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MAINTENANCE, REPAIR AND CONSTRUCTION 99

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5 DOOR SUPPLEMENT 00

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SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box seat belt tensioners located in the front seat belt retractors.
Information necessary to safely service the SRS is included in the Accord Shop Manual.
Items marked with an asterisk (*) on the contents page include, or are located near SRS components. Servicing, disassembling or replacing these items will require special precautions and tools and should therefore be done by an authorized Honda dealer.

⚠ WARNING

- **To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed 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 and seat belt tensioners.**
- **SRS electrical wiring harnesses are indicated with yellow color. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box, front seats and around the floor. Do not use electrical test equipment on these circuits.**

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This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box and seat belt tensioners located in the seat belt retractors.
Information necessary to safely service the SRS is included this Shop Manual.
Items marked with an asterisk (*) on the contents page include, or are located near SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorized Honda dealer.

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- **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 and seat belt tensioners.**
- **All SRS electrical wiring harnesses are indicated with yellow color. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box, front seats and around the floor. Do not use electrical test equipment on these circuits.**

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Wiring Diagrams

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

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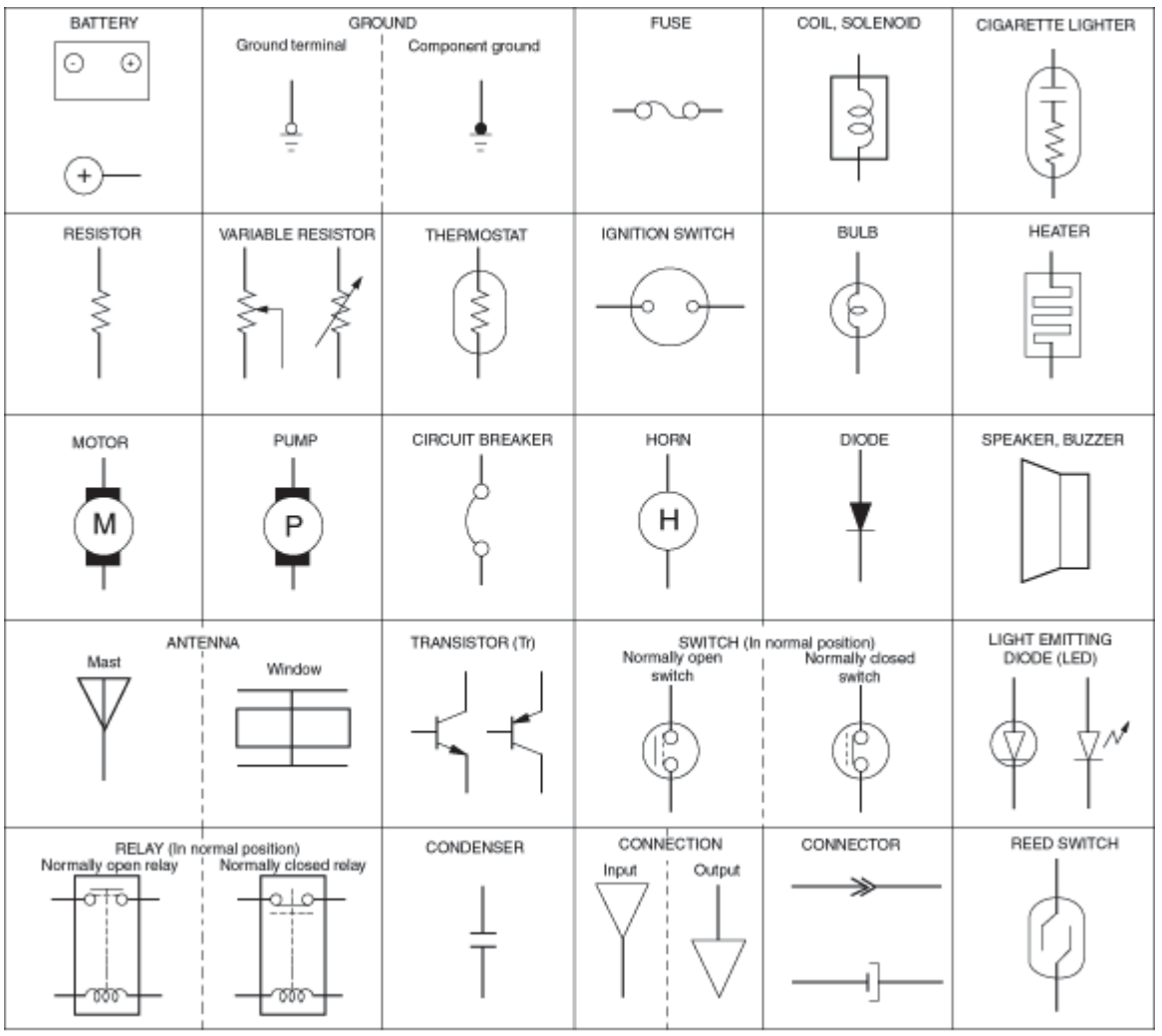
SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

