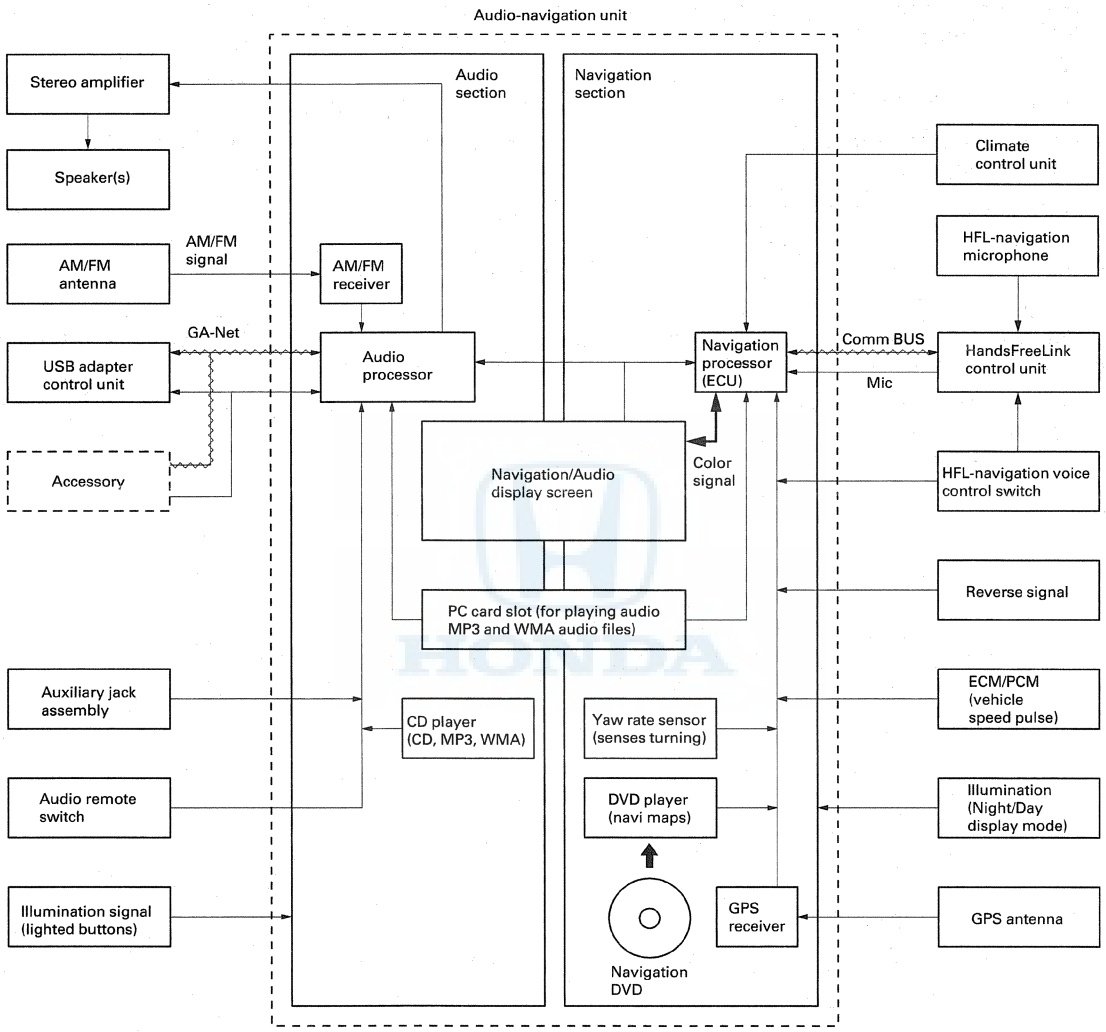
Because hardware and software continually change, make sure the iPod is compatible with the vehicle by referring to the applicable Owner's Manual.

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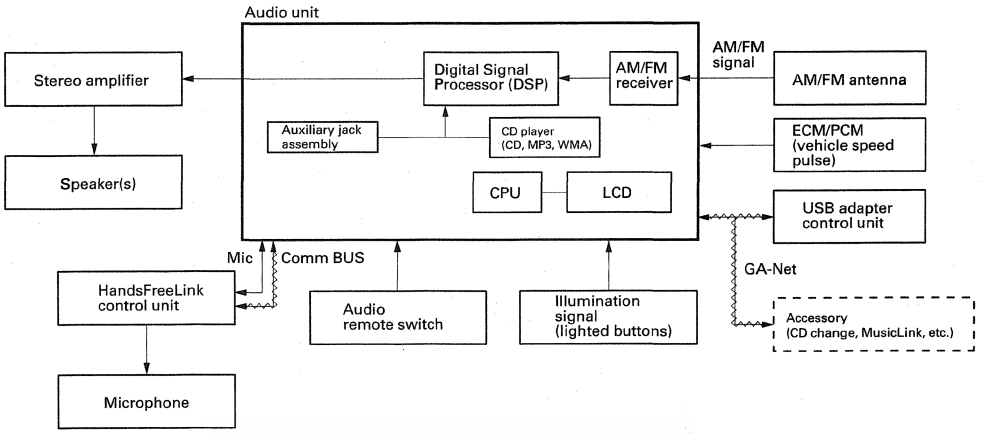
System Description (cont'd)

System Diagram

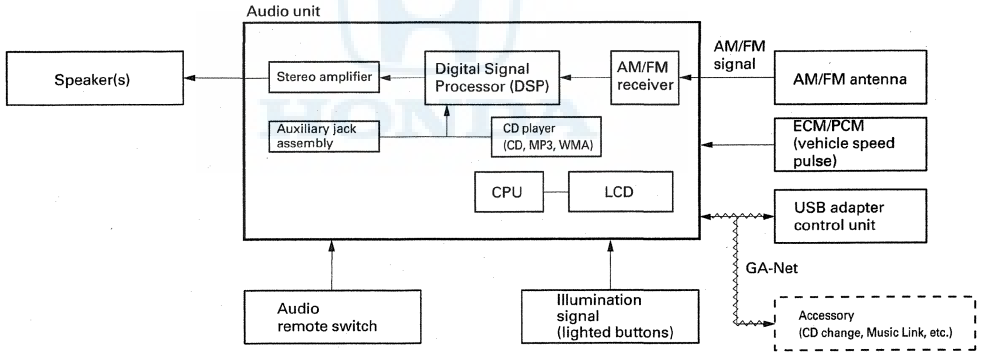
With navigation



Without navigation (Separate stereo amplifier type)



Without navigation (Built-in stereo amplifier type)



(cont'd)

System Description (cont'd)

Audio Glossary

NOTE: All items may not apply to this vehicle. See the Owner's Manual for more information.

Item	Definition
Active noise cancellation	The active noise cancellation system cancels some of the vehicle noise. This occurs in the 1,500—2,400 rpm range. Microphones detect the low frequency sound, and the system outputs a canceling sound from the audio speaker.
Active Sound Control	The next generation of sound control that eliminated unwanted sound in the passenger compartment.
AM (Amplitude Modulation)	The type of transmission used in the standard radio broadcast band from 530 to 1,710 kHz.
Amplifier	A device that increases the level of a signal by increasing the current or voltage.
Antenna	A device used to send or receive electromagnetic waves through the air.
ATA (PC Card)	A type of card that has been tested for use in playing WMA and MP3 music files in the PC card slot. Sizes of up to 1 GB have been tested.
Audio remote switch	The switches on the steering wheel that control the audio system.
Auxiliary jack	Allows the customer to use a portable audio device to input audio recordings.
Balance	A control that changes the relative volume of the left and right channels.
Band	A range of frequencies between two definite limits. Bands are assigned by the Federal Communications Commission for specific uses.
Bass	An adjustment for the low frequency sounds of around 160 Hz and below.
Bluetooth Audio	Allows the customer to play audio recordings stored on their cell phone through the audio system.
Byte	A unit of storage for computer files and memory. A CD holds approximately 700 million bytes.
Compact flash	A standard for small-size (3 x 4 cm), memory cards used in mobile computers, PDAs, and digital cameras. Compact flash memory cards are available in size of 32 MB up to 4 GB or more and can be played in the audio PC slot. Sizes above 1 GB have not been tested.
CD	A 4.5-inch plastic disc containing digital audio recording that is played optically on a laser equipped player. Never use discs with a paper label. In a hot vehicle, labels can curl up and jam the unit.
CD changer	CD player that can store and play more than one CD. Two types are available. Some units accept CDs fed into the changer one at a time, and others accept a magazine (with CDs stacked in a container).
CD player	A component designed to play compact disc recordings using a laser optical pickup. The signal from a CD player usually requires amplification.
CSF (Cold Start Fix) screens	These screens are displayed if the system requires a GPS initialization. The vehicle should be moved outside into an open area away from buildings/power lines.
dB (Decibels)	A method of measuring sound or radio signal strength received by the audio unit antenna.
Distortion	Inexact reproduction of an audio signal caused by playing music at levels the audio system cannot handle. you will typically hear this as static, pops, or crackles.
Dolby (noise reduction)	A processing system developed by Dolby Laboratories that reduces the background noise on recording media. The result is a cleaner playback from the audio system.

Item	Definition
DUET	A serial data communication line used for sub display.
DVD (Digital Versatile Disc)	A 4.5-inch CD-like format used for storing movies with digital audio and video features. The DVD-A format is a DVD format designed for DVD audio systems. Some vehicles can play DVD and DVD-A formats.
Equalizer	A device that changes the relative volume of individual frequency bands to suit personal tastes of the listener.
Fader	The control that adjusts the relative volume levels of front and rear speakers in a four-speaker system.
Format	To prepare a PC card to receive files this function is done on a PC. Always choose either FAT or FAT32, as the NTFS format is not accepted by the system. Pick the default sectors for the format method selected.
FM (Frequency Modulation)	The form of modulation used for radio and television sound transmission in most of the world. Less prone to interference than AM. The FM broadcast band in North America covers roughly 87.7 to 107.9 MHz.
GA-Net	The GA-Net allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-Net or components, the entire audio and navigation system may appear inoperative.
GB (Gigabyte)	A unit of memory or disc storage equal to one billion bytes (1,000 million bytes).
HDD	Hard disc drive. The navigation does not use a DVD, but uses a hard drive to contain the navigation software. Can be updated with a CD or DVD that is inserted into the audio disc slot.
Hz (Hertz)	The unit of frequency equal to one cycle per second (cps). One kilohertz (kHz) equals 1,000 cps; one megahertz (MHz) equals 1 million cps.
Integrated amplifier	A component that combines a pre amp and a power amp into a single unit. A receiver combines an integrated amp and a tuner into a single unit.
iPod	Portable digital audio player.
LCD (Liquid Crystal Display)	A type of digital display that changes reflectance or transmittance when an electrical field is applied to it.
Memory	Circuitry or devices that hold information in electrical or magnetic form, such as the AM/FM radio presets.
MB (Megabyte)	One million bytes. Written as 1 MB. Megabytes are used as a measure of digital storage space. For example, a CD can hold 650 MB.
Mic (Microphone)	An abbreviation for microphone. For vehicles with navigation, the microphone accepts navigation voice commands to control audio and navigation functions.
Mute	When the navigation gives guidance, the front speakers are muted (no music). When you use the voice control system, all of the speakers are muted.
Noise	Unwanted random sounds like buzzing, hiss, pops, static, whine, etc.
PC card	The slot used for playing MP3 and WMA music files. The PC card is usually a combination of a small flash card in a PCMCIA adaptor that slides into the slot. The ATA, SD, and compact flash types of cards have been tested up to 1 GB.
PCMCIA	A computer standard for the slot that the PC card slides into. Another term for the PC card slot.
Processor	The part of an audio device that performs tasks/calculations. In the audio unit, the processor handles muting to allow the navigation system to speak its voice commands, and the decoding/playback of the sound files, etc.

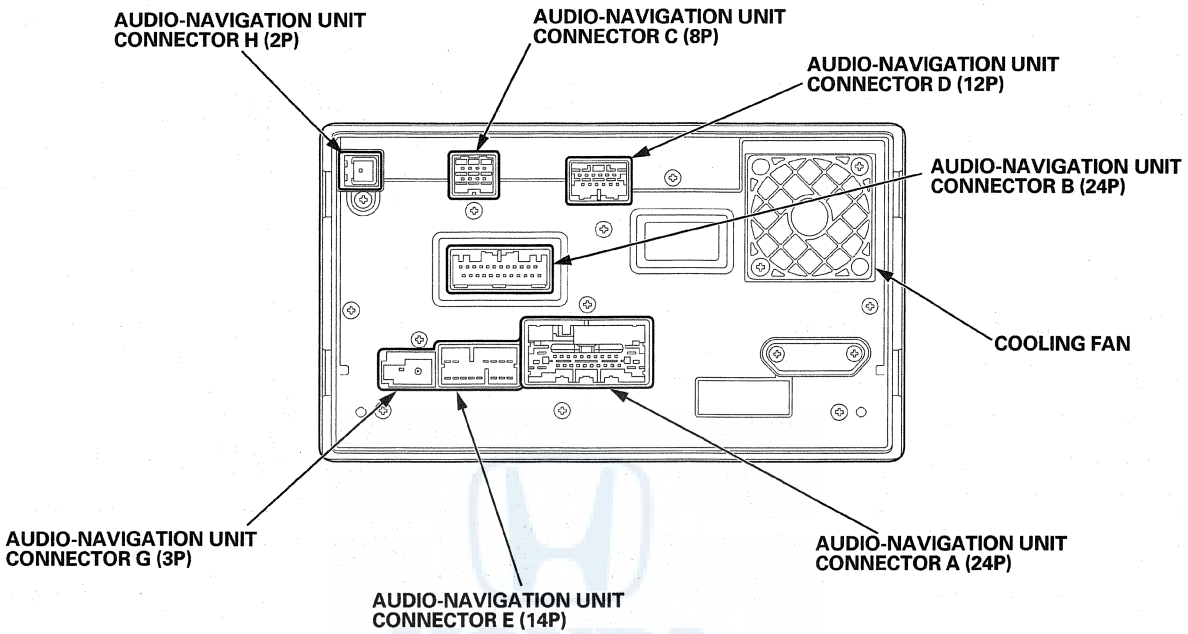
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System Description (cont'd)

Item	Definition
Radio	A head unit that combines a tuner, a preamplifier, and often a power-amplifier.
Route guidance	Spoken voice used for turn-by-turn navigation from the audio speakers.
Stereo	A recording of at least two channels where you can hear sound or music from the left or right side.
SD (Secure Digital) card	This compact type of memory card allows for fast data transfer and has built-in security functions. SD cards have a small write-protection switch on the side.
Shield	A metallic foil or braided wire layer surrounding conductors which are designed to prevent electrostatic or electromagnetic interference (noise) from external sources which you hear as buzzing or popping sounds which you hear on the speakers.
Loudspeaker	A device that converts electrical energy into acoustical energy (sound).
SVC (Speed-sensitive volume compensation)	The SVC increases the audio volume to compensate for increased interior noise when the vehicle is driven at freeway speeds.
Subwoofer	A loudspeaker made to reproduce the lowest audio frequencies, from about 25 Hz to 125 Hz.
Track	A sound recording on a CD, tape, or PC card.
Treble	An adjustment to control the volume of the high frequency sounds.
Tuner	A component (or part of a component) that receives radio signals and selects one broadcast from many.
Tweeter	A speaker designed to reproduce the higher frequencies (treble) only.
USB	Universal serial bus. The USB is used for playing audio files (MP3, WMA, AAC, etc.) on the external device through the audio unit.
USB port	Allows the customers to play data such as input audio recording from portable audio devices (such as iPod) or data from USB flash memory.
Woofer	A speaker that is designed to reproduce low (bass) frequencies only.
XM radio	Satellite based radio transmission, which also uses a ground based repeater network to ensure seamless reception. The channels originate from XM's broadcast center, in Washington DC, and uplink to two satellites. These satellites transmit the signal across the entire continental United States.
XM receiver	The external component that receives and processes the XM signals from the XM satellites, and terrestrial (land) stations. The audio unit communicates to the XM receiver over the GA-Net bus.

Audio-Navigation Unit Connector for Inputs and Outputs

With navigation

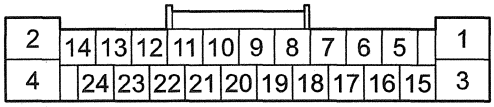


NOTE: Refer to the navigation section for audio-navigation unit connector C, D, and H inputs and outputs (see page 23-162).

(cont'd)

System Description (cont'd)

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)

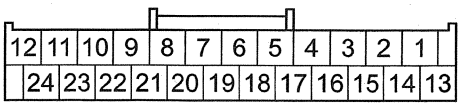


Wire side of female terminals

Audio-Navigation Unit Connector A (24P)

Cavity	Wire Color	Terminal Name	Description
A1	BLK	MAIN GND	Ground for audio-navigation unit (G503)
A2	WHT	ILLUMI− (BULB)	Detects illumination control signal
A3	PNK	+B BACK UP	Continuous power source
A4	RED	ILLUMI+	Inputs parking light on signal
A5	RED	RL PRE+	Outputs sound signal for left rear speaker
A6	GRN	RL PRE−	Outputs sound signal for left rear speaker
A7	———	———	Not used
A8	———	———	Not used
A9	LT GRN	RR PRE+	Outputs sound signal for right rear speaker
A10	WHT	RR PRE−	Outputs sound signal for right rear speaker
A11	WHT	REMOTE GND	Ground for audio remote switch
A12	GRN	SCTY	Security signal from Multiplex integrated control unit (MICU)
A13	BLU	K-LINE	Detects scan tool signal (serial data)
A14	———	———	Not used
A15	YEL	FL PRE+	Outputs sound signal for driver's door speaker and left tweeter
A16	PNK	FL PRE−	Outputs sound signal for driver's door speaker and left tweeter
A17	———	———	Not used
A18	———	———	Not used
A19	GRN	FR PRE+	Outputs sound signal for passenger's door speaker and right tweeter
A20	ORN	FR PRE−	Outputs sound signal for passenger's door speaker and right tweeter
A21	WHT	SWD+B	Outputs voltage for stereo amplifier switching ON/OFF
A22	PNK	REMOTE SW	Detects voltage for audio remote switch
A23	BLU	VSP	Inputs vehicle speed pulse from ECM/PCM
A24	PUR	ACC	Power source for accessories

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Audio-Navigation Unit Connector B (24P)

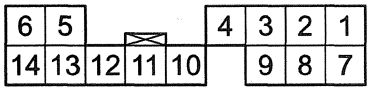
Cavity	Wire Color	Terminal Name	Description
B1	LT GRN	HFL COMM 4	Communication signal for HFL
B2	LT BLU	HFL COMM 2	Communication signal for HFL
B3	GRY*	HFL COMM SH	Shield for terminals No. 1, No. 2, No. 13, and No. 14
B4	RED	TELM SIG −	Inputs sound signal for HFL
B5	BRN	HFL MUTE	HFL MUTE signal
B6	———	———	Not used
B7	———	———	Not used
B8	———	———	Not used
B9	———	———	Not used
B10	WHT	AUX GND	Ground for AUX DET signal
B11	GRY*	AUX SH GND	Shield for terminals No. 12, No. 23, and No. 24
B12	BRN	AUX S GND	Ground for AUX signal
B13	PNK	HFL COMM 3	Communication signal for HFL
B14	ORN	HFL COMM 1	Communication signal for HFL
B15	———	———	Not used
B16	GRN	TELM SIG +	Inputs sound signal for HFL
B17	BLU	HFL ICON	HFL ICON signal
B18	———	———	Not used
B19	———	———	Not used
B20	———	———	Not used
B21	———	———	Not used
B22	YEL	AUX DET	AUX DET signal
B23	ORN	AUX RCH	Inputs sound signal for AUX audio right channel
B24	YEL	AUX LCH	Inputs sound signal for AUX audio left channel

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

(cont'd)

System Description (cont'd)

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



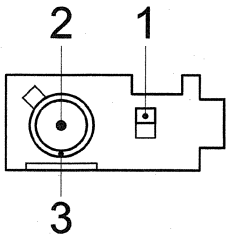
Wire side of female terminals

Audio-Navigation Unit Connector E (14P)

Cavity	Wire Color	Terminal Name	Description
E1	WHT	GA AUDIO L+	Inputs sound signal for GA audio left channel
E2	BLK	GA AUDIO R+	Inputs sound signal for GA audio right channel
E3	GRY*	GA AUDIO SH	Shield for terminals No. 1, No. 2, No. 7, and No. 8
E4	GRY*	GA BUS SH	Shield for terminals No. 11 and No. 12
E5	BLU	GA SYS ON	GA audio control signal
E6	ORN	GA +B	Power source for GA audio
E7	GRN	GA AUDIO L−	Inputs sound signal for GA audio left channel
E8	RED	GA AUDIO R−	Inputs sound signal for GA audio right channel
E9	———	———	Not used
E10	BLK	GA GND	Ground for GA audio
E11	BRN	GA BUS−	Communication signal for GA audio
E12	YEL	GA BUS+	Communication signal for GA audio
E13	———	———	Not used
E14	———	———	Not used

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)



Terminal side of female terminals

Audio-Navigation Unit Connector G (3P)

Cavity	Wire Color	Terminal Name	Description
G1	———	ANT+B	Power source for AM/FM antenna amplifier
G2	———	RF IN	Inputs signal for AM/FM antenna
G3	———	RF SH	Shield for terminal No. 2

HONDA

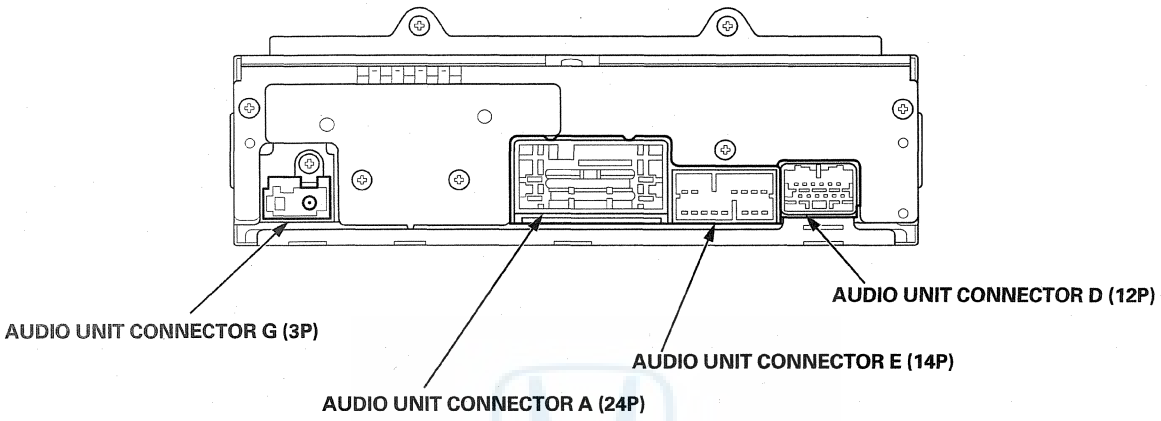
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System Description (cont'd)

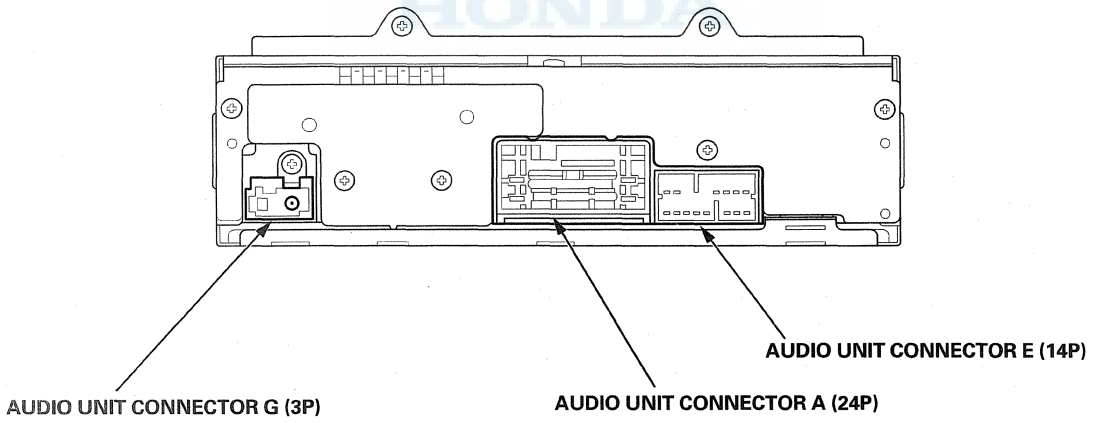
Audio Unit Connector for Inputs and Outputs

Without navigation

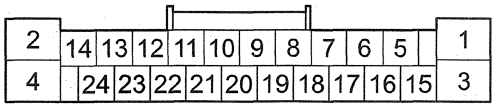
Separate stereo amplifier type



Built-in stereo amplifier type



AUDIO UNIT CONNECTOR A (24P) (Separate stereo amplifier type)



Wire side of female terminals

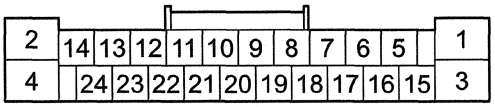
Audio Unit Connector A (24P) (Separate stereo amplifier type)

Cavity	Wire Color	Terminal Name	Description
A1	BLK	MAIN GND	Ground for audio unit (G503)
A2	WHT	ILLUMI− (BULB)	Detects illumination control signal
A3	PNK	+B BACK UP	Continuous power source
A4	RED	ILLUMI+	Inputs parking light on signal
A5	RED	RL PRE+	Outputs sound signal for left rear speaker
A6	GRN	RL PRE−	Outputs sound signal for left rear speaker
A7	———	———	Not used
A8	———	———	Not used
A9	LT GRN	RR PRE+	Outputs sound signal for right rear speaker
A10	WHT	RR PRE−	Outputs sound signal for right rear speaker
A11	WHT	REMOTE GND	Ground for audio remote switch
A12	GRN	SCTY	Security signal from Multiplex integrated control unit (MICU)
A13	BLU	K-LINE	Detects scan tool signal (serial data)
A14	———	———	Not used
A15	YEL	FL PRE+	Outputs sound signal for driver's door speaker and left tweeter
A16	PNK	FL PRE−	Outputs sound signal for driver's door speaker and left tweeter
A17	———	———	Not used
A18	———	———	Not used
A19	GRN	FR PRE+	Outputs sound signal for passenger's door speaker and right tweeter
A20	ORN	FR PRE−	Outputs sound signal for passenger's door speaker and right tweeter
A21	WHT	SWD+B	Outputs voltage for stereo amplifier switching ON/OFF
A22	PNK	REMOTE SW	Detects voltage for audio remote switch
A23	BLU	VSP	Inputs vehicle speed pulse from ECM/PCM
A24	PUR	ACC	Power source for accessories

(cont'd)

System Description (cont'd)

AUDIO UNIT CONNECTOR A (24P) (Built-in stereo amplifier type)

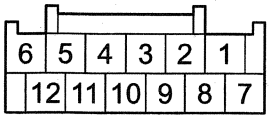


Wire side of female terminals

Audio Unit Connector A (24P) (Built-in stereo amplifier type)

Cavity	Wire Color	Terminal Name	Description
A1	BLK	MAIN GND	Ground for audio unit (G503)
A2	WHT	ILLUMI− (BULB)	Detects illumination control signal
A3	PNK	+B BACK UP	Continuous power source
A4	RED	ILLUMI+	Inputs parking light on signal
A5	GRY	RL SP+	Outputs sound signal for left rear speaker
A6	BRN	RL SP−	Outputs sound signal for left rear speaker
A7	———	———	Not used
A8	———	———	Not used
A9	BLU	RR SP+	Outputs sound signal for right rear speaker
A10	ORN	RR SP−	Outputs sound signal for right rear speaker
A11	WHT	REMOTE GND	Ground for audio remote switch
A12	GRN	SCTY	Security signal from Multiplex integrated control unit (MICU)
A13	BLU	K-LINE	Detects scan tool signal (serial data)
A14	———	———	Not used
A15	LT BLU	FL SP+	Outputs sound signal for driver's door speaker and left tweeter
A16	GRY	FL SP−	Outputs sound signal for driver's door speaker and left tweeter
A17	———	———	Not used
A18	———	———	Not used
A19	BLU	FR SP+	Outputs sound signal for passenger's door speaker and right tweeter
A20	RED	FR SP−	Outputs sound signal for passenger's door speaker and right tweeter
A21	———	———	Not used
A22	PNK	REMOTE SW	Detects voltage for audio remote switch
A23	BLU	VSP	Inputs vehicle speed pulse from ECM/PCM
A24	PUR	ACC	Power source for accessories

AUDIO UNIT CONNECTOR D (12P) (Separate stereo amplifier type)



Wire side of female terminals

Audio Unit Connector D (12P) (Separate stereo amplifier type)

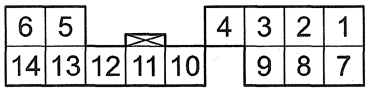
Cavity	Wire Color	Terminal Name	Description
D1	BLU	HFL ICON	HFL ICON signal
D2	GRY*	TELM SIG SH	Shield for terminals No. 9 and No. 10
D3	———	———	Not used
D4	———	———	Not used
D5	———	———	Not used
D6	———	———	Not used
D7	———	———	Not used
D8	BRN	HFL MUTE	HFL MUTE signal
D9	GRN	TELM SIG +	Inputs sound signal for HFL
D10	RED	TELM SIG −	Inputs sound signal for HFL
D11	———	———	Not used
D12	———	———	Not used

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

(cont'd)

System Description (cont'd)

AUDIO UNIT CONNECTOR E (14P)



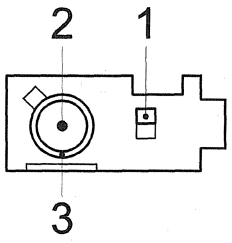
Wire side of female terminals

Audio Unit Connector E (14P)

Cavity	Wire Color	Terminal Name	Description
E1	WHT	GA AUDIO L+	Inputs sound signal for GA audio left channel
E2	BLK	GA AUDIO R+	Inputs sound signal for GA audio right channel
E3	GRY*	GA AUDIO SH	Shield for terminals No. 1, No. 2, No. 7, and No. 8
E4	GRY*	GA BUS SH	Shield for terminals No. 11 and No. 12
E5	BLU	GA SYS ON	GA audio control signal
E6	ORN	GA +B	Power source for GA audio
E7	GRN	GA AUDIO L−	Inputs sound signal for GA audio left channel
E8	RED	GA AUDIO R−	Inputs sound signal for GA audio right channel
E9	———	———	Not used
E10	BLK	GA GND	Ground for GA audio
E11	BRN	GA BUS−	Communication signal for GA audio
E12	YEL	GA BUS+	Communication signal for GA audio
E13	———	———	Not used
E14	———	———	Not used

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

AUDIO UNIT CONNECTOR G (3P)



Terminal side of female terminals

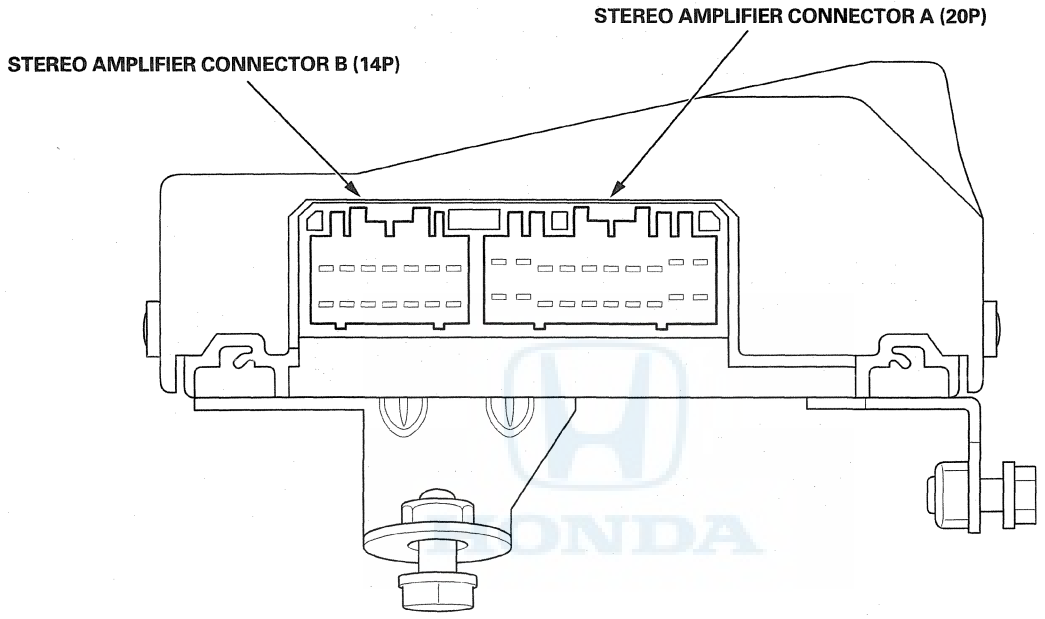
Audio Unit Connector G (3P)

Cavity	Wire Color	Terminal Name	Description
G1	———	ANT+B	Power source for AM/FM antenna amplifier
G2	———	RF IN	Inputs signal for AM/FM antenna
G3	———	RF SH	Shield for terminal No. 2

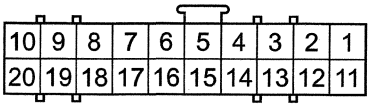
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System Description (cont'd)

Stereo Amplifier Connector for Inputs and Outputs



STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

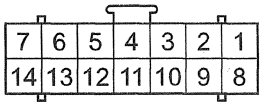
Stereo Amplifier Connector A (20P)

Cavity	Wire Color	Terminal Name	Description
A1	WHT	+B	Continuous power source
A2	WHT	SWD+B2	Inputs voltage for stereo amplifier switching ON/OFF
A3	GRY	RL SP+	Outputs sound signal for left rear speaker
A4	BLU	RR SP+	Outputs sound signal for right rear speaker
A5	———	———	Not used
A6	RED	SUBW SP+	Outputs sound signal for subwoofer
A7	LT BLU	FL TW SP+	Outputs sound signal for left tweeter
A8	WHT	FL SP+	Outputs sound signal for driver's door speaker
A9	BLU	FR SP+	Outputs sound signal for passenger's door speaker
A10	BLU	FR TW SP+	Outputs sound signal for right tweeter
A11	BLK	GND	Ground for stereo amplifier (G502)
A12	———	———	Not used
A13	BRN	RL SP−	Outputs sound signal for left rear speaker
A14	ORN	RR SP−	Outputs sound signal for right rear speaker
A15	———	———	Not used
A16	LT BLU	SUBW SP−	Outputs sound signal for subwoofer
A17	GRY	FL TW SP−	Outputs sound signal for left tweeter
A18	GRY	FL SP−	Outputs sound signal for driver's door speaker
A19	RED	FR SP−	Outputs sound signal for passenger's door speaker
A20	RED	FR TW SP−	Outputs sound signal for right tweeter

(cont'd)

System Description (cont'd)

STEREO AMPLIFIER CONNECTOR B (14P)

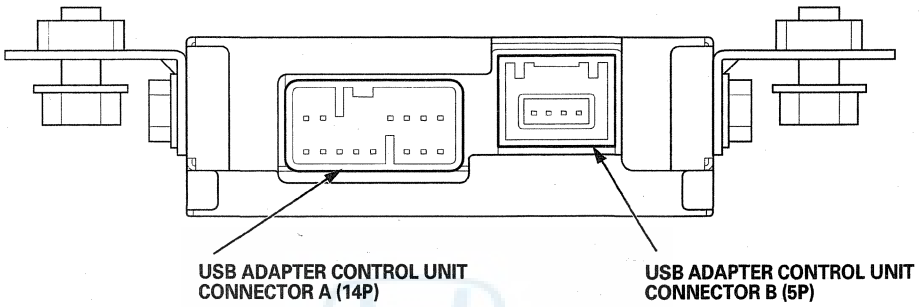


Wire side of female terminals

Stereo Amplifier Connector B (14P)

Cavity	Wire Color	Terminal Name	Description
B1	WHT	SWD +B1	Inputs voltage for stereo amplifier switching ON/OFF
B2	LT GRN	RR PRE+	Inputs sound signal for right rear speaker
B3	———	———	Not used
B4	GRN	FR PRE+	Inputs sound signal for passenger's door speaker and right tweeter
B5	RED	RL PRE+	Inputs sound signal for left rear speaker
B6	———	———	Not used
B7	YEL	FL PRE+	Inputs sound signal for driver's door speaker and left tweeter
B8	———	———	Not used
B9	WHT	RR PRE−	Inputs sound signal for right rear speaker
B10	———	———	Not used
B11	ORN	FR PRE−	Inputs sound signal for passenger's door speaker and right tweeter
B12	GRN	RL PRE−	Inputs sound signal for left rear speaker
B13	———	———	Not used
B14	PNK	FL PRE−	Inputs sound signal for driver's door speaker and left tweeter

USB Adapter Control Unit Connector for Inputs and Outputs

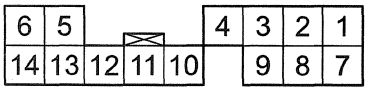


HONDA

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System Description (cont'd)

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



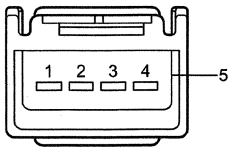
Wire side of female terminals

USB Adapter Control Unit Connector A (14P)

Cavity	Wire Color	Terminal Name	Description
A1	WHT	GA AUDIO L+	Outputs sound signal for GA audio left channel
A2	BLK	GA AUDIO R+	Outputs sound signal for GA audio right channel
A3	GRY*	GA AUDIO SH	Shield for terminals No. 1, No. 2, No. 7, and No. 8
A4	GRY*	GA BUS SH	Shield for terminals No. 11 and No. 12
A5	BLU	GA SYS ON	GA audio control signal
A6	ORN	GA +B	Power source for GA audio
A7	GRN	GA AUDIO L−	Outputs sound signal for GA audio left channel
A8	RED	GA AUDIO R−	Outputs sound signal for GA audio right channel
A9	———	———	Not used
A10	BLK	GA GND	Ground for GA audio
A11	BRN	GA BUS−	Communication signal for GA audio
A12	YEL	GA BUS+	Communication signal for GA audio
A13	———	———	Not used
A14	———	———	Not used

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

USB ADAPTER CONTROL UNIT CONNECTOR B (5P)



Terminal side of female terminals

USB Adapter Control Unit Connector B (5P)

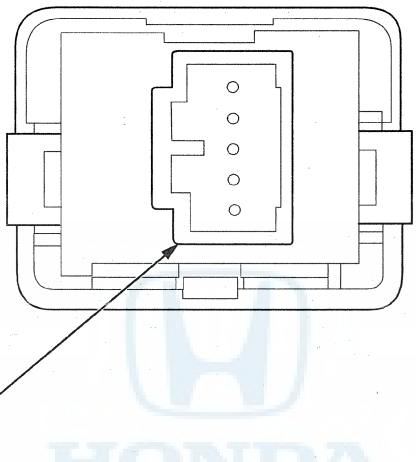
Cavity	Wire Color	Terminal Name	Description
B1	———	USB GND	Ground for USB device
B2	———	USB DATA+	Inputs signal for USB device
B3	———	USB DATA−	Inputs signal for USB device
B4	———	USB VBUS	Power source for USB device
B5	———	USB SH	Shield for terminals No. 1, No. 2, No. 3, and No. 4

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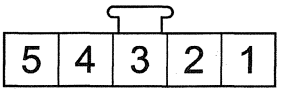
System Description (cont'd)

Auxiliary Jack Assembly Connector for Inputs and Outputs

With navigation



AUXILIARY JACK ASSEMBLY 5P CONNECTOR



Wire side of female terminals

Auxiliary Jack Assembly 5P Connector

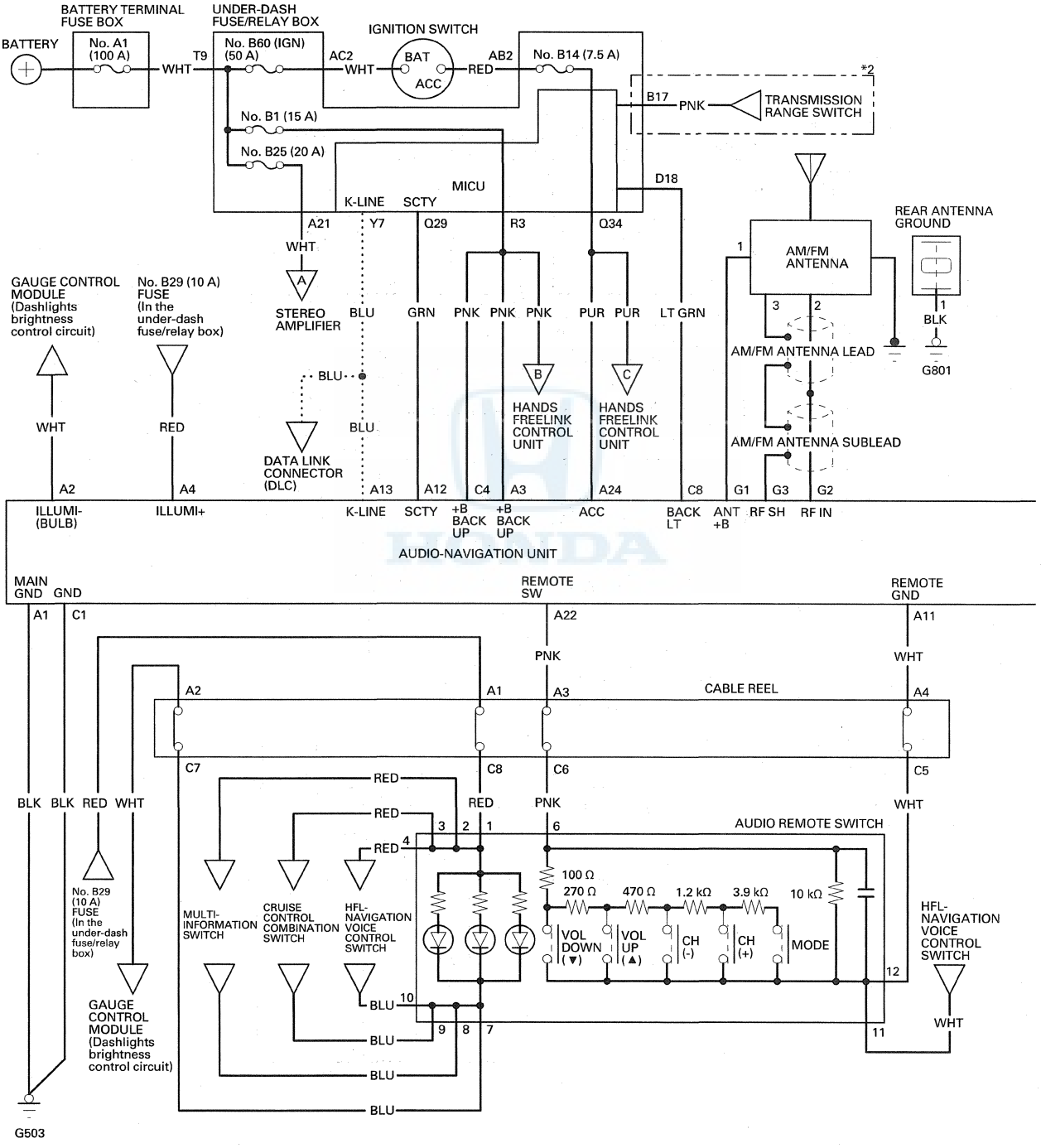
Cavity	Wire Color	Terminal Name	Description
1	ORN	AUX RCH	Outputs sound signal for AUX audio right channel
2	YEL	AUX LCH	Outputs sound signal for AUX audio left channel
3	BRN	AUX S GND	Ground for AUX signal
4	WHT	AUX GND	Ground for AUX DET signal
5	YEL	AUX DET	AUX DET signal

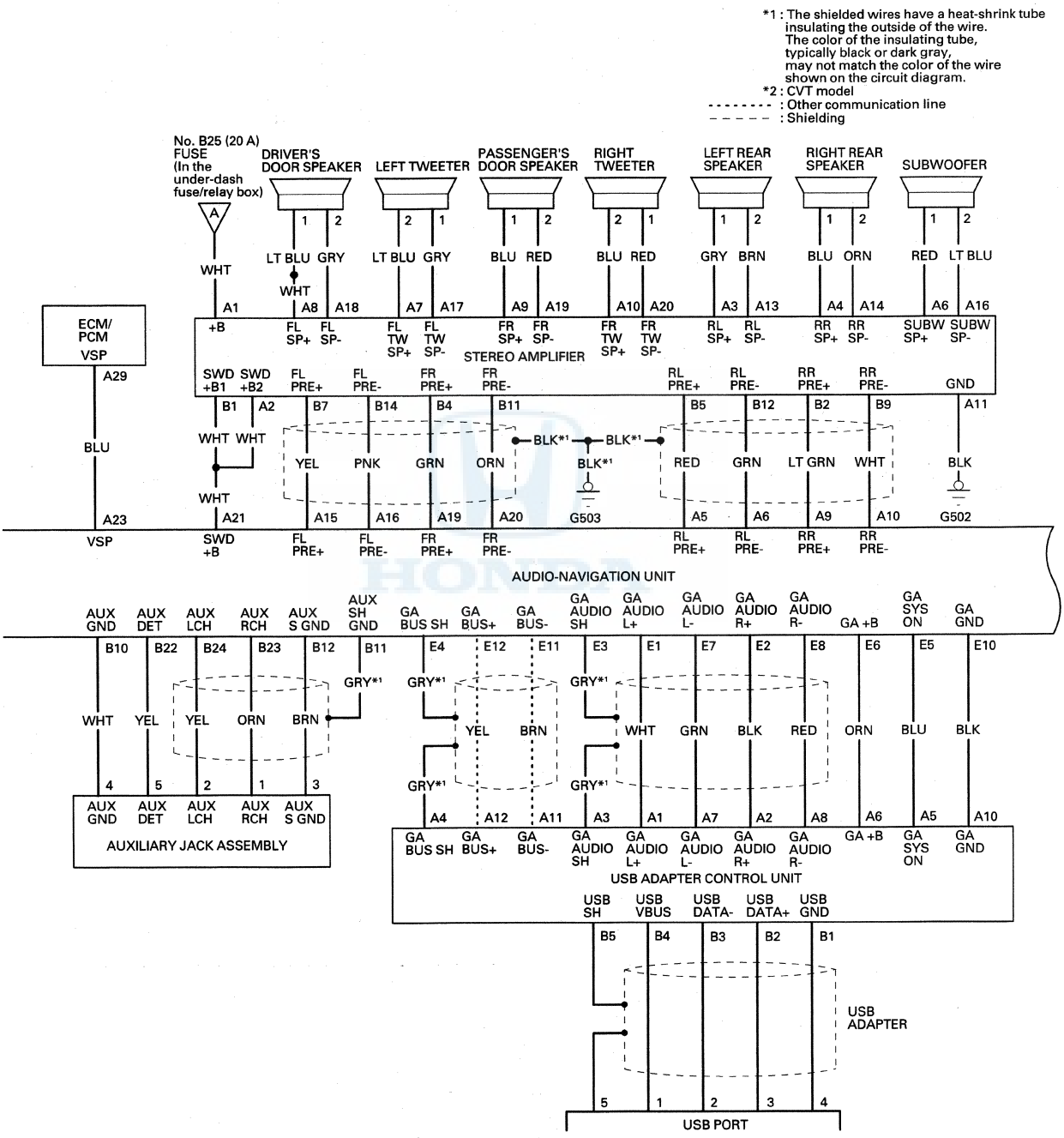
HONDA

Audio System

Circuit Diagram

With Navigation

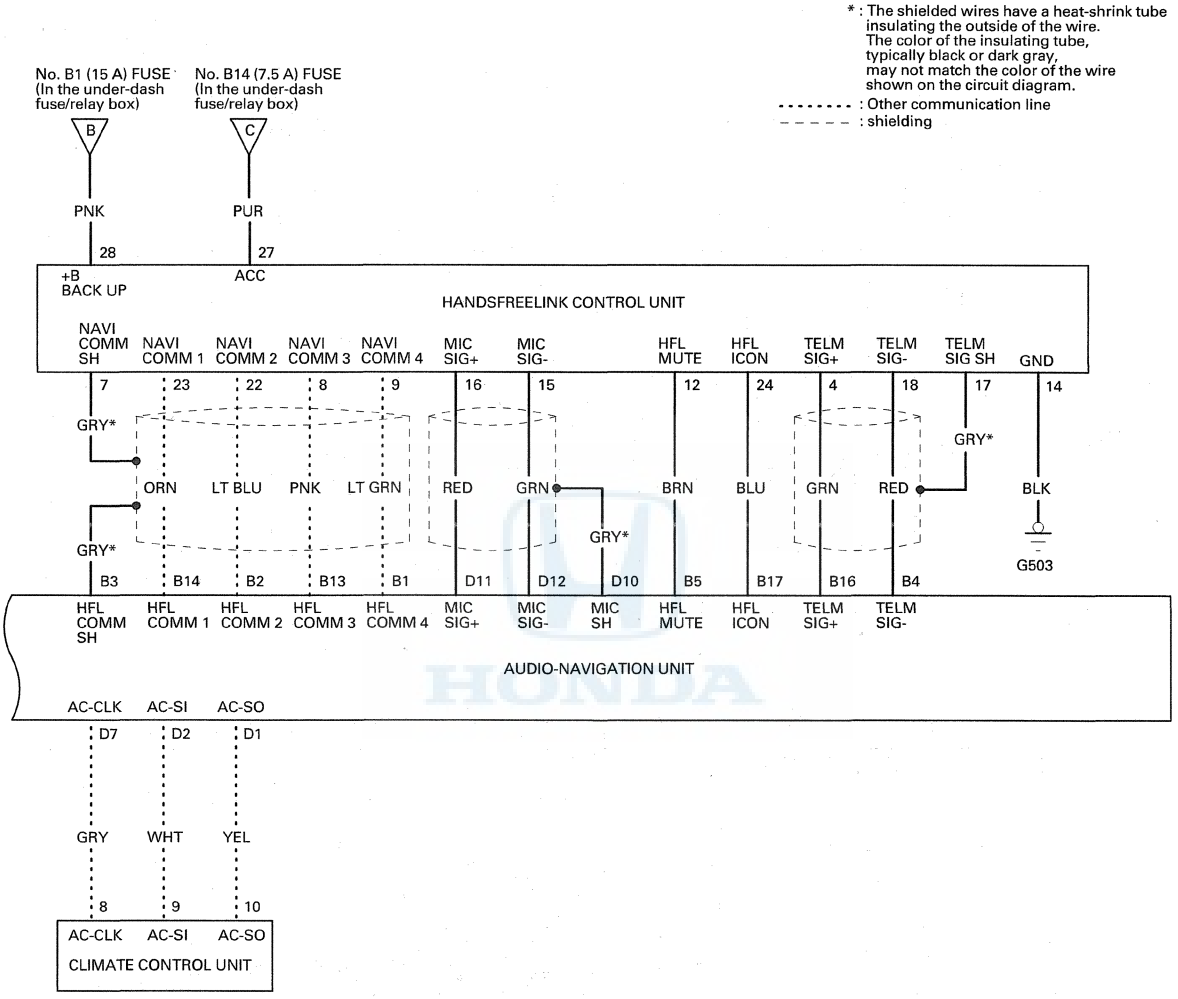



*1 : The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.
*2 : CVT model
: Other communication line
: Shielding
No. B25 (20 A) FUSE (In the under-dash fuse/relay box)
DRIVER'S DOOR SPEAKER
LEFT TWEETER
PASSENGER'S DOOR SPEAKER
RIGHT TWEETER
LEFT REAR SPEAKER
RIGHT REAR SPEAKER
SUBWOOFER
ECM/ PCM
VSP
A29
BLU
A23
VSP
STEREO AMPLIFIER
+B
FL SP+
FL SP-
FL TW SP+
FL TW SP-
FR SP+
FR SP-
FR TW SP+
FR TW SP-
RL SP+
RL SP-
RR SP+
RR SP-
SUBW SP+
SUBW SP-
SWD +B1
SWD +B2
FL PRE+
FL PRE-
FR PRE+
FR PRE-
RL PRE+
RL PRE-
RR PRE+
RR PRE-
GND
G503
G502
AUDIO-NAVIGATION UNIT
AUX GND
AUX DET
AUX LCH
AUX RCH
AUX S GND
AUX SH GND
GA BUS SH
GA BUS+
GA BUS-
GA AUDIO SH
GA AUDIO L+
GA AUDIO L-
GA AUDIO R+
GA AUDIO R-
GA +B
GA SYS ON
GA GND
AUXILIARY JACK ASSEMBLY
USB ADAPTER CONTROL UNIT
USB SH
USB VBUS
USB DATA-
USB DATA+
USB GND
USB ADAPTER
USB PORT

(cont'd)

Circuit Diagram (cont'd)

With Navigation



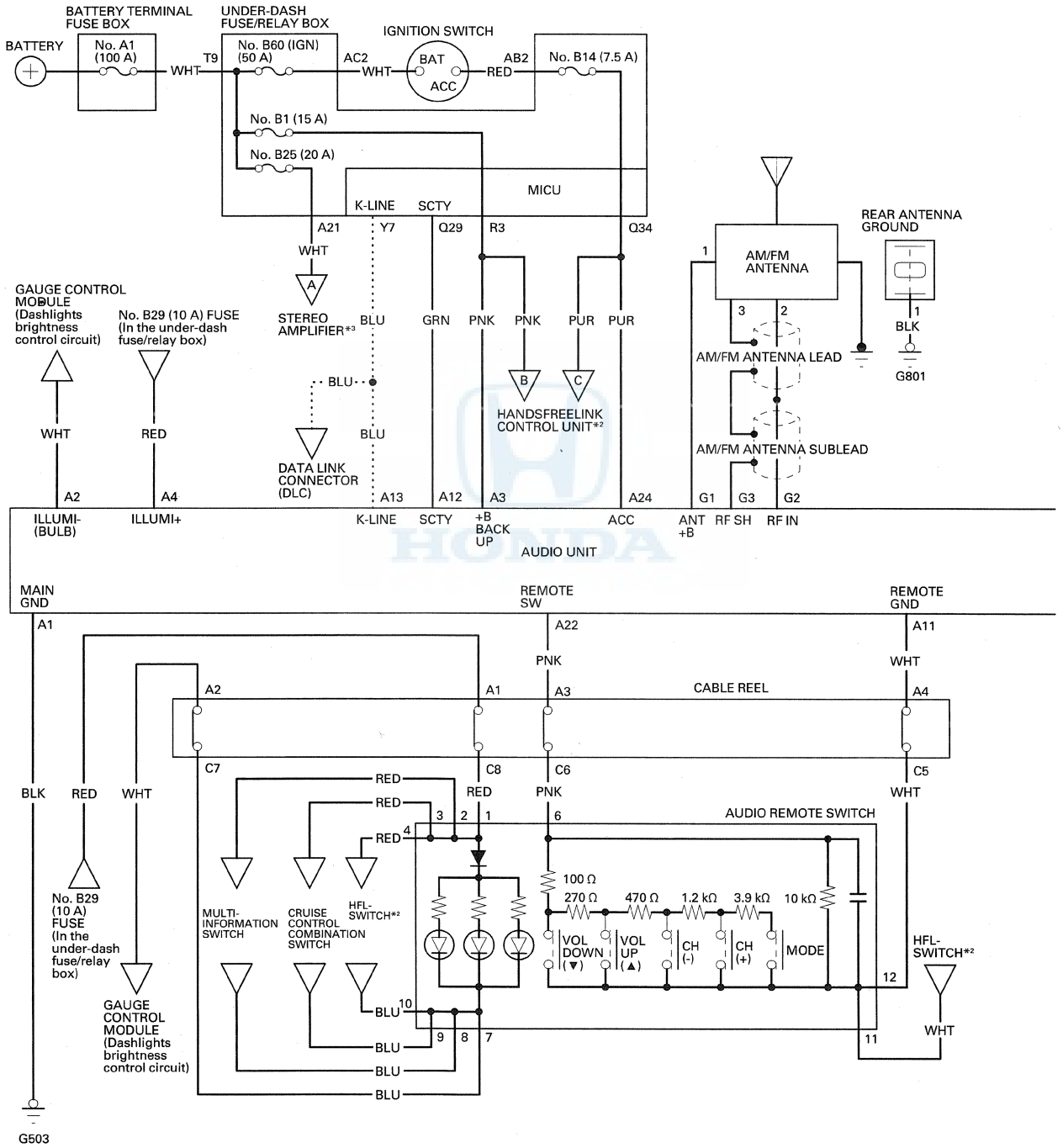


HONDA

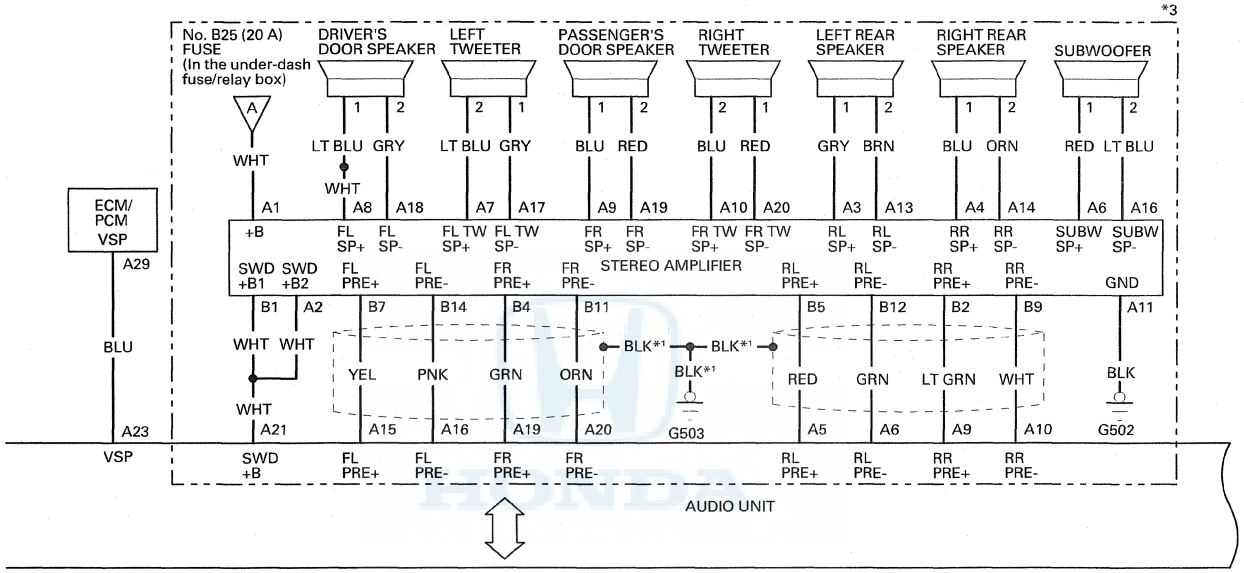
(cont'd)

Circuit Diagram (cont'd)

Without Navigation



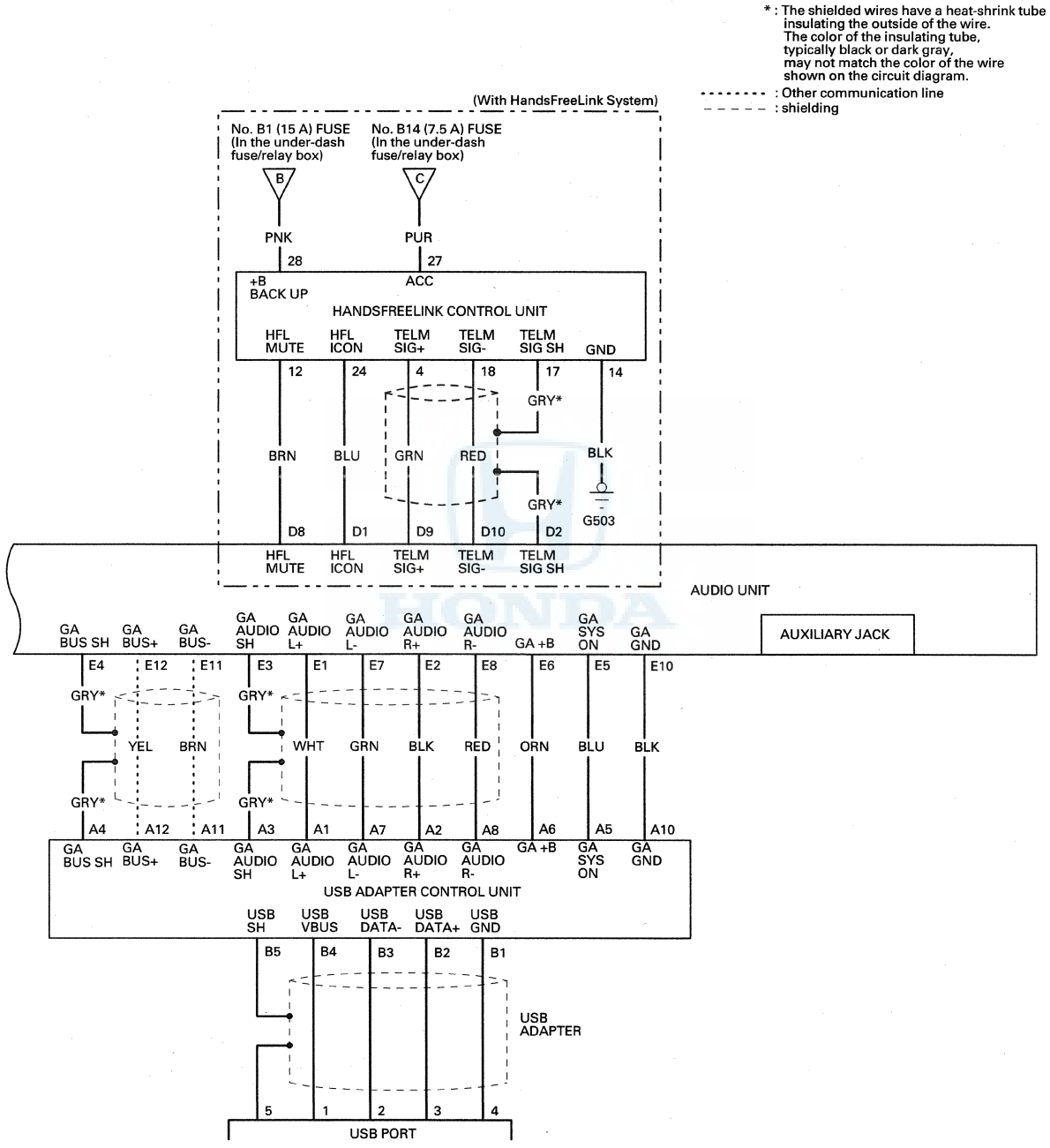
*1 : The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.
*2 : With HandsFreeLink system
*3 : Separated stereo amplifier type
*4 : Built-in stereo amplifier type
: Other communication line
: Shielding



(cont'd)

Circuit Diagram (cont'd)

Without Navigation



Self-Diagnostic Function

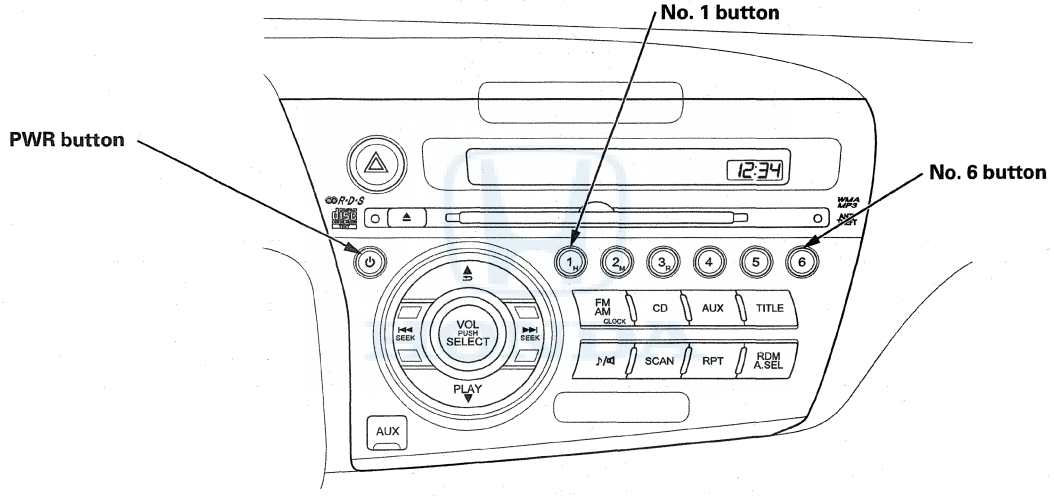
How to Obtain the Audio Unit Serial Number

To obtain the audio unit serial number on a vehicle, do following:

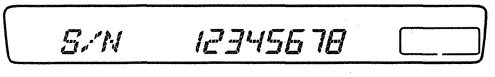
NOTE:

- This procedure can only be done when the power has been disconnected from the audio unit, and the audio unit displays CODE when the audio unit is turned on.
- If the audio unit does not display CODE when turned on, remove the No. B1 fuse (15A) from the under-dash fuse/relay box for 1 minute, then reinstall the fuse.

1. Turn the ignition switch to ON (II).
2. Make sure the audio system is turned off.
3. Press and hold the preset No. 1 and No. 6 buttons.
4. While holding the buttons, press the PWR button to on.



5. Release the buttons, and the self-diagnostic begins (for 20 seconds).
6. The display shows an 8 digit number (example 12345678).



7. Use all 8 numbers as the serial number when using the Interactive Network (iN) to retrieve the 5 digit anti-theft code.
8. To end the self-diagnostic function, turn the audio unit off, or turn the ignition switch to LOCK (0), or it will end by itself if no operation is done for 20 seconds.

(cont'd)

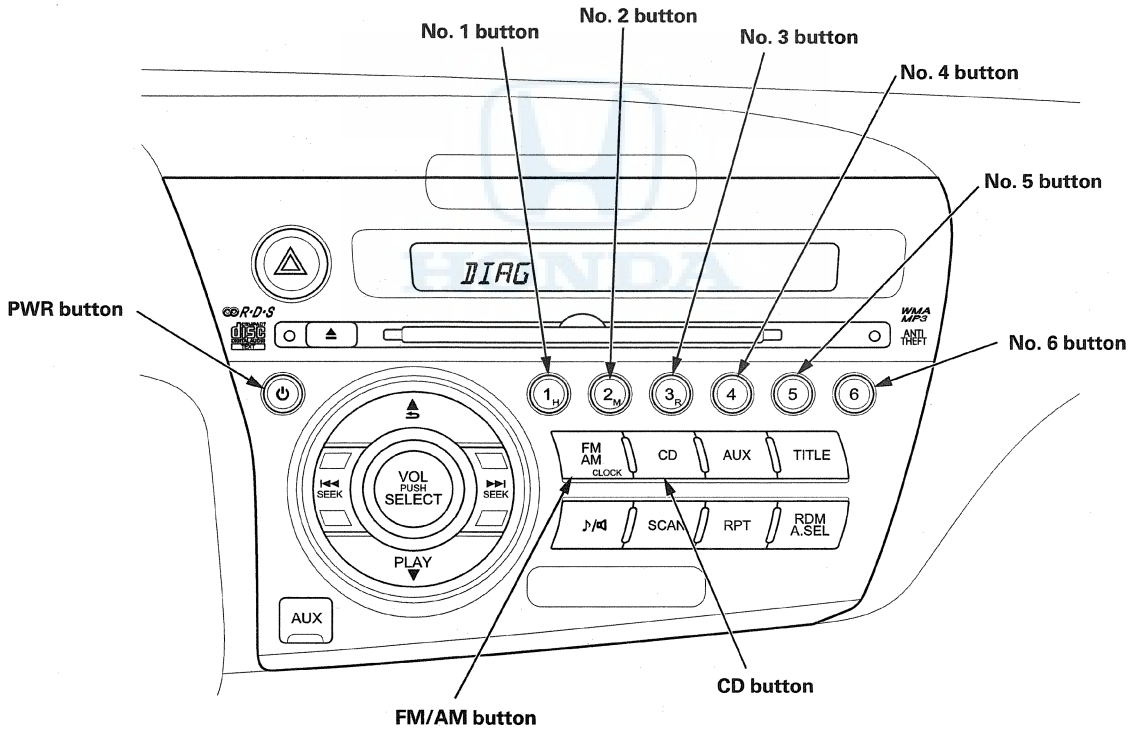
Self-Diagnostic Function (cont'd)

How to Check the Audio System Condition

The audio system has a self-diagnostic function to help find problems with the audio system. To run the self-diagnostic function, do the following:

NOTE:
- There may be other self-diagnostic functions that are for factory use only.
- The self-diagnostic function does not find every problem with the audio system. Check any official Honda service website for more information about the audio system.

1. Turn the ignition switch to ON (II).
2. Make sure the audio system is turned off.
3. Press and hold the preset No. 1 and No. 6 buttons.
4. While holding the buttons, press the PWR button to on.
5. Release the buttons, and the self-diagnostic begins (for 20 seconds).



6. When you are in the self-diagnostic mode, pressing a preset button starts the diagnostic mode that is assigned to that preset button.

   NOTE: Any other diagnostic screens shown are for factory use only.

   No. 2 button
   Audio button, knob, and audio remote switch detection: Allows individual manual selection of all audio panel knobs, buttons, and remote switches to verify if they are functional. When properly detected, the selected knob, button, or audio remote switch name and/or value is displayed (except PWR button). You cannot exit this test. If you need to check other items with the self-diagnostic function, go to step 7 to exit the self-diagnostic function, then start again at step 1.

   NOTE: The CD eject button does not work in this test, but when you press it, the CD eject mechanism should hum faintly.

   No. 3 button
   Entire LCD lighting/light-out mode: Turns on/off the entire LCD to show the presence (LCD stuck on) or absence (LCD dead) of an LCD segment.

   No. 4 button
   Duty indication mode (for the illumination dim): Indicates the duty for the illumination dim when the dash lights are on.

   No. 5 button
   Vehicle speed pulse (VSP) indication mode: Indicates the vehicle speed pulse in hertz (Hz) and in speed (km/h).

   CD button (Press and hold 5 sec.)
   DRAM residual quantity indication mode: Indicates the DRAM residual quantity.

   FM/AM button (Press and hold 5 sec.)
   Reception level indication mode: Indicates the reception level (dB) with the antenna amplifier on. Press the RDM/A.SEL button to turn the antenna amplifier off.

Canceling the Self-Diagnostic Function

7. To end the self-diagnostic function, turn the audio unit off, or turn the ignition switch to LOCK (0), or it will end by itself if no operation is done for 20 seconds.

(cont'd)

Self-Diagnostic Function (cont'd)

Display Specifications

NOTE: Any other diagnostic screens shown are for audio manufacturer's use only.

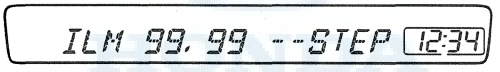
Entry LCD lighting/lights-outs mode (Press No. 3 button)

This diagnostic screen checks for segments that may be dead (off) or stuck on.
All the segments in the display must appear. If there are dead segments, replace the center panel (see step 9 on page 23-120).
When the display segments are all on, press the No. 3 button. The entire display must turn black. If any segments are stuck on, replace the center panel (see step 9 on page 23-120).



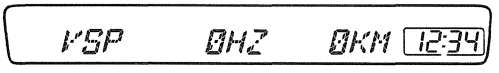
Illumination level (for the gauge illumination) indication (Press No. 4 button)

This diagnostic screen checks the gauge illumination input.
With the headlights on, you should see a values between 1 (max low) and 22 (max high).
When you dim and brighten the gauge with the dimmer knob, you should see this value change accordingly.



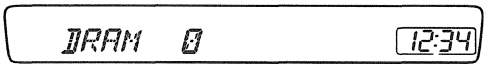
Vehicle speed pulse indication (Press No. 5 button)

This diagnostic screen checks that the audio unit is receiving the VSP indication.
When you drive the vehicle, the VSP indicates the signal from the ECM/PCM in hertz (Hz) and the vehicle speed in km/h.



DRAM residual quantity indication (Press and hold 5 sec. CD button)

Indicates the DRAM residual quantity.



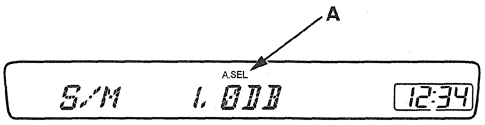
Reception level indication (Press and hold 5 sec. FM/AM button)

This diagnostic screen checks the radio reception level. This level then can be used to diagnose the radio reception quality. The reception level is displayed in decibels (dB).

Preparation:

- Park the vehicle outdoors in a location with good radio reception.
- Tune to a powerful local FM radio station, then write down the radio station number.
- Tune to a powerful local AM radio station, then write down the radio station number.

1. Enter the reception level indication mode in the self-diagnostic function. The AM/FM antenna amplifier is on and the character (A) is not displayed in the audio display.



2. Tune to the FM radio station you wrote down in preparation using the TUNE button (|◀◀ ▶▶|), and note the decibel level of that station.
3. Press and release the RDM/A.SEL button to turn the AM/FM antenna amplifier off (A is now displayed in the audio display).
4. Note the decibel level of that station.
5. Press and release the RDM/A.SEL button to turn the AM/FM antenna amplifier back on (A is not displayed in the audio display).
6. Press and hold the FM/AM button for more than 5 seconds to enter the AM reception mode.
7. Tune to the AM radio station you wrote down in preparation using the TUNE button (|◀◀ ▶▶|), and note the decibel level of that station.
8. Press and release the RDM/A.SEL button to turn the antenna amplifier off (A is now displayed in the audio display).
9. Note the decibel level of that station.
10. Press and release the RDM/A.SEL button to turn the AM/FM antenna amplifier back on (A is not displayed in the audio display).
11. Turn the ignition switch to LOCK (0), or audio unit off to exit the test mode.
12. Compare your results to a known-good vehicle, (make sure it is the same year and trim level) in the same location and direction, and under the same environmental conditions.
    - If the reception level is within 10 % of the known-good vehicle, no repair is needed at this time.
    - If the reception level is at least 10 % less than the known-good vehicle, go to Poor AM or FM radio reception or interference troubleshooting (see page 23-63).

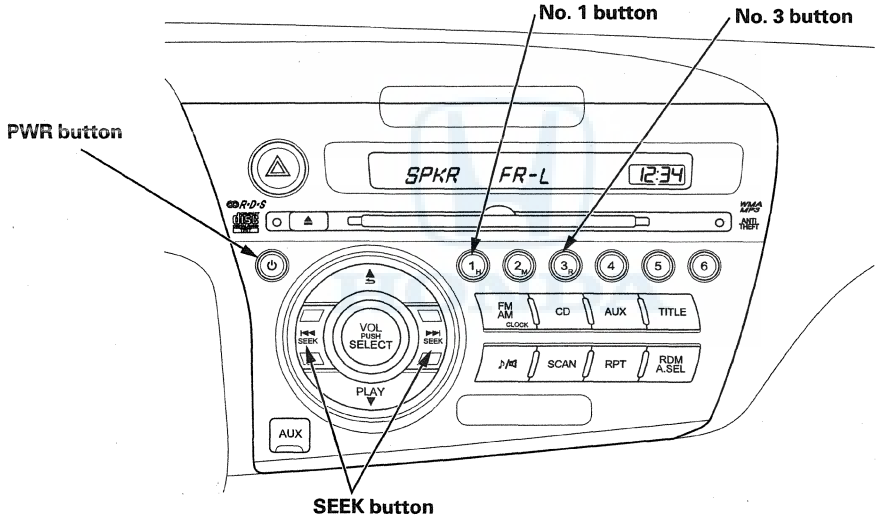
(cont'd)

Self-Diagnostic Function (cont'd)

Speaker Check Mode

NOTE:
- There may be other self-diagnostic functions that are for factory use only.
- If no sound is heard from speakers, go to No sound is heard from the speaker(s) (see page 23-76).

1. Turn the ignition switch to ON (II).
2. Make sure the audio unit is turned off.
3. Press and hold the preset No. 1 and No. 3 buttons.
4. While holding the buttons, press the PWR button to on.
5. Release the buttons and the speaker check mode begins. A tone should sound from one speaker as indicated on the display.
6. Adjust the test tone volume to a comfortable level with the VOL/SELECT knob.
7. Each time you press the SEEK button (|◀◀ ▶▶|), the test moves to the next speaker in the order listed in the table.



Display Specifications

Separated stereo amplifier type

(▶▶|) is pressed: ①→②→③→④→⑤→⑥→①

(|◀◀) is pressed: ①→⑥→⑤→④→③→②→①

Built-in stereo amplifier type

(▶▶|) is pressed: ①→②→③→⑤→⑥→①

(|◀◀) is pressed: ①→⑥→⑤→③→②→①

	Speaker	Displayed Segments	Remarks
①	Driver's door speaker and left tweeter	SPKR FR-L	You should hear a tone corresponding to the speaker
②	Passenger's door speaker and right tweeter	SPKR FR-R	You should hear a tone corresponding to the speaker
③	Right rear speaker	SPKR RR-R	You should hear a tone corresponding to the speaker
④	Subwoofer	SPKR SUBW	You should hear a tone corresponding to the speaker
⑤	Left rear speaker	SPKR RR-L	You should hear a tone corresponding to the speaker
⑥	All speakers	SPKR ALL	You should hear a tone corresponding to the speaker

NOTE: Any other diagnostic screens are for factory use only.

8. The speaker check mode ends when you turn the audio unit off or turn the ignition switch to LOCK (0).

Error Codes

The audio system can display a few error codes when some problems are detected with the audio disc player, the audio disc, the USB audio or the anti-theft code. This is not a complete list of audio error codes. Refer to symptom troubleshooting.

CD Error Codes (with navigation)

Error Code Displayed	Possible Cause	Solution
CHECK DISC	The system cannot read the disc because an audio or video DVD is inserted into the unit. The CD may be inserted upside down. TOC (Table of Contents) error.	Verify that the unit functions with a standard mass production CD.
BAD DISC/PLEASE CHECK/OWNERS MANUAL	• CD label jammed in the mechanism. • The wrong type disc is inserted. • CD eject mechanism or motor is inoperative. • CD spindle motor won't spin up the CD.	Eject CD and insert a known-good CD.
HEAT ERROR	Disc player is hot. This can happen if the vehicle is parked out in the hot sun all day.	The audio-navigation unit should function normally when it cools off.
FILE ERROR	Audio-navigation unit cannot read the files on the CD or CD-R.	Current track is skipped. The next supported track or file plays automatically. • Verify that CD, CD-R or CD-RW file names end in CD-A or WMA. • Verify that CD, CD-R or CD-RW with compressed music formats end in MP3 or WMA. • Other file formats like i-Tunes or Ogg are not recognized. • WMA files may have (DRM) copy protection, and cannot be read.

NOTE: If flashing "BUSY PLEASE WAIT", turn the ignition switch to LOCK (0), then back to ON (II) and recheck.

CD Error Codes (without navigation)

Error Code Displayed	Possible Cause	Solution
UNSUPPORTED	Audio unit cannot read the files on the CD or CD-R.	Current track will be skipped. The next supported track or file plays automatically. • Verify that CD, CD-R or CD-RW file names end in CD-A or WMA. • Verify that CD, CD-R or CD-RW with compressed music formats end in MP3 or WMA. • Other file formats like i-Tunes (AAC) or Ogg are not recognized. • WMA files may have (DRM) copy protection and cannot be read.
BAD DISC/PLEASE CHECK/OWNERS MANUAL/PUSH EJECT	• CD label jammed in the mechanism. • The wrong type disc is inserted. • CD eject mechanism or motor is inoperative. • CD spindle motor won't spin up the CD.	• Eject CD and insert a known-good CD. • If flashing the PUSH EJECT, press the EJECT button and hold it for 5 seconds. If the disc does not eject, try again. If the disc still won't eject, replace the audio unit (see page 23-119).
CHECK DISC	The system cannot read the disc because an audio or video DVD is inserted into the unit. The CD may be inserted upside down.	Verify that the unit functions with a standard mass production CD.

NOTE: If flashing "BUSY WAIT", wait until the information is displayed.

(cont'd)

Error Codes (cont'd)

USB Error Codes

Error Code Displayed	Possible Cause	Solution
USB ERROR	USB adapter control unit Internal ROM Error.	Replace the USB adapter control unit (see page 23-128).
BAD USE DEVICE/PLEASE CHECK/OWNERS MANUAL	The power supply is not supplied to USB device.	If the symptom is reproduced when the USB device is connected with another vehicle, it is a problem with the USB device. Substitute a USB adapter control unit (see page 23-128) or the cable if you cannot reproduce the symptom.
NO DATA (with navigation) USB NO DATA	USB device is not connected.	If the code appears when the USB device is connected, go to USB device does not function: • With navigation (see page 23-99). • Without navigation (see page 23-104).
NO SONG (with navigation) USB NO SONG/iPod NO SONG	There is no file in the USB device or iPod.	Check the files in the USB device. There is a possibility that the files have been damaged, or are not supported.
UNPLAYABLE FILE	The audio unit or the audio-navigation unit cannot read the file(s).	• Check the files in the USB device. There is a possibility that the files have been damaged. • The WMA files or the AAC file cannot be read with the (DRM) copy protection rights.
UNSUPPORTED	• Unsupported USB device is connected. • Unsupported file system. • Unsupported iPod is connected. • USB device communication error.	• Connect the applicable USB device. (see Owner's Manual) • Connect the applicable iPod. (see Owner's Manual)
UNSUPPORTED VER	Unsupported iPod is connected.	Connect the applicable iPod. (see Owner's Manual)
RETRY (with navigation) CONNECT RETRY	The audio unit or audio-navigation unit failed to synchronize with the iPod.	Reconnect the iPod.

Audio Unit Error Codes

Error Code Displayed	Possible Cause	Solution
CODE ERROR 1	Anti-theft code mismatch (1st try).	Enter the correct anti-theft code.
CODE ERROR E	Anti-theft code mismatch (10th try).	Remove the No. B1 (15 A) fuse in the under-dash fuse/relay box, then reinsert it. You will have 10 more tries to enter the correct anti-theft code.

Poor AM or FM radio reception or interference (with navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check for aftermarket accessories including cell phones and chargers plugged into the vehicle accessory power sockets.
- Check the radio reception in an open area. Poor reception/interference can be caused by the following:
  - The radio station is far away.
  - A tall building, a mountain, or a high-voltage power line is nearby.
  - Aftermarket window tint.

1. Do the seek stop test (see page 23-118), and check the radio reception/interference.

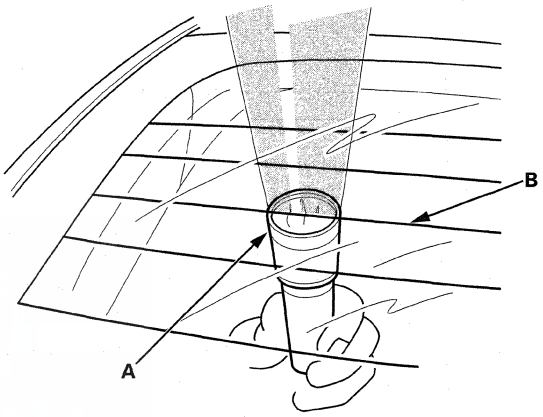
   Is the reception/interference OK?

   YES–Multipath interference or weak station. Operation is normal.■

   NO–Go to step 2.

2. With the help of an assistant inside the vehicle, have the assistant shine a strong flashlight (A) along each rear antenna ground wire (B). Check from the outside of the vehicle for any breaks or openings in the rear antenna ground wires (the light shines through any breaks or cuts).

   NOTE: It is easier to see the breaks if you do this test in a dark or shaded area.



   Are there any breaks or cuts in the rear antenna ground?

   YES–Repair the rear antenna ground. Go to window grid repair (see page 23-129), or replace the rear window (see page 20-40) if the damaged section is too long.■

   NO–Go to step 3.

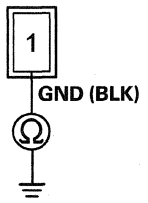
3. Disconnect the rear antenna ground 1P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

4. Check for continuity between rear antenna ground 1P connector terminal No. 1 and body ground.

REAR ANTENNA GROUND 1P CONNECTOR



Terminal side of male terminals

Is there continuity?

YES–Go to step 5.

NO–Repair an open or high resistance in the wire between the rear antenna ground 1P connector terminal No. 1 and body ground (G801) (see page 22-58).■

5. Check the reception/interference while the engine is running.

Is there noise (static or whine) only with the engine running?

YES–Check the antenna and radio grounds. If OK, check the charging system and the ignition system.■

NO–Go to step 6.

6. Turn the ignition switch to LOCK (0).
7. Check the AM/FM antenna for cracks or other damage.

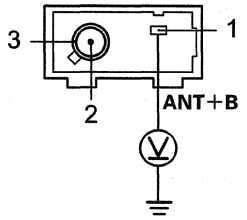
Is there any damage?

YES–Replace the AM/FM antenna (see page 23-129).■

NO–Go to step 8.

8. Disconnect the AM/FM antenna 3P connector from the AM/FM antenna.
9. Turn the ignition switch to ON (II).
10. Turn on the audio-navigation unit.
11. Measure the voltage between AM/FM antenna 3P connector terminal No. 1 and body ground.

AM/FM ANTENNA 3P CONNECTOR



Terminal side of male terminals

Is there battery voltage?

YES–Go to step 16.

NO–Go to step 12.

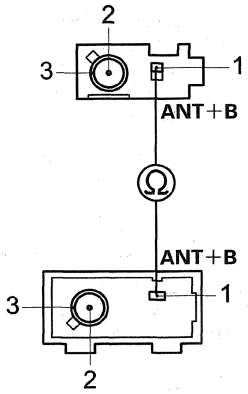
12. Turn the ignition switch to LOCK (0).
13. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector G (3P).

NOTE:
- Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

14. Check for continuity between audio-navigation unit connector G (3P) terminal No. 1 and AM/FM antenna 3P connector terminal No. 1.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)

Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR

Terminal side of male terminals

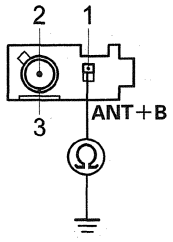
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between the audio-navigation unit and the AM/FM antenna. Also check the AM/FM antenna lead/sublead connector.■

15. Check for continuity between audio-navigation unit connector G (3P) terminal No. 1 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the audio-navigation unit and the AM/FM antenna.■

NO–Replace the audio-navigation unit (see page 23-232).■

16. Turn the ignition switch to LOCK (0).

17. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector G (3P).

NOTE:

- Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

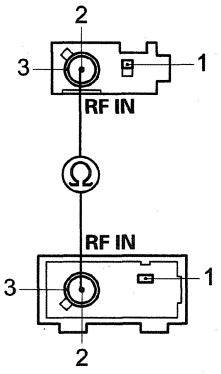
(cont'd)

Symptom Troubleshooting (cont'd)

18. Check for continuity between audio-navigation unit connector G (3P) terminal No. 2 and AM/FM antenna 3P connector terminal No. 2.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)

Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR

Terminal side of male terminals

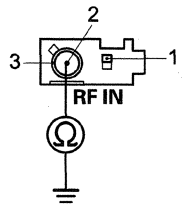
Is there continuity?

YES–Go to step 19.

NO–Replace the AM/FM antenna lead and/or sublead.■

19. Check for continuity between audio-navigation unit connector G (3P) terminal No. 2 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)



Terminal side of female terminals

Is there continuity?

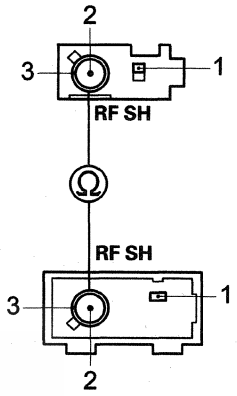
YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Go to step 20.

20. Check for continuity between audio-navigation unit connector G (3P) terminal No. 3 and AM/FM antenna 3P connector terminal No. 3.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)

Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR

Terminal side of male terminals

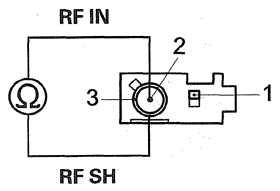
Is there continuity?

YES–Go to step 21.

NO–Replace the AM/FM antenna lead and/or sublead.■

21. Check for continuity between audio-navigation unit connector G (3P) terminals No. 2 and No. 3.

AUDIO-NAVIGATION UNIT CONNECTOR G (3P)



Terminal side of female terminals

Is there continuity?

YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Go to step 22.

22. Substitute a known-good AM/FM antenna lead and/or sublead, and check the radio reception.

Is the reception normal?

YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Substitute a known-good AM/FM antenna (see page 23-129), and recheck. If the reception is still poor, replace the audio-navigation unit (see page 23-232).■

Poor AM or FM radio reception or interference (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check for aftermarket accessories including cell phones and chargers plugged into the vehicle accessory power sockets.
- Check the radio reception in an open area. Poor reception/interference can be caused by the following:
  - The radio station is far away.
  - A tall building, a mountain, or a high-voltage power line is nearby.
  - Aftermarket window tint.

1. Do the seek stop test (see page 23-118), and check the radio reception/interference.

Is the reception/interference OK?

YES–Multipath interference or weak station. Operation is normal.■

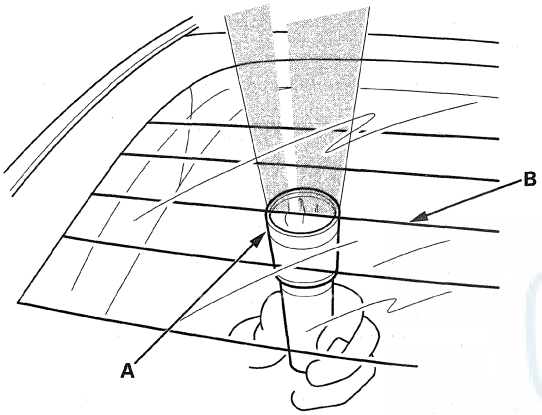
NO–Go to step 2.

(cont'd)

Symptom Troubleshooting (cont'd)

2. With the help of an assistant inside the vehicle, have the assistant shine a strong flashlight (A) along each rear antenna ground wire (B). Check from the outside of the vehicle for any breaks or openings in the rear antenna ground wires (the light shines through any breaks or cuts).

   NOTE: It is easier to see the breaks if you do this test in a dark or shaded area.



   Are there any breaks or cuts in the rear antenna ground?

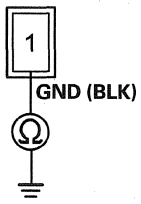
   YES–Repair the rear antenna ground. Go to window grid repair (see page 23-129), or replace the rear window (see page 20-40) if the damaged section is too long.■

   NO–Go to step 3.

3. Disconnect the rear antenna ground 1P connector.

4. Check for continuity between rear antenna ground 1P connector terminal No. 1 and body ground.

REAR ANTENNA GROUND 1P CONNECTOR



Terminal side of male terminals

   Is there continuity?

   YES–Go to step 5.

   NO–Repair an open or high resistance in the wire between the rear antenna ground 1P connector terminal No. 1 and body ground (G801) (see page 22-58).■

5. Check the reception/interference while the engine is running.

   Is there noise (static or whine) only with the engine running?

   YES–Check the antenna and radio grounds. If OK, check the charging system and the ignition system.■

   NO–Go to step 6.

6. Turn the ignition switch to LOCK (0).

7. Check the AM/FM antenna for cracks or other damage.

   Is there any damage?

   YES–Replace the AM/FM antenna (see page 23-129).■

   NO–Go to step 8.

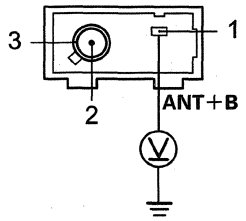
8. Disconnect the AM/FM antenna 3P connector from the AM/FM antenna.

9. Turn the ignition switch to ON (II).

10. Turn on the audio unit.

11. Measure the voltage between AM/FM antenna 3P connector terminal No. 1 and body ground.

AM/FM ANTENNA 3P CONNECTOR



Terminal side of male terminals

Is there battery voltage?

YES–Go to step 16.

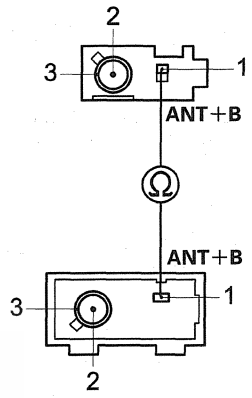
NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Remove the audio unit (see page 23-119), and disconnect audio unit connector G (3P).

    NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

14. Check for continuity between audio unit connector G (3P) terminal No. 1 and AM/FM antenna 3P connector terminal No. 1.

AUDIO UNIT CONNECTOR G (3P)
Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR
Terminal side of male terminals

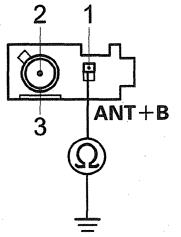
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between the audio unit and the AM/FM antenna. Also check the AM/FM antenna lead/sublead connector.■

15. Check for continuity between audio unit connector G (3P) terminal No. 1 and body ground.

AUDIO UNIT CONNECTOR G (3P)



Terminal side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the audio unit and AM/FM antenna.■

NO–Replace the audio unit (see page 23-119).■

16. Turn the ignition switch to LOCK (0).

(cont'd)

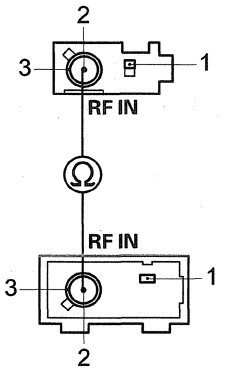
Symptom Troubleshooting (cont'd)

17. Remove the audio unit (see page 23-119), and disconnect audio unit connector G (3P).

    NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

18. Check for continuity between audio unit connector G (3P) terminal No. 2 and AM/FM antenna 3P connector terminal No. 2.

AUDIO UNIT CONNECTOR G (3P)
Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR
Terminal side of male terminals

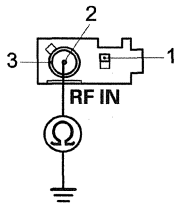
Is there continuity?

YES–Go to step 19.

NO–Replace the AM/FM antenna lead and/or sublead.■

19. Check for continuity between audio unit connector G (3P) terminal No. 2 and body ground.

AUDIO UNIT CONNECTOR G (3P)



Terminal side of female terminals

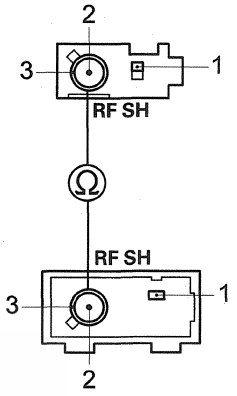
Is there continuity?

YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Go to step 20.

20. Check for continuity between audio unit connector G (3P) terminal No. 3 and AM/FM antenna 3P connector terminal No. 3.

AUDIO UNIT CONNECTOR G (3P)
Terminal side of female terminals



AM/FM ANTENNA 3P CONNECTOR
Terminal side of male terminals

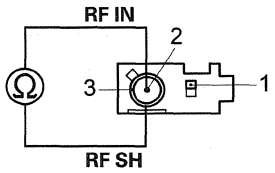
Is there continuity?

YES–Go to step 21.

NO–Replace the AM/FM antenna lead and/or sublead.■

21. Check for continuity between audio unit connector G (3P) terminals No. 2 and No. 3.

AUDIO UNIT CONNECTOR G (3P)



Terminal side of female terminals

Is there continuity?

YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Go to step 22.

22. Substitute a known-good AM/FM antenna lead and/or sublead, and check the radio reception.

Is the reception normal?

YES–Replace the AM/FM antenna lead and/or sublead.■

NO–Substitute a known-good AM/FM antenna (see page 23-129), and recheck. If the reception is still poor, replace the audio unit (see page 23-119).■

Audio-navigation unit power switch will not turn on (No information display and no sound) (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Press the power button on to see if the audio-navigation unit turns on.

   Does the audio-navigation unit display operate properly, and does the audio-navigation unit sound normal?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Check the No. B1 (15 A) fuse and the No. B14 (7.5 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 5.

   NO–Replace the fuse(s), and recheck.■
5. Remove the audio-navigation unit (see page 23-232). Check that the audio-navigation unit is properly connected.

   NOTE:
   - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

   Is it connected properly?

   YES–Go to step 6.

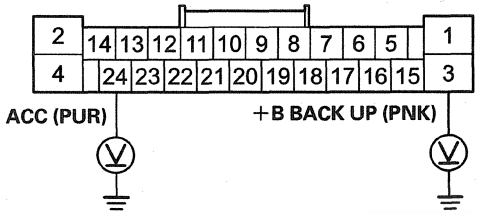
   NO–Repair poor connections and reconnect the connector(s), and recheck the function.■
6. Turn the ignition switch to ON (II).

(cont'd)

Symptom Troubleshooting (cont'd)

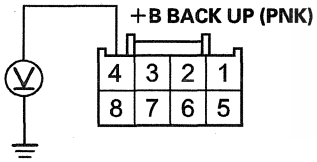
7. Measure the voltage between body ground and audio-navigation unit connector A (24P) terminals No. 3 and No. 24 individually, and between audio-navigation unit connector C (8P) terminal No. 4 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

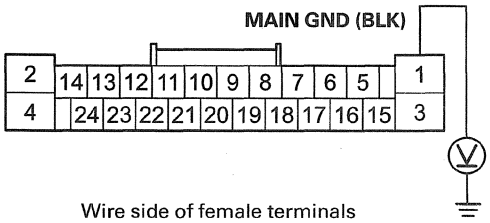
Is there battery voltage on the these terminals?

YES–Go to step 8.

NO–Repair an open in the wire(s) between the No. B1 (15 A) fuse and/or the No. B14 (7.5 A) fuse in the under-dash fuse/relay box and the audio-navigation unit.■

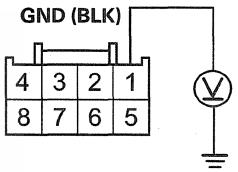
8. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 1 and body ground, and between audio-navigation unit connector C (8P) terminal No. 1 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

NO–Repair an open or high resistance in the wire between the audio-navigation unit connector A (24P) terminal No. 1 or audio-navigation unit connector C (8P) terminal No. 1 and body ground (G503) (see page 22-44).■

Audio unit power switch will not turn on (No information display and no sound) (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Press the power button on to see if the audio unit turns on.

   Does the audio unit display and operate properly, and does the audio unit sound normal?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Check the No. B1 (15 A) fuse and the No. B14 (7.5 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 5.

   NO–Replace the fuse(s), and recheck.■
5. Remove the audio unit (see page 23-119). Check that the audio unit is properly connected.

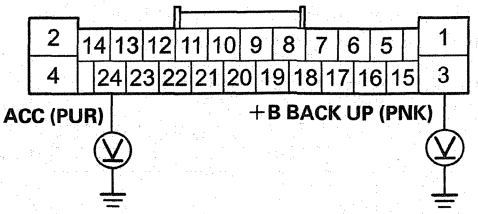
   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

   Is it connected properly?

   YES–Go to step 6.

   NO–Repair poor connections and reconnect the connector(s), and recheck the function.■
6. Turn the ignition switch to ON (II).
7. Measure the voltage between body ground and audio unit connector A (24P) terminals No. 3 and No. 24 individually.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

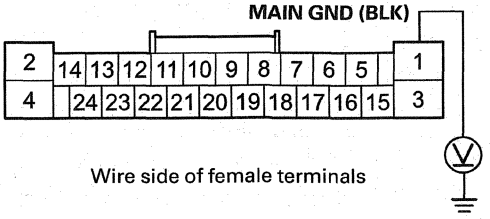
Is there battery voltage on the both terminals?

YES–Go to step 8.

NO–Repair an open in the wire(s) between the No. B1 (15 A) fuse and/or the No. B14 (7.5 A) fuse in the under-dash fuse/relay box and the audio unit.■

8. Measure the voltage between audio unit connector A (24P) terminal No. 1 and body ground.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

NO–Repair an open or high resistance in the wire between the audio unit connector A (24P) terminal No. 1 and body ground (G503) (see page 22-44).■

(cont'd)

Symptom Troubleshooting (cont'd)

Audio-navigation unit power switch will not turn off (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check for aftermarket accessories plugged into the vehicle's accessory power sockets.

1. Turn the ignition switch to ON (II).
2. Press the power button off or turn the ignition switch to LOCK (0) to see if the audio-navigation unit turns off.

   Does the audio-navigation unit turn off?

   YES–Operation is normal.■

   NO–Go to step 3.
3. Turn the ignition switch to ON (II), press the power button on, then turn the ignition switch to LOCK (0).

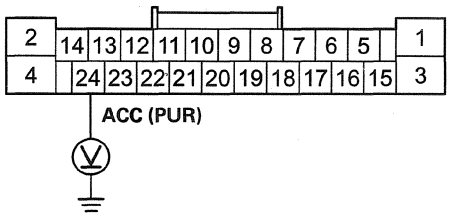
   Does the audio-navigation unit turn off?

   YES–Operation is normal.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector A (24P).

   NOTE:
   - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
6. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 24 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there battery voltage?

YES–Check for short to power in the wire.■

NO–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

Audio unit power switch will not turn off (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check for aftermarket accessories plugged into the vehicle's accessory power sockets.

1. Turn the ignition switch to ON (II).
2. Press the power button off or turn the ignition switch to LOCK (0) to see if the audio unit turns off.

   Does the audio unit turn off?

   YES–Operation is normal.■

   NO–Go to step 3.
3. Turn the ignition switch to ON (II), press the power button on, then turn the ignition switch to LOCK (0).

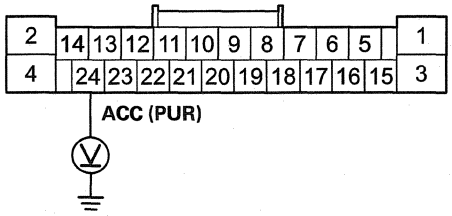
   Does the audio unit turn off?

   YES–Operation is normal.■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Remove the audio unit (see page 23-119), and disconnect audio unit connector A (24P).

   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
6. Measure the voltage between audio unit connector A (24P) terminal No. 24 and body ground.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there battery voltage?

YES–Check for short to power in the wire.■

NO–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

(cont'd)

Symptom Troubleshooting (cont'd)

No sound is heard from the speaker(s) (display is normal) (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Set the fader and balance positions to the center.
- Before doing the troubleshooting, do the audio-navigation unit power switch will not turn on troubleshooting (see page 23-67).

1. Turn the ignition switch to ON (II).
2. Make sure the volume is not set to the MIN level, and check for sound in all modes (AM/FM, CD, USB).

   Is there sound in all modes, and is the sound normal?

   YES–System is OK at this time. Check for poor connections at the audio-navigation unit, the speakers, and the stereo amplifier.■

   NO–
   - If there is no sound in all modes, go to step 4.
   - If there is no sound in AM/FM mode, do the poor AM or FM radio reception or interference troubleshooting (see page 23-59).
   - If there is no sound in CD mode, do the Audio disc does not play troubleshooting (see page 23-97).
   - If there is no sound in the USB mode, do the USB input sound is low or cannot be heard troubleshooting (see page 23-109).
3. Turn the ignition switch to LOCK (0).
4. Check the speaker(s) with no sound for any damage.

   Is there any damage?

   YES–Replace the speaker (see page 23-122), and recheck.■

   NO–Go to step 5.
5. Remove the speaker(s) with no sound (see page 23-122), and disconnect its connector.
6. Check the speaker 2P connector for a loose or poor connection reconnect the speaker 2P connector, and recheck the symptom

   Does the symptom still appear?

   YES–Go to step 7.

   NO–Intermittent failure. Operation is normal.■
7. Test the speaker(s) (see page 23-122).

   Is the speaker OK?

   YES–Go to step 8.

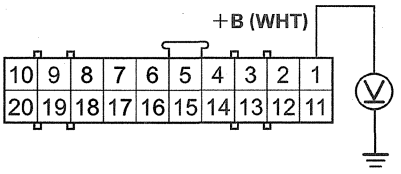
   NO–Replace the speaker (see page 23-122), and recheck.■
8. Reconnect the speaker connector.
9. Check the No. B1 (15 A) fuse, the No. B14 (7.5 A) fuse, and the No. B25 (20 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 10.

   NO–Replace the fuse(s), and recheck.■
10. Measure the voltage between stereo amplifier connector A (20P) terminal No. 1 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

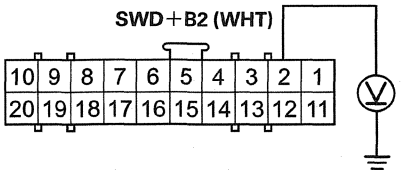
Is there battery voltage?

YES–Go to step 11.

NO–Repair an open in the wire between the No. B25 (20 A) fuse in the under-dash fuse/relay box and stereo amplifier connector A (20P) terminal No. 1.■

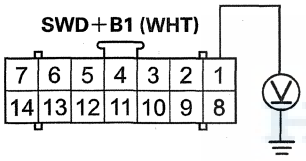
11. Turn the ignition switch to ON (II).
12. Measure the voltage between stereo amplifier connector A (20P) terminal No. 2 and body ground, and between stereo amplifier connector B (14P) terminal No. 1 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

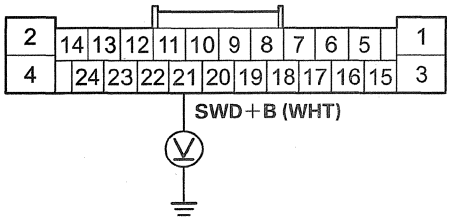
Is there battery voltage?

YES–Go to step 14.

NO–Go to step 13.

13. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 21 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

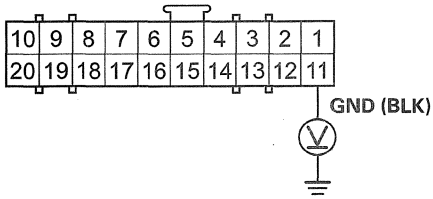
Is there battery voltage?

YES–Repair an open in the wire(s) between stereo amplifier connector A (20P) terminal No. 2, stereo amplifier connector B (14P) terminal No. 1, and audio-navigation unit connector A (24P) terminal No. 21.■

NO–Replace the audio-navigation unit (see page 23-232).■

14. Measure the voltage between stereo amplifier connector A (20P) terminal No. 11 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 15.

NO–Repair an open or high resistance in the wire between stereo amplifier connector A (20P) terminal No. 11 and body ground (G502) (see page 22-44).■

15. Turn the ignition switch to LOCK (0).
16. Disconnect stereo amplifier connector A (20P).

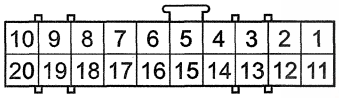
(cont'd)

Symptom Troubleshooting (cont'd)

17. Check for continuity between body ground and stereo amplifier connector A (20P) according to the table.

Speaker	Stereo amplifier connector	Wire color
Driver's door speaker	A8 (+)	WHT
	A18 (−)	GRY
Left tweeter	A7 (+)	LT BLU
	A17 (−)	GRY
Passenger's door speaker	A9 (+)	BLU
	A19 (−)	RED
Right tweeter	A10 (+)	BLU
	A20 (−)	RED
Left rear speaker	A3 (+)	GRY
	A13 (−)	BRN
Right rear speaker	A4 (+)	BLU
	A14 (−)	ORN
Subwoofer	A6 (+)	RED
	A16 (−)	LT BLU

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

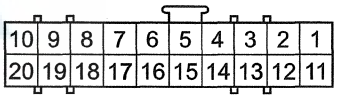
YES–Repair a short to body ground in the wire(s) between the stereo amplifier and the speaker(s).■

NO–Go to step 18.

18. Measure the resistance between each pair of speaker terminals at stereo amplifier connector A (20P) according to the table.

Speaker	Stereo amplifier connector	Wire color	Resistance
Driver's door speaker	A8 (+)	WHT	About 4 Ω
	A18 (−)	GRY	
Left tweeter	A7 (+)	LT BLU	About 4 Ω
	A17 (−)	GRY	
Passenger's door speaker	A9 (+)	BLU	About 4 Ω
	A19 (−)	RED	
Right tweeter	A10 (+)	BLU	About 4 Ω
	A20 (−)	RED	
Left rear speaker	A3 (+)	GRY	About 4 Ω
	A13 (−)	BRN	
Right rear speaker	A4 (+)	BLU	About 4 Ω
	A14 (−)	ORN	
Subwoofer	A6 (+)	RED	About 2.3 Ω
	A16 (−)	LT BLU	

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is the resistance OK?