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Schematic Symbols

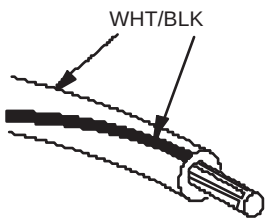


Wire Colour Codes

The following abbreviations are used to identify wire colours in the circuit schematics:

WHT	White	PNK	Pink
YEL	Yellow	BRN	Brown
BLK	Black	GRY	Grey
BLU	Blue	PUR	Purple
GRN	Green	LT BLU	Light Blue
RED	Red	LT GRN	Light Green
ORN	Orange		

The wire insulation has one colour or one colour with another colour stripe. The second colour is the stripe.



NOTE: Different wires with the same colour in the same system have been given number suffixes to distinguish them (for example, YEL^{1} and YEL^{2} are not the same).

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The symbols in the mass production body welding diagrams and in the replacement illustrations carry the following meanings:

<Mass Production Body welding Diagram>
✳ : Spot welding
▽ : MIG welding
× : 2-Plate welding
⊗ : 3-Plate welding
⊠ : 4-Plate welding
P= : Spot welding pitch
L= : MIG welding length
Unit: mm (in.)
( ): The number of spot welds

<Replacement illustration>
× : Spot welding
● : MIG welding

NOTE: The welding symbols in the illustrations don't show exact welding locations. For exact welding locations, refer to the mass production body welding diagrams.

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Cross Section of Body and Sealants

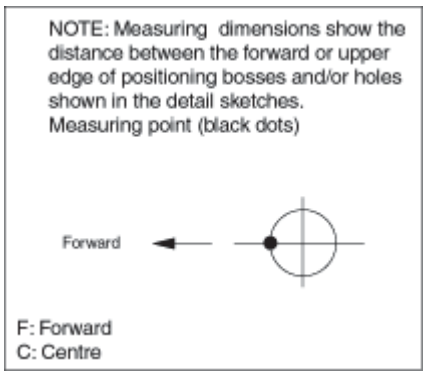
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NOTE: Seal the following areas to prevent air leaks, water leaks and rust.
▶ : Sealing locations
Spore sealer: 3M #08892 (internal)
3M #08893 (external)
Use material above or equivalents.

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NOTE: D16W5 engine has been added. For related information, refer to the D16W1, D16W2 engines information in 1999 HR-V Shop Manual (P/N, 62S2H00) and changed above items.

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NOTE: D16W5 engine has been added. For related information, refer to the D16W1, D16W2 engines information in 1999 HR-V Shop Manual (P/N, 62S2H00) and changed above items.

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Outline of Model Changes

- D16W5 engine has been added and changed the following
  - Vacuum Connections
  - Electrical Connections
  - The Knock Sensor has been added
  - Idle Speed Setting
  - Fuel Pressure Relieving/Inspection
  - Fuel Filter
  - Throttle Body
  - Fuel Injector Air Control System
- The ECM/PCM has been changed.
- The EVAP Control Canister has been changed
- The EVAP Two Way Valve has been changed

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Outline of Model Changes

- D16W5 engine has been added and changed the following
  - Vacuum Connections
  - Electrical Connections
  - The Knock Sensor has been added (KQ model)
  - Idle Speed Setting
  - Fuel Pressure Relieving/Inspection
  - Fuel Filter
  - Throttle Body

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Continuously Variable Transmission (CVT)/
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Outline of Model Changes

For KE and KG models:

- Electrical troubleshooting procedures has been changed; checking DTC procedure with OBD scan tool and HONDA PGM tester on electrical troubleshooting procedures has been adopted.
- Electrical symptom-to-component chart has been modified.

For KQ and KU models:

- S1 and S2 mode position driving system has been added on the D16W5 engine model.

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NOTE: Refer to the 1999 HR-V Shop Manual, PIN. 62S2H00, For the items not shown in this section.