YES–Go to step 19.

NO–Repair an open or a short in the wire(s) between the stereo amplifier and the speaker(s).■

19. Disconnect audio-navigation unit connector A (24P) and stereo amplifier connector B (14P).

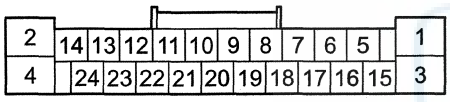
NOTE:

- Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

20. Check for continuity between audio-navigation unit connector A (24P) and stereo amplifier connector B (14P) according to the table.

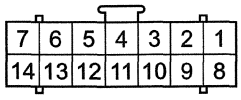
Audio-navigation unit connector	Stereo amplifier connector	Wire color
A5	B5	RED
A6	B12	GRN
A9	B2	LT GRN
A10	B9	WHT
A15	B7	YEL
A16	B14	PNK
A19	B4	GRN
A20	B11	ORN

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

Is there continuity?

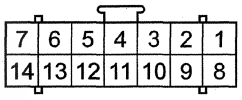
YES–Go to step 21.

NO–There is an open in the wire(s) between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.■

21. Check for continuity between stereo amplifier connector B (14P) and body ground according to the table.

Stereo amplifier connector	Wire color
B2	LT GRN
B4	GRN
B5	RED
B7	YEL
B9	WHT
B11	ORN
B12	GRN
B14	PNK

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

Is there continuity?

YES–There is a short to body ground in the wire(s) between the audio-navigation unit and the stereo amplifier. Replace the affected shielded harness.■

NO–Substitute a known-good stereo amplifier (see page 23-121), and recheck. If the symptom goes away, replace the original stereo amplifier (see page 23-121). If the symptom/indication does not go away, replace the audio-navigation unit (see page 23-232).■

(cont'd)

Symptom Troubleshooting (cont'd)

No sound is heard from the speaker(s) (display is normal) (without navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Set the fader and balance positions to the center.
- Before doing the troubleshooting, do the audio unit power switch will not turn on troubleshooting (see page 23-69).

1. Turn the ignition switch to ON (II).
2. Make sure the volume is not set to the MIN level, and check for sound in all modes (AM/FM, CD, USB).

   Is there sound in all modes, and is the sound normal?

   YES–System is OK at this time. Check for poor connections at the audio unit, the speakers, and the stereo amplifier.■

   NO–
   - If there is no sound in all modes:
     - With HandsFreeLink system, go to step 3.
     - Without HandsFreeLink system, go to step 11.
   - If there is no sound in AM/FM mode, do the poor AM or FM radio reception or interference troubleshooting (see page 23-63).
   - If there is no sound in CD mode, do the Audio disc does not play troubleshooting (see page 23-97).
   - If there is no sound in the USB mode, do the USB input sound is low or cannot be heard troubleshooting (see page 23-111).
3. Do the speaker check mode with self-diagnostic function (see page 23-54).

   Did all speakers produce a tone?

   YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom goes away, replace the original audio unit (see page 23-119).■

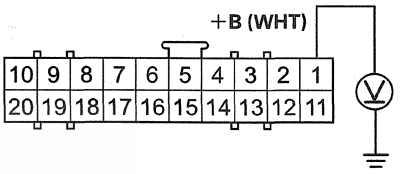
   NO–
   - Separate stereo amplifier type, go to step 4.
   - Built-in stereo amplifier type, go to step 11.
4. Turn the ignition switch to LOCK (0).
5. Check the No. B1 (15 A) fuse, the No. B14 (7.5 A) fuse, and the No. B25 (20 A) fuse in the under-dash fuse/relay box.

   Are the fuses OK?

   YES–Go to step 6.

   NO–Replace the fuse(s), and recheck.■
6. Measure the voltage between stereo amplifier connector A (20P) terminal No. 1 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

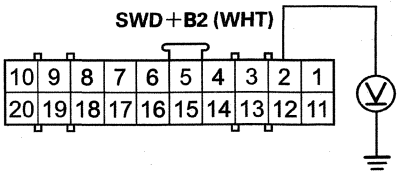
Is there battery voltage?

YES–Go to step 7.

NO–Repair an open in the wire between the No. B25 (20 A) fuse in the under-dash fuse/relay box and stereo amplifier connector A (20P) terminal No. 1.■

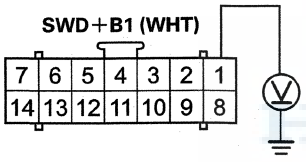
7. Turn the ignition switch to ON (II).
8. Measure the voltage between stereo amplifier connector A (20P) terminal No. 2 and body ground, and between stereo amplifier connector B (14P) terminal No. 1 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

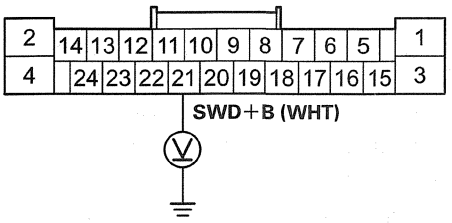
Is there battery voltage?

YES–Go to step 10.

NO–Go to step 9.

9. Measure the voltage between audio unit connector A (24P) terminal No. 21 and body ground.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

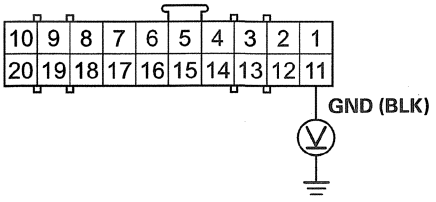
Is there battery voltage?

YES–Repair an open in the wire(s) between stereo amplifier connector A (20P) terminal No. 2, stereo amplifier connector B (14P) terminal No. 1, and audio unit connector A (24P) terminal No. 21.■

NO–Replace the audio unit (see page 23-119).■

10. Measure the voltage between stereo amplifier connector A (20P) terminal No. 11 and body ground.

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 11.

NO–Repair an open or high resistance in the wire between stereo amplifier connector A (20P) terminal No. 11 and body ground (G502) (see page 22-44).■

11. Turn the ignition switch to LOCK (0).

(cont'd)

Symptom Troubleshooting (cont'd)

12. Check the speaker(s) with no sound for any damage.

    Is there any damage?

    YES–Replace the speaker(s) (see page 23-122), and recheck.■

    NO–Go to step 13.

13. Remove the speaker(s) with no sound (see page 23-122), and disconnect its connector.

14. Check the speaker 2P connector for a loose or poor connection reconnect the speaker connector, and recheck the symptom.

    Is the condition still present?

    YES–Go to step 15.

    NO–Intermittent failure. Operation is normal.■

15. Test the speaker(s) (see page 23-122).

    Is the speaker OK?

    YES–

    - Separate stereo amplifier type, go to step 16.
    - Built-in stereo amplifier type, go to step 20.

    NO–Replace the speaker(s) (see page 23-122).■

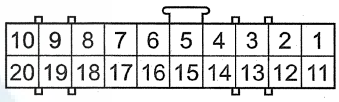
16. Reconnect the speaker connector(s).

17. Disconnect stereo amplifier connector A (20P).

18. Check for continuity between body ground and stereo amplifier connector A (20P) according to the table.

Speaker	Stereo amplifier connector	Wire color
Driver's door speaker	A8 (+)	WHT
	A18 (−)	GRY
Left tweeter	A7 (+)	LT BLU
	A17 (−)	GRY
Passenger's door speaker	A9 (+)	BLU
	A19 (−)	RED
Right tweeter	A10 (+)	BLU
	A20 (−)	RED
Left rear speaker	A3 (+)	GRY
	A13 (−)	BRN
Right rear speaker	A4 (+)	BLU
	A14 (−)	ORN
Subwoofer	A6 (+)	RED
	A16 (−)	LT BLU

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is there continuity?

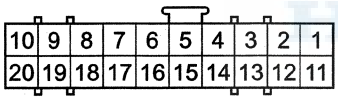
YES–Repair a short to body ground in the wire(s) between the stereo amplifier and the speaker(s).■

NO–Go to step 19.

19. Measure the resistance between each pair of speaker terminals at stereo amplifier connector A (20P) according to the table.

Speaker	Stereo amplifier connector	Wire color	Resistance
Driver's door speaker	A8 (+)	WHT	About 4 Ω
	A18 (−)	GRY	
Left tweeter	A7 (+)	LT BLU	About 4 Ω
	A17 (−)	GRY	
Passen-ger's door speaker	A9 (+)	BLU	About 4 Ω
	A19 (−)	RED	
Right tweeter	A10 (+)	BLU	About 4 Ω
	A20 (−)	RED	
Left rear speaker	A3 (+)	GRY	About 4 Ω
	A13 (−)	BRN	
Right rear speaker	A4 (+)	BLU	About 4 Ω
	A14 (−)	ORN	
Subwoofer	A6 (+)	RED	About 2.3 Ω
	A16 (−)	LT BLU	

STEREO AMPLIFIER CONNECTOR A (20P)



Wire side of female terminals

Is the resistance OK?

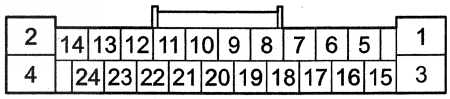
YES–Go to step 26.

NO–Repair an open or a short in the wire(s) between the stereo amplifier and the speaker(s).■

20. Check for continuity between body ground and audio unit connector A (24P) according to the table.

Speaker	Audio unit connector	Wire color
Driver's door speaker, Left tweeter	A15 (+)	LT BLU
	A16 (−)	GRY
Passenger's door speaker, Right tweeter	A19 (+)	BLU
	A20 (−)	RED
Left rear speaker	A5 (+)	GRY
	A6 (−)	BRN
Right rear speaker	A9 (+)	BLU
	A10 (−)	ORN

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the audio unit and the speaker(s).■

NO–Go to step 21.

21. Disconnect the tweeter 2P connectors.

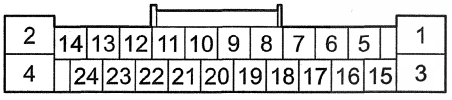
(cont'd)

Symptom Troubleshooting (cont'd)

22. Measure the resistance between each pair of speaker terminals at audio unit connector A (24P) according to the table.

Speaker	Audio unit connector	Wire color	Resistance
Driver's door speaker	A15 (+)	LT BLU	About 4 Ω
	A16 (−)	GRY	
Passen-ger's door speaker	A19 (+)	BLU	About 4 Ω
	A20 (−)	RED	
Left rear speaker	A5 (+)	GRY	About 4 Ω
	A6 (−)	BRN	
Right rear speaker	A9 (+)	BLU	About 4 Ω
	A10 (−)	ORN	

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is the resistance OK?

YES–Go to step 26.

NO–Repair an open or a short in the wire(s) between the audio unit and the speaker(s).■

23. Disconnect the connector(s) from the front speaker(s).

24. Connect the tweeter connector terminals No. 2 (+) and No. 1 (−) with a jumper wire as shown.

TWEETER 2P CONNECTOR



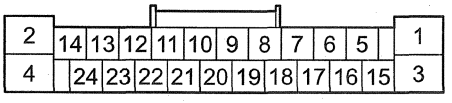
JUMPER WIRE

Wire side of female terminals

25. Check for continuity between each pair of speaker terminals at audio connector A (24P) according to the table.

Speaker		Audio unit connector	Wire color
Left tweeter	1 (−)	A16 (−)	GRY
	2 (+)	A15 (+)	LT BLU
Right tweeter	1 (−)	A20 (−)	RED
	2 (+)	A19 (+)	BLU

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there continuity?

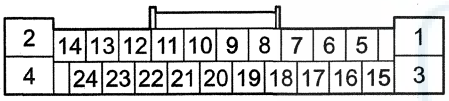
YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

NO–Repair an open or a short in the wire(s) between the audio unit and the tweeter.■

26. Check for continuity between audio unit connector A (24P) and stereo amplifier connector B (14P) according to the table.

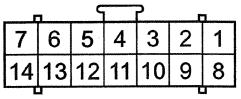
Audio unit connector	Stereo amplifier connector	Wire color
A5	B5	RED
A6	B12	GRN
A9	B2	LT GRN
A10	B9	WHT
A15	B7	YEL
A16	B14	PNK
A19	B4	GRN
A20	B11	ORN

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

Is there continuity?

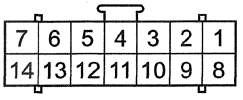
YES–Go to step 27.

NO–There is an open in the wire(s) between the audio unit and the stereo amplifier. Replace the affected shielded harness.■

27. Check for continuity between stereo amplifier connector B (14P) and body ground according to the table.

Stereo amplifier connector	Wire color
B2	LT GRN
B4	GRN
B5	RED
B7	YEL
B9	WHT
B11	ORN
B12	GRN
B14	PNK

STEREO AMPLIFIER CONNECTOR B (14P)



Wire side of female terminals

Is there continuity?

YES–There is a short to body ground in the wire(s) between the audio unit and the stereo amplifier. Replace the affected shielded harness.■

NO–Substitute a known-good stereo amplifier (see page 23-121), and recheck. If the symptom goes away, replace the original stereo amplifier (see page 23-121). If the symptom/indication does not go away, replace the audio unit (see page 23-119).■

(cont'd)

Symptom Troubleshooting (cont'd)

Auxiliary input sound is low or cannot be heard (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Use auxiliary stereo cables with 3.5 mm ends only.
- Auxiliary accessories may be played on the audio-navigation unit using the auxiliary input.

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit, and connect an auxiliary accessory to the auxiliary input jack.
3. Check the volume operation.

   Is the sound normal?

   YES–Operation is normal at this time.■

   NO–Go to step 4.
4. Make sure the auxiliary accessory volume is set to MAX.

   Is the volume set to MAX?

   YES–Go to step 5.

   NO–Raise the auxiliary accessory volume to MAX. Make sure the audio-navigation unit volume is turned down before retesting.■
5. Substitute a known-good auxiliary audio accessory and/or auxiliary stereo cable, and recheck.

   Does the auxiliary audio accessory operate properly?

   YES–Original auxiliary audio accessory or auxiliary stereo cable is faulty.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Remove the auxiliary jack assembly (see page 23-128), and check that the auxiliary jack assembly is properly connected.

   Is the auxiliary jack assembly connected properly?

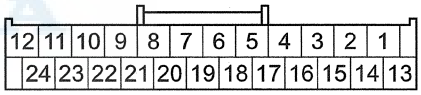
   YES–Go to step 8.

   NO–Reconnect the connector, and recheck the function.■
8. Disconnect the auxiliary jack assembly 5P connector.
9. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector B (24P).

   NOTE:
   - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
10. Check for continuity between body ground and audio-navigation unit connector B (24P) according to the table.

Audio-navigation unit connector	Wire color
B10	WHT
B12	BRN
B22	YEL
B23	ORN
B24	YEL

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

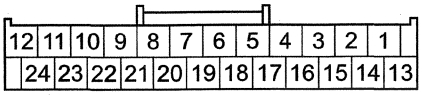
YES–There is a short to body ground in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Replace the affected shielded harness.■

NO–Go to step 11.

11. Check for continuity between audio-navigation unit connector B (24P) according to the table.

From terminal (wire color)	To terminals (wire color)
B11 (GRY)	B12 (BRN), B23 (ORN), B24 (YEL)
B12 (BRN)	B23 (ORN), B24 (YEL)
B23 (ORN)	B24 (YEL)

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

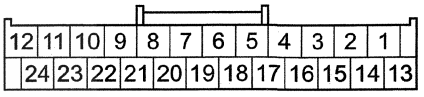
YES–There is a short in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Replace the affected shielded harness.■

NO–Go to step 12.

12. Check for continuity between audio-navigation unit connector B (24P) and the auxiliary jack assembly 5P connector according to the table.

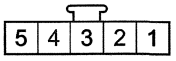
Audio-navigation unit connector	Auxiliary jack assembly connector	Wire color
B10	4	WHT
B12	3	BRN
B22	5	YEL
B23	1	ORN
B24	2	YEL

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

AUXILIARY JACK ASSEMBLY 5P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Substitute a known-good auxiliary jack assembly (see page 23-128), and recheck. If the symptom/indication goes away, replace the original auxiliary jack assembly (see page 23-128). If the symptom/indication is still present, replace the audio-navigation unit (see page 23-232).■

NO–There is an open in the wire(s) between the audio-navigation unit and the auxiliary jack assembly. Replace the affected shielded harness.■

(cont'd)

Symptom Troubleshooting (cont'd)

Auxiliary input sound is low or cannot be heard (without navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Use auxiliary stereo cables with 3.5 mm ends only.
- Auxiliary accessories may be played on the audio unit using the auxiliary input.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit, and connect an auxiliary accessory to the auxiliary input jack.
3. Check the volume operation.

   Is the sound normal?

   YES–Operation is normal at the time.■

   NO–Go to step 4.
4. Make sure the auxiliary accessory volume is set to MAX.

   Is the volume set to MAX?

   YES–Go to step 5.

   NO–Raise the auxiliary accessory volume to MAX. Make sure the audio unit volume is turned down before retesting.■
5. Substitute a known-good auxiliary audio accessory and/or auxiliary stereo cable, and recheck.

   Does the auxiliary audio accessory operate properly?

   YES–Original auxiliary audio accessory or auxiliary stereo cable is faulty.■

   NO–Substitute a known-good center panel (see step 9 on page 23-120), and recheck. If the symptom/indication goes away, replace the original center panel (see step 9 on page 23-120). If the symptom/indication is still present, replace the audio unit (see page 23-119).■

Audio system sound is weak or distorted (display is normal)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Set the fader and balance positions to the center.

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit or audio unit, and check for sound in each mode (AM, FM, and CD).

   Is there sound from the speakers, and is the sound quality normal in each mode?

   YES–Intermittent failure. The system is OK at this time. Check for loose connections at the audio-navigation unit, the audio unit, and each speaker.■

   NO–Speakers all work normally, but the sound quality is poor:
   - If the sound quality is poor only with AM or FM radio, go to poor AM or FM radio reception or interference:
     - With navigation (see page 23-59).■
     - Without navigation (see page 23-63).■
   - If the sound is poor in all modes, go to sound quality diagnosis (see page 23-115).■

Radio preset memory is lost

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Set each of the radio station preset buttons.

   Do each of the buttons set properly?

   YES–Go to step 2.

   NO–

   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

2. Turn the ignition switch to LOCK (0) for 1 minute, then turn it back to ON (II).

3. Test the preset buttons for proper recall operation.

   Do the preset buttons recall the set radio stations?

   YES–System is normal at this time. If the problem recurs, replace the audio-navigation unit (see page 23-232) or the audio unit (see page 23-119).■

   NO–

   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Volume does not change

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Set the fader and balance positions to the center.
- If the volume button does not change volume with the audio remote switch on the steering wheel, go to Audio remote switch does not work properly (with navigation) (see page 23-93), (without navigation) (see page 23-94).

1. Turn the ignition switch to ON (II).

2. Turn on the audio-navigation unit or audio unit, and check for sound in each mode (AM, FM, and CD).

   Is the sound normal?

   YES–Go to step 3.

   NO–Go to Audio system sound is weak or distorted (see page 23-84), or No sound is heard from the speaker(s) (with navigation) (see page 23-72), (without navigation) (see page 23-76).■

3. Operate the volume knob to see if the volume changes.

   Does the volume change?

   YES–Operation is normal.■

   NO–

   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

(cont'd)

Symptom Troubleshooting (cont'd)

Volume does not increase with speed (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Verify SVC mode setting in the audio-navigation unit sound adjustment set-up.

   Is the SVC set to off?

   YES–Change the setting to MID, and recheck.■

   NO–Go to step 2.

2. Enter the navigation diagnostic mode, and use the Car status diagnosis to check the vehicle speed pulse signal (see page 23-192).

   Is there a vehicle speed signal OK?

   YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

   NO–Go to step 3.

3. Test-drive the vehicle at highway speeds, and monitor if the volume increases.

   Does the volume increase?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.

4. Turn the ignition switch to LOCK (0).

5. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector A (24P).

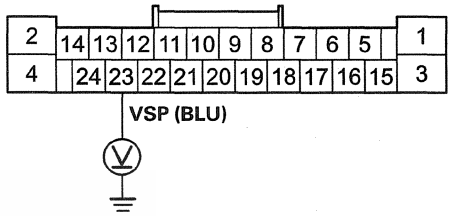
   NOTE:
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

6. Turn the ignition switch to ON (II).

7. Drive the vehicle, and have an assistant measure the voltage at audio-navigation unit connector A (24P) terminal No. 23 and body ground.

   NOTE: Some voltmeters may show an average of 2.5 V, and others may show a constant voltage, depending on the meter's measurement speed.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there a 0-5 V pulse or about 2.5 V average?

YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

NO–Repair an open or a short in the wire between audio-navigation unit connector A (24P) terminal No. 23 and ECM/PCM connector A (44P) terminal No. 29. If no opens are found, substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209).■

Volume does not increase with speed (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Verify SVC mode setting in the audio unit sound adjustment set-up.

   Is the SVC set to off?

   YES–Change setting to MID, and recheck.■

   NO–Go to step 2.

2. Do the self-diagnostic function for the vehicle speed pulse indication (see page 23-50).

   Does the self-diagnostic function indicate a VSP signal?

   YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

   NO–Go to step 3.

3. Test-drive the vehicle at highway speeds, and monitor if the volume increases.

   Does the volume increase?

   YES–Intermittent failure, the system is OK at this time.■

   NO–Go to step 4.

4. Turn the ignition switch to LOCK (0).

5. Remove the audio unit (see page 23-119), and disconnect audio unit connector A (24P).

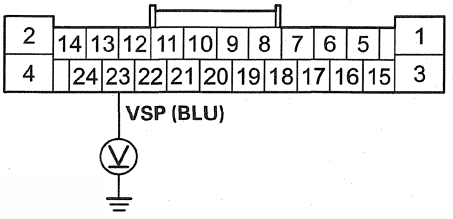
   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

6. Turn the ignition switch to ON (II).

7. Drive the vehicle, and have an assistant measure the voltage at audio unit connector A (24P) terminal No. 23 and body ground.

   NOTE: Some voltmeters may show an average of 2.5 V, and others may show a constant voltage, depending on the meter's measurement speed.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there a 0-5 V pulse or about 2.5 V average?

YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

NO–Repair an open or a short in the wire between audio unit connector A (24P) terminal No. 23 and ECM/PCM connector A (44P) terminal No. 29. If no opens are found, substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209).■

(cont'd)

Symptom Troubleshooting (cont'd)

Volume is too high or too low when driving at freeway speeds

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Change the SVC mode setting in sound set-up to MID (see page 23-9).

   Is the volume level still too high, or too low?

   YES–Go to step 2.

   NO–Improper SVC setting for customers sound taste.■

2. Compare the SVC to a known-good vehicle.

   Is the SVC operation similar in both vehicles?

   YES–The SVC is operating normally.

   NO–Go to step 3.

3. Test-drive the vehicle at freeway speeds, and monitor volume level.

   Is the volume level too high, or too low?

   YES–
   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

   NO–Intermittent failure, the system is OK at this time.■

Radio tuner does not change stations

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- If the radio tuner does not change stations with the audio remote switch on the steering wheel, go to Audio remote switch does not work properly (with navigation) (see page 23-93), (without navigation) (see page 23-94).

1. Check the audio information on the display panel.

   Does the audio information display properly?

   YES–Go to step 2.

   NO–
   - With navigation: Go to Audio-navigation unit power switch will not turn on (see page 23-67).■
   - Without navigation: Go to Audio unit power switch will not turn on (see page 23-69).■

2. Operate the tuning buttons to see if the radio station changes.

   Does the radio station change?

   YES–Intermittent failure, the tuning buttons are OK at this time.■

   NO–
   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Display does not dim or brighten with dimmer (without navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn the combination light switch on and off to see if the symptom can be duplicated.

   Can you duplicate the symptom?

   YES–Go to step 3.

   NO–Operation is normal.■
3. Turn the combination light switch off.
4. Operate the illumination control dial.

   Does the illumination control dial function normally?

   YES–Operation is normal.■

   NO–Go to step 5.
5. Turn the ignition switch to LOCK (0).
6. Remove the audio unit (see page 23-119).

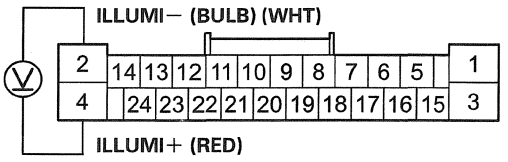
   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
7. Disconnect and check audio unit connector A (24P) for loose or a poor connection reconnect audio unit connector A (24P), and recheck the symptom.

   Does the symptom still appear?

   YES–Go to step 8.

   NO–Operation is normal.■
8. Turn the ignition switch to ON (II).
9. Measure the voltage between audio unit connector A (24P) terminals No. 2 and No. 4. Operate the dashlights brightness controller buttons to see if the voltage changes.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Does the voltage change?

YES–Substitute a known-good center panel (see step 9 on page 23-120), and recheck. If the symptom/indication goes away, replace the original center panel (see step 9 on page 23-120). If symptom is still present, substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

NO–Check for an open in the wire(s) between the under-dash fuse/relay box and the gauge control module. If the wires are OK, substitute a known-good gauge control module (see page 22-354), and recheck. If the symptom goes away, replace the original gauge control module (see page 22-354).■

(cont'd)

Symptom Troubleshooting (cont'd)

Audio-navigation unit button illumination does not work (with navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn the combination light switch to the parking light position.
3. Check the illumination of the audio-navigation unit buttons.

   Are the buttons illuminated?

   YES–Intermittent failure, the audio-navigation unit is OK at this time. Check for loose or poor connections at the audio-navigation unit connector A (24P).■

   NO–Go to step 4.
4. Check the illumination of several other buttons not related to the navigation system.

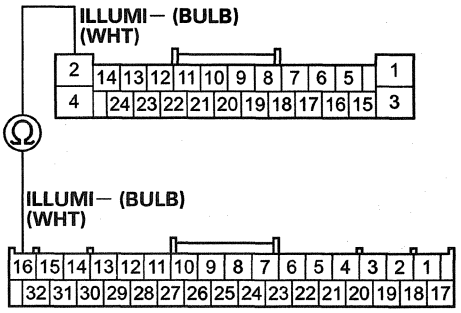
   Are the buttons illuminated?

   YES–Go to step 5.

   NO–Troubleshoot the interior lights. Start by checking the No. B29 (10 A) fuse in the under-dash fuse/relay box. If the fuse is OK, check for an open in the wire between the under-dash fuse/relay box and the audio-navigation unit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the audio-navigation unit (see page 23-232).

   NOTE:
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
7. Disconnect audio-navigation unit connector A (24P).
8. Disconnect the gauge control module 32P connector.
9. Check for continuity between audio-navigation unit connector A (24P) terminal No. 2 and gauge control module 32P connector terminal No. 16.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

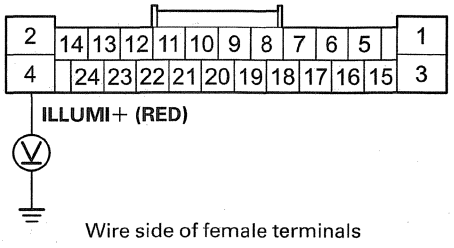
Is there continuity?

YES–Go to step 10.

NO–Repair an open in the wire between the gauge control module and the audio-navigation unit.■
10. Turn the ignition switch to ON (II).

11. With the combination light switch still on, measure the voltage between audio-navigation unit connector A (24P) terminal No. 4 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Is there battery voltage?

YES–Check the connections at audio-navigation unit connector A (24P). If all connections are OK, replace the audio-navigation unit (see page 23-232).■

NO–Repair an open in the wire between the under-dash fuse/relay box and the audio-navigation unit.■

Audio unit button illumination does not work (without navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn the combination light switch to the parking light position.
3. Check the illumination of the audio unit buttons.

   Are the buttons illuminated?

   YES–Intermittent failure, the audio unit is OK at this time. Check for loose or poor connections at the audio unit connector A (24P).■

   NO–Go to step 4.
4. Check the illumination of several other buttons not related to the audio system.

   Are the buttons illuminated?

   YES–Go to step 5.

   NO–Troubleshoot the interior lights. Start by checking the No. B29 (10 A) fuse in the under-dash fuse/relay box. If the fuse is OK, check for an open in the wire between the under-dash fuse/relay box and the audio unit.■
5. Turn the ignition switch to LOCK (0).
6. Remove the audio unit (see page 23-119).

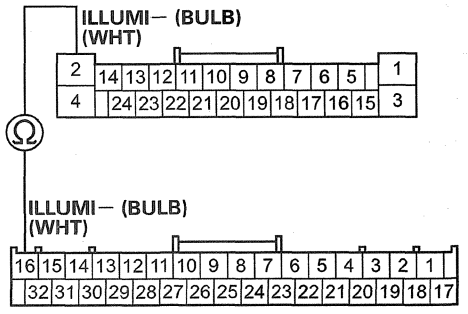
   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
7. Disconnect audio unit connector A (24P).
8. Disconnect the gauge control module 32P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

9. Check for continuity between audio unit connector A (24P) terminal No. 2 and gauge control module 32P connector terminal No. 16.

AUDIO UNIT CONNECTOR A (24P)
Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR
Wire side of female terminals

Is there continuity?

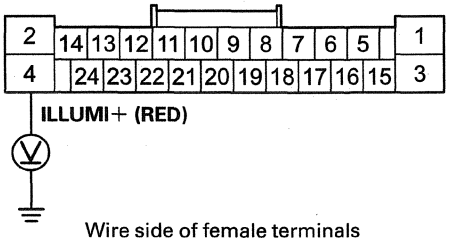
YES–Go to step 10.

NO–Repair an open in the wire between the gauge control module and the audio unit.■

10. Turn the ignition switch to ON (II).

11. With the combination light switch still on, measure the voltage between audio unit connector A (24P) terminal No. 4 and body ground.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there battery voltage?

YES–Check the connections at audio unit connector A (24P). If all connections are OK, replace the audio unit (see page 23-119).■

NO–Repair an open in the wire between the under-dash fuse/relay box and the audio unit.■

Audio remote switch does not work properly (with navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit, and check the audio remote switch operation (volume up, volume down, CH +, CH −, MODE).

   Is the audio-navigation unit operation OK?

   YES–Intermittent failure, the audio remote switch is OK at this time. Check for loose connections.■

   NO–Go to step 3.

3. Go to the audio button, knob, and audio remote switch detection mode in the Self-Diagnostic Function (see page 23-184).

   Are the audio remote switch functions detected and functioning properly?

   YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

   NO–Go to step 4.

4. Turn the ignition switch to LOCK (0).
5. Do the Audio Remote Switch Test (see page 23-125).

   Is the audio remote switch OK?

   YES–Go to step 6.

   NO–Replace the audio remote switch (see page 23-125), and recheck.■

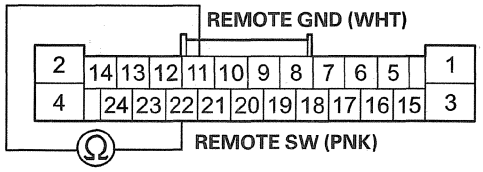
6. Remove the audio-navigation unit (see page 23-232).

   NOTE:

   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

7. Disconnect audio-navigation unit connector A (24P).
8. Reconnect the audio remote switch, and measure the resistance between audio-navigation unit connector A (24P) terminals No. 11 and No. 22 as specified in the table.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO REMOTE SWITCH TABLE

Position	Resistance
VOL DOWN	about 100 Ω
VOL UP	about 357 Ω
CH (−)	about 775 Ω
CH (+)	about 1.7 kΩ
MODE	about 3.7 kΩ
No button pressed	about 10 kΩ

Is the resistance OK?

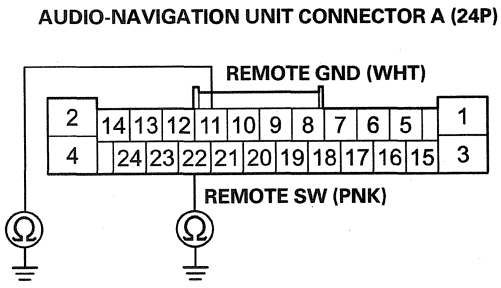
YES–Go to step 9.

NO–Repair a short or open or high resistance in the circuit between the audio-navigation unit and the audio remote switch. If the wires are OK, replace the cable reel (see page 24-183).■

(cont'd)

Symptom Troubleshooting (cont'd)

9. Check for continuity between body ground and audio-navigation unit connector A (24P) terminals No. 11 and No. 12 individually.



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the circuit between the audio-navigation unit and the audio remote switch. If the wires are OK, replace the cable reel (see page 24-183).■

NO–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

Audio remote switch does not work properly (without navigation)

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.

1. Turn the ignition switch to ON (II).
2. Turn on the audio unit, and check the audio remote switch operation (volume up, volume down, CH +, CH −, MODE).

   Is the audio unit operation OK?

   YES–Intermittent failure, the audio remote switch is OK at this time. Check for loose connections.■

   NO–Go to step 3.
3. Go to the audio button, knob, and audio remote switch detection mode in the audio system Self-Diagnostic Function (see page 23-50).

   Are the audio remote switch functions detected and functioning properly?

   YES–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. Do the Audio Remote Switch Test (see page 23-125).

   Is the audio remote switch OK?

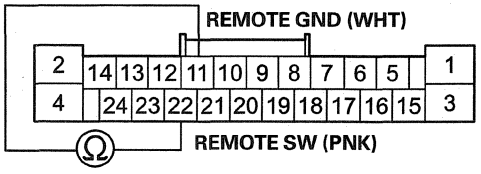
   YES–Go to step 6.

   NO–Replace the audio remote switch (see page 23-125), and recheck.■
6. Remove the audio unit (see page 23-119).

   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
7. Disconnect audio unit connector A (24P).

8. Reconnect the audio remote switch, and measure the resistance between audio unit connector A (24P) terminals No. 11 and No. 22 as specified in the table.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO REMOTE SWITCH TABLE

Position	Resistance
VOL DOWN	about 100 Ω
VOL UP	about 357 Ω
CH (−)	about 775 Ω
CH (+)	about 1.7 kΩ
MODE	about 3.7 kΩ
No button pressed	about 10 kΩ

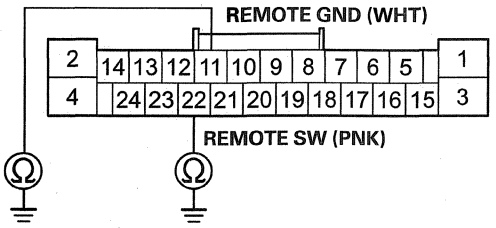
Is the resistance OK?

YES–Go to step 9.

NO–Repair a short or open or high resistance in the circuit between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see page 24-183).■

9. Check for continuity between body ground and audio unit connector A (24P) terminals No. 11 and No. 22 individually.

AUDIO UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the circuit between the audio unit and the audio remote switch. If the wires are OK, replace the cable reel (see page 24-183).■

NO–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

(cont'd)

Symptom Troubleshooting (cont'd)

Audio disc does not load

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Disc labels should not be used in the audio-navigation unit or the audio unit. They may damage and jam the player mechanism.
- Make sure the disc is compatible with the system (see the Owner's Manual for more information).

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit or the audio unit, and insert a known-good disc to see if the symptom can be duplicated.

   Does the disc load?

   YES–Operation is normal. If the disc loads normally, but will not play, go to Audio disc does not play (see page 23-97).■

   NO–Go to step 3.
3. Insert another disc.

   Does the disc load?

   YES–The original disc is faulty.■

   NO–
   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Audio disc does not eject

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Disc labels should not be used in the audio-navigation unit or the audio unit. They may damage and jam the player mechanism.

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit or the audio unit.

   Does the system turn on?

   YES–Go to step 3.

   NO–
   - With navigation: Go to Audio-navigation unit power switch will not turn on (see page 23-67).■
   - Without navigation: Go to Audio unit power switch will not turn on (see page 23-69).■
3. Check to see if the disc ejects correctly with no binding by pressing the EJECT button.

   Does the disc eject normally?

   YES–Operation is normal.■

   NO–
   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Special Tools Required
Diagnostic CD 07AAZ-SDBA100

Audio disc does not play

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Disc labels should not be used in the audio-navigation unit or audio unit. They may damage and jam the player mechanism.

1. Turn the ignition switch to ON (II).
2. Turn on the audio-navigation unit or the audio unit, and try loading a disc.

   Does the disc load?

   YES–Go to step 3.

   NO–Go to Audio disc does not load (see page 23-96).■
3. Insert the audio diagnostic CD (T/N: 07AAZ-SDBA100) in the audio-navigation unit or audio unit.

   Does the disc play?

   YES–The original disc is faulty, or has an unreadable format.■

   NO–
   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Special Tools Required
- Diagnostic CD 07AAZ-SDBA100
- Skip Test CD 07AAZ-SDBA200
- Skip Test CD 07AAZ-SDBA300

Audio disc skips

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Over inflated tires can cause excessive vibration.
- Disc labels should not be used in the audio-navigation unit or audio unit. They may damage and jam the player mechanism.

1. Confirm the vehicle's tires are properly inflated.
2. Check the customer's disc for scratches, fingerprints, and marks.

   NOTE: The following test should be done with the audio-navigation unit or audio unit bass and treble set to the customer's listening performance. When comparing to a known-good vehicle, do the comparison on the same model and trim level.
3. Test drive to identify when the customer's disc skips. The audio diagnostic CD (T/N: 07AAZ-SDBA100) can be used if customer's disc is not available. Use tracks 10–12.

   Does the disc skip?

   YES–Go to step 4.

   NO–Operation is normal.■
4. Compare the customer's disc that skips to a known-good vehicle under the same conditions.

   Does the disc skip in the known-good vehicle under the same conditions?

   YES–The audio disc player operation is normal, the problem is with the customer's disc.■

   NO–Go to step 5.

NOTE: Do the following test with vehicle parked and the engine running.

(cont'd)

Symptom Troubleshooting (cont'd)

5. Insert the diagnostic skip test CD (T/N: 07AAZ-SDBA300) (ABEX-TCD-721). Play tracks 2—11, and note the track number(s) where the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track number(s) as the known-good vehicle?

   YES–Operation is normal.■

   NO–Go to step 6.

6. Insert the diagnostic skip test CD (T/N: 07AAZ-SDBA200) (ABEX-TCD-725B). Play tracks 7—11 and tracks 13—15, and note the track number(s) where the disc starts skipping. Do the same test on a known-good vehicle.

   Does the disc skip on the same track number(s) as the known-good vehicle?

   YES–Operation is normal.■

   NO–

   - With navigation: Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■
   - Without navigation: Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119).■

Audio unit button does not work (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- In order to troubleshoot the main power switch, go to Audio unit power switch will not turn on troubleshooting (see page 23-69).

1. Go to the audio button, knob, and audio remote switch detection mode in the audio Self-Diagnostic Function (see page 23-50). Operate all items in the appropriate switch list.

   Switch list

   1-6, EJECT, FM/AM, CD, AUX, TITLE, ♪/◁, SCAN, RPT, RDM/A.SEL, VOL PUSH SELECT, SEEK, PLAY, RETURN, PWR

   Are all the items in the appropriate switch list detected?

   YES–Operation is normal.■

   NO–Substitute a known-good center panel (see step 9 on page 23-120), and recheck. If the symptom/indication goes away, replace the original center panel (see step 9 on page 23-120). If the symptom is still present, replace the audio unit (see page 23-119).■

Audio unit disc indicator does not work (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Audio discs with labels should not be used in the audio unit. They may damage and jam the player mechanism.

1. Turn on the audio system.
2. Insert a known-good disc or press the EJECT button.

   Is the DISC indicator (LED) indicated?

   YES–The audio unit is OK at this time. Check for loose or poor connections at the audio unit and the center panel.■

   NO–Substitute a known-good audio unit (see page 23-119), and recheck. If the symptom/indication goes away, replace the original audio unit (see page 23-119). If the symptom is still present, substitute a known-good center panel (see step 9 on page 23-120), and recheck. If the symptom/indication goes away, replace the original center panel (see step 9 on page 23-120).■

USB device does not function (with navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check the USB device compatibility.
  - Mass-storage class ready digital audio player with USB 2.0 port
  - More than 256 MB of RAM
  - Supports MP3, WMA, and AAC (encoded with the iTunes) files, DRM files are not supported
- Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the customer's USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result in that USB devices may work in newer vehicles, but not in older vehicles of the same model.
- If UNSUPPORTED appears on the display, the vehicle is OK, there is a software problem with the USB device.

1. Turn the ignition switch to ON (II).
2. Turn on the audio system.
3. Press the AUX button to select USB mode.

   NOTE: Do not connect the USB device.

   Is USB NO DATA displayed in the navigation display?

   YES–Go to step 4.

   NO–Go to step 14.

4. Turn the ignition switch to LOCK (0).
5. Connect the customer's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

   Is the USB device working properly in the known-good vehicle?

   YES–Go to step 6.

   NO–If UNSUPPORTED is displayed in the navigation display, the USB device may not be supported or the wrong type music files are on the device. If USB NO SONG is displayed in the navigation display, the USB device may have no music files. See the Owner's Manual for details on USB device requirements and approved file types.■

(cont'd)

Symptom Troubleshooting (cont'd)

6. On the customer's vehicle, connect the customer's USB device to the USB port.
7. Turn the ignition switch to ON (II).
8. Turn on the audio system.
9. Check the USB device operation in the customer's vehicle.

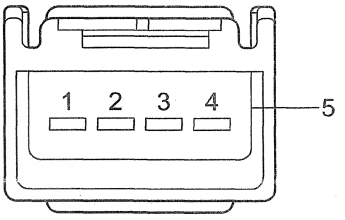
   Does the USB device work properly in the customer's vehicle?

   YES–The system is OK at this time. Inspect the connectors of the USB device, the USB port, and the USB adapter for wear.■

   NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. On the customer's vehicle, remove the USB device.
12. Disconnect USB adapter control unit connector B (5P).
13. Check for continuity between USB adapter control unit connector B (5P) and the USB port 5P connector according to the table.

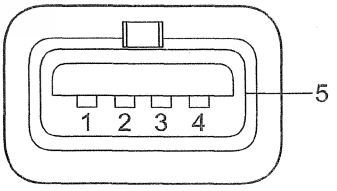
USB adapter control unit connector	USB port 5P connector
B1	4
B2	3
B3	2
B4	1
B5	5

USB ADAPTER CONTROL UNIT CONNECTOR B (5P)



Terminal side of female terminals

USB PORT 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Replace the USB adapter control unit (see page 23-128), then recheck.■

NO–Replace the USB adapter, then recheck.■

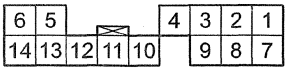
14. Turn the ignition switch to LOCK (0).
15. Remove the audio-navigation unit (see page 23-232).

    NOTE:
    - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
    - Remove the PC card before removing the audio-navigation unit.
16. Disconnect audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P).

17. Check for continuity between audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P) according to the table.

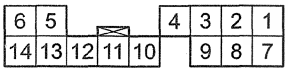
Audio-navigation unit connector	USB adapter control unit connector	Wire color
E1	A1	WHT
E2	A2	BLK
E7	A7	GRN
E8	A8	RED

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there continuity?

YES–Go to step 18.

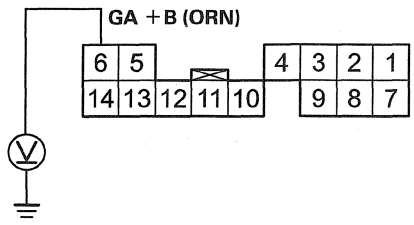
NO–There is an open in the wire(s) between the audio-navigation unit and the USB adapter control unit. Replace the affected shielded harness.■

18. Reconnect audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P).

19. Turn the ignition switch to ON (II).

20. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 6 and body ground.

USB ADAPTER UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there battery voltage?

YES–Go to step 23.

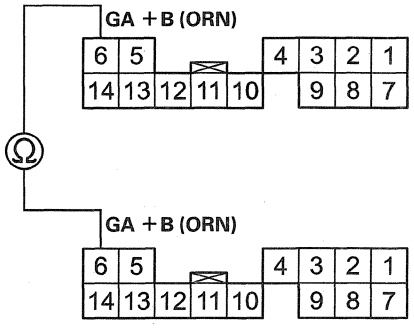
NO–Go to step 21.

21. Disconnect audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P).

22. Check for continuity between USB adapter control unit connector A (14P) terminal No. 6 and audio-navigation unit connector E (14P) terminal No. 6.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)

Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR E (14P)

Wire side of female terminals

Is there continuity?

YES–Replace the audio-navigation unit (see page 23-232).■

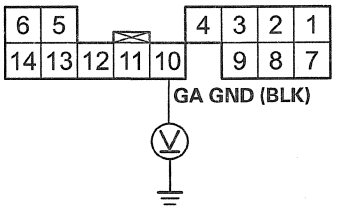
NO–Repair an open in the wire between USB adapter control unit connector A (14P) terminal No. 6 and audio-navigation unit connector E (14P) terminal No. 6.■

(cont'd)

Symptom Troubleshooting (cont'd)

23. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 10 and body ground.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there less than 0.2 V?

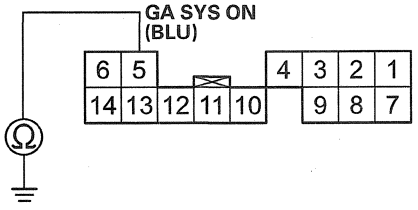
YES–Go to step 24.

NO–Repair an open or high resistance in the wire between USB adapter control unit connector A (14P) terminal No. 10 and audio-navigation unit connector E (14P) terminal No. 10.■

24. Disconnect audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P).

25. Check for continuity between USB adapter control unit connector A (14P) terminal No. 5 and body ground.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there continuity?

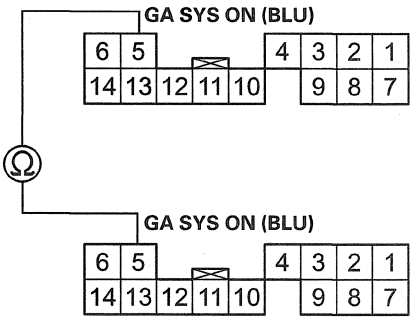
YES–Repair a short to body ground in the wire between USB adapter control unit connector A (14P) terminal No. 5 and audio-navigation unit connector E (14P) connector terminal No. 5.■

NO–Go to step 26.

26. Check for continuity between audio-navigation unit connector E (14P) terminal No. 5 and USB adapter unit connector A (14P) terminal No. 5.

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)

Wire side of female terminals



USB ADAPTER CONTROL UNIT CONNECTOR A (14P)

Wire side of female terminals

Is there continuity?

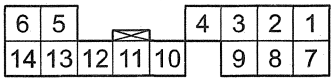
YES–Go to step 27.

NO–Repair an open in the wire between audio-navigation unit connector E (14P) terminal No. 5 and USB adapter control unit connector A (14P) terminal No. 5.■

27. Check for continuity between USB adapter control unit connector A (14P) and audio-navigation unit connector E (14P) according to the table.

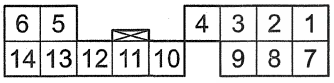
USB adapter control unit connector	Audio-navigation unit connector	Wire color
A11	E11	BRN
A12	E12	YEL

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity?

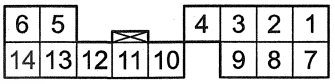
YES–Go to step 28.

NO–There is an open in the wire(s) between the audio-navigation unit and the USB adapter control unit. Replace the affected shielded harness.■

28. Check for continuity between body ground and audio-navigation unit connector E (14P) according to the table.

Audio-navigation unit connector	Wire color
E11	BRN
E12	YEL

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity?

YES–There is a short to body ground in the wire(s) between the audio-navigation unit and the USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 29.

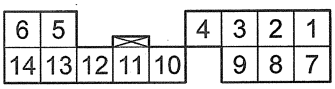
(cont'd)

Symptom Troubleshooting (cont'd)

29. Check for continuity between the audio-navigation unit connector E (14P) according to the table.

From terminal (wire color)	To terminals (wire color)
E4 (GRY)	E11 (BRN), E12 (YEL)
E11 (BRN)	E12 (YEL)

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity between any of the terminals?

YES–There is a short in the wires between the USB adapter control unit and audio-navigation unit. Replace the affected shielded harness.■

NO–Substitute a known-good USB adapter control unit (see page 23-128), and recheck. If the symptom/indication goes away, replace the original USB adapter control unit (see page 23-128). If the symptom is still present, replace the audio-navigation unit (see page 23-232).■

USB device does not function (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Check the USB device requirement:
  - Mass-storage class ready digital audio player with USB 2.0 port
  - More than 256 MB of RAM
  - Supports MP3, WMA, and AAC (encoded with the iTunes) files, DRM files are not supported
- Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the customer's USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result in that USB devices may work in newer vehicles, but not in older vehicles of the same model.
- If UNSUPPORTED appears on the display, the vehicle is OK, there is a software problem with the USB device.

1. Turn the ignition switch to ON (II).
2. Turn on the audio system.
3. Press the AUX button to select USB mode.

   NOTE: Do not connect the USB device.

   Is USB NO DATA displayed in the audio display?

   YES–Go to step 4.

   NO–Go to step 14.
4. Turn the ignition switch to LOCK (0).
5. Connect the customer's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

   Is the USB device working properly in the known-good vehicle?

   YES–Go to step 6.

   NO–If UNSUPPORTED is displayed in the audio display, the USB device may not be supported or the wrong type music files are on the device. If USB NO SONG is displayed in the audio display, the USB device may have no music files. See the Owner's Manual for details on USB device requirements and approved file types.■

6. On the customer's vehicle, connect the customer's USB device to the USB port.
7. Turn the ignition switch to ON (II).
8. Turn on the audio system.
9. Check the USB device operation in the customer's vehicle.

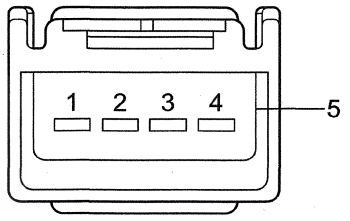
   Does the USB device work properly in the customer's vehicle?

   YES–The system is OK at this time. Inspect the connectors of the USB device, the USB port, and the USB adapter for wear.■

   NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. On the customer's vehicle, remove the USB device.
12. Disconnect USB adapter control unit connector B (5P).
13. Check for continuity between USB adapter unit connector B (5P) and the USB adapter cable 5P connector according to the table.

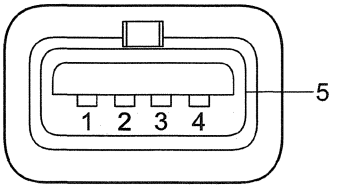
USB adapter control unit connector	USB port 5P connector
B1	4
B2	3
B3	2
B4	1
B5	5

USB ADAPTER CONTROL UNIT CONNECTOR B (5P)



Terminal side of female terminals

USB PORT 5P CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Replace the USB adapter control unit (see page 23-128), then recheck.■

NO–Replace the USB adapter, then recheck.■
14. Turn the ignition switch to LOCK (0).
15. Remove the audio unit (see page 23-119).

    NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

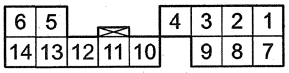
(cont'd)

Symptom Troubleshooting (cont'd)

16. Disconnect audio unit connector E (14P) and USB adapter control unit connector A (14P).
17. Check for continuity between audio unit connector E (14P) and USB adapter control unit connector A (14P) according to the table.

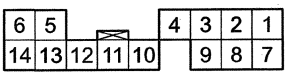
Audio unit connector	USB adapter control unit connector	Wire color
E1	A1	WHT
E2	A2	BLK
E7	A7	GRN
E8	A8	RED

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

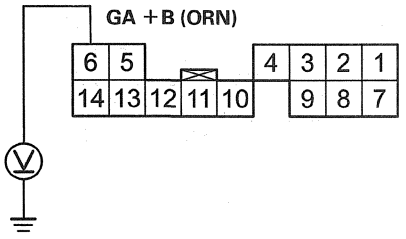
Is there continuity?

YES–Go to step 18.

NO–There is an open in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

18. Reconnect audio unit connector E (14P) and USB adapter control unit connector A (14P).
19. Turn the ignition switch to ON (II).
20. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 6 and body ground.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

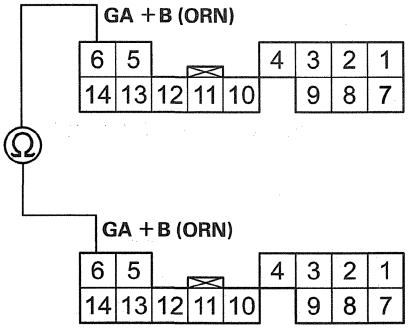
Is there battery voltage?

YES–Go to step 23.

NO–Go to step 21.

21. Disconnect audio unit connector E (14P) and USB adapter control unit connector A (14P).
22. Check for continuity between USB adapter control unit connector A (14P) terminal No. 6 and audio-navigation unit connector E (14P) terminal No. 6.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)
Wire side of female terminals



AUDIO UNIT CONNECTOR E (14P)
Wire side of female terminals

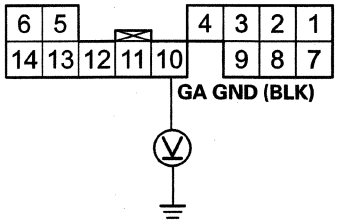
Is there continuity?

YES–Replace the audio unit (see page 23-119).■

NO–Repair an open or high resistance in the wire between USB adapter control unit connector A (14P) terminal No. 6 and audio unit connector E (14P) terminal No. 6.■

23. Measure the voltage between USB adapter control unit connector A (14P) terminal No. 10 and body ground.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there less than 0.2 V?

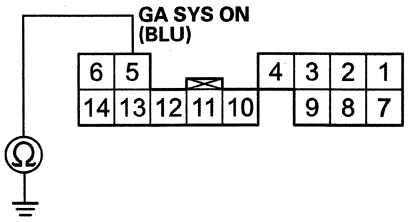
YES–Go to step 24.

NO–Repair an open or high resistance in the wire between USB adapter control unit connector A (14P) terminal No. 10 and audio unit connector E (14P) terminal No. 10.■

24. Disconnect audio unit connector E (14P) and USB adapter control unit connector A (14P).

25. Check for continuity between USB adapter control unit connector A (14P) terminal No. 5 and body ground.

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

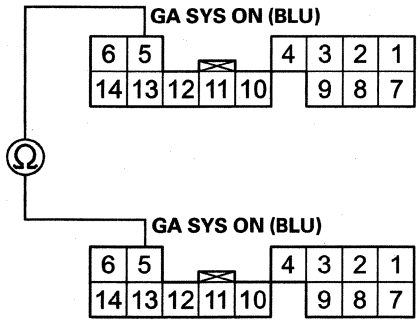
Is there continuity?

YES–Repair a short to body ground in the wire between USB adapter control unit connector A (14P) terminal No. 5 and audio unit connector E (14P) connector terminal No. 5.■

NO–Go to step 26.

26. Check for continuity between audio unit connector E (14P) terminal No. 5 and USB adapter unit connector A (14P) terminal No. 5.

AUDIO UNIT CONNECTOR E (14P)
Wire side of female terminals



USB ADAPTER CONTROL UNIT CONNECTOR A (14P)
Wire side of female terminals

Is there continuity?

YES–Go to step 27.

NO–Repair an open in the wire between audio unit connector E (14P) terminal No. 5 and USB adapter control unit connector A (14P) terminal No. 5.■

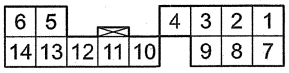
(cont'd)

Symptom Troubleshooting (cont'd)

27. Check for continuity between USB adapter control unit connector A (14P) and audio unit connector E (14P) according to the table.

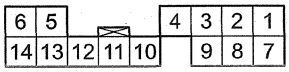
USB adapter control unit connector	Audio unit connector	Wire color
A11	E11	BRN
A12	E12	YEL

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity?

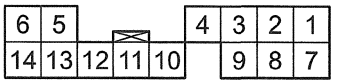
YES–Go to step 28.

NO–There is an open in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

28. Check for continuity between body ground and audio unit connector E (14P) according to the table.

Audio unit connector	Wire color
E11	BRN
E12	YEL

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity?

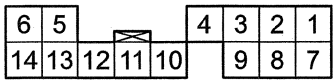
YES–There is a short to body ground in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 29.

29. Check for continuity between the audio unit connector E (14P) according to the table.

From terminal (wire color)	To terminals (wire color)
E4 (GRY)	E11 (BRN), E12 (YEL)
E11 (BRN)	E12 (YEL)

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity between any of the terminals?

YES–There is a short in the wires between the USB adapter control unit and audio unit. Replace the affected shielded harness.■

NO–Substitute a known-good USB adapter control unit (see page 23-128), and recheck. If the symptom/indication goes away, replace the original USB adapter control unit (see page 23-128). If the symptom is still present, replace the audio unit (see page 23-119).■

USB input sound is low or cannot be heard (with navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the customer's USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result that USB devices may work in newer vehicles, but not in older vehicles of the same model.

1. Turn the ignition switch ON (II).
2. Check to see if there is a specific speaker that has no sound.

   Do all speakers make a sound?

   YES–Go to step 3.

   NO–Go to No sound is heard from the speaker(s) (see page 23-72).■
3. Turn the ignition switch to LOCK (0).
4. On the customer's vehicle, connect the customer's USB device to the USB port.
5. Turn the ignition switch to ON (II).
6. Turn on the audio-navigation unit.
7. Press the AUX button until USB appears on the navigation display.
8. Check if the USB device can be operated with the audio-navigation unit (Folders of Files UP/DOWN, etc.).

   Can you operate the USB device, but there is no sound heard?

   YES–Go to step 9.

   NO–If the sound is normal, the USB device is OK at this time. If USB device cannot be operated, go to USB device does not function troubleshooting (see page 23-99).■
9. Turn the ignition switch to LOCK (0).

(cont'd)

Symptom Troubleshooting (cont'd)

10. Connect the customer's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

    Is the USB device working properly in the known-good vehicle?

    YES–Go to step 11.

    NO–The USB device is faulty. Also check the USB port and the USB adapter connector condition.■

11. Return to the customer's vehicle.

12. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector E (14P).

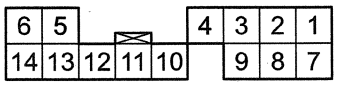
    NOTE:
    - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
    - Remove the PC card before removing the audio-navigation unit.

13. Disconnect USB adapter control unit connector A (14P).

14. Check for continuity between body ground and audio-navigation unit connector E (14P) according to the table.

Audio-navigation unit connector	Wire color
E1	WHT
E2	BLK
E7	GRN
E8	RED

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there any continuity?

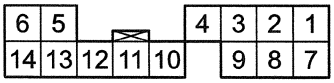
YES–There is a short in the wire(s) between audio-navigation unit and USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 15.

15. Check for continuity between the audio-navigation unit connector E (14P) according to the table.

From terminal (wire color)	To terminals (wire color)
E3 (GRY)	E1 (WHT), E2 (BLK), E7 (GRN), E8 (RED)
E1 (WHT)	E2 (BLK), E7 (GRN), E8 (RED)
E2 (BLK)	E7 (GRN), E8 (RED)
E7 (GRN)	E8 (RED)

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity between any of the terminals?

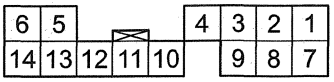
YES–There is a short in the wire(s) between the audio-navigation unit and the USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 16.

16. Check for continuity between audio-navigation unit connector E (14P) and USB adapter control unit connector A (14P) according to the table.

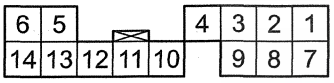
Audio-navigation unit connector	USB adapter control unit connector	Wire color
E1	A1	WHT
E2	A2	BLK
E7	A7	GRN
E8	A8	RED

AUDIO-NAVIGATION UNIT CONNECTOR E (14P)



Wire side of female terminals

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there continuity?

YES–Substitute a known-good USB adapter control unit (see page 23-128), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original USB adapter control unit (see page 23-128). If the symptom/indication is still present, replace the audio-navigation unit (see page 23-232).■

NO–There is an open in the wire(s) between the audio-navigation unit and the USB adapter control unit. Replace the affected shielded harness.■

USB input sound is low or cannot be heard (without navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Not all players and player functions work with the USB adapter. Please see the Owner's Manual for more information. Always test the customer's USB device in a known-good vehicle of the same year and trim (if possible). Technologies change and are updated frequently which may result that USB devices may work in newer vehicles, but not in older vehicles of the same model.

1. Turn the ignition switch ON (II).
2. Check to see if there is a specific speaker that has no sound.

   Do all speakers make a sound?

   YES–Go to step 3.

   NO–Go to No sound is heard from the speaker(s) (see page 23-76).■
3. Turn the ignition switch to LOCK (0).
4. On the customer's vehicle, connect the customer's USB device to the USB port.
5. Turn the ignition switch to ON (II).
6. Turn on the audio unit.
7. Press the AUX button until USB appears on the audio display.
8. Check if the USB device can be operated with the audio unit (Folders of Files UP/DOWN, etc.).

   Can you operate the USB device, but there is no sound heard?

   YES–Go to step 9.

   NO–If the sound is normal, the USB device is OK at this time. If the USB device cannot be operated, go to USB device does not function troubleshooting (see page 23-104).■
9. Turn the ignition switch to LOCK (0).

(cont'd)

Symptom Troubleshooting (cont'd)

10. Connect the customer's USB device to a known-good vehicle (same year/trim) that is equipped with a USB adapter, and check the USB device operation.

    Is the USB device working properly in the known-good vehicle?

    YES–Go to step 11.

    NO–The USB device is faulty. Also check the USB port and the USB adapter connector condition.■

11. Return to the customer's vehicle.

12. Remove the audio unit (see page 23-119), and disconnect audio unit connector E (14P).

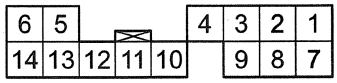
    NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

13. Disconnect USB adapter control unit connector A (14P).

14. Check for continuity between body ground and audio unit connector E (14P) according to the table.

Audio unit connector	Wire color
E1	WHT
E2	BLK
E7	GRN
E8	RED

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there any continuity?

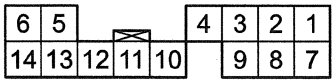
YES–There is a short to body ground in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 15.

15. Check for continuity between the audio unit connector E (14P) according to the table.

From terminal (wire color)	To terminals (wire color)
E3 (GRY)	E1 (WHT), E2 (BLK), E7 (GRN), E8 (RED)
E1 (WHT)	E2 (BLK), E7 (GRN), E8 (RED)
E2 (BLK)	E7 (GRN), E8 (RED)
E7 (GRN)	E8 (RED)

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

Is there continuity between any of the terminals?

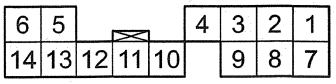
YES–There is a short in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

NO–Go to step 16.

16. Check for continuity between audio unit connector E (14P) and USB adapter control unit connector A (14P) according to the table.

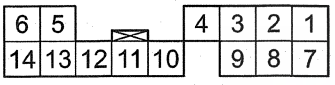
Audio unit connector	USB adapter control unit connector	Wire color
E1	A1	WHT
E2	A2	BLK
E7	A7	GRN
E8	A8	RED

AUDIO UNIT CONNECTOR E (14P)



Wire side of female terminals

USB ADAPTER CONTROL UNIT CONNECTOR A (14P)



Wire side of female terminals

Is there continuity?

YES–Substitute a known-good USB adapter control unit (see page 23-128), then reconnect all of the connectors, and recheck. If the symptom/indication goes away, replace the original USB adapter control unit (see page 23-128). If the symptom/indication is still present, replace the audio unit (see page 23-119).■

NO–There is an open in the wire(s) between the audio unit and the USB adapter control unit. Replace the affected shielded harness.■

Audio disc cannot be inserted and/or ejected (with navigation)

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Disc labels should not be used in the audio-navigation unit. They may damage and jam the player mechanism.
- Make sure the disc is compatible with the system (see the Owner's Manual for more information).

1. Press the OPEN/CLOSE button to open the navigation display.
2. Try inserting an audio disc.

   Does the player accept the audio disc?

   YES–Go to step 3.

   NO–Replace the audio-navigation unit (see page 23-232).■
3. Press the audio disc eject button.

   Does the player eject the audio disc?

   YES–The system is OK at this time.■

   NO–Replace the audio-navigation unit (see page 23-232).■

(cont'd)

Symptom Troubleshooting (cont'd)

PC card will not play/card icon on audio screen cannot be selected (with navigation)

Unfortunately there are no error messages and no diagnostics for the PC card. There are many reasons why a card won't play audio files in the audio-navigation unit.

- The card may not be fully inserted into the slot. Eject the card, and inspect for warping or damage to the edge connector. Never use excessive force to insert a card. This can result in damage to the pins in the rear of the slot.
- The customer's card may contain audio files that are not recognized by the system. Only MP3 and WMA music files are played.
- The flash card type may not be accepted by the system. Only Compact Flash and ATA cards have been tested.
- The card's PCMCIA adaptor may be preventing a known-good card from playing. New PCMCIA adaptors are constantly being released, and have not been tested.
- There may not be any files on the card. Some cards have write protection, make sure it is turned off before putting files on the card.
- Although flash memory chips are reliable, occasionally they develop bad sectors or other formatting errors that prevents them from playing. The customer should re-format the card using the FAT or FAT32 format.
- The card may have been damaged by heat. Suggest that the customer remove their card when exiting the vehicle.
- The customer may have formatted the card using the format NTFS. Only the formats FAT and FAT32 are accepted by the system.
- Hard Disc Drive (HDD) cards may not work properly in the system and can overheat and quit functioning, particularly in a hot vehicle. They are not recommended.
- The filing structure of the card may exceed the specification of 8 folder levels deep, 99 folders maximum, and 999 total tracks maximum. If any of these limitations is exceeded, the system may not properly display or play the tracks.

NOTE: A delay when first inserting a card is normal. The system is reading the File Tag information for album names, artist, and song titles and there is no hour glass. The delay length depends on the number of tracks and the complexity of the folder structure. See the audio section glossary for an explanation of the terms used.

Sound Quality Diagnosis

Special Tools Required
Diagnostic CD 07AAZ-SDBA100

Use the following tests to check sound quality.

NOTE: Before beginning the following tests, write down the customer's bass, treble, fader and balance settings, then set them to their center positions for the testing.

Left/Right Channel ID

Do this test to confirm proper channel routing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio-navigation unit or the audio unit.
2. Play track No. 1 (left, both, right channel ID) at a normal, or slightly higher than normal, volume level.
3. The voice should be audible only from the channel or channels when indicated.
   - If the channel ID is correct for each side, go to phase test.
   - If the channel ID is not correct, check for:
     - Shorted speaker wire
     - Faulty stereo amplifier
     - Faulty audio unit or audio-navigation unit

Phase Test

Do this test to confirm proper speaker phasing.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
2. Play track No. 2 (phase) at a normal, or slightly higher than normal, volume level.
3. The voice should sound centered and focused when it is in-phase.
4. The voice should sound diffused, and have less bass when it is out of phase.
   - If the voice changes from in-phase to out of phase as indicated by the prompt, the phasing is correct. Go to electrical noise test.
   - If the voice always sounds out of phase, phasing is not correct. Check for:
     - Crossed speaker wire
     - Faulty stereo amplifier
     - Faulty audio unit or audio-navigation unit

(cont'd)

Sound Quality Diagnosis (cont'd)

Electrical Noise Test

Do this test to check for electrical noise being induced into the audio system.

NOTE: Electrical noise may be caused by outside sources that cannot be handled by the audio system. Make sure you remove any cell phones and/or turn off any aftermarket devices before beginning this test.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
2. Play track No. 4 (digital zero) at a normal, or slightly higher than normal, volume level.
3. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
4. Play track No. 5 (near digital zero) at a normal, or slightly higher than normal, volume level.
5. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
6. Play track No. 6 (SNR) at a normal, or slightly higher than normal, volume level.
7. Operate any electrical device that may create electrical noise in the audio system, including starting the engine.
   - If no abnormal noise is heard, go to the individual speaker test.
   - If the noise is present only during the SNR track, replace the audio unit or audio-navigation unit.
   - If the noise is heard during the digital zero or near digital zero track, check for:
     - Poor ground at the audio unit or audio-navigation unit, stereo amplifier, engine, or battery cable
     - Pinched or shorted speaker or stereo amplifier wire
     - Faulty stereo amplifier
     - Faulty audio unit or audio-navigation unit
     - Other faulty components causing excessive electrical noise (ignition coils, IMA motor, door lock actuators, etc.). Disconnect any suspect components, and then replay the tracks that were originally noisy. If the noise is gone, check the component's circuit and the component.

Individual Speaker Test

Do this test to identify a faulty speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
2. Play track No. 30 (steady 300 Hz tone) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound compared to the other channels. Use the audio system's fader and balance settings to help isolate the channel with the problem.
   - If the sound quality produced by a specific speaker is poor, substitute it with a known-good speaker. If the poor sound quality continues, go to the sound balance test.
   - If the sound quality is OK, go to the sound balance test.

Sound Balance Test

Do this test to identify a faulty channel or speaker.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
2. Confirm the bass and treble are set to the center positions.
3. Play track No. 3 (pink noise) at a normal, or slightly higher than normal, volume level.
4. A static type sound should be heard through all speakers.
5. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit of a known-good vehicle.
6. Set the bass and treble to the center positions.
7. Play track No. 3 (pink noise) all the same level as was played in step 3.
8. Compare the sounds made by the two vehicles.
   - If the sounds made by the two vehicles are very similar, go to the Frequency Sweep Test.
   - If the sound does not have as much bass, check the subwoofer and circuit.
   - If the sound does not have enough hiss, check the tweeters and their circuits.

Frequency Sweep

Do this test to find rattles or reverberations that may cause a perception of poor sound quality.

1. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
2. Play track No. 13 (sweep from 500 Hz to 35 Hz) at a normal, or slightly higher than normal, volume level.
3. Listen to each speaker for poor sound quality or reverberations caused by specific frequencies. Use the voice-over to estimate the frequency that causes the vibration. Use the audio system's fader and balance settings to help isolate the channel with the problem.
   - If vibrations or poor sound quality are heard, go to step 4.
   - If no vibrations or poor sound quality are heard, go to sound judging.
4. Choose the appropriate track from No. 14 to 25 (small range frequency sweep) or 26 to 53 (single frequencies) to recreate the frequency that caused the poor sound quality or vibration witnessed in step 3; this aids in diagnosis of the cause.

   NOTE: When you get to the track that recreates the problem, select the repeat function on the audio system, this will help you isolate the cause.
5. Replace or insulate the source of the vibration or, if the speaker is the source of the poor sound quality, replace it.

(cont'd)

Sound Quality Diagnosis (cont'd)

Sound Judging

Do this test to compare overall sound quality, imaging, and dynamics between the customer's vehicle and a known-good vehicle. Only use a vehicle of the same model and trim level for this test.

1. In the customer's vehicle, set the bass, treble, fader, and balance settings to the customer's normal settings that were written down before beginning the test.
2. Insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
3. Play tracks No. 7 to 12 (sound quality, midland, dynamics, and imaging demonstration tracks) at a normal, or slightly higher than normal, volume level. Write down the volume setting being used.
4. Listen to areas of the track that stand out as being either very clear or poorer than other areas of the track.
5. In a known-good vehicle, insert the audio diagnostic CD (T/N 07AAZ-SDBA100) into the audio unit or the audio-navigation unit.
6. Play the tracks at the same volume level and the same bass, treble, balance, and fader settings as used in step 3 in the customer's vehicle.
7. Listen to the same area of the track that stood out as being either very clear or poorer than other areas of the track.
8. Compare the customer's vehicle's sound quality results the known-good vehicle's results.
   - If the sound quality in the customer's vehicle is comparable to the sound quality in the known-good vehicle, then the customer's vehicle is operating as designed.
   - If the sound quality is not comparable, check these items in order:
     - Loose or improperly installed speakers or other hardware that may create interference from the vibrations generated by the speakers
     - Damaged speaker(s)
     - Faulty stereo amplifier
     - Faulty audio unit or audio-navigation unit

Seek Stop Test

Do this test to check the performance of the audio system's AM and FM reception. Refer to symptom troubleshooting: Audio system sound weak or distorted (see page 23-84), or No sound is heard from the speakers (display is normal), with navigation (see page 23-72), without navigation (see page 23-76) before continuing with this test.

NOTE:
- Window tint, aftermarket theft-recovery devices and other aftermarket devices may affect reception.
- Changes in cloud cover and other atmospheric conditions will affect the ability of the audio system to receive radio signals.

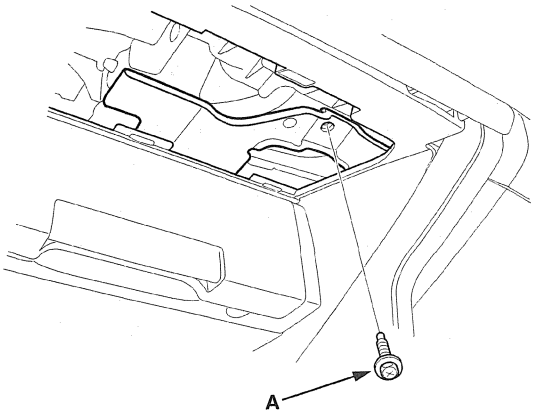
1. Park the customer's vehicle in an open area away from buildings or other obstructions.
2. Park a known-good vehicle (same year, model, and trim level) next to the customer's vehicle, facing the same direction.
3. Start the engine in the customer's vehicle, and turn on the radio.
4. Set the FM receiver to 87.7 MHz.
5. Press the Seek + button, and record the first station that the audio unit or audio-navigation unit locks onto.
6. Press the Seek + button repeatedly, and write down each station that the audio unit or audio-navigation unit locks onto until the station recorded in step 5 is reached again.
7. Set the AM receiver to 530 kHz.
8. Press the Seek + button, and record the first station that the audio unit locks onto.
9. Press the Seek + button repeatedly, and write down each station that the audio unit or audio-navigation unit locks onto until the station recorded in step 8 is reached again.
10. Turn the ignition switch to LOCK (0).
11. Start the engine in the known-good vehicle, and then do steps 4 thru 10 on the known-good vehicle.

12. Compare the number of stations received in steps 6 and 9 in the customer's vehicle with the number of stations received in the known-good vehicle.
    - If the number of stations received is the same, or within 10 %, the audio unit's or audio-navigation unit's tuner performance is OK. The problem may be atmospheric conditions, multi-path interference, or other obstructions to the radio signal.
    - If the customer's vehicle receives fewer stations by at least 10 %, go to poor AM or FM radio reception or interference.
      - with navigation (see page 23-59)
      - without navigation (see page 23-63)

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

NOTE:
- Put on gloves to protect your hands.
- Take care not to scratch the dashboard and related parts.
- Lay a workshop towel under the parts when working on them to protect the face panel from scratches or other damage.
- Do not work in a dusty or dirty place.
- Discharge static electricity from your body before and during the work.
- Do not touch the circuit board(s) with your bare hands.
- Do not work with dirty hands.
- Be careful not to fold the flat plate cable.
- Do not touch the terminal connector of the flat plate cable with your bare hands (If you have touched it, wipe it off thoroughly.).
- Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
- If you are replacing the audio unit, write down the audio presets (if possible), and enter them into the new audio unit.

1. Make sure you have 5-digit anti-theft codes for the audio system.
2. Remove the center lower lid (see page 20-89).
3. Remove the bolt (A).



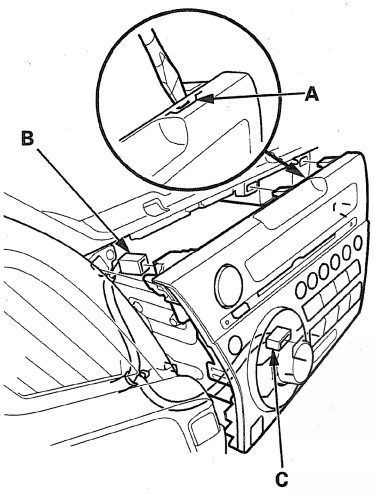
A
5 x 0.8 mm
3.7 N·m (0.38 kgf·m, 2.7 lbf·ft)

4. Remove the dashboard center upper trim (see page 20-88).

(cont'd)

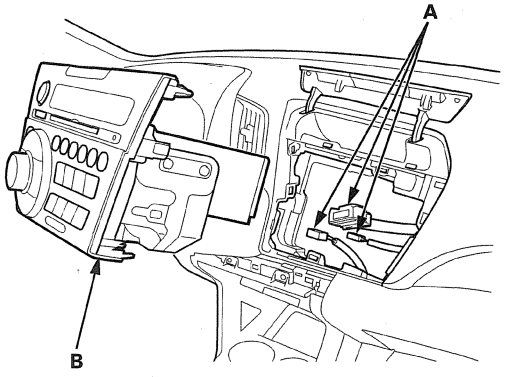
Audio Unit Removal/Installation (cont'd)

5. Lift the panel, taking care not to damage the dashboard. Insert the appropriate tool into the gap (A) between the dashboard and the center panel, then release the clips in order from the gap side.

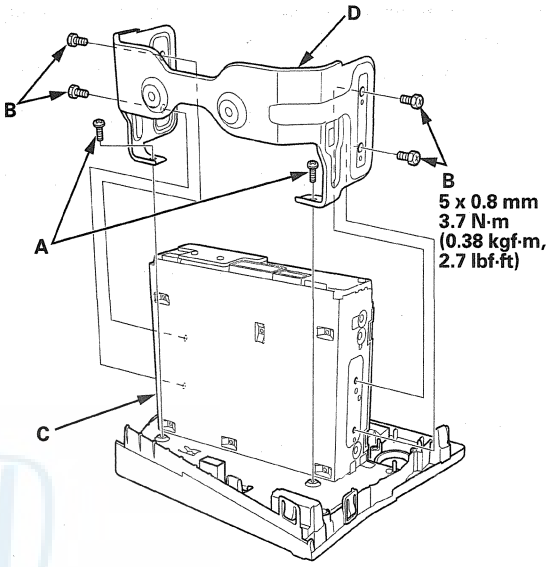


6. Disconnect the hazard warning switch 5P connector (B) and the front passenger's airbag cutoff indicator 5P connector (C).

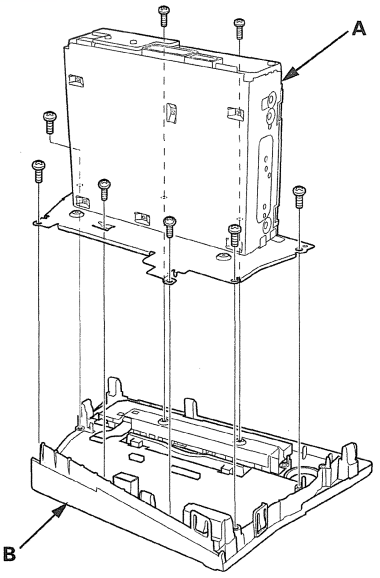
7. Disconnect the connectors (A), then pull out the audio unit (B).



8. Remove the mounting screws (A) and bolts (B) from the audio unit (C), then remove the bracket (D).



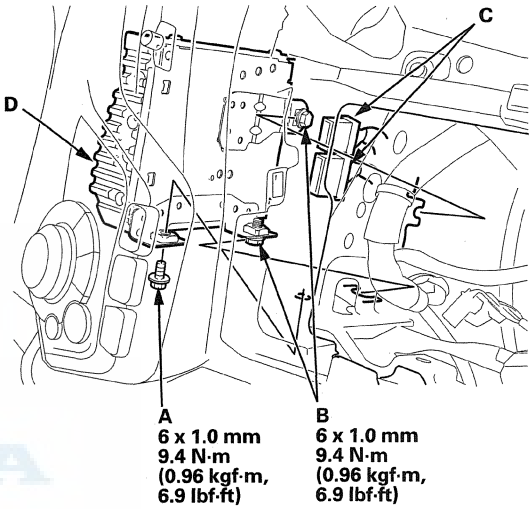
9. Remove the mounting screws and the audio unit (A) from the center panel (B).



10. Install the audio unit in the reverse order of removal, and note these items:
    - Make sure all connectors are secure.
    - If needed, enter the anti-theft codes for the audio system.
    - Set the clock.
11. Give the new anti-theft codes to the customer if the audio unit is replaced.

Stereo Amplifier Removal/Installation

1. Remove the driver's dashboard undercover (see page 20-86).
2. Remove the audio-navigation unit (with navigation) (see page 23-232), or the audio unit (without navigation) (see page 23-119).
3. Remove the mounting bolt (A) and loosen the mounting bolts (B), then disconnect the connectors (C) from the stereo amplifier (D).



4. Install the stereo amplifier in the reverse order of removal.

HONDA

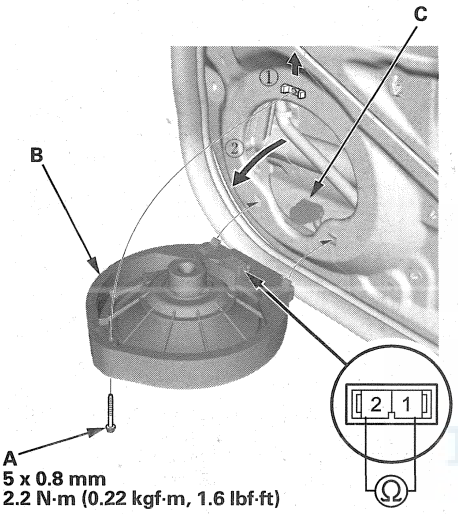
Speaker Test/Replacement

Front Door Speaker

1. Remove the door panel (see page 20-4).
2. Remove the bolt (A). Then lift the speaker (B) straight up to release the lower clips.

NOTICE

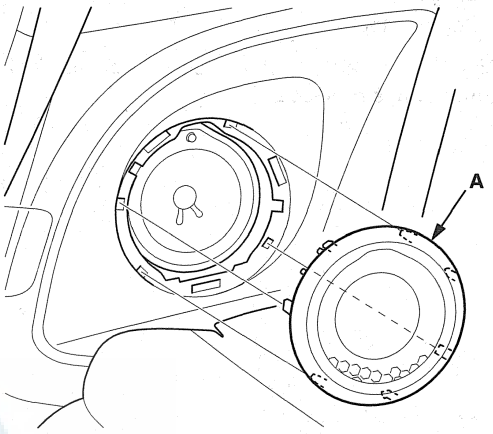
If you pull the speaker out too far from the door, you will damage the lower clips.



3. Disconnect the 2P connector (C), and remove the speaker.
4. Measure the resistance between terminals No. 1 and No. 2. There should be about 4.0 Ω.
5. If the resistance is not as specified, replace the door speaker.
6. Install the speaker in the reverse order of removal.

Rear Speaker

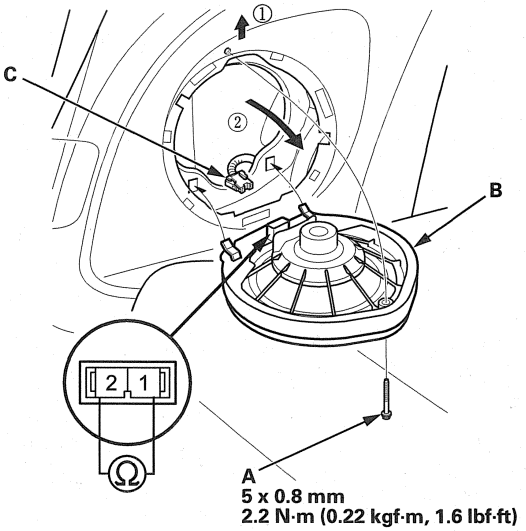
1. Remove the rear speaker grille (A) from the rear side trim panel.



2. Remove the bolt (A). Then lift the speaker (B) straight up to release the lower clips.

NOTICE

If you pull the speaker out too far from the trim, you will damage the lower clips.



3. Disconnect the 2P connector (C), and remove the speaker.
4. Measure the resistance between terminals No. 1 and No. 2. There should be about 4.0 Ω.

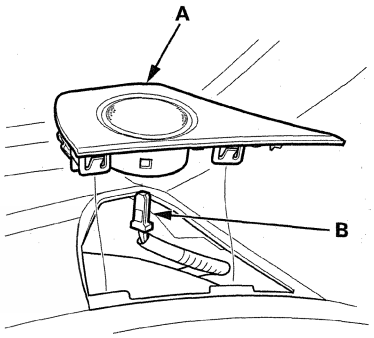
5. If the resistance is not as specified, replace the rear speaker.
6. Install the speaker in the reverse order of removal.

Tweeter

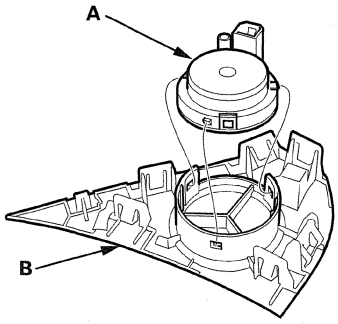
NOTE:

- Be careful not to damage the tweeter grille and the dashboard.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Carefully pry the tweeter grille (A) out of the dashboard.



2. Disconnect the 2P connector (B) from the tweeter.
3. Remove the tweeter (A) from the tweeter grille (B).

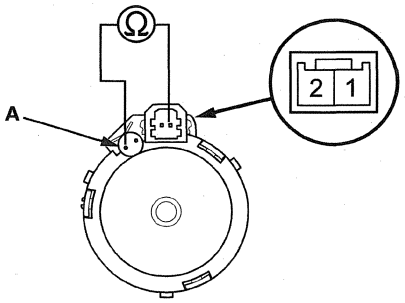


4. Check the capacitor condition. If any malfunction is found, replace the tweeter.

(cont'd)

Speaker Test/Replacement (cont'd)

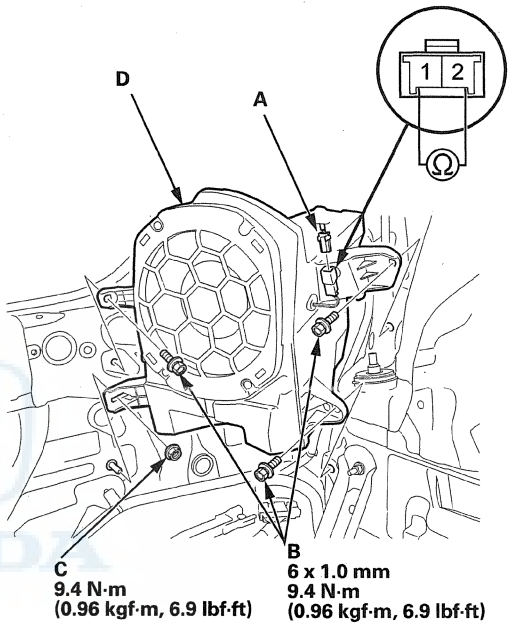
5. Measure the resistance between the tweeter (A) terminal No. 2 and the outside terminal of the capacitor. There should be about 4.0 Ω.



6. If the resistance is not as specified, replace the tweeter.
7. Install the tweeter in the reverse order of removal.

Subwoofer

1. Remove the rear side trim panel (see page 20-64).
2. Disconnect the 2P connector (A). Remove the mounting bolts (B) and nut (C), then remove the subwoofer (D).

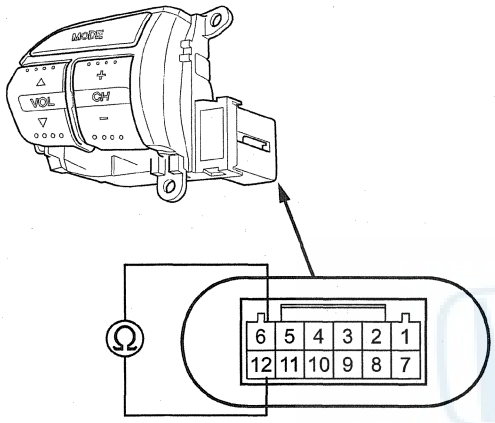


3. Measure the resistance between terminals No. 1 and No. 2. There should be about 2.3 Ω.
4. If the resistance is not as specified, replace the subwoofer.
5. Install the subwoofer in the reverse order of removal.

Audio Remote Switch Test

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

1. Remove the audio remote switch:
   - With HandsFreeLink system (see page 23-125).
   - Without HandsFreeLink system (see page 23-127).



2. Measure the resistance between the terminals No. 6 and No. 12 in each switch position according to the table.

Position	Resistance
No button pressed	About 10 kΩ
MODE	About 3.7 kΩ
CH (+)	About 1.7 kΩ
CH (−)	About 775 Ω
▲ (VOL.UP)	About 357 Ω
▼ (VOL.DOWN)	About 100 Ω

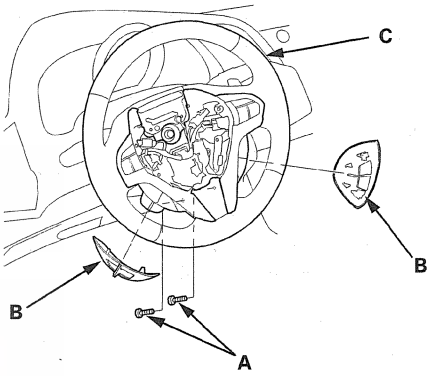
3. If the resistance is not as specified, replace the audio remote switch:
   - With HandsFreeLink system (see page 23-125).
   - Without HandsFreeLink system (see page 23-127).

Audio Remote Switch Replacement

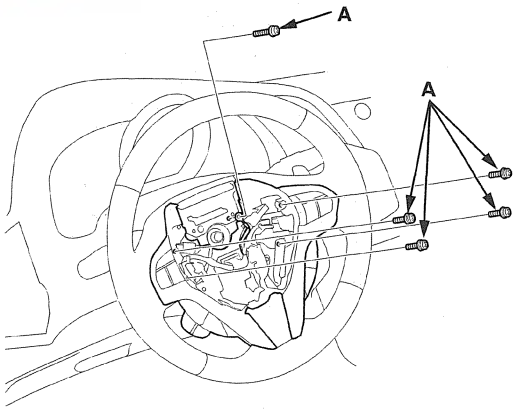
SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

With HandsFreeLink system

1. Remove the driver's airbag assembly (see page 24-166).
2. Remove the screws (A) and lids (B) from the steering wheel (C).



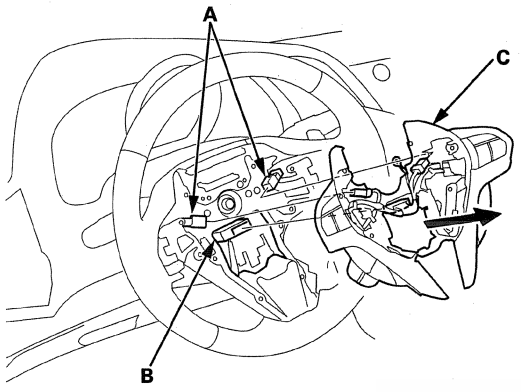
3. Remove the screws (A) from the steering wheel.



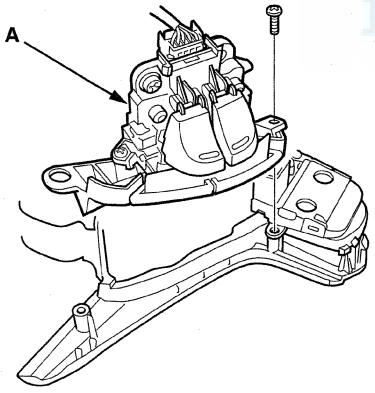
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Audio Remote Switch Replacement (cont'd)

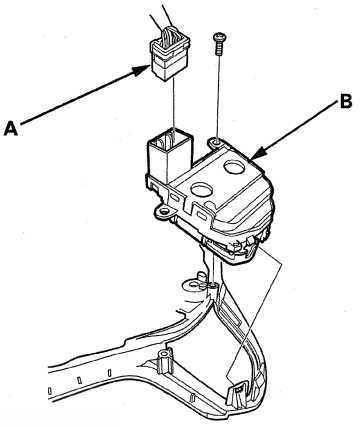
4. Disconnect the connectors (A) (CVT model) and the connector (B), then remove the steering wheel trim (C).



5. Remove the screw, then remove the HFL switch or HFL-navigation voice control switch (A).



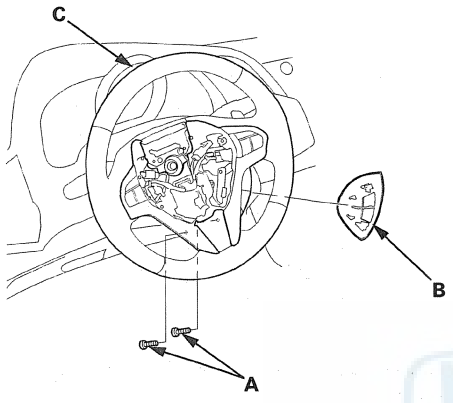
6. Remove the screws, then disconnect the connector (A) from the audio remote switch (B).



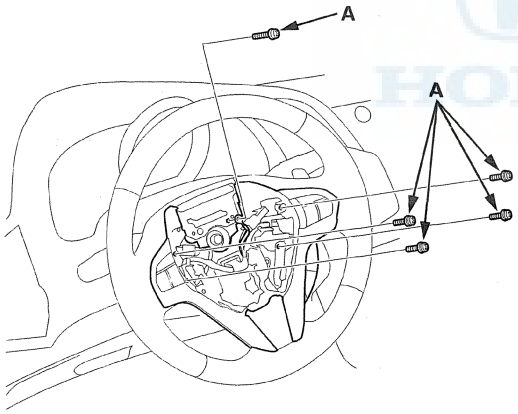
7. Install the audio remote switch in the reverse order of removal.

Without HandsFreeLink system

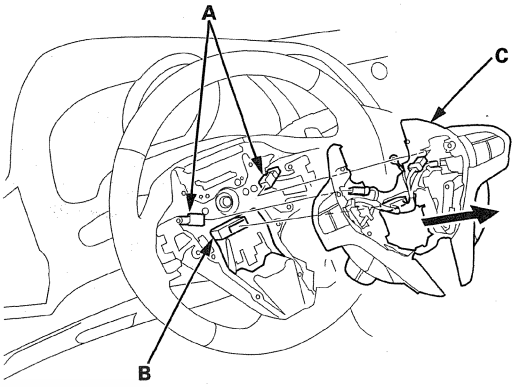
1. Remove the driver's airbag assembly (see page 24-166).
2. Remove the screws (A) and the lid (B) from the steering wheel (C).



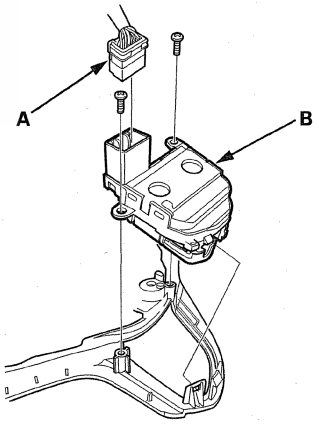
3. Remove the screws (A) from the steering wheel.



4. Disconnect the connectors (A) (CVT model) and the connector (B), then remove the steering wheel trim (C).



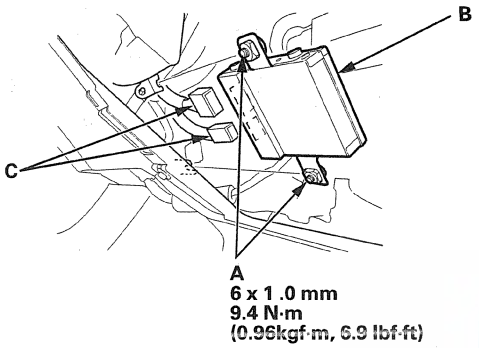
5. Remove the screws, then disconnect the connector (A) from the audio remote switch (B).



6. Install the audio remote switch in the reverse order of removal.

USB Adapter Control Unit Replacement

1. Remove the passenger's dashboard undercover (see page 20-94).
2. Remove the glove box (see page 20-94).
3. Loosen the mounting bolts (A), then pull out the USB adapter control unit (B).

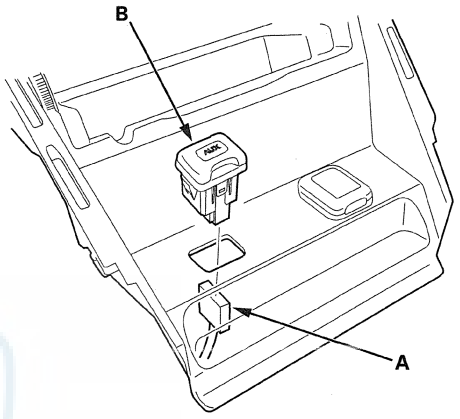


4. Disconnect the connectors (C) from the USB adapter control unit.
5. Install the USB adapter control unit in the reverse order of removal.

Auxiliary Jack Assembly Replacement

With navigation

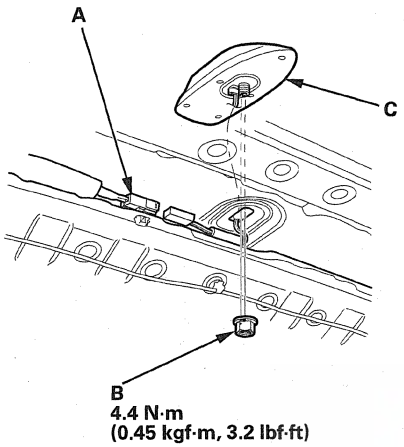
1. Remove the dashboard center lower cover (see page 20-89).
2. Remove the 5P connector (A) from the auxiliary jack assembly (B).



3. Push out the auxiliary jack assembly from the dashboard center lower cover.
4. Install the auxiliary jack assembly in the reverse order of removal.

AM/FM Antenna Replacement

1. Remove the headliner (see page 20-73).
2. Disconnect the AM/FM antenna 3P connector (A), then remove the nut (B) from the AM/FM antenna (C).

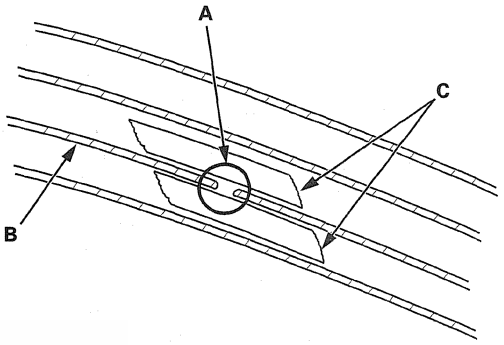


3. Install the antenna in the reverse order of removal.

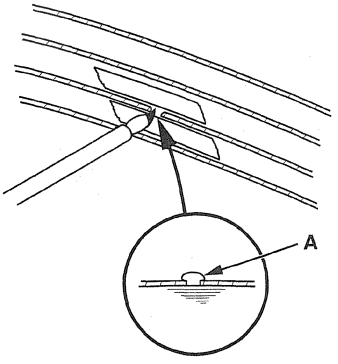
Window Grid Repair

NOTE: To make an effective repair, the broken section must be no longer than one inch.

1. Lightly rub the area around the broken section (A) with fine steel wool, then clean it with isopropyl alcohol.



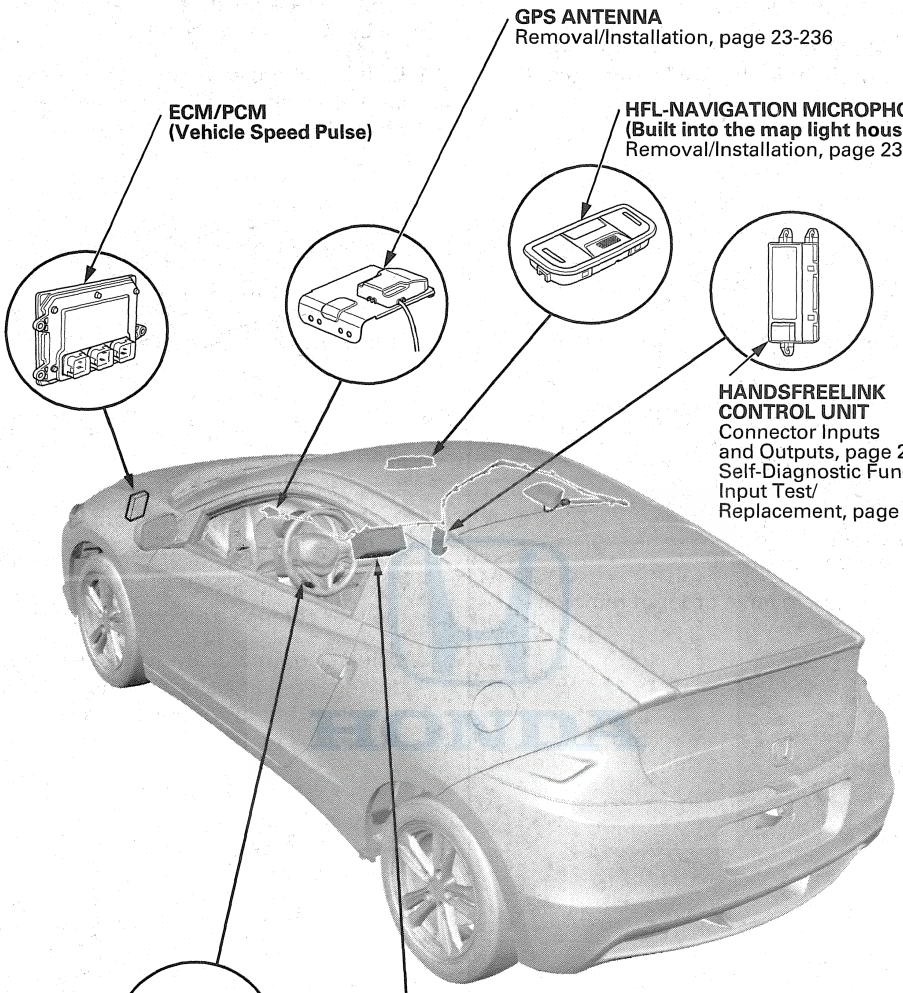
2. Carefully mask above and below the broken portion of the rear antenna ground (B) with cellophane tape (C).
3. Using a commercially available rear window defogger repair kit, apply a heavy coat of paint (A) extending about 1/8" on both sides of the break. Allow 30 minutes to dry.



4. Check for continuity in the repaired wire.
5. Apply a second coat of paint in the same way. Let it dry 3 hours before removing the tape.

Navigation System

Component Location Index



General Troubleshooting Information

General Operation

Refer to the navigation manual for the navigation system operating procedures.

Anti-Theft Feature

The audio-navigation unit has a coded theft protection circuit. Make sure you have the anti-theft security code before:

- Disconnecting the 12 volt battery.
- Disconnecting the audio-navigation unit connector A (24P) and C (8P).
- Removing the No. B1 (15 A) fuse from the under-dash fuse/relay box.

After service, reconnect power to the audio-navigation unit, and turn the ignition switch to ON (II). Enter the 4-digit anti-theft security code, then select Done.

If the code card is lost or unavailable, you can get the code form the interactive Network (iN) using the navigation system serial number. The system serial number can easily be obtained without removing the audio-navigation unit. To get the serial number and the code, do this:

- Press and hold the MENU, MAP/GUIDE, and CANCEL buttons for 3 seconds.
- At the select diagnosis items screen, select Detail Information & Settings, select Unit Check, then ECU Info (see page 23-183). The system runs a brief diagnosis, then the audio-navigation unit serial number is displayed at the bottom of the screen.
- Use the navigation anti-theft code inquiry option on the iN to look up the 4-digit navigation anti-theft code.

The iN may display more than one code for a given serial number. This is because serial numbers are not unique. You may have to try more than one 4-digit code. If no code is shown, or if the code(s) given do not work in the audio-navigation unit, contact the Automobile Warranty department.

Alternatively, you can find the serial number on the underside label which is located on the audio-navigation unit in the dash. When replacing the audio-navigation unit, be sure to give the customer the new anti-theft security code.

Symptom Diagnosis

Certain circumstances and system limitations may result in occasional vehicle positioning errors. Some customer's may think this indicates a problem with the navigation system when, in fact, the system is normal. Keep the following items in mind when interviewing customer's about symptoms of the navigation system.

Self-Inertial Navigation Limitations

The limitations of the self-inertial portion of the navigation system (the yaw rate sensor and the vehicle speed pulse signal) can cause discrepancies between the vehicle's actual position and the indicated vehicle's position (GPS vehicle position).

The following circumstances may cause vehicle positioning errors:

- Moving the vehicle with the engine stopped and the vehicle stopped, such as by ferry or tow truck, or if the vehicle is spun on a turn table.
- Tire slippage, changes in tire rolling diameters, and some driving situations may cause discrepancies in travel distances. Examples of this include:
  - Continuous tire slippage on a slippery surface
  - Driving with snow chains mounted
  - Abnormal tire pressure
  - Incorrect tire size
  - Frequent lane changes across a wide highway
  - Continuous driving on a straight or gently curving highway
  - Very bumpy roads
- Tolerances in the system and map inaccuracies sometimes limit how precisely the vehicle's position is indicated. Examples of this include:
  - Driving on roads not shown on the map (map matching is not possible)
  - Driving on a road that winds in one direction, such as a loop bridge, an interchange, or a spiral parking garage
  - Driving on a road with a series of sharp hair-pin turns
  - Driving near a gradual highway exit or transition
  - Driving on one of two close parallel roads
  - Making many 90 degree turns

(cont'd)

General Troubleshooting Information (cont'd)

Global Positioning System (GPS) Limitations

The GPS cannot detect the vehicle's position or elevation during the following instances:

- For the first 5 to 10 minutes after reconnecting the battery (this process can take as long as 45 minutes).
- When the satellite signals are blocked by tall buildings, mountains, tunnels, large trees, inside parking structures or large trucks.
- When the GPS antenna is blocked by metallic window tinting or by an object placed above it in the vehicle. The GPS antenna requires a clear unobstructed view of the sky.
- When there is no satellite signal output (signal output is sometimes stopped for satellite servicing).
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (radio, CD players/changers, radar detectors and theft recovery systems) and cell phones placed near the navigation system.

The accuracy of the GPS is reduced during these instances:

- Metallic window tinting above the GPS antenna.
- When only three or fewer satellite signals are received (Four satellite signals are required for accurate positioning).
- When driving near high tension power lines.
- When the satellite control centers are experiencing problems.

Muting Logic

Whenever the navigation system is giving guidance, the front speakers are muted. When the navigation voice control system is being used, all of the speakers are muted.

If HandsFreeLink is in use, the voice control system is unavailable and a message appears on screen.

LCD (Liquid Crystal Display) Unit Limitations

- In cold temperatures, the display may stay dark for the first 2 or 3 minutes until it warms up.
- When the display is too hot because of direct summer sunlight, it will remain dark until the temperature drops (you may see an error message displayed stating this fact and a navigation DTC may be set).
- When the humidity is high and the interior temperature is low, the display may appear cloudy. The display will clear up after some use.
- Fingerprints on the screen may be noticeable. Clean the screen with a soft, damp cloth. You may use a mild cleaner intended for eye glasses or computer screens. To avoid scratching the panel, do not rub too hard or use abrasive cleaners or shop towels.

Symptom Duplication

- When the symptom can be duplicated, verify that it is not a characteristic of the system. Review the navigation manual and compare it to a known-good vehicle (with the same software and database), under the same conditions. If the symptom is not the same as the known-good vehicle, follow the self-diagnostic procedures and the appropriate troubleshooting procedures.
- When the symptom does not reappear or only reappears intermittently, ask the customer about the conditions when the symptom occurred.
  - Always ask the customer to demonstrate the problem.
  - Ask the customer if they remember the time and date when they had the issue. You may be able to find the DTC stored in the hard error history.
  - Try to establish possible user error or misunderstanding of the system.
  - Try to establish if outside interference may have been the cause.
  - Try to duplicate the symptom under the same conditions the customer experienced.
  - Vibration, temperature extremes, and moisture (dew, humidity) are factors that are difficult to duplicate.
  - Inspect the vehicle for after-market electronic devices (vehicle locators, amps, radar detectors, etc.) that may be hidden.

NOTICE

When troubleshooting navigation system problems, ensure that the known-good vehicle is the same software version year and model as the vehicle being serviced. Mixing incompatible navigation DVDs or other system components can delay the troubleshooting process by creating symptoms or causing effects unrelated to the original problem.

Service Precautions

- If you need to replace the audio-navigation unit, you can back-up the navigation data and transfer it to a new audio-navigation unit. See save users memory (see page 23-186).
- When the battery is disconnected, the internal GPS clock is reset to 0:00. The clock will reset to the correct time after the system finishes GPS initialization.
- Before disconnecting the battery, make sure you have the anti-theft codes for the navigation system. Also obtain any PGM-FI or transmission DTCs and freeze frame date (which will be lost when the ECM/PCM loses power).
- After reconnecting the battery, you have to wait to get the initial signal from the satellite. It will take from 10 to 45 minutes.
- Adjust the setup clock settings (time zone and daylight savings) in the navigation system.
- Before returning the vehicle to the customer, enter the anti-theft codes for the audio system and the navigation system.

System Initialization

If the navigation system loses power (like the battery was disconnected), the navigation system requires initialization. Once completed, the system is ready to use.

This initialization requires the following:

- Entering the 4-digit anti-theft security code to unlock the system
- GPS initialization (may not be needed depending of the length of time the system was without power)
- Map matching to align the GPS to a location on the map

(cont'd)

General Troubleshooting Information (cont'd)

Entering the Security Code

Any time the navigation system loses power, you need to enter the 4-digit anti-theft code on the navigation system display. This 4-digit code is located on a small code card that was given to the customer. Enter the 4-digit code, then select Done.

If the navigation system anti-theft code is missing, get the serial number from the audio-navigation unit and use the interactive Network (iN) to look it up. You do not need to remove the audio-navigation unit. See Anti-Theft Feature.

When replacing the audio-navigation unit, make sure you give the customer the new anti-theft security code.

GPS Initialization

NOTE: You must park the vehicle outside with a clear view of the southern sky.

Depending on the length of time the battery was disconnected, your system may require GPS initialization. If it does, the following screen appears:

> The navigation system lost power and is acquiring its location from the GPS satellites. This usually takes less than 10 minutes.
>
> * Start the engine.
> * Park the vehicle in an open area away from trees, power lines, and tall buildings.
> * Remove loose articles, cell phones, or electrical accessories located near the GPS antenna.
> * If this screen is displayed repeatedly when starting the vehicle, see your dealer.

If this procedure is not necessary, the system proceeds directly to the Disclaimer screen. During initialization, the system searches for all available GPS satellites, and obtains their orbital information. During this procedure the vehicle should be out in the open with a clear view of the sky.

If the navigation system finds the satellites properly, this box clears, and changes to the Disclaimer screen. If within 10 minutes the system fails to locate a sufficient number of satellites to locate your position, the following screen appears.

> Something is interfering with the system's ability to acquire its location. Check the following:
>
> * The vehicle must be in an open area with a clear view of the sky.
> * Remove sources of GPS interference like metallic window tint above antenna, or electrical items near antenna (see owner's manual for details).
> * Check GPS antenna cable connection.
> * Restart the engine and repeat the GPS acquire procedure. If the problem persists, see your dealer.

If this screen appears, turn off the engine, then restart the vehicle and move it to a different location. If the disclaimer screen appears, the GPS initialization is complete.

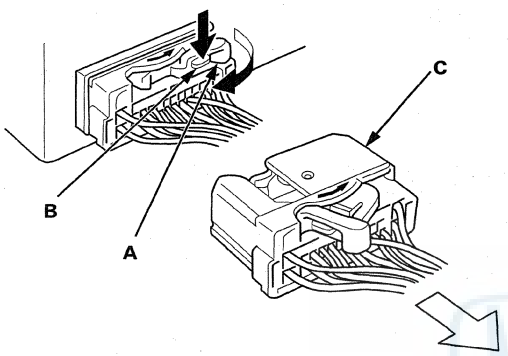
NOTE:

- The average acquiring time is less than 10 minutes, but it can take as long as 45 minutes.
- If the system is still unable to acquire a signal, follow the instructions on the screen. If this screen appears again, go to GPS icon is white or not shown troubleshooting (see page 23-219).
- Skip to a CSF screen by pressing the MENU and the ZOOM OUT buttons at the same time and you can move to a System Links screen.

Lever-Locked Connector

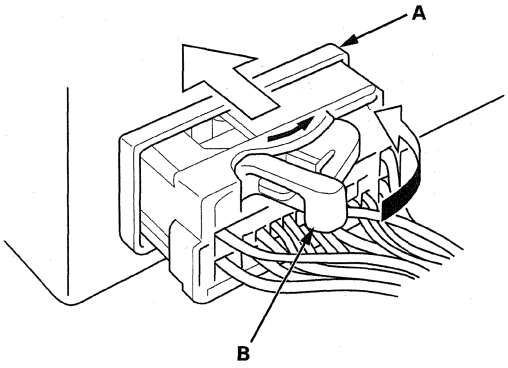
Disconnecting

To disconnect the connector, pull the lever (A) while pushing the lock tab (B) down, then pull out the connector (C).



Connecting

To connect the connector, push the connector into the connector sleeve (A). As the connector is pressed in, the lever (B) moves to the locked position.



Map Matching

This part of the initialization matches the GPS coordinates with a road on the map screen. To do this part of the procedure, make sure that the navigation system is displaying a map, and drive the vehicle on a mapped road shown on the map screen. Do not enter a destination at this time. When the name of the current road you are driving on appears at the bottom of the screen, the entire procedure is complete. Your system is now ready to use.

(cont'd)

General Troubleshooting Information (cont'd)

Obtaining a Navigation DVD

If the navigation DVD is lost or damaged, or you need a yearly updated DVD, you have two ways to purchase one. You can either call 888-291-4675, or order on-line at www.hondanavi.com.

Both methods require a credit card. The navigation DVD for this model has a turquoise label, and cannot be ordered through the parts system. The following DVDs will not work in this navigation system:

- Earlier model navigation DVDs (black, orange, white, and older versions with a turquoise label). Refer to any official Honda service website for more information about navigation DVD colors and versions.
- Map software programs manufactured by other companies
- DVD movies, or DVDs containing audio recordings

Update navigation DVDs are available for purchase usually in the fall of each year. They may contain the following:

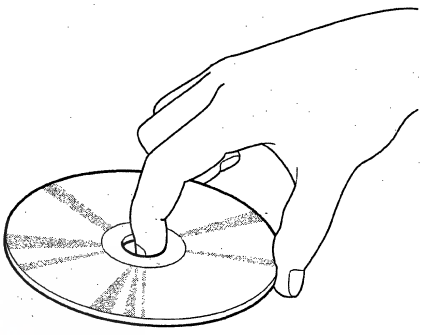
- Enhanced maps and points of interest (POI) coverage
- Fixes for minor software bugs
- Additional features

NOTE:

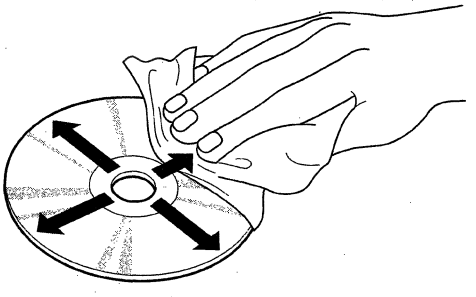
- Map matching must be done any time the navigation DVD is removed or replaced.
- Always order navigation DVDs on an as-needed basis. During a typical model year, each color navigation DVD may undergo a half a dozen software only version upgrades to fix minor issues on some or all models the navigation DVD supports. This is normal. Usually only the letter at the end of the version number changes, while the database (maps and POIs) remain unchanged.
- Never promise your customer future free updates. There are no free programs for updating the navigation DVD. Update navigation DVDs are generally available for purchase each fall. The online navigation DVD order site provides information when an update for a particular color navigation DVD is available.
- Damaged discs are not covered by warranty unless they have been damaged by the navigation system.

DVD Handling and Cleaning

To avoid damaging or leaving fingerprints on the navigation DVD, always handle it by the edges and place it in a jewel case whenever it is outside the audio-navigation unit. Deep scratches or fingerprints on the back of the navigation DVD can cause intermittent rebooting or other system errors.



Smudges and fingerprints can be carefully removed using a mild cleaner and tissues designed to clean eyeglasses. To clean a navigation DVD, use a clean soft cloth. Very gently wipe across the navigation DVD from the center to the outside edge, never in a circular motion.



Do not place stabilizer rings or labels on the navigation DVD.

Earliest DVD Version Application for Each Model

Each navigation system DVD contains a map/POI (point of interest) database and the navigation system software for each model that it supports. Inserting an older navigation DVD can cause problems since it lacks the software to provide the specific features needed for that model. Unfortunately, the navigation software does not detect or warn you that the version is outdated, and it may even appear to operate. Refer to any official Honda service website for more information about navigation DVD colors and versions.

NOTE: Replacing a navigation DVD just because the version number is higher is not always warranted. A higher software version does not necessarily mean it contains newer software for your model. The navigation DVD contains software for all models that use the same color navigation DVD, and a revised number may or may not have software fixes or upgrades for the model in question.

Typical warning symptoms that an outdated navigation DVD is being used include:

- The Honda model navigation screen may display an Acura logo while booting up.
- A newly introduced model feature or current accessory may not display properly, and Extension may display instead.
- The system locks up when entering an address or POI.
- The current street (the street being driven on) does not appear properly at the bottom of the map screen display when the vehicle is driven on a main road.

  NOTE: If necessary, compare the operation to the navigation system of the same model and year vehicle that has a current navigation DVD.

How to Identify Navigation DVD Versions, and How to Inspect A DVD for Damage

To determine the navigation version on a particular model, start the engine, then locate the audio-navigation unit. Open the DVD door, and press the eject button to eject the navigation DVD. Hold the navigation DVD by the edges, and check for these items:

- Check any official Honda service website for more service information about the navigation DVDs label color and versions.
- Read the navigation DVD version on the label, and note it on the repair order. The version number is near the bottom of the label text (for example, ver: 6.23A). You will need this version number:
  - To verify that the navigation DVD version is appropriate for the vehicle. Check any official Honda service website for more service information.
  - Any time you call Tech Line regarding a navigation system issue.
  - To answer customer inquires concerning update or coverage issues.

    NOTE: Customers may obtain navigation DVDs from sources outside the normal ordering process. If you determine this is the case, recommend that your customer purchase the appropriate navigation DVD from the Honda Disc Fulfillment Center (see ORDERING A DVD).
  - Check the underside of the navigation DVD for signs of mishandling. Deep scratches, or random scratches, light swirl marks, or fingerprints can cause random lock-ups, reboots, erratic voice response, erratic positioning errors, and navigation DVD read or format errors.

    NOTE: A damaged navigation DVD is not covered under warranty unless the disc is damaged by the audio-navigation unit. Damage by the audio-navigation unit typically appears as circular scratches caused by something rubbing against the navigation DVD as it spins. The damage may appear as arcs or complete circles on the navigation DVD reading surface.
  - Verify that the underside of the navigation DVD is silver, and not a copy with a blue color. Copies will not work properly and can cause other symptoms that mimic hardware problems.

(cont'd)

General Troubleshooting Information (cont'd)

- Incorrectly colored navigation DVDs being put into the audio-navigation unit. This causes the system to either display error messages, or causes system malfunctions that mimic a hardware problem. This results in the customer leaving with a malfunctioning navigation system.
- The navigation DVD version provided to the customer is out-of date or incompatible with a particular model. This inconveniences your customer by delaying the repair, or by causing additional (and unnecessary) returns to your dealership.
- The customer experiences bugs or other issues that have already been resolved in later versions currently available at the fulfillment desk.

If the navigation DVD is defective, or has any of the issues mentioned above, return the vehicle to your customer and recommend that they order the proper navigation DVD from the Honda Disc Fulfillment Center.

NOTE: Navigation DVDs do not come with replacement audio-navigation units. If you are replacing a audio-navigation unit because it is defective (following the appropriate service manual troubleshooting), and the navigation DVD does not eject, order a navigation DVD. See Obtaining a navigation DVD.

How to Answer Customer Questions About Navigation Coverage

Some customers may ask questions regarding a city, address, or POI (point of interest) covered by the navigation system. It is better to verify a coverage question on an actual vehicle than to disappoint your customer by promising coverage that may be incomplete or missing in their area. The following suggestions can be used to answer coverage inquiries from your customer.

Is my address covered by the navigation system?

Using a current production vehicle (of the same model), try and enter the customer's address (street first) to see if their area is covered. Always enter the street first, because sometimes their city may be included in a neighboring township, or under some larger metropolitan city name. If the address is shown in a later year vehicle, but not your customer's vehicle, you might recommend that your customer purchase an update.

Is my city covered by the navigation system?

For general questions about whether a city is covered, view the map coverage link on the navigation DVD order site. On the site, select a year, and select a model, then click on the Coverage link. You then select a state or province, and the cities are listed. Of course, this does not guarantee that the customer's road or address is in the system. Verifying on an actual production vehicle is always the best guarantee that your information is accurate.

The gas station on my corner is now a restaurant. Why is it still incorrect in the navigation system?

For POI-related client questions, explain that businesses are constantly moving, and there can be a considerable lag in updating the millions of POIs in the system. The database is updated annually, and the best way to the verify whether the POI is accurate is verify the inquiry on a current production vehicle.

Answers to these and other questions regarding coverage can be found in these locations:

- In the Frequently Asked Questions section of the navigation system manual.
- At the online navigation DVD order site, by clicking on the FAQs link.

How do I find the local address of a business that is part of a national chain (for example, Starbucks)?

There are three ways to find the local address to businesses:

- If you know the phone number of the business, select Phone Number and enter the 10 digit phone number (area code plus seven digit number).
- Select Category, then Restaurant. Enter the keyword Star. The resulting list includes all restaurants that have the letters Star anywhere in the name.
- Select Name and enter Starbucks. For more common business names, like McDonalds, you may have to search through a list that includes other businesses like McDonalds Welding, McDonalds Automotive, etc.

Why are some features different or missing compared to my previous Honda vehicle?

Hardware and software continually go through updates and improvements. Features may change or disappear over time based on the navigation system development.

Precaution on Customer Navigation DVD Sneak Previews

Your customer might request a look (or sneak preview) at features in the latest navigation software. You should never preview a navigation DVD in a customer's vehicle. Inserting a new navigation DVD installs the latest software from the navigation DVD into the memory of the customer's navigation system. When the original navigation DVD is reinstalled, the newer software remains in memory and is often incompatible with the customer's original navigation DVD Map and POI database.

If your customer wishes to see the latest navigation coverage or software features, demonstrate it on an in-stock vehicle that already has the latest navigation DVD version.

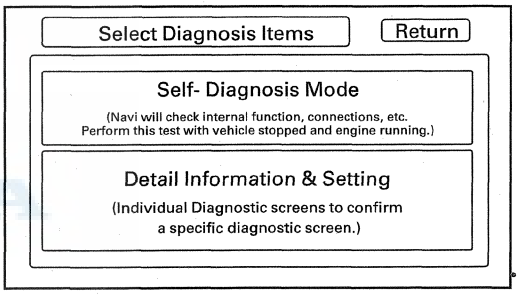
If a newer version is loaded, either by the dealer or the customer, the only remedy is to enter the navigation diagnostic mode's Version screen and do a forced download. Check any official Honda service website for more information about what patches may need reinstalling.

How to Check Error History (Navigation DTCs)

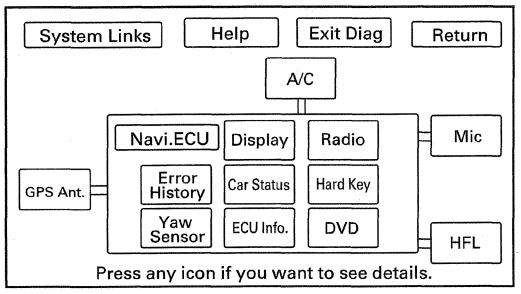
NOTE: The navigation DTCs cannot be retrieved with the HDS.

The Error History feature is to record intermittent navigation issues that occur while using the system by setting navigation DTCs. Sometimes the customer complaint cannot be duplicated. The error history may record the information needed to diagnose the problem. To check the error history:

1. Start the engine.
2. Press and hold the MAP/GUIDE, MENU, and CANCEL buttons for 3 seconds.
3. When the Select Diagnosis Items menu is displayed, select Self-Diagnosis Mode.



4. When the audio-navigation unit has hard error codes, the Error History icon appears yellow when the Self-Diagnosis mode (System links) screen is displayed. When no hard errors are stored, the icon appears gray. To view the errors with their navigation DTC codes, select the error history icon.

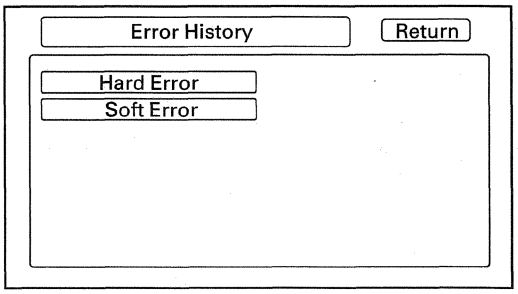


(cont'd)

General Troubleshooting Information (cont'd)

5. Select Hard Error

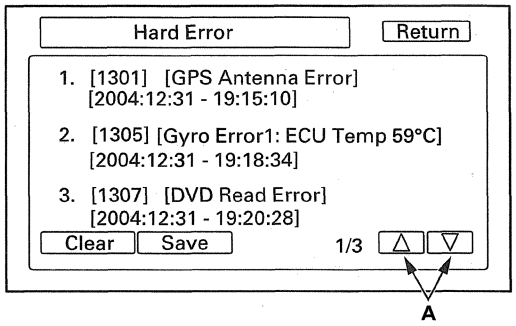
   NOTE: Soft errors are for factory use only.



Hardware Error History

6. The Hard Error screen displays the following information for each error:
   - The navigation DTC for the error.
   - A brief description of the navigation DTC.
   - The date and time when the error occurred.

   NOTE:
   - To see additional errors, use the interface dial to select UP or DOWN icons (A).
   - Write down the DTCs, then select Clear to delete the error history. The Save feature is for factory use only.



7. Use the DTC Symptom Troubleshooting table to troubleshoot the error.
8. Clear the navigation DTCs.
9. Select Return to exit the error history.

Software Error (Soft Error) History

Software errors are not available. They are for factory use only.

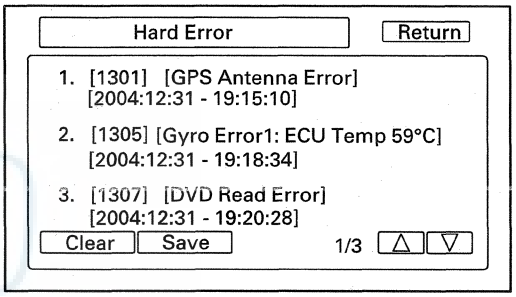
How to Clear Error History

NOTE: It is recommended that you write down the stored DTCs before clearing them.

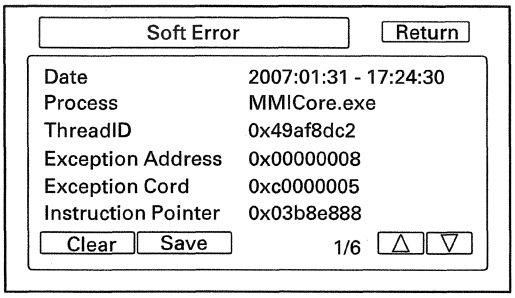
1. Do the steps in How to check Error History.
2. Select Clear in the error menu.

   NOTE:
   - By selecting Clear, all software and hardware errors stored in history are erased at the same time.
   - Save is for factory use only.

Hard error history is displayed

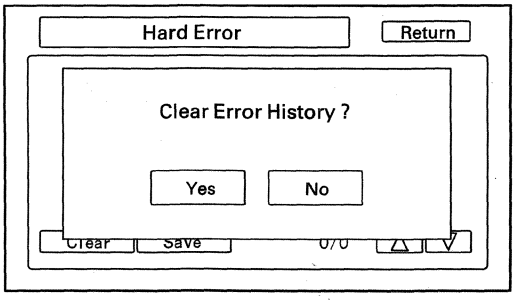


Soft error history is displayed (Soft errors are for factory use only)

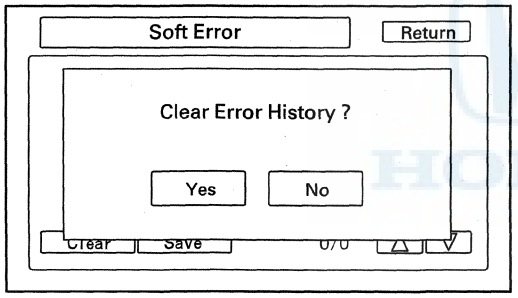


3. After selecting Clear, then selecting Yes, both Hard Error history and Soft Error history are cleared at the same time.

Hard error history clear



Soft error history clear (Soft errors are for factory use only)



4. Press return to exit.

DTC Troubleshooting Index

DTC	Description	Circuit	Failure Detection	Page	Also Check for
1001	FROM System Info Error	Flash ROM management	Audio-navigation unit internal data error.	DTC Troubleshooting (see page 23-198)	Low or weak battery voltage.
1101	Media Bus Send Error	Media condition monitoring	Audio-navigation unit internal media error.	DTC Troubleshooting (see page 23-198)	Low or weak battery voltage.
1201	DVD High Temp	DVD drive	Audio-navigation unit temperature above the upper limit. Failure in audio-navigation unit fan circuit.	DTC Troubleshooting (see page 23-199)	• Low or weak battery voltage. • High temperature around the audio-navigation unit. • Clogged cooling fan screen on the back of the audio-navigation unit.
1202	DVD Low Temp	DVD drive	Audio-navigation unit temperature below the lower limit.	DTC Troubleshooting (see page 23-199)	• Low or weak battery voltage. • Low temperature around the audio-navigation unit.
1301	GPS Antenna Error	GPS Antenna	GPS antenna circuit malfunction.	DTC Troubleshooting (see page 23-200)	Low or weak battery voltage.
1302	GPS Receiver Error 1	GPS Receiver (internal)	GPS antenna circuit malfunction. Audio-navigation unit internal GPS receiver malfunction.	DTC Troubleshooting (see page 23-201)	Low or weak battery voltage.
1303	GPS Receiver Error 2	GPS Receiver (internal)	Audio-navigation unit internal GPS receiver malfunction.	DTC Troubleshooting (see page 23-202)	Low or weak battery voltage.
1305	Gyro Error 2: ECU Temp XX °C	Gyro	Audio-navigation unit internal gyro malfunction.	DTC Troubleshooting (see page 23-202)	• Low or weak battery voltage. • Temperature is too high or low in the audio-navigation unit. • Clogged cooling fan screen on the back of the audio-navigation unit.
1306	Vehicle Speed Pulse	Vehicle Speed Pulse	VSP circuit malfunction.	DTC Troubleshooting (see page 23-203)	Check for F-CAN DTCs.

DTC	Description	Circuit	Failure Detection	Page	Also Check for
1307	DVD Read Error	DVD	Scratched/Dirty DVD or audio-navigation unit internal DVD ROM drive.	DTC Troubleshooting (see page 23-204)	Low or weak battery voltage.
1402	Audio Error 2	CD	Mechanical malfunction in the audio-navigation unit.	DTC Troubleshooting (see page 23-205)	Low or weak battery voltage.
2601	Display Diag: Connect	Display	GA-Net bus circuit malfunction (open/short). ECU bus circuit malfunction (open/short).	DTC Troubleshooting (see page 23-205)	
2605	H/U Diag: Connect	H/U	GA-Net bus circuit malfunction (open/short).	DTC Troubleshooting (see page 23-206)	
2609	VRAM Diag	ECU VRAM	Audio-navigation unit internal VRAM malfunction.	DTC Troubleshooting (see page 23-206)	
2610	DRAM Diag	ECU DRAM	Audio-navigation unit internal DRAM malfunction.	DTC Troubleshooting (see page 23-207)	
2701	GPS Diag: Antenna	GPS	GPS antenna malfunction.	DTC Troubleshooting (see page 23-207)	
2702	GPS Diag: Receiver in Navi ECU	GPS	GPS antenna malfunction.	DTC Troubleshooting (see page 23-208)	
2703	Aircon Diag	Aircon	Communication error between climate control unit and audio-navigation unit (open/short).	DTC Troubleshooting (see page 23-208)	• Check for B-CAN DTCs • DTC sets if Self-Diagnosis Mode is run with the ignition switch in ACCESSORY (I).
2705	HFL Diag	HFL	HandsFreeLink control unit internal malfunction.	DTC Troubleshooting (see page 23-210)	Check for B-CAN DTCs

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC	Description	Circuit	Failure Detection	Page	Also Check for
2706	Gyro Diag: ECU Temp XX °C	Gyro	Audio-navigation unit internal malfunction.	DTC Troubleshooting (see page 23-212)	• Low or weak battery voltage. • Temperature is too high or low in the audio-navigation unit. • Clogged cooling fan screen on the back of the audio-navigation unit.
2707	Mic Diag	Mic	Mic circuit malfunction (open/short).	DTC Troubleshooting (see page 23-213)	

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
Navigation system stays on the GPS initialization screen	System Initialization (see page 23-133)	• Audio-navigation unit • Internal defect in GPS antenna • GPS antenna/cable is disconnected or damaged • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Harness/fuses/switches
Vehicle position icon constantly leaves road, moves erratically, or is displayed very far from actual vehicle position	Symptom Troubleshooting (see page 23-214)	• Audio-navigation unit • Internal defect in GPS antenna • GPS antenna/cable • Aftermarket metallic window tint • ECM/PCM (vehicle speed pulses) • Harness/fuses/switches
System always comes up in the in-line diagnostic mode (Factory Diag Mode)	Symptom Troubleshooting (see page 23-216)	
Navigation system does not accept security code	Symptom Troubleshooting (see page 23-216)	• The navigation DVD is damaged or dirty • Anti-theft code does not match the audio-navigation unit
Navigation frequently asks for anti-theft code and/or needs GPS initialization	Symptom Troubleshooting (see page 23-217)	• Loss of voltage or poor ground (G503) • Audio-navigation unit • Software not up to date • Low battery voltage • Harness/fuses/switches
GPS icon is white or not shown	Symptom Troubleshooting (see page 23-219)	• Audio-navigation unit • Aftermarket accessories connected to the system • Internal defect in GPS antenna • Aftermarket accessories connected to the system • GPS antenna/cable • Harness/fuses/switches
Vehicle icon wanders across the map when driving (does not follow a displayed road) or map or vehicle ICON spins	Symptom Troubleshooting (see page 23-219)	• Audio-navigation unit • GPS antenna/cable • Aftermarket metallic window tint • ECM/PCM (vehicle speed pulse) • Internal defect in GPS antenna
No picture is displayed	Symptom Troubleshooting (see page 23-221)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Harness/fuses/switches
Picture has lines/rolls/other issues or is an odd color	Symptom Troubleshooting (see page 23-223)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Aftermarket accessories connected to the system • Harness/fuses/switches

(cont'd)

Symptom Troubleshooting Index (cont'd)

Symptom	Diagnostic procedure	Also check for
Display day/night mode does not work or does not work properly	• If you use the display mode button, the auto day/night function is disabled until you turn the ignition switch to ON (II) • Symptom Troubleshooting (see page 23-224)	• Audio-navigation unit • The instrument (gauge) brightness setting is set to High in day or night mode • Gauge control module • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Harness/fuses/switches
System locks up or freezes constantly	Symptom Troubleshooting (see page 23-224)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Harness/fuses/switches
Voice guidance cannot be heard, is broken up, or there is static	Symptom Troubleshooting (see page 23-225)	• Volume or voice feedback setting (see navigation manual) • Audio-navigation unit • Stereo amplifier • Harness/fuses/switches
Voice control does not work/respond	Symptom Troubleshooting (see page 23-225)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty • Microphone harness/switches
Navigation cannot control audio system	Symptom Troubleshooting (see page 23-227)	• Audio-navigation unit • Harness • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty
Navigation display buttons do not work or respond properly	Symptom Troubleshooting (see page 23-228)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty
Today's Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The customer has not entered a group of locations for Today's Destinations. This is normal. The button is only selectable if the customer is using this function	See navigation manual
Some set-up and information functions of the navigation system are grayed-out and do not work	The customer did not select OK from Disclaimer screen. Refer to Diagnostic System Diagram (see page 23-161)	
Previous Destinations button is dim and not selectable in the Enter destination by screen (grayed-out)	The vehicle may be new, or the customer deleted the destination. Enter a destination, and allow the system to route to it. After the trip, the Previous Destinations button will be selectable	

Symptom	Diagnostic procedure	Also check for
Address cannot be found or system gives poor routing	• Verify proper operation and system limitations using the Owner's Manual • See Answering customer question Navigation coverage in general troubleshooting • Refer to Database limitation in the navigation system manual to report database errors • Refer to the FAQs in the navigation manual	• Database limitations (address not in database) • The wrong color or version DVD is installed
OPEN/CLOSE function of the display does not work	Symptom Troubleshooting (see page 23-228)	• Audio-navigation unit • Harness • There is an object blocking the display panel from moving
Navigation display does not close	Symptom Troubleshooting (see page 23-229)	• Audio-navigation unit • Harness • There is an object blocking the display panel from moving
Navigation display does not open or opens part way	Symptom Troubleshooting (see page 23-229)	• Audio-navigation unit • Harness • There is an object blocking the display panel from moving
PC card will not play/card icon on audio screen cannot be selected	Symptom Troubleshooting (see page 23-114)	Audio-navigation unit
The map will not display the Southern portion of the U.S. or the Northern parts of Canada	North American coverage is different for USA/ Canada markets. See the Version Diagnostic Screen for details on coverage differences (see page 23-193)	• See navigation manual • The wrong color or version DVD is installed
Navigation display stays on with ignition switch in LOCK (0)	Symptom Troubleshooting (see page 23-230)	• Harness/fuses/switches • Aftermarket accessories connected to the system
DVD read error messages	Symptom Troubleshooting (see page 23-230)	• Audio-navigation unit • The wrong color or version navigation DVD is installed • The navigation DVD is damaged or dirty
Error messages are displayed	See Error Message Table (see page 23-197)	Check any official Honda service website for more information about the navigation system
Navigation system will not go beyond the disclaimer screen and displays the OK button	See Navigation display buttons do not work or respond properly (see page 23-228)	• The wrong color or version navigation DVD is installed • Scratched or damaged navigation DVD • Audio-navigation unit
The navigation anti-theft code card is lost or missing	See Anti-Theft Feature (see page 23-131)	
The vehicle icon lags behind when the vehicle turns	See Self-Inertial Navigation Limitations (see page 23-131)	• Aftermarket accessories connected to the system • GPS antenna/cable
Navigation screen is darker than normal or takes time to brighten when it is cold	See LCD unit limitations (see page 23-132)	

(cont'd)

Symptom Troubleshooting Index (cont'd)

Symptom	Diagnostic procedure	Also check for
The navigation clock is off by 1 to 3 hours after replacing the navigation unit	See Service Precautions (see page 23-133)	• Do Map Matching (see page 23-135) • GPS antenna/cable • Check and adjust the clock settings
A new navigation DVD is needed	See Obtaining a Navigation DVD (see page 23-136)	
Time is not correct	Reset Time Adjustment in set-up	• The wrong color or version navigation DVD is installed • Reset Time Adjustment in set-up • A defective GPS receiver in the audio-navigation unit
The DVD is scratched or dirty	See DVD Handling and Cleaning (see page 23-136)	Audio-navigation unit
The wrong DVD was installed and now the system does not function properly	See Precaution on Customer Navigation DVD Sneak Previews (see page 23-139)	• Install the correct version navigation DVD • Check any official Honda service website for more service information about the navigation system
A POI cannot be found	See How to Answer Customer Questions About Navigation Coverage (see page 23-138)	• The navigation DVD is scratched or dirty • The database may be out of date. Confirm the POI exists in a current production vehicle
A specific city cannot be found	See How to Answer Customer Questions About Navigation Coverage (see page 23-138)	• The navigation DVD is scratched or dirty • The database may be out of date. Confirm the POI exists in a current production vehicle
An In Line Diagnosis screen appears every time vehicle is started	See Factory Diagnostic Screen In Line Diag (see page 23-178)	
The Acura Globe Screen (not the Honda Globe Screen) appears every time the vehicle is started	Symptom troubleshooting (see page 23-231)	Also see the symptom The wrong navigation DVD was installed and now the system does not function properly
The customer vehicle was recently moved to or from Hawaii, and the map screen does not display properly	See Coverage Area (see page 23-188)	



System Description

Overview

The navigation system is a highly sophisticated, hybrid locating system.

The audio-navigation unit uses global positioning system (GPS) satellite signals, internal yaw and vehicle speed inputs, and a map database to show where the vehicle is and to help guide you to a desired destination.

The audio-navigation unit's GPS receiver receives signals from the GPS, a network of 24 satellites in orbit around the earth. By receiving signals from several of these satellites, the navigation system can determine the latitude, longitude, and elevation of the vehicle.

Signals from the system's yaw rate sensor (inside the audio-navigation unit) detects turns, and the ECM/PCM vehicle speed pulse (VSP) and reverse signal enable the system to keep track of the vehicle's speed and direction of travel. The advantage of this hybrid system is that the system can track your position if either the GPS signal or the vehicle speed pulse signal is missing. For instance, when in a tunnel (no GPS), the speed signal is used to update your position on the map. Alternately, while the vehicle is being transported on a ferry, GPS signals can show the vehicle position on the map as it crosses the water.

The navigation system uses the location, direction, and speed information to display the appropriate map and calculate a route to the destination entered. As you drive to a destination, the system provides both visual and audio guidance. Audio guidance is sent to the audio unit, and an RGB graphics color signal is sent to the navigation display.

This navigation system also has voice recognition that allows voice control of most of the navigation and audio functions. The voice control switches (navigation TALK and BACK buttons on the steering wheel) activate the voice control system. The microphone on the ceiling receives your voice commands. For more information on this feature, consult the Navigation Owner's Guide.

The illumination signal is used by the audio-navigation unit to automatically switch the display mode between the Night and Day display modes. When the headlights are on, and the dash brightness control setting is set to full bright, it overrides the Night display mode, and allows a daytime navigation display with the lights on.

When the navigation system is giving voice guidance commands, the front speakers are muted. When the voice control system is being used (navigation TALK button pressed), all of the speakers are muted.

The internal GA-Net II bus passes information back and forth between the navigation display, the audio-navigation unit, the USB adapter control unit, and the audio system components. The information passed on this bus are touch button commands, audio muting signal, audio (radio and USB audio), and any opens or shorts in these bus lines can affect the navigation system or other audio accessory operation.

The clock on the navigation display is set and maintained internally by the audio-navigation unit. The time is automatically adjusted for daylight savings, and time zone changes while driving. The time and daylight saving time can be adjusted in setup.

Additional information is available about the navigation components following the System Diagram. A glossary of terms that are used throughout this section follows the detailed information.

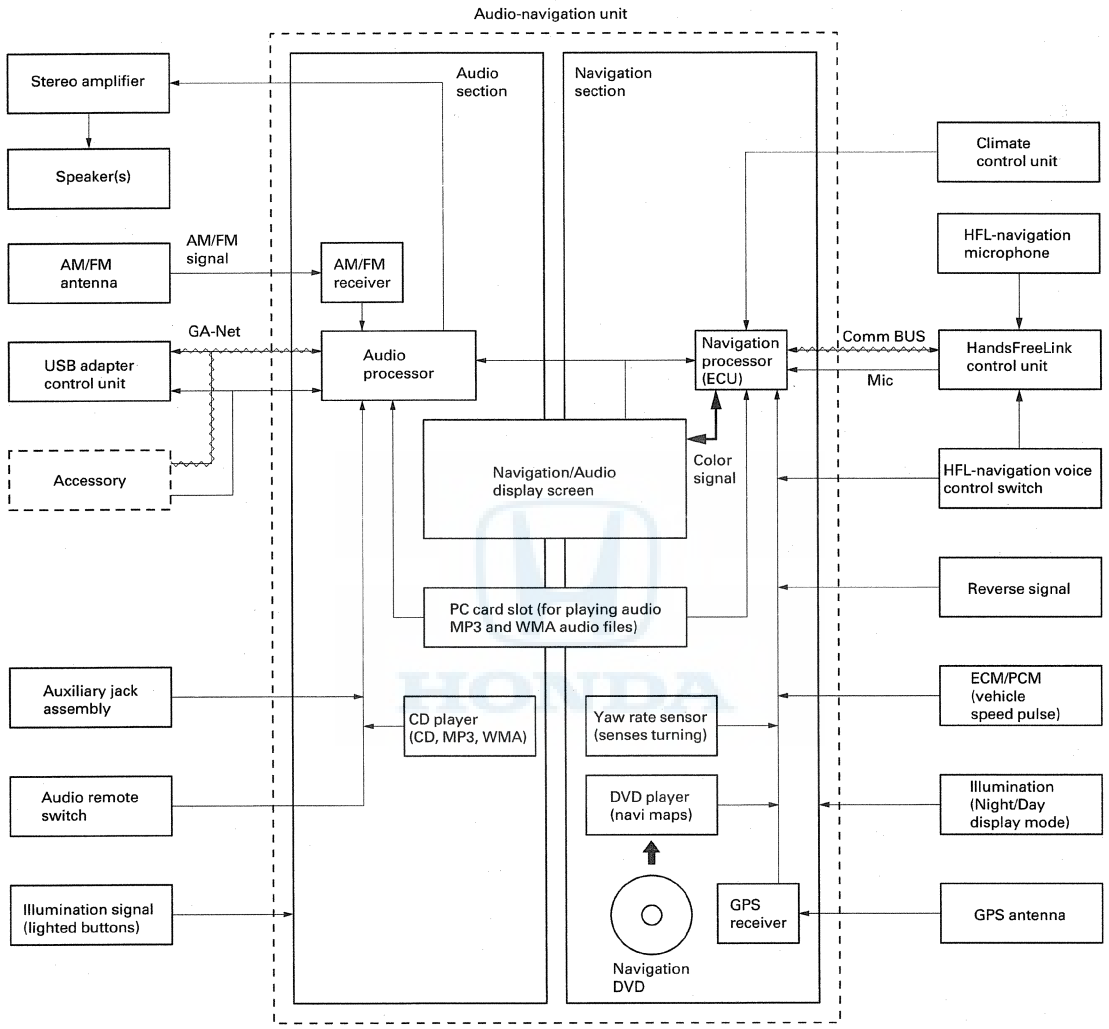
The navigation manual in the glove box or on-line at any official Honda service website covers all of the system functions and settings. Use this as a resource when evaluating a customer concern.

The Comm. Bus connects the HandsFreeLink control unit to the audio-navigation unit. If a POI phone number is available, the audio-navigation unit can send the phone number to the HandsFreeLink control unit for dialing if a phone is paired.

(cont'd)

System Description (cont'd)

System Diagram

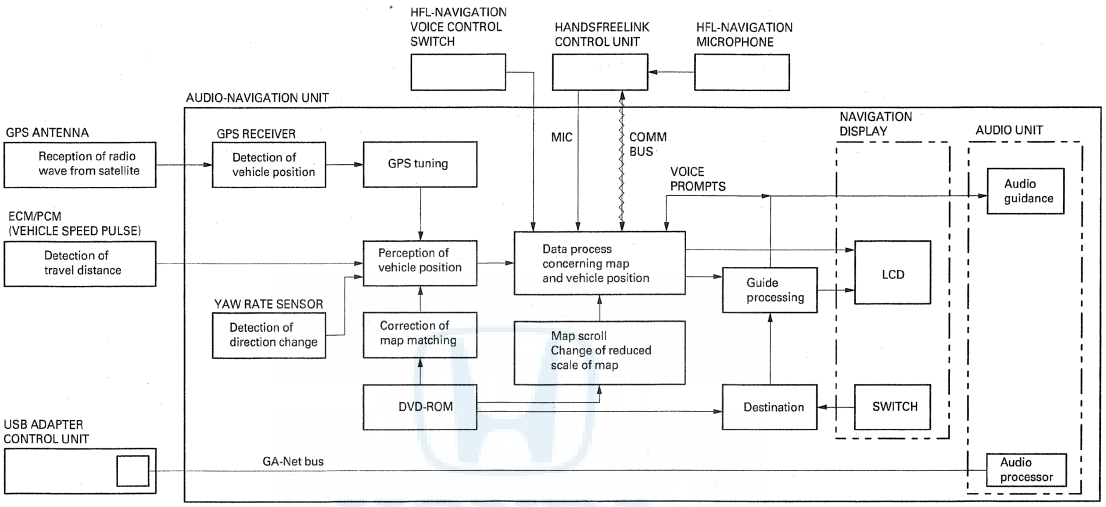


Navigation Function

The navigation system is composed of the audio-navigation unit, the ECM/PCM (vehicle speed pulse), the GPS antenna, HFL-navigation microphone, the HFL-navigation voice control switch, the HandsFreeLink control unit, and the USB adapter control unit.

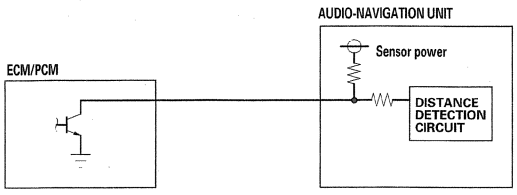
These units communicate with each other on the GA-Net bus.

Function Diagram



Vehicle Speed Pulse

The vehicle speed pulse is sent by the ECM/PCM. The ECM/PCM receives a signal from the output shaft (countershaft) speed sensor, then it processes the signal and transmits it to the gauge control module and other systems.

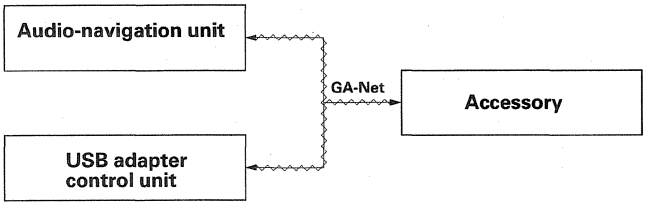


(cont'd)

System Description (cont'd)

GA-Net Bus Configuration

The GA-Net bus passes audio and navigation commands throughout the navigation and audio components. These commands include navigation touch screen and hard button signals. Because the entire bus is daisy chained between components (see diagram), any open or short in the GA-Net bus harness will cause any or all of these functions to become inoperative. The addition of any factory audio accessory must maintain the continuity of the GA-Net bus by installing the Y cable included with the accessory kit.



Yaw Rate Sensor

The yaw rate sensor (located in the audio-navigation unit) detects the direction change (angular speed) of the vehicle. The sensor is an oscillation gyro built into the audio-navigation unit.

Sensor Element Structure

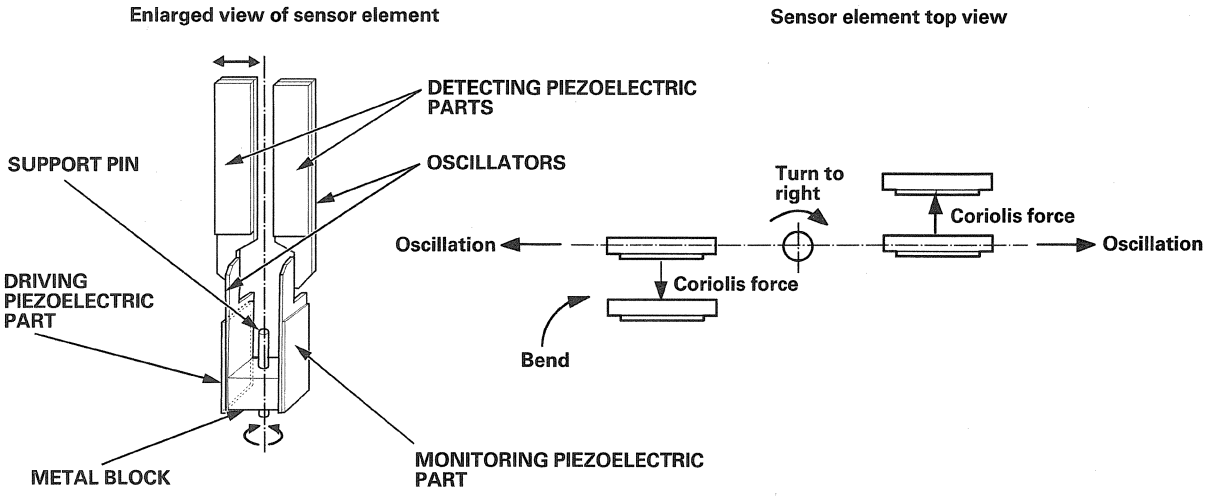
The sensor element is shaped like a tuning fork, and it consists of the piezoelectric parts, the metal block, and the support pin. There are four piezoelectric parts: one to drive the oscillators, one to monitor and maintain the oscillation at a regular frequency, and two to detect angular velocity. The two oscillators, which have a 90-degree twist in the center, are connected at the bottom by the metal block and supported by the support pin. A detection piezoelectric part is attached to the top of each oscillator. The driving piezoelectric part is attached to the bottom of one oscillator, and the monitoring piezoelectric part is attached to the bottom of the other oscillator.

Oscillation Gyro Principles

The piezoelectric parts have electric/mechanical transfer characteristics. They bend vertically when voltage is applied to both sides of the parts, and voltage is generated between both sides of the piezoelectric parts when they are bent by an external force. The oscillation gyro functions by utilizing this characteristic of the piezoelectric parts and Coriolis force. (Coriolis force deflects moving objects as a result of the earth's rotation.) In the oscillation gyro, this force moves the sensor element when angular velocity is applied.

Operation

1. The driving piezoelectric part oscillates the oscillator by repeatedly bending and returning when an AC voltage of 6 kHz is applied to the part. The monitoring-side oscillator resonates because it is connected to the driving-side oscillator by the metal block.
2. The monitoring piezoelectric part bends in proportion to the oscillation and outputs voltage (the monitor signal). The audio-navigation unit control circuit controls the drive signal to stabilize the monitor signal.
3. When the vehicle is stopped, the detecting piezoelectric parts oscillate right and left with the oscillators, but no signal is output because the parts are not bent (no angular force).
4. When the vehicle turns to the right, the sensor element moves in a circular motion with the right oscillator bending forward and the left oscillator bending backward. The amount of forward/rearward bend varies according to the angular velocity of the vehicle.
5. The detecting piezoelectric parts output voltage (the yaw rate signal) according to the amount of bend. The amount of vehicle direction change is determined by measuring this voltage.



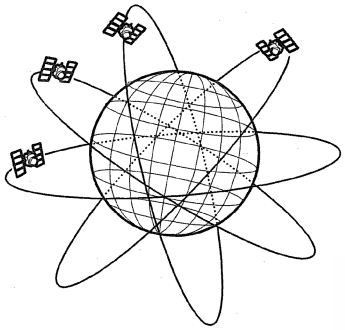
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System Description (cont'd)

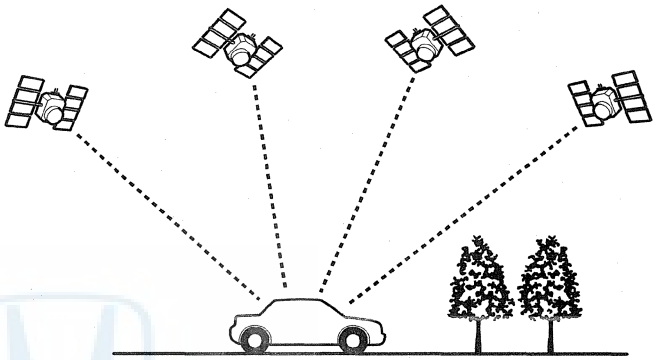
Global Positioning System (GPS)

The global positioning system (GPS) enables the navigation system to determine the current position of the vehicle by using the signals transmitted from the satellites in orbit around the earth. The satellites transmit the satellite identification signal, orbit information, transmission time signal, and other information. When the GPS receiver receives a signal from four or more satellites simultaneously, it calculates the current position of the vehicle based on the distance to each satellite and the satellite's position in its respective orbit.

Position Detection Image with GPS Satellite



NOTE: Four satellites on each of 6 orbits.



Precision of GPS

The precision of the GPS varies according to the number of satellites from which signals are received and the view of the sky. The accuracy is indicated by the color of the GPS icon shown on the display.

GPS ICON COLOR	NUMBER OF SATELLITES	CONDITION	DESCRIPTION
No GPS icon	None	Faulty reception	The GPS can't be utilized due to a faulty GPS receiver, open in the wire, or other fault or interference.
	2 or less	Impossible to detect vehicle position	GPS function is normal. The satellite signals received by the GPS are too few to detect the vehicle position.
White GPS icon	3	Vehicle position detectable in 2 dimensions	The longitude and latitude of the vehicle position can be detected. (Less precise than detection in three dimensions)
Green GPS icon	4 or more	Vehicle position detectable in 3 dimensions (elevation displayed)	The longitude, latitude and the altitude of the vehicle position can be detected. (More precise than detection in two dimensions)

GPS Antenna

The GPS antenna amplifies and transmits the signals received from the satellites to the GPS receiver.

GPS Receiver and Clock

The GPS receiver is built into the audio-navigation unit. It calculates the vehicle position by receiving the signal from the GPS antenna. The current time vehicle position and signal reception condition is transmitted from the GPS receiver to the audio-navigation unit to adjust vehicle position.



Audio-Navigation Unit

The audio-navigation unit calculates the vehicle position and guides you to the destination. The unit performs map matching correction, GPS correction, and distance tuning. It also controls the menu functions and the DVD-ROM drive, and interprets voice commands. With control of all these items, the audio-navigation unit makes the navigation picture signal, then it transmits the signal to the navigation display and the audio driving instructions to the audio-navigation unit via the internal audio section.

Calculation of Vehicle Position

The audio-navigation unit calculates the vehicle position (the driving direction and the current position) by receiving the directional change signals from the yaw rate sensor and the travel distance signals from the ECM/PCMs vehicle speed pulse (VSP) signal.

Map Matching Tuning

The map matching tuning is accomplished by indicating the vehicle position on the roads on the map. The map data transmitted from the DVD-ROM is checked against the vehicle position data, and the vehicle position is indicated on the nearest road. Map matching tuning does not occur when the vehicle travels on a road not shown on the map, or when the vehicle position is far away from a road on the map.

GPS Tuning

The GPS tuning is accomplished by indicating the vehicle position as the GPS's vehicle position. The audio-navigation unit compares its calculated vehicle position data with the GPS vehicle position data. If there is large difference between the two, the indicated vehicle position is adjusted to the GPS vehicle position.

Distance Tuning

The distance tuning reduces the difference between the travel distance signal from the VSP and the distance data on the map. The audio-navigation unit compares its calculated vehicle position data with the GPS vehicle position data. The audio-navigation unit then decreases the tuning value when the vehicle position is always ahead of the GPS vehicle position, and it increases the tuning value when the vehicle position is always behind the GPS vehicle position.

Route Guidance

The audio-navigation unit can calculate different routes to a selected destination. You have five options:

- Direct Route — Calculate a route that is the most direct.
- Easy Route — Calculate a route that minimizes the number of turns needed.
- Minimize Freeways — Calculate a route that avoids freeway travel. If that is not possible, keep the amount of freeway travel to a minimum.
- Minimize Toll Roads — Calculate a route that avoids, or minimizes travel on toll roads.
- Maximize Freeways — Calculate a route that uses freeways as much as possible.

Audio Guidance

The audio-navigation unit transmits audio driving instructions before entering an intersection or passing a junction. The audio instructions come through the audio-navigation unit to the front speakers.

NOTE: The front speakers are muted whenever the navigation system is giving guidance commands, and all of the speakers are muted when the voice control system is being used.

(cont'd)

System Description (cont'd)

Muting Signal Logic

The audio muting logic is orchestrated by the audio-navigation unit. The audio-navigation unit determines what audio source has priority to use the speakers.

The priority of the audio sources is as follows:

HandsFreeLink has the highest priority, followed by navigation, and finally the radio/CD player. The priority signal is passed by HandsFreeLink to the audio-navigation unit by dedicated mute wires. The navigation mute signal is passed to the stereo amplifier.

The audio-navigation unit temporarily disables the voice control buttons, but allows guidance to be heard.

When the navigation system sends out a voice route guidance command, the rear speakers are muted, and the navigation voice is heard in the front speakers.

When the navigation voice control system and HandsFreeLink is in use, the rear speakers are muted, and the navigation voice prompts are heard from the front speakers.

DVD-ROM

The map data (including all scale rates) is stored in the DVD-ROM. The map data includes:

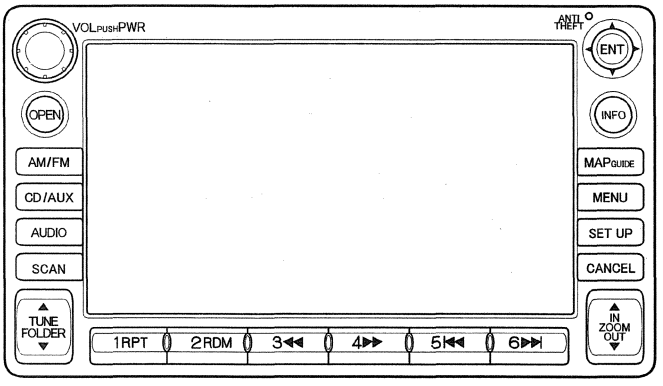
- Road distances, road widths, speed limits, traffic regulations, passing time at junction, distances to junctions, and the driving instructions for audio guidance.
- Latitude and longitude GPS.

Audio Unit (Built in the audio-navigation unit)

The audio unit receives the audio driving instructions from the audio-navigation unit, and transmits the instructions through the front speakers even when the audio system is in use.

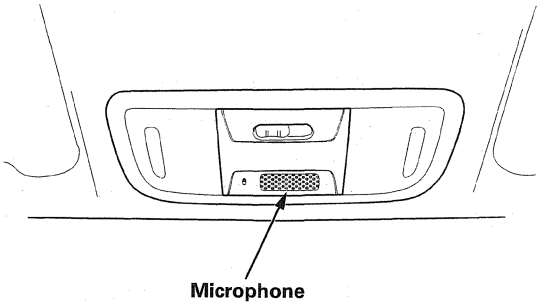
Navigation Display

The navigation display uses liquid crystal display (LCD). The LCD is a 6.5-inch-diagonal, thin film transistor (TFT), stripe type. The color film and fluorescent light are laid out on the back of the liquid crystal film. The touch sensor on the front of the LCD consists of a touch sensitive resistive membrane with an infinite number of possible touch locations.



Microphone

The microphone (on the ceiling, near the individual map light) receives voice commands and transmits them to the audio-navigation unit for interpretation.

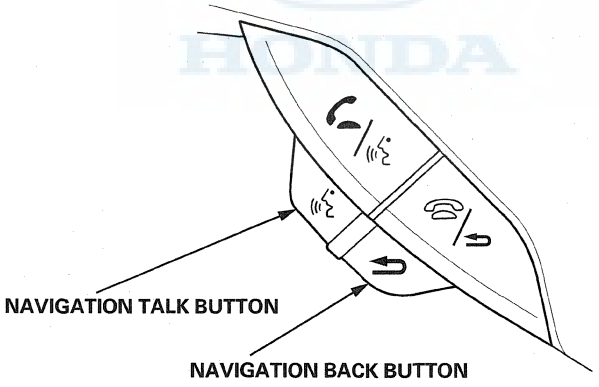


Navigation TALK Button

Activates the voice control system in the audio-navigation unit to accept voice commands.

Navigation BACK Button

Returns the display to the previous screen (similar function as the CANCEL button).



(cont'd)

System Description (cont'd)

Glossary

The following is a glossary of terms pertaining to the Voice Recognition Navigation System.

NOTE: All items may not apply to this vehicle. See the navigation manual for more information.

Item	Definition
Active Sound Control	See audio section.
ANC (Active Noise Cancellation)	See audio section.
Address Book	The HFL system can import a copy of the phone book from and approved HFL compatible phone and display the imported phone book on the navigation screen as the address book. See the navigation manual for more information.
B-CAN	Body CAN Bus (see CAN)
Bluetooth	Bluetooth is a short-range wireless technology intended to replace cables connecting portable devices (like cell phones) to the audio system (Bluetooth audio) or the HFL (Hands free phone use).
Bluetooth audio	See audio section.
Bread-crumbs (White dots)	Off road tracking dots that can be followed on the map to retrace your route back to a mapped (digitized) road. This function can be turned on/off in Setup screen 1.
CAN	Controller Area Network. This communication network allows processors in the vehicle to send/receive information. The fuel pulses used by the MID trip computer are received from the ECM/PCM using the F-CAN (Fast Controller Area Network) bus.
CPU	Central Processing Unit. The main device within the navigation unit that coordinates the rest of the electronic functions.
CSS	Output shaft (Countershaft) Speed Sensor. This sensor reads the output shaft speed at the transmission and provides a speed pulse to the ECM/PCM.
Database	This consists of the Map data, and the POI (Points Of Interest) data stored on the navigation DVD or navigation HDD.
DBW	Drive By Wire. Allows electrical control of the throttle without the need of a mechanical linkage.
DCA	Detailed Coverage Area. Main metropolitan areas in the Lower 48 states, and Canada are mapped to this level. See the navigation manual for a list of these areas.
DTC	Diagnostic Trouble Codes. Use the HDS tablet to obtain, and troubleshoot the cause of these codes.
Dead Reckoning	The use of the speed signal, and yaw rate sensor to position the vehicle on the map even when tall buildings, or driving in a tunnel obscures the GPS signal.
Digitized Road	A road that appears on the navigation screen. The road name will appear at the bottom of the navigation screen. If the user drives off road the navigation system displays "Not on a digitized road", and after 1/2 mile (0.8 km), the breadcrumbs appear.
Disclaimer Screen	Screen containing cautionary information. It is meant to be read carefully, and acknowledged by the customer when using the navigation system.
DVD or DVD-ROM	Digital Versatile Disc. The navigation program and database resides on this disc. See the navigation manual for information on how to order a replacement or an navigation update DVD.
Dynamic Route Guidance	Uses real-time traffic to change your driving route to help avoid extended traffic delays and incidents. Requires a data package subscription.
ECM	Engine Control Module. Typically referred to as the ECM.
FAQ	Frequently Asked Questions. See the navigation manual for a list of the customer FAQs, and troubleshooting information.
F-CAN	Fast CAN Bus (see CAN)
GA-Net	The GA-Net allows the audio unit to communicate with all the audio and navigation components in a vehicle. If there is an open in the GA-Net, components or the entire audio and navigation system may appear inoperative.
GPS	Global Positioning System. A network of 24 satellites in orbit around the earth. The navigation system can simultaneously receive signals from up to 12 satellites to accurately position the vehicle on the map.

Item	Definition
HDD	Hard disc drive. The HDD navigation system does not use a navigation DVD, but uses a hard drive to contain the navigation software. Can be updated with a CD or DVD that is inserted into the audio disc slot.
HDS	Honda Diagnostic System. A hand held tablet PC used for in diagnosing vehicle problems.
HIP (AcuraLink)	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic and weather information is sent to the navigation unit.
HFL	HandsFreeLink uses Bluetooth technology as a wireless link between it and an approved Bluetooth compatible cell phone. See the vehicle Owner's Manual or Quick Start Guide for more information.
H/U	Head Unit. The navigation system display assembly in the dash.
Initialization	This refers to the period needed to re-acquire the GPS satellite orbital information whenever the navigation system power has been disconnected. This can take from 10 to 45 minutes.
Interface Dial	This control device consists of a rotating knob and the buttons surrounding it. This device allows control of the navigation and the audio system on the screen.
Jog Dial	See interface dial.
LCD	Liquid Crystal Display (the navigation screen)
Map Matching	The received GPS information allows the navigation system to position the vehicle on the map. Map matching has occurred if the map screen displays the current street name in the bottom-shaded area.
Mated	The process where the navigation unit electronically writes its pass code to the HDD.
Mic	Abbreviation for the microphone used for receiving voice commands. The active noise cancellation unit may also use it to check its tuning (if equipped). It is located near the map light in the ceiling.
MID	Multi-Information Display
MP3 music files	MP3 is an audio coding formal. MP3 is a popular audio compression format on the internet and computers. CDs and PC cards mid three files can be played on some vehicle audio system.
MW	Maneuver Window. While on-route to a destination, this window displays information about the next maneuver.
Navi	Abbreviation for the Navigation System.
Off-Road Tracking	See Bread-crumbs
Off Route	This occurs when the user leaves mapped roads. Off road tracking dots (bread-crumbs) are displayed if the option is enabled in the setup menu. The user can use them to return to a mapped road. The bottom of the navigation screen displays "Not on a digitized road"
Outlying Areas	These are rural areas that typically have only their main roads mapped. All other roads are shown in light brown for reference only, since they have not been verified.
Paired	Linking your cell phone to the HFL
PC Card Slot	The PC card (PCMCIA, type II) slot is for factory use only. Make sure that the sliding door is closed at all items, if opened, an error message is displayed on the screen (if equipped).
PCM	Powertrain Control Module. This unit supplies the navigation system speed signal, and charge signal via the F-CAN network. Also referred to as ECM.
PCMCIA	A computer industry defined term referring to the PC card slot standard.
PIN	Personal Identification Number, a random 4 digit number created by the customer to protect personal information.
POI	Point Of Interest. These are the businesses, schools, etc. found under the places option on the main menu.
Polygon	Colored areas on the map screen denoting parks, schools, etc. Refer to the navigation manual "Driving to Your Destination" for a list of the assigned colors.
QWERTY	Keyboard layout resembling the typewriter keys. The keyboard layout can be changed to an alphabetical layout in the Setup mode.

(cont'd)

System Description (cont'd)

Item	Definition
SCS service connector	The service check signal 2-pin connector used to put the navigation system into the diagnostic mode.
Security Code	Code needed to activate the navigation system. You can get the security code from the iN by entering the navigation unit serial number. You can find the serial number on the diagnostic screens (Unit Check, Navi ECU) or on the underside of the navigation unit.
Tuning	A continual update of internal navigation system scaling factors. See the individual sensor tuning discussions under either System Description, or System Diagnostic Mode.
Unverified Streets	These streets have not been verified for turn restrictions, one-way, etc. They appear light brown on the map. You can enter address destinations in these areas, but depending on your Unverified Routing choice in setup, voice guidance may end at the last verified street closest to your destination.
USB port	Allows the customer to play data such as input audio recording from portable audio devices (such as iPod) or data from USB flash memory.
Verified Streets	These streets consist of the detailed metropolitan coverage areas, and all other inter-town connection roads. These roads are shown in black on the map.
VP	Vehicle Position. When in map mode, this circular icon shows the vehicle position on the map. Touch this icon to show the latitude, longitude, and elevation of your current position.
VR	Voice Recognition. This allows voice control of many of the navigation functions. The hardware consists of the microphone, voice control switch (navigation Talk/Back buttons), and the front speakers. See the overview for more information.
VSP	Vehicle Speed Pulse. This pulse signal coming from the ECM/PCM (via the CSS) is used to update the Vehicle position on the map. These pulses do not indicate direction (forward or backward). When in reverse, the navigation receives a signal and directs the VP to move backwards on the map.
Weather Information	The navigation system receives and displays weather information.
XM	This device receives information from the XM satellites and passes XM audio information to the audio unit. In addition, traffic and weather information is sent to the navigation unit (see AcuraLink).
Yaw Rate Sensor	This device is located in the navigation unit and senses the side-to-side twisting force generated when the vehicle turns. See a detailed description of how this sensor works.

Diagnostic System Diagram

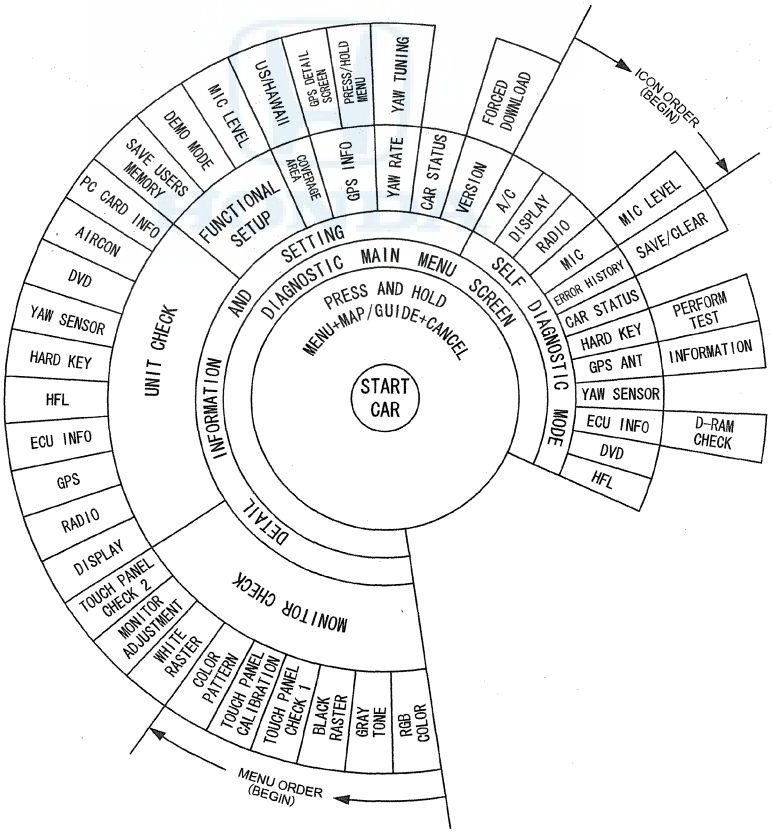
This diagram shows all of the navigation diagnostic features available for system troubleshooting. The diagram starts at the center, and works outward in layers.

Access to the diagnostic features begins by starting the vehicle. This is necessary so the system can check the other systems connected by various busses. After starting the vehicle you can enter the diagnostic mode by pressing and holding the MENU, the MAP/GUIDE, and the CANCEL buttons for 3 seconds.

The main menu screen allows 2 checking modes - one automatic, and one manual:

- The automatic diagnostic check starts when you select SELF DIAGNOSTIC MODE. The system runs for several seconds, and reports any issues with Red icons. Use the joystick or touch screen and select the icon you wish obtain the problem details.
- The manual diagnostic check is selected from the main menu by selecting DETAIL INFORMATION AND SETTING. The traditional diagnostic menu is displayed. This allows you to obtain additional details as instructed in the troubleshooting procedures.

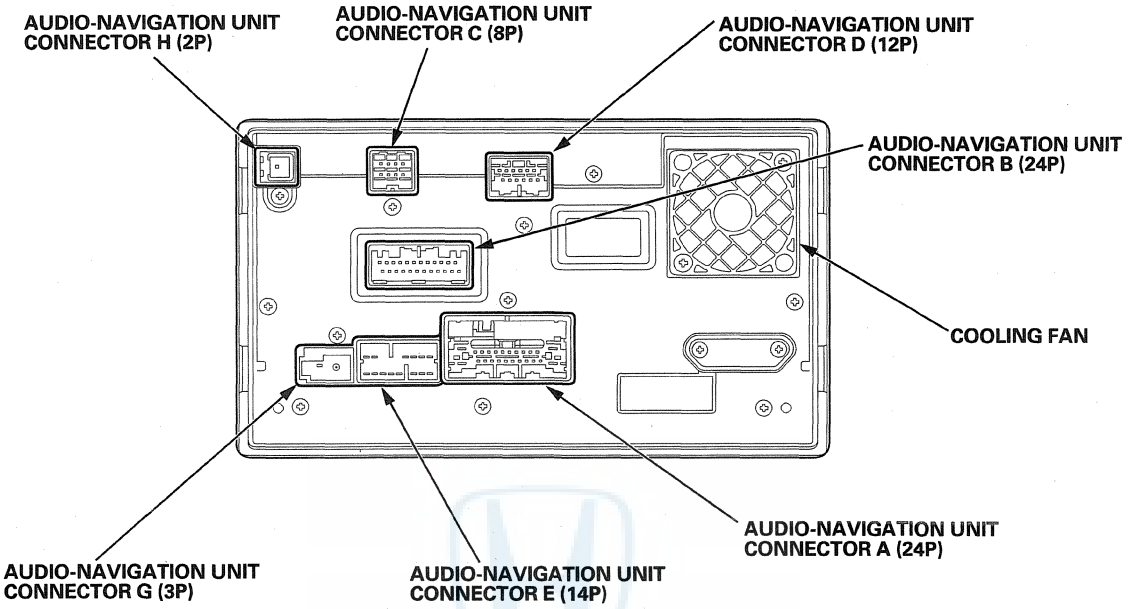
NOTE: Do not clear or change settings unless specified by either the Service Manual troubleshooting procedures or by the factory. Otherwise, you may accidentally delete customer information, or remove the latest flash software version installed by the factory.



(cont'd)

System Description (cont'd)

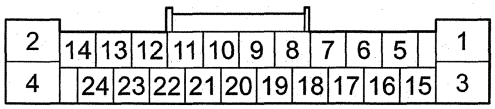
Audio-navigation unit connectors



NOTE: Refer to the audio section for audio-navigation unit connector E and G inputs and outputs (see page 23-23).

Audio-Navigation Unit Inputs and Outputs

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Audio-Navigation Unit Connector A (24P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
A1	BLK	MAIN GND	Ground for audio-navigation unit (G503)	0 V	If open: No change to display. If short to ground: No change to display.
A2	WHT	ILLUMI− (BULB)	Detects illumination control signal	With full dash lights brightness: 0 V	If open: When brightness = Auto, night mode for the display is inoperative when lights on. If short to ground: No change to display.
A3	PNK	+B BACK UP	Continuous power source	Battery voltage	If open: Screen completely off (no backlight visible). If short to ground: Blows fuse No. B1 (15 A) in the under-dash fuse/relay box.
A4	RED	ILLUMI+	Inputs parking light on signal	Lights on: battery voltage, Lights off: 0 V	If open: When brightness = Auto, night mode for the display is inoperative when lights on. If short to ground: Blows fuse No. B29 (10 A) in under-dash fuse/relay box.
A5	RED	RL PRE+	Outputs sound signal for left rear speaker	———	———
A6	GRN	RL PRE−	Outputs sound signal for left rear speaker	———	———
A7	———	———	Not used	———	———
A8	———	———	Not used	———	———
A9	LT GRN	RR PRE+	Outputs sound signal for right rear speaker	———	———

(cont'd)

System Description (cont'd)

Audio-Navigation Unit Connector A (24P) (cont'd)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
A10	WHT	RR PRE−	Outputs sound signal for right rear speaker	———	———
A11	WHT	REMOTE GND	Ground for audio remote switch	———	———
A12	GRN	SCTY	Security signal form Multiplex integrated control unit (MICU)	———	———
A13	BLU	K-LINE	Detects scan tool signal (serial data)	———	———
A14	———	———	Not used	———	———
A15	YEL	FL PRE+	Outputs sound signal for driver's door speaker and left tweeter	———	———
A16	PNK	FL PRE−	Outputs sound signal for driver's door speaker and left tweeter	———	———
A17	———	———	Not used	———	———
A18	———	———	Not used	———	———
A19	GRN	FR PRE+	Outputs sound signal for passenger's door speaker and right tweeter	———	———
A20	ORN	FR PRE−	Outputs sound signal for passenger's door speaker and right tweeter	———	———
A21	WHT	SWD+B	Outputs voltage for stereo amplifier switching ON/OFF	———	———
A22	PNK	REMOTE SW	Detects voltage for audio remote switch	———	———
A23	BLU	VSP	Inputs vehicle speed pulse from ECM/PCM	Ignition switch ON (II): 0−5 V pulses, 2.5 V average (Depends on vehicle speed)	If open: No vehicle speed pulses. Diagnostic screen Car Status, VSP = 0. If short to ground: No vehicle speed pulses. Diagnostic screen Car Status, VSP = 0.

Audio-Navigation Unit Connector A (24P) (cont'd)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
A24	PUR	ACC	Power source for accessories	Ignition switch ACCESSORY (I): Battery voltage	If open: Display picture goes out (display back light still on). If short to ground: Blows fuse No. B14 (7.5 A) in the under-dash fuse/relay box.

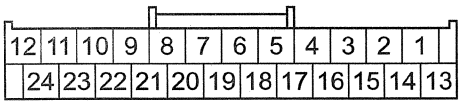
HONDA

(cont'd)

System Description (cont'd)

Audio-Navigation Unit Inputs and Outputs

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Audio-Navigation Unit Connector B (24P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
B1	LT GRN	HFL COMM 4	Communication signal for HFL	———	Solid red HFL icon in System Links
B2	LT BLU	HFL COMM 2	Communication signal for HFL	———	HFL icon in System Links changes between red and green
B3	GRY*	HFL COMM SH	Shield for terminal No. 1, No. 2, No. 13 and No. 14	———	———
B4	RED	TELM SIG−	Inputs sound signal for HFL	———	———
B5	BRN	HFL MUTE	HFL MUTE signal	———	———
B6	———	———	Not used	———	———
B7	———	———	Not used	———	———
B8	———	———	Not used	———	———
B9	———	———	Not used	———	———
B10	WHT	AUX GND	Ground for AUX DET signal	———	———
B11	GRY*	AUX SH GND	Shield for terminals No. 12, No. 23, and No. 24	———	———
B12	BRN	AUX S GND	Ground for AUX signal	———	———
B13	PNK	HFL COMM 3	Communication signal for HFL	———	Solid red HFL icon in System Links
B14	ORN	HFL COMM 1	Communication signal for HFL	———	HFL icon in System Links changes between red and green
B15	———	———	Not used	———	———
B16	GRN	TELM SIG+	Inputs sound signal for HFL	———	———
B17	BLU	HFL ICON	HFL ICON signal	———	———
B18	———	———	Not used	———	———
B19	———	———	Not used	———	———

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

Audio-Navigation Unit Connector B (24P) (cont'd)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
B20	———	———	Not used	———	———
B21	———	———	Not used	———	———
B22	YEL	AUX DET	AUX DET signal	———	———
B23	ORN	AUX RCH	Inputs sound signal for AUX audio right channel	———	———
B24	YEL	AUX LCH	Inputs sound signal for AUX audio left channel	———	———

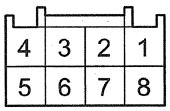
*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

(cont'd)

System Description (cont'd)

Audio-Navigation Unit Inputs and Outputs

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



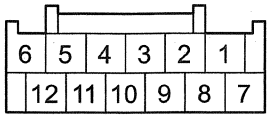
Wire side of female terminals

Audio-Navigation Unit Connector C (8P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
C1	BLK	GND	Ground for audio-navigation unit (G503)	0 V	If open: No effect on system. If short to ground: No effect on system.
C2	———	———	Not used	———	———
C3	———	———	Not used	———	———
C4	PNK	+B BACK UP	Continuous power source	Battery voltage	If open: Display picture goes out (display back light still on). NOTE: System will reboot to enter code screen. If short to ground: Blows fuse No. B1 (15 A) in the under-dash fuse/relay box.
C5	———	———	Not used	———	———
C6	———	———	Not used	———	———
C7	———	———	Not used	———	———
C8	LT GRN	BACK LT	Reverse signal of select lever (CVT model) or shift lever (M/T model) from Multiplex integrated Control unit (MICU)	In reverse: battery voltage, Otherwise: 0 V	If open: Navigation never sees the reverse signal. Diagnostic screen Car Status, Back = 0. If short to ground: Blows fuse No. B5 (10 A) in the under-dash fuse/relay box.

Audio-Navigation Unit Inputs and Outputs

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

Audio-Navigation Unit Connector D (12P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
D1	YEL	AC-SO	Communication signal for climate control unit	0-battery voltage pulses	If open: Voice control of HVAC does not work. If short to ground: Voice control of HVAC does not work.
D2	WHT	AC-SI	Communication signal for climate control unit	———	If open/short: HVAC will not respond to navigation commands.
D3	———	———	Not used	———	———
D4	———	———	Not used	———	———
D5	———	———	Not used	———	———
D6	ORN	HFL-NAVI GUIDE	Detects voltage for HFL-voice control switch	No button pressed: 2.5 V TALK button pressed: 2.2 V BACK button pressed: 1.5 V	If open: Steering wheel navigation TALK, and navigation BACK buttons do not work. If short to ground: Steering wheel navigation TALK, and navigation BACK buttons do not work.
D7	GRY	AC-CLK	Check signal for climate control unit	———	If open/short: HVAC will not respond to navigation commands.
D8	———	———	Not used	———	———
D9	———	———	Not used	———	———
D10	GRY*	MIC SH	Shield for terminals No. 11 and No. 12	0 V	If open: No effect on voice control. If short to ground: No effect on voice control.
D11	RED	MIC SIG+	Inputs sound signal for microphone	4—5 V (Navigation TALK button pressed)	If open/short: Mic icon shown as red in System Links.

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

(cont'd)

System Description (cont'd)

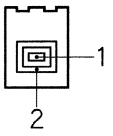
Audio-Navigation Unit Connector D (12P) (cont'd)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
D12	GRN	MIC SIG−	Inputs sound signal for microphone	0 V	If open: Mic icon shown as red in System Links If short to ground: No effect on voice control.

*: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.

Audio-Navigation Unit Inputs and Outputs

AUDIO-NAVIGATION UNIT CONNECTOR H (2P)



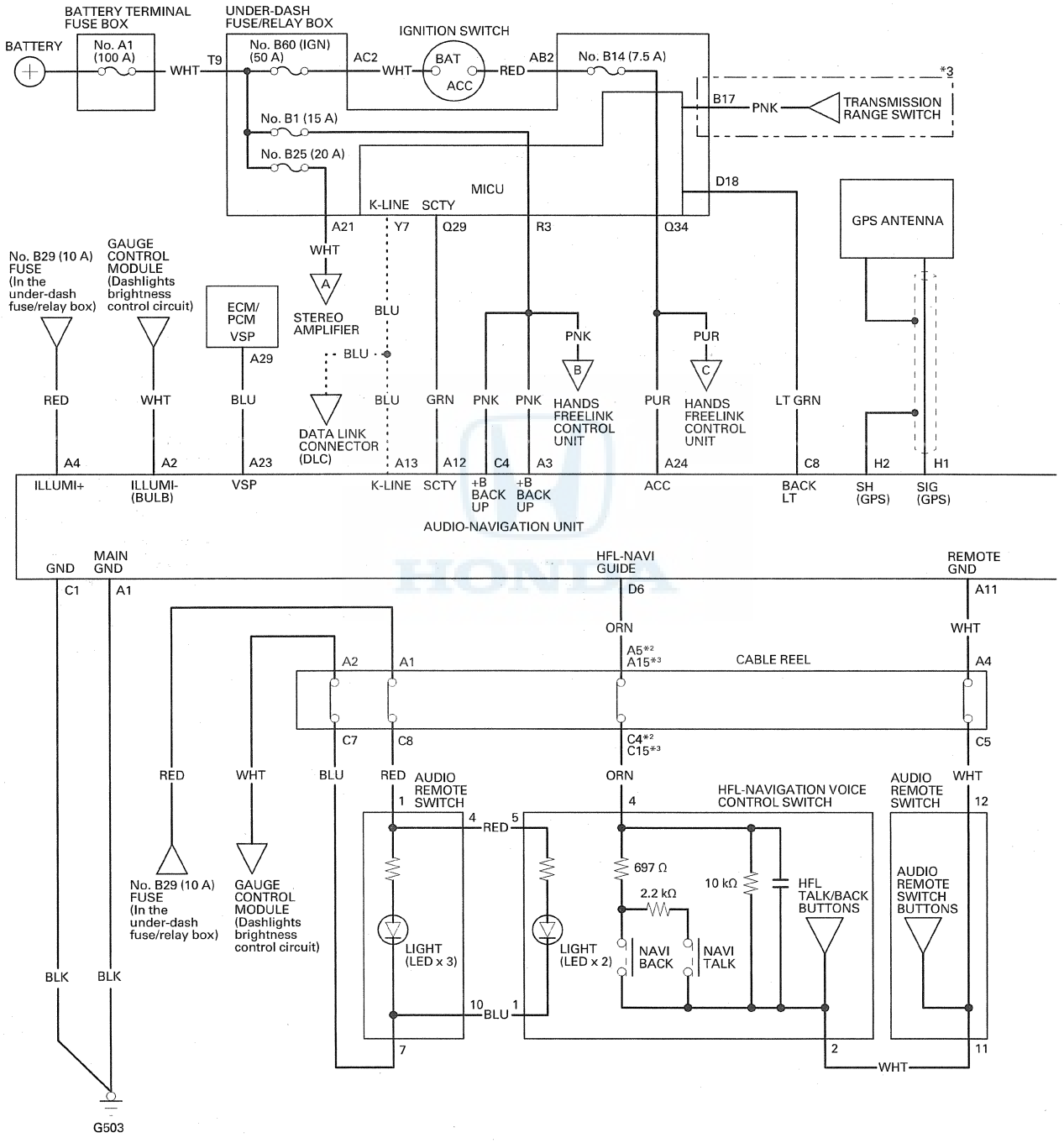
Terminal side of female terminals

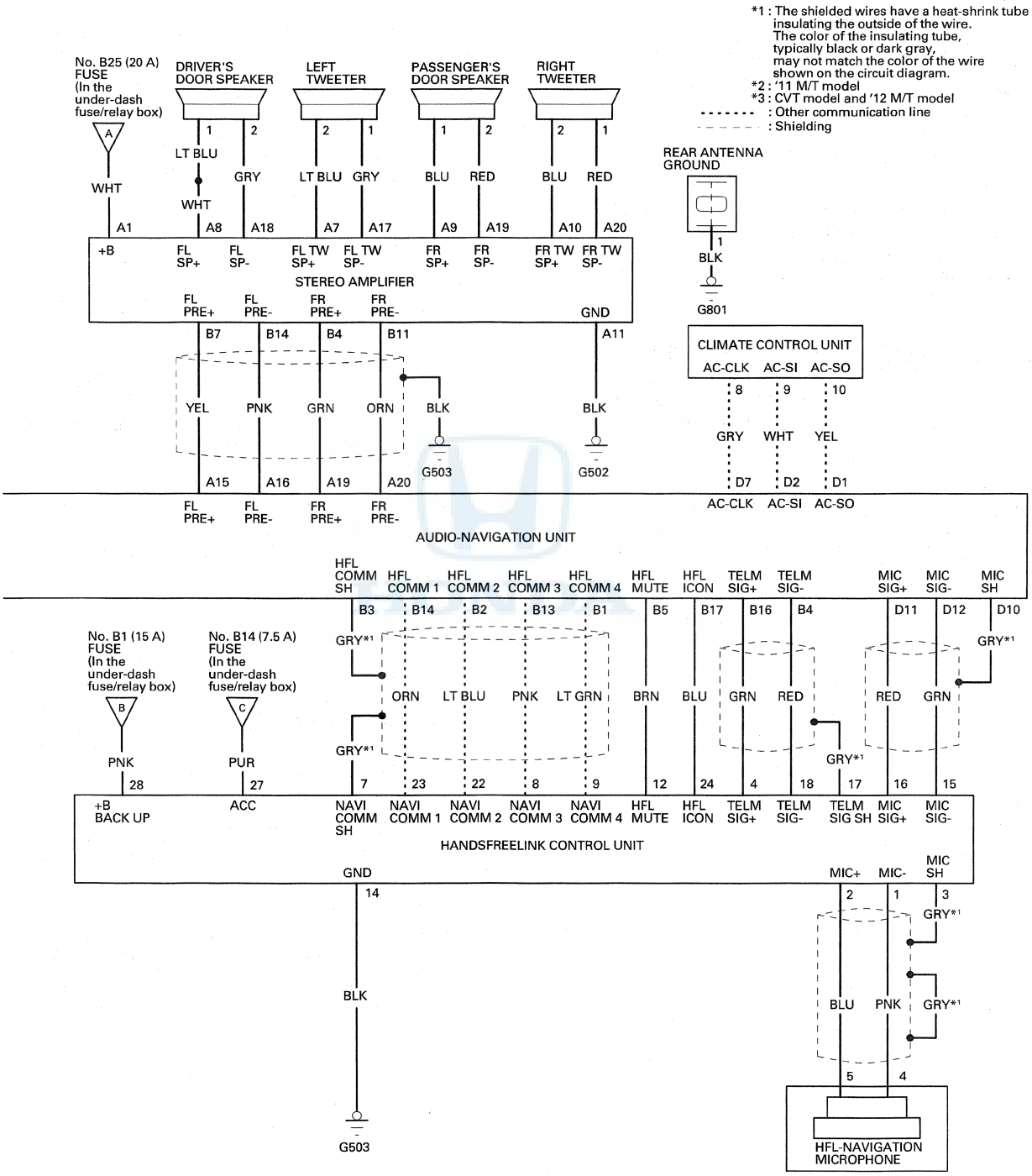
Audio-Navigation Unit Connector H (2P)

Cavity	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
H1	———	SIG (GPS)	GPS signal (5 V in, GPS signal out)	5 V	If open: GPS icon on screen is not shown, System Links screen GPS Ant. shown as red. If short to body ground: Same as open.
H2	———	SH (GPS)	Shield for terminal No. 1	0 V	If open: GPS icon on screen is not shown, System Links screen GPS Ant. shown as red. If short to body ground: No effect on system.

Navigation System

Circuit Diagram




*1 : The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.
*2 : '11 M/T model
*3 : CVT model and '12 M/T model
: Other communication line
: Shielding
No. B25 (20 A) FUSE (In the under-dash fuse/relay box)
DRIVER'S DOOR SPEAKER
LEFT TWEETER
PASSENGER'S DOOR SPEAKER
RIGHT TWEETER
REAR ANTENNA GROUND
WHT
LT BLU
GRY
BLU
RED
BLK
G801
STEREO AMPLIFIER
FL SP+
FL SP-
FL TW SP+
FL TW SP-
FR SP+
FR SP-
FR TW SP+
FR TW SP-
FL PRE+
FL PRE-
FR PRE+
FR PRE-
GND
CLIMATE CONTROL UNIT
AC-CLK
AC-SI
AC-SO
YEL
PNK
GRN
ORN
G503
G502
AUDIO-NAVIGATION UNIT
HFL COMM SH
HFL COMM 1
HFL COMM 2
HFL COMM 3
HFL COMM 4
HFL MUTE
HFL ICON
TELM SIG+
TELM SIG-
MIC SIG+
MIC SIG-
MIC SH
No. B1 (15 A) FUSE (In the under-dash fuse/relay box)
No. B14 (7.5 A) FUSE (In the under-dash fuse/relay box)
PUR
+B BACK UP
ACC
NAVI COMM SH
NAVI COMM 1
NAVI COMM 2
NAVI COMM 3
NAVI COMM 4
TELM SIG SH
HANDSFREELINK CONTROL UNIT
MIC+
MIC-
BLU
HFL-NAVIGATION MICROPHONE

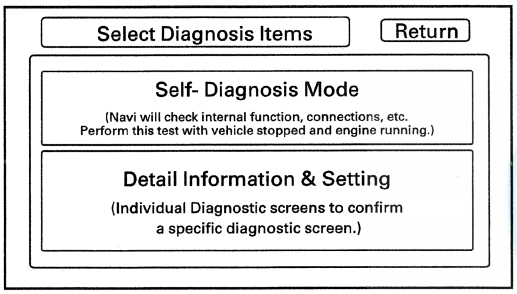
System Diagnostic Mode

Start-Up Procedure and Diagnostic Menu

1. Start the vehicle, and at the disclaimer screen use the navigation display hard buttons as described below:

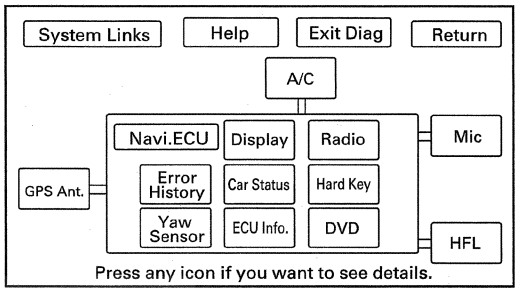
   Make sure the battery is in good condition then press and hold the three buttons (MAP/GUIDE, MENU, and CANCEL), for about 3 seconds. The display screen goes directly to the Select Diagnosis Items menu shown.

   - Self-Diagnosis Mode (runs the automatic diagnosis of the navigation system)
   - Detail Information & Setting (allows you to manually diagnose the navigation system)



System Links

1. Select Self-Diagnosis Mode from the navigation screen main menu. The message at the bottom of the screen flashes indicating the diagnostic is running. Make sure you enter the anti-theft code.



2. Select the icon you want to diagnose. Push in the selector to see the details of that diagnostic function.

   The System Links function runs automatically and displays a flashing message at the bottom of the screen reminding you to have the engine running for the test. The diagnostic tests the following:

   - Most of the wires connecting the external navigation components shown in the block diagram.
   - The results from the various components shown in the block diagram.
   - The microphone is tested by listening to the bong sound produced by the audio-navigation unit from the speakers when the diagnostic is started. This requires that the audio system be operating normally.

   When the diagnostic finishes, the icons turn different colors based on their test status. The color definitions are shown below and can also be seen by selecting Help on the System Links screen.

   The indication on the screen may not change until you exit and reenter the Self-Diagnosis Mode. In some cases, you may have to restart the engine for the indication to change. After you repair the affected component or harness, repeat this diagnostic.

Each icon color is explained in the table.

Icon Colors	Description
Green	The system ran a diagnosis and the results are OK.
Red	Errors that require replacement of hardware or harness. Examples are connection error or memory diagnosis errors. Troubleshoot for DTCs.
Yellow	Errors that don't require hardware replacement, such as an open display cover, an incorrect DVD, leaving the vehicle in ACCESSORY (I), an open ground or mic wire, or because of a missing accessory.
White	The diagnosis is running. The screen functions are locked out while the diagnosis runs.
Gray	The system cannot automatically check this function. You have to select the diagnosis item and manually do additional testing, like checking the navigation buttons in the Hard Key test. When you complete the Hard Key test and return to the System Links menu, the gray icon turns green.

NOTE: By selecting the HELP icon, you can see a description for each color.

(cont'd)

System Diagnostic Mode (cont'd)

Icon Color Information

Icon	Icon Color				
	GREEN	RED	YELLOW	WHITE	GRAY
Display	Result of Connection under the Display diagnosis menu is OK.	Result of Connection under the Display diagnosis menu is NG.	——	Executing (Not completed)	——
Radio	Result of Connection under the Radio diagnosis menu is OK.	Result of Connection under the Radio diagnosis menu is NG.	——	Executing (Not completed)	——
GPS Ant.	All result of Antenna and Receiver in NAVI ECU is OK.	Any result of Antenna and Receiver in NAVI ECU is NG.	——	Executing (Not completed)	——
A/C*	Result of Connection under the Aircon diagnosis menu is OK while Ignition is ON.	Result of Connection under the Aircon diagnosis menu is NG while Ignition is ON.	While Ignition is OFF.	Executing (Not completed)	——
HFL	Result of Connection under the HFL diagnosis menu is OK.	Result of Connection under the HFL diagnosis menu is NG.	——	Executing (Not completed)	——
Mic	The microphone detect the sound Pi-Pi-Pon at the system link menu.	The microphone could not detects the sound Pi-Pi-Pon at the system link menu.	——	Executing (Not completed)	——
ECU Info.	Both V-RAM or D-RAM is OK, and all Program Flash, Serial No., Model is available, and the DVD lid is closed.	Either the V-RAM or D-RAM is NG, or any of the Program Flash, Serial No., Model is unavailable.	DVD lid is opened.	Executing (Not completed)	——
Hard Key	All buttons are pressed and are detected under Hard key menu.	All buttons are not pressed or pressed but not detected under Hard key menu, or exit from Hard key menu without the button not detected.	——	——	Until changing to Hard key menu.
Error History	——	——	Hard Error or Soft Error is detected under Error History menu.	Executing (Not completed)	Hard Error or Soft Error is not detected under Error History menu.

*: DTC 2703 can be stored when the ignition switch is in ACCESSORY (I). When the ignition switch is in ACCESSORY (I), and the climate control unit is turned off, the audio-navigation unit loses communication and stores DTCs. It is possible that the system is normal with DTC 2703 stored. Check the System Links with the engine running, and if it shows normal, the system is OK at this time.

Icon	Icon Color				
	GREEN	RED	YELLOW	WHITE	GRAY
DVD	DVD mechanism is normal and the proper navigation DVD is installed.	——	Improper navigation DVD is installed, or navigation DVD is not installed, or cannot identify software version from the navigation DVD or internal mechanism failure.	Executing (Not completed)	——
Yaw Sensor	Result of the Yaw Sensor diagnosis menu is OK.	Result of the Yaw Sensor diagnosis menu is NG.	Result of the Zero Point Output under the Yaw Sensor diagnosis menu is NO CHECK.	Executing (Not completed)	——
Car Status	——	——	——	——	Check these systems manually.

*: DTC 2703 can be stored when the ignition switch is in ACCESSORY (I). When the ignition switch is in ACCESSORY (I), and the climate control unit is turned off, the audio-navigation unit loses communication and stores DTCs. It is possible that the system is normal with DTC 2703 stored. Check the System Links with the engine running, and if it shows normal, the system is OK at this time.

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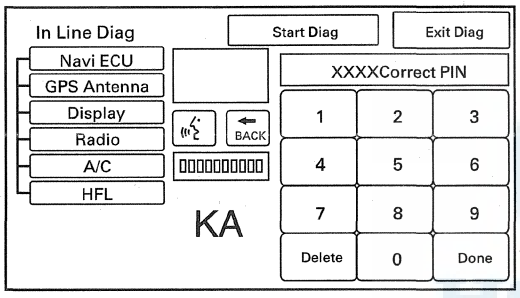
System Diagnostic Mode (cont'd)

Factory Diagnostic Screen In Line Diag

NOTE: If the vehicle left the factory in the factory diagnostic mode, you will see this screen every time you turn on the ignition. Sometimes this screen also appears after you replace the audio-navigation unit with a new or remanufactured unit.

When an audio-navigation unit is powered up for the first time at the factory, the factory diagnosis screen (In Line Diag) appears. Normally the factory does the steps necessary to verify proper operation and terminate the factory diagnostic.

Until the proper confirmation sequence is done, the screen appears every time the vehicle is started.



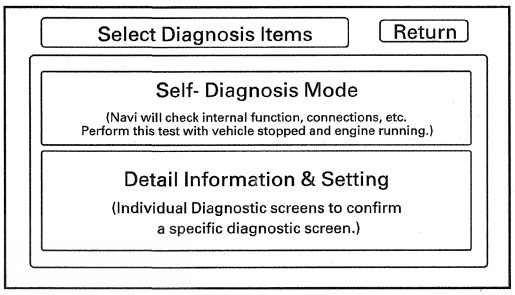
Follow the steps below to prevent the screen from showing up in the future:

- Press and hold the MENU, the MAP/GUIDE, and the CANCEL buttons for about 3 seconds. The Select Diagnosis items screen appears.
- Press and hold the MAP/GUIDE button for 5—10 seconds. A screen with a Complete button appears.
- Press complete, then Return, and then turn the ignition switch to LOCK (0) for 5 seconds. Do not disconnect the battery during this period as the unit is saving the setting to the SRAM memory. The In Line Diag should not appear again.
- Restart the vehicle, and confirm normal operation by completing PDI of the Navigation System Service Bulletin.

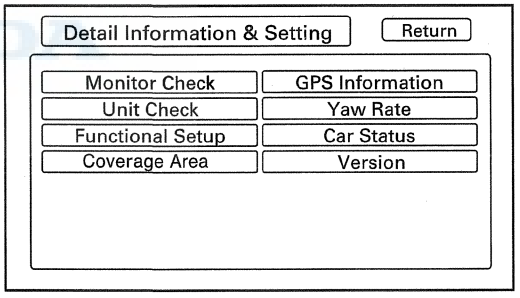
Detailed Information & Settings

This section allows you to run a specific diagnostic and allows additional setting choices for some screens that are not shown when selecting an icon from the System Links screen.

When you select the menu item Detail Information & Setting menu, the main diagnosis menu is displayed.



After the display changes to the Diagnostic Menu, select the item you want to check, and the test begins. To return to the previous screen, select Return.



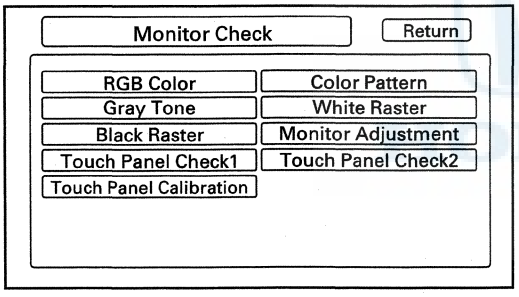
Monitor Check

Overview of navigation display.

The illumination input from the gauge brightness control with the headlights on provides back lighting for the buttons surrounding the screen.

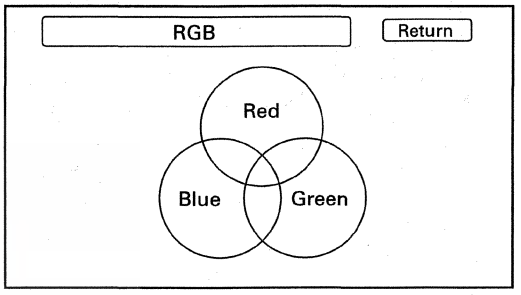
These screens allow you to troubleshoot the navigation display. Select the item you want to troubleshoot, and follow the diagnostic instructions.

- RGB Color
- Gray Tone
- Black Raster
- Touch Panel Check 1
- Touch Panel Calibration
- Color Pattern
- White Raster
- Monitor Adjustment
- Touch Panel Check 2



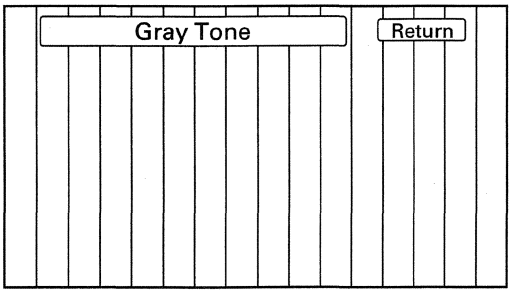
RGB Color

This screen verifies that the navigation display is receiving the video (R, G, B and Composite sync) signals properly. The three primary colors should all appear without distortion. The combination of all three should produce a central white section. If the picture has lines in it, or scrolls horizontally or vertically, and any of the colors are missing, troubleshoot for the color signal. If the picture has lines in it or scrolls horizontally, or vertically, troubleshoot for a Composite sync problem (see page 23-223).



Gray Tone

This screen diagnoses problems with contrast. You should be able to see the changes from bar to bar across the scale. It is normal for the two bars on either side to appear the same. If you can't see changes from bar to bar, replace the audio-navigation unit (see page 23-232).

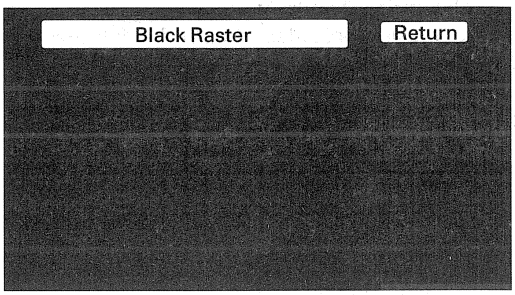


(cont'd)

System Diagnostic Mode (cont'd)

Black Raster

This diagnostic screen checks for pixels that may be stuck on. The entire display must be black. If pixels are stuck on, replace the audio-navigation unit (see page 23-232).

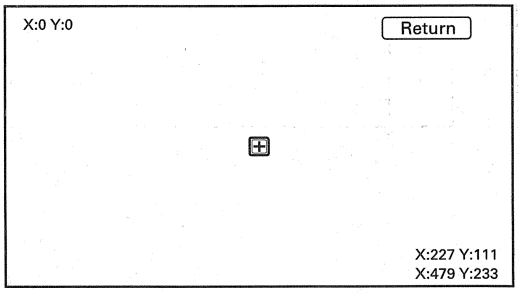


Touch Panel Check 1

The panel touch sensing system consists of a touch sensitive resistive membrane covering the display. The screen has to be physically touched to make it work. The display has the capability of 479 touch locations (left to right), and 233 touch locations (top to bottom). The upper left hand corner is position (0, 0) and the lower right hand corner is (479, 233) as displayed. Touching anywhere on the screen displays the coordinate of the location, and cause the place you touch to display a + icon. If any area of the screen either doesn't respond, or responds at some other location when touched, then replace the audio-navigation unit (see page 23-232).

NOTE:

- Unlike earlier screens that used infrared sensors, direct sunlight does not affect this test.
- A box appears after you touch the screen.

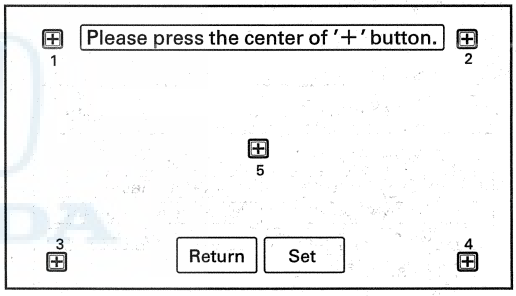


Touch Panel Calibration

The display screen uses a touch sensitive membrane. This means that every location of the entire surface of the display is touch sensitive. This diagnostic allows alignment of these touch locations with the location of the buttons images on the screen.

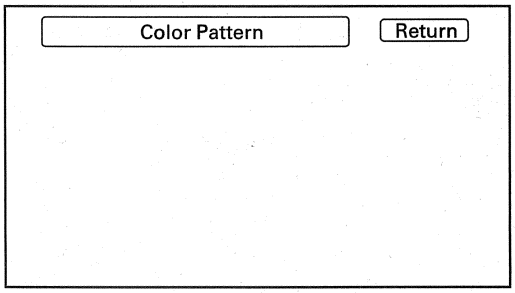
This should never need adjustment, and is used only by the factory to adjust the touch locations for parallax (the touch locations appear different when viewed at an angle). If you are directed to make an adjustment by the factory or other service information, follow this procedure:

- The screen consists of the + button icons. Touch the center of the five + buttons on order 1–5.
- To store any change you make, touch the Set button.
- Use the Return key to exit the diagnostic.



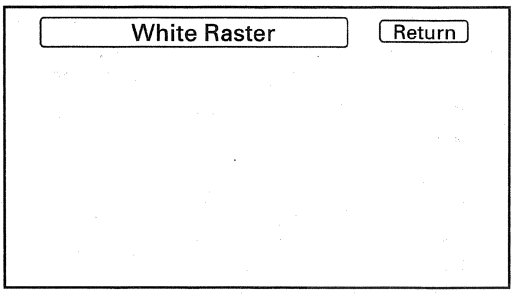
Color Pattern

The chart below shows the colors being used for the map and menu screens. This is for factory use only. To check the color signal, use the RGB Color diagnostic found under the Monitor Check.



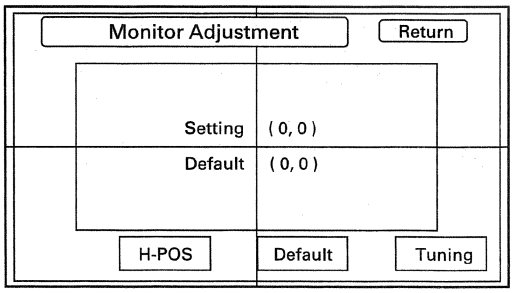
White Raster

This diagnostic screen checks for pixels that may be dead (off). The entire display must be white. If there are dead pixels, replace the audio-navigation unit (see page 23-232).



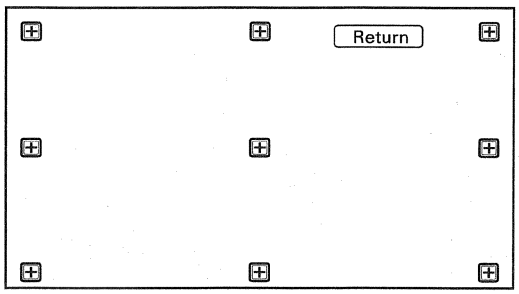
Monitor Adjustment

This allows you to center the navigation display. This is for factory use. Use this procedure only if you are directed by the factory, or other service information like a service bulletin, use the joystick to move the picture up/down or left/right. It is unlikely that you will ever need to adjust the monitor position. The Default button will reset the display position to factory specifications. The factory default is (0, 0). The H-POS button is for factory use only.



Touch Panel Check 2

If you touch any icons on the screen, the icon color changes while pressing the icon. If any icons on the screen don't respond, replace the audio-navigation unit (see page 23-232).



(cont'd)

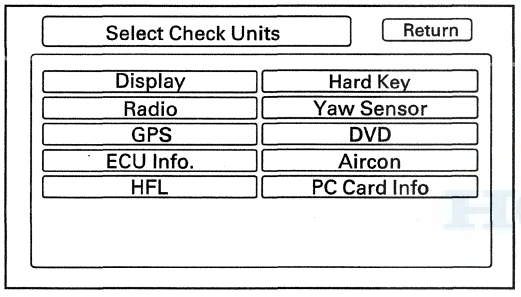
System Diagnostic Mode (cont'd)

Unit Check (Quick Check)

Some of the tests and screens that are displayed under the Unit Check are different from the more detailed checks listed in other areas of this service manual.

To start the test, select the item you want to check.

- Display
- Radio
- GPS
- ECU Info.
- HFL
- Hard Key
- Yaw Sensor
- DVD
- Aircon
- PC Card Info

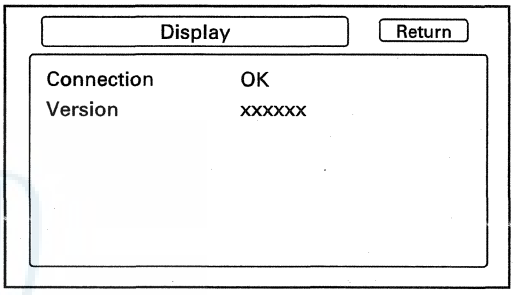


Display

This diagnosis does additional checks on the communication bus between the navigation CPU and the navigation display. In addition, this test checks the internal electronic functions and the touch screen operation.

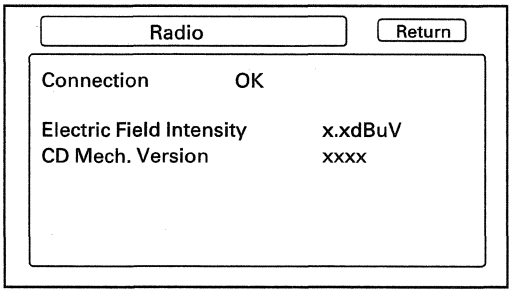
If the connection is NG, replace the audio-navigation unit (see page 23-232).

- Connection verifies internal communications.
- Version represents the software version for the display.



Radio

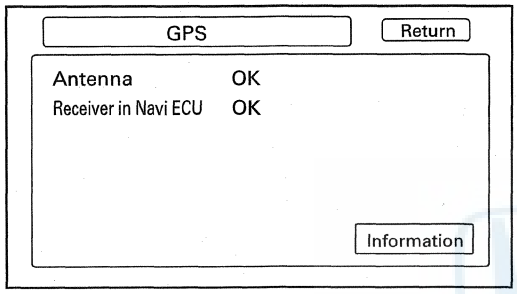
This diagnostic screen checks the internals of the radio (AM and FM) and the CD player. If NG, replace the audio-navigation unit (see page 23-232).



GPS

If GPS indicates NG (Antenna), then check the entire GPS antenna wire from the audio-navigation unit to the GPS antenna. If the wire is crushed or damaged, substitute a known-good GPS antenna (see page 23-236). If the diagnostic reads OK, replace the original GPS antenna (see page 23-236). If the diagnostic still reads NG (Antenna), replace the audio-navigation unit (see page 23-232).

Select information to see the GPS satellite details.

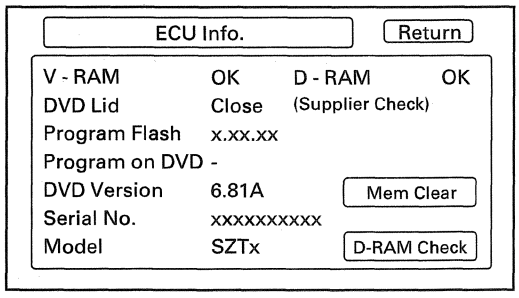


ECU Info.

This screen looks for problems in the audio-navigation unit. When you initiate this diagnosis, the audio-navigation unit may freeze or delay up to a minute while the diagnosis runs.

NOTE: Do not try to end this diagnostic by pressing OK or Mem Clear before it finishes, otherwise the system may reboot.

- If V-RAM or D-RAM is NG, replace the audio-navigation unit (see page 23-232).
- DVD lid displays the position of the audio-navigation unit lid.
- Program Flash: Displays the version of the navigation software in memory.
- Program on DVD: If displayed, this value represents the version of the navigation software on the navigation DVD.
- DVD version represents the database version on the DVD. You can find this information in either the Setup Screen Version, or in the Diagnostic Screen Version.
- Serial No. should be the same as the serial number found on the underside of the audio-navigation unit. You need this number to obtain the security code from the Interactive Network (iN) system.
- Model: For this model, the field should begin with SZT.
- Mem Clear is used to initialize the memory in the navigation ECU, and to delete the old data program completely. Do not select Mem Clear except when using the Download procedure in Version. Selecting this will clear the customer's settings, personal information, GPS orbital data, and anything else stored in memory.

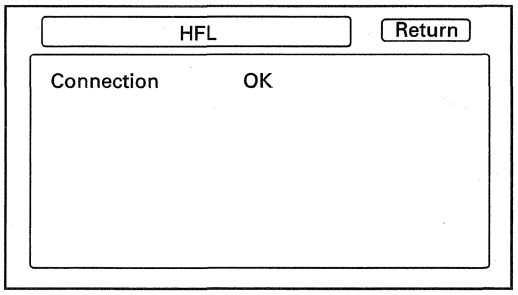


(cont'd)

System Diagnostic Mode (cont'd)

HFL

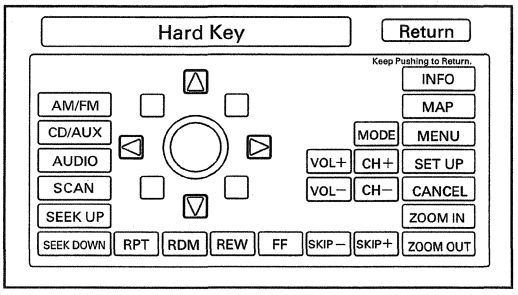
This checks the four-wire communication bus between the HandsFreeLink control unit and the audio-navigation unit.



Hard Key

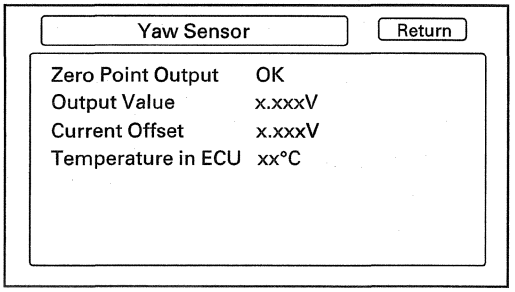
This diagnostic screen checks the status of each of the hard buttons surrounding the navigation display. When you press each hard button, the corresponding item on the screen should flash blue. Touch the return key, or press and hold the joystick to exit.

NOTE: It is normal for the VOL (+, −), CH (+, −) and MODE button to be inactive. Press the steering wheel remote buttons VOL (+, −), CH (+, −) and MODE to check their status on the screen.



Yaw Sensor

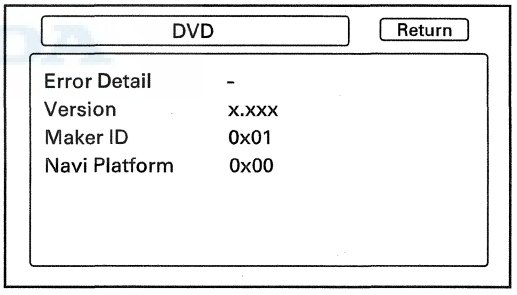
This screen gives a quick test of the yaw sensor functionality based on the two voltages Sensor and Offset. For more information see the Yaw Rate diagnostic.



DVD

This diagnostic tests the navigation DVD reader.

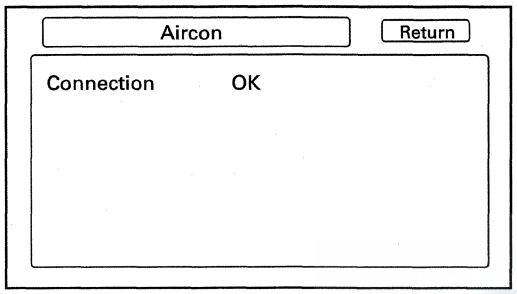
NOTE: If this test fails, remove the navigation DVD, clean it, and retest before ordering a new navigation DVD.



Aircon

This diagnostic tests the climate bus connection (AC-SI and AC-SO) between the audio-navigation unit and climate control unit. Make sure the engine is running for this test.

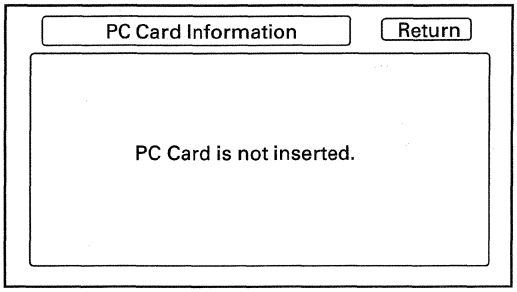
NOTE: If this test is run with the ignition switch in ACCESSORY (I), the result will be NG.



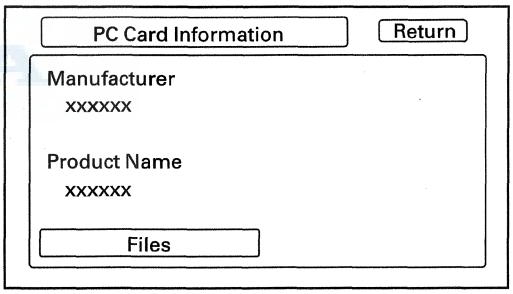
PC Card info.

There is no PC Card in the PC slot, and the screen should display, PC Card is not inserted.

NOTE: Do not insert any card or object into the slot.



If the factory provides a PC card and instructs you to insert it, the screen displays the Manufacturer, and Product Name as shown in the following screen. Follow the instructions provided by the factory to complete the test.



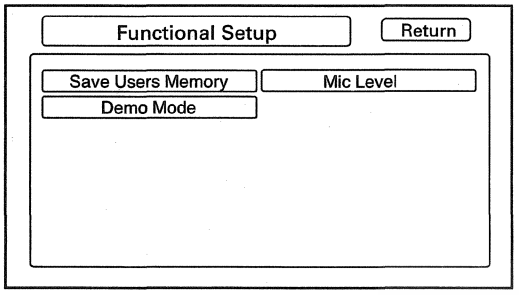
(cont'd)

System Diagnostic Mode (cont'd)

Functional Setup

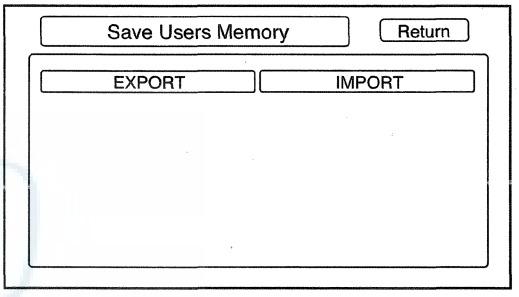
Select the item you want to check.

- Save Users Memory
- Demo Mode
- Mic Level



Save Users Memory

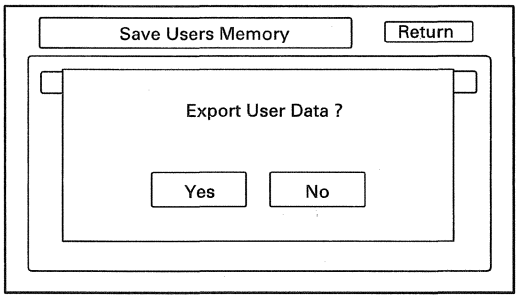
When replacing the audio-navigation unit, this function allows the technician to transfer the customer's personal data to the new audio-navigation unit. The transferred information includes customer setup settings and personal addresses. The dealer inserts a PC card into the audio-navigation unit, and then selects the Save Users Memory function. The two functions in this diagnostic screen are EXPORT and IMPORT. EXPORT saves the customer's data to the PC card, and IMPORT moves the PC card files to the new audio-navigation unit.
You need to insert a PC card for these functions to work.



Before starting this function, see the PC Card FAQs for information regarding PC cards, and how to use this function.

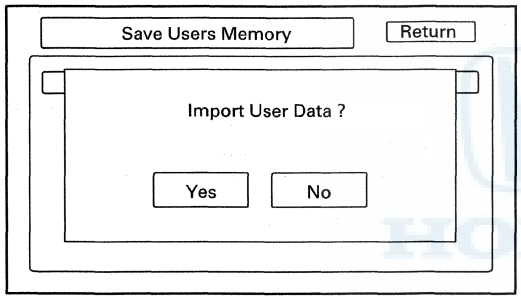
1. Select the EXPORT button to move the customer's data from the original audio-navigation unit to the PC card. YES on the Export User Data Confirmation screen. The process takes only a couple of seconds. The system stores two files on the card.

   NOTE: If the EXPORT button is grayed out, check the PC card's edge connector, and the pins inside the audio-navigation unit (with a flashlight) for damage.



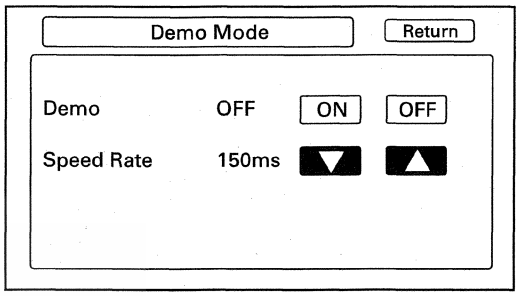
2. After installing the customer's original navigation DVD in the new audio-navigation unit, allow the system to boot up. Insert the PC card into the new audio-navigation unit and enter the Save Users Memory in the navigation system diagnostic mode.
3. Select the IMPORT button to move the two files stored by the Export process from the PC card to the new audio-navigation unit. Select YES on the Import User Data Confirmation screen. When the transfer is finished (a few seconds) the system automatically reboots. After the system reboots, remove the PC card from the PC slot.

   NOTE: If the IMPORT button is grayed out, check if the Model and the Program Flash shown on the Version screen are the same for the two (original and replacement) audio-navigation unit.



Demo Mode

This screen is for factory use only, and should always be set to OFF. Occasionally the DEMO setting is turned ON when vehicles are being used at Auto Shows or similar events. Turning this feature on, allows the navigation system to automatically follow a route to a destination when the vehicle is stationary. The Speed Rate changes the speed of the demo mode.



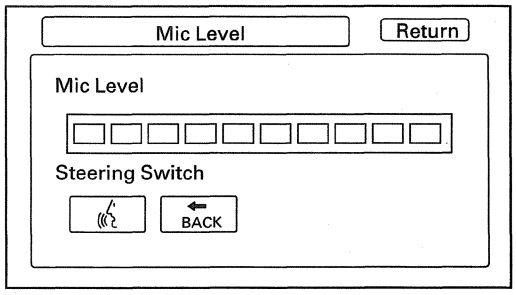
(cont'd)

System Diagnostic Mode (cont'd)

Mic Level

This diagnostic allows you to independently test the microphone and the navigation TALK and navigation BACK buttons. They are used to activate the voice control system. The microphone is located near the map light on the ceiling. The microphone can now isolate the driver's voice even when there is noise or other conversations in the vehicle. To properly check the microphones, make sure you are sitting in the driver's seat.

- Press the navigation TALK button on the steering wheel, wait until you hear a beep, and in a normal voice say "testing." The TALK indicator on the screen should momentarily turn green, and the text Now Recording... should appear in yellow. If the talk indicator shown on the screen does not briefly turn green, check the wiring from the steering wheel navigation TALK button to the audio-navigation unit. If there is no Mic Level movement when you speak, then you should check the wires running from the microphone to the HandsFreeLink control unit and the audio-navigation unit. If the wires are OK, the microphone must be faulty; replace the microphone (see page 23-236).
- Press the navigation BACK button on the steering wheel. This should cause the Cancel indicator on the screen to momentarily turn green. If it does not briefly turn green, check the wiring from the steering wheel navigation BACK button to the audio-navigation unit.

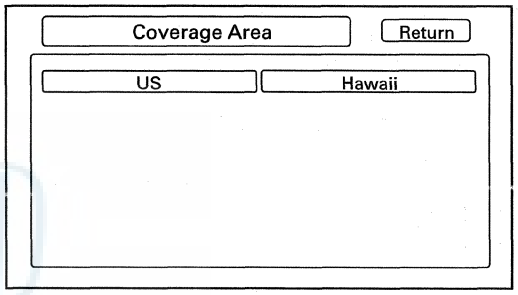


Coverage Area

This screen allows the dealer to select the area that applies to their location. The choice is US (continental) or Hawaii. The default is US. Select the coverage area (the system may reboot), exit the diagnostic mode, and restart the vehicle.

If a customer relocates a vehicle from the US mainland to Hawaii, or from Hawaii to the US mainland, you need to change the coverage area to display the correct maps.

NOTE: This function operates only when the vehicle is physically located in the coverage area you select.

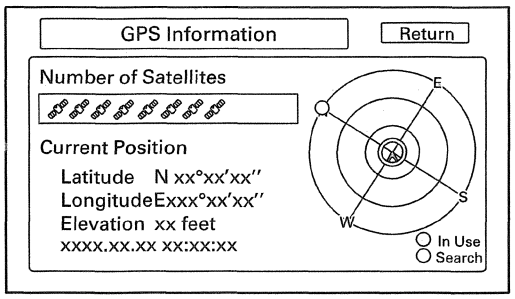


GPS Information

This screen shows the current status of GPS reception. The circular diagram shows the current location of the GPS satellites (yellow numbers) as they would appear in the sky. The outer circle represents the horizon (0 degrees elevation). The middle and inner circles represents 30 and 60 degrees respectively. The very center of the diagram (90 degrees elevation) is directly overhead. Nearby obstructions, like tall buildings will block satellites in that direction. That is why it is necessary to be in an open area to effectively troubleshoot GPS reception issues. The satellite numbers shown on the diagram correspond to the PRN number in the GPS Detail screen. There are always at least 24 active GPS satellites in orbit. Because satellites fail, and have to be removed from service, spares are always parked in orbit, ready to be activated. This is why the PRN (satellite ID number) can be greater than 24.

NOTE: When you use this screen for troubleshooting, park the vehicle outside, away from buildings, tall trees, and high-tension wires for at least 10 minutes with the engine running.

- The Number of Satellites box shows the number of acquired satellites (maximum of 12). It should contain three or more icons. If not, go to GPS icon is white or not shown troubleshooting (see page 23-219).
- The Current Position shows latitude, longitude, and elevation (in feet). If there are less than four satellites, the elevation can be grossly inaccurate.
- The Date/Time field shows the current date, and also a time that includes daylight saving and other offsets entered by the customer in Setup screen 2 Adjust Time Zone/Clock.

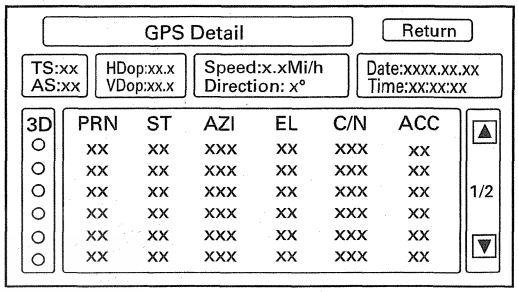


NOTE: Pressing the map/guide button displays the satellite number on each circle.

GPS Detail

By pressing and holding the MENU button for 2 seconds, a GPS Detail screen appears. This screen displays real time incoming satellite positional data when the vehicle is outside in the open. The information shown on this screen is for factory use.

NOTE: The data shown is an example only.



- The box TS/AS and H Dop/V Dop is for factory use.
- The Speed and Direction information is updated in real time when driving.
- The Date/Time Information is the same as in Setup screen 2 Adjust Time Zone/Clock.
- If the 3D icon is shown above the yellow dots, this implies that at least four satellites are available for map positioning, and the GPS indicator on the map screen will be green. See the Global Positioning System detailed explanation in the System Description.
- If the row of data in the table below begins with a yellow dot, the AZI and EL fields can be used to locate each satellite on the circular GPS diagram (see prior screen).

(cont'd)

System Diagnostic Mode (cont'd)

NOTE: The table of values defines the terms at the top of the columns in the GPS Detail screen.

Column	Description	Problem indication
3D	Active satellites (Yellow Dot)	If 3D or 2D is missing when the vehicle is parked outside, follow GPS icon is white or not shown troubleshooting (see page 23-219).
PRN	The satellite ID number	
ST	The status: 0 = cannot view or searching, 2 = acquiring	If all 0, then, follow GPS icon is white or not shown troubleshooting (see page 23-219).
AZI	Azimuth, the angle (0—360) clockwise from north	
EL	Elevation from the horizon (90 deg is overhead)	
C/N	Receiver sensitivity	Normal signal is 49-52, no signal: 27-33
ACC	Satellite accuracy	
△ 1/2 or 2/2 ▽	Shows view of all satellites in two screen views 1/2 or 2/2	

Yaw Rate

This diagnostic checks the yaw rate sensor in the audio-navigation unit. This device detects when the vehicle turns, and repositions the vehicle position icon on the map screen. For more detailed information, see the yaw rate sensor theory of operation under System Description (see page 23-153).

- Sensor indicates the voltage output from the yaw rate sensor. It should indicate about 2.500 V when the vehicle is stopped.
- Offset is the reference voltage or standard within the yaw rate sensor. It also should indicate about 2.500 V when the vehicle is stopped.
- A sensor output voltage LOWER than the Offset voltage indicates that the vehicle is turning to the right.

  A sensor output voltage HIGHER than the Offset voltage indicates that the vehicle is turning to the left.
- The yaw rate offset, and sensor should both indicate about 2.500 V when the vehicle is stopped. If either reads zero, or 5.000 V, replace the audio-navigation unit (see page 23-232).
- The yaw rate offset and sensor should be within +/—0.01 V of each other when the vehicle is stopped. The sensor value should change relative to the offset as the vehicle turns while driving. If not, replace the audio-navigation unit (see page 23-232).

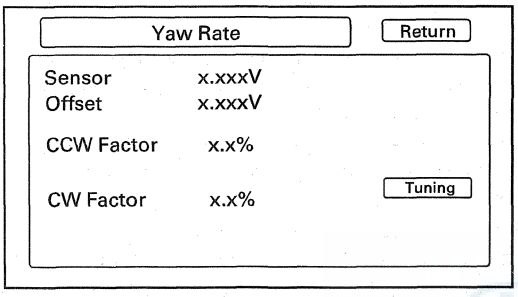
Example: Vehicle stopped

Normal		**Abnormal**	
Offset	2.526 V	Offset	2.526 V
Sensor	2.516—2.536 V	Sensor	2.623 V

Example: Vehicle turning

Normal		**Abnormal**	
Offset	2.526 V	Offset	2.526 V
Sensor	2.678 V (left turn) 2.478 V (right turn)	Sensor	2.623 V (no change on turns)

- Sensitivity study represents the status of the internal tuning function. At initialization, this value starts at 6 and increases to 10 as the internal correction values become more accurate.
- The settings CCW Cal Factor, CW Cal Factor, and Set are for factory use only. THIS SHOULD NEVER BE ADJUSTED.
- For detailed analysis of the yaw rate select tuning.



Yaw Rate Tuning

This diagnostic allows you to graphically display problems with the yaw rate sensor.

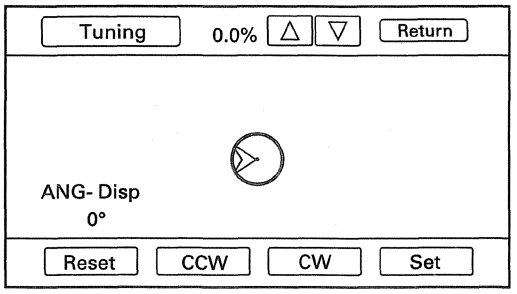
- The ANG-Disp value accumulates any differences between the offset and sensor voltages (see Yaw Rate diagnostic). When the sensor functions properly, the random changes in these two voltages generally cancels out, so the value is 0. However if one voltage is consistently higher than the other, then the ANG-Disp value accumulates the constant change.
- The Reset button temporarily clears the angular accumulation (ANG-Disp), and clears the display dots.
- Do not touch the CCW, CW, or Set buttons. These are used for factory setup only.

Two tests are explained below. For large problems with the sensor values, the stationary test usually confirms whether the sensor is defective. For yaw rate issues related to driving, do the road test.

1. Stationary test: If the VP icon spins in place and the ANG-Disp value slowly increases or decreases in value, the yaw rate sensor is defective. Replace the audio-navigation unit (see page 23-232).
2. Road test: Drive the vehicle on a very straight road. Enter the diagnostic mode, select Yaw rate, and touch the Tuning button. While driving down a straight road, the white dots should trace a straight line across the screen. However, if you are driving on a straight road, and you notice the dots constantly dropping down or heading up as you drive, the audio-navigation unit's yaw rate sensor is defective. You can touch Reset to clear ANG-Disp, and dotted lines.

   If either test above fails, please enter Yaw rate sensor defective for the problem description, on the Navigation core return form.

   NOTE: The CCW, CW, and Set buttons are disabled and cannot be activated.



(cont'd)

System Diagnostic Mode (cont'd)

Car Status

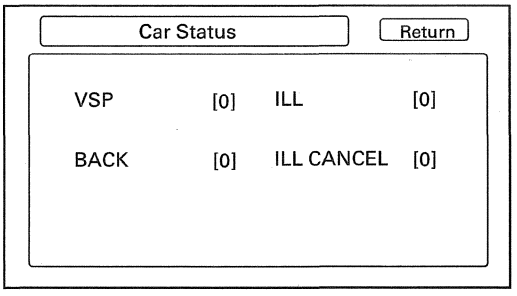
Use this screen to confirm that the audio-navigation unit is properly receiving input signals. Signals equal to (0) are OFF, and signals equal to (1) are ON. If the value on the display does not match the actual vehicle status, then check the wire carrying the signal.

- VSP-Vehicle Speed Pulse from the ECM/PCM (audio-navigation unit connector A (24P) terminal No. 23)
  a) OFF (0) when vehicle is not moving
  b) ON (1) when vehicle is moving

The VSP comes from the ECM/PCM as a dedicated signal. Internally, the audio-navigation unit compares the actual VP on the map against street data to adjust the pulse to speed scaling factor. As this scaling factor becomes more accurate, the Level gradually increases from 0 to 10.

- BACK-Reverse indication from taillight relay (audio-navigation unit connector C (8P) terminal No. 8)
  a) OFF (0) when the shift lever is in any position other than reverse
  b) ON (1) when the shift lever is in reverse

The Back signal is used by the audio-navigation unit to allow the map screen to show the VP moving backwards when in reverse. This signal is needed because the Speed Pulse does not indicate direction.



- ILL-Illumination Indication (audio-navigation unit connector A (24P) terminal No. 4)
  a) OFF (0) when parking lights, or headlights are off
  b) ON (1) when parking lights, or headlights are on

The navigation uses the signal to determine whether to put the navigation screen into the Day or Night brightness mode (Setup screen 1).

- ILL CANCEL
  This item detects whether the illumination cancel function is in use.
  a) OFF (0) when the dashlights brightness control button is less than 90 % brightness with the headlights turned on.
  b) ON (1) when the dashlights brightness control button is more than 90 % brightness with the headlights turned on.

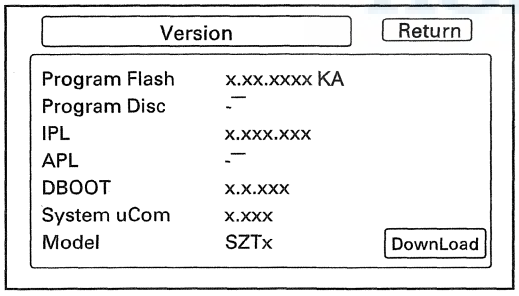
Version

This screen displays the current version information for the navigation system software. In addition, this screen allows the loading of updated software if requested by the factory, or instructed by a Service Bulletin. Software may be loaded from a CD or a PC card.

- Program Flash: Displays the version of the navigation software in memory.
- Program Disc: If displayed, this value represents the version of the navigation software on the navigation DVD.

  NOTE: The last two letters of the Program Flash or DVD fields indicate which DVD is installed in the unit. The letters KA imply that a United States DVD is installed. If the letters are KC, then a Canada DVD is installed. (See coverage discussion below.)
- IPL, APL, DBOOT, and System uCom, are all for factory use.
- Model: For this model, the field should begin with SZT.
- Download: Do not touch, unless instructed by the factory.

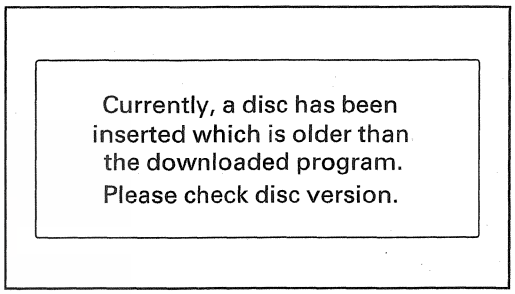
  Check any official Honda service website for more service information about navigation DVDs.



The navigation system uses a turquoise disc that is for the US market and contains maps for the contiguous 48 US states, and some southern portions of Canada. Customers wanting additional northern coverage in Canada, can purchase a Canada DVD by contacting the DVD fulfillment desk.

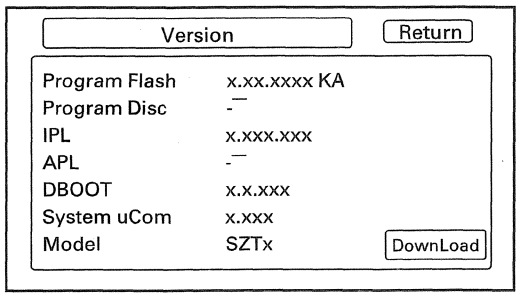
An older navigation DVD cannot be used in a audio-navigation unit that is uploaded with newer software. You may see this error if you order a new audio-navigation unit as it may arrive with a higher software version loaded into its memory.

You may also see this error if a customer inserted a newer navigation DVD into their unit. This is why it is never recommended that you show a customer a new navigation DVD by inserting it into their current vehicle. Once the newer software is uploaded, they will see an error message when they reinstall their original navigation DVD.



If you need to Download (install) an older software version into the audio-navigation unit, do this:

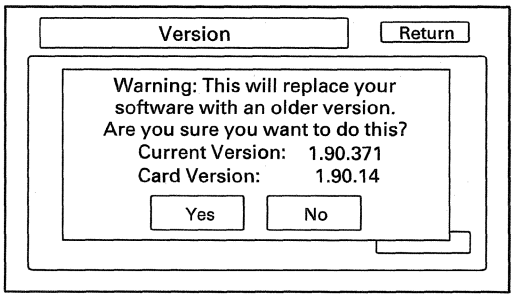
1. Install the original navigation DVD from the original navigation unit into the new audio-navigation unit.
2. Select DownLoad in the Version menu. The confirmation screen appears.



(cont'd)

System Diagnostic Mode (cont'd)

3. Select YES on the confirmation screen. The navigation system reboots.



4. After the navigation system reboots, go into the System Diagnostic Mode and select ECU Info. diagnosis, then select Mem Clear. The navigation system reboots.

   NOTE: This step is necessary to delete all of the unwanted software version and to initialize the navigation ECU memory. Do not use Mem Clear except when doing this procedure.

5. Check that the navigation display shows the map properly.

PC Card FAQs

Question	Answer
Where do we buy the flash memory or adaptors, and what do we ask for?	You need a PCMCIA type II adaptor and a flash memory chip. You can purchase them at a computer, or office supply store. The card is the same size and shape as the PC card in the HDS. Adaptors that accept multiple flash types are not recommended.
What memory flash chips will work with what adaptors?	The flash memory devices that have been tested include Compact Flash (CF), and ATA style (like the card in the HDS). Other card types and flash memory chips may work, but have not been tested.
What capacity card do I need for this function?	A memory chip with capacity of 64 MB to 2 GB will work. The two files moved to the PC card during export are less than a megabyte in size.
Should the dealer have a dedicated PC card for the Export and Import navigation function?	Yes, treat the PC card as a dedicated special tool that you can use any time you need to transfer the navigation personal files transferred to a new audio-navigation unit.
What device can I use to maintain the PC card, and delete files?	Any computer store sells USB style card readers that accept the PC card, and allow you to do file maintenance on your PC card. Most laptops will also accept the PC card.
Can we move the customer's data to different models?	No, the files are model specific and will only load into an audio-navigation unit with the same part number.
Can we move the customer's data to the same vehicle with a different software version? (Like moving version 4.41 to version 4.51)	The customer's files can only be transferred to a new audio-navigation unit, if the Model and the Program Flash shown on the Version screen are the same. Files cannot be transferred to the different model and different versions.
Will other files on the PC card like images or music files prevent the Export/Import function from working?	No, the system simply adds two small files that are recognized by the new audio-navigation unit when doing the import function. However, it the PC card is full, the Export function won't work correctly.
Do I have to delete the files on the PC card after each transfer of the personal data?	After the transfer of personal data to the new audio-navigation unit, the files remain on the PC card. Since this is confidential information, we recommend that you delete these files after each use. Please note that each time you export navigation files of the same model and version, the files are overwritten.
If the memory card needs formatting what format should I use?	If the PC card needs to be formatted, use the FAT (file allocation table) file system.
I can't enter the navigation diagnostic mode to do the Export/Import function. How can I transfer the personal data?	Some internal audio-navigation unit ECU failures may make it impossible to use the Export/Import function.

(cont'd)

System Diagnostic Mode (cont'd)

Question	Answer
Why won't the Export or Import functions work? What do I check as part of troubleshooting?	• The card may not be fully inserted into the slot. Eject the PC card, and inspect for warping or damage to the edge connector. Never use excessive force to insert a PC card. This can damage the pins in the rear of the slot. • The PC card may not contain files that are recognized by the new audio-navigation unit. Navigation data can only be transferred between audio-navigation units with the same Model code, and with the same navi Program flash version. • The flash memory chip type may not be accepted by the system. Only Compact Flash and ATA cards have been tested. • The card's PCMCIA adaptor may prevent a known-good PC card from being recognized. Avoid multi-slot type PCMCIA adaptors that accept several different flash memory types. • The card may be full and as a result the files are stored, but without any data. Export and import appear to function, but move nothing. Delete unused files from the PC card. • There may not be any files on the PC card. If the PC card has a write protection switch, make sure it is turned off before using the Export function. • Although flash memory chips are reliable, occasionally they develop bad sectors or other formatting errors that prevents them from accepting files. The PC card should be reformatted using the FAT format. • The PC card may have been formatted using the format NTFS. Only the FAT format is accepted by the system. • Hard Disc Drive (HDD) cards may not work properly in the system and can overheat or quit functioning, particularly in a hot vehicle. They are not recommended. • Before performing the Import function, ensure that the original navigation DVD is loaded into the new audio-navigation unit and working properly.

Error Message Table

Screen Error Message	Solution
Navigation system is unable to acquire a proper GPS signal.	Make sure there is nothing on the dashboard blocking the GPS antenna. If not, move the vehicle to an open space away from tall buildings, trees, etc. Aftermarket metallic window tinting and other aftermarket devices can affect the GPS reception.
Navigation unit door is open or No DVD disc installed. Please check system.	Make sure the navigation DVD is the correct color and is not scratched or damaged. Make sure it is installed with the label side up and the audio-navigation unit door is snapped fully closed.
No DVD disc, please check system.	Check that the correct color and version navigation DVD is installed with the label side up.
Display temp is too high. System will shut down until display cools down.	This message appears briefly when the display temperature is too high, and then the display turns off until the temperature cools down. The system turns back on when the display cools down.
System temp is too high. System will shut down until it cools down.	This message appears briefly when the audio-navigation unit temperature is too high, and then the audio-navigation unit turns off until the temperature cools down. The system turns back on when the audio-navigation unit cools down.
Outside temperature is low, system will take a while to start up.	The temperature is below −22 °F (−30 °C) and the audio-navigation unit has difficulties reading the navigation DVD. The system will start up when the temperature warms up.
DVD disc reading error (unformatted), please consult your dealer.	Check the navigation DVD for the correct color and software version. Also check for deep scratches or other damage. Make sure you are using an official Honda navigation DVD (turquoise in color). The system cannot read other mapping databases or video DVDs.
DVD disc reading error (incorrect DVD Disc), please consult your dealer.	
Currently, a disc has been inserted which is older than the downloaded program. Please check disc version.	This message appears when the navigation DVD version is not latest, and the system cannot start up. Check any official Honda service website for more service information about the navigation system.
Route has not been completed. Please try again from a different location.	Routing to or from a place (new area) that is not in the map database. Try planning a different route to or from a different location that is clearly displayed on the map (map matched).
No alternate route found. Original route will be guided.	No alternate route method was found. The original route method will be used.
This destination cannot be found in database.	The destination was not found in the database. Try another destination nearby, or select the destination with the joystick.

DTC Troubleshooting

DTC 1001: FROM System Info Error

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is an internal problem with the Flash-ROM.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 1001 indicated?

   YES–Replace the audio-navigation unit (see page 23-232), because there is an internal problem with the Flash-ROM.■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1101: Media Bus Send Error

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is an internal error is BUS sending.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 1101 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1201: DVD High Temp

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when the internal temperature of the audio-navigation unit ECU rises above 158 °F (70 °C). The audio-navigation unit is designed to shut down to protect the audio-navigation unit ECU. This could be caused by an inoperative audio-navigation unit ECU fan or if the dash temperature exceeds the maximum. Do the troubleshooting when the unit is within the allowable temperature range.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Check that the fan screen on the back to the audio-navigation unit is not blocked. Clean it if necessary.

1. Check that the temperature is below 158 °F (70 °C) in the dash.
2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for the hard error code (see page 23-139).

   Is DTC 1201 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1202: DVD Low Temp

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when the internal temperature of the audio-navigation unit ECU falls below −4 °F (−20 °C). The unit is designed to shut down to protect the audio-navigation unit ECU. This is usually caused by very cold exterior temperatures. Do the troubleshooting when the unit is within the allowable temperature range.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Check that the temperature is above −4 °F (−20 °C) in the dash.
2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for the hard error code (see page 23-139).

   Is DTC 1202 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 1301: GPS Antenna Error

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is poor connectors or loose terminals at the GPS antenna connector or an open in GPS antenna lead.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Aftermarket electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 1301 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■
4. Turn the ignition switch to LOCK (0).
5. Check for poor connections or loose terminals at the audio-navigation unit connector H (2P).
6. Clear the hard error code.
7. Turn the ignition switch to LOCK (0), and then back to ON (II).
8. Check for the hard error code.

   Is DTC 1301 indicated?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time.■
9. Turn the ignition switch to LOCK (0).
10. Substitute a known-good GPS antenna (see page 23-236).
11. Turn the ignition switch to ON (II).
12. Clear the hard error code.
13. Turn the ignition switch to LOCK (0), and then back to ON (II).
14. Check for the hard error code.

    Is DTC 1301 indicated?

    YES–Check the antenna lead for an open or short to ground between the navigation unit and the GPS antenna. If OK, replace the audio-navigation unit (see page 23-232).■

    NO–Replace the original GPS antenna (see page 23-236).■

DTC 1302: GPS Receiver Error 1

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is an internal GPS receiver problem.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Aftermarket electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 1302 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■
4. Turn the ignition switch to LOCK (0).
5. Check for poor connections or loose terminals at the audio-navigation unit connector H (2P).
6. Clear the hard error code.
7. Turn the ignition switch to LOCK (0), and then back to ON (II).
8. Check for the hard error code.

   Is DTC 1302 indicated?

   YES–Go to step 9.

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■
9. Turn the ignition switch to LOCK (0).
10. Substitute a known-good GPS antenna (see page 23-236).
11. Turn the ignition switch to ON (II).
12. Clear the hard error code.
13. Turn the ignition switch to LOCK (0), and then back to ON (II).
14. Check for the hard error code.

    Is DTC 1302 indicated?

    YES–Replace the original GPS antenna (see page 23-236).■

    NO–Replace the audio-navigation unit (see page 23-232).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 1303: GPS Receiver Error 2

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is an internal GPS receiver problem.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Aftermarket electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 1303 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1305: Gyro Error 2: ECU Temp xx °C

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is a problem with the internal yaw rate sensor.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Aftermarket electronic devices located near the audio-navigation unit or GPS antenna can potentially interfere with the operation of the navigation system.
- Check that the fan screen on the back of the audio-navigation unit is not blocked. Clean it if necessary.

1. Check that the dash temperature is between −4 °F (−20 °C) and 158 °F (70 °C).
2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for the hard error code (see page 23-139).

   Is DTC 1305 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1306: Vehicle Speed Pulse

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is a problem with the VSP circuit.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Check the MIL on the gauge control module (see page 22-325).

   Is the MIL on?

   YES–Go to the PGM-FI system's General Troubleshooting Information (see page 11-3).■

   NO–Go to step 2.

2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then start the engine.
4. Check for the hard error code (see page 23-139).

   Is DTC 1306 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■

5. Go into the System Diagnostic Mode, and use the Car Status test (see page 23-192) to check the VSP signal.
6. Drive the vehicle, and watch the VSP signal.

   Does the VSP signal change from [0] when stopped to [1] when the vehicle is moving?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Go to step 7.

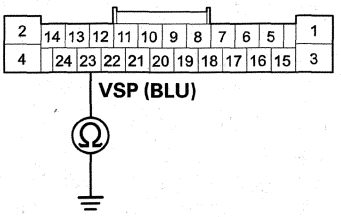
7. Turn the ignition switch to LOCK (0).
8. Remove the audio-navigation unit (see page 23-232).

   NOTE:

   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

9. Jump the SCS line with the HDS.
10. Disconnect audio-navigation unit connector A (24P) and ECM/PCM connector A (44P).
11. Check for continuity between audio-navigation unit connector A (24P) terminal No. 23 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the audio-navigation unit and the ECM/PCM.■

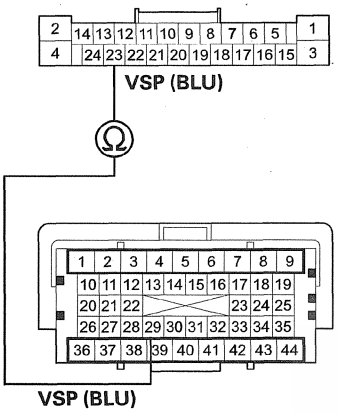
NO–Go to step 12.

(cont'd)

DTC Troubleshooting (cont'd)

12. Check for continuity between audio-navigation unit connector A (24P) terminal No. 23 and ECM/PCM connector A (44P) terminal No. 29.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



ECM/PCM CONNECTOR A
Terminal side of female terminals

Is there continuity?

YES–Update the ECM/PCM (see page 11-207) if it does not have the latest software, or substitute a known-good ECM/PCM (see page 11-7).■

NO–Repair an open in the wire between the audio-navigation unit and the ECM/PCM.■

DTC 1307: DVD Read Error

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when the navigation DVD is severely scratched or dirty, or if the audio-navigation unit's DVD drive is malfunctioning.
- Make sure the correct navigation DVD version is installed.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Check any official Honda service website for more information about the navigation system and software updates.

1. Check the navigation DVD.

   Is the navigation DVD the correct color and version for the vehicle? Is it scratch free?

   YES–Go to step 2.

   NO–Replace the navigation DVD, and recheck.■

2. Turn the ignition switch to ON (II).

   Is there a DVD error message?

   YES–Go to DVD screen error messages (see page 23-197).■

   NO–Go to step 3.

3. Clear the hard error code (see page 23-140).

4. Turn the ignition switch to LOCK (0), and then back to ON (II).

5. Check for the hard error code (see page 23-139).

   Is DTC 1307 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 1402: Audio Error 2

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is a problem with the audio disc player.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Check that the dash temperature is between −4 °F (−20 °C) and 158 °F (70 °C).
2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for the hard error code (see page 23-139).

   Is DTC 1402 indicated?

   YES–Check if the audio system functions are working properly. If any problems are found, go to affected troubleshooting in audio section.■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 2601: Display Diag: Connect

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when there is a problem with the display.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error cord (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the Diagnostic Menu, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Check the System Links.

   Is the Display icon red?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 2605: H/D Diag: Connect

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem (open or short) is detected in the GA-Net bus.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Check for the hard error code (see page 23-139).

   Is DTC 2605 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time.■
4. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
5. Check the System Links.

   Is the Radio icon red?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 2609: VRAM Diag

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem with the audio-navigation unit internal VRAM is detected.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Select the ECU Info in the System Links.

   Is V-RAM OK indicated?

   YES–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

   NO–Replace the audio-navigation unit (see page 23-232).■

DTC 2610: DRAM Diag

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem with the audio-navigation unit internal DRAM is detected.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Select the ECU Info in the System Links.

   Is D-RAM OK indicated?

   YES–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

   NO–Replace the audio-navigation unit (see page 23-232).■

DTC 2701: GPS Diag: Antenna

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem is detected in the GPS antenna.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Check for electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Select the GPS Ant. in the System Links.

   Is Antenna OK indicated?

   YES–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

   NO–Go to step 5.

5. Turn the ignition switch to LOCK (0).
6. Check for poor connections at audio-navigation unit connector H (2P).

   Is the connection OK?

   YES–Replace the GPS antenna (see page 23-236).■

   NO–Repair the poor connection at audio-navigation unit connector H (2P), and recheck.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 2702: GPS Diag: Receiver in Navi ECU

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem is detected in the GPS antenna.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Make sure the vehicle is parked outside, away from buildings.
- Check for electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Select the GPS Ant. in the System Links.

   Is Receiver in Navi ECU OK indicated?

   YES–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

   NO–Replace the audio-navigation unit (see page 23-232).■

DTC 2703: Aircon Diag

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a communication error between the climate control unit and the audio-navigation unit (open or short) is detected.
- Check for B-CAN DTCs and resolve them before troubleshooting.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- DTC 2703 can be stored when the ignition switch is at ACCESSORY (I). When the ignition switch is in ACCESSORY (I), the climate control unit is turned off, the audio-navigation unit loses communication and stores navigation DTCs. Therefore, there is a possibility that the system is normal even though DTC 2703 is stored. Check System Links (see page 23-174) with the engine running, and if it shows normal, the system is OK at this time. If not, do this troubleshooting.

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Check the System Links.

   Is the A/C icon red?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■

5. Turn the ignition switch to LOCK (0).
6. Remove the audio-navigation unit (see page 23-232).

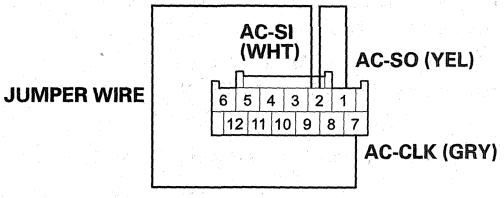
   NOTE:

   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

7. Disconnect audio-navigation unit connector D (12P).

8. Connect audio-navigation unit connector D (12P) terminals No. 1 and No. 2, and terminals No. 2 and No. 7 with jumper wires.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

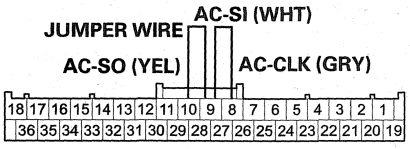
9. Turn the ignition switch to ON (II).
10. Press and hold the AUTO button, then press and hold the ON/OFF buttons.

    Is the HEAT/VENT indicator solid with the remaining icons blinking?

    YES–Replace the audio-navigation unit (see page 23-232).■

    NO–Go to step 11.
11. Turn the ignition switch to LOCK (0), then disconnect the jumper wires.
12. Disconnect climate control unit 36P connector.
13. Connect climate control unit 36P connector terminals No. 8 and No. 9, and terminals No. 9 and No. 10 with jumper wires.

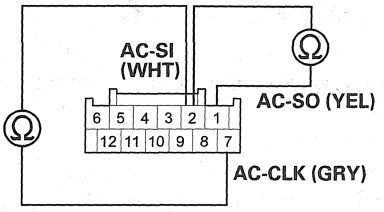
CLIMATE CONTROL UNIT 36P CONNECTOR



Wire side of female terminals

14. Check for continuity between audio-navigation unit connector D (12P) terminals No. 1 and No. 2, and between terminals No. 2 and No. 7.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

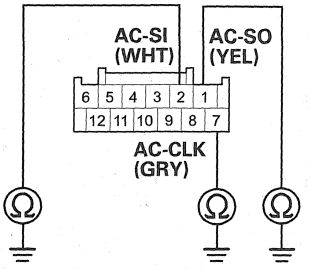
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire(s) between the audio-navigation unit and the climate control unit.■

15. Disconnect the jumper wires.
16. Check for continuity between body ground and audio-navigation unit connector D (12P) terminals No. 1, No. 2, and No. 7 individually.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire(s) between the audio-navigation unit and the climate control unit.■

NO–Go to step 17.

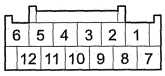
(cont'd)

DTC Troubleshooting (cont'd)

17. Check for continuity between the audio-navigation unit connector D (12P) according to the table.

From terminal (wire color)	To terminals (wire color)
D1 (YEL)	D2 (WHT), D7 (GRY)
D2 (WHT)	D7 (GRY)

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

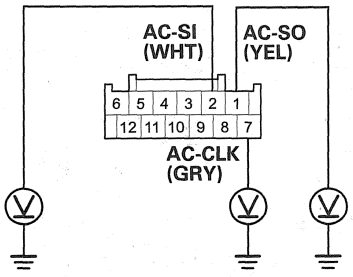
Is there continuity between any of the terminals?

YES–Repair a short in the wire(s) between the audio-navigation unit and climate control unit.■

NO–Go to step 18.

18. Turn the ignition switch to ON (II).
19. Measure the voltage between body ground and audio-navigation unit connector D (12P) terminals No. 1, No. 2, and No. 7 individually.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Replace the climate control unit (see page 21-112).■

NO–Repair a short to power in the wire(s) between the audio-navigation unit and the climate control unit.■

DTC 2705: HFL Diag

NOTE

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem detected in the connecting lines (open/short) or in the HandsFreeLink control unit.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Check the System Links.

   Is the HFL icon red?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Connect the HDS to the DLC (see page 23-239).
7. Clear the DTCs with the HDS.
8. Turn the ignition switch to LOCK (0), and then back to ON (II).
9. Check for DTCs with the HDS.

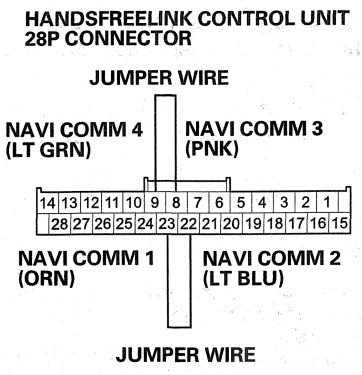
   Are there any HFL DTCs indicated?

   YES–Do the HFL DTC troubleshooting.■

   NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector B (24P).

    NOTE:
    - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
    - Remove the PC card before removing the audio-navigation unit.
12. Disconnect the HandsFreeLink control unit 28P connector.

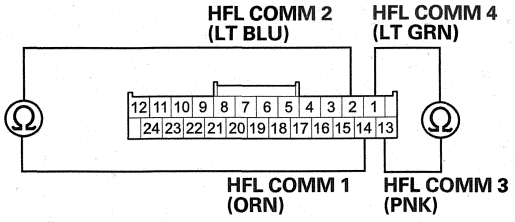
13. Connect HandsFreeLink control unit 28P connector terminals No. 8 and No. 9 with a jumper wire, then connect terminals No. 22 and No. 23 with a jumper wire.



Wire side of female terminals

14. Check for continuity between audio-navigation unit connector B (24P) terminals No. 1 and No. 13, and between terminals No. 2 and No. 14.

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

YES–Go to step 15.

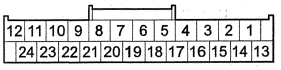
NO–There is an open in the wire(s) between the audio-navigation unit and the HandsFreeLink control unit. Replace the affected shielded harness.■

15. Disconnect the jumper wire.

16. Check for continuity between the terminals of audio-navigation unit connector B (24P) according to the table.

From terminal (wire color)	To terminals (wire color)
B3 (GRY)	B1 (LT GRN), B2 (LT BLU), B13 (PNK), B14 (ORN)
B1 (LT GRN)	B2 (LT BLU), B13 (PNK), B14 (ORN)
B2 (LT BLU)	B13 (PNK), B14 (ORN)
B13 (PNK)	B14 (ORN)

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

YES–There is a short in the wire(s) between the audio-navigation unit and the HandsFreeLink control unit. Replace the affected shielded harness.■

NO–Go to step 17.

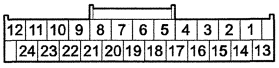
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DTC Troubleshooting (cont'd)

17. Check for continuity between body ground and audio-navigation unit connector B (24P) according to the table.

Audio-navigation unit connector	Wire color
B1	LT GRN
B2	LT BLU
B13	PNK
B14	ORN

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

YES–There is a short to body ground in the wire(s) between the audio-navigation unit and the HandsFreeLink control unit. Replace the affected shielded harness.■

NO–Replace the HandsFreeLink control unit (see page 23-282).■

DTC 2706: Gyro Diag: ECU Temp XX °C

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when the audio-navigation unit internal yaw rate sensor's temperature is out of its specified range.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).
- Check that the fan screen on the back of the audio-navigation unit is not blocked. Clean it if necessary.

1. Check that the dash temperature is between −4 °F (−20 °C) and 158 °F (70 °C).
2. Clear the hard error code (see page 23-140).
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for the hard error code (see page 23-139).

   Is DTC 2706 indicated?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Intermittent failure, the system is OK at this time. If the vehicle repeatedly comes back with the navigation DTC, replace the audio-navigation unit (see page 23-232).■

DTC 2707: MIC Diag

NOTE

- Check the vehicle battery condition first (see page 22-85).
- This navigation DTC sets when a problem is detected in the microphone circuit.
- Before you troubleshoot, make sure to follow the General Troubleshooting Information (see page 23-131).

1. Clear the hard error code (see page 23-140).
2. Turn the ignition switch to LOCK (0), and then back to ON (II).
3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode in the Select Diagnosis Items menu (see page 23-174).
4. Check the System Links.

   Is the Mic icon red?

   YES–Go to step 5.

   NO–Go to step 10.
5. Turn the ignition switch to LOCK (0).
6. Check for poor connections or loose terminals at the HandsFreeLink control unit 28P connector, the HFL-navigation microphone 10P connector, and audio-navigation unit B (24P) connector.

   Are the connections OK?

   YES–Go to step 7.

   NO–Repair poor connections or loose terminals.■
7. Connect the HDS to the DLC (see page 23-239).
8. Turn the ignition switch to ON (II).
9. Check for DTCs with the HDS.

   Is DTC B1775 or B1776 indicated?

   YES–Troubleshoot the indicated DTC.■

   NO–Replace the HFL-navigation microphone (see page 23-236).■
10. Select the Mic in the System Links.
11. Press the navigation TALK button on the steering wheel switch, then check the Mic Level (see page 23-188).

    Does the microphone level reach at least the 6th bar?

    YES–Intermittent failure, the system is OK at this time.■

    NO–Replace the HFL-navigation microphone (see page 23-236).■

Symptom Troubleshooting

Vehicle position icon constantly leaves road, moves erratically, or is displayed very far from actual vehicle position

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check that the GPS antenna is plugged in.
- This is not the same condition as when driving off-road (or on a fire or logging road). This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket metallic window tinting or other objects that can block the GPS signal. Always do the Map Matching (see page 23-135) before proceeding with the troubleshooting.
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage.
- Check any official Honda service website for more service information about the navigation system.
- Check the GPS signal reception in an open area.

1. Check the GPS icon on the navigation screen.

   Is the GPS icon white?

   YES–Do the troubleshooting for GPS icon is white or not shown troubleshooting (see page 23-219).■

   NO–Go to step 2.

2. Go into the System Diagnostic Mode, and use the Yaw Rate test (see page 23-190) to check the audio-navigation unit internal yaw rate sensor.

   Is the yaw rate sensor OK?

   YES–The condition may be normal. Check to see if the condition occurs in the same place in a known-good vehicle with the same navigation software version. If it does, the problem could be in the database. Go to step 3.

   NO–Replace the audio-navigation unit (see page 23-232).■

3. Go into the System Diagnostic Mode, and use the Car Status test (see page 23-192) to check the VSP signal.

4. Drive the vehicle, and watch the VSP signal.

   Does the VSP signal change from [0] when stopped to [1] when the vehicle is moving?

   YES–Condition may be normal. Check to see if the condition occurs in the same place in a known-good vehicle. If it does, the condition could be in the database. Go to step 5.

   NO–Go to step 6.

5. Substitute a known-good audio-navigation unit (see page 23-232), and check to see if the problem occurs in the same place.

   Does the problem occur in the same place?

   YES–The problem is in the database and should be considered a characteristic of the system. Report the problem according to the navigation manual under Reporting Errors and look for improvements in future databases.■

   NO–Replace the audio-navigation unit (see page 23-232).■

6. Turn the ignition switch to LOCK (0).

7. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector A (24P).

   NOTE:

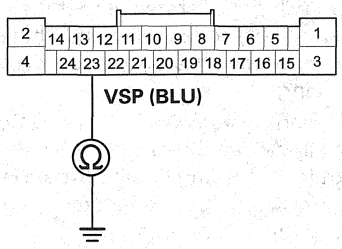
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

8. Jump the SCS line with the HDS.

9. Disconnect ECM/PCM connector A (44P).

10. Check for continuity between audio-navigation unit connector A (24P) terminal No. 23 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

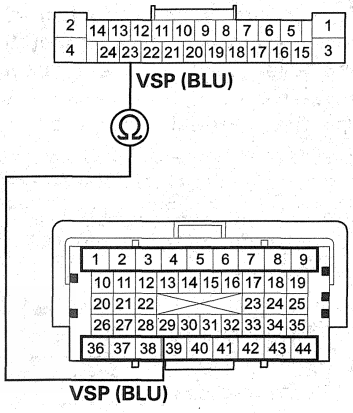
Is there continuity?

YES–Repair a short to body ground in the wire between the audio-navigation unit connector A (24P) and the ECM/PCM connector terminal A (44P).■

NO–Go to step 11.

11. Check for continuity between audio-navigation unit connector A (24P) terminal No. 23 and ECM/PCM connector A (44P) terminal No. 29.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



ECM/PCM CONNECTOR A
Terminal side of female terminals

Is there continuity?

YES–Substitute a known-good ECM/PCM (see page 11-7), and recheck. If the symptom/indication goes away, replace the original ECM/PCM (see page 11-209).■

NO–Repair an open in the wire between the audio-navigation unit connector A (24P) and the ECM/PCM connector terminal A (44P).■

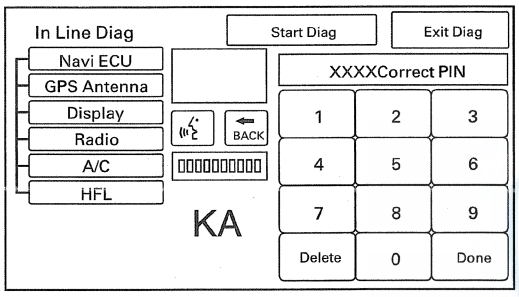
(cont'd)

Symptom Troubleshooting (cont'd)

System always comes up in the in-line diagnostic mode (Factory Diag Mode)

NOTE: You may also see this screen if a new or remanufactured audio-navigation unit is installed.

1. When an audio-navigation unit is powered up for the first time at the factory, the factory diagnosis screen (In Line Diag) appears. Normally the factory performs the steps necessary to verify proper operation and terminate the factory diagnostic. Until the proper confirmation sequence is performed, the screen appears every time the vehicle is started.



2. Follow the steps to prevent the screen from showing up in the future:
   - Hold down the MENU, MAP/GUIDE, and CANCEL buttons for about 3 seconds (the Select Diagnosis Items screen appears).
   - Hold down the MAP/GUIDE button for 5—10 seconds (A screen with a Complete button appears).
   - Touch Complete.
   - Touch the Return button twice (the system may reboot).
   - Restart the vehicle, and confirm normal operation by completing the PDI of the navigation system Service Bulletin.

Navigation system does not accept security code

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- The system will not operate without the 4-digit security (anti-theft) code. Follow the this procedure. (After 10 consecutive tries, you must cycle the key to continue trying)
- The Navigation System Diagnosis and Core Return Form is available on ISIS, under Job aids, and can be printed out for recording this information. This information will help the Reman facility determine what caused the failure.
- Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version (see page 23-193).
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have anti-theft code.
- Check any official Honda service website for more service information about the navigation system.

1. Go into the System Diagnostic Mode (see page 23-174), and use the ECU Info under the Unit Check diagnosis (see page 23-182). A brief diagnosis runs for 20 seconds, and the serial number is displayed.

   Is the serial number displayed?

   YES–Go to step 4.

   NO–Go to step 2.

2. Remove the audio-navigation unit (see page 23-232).

   NOTE:
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

3. Check the serial number on the label on the underside of the audio-navigation unit.

   Is the serial number confirmed on the underside of the audio-navigation unit?

   YES–Go to step 4.

   NO–Replace the audio-navigation unit (see page 23-232).■

4. Using the serial number, look up the navigation security code in the Interactive Network (iN) (click: Service, Vehicle Information, Anti-Theft code Inquiry, and then select Navigation from the product dropdown box). Enter the serial number.

   Is a 4-digit code displayed on the screen?

   YES–Go to step 5.

   NO–Call the Warranty Department to obtain the code (the telephone number is in the PDI service bulletin). Do not call Tech Line. Then go to step 5.

5. Check that the obtained code works to bypass the code screen in the navigation system.

   Does the code work?

   YES–The system is OK at this time. Return the vehicle to the customer, and give them the anti-theft code.■

   NO–Replace the audio-navigation unit (see page 23-232), and enter "Won't take security code" in the Problem description field of the core return form; (as proof, enclose the sticker that contains the Serial number and the Code).■

Navigation frequently asks for anti-theft code and/or needs GPS initialization

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- This is often caused by a loss of battery power, or a poor ground.
- Make sure that the correct navigation DVD color and version are installed.
- Check any official Honda service website for more information about the navigation system.

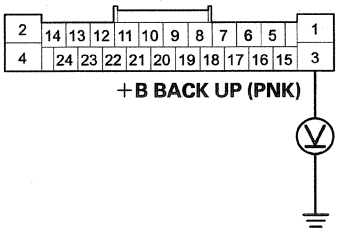
1. Turn the ignition switch to ON (II).

(cont'd)

Symptom Troubleshooting (cont'd)

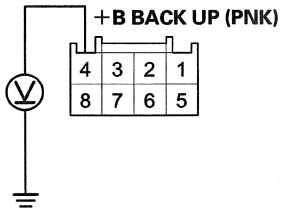
2. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 3 and body ground, and between audio-navigation unit connector C (8P) terminal No. 4 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

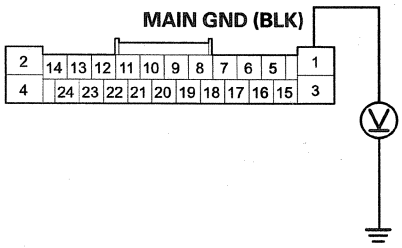
Is there battery voltage in either terminal?

YES–Go to step 3.

NO–Repair an open in the wire(s) between the under-dash fuse/relay box and the audio-navigation unit.■

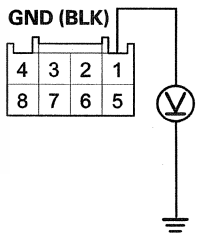
3. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 1 and body ground, and between audio-navigation unit connector C (8P) terminal No. 1 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Is there less than 0.2 V in either terminal?

YES–Replace the audio-navigation unit (see page 23-232).■

NO–Repair an open or high resistance in the wire between the audio-navigation unit and body ground (G503) (see page 22-44).■



GPS icon is white or not shown

Diagnostic Test: Self-Diagnosis Mode

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- With good reception, the icon is normally green.
- Make sure the GPS antenna is plugged in.
- Check for any aftermarket accessories or metallic window tinting that may be interfering with the GPS signal.
- Make sure the vehicle is parked outside, away from buildings.
- Refer to GPS Information (see page 23-189) for real time satellite reception display.

1. Check for aftermarket metallic window tint on the front window and electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the audio-navigation unit.

   Is there aftermarket metallic window tint or electronic accessories?

   YES–Remove the tint or the accessories, and recheck.■

   NO–Go to step 2.

2. Turn the ignition switch to ON (II).

3. Go into the System Diagnostic Mode, and use the System Links diagnosis (see page 23-174) to check the GPS antenna.

   Is the GPS Ant. icon red?

   YES–Check for a kinked, crushed, or disconnected GPS antenna wire. If the icon is still red, replace the GPS antenna (see page 23-236).■

   NO–Check that nothing is blocking the GPS antenna located in the dash, and recheck. Substitute a known-good GPS antenna (see page 23-236), and recheck. If the symptom is gone, replace the GPS antenna (see page 23-236). If the symptom is still present, replace the original audio-navigation unit (see page 23-232).■

Vehicle icon wanders across the map when driving (does not follow a displayed road) or map vehicle ICON spins

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- This is not the same condition as when driving off-road (or on a fire or logging road).
- This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket accessories or other objects that can block the GPS signal. Always do the Map matching (see page 23-135) before proceeding with the troubleshooting.
- Always check for and resolve all CAN DTCs before troubleshooting the navigation system.
- Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode and use Version (see page 23-193).
- Make sure that the correct navigation DVD color and version are installed.
- Check for aftermarket metallic window tinting.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Check any official Honda service website for more information about the navigation system.
- Before troubleshooting, make sure you have the anti-theft code for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.

1. Check the GPS icon on the navigation screen.

   Is the GPS icon white or missing?

   YES–Do the GPS icon is white or not shown troubleshooting (see page 23-219).■

   NO–Go to step 2.

2. Go into the System Diagnostic Mode, and use the Yaw Rate diagnosis (see page 23-190) to check the yaw rate sensor.

   Is the yaw rate sensor OK?

   YES–

   - CVT model: Go to step 3.
   - M/T model: Go to step 4.

   NO–Replace the audio-navigation unit (see page 23-232).■

(cont'd)

Symptom Troubleshooting (cont'd)

3. Go into the System Diagnostic Mode, and use the Car Status diagnosis (see page 23-192) to check the BACK signals.

   Does the BACK signal change from [0] to [1] when the shift lever position is changed from P or N to R?

   YES–Go to step 5.

   NO–Troubleshoot the back-up lights. If OK, go to step 7.

4. Go into the System Diagnostic Mode, and use the Car Status diagnosis (see page 23-192) to check the BACK signals.

   Does the BACK signal change from [0] to [1] when the shift lever position is changed from neutral to reverse?

   YES–Go to step 5.

   NO–Troubleshoot the back-up lights. If OK, go to step 7.

5. Go into the System Diagnostic Mode, and use the Car Status diagnosis (see page 23-192) to check the VSP signal.

6. Drive the vehicle and watch the VSP signal.

   Does the VSP signal change from [0] when stopped to [1] when the vehicle is moving?

   YES–The problem may be a characteristic of the system. Check to see if the problem occurs in the same place in a known-good vehicle. If it does, the problem could be in the database. Go to step 11.

   NO–Do the DTC 1306: Vehicle Speed Pulse troubleshooting (see page 23-203).■

7. Turn the ignition switch to LOCK (0).

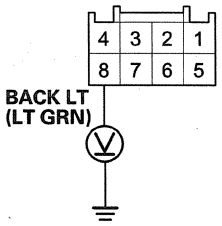
8. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector C (8P).

   NOTE:
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.

9. Turn the ignition switch to ON (II).

10. Measure the voltage between audio-navigation unit connector C (8P) terminal No. 8 and body ground when the shift lever is in R (CVT model) or reverse (M/T model).

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Is there battery voltage?

YES–Replace the audio-navigation unit (see page 23-232).■

NO–Repair an open or high resistance in the wire between the audio-navigation unit and the under-dash fuse/relay box.■

11. Substitute a known-good audio-navigation unit (see page 23-232), and check to see if the problem occurs in the same place.

    Does the problem occur in the same place?

    YES–The problem is in the database and should be considered a characteristic of the system. Report the problem according to the navigation manual under Reporting Errors and look for improvements in future databases.■

    NO–Replace the original audio-navigation unit (see page 23-232).■

No picture is displayed

Diagnostic Test: Self-Diagnosis Mode

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft code for the audio-navigation unit.
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Check any official Honda service website for more information about the navigation system.

1. Check the No. B1 (15 A) fuse and No. B14 (7.5 A) fuse in the under-dash fuse/relay box, and reinstall the fuses if they are OK.

   Are the fuses OK?

   YES–Go to step 2.

   NO–Replace the fuse(s), and recheck.■

2. Turn the ignition switch to ON (II).
3. Operate the radio and listen to the audio.

   Can you hear the audio?

   YES–Go to step 4.

   NO–Refer to audio system troubleshooting.■

4. Turn the ignition switch to LOCK (0).
5. Check for DTCs.

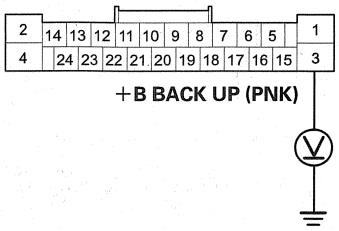
   Are there any DTCs stored?

   YES–Troubleshoot the indicated DTC, and recheck. If the symptom does not go away, go to step 6.

   NO–Go to step 6.

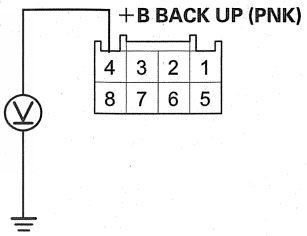
6. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 3 and body ground, and between audio-navigation unit connector C (8P) terminal No. 4 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Is there battery voltage in either terminal?

YES–Go to step 7.

NO–Repair an open in the wire(s) between the under-dash fuse/relay box and the audio-navigation unit. ■

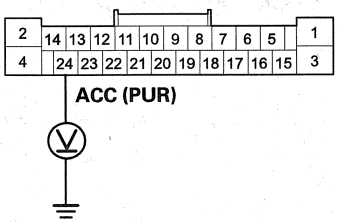
7. Turn the ignition switch to ON (II).

(cont'd)

Symptom Troubleshooting (cont'd)

8. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 24 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

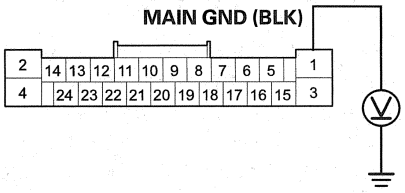
Is there battery voltage?

YES–Go to step 9.

NO–Repair an open in the wire between the under-dash fuse/relay box and the audio-navigation unit. ■

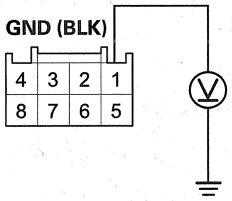
9. Measure the voltage between audio-navigation unit connector A (24P) terminal No. 1 and body ground, and between audio-navigation unit connector C (8P) terminal No. 1 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

AUDIO-NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

Is there less than 0.2 V in either terminal?

YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232). ■

NO–Repair an open or high resistance in the wire between the audio-navigation unit and body ground (G503) (see page 22-44). ■

Picture has lines/rolls/other issues or is an odd color

Diagnostic Test: Monitor Check

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Always compare the screen image to a known-good vehicle. If the screen looks the same, inform the customer that it is a characteristic of the system.
- Check the connectors for poor connections or loose terminals.
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Check any official Honda service website for more information about the navigation system.
- Check the navigation screen settings for brightness, contrast, black level, and check the color screen for map color and menu color.
- Before troubleshooting, make sure you have the anti-theft codes for the audio-navigation unit.

1. Check for electronic aftermarket accessories (possibly hidden) mounted near the audio-navigation unit.

   Are there any electronic accessories?

   YES–Disable the accessories, and recheck.■

   NO–Go to step 2.

2. Turn the ignition switch to ON (II), and start up the navigation screen and check it.

   Is the picture scrolling horizontally (left to right or right to left), have lines across the screen, or is blurry?

   YES–Go to step 4.

   NO–Go to step 3.

3. Go into the System Diagnostic Mode, and select Monitor Check, then select RGB Color diagnosis (see page 23-179).

   Is the picture missing a red, green, or blue color?

   YES–Substitute a known-good audio-navigation unit (see page 23-232), and recheck. If the symptom/indication goes away, replace the original audio-navigation unit (see page 23-232).■

   NO–Operation is normal at this time. Check for loose connections.■

4. Turn the ignition switch to LOCK (0) then turn it to ON (II), and observe the navigation picture.

   Did the image improve?

   YES–Check for sources of electrical noise, such as poor battery connections, the alternator, a defective battery, aftermarket accessories, or cell phones.■

   NO–Replace the audio-navigation unit (see page 23-232).■

(cont'd)

Symptom Troubleshooting (cont'd)

Display day/night mode does not work or does not work properly

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check if the Day mode color is set to same as the Night mode color (refer to the navigation manual).
- Check the connectors for poor connection or loose terminals.
- Before troubleshooting, make sure you have the anti-theft code for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.
- Full brightness on the instrument panel brightness control with the headlights turned on causes the system to stay in the day mode, even when the lights are on.

1. Make sure the instrument panel brightness control is not on full brightness. Turn the headlights on, and adjust the dash brightness to the middle range.
2. Change the day/night mode under Set-up to AUTO, and recheck.

   Does the display change to day and night modes when turning the headlights on and off?

   YES–The system is OK at this time.■

   NO–Go to step 3.
3. Go into the System Diagnostic Mode, and use the Car Status test (see page 23-192) to check for an ILL signal.

   Is the ILL signal OK?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Check the ILLUMI+ circuit between the audio-navigation unit and the No. B29 (10 A) fuse in the under-dash fuse/relay box.■

System locks up or freezes constantly

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Verify that the correct navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version (see page 23-193).
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Check any official Honda service website for more information about the navigation system.

1. Turn the ignition switch to ON (II).
2. Remove the navigation DVD, and check the navigation DVD reading surface for scratches and finger prints.

   Are there any scratches or finger prints on the navigation DVD reading surface?

   YES–Clean or replace the navigation DVD (see page 23-136), and recheck.■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).

   Does the system reboot, lock up, or freeze?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–The system is OK at this time. Go into the Diagnostic Mode, and use the Unit Check diagnosis (see page 23-182). Also check for low battery charge or poor charging system performance.■

Voice guidance cannot be heard, is broken up, or there is static

Diagnostic Test: Self-Diagnosis Mode

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the navigation volume level (see Owner's Manual).
- Check the connectors for poor connections or loose terminals.
- If the Hard Error Code stored, check the Hard Error Code troubleshooting first.
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Before troubleshooting, make sure you have the anti-theft codes for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.

1. Turn the ignition switch to ON (II).
2. Press the SET-UP button.
3. Check the volume and voice feedback setting for the navigation system in set-up.

   Is either set to OFF?

   YES–Set the voice feedback to ON, and select an audible level for the volume.■

   NO–Go to step 4.
4. Check the audio system operation.

   Can you hear the audio system?

   YES–Go to step 5.

   NO–Troubleshoot the audio system.■
5. Clear the hard error code (see page 23-140).
6. Turn the ignition switch to LOCK (0), and then back to ON (II).
7. Check for error code in the Error History (see page 23-139).

   Are there any Hard Error Codes stored?

   YES–Refer to the Hard Error Code troubleshooting.■

   NO–Replace the audio-navigation unit (see page 23-232).■

Voice control does not work/respond

Diagnostic Test: Mic Level

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connector for poor connection or loose terminals.
- Make sure that the correct navigation DVD color and version are installed.
- Check any official Honda service website for more information about the navigation system.
- Before assuming that a voice complaint is hardware related, ensure that the voice control system is being operated correctly.
  - Make sure you are on the correct screen when trying to issue a voice command. For instance, the command "Find the nearest Italian Restaurant" only works on a Map screen. (See the navigation manual for a complete list of allowed voice commands for the information being displayed.)
  - Close the windows, and doors.
  - Set the fan speed to low (1 or 2).
  - Adjust the air flow from the air conditioning vents so that they do not blow against the microphone on the ceiling.
  - Pause after pressing the navigation TALK button, then give a voice command clearly in a natural speaking voice. If the system cannot recognize your command, speak louder.
  - If the microphone picks up voices other than yours, the system may not interpret your voice commands correctly.
  - If you speak a command with something in your mouth, or your voice is too husky, or high pitched, the system may misunderstand your command.
- Check for a loose microphone on the ceiling; if it's loose, tighten it.
- Before troubleshooting, make sure you have the anti-theft code for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.
- Determine if the problem only happens to one person, or everyone who uses the system.
- If the system only has a problem with one person's voice, this should be considered a system limitation.

(cont'd)

Symptom Troubleshooting (cont'd)

1. Turn the ignition switch to ON (II).
2. Go into the System Diagnostic Mode, and select Mic Icon Menu, and use the Mic Level test under Functional Setup (see page 23-186) to check the operation of the navigation TALK and navigation BACK buttons.

   Are the navigation TALK and navigation BACK buttons operational?

   YES–Go to step 11.

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Do the Voice Control Switch Test (see page 23-234).

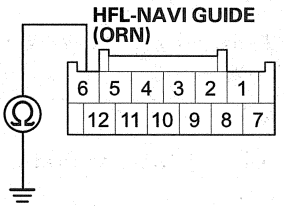
   Is the voice control switch OK?

   YES–Go to step 5.

   NO–Replace the HFL-navigation voice control switch (see page 23-235).■
5. Remove the audio-navigation unit (see page 23-232).

   NOTE:
   - Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
6. Disconnect the HFL-navigation voice control switch 5P connector and audio-navigation unit connector D (12P).
7. Check for continuity between audio-navigation unit connector D (12P) terminal No. 6 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)



Wire side of female terminals

Is there continuity?

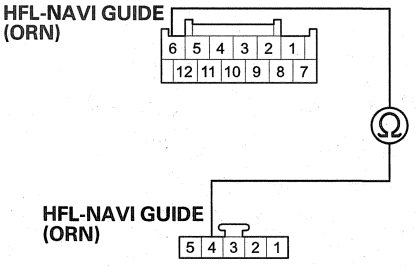
YES–Repair a short to body ground in the wire between the audio-navigation unit and the HFL-navigation voice control switch, or replace the cable reel (see page 24-183).■

NO–Go to step 8.

8. Check for continuity between audio-navigation unit connector D (12P) terminal No. 6 and HFL-navigation voice control switch 5P connector terminal No. 4.

AUDIO-NAVIGATION UNIT CONNECTOR D (12P)

Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR

Wire side of female terminals

Is there continuity?

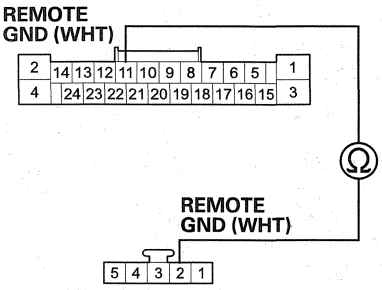
YES–Go to step 9.

NO–Repair an open in the wire between the audio-navigation unit and the HFL-navigation voice control switch, or replace the cable reel (see page 24-183).■

9. Disconnect audio-navigation unit connector A (24P).

10. Check for continuity between audio-navigation unit connector A (24P) terminal No. 11 and HFL-navigation voice control switch 5P connector terminal No. 2.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the audio-navigation unit (see page 23-232).■

NO–Repair an open in the wire between the audio-navigation unit and the HFL-navigation voice control switch, or replace the cable reel (see page 24-183).■

11. Use the Mic Level diagnostic under Functional Setup (see page 23-186) to check the operation of the microphone.

Is the microphone operational?

YES–Check the operation of the voice control system (see the navigation manual).■

NO–Go to step 12.

12. Clear the hard error code (see page 23-140).

13. Turn the ignition switch to LOCK (0), and then back to ON (II).

14. Check for hard error code (see page 23-139).

Is DTC 2707 indicated?

YES–Do the DTC 2707 troubleshooting (see page 23-213).■

NO–Replace the audio-navigation unit (see page 23-232).■

Navigation cannot control audio system

Diagnostic Test: System Links

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Verify that the correct audio-navigation unit is installed for this model. Go into the System Diagnostic Mode, and use Version (see page 23-193).
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft code for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.
- Make sure that the correct navigation DVD color and version are installed.
- Inspect the navigation DVD for dirt or damage.
- Check any official Honda service website for more information about the navigation system.

1. Turn the ignition switch to ON (II).

2. Make sure the anti-theft code for the audio-navigation unit is entered.

3. Go into the System Diagnostic Mode, and select the Self-Diagnosis Mode (see page 23-174).

4. Check the System Links (see page 23-174).

Is the Radio icon red?

YES–Do the troubleshooting for the voice guidance cannot be heard, is broken up, or there static (see page 23-225).■

NO–Go to step 5.

5. Substitute a known-good audio-navigation unit (see page 23-232), and recheck.

NOTE:
- Eject all the discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

Can the navigation system control the audio system?

YES–Replace the audio-navigation unit (see page 23-232).■

NO–Do the audio system troubleshooting.■

(cont'd)

Symptom Troubleshooting (cont'd)

Navigation display buttons do not work or respond properly

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- Check the connectors for poor connections or loose terminals.
- Always make sure that the correct navigation DVD color and version are installed.
- Check any official Honda service website for more information about the navigation system.
- Before troubleshooting, make sure you have the anti-theft codes for the audio-navigation unit.
- After troubleshooting, enter the anti-theft code for the audio-navigation unit.

1. Turn the ignition switch to ON (II).
2. Go into the Detail Information & Settings, select Unit Check, and use Hard Key test under Unit Check (see page 23-182).

   Does the audio-navigation unit buttons work properly?

   YES–The system is OK at this time.■

   NO–Replace the audio-navigation unit (see page 23-232).■

OPEN/CLOSE function of the display does not work

NOTE:

- Check the vehicle battery condition first (see page 22-85).
- If the display's OPEN/CLOSE button does not work, you must manually open the display to obtain the customer's navigation DVD, audio CD, and PC card (see page 23-231).

1. Press the OPEN/CLOSE button.

   Does the display open and/or close normally?

   YES–The system is OK at this time.■

   NO–Replace the audio-navigation unit (see page 23-232).■

Navigation display does not close

NOTE: Check the vehicle battery condition first (see page 22-85).

1. Check the CD slot. Look for foreign objects, a stuck CD, a broken or sticking slot, or if a memory card has fallen out of the PC card adapter.

   Is the CD slot OK?

   YES–Go to step 2.

   NO–Replace the audio-navigation unit (see page 23-232).■

2. Check the PC card.

   Is the PC card fully seated and memory card in place (if applicable)?

   YES–Go to step 3.

   NO–Reseat the card or remove it. If it still won't close, replace the audio-navigation unit (see page 23-232).■

3. Press the OPEN/CLOSE button.

   Does the display open and/or close normally?

   YES–The system is OK at this time.■

   NO–Replace the audio-navigation unit (see page 23-232).■

Navigation display does not open or opens part way

NOTE: Check the vehicle battery condition first (see page 22-85).

1. Press the OPEN/CLOSE button.

   Does the unit beep?

   YES–Go to step 2.

   NO–Replace the audio-navigation unit (see page 23-232).■

2. Press the OPEN/CLOSE button.

   Does the display open normally?

   YES–The system is OK at this time.■

   NO–Replace the audio-navigation unit (see page 23-232).■

(cont'd)

Symptom Troubleshooting (cont'd)

Navigation display stays on with ignition switch in LOCK (0)

NOTE:
- Check for aftermarket accessories that may interfere with the navigation system.
- Check the connectors for poor connections or loose terminals.
- Before troubleshooting, make sure you have the anti-theft codes for the audio-navigation unit.
- After troubleshooting, enter the anti-theft codes for the audio-navigation unit.
- The vehicle may have been used for a show event. Check for a short jumper harness in-line with the audio-navigation unit connector A (24P). If a jumper harness is present, remove it, and return it to Tech Line.

1. Remove the key from the ignition.

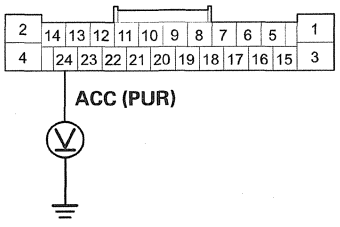
   Does the navigation screen stay on?

   YES–Go to step 2.

   NO–The system is OK at this time.■

2. Measure the voltage audio-navigation unit connector A (24P) terminal No. 24 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)



Wire side of female terminals

Is there battery voltage?

YES–Repair a short to power in the wire between the under-dash fuse/relay box and audio-navigation unit connector A (24P).■

NO–Replace the audio-navigation unit (see page 23-232).■

DVD read error messages

NOTE:
- Check the vehicle battery condition first (see page 22-85).
- Make sure that the correct navigation DVD color and version are installed.
- Go into the System Diagnostic Mode, and use the ECU Info diagnostic (see page 23-183) to check the status of the DVD cover.
- Inspect the navigation DVD for dirt or damage (see page 23-136).
- Refer to General Troubleshooting for a list of common DVD screen error messages and the probable causes (see page 23-197).
- Check any official Honda service website for more information about the navigation system.

1. Check the navigation DVD reading surface for scratches and finger prints.

   Are there any scratches or finger prints on the navigation DVD reading surface?

   YES–Clean or replace the navigation DVD (see page 23-136).■

   NO–If the problem occurs occasionally when the system is cold, this is normal. If the problem occurs frequently when driving, replace the audio-navigation unit (see page 23-232).■

The Acura Globe Screen (not the Honda Globe Screen) appears every time the vehicle is started

NOTE: The navigation DVD and the audio-navigation unit are correct for the vehicle, but earlier and possibly later versions of the navigation software may have been installed. When this happens, the software may not be recognized by the audio-navigation unit, and could cause the audio-navigation unit to revert to an Acura model profile.

1. Remove the audio-navigation unit (see page 23-232), and verify that the part number printed on the audio-navigation unit label is the correct one for the year/model vehicle you are working on.

   Is the correct audio-navigation unit installed based on the part number?

   YES–Go to step 2.

   NO–Replace the audio-navigation unit with the correct unit for the year/model vehicle you are working on.■

2. Reinstall the audio-navigation unit.
3. Remove the navigation DVD.
4. Note the software version marked on the navigation DVD label and verify if it is the correct version for the vehicle year/model you are working on by checking any official Honda service website, and searching for any related service information about the navigation system and navigation software.

   Is the software version marked on the navigation DVD label the correct one for the vehicle year/model you are working on?

   YES–Replace the audio-navigation unit (see page 23-232).■

   NO–Go to step 5.

5. Obtain the correct version navigation DVD (see page 23-136) and install it.

   Does the navigation system boot-up with the Honda Globe Screen?

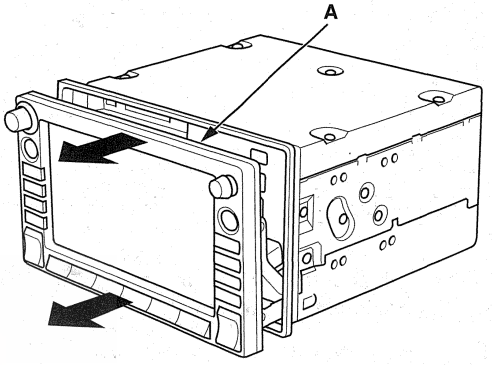
   YES–The problem is resolved, troubleshooting is complete.■

   NO–The system still shows an Acura Globe Screen. Replace the audio-navigation unit (see page 23-232).■

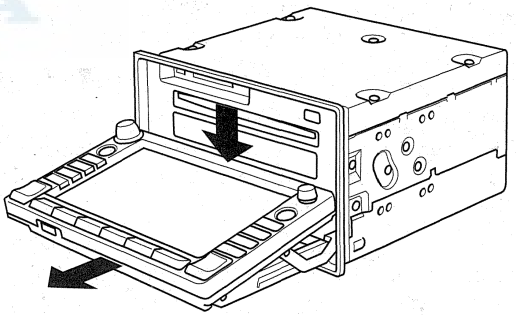
CD, DVD, and PC Card Removal/Installation

If the display will not open, use this procedure to manually open the display and remove the DVD, CD, or the PC card.

1. Remove the audio-navigation unit from the vehicle (see page 23-232).
2. On the bench, carefully pull the display (A) straight out (about 1/2 inch).



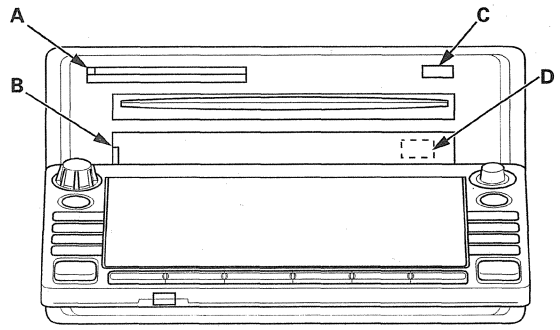
3. Fold down the display as shown.



(cont'd)

CD, DVD, and PC Card Removal/Installation (cont'd)

4. Press the PC card eject button (A) to eject the customer's PC card (if installed). Power is not required for this function.



5. Open the plastic cover (B) for the navigation DVD slot. Do not remove the plastic cover.
6. With the display open, temporarily reconnect the unit in the dash (to power it up).
7. Press the CD eject button (C), and navigation DVD eject button (D) and remove the discs (hold the discs by their edges to avoid fingerprints). To avoid scratches, place the navigation DVD and the customer's CD in a jewel case if available.
8. Close the plastic cover that hides the navigation DVD slot.
9. Close the display by first returning the display to the upward position, and then pushing the entire display straight back into the unit.
10. After installing the new audio-navigation unit, re-insert the navigation DVD, the customer's CD, and the PC card.

Audio-Navigation Unit Removal/Installation

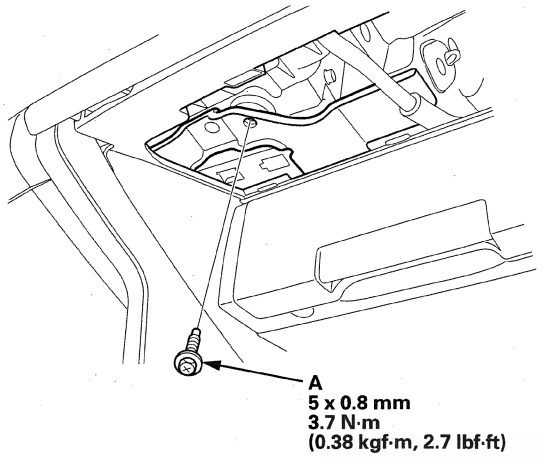
SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

NOTE:

- Put on gloves to protect your hands.
- Take care not to scratch the dashboard and related parts.
- Lay a workshop towel under the parts when working on them to protect the face panel from scratches or other damage.
- Do not work in a dusty or dirty place.
- Discharge static electricity from your body before and during the work.
- Do not touch the circuit board(s) with your bare hands.
- Do not work with dirty hands.
- Be careful not to fold the flat plate cable.
- Do not touch the terminal connector of the flat plate cable with your bare hands. (If you have touched it, wipe it off thoroughly.)
- Before replacing the audio-navigation unit, make sure to remove the customer's navigation DVD, and their audio CD, or PC card. Remanufactured audio-navigation units do not come with a navigation DVD. Re-install the customer's navigation DVD, audio CD, and audio PC card into the new remanufactured unit. If the navigation display won't open, manually remove the navigation DVD, audio CD, and PC card (see page 23-231).
- If you are replacing the audio-navigation unit, write down the audio presets (if possible), then enter them into the new audio-navigation unit.
- If after replacing the audio-navigation unit, the vehicle starts up in the inline diag screen (see page 23-216).

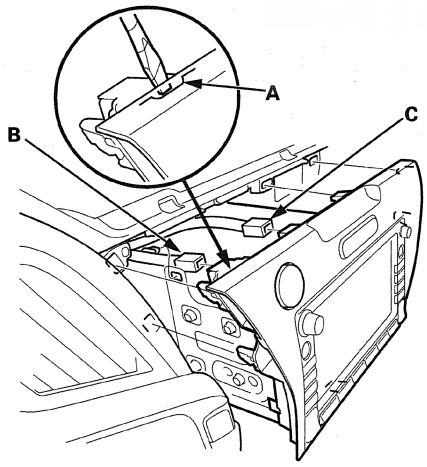
1. Make sure you have the 4-digit anti-theft code for the navigation system.
2. Eject all the discs from the original audio-navigation unit (see page 23-231). To avoid scratching or damaging the DVD, temporarily place the DVD in jewel case.
3. Remove the center lower lid (see page 20-89).

4. Remove the bolt (A).



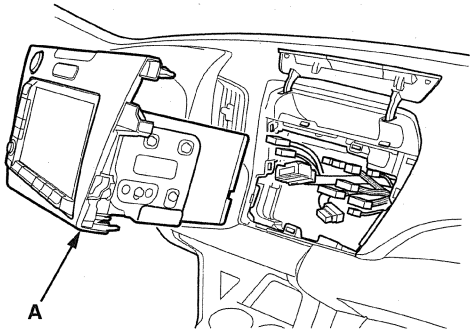
5. Remove the dashboard center upper trim (see page 20-88).

6. Lift the panel, taking care not to damage the dashboard. Insert the appropriate tool into the gap (A) between the dashboard and the center panel, then release the clips in order from the gap side.

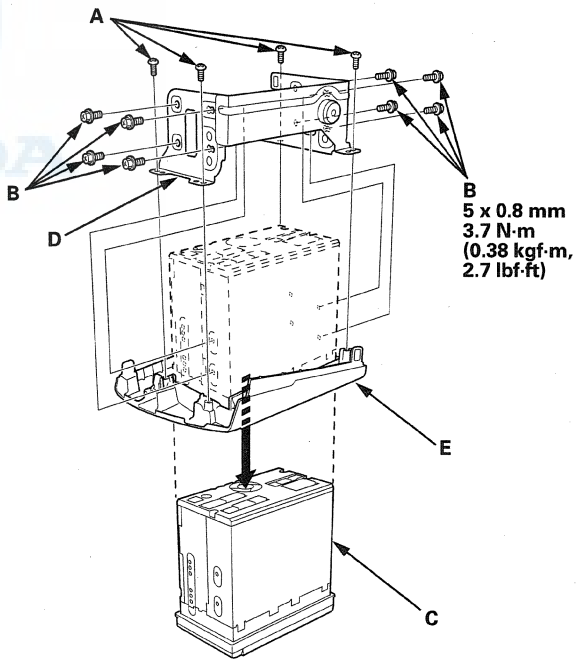


7. Disconnect the hazard warning switch 5P connector (B) and the front passenger's airbag cutoff indicator 5P connector (C).

8. Disconnect the connectors, then pull out the audio-navigation unit (A).



9. Remove the mounting screws (A) and bolts (B) from the audio-navigation unit (C), then remove the bracket (D).



(cont'd)

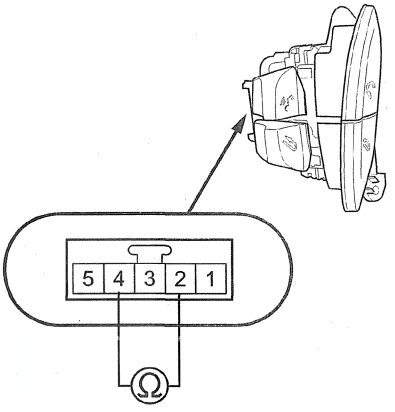
Audio-Navigation Unit Removal/Installation (cont'd)

10. Remove the audio-navigation unit from the center panel (E).
11. Install the audio-navigation unit in the reverse order of removal and note these items:
    - Make sure all connectors are secure.
    - If needed, enter the anti-theft codes for the audio system.
    - Set the clock.
12. Give the new anti-theft code to the customer if the audio-navigation unit is replaced.

Voice Control Switch Test

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

1. Remove the HFL-navigation voice control switch (see page 23-235).



2. Measure the resistance between terminals No. 2 and No. 4 in each switch position according to the table.

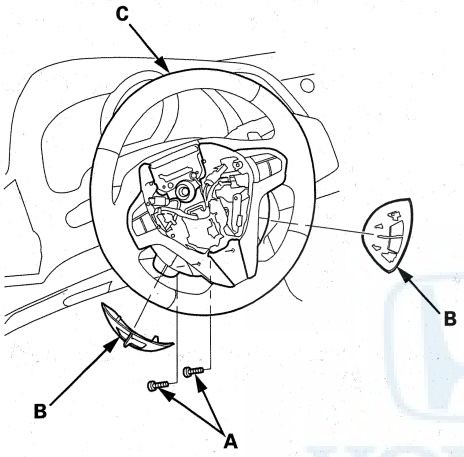
Position	Resistance
No button pressed	About 10 kΩ
Navigation TALK button	About 2.2 kΩ
Navigation BACK button	About 652 Ω

3. If the resistance is not as specified, replace the HFL-navigation voice control switch (see page 23-235).

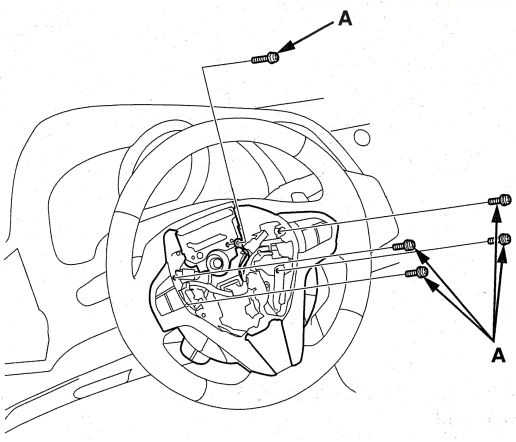
Voice Control Switch Replacement

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

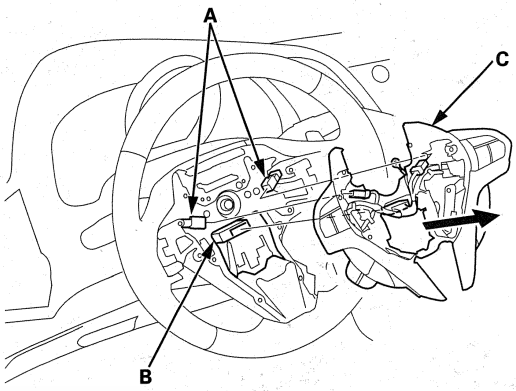
1. Remove the driver's airbag assembly (see page 24-166).
2. Remove the screws (A) and lids (B) from the steering wheel (C).



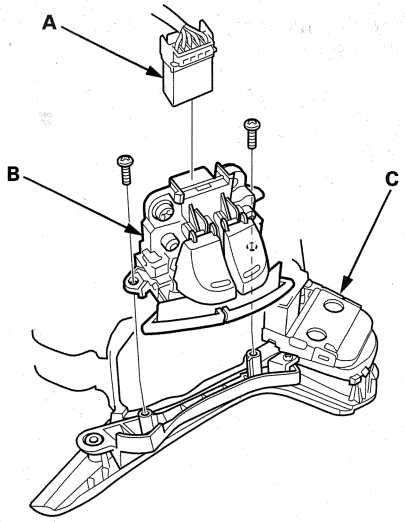
3. Remove the screws (A) from the steering wheel.



4. Disconnect the connectors (A) (CVT model) and the connector (B), then remove the steering wheel trim (C).



5. Disconnect the connector (A), then remove the screws and HFL-navigation voice control switch (B) from the steering wheel trim (C).

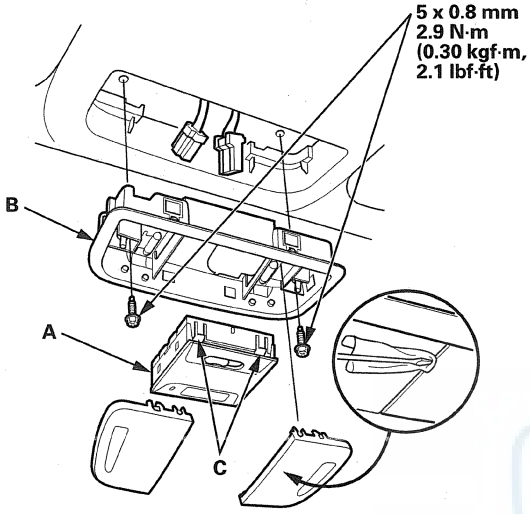


6. Install the HFL-navigation voice control switch in the reverse order of removal.

HONDA

HFL-Navigation Microphone Removal/Installation

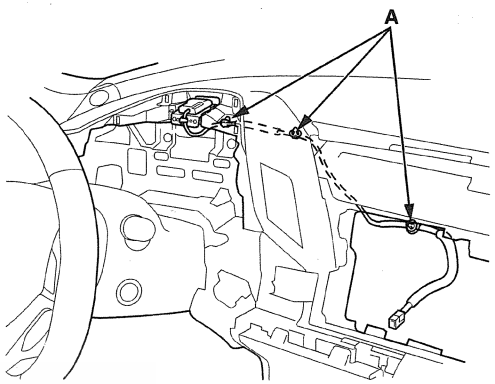
1. Remove the individual map light (see page 22-263).
2. Carefully pry off the microphone (A) from the map light housing (B) while pressing the retaining tabs (C).



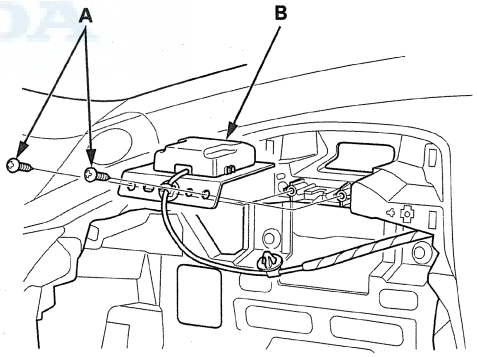
3. Install the HFL-navigation microphone in the reverse order of removal.

GPS Antenna Removal/Installation

1. Remove the audio-navigation unit (see page 23-232).
2. Remove the gauge control module (see page 22-354).
3. Remove the wire harness clips (A).



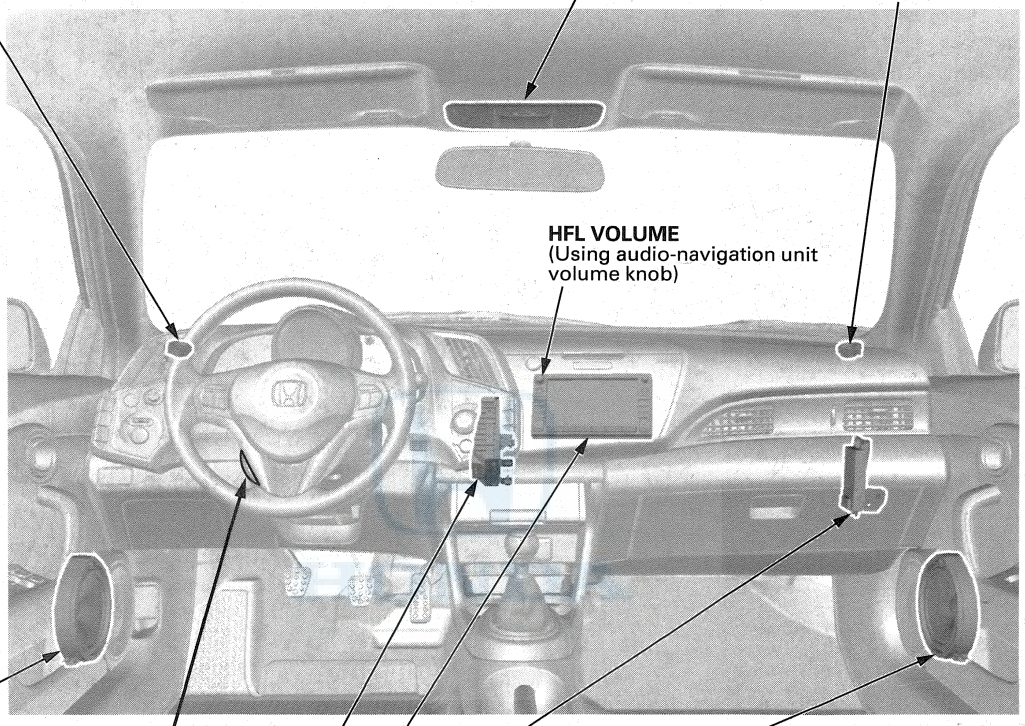
4. Remove the screws (A), then remove the GPS antenna (B).



5. Install the GPS antenna in the reverse order of removal.

Component Location Index

With navigation



HFL-NAVIGATION MICROPHONE
(Built-in the map light housing)
Removal/Installation, page 23-236

LEFT TWEETER
(Telephone sound output)

RIGHT TWEETER
(Telephone sound output)

HFL VOLUME
(Using audio-navigation unit volume knob)

DRIVER'S DOOR SPEAKER
(Telephone sound output)

PASSENGER'S DOOR SPEAKER
(Telephone sound output)

HANDSFREELINK CONTROL UNIT
Self-Diagnostic Function, page 23-258
Connector Inputs and Outputs, page 23-253
Input Test/Replacement, page 23-282

AUDIO-NAVIGATION UNIT
Removal/Installation, page 23-232

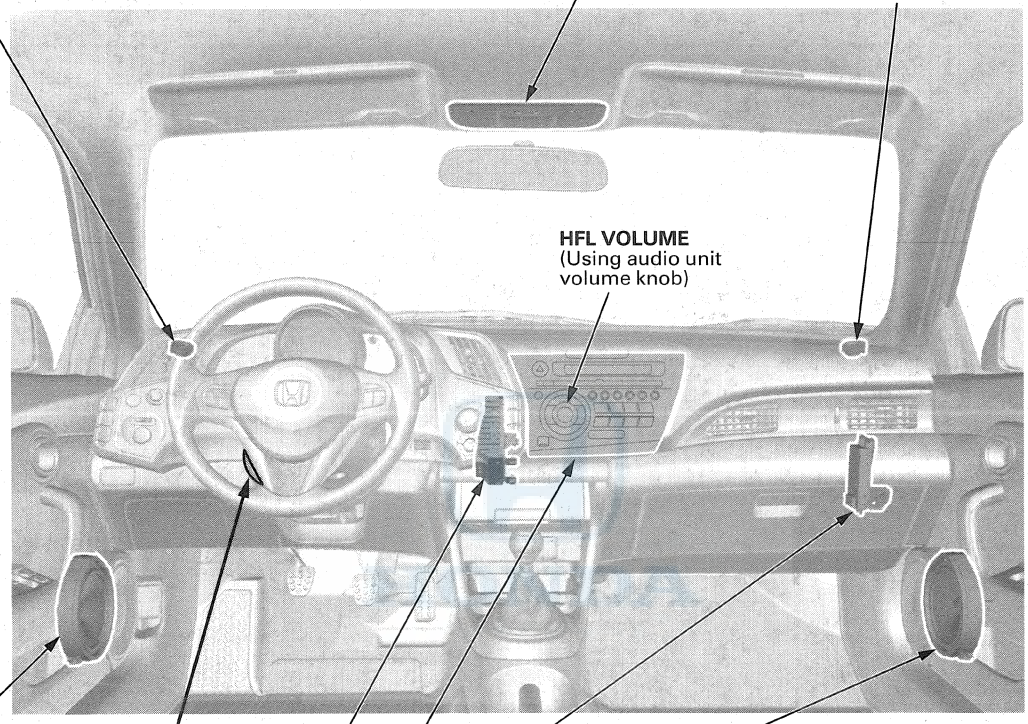
STEREO AMPLIFIER
Connector Inputs and Outputs, page 23-34
Removal/Installation, page 23-121

HFL SWITCH
Test, page 23-280
Replacement, page 23-235

(cont'd)

Component Location Index (cont'd)

Without navigation

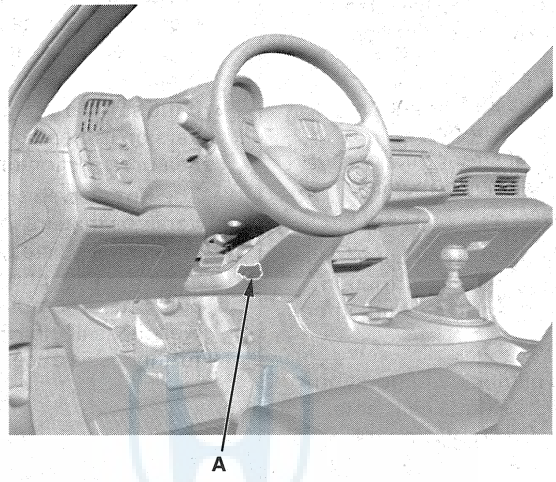


General Troubleshooting Information

How to Check for DTCs with the HDS

NOTE: Check the vehicle battery condition first (see page 22-85).

1. Make sure the ignition switch is turned to LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.



3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the HandsFreeLink control unit. If it does not, troubleshoot the DLC circuit (see page 11-383).
5. Select HandsFreeLink in the BODY ELECTRICAL menu.
6. Select DTCs in the HandsFreeLink menu.
7. Check for DTCs. If any DTCs are indicated, write down the DTCs, then go to the indicated DTC troubleshooting. If no DTCs are indicated, refer to symptom troubleshooting.

   NOTE:
   - After troubleshooting, clear the DTCs with the HDS.
   - For specific operations, refer to the HDS user's manual.

(cont'd)

General Troubleshooting Information (cont'd)

Introduction

The HFL system works only with Honda approved Bluetooth®-enabled cell phones with a hands-free profile. If you are not sure if a particular cell phone is compatible with the HFL system, Honda has a dedicated call center at 888-528-7876 and website handsfreelink.honda.com to answer your questions. You can also contact the call center for information about phone software versions and settings.

The HFL system allows you to make and receive hands-free calls. It cannot control the phone's performance (call quality and signal strength). For more information about performance and performance problems, refer to Dropped Calls.

Always call the HFL call center first, not Tech Line, because the HFL call center has the latest information about cell phone software versions, settings, and other issues.

Most HFL complaints are due to pairing, configuration, or compatibility issues. Contact the Honda call center after verifying the problem, or before replacing the HandsFreeLink control unit.

The call center is open Monday thru Friday from 6:00 a.m. to 6:00 p.m. CST; Saturday from 7:00 a.m. to 6:00 p.m. CST; and Sunday from 8:00 a.m. to 6:00 p.m. CST.

Checking Cell Phone Compatibility

The most important step in troubleshooting HFL issues is to identify the customer's phone model, software version, and the cellular carrier that experiences the HFL problem. Not all phones with the Bluetooth feature and a hands-free profile are compatible with the Honda HFL system. Also make sure to check the compatible functions. Some functions of approved phones are not compatible with the HFL system.

Go to handsfreelink.honda.com, and check if the customer's phone is approved to work with the Honda HFL system.

NOTE:

- The lists of approved and currently testing phone model lists change, so make sure you view them frequently.
- Phones are added as they are approved.
- Phones can be removed from the approved list if a software bug is discovered that makes the phone incompatible. These phones can be added back to the approved list if the phone manufacturer corrects the bug.
- If the software bug is corrected, a new software version is created and may be listed in the Supported Features section of the phone.
- The Honda web site now includes the software versions that are tested and approved. When software versions are listed, you need to know which version is loaded on the phone to help you troubleshoot the customer's complaint. If you cannot access the Honda website, call the HFL call center at 888-528-7876 for further assistance.

Voice Control Tips and Improving Voice Recognition

To give a voice command to the HFL system, press and release the HFL TALK button. Always wait for the beep, then give your command in a clear, natural voice. The HFL microphone is on the ceiling by the map lights.

If the HFL system doesn't recognize your voice command, you'll hear "Pardon? Press the TALK button and say a command. For a list of commands, say handsfreehelp." If your command isn't recognized a second time, you'll hear "Bluetooth handsfreelink main menu. Available calling options are call, dial, redial, and transfer. Available setup options are phone setup, phone book, and system setup. For more detailed help, say handsfreehelp." If your command isn't recognized a third time, the HFL system sends you to its Help menu.

To hear a list of available options at any time, press the HFL TALK button and say "Hands-free help."

The HFL system may have problems recognizing some voices. To improve voice recognition:

- Close the windows.
- Set the fan speed to low (1 or 2) or off.
- Adjust the airflow from the center vents down, so that it's not blowing against the microphone on the ceiling.
- Speak in a clear and natural voice. If the system cannot recognize your command, try speaking louder, in a deeper tone.
- If the background noise is too loud, you may need to speak louder.
- If you speak with something in your mouth, or your voice is too high, the system may not interpret your command correctly.
- Find out if the problem is with one person or with everyone who uses the system. If the system has a problem with only one person's voice, this is a system limitation.

Many issues result from the customer not using the system properly. Make sure the customer is using the HFL buttons and not the navigation TALK/navigation BACK buttons. When the HFL TALK button is pressed, the customer hears one audible tone. When the HFL BACK button is pressed, the customer hears two audible tones. Make sure to press the HFL BACK button to exit the HFL main menu after completing a call and before giving any navigation commands.

The HFL system may experience a number recognition issue, such as when a customer says a set of numbers in a group unrecognized by the system. The HFL system understands phone numbers in specific blocks of 1, 3, 4, 7, and 10 numbers. For example, the system understands:

1234567890
123-456-7890
1-2-3-4-5-6-7-8-9-0

The system may become confused if numbers are stated in other blocks, as following:

1234-567-890
12-34-56-78-90
12345-67890
123-4567-890

(cont'd)

General Troubleshooting Information (cont'd)

Navigating Through HFL Menus

To skip a voice prompt, press and release the HFL TALK button while the HFL system is speaking. The system beings listening for your next voice command.

To go back a step in a voice command sequence, press and release the HFL BACK button, or press the HFL TALK button and say "Go back." If you don't say anything while the HFL system is listening for your voice command, it times out and stops voice recognition. The next time you press and release the HFL TALK button, the HFL system begins listening from the point it timed out.

If you've finished or want to stop a voice command sequence at any time, press and release the HFL BACK button, or press and release the HFL TALK button, wait for the beep, and say "Cancel." The next time you press and release the HFL TALK button, the HFL system begins from its main menu. To avoid keeping the audio system muted, press and release the HFL BACK button when you are finished.

NOTE: You can say multiple commands in one sequence, like "Phone setup-pair" after pressing the HFL TALK button.

Pairing a Cell Phone

You must pair an approved Bluetooth-compatible phone to the HFL system before you can make and receive calls. For a current list of approved phones and specific phone pairing instructions for each phone, see Checking Cell Phone Compatibility, go to handsfreelink.honda.com, or call 888-528-7876.

The following procedure works for most approved phones. If you cannot pair a phone to the HFL system with this procedure, refer to the phone's operating manual, the vehicle's Owner's Manual, visit handsfreelink.honda.com, or call 888-528-7876.

NOTE:

- You cannot pair a phone while the vehicle is moving.
- Your phone must be in Discovery Mode.
- A maximum of six Bluetooth-compatible phones can be paired to the system.
- Some non-approved phones may pair to the HFL system, but some features may not work, or the phone may cause the HFL system to malfunction.

1. With the phone on and the ignition switch in ACCESSORY (I) or ON (II), press and release the HFL TALK button. After the beep, say "Phone setup." The HFL responds, "Phone setup options are pair, edit, delete, list, status, next phone, set pairing code."
2. Press and release the HFL TALK button. After the beep, say "Pair." The HFL responds, "The pairing process requires operation of your mobile phone. For safety, only perform this function while the vehicle is stopped. For proper system function a compatible bluetooth phone is required. Please visit handsfreelink.honda.com for a list of approved phones and other system information. Handsfreelink is waiting to pair with a bluetooth phone. From your phone, search for bluetooth devices, and select handsfreelink. When prompted by your mobile phone enter the pairing code XXXX." The HFL system gives you a 4-digit pairing code.
3. When prompted by your mobile phone, enter the pairing code. Refer to your cell phone user guide for more information about searching for a Bluetooth device.
4. Once the phone is recognized by the HFL system, it responds, "Handsfreelink has connected to a new phone. A name is needed to identify this phone. Press the TALK button and say a name. For example, John's phone."
5. Press and release the HFL TALK button. After the beep, say the name you want to use. For example, say "Tom's phone." The HFL responds, "Tom's phone has been successfully paired. Returning to the main menu."

NOTE: If no phones are paired to the system when you press the TALK button, the system asks if you want to pair a phone. Press the TALK button and say "Yes." The system then proceeds to step 2.

Pairing Troubleshooting

Many pairing issues are resolved by altering the customer's phone settings. Call the HFL call center at 888-528-7876 after you have duplicated the problem.

Bluetooth feature settings must be turned on. Phone manufacturers set the default to disable Bluetooth features to conserve battery life. Cell phones may provide procedures to Temporary Power On Bluetooth, or Power On Bluetooth. Turn the Bluetooth feature on, pair the phone to the vehicle, and confirm the phone is linked. Do this by turning the phone off and back on. Make or receive a call to confirm that the cell phone is successfully paired.

When the phone's Bluetooth feature is on, other handsfree accessories such as earpieces or headsets may automatically reconnect to the phone when you turn on the accessory or move it within range of the cell phone. This results in the phone not connecting to the HFL system when the customer enters the vehicle. You must unlink the hands-free accessory from the phone before the HFL system can reconnect.

Some phones have an Auto Answer setting that functions with a headset. This setting must be turned off or the HFL system cannot accept any incoming calls. When this setting is on, it blocks the HFL system from answering the call, and the call goes to voice mail. This can cause the customer to think that the cell phone is not paired properly.

The HFL system can pair a maximum of six phones. Some vehicles will tell you that the HFL system has reached its maximum while other vehicles will not. To check how many phones are paired, press and release the HFL TALK button. After the beep, say "Phone setup list." The HFL system lists every assigned phone name paired with it, then finishes by saying "The entire list has been read. Returning to the main menu." Count the number of phones listed. If there are six, you must delete one phone before adding a new one.

Pairing Checks

For more information about pairing, refer to the cell phone Owner's Manual, or go to handsfreelink.honda.com.

1. Is the cell phone compatible with the Honda HFL system?
2. Is the Bluetooth feature turned on?
3. Is the customer using the HFL buttons, not the navigation TALK/navigation BACK buttons, when pairing?
4. Is the cell phone battery fully charged, and is there good signal strength when pairing?
5. Do a soft reset on the cell phone (see cell phone manual).
6. If the customer is trying to pair a Blackberry® or Palm Treo™ device, make sure the customer uses the shift key when entering the pass code. If the shift key is not pressed, the customer may be entering letters. The HFL does not recognize letters.

Dropped Calls

Customers may perceive dropped calls as being an HFL system fault, but most dropped calls are from cell phone and cell phone carrier issues. The HFL system does not directly handle the cell phone signal. It allows the cell phone to transmit the cell phone audio over the vehicle's audio system.

Before troubleshooting for dropped calls, confirm the cell phone settings:

- Disable Audio Answer. If Auto Answer is enabled, incoming calls are routed to voice mail.
- Disable Always Ask/Trust, Authorize Device, or similar setting, If these settings are enabled, each time the HFL system attempts to link to the phone, the phone will ask if you want to connect. If you do not allow the connection, the HFL will not operate. The phone must be set to Never Ask, Authorize Device, etc. (based on the phone manufacturer and carrier) for permission. Refer to the cell phone Owner's Manual for more information.
- Disable Flip Open to Answer. If this setting is enabled, the phone must remain open in the vehicle. If it is closed, the incoming calls are routed to voice mail.

(cont'd)

General Troubleshooting Information (cont'd)

Always confirm with the customer if the number of dropped calls is higher while using the HFL system as opposed to using the cell phone only. Customers often confuse problems with their phone or carrier as a problem with the HFL system. The HFL system cannot control or determine:

- Cellular connection quality.
- Signal strength.
- Cellular coverage.
- Ambient weather conditions that affect cellular signals.

When a customer complains about dropped calls, ask questions about when or where the calls are dropped, such as:

- Do you drive the same route on a regular basis?
- Does the call drop in the same location?
- Where do you keep your cell phone?
- Have you compared the number of dropped calls using the HFL versus making calls from the handset?
- Does your phone have an antenna that needs to be extended?

Many reasons for a dropped call are not related to the HFL system. Here are some causes for dropped calls:

- If the quantity of dropped calls is about the same when the customer uses the HFL system versus the handset, the issue is likely due to the cellular phone or carrier.
- If the phone is equipped with a retractable antenna, it needs to be extended to maximize signal strength.
- If a customer also notices that the calls tend to drop in the same areas, the HFL system may be operating normally, but something about the area diminishes cellular coverage to a point where the call drops.
- Hills or mountains can block or interfere with cellular signals.
- High-rise buildings, bridges, or other large structures may block or interfere with cellular signals.
- Placing the cell phone in a purse, in a metal briefcase, under the seat, in the glove box can all affect signal reception.
- There are coverage gaps in the cellular service. When driving, a call is typically passed from one tower to another. If the customer drives through an area where there is a coverage gap between towers, the call drops.
- Electrical storms, heavy rain, or overcast conditions interfere with signal strength.
- The cell phone battery's state of charge can affect signal reception. A low battery may reduce the phone's ability to boost the antenna's power and function properly, especially in low signal strength areas. Some phone manufacturers trade off signal transmission and reception strength for battery life. As the battery weakens, the signal strength may also weaken. Some cell phones may operate more effectively than others in low signal strength areas, especially with a partially charged battery, and depending on whether or not the retractable antenna is fully extended (if applicable). On these models, make sure the antenna is always extended to maximize signal strength and extend battery life.

Phone Will Not Automatically Connect to the HFL

Call the HFL call center at 888-528-7876 after you have duplicated the problem.

If a customer complains that their cell phone is not automatically connecting to the HFL system when they enter the vehicle, do this:

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is properly paired to the HFL system.
3. Do a soft reset to the cell phone.
4. Check if the phone has an Authorized Connection or Trusted option.
5. Check the battery and signal strength on the cell phone. Pairing a phone requires optimal signal strength and a nearly full battery.

Incoming Calls

Call the HFL call center at 888-528-7876 after you have duplicated the problem.

If a customer complains that they cannot receive incoming calls through the HFL system, see if the call is routing to the cell phone instead of the HFL system. An easy way to know if the call is routed to the cell phone is when the customer says, "I can't hear the caller, but they can hear me."

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked.
3. Make sure the answer settings in the cell phone are set to multi-key or any-key answer. If the phone is set to flip open to answer, recommend changing the setting to Any Key or leaving the phone flipped open when using the HFL system.
4. Make sure the Auto Answer feature is turned off in the cell phone.
5. Do a soft reset to the phone.
6. Make sure the battery is fully charged and there is adequate signal strength.
7. Ask the customer if they have set specific ring tones or ringer IDs to specific contacts. If they have, recommend using one standard ring tone for all calls.
8. Make sure the customer is pressing the HFL TALK button and not the HFL BACK button or the navigation TALK/navigation BACK buttons.

(cont'd)

General Troubleshooting Information (cont'd)

Outgoing Calls

Call the HFL call center at 888-528-7876 after you have duplicated the problem.

If a customer says that they cannot place a call using the HFL system, ask if the call was initiated through the HFL system or the cell phone itself.

If the call is placed by the HFL system:

1. Make sure the Bluetooth feature is turned on in the cell phone.
2. Make sure the cell phone is paired to the HFL system and linked.
3. Make sure the customer is pressing the HFL TALK button before each command and going through the calling process correctly.
4. Make sure the customer is pressing the HFL TALK button and not the HFL BACK button or the navigation TALK/navigation BACK buttons.
5. Check if the cell phone has an Authorized Connections or Trusted option.
6. Do a soft reset to the cell phone.

If the call is placed by the cell phone:

By default, the call will automatically transfer to HFL. This setting can be changed using the "Auto Transfer" command under the "System Setup" menu. If it is preferred to have a call placed by the cell phone remain on the cell phone, then the Auto Transfer featured should be set to Disabled. The "Transfer" command can be used to transfer calls between the HFL and handset.

Clearing the HFL System

NOTE:

- This operation clears the HFL system of all pass code(s), any paired phones, and all names in the HFL phonebook.
- Clearing the HFL system is recommended before selling the vehicle.
- If the HFL system is locked and the pass code has been lost or forgotten, see the symptom troubleshooting (see page 23-271).

1. Press and release the HFL TALK button. After the beep, say "System Setup Clear" and the HFL system responds, "This process will clear all paired phones, clear all entries in the phonebook, clear the security pass code, and restore all defaults in the system setup. Is this what you would like to do?"
2. Press and release the HFL TALK button. After the beep, say "Yes" and the HFL system responds, "Preparing to clear the system, which may take up to 2 minutes to complete. To proceed, press the talk button, and say "Continue." Otherwise say "Go back" or "Cancel."
3. Press and release the HFL TALK button. After the beep, say "Continue" to proceed, or say "Go back" or "Cancel".
4. If you said "Continue," the HFL responds, "Please wait until the system is cleared." After a short period of time (up to two minutes) the HFL responds, "The system has been cleared."

Glossary of Terms

Auto Answer

This cell phone setting forces incoming calls to automatically be answered by the handset. Disable this feature on the phone when using the HFL system, as it may interfere with the HFL system answering incoming calls. Set the phone setting to:

- Send Key
- Any Key
- Multi Key answer

Answer Options

These cell phone settings allow you to select how you would like to answer an incoming call on the handset. The answer option in the phone can affect inbound calls on the HFL system.

Authorized Connection

This cell phone setting allows the phone to connect automatically with the HFL system without prompting the customer for permission to connect. In some instances, it can affect the ability of the phone to properly route sound to the HFL system.

Bluetooth Power

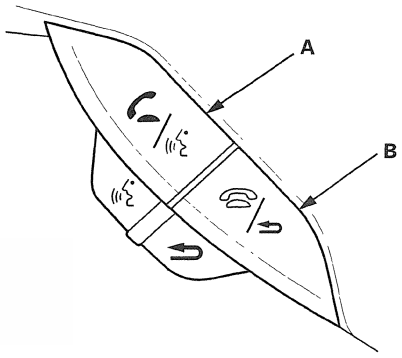
This cell phone function enables or disables the Bluetooth application. When using a hands-free device such as HFL, the Bluetooth application needs to be enabled.

Discovery Mode

You need to have the cell phone in Discovery Mode to allow other devices with Bluetooth capabilities (such as the HFL system) to find the phone during the pairing process.

HFL Buttons

- HFL TALK button (A): Use this button on the steering wheel to give commands. Press the button before a voice command is given.
- HFL BACK button (B): Use this button on the steering wheel to end a call or return to a previous prompt in the HFL menu. Pressing the button twice or holding it down returns you to the idle.



Hard Reset (Cellular Phone)

Hard reset clears the saved settings in the cell phone and restores it to the factory defaults. A hard reset should be done only as a last resort (see the cell phone Owner's Manual for more information).

Linking

This is when your paired phone is actively ready to use the HFL system. You can pair up to six phones to the HFL system, but only one phone can be linked at a time. If two paired phones are in the vehicle, only the phone that is linked can use the HFL system and functions. The second phone must be used as a normal handset.

Pairing

A description for linking two Bluetooth devices together. In this case, you are linking a cell phone with the HFL system. After the pairing process is complete, the devices are able to recognize each other and communicate wirelessly via Bluetooth.

Soft Reset (Cellular Phone)

This helps to restore the basic functions of the phone. To do a soft reset, turn the phone power off, remove and reinsert the cell phone battery, then turn the phone back on. See the cell phone user manual for more information.

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General Troubleshooting Information (cont'd)

Software Version

This refers to the software version loaded in the cell phone. The software version that was tested and determined to be compatible with the HFL system may be listed on the HFL website. Not all software versions are compatible with the HFL system.

Standard Ringtone

These ringtones come factory-installed on the cell phone.

DTC Troubleshooting Index

With navigation

DTC	Description	DTC type	Page
B1775	Microphone input/output shorted to power	Signal error	DTC Troubleshooting (see page 23-259)
B1776	Microphone input/output shorted to ground or open	Signal error	DTC Troubleshooting (see page 23-261)
B1779	HandsFreeLink steering wheel switch failure	Signal error	DTC Troubleshooting (see page 23-264)
B1780	HandsFreeLink steering wheel switch line short	Signal error	DTC Troubleshooting (see page 23-268)
B1792	HandsFreeLink control module error	Internal error	DTC Troubleshooting (see page 23-270)
U1280	Communication bus line error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-140)

(cont'd)

DTC Troubleshooting Index (cont'd)

Without navigation

DTC	Description	DTC type	Page
B1775	Microphone input/output shorted to power	Signal error	DTC Troubleshooting (see page 23-260)
B1776	Microphone input/output shorted to ground or open	Signal error	DTC Troubleshooting (see page 23-263)
B1779	HandsFreeLink steering wheel switch failure	Signal error	DTC Troubleshooting (see page 23-266)
B1780	HandsFreeLink steering wheel switch line short	Signal error	DTC Troubleshooting (see page 23-269)
B1792	HandsFreeLink control module error	Internal error	DTC Troubleshooting (see page 23-270)
U1280	Communication bus line error (BUS-OFF)	Loss of communication	DTC Troubleshooting (see page 22-140)

Symptom Troubleshooting Index

NOTE: Most HFL problems with pairing and HFL function are usually caused by the cell phone and its configuration. Call the HFL support desk at 888-528-7876 for help before any HFL components.

With navigation

Symptom	Diagnostic procedure	Also check for
HFL does not respond	Control Unit Input Test (see page 23-282)	Check and repair all CAN related DTCs.
The Bluetooth icon in the navigation display is not displayed	• There is no HFL-compatible phone paired to the vehicle. Pair an approved HFL-compatible phone to the vehicle • Symptom Troubleshooting (see page 23-278)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance. Check the Diagnostic Menu and use the Navi System Link.
The Honda approved Bluetooth phone is having problems pairing to the vehicle	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The Honda approved Bluetooth phone cannot use all its functions	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The Honda approved Bluetooth phone does not place or receive calls using the HFL system	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The customer wants the HFL system reset (all phones and address information cleared from the HFL system)	Clearing the HFL system (see page 23-246)	See the Owner's Manual for additional information.
The HFL system is locked and the pass code has been lost or forgotten	Symptom Troubleshooting (see page 23-271)	
The HFL system does not recognize all voice prompts	Symptom Troubleshooting (see page 23-270)	Also see Voice control tips (see page 23-241).
The HFL system speaks in French	See the HFL section in the Owner's Manual for Changing Language	
The address book does not transfer from the Honda approved Bluetooth phone to HFL system	There is no HFL compatible phone paired to the vehicle or the approved phone does not support the function. Pair an approved HFL compatible phone to the vehicle	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876
The HFL messages cannot be heard or are weak	Symptom Troubleshooting (see page 23-272)	Excessive interior noise (open windows, vents blowing on microphone, etc.).

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Symptom Troubleshooting Index (cont'd)

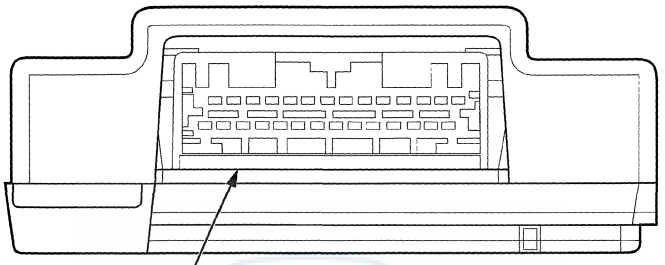
NOTE: Most HFL problems with pairing and HFL function are usually caused by the cell phone and its configuration. Call the HFL support desk at 888-528-7876 for help before any HFL components.

Without navigation

Symptom	Diagnostic procedure	Also check for
HFL does not respond	Control Unit Input Test (see page 23-282)	Check and repair all CAN related DTCs.
The Bluetooth icon in the display is not displayed	• There is no HFL-compatible phone paired to the vehicle. Pair an approved HFL-compatible phone to the vehicle • Symptom Troubleshooting (see page 23-279)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The Honda approved Bluetooth phone is having problems pairing to the vehicle	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The Honda approved Bluetooth phone cannot use all its functions	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The Honda approved Bluetooth phone does not place or receive calls using the HFL system	HFL Self-Diagnostic Function (see page 23-258) or HFL System Troubleshooting (see page 23-255)	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876 for further assistance.
The customer wants the HFL system reset (all phones and address information cleared from the HFL system)	Clearing the HFL system (see page 23-246)	See the Owner's Manual for additional information.
The HFL system is locked and the pass code has been lost or forgotten	Symptom Troubleshooting (see page 23-271)	
The HFL system does not recognize all voice prompts	Symptom Troubleshooting (see page 23-270)	Also see Voice control tips (see page 23-241).
The HFL system speaks in French	See the HFL section in the Owner's Manual for Changing Language	
The address book does not transfer from the Honda approved Bluetooth phone to HFL system	There is no HFL compatible phone paired to the vehicle or the approved phone does not support the function. Pair an approved HFL compatible phone to the vehicle	The phone must be on the Honda list of approved Bluetooth phones and configured correctly. For a current list of approved phones, go to handsfreelink.honda.com, or call 888-528-7876
The HFL messages cannot be heard or are weak	Symptom Troubleshooting (see page 23-275)	Excessive interior noise (open windows, vents blowing on microphone, etc.).

System Description

HandsFreeLink Control Unit Connector for Inputs and Outputs



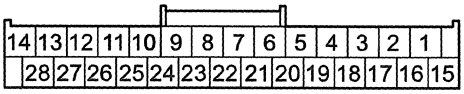
HANDSFREELINK CONTROL UNIT 28P CONNECTOR

HONDA

(cont'd)

System Description (cont'd)

HandsFreeLink Control Unit 28P Connector



Wire side of female terminals

Cavity	Wire Color	Terminal Name	Description
1	PNK	MIC−	Inputs sound signal for microphone
2	BLU	MIC+	Inputs sound signal for microphone
3	GRY*1	MIC SH	Shield for terminals No. 1 and No. 2
4	GRN	TELM SIG+	Outputs sound signal for HFL
5	———	———	Not used
6	———	———	Not used
7*2	GRY*1	NAVI COMM SH	Shield for terminals No. 8, No. 9, No. 22 and No. 23
8*2	PNK	NAVI COMM 3	Communication signal for HFL
9*2	LT GRN	NAVI COMM 4	Communication signal for HFL
10	———	———	Not used
11	———	———	Not used
12	BRN	HFL MUTE	HFL MUTE signal
13	GRN	HFL STRG SW	Detects voltage for HFL switch
14	BLK	GND	Ground for HandsFreeLink control unit (G503)
15*2	GRN	MIC SIG−	Outputs sound signal for microphone
16*2	RED	MIC SIG+	Outputs sound signal for microphone
17	GRY*1	TELM SIG SH	Shield for terminals No. 4 and No. 18
18	RED	TELM SIG−	Outputs sound signal for HFL
19	———	———	Not used
20	———	———	Not used
21	———	———	Not used
22*2	LT BLU	NAVI COMM 2	Communication signal for HFL
23*2	ORN	NAVI COMM 1	Communication signal for HFL
24	BLU	HFL ICON	HFL ICON signal
25	GRN	B-CAN	B-CAN communication signal
26	———	———	Not used
27	PUR	ACC	Power source for accessories
28	PNK	+B	Continuous power source

*1: The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram.
*2: With navigation

HFL System Troubleshooting

NOTE:
- Before doing this troubleshooting, refer to General Troubleshooting Information (see page 23-240) to make sure the phone is compatible and configured correctly. You can also check online at handsfreelink.honda.com.
- You must be able to duplicate the customer's concern to successfully diagnose the problem.
- Always use the customer's phone.
- Make sure the phone is approved and configured correctly. Online, go to handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.
- Also check what features are approved as some approved phones may have features that are not compatible with the HandsFreeLink system.

1. Make sure the phone is approved by checking handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.

   Is the Bluetooth phone approved?

   YES–Go to step 2.

   NO–Explain to the customer that the cell phone is not approved. Recommend they get a phone that does appear on the handsfreelink.honda.com website.■

2. Check the features of the approved phone at handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.

   Are all the features approved?

   YES–Go to step 3.

   NO–Check and see if the feature that is not approved is the same as the customer complaint. If the complaint is about the feature that is not approved, the vehicle is OK. Explain to the customer that the feature is not approved to work with the HFL. If the complaint is an approved feature, go to step 3.

3. Connect the HDS to the DLC.
4. Turn the ignition switch to ON (II).
5. Check for DTCs.

   Are any DTCs indicated?

   YES–Repair the indicated DTCs, and recheck.■

   NO–Go to step 6.

6. Try to duplicate the problem.

   Can you duplicate the problem?

   YES–Go to step 7.

   NO–The system is OK at this time.■

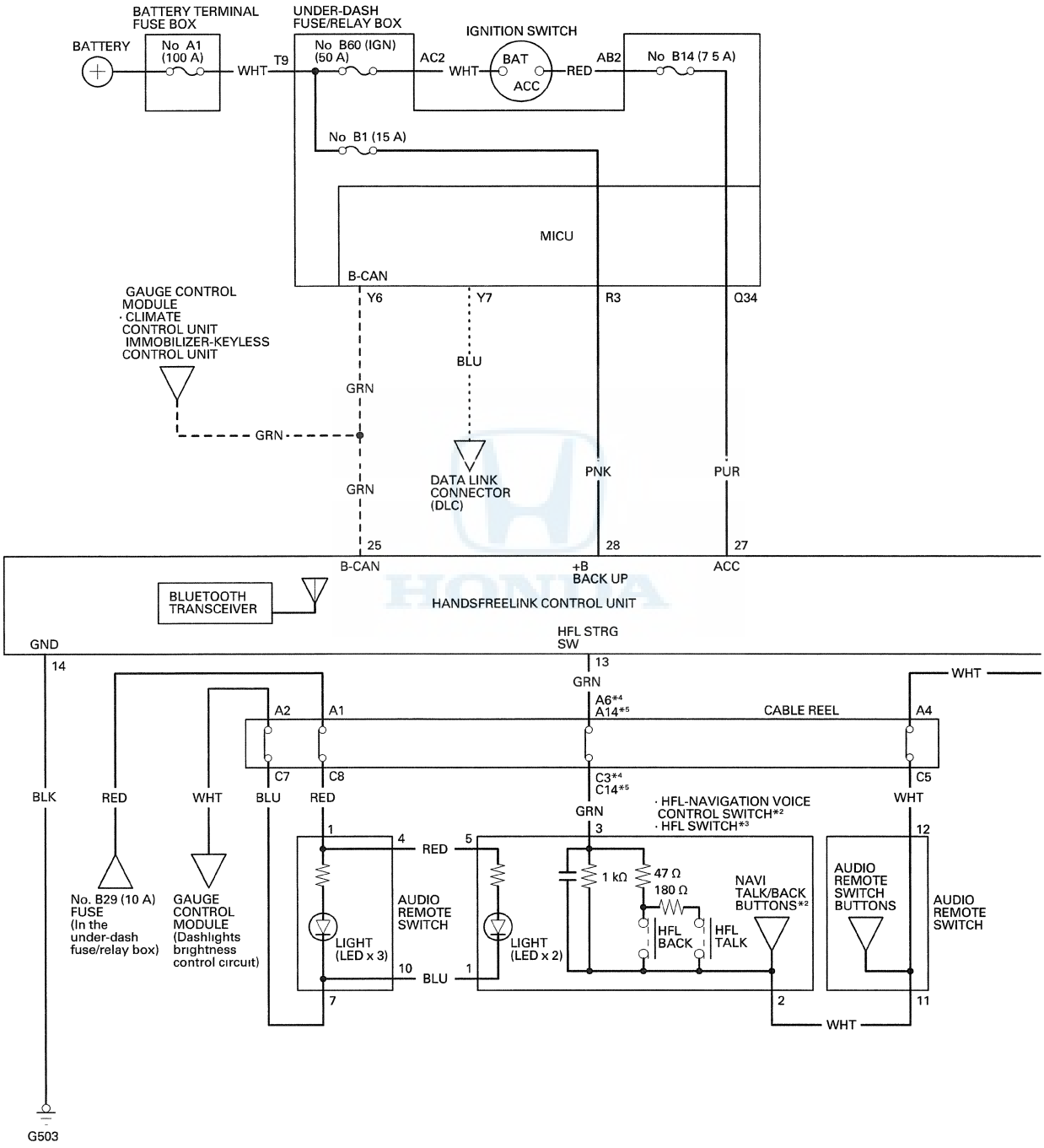
7. Pair the phone to a known-good vehicle (same model, year, and trim), and try duplicate the problem.

   Does the phone have the same problem on the known-good vehicle?

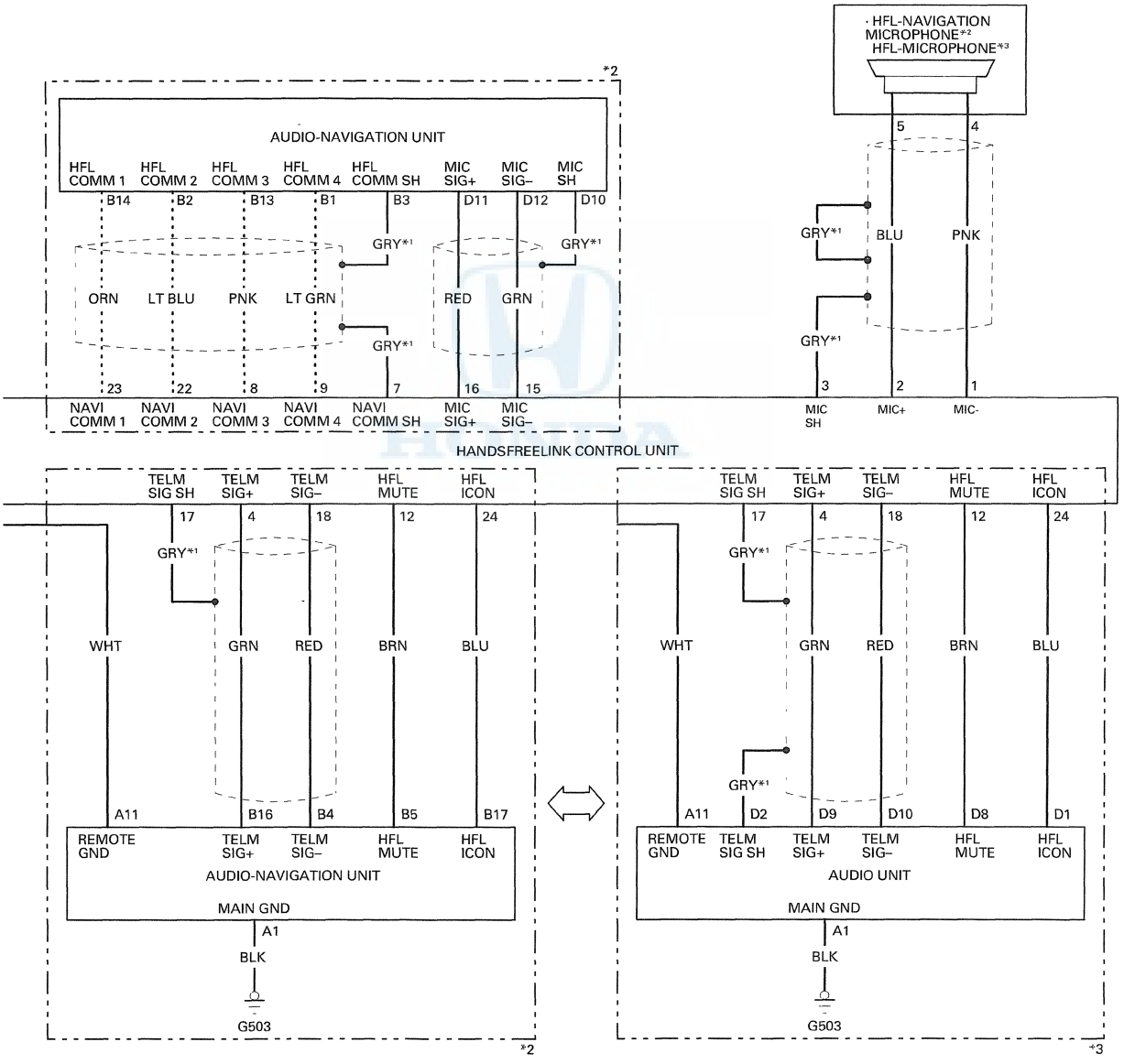
   YES–Call the HFL support desk at 888-528-7876 to make sure the phone is configured correctly and has the correct software. If the phone is configured correctly, it is either a characteristic of the HFL system, or a characteristic of the particular approved phone being used. Explain to your customer that this is a system characteristic. Another phone from the approved phone list may give more favorable results.■

   NO–Substitute a known-good HandsFreeLink control unit, and recheck. If the problem goes away, replace the original HandsFreeLink control unit (see page 23-282).■

Circuit Diagram



*1 The shielded wires have a heat-shrink tube insulating the outside of the wire. The color of the insulating tube, typically black or dark gray, may not match the color of the wire shown on the circuit diagram
*2 With navigation
*3 Without navigation
*4 '11 M/T model
*5 CVT model and '12 M/T model
- - - - - - : CAN line
. . . . . : Other communication line
- - - - - - : Shielding



Self-Diagnostic Function

NOTE: This procedure should be used only if HDS is unavailable.

To run the self-diagnostic function, do the following:

1. Turn the ignition switch to ON (II).
2. Press and hold the HFL BACK button for more than 5 seconds.
3. When the HandsFreeLink system enters the self-diagnostic function, the following will occur.
   - If the system has not completed testing for DTC's, the HandsFreeLink system says "The hands free system test is in progress."
   - If there is no DTC, the HandsFreeLink system says "The hands free system is OK."
   - If there is any DTC, the HandsFreeLink system says "The hands free system needs to be serviced."
   - The self-diagnostic function ends when the unit returns to idle state.

   NOTE: The self-diagnostic function can only be initiated while the HFL is in an idle state.

DTC B1775: Microphone input/output shorted to power (with navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

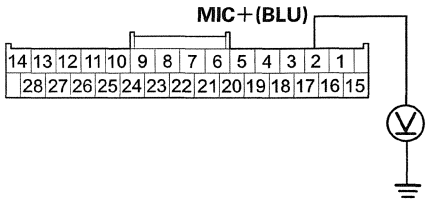
1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Is DTC B1775 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the HFL-navigation microphone 10P connector.
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between HandsFreeLink control unit 28P connector terminal No. 2 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

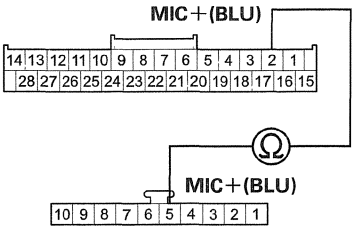
Is there voltage?

YES–There is a short to power in the wire between the HandsFreeLink control unit and the HFL-navigation microphone. Replace the affected shielded harness.■

NO–Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 2 and HFL-navigation microphone 10P connector terminal No. 5.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



HFL-NAVIGATION MICROPHONE 10P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit. If the symptom does not go away, replace the HFL-navigation microphone (see page 23-236).■

NO–There is an open in the wire between the HandsFreeLink control unit and the HFL-navigation microphone. Replace the affected shielded harness.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1775: Microphone input/output shorted to power (without navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

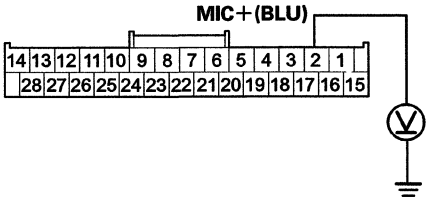
1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Is DTC B1775 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the HFL microphone 10P connector.
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Turn the ignition switch to ON (II).
9. Measure the voltage between HandsFreeLink control unit 28P connector terminal No. 2 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

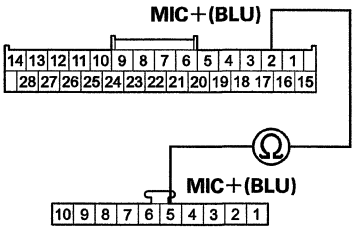
Is there voltage?

YES–There is a short to power in the wire between the HandsFreeLink control unit and the HFL microphone. Replace the affected shielded harness.■

NO–Go to step 10.

10. Turn the ignition switch to LOCK (0).
11. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 2 and HFL microphone 10P connector terminal No. 5.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



HFL MICROPHONE 10P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit. If the symptom does not go away, replace the HFL microphone (see page 23-280).■

NO–There is an open in the wire between the HandsFreeLink control unit and the HFL microphone. Replace the affected shielded harness.■

DTC B1776: Microphone input/output shorted to ground or open (with navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

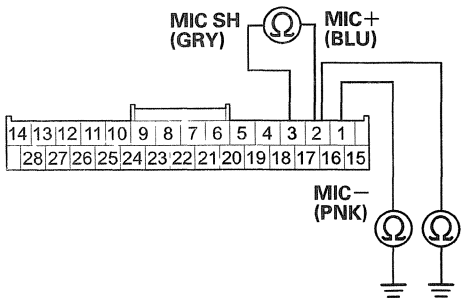
1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Is DTC B1776 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the HFL-navigation microphone 10P connector.
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Check for continuity between body ground and HandsFreeLink control unit 28P connector terminals No. 1 and No. 2 individually, then between terminals No. 2 and No. 3.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

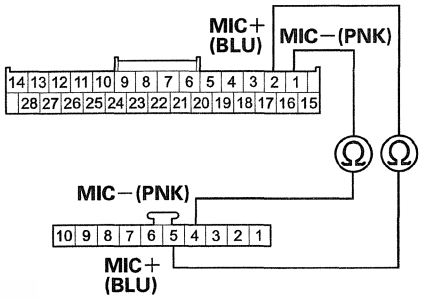
Is there continuity?

YES–There is a short in the wire(s) between the HandsFreeLink control unit and the HFL-navigation microphone. Replace the affected shielded harness.■

NO–Go to step 9.

9. Check for continuity between HandsFreeLink control unit 28P connector terminals No. 1 and No. 2 and HFL-navigation microphone 10P connector terminals No. 4 and No. 5 respectively.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



HFL-NAVIGATION MICROPHONE 10P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Go to step 10.

NO–There is an open in the wire(s) between the HandsFreeLink control unit and the HFL-navigation microphone. Replace the affected shielded harness.■

10. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector D (12P).

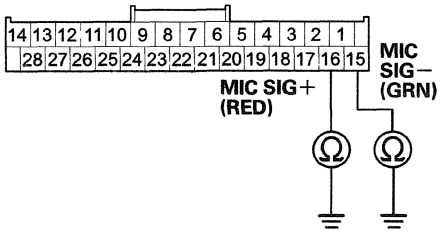
    NOTE:
    - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
    - Remove the PC card before removing the audio-navigation unit.

(cont'd)

DTC Troubleshooting (cont'd)

11. Check for continuity between body ground and HandsFreeLink control unit 28P connector terminals No. 15 and No. 16 individually.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

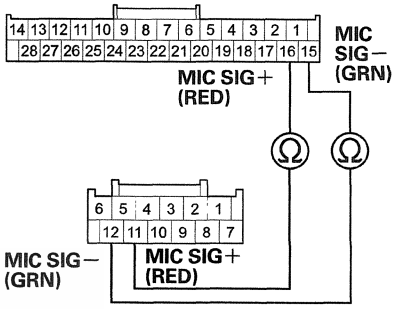
Is there continuity?

YES–There is a short to body ground in the wires between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness.■

NO–Go to step 12.

12. Check for continuity between HandsFreeLink control unit 28P connector terminals No. 15 and No. 16 and audio-navigation unit connector D (12P) terminals No. 12 and No. 11 respectively.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR D (12P)
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the faulty audio-navigation unit (see page 23-232).■

NO–There is an open in the wires between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness.■

DTC B1776: Microphone input/output shorted to ground or open (without navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

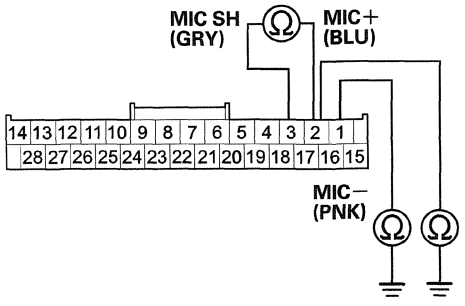
1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Is DTC B1776 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the HFL microphone 10P connector.
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Check for continuity between body ground and HandsFreeLink control unit 28P connector terminals No. 1 and No. 2 individually, then between terminals No. 2 and No. 3.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

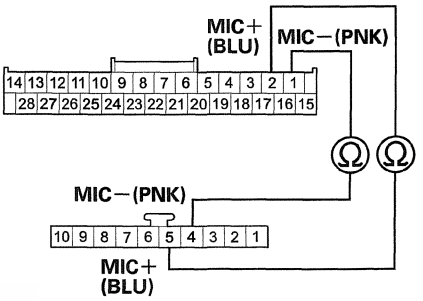
Is there continuity?

YES–There is a short in the wire(s) between the HandsFreeLink control unit and the HFL microphone. Replace the affected shielded harness.■

NO–Go to step 9.

9. Check for continuity between HandsFreeLink control unit 28P connector terminals No. 1 and No. 2 and HFL microphone 10P connector terminals No. 4 and No. 5 respectively.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



HFL MICROPHONE 10P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), then recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the faulty HFL microphone (see page 23-280).■

NO–There is an open in the wire(s) between the HandsFreeLink control unit and the HFL microphone. Replace the affected shielded harness.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1779: HandsFreeLink steering wheel switch failure (with navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), then start the vehicle and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

   Is DTC B1779 indicated?

   YES–Go to step 5.

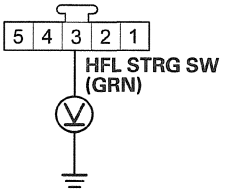
   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Do the HFL switch test (see page 23-280).

   Is the switch OK?

   YES–Go to step 7.

   NO–Replace the HFL-navigation voice control switch (see page 23-235).■
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Disconnect the HFL-navigation voice control switch 5P connector, then connect cable reel connector A (20P) and C (20P).
9. Turn the ignition switch to ON (II).
10. Measure the voltage between HFL-navigation voice control switch 5P connector terminal No. 3 and body ground.

HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR



Wire side of female terminals

Is there voltage?

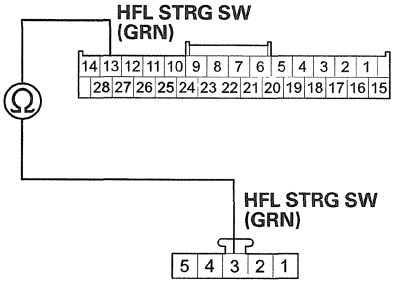
YES–Go to step 13.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and HFL-navigation voice control switch 5P connector terminal No. 3.

HANDS FREE TELEPHONE CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR

Wire side of female terminals

Is there continuity?

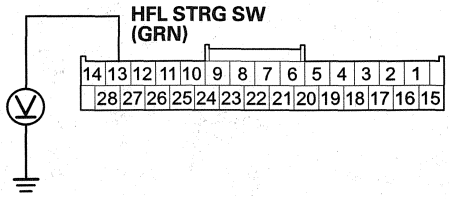
YES–Go to step 15.

NO–Repair an open in the wire between the HFL-navigation voice control switch, the cable reel, and the HandsFreeLink control unit.■

13. Disconnect cable reel connector A (20P).

14. Measure the voltage between HandsFreeLink control unit 28P connector terminal No. 13 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there voltage?

YES–Repair a short to power in the wire between the HandsFreeLink control unit and the cable reel.■

NO–Replace the cable reel (see page 24-183).■

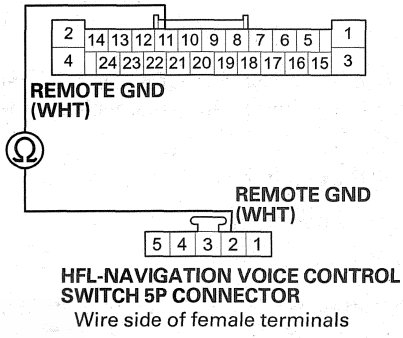
15. Remove the audio-navigation unit (see page 23-232), and disconnect audio-navigation unit connector A (24P).

NOTE:

- Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

16. Check for continuity between HFL-navigation voice control switch 5P connector terminal No. 2 and audio-navigation unit connector A (24P) terminal No. 11.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR
Wire side of female terminals

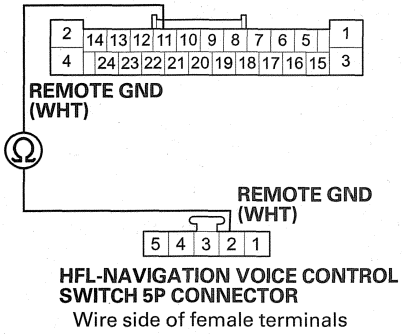
Is there continuity?

YES–Replace the HandsFreeLink control unit (see page 23-282).■

NO–Go to step 17.

17. Substitute a known-good cable reel, and check for continuity between HFL-navigation voice control switch 5P connector terminal No. 2 and audio-navigation unit connector A (24P) terminal No. 11.

AUDIO-NAVIGATION UNIT CONNECTOR A (24P)
Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the original cable reel (see page 24-183).■

NO–Repair an open in the wire between the audio remote, the HFL-navigation voice control switch, and the audio-navigation unit.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1779: HandsFreeLink steering wheel switch failure (without navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), then start the vehicle and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

   Is DTC B1779 indicated?

   YES–Go to step 5.

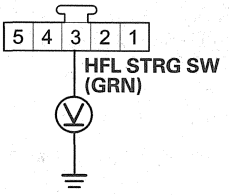
   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Do the HFL switch test (see page 23-280).

   Is the switch OK?

   YES–Go to step 7.

   NO–Replace the HFL switch (see page 23-281).■
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Disconnect the HFL switch 5P connector, then connect cable reel connector A (20P) and C (20P).
9. Turn the ignition switch to ON (II).
10. Measure the voltage between HFL switch 5P connector terminal No. 3 and body ground.

HFL SWITCH 5P CONNECTOR



Wire side of female terminals

Is there voltage?

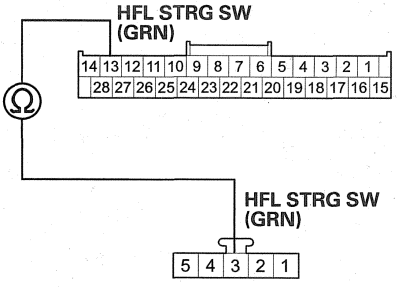
YES–Go to step 13.

NO–Go to step 11.

11. Turn the ignition switch to LOCK (0).
12. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and HFL switch 5P connector terminal No. 3.

HANDS FREE TELEPHONE CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



HFL SWITCH 5P CONNECTOR

Wire side of female terminals

Is there continuity?

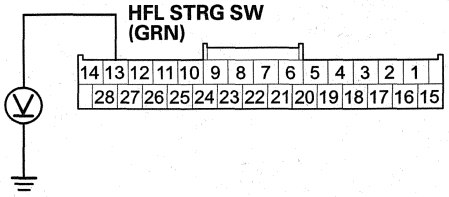
YES–Go to step 15.

NO–Repair an open in the wire between the HFL switch, the cable reel, and the HandsFreeLink control unit.■

13. Disconnect cable reel connector A (20P).

14. Measure the voltage between HandsFreeLink control unit 28P connector terminal No. 13 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there voltage?

YES–Repair a short to power in the wire between the HandsFreeLink control unit and the cable reel.■

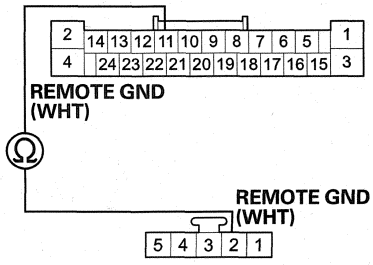
NO–Replace the cable reel (see page 24-183).■

15. Remove the audio unit (see page 23-119), and disconnect audio unit connector A (24P).

NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

16. Check for continuity between HFL switch 5P connector terminal No. 2 and audio unit connector A (24P) terminal No. 11.

AUDIO UNIT CONNECTOR A (24P)
Wire side of female terminals



HFL SWITCH 5P CONNECTOR
Wire side of female terminals

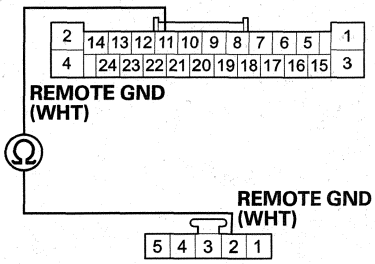
Is there continuity?

YES–Replace the HandsFreeLink control unit (see page 23-282).■

NO–Go to step 17.

17. Substitute a known-good cable reel, and check for continuity between HFL switch 5P connector terminal No. 2 and audio unit connector A (24P) terminal No. 11.

AUDIO UNIT CONNECTOR A (24P)
Wire side of female terminals



HFL SWITCH 5P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Replace the original cable reel (see page 24-183).■

NO–Repair an open in the wire between the audio remote, the HFL switch, and the audio unit.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1780: HandsFreeLink steering wheel switch line short (with navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), then start the vehicle, and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

   Is DTC B1780 indicated?

   YES–Go to step 5.

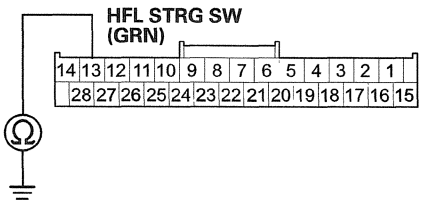
   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Do the HFL switch test (see page 23-280).

   Is the switch OK?

   YES–Go to step 7.

   NO–Replace the HFL-navigation voice control switch (see page 23-235).■
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Disconnect the HFL-navigation voice control switch 5P connector.
9. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the HandsFreeLink control unit and the HFL-navigation voice control switch.■

NO–Replace the HandsFreeLink control unit (see page 23-282).■

DTC B1780: HandsFreeLink steering wheel switch line short (without navigation)

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN system diagnosis test mode A (see page 22-126).

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), then start the vehicle, and turn the steering wheel back and forth several times.
4. Check for DTCs with the HDS.

   Is DTC B1780 indicated?

   YES–Go to step 5.

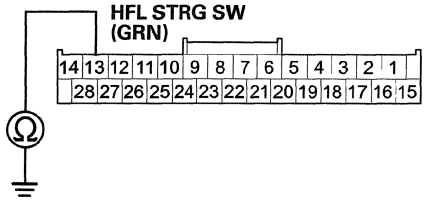
   NO–Intermittent failure, the system is OK at this time.■
5. Turn the ignition switch to LOCK (0).
6. Do the HFL switch test (see page 23-280).

   Is the switch OK?

   YES–Go to step 7.

   NO–Replace the HFL switch (see page 23-281).■
7. Disconnect the HandsFreeLink control unit 28P connector.
8. Disconnect the HFL switch 5P connector.
9. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between the HandsFreeLink control unit and the HFL switch.■

NO–Replace the HandsFreeLink control unit (see page 23-282).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC B1792: HandsFreeLink control unit module error

NOTE: Check the vehicle battery condition first (see page 22-85).

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Is DTC B1792 indicated?

   YES–Replace the HandsFreeLink control unit (see page 23-282).■

   NO–Intermittent failure, the system is OK at this time.■

Symptom Troubleshooting

The HFL system does not recognize all voice prompts

NOTE: Before doing this troubleshooting, refer to General Troubleshooting Information (see page 23-240) to make sure the phone is compatible and configured correctly. You can also check online at handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.

1. Connect the HDS to the DLC (see page 23-239).
2. Clear the DTCs with the HDS.
3. Turn the ignition switch to LOCK (0), and then back to ON (II).
4. Check for DTCs with the HDS.

   Are there any DTCs indicated?

   YES–Repair the indicated DTCs.■

   NO–Go to step 5.

5. Check to see if you can duplicate the customer compliant.

   Can you duplicate the compliant?

   YES–

   - With navigation: Go to step 6.
   - Without navigation: Go to step 7.

   NO–The system is OK at this time. Ask the customer to demonstrate the problem.■

6. Check if the navigation system can recognize voice prompts.

   Can the voice prompts be recognized?

   YES–Go to step 7.

   NO–Go to Voice control does not work/respond (see page 23-225).■

7. Pair the customer's phone to a known-good vehicle (same year and trim), and try to duplicate the problem.

   Can you duplicate the problem?

   YES–Call the HFL support desk at 888-528-7876, and inquire if there are any known issues for the problem. If there are no known issues, explain to the customer's this is a system characteristic and cannot be improved at this time.■

   NO–Substitute a known-good HFL-navigation microphone (see page 23-236) or the HFL microphone (see page 23-280). If the problem is still present, substitute a known-good HandsFreeLink control unit. If the problem goes away, replace the original HFL-navigation microphone (see page 23-236) or the HFL microphone (see page 23-280).■

The HFL system is locked and the pass code has been lost or forgotten

1. Connect the HDS to the DLC (see page 23-239).
2. Turn the ignition switch to ON (II).
3. From the Body Electrical menu, select HandsFreeLink.
4. Select Inspection, then select Pass code reset.
5. Follow the HDS prompts to reset the pass code.

(cont'd)

Symptom Troubleshooting (cont'd)

The HFL messages cannot be heard or are weak (with navigation)

NOTE: Before doing this troubleshooting, refer to General Troubleshooting Information (see page 23-240) to make sure the phone is compatible and configured correctly. You can also check online at handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.

1. Turn the ignition switch to ON (II).
2. Check that the audio system is operating normally and the speaker sound levels from different audio sources (AM, FM, CD, Navigation, etc.).

   Does the audio system work normally, and is the audio output from the speaker normal when playing various audio sources?

   YES–Go to step 3.

   NO–Go to No sound is heard from the speaker(s), with navigation troubleshooting (see page 23-72).■
3. Connect the HDS to the DLC (see page 23-239).
4. Clear the DTCs with the HDS.
5. Turn the ignition switch to LOCK (0), and then back to ON (II).
6. Check for DTCs with the HDS.

   Are there any DTCs indicated?

   YES–Repair the indicated DTCs.■

   NO–Go to step 7.
7. Press the HFL TALK button.

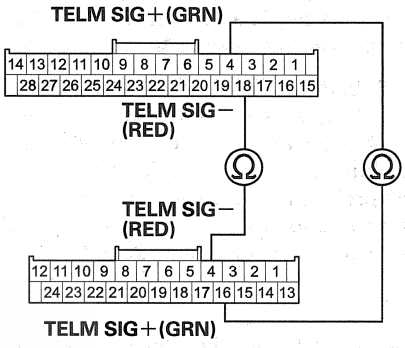
   Does the audio system mute when HFL messages are being played?

   YES–Go to step 8.

   NO–Go to step 14.
8. Turn the ignition switch to LOCK (0).
9. Remove the audio-navigation unit (see page 23-232).

   NOTE:
   - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
10. Disconnect audio-navigation unit connector B (24P) and the HandsFreeLink control unit 28P connector.
11. Check for continuity between the HandsFreeLink control unit 28P connector terminals No. 4 and No. 18 and audio-navigation unit connector B (24P) terminals No. 16 and No. 4 respectively.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR B (24P)
Wire side of female terminals

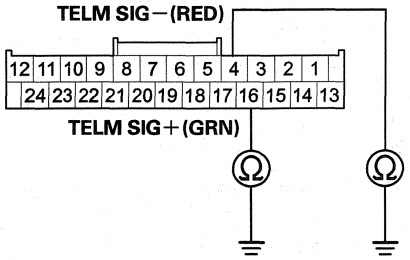
Is there continuity?

YES–Go to step 12.

NO–There is an open in the wire(s) between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness.■

12. Check for continuity between body ground and audio-navigation unit connector B (24P) terminals No. 4 and No. 16 individually.

AUDIO-NAVIGATION UNIT CONNECTOR B (24P)



Wire side of female terminals

Is there continuity?

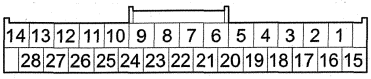
YES–There is a short to body ground in the wire(s) between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness.■

NO–Go to step 13.

13. Check for continuity between the HandsFreeLink control unit 28P connector according to the table.

From terminal (wire color)	To terminals (wire color)
17 (GRY)	4 (GRN), 18 (RED)
4 (GRN)	18 (RED)

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–There is a short in the wire(s) between the HandsFreeLink control unit and the audio-navigation unit. Replace the affected shielded harness.■

NO–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit. If the symptom does not go away, replace the audio-navigation unit (see page 23-232).■

14. Press the HFL TALK button.

Does "TEL" appear on the audio-navigation unit display when you press the HFL TALK button?

YES–Go to step 15.

NO–Go to step 20.

15. Turn the ignition switch to LOCK (0).

16. Remove the audio-navigation unit (see page 23-232).

NOTE:
- Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
- Remove the PC card before removing the audio-navigation unit.

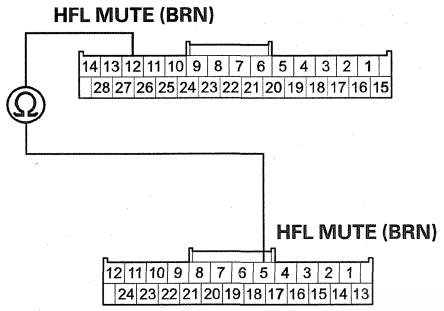
17. Disconnect audio-navigation unit connector B (24P) and the HandsFreeLink control unit 28P connector.

(cont'd)

Symptom Troubleshooting (cont'd)

18. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 12 and audio-navigation unit connector B (24P) terminal No. 5.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR B (24P)
Wire side of female terminals

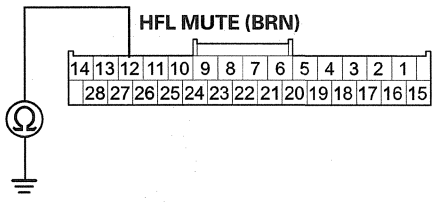
Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the HandsFreeLink control unit and the audio-navigation unit.■

19. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 12 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

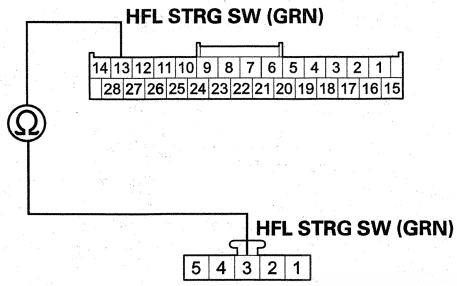
YES–Repair a short to body ground in the wire between HandsFreeLink control unit and audio-navigation unit.■

NO–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the audio-navigation unit (see page 23-232).■

20. Turn the ignition switch to LOCK (0).
21. Disconnect the HFL-navigation voice control switch 5P connector, then connect the cable reel 20P connector.
22. Disconnect the HandsFreeLink control unit 28P connector.

23. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and HFL-navigation voice control switch 5P connector terminal No. 3.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR
Wire side of female terminals



HFL-NAVIGATION VOICE CONTROL SWITCH 5P CONNECTOR
Wire side of female terminals

Is there continuity?

YES–Do the HFL Switch Test (see page 23-280).■

NO–Repair an open in the wire between the HandsFreeLink control unit and the HFL-navigation voice control switch.■

The HFL messages cannot be heard or are weak (without navigation)

NOTE: Before doing this troubleshooting, refer to General Troubleshooting Information (see page 23-240) to make sure the phone is compatible and configured correctly. You can also check online at handsfreelink.honda.com, or call the HFL support desk at 888-528-7876.

1. Turn the ignition switch to ON (II).
2. Check that the audio system is operating normally and the speaker sound levels from different audio sources (AM, FM, CD, etc.).

   Does the audio system work normally, and is the audio output from the speaker normal when playing various audio sources?

   YES–Go to step 3.

   NO–Go to No sound is heard from the speaker(s), without navigation (see page 23-76).■
3. Connect the HDS to the DLC (see page 23-239).
4. Clear the DTCs with the HDS.
5. Turn the ignition switch to LOCK (0), and then back to ON (II).
6. Check for DTCs with the HDS.

   Are there any DTCs indicated?

   YES–Repair the indicated DTCs.■

   NO–Go to step 7.
7. Press the HFL TALK button.

   Does the audio system mute when HFL messages are being played?

   YES–Go to step 8.

   NO–Go to step 14.
8. Turn the ignition switch to LOCK (0).
9. Remove the audio unit (see page 23-119).

   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
10. Disconnect audio unit connector D (12P) and the HandsFreeLink control unit 28P connector.

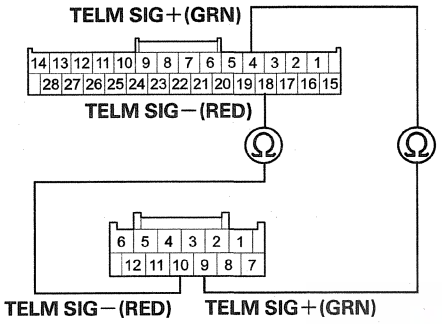
(cont'd)

Symptom Troubleshooting (cont'd)

11. Check for continuity between the HandsFreeLink control unit 28P connector terminals No. 4 and No. 18 and audio unit connector D (12P) terminals No. 9 and No. 10 respectively.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



AUDIO UNIT CONNECTOR D (12P)

Wire side of female terminals

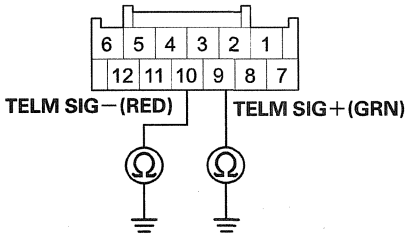
Is there continuity?

YES–Go to step 12.

NO–There is an open in the wire(s) between the HandsFreeLink control unit and the audio unit. Replace the affected shielded harness.■

12. Check for continuity between body ground and audio unit connector D (12P) terminals No. 9 and No. 10 individually.

AUDIO UNIT CONNECTOR D (12P)



Wire side of female terminals

Is there continuity?

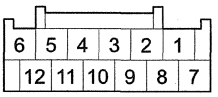
YES–There is a short to body ground in the wire(s) between the HandsFreeLink control unit and the audio unit. Replace the affected shielded harness.■

NO–Go to step 13.

13. Check for continuity between the terminals of audio unit connector D (12P) according to the table.

From terminal (wire color)	To terminals (wire color)
D2 (GRY)	D9 (GRN), D10 (RED)
D9 (GRN)	D10 (RED)

AUDIO UNIT CONNECTOR D (12P)



Wire side of female terminals

Is there continuity?

YES–There is a short in the wire(s) between the HandsFreeLink control unit and the audio unit. Replace the affected shielded harness.■

NO–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the audio unit (see page 23-119).■

14. Press the HFL TALK button.

Does "TEL" appear on the audio display when you press the HFL TALK button?

YES–Go to step 15.

NO–Go to step 20.

15. Turn the ignition switch to LOCK (0).

16. Remove the audio unit (see page 23-119).

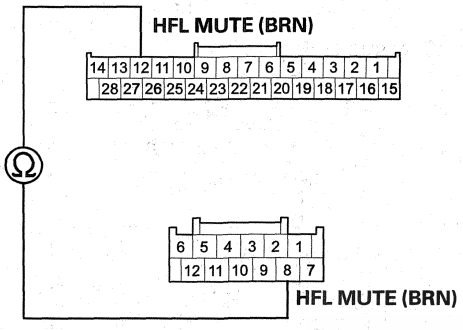
NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.

17. Disconnect audio unit connector D (12P) and the HandsFreeLink control unit 28P connector.

18. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 12 and audio unit connector D (12P) terminal No. 8.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



AUDIO UNIT CONNECTOR D (12P)

Wire side of female terminals

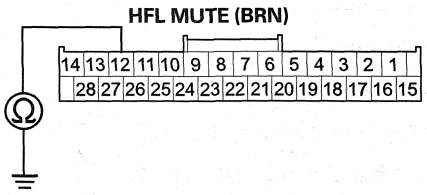
Is there continuity?

YES–Go to step 19.

NO–Repair an open in the wire between the HandsFreeLink control unit and the audio unit.■

19. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 12 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between HandsFreeLink control unit and audio unit.■

NO–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the audio unit (see page 23-119).■

20. Turn the ignition switch to LOCK (0).

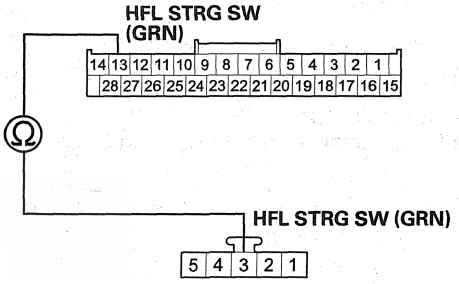
21. Disconnect the HFL switch 5P connector, then connect the cable reel 20P connector.

22. Disconnect the HandsFreeLink control unit 28P connector.

23. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 13 and HFL switch 5P connector terminal No. 3.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



HFL SWITCH 5P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–HFL Switch Test (see page 23-280).■

NO–Repair an open in the wire between the HandsFreeLink control unit and the HFL switch.■

(cont'd)

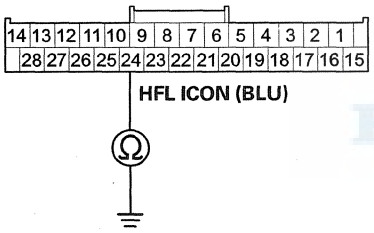
Symptom Troubleshooting (cont'd)

The Bluetooth icon in the navigation display is not displayed (with navigation)

1. Turn the ignition switch to LOCK (0).
2. Remove the audio-navigation unit (see page 23-232).

   NOTE:
   - Eject all the audio discs before removing the audio-navigation unit to prevent damaging the CD player's load mechanism.
   - Remove the PC card before removing the audio-navigation unit.
3. Disconnect audio-navigation unit connector B (24P) and the HandsFreeLink control unit 28P connector.
4. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 24 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

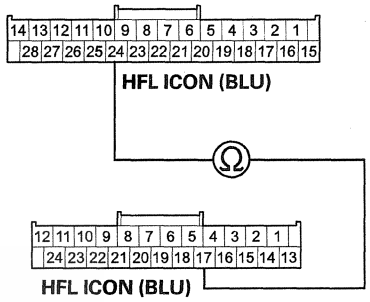
YES–Repair a short to body ground in the wire between HandsFreeLink control unit and the audio-navigation unit.■

NO–Go to step 5.

5. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 24 and audio-navigation unit connector B (24P) terminal No. 17.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



AUDIO-NAVIGATION UNIT CONNECTOR B (24P)

Wire side of female terminals

Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the audio-navigation unit (see page 23-232).■

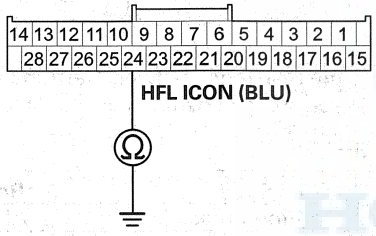
NO–Repair an open in the wire between the HandsFreeLink control unit and the audio-navigation unit.■

The Bluetooth icon in the display is not displayed (without navigation)

1. Turn the ignition switch to LOCK (0).
2. Remove the audio unit (see page 23-119).

   NOTE: Eject all the discs before removing the audio unit to prevent damaging the CD player's load mechanism.
3. Disconnect audio unit connector D (12P) and the HandsFreeLink control unit 28P connector.
4. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 24 and body ground.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR



Wire side of female terminals

Is there continuity?

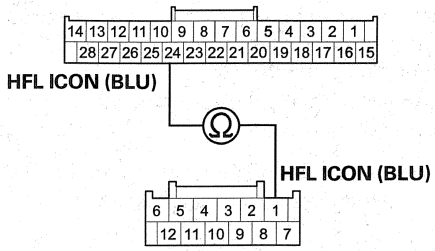
YES–Repair a short to body ground in the wire between HandsFreeLink control unit and the audio unit.■

NO–Go to step 5.

5. Check for continuity between HandsFreeLink control unit 28P connector terminal No. 24 and audio unit connector D (12P) terminal No. 1.

HANDSFREELINK CONTROL UNIT 28P CONNECTOR

Wire side of female terminals



AUDIO UNIT CONNECTOR D (12P)

Wire side of female terminals

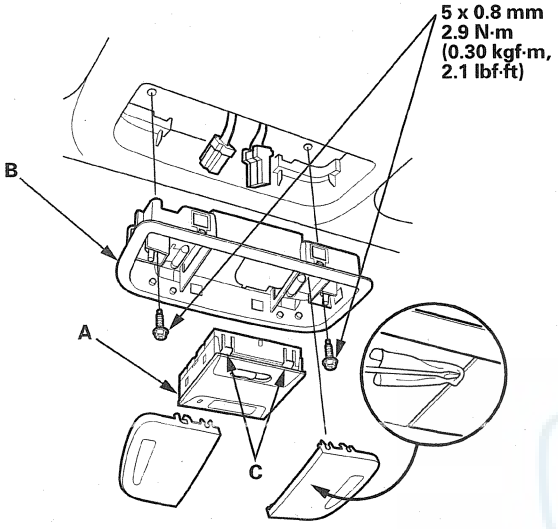
Is there continuity?

YES–Substitute a known-good HandsFreeLink control unit (see page 23-282), and recheck. If the symptom goes away, replace the original HandsFreeLink control unit (see page 23-282). If the symptom does not go away, replace the audio unit (see page 23-119).■

NO–Repair an open in the wire between the HandsFreeLink control unit and the audio unit.■

HFL Microphone Removal/Installation

1. Remove the individual map light (see page 22-263).
2. Carefully pry off the microphone (A) from the map light housing (B) while pressing in on the retaining tabs (C).

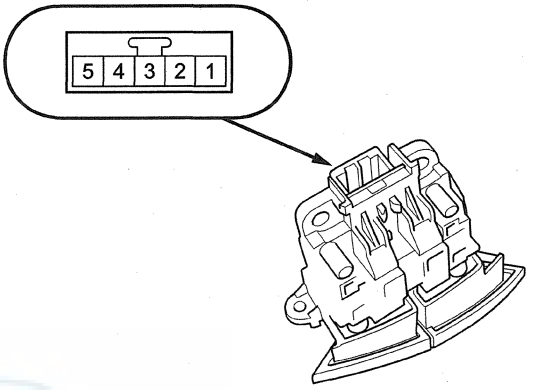


3. Install the HFL microphone in the reverse order of removal.

HFL Switch Test

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

1. Remove the HFL switch (see page 23-281).



2. Measure the resistance between terminals No. 2 and No. 3 in each switch position according to the table.

HFL Switch

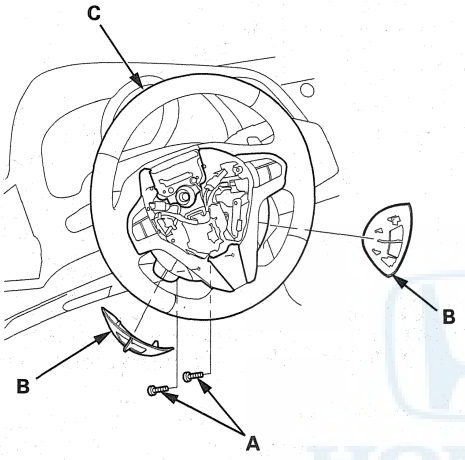
Position	Resistance
No button pressed	About 1 k Ω
HFL TALK button pressed	About 185 Ω
HFL BACK button pressed	About 45 Ω

3. If the resistance is not as specified, replace the HFL switch (see page 23-281).

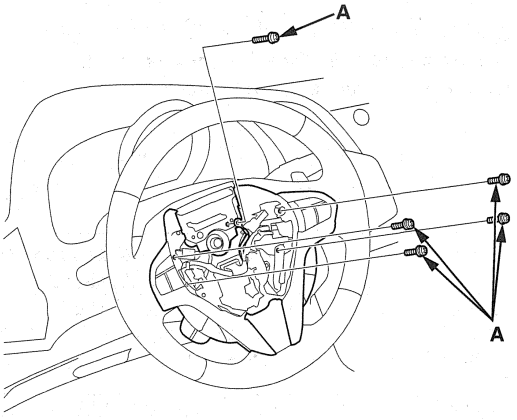
HFL Switch Replacement

SRS components are located in this area. Review the SRS component location (see page 24-11), and the precautions and procedures (see page 24-13) in the SRS section before doing repairs or service.

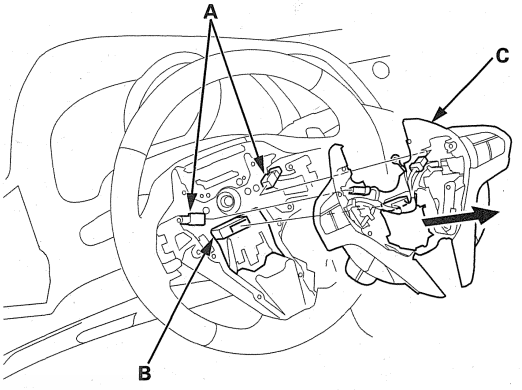
1. Remove the driver's airbag assembly (see page 24-166).
2. Remove the screws (A) and lids (B) from the steering wheel (C).



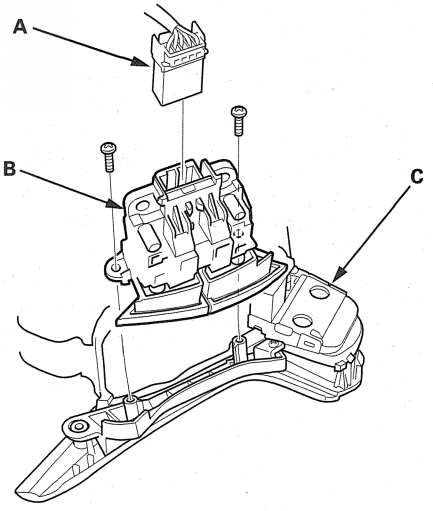
3. Remove the screws (A) from the steering wheel.



4. Disconnect the connectors (A) (CVT model) and the connector (B), then remove the steering wheel trim (C).



5. Disconnect the connector (A), then remove the screws and HFL switch (B) from the steering wheel trim (C).

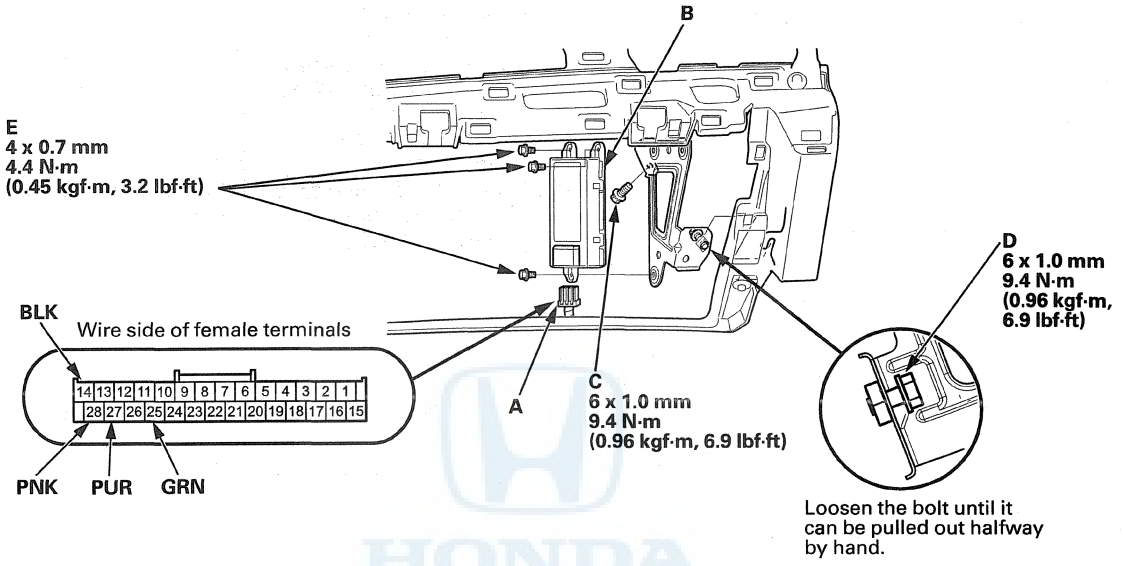


6. Install the HFL switch in the reverse order of removal.

HONDA

Control Unit Input Test/Replacement

1. Remove the passenger's dashboard undercover (see page 20-94).
2. Remove the glove box (see page 20-94).
3. Disconnect the 28P connector (A) from the HandsFreeLink control unit (B).



4. Remove the mounting bolt (C) and loosen the bolt (D), then remove the bolts (E) from the bracket.
5. Inspect the connector and socket terminals for a good pinfit to be sure they are all making good contact.
   - If the terminals are bent, loose or corroded, repair them as necessary, and recheck the system.
   - If the terminals look OK, go to step 6.
6. Reconnect the connector and make these input tests at the connector under the test conditions listed.
   - If any test indicates a problem, find and correct the cause, then recheck the system.
   - If all the input tests prove OK, go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
14	BLK	Under all conditions	Measure the voltage to body ground: There should be less than 0.2 V.	• Poor ground (G503) • An open or high resistance in the wire
27	PUR	Ignition switch in ACCESSORY (I) or ON (II)	Measure the voltage to body ground: There should be battery voltage.	• Blown No. B14 (7.5 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire
28	PNK	Under all conditions	Measure the voltage to body ground: There should be battery voltage.	• Blown No. B1 (15 A) fuse in the under-dash fuse/relay box • An open or high resistance in the wire

7. Disconnect the 28P connector again, and make this input test at the connector.
   - If the test indicates a problem, find and correct the cause, then recheck the system
   - If the input test proves OK, the HandsFreeLink control unit must be faulty; replace it.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
25	GRN	Under all conditions	Check for continuity between No. 25 terminal and the under-dash fuse/relay box connector Y (16P) terminal No. 6: There should be continuity.	An open in the wire
		Disconnect these items: • Under-dash fuse/relay box connector Y (16P) • Gauge control module 32P connector • Immobilizer-keyless control unit 7P connector • Climate control unit 36P connector	Check for continuity to ground: There should be no continuity.	Short to body ground in the wire

Restraints

Restraints

Special Tools 24–2

Seat Belts

Component Location Index 24–3
* Seat Belt Replacement 24–4
Inspection 24–9

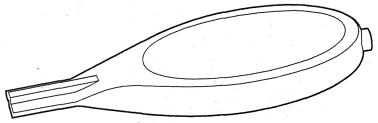
SRS (Supplemental Restraint System)

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Precautions and Procedures 24–13
General Troubleshooting Information 24–23
SRS Unit Update 24–25
ODS Unit Initialization 24–26
ODS Unit Operation Check 24–28
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Driver's Seat Position Sensor Operation Check 24–30
DTC Troubleshooting Index 24–32
Symptom Troubleshooting Index 24–38
System Description 24–39
Circuit Diagram 24–44
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Side Airbag Replacement 24–171
Side Curtain Airbag Replacement 24–174
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Side Impact Sensor (Second) Replacement 24–187
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ODS Unit Replacement 24–190
Front Impact Sensor Replacement 24–191
Driver's Seat Position Sensor Replacement 24–192
Front Passenger's Airbag Cutoff Indicator Replacement 24–193

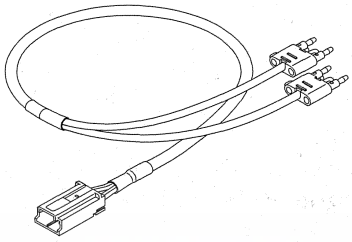


Special Tools

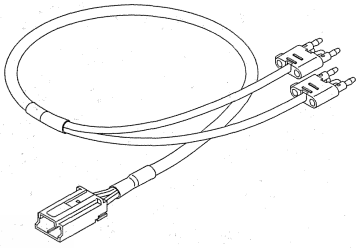
Ref.No.	Tool Number	Description	Qty
①	070AZ-SAA0100	SRS Short Canceller	1
②	070AZ-SNAA100	SRS Simulator Lead J	1
③	070AZ-SNAA200	SRS Simulator Lead K	1
④	070AZ-SNAA300	SRS Simulator Lead L	1
⑤	07AAZ-000A100	Deployment Tool	1
⑥	07SAZ-TB4011A	SRS Inflator Simulator	1
⑦	07TAZ-001020A	Back Probe Adapter, 17 mm	1



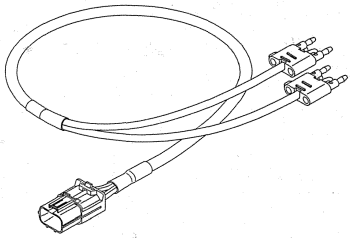
①



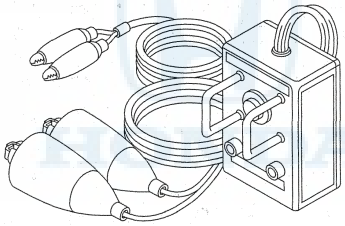
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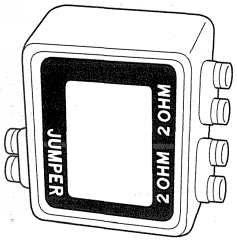
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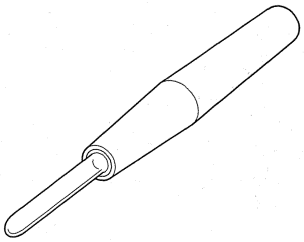
④



⑤

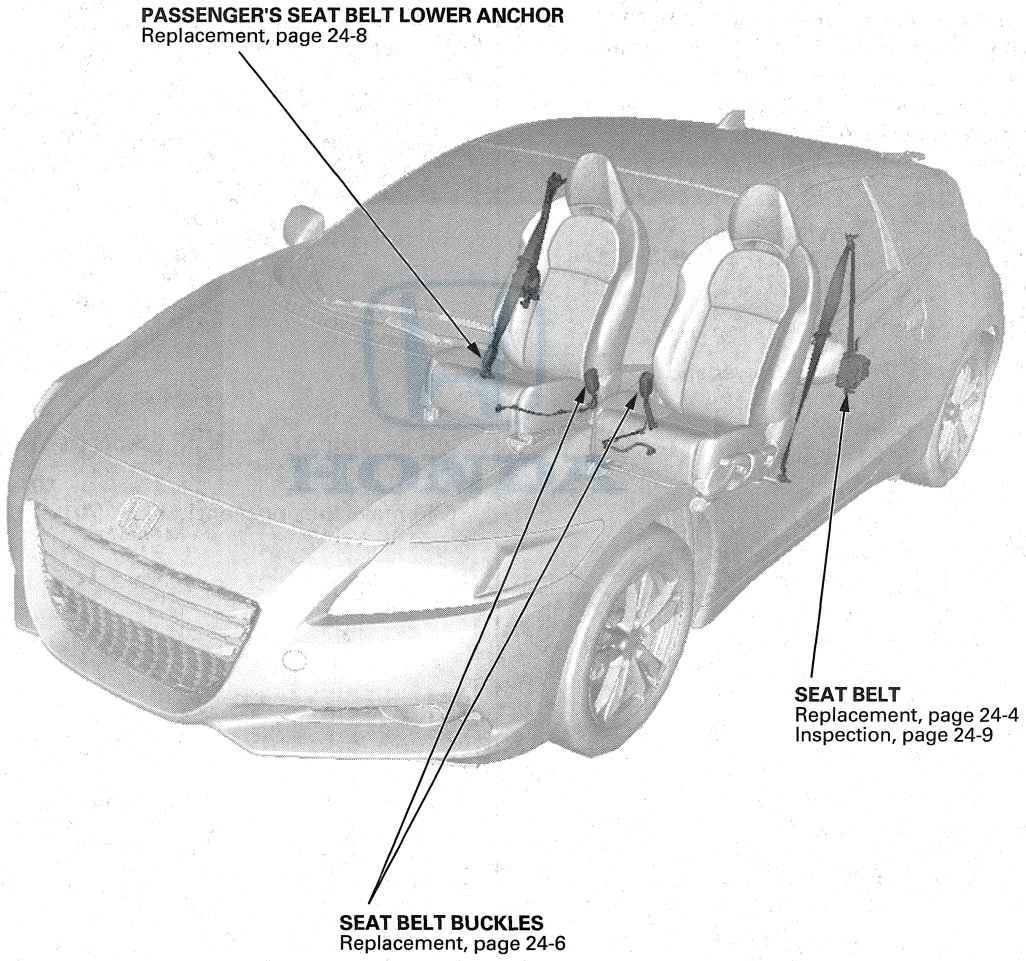


⑥



⑦

Component Location Index



Seat Belt Replacement

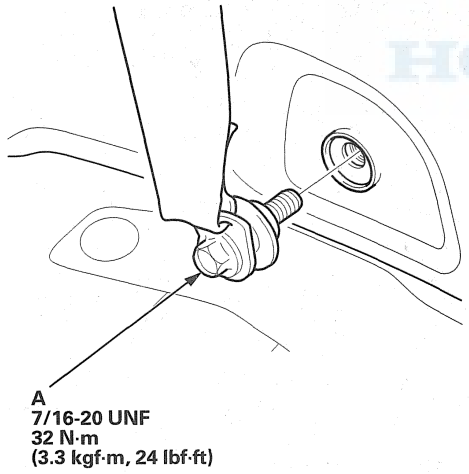
Seat Belt

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

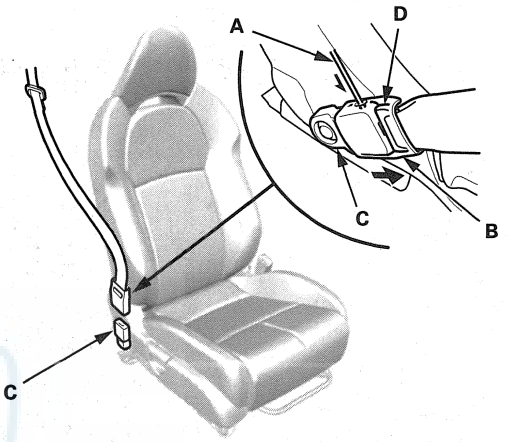
NOTE:

- Put on gloves to protect your hands.
- Take care not to bend or scratch the trim or the panels.
- Check the seat belts for damage (see page 24-9), and replace them if necessary. Be careful not to damage them during removal and installation.
- If replacing the seat belt after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.

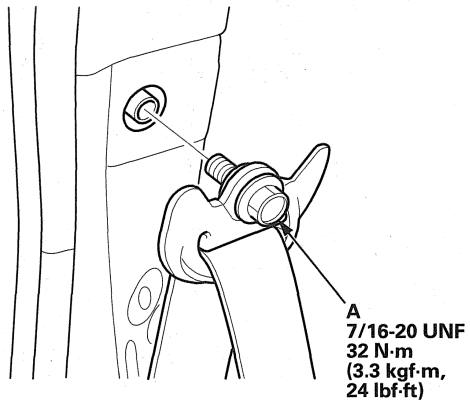
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before beginning work.
2. Slide the seat forward fully.
3. Driver's seat belt: Remove the lower anchor bolt (A).



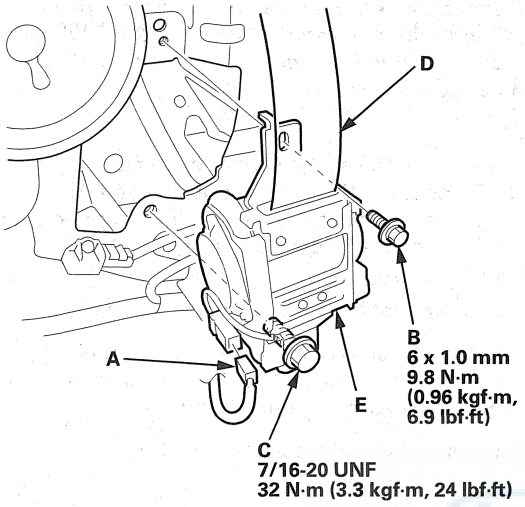
4. Passenger's seat belt: Carefully insert the tip of a small screwdriver (A) through the hole in the back of the seat belt lower anchor cover (B), and into the hole in the seat belt lower anchor (C). Unlock the lower anchor by pushing in on the screwdriver. Remove the screwdriver, and then detach the seat belt anchor plate (D) and the anchor cover from the lower anchor.



5. Remove the rear side trim panel (see step 11 on page 20-65).
6. Remove the upper anchor bolt (A).



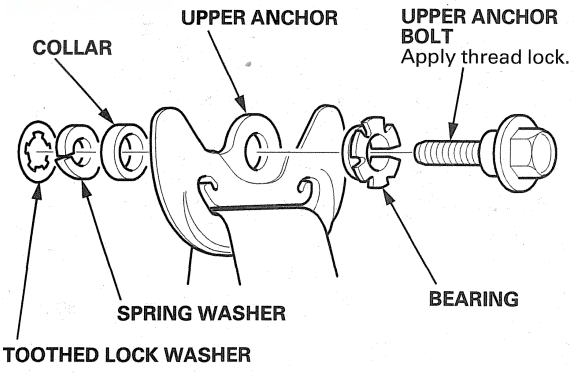
7. Disconnect the seat belt tensioner connector (A).



8. Remove the retractor mounting bolt (B) and the retractor bolt (C), then remove the seat belt (D) and the retractor (E).

9. Install the seat belt and the retractor in the reverse order of removal, and note these items:
   - Apply medium strength liquid thread lock to the upper anchor bolts before reinstallation.
   - Tighten the bolts by hand first, then tighten to the specified torque.
   - Check that the retractor locking mechanism functions (see page 24-9).
   - Assemble the washers, the collars, and the bearings on the upper anchor bolt, the lower anchor bolt and the retractor bolt as shown.
   - Before installing the anchor bolts, make sure there are no twists or kinks in the seat belt.
   - Make sure the seat belt tensioner connector is plugged in properly.
   - Passenger's seat belt: Triangle marks (A) on the anchor plate (B) and on the lower anchor (C) must face the same side.
   - Passenger's seat belt: Insert the hook on the anchor plate into the lower anchor, and be sure that the lower anchor is locked securely.
   - Do the 12 volt battery terminal reconnection procedure (see page 22-86).
   - Check for any DTCs that may have been set during repairs, and clear them.

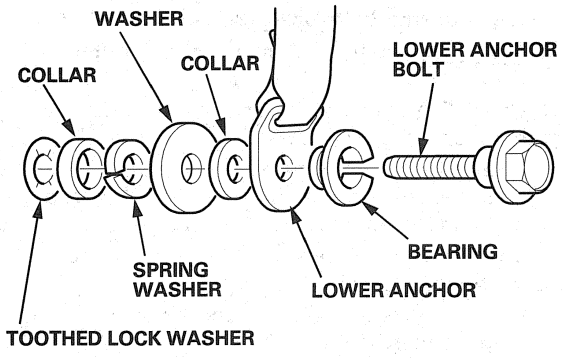
Upper anchor bolt installation



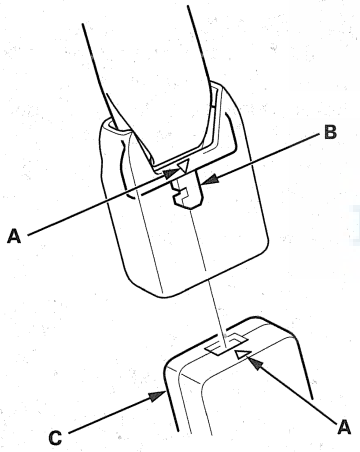
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Seat Belt Replacement (cont'd)

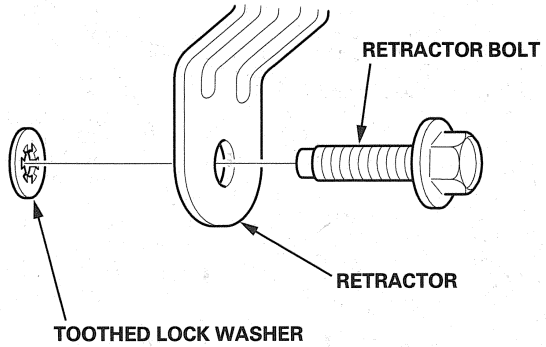
Driver's seat belt lower anchor bolt installation



Passenger's seat belt lower anchor installation



Retractor bolt installation



Seat Belt Buckles

SRS components are located in this area. Review the SRS component locations (see page 24-11) and the precautions and procedures (see page 24-13) before doing repairs or service.

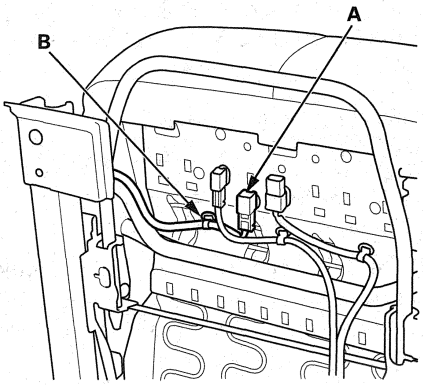
NOTE:

- If replacing the seat belt buckle after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.
- Put on gloves to protect your hands.
- Take care not to tear or damage the seat covers.

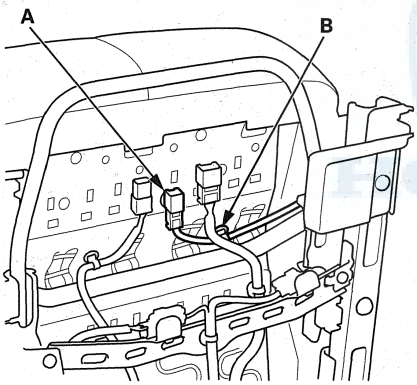
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before beginning work.
2. Remove the seat (see page 20-109).

3. Lift up the seat, then detach the seat belt buckle switch connector (A), and detach the harness clip (B).

Driver's seat

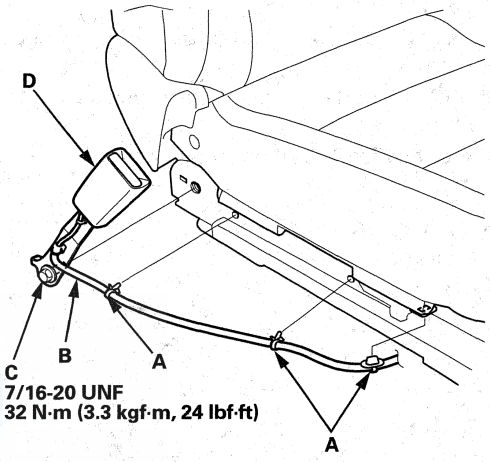


Passenger's seat

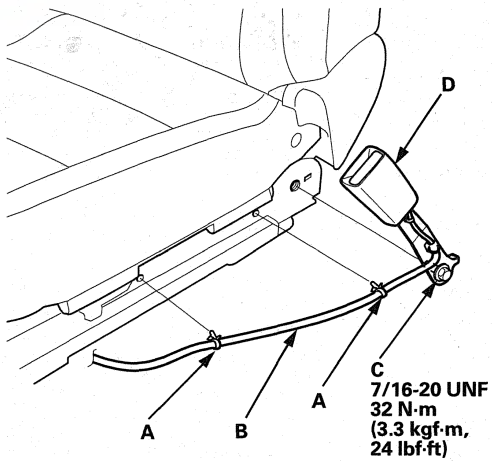


4. Detach the harness clips (A), and pull out the seat belt buckle switch harness (B) through the seat cushion cover. Remove the center anchor bolt (C), then remove the seat belt buckle (D).

Driver's seat



Passenger's seat

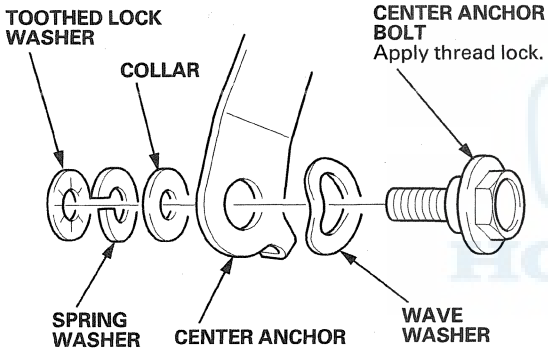


(cont'd)

Seat Belt Replacement (cont'd)

5. Install the buckle in the reverse order of removal, and note these items:
   - Assemble the washers and the collar on the center anchor bolt as shown.
   - Apply medium strength liquid thread lock to the center anchor bolts before reinstallation.
   - Tighten the bolts by hand first, then tighten to the specified torque.
   - Make sure the seat belt switch connector is plugged in properly.
   - Do the 12 volt battery terminal reconnection procedure (see page 22-86).
   - Check for any DTCs that may have been set during repairs, and clear them.

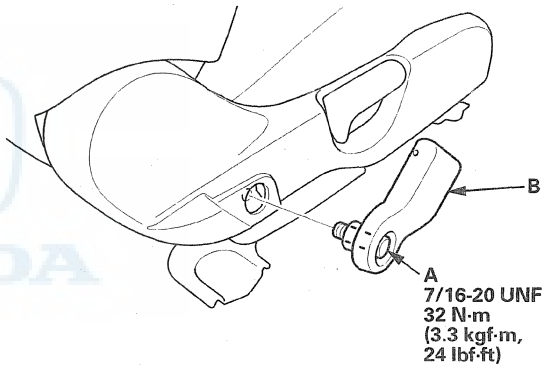
Center anchor bolt installation



Passenger's Seat Belt Lower Anchor

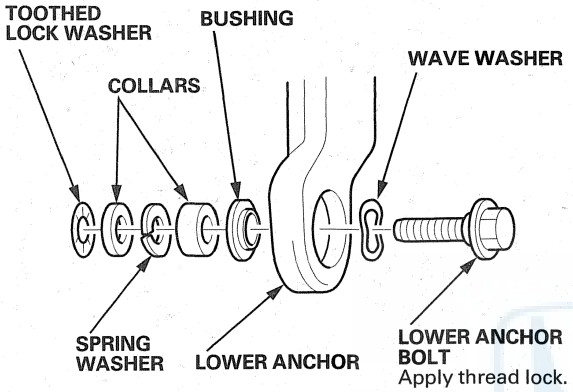
NOTE:
- If replacing the passenger's seat belt lower anchor after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.
- Put on gloves to protect your hands.
- Take care not to tear or damage the seat covers.

1. Detach the passenger's seat belt anchor plate and the anchor cover from the lower anchor.
2. Remove the lower anchor bolt (A), then remove the lower anchor (B).



3. Install the lower anchor in the reverse order of removal, and note these items:
   - Assemble the washers, the collars, and the bushing on the lower anchor bolt as shown.
   - Apply medium strength liquid thread lock to the lower anchor bolt before reinstallation.

Lower anchor bolt installation



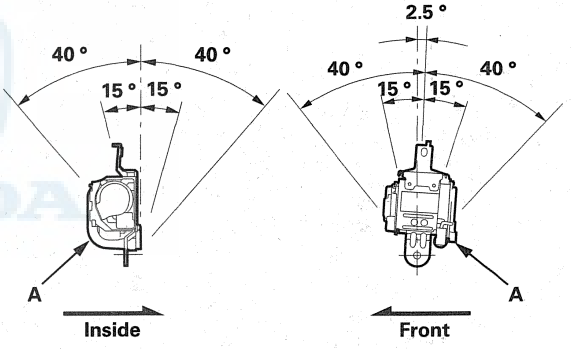
Inspection

Out of Vehicle

For the seat belt retractors with seat belt tensioners, review the SRS component locations (see page 24-11), and the precautions and procedures (see page 24-13) before doing repairs or service.

Retractor

1. Before installing the retractor, check that the seat belt can be pulled out freely.
2. Make sure that the seat belt does not lock when the retractor (A) is leaned slowly up to 15 ° from the mounted position. The seat belt should lock when the retractor is leaned over 40 °. Do not attempt to disassemble the retractor.



3. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

In-vehicle

1. Check that the seat belt is not twisted or caught on anything.
2. After installing the anchors, check for free movement on the anchor bolts. If necessary, remove the anchor bolts and check that the washers and other parts are not damaged or improperly installed.
3. Check the seat belts for damage or discoloration. Clean with a shop towel if necessary. Use only soap and water to clean.

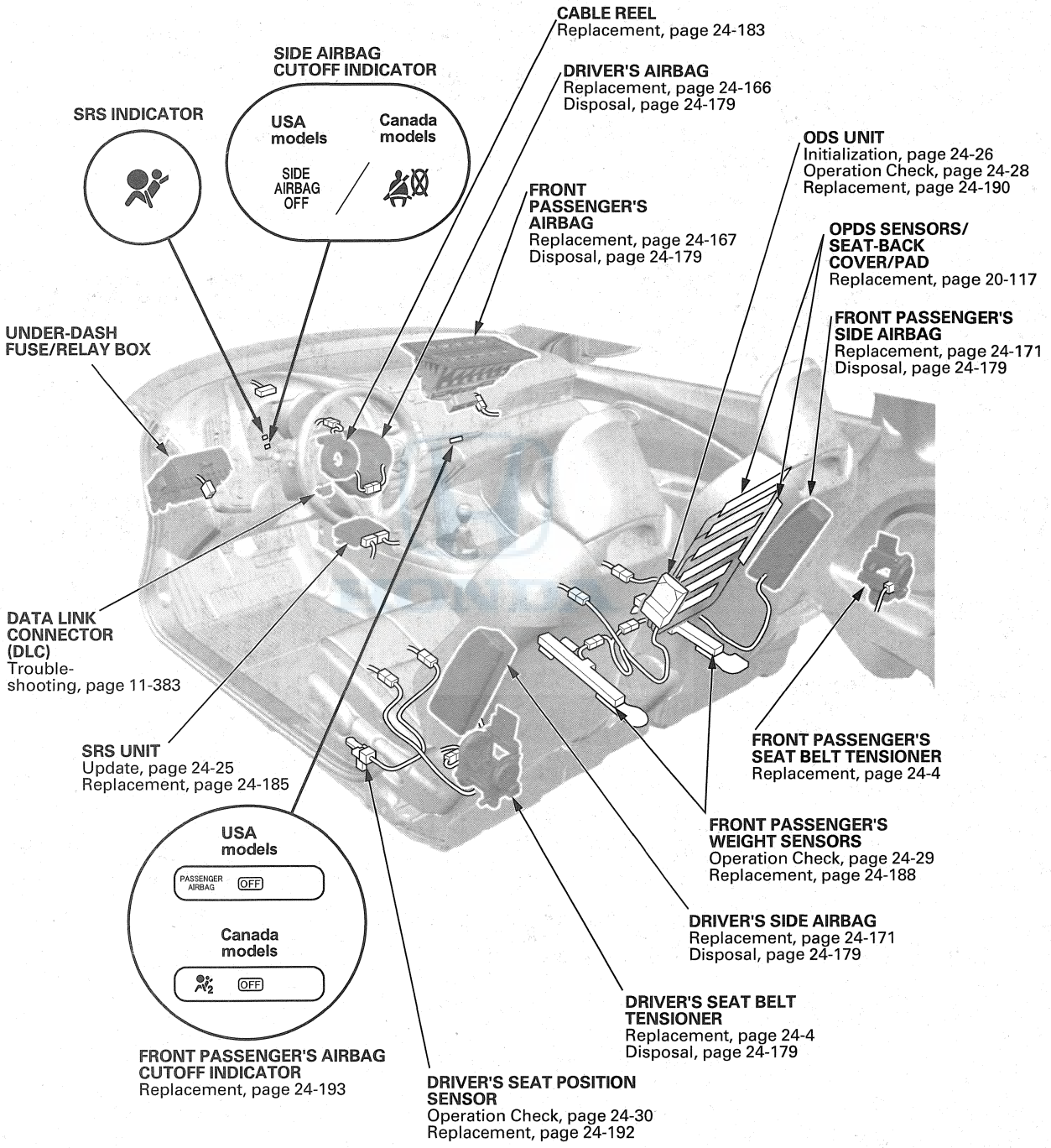
   NOTE: Dirt build-up in the loops of the upper anchors can cause the seat belts to retract slowly. Wipe the inside of the loops with a clean cloth dampened in isopropyl alcohol.

(cont'd)

Inspection (cont'd)

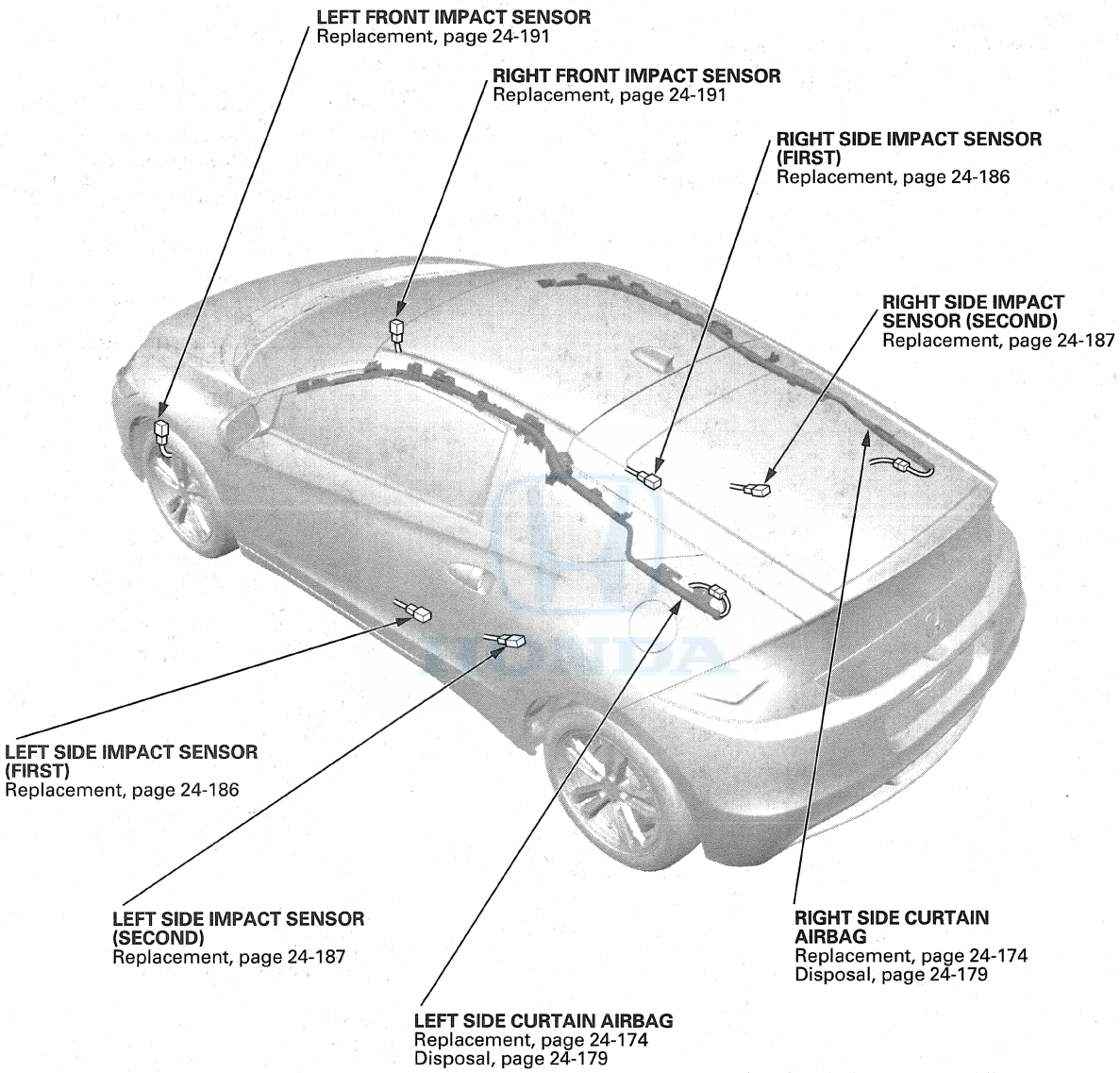
4. Check that the seat belt does not lock when pulled out slowly. The seat belt is designed to lock only during a sudden stop or impact.
5. Make sure that the seat belt will retract automatically when released.
6. Replace the seat belt with a new assembly if there is any abnormality. Do not disassemble any part of the seat belt for any reason.

Component Location Index



(cont'd)

Component Location Index (cont'd)



Precautions and Procedures

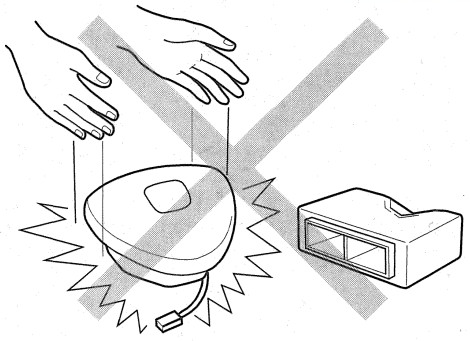
General Precautions

NOTE: Some systems store data in memory that is lost when the 12 volt battery is disconnected. Before disconnecting the 12 volt battery, refer to 12 volt Battery Terminal Disconnection and Reconnection (see page 22-86).

Please read the following precautions carefully before servicing the SRS, or the airbags could accidentally deploy and cause damage or injuries.

- Except when doing electrical inspections that requires 12 volt battery power, always turn the ignition switch to LOCK (0), disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes before starting work.

  NOTE: The SRS memory is not erased even if the ignition switch is turned to LOCK (0) or the 12 volt battery cables are disconnected from the 12 volt battery.
- Use replacement parts which are manufactured to the same standards and quality as the original parts. Do not install used SRS parts. Use only new parts when making SRS repairs.
- Carefully inspect any SRS part before you install it. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.



- Before disconnecting the SRS unit connectors, always disconnect the appropriate SRS parts connectors.
- Use only a digital multimeter to check the system. If it is not a Honda multimeter, make sure its output is 10 mA (0.01 A) or less when switched to the lowest value in the ohmmeter range. A tester with a higher output could cause accidental deployment and possible injury.
- Do not put objects on the front passenger's airbag.

Steering-Related Precautions

Cable Reel Alignment

- Misalignment of the cable reel could cause an open in the wiring, making the SRS, remote steering wheel controls, or the horn inoperative. Center the cable reel whenever you do the following (see step 6 on page 24-184).
  - Installation of the steering wheel
  - Installation of the cable reel
  - Installation of the steering column
  - Other steering-related adjustment or installation
- Do not disassemble the cable reel.
- Do not apply grease to the cable reel.
- If the cable reel shows any signs of damage, replace it with a new one. For example, if the cable reel does not rotate smoothly, replace it.

(cont'd)

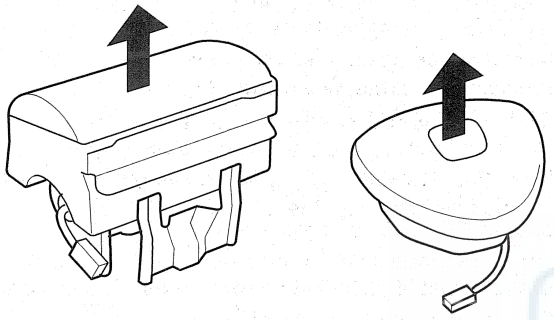
Precautions and Procedures (cont'd)

Airbag Handling and Storage

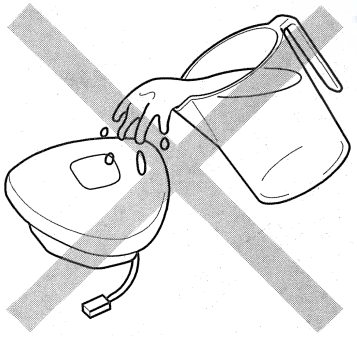
Do not disassemble an airbag. It has no serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.

For temporary storage of an airbag during service, observe the following precautions.

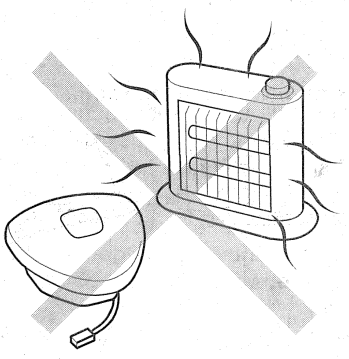
- Store the removed airbag with the pad surface up. Never put anything on the airbag.



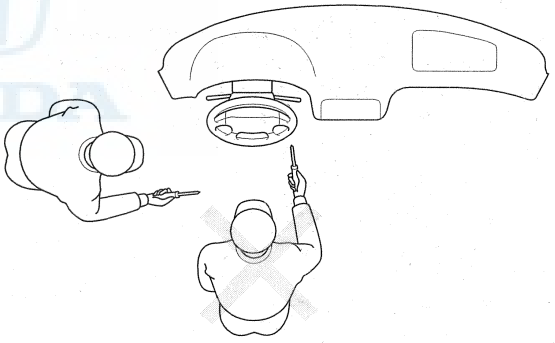
- To prevent damage to the airbag, keep it away from any oil, grease, detergent, or water.



- Store the removed airbag on a secure, flat surface away from any high heat source (exceeding 200 °F/ 93 °C).

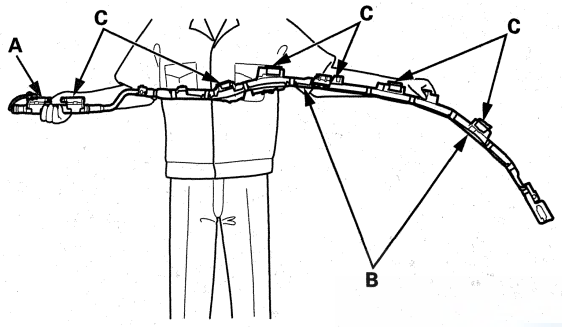


- Never do electrical tests on the airbags, such as measuring resistance.
- Do not position yourself in front of the airbag during removal, inspection, or replacement.



- For proper disposal of a damaged airbag or tensioner, refer to Airbag and Tensioner Disposal (see page 24-179).

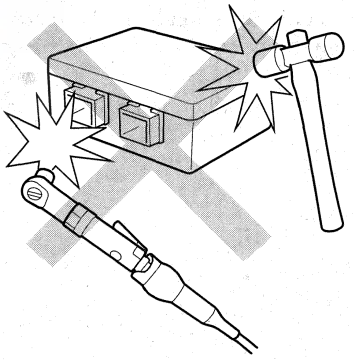
- The side curtain airbag module assembly is a long, jointed part containing an inflator (A), a flexible bag (B), and brackets (C). When removing or installing the side curtain airbag assembly, never:
  - Handle the flexible bag.
  - Drop the airbag assembly.
  - Cut, tear, or unwrap the tape strips.



SRS Unit, Front and Side Impact Sensors, Driver's Seat Position Sensor and Front Passenger's Weight Sensors

NOTE: Some systems store data in memory that is lost when the 12 volt battery is disconnected. Before disconnecting the 12 volt battery, refer to 12 volt Battery Terminal Disconnection and Reconnection (see page 22-86).

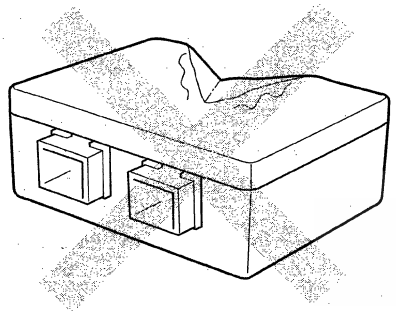
- Turn the ignition switch to LOCK (0), disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes before starting installation or replacement of the SRS unit or disconnecting the connectors from the SRS unit.
- Be careful not to bump or impact the SRS unit, the front impact sensors or the side impact sensors when the ignition switch is in ON (II), or for at least 3 minutes after the ignition switch is turned to LOCK (0).
- Do not reconnect any connectors to the SRS unit until it is fully installed, including torquing the TORX bolts.
- During installation or replacement, be careful not to bump (by impact wrench, hammer, etc.) the area around the SRS unit, the front impact sensors or the side impact sensors. The airbags could accidentally deploy and cause damage or injury.



(cont'd)

Precautions and Procedures (cont'd)

- After a collision where the front airbags, the side airbags, the side curtain airbags, or the seat belt tensioners deploy, go to Component Replacement/Inspection after Deployment (see page 24-163). After a collision where the airbags or the side airbags do not deploy, inspect for any damage or any deformation on the SRS unit, the front impact sensors and the side impact sensors. Also, do the active head restraint inspection (see page 20-108). Replace all damaged parts.

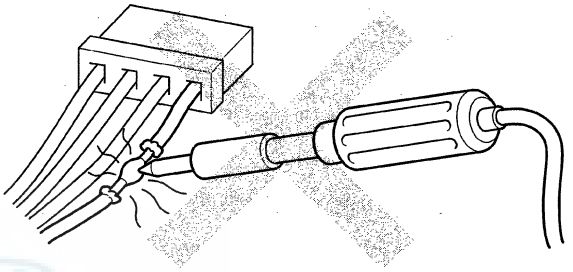


- Do not disassemble the SRS unit, the front impact sensors, the side impact sensors, the driver's seat position sensor or the front passenger's weight sensors.
- Always install the SRS unit and all impact sensors securely with the new TORX bolts to the specified torque.
- Do not spill water or oil on the SRS unit or any of the sensors.

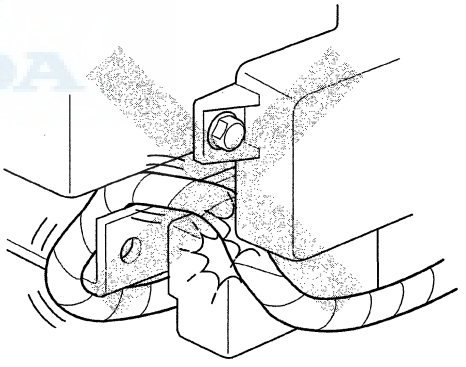
Wiring Precautions

Some of the SRS wiring can be identified by a special yellow outer covering and the SRS connectors can be identified by their yellow color. Observe the following instructions.

- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage to the SRS wiring, replace the harness.



- Be sure to install the harness wires so they do not get pinched or interfere with other parts.



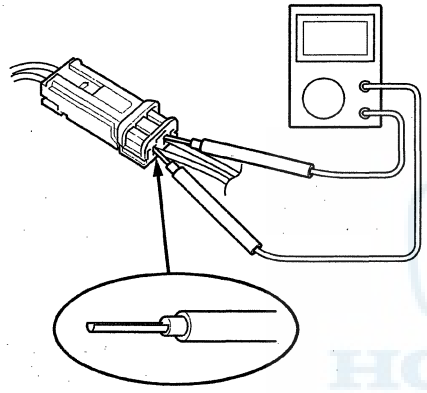
- Make sure all SRS ground locations are clean, and the grounds are securely fastened for optimum metal-to-metal contact. Poor grounds can cause intermittent problems that are difficult to diagnose.
- Do not use any silicone based cleaners or lubricants on any SRS connectors or terminals.

Precautions for Electrical Inspections

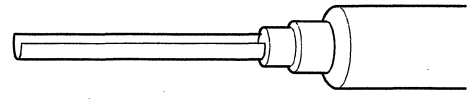
Special Tools Required

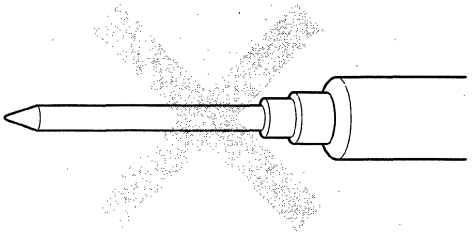
Back Probe Adapter, 17 mm 07TAZ-001020A

- Make sure the 12 volt battery is fully charged when doing electrical test. If the 12 volt battery is not fully charged, the results of the tests may not be accurate.
- When using electrical test equipment, insert the probe of the tester into the wire side of the connector (except water proof connector). Do not insert the probe of the tester into the terminal side of the connector, and do not tamper with the connector.



- Use the back probe adapter, 17 mm (07TAZ-001020A). Do not insert the probe forcibly.

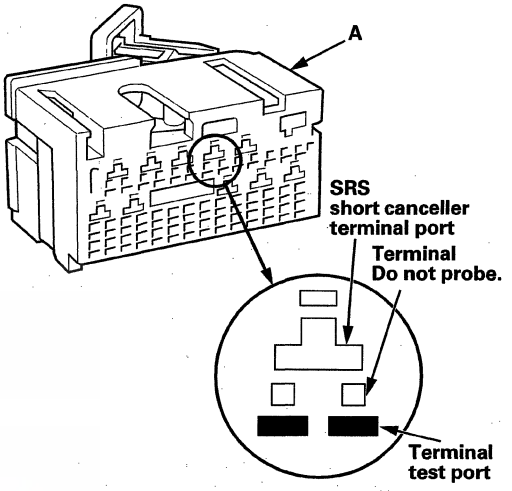




- Use specified service connectors in troubleshooting. Using improper tools could cause a diagnostic error due to poor metal-to-metal contact.

SRS Unit Connectors

When diagnosing or troubleshooting at an SRS unit connector (A), use the terminal test port below the terminal you need to check. Gently insert the pin probes of the tester or jumper wire at the terminal test port from the terminal side.



Terminal side of female terminals

NOTE:

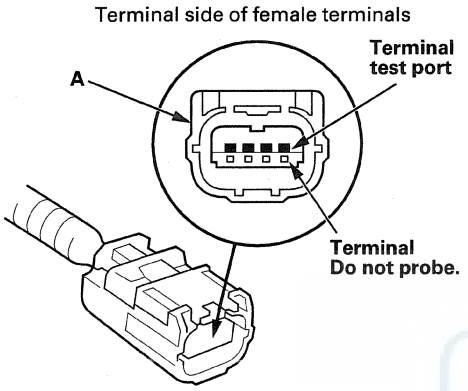
- Do not insert the pin probes of the tester or a jumper wire at the terminal port or the SRS short canceller terminal port.
- To prevent damage to the connector terminals, do not insert the test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals cause a poor connection and an incorrect measurement.

(cont'd)

Precautions and Procedures (cont'd)

Water Proof SRS Connectors

When diagnosis/troubleshooting is done at water proof connector (A), use the terminal test port above the terminal you need to check. Gently contact the pin probe of the tester or jumper wire at the terminal test port from the terminal side.



NOTE:

- Do not insert the pin probes of the tester or a jumper wire into the terminal port.
- To prevent damage to the connector terminals, do not insert the test equipment probes, paper clips, or other substitutes as they can damage the terminals. Damaged terminals can cause a poor connection and an incorrect measurement.

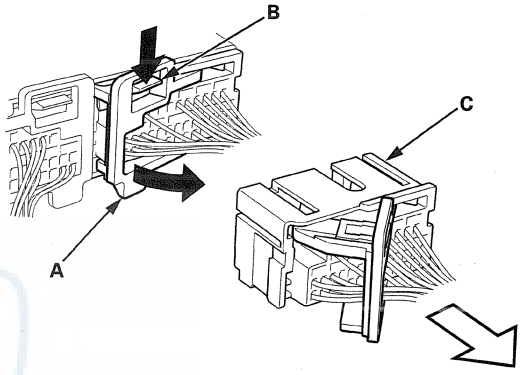
Lever-Locked Connector

The SRS unit connectors have a lever lock.

SRS Unit Connectors

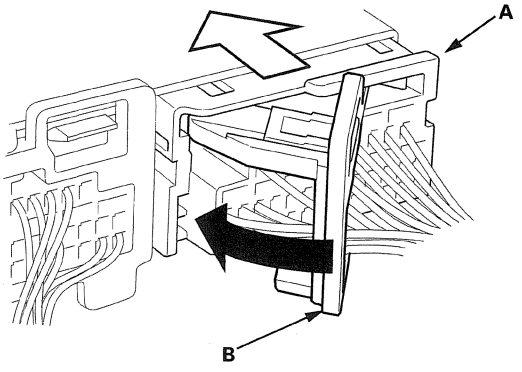
Disconnecting

To release the lock, pull the lever (A) while pushing the lock (B) on the outside of the connector, then pull out the connector (C).



Connecting

To reconnect the connector, push in on the connector (A). As the connector is pressed in, the lever (B) moves to the locked position.



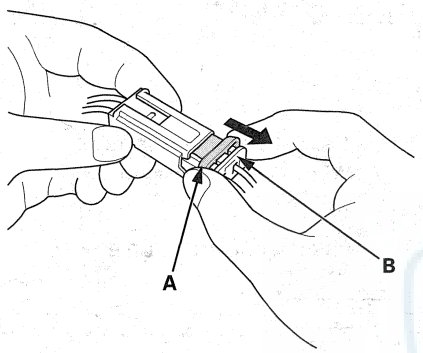
Spring-Loaded Lock Connector

Some SRS connectors have a spring-loaded lock.

Front Airbag Connectors

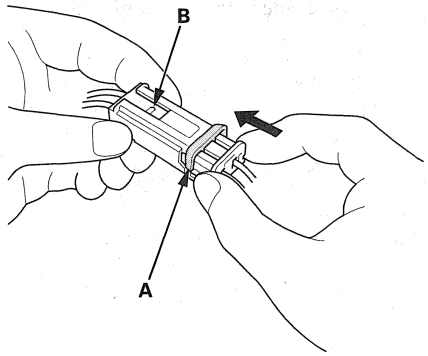
Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (B) while holding the opposite half of the connector, then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector.



Connecting

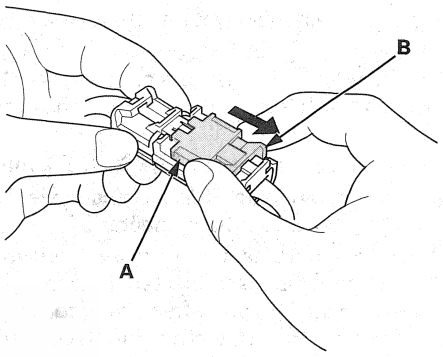
To reconnect, hold the pawl-side connector, and press on the back of the sleeve-side connector in the direction shown. As the two connector halves are pressed together, the sleeve (A) is pushed back by the pawl (B). Do not touch the sleeve.



Side Airbag Connector

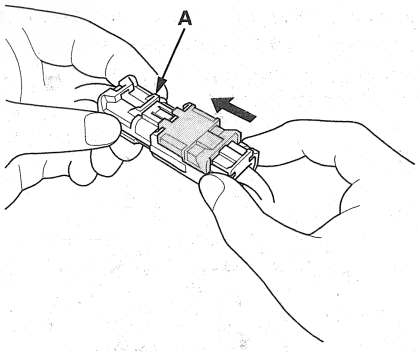
Disconnecting

To release the lock, pull the spring-loaded sleeve (A) toward the stop (B) while holding the opposite half of the connector, then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector half.



Connecting

Hold both connector halves, and press them firmly together until the projection (A) of the sleeve-side connector clicks.



(cont'd)

Precautions and Procedures (cont'd)

Opening the SRS Unit Shorting Connectors for Diagnosis

Special Tools Required

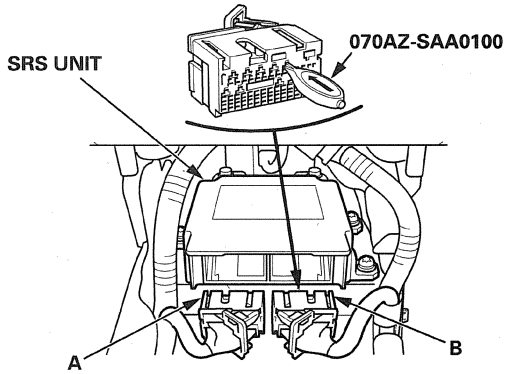
SRS Short Canceller 070AZ-SAA0100

NOTE:

- To prevent damage to the connector cavity, insert an SRS short canceller straight into the cavity from the terminal side.
- Before installing an SRS short canceller, wash it with electrical contact cleaner, then dry it with compressed air.
- Do not use an SRS short canceller if it is damaged.
- Make sure to remove an SRS short canceller before reconnecting the SRS unit connector.
- Some systems store data in memory that is lost when the 12 volt battery is disconnected. Before disconnecting the 12 volt battery, refer to 12 volt Battery Terminal Disconnection and Reconnection (see page 22-86).

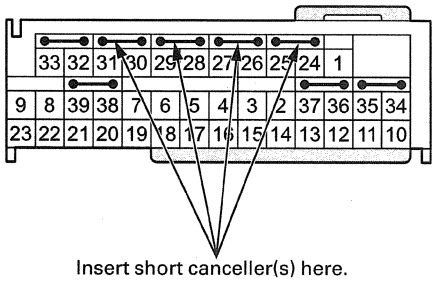
When SRS unit connector A (39P) or B (39P) is disconnected, a short circuit is automatically created in the connector to prevent accidental deployment of an airbag or tensioner. The circuit may need to be opened sometimes when diagnosing the system. Insert an SRS short canceller in the specified cavities when necessary to keep the circuit open for diagnosis.

Terminal side of female terminals



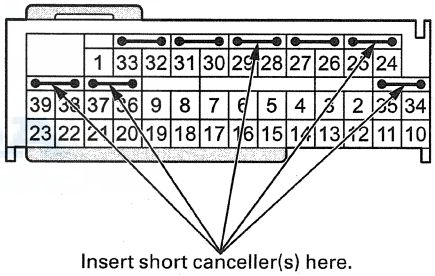
Terminal numbers are shown from the wire side of the female terminals. Insert the SRS short canceller(s) into the cavities on the terminal side of the connector.

SRS UNIT CONNECTOR A (39P)



Insert short canceller(s) here.
Wire side of female terminals

SRS UNIT CONNECTOR B (39P)



Insert short canceller(s) here.
Wire side of female terminals

Seats with Side Airbags

Seats with side airbags have a "SIDE AIRBAG" label on the seat-back.



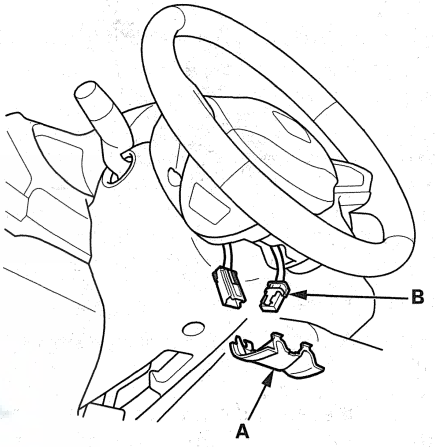
- Clean the seats with a damp cloth. Do not soak the seats with liquid. Do not spray steam on the seats.
- Do not repair a torn or frayed seat-back cover/pad. Replace the seat-back cover/pad if it is damaged.
- After a collision where the side airbag was deployed, replace the side airbag, the seat frame and related parts with new parts. If the seat-back cushion is split, it must be replaced. Refer to Component Replacement/Inspection After Deployment (see page 24-163).
- Never put aftermarket accessories on the seats (covers, pads, seat heaters, lights, etc.).

Disconnecting System Connectors

1. Turn the ignition switch to LOCK (0). Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.

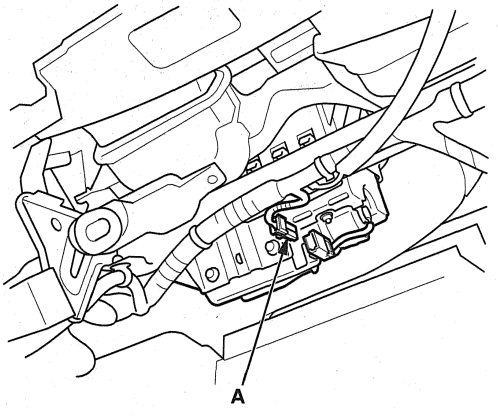
Driver's Airbag

2. Remove the access panel (A) from the steering wheel, then disconnect the driver's airbag inflator 4P connector (B) on the cable reel harness.



Front Passenger's Airbag

3. Remove the glove box (see page 20-94).
4. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.

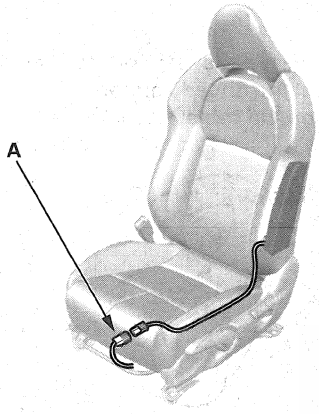


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Precautions and Procedures (cont'd)

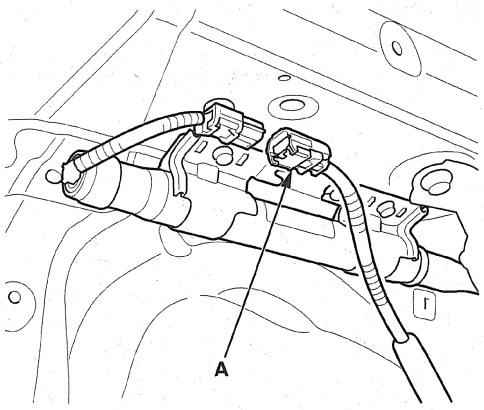
Side Airbag

5. Disconnect the driver's and the front passenger's side airbag inflator 2P connector (A) on the floor wire harness.



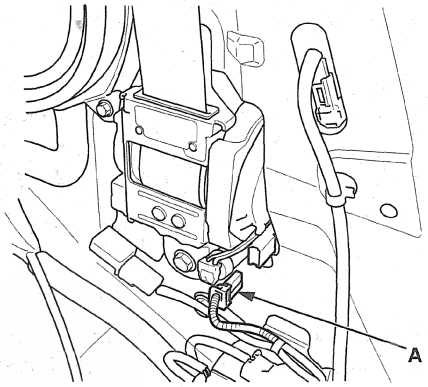
Side Curtain Airbag

6. Remove the rear side trim panel (see step 11 on page 20-65).
7. Disconnect the left and right side curtain airbag inflator 2P connector (A) on the driver's side or floor wire harness.



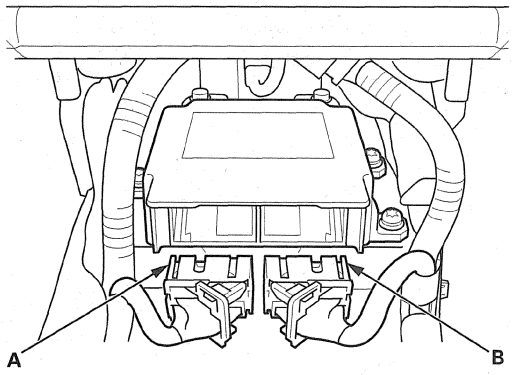
Seat Belt Tensioner

8. Remove the rear side trim panel (see step 11 on page 20-65).
9. Disconnect the driver's and the front passenger's seat belt tensioner 4P connector (A) on the floor wire harness.



SRS Unit

10. Remove the center console (see page 20-79).
11. Disconnect SRS unit connectors A (39P) and B (39P) from the SRS unit.



General Troubleshooting Information

DTC (Diagnostic Trouble Codes)

The self-diagnostic function of the SRS unit allows it to locate the causes of system problems and store this information in memory. For easier troubleshooting, this data can be retrieved with the HDS via the data link circuit.

- When you turn the ignition switch to ON (II), the SRS indicator should come on. If it goes off after 6 seconds, the system is normal, and is not currently detecting any problems.
- If there is a problem, the system locates and defines the problem, stores this information in memory, and turns on the SRS indicator. The data remains in memory even if the ignition switch is turned to LOCK (0) or the 12 volt battery is disconnected.
- The data is stored in memory as a diagnostic trouble code (DTC).
- DTCs are either latching or resetting depending on the malfunction. With resetting DTCs, the SRS indicator goes off the next time the ignition switch is turned to ON (II) and the system is normal, but the DTC is still stored. With latching DTCs, the SRS indicator does not turn OFF until the malfunction is repaired and the DTC is cleared.
- When you connect the HDS to the data link connector (DLC), you can retrieve a more detailed DTC in the HDS SRS menu.

  NOTE: Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).
- After reading and recording the DTC, go to the troubleshooting procedure for that code.

Precautions

- Make sure the 12 volt battery is fully charged. If the 12 volt battery is dead or low, electrical measurements values may not be correct.
- Determine if the vehicle has been crashed and repaired, make sure all required parts have been replaced. Refer to Component Replacement/Inspection After Deployment (see page 24-163).
- Use only a digital multimeter to check the system. Make sure its output is 10 mA (0.01 A) or less when switched to the smallest value in the ohmmeter range. A tester with a higher output could damage the airbag circuit or cause accidental airbag deployment and possible injury.
- Whenever the ignition switch is in ON (II), or has been turned to LOCK (0) for less than 3 minutes, be careful not to bump the SRS unit; the airbags could accidentally deploy and cause damage or injuries.
- Before removing the dashboard wire harness or floor wire harness, disconnect the driver's airbag connector, the front passenger's airbag connector, both side airbag connectors, both side curtain airbag connectors, and both seat belt tensioner connectors.
- Do not touch a tester probe to the terminals in the SRS unit or harness connectors, and do not connect the SRS unit terminals or the sensor terminals with a jumper wire. Use only the back probe set and the multimeter. Back probe spring-loaded lock type connectors correctly.

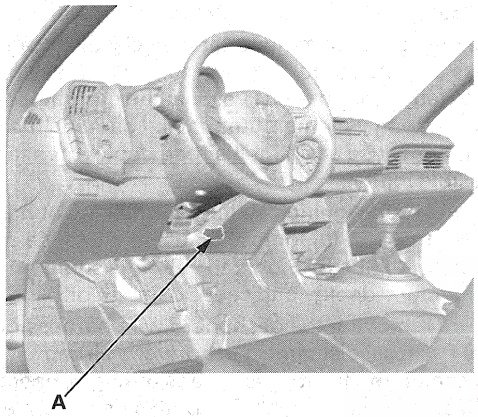
(cont'd)

General Troubleshooting Information (cont'd)

How to Read DTCs

NOTE: Make sure the 12 volt battery is fully charged before you begin.

1. Make sure the ignition switch is in LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A).



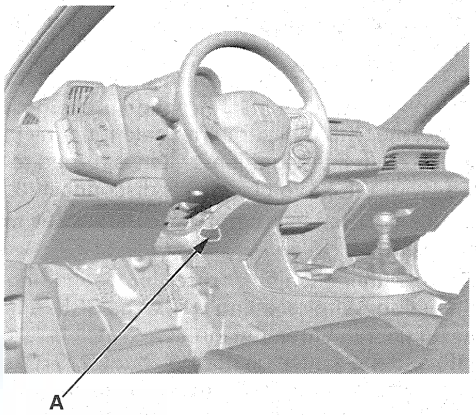
3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, inspect the power line of SRS unit, fuses, and ground, and if there is not any abnormality found, then go to the DLC circuit troubleshooting (see page 11-383).
5. Use the HDS to check for SRS DTCs.
6. Read and record the DTC.

   NOTE:
   - Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. These SWS DTCs are cleared when you turn the ignition switch to LOCK (0).
   - Do not clear the DTC until instructed by the troubleshooting procedure.
7. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
8. Disconnect the HDS from the DLC.
9. Do the troubleshooting procedure for the DTC.

How to Clear DTCs

NOTE: Make sure the 12 volt battery is fully charged before you begin.

1. Make sure the ignition switch is in LOCK (0).
2. Connect the HDS to the data link connector (DLC) (A).



3. Turn the ignition switch to ON (II).
4. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
5. In the SRS MENU of the HDS, select SRS, then DTC to clear DTC(s).
6. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
7. Disconnect the HDS from the DLC.

Troubleshooting Intermittent Failures

If there was a malfunction that sets a DTC, but it does not recur, a DTC will be stored in the memory, and the SRS indicator may come on depending on the malfunction detected.

NOTE:

- Check the condition of the 12 volt battery (see page 22-85), and the charging system. Low battery voltage may cause some intermittent failures.
- A faulty or damaged cable reel can cause intermittent problem related to the driver's airbag inflator DTCs.

After checking the DTC, troubleshoot as follows:

1. Check for DTCs with the HDS (see How to Read DTCs).
2. Clear the DTCs with the HDS (see How to Clear DTCs).
3. Set the parking brake, then start the engine, and let it idle.
4. The SRS indicator comes on for about 6 seconds and then goes off.
5. Shake the related wire harnesses and the connectors, and look for loose connections, poor pin fits, and poor grounds.
6. Take a test-drive (quick acceleration, quick braking, and cornering), turn the steering wheel fully left and right, and hold it there for 5 to 10 seconds. If the problem recurs, the SRS indicator will come on.
7. If you cannot duplicate the concern, ask the customer about the conditions when it occurred, or ask the customer to demonstrate the concern.
8. If you cannot duplicate the intermittent failure, the system is OK at this time.

SRS Unit Update

Special Tools Required

- Honda Diagnostic System (HDS) tablet tester
- Honda Interface Module (HIM) and an iN workstation with the latest HDS software version
- HDS pocket tester
- GNA600 and an iN workstation with the latest HDS software version
- MVCI unit with the latest control module (CM) update software installed

Any one of the above updating tools can be used.

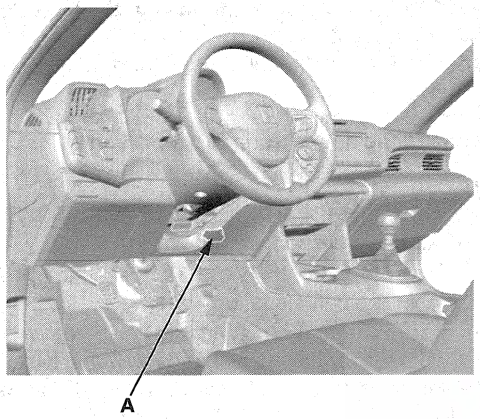
NOTE:

- Make sure the HDS/iN workstation or the MVCI has the latest HDS software version.
- Before you update the SRS unit, make sure the 12 volt battery in the vehicle is fully charged.
- Never turn the ignition switch to LOCK (0) or ACCESSORY (I) during the update. If there is a problem with the update, leave the ignition switch to ON (II).
- To prevent SRS unit damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do an SRS unit update whenever the SRS unit is substituted or replaced.
- You cannot update an SRS unit with a program it already has. It will only accept a new program.
- If you need to diagnose the HIM because the HIM's red (#3) light came on or was flashing during the update, leave the ignition switch in ON (II) when you disconnect the HIM from the data link connector (DLC). This will prevent SRS unit damage.

(cont'd)

SRS Unit Update (cont'd)

1. Turn the ignition switch to LOCK (0).
2. Connect the updating tool to the data link connector (DLC) (A).



3. Turn the ignition switch to ON (II), but do not start the engine.
4. Make sure the updating tool communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
5. Select the update program, and follow the screen prompts to update the SRS unit.
6. If the software in the SRS unit is the latest, disconnect the updating tool from the DLC, and go back to the procedure that you were doing. If the software in the SRS unit is not the latest, follow the instructions on the screen.

   NOTE: If you run into a problem during the update procedure (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer light flashes, updating tool freezes, etc.), follow these steps to minimize the chance of damaging the SRS unit :
   - Leave the ignition switch in ON (II).
   - Connect a jumper 12 volt battery (do not connect a battery charger).
   - Shut down the updating tool.
   - Disconnect the updating tool from the DLC.
   - Reboot the updating tool.
   - Reconnect the updating tool to the DLC, and try the update procedure again.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the updating tool from the DLC.

ODS Unit Initialization

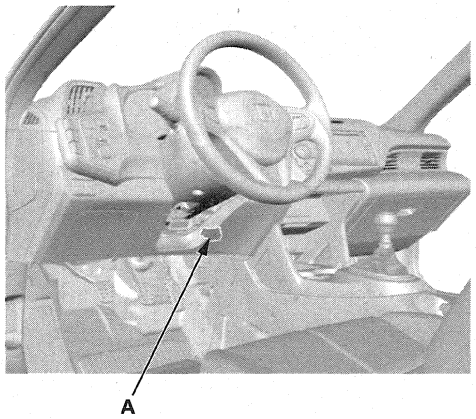
NOTE:
- After SRS unit, ODS unit or OPDS sensor is replaced, do this procedure to initialize the ODS unit.
- ODS unit initialization initializes both the OPDS sensor and the front passenger's weight sensor.

OPDS Sensor Initialization

When you replace a seat-back cover/pad, the SRS unit, and/or the ODS unit, initialize the OPDS sensor with the HDS.

NOTE:
- Before initializing the ODS unit, make sure the 12 volt battery is fully charged.
- A new (uninitialized) ODS unit installed with a faulty OPDS sensor (DTC 86-1x or 86-2x) can cause DTCs 85-71 and 85-78. If the SRS has a hard DTC 86-1x or 86-2x, troubleshoot the DTCs completely before replacing the ODS unit.
- Before initializing the ODS unit, clear the DTCs.
- Make sure all components of the front passenger's seat are correctly installed.
- Make sure nothing is on the front passenger's seat, including aftermarket seat covers or mats.
- Keep the A/C and the heater off.

1. Turn the ignition switch to ON (II).
2. Set the seat-back in a normal position.
3. Turn the ignition switch to LOCK (0).
4. Connect the HDS to the data link connector (DLC) (A).



5. Turn the ignition switch to ON (II).
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
7. From the HDS Main Menu, select SRS, then INITIALIZATION. In the INITIALIZATION Menu, select ODS Initialization. Follow the prompts until the OPDS sensor initialization has been completed.
8. Turn the ignition switch to LOCK (0).
9. Disconnect the HDS from the DLC.

   NOTE: If the ODS unit fails to initialize after several attempts, replace the seat-back cover/pad equipped with the OPDS sensor (see page 20-117), retry. If the ODS unit continues to fail to initialize, replace the ODS unit (see page 24-190).

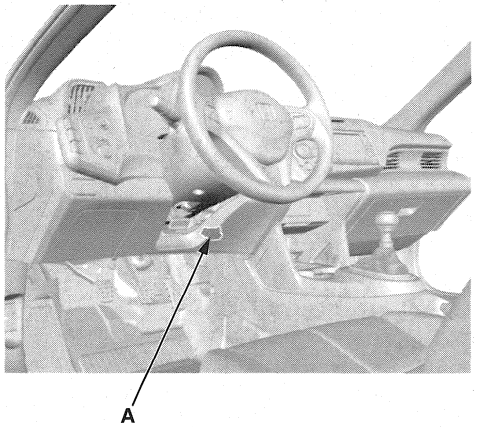
Front Passenger's Weight Sensor Initialization

When you replace the SRS unit, the front passenger's weight sensor, the front passenger's seat assembly, or the ODS unit, initialize the front passenger's weight sensor with the HDS unit.

NOTE:

- Before initializing the front passenger's weight sensor, make sure the battery is fully charged.
- Before initializing the ODS unit, clear the DTCs.
- Make sure all components of the front passenger's seat are correctly installed.
- Make sure nothing is on the front passenger's seat, including aftermarket seat covers or mats.
- Keep the windows closed.
- Do all initialization procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.
- Keep the A/C and the heater off.
- Do not touch the front passenger's seat during initialization, until you are prompted to or when you have completed the initialization.
- Do not expose the front passenger's seat to sudden temperature changes.

1. Position the front passenger's seat all the way rearward, and adjust the seat-back to the forward most position. Do not move the seat from this position until the initialization is completed.
2. Make sure the ignition switch is in LOCK (0).
3. Connect the HDS to the data link connector (DLC) (A).



(cont'd)

ODS Unit Initialization (cont'd)

4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. Drive the vehicle, and accelerate to 22 mph (36 km/h), then stop on level ground.
7. From the HDS Main Menu, select SRS, then INITIALIZATION. In the INITIALIZATION Menu, select SWS Initialization. Follow the prompts until the front passenger's weight sensor initialization has been completed.
8. Turn the ignition switch to LOCK (0).
9. Disconnect the HDS from the DLC.

ODS Unit Operation Check

After Replacing Front Passenger's Seat Component(s)

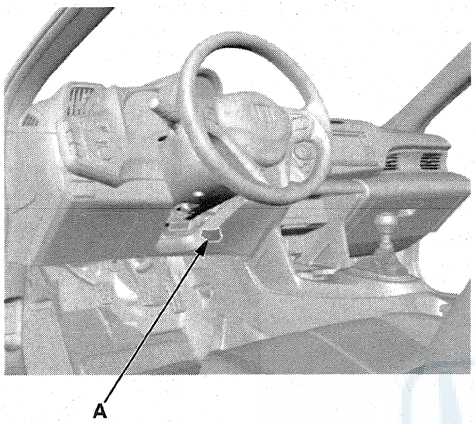
NOTE: Check the ODS unit operation after any of these actions:

- Front passenger's seat component(s) replacement (except ODS unit and/or front passenger's weight sensor).
- SRS unit replacement.
- Remove the front passenger's weight sensor(s).
- After a vehicle collision (see page 24-29).

Pre-Operation Check Set-up

- Make sure all the components of the front passenger's seat are correctly installed.
- Position the front passenger's seat to the rear most position. Adjust the seat-back to the forward most position. Do not move the seat from this position until the operation check is completed.
- Make sure nothing is on the front passenger's seat, including aftermarket seat covers or mats.
- Keep the windows closed.
- Do all initialization procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.
- Turn the heater and the A/C off.
- Do not touch the front passenger's seat during the operation check.
- Do not expose the front passenger's seat to sudden temperature changes.
- Make sure all aftermarket devices such as amplifiers, fluorescent light, air purifiers, CB or HAM radios, etc. are turned off.

1. Drive the vehicle, accelerate to 22 mph (36 km/h), then stop on level ground.
2. Make sure the ignition switch is in LOCK (0).
3. Connect the HDS to the data link connector (DLC) (A).



4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S). Follow the prompts until the ODS unit operation check has been completed.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the HDS from the DLC.

Front Passenger's Weight Sensor Output Check After a Vehicle Collision

NOTE: Check the front passenger's weight sensor output after this action:

- After a vehicle collision

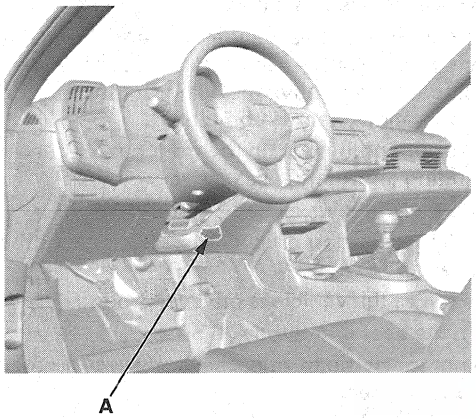
Pre-Operation Check Set-up

- Make sure all the components of the front passenger's seat are correctly installed.
- Position the front passenger's seat to the rear most position. Adjust the seat-back to the forward most position. Do not move the seat from this position until the operation check is completed.
- Make sure nothing is on the front passenger's seat, including aftermarket seat covers or mats.
- Keep the windows closed.
- Do all initialization procedures, except test-driving, in the service bay.
- Make sure the vehicle is on level ground.
- Turn the heater and the A/C off.
- Do not touch the front passenger's seat during the operation check.
- Do not expose the front passenger's seat to sudden temperature changes.
- Make sure all aftermarket devices such as amplifiers, fluorescent light, air purifiers, CB or HAM radios, etc. are turned off.

(cont'd)

Front Passenger's Weight Sensor Output Check After a Vehicle Collision (cont'd)

1. Drive the vehicle, accelerate to 22 mph (36 km/h), then stop on level ground.
2. Make sure the ignition switch is in LOCK (0).
3. Connect the HDS to the data link connector (DLC) (A).

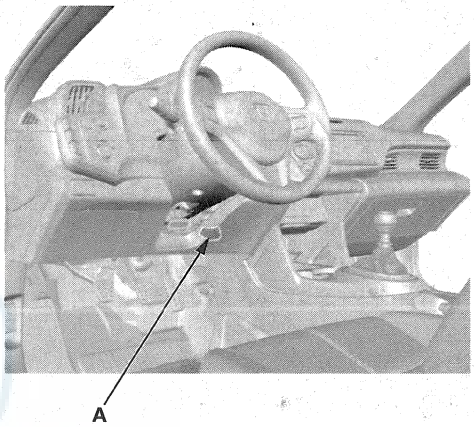


4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER A VEHICLE COLLISION. Follow the prompts until the front passenger's weight sensor output check has been completed.
7. Turn the ignition switch to LOCK (0).
8. Disconnect the HDS from the DLC.

Driver's Seat Position Sensor Operation Check

Check the driver's seat position sensor after the driver's seat position sensor replacement.

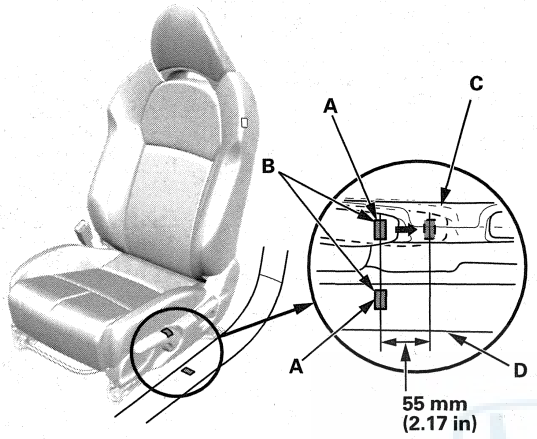
1. Make sure the driver's seat is all the way forward position.
2. Make sure the ignition switch is in LOCK (0).
3. Connect the HDS to the data link connector (DLC) (A).



4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. '11 model: From the HDS Main Menu, select SRS, then PARAMETER INFORMATION. In the PARAMETER INFORMATION Menu, select Buckle Switch, Seat Position Sensor.

   '12 model: From the HDS Main Menu, select SRS, then Data List.

7. Using two pieces of tape (A), make alignment marks (B) on the upper rail outer cover (C) and the front door sill trim (D) as shown. The driver's seat position sensor should read NEAR.



8. Move the seat back in small increments (about 5 mm, 0.2 in) until the driver's seat position sensor reads NOT NEAR. The seat should be about 55 mm (2.17 in) from the front.

   NOTE: It takes a few seconds for the HDS to display changes, so wait for about 5 seconds between each movement.

   If the driver's seat position sensor data does not work as described above, check the driver's seat position sensor for damage, and replace parts as needed.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the HDS from the DLC.

DTC Troubleshooting Index

DTC	Detection Item	Notes
11-1x	Open in the driver's airbag first inflator	DTC Troubleshooting (see page 24-47)
11-2x	Increased resistance in the driver's airbag first inflator	
11-3x	Short to another wire or decreased resistance in the driver's airbag first inflator	DTC Troubleshooting (see page 24-49)
11-4x	Open in the driver's airbag second inflator	DTC Troubleshooting (see page 24-47)
11-5x	Increased resistance in the driver's airbag second inflator	
11-6x	Short to another wire or decreased resistance in the driver's airbag second inflator	DTC Troubleshooting (see page 24-49)
11-8x	Short to power in the driver's airbag first inflator	DTC Troubleshooting (see page 24-51)
11-9x	Short to ground in the driver's airbag first inflator	DTC Troubleshooting (see page 24-53)
11-Ax	Short to power in the driver's airbag second inflator	DTC Troubleshooting (see page 24-51)
11-Bx	Short to ground in the driver's airbag second inflator	DTC Troubleshooting (see page 24-53)
12-1x	Open in the front passenger's airbag first inflator	DTC Troubleshooting (see page 24-55)
12-2x	Increased resistance in the front passenger's airbag first inflator	
12-3x	Short to another wire or decreased resistance in the front passenger's airbag first inflator	DTC Troubleshooting (see page 24-56)
12-4x	Open in the front passenger's airbag second inflator	DTC Troubleshooting (see page 24-55)
12-5x	Increased resistance in the front passenger's airbag second inflator	
12-6x	Short to another wire or decreased resistance in the front passenger's airbag second inflator	DTC Troubleshooting (see page 24-56)
12-8x	Short to power in the front passenger's airbag first inflator	DTC Troubleshooting (see page 24-58)
12-9x	Short to ground in the front passenger's airbag first inflator	DTC Troubleshooting (see page 24-59)
12-Ax	Short to power in the front passenger's airbag second inflator	DTC Troubleshooting (see page 24-58)
12-Bx	Short to ground in the front passenger's airbag second inflator	DTC Troubleshooting (see page 24-59)
21-1x	Open in the driver's seat belt tensioner	DTC Troubleshooting (see page 24-61)
21-2x	Increased resistance in the driver's seat belt tensioner	
21-3x	Short to another wire or decreased resistance in the driver's seat belt tensioner	DTC Troubleshooting (see page 24-62)
21-8x	Short to power in the driver's seat belt tensioner	DTC Troubleshooting (see page 24-64)
21-9x	Short to ground in the driver's seat belt tensioner	DTC Troubleshooting (see page 24-65)

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

DTC	Detection Item	Notes
22-1x	Open in the front passenger's seat belt tensioner	DTC Troubleshooting (see page 24-67)
22-2x	Increased resistance in the front passenger's seat belt tensioner	
22-3x	Short to another wire or decreased resistance in the front passenger's seat belt tensioner	DTC Troubleshooting (see page 24-68)
22-8x	Short to power in the front passenger's seat belt tensioner	DTC Troubleshooting (see page 24-70)
22-9x	Short to ground in the front passenger's seat belt tensioner	DTC Troubleshooting (see page 24-71)
31-1x	Open in the driver's side airbag inflator	DTC Troubleshooting (see page 24-73)
31-2x	Increased resistance in the driver's side airbag inflator	
31-3x	Short to another wire or decreased resistance in the driver's side airbag inflator	DTC Troubleshooting (see page 24-74)
31-8x	Short to power in the driver's side airbag inflator	DTC Troubleshooting (see page 24-76)
31-9x	Short to ground in the driver's side airbag inflator	DTC Troubleshooting (see page 24-77)
32-1x	Open in the front passenger's side airbag inflator	DTC Troubleshooting (see page 24-79)
32-2x	Increased resistance in the front passenger's side airbag inflator	
32-3x	Short to another wire or decreased resistance in the front passenger's side airbag inflator	DTC Troubleshooting (see page 24-80)
32-8x	Short to power in the front passenger's side airbag inflator	DTC Troubleshooting (see page 24-82)
32-9x	Short to ground in the front passenger's side airbag inflator	DTC Troubleshooting (see page 24-83)
33-1x	Open in the left side curtain airbag inflator	DTC Troubleshooting (see page 24-85)
33-2x	Increased resistance in the left side curtain airbag inflator	
33-3x	Short to another wire or decreased resistance in the left side curtain airbag inflator	DTC Troubleshooting (see page 24-86)
33-8x	Short to power in the left side curtain airbag inflator	DTC Troubleshooting (see page 24-88)
33-9x	Short to ground in the left side curtain airbag inflator	DTC Troubleshooting (see page 24-89)
34-1x	Open in the right side curtain airbag inflator	DTC Troubleshooting (see page 24-91)
34-2x	Increased resistance in the right side curtain airbag inflator	
34-3x	Short to another wire or decreased resistance in the right side curtain airbag inflator	DTC Troubleshooting (see page 24-92)
34-8x	Short to power in the right side curtain airbag inflator	DTC Troubleshooting (see page 24-94)
34-9x	Short to ground in the right side curtain airbag inflator	DTC Troubleshooting (see page 24-95)

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC	Detection Item	Notes
41-1x	No signal from the left front impact sensor	DTC Troubleshooting (see page 24-97)
41-2x	Internal failure of the left front impact sensor	DTC Troubleshooting (see page 24-102)
41-8x		
41-9x		
41-Ax		
41-Bx		
42-1x	No signal from the right front impact sensor	DTC Troubleshooting (see page 24-99)
42-2x	Internal failure of the right front impact sensor	DTC Troubleshooting (see page 24-102)
42-8x		
42-9x		
42-Ax		
42-Bx		
43-1x	No signal from the left side impact sensor (first)	DTC Troubleshooting (see page 24-103)
43-2x	Internal failure of the left side impact sensor (first)	DTC Troubleshooting (see page 24-113)
43-8x		
43-9x		
43-Ax		
43-Bx		
44-1x	No signal from the right side impact sensor (first)	DTC Troubleshooting (see page 24-108)
44-2x	Internal failure of the right side impact sensor (first)	DTC Troubleshooting (see page 24-113)
44-8x		
44-9x		
44-Ax		
44-Bx		
45-1x	No signal from the left side impact sensor (second)	DTC Troubleshooting (see page 24-103)
45-2x	Internal failure of the left side impact sensor (second)	DTC Troubleshooting (see page 24-114)
45-8x		
45-9x		
45-Ax		
45-Bx		
46-1x	No signal from the right side impact sensor (second)	DTC Troubleshooting (see page 24-108)
46-2x	Internal failure of the right side impact sensor (second)	DTC Troubleshooting (see page 24-114)
46-8x		
46-9x		
46-Ax		
46-Bx		

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

DTC	Detection Item	Notes
51-xx	Internal failure of the SRS unit	DTC Troubleshooting (see page 24-115)
52-xx		
53-xx		
53-FF	SRS unit programming error	DTC Troubleshooting (see page 24-115)
54-xx	Internal failure of the SRS unit	DTC Troubleshooting (see page 24-115)
55-xx		
56-21	Lost communication with the ECM/PCM (PGM-FI system)	DTC Troubleshooting (see page 24-116)
56-22		
56-23		
56-25	Lost communication with the gauge control module	DTC Troubleshooting (see page 24-117)
56-26	Undefined data received from the gauge control module	DTC Troubleshooting (see page 24-118)
56-27		
56-31	Lost communication with the ECM/PCM (PGM-FI system)	DTC Troubleshooting (see page 24-119)
56-32	Undefined data received from the ECM/PCM (PGM-FI system)	
56-33		
57-xx	Internal failure of the SRS unit	DTC Troubleshooting (see page 24-115)
58-xx		
61-1x	Open in the driver's seat belt buckle switch	DTC Troubleshooting (see page 24-120)
61-2x	Short in the driver's seat belt buckle switch	DTC Troubleshooting (see page 24-122)
62-1x	Open in the front passenger's seat belt buckle switch	DTC Troubleshooting (see page 24-123)
62-2x	Short in the front passenger's seat belt buckle switch	DTC Troubleshooting (see page 24-125)
71-1x	Open in the driver's seat position sensor	DTC Troubleshooting (see page 24-126)
71-2x	Short in the driver's seat position sensor	DTC Troubleshooting (see page 24-128)
81-4x	Internal failure of the ODS unit	DTC Troubleshooting (see page 24-129)
81-5x		
81-61	No signal from the ODS unit	DTC Troubleshooting (see page 24-130)
81-62	Incorrect data from the ODS unit	
81-63	Internal failure of the ODS unit	DTC Troubleshooting (see page 24-129)
81-64		
81-71	ODS unit not calibrated	DTC Troubleshooting (see page 24-133)
81-78		
81-79	Front passenger's weight sensors initial check failure	DTC Troubleshooting (see page 24-134)

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

(cont'd)

DTC Troubleshooting Index (cont'd)

DTC	Detection Item	Notes
82-11	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-135)
82-12	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-137)
82-13	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-138)
83-21	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-138)
83-22	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-140)
83-23	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-141)
85-4x	Internal failure of the ODS unit	DTC Troubleshooting (see page 24-142)
85-5x		
85-61	No signal from the ODS unit	DTC Troubleshooting (see page 24-143)
85-62	Incorrect data from the ODS unit	
85-63	Internal failure of the ODS unit	DTC Troubleshooting (see page 24-142)
85-64		
85-71	ODS unit not initialized	DTC Troubleshooting (see page 24-146)
85-78		
85-79	OPDS sensor initial check failure	DTC Troubleshooting (see page 24-147)
86-1x	Faulty OPDS seat-back sensor	DTC Troubleshooting (see page 24-148)
86-2x	Faulty OPDS seat support sensor	
92-1x	Short to power in the front passenger's airbag cutoff indicator	DTC Troubleshooting (see page 24-149)
92-2x	Open or short to ground in the front passenger's airbag cutoff indicator	DTC Troubleshooting (see page 24-150)
A1-1x	Faulty power supply (VA line)	DTC Troubleshooting (see page 24-151)
A2-1x	Faulty power supply (VB line)	DTC Troubleshooting (see page 24-152)
A3-1x	SRS unit connector A not properly installed	DTC Troubleshooting (see page 24-153)
A4-1x	SRS unit connector B not properly installed	DTC Troubleshooting (see page 24-154)
Ex-11	Control operation recorded	DTC Troubleshooting (see page 24-154)
Fx-11	Airbags and/or tensioners deployment recorded	DTC Troubleshooting (see page 24-155)

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

SWS DTC Index

SRS Unit DTC	SWS DTC	Detection Item	Notes
81-4x	41-xx	Internal failure of the ODS unit	DTC Troubleshooting (see page 24-158)
	42-xx		
	43-xx		
81-71	71-xx	ODS unit not calibrated	DTC Troubleshooting (see page 24-159)
82-11	11-1x	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-155)
82-12	12-2x	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-156)
82-13	13-3x	No signal from the inner side front passenger's weight sensor	DTC Troubleshooting (see page 24-156)
83-21	21-1x	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-157)
83-22	22-2x	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-157)
83-23	23-3x	No signal from the outer side front passenger's weight sensor	DTC Troubleshooting (see page 24-158)

NOTE: The "x" at the end of each DTC denotes a numeric character (0 thru 9) or an alpha character (A thru F) that you may also see on the HDS display. The alphanumeric character is unrelated to your DTC troubleshooting; it is used by the SRS unit manufacturer.

Symptom Troubleshooting Index

Symptom	Diagnostic procedure	Also check for
SRS indicator does not come on	Symptom Troubleshooting (see page 24-159)	
SRS indicator stays on, but no DTCs are stored, or cannot be read	Symptom Troubleshooting (see page 24-160)	• 12 volt battery • Communication with the HDS
Side airbag cutoff indicator flashes	Check for DTCs. If any DTC is indicated, go to the DTC troubleshooting	ODS unit Initialization
Side airbag cutoff indicator stays on	Symptom Troubleshooting (see page 24-161)	
Side airbag cutoff indicator does not come on	Symptom Troubleshooting (see page 24-161)	
Front passenger's airbag cutoff indicator flashes	Check for DTCs. If any DTC is indicated, go to the DTC troubleshooting	ODS unit initialization
Front passenger's airbag cutoff indicator stays on or comes on suddenly	Symptom Troubleshooting (see page 24-162)	ODS unit initialization
Front passenger's airbag cutoff indicator does not come on	Check for DTCs. If any DTC is indicated, go to the DTC troubleshooting	
HDS does not communicate with the SRS unit or the vehicle	Troubleshoot the DLC circuit (see page 11-383)	

HONDA

System Description

SRS Components

Airbags

The SRS is a supplemental safety device which, when used with the seat belt, is designed to help protect the driver and passenger in a frontal impact exceeding a certain set limit. The system consists of the SRS unit, including the impact sensor (A), the cable reel (B), the driver's airbag (C), the front passenger's airbag (D), the side airbags (E), the side curtain airbags (F), the seat belt tensioners (G), the side impact sensors (first) (H), the front impact sensors (I), and the side impact sensors (second) (J).

Since the driver's and front passenger's airbags use the same sensors, both normally inflate at the same time. However, it is possible for only one airbag to inflate. This can occur when collision severity is near threshold for airbag deployment. In such case, the SRS will only deploy airbags when the protection provided by the seat belt is insufficient.

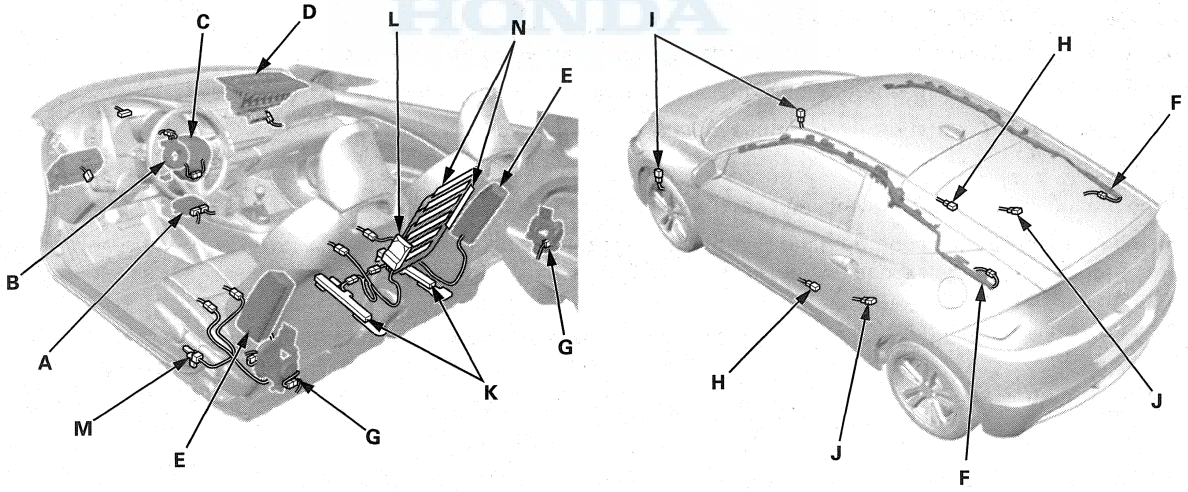
Front Passenger's Weight Sensors

The front passenger's weight sensors (K) are part of the seat. The front passenger's weight sensors detect the weight on the seat, and send the information to the ODS unit (L). If the total weight is about 30 kg (66 lbs) or less, the ODS unit sends a signal to the SRS unit to prevent the front passenger's airbag from deploying. When the front passenger's airbag is disabled, the front passenger's airbag cutoff indicator on the center panel comes on to alert the driver that the front passenger's airbag will not deploy in a front-end collision.

NOTE: The sensors only detect the weight on the seat. The sensors do not detect the weight of the passenger's legs or arms that may be resting on the floor or armrests.

Driver's Seat Position Sensor

The driver's seat position sensor (M) is under the driver's seat on the left side. When the driver's seat is moved to forward most position, the deployment of the driver's airbag is moderated to decrease its force of impact during a front-end collision.



(cont'd)

System Description (cont'd)

Side Airbag Cutoff Indicator/OPDS Operation

The OPDS sensors (N) is located in the front passenger's seat-back. The ODS unit detects front passenger's position on the seat by using the OPDS sensors, then sends the signals to the SRS unit. The indicator comes on when the front passenger's seat is occupied by a small adult or child who is leaning into the deployment path, or when an object (grocery bag, briefcase, purse, etc.) is in the seat. This indicates the passenger's side airbag is off and will not deploy; there is no problem with the side airbag. If the passenger sits upright or you remove the object from the seat, the indicator should go off. There will be some delay between the occupant's repositioning, and when the indicator will turn on or off.

Front Passenger's Airbag Cutoff Indicator/Front Passenger's Weight Sensor Operation

The indicator comes on if the weight on the front passenger seat is about 30 kg (66 lbs) or less. This indicates the passenger's front airbag is off and will not deploy. The front airbag is shut off to reduce the chance of airbag-caused injuries.

SRS Operation

The main circuit in the SRS unit senses and analyzes the force of impact and, if necessary, ignites the inflator charges. If the 12 volt battery voltage is too low or power is disconnected due to the impact, the voltage regulator and the back-up power circuit will keep voltage at a constant level.

For the SRS to operate

Seat Belt Tensioners

(1) A front impact sensor must activate and send electric signals to the microprocessor.

(2) The microprocessor must compute the signals and trigger the tensioners.

(3) The charges must ignite and deploy the tensioners.

Driver's and Front Passenger's Airbag(s)

(1) The front impact sensors must activate, and send electric signals to the microprocessor.

(2) The microprocessor must compute the signals and trigger the airbag inflators.

(3) The triggered inflators that received signals must ignite and deploy the airbags.

Side Airbag(s)

(1) A side impact sensor must activate, and send electric signals to the microprocessor.

(2) The microprocessor must compute the signals and trigger the side airbag inflators. However, the microprocessor does not trigger the front passenger's side airbag if the SRS unit determines that the front passenger's head is in the deployment path of the side airbag.

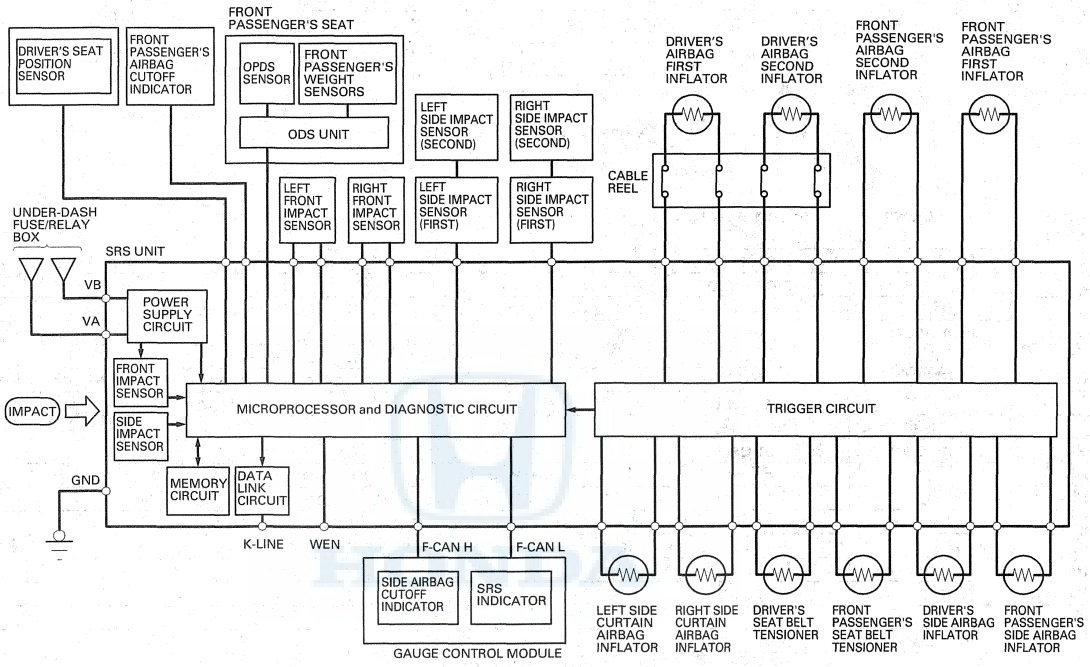
(3) The triggered inflators that receive the signal must ignite and deploy the side airbags.

Side Curtain Airbag(s)

(1) The side impact sensors must activate and send electrical signals to the microprocessor.

(2) The microprocessor must compute the signals and trigger the side curtain airbag and side airbag inflators.

(3) The triggered inflators must ignite and deploy the side curtain airbag and side airbag at the same time.



Self-diagnostic System

A self-diagnostic circuit is built into the SRS unit; when the ignition switch is turned to ON (II), the SRS indicator comes on and goes off after about 6 seconds if the system is operating normally. If the indicator does not come on, or if it does not go off after 6 seconds, or comes on while driving, it indicates a problem in the system. The system must be inspected and repaired as soon as possible.

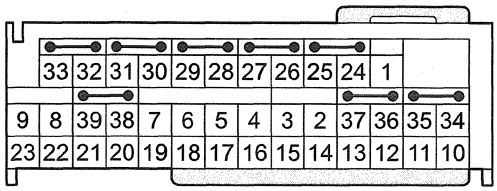
For better serviceability, the SRS unit memory stores DTCs related to the cause of the malfunction, the SRS unit is connected to the data link connector (DLC). This information can be read with the HDS when it is connected to the DLC (see page 24-23).

NOTE: Before you disconnect the negative cable from the 12 volt battery for troubleshooting, refer to 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).

(cont'd)

System Description (cont'd)

SRS Unit Inputs and Outputs at Connector A (39P)

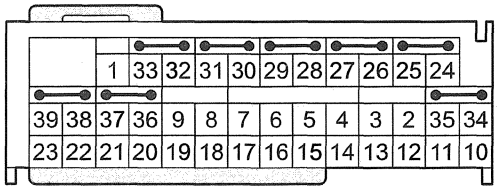


Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description
1	Not used	Not used	—
2	Not used	Not used	—
3	GRN*1	PTT	Front passenger's airbag cutoff indicator output line
4	Not used	Not used	—
5	BLU*1	K-LINE	Sends and receives scan tool signal (serial data)
6	GRN*1	F-CAN H	Sends and receives communication signal from the gauge control module
7	PNK*1	F-CAN L	Sends and receives communication signal from the gauge control module
8	Not used	Not used	—
9	Not used	Not used	—
10	GRN*1	RFS+	Power source for the right front impact sensor
11	LT BLU*1	RFS-	Ground for the right front impact sensor
12	RED*1	LFS+	Power source for the left front impact sensor
13	BRN*1	LFS-	Ground for the left front impact sensor
14	Not used	Not used	—
15	Not used	Not used	—
16	Not used	Not used	—
17	Not used	Not used	—
18*2	ORN*1	WEN	Data link connector
19	Not used	Not used	—
20	BLK*1	SRS GND2	Ground circuit for the SRS unit (G504)
21	BLK*1	SRS GND1	Ground circuit for the SRS unit (G504)
22	PUR*1	VB	SRS dedicated power (dedicated booster circuit)
23	WHT*1	VA	SRS system sub power (common with ODS)
24	GRN*1	RA2+	Power source for the front passenger's airbag second inflator
25	PUR*1	RA2-	Ground for the front passenger's airbag second inflator
26	LT GRN*1	LA2+	Power source for the driver's airbag second inflator
27	LT BLU*1	LA2-	Ground for the driver's airbag second inflator
28	LT BLU*1	RA1+	Power source for the front passenger's airbag first inflator
29	BRN*1	RA1-	Ground for the front passenger's airbag first inflator
30	YEL*1	LA1+	Power source for the driver's airbag first inflator
31	ORN*1	LA1-	Ground for the driver's airbag first inflator
32	Not used	Not used	—
33	Not used	Not used	—
34	Not used	Not used	—
35	Not used	Not used	—
36	Not used	Not used	—
37	Not used	Not used	—
38	Not used	Not used	—
39	Not used	Not used	—

*1: Wire colors may be substituted in this table.
*2: '11 model

SRS Unit Inputs and Outputs at Connector B (39P)



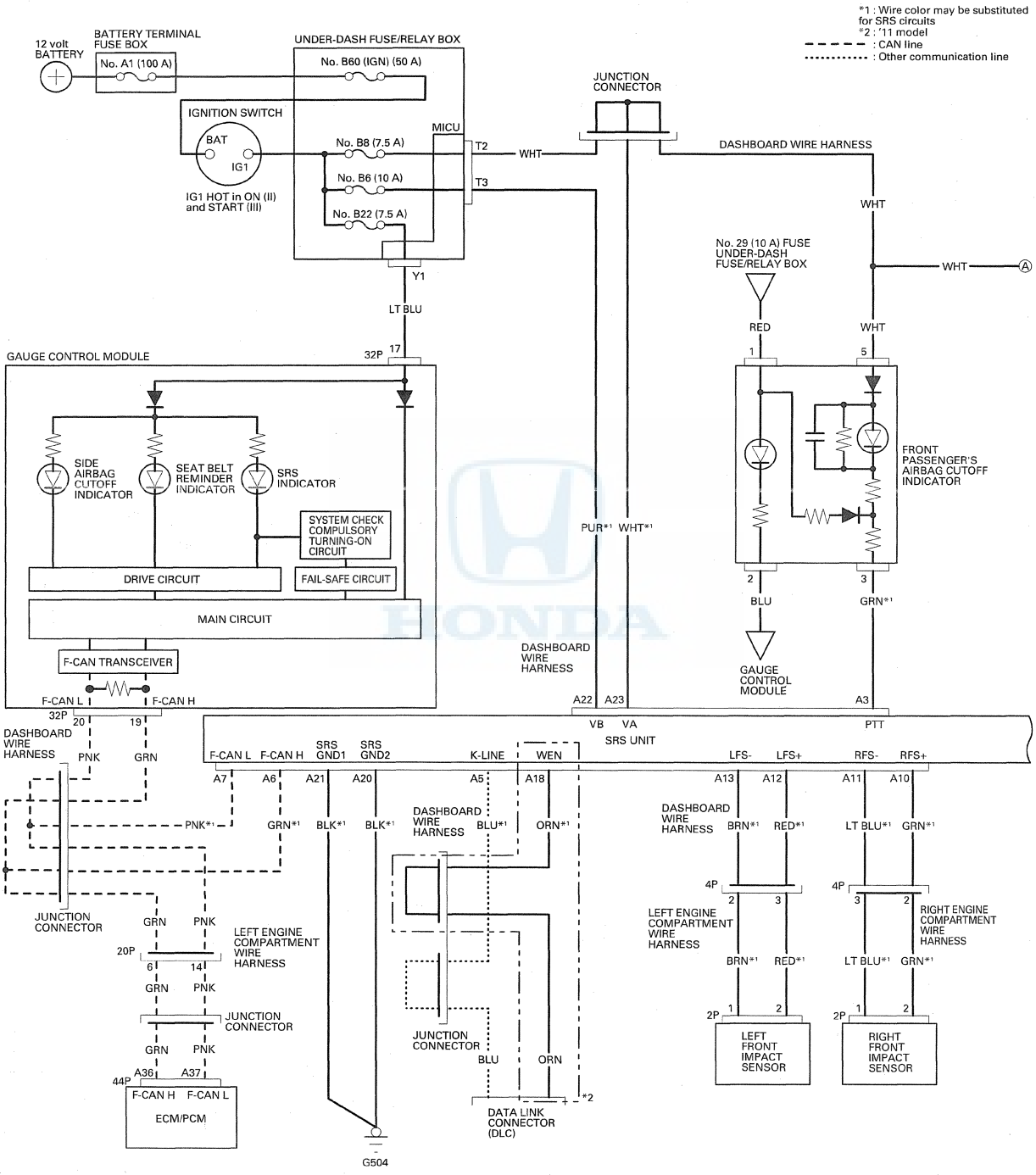
Wire side of female terminals

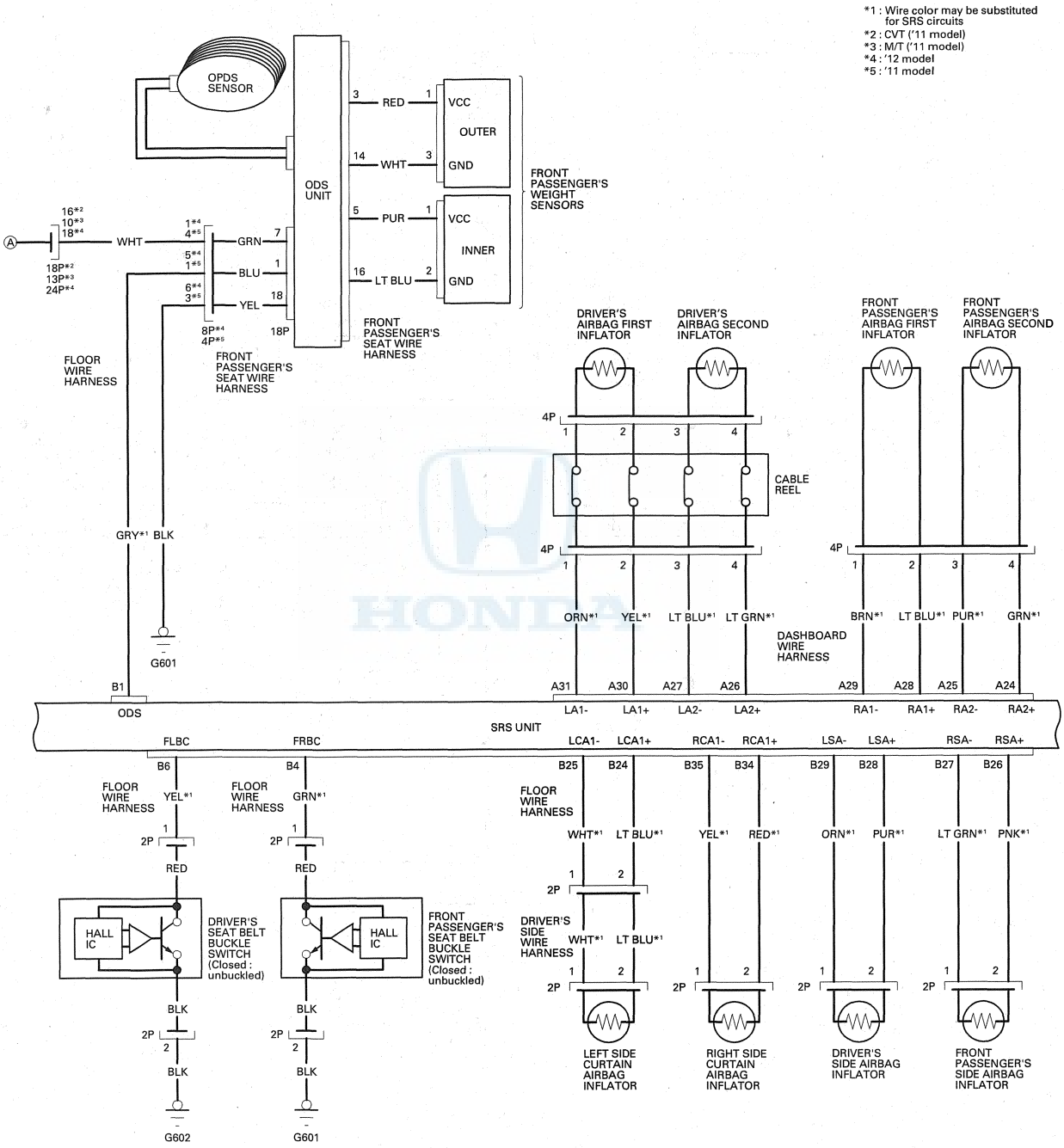
Terminal Number	Wire Color	Terminal Name	Description
1	GRY*	ODS	Sends and receives communication signal with the ODS unit
2	LT BLU*	SS+	Driver's seat position sensor
3	Not used	Not used	—
4	GRN*	FRBC	Front passenger's seat belt buckle switch
5	Not used	Not used	—
6	YEL*	FLBC	Driver's seat belt buckle switch
7	Not used	Not used	—
8	Not used	Not used	—
9	Not used	Not used	—
10	BRN*	RS1+	Power source for the right side impact sensor (first), right side impact sensor (second)
11	LT GRN*	RS1-	Ground for the right side impact sensor (first), right side impact sensor (second)
12	PNK*	LS1+	Power source for the left side impact sensor (first), left side impact sensor (second)
13	GRY*	LS1-	Ground for the left side impact sensor (first), left side impact sensor (second)
14	Not used	Not used	—
15	Not used	Not used	—
16	Not used	Not used	—
17	Not used	Not used	—
18	Not used	Not used	—
19	Not used	Not used	—
20	Not used	Not used	—
21	Not used	Not used	—
22	Not used	Not used	—
23	Not used	Not used	—
24	LT BLU*	LCA1+	Power source for the left side curtain airbag inflator
25	WHT*	LCA1-	Ground for the left side curtain airbag inflator
26	PNK*	RSA+	Power source for the front passenger's side airbag inflator
27	LT GRN*	RSA-	Ground for the front passenger's side airbag inflator
28	PUR*	LSA+	Power source for the driver's side airbag inflator
29	ORN*	LSA-	Ground for the driver's side airbag inflator
30	Not used	Not used	—
31	Not used	Not used	—
32	Not used	Not used	—
33	Not used	Not used	—
34	RED*	RCA1+	Power source for the right side curtain airbag inflator
35	YEL*	RCA1-	Ground for the right side curtain airbag inflator
36	LT BLU*	RRP+	Power source for the front passenger's seat belt tensioner
37	LT GRN*	RRP-	Ground for the front passenger's seat belt tensioner
38	PNK*	LRP+	Power source for the driver's seat belt tensioner
39	BRN*	LRP-	Ground for the driver's seat belt tensioner

*: Wire colors may be substituted in this table.

SRS (Supplemental Restraint System)

Circuit Diagram

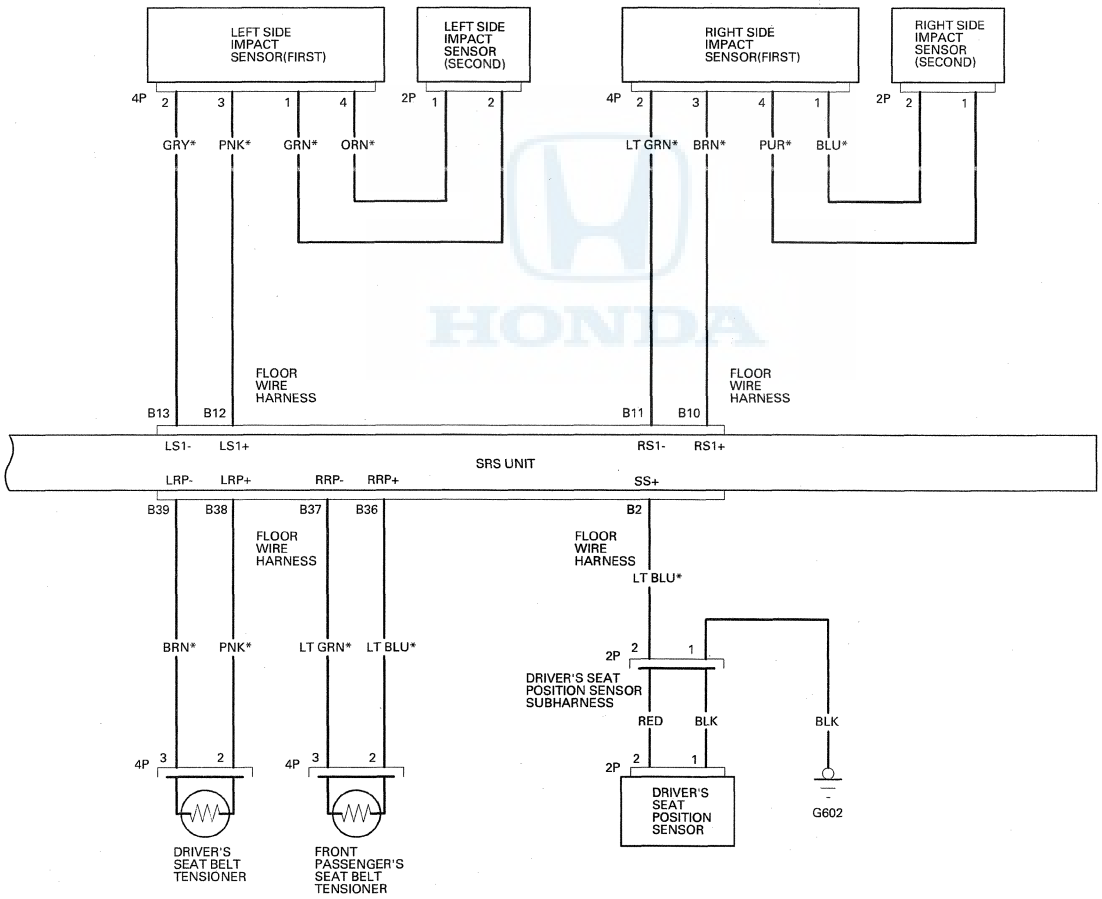



*1 : Wire color may be substituted for SRS circuits
*2 : CVT ('11 model)
*3 : M/T ('11 model)
*4 : '12 model
*5 : '11 model
OPDS SENSOR
ODS UNIT
3 RED 1 VCC
OUTER
14 WHT 3 GND
FRONT PASSENGER'S WEIGHT SENSORS
5 PUR 1 VCC
INNER
16 LT BLU 2 GND
FRONT PASSENGER'S SEAT WIRE HARNESS
16*2 10*3 18*4
18P*2 13P*3 24P*4
WHT
1*4 4*5 GRN 7
5*4 1*5 BLU 1
6*4 3*5 YEL 18
8P*4 4P*5
18P
FRONT PASSENGER'S SEAT WIRE HARNESS
FLOOR WIRE HARNESS
GRY*1 BLK
G601
B1
ODS
DRIVER'S AIRBAG FIRST INFLATOR
DRIVER'S AIRBAG SECOND INFLATOR
FRONT PASSENGER'S AIRBAG FIRST INFLATOR
FRONT PASSENGER'S AIRBAG SECOND INFLATOR
4P 1 2 3 4
CABLE REEL
4P 1 2 3 4
ORN*1 YEL*1 LT BLU*1 LT GRN*1
BRN*1 LT BLU*1 PUR*1 GRN*1
DASHBOARD WIRE HARNESS
A31 A30 A27 A26 A29 A28 A25 A24
LA1- LA1+ LA2- LA2+ RA1- RA1+ RA2- RA2+
SRS UNIT
FLBC FRBC LCA1- LCA1+ RCA1- RCA1+ LSA- LSA+ RSA- RSA+
B6 B4 B25 B24 B35 B34 B29 B28 B27 B26
FLOOR WIRE HARNESS YEL*1 GRN*1
FLOOR WIRE HARNESS
WHT*1 LT BLU*1 YEL*1 RED*1 ORN*1 PUR*1 LT GRN*1 PNK*1
2P 1 2
RED RED
HALL IC HALL IC
DRIVER'S SEAT BELT BUCKLE SWITCH (Closed : unbuckled)
FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH (Closed : unbuckled)
DRIVER'S SIDE WIRE HARNESS
WHT*1 LT BLU*1
BLK BLK
BLK BLK
G602 G601
LEFT SIDE CURTAIN AIRBAG INFLATOR
RIGHT SIDE CURTAIN AIRBAG INFLATOR
DRIVER'S SIDE AIRBAG INFLATOR
FRONT PASSENGER'S SIDE AIRBAG INFLATOR

(cont'd)

Circuit Diagram (cont'd)

* : Wire color may be substituted for SRS circuits



DTC Troubleshooting

DTC 11-1x ("x" can be 0 thru 9 or A thru F):
Open in the Driver's Airbag First Inflator

DTC 11-2x ("x" can be 0 thru 9 or A thru F):
Increased Resistance in the Driver's Airbag First Inflator

DTC 11-4x ("x" can be 0 thru 9 or A thru F):
Open in the Driver's Airbag Second Inflator

DTC 11-5x ("x" can be 0 thru 9 or A thru F):
Increased Resistance in the Driver's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

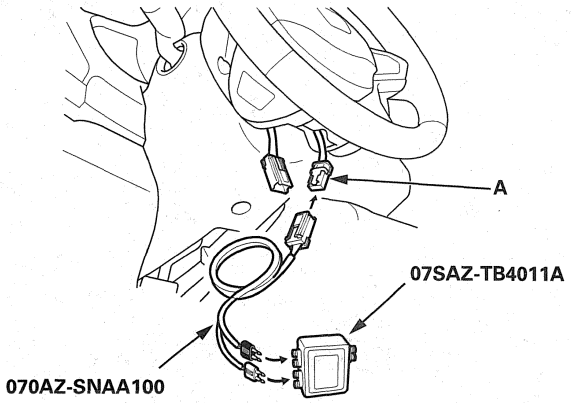
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2 on page 24-21).
7. Disconnect the driver's airbag inflator 4P connector (A) on the cable reel harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the driver's airbag inflator 4P connector on the cable reel harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

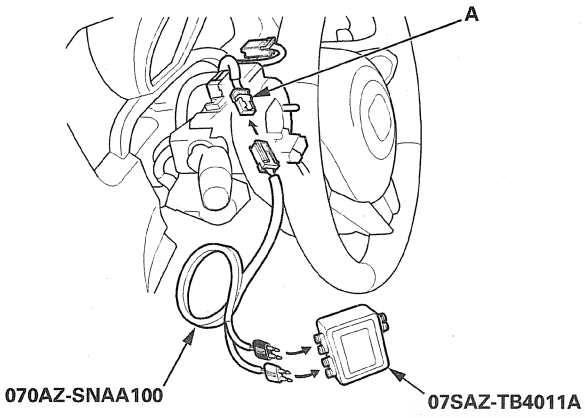
    YES–Go to step 13.

    NO–Open or increased resistance in the driver's airbag first or second inflator; replace the driver's airbag (see page 24-166), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Remove the column cover (see page 20-96).

(cont'd)

DTC Troubleshooting (cont'd)

16. Disconnect the cable reel connector B (4P) (A) on the dashboard wire harness.

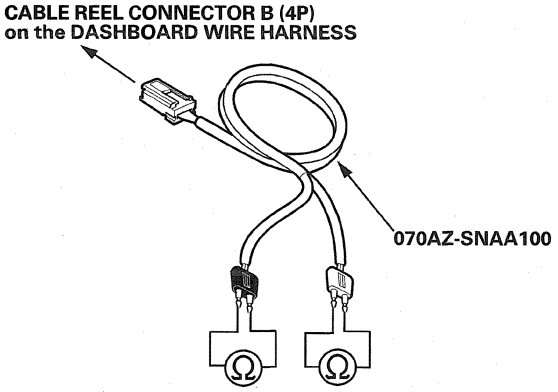


17. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the cable reel connector B (4P) on the dashboard wire harness.
18. Reconnect the negative cable to the 12 volt battery.
19. Clear the DTCs with the HDS (see page 24-24).
20. Turn the ignition switch to ON (II), then wait for 10 seconds.
21. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-1x, 11-2x, 11-4x, or 11-5x indicated?

    YES–Go to step 22.

    NO–Open or increased resistance in the cable reel; replace the cable reel (see page 24-183), then clear the DTC.■
22. Turn the ignition switch to LOCK (0).
23. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
24. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
25. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the cable reel connector B (4P) on the dashboard wire harness.
26. Measure the resistance between the SRS simulator lead J black and red terminals respectively.



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 11-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Driver's Airbag First Inflator

DTC 11-6x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Driver's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100
- SRS Short Canceller 070AZ-SAA0100

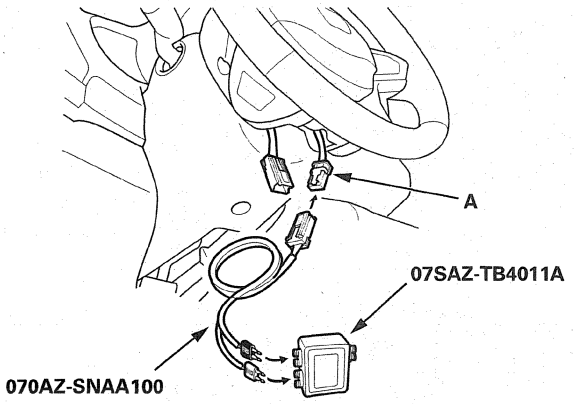
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 11-3x or 11-6x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2 on page 24-21).
7. Disconnect the driver's airbag inflator 4P connector (A) on the cable reel harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the driver's airbag inflator 4P connector on the cable reel harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-3x or 11-6x indicated?

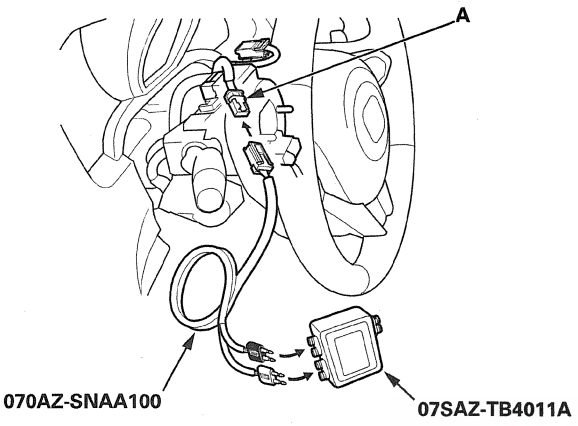
    YES–Go to step 13.

    NO–Short to another wire in the driver's airbag first or second inflator; replace the driver's airbag (see page 24-166), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Remove the column cover (see page 20-96).

(cont'd)

DTC Troubleshooting (cont'd)

16. Disconnect the cable reel connector B (4P) (A) on the dashboard wire harness.

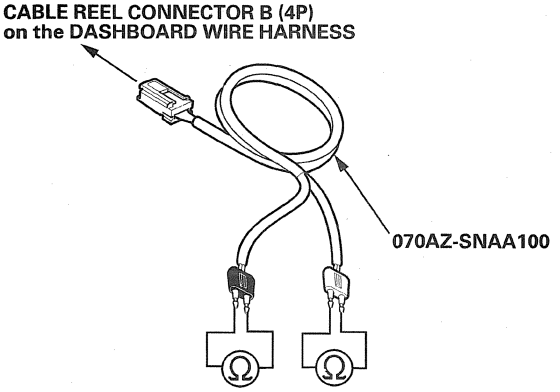


17. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the cable reel connector B (4P) on the dashboard wire harness.
18. Reconnect the negative cable to the 12 volt battery.
19. Clear the DTCs with the HDS (see page 24-24).
20. Turn the ignition switch to ON (II), then wait for 10 seconds.
21. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-3x or 11-6x indicated?

    YES–Go to step 22.

    NO–Short to another wire in the cable reel; replace the cable reel (see page 24-183), then clear the DTC.■
22. Turn the ignition switch to LOCK (0).
23. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
24. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
25. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the cable reel connector B (4P) on the dashboard wire harness.
26. Connect the SRS short cancellers (070AZ-SAA0100) to SRS unit connector A (39P) terminals No. 26 and No. 27, and to terminals No. 30 and No. 31 (see page 24-20).
27. Measure the resistance between the SRS simulator lead J black and red terminals respectively.



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to another wire in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 11-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Driver's Airbag First Inflator

DTC 11-Ax ("x" can be 0 thru 9 or A thru F): Short to Power in the Driver's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

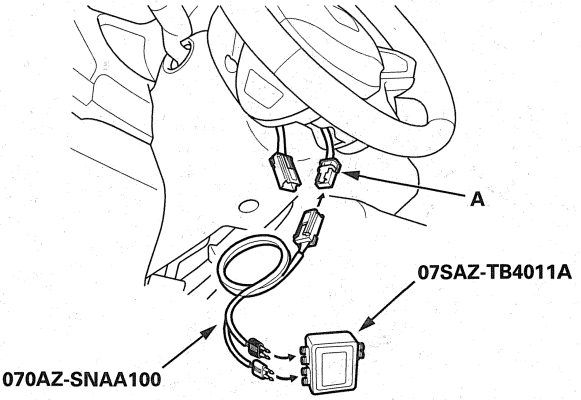
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 11-8x or 11-Ax indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2 on page 24-21).
7. Disconnect the driver's airbag inflator 4P connector (A) on the cable reel harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the driver's airbag inflator 4P connector on the cable reel harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-8x or 11-Ax indicated?

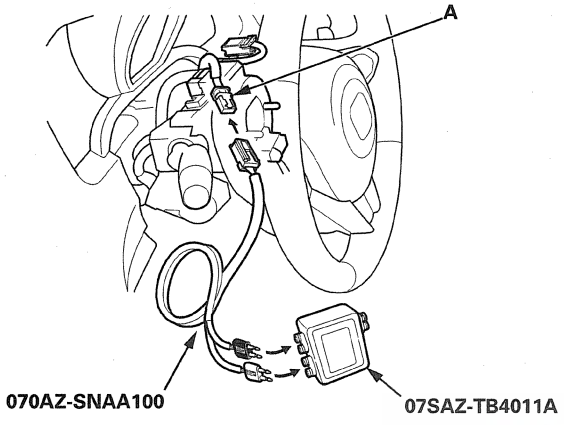
    YES–Go to step 13.

    NO–Short to power in the driver's airbag first or second inflator; replace the driver's airbag (see page 24-166), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Remove the column cover (see page 20-96).

(cont'd)

DTC Troubleshooting (cont'd)

16. Disconnect the cable reel connector B (4P) (A) on the dashboard wire harness.

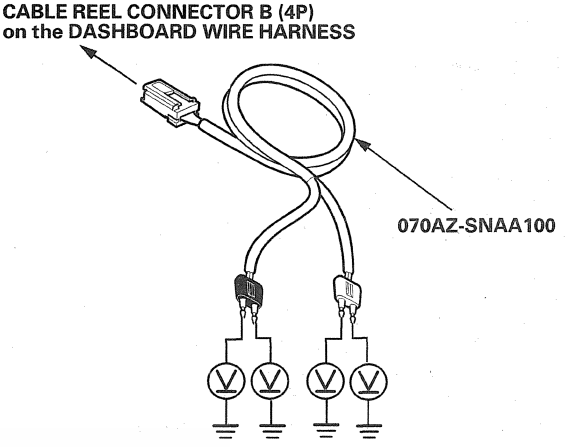


17. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the cable reel connector B (4P) on the dashboard wire harness.
18. Reconnect the negative cable to the 12 volt battery.
19. Clear the DTCs with the HDS (see page 24-24).
20. Turn the ignition switch to ON (II), then wait for 10 seconds.
21. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-8x or 11-Ax indicated?

    YES–Go to step 22.

    NO–Short to power in the cable reel; replace the cable reel (see page 24-183), then clear the DTC.■
22. Turn the ignition switch to LOCK (0).
23. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
24. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
25. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the cable reel connector B (4P) on the dashboard wire harness.
26. Reconnect the negative cable to the 12 volt battery.
27. Turn the ignition switch to ON (II).
28. Measure the voltage between each terminal of SRS simulator lead J and body ground individually.



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to power in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 11-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Driver's Airbag First Inflator

DTC 11-Bx ("x" can be 0 thru 9 or A thru F): Short to Ground in the Driver's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

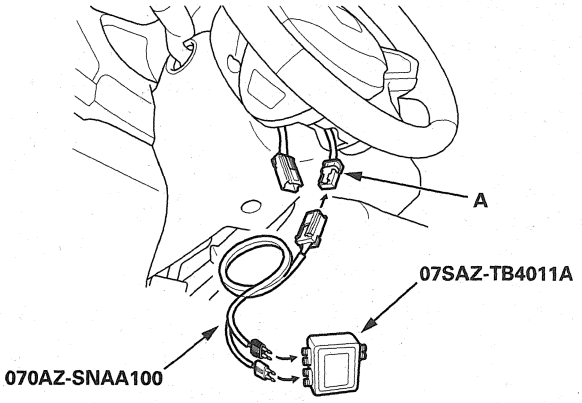
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 11-9x or 11-Bx indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the access panel from the steering wheel (see step 2 on page 24-21).
7. Disconnect the driver's airbag inflator 4P connector (A) on the cable reel harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the driver's airbag inflator 4P connector on the cable reel harness.
9. Reconnect the negative cable from the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-9x or 11-Bx indicated?

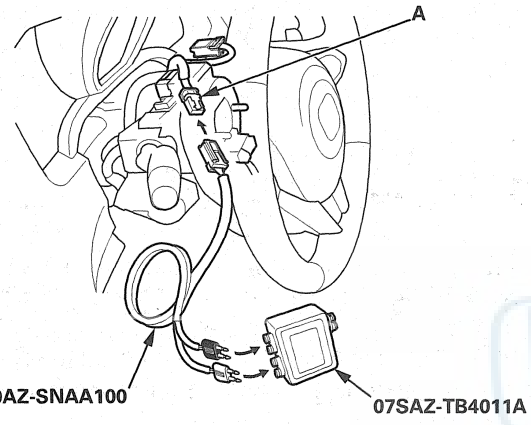
    YES–Go to step 13.

    NO–Short to ground in the driver's airbag first or second inflator; replace the driver's airbag (see page 24-166), then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Remove the column cover (see page 20-96).
16. Disconnect the cable reel connector B (4P) (A) on the dashboard wire harness.



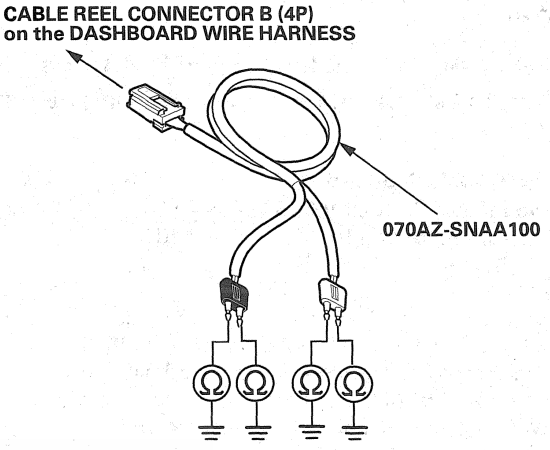
17. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the cable reel connector B (4P) on the dashboard wire harness.
18. Reconnect the negative cable to the 12 volt battery.
19. Clear the DTCs with the HDS (see page 24-24).
20. Turn the ignition switch to ON (II), then wait for 10 seconds.
21. Check for DTCs with the HDS (see page 24-24).

    Is DTC 11-9x or 11-Bx indicated?

    YES–Go to step 22.

    NO–Short to ground in the cable reel; replace the cable reel (see page 24-183), then clear the DTC.■

22. Turn the ignition switch to LOCK (0).
23. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
24. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
25. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the cable reel connector B (4P) on the dashboard wire harness.
26. Measure the resistance between each terminal of SRS simulator lead J and body ground individually.



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to ground in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 12-1x ("x" can be 0 thru 9 or A thru F): Open in the Front Passenger's Airbag First Inflator

DTC 12-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Front Passenger's Airbag First Inflator

DTC 12-4x ("x" can be 0 thru 9 or A thru F): Open in the Front Passenger's Airbag Second Inflator

DTC 12-5x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Front Passenger's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

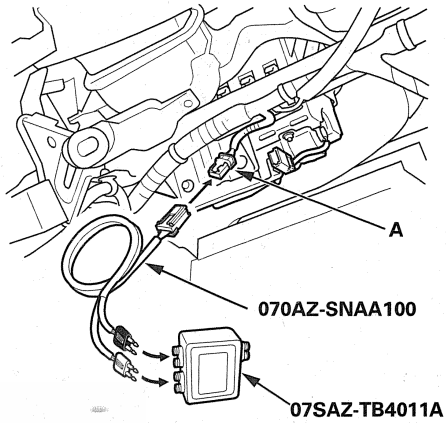
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the glove box (see page 20-94).
7. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the front passenger's airbag inflator 4P connector on the dashboard wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 12-1x, 12-2x, 12-4x, or 12-5x indicated?

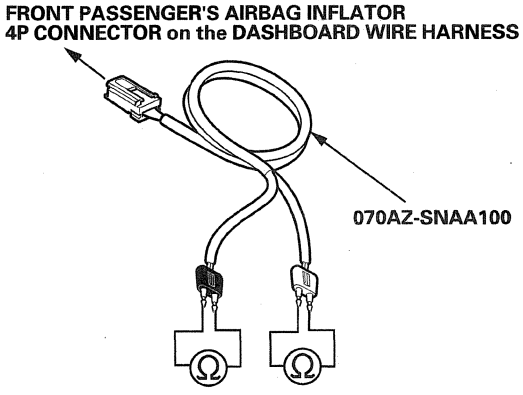
    YES–Go to step 13.

    NO–Open or increased resistance in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see page 24-167), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the front passenger's airbag inflator 4P connector on the dashboard wire harness.

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the resistance between the SRS simulator lead J black and red terminals respectively.



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P). Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Open or increased resistance in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 12-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Front Passenger's Airbag First Inflator

DTC 12-6x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Front Passenger's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

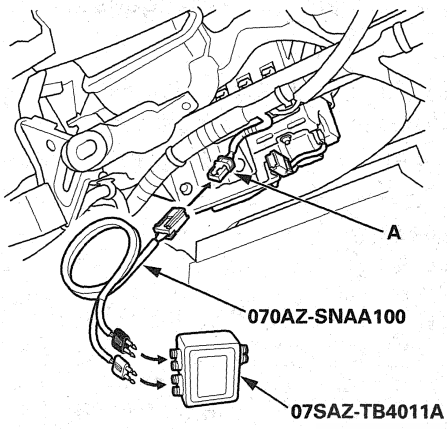
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 12-3x or 12-6x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the glove box (see page 20-94).

7. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



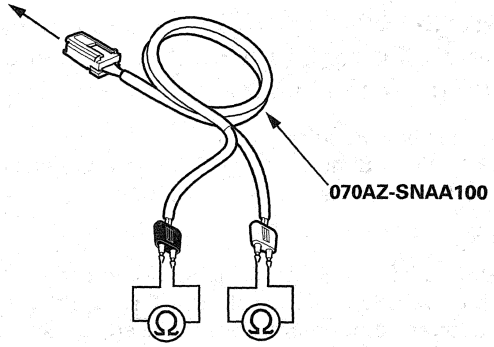
8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the front passenger's airbag inflator 4P connector on the dashboard wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 12-3x or 12-6x indicated?

    YES–Go to step 13.

    NO–Short to another wire in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see page 24-167), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the front passenger's airbag inflator 4P connector on the dashboard wire harness.
17. Connect the SRS short cancellers (070AZ-SAA0100) to SRS unit connector A (39P) terminals No. 24 and No. 25, and to terminals No. 28 and No. 29 (see page 24-20).
18. Measure the resistance between the SRS simulator lead J black and red terminals respectively.

FRONT PASSENGER'S AIRBAG INFLATOR 4P CONNECTOR on the DASHBOARD WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to another wire in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 12-8x ("x" can be 0 thru 9 or A thru F):
Short to Power in the Front Passenger's Airbag First Inflator

DTC 12-Ax ("x" can be 0 thru 9 or A thru F):
Short to Power in the Front Passenger's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

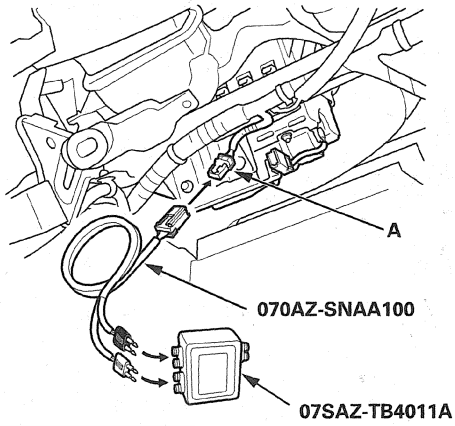
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 12-8x or 12-Ax indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the glove box (see page 20-94).
7. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the front passenger's airbag inflator 4P connector on the dashboard wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

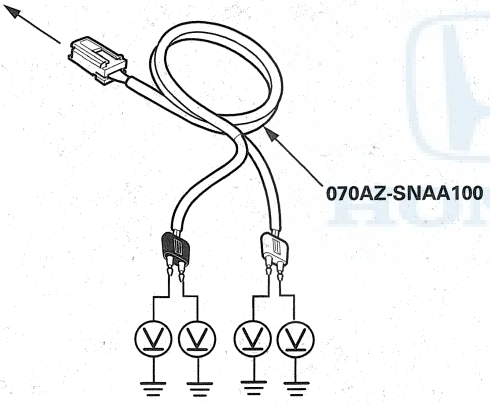
    Is DTC 12-8x or 12-Ax indicated?

    YES–Go to step 13.

    NO–Short to power in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see page 24-167), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the front passenger's airbag inflator 4P connector on the dashboard wire harness.
17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II), then wait for 10 seconds.
19. Measure the voltage between each terminal of SRS simulator lead J and body ground individually.

FRONT PASSENGER'S AIRBAG INFLATOR 4P CONNECTOR on the DASHBOARD WIRE HARNESS



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to power in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 12-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Front Passenger's Airbag First Inflator

DTC 12-Bx ("x" can be 0 thru 9 or A thru F): Short to Ground in the Front Passenger's Airbag Second Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead J 070AZ-SNAA100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 12-9x or 12-Bx indicated?

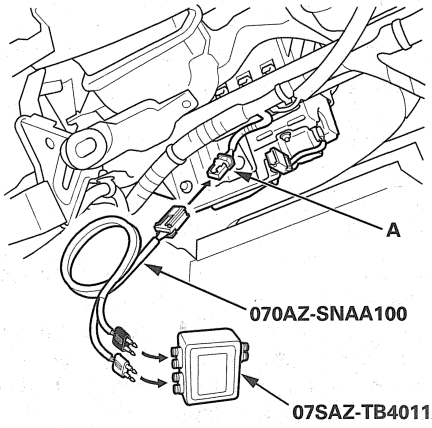
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the glove box (see page 20-94).

(cont'd)

DTC Troubleshooting (cont'd)

7. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



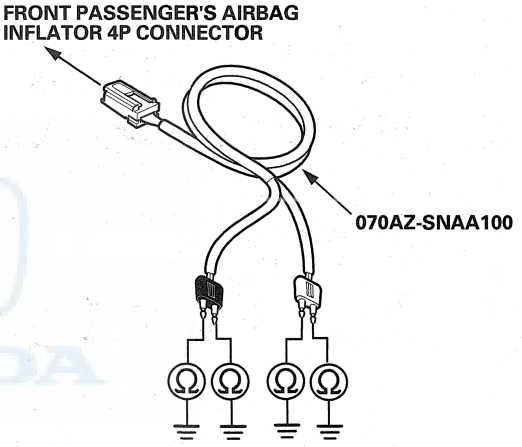
8. Connect the terminals of SRS simulator lead J to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead J to the front passenger's airbag inflator 4P connector on the dashboard wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 12-9x or 12-Bx indicated?

    YES–Go to step 13.

    NO–Short to ground in the front passenger's airbag first or second inflator; replace the front passenger's airbag (see page 24-167), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead J. Do not disconnect SRS simulator lead J from the front passenger's airbag inflator 4P connector.
17. Measure the resistance between each terminal of SRS simulator lead J and body ground individually.



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Short to ground in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC 21-1x ("x" can be 0 thru 9 or A thru F): Open in the Driver's Seat Belt Tensioner

DTC 21-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Driver's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

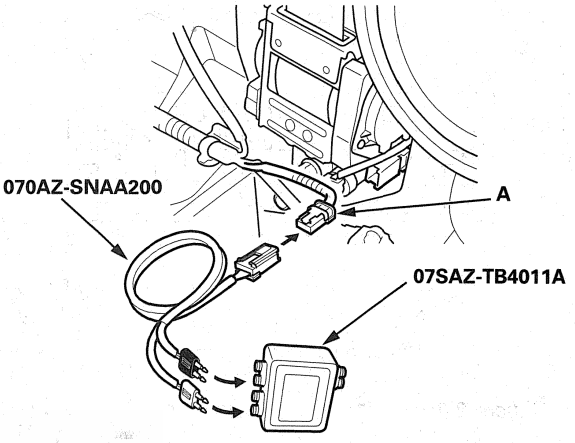
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 21-1x or 21-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).
7. Disconnect the driver's seat belt tensioner 4P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the driver's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 21-1x or 21-2x indicated?

    YES–Go to step 13.

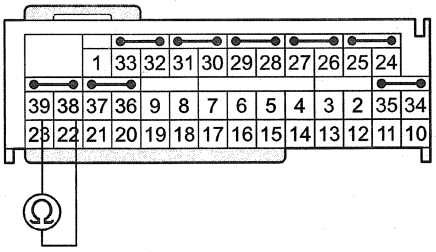
    NO–Open or increased resistance in the driver's seat belt tensioner; replace the driver's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 38 and No. 39 (see page 24-20).

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the resistance between SRS unit connector B (39P) terminals No. 38 and No. 39.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there 2.0—3.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 21-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Driver's Seat Belt tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

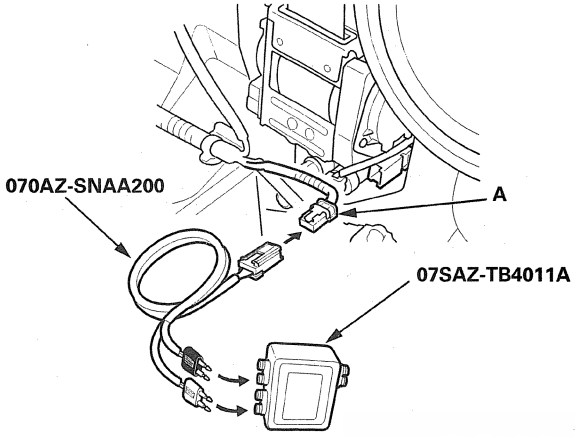
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 21-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).

7. Disconnect the driver's seat belt tensioner 4P connector (A) on the floor wire harness.



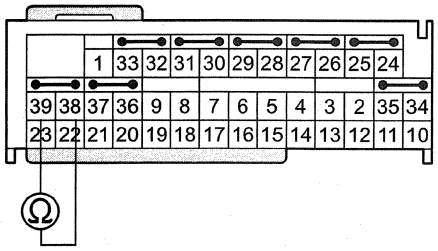
8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the driver's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 21-3x indicated?

    YES–Go to step 13.

    NO–Short to another wire in the driver's seat belt tensioner; replace the driver's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS simulator lead K from the driver's seat belt tensioner 4P connector on the floor wire harness.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 38 and No. 39 (see page 24-20).
18. Measure the resistance between SRS unit connector B (39P) terminals No. 38 and No. 39.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 21-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Driver's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

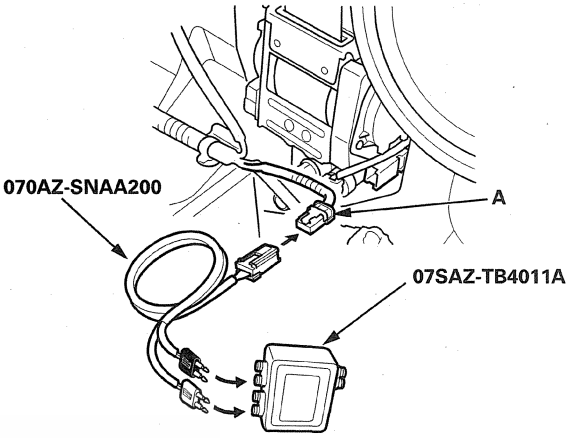
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 21-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).
7. Disconnect the driver's seat belt tensioner 4P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the driver's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

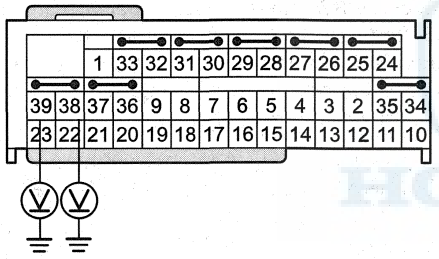
    Is DTC 21-8x indicated?

    YES–Go to step 13.

    NO–Short to power in the driver's seat belt tensioner; replace the driver's seat belt (see page 24-4), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect SRS simulator lead K from the driver's seat belt tensioner 4P connector on the floor wire harness.
17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II).
19. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 38 and No. 39 individually.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 21-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Driver's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 21-9x indicated?

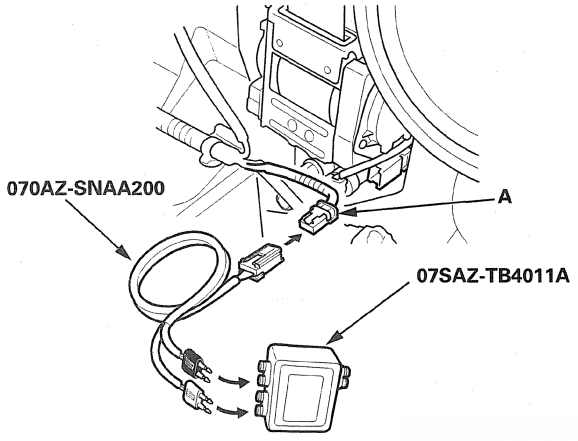
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).

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DTC Troubleshooting (cont'd)

7. Disconnect the driver's seat belt tensioner 4P connector (A) on the floor wire harness.



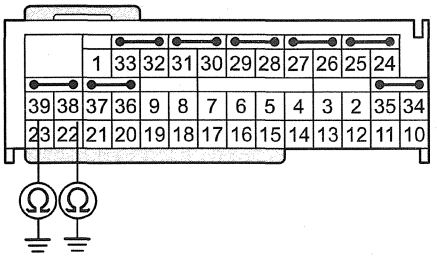
8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the driver's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 21-9x indicated?

    YES–Go to step 13.

    NO–Short to ground in the driver's seat belt tensioner; replace the driver's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect SRS simulator lead K from the driver's seat belt tensioner 4P connector on the floor wire harness.
17. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 38 and No. 39 individually.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 22-1x ("x" can be 0 thru 9 or A thru F): Open in the Front Passenger's Seat Belt Tensioner

DTC 22-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Front Passenger's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

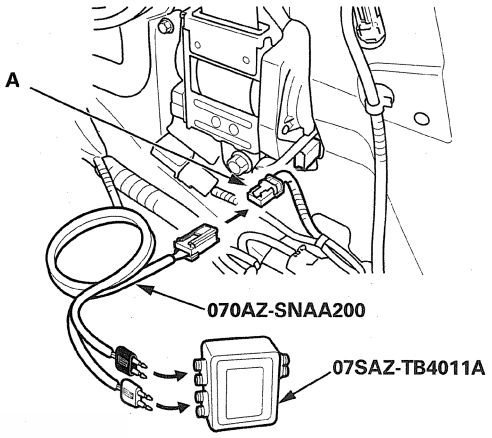
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 22-1x or 22-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).
7. Disconnect the front passenger's seat belt tensioner 4P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the front passenger's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 22-1x or 22-2x indicated?

    YES–Go to step 13.

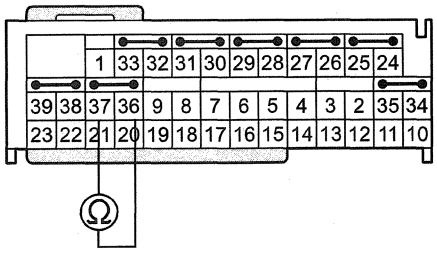
    NO–Open or increased resistance in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 36 and No. 37 (see page 24-20).

(cont'd)

DTC Troubleshooting (cont'd)

17. Measure the resistance between SRS unit connector B (39P) terminals No. 36 and No. 37.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there 2.0—3.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 22-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Front Passenger's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

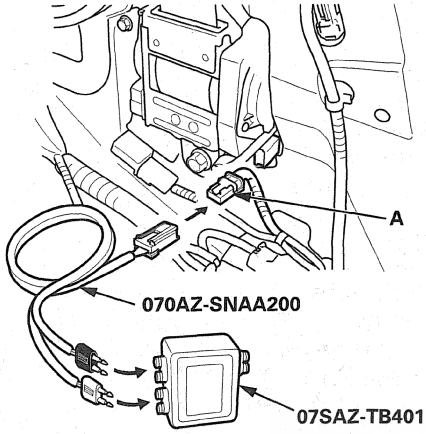
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 22-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).

7. Disconnect the front passenger's seat belt tensioner 4P connector (A) on the floor wire harness.



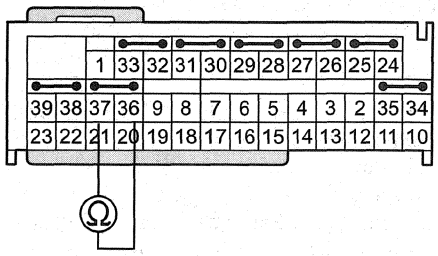
8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the front passenger's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 22-3x indicated?

    YES–Go to step 13.

    NO–Short to another wire in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect SRS simulator lead K from the front passenger's seat belt tensioner 4P connector.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 36 and No. 37 (see page 24-20).
18. Measure the resistance between SRS unit connector B (39P) terminals No. 36 and No. 37.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 22-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Front Passenger's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

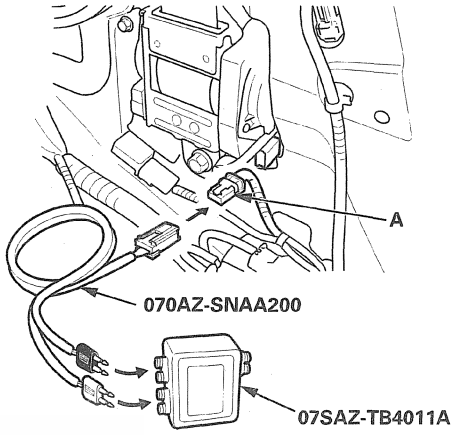
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 22-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).
7. Disconnect the front passenger's seat belt tensioner 4P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the front passenger's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

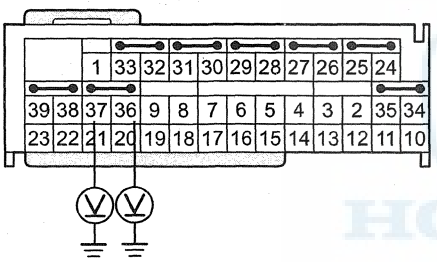
    Is DTC 22-8x indicated?

    YES–Go to step 13.

    NO–Short to power in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see page 24-4), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect SRS simulator lead K from the front passenger's seat belt tensioner 4P connector.
17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II).
19. Measure the voltage between body ground and SRS unit connector B (39P) terminals No. 36 and No. 37 individually.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 22-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Front Passenger's Seat Belt Tensioner

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead K 070AZ-SNAA200

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 22-9x indicated?

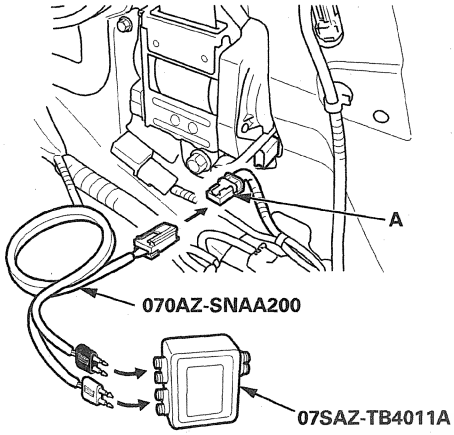
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).

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DTC Troubleshooting (cont'd)

7. Disconnect the front passenger's seat belt tensioner 4P connector (A) on the floor wire harness.



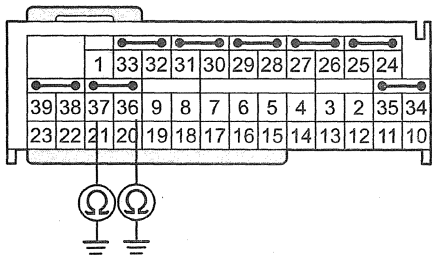
8. Connect the terminals of SRS simulator lead K to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead K to the front passenger's seat belt tensioner 4P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 22-9x indicated?

    YES–Go to step 13.

    NO–Short to ground in the front passenger's seat belt tensioner; replace the front passenger's seat belt (see page 24-4), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect SRS simulator lead K from the front passenger's seat belt tensioner 4P connector.
17. Measure the resistance between body ground and SRS unit connector B (39P) terminals No. 36 and No. 37 individually.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 31-1x ("x" can be 0 thru 9 or A thru F): Open in the Driver's Side Airbag Inflator

DTC 31-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Driver's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

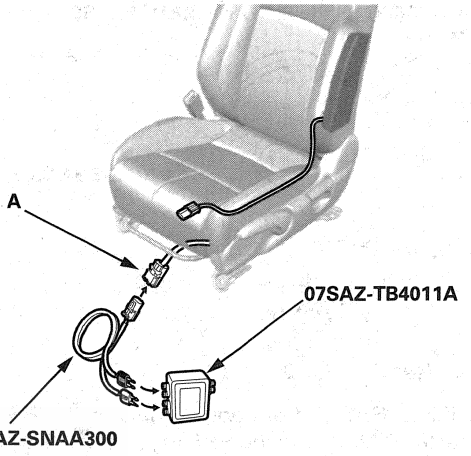
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 31-1x or 31-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the driver's side airbag inflator 2P connector (A) on the floor wire harness.



7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the driver's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 31-1x or 31-2x indicated?

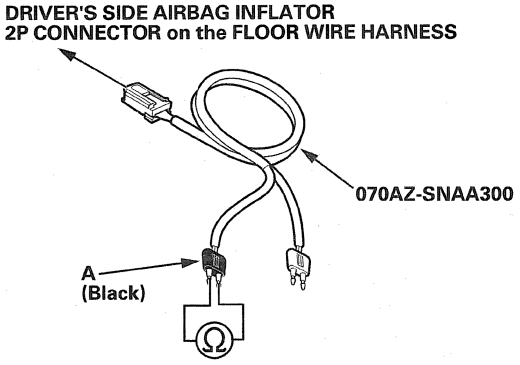
    YES–Go to step 12.

    NO–Open or increased resistance in the driver's side airbag inflator; replace the driver's side airbag (see page 24-171), then clear the DTC.■
12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the driver's side airbag inflator 2P connector on the floor wire harness.

(cont'd)

DTC Troubleshooting (cont'd)

16. Measure the resistance between the SRS simulator lead L (A) black terminals.



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 31-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Driver's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

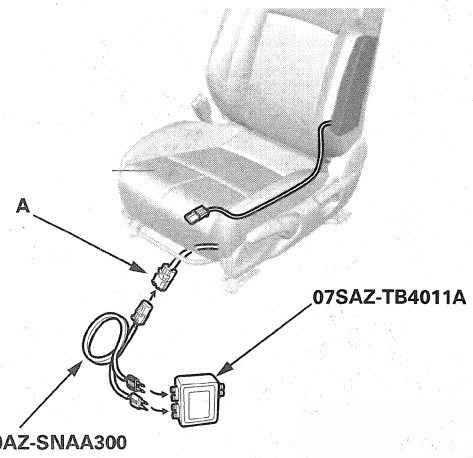
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 31-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

6. Disconnect the driver's side airbag inflator 2P connector (A) on the floor wire harness.



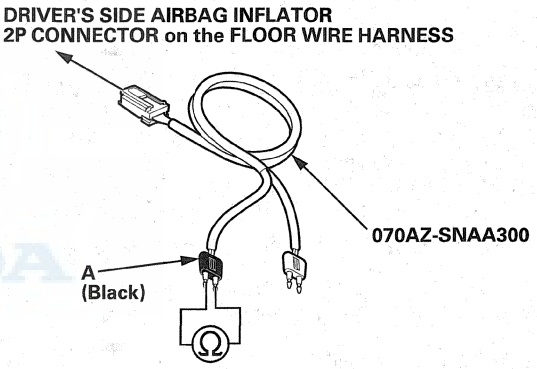
7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the driver's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 31-3x indicated?

    YES–Go to step 12.

    NO–Short to another wire in the driver's side airbag inflator; replace the driver's side airbag (see page 24-171), then clear the DTC.■

12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the driver's side airbag inflator 2P connector on the floor wire harness.
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 28 and No. 29 (see page 24-20).
17. Measure the resistance between the SRS simulator lead L (A) black terminals.



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 31-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Driver's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

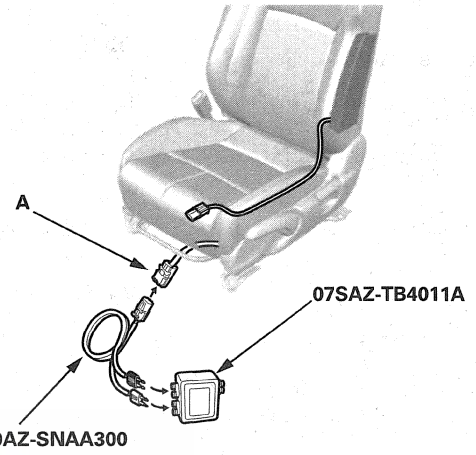
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 31-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the driver's side airbag inflator 2P connector (A) on the floor wire harness.



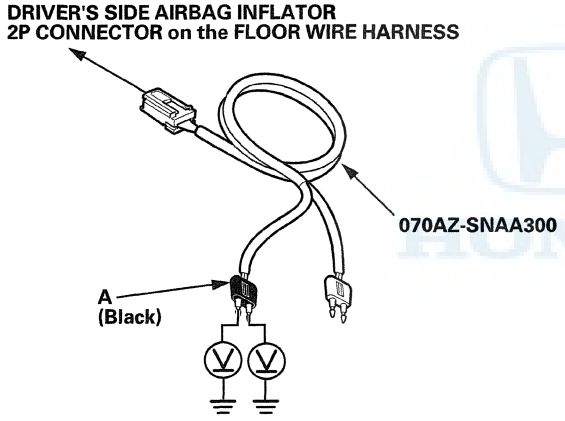
7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the driver's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 31-8x indicated?

    YES–Go to step 12.

    NO–Short to power in the driver's side airbag inflator; replace the driver's side airbag (see page 24-171), then clear the DTC.■

12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L Do not disconnect SRS simulator lead L from the driver's side airbag inflator 2P connector on the floor wire harness.
16 Reconnect the negative cable to the 12 volt battery
17 Turn the ignition switch to ON (II)
18. Measure the voltage between the black terminals of SRS simulator lead L (A) and body ground individually



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 31-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Driver's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS If the software version is not the latest, update the SRS unit software (see page 24-25), and retest

1 Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

Is DTC 31-9x indicated?

YES–Go to step 4

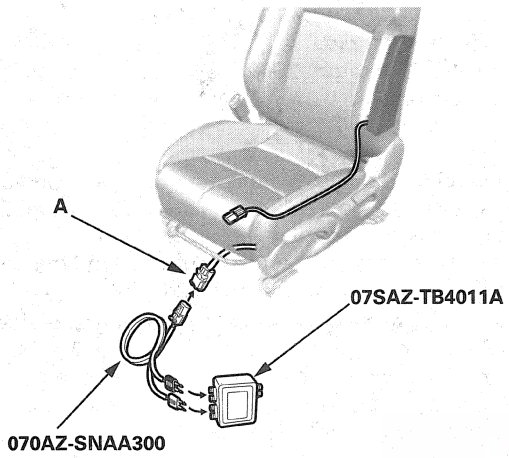
NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25) If another DTC is indicated, troubleshoot the DTC ■

4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

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DTC Troubleshooting (cont'd)

6. Disconnect the driver's side airbag inflator 2P connector (A) on the floor wire harness.



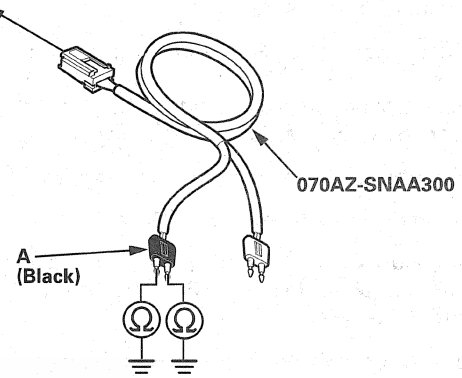
7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the driver's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 31-9x indicated?

    YES–Go to step 12.

    NO–Short to ground in the driver's side airbag inflator; replace the driver's side airbag (see page 24-171), then clear the DTC.■
12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the driver's side airbag inflator 2P connector on the floor wire harness.
16. Measure the resistance between the black terminals of SRS simulator lead L (A) and body ground individually.

DRIVER'S SIDE AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 32-1x ("x" can be 0 thru 9 or A thru F): Open in the Front Passenger's Side Airbag Inflator

DTC 32-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Front Passenger's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

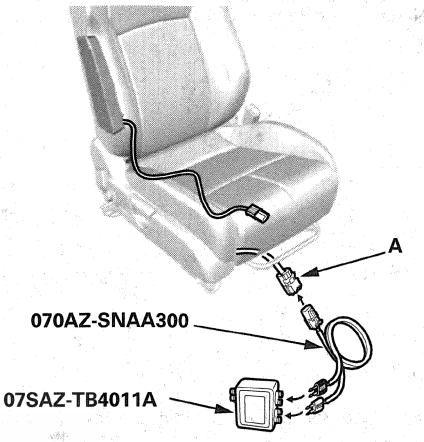
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 32-1x or 32-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the front passenger's side airbag inflator 2P connector (A) on the floor wire harness.



7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the front passenger's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 32-1x or 32-2x indicated?

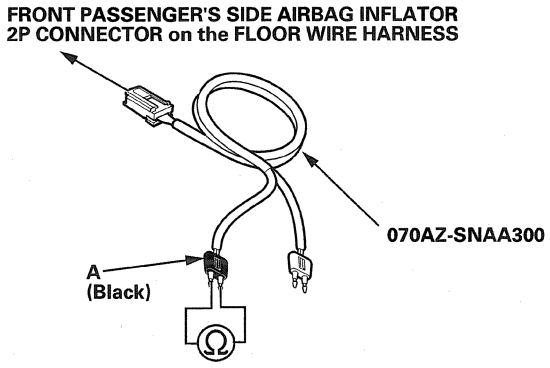
    YES–Go to step 12.

    NO–Open or increased resistance in the front passenger's side airbag inflator; replace the front passenger's side airbag (see page 24-171), then clear the DTC.■
12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the front passenger's side airbag inflator 2P connector on the floor wire harness.

(cont'd)

DTC Troubleshooting (cont'd)

16. Measure the resistance between the SRS simulator lead L (A) black terminals.



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 32-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Front Passenger's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

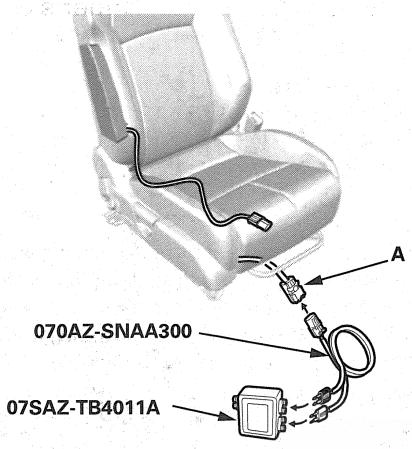
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 32-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

6. Disconnect the front passenger's side airbag inflator 2P connector (A) on the floor wire harness.



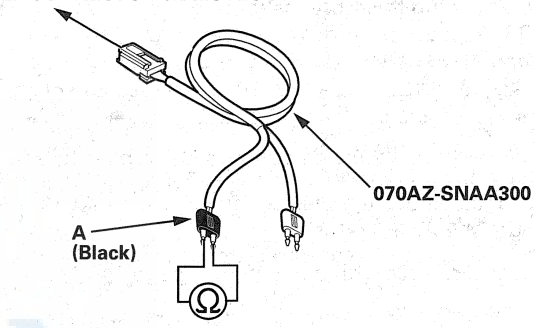
7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the front passenger's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 32-3x indicated?

    YES–Go to step 12.

    NO–Short to another wire in the front passenger's side airbag inflator; replace the front passenger's side airbag (see page 24-171), then clear the DTC.■
12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the front passenger's side airbag inflator 2P connector on the floor wire harness.
16. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 26 and No. 27 (see page 24-20).
17. Measure the resistance between the SRS simulator lead L (A) black terminals.

FRONT PASSENGER'S SIDE AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 32-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Front Passenger's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

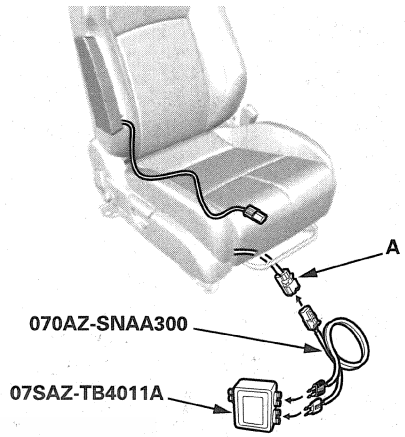
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 32-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the front passenger's side airbag inflator 2P connector (A) on the floor wire harness.



7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the front passenger's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

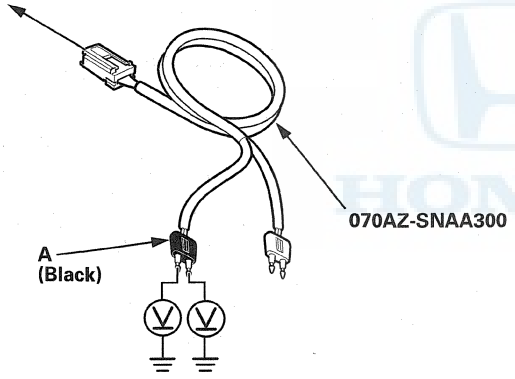
    Is DTC 32-8x indicated?

    YES–Go to step 12.

    NO–Short to power in the front passenger's side airbag inflator; replace the front passenger's side airbag (see page 24-171), then clear the DTC.■

12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the front passenger's side airbag inflator 2P connector on the floor wire harness.
16. Reconnect the negative cable to the 12 volt battery.
17. Turn the ignition switch to ON (II).
18. Measure the voltage between the black terminals of SRS simulator lead L (A) and body ground individually.

FRONT PASSENGER'S SIDE AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 32-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Front Passenger's Side Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 32-9x indicated?

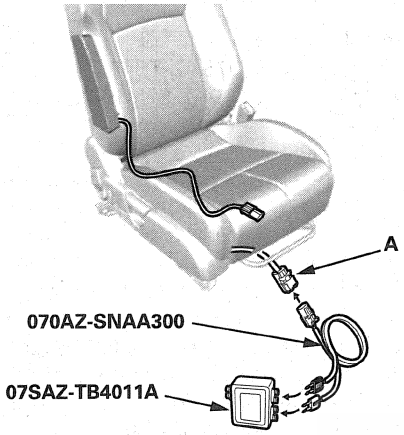
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

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DTC Troubleshooting (cont'd)

6. Disconnect the front passenger's side airbag inflator 2P connector (A) on the floor wire harness.



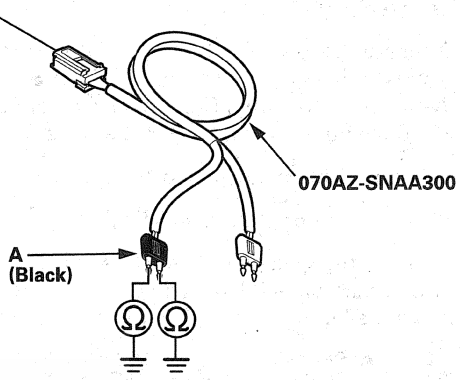
7. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the front passenger's side airbag inflator 2P connector on the floor wire harness.
8. Reconnect the negative cable to the 12 volt battery.
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 32-9x indicated?

    YES–Go to step 12.

    NO–Short to ground in the front passenger's side airbag inflator; replace the front passenger's side airbag (see page 24-171), then clear the DTC.■
12. Turn the ignition switch to LOCK (0).
13. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
14. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
15. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the front passenger's side airbag inflator 2P connector on the floor wire harness.
16. Measure the resistance between the black terminals of SRS simulator lead L (A) and body ground individually.

FRONT PASSENGER'S SIDE AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 33-1x ("x" can be 0 thru 9 or A thru F): Open in the Left Side Curtain Airbag Inflator

DTC 33-2x ("x" can be 0 thru 9 or A thru F): Increased Resistance in the Left Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

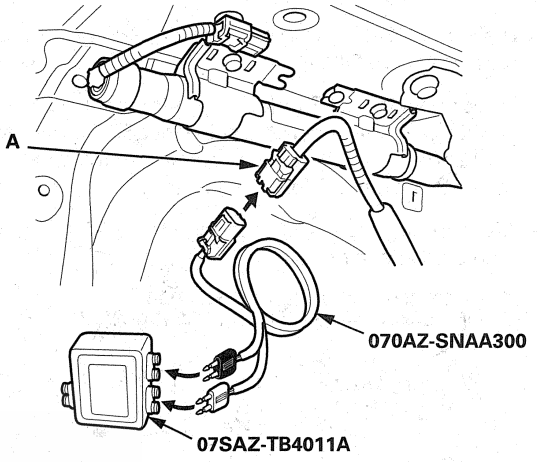
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 33-1x or 33-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).
7. Disconnect the left side curtain airbag inflator 2P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the left side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 33-1x or 33-2x indicated?

    YES–Go to step 13.

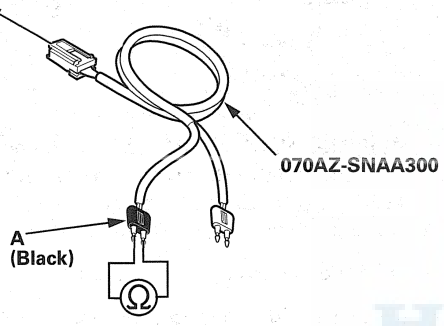
    NO–Open or increased resistance in the left side curtain airbag; replace the left side curtain airbag (see page 24-174), then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the left side curtain airbag inflator 2P connector on the floor wire harness.
17. Measure the resistance between the SRS simulator lead L (A) black terminals.

LEFT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at the SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the driver's side wire harness or the floor wire harness; replace the driver's side wire harness or the floor wire harness, then clear the DTC.■

DTC 33-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Left Side Curtain airbag inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

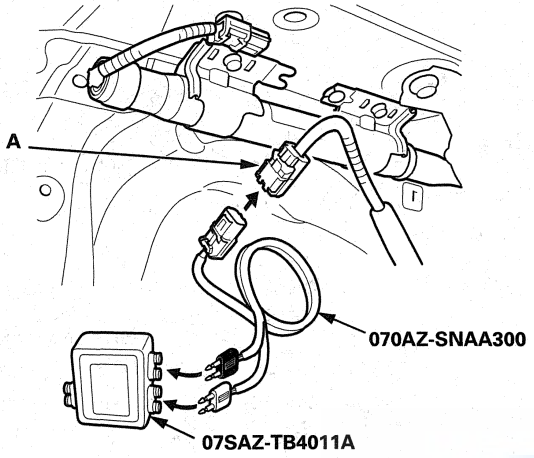
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 33-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).

7. Disconnect the left side curtain airbag inflator 2P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the left side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

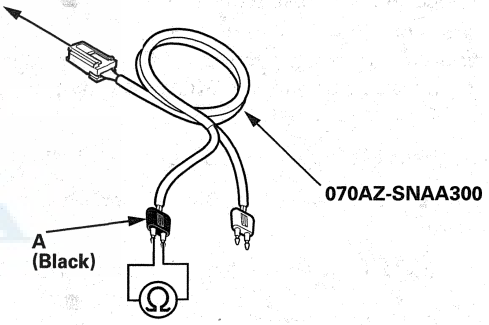
Is DTC 33-3x indicated?

YES–Go to step 13.

NO–Short to another wire in the left side curtain airbag inflator; replace the left side curtain airbag (see page 24-174), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the left side curtain airbag inflator 2P connector on the floor wire harness.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 24 and No. 25 (see page 24-20).
18. Measure the resistance between the SRS simulator lead L (A) black terminals.

LEFT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the driver's side wire harness or the floor wire harness; replace the driver's side wire harness or the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 33-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Left Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

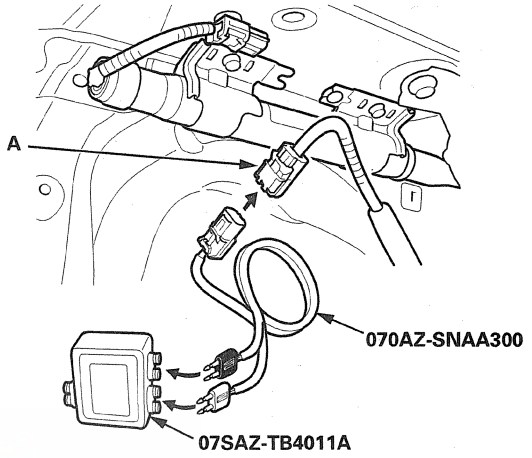
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 33-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).
7. Disconnect the left side curtain airbag inflator 2P connector (A) on the floor wire harness.



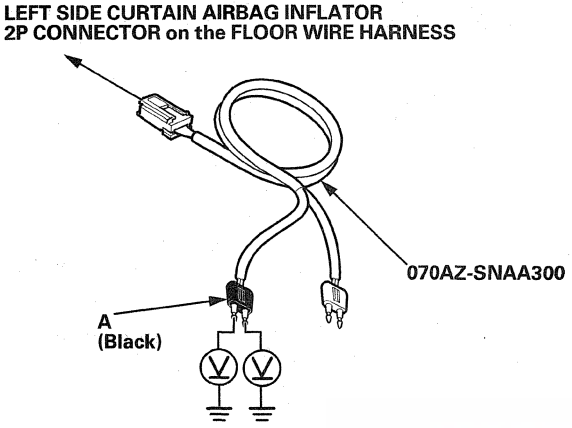
8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the left side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 33-8x indicated?

    YES–Go to step 13.

    NO–Short to power in the left side curtain airbag inflator; replace the left side curtain airbag (see page 24-174), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the left side curtain airbag inflator 2P connector on the floor wire harness.
17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II).

19. Measure the voltage between the black terminals of SRS simulator lead L (A) and body ground individually.



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the driver's side wire harness or the floor wire harness; replace the driver's side wire harness or the floor wire harness, then clear the DTC.■

DTC 33-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Left Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 33-9x indicated?

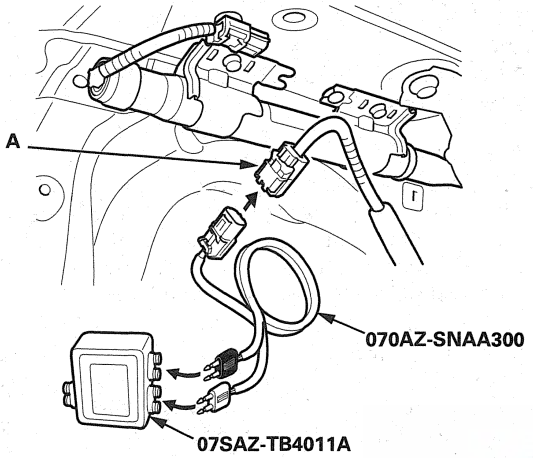
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the left rear side trim panel (see page 20-64).

(cont'd)

DTC Troubleshooting (cont'd)

7. Disconnect the left side curtain airbag inflator 2P connector (A) on the floor wire harness.



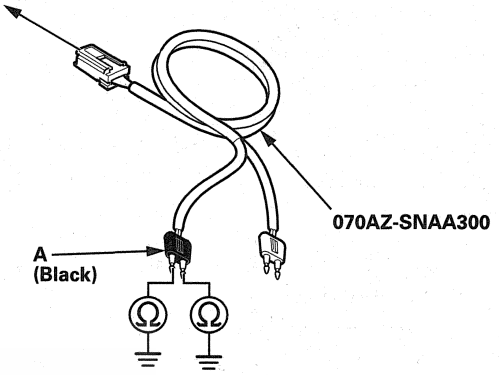
8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the left side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 33-9x indicated?

    YES–Go to step 13.

    NO–Short to ground in the left side curtain airbag inflator; replace the left side curtain airbag (see page 24-174), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the left side curtain airbag inflator 2P connector on the floor wire harness.
17. Measure the resistance between the black terminals of SRS simulator lead L (A) and body ground individually.

LEFT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the driver's side wire harness or the floor wire harness; replace the driver's side wire harness or the floor wire harness, then clear the DTC.■

DTC 34-1x ("x" can be 0 thru 9 or A thru F):
Open in the Right Side Curtain Airbag Inflator

DTC 34-2x ("x" can be 0 thru 9 or A thru F):
Increased Resistance in the Right Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

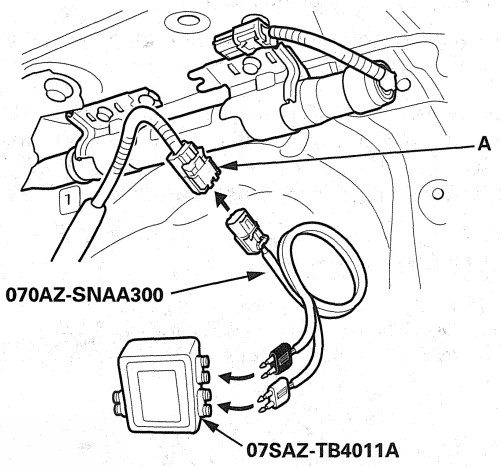
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 34-1x or 34-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).
7. Disconnect the right side curtain airbag inflator 2P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the right side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 34-1x or 34-2x indicated?

    YES–Go to step 13.

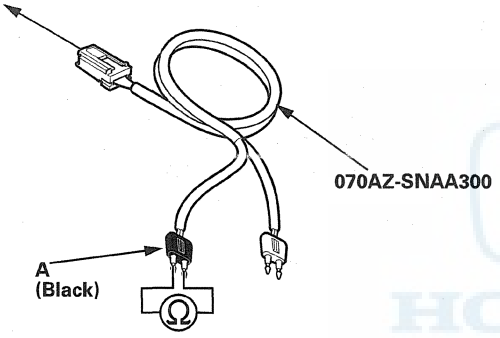
    NO–Open or increased resistance in the right side curtain airbag inflator, replace the right side curtain airbag (see page 24-174), then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the right side curtain airbag inflator 2P connector on the floor wire harness.
17. Measure the resistance between the SRS simulator lead L (A) black terminals.

RIGHT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there less than 1.0 Ω?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Open or increased resistance in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 34-3x ("x" can be 0 thru 9 or A thru F): Short to Another Wire or Decreased Resistance in the Right Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300
- SRS Short Canceller 070AZ-SAA0100

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

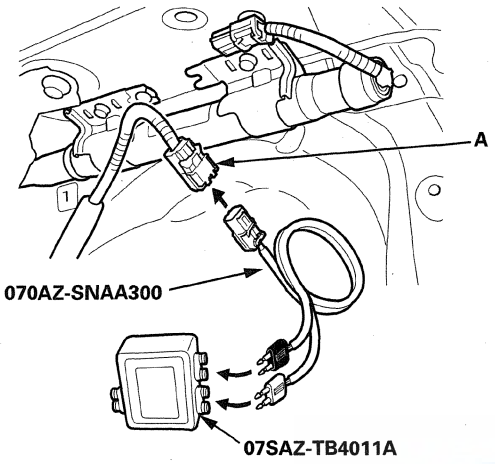
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 34-3x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).

7. Disconnect the right side curtain airbag inflator 2P connector (A) on the floor wire harness.



8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the right side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

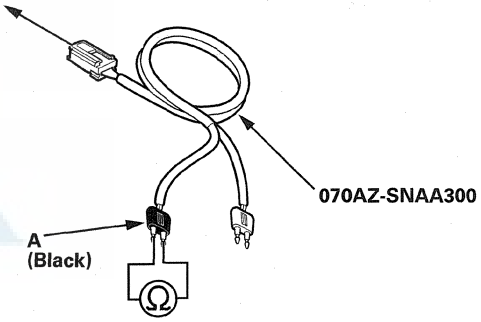
Is DTC 34-3x indicated?

YES–Go to step 13.

NO–Short to another wire in the right side curtain airbag inflator; replace the right side curtain airbag (see page 24-174), then clear the DTC.■

13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the right side curtain airbag inflator 2P connector on the floor wire harness.
17. Connect an SRS short canceller (070AZ-SAA0100) to SRS unit connector B (39P) terminals No. 34 and No. 35 (see page 24-20).
18. Measure the resistance between the SRS simulator lead L (A) black terminals.

RIGHT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to another wire in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 34-8x ("x" can be 0 thru 9 or A thru F): Short to Power in the Right Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

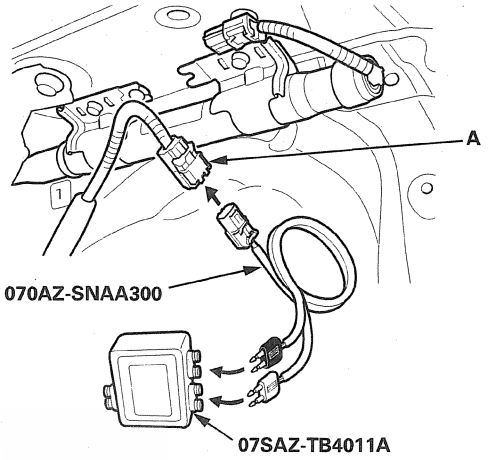
NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 34-8x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).
7. Disconnect the right side curtain airbag inflator 2P connector (A) on the floor wire harness.



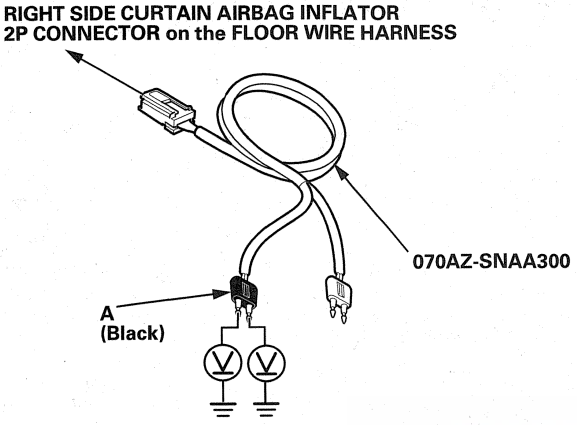
8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the right side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 34-8x indicated?

    YES–Go to step 13.

    NO–Short to power in the right side curtain airbag inflator; replace the right side curtain airbag (see page 24-174), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the right side curtain airbag inflator 2P connector on the floor wire harness.
17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II).

19. Measure the voltage between the black terminals of SRS simulator lead L (A) and body ground individually.



Is there less than 0.2 V?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to power in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 34-9x ("x" can be 0 thru 9 or A thru F): Short to Ground in the Right Side Curtain Airbag Inflator

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 34-9x indicated?

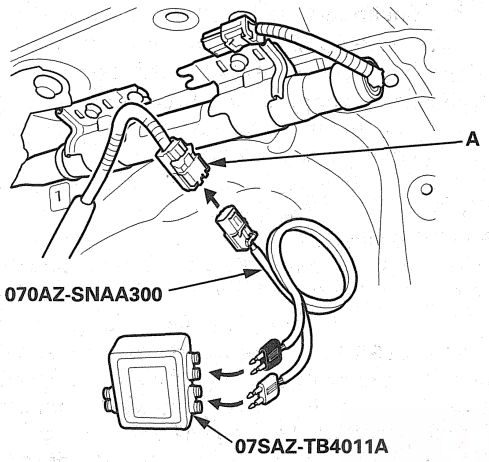
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Remove the right rear side trim panel (see page 20-64).

(cont'd)

DTC Troubleshooting (cont'd)

7. Disconnect the right side curtain airbag inflator 2P connector (A) on the floor wire harness.



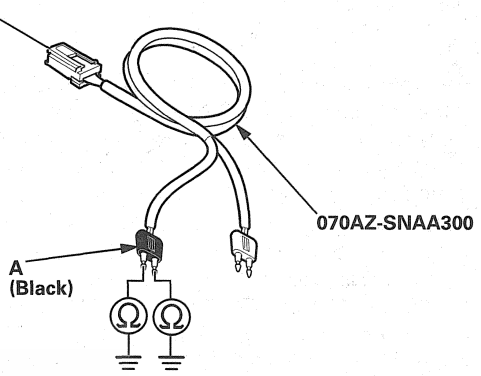
8. Connect the terminals of SRS simulator lead L to the SRS inflator simulator (2 Ω connectors), and then connect SRS simulator lead L to the right side curtain airbag inflator 2P connector on the floor wire harness.
9. Reconnect the negative cable to the 12 volt battery.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 34-9x indicated?

    YES–Go to step 13.

    NO–Short to ground in the right side curtain airbag inflator; replace the right side curtain airbag (see page 24-174), then clear the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
16. Disconnect the SRS inflator simulator from SRS simulator lead L. Do not disconnect SRS simulator lead L from the right side curtain airbag inflator 2P connector on the floor wire harness.
17. Measure the resistance between the black terminals of SRS simulator lead L (A) and body ground individually.

RIGHT SIDE CURTAIN AIRBAG INFLATOR 2P CONNECTOR on the FLOOR WIRE HARNESS



Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection; if the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

NO–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

DTC 41-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Left Front Impact Sensor

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 41-1x indicated?

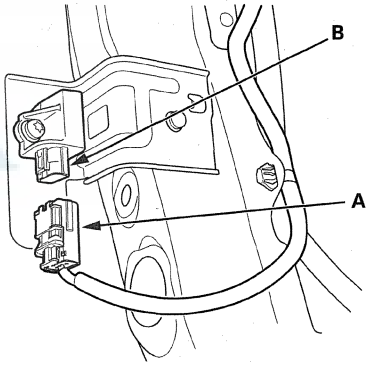
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Check for these connector connections:
   - SRS unit connector A (39P) and the SRS unit (see page 24-22).
   - Left front impact sensor 2P connector on the left engine compartment wire harness (see page 24-191).
   - Left engine compartment wire harness 4P connector and the dashboard wire harness 4P connector (see page 22-38).

   Are the connections OK?

   YES–Go to step 7.

   NO–Repair the poor connections, then clear the DTC, and retest. If DTC 41-1x is still present, go to step 7.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
8. Disconnect the left front impact sensor 2P connector (A) from the left impact sensor (B) (see page 24-191).

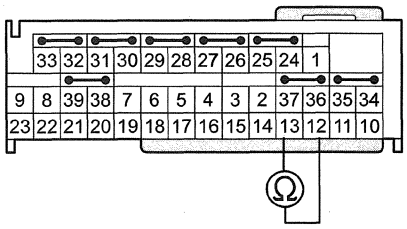


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DTC Troubleshooting (cont'd)

9. Measure the resistance between SRS unit connector A (39P) terminals No. 12 and No. 13.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

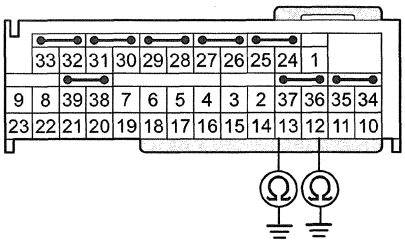
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 10.

NO–Short to another wire in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

10. Measure the resistance between body ground and SRS unit connector A (39P) terminals No. 12 and No. 13 individually.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

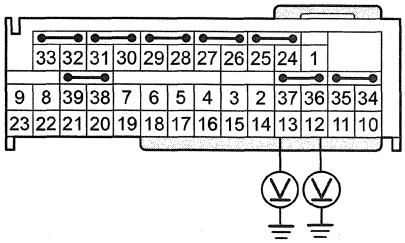
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 11.

NO–Short to ground in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

11. Reconnect the negative cable to the 12 volt battery.
12. Turn the ignition switch to ON (II).
13. Measure the voltage between body ground and SRS unit connector A (39P) terminals No. 12 and No. 13 individually.

SRS UNIT CONNECTOR A (39P)



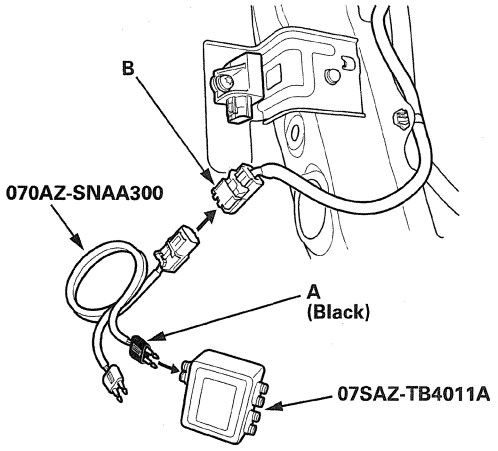
Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 14.

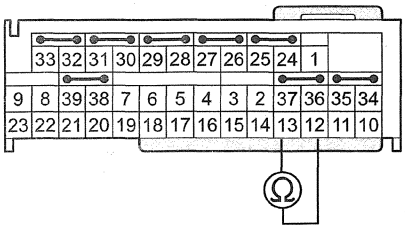
NO–Short to power in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

14. Turn the ignition switch to LOCK (0).
15. Connect the black terminals (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the left front impact sensor 2P connector (B).



16. Measure the resistance between SRS unit connector A (39P) terminals No. 12 and No. 13.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty left front impact sensor or SRS unit; replace the left front impact sensor (see page 24-191), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185). If the DTC is still present, replace the faulty harness.■

NO–Open in the left engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

DTC 42-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Right Front Impact Sensor

Special Tools Required
- SRS Inflator Simulator 07SAZ-TB4011A
- SRS Simulator Lead L 070AZ-SNAA300

NOTE:
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 42-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

(cont'd)

DTC Troubleshooting (cont'd)

6. Check for these connector connections:
   - SRS unit connector A (39P) and the SRS unit (see page 24-22).
   - Right front impact sensor 2P connector on the right engine compartment wire harness (see page 24-191).
   - Right engine compartment wire harness 4P connector and the dashboard wire harness 4P connector (see page 22-38).

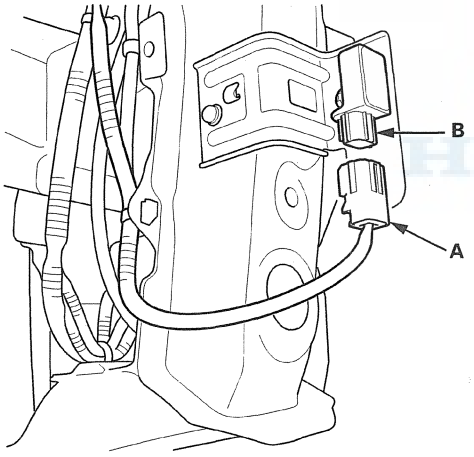
   Are the connections OK?

   YES–Go to step 7.

   NO–Repair the poor connections, then clear the DTC, and retest. If DTC 42-1x is still present, go to step 7.

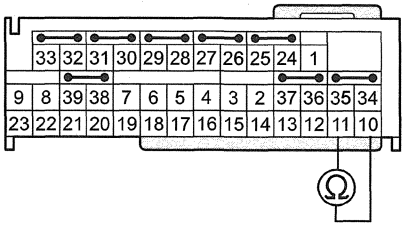
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).

8. Disconnect the right front impact sensor 2P connector (A) from the right impact sensor (B) (see page 24-191).



9. Measure the resistance between SRS unit connector A (39P) terminals No. 10 and No. 11.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

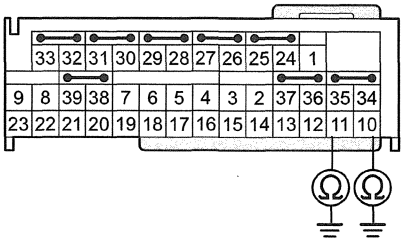
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 10.

NO–Short to another wire in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

10. Measure the resistance between body ground and SRS unit connector A (39P) terminals No. 10 and No. 11 individually.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Go to step 11.

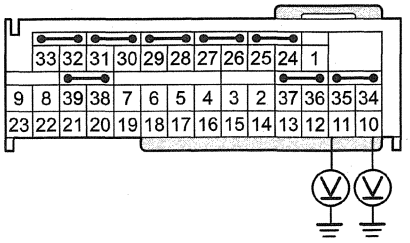
NO–Short to ground in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

11. Reconnect the negative cable to the 12 volt battery.

12. Turn the ignition switch to ON (II).

13. Measure the voltage between body ground and SRS unit connector A (39P) terminals No. 10 and No. 11 individually.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

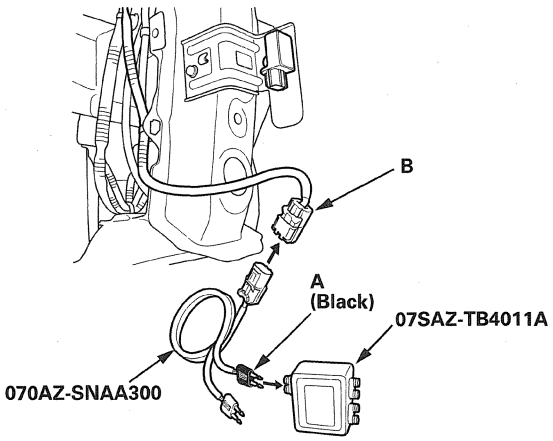
Is there less than 0.2 V?

YES–Go to step 14.

NO–Short to power in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

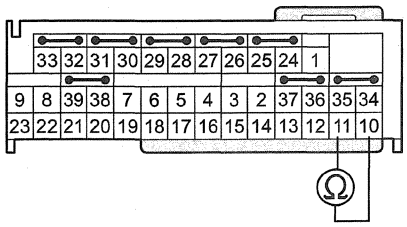
14. Turn the ignition switch to LOCK (0).

15. Connect the black terminals (A) of SRS simulator lead L to the SRS inflator simulator (jumper connector), and then connect SRS simulator lead L to the right front impact sensor 2P connector (B) on the right engine compartment wire harness.



16. Measure the resistance between SRS unit connector A (39P) terminals No. 10 and No. 11.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty right front impact sensor or SRS unit; replace the right front impact sensor (see page 24-191), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185). If the DTC is still present, replace the faulty engine compartment or dashboard wire harness.■

NO–Open in the right engine compartment wire harness or the dashboard wire harness; replace the faulty harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 41-2x, 41-8x, 41-9x, 41-Ax, 41-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Left Front Impact Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

Is DTC 41-2x, 41-8x, 41-9x, 41-Ax, or 41-Bx indicated?

YES–Faulty left front impact sensor or SRS unit; replace the left front impact sensor (see page 24-191), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185). If the DTC is still present, replace the faulty engine compartment or dashboard wire harness.■

NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 42-2x, 42-8x, 42-9x, 42-Ax, 42-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Right Front Impact Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

Is DTC 42-2x, 42-8x, 42-9x, 42-Ax, or 42-Bx indicated?

YES–Faulty right front impact sensor or SRS unit; replace the right front impact sensor (see page 24-191), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185). If the DTC is still present, replace the faulty engine compartment or dashboard wire harness.■

NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 43-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Left Side Impact Sensor (first)

DTC 45-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Left Side Impact Sensor (second)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 45-1x (except 45-11) indicated?

   YES–Faulty left side impact sensor (second); replace the left side impact sensor (second) (see page 24-187), then clear the DTC.■

   NO–Go to step 4.
4. Clear the DTCs with the HDS (see page 24-24).
5. Turn the ignition switch to ON (II), then wait for 10 seconds.
6. Check for DTCs with the HDS (see page 24-24).

   Is DTC 43-1x (except 43-11) indicated?

   YES–Faulty left side impact sensor (first); replace the left side impact sensor (first) (see page 24-186), then clear the DTC.■

   NO–Go to step 7.
7. Clear the DTCs with the HDS (see page 24-24).
8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

   Is DTC 45-11 indicated?

   YES–Go to step 13.

   NO–Go to step 10.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 43-11 indicated?

    YES–Go to step 40.

    NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Check for these connector connections:
    - SRS unit connector B (39P) and the SRS unit (see page 24-22).
    - Left side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
    - Left side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).

    Are the connections OK?

    YES–Go to step 15.

    NO–Replace the floor wire harness, then clear the DTC.■
15. Substitute a known-good left side impact sensor (second) (see page 24-187).
16. Reconnect the negative cable to the 12 volt battery.
17. Clear the DTCs with the HDS (see page 24-24).
18. Turn the ignition switch to ON (II), then wait for 10 seconds.
19. Check for DTCs with the HDS (see page 24-24).

    Is DTC 45-11 indicated?

    YES–Go to step 20.

    NO–Faulty left side impact sensor (second); replace the left side impact sensor (second) (see page 24-187), then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

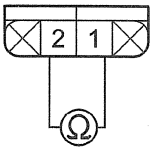
20. Turn the ignition switch to LOCK (0).
21. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
22. Reinstall the impact sensor (second) that was substituted in step 15.
23. Substitute a known-good left side impact sensor (first) (see page 24-186).
24. Reconnect the negative cable to the 12 volt battery.
25. Clear the DTCs with the HDS (see page 24-24).
26. Turn the ignition switch to ON (II), then wait for 10 seconds.
27. Check for DTCs with the HDS (see page 24-24).

    Is DTC 45-11 indicated?

    YES–Go to step 28.

    NO–Faulty left side impact sensor (first); replace the left side impact sensor (first) (see page 24-186), then clear the DTC.■
28. Turn the ignition switch to LOCK (0).
29. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
30. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).
31. Disconnect the left side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
32. Disconnect the left side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).
33. Measure the resistance between left side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2.

LEFT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

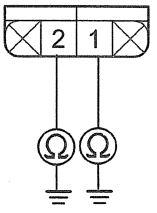
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 34.

NO–Short to another wire in the floor wire harness between the left side impact sensor (first) and the left side impact sensor (second); replace the floor wire harness, then clear the DTC.■

34. Measure the resistance between body ground and left side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2 individually.

LEFT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

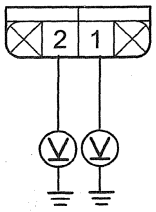
YES–Go to step 35.

NO–Short to ground in the floor wire harness between the left side impact sensor (first) and the left side impact sensor (second); replace the floor wire harness, then clear the DTC.■

35. Reconnect the negative cable to the 12 volt battery.
36. Turn the ignition switch to ON (II).

37. Measure the voltage between body ground and left side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2 individually.

LEFT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there less than 0.2 V?

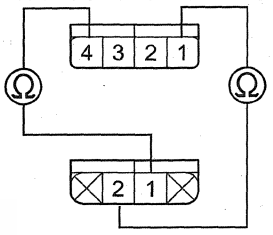
YES–Go to step 38.

NO–Short to power in the floor wire harness between the left side impact sensor (first) and the left side impact sensor (second); replace the floor wire harness, then clear the DTC.■

38. Turn the ignition switch to LOCK (0).

39. Measure the resistance between left side impact sensor (first) 4P connector on the floor wire harness terminal No. 1 and left side impact sensor (second) 2P connector on the floor wire harness terminal No. 2, and between left side impact sensor (first) 4P connector on the floor wire harness terminal No. 4 and left side impact sensor (second) 2P connector on the floor wire harness terminal No. 1.

LEFT SIDE IMPACT SENSOR (FIRST) 4P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals



LEFT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals

Is there less than 1.0 Ω?

YES–Disconnect and reconnect the connector, and then check DTC again. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the floor wire harness between the left side impact sensor (first) and the left side impact sensor (second); replace the floor wire harness, then clear the DTC.■

40. Turn the ignition switch to LOCK (0).

41. Check for these connector connections:
- SRS unit connector B (39P) and the SRS unit (see page 24-22).
- Left side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
- Left side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).

Are the connections OK?

YES–Go to step 42.

NO–Replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

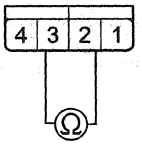
42. Substitute a known-good left side impact sensor (first) (see page 24-186).
43. Reconnect the negative cable to the 12 volt battery.
44. Clear the DTCs with the HDS (see page 24-24).
45. Turn the ignition switch to ON (II).
46. Check for DTCs with the HDS (see page 24-24).

    Is DTC 43-11 indicated?

    YES–Go to step 47.

    NO–Faulty left side impact sensor (first); replace the left side impact sensor (first) (see page 24-186), then clear the DTC.■
47. Turn the ignition switch to LOCK (0).
48. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
49. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).
50. Disconnect the left side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
51. Measure the resistance between left side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3.

LEFT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

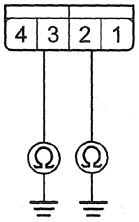
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 52.

NO–Short to another wire in the floor wire harness between the SRS unit and the left side impact sensor (first); replace the floor wire harness, then clear the DTC.■

52. Measure the resistance between body ground and left side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3 individually.

LEFT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

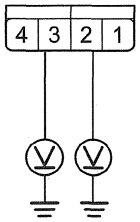
YES–Go to step 53.

NO–Short to ground in the floor wire harness between the SRS unit and the left side impact sensor (first); replace the floor wire harness, then clear the DTC.■

53. Reconnect the negative cable to the 12 volt battery.
54. Turn the ignition switch to ON (II).

55. Measure the voltage between body ground and left side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3 individually.

LEFT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there less than 0.2 V?

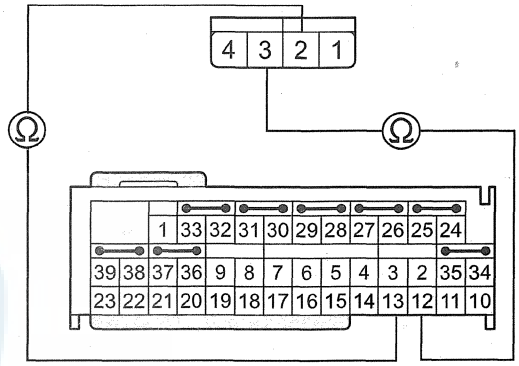
YES–Go to step 56.

NO–Short to power in the floor wire harness between the SRS unit and the left side impact sensor (first); replace the floor wire harness, then clear the DTC.■

56. Turn the ignition switch to LOCK (0).

57. Measure the resistance between left side impact sensor (first) 4P connector on the floor wire harness terminal No. 2 and SRS unit connector B (39P) terminal No. 13, and between left side impact sensor (first) 4P connector on the floor wire harness terminal No. 3 and SRS unit connector B (39P) terminal No. 12.

LEFT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals



SRS UNIT CONNECTOR B (39P)
Wire side of female terminals

Is there less than 1.0 Ω?

YES–Disconnect and reconnect the connector, and then check DTC again. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the floor wire harness between the SRS unit and the left side impact sensor (first); replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 44-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Right Side Impact Sensor (first)

DTC 46-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Right Side Impact Sensor (second)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 46-1x (except 46-11) indicated?

   YES–Faulty right side impact sensor (second); replace the right side impact sensor (second) (see page 24-187), then clear the DTC.■

   NO–Go to step 4.
4. Clear the DTCs with the HDS (see page 24-24).
5. Turn the ignition switch to ON (II), then wait for 10 seconds.
6. Check for DTCs with the HDS (see page 24-24).

   Is DTC 44-1x (except 44-11) indicated?

   YES–Faulty right side impact sensor (first); replace the right side impact sensor (first) (see page 24-186), then clear the DTC.■

   NO–Go to step 7.
7. Clear the DTCs with the HDS (see page 24-24).
8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

   Is DTC 46-11 indicated?

   YES–Go to step 13.

   NO–Go to step 10.
10. Clear the DTCs with the HDS (see page 24-24).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 44-11 indicated?

    YES–Go to step 40.

    NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
13. Turn the ignition switch to LOCK (0).
14. Check for these connector connections:
    - SRS unit connector B (39P) and the SRS unit (see page 24-22).
    - Right side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
    - Right side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).

    Are the connections OK?

    YES–Go to step 15.

    NO–Replace the floor wire harness, then clear the DTC.■
15. Substitute a known-good right side impact sensor (second) (see page 24-187).
16. Reconnect the negative cable to the 12 volt battery.
17. Clear the DTCs with the HDS (see page 24-24).
18. Turn the ignition switch to ON (II), then wait for 10 seconds.
19. Check for DTCs with the HDS (see page 24-24).

    Is DTC 46-11 indicated?

    YES–Go to step 20.

    NO–Faulty right side impact sensor (second); replace the right side impact sensor (second) (see page 24-187), then clear the DTC.■

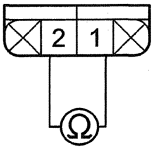
20. Turn the ignition switch to LOCK (0).
21. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
22. Reinstall the impact sensor (second) that was substituted in step 15.
23. Exchange the right side impact sensor (first) for the impact sensor prepared in step 22.
24. Reconnect the negative cable to the 12 volt battery.
25. Clear the DTCs with the HDS (see page 24-24).
26. Turn the ignition switch to ON (II), then wait for 10 seconds.
27. Check for DTCs with the HDS (see page 24-24).

    Is DTC 46-11 indicated?

    YES–Go to step 28.

    NO–Faulty right side impact sensor (first); replace the right side impact sensor (first) (see page 24-186), then clear the DTC.■
28. Turn the ignition switch to LOCK (0).
29. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
30. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).
31. Disconnect the right side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
32. Disconnect the right side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).
33. Measure the resistance between right side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2.

RIGHT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



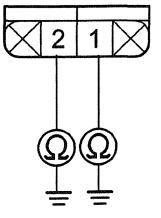
Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Go to step 34.

NO–Short to another wire in the floor wire harness between the right side impact sensor (first) and the right side impact sensor (second); replace the floor wire harness, then clear the DTC.■
34. Measure the resistance between body ground and right side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2 individually.

RIGHT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Go to step 35.

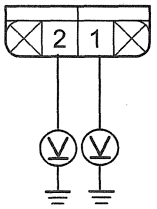
NO–Short to ground in the floor wire harness between the right side impact sensor (first) and the right side impact sensor (second); replace the floor wire harness, then clear the DTC.■
35. Reconnect the negative cable to the 12 volt battery.

(cont'd)

DTC Troubleshooting (cont'd)

36. Turn the ignition switch to ON (II).
37. Measure the voltage between body ground and right side impact sensor (second) 2P connector on the floor wire harness terminals No. 1 and No. 2 individually.

RIGHT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

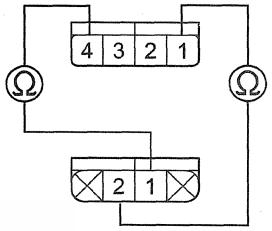
Is there less than 0.2 V?

YES–Go to step 38.

NO–Short to power in the floor wire harness between the right side impact sensor (first) and the right side impact sensor (second); replace the floor wire harness, then clear the DTC.■

38. Turn the ignition switch to LOCK (0).
39. Measure the resistance between right side impact sensor (first) 4P connector on the floor wire harness terminal No. 1 and right side impact sensor (second) 2P connector on the floor wire harness terminal No. 2, and between right side impact sensor (first) 4P connector on the floor wire harness terminal No. 4 and right side impact sensor (second) 2P connector on the floor wire harness terminal No. 1.

RIGHT SIDE IMPACT SENSOR (FIRST) 4P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals



RIGHT SIDE IMPACT SENSOR (SECOND) 2P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals

Is there less than 1.0 Ω?

YES–Disconnect and reconnect the connector, and then check DTC again. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the floor wire harness between the right side impact sensor (first) and the right side impact sensor (second); replace the floor wire harness, then clear the DTC.■

40. Turn the ignition switch to LOCK (0).
41. Check for these connector connections:
    - SRS unit connector B (39P) and the SRS unit (see page 24-22).
    - Right side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
    - Right side impact sensor (second) 2P connector on the floor wire harness (see page 24-187).

Are the connections OK?

YES–Go to step 42.

NO–Replace the floor wire harness, then clear the DTC.■

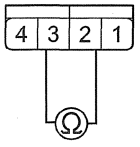
42. Substitute a known-good right side impact sensor (first) (see page 24-186).
43. Reconnect the negative cable to the 12 volt battery.
44. Clear the DTCs with the HDS (see page 24-24).
45. Turn the ignition switch to ON (II).
46. Check for DTCs with the HDS (see page 24-24).

    Is DTC 44-11 indicated?

    YES–Go to step 47.

    NO–Faulty right side impact sensor (first); replace the right side impact sensor (first) (see page 24-186), then clear the DTC.■
47. Turn the ignition switch to LOCK (0).
48. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
49. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).
50. Disconnect the right side impact sensor (first) 4P connector on the floor wire harness (see page 24-186).
51. Measure the resistance between right side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3.

RIGHT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

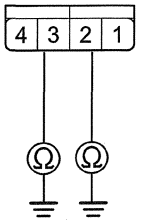
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 52.

NO–Short to another wire in the floor wire harness between the SRS unit and the right side impact sensor (first); replace the floor wire harness, then clear the DTC.■

52. Measure the resistance between body ground and right side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3 individually.

RIGHT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Go to step 53.

NO–Short to ground in the floor wire harness between the SRS unit and the right side impact sensor (first); replace the floor wire harness, then clear the DTC.■

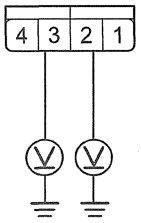
53. Reconnect the negative cable to the 12 volt battery.
54. Turn the ignition switch to ON (II).

(cont'd)

DTC Troubleshooting (cont'd)

55. Measure the voltage between body ground and right side impact sensor (first) 4P connector on the floor wire harness terminals No. 2 and No. 3 individually.

RIGHT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there less than 0.2 V?

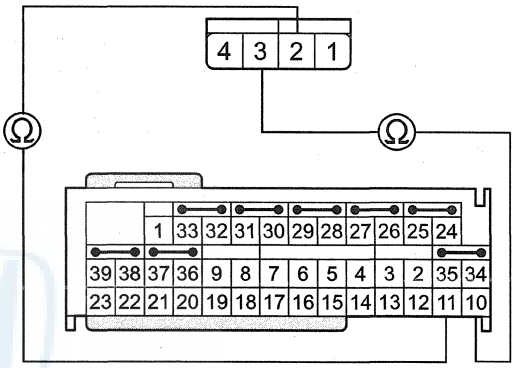
YES–Go to step 56.

NO–Short to power in the floor wire harness between the SRS unit and the right side impact sensor (first); replace the floor wire harness, then clear the DTC.■

56. Turn the ignition switch to LOCK (0).

57. Measure the resistance between right side impact sensor (first) 4P connector on the floor wire harness terminal No. 2 and SRS unit connector B (39P) terminal No. 11, and between right side impact sensor (first) 4P connector on the floor wire harness terminal No. 3 and SRS unit connector B (39P) terminal No. 10.

RIGHT SIDE IMPACT SENSOR (FIRST)
4P CONNECTOR on the FLOOR WIRE HARNESS
Wire side of female terminals



SRS UNIT CONNECTOR B (39P)
Wire side of female terminals

Is there less than 1.0 Ω?

YES–Disconnect and reconnect the connector, and then check DTC again. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the floor wire harness between the SRS unit and the right side impact sensor (first); replace the floor wire harness, then clear the DTC.■

DTC 43-2x, 43-8x, 43-9x, 43-Ax, 43-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Left Side Impact Sensor (first)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 43-2x, 43-8x, 43-9x, 43-Ax, or 43-Bx indicated?

   YES–Faulty left side impact sensor (first) or SRS unit; replace the left side impact sensor (first) (see page 24-186), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 44-2x, 44-8x, 44-9x, 44-Ax, 44-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Right Side Impact Sensor (first)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 44-2x, 44-8x, 44-9x, 44-Ax, or 44-Bx indicated?

   YES–Faulty right side impact sensor (first) or SRS unit; replace the right side impact sensor (first) (see page 24-186), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 45-2x, 45-8x, 45-9x, 45-Ax, 45-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Left Side Impact Sensor (second)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

Is DTC 45-2x, 45-8x, 45-9x, 45-Ax, or 45-Bx indicated?

YES–Faulty left side impact sensor (second) or SRS unit; replace the left side impact sensor (second) (see page 24-187), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 46-2x, 46-8x, 46-9x, 46-Ax, 46-Bx ("x" can be 0 thru 9 or A thru F): Internal Failure of the Right Side Impact Sensor (second)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

Is DTC 46-2x, 46-8x, 46-9x, 46-Ax, or 46-Bx indicated?

YES–Faulty right side impact sensor (second) or SRS unit; replace the right side impact sensor (second) (see page 24-187), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 51-xx, 52-xx, 53-xx, 54-xx, 55-xx, 57-xx, 58-xx ("x" can be 0 thru 9 or A thru F): Internal Failure of the SRS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before troubleshooting any of these DTCs, check the 12 volt battery/system voltage and 12 volt battery cable connections. If the voltage is low, repair the IMA system, test and charge the 12 volt battery, or replace the 12 volt battery before troubleshooting the SRS. If the 12 volt battery/system voltage is now OK, ask the customer if the 12 volt battery ever went dead or if the engine was started and run with the 12 volt battery in a low state of charge. A dead 12 volt battery may trigger one or more of these DTCs.
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.
- Determine if the vehicle has been in a collision; make sure all required parts were replaced.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 51-xx, 52-xx, 53-xx, 54-xx, 55-xx, 57-xx, or 58-xx indicated?

   YES–Replace the SRS unit (see page 24-185).■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 53-FF: SRS Unit Programming Error

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- This DTC is indicated when a SRS unit update is not completed properly.
- Do not turn the ignition switch to ACCESSORY (I) or LOCK (0) while updating the SRS unit. If you turn the ignition switch to ACCESSORY (I) or LOCK (0) before you complete the SRS unit update procedure, the SRS unit can be damaged.
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).

1. Do the SRS unit update procedure (see page 24-25).
2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to LOCK (0).
4. Turn the ignition switch to ON (II), then wait for 10 seconds.
5. Check for DTCs with the HDS (see page 24-24).

   Is DTC 53-FF indicated?

   YES–Replace the original SRS unit (see page 24-185).■

   NO–Update is complete.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 56-21: Lost Communication With the ECM/PCM (PGM-FI system)

DTC 56-22, 56-23: Undefined Data Received From the ECM/PCM (PGM-FI system)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES–Go to the appropriate DTC troubleshooting.

   NO–Go to step 2.

2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 56-21, 56-31, 56-22, 56-23, 56-32, or 56-33 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

5. Turn the ignition switch to LOCK (0).
6. Start the engine, and see if the malfunction indicator lamp (MIL) also stays on.

   Does the MIL stay on longer than 30 seconds?

   YES–Go to MIL Circuit Troubleshooting (see page 11-187).■

   NO–Go to step 7.

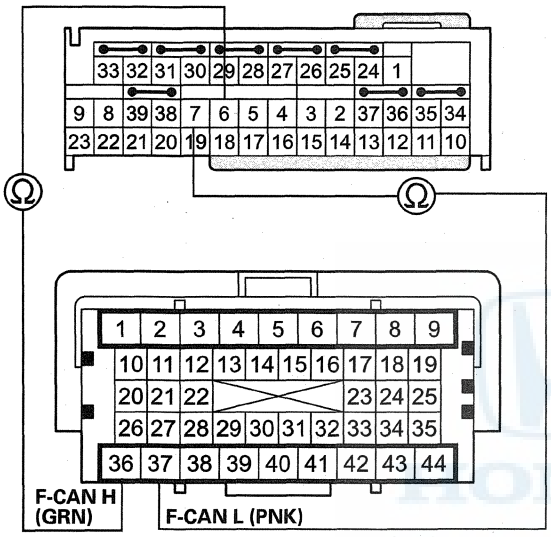
7. Turn the ignition switch to LOCK (0).
8. Jump the SCS line with the HDS.

   NOTE: This step must be done to protect the ECM/PCM from damage.

9. Disconnect ECM/PCM connector A (49P) from the ECM/PCM (see page 11-6).
10. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
11. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).

12. Check for continuity between SRS unit connector A (39P) terminal No. 6 and ECM/PCM connector A (44P) terminal No. 36, and between SRS unit connector A (39P) terminal No. 7 and ECM/PCM connector A (44P) terminal No. 37.

SRS UNIT CONNECTOR A (39P)
Wire side of female terminals



ECM/PCM CONNECTOR A (44P)
Terminal side of female terminals

Is there continuity?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185).■

NO–Open in the harness between the SRS unit connector A (39P) terminal No. 6 and ECM/PCM connector A (44P) terminal No. 36, or between the SRS unit connector A (39P) terminal No. 7 and ECM/PCM connector A (44P) terminal No. 37 (left engine compartment wire harness or the dashboard wire harness); replace the faulty harness, then clear the DTC.■

DTC 56-25: Lost Communication With the Gauge Control Module

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES–Go to the appropriate DTC troubleshooting.

   NO–Go to step 2.

2. Release the parking brake, turn the ignition switch to ON (II), and see if the brake system indicator comes on for 2 seconds and then goes off.

   Does the brake system indicator come on and then go off after 2 second?

   YES–Go to step 3.

   NO–Faulty gauge control module. Do the gauge control module self-diagnostic function (see page 22-325), and retest. If the gauge control module fails the self-diagnosis, replace the gauge control module (see page 22-354), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

3. Clear the DTCs with the HDS (see page 24-24).

4. Turn the ignition switch to ON (II), then wait for 10 seconds.

5. Check for DTCs with the HDS (see page 24-24).

   Is DTC 56-25 indicated?

   YES–Go to step 6.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

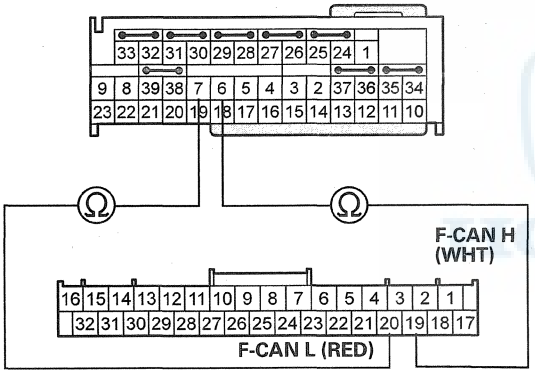
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DTC Troubleshooting (cont'd)

6. Turn the ignition switch to LOCK (0).
7. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
8. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
9. Disconnect gauge control module 32P connector (see page 22-354).
10. Check for continuity between SRS unit connector A (39P) terminal No. 6 and gauge control module 32P connector terminal No. 19, and between SRS unit connector A (39P) terminal No. 7 and gauge control module 32P connector terminal No. 20.

SRS UNIT CONNECTOR A (39P)

Wire side of female terminals



GAUGE CONTROL MODULE 32P CONNECTOR

Wire side of female terminals

Is there continuity?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Open in the harness between SRS unit connector A (39P) terminal No. 6 and gauge control module 32P connector terminal No. 19, or between the SRS unit connector A (39P) terminal No. 7 and gauge control module 32P connector terminal No. 20; replace the dashboard wire harness, then clear the DTC.■

DTC 56-26, 56-27: Undefined Data Received From the Gauge Control Module

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES–Go to the appropriate DTC troubleshooting.

   NO–Go to step 2.

2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 56-26 or 56-27 indicated?

   YES–Faulty gauge control module. Do the gauge control module self-diagnostic function (see page 22-325), and retest. If the gauge control module fails the self-diagnosis, replace the gauge control module (see page 22-354), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 56-31: Lost Communication with the ECM/PCM (PGM-FI system)

DTC 56-32, 56-33: Undefined Data Received From the ECM/PCM (PGM-FI system)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Check for any F-CAN and B-CAN communication DTCs with the HDS.

   Are there any communication DTCs?

   YES–Go to the appropriate DTC troubleshooting.

   NO–Go to step 2.

2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 56-31, 56-32, or 56-33 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

5. Turn the ignition switch to LOCK (0).
6. Turn the ignition switch to ON (II).
7. Start the engine, and see if the malfunction indicator lamp (MIL) also stays on.

   Does the MIL stay on longer than 30 seconds?

   YES–Go to the MIL Circuit Troubleshooting (see page 11-187).

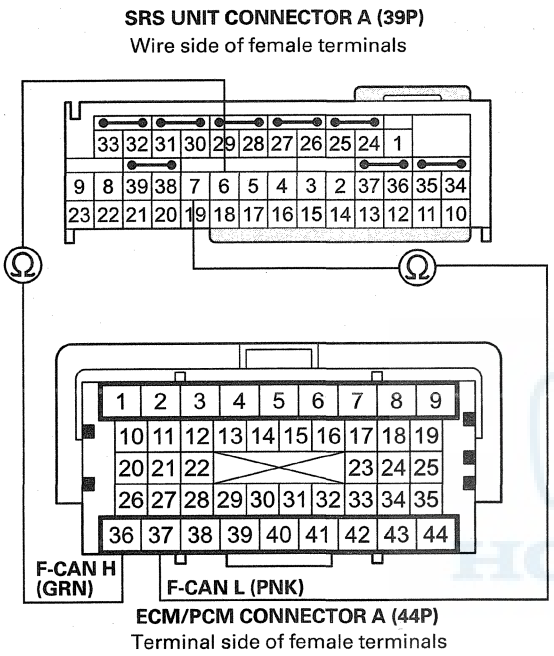
   NO–Go to step 8.

8. Turn the ignition switch to LOCK (0).
9. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
10. Disconnect ECM/PCM connector A (44P) from the ECM/PCM (see page 11-6).
11. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).

(cont'd)

DTC Troubleshooting (cont'd)

12. Check for continuity between SRS unit connector A (39P) terminal No. 6 and ECM/PCM connector A (44P) terminal No. 36, and between SRS unit connector A (39P) terminal No. 7 and ECM/PCM connector A (44P) terminal No. 37.



Is there continuity?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185).■

NO–Open in the harness between the SRS unit connector A (39P) terminal No. 6 and ECM/PCM connector A (44P) terminal No. 36, or between the SRS unit connector A (39P) terminal No. 7 and ECM/PCM connector A (44P) terminal No. 37 (left engine compartment wire harness or the dashboard wire harness); replace the faulty harness, then clear the DTC.■

DTC 61-1x ("x" can be 0 thru 9 or A thru F): Open in the Driver's Seat Belt Buckle Switch

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
3. Turn the ignition switch to ON (II), then wait for 10 seconds. Buckle and unbuckle the driver's seat belt several times.
4. Check for DTCs with the HDS (see page 24-24).

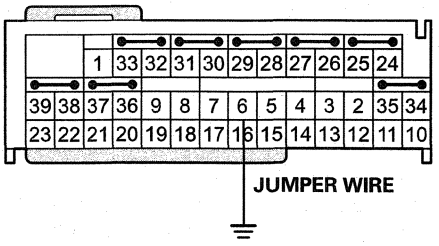
Is DTC 61-1x indicated?

YES–Go to step 5.

NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

5. Turn the ignition switch to LOCK (0).
6. Install a jumper wire between SRS unit connector B (39P) terminal No. 6 and body ground.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

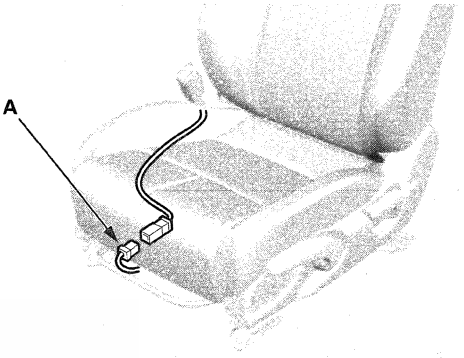
7. Clear the DTCs with the HDS (see page 24-24).
8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

Is DTC 61-2x indicated?

YES–Go to step 10.

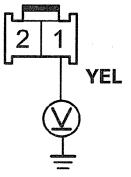
NO–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

10. Turn the ignition switch to LOCK (0).
11. Remove the jumper wire from SRS unit connector B (39P).
12. Disconnect the driver's seat belt buckle switch 2P connector (A) on the floor wire harness.



13. Turn the ignition switch to ON (II), then wait for 10 seconds.
14. Measure the voltage between the driver's seat belt buckle switch 2P connector on the floor wire harness terminal No. 1 and body ground.

DRIVER'S SEAT BELT BUCKLE SWITCH 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there more than 10 V?

YES–Go to step 15.

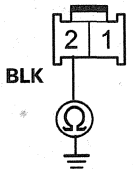
NO–Open in the floor wire harness; replace the floor wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

15. Turn the ignition switch to LOCK (0).
16. Measure the resistance between the driver's seat belt buckle switch 2P connector on the floor wire harness terminal No. 2 and body ground.

DRIVER'S SEAT BELT BUCKLE SWITCH 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty driver's seat belt buckle switch; replace the driver's seat belt buckle assembly (see page 24-6), then clear the DTC.■

NO–Open in the floor wire harness; check for a poor ground at G602. If the ground is OK, replace the floor wire harness, then clear the DTC.■

DTC 61-2x ("x" can be 0 thru 9 or A thru F): Short in the Driver's Seat Belt Buckle Switch

NOTE:

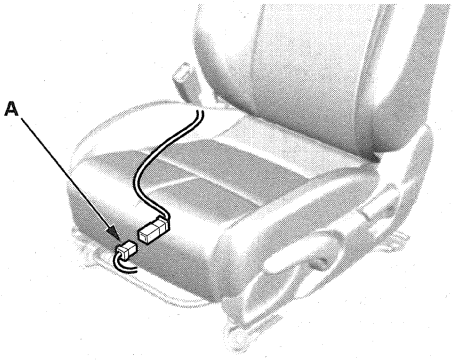
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
3. Turn the ignition switch to ON (II), then wait for 10 seconds. Buckle and unbuckle the driver's seat belt several times.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 61-2x indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the driver's seat belt buckle switch 2P connector (A) on the floor wire harness.



7. Clear the DTCs with the HDS (see page 24-24).
8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

   Is DTC 61-2x indicated?

   YES–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

   NO–Faulty driver's seat belt buckle switch; replace the driver's seat belt buckle assembly (see page 24-6), then clear the DTC.■

DTC 62-1x ("x" can be 0 thru 9 or A thru F): Open in the Front Passenger's Seat Belt Buckle Switch

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
3. Turn the ignition switch to ON (II), then wait for 10 seconds. Buckle and unbuckle the front passenger's seat belt several times.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 62-1x indicated?

   YES–Go to step 5.

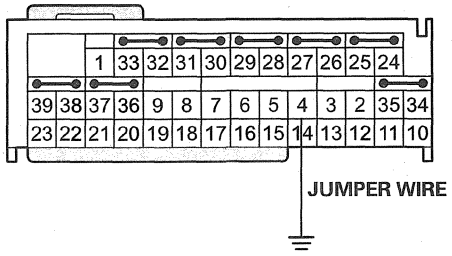
   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

5. Turn the ignition switch to LOCK (0).
6. Install a jumper wire between SRS unit connector B (39P) terminal No. 4 and body ground.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

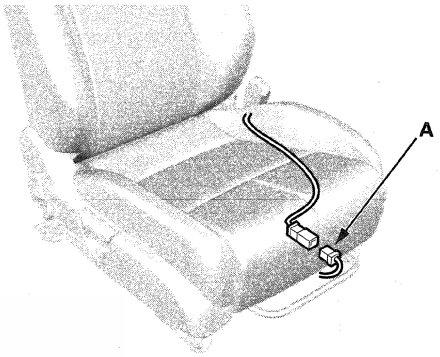
7. Clear the DTCs with the HDS (see page 24-24).
8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

Is DTC 62-2x indicated?

YES–Go to step 10.

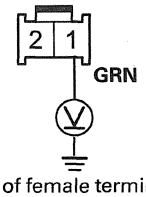
NO–Faulty SRS unit or poor connection at SRS unit connector B (39P) and the SRS unit. Check the connection between the connector and the SRS unit. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the floor wire harness.■

10. Remove the jumper wire from SRS unit connector B (39P).
11. Remove the jumper wire.
12. Disconnect the front passenger's seat belt buckle switch 2P connector (A) on the floor wire harness.



13. Turn the ignition switch to ON (II), then wait for 10 seconds.
14. Measure the voltage between the body ground and front passenger's seat belt buckle switch 2P connector terminal No. 1 on the floor wire harness.

FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

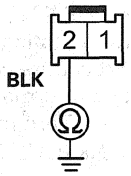
Is there more than 10 V?

YES–Go to step 15.

NO–Open in the floor wire harness; replace the floor wire harness, then clear the DTC.■

15. Turn the ignition switch to LOCK (0).
16. Measure the resistance between the body ground and front passenger's seat belt buckle switch 2P connector terminal No. 2 on the floor wire harness.

FRONT PASSENGER'S SEAT BELT BUCKLE SWITCH 2P CONNECTOR on the FLOOR WIRE HARNESS



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty front passenger's seat belt buckle switch; replace the front passenger's seat belt buckle assembly (see page 24-6), then clear the DTC.■

NO–Open in the floor wire harness; check for a poor ground at G601. If the ground is OK, replace the floor wire harness, then clear the DTC.■

DTC 62-2x ("x" can be 0 thru 9 or A thru F): Short in the Front Passenger's Seat Belt Buckle Switch

NOTE:

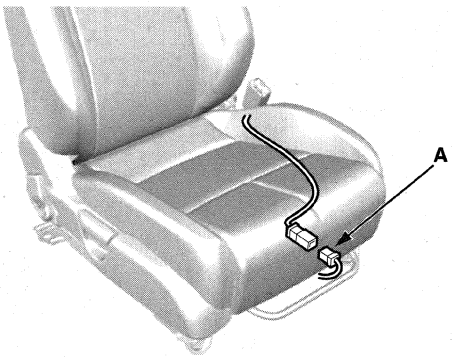
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
3. Turn the ignition switch to ON (II), then wait for 10 seconds. Buckle and unbuckle the front passenger's seat belt several times.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 62-2x indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the front passenger's seat belt buckle switch 2P connector (A) on the floor wire harness.



7. Clear the DTCs with the HDS (see page 24-24).

(cont'd)

DTC Troubleshooting (cont'd)

8. Turn the ignition switch to ON (II), then wait for 10 seconds.
9. Check for DTCs with the HDS (see page 24-24).

   Is DTC 62-2x indicated?

   YES–Short to ground in the floor wire harness; replace the floor wire harness, then clear the DTC.■

   NO–Faulty front passenger's seat belt buckle switch; replace the front passenger's seat belt buckle assembly (see page 24-6), then clear the DTC.■

DTC 71-1x ("x" can be 0 thru 9 or A thru F): Open in the Driver's Seat Position Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Raise the driver's seat all the way up, and position all the way rearward.
2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 71-1x indicated?

   YES–Go to step 5.

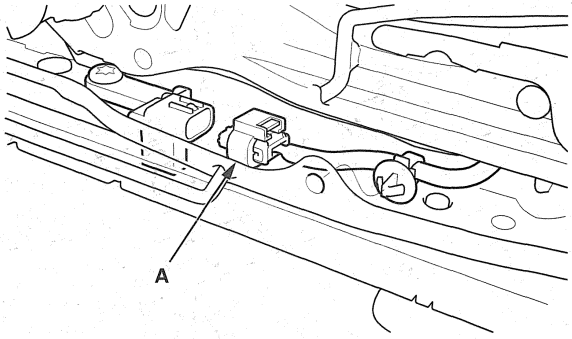
   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0).
6. Check for these connector connections:
   - Driver's seat position sensor 2P connector on the driver's seat position sensor subharness 2P connector (see page 24-192).
   - Driver's seat position sensor subharness 2P connector on the floor wire harness (see page 24-192).
   - G602 (see page 22-48).

   Are the connections OK?

   YES–Go to step 7.

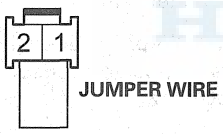
   NO–Repair the poor connections, then clear the DTC, and retest. If DTC 71-1x is still present, go to step 7.
7. Turn the ignition switch to LOCK (0), and wait for 10 seconds.
8. Remove the outer recline cover (see page 20-115).

9. Disconnect the driver's seat position sensor 2P connector (A) on the driver's seat position sensor subharness.



10. Install a jumper wire between the driver's seat position sensor 2P connector on the driver's seat position sensor subharness terminals No. 1 and No. 2.

DRIVER'S SEAT POSITION SENSOR 2P CONNECTOR on the DRIVER'S SEAT POSITION SENSOR SUBHARNESS



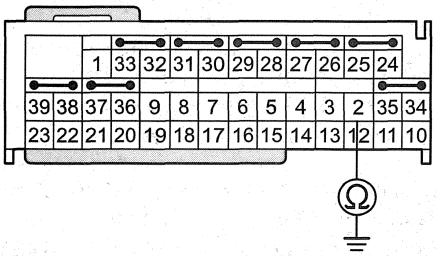
Wire side of female terminals

11. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

12. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).

13. Measure the resistance between body ground and SRS unit connector B (39P) terminal No. 2.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty driver's seat position sensor or SRS unit; replace the driver's seat position sensor (see page 24-192), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the floor wire harness or the driver's seat position sensor subharness; replace the faulty harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 71-2x ("x" can be 0 thru 9 or A thru F): Short in the Driver's Seat Position Sensor

NOTE:

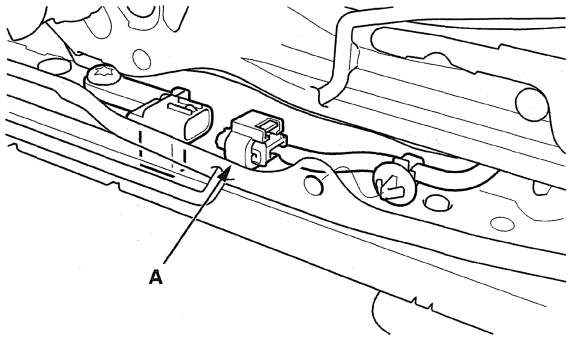
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Raise the driver's seat all the way up, and position all the way rearward.
2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 71-2x indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
6. Remove the outer recline cover (see page 20-115).
7. Disconnect the driver's seat position sensor 2P connector (A) on the driver's seat position sensor subharness.



8. Clear the DTCs with the HDS (see page 24-24).
9. Turn the ignition switch to ON (II), then wait for 10 seconds.
10. Check for DTCs with the HDS (see page 24-24).

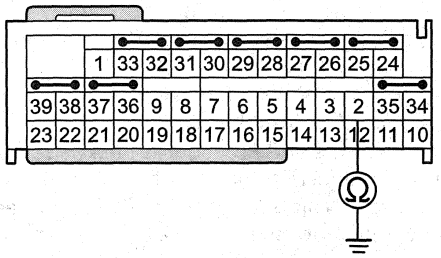
    Is DTC 71-2x indicated?

    YES–Go to step 11.

    NO–Faulty driver's seat position sensor; replace the driver's seat position sensor (see page 24-192), then clear the DTC.■
11. Turn the ignition switch to LOCK (0).
12. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
13. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).

14. Measure the resistance between body ground and SRS unit connector B (39P) terminal No. 2.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty driver's seat position sensor or SRS unit; replace the driver's seat position sensor (see page 24-192), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Short to ground in the floor wire harness or the driver's seat wire harness; replace the faulty harness, then clear the DTC.■

DTC 81-4x, 81-5x ("x" can be 0 thru 9 or A thru F), 81-63, 81-64: Internal Failure of the ODS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-4x, 81-5x, 81-63, or 81-64 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Clear the DTCs with the HDS (see page 24-24).
5. Do the front passenger's weight sensor initialization (see page 24-27).
6. Turn the ignition switch to ON (II), then wait for 10 seconds.
7. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-4x, 81-5x, 81-63, or 81-64 indicated?

   YES–Go to step 8.

   NO–The system is OK at this time.■
8. Replace the ODS unit (see page 24-190).
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.

(cont'd)

DTC Troubleshooting (cont'd)

11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 81-4x, 81-5x, 81-63, or 81-64 indicated?

    YES–Replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

DTC 81-61: No Signal From the ODS Unit

DTC 81-62: Incorrect Data From the ODS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Make sure nothing is on the front passenger's seat.
2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-61 or 81-62 indicated?

   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

5. Turn the ignition switch to LOCK (0).
6. Check the No. B8 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

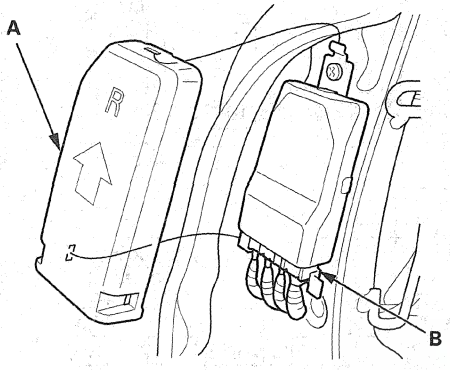
   YES–Go to step 7.

   NO–Replace the fuse, then turn the ignition switch to ON (II). If the fuse blows again, check for a short in the No. B8 (7.5 A) fuse circuit (dashboard wire harness, floor wire harness, or ODS unit harness); replace the faulty harness, then clear the DTC. If the DTC is still present, replace the under-dash fuse/relay box, then clear the DTC.■

   - USA models (see page 22-82)
   - Canada models (see page 22-83)

7. Turn over the front passenger's seat-back cover/pad as needed (see page 20-117).

8. Remove the cover (A). Check the connection between the ODS unit harness 18P connector (B) and the ODS unit.

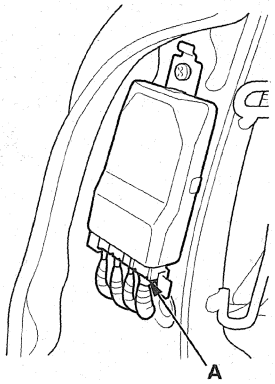


Is the connection OK ?

YES–Go to step 9.

NO–Repair the poor connection, then clear the DTC, and retest. If DTC 81-61 or 81-62 is still present, go to step 9.

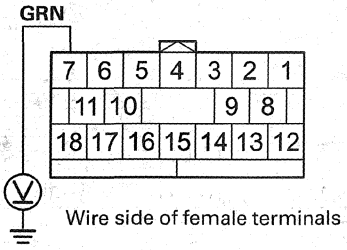
9. Disconnect the ODS unit harness 18P connector (A) from the ODS unit.



10. Turn the ignition switch to ON (II), then wait for 10 seconds.

11. Measure the voltage between body ground and ODS unit harness 18P connector terminal No. 7.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

Is there battery voltage?

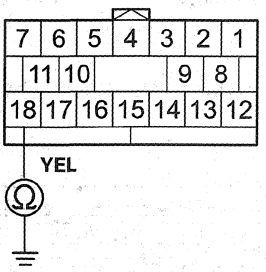
YES–Go to step 12.

NO–Open in the dashboard wire harness, the floor wire harness, or the ODS unit harness; replace the faulty harness, then clear the DTC.■

12. Turn the ignition switch to LOCK (0).

13. Measure the resistance between body ground and ODS unit harness 18P connector terminal No. 18.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

Is there less than 1.0 Ω?

YES–Go to step 14.

NO–Open in the floor wire harness or the ODS unit harness, or a poor connection at the ODS unit harness 18P connector and the ODS unit. Check the ground connection at G601 (see page 22-48). Check the connection; if the connection is OK, replace the faulty harness, then clear the DTC.■

14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.

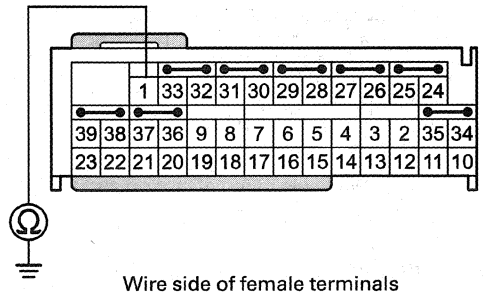
15. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).

(cont'd)

DTC Troubleshooting (cont'd)

16. Measure the resistance between body ground and SRS unit connector B (39P) terminal No. 1.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

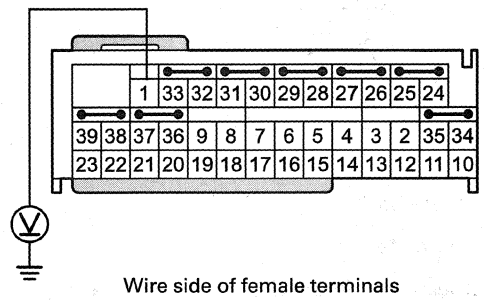
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 17.

NO–Short to ground or to another wire in the floor wire harness or the ODS unit harness; replace the faulty harness, then clear the DTC.■

17. Reconnect the negative cable to the 12 volt battery.
18. Turn the ignition switch to ON (II), then wait for 10 seconds.
19. Measure the voltage between body ground and SRS unit connector B (39P) terminal No. 1.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

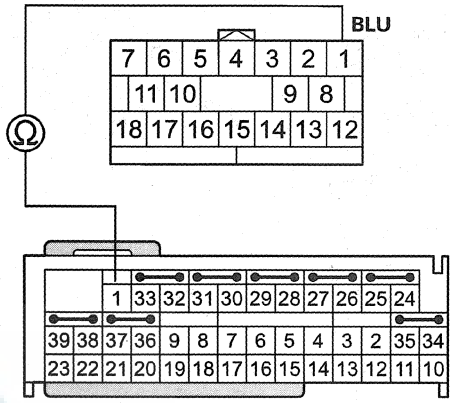
Is there less than 0.2 V?

YES–Go to step 20.

NO–Short to power in the floor wire harness or the ODS unit harness; replace the faulty harness, then clear the DTC.■

20. Turn the ignition switch to LOCK (0).
21. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and ODS unit harness 18P connector terminal No. 1.

ODS UNIT HARNESS 18P CONNECTOR
Wire side of female terminals



SRS UNIT CONNECTOR B (39P)
Wire side of female terminals

Is there less than 1.0 Ω?

YES–Faulty ODS unit or SRS unit; replace the ODS unit (see page 24-190), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Open in the harness between SRS unit connector B (39P) terminal No. 1 and ODS unit 18P connector terminal No. 1 (floor wire harness or ODS unit harness); replace the faulty harness, then clear the DTC.■

DTC 81-71, 81-78: ODS Unit Not Calibrated

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-71 or 81-78 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Clear the DTCs with the HDS (see page 24-24).
5. Do the front passenger's weight sensor initialization (see page 24-27).
6. Turn the ignition switch to ON (II), then wait for 10 seconds.
7. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-71 or 81-78 indicated?

   YES–Go to step 8.

   NO–The system is OK at this time.■
8. Replace the ODS unit (see page 24-190).
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 81-71 or 81-78 indicated?

    YES–Replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 81-79: Front Passenger's Weight Sensors Initial Check Failure

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-79 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Make sure nothing is on the front passenger's seat.
6. Clear the DTCs with the HDS (see page 24-24).
7. Turn the ignition switch to ON (II), then wait for 10 seconds.
8. Check for DTCs with the HDS (see page 24-24).

   Is DTC 81-79 indicated?

   YES–Go to step 9.

   NO–The system is OK at this time.■
9. Turn the ignition switch to LOCK (0).
10. Loosen the front passenger's seat mounting bolts, and shake the seat in all directions. Tighten the seat mounting bolts to the specified torque.
11. Clear the DTCs with the HDS (see page 24-24).
12. Do the front passenger's weight sensor initialization (see page 24-27).
13. Turn the ignition switch to ON (II), then wait for 10 seconds.
14. Check for DTCs with the HDS (see page 24-24).

    Is DTC 81-79 indicated?

    YES–Go to step 15.

    NO–The system is OK at this time.■
15. Replace the front passenger's seat frame including all front passenger's weight sensors (see page 24-188).
16. Check for DTCs with the HDS (see page 24-24).
17. Turn the ignition switch to ON (II), then wait for 10 seconds.
18. Check for DTCs with the HDS (see page 24-24).

    Is DTC 81-79 indicated?

    YES–Replace the ODS unit (see page 24-190), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

DTC 82-11: No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 82-11 indicated?

   YES–Go to step 4.

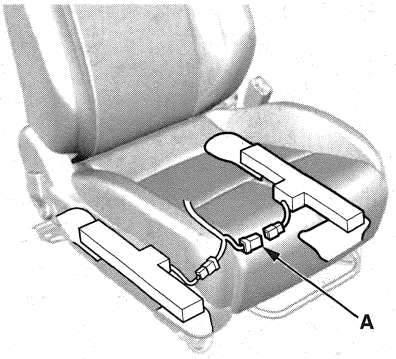
   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

   Is an SWS DTC also indicated?

   YES–

   - DTC 11-11: Short to power in the inner side front passenger's weight sensor power circuit. Go to step 5.
   - DTC 11-12: Short to ground in the inner side front passenger's weight sensor output circuit. Go to step 11.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0).
6. Disconnect the inner side front passenger's weight sensor 2P connector (A) on the front passenger's seat wire harness.



7. Turn the ignition switch to ON (II), then wait for 10 seconds.
8. Clear the DTCs with the HDS (see page 24-24).
9. Turn the ignition switch to ON (II), then wait for 10 seconds.
10. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

    Is SWS DTC 11-11 indicated?

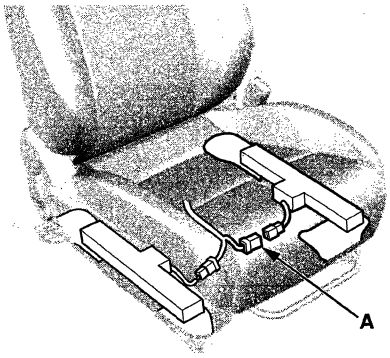
    YES–Short to power in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC. If the DTC does not clear, replace the ODS unit. ■

    NO–Faulty inner side front passenger's weight sensor; replace the inner side front passenger's weight sensor (see page 24-188), then clear the DTC.■
11. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

12. Disconnect the inner side front passenger's weight sensor 2P connector (A) on the front passenger's seat wire harness.



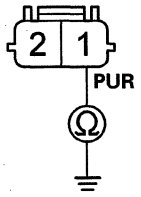
13. Turn the ignition switch to ON (II), then wait for 10 seconds.
14. Clear the DTCs with the HDS (see page 24-24).
15. Turn the ignition switch to ON (II), then wait for 10 seconds.
16. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

    Is SWS DTC 11-12 indicated?

    YES–Go to step 17.

    NO–Faulty inner side front passenger's weight sensor; replace the inner side front passenger's weight sensor (see page 24-188), then clear the DTC.■
17. Turn the ignition switch to LOCK (0).
18. Measure the resistance between body ground and inner side front passenger's weight sensor 2P connector terminal No.1.

INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR 2P CONNECTOR



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty ODS unit; replace the ODS unit (see page 24-190), then clear the DTC.■

NO–Short to ground in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC.■

DTC 82-12: No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

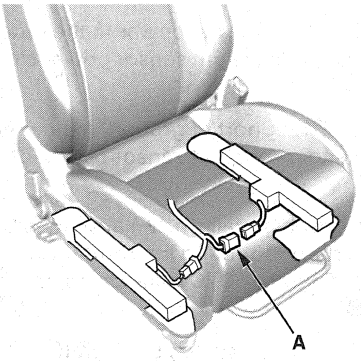
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 82-12 indicated?

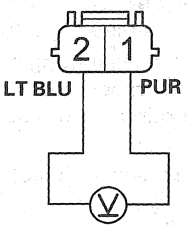
   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the inner side front passenger's weight sensor 2P connector (A) on the front passenger's seat wire harness.



6. Turn the ignition switch to ON (II), then wait for 10 seconds.
7. Measure the voltage between inner side front passenger's weight sensor 2P connector terminals No. 1 and No. 2.

INNER SIDE FRONT PASSENGER'S WEIGHT SENSOR 2P CONNECTOR



Wire side of female terminals

Is there more than 6 V?

YES–Faulty inner side front passenger's weight sensor; replace the inner side front passenger's weight sensor (see page 24-188), then clear the DTC.■

NO–Open in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest. If the DTC is still present, replace the ODS unit (see page 24-190).■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 82-13: No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 82-13 indicated?

   YES–Faulty inner side front passenger's weight sensor; replace the inner side front passenger's weight sensor (see page 24-188), then clear the DTC.■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC 83-21: No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 83-21 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

4. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

   Is an SWS DTC also indicated?

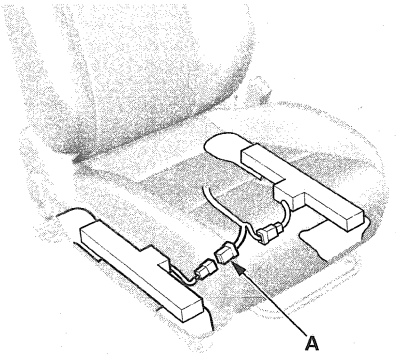
   YES–

   - DTC 21-11: Short to power in the outer side front passenger's weight sensor power circuit. Go to step 5.
   - DTC 21-12: Short to ground in the outer side front passenger's weight sensor output circuit. Go to step 11.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

5. Turn the ignition switch to LOCK (0).

6. Disconnect the outer side front passenger's weight sensor 3P connector (A) on the front passenger's seat wire harness.



7. Turn the ignition switch to ON (II), then wait for 10 seconds.
8. Clear the DTCs with the HDS (see page 24-24).
9. Turn the ignition switch to ON (II), then wait for 10 seconds.
10. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

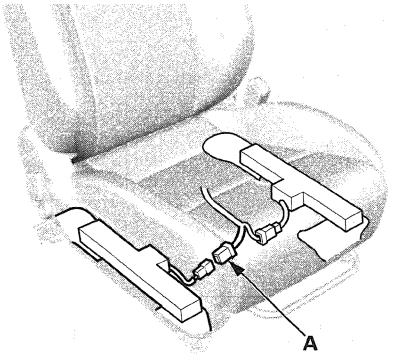
    Is SWS DTC 21-11 indicated?

    YES–Short to power in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC. If the DTC does not clear, replace the ODS unit. ■

    NO–Faulty outer side front passenger's weight sensor; replace the outer side front passenger's weight sensor (see page 24-188), then clear the DTC.■

11. Turn the ignition switch to LOCK (0).

12. Disconnect the outer side front passenger's weight sensor 3P connector (A) on the front passenger's seat wire harness.



13. Turn the ignition switch to ON (II), then wait for 10 seconds.
14. Clear the DTCs with the HDS (see page 24-24).
15. Turn the ignition switch to ON (II), then wait for 10 seconds.
16. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select the SWS DTC CHECK.

    Is SWS DTC 21-12 indicated?

    YES–Go to step 17.

    NO–Faulty outer side front passenger's weight sensor; replace the outer side front passenger's weight sensor (see page 24-188), then clear the DTC.■

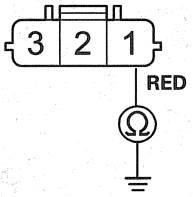
17. Turn the ignition switch to LOCK (0).

(cont'd)

DTC Troubleshooting (cont'd)

18. Measure the resistance between body ground and outer side front passenger's weight sensor 3P connector terminal No.1.

OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR 3P CONNECTOR



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty ODS unit; replace the ODS unit (see page 24-190), then clear the DTC.■

NO–Short to ground in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC.■

DTC 83-22: No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

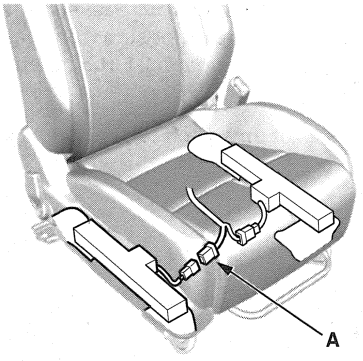
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 83-22 indicated?

   YES–Go to step 4.

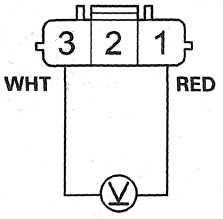
   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the outer side front passenger's weight sensor 3P connector (A) on the front passenger's seat wire harness.



6. Turn the ignition switch to ON (II), then wait for 10 seconds.

7. Measure the voltage between outer side front passenger's weight sensor 3P connector terminals No. 1 and No. 3.

OUTER SIDE FRONT PASSENGER'S WEIGHT SENSOR 3P CONNECTOR



Wire side of female terminals

Is there more than 6 V?

YES–Faulty outer side front passenger's weight sensor; replace the outer side front passenger's weight sensor (see page 24-188), then clear the DTC.■

NO–Open in the front passenger's seat wire harness; replace the front passenger's seat wire harness, then clear the DTC, and retest. If the DTC is still present, replace the ODS unit (see page 24-190).■

DTC 83-23: No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- These SWS DTCs are cleared by turning the ignition switch to LOCK (0).

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 83-23 indicated?

   YES–Faulty outer side front passenger's weight sensor; replace the outer side front passenger's weight sensor (see page 24-188), then clear the DTC.■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 85-4x, 85-5x ("x" can be 0 thru 9 or A thru F), 85-63, 85-64: Internal Failure of the ODS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the ODS unit operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-4x, 85-5x, 85-63, or 85-64 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Clear the DTCs with the HDS (see page 24-24).
5. Do the ODS unit initialization (see page 24-26).
6. Turn the ignition switch to ON (II), then wait for 10 seconds.
7. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-4x, 85-5x, 85-63, or 85-64 indicated?

   YES–Go to step 8.

   NO–The system is OK at this time.■
8. Replace the ODS unit (see page 24-190).
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 85-4x, 85-5x, 85-63, or 85-64 indicated?

    YES–Replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

DTC 85-61: No Signal From the ODS Unit

DTC 85-62: Incorrect Data From the ODS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the ODS unit operation.

1. Make sure nothing is on the front passenger's seat.
2. Clear the DTCs with the HDS (see page 24-24).
3. Turn the ignition switch to ON (II), then wait for 10 seconds.
4. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-61 or 85-62 indicated?

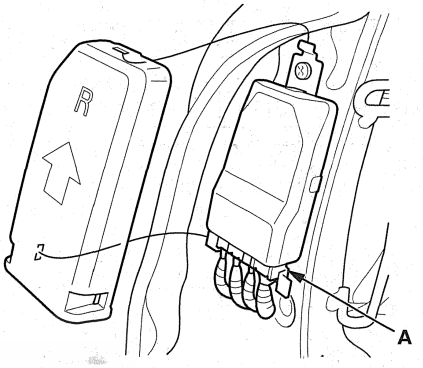
   YES–Go to step 5.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
5. Turn the ignition switch to LOCK (0).
6. Check the No. B8 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 7.

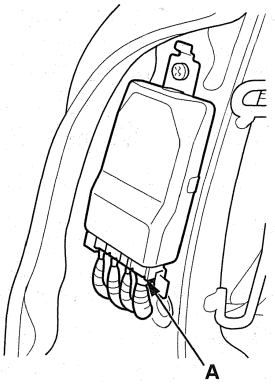
   NO–Replace the fuse, then turn the ignition switch to ON (II). If the fuse blows again, check for a short in the No. B8 (7.5 A) fuse circuit (dashboard wire harness, floor wire harness, or ODS unit harness); replace the faulty harness, then clear the DTC. If the DTC is still present, replace the under-dash fuse/relay box, then clear the DTC.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)
7. Turn over the front passenger's seat-back cover/pad as needed (see page 20-117).
8. Check the connection between the ODS unit harness 18P connector (A) and the ODS unit.



   Is the connection OK ?

   YES–Go to step 9.

   NO–Repair the poor connection, then clear the DTC, and retest. If DTC 85-61 or 85-62 is still present, go to step 9.
9. Disconnect the ODS unit harness 18P connector (A) from the ODS unit.



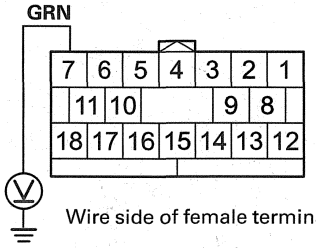
10. Turn the ignition switch to ON (II), then wait for 10 seconds.

(cont'd)

DTC Troubleshooting (cont'd)

11. Measure the voltage between body ground and ODS unit harness 18P connector terminal No. 7.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

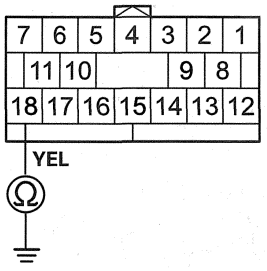
Is there battery voltage?

YES–Go to step 12.

NO–Open in the dashboard wire harness, the floor wire harness, or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.■

12. Turn the ignition switch to LOCK (0).
13. Measure the resistance between body ground and ODS unit harness 18P connector terminal No. 18.

ODS UNIT HARNESS 18P CONNECTOR



Wire side of female terminals

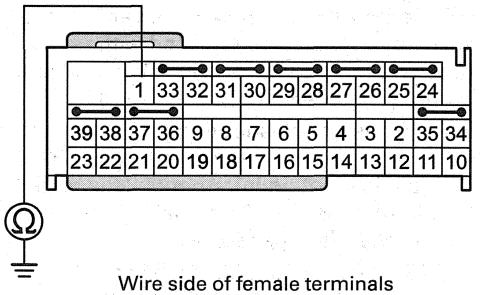
Is there less than 1.0 Ω?

YES–Go to step 14.

NO–Open between ODS unit harness 18P connector terminal No. 18 and body ground (G601) or poor connection at G601 (see page 22-48). If the ground is OK, replace the faulty harness, then clear the DTC.■

14. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
15. Disconnect SRS unit connector B (39P) from the SRS unit (see step 10 on page 24-22).
16. Measure the resistance between body ground and SRS unit connector B (39P) terminal No. 1.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

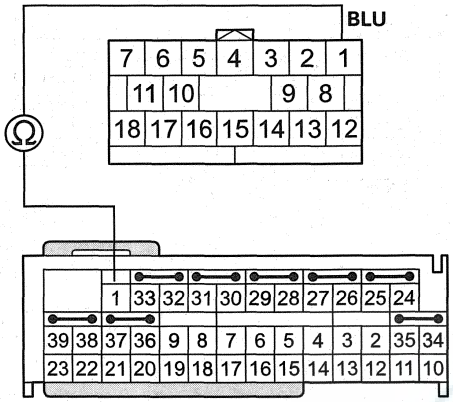
Is there an open circuit, or at least 1 MΩ?

YES–Go to step 17.

NO–Short to ground or to another wire in the floor wire harness or the ODS unit harness; replace the faulty harness, then clear the DTC.■

17. Measure the resistance between SRS unit connector B (39P) terminal No. 1 and ODS unit harness 18P connector terminal No. 1.

ODS UNIT HARNESS 18P CONNECTOR
Wire side of female terminals



SRS UNIT CONNECTOR B (39P)
Wire side of female terminals

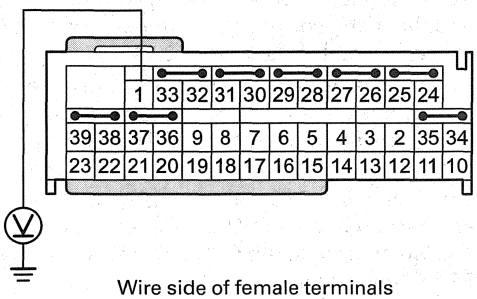
Is there less than 1.0 Ω?

YES–Go to step 18.

NO–Open in the harness between SRS unit connector B (39P) terminal No. 1 and ODS unit harness 18P connector terminal No. 1 (floor wire harness or front passenger's seat wire harness); replace the faulty harness, then clear the DTC.■

18. Reconnect the negative cable to the 12 volt battery.
19. Turn the ignition switch to ON (II).
20. Measure the voltage between body ground and SRS unit connector B (39P) terminal No. 1.

SRS UNIT CONNECTOR B (39P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Go to step 21.

NO–Short to power in the floor wire harness or the front passenger's seat wire harness; replace the faulty harness, then clear the DTC.■

21. Replace the ODS unit (see page 24-190).
22. Clear the DTCs with the HDS (see page 24-24).
23. Turn the ignition switch to ON (II), then wait for 10 seconds.
24. Check for DTCs with the HDS (see page 24-24).

Is DTC 85-61 or 85-62 indicated?

YES–Replace the OPDS sensor (see page 20-117); if the DTC is still present, replace the SRS unit (see page 24-185).■

NO–This system is OK.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 85-71, 85-78: ODS Unit Not Initialized

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-71 or 85-78 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Clear the DTCs with the HDS (see page 24-24).
5. Do the ODS unit initialization (see page 24-26).
6. Turn the ignition switch to ON (II), then wait for 10 seconds.
7. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-71 or 85-78 indicated?

   YES–Go to step 8.

   NO–The system is OK at this time.■
8. Replace the ODS unit (see page 24-190).
9. Clear the DTCs with the HDS (see page 24-24).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 85-71 or 85-78 indicated?

    YES–Replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

DTC 85-79: OPDS Sensor Initial Check Failure

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- These DTCs are codes that relate to the front passenger's weight sensor operation.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-79 indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Make sure nothing is on the front passenger's seat.
6. Clear the DTCs with the HDS (see page 24-24).
7. Turn the ignition switch to ON (II), then wait for 10 seconds.
8. Check for DTCs with the HDS (see page 24-24).

   Is DTC 85-79 indicated?

   YES–Go to step 9.

   NO–The system is OK at this time.■
9. Clear the DTCs with the HDS (see page 24-24).
10. Do the ODS unit initialization (see page 24-26).
11. Turn the ignition switch to ON (II), then wait for 10 seconds.
12. Check for DTCs with the HDS (see page 24-24).

    Is DTC 85-79 indicated?

    YES–Faulty ODS unit; replace the ODS unit (see page 24-190), then clear the DTC and retest. If the DTC is still present, replace the OPDS sensor/front passenger's seat-back cover/pad (see page 20-117) with equipped OPDS sensor, then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 86-1x ("x" can be 0 thru 9 or A thru F):
Faulty OPDS Seat-Back Sensor

DTC 86-2x ("x" can be 0 thru 9 or A thru F):
Faulty OPDS Seat Support Sensor

NOTE:

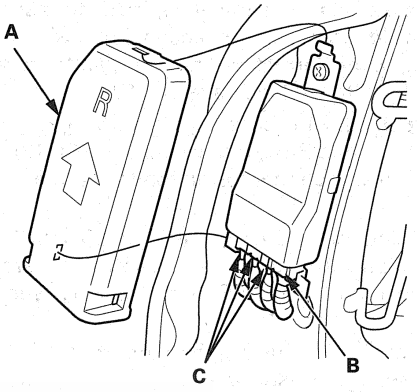
- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 86-1x or 86-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Turn over the front passenger's seat-back cover/pad as needed (see page 20-117).
6. Remove the cover (A). Check the connection at the ODS unit harness 18P connector (B), the OPDS sensor connectors (C), and the ODS unit.



   Are the connections OK?

   YES–Go to step 7.

   NO–Repair the poor connections, then clear the DTC, and retest. If DTC 86-1x or 86-2x is still present, go to step 7.
7. Replace the seat-back cover/pad equipped with the OPDS sensor (see page 20-117).
8. Clear the DTCs with the HDS (see page 24-24).
9. Do the ODS unit initialization (see page 24-26).
10. Turn the ignition switch to ON (II), then wait for 10 seconds.
11. Check for DTCs with the HDS (see page 24-24).

    Is DTC 86-1x or 86-2x indicated?

    YES–Replace the ODS unit (see page 24-190), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

    NO–The system is OK at this time.■

DTC 92-1x ("x" can be 0 thru 9 or A thru F): Short to Power in the Front Passenger's Airbag Cutoff Indicator

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- If there are other SRS DTCs stored with 92-1x, troubleshoot them first.

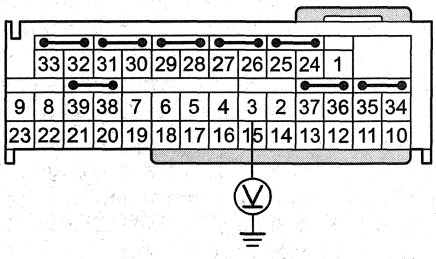
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 92-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the front passenger's airbag cutoff indicator 5P connector (see page 24-193) on the dashboard wire harness.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
8. Reconnect the negative cable to the 12 volt battery.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between body ground and SRS unit connector A (39P) terminal No. 3.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there less than 0.2 V?

YES–Faulty SRS unit or front passenger's airbag cutoff indicator; replace the front passenger's airbag cutoff indicator (see page 24-193), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Short to power in the dashboard wire harness; replace the faulty harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC 92-2x ("x" can be 0 thru 9 or A thru F):
Open or Short to Ground in the Front Passenger's Airbag Cutoff Indicator

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.
- If there are other SRS DTCs stored with 92-2x, troubleshoot them first.

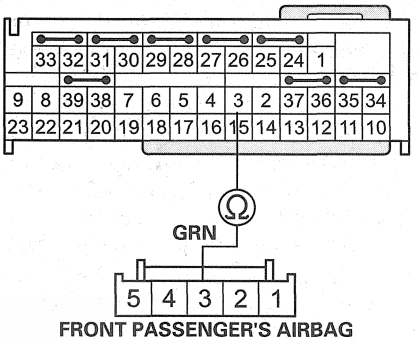
1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC 92-2x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Disconnect the front passenger's airbag cutoff indicator 5P connector (see page 24-193) on the dashboard wire harness.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
8. Measure the resistance between SRS unit connector A (39P) terminal No. 3 and front passenger's airbag cutoff indicator 5P connector on the dashboard wire harness terminal No. 3.

SRS UNIT CONNECTOR A (39P)
Wire side of female terminals



FRONT PASSENGER'S AIRBAG CUTOFF INDICATOR 5P CONNECTOR on the DASHBOARD WIRE HARNESS
Wire side of female terminals

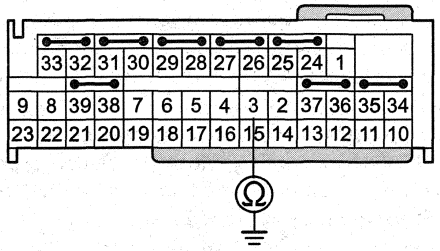
Is there less than 1.0 Ω?

YES–Go to step 9.

NO–Open in the dashboard wire harness; replace the faulty harness, then clear the DTC.■

9. Measure the resistance between body ground and SRS unit connector A (39P) terminal No. 3.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there an open circuit, or at least 1 MΩ?

YES–Faulty SRS unit or front passenger's airbag cutoff indicator; replace the front passenger's airbag cutoff indicator (see page 24-193), then clear the DTC, and retest. If the DTC is still present, replace the SRS unit (see page 24-185).■

NO–Short to ground in the dashboard wire harness; replace the faulty harness, then clear the DTC.■

DTC A1-1x ("x" can be 0 thru 9 or A thru F): Faulty Power Supply (VA line)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC A1-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Check the No. B8 (7.5 A) fuse in the under-dash fuse/relay box.

   Is the fuse OK?

   YES–Go to step 6.

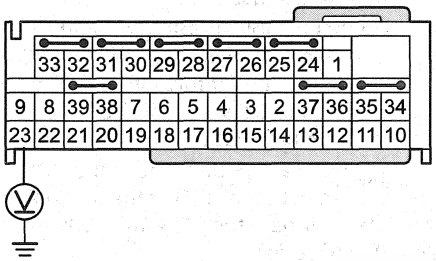
   NO–Replace the fuse, then turn the ignition switch to ON (II). If the fuse blows again, check for a short to ground in the dashboard wire harness or in the under-dash fuse/relay box No. B8 (7.5 A) fuse circuit; replace the dashboard wire harness, then clear the DTC, and retest. If the DTC is still present, replace the under-dash fuse/relay box, then clear the DTC.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)
6. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).

(cont'd)

DTC Troubleshooting (cont'd)

8. Reconnect the negative cable to the 12 volt battery.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between body ground and SRS unit connector A (39P) terminal No. 23.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there battery voltage?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit; check the connection. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Open in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC A2-1x ("x" can be 0 thru 9 or A thru F): Faulty Power Supply (VB line)

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC A2-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Check the No. B6 (10 A) fuse in the under-dash fuse/relay box.

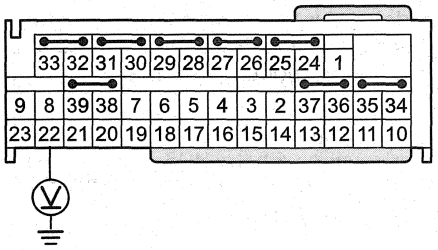
   Is the fuse OK?

   YES–Go to step 6.

   NO–Replace the fuse, then turn the ignition switch to ON (II). If the fuse blows again, check for a short to ground in the dashboard wire harness or in the under-dash fuse/relay box No. B6 (10 A) fuse circuit; replace the dashboard wire harness, then clear the DTC, and retest. If the DTC is still present, replace the under-dash fuse/relay box, then clear the DTC.■
   - USA models (see page 22-82)
   - Canada models (see page 22-83)
6. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).

8. Reconnect the negative cable to the 12 volt battery.
9. Turn the ignition switch to ON (II).
10. Measure the voltage between body ground and SRS unit connector A (39P) terminal No. 22.

SRS UNIT CONNECTOR A (39P)



Wire side of female terminals

Is there battery voltage?

YES–Faulty SRS unit or poor connection at SRS unit connector A (39P) and the SRS unit; check the connection. If the connection is OK, replace the SRS unit (see page 24-185). If the DTC does not clear, replace the dashboard wire harness.■

NO–Open in the dashboard wire harness; replace the dashboard wire harness, then clear the DTC.■

DTC A3-1x ("x" can be 0 thru 9 or A thru F): SRS Unit Connector A Not Properly Installed

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC A3-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Check the connection between SRS unit connector A (39P) and the SRS unit.

   Is the connection OK?

   YES–Go to step 7.

   NO–Repair the poor connection, then clear the DTC, and retest. If DTC A3-1x is still present, go to step 7.
7. Disconnect SRS unit connector A (39P) from the SRS unit (see page 24-22).
8. Check for bent or damaged terminals on the SRS unit.

   Are any terminals bent or damaged?

   YES–Replace the SRS unit (see page 24-185).■

   NO–Replace the dashboard wire harness, then clear the DTC.■

(cont'd)

DTC Troubleshooting (cont'd)

DTC A4-1x ("x" can be 0 thru 9 or A thru F): SRS Unit Connector B Not Properly Installed

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC A4-1x indicated?

   YES–Go to step 4.

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■
4. Turn the ignition switch to LOCK (0).
5. Disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
6. Check the connection between SRS unit connector B (39P) and the SRS unit.

   Is the connection OK?

   YES–Go to step 7.

   NO–Repair the poor connection, then clear the DTC, and retest. If DTC A4-1x is still present, go to step 7.
7. Disconnect SRS unit connector B (39P) from the SRS unit (see page 24-22).
8. Check for bent or damaged terminals on the SRS unit.

   Are any terminals bent or damaged?

   YES–Replace the SRS unit (see page 24-185).■

   NO–Replace the floor wire harness, then clear the DTC.■

DTC Ex-11 ("x" can be 0 thru 9 or A thru F): Control Operation Recorded

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13) and General Troubleshooting Information (see page 24-23).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Clear the DTCs with the HDS (see page 24-24).
2. Turn the ignition switch to ON (II), then wait for 10 seconds.
3. Check for DTCs with the HDS (see page 24-24).

   Is DTC Ex-11 indicated?

   YES–Faulty SRS unit; replace the SRS unit (see page 24-185).■

   NO–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25). If another DTC is indicated, troubleshoot the DTC.■

DTC Fx-11 ("x" can be 0 thru 9 or A thru F): Airbags And/or Tensioners Deployment Recorded

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, review SRS Precautions and Procedures (see page 24-13), General Troubleshooting Information (see page 24-23), and 12 Volt Battery Terminal Disconnection and Reconnection (see page 22-86).
- Refer to the DTCs shown:
  - DTC F1-11: Driver's airbag, left side curtain airbag, and/or driver's seat belt tensioner deployed.
  - DTC F2-11: Front passenger's airbag, right side curtain airbag, and/or front passenger's seat belt tensioner deployed.
  - DTC F3-11: Driver's side airbag, left side curtain airbag, and/or driver's seat belt tensioner deployed.
  - DTC F4-11: Front passenger's side airbag, right side curtain airbag, and/or front passenger's seat belt tensioner deployed.
  - DTC F5-11: Both or only one side curtain airbag and seat belt tensioner deployed.
  - DTC F6-11: Both or only one side curtain airbag and seat belt tensioner deployed.

When any airbag or tensioners have deployed, go to Component Replacement/Inspection After Deployment (see page 24-163).

DTC 11-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 82-11 (see page 24-135).

(cont'd)

DTC Troubleshooting (cont'd)

DTC 12-2x ("x" can be 0 thru 9 or A thru F): No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 82-12 (see page 24-137).

DTC 13-3x ("x" can be 0 thru 9 or A thru F): No Signal From the Inner Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 82-13 (see page 24-138).

DTC 21-1x ("x" can be 0 thru 9 or A thru F): No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 83-21 (see page 24-138).

DTC 22-2x ("x" can be 0 thru 9 or A thru F): No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 83-22 (see page 24-140).

(cont'd)

DTC Troubleshooting (cont'd)

DTC 23-3x ("x" can be 0 thru 9 or A thru F): No Signal From the Outer Side Front Passenger's Weight Sensor

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 83-23 (see page 24-141).

DTC 41-xx, 42-xx, 43-xx ("x" can be 0 thru 9 or A thru F): Internal Failure of the ODS Unit

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 81-4x (see page 24-129).

DTC 71-xx ("x" can be 0 thru 9 or A thru F): ODS Unit Not Calibrated

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Only read DTCs from the SRS menu, not from SWS menus unless instructed to check SWS DTCs. SWS (ODS unit) DTCs are subcodes of SRS unit DTCs. Only troubleshoot the corresponding SRS DTCs. Also these SWS DTCs are cleared by turning the ignition switch to LOCK (0).

Do the troubleshooting for SRS unit DTC 81-71 (see page 24-133).

SRS indicator does not come on

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25) and retest.

1. Turn the ignition switch to LOCK (0), then wait for 10 seconds.
2. Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

   Does the SRS indicator come on?

   YES–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25).■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Connect the HDS to the data link connector (DLC) (see page 24-23).
5. Turn the ignition switch to ON (II).
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
7. Do the gauge control module self-diagnostic function (see page 22-325).

   Does the SRS indicator come on?

   YES–Faulty SRS unit; replace the SRS unit (see page 24-185).■

   NO–Faulty gauge control module; replace the gauge control module (see page 22-354).■

(cont'd)

Symptom Troubleshooting (cont'd)

SRS indicator stays on, but no DTCs are stored, or cannot be read

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before doing this troubleshooting procedure, make sure the 12 volt battery is fully charged. If the 12 volt battery voltage is low, SRS indicator may stays on.
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Start the engine, and see if the malfunction indicator lamp (MIL) also stays on.

   Does the MIL stay on longer than 30 seconds?

   YES–Go to the MIL Circuit Troubleshooting (see page 11-187).

   NO–Go to step 2.

2. Turn the ignition switch to LOCK (0).
3. Connect the HDS to the data link connector (DLC) (see page 24-23).
4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. Check for DTCs with the HDS (see page 24-24).

   Are any SRS DTCs indicated?

   YES–Do the SRS DTC troubleshooting.■

   NO–Go to step 7.

7. From the HDS Main Menu, select BODY ELECTRICAL, then select the desired MODE MENU.
8. Check for DTCs with the HDS (see page 24-24).

   Is DTC U0151 indicated?

   YES–Troubleshoot DTC U0151 (see page 22-342).

   NO–Go to step 9.

9. Do the gauge control module self-diagnostic function (see page 22-325).

   Does the SRS indicator come on?

   YES–Faulty SRS unit; replace the SRS unit (see page 24-185).■

   NO–Faulty gauge control module; replace the gauge control module (see page 22-354).■

Side airbag cutoff indicator stays on

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Make sure nothing is on the front passenger's seat.
2. Make sure the seat-back is dry.
3. Turn the ignition switch to ON (II), and see if the SRS indicator comes on.

   Does the SRS indicator come on and stay on?

   YES–Go to the Symptom Troubleshooting "SRS indicator stays on, but no DTCs are stored, or cannot be read" (see page 24-160).

   NO–Go to step 4.
4. Turn the ignition switch to LOCK (0).
5. From the HDS Main Menu, select BODY ELECTRICAL, then select the desired MODE MENU.
6. Check for body electrical DTCs with the HDS (see page 22-6).

   Is DTC U0151 indicated?

   YES–Troubleshoot DTC U0151 (see page 22-342).

   NO–Go to step 7.
7. Do the gauge control module self-diagnostic function (see page 22-325).

   Does the side airbag cutoff indicator flash?

   YES–Do the ODS unit initialization (see page 24-26), and retest. If problem is still present, replace the seat-back cover/pad equipped with the OPDS sensor (see page 20-117), and retest. If the problem is still present, replace the SRS unit (see page 24-185).■

   NO–Faulty gauge control module; replace the gauge control module (see page 22-354).■

Side airbag cutoff indicator does not come on

NOTE:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- If the SRS indicator also stays on, go to the Symptom Troubleshooting "SRS indicator stays on, but no DTCs are stored, or cannot be read" (see page 24-160).
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Turn the ignition switch to LOCK (0), and wait for 10 seconds.
2. Turn the ignition switch to ON (II), and check that the side airbag cutoff indicator comes on for about 6 seconds.

   Does the side airbag cutoff indicator come on?

   YES–Intermittent failure, the system is OK at this time. Go to Troubleshooting Intermittent Failures (see page 24-25).■

   NO–Go to step 3.
3. Turn the ignition switch to LOCK (0).
4. Connect the HDS to the data link connector (DLC) (see page 24-23).
5. Turn the ignition switch to ON (II).
6. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
7. Do the gauge control module self-diagnostic function (see page 22-325).

   Does the side airbag cutoff indicator blink?

   YES–Faulty SRS unit; replace the SRS unit (see page 24-185).■

   NO–Faulty gauge control module; replace the gauge control module (see page 22-354).■

(cont'd)

Symptom Troubleshooting (cont'd)

Front passenger's airbag cutoff indicator stays on or comes on suddenly

NOTE: Under the following conditions, the front passenger's airbag cutoff indicator stays on or comes on suddenly:

- Before doing this troubleshooting procedure, find out if the vehicle was in a collision. If so, verify that all the required components were replaced with new components, of the correct part number, and that they were properly installed (see page 24-163).
- When no one is sitting on the front passenger's seat, but there is an object on the seat more than 5 kg (11 lbs).
- The front seat belt is buckled, but no one is sitting on the front passenger's seat.
- Someone who is less than about 30 kg (66 lbs) is sitting on the front passenger's seat.
- Before replacing the SRS unit, check the SRS unit software version with the HDS. If the software version is not the latest, update the SRS unit software (see page 24-25), and retest.

1. Check for these items, then recheck the front passenger's airbag cutoff indicator.
   - The front passenger's seat is installed correctly.
   - Nothing is/was on the front passenger's seat.
   - Nothing is/was under the front passenger's seat.
   - Whoever was sitting on the front passenger's seat was sitting in the proper sitting position.
   - The seat weight sensors may not measure the correct weight of the front passenger. If the front passenger's weight is more than 30 kg (66 lbs) but is supporting some of their body weight with their feet on the floor, or with their hands and arms on an arm rest, the actual weight of the passenger is not measured.

   Does the front passenger's airbag cutoff indicator stay on?

   YES–Go to step 2.

   NO–The vehicle is OK at this time.■
2. Turn the ignition switch to LOCK (0).
3. Connect the HDS to the data link connector (DLC) (see page 24-23).
4. Turn the ignition switch to ON (II).
5. Make sure the HDS communicates with the vehicle and the SRS unit. If it does not communicate, go to the DLC circuit troubleshooting (see page 11-383).
6. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER REPLACING FRONT PASSENGER'S SEAT COMPONENT(S), and follows the problems.

   Does the front passenger's airbag cutoff indicator stay on?

   YES–Go to step 7.

   NO–Troubleshooting is complete.■
7. From the HDS Main Menu, select SRS, then Inspection. In the Inspection Menu, select AFTER A VEHICLE COLLISION, and follow the prompts.

   Does the front passenger's airbag cutoff indicator stay on?

   YES–Faulty SRS unit; replace the SRS unit (see page 24-185), and retest. If the problem is still present, replace the ODS unit (see page 24-190), and retest. If the problem is still present, replace the front passenger's weight sensor assembly (see page 24-188).■

   NO–The vehicle is OK at this time.■

Component Replacement/Inspection After Deployment

NOTE:

- Before doing any SRS repairs, check for DTCs (see page 24-24), for the less obvious deployed components (seat belt tensioners, front impact sensors, side impact sensors, etc).
- If there is a breaking or damage found in harness relevant to the replacement parts shown below, replace it, do not repair.
- Do not replace the ODS unit unless it is physically damaged or a specific fault was found during DTC troubleshooting. Because it could complicate troubleshooting other DTCs.
- After a vehicle collision, do the ODS unit operation check (see page 24-28).
- After a vehicle collision, inspect the active head restraint (see page 20-108).

After a collision where the seat belt tensioner(s) deployed, replace these items:

- SRS unit
- Seat belt tensioner(s)
- Front impact sensor(s)
- Rear side trim panel(s)

After a collision where the front airbag(s) deployed, replace these items:

- SRS unit
- Deployed airbag(s)
- Seat belt tensioner(s)
- Front impact sensor(s)
- dashboard upper panel
- Rear side trim panel(s)

After a collision where the side airbag(s) deployed, replace these items:

- SRS unit
- Deployed side airbag(s)
- Side impact sensor(s) (first)
- Side impact sensor(s) (second)
- Seat frame(s) and related parts

After a collision where a side curtain airbag has deployed, replace the items for the side(s) that deployed:

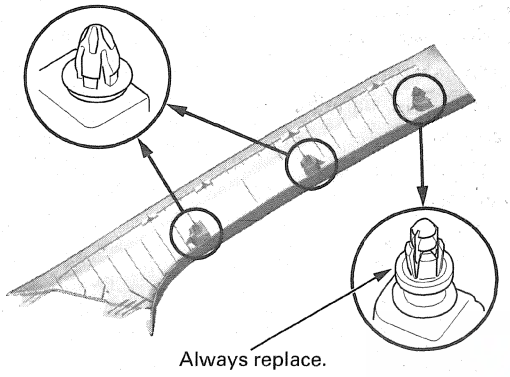
- SRS unit
- Deployed side curtain airbag(s)
- Side impact sensor(s) (first)
- Side impact sensor(s) (second)
- Front pillar trim(s)
- Center pillar trim(s)
- Rear pillar trim(s)
- Rear side trim panel(s)
- Headliner
- All related trim clips
- Sunvisor(s)

(cont'd)

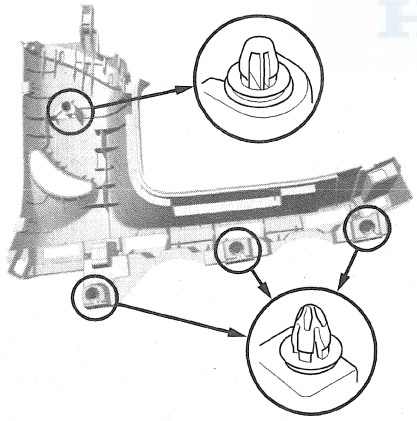
Component Replacement/Inspection After Deployment (cont'd)

After a moderate to severe side or rear collision, inspect for any damage on the side curtain airbag or other related components. Replace the components as needed.

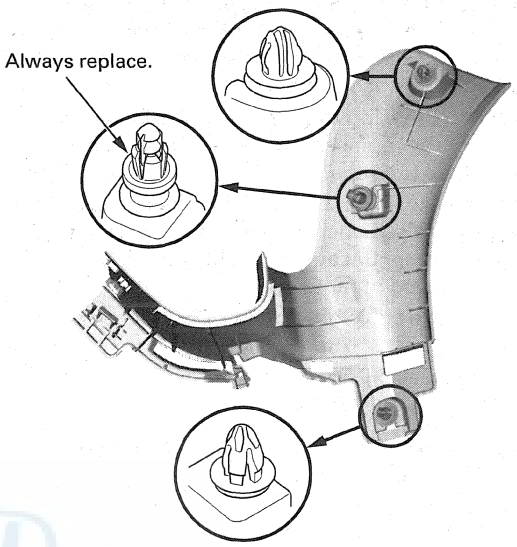
Front pillar trim



Center pillar trim



Rear pillar trim



During the repair process, inspect these areas:

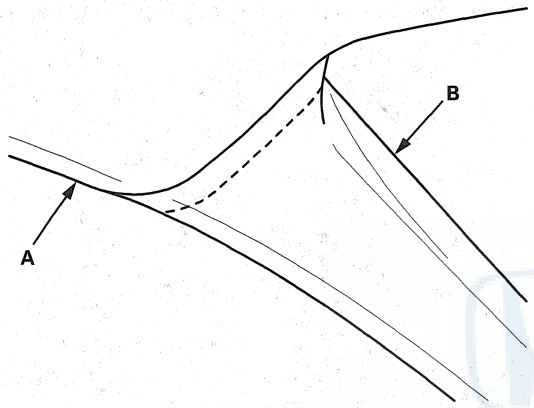
- Inspect all the SRS wire harnesses. Replace, do not repair, any damaged harnesses.
- Inspect the cable reel for heat damage. If there is any damage, replace the cable reel (see page 24-183).

After the vehicle is completely repaired, turn the ignition switch to ON (II). If the SRS indicator comes on for about 6 seconds and then goes off, the SRS is OK. If the indicator does not function properly, use the HDS to check for the DTCs (see page 24-24). If you cannot retrieve a code, do the SRS Symptom Troubleshooting.

Checking and Adjusting the Headliner/Pillar Trim Overlap

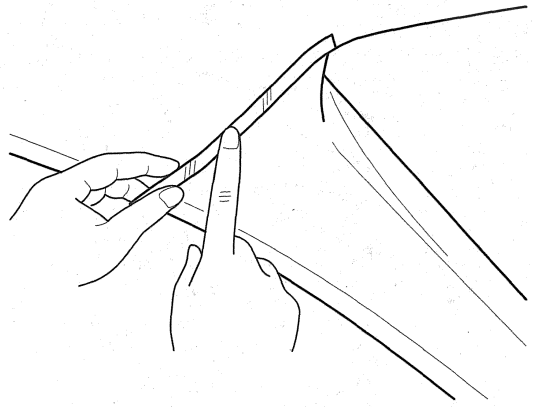
To prevent the side curtain airbag from deploying and damaging the pillar trim, the overlap between the headliner and pillar trim must be less than 8 mm (0.31 in). To check the overlap, do this:

1. Install the headliner (A) and the pillar trim (B).



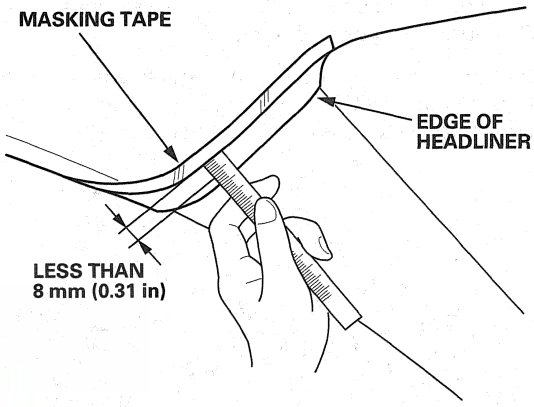
This illustration shows the front pillar.

2. Apply masking tape to the headliner to mark the upper edge of each pillar trim.



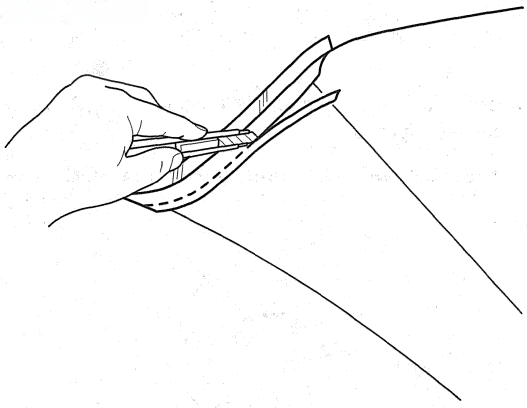
This illustration shows the front pillar.

3. Remove the pillar trim, and measure the headliner overlap.
   - If the overlap is less than 8 mm (0.31 in), remove the tape, and install the pillar trim.
   - If the overlap is more than 8 mm (0.31 in), go to step 4.



This illustration shows the front pillar.

4. Carefully trim the headliner with a utility knife, reducing the overlap to less than 8 mm (0.31 in).



This illustration shows the front pillar.

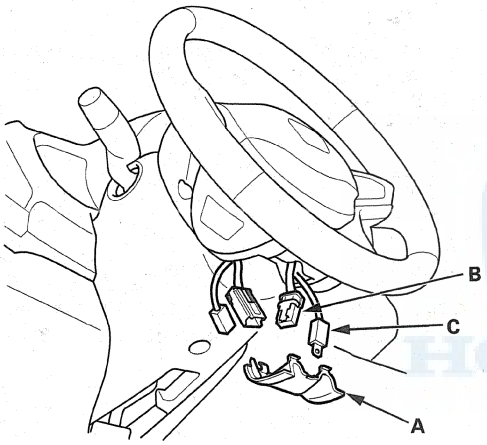
5. Remove the tape, and install the pillar trim.

Driver's Airbag Replacement

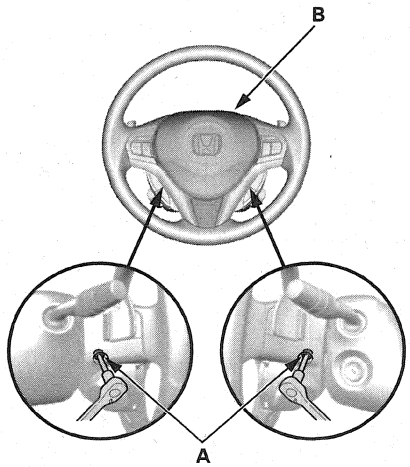
NOTE: If replacing the driver's airbag after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the access panel (A) from the steering wheel, then disconnect the driver's airbag inflator 4P connector (B) on the cable reel harness.



3. Disconnect the horn switch 1P connector (C) on the cable reel harness.
4. Remove the two TORX bolts (A) using a TORX T30 bit.



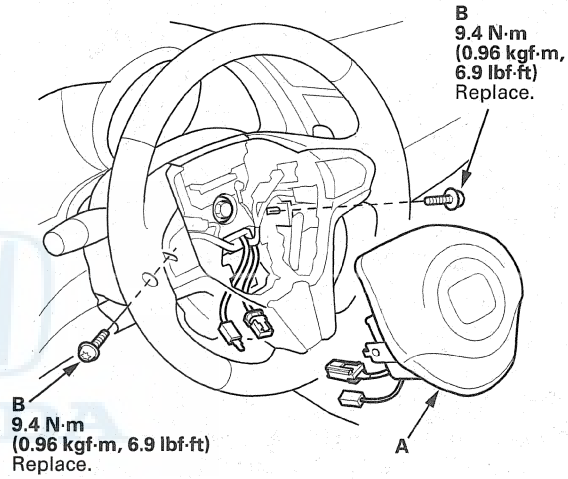
5. Remove the driver's airbag (B).

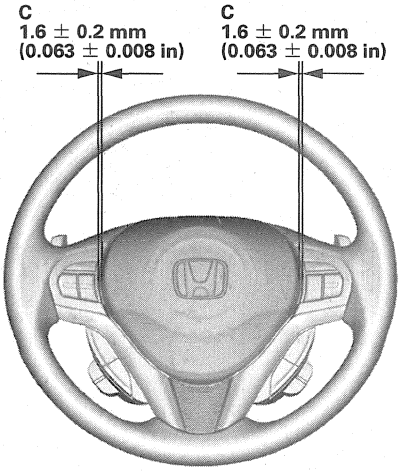
Installation

NOTE: If replacing a deployed driver's airbag, inspect the cable reel for heat damage. If there is any damage, replace the cable reel (see page 24-183).

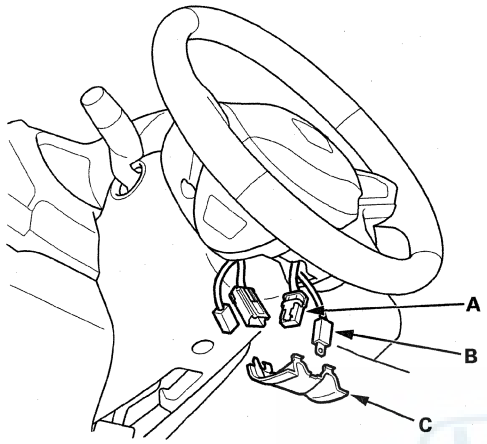
1. Place the driver's airbag (A) in the steering wheel, and secure it with new TORX bolts (B), using a TORX T30 bit.

   NOTE: Make sure the clearance (C) between the steering wheel and horn pad is the specified value.





2. Connect the driver's airbag inflator 4P connector (A) and horn switch 1P connector (B) on the cable reel harness, then install the access panel (C) on the steering wheel.



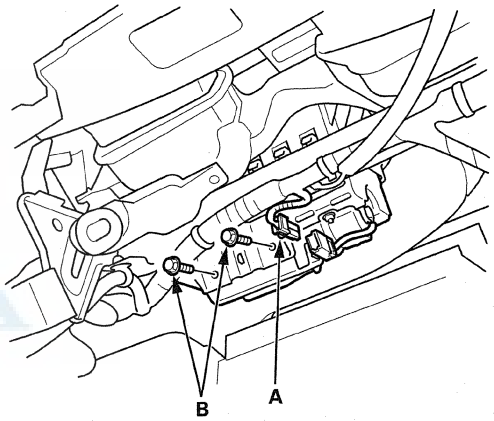
3. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
4. Clear any DTCs with the HDS (see page 24-24).
5. After installing the driver's airbag, confirm proper system operation:
   - Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
   - Make sure the horn work properly.

Front Passenger's Airbag Replacement

NOTE: If replacing the front passenger's airbag after deployment, refer to Component Replacement/ Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the glove box (see page 20-94).
3. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



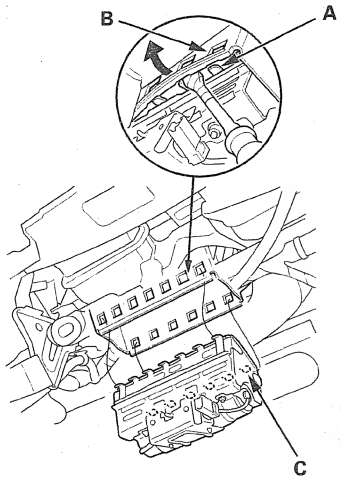
4. Remove the mounting bolts (B).
5. Remove the blower unit (see page 21-99).

(cont'd)

Front Passenger's Airbag Replacement (cont'd)

6. Remove the hooks (A) from the front passenger's airbag housing holes (B) of the dashboard upper panel.

   NOTE:
   - When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
   - Take care not to damage the front passenger's airbag housing holes of the dashboard upper panel.
   - Take care not to damage the front passenger's airbag.

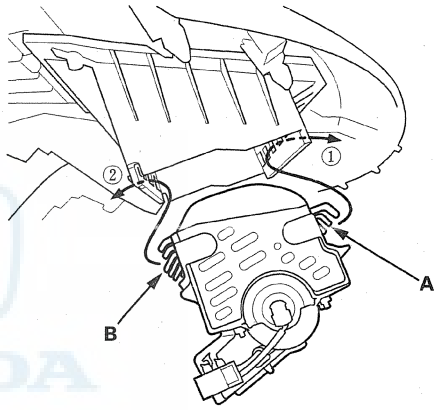


7. Remove the other hooks (C) from the front passenger's airbag housing holes of the dashboard upper panel, then remove the front passenger's airbag from the dashboard upper panel.

Installation

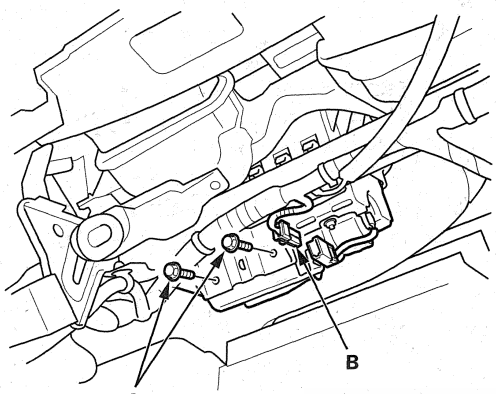
1. Insert the hooks (A) into the front passenger's airbag housing holes of the dashboard upper panel.

   NOTE:
   - Make sure there are no objects between the airbag and the dashboard upper panel.
   - Make sure the airbag is fully seated, and make sure the dashboard upper panel is not deformed or damaged after the airbag is in place.
   - Make sure the hooks are set properly.



2. Insert the other hooks (B) into the front passenger's airbag housing holes of the dashboard upper panel.
3. Reinstall the blower unit (see page 21-99).

4. Install the new mounting bolts (A), then tighten the bolts to the specified torque.

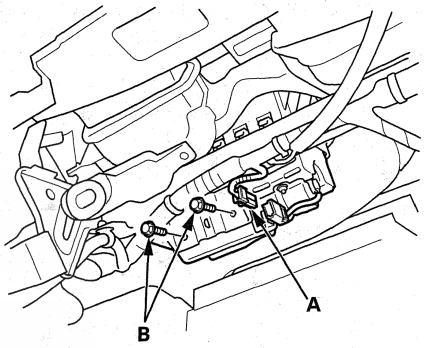


9.4 N·m (0.96 kgf·m, 6.9 lbf·ft)
Replace.

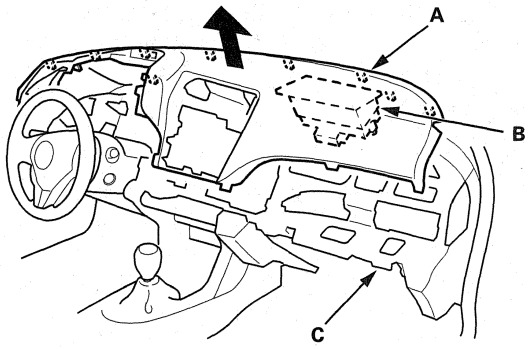
5. Connect the front passenger's airbag inflator 4P connector (B) on the dashboard wire harness.
6. Reinstall the glove box (see page 20-94).
7. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
8. Clear any DTCs with the HDS (see page 24-24).
9. After installing the front passenger's airbag, confirm proper system operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Removal after a collision where the front passenger's airbag deployed

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the glove box (see page 20-94).
3. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.



4. Remove the mounting bolts (B).
5. Remove the dashboard upper panel (A) and the front passenger's airbag (B) assembly from the dashboard (C) (see page 20-97).



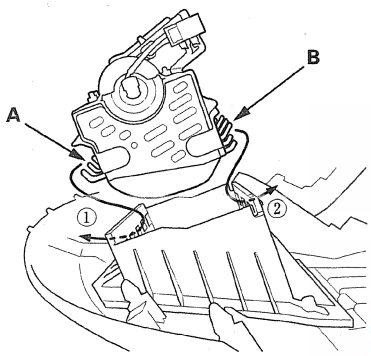
(cont'd)

Front Passenger's Airbag Replacement (cont'd)

Installation after a collision where the front passenger's airbag deployed

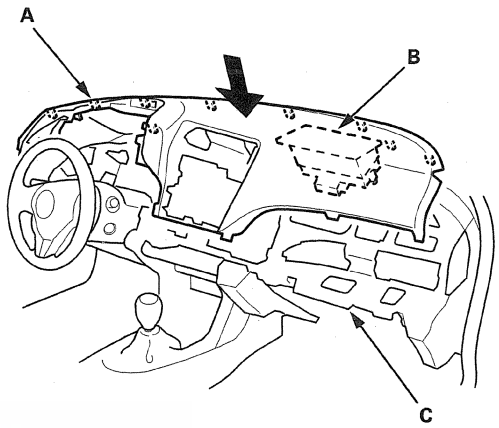
1. Insert the hooks (A) into the front passenger's airbag housing holes of the new dashboard upper panel.

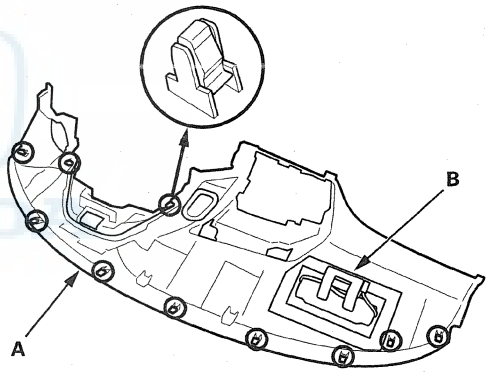
   NOTE:
   - Make sure there are no objects between the airbag and the dashboard upper panel.
   - Make sure the airbag is fully seated, and make sure the dashboard upper panel is not deformed or damaged after the airbag is in place.
   - Make sure the hooks are set properly.



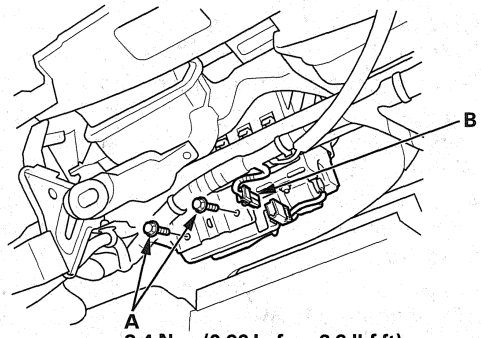
2. Insert the other hooks (B) into the front passenger's airbag housing holes of the dashboard upper panel.

3. Install the dashboard upper panel (A) and the front passenger's airbag (B) assembly to the dashboard (C) (see page 20-97).





4. Install the new mounting bolts (A), then tighten the bolts to the specified torque.



9.4 N·m (0.96 kgf·m, 6.9 lbf·ft)
Replace.

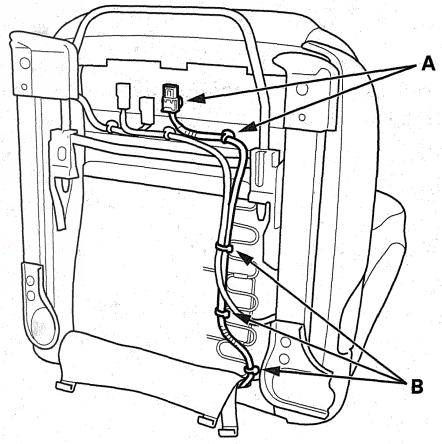
5. Connect the front passenger's airbag inflator 4P connector (B) on the dashboard wire harness.
6. Reinstall the glove box (see page 20-94).
7. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
8. Clear any DTCs with the HDS (see page 24-24).
9. After installing the front passenger's airbag, confirm proper system operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Side Airbag Replacement

NOTE: If replacing the side airbag after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the front seat (see page 20-109).
3. Release the seat-back cover strap and the seat cushion cover hooks from the seat cushion frame spring.
4. Detach the clips (A) and wire ties (B) of side airbag harness from the seat cushion frame.

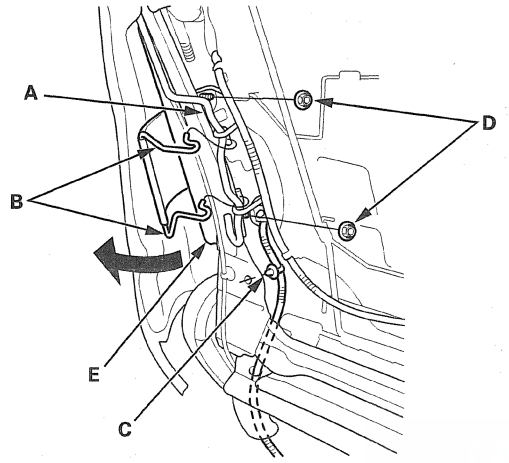


5. Unzip the seat-cover from behind the seat-back (see step 5 on page 20-119).
6. Pull back the seat-back cover, then release the hook strips from the seat-back frame (see step 6 on page 20-119).
7. Remove the protective board from the seat-back (see step 7 on page 20-119).

(cont'd)

Side Airbag Replacement (cont'd)

8. Release airbag attachment wire B from the seat-back frame (A).



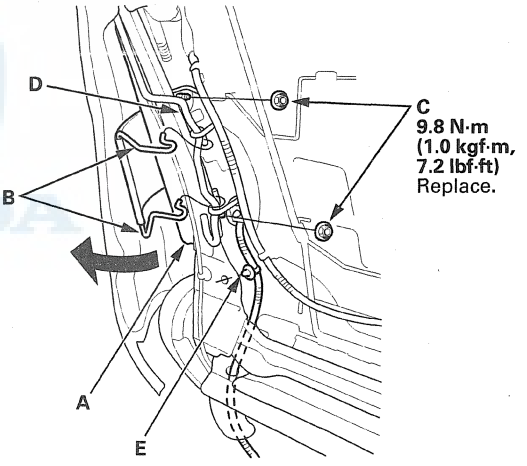
9. Detach the clip (C). Pull out the side airbag harness in the seat-back cover, then remove the two mounting nuts (D) and the side airbag (E).

Installation

NOTE:

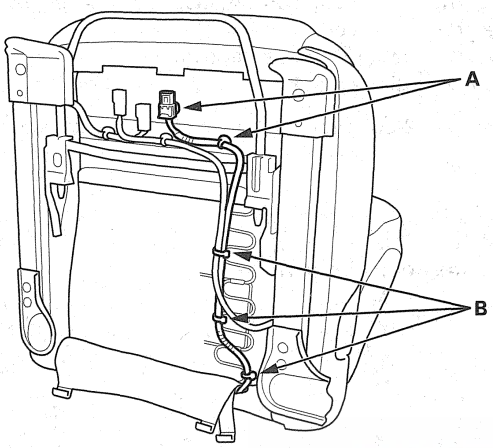
- If the side airbag lid is secured with tape, remove the tape.
- Do not open the lid on the side airbag cover.
- Use new mounting nuts tightened to the specified torque.
- If replacing a deployed airbag, replace attachment wires A and B.
- Make sure that the seat-back cover/pad is installed properly. Improper installation may prevent proper deployment.
- Be sure to install the harness so that it is not pinched or interfering with other parts.

1. Place the side airbag (A) on the seat-back frame. Install the two new side airbag mounting nuts (C).



2. Install the airbag attachment wire B in the seat-back frame (D).
3. Install the side airbag harness into the seat-back cover, then install the clip (E).
4. Reinstall the protective board and seat-back cover/pad in the reverse order of removal.

5. Install the clips (A) and wire ties (B) of the side airbag harness to seat cushion frame.



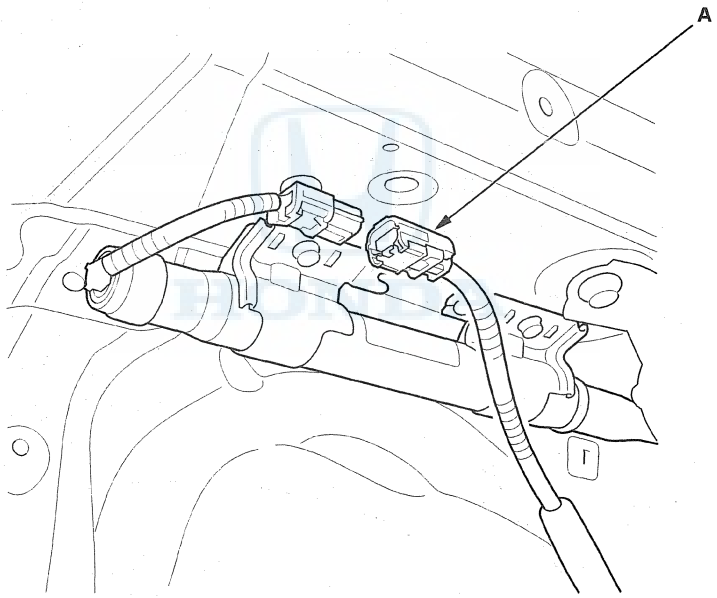
6. Install the seat-back cover strap and the seat cushion cover hooks to the seat cushion frame springs.
7. Install the front seat (see page 20-109).
8. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
9. Move the front seat and the seat-back through their full ranges of movement, making sure the harness are not pinched or interfering with other parts.
10. Clear any DTCs with the HDS (see page 24-24).
11. After installing the side airbag, confirm proper system operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Side Curtain Airbag Replacement

Removal

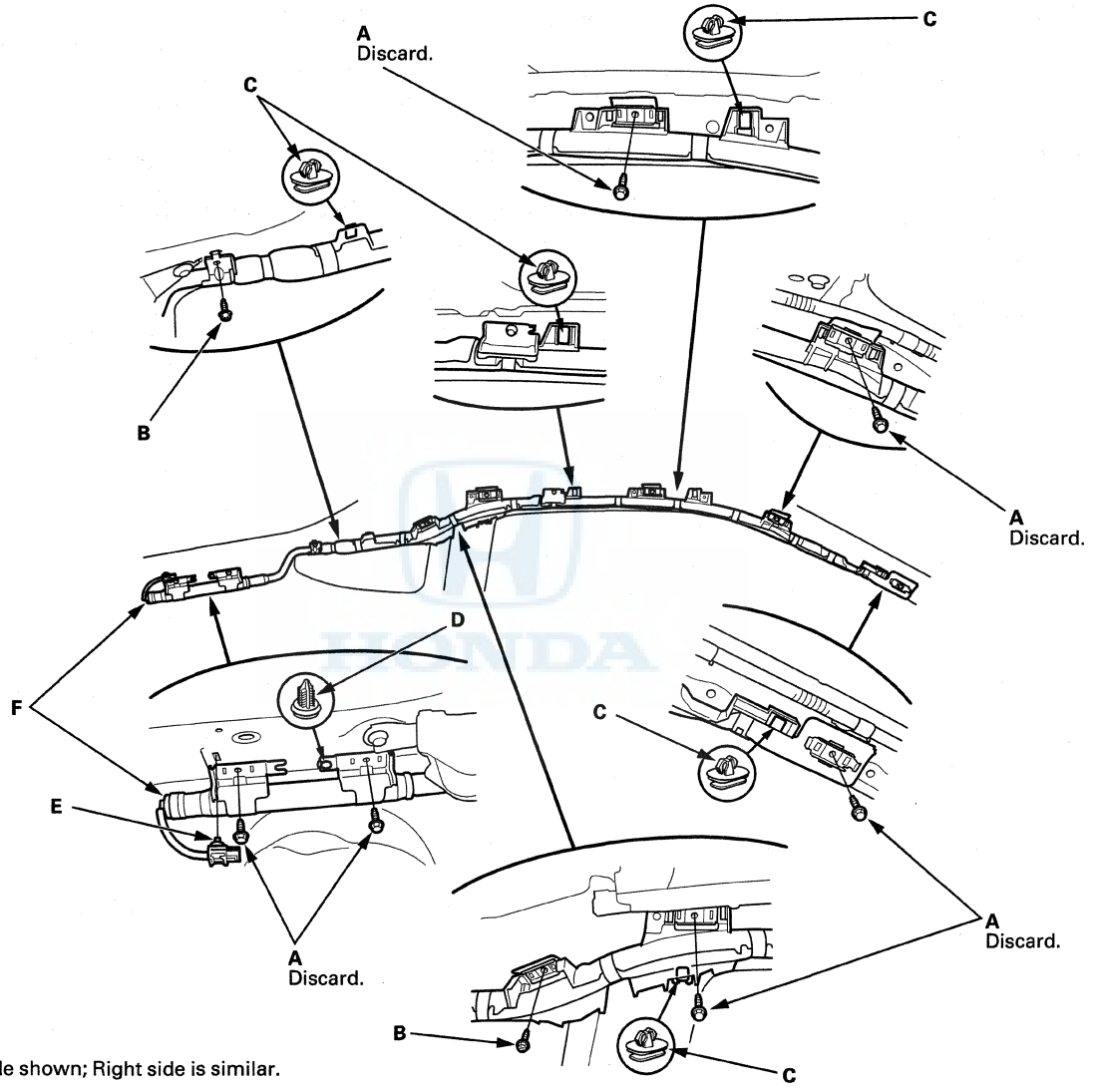
NOTE:
- If replacing the side curtain airbag after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.
- Review the interior trim replacement procedure before doing repair or service (see page 20-51).
- Removal of the side curtain airbag must be done according to Precautions and Procedures (see page 24-13).

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the rear side trim panel (see page 20-64).
3. Remove the headliner (see page 20-73).
4. Disconnect the side curtain airbag inflator 2P connector (A) on the floor wire harness.



Left side shown; Right side is similar.

5. Remove the side curtain airbag mounting bolts (A) and the mounting bolts (B) from the bracket. Detach the clips (C), the clip (D), and the clip (E), then remove the side curtain airbag (F).



Left side shown; Right side is similar.

(cont'd)

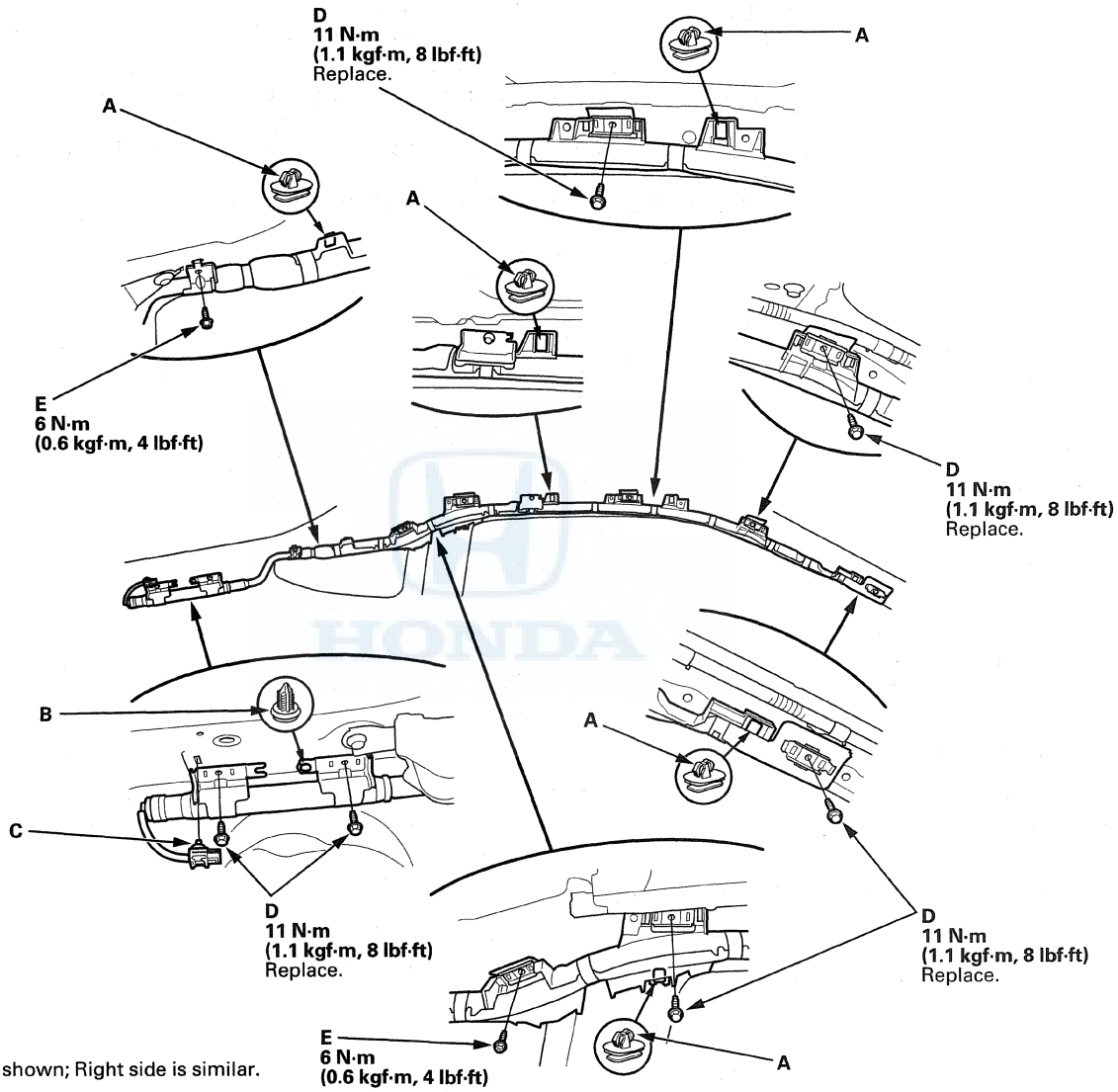
Side Curtain Airbag Replacement (cont'd)

Installation

NOTE:

- If replacing the side curtain airbag after deployment, refer to Component Replacement/Inspection After Deployment (see page 24-163) for a complete list of other parts that must also be replaced.
- Installation of the side curtain airbag must be done according to the Precautions and Procedures (see page 24-13).
- If the airbag is frayed, or has any other visible damage, replace it. Do not attempt to repair an airbag.
- When you install the airbag, make sure it is not twisted, and that it is not caught between the inflator bracket by the bracket bolts.
- Make sure that the side curtain airbag inflator retainer is installed properly. Otherwise the airbag could incorrectly deploy and cause damage or injuries.
- If there is any damage to the side curtain airbag, do not try to repair it. Replace any damaged side curtain airbag.

1. Place the side curtain airbag assembly on the side of the roof, and fit the clips (A), the clip (B), and the clip (C) into the holes in the body. Tighten the new side curtain airbag mounting bolts (D) and the mounting bolts (E) to the specified torque, and the clips are pushed until stopping.

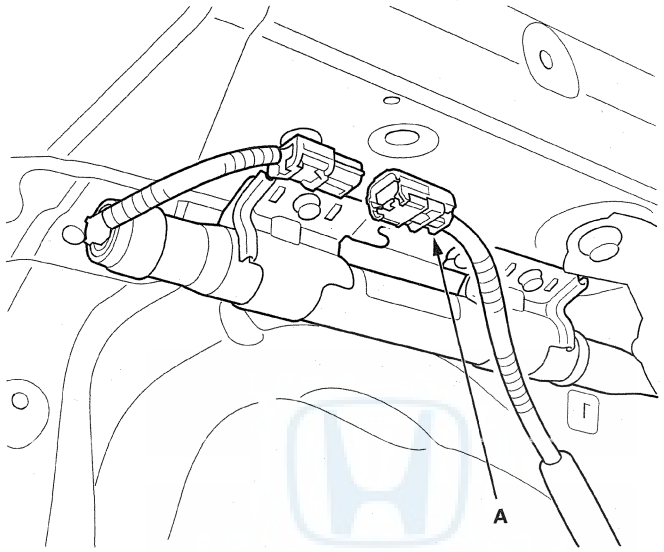


Left side shown; Right side is similar.

(cont'd)

Side Curtain Airbag Replacement (cont'd)

2. Connect the side curtain airbag inflator 2P connector (A) on the floor wire harness.



Left side shown; Right side is similar.

3. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
4. Clear any DTCs with the HDS (see page 24-24).
5. After installing the side curtain airbag, confirm proper system operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
6. Install all removed parts in reverse order of removal. If any clips are stress-whitened, replace them with new ones.
7. Confirm proper headliner/pillar trim overlap (see page 24-163).

Airbag and Tensioner Disposal

Special Tools Required

Deployment Tool 07AAZ-000A100

Before scrapping any airbags, side airbags, side curtain airbags, seat belt tensioners (including those in a whole vehicle to be scrapped), the part(s) must be deployed. If the vehicle is still within the warranty period, the Honda District Parts and Service Manager must give approval and/or special instruction before deploying the part(s). Only after the part(s) have been deployed (as the result of vehicle collision, for example), can they be scrapped. If the parts appear intact (not deployed), treat them with extreme caution. Follow this procedure.

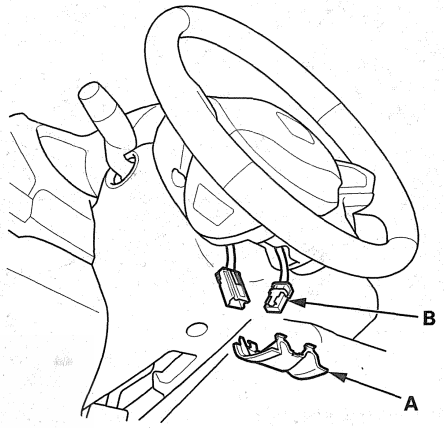
Deploying Airbags in the Vehicle

If an SRS equipped vehicle is to be entirely scrapped, its airbags, side airbags, side curtain airbags, and seat belt tensioners, should be deployed while still in the vehicle. These parts should not be considered as salvageable parts and should never be installed in another vehicle.

1. Turn the ignition switch to LOCK (0).
2. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
3. Confirm that each front airbag, side airbag, side curtain airbag, or seat belt tensioner is securely mounted.
4. Confirm that the deployment tool is functioning properly by following the check procedure on the tool label.

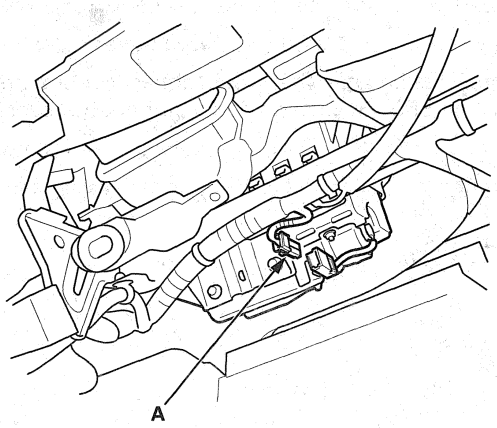
Driver's Airbag

5. Remove the access panel (A) from the steering wheel, then disconnect the driver's airbag inflator 4P connector (B) on the cable reel harness.



Front Passenger's Airbag

6. Remove the glove box (see page 20-94).
7. Disconnect the front passenger's airbag inflator 4P connector (A) on the dashboard wire harness.

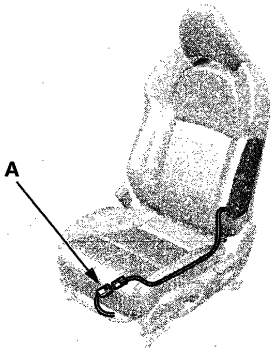


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Airbag and Tensioner Disposal (cont'd)

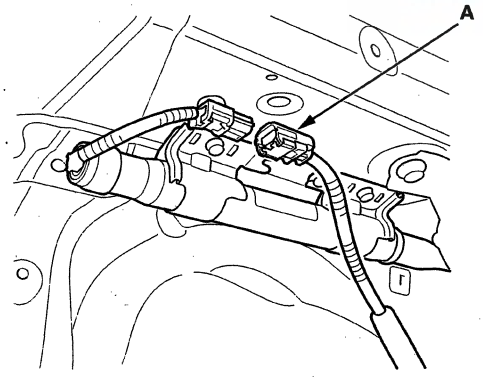
Side Airbag

8. Disconnect the driver's and the front passenger's side airbag inflator 2P connectors (A) on the floor wire harness.



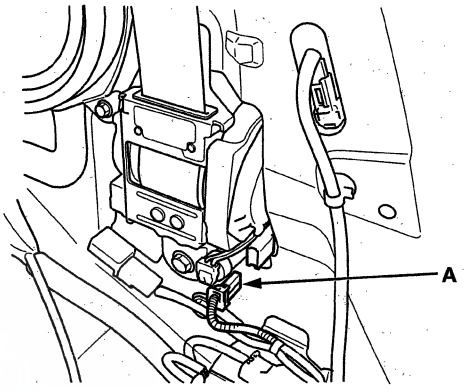
Side Curtain Airbag

9. Remove the rear side trim panel (see step 11 on page 20-65).
10. Disconnect the left and right side curtain airbag inflator 2P connectors (A) on the floor wire harness.



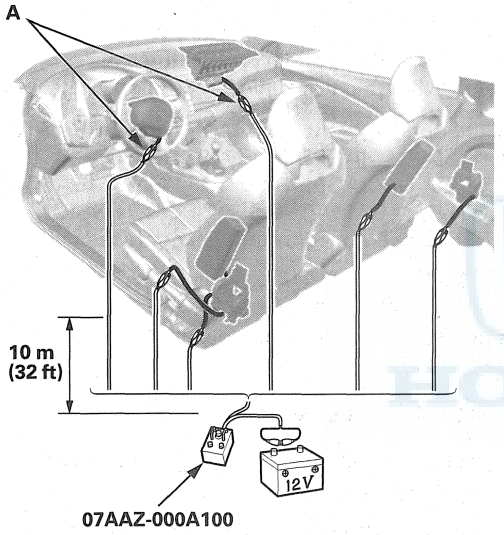
Seat Belt Tensioner

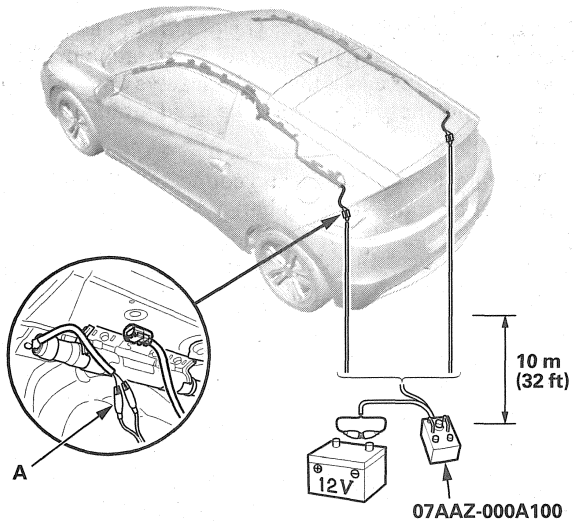
11. Remove the rear side trim panel (see step 11 on page 20-65).
12. Disconnect the left and right side seat belt tensioner 4P connectors (A) on the floor wire harness. Pull the seat belt out all the way and cut it.



13. Cut off each connector, and strip the ends of the wires. Twist each pair of unlike colored wires together, and clip an alligator clip (A) from the deployment tool to each pair.

    NOTE:
    - Place the deployment tool at least 10m (32 ft) away from the vehicle.
    - The driver's and front passenger's airbags have dual inflators. Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

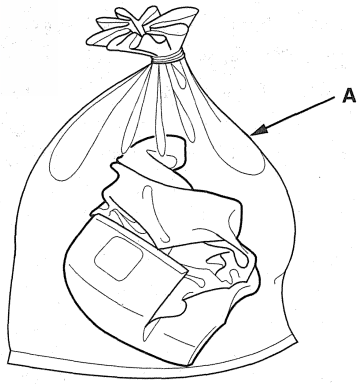




14. Connect a 12 volt battery to the tool.
    - If the green light on the tool comes on, the igniter circuit is defective and cannot deploy the component. Go to Disposal of Damaged Components.
    - If the red light on the tool comes on, the component is ready to be deployed.

15. Push the tool's deployment switch. The airbags and tensioners should deploy (deployment is both highly audible and visible: A loud noise and rapid inflation of the bag, followed by slow deflation).
    - If the components deploy and the green light on the tool comes on, continue with this procedure.
    - If a component does not deploy, and the green light comes ON, its igniter is defective. Go to Disposal of Damaged Components.
    - During deployment, the airbags can become hot enough to burn you. Wait for 30 minutes after deployment before touching the airbags.

16. Dispose of the complete airbag. No part of it can be reused. Place it in a sturdy plastic bag (A), and seal it securely. Dispose of the deployed airbag according to your local regulations.

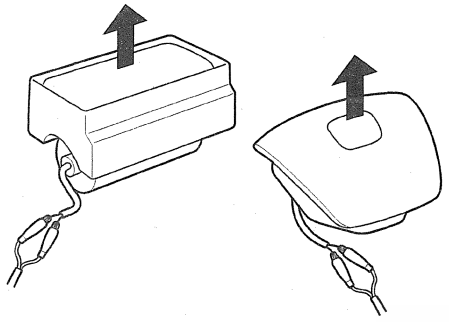


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Airbag and Tensioner Disposal (cont'd)

Deploying Components Out of the Vehicle

If an intact airbag or tensioner has been removed from a scrapped vehicle, or has been found defective or damaged during transit, storage, or service, it should be deployed as follows:



1. Confirm that the deployment tool is functioning properly by following the check procedure Deploying Airbags in the Vehicle on the tool label.
2. Position the airbag face up, outdoors, on flat ground, at least 10 m (32 ft) from any obstacles or people.
3. Follow steps 13 through 16 of the in-vehicle deployment procedure.

   NOTE: The driver's and front passenger's airbags have dual inflators. Twist each pair of unlike colored wires together, and clip an alligator clip to each pair.

Disposal of Damaged Components

1. If installed in a vehicle, follow the removal procedure for the driver's airbag (see page 24-166), the front passenger's airbag (see page 24-167), the side airbag (see page 24-171), the side curtain airbag (see page 24-174), and the seat belt tensioner (see page 24-4).
2. In all cases, make a short circuit by cutting, stripping, and twisting together the two inflator wires.

   NOTE: The driver's and front passenger's airbags have dual inflators. The like color wires go to the individual inflators. Twist the like colored wires together.
3. Package the component in exactly the same packaging that the new replacement part came in.
4. Mark the outside of the box DAMAGED AIRBAG NOT DEPLOYED, DAMAGED SIDE AIRBAG NOT DEPLOYED, DAMAGED SIDE CURTAIN AIRBAG NOT DEPLOYED, or DAMAGED SEAT BELT TENSIONER NOT DEPLOYED so it does not get confused with your parts stock.
5. Contact your Honda District Parts and Service Manager for instructions on how and where to return it for disposal.

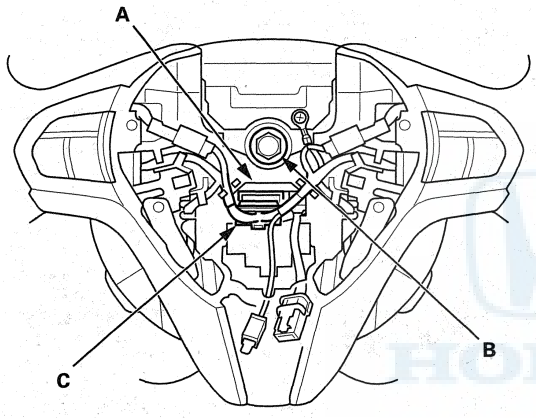
Deployment Tool Check

1. Connect the yellow clips to both switch protector handles on the tool.
2. Then connect the red lead to the positive battery post and the black lead to the negative battery post.
3. Push the operation switch: The green light should come on, indicating that the tool is operating properly and is ready for use. If the red light stays on, the tool is faulty, and another one must be used for the procedure.
4. Disconnect the tool clips and connectors from the protector handles and the battery.

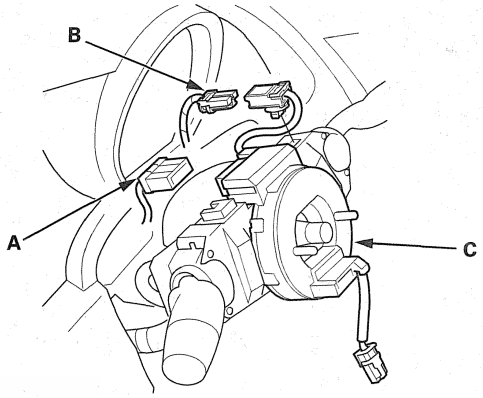
Cable Reel Replacement

Removal

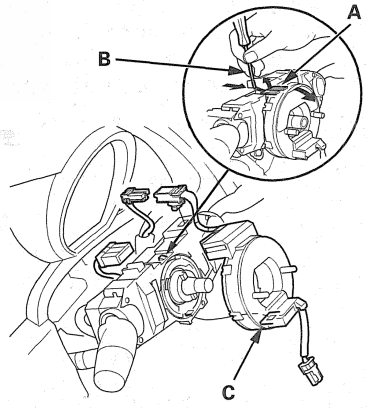
1. Make sure the front wheels are aligned straight ahead.
2. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
3. Remove the driver's airbag (see page 24-166).
4. Disconnect cable reel connector C (20P) on the cable reel subharness from the cable reel (A), then remove the steering wheel bolt (B).



5. Confirm that the front wheels point straight ahead, then remove the steering wheel with a steering wheel puller (see step 5 on page 17-6).
   Do not tap on the steering wheel or steering column shaft when removing the steering wheel.
6. Remove the upper and lower column covers (see page 20-96).
7. Disconnect cable reel connector B (4P) on the dashboard wire harness and cable reel connector A (20P) on the dashboard wire harness from the cable reel (C).



8. Release the upper lock tab (A) under the cable reel connector with a 90 ° hook shaped tool (B). Slide the tool below the cable reel connector just above the lock tab. Release the lower lock tab (C), and slide the cable reel off the column.

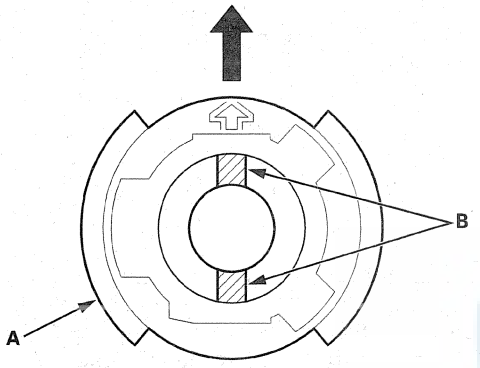


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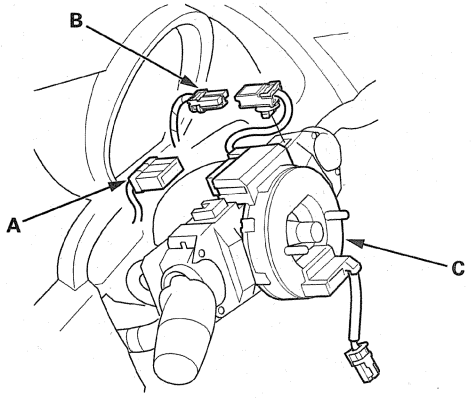
Cable Reel Replacement (cont'd)

Installation

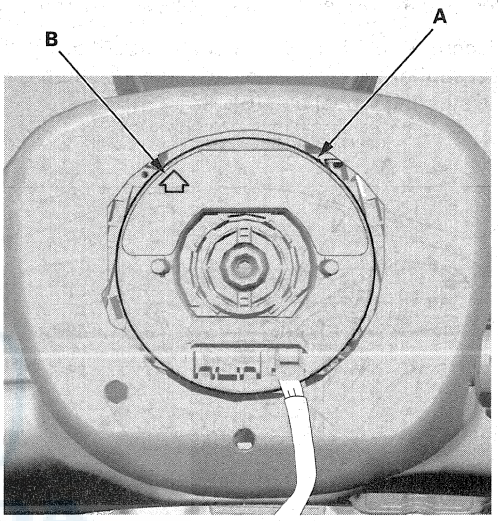
1. Before installing the steering wheel, make sure the front wheels are aligned straight ahead.
2. If not already done, disconnect the negative cable from the 12 volt battery, then wait at least 3 minutes.
3. Set the turn signal canceling sleeve (A) so that the tabs (B) are aligned vertically.



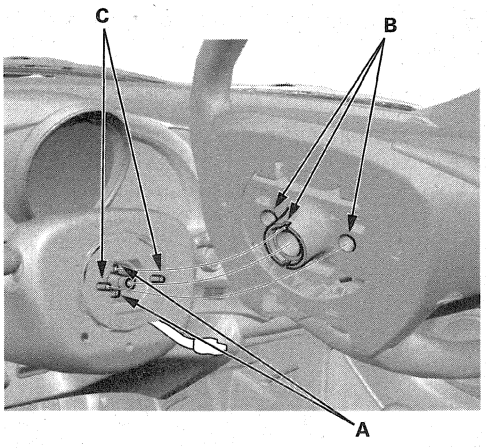
4. Carefully install the cable reel (C) on the steering column shaft. Then connect cable reel connector A (20P) on the dashboard wire harness and cable reel connector B (4P) on the dashboard wire harness to the cable reel.



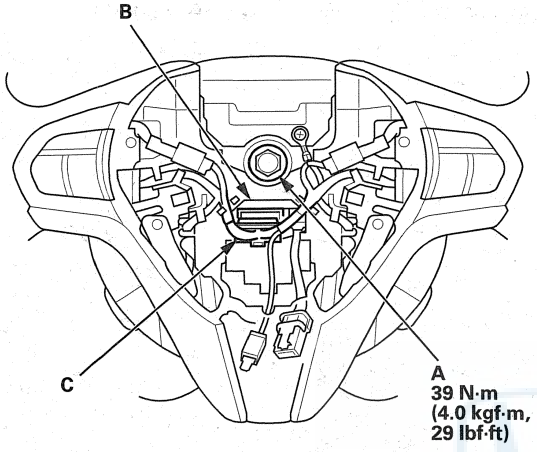
5. Install the upper and lower column covers (see page 20-96).
6. Before installing the steering wheel, make sure the front wheels are pointing straight ahead, then center the cable reel (A). Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise about three full turns. The arrow mark (B) on the cable reel label should point straight up.



7. Position the two tabs (A) of the turn signal canceling sleeve as shown, and install the steering wheel on to the steering column shaft, making sure the steering wheel hub (B) engages the pins (C) of the cable reel and tabs of the turn signal canceling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.



8. Install the steering wheel bolt (A), and tighten it to the specified torque. Connect cable reel connector C (20P) on the cable reel subharness to the cable reel (B). Make sure the wire harness is routed and fastened properly.

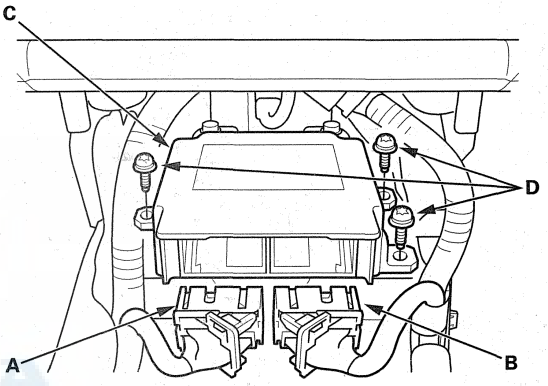


9. Install the driver's airbag (see page 24-166).
10. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
11. Clear any DTCs with the HDS (see page 24-24).
12. After installing the cable reel, confirm proper system operation:
    - Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
    - Make sure the horn and turn signal switches work properly.
    - Make sure the steering wheel switches work properly.
    - Make sure the horn works properly.
13. After installation, check the steering wheel spoke angle. If the steering spoke angles to the right and left are not equal (steering wheel is not centered), correct the engagement of the steering wheel/column shaft splines.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the center console (see page 20-79).
3. Disconnect SRS unit connectors A (39P) and B (39P) from the SRS unit (C).

   NOTE: The SRS unit connectors have lever locks. Release the locks before disconnecting the connectors (see page 24-18).



4. Remove the TORX bolts (D) using a TORX T30 bit, then pull out the SRS unit.

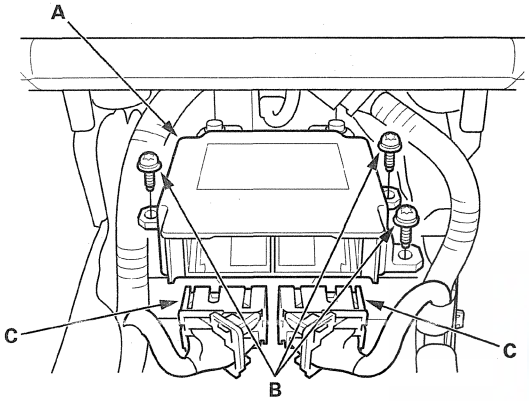
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SRS Unit Replacement (cont'd)

Installation

1. Install the SRS unit (A) with new TORX bolts (B), then connect the SRS connectors (C) to the SRS unit; push them into position until they click and the lever locks are fully secured (see page 24-18).

   NOTE: Be sure the SRS unit is sitting squarely against its bracket before torquing the TORX bolts.

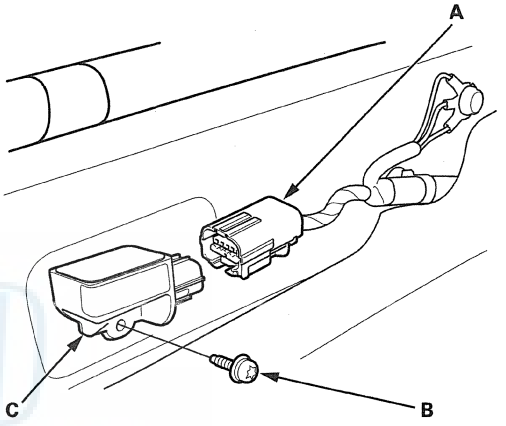


2. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
3. Make sure the SRS unit has the latest software. If it does not have the latest, update the software in the SRS unit (see page 24-25).
4. Do the ODS unit initialization (see page 24-26).
5. Check the operation of the ODS unit with the HDS (see page 24-28).
6. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
7. Reinstall all removed parts.

Side Impact Sensor (First) Replacement

Removal

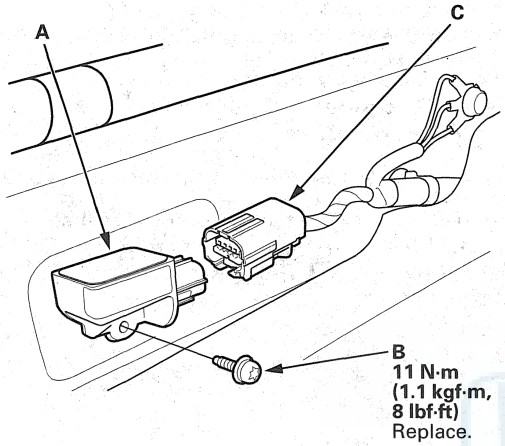
1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the door sill trim (see page 20-52).
3. Disconnect the side impact sensor (first) 4P connector (A) on the floor wire harness.



4. Remove the TORX bolt (B) using a TORX T30 bit, then remove the side impact sensor (first) (C).

Installation

1. Install the side impact sensor (first) (A) with a new TORX bolt (B), using a TORX T30 bit. Connect the side impact sensor (first) 4P connector (C) on the floor wire harness.

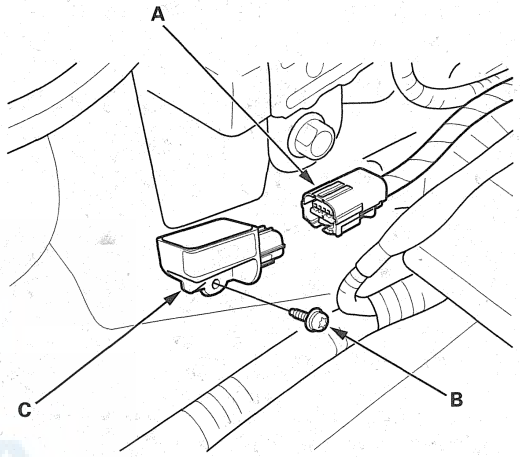


2. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
3. Clear any DTCs with the HDS (see page 24-24).
4. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.
5. Reinstall all removed parts.

Side Impact Sensor (Second) Replacement

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the rear side trim panel (see page 20-64).
3. Disconnect the side impact sensor (second) 2P connector (A) on the floor wire harness.



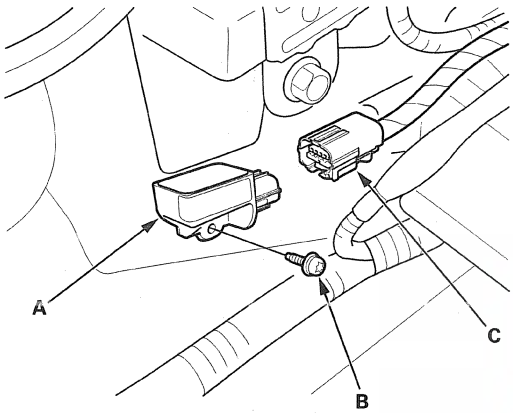
4. Remove the TORX bolt (B) using a TORX T30 bit, then remove the side impact sensor (second) (C).

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Side Impact Sensor (Second) Replacement (cont'd)

Installation

1. Install the side impact sensor (second) (A) with a new TORX bolt (B), using a TORX T30 bit. Connect the side impact sensor (second) 2P connector (C) on the floor wire harness.



2. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
3. Clear any DTCs with the HDS (see page 24-24).
4. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds, and then goes off.
5. Reinstall all removed parts.

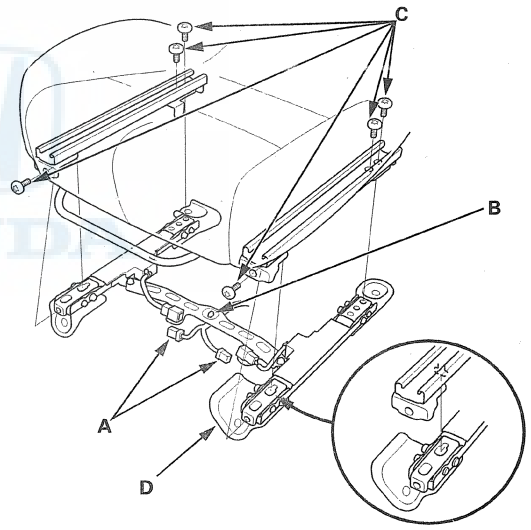
Front Passenger's Weight Sensor Replacement

Removal

NOTE:

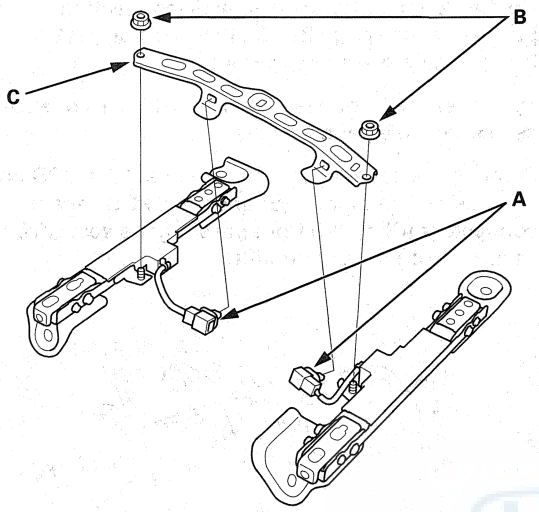
- Removal of the front passenger's weight sensor must be done according to precautions and procedures (see page 24-13).
- The front passenger's weight sensor are part of the seat track and must be replaced as an assembly.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the front passenger's seat (see page 20-109).
3. Disconnect the front passenger's weight sensor connectors (A) on the front passenger's seat wire harness, then detach the clip (B).



4. Remove the TORX bolts (C) using a TORX T40 bit, then remove the front passenger's weight sensor assembly (D).

5. Detach the clips(A).



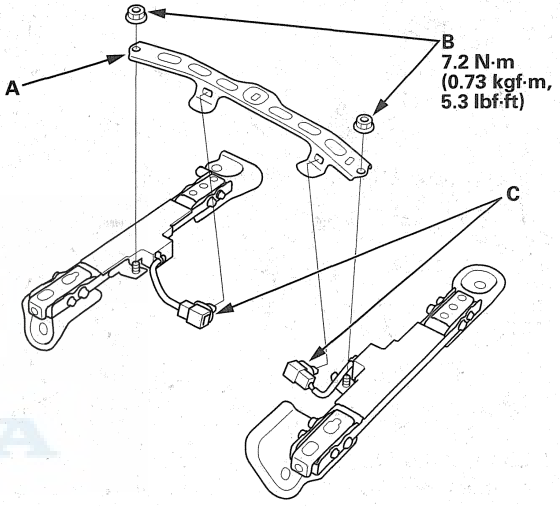
6. Remove the nuts (B) and the bracket (C).

Installation

NOTE:

- Be sure to install the harness wires so they are not pinched or interfere with other parts.
- The front passenger's weight sensor are part of the seat track and must be replaced as an assembly.

1. Install the bracket (A), then tighten the nuts (B) to the specified torque.



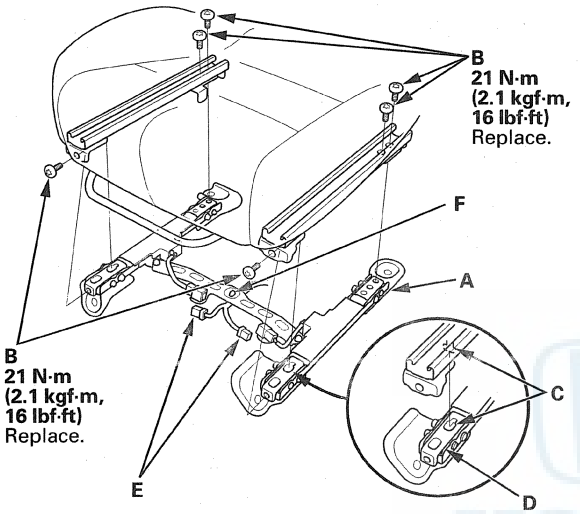
2. Install the clips (C).

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Front Passenger's Weight Sensor Replacement (cont'd)

3. Install the front passenger's weight sensor assembly (A) with new mounting bolts (B) under the seat frame.

   NOTE: Make sure both of the hooks (C) on the seat track are properly secured to the front bracket (D). If the hooks are not properly secured, the seat weight sensors will not perform properly.

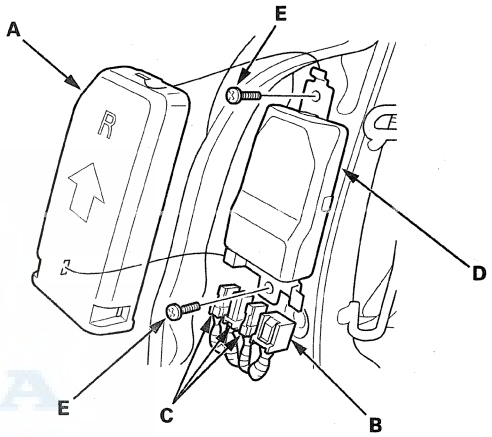


4. Connect the front passenger's weight sensor connectors (E) on the front passenger's seat wire harness, then install the clip (F).
5. Reinstall the front passenger's seat (see page 20-109).
6. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
7. Clear any DTCs with the HDS (see page 24-24).
8. Do the front passenger's weight sensor initialization (see page 24-27).
9. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

ODS Unit Replacement

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Turn over the front passenger's seat-back cover/pad as needed (see page 20-117).
3. Remove the cover (A), then disconnect the ODS unit harness 18P connector (B) and the OPDS sensor connectors (C) on the front passenger's seat wire harness from the ODS unit (D).

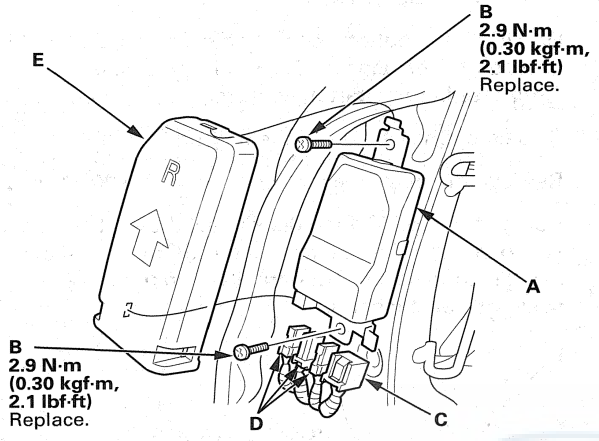


4. Remove the two screws (E) and the ODS unit.

Front Impact Sensor Replacement

Installation

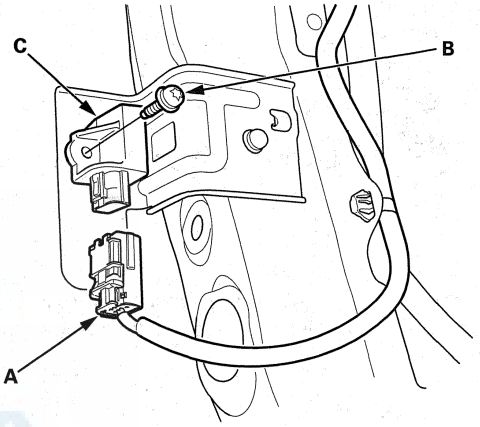
1. Place the ODS unit (A) on the seat-back frame. Tighten the two new screws (B).



2. Connect the ODS unit harness 18P connector (C) and the OPDS sensor connectors (D) on the front passenger's seat wire harness to the ODS unit. Reinstall the cover (E).
3. Install the front passenger's seat-back cover/pad in the reverse order of removal (see page 20-117).
4. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
5. Set the seat-back in the normal position, and make sure there is nothing on the front passenger's seat.
6. Clear any DTCs with the HDS (see page 24-24).
7. Do the ODS unit initialization (see page 24-26).
8. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Removal

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Remove the front inner fender (see page 20-162).
3. Disconnect the left or right front impact sensor 2P connector (A) on the left or right engine compartment wire harness.



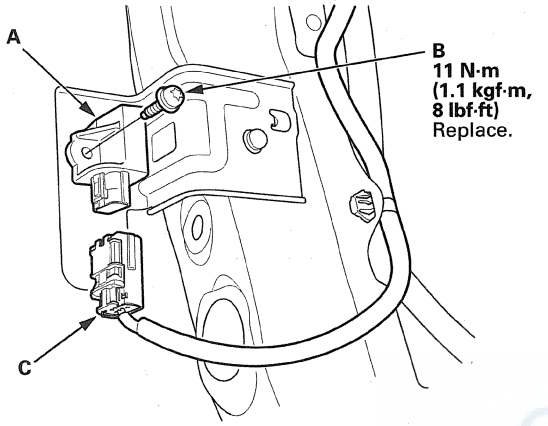
4. Remove the TORX bolt (B) using a TORX T30 bit, then remove the front impact sensor (C).

(cont'd)

Front Impact Sensor Replacement (cont'd)

Installation

1. Install the front impact sensor (A) with a new TORX bolt (B), using a TORX T30 bit.



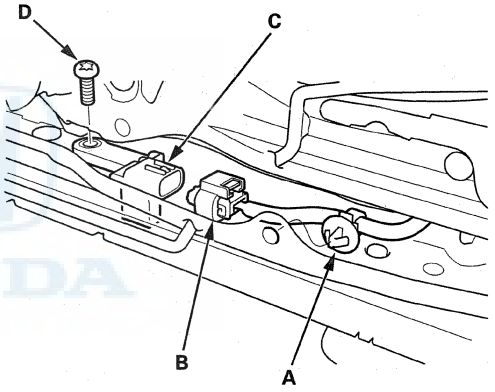
2. Connect the left or right front impact sensor 2P connector (C) on the left or right engine compartment wire harness.
3. Reinstall the front inner fender (see page 20-162).
4. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
5. Clear any DTCs with the HDS (see page 24-24).
6. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

Driver's Seat Position Sensor Replacement

Removal

NOTE: Do not turn the ignition switch to ON (II), and do not connect the battery cable while removing the driver's seat position sensor.

1. Do the 12 volt battery terminal disconnection procedure (see page 22-86), then wait at least 3 minutes before starting work.
2. Raise the driver's seat all the way up.
3. Remove the outer recline cover (see page 20-115).
4. Detach the clip (A), then disconnect the seat position sensor sub harness 2P connector (B) on the driver's seat position sensor subharness from the driver's seat position sensor (C).



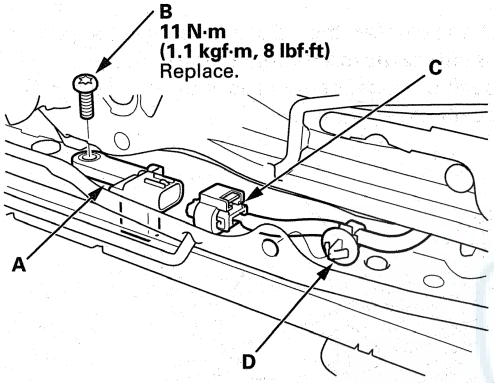
5. Remove the TORX bolt (D) using a TORX T30 bit, then remove the driver's seat position sensor.

Installation

NOTE:

- Be sure to install the harness so it does not pinch or interfere with other parts.
- Do not turn the ignition switch to ON (II), and do not connect the 12 volt battery cable while installing the driver's seat position sensor.

1. Install the driver's seat position sensor (A) with a new TORX bolt (B).

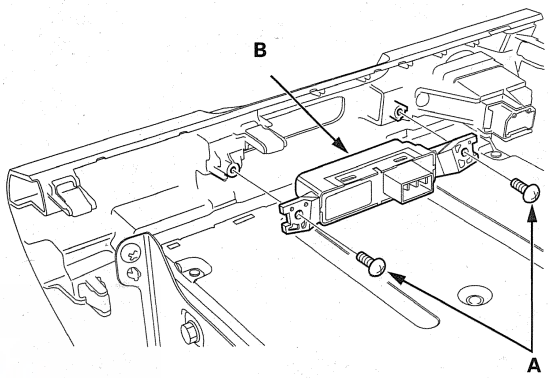


2. Connect the driver's seat position sensor 2P connector (C) on the driver's seat position sensor subharness, then install the clip (D).
3. Install the outer recline cover (see page 20-115).
4. Do the 12 volt battery terminal reconnection procedure (see page 22-87).
5. Clear any DTCs with the HDS (see page 24-24).
6. Check the operation of the driver's seat position sensor with the HDS (see page 24-30).
7. Confirm proper SRS operation: Turn the ignition switch to ON (II), and check that the SRS indicator comes on for about 6 seconds and then goes off.

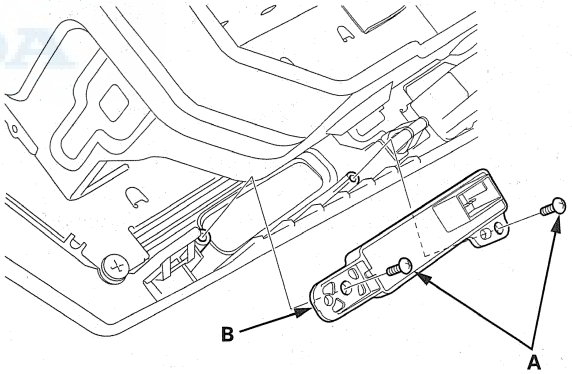
Front Passenger's Airbag Cutoff Indicator Replacement

1. Remove the audio-navigation unit (see page 23-232) (with navigation) or audio unit (see page 23-119) (without navigation).
2. Remove the two screws (A) and the front passenger's airbag cutoff indicator (B).

With navigation



Without navigation



3. Reinstall the parts in the reverse order of removal.

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