Outline of Model Changes

- 5-door model has been added. Related information was entered.
- The high mount brake light has been equipped in the roof spoiler. The roof spoiler removal and installation procedures were entered.

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Outline of Model Changes

- 4-door hatchback model has been added; following information was entered.
  - Power and ground distributions have been changed.
  - Rear fog light switch on KG and KE models has been changed.
  - Headlight adjuster switch on KG and KE modes has been changed.
  - Dash lights brightness control circuit on KQ model has been changed.
  - Interior lights circuit has been changed.
  - Power windows circuit has been changed.
  - Power door locks circuit has been changed.
  - Integrated control circuit has been changed.
  - Power mirror switch location has been changed.
- No. 25, 46, 47 and 49 fuse ampere has been changed.
- Power and ground distributions have been changed.
- Hazard warning light on KG and KE models has been removed.
- A/T gear position console light has been added.
- LED type high mount brake light has been added. (FOP)
- Interior lights circuit has been changed.
- The switch light (LED) has been equipped in the power window master switch.
- Power door locks circuit has been changed.
- Integrated control circuit has been changed.
- The wire colours of power mirrors circuit has been changed.
- Audio unit with radio sub-harness on KY, KT and KQ models has been added.
- Seat heater switch on KG model has been changed.

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NOTE: Refer to the 1999 HR-V Shop Manual, P/N. 62S2H00, for the items not shown in this section.

Outline of Model Change

- 5-door model has been added. The work of the following items are different against the 3-door model.
  - Front seat belt
  - Front seat belt shoulder anchor adjuster (added)
  - Rear seat belt
  - Centre belt and seat belt buckles

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NOTE: Refer to the 1999 HR-V Shop Manual, P/N. 62S2H00, for the items not shown in this section.

Outline of Model Change

- 5-door model has been added. The work of the following items are different against the 3-door model.
  - Front seat belt
  - Front seat belt shoulder anchor adjuster (added)
  - Rear seat belt
  - Centre belt and seat belt buckles

Restraints Index

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NOTE: Refer to the 1999 HR-V Shop Manual, P/N. 62S2H00, for the items not shown in this section.

Outline of Model Change

- The installation of the front seat belt has changed.

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SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box and seat belt tensioner located in the seat belt retractors.

Information necessary to safely service the SRS is included in the HR-V Shop Manual, P/N 62S2H00. Items marked with an asterisk (*) on the contents page include, or are located near SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorized Honda dealer.

⚠ WARNING

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed 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 and seat belt tensioners.
- All SRS electrical wiring harnesses are indicated with yellow color. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box, front seats and around the floor. Do not use electrical test equipment on these circuits.

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INTRODUCTION

How to Use This Manual

This manual is divided into 24 sections. Click on the chapter you want to look at from the opening screen, this is followed by a contents list of the chapter, click on the page you require 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.

Special Information

WARNING **: Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.**

CAUTION **: Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

NOTICE **: The purpose of these messages is intended to help prevent damage to the vehicle, other property, or the environment.**

NOTE **: Gives helpful information.**

⚠ CAUTION

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause PERSONAL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings and cautions cannot cover all conceivable ways in which service, whether or not recommend by HONDA, might be done, or of the possible hazardous consequences of each conceivable way, nor could HONDA investigate all such ways. Anyone using service procedures or tools, whether or not recommended by HONDA, must satisfy themselves thoroughly that neither personal safety nor vehicle safety will be jeopardized.

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

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box and seat belt tensioner located in the seat belt retractors.
Information necessary to safely service the SRS is included in this Shop Manual.
Items marked with an asterisk (*) on the contents page include, or are located near SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorized Honda dealer.

⚠ WARNING

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed 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 and seat belt tensioners.
- All SRS electrical wiring harnesses are indicated with yellow color. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box, front seats and around the floor. Do not use electrical test equipment on these circuits.

General Info
Specifications
Maintenance
Engine Electrical
Engine
Cooling
Fuel & Emmissions
* Transaxle
* Steering
Suspension
* Brakes (including ABS)
* Body
***Heating & Air Conditioning**
* Body Electrical
* Restraints

INTRODUCTION

How to Use This Manual

This manual covers the repair of a 1999 HR-V that has been involved in an accident, and it describes the work related to the replacement of damaged body parts.
Please read through these instructions and familiarize yourself with them before actually using this manual.
NOTE: Refer to the 1999 HR-V Shop Manual, P/N 62S2H00, for specifications, wire harness locations, safety stand support points etc.

Special Information

⚠WARNING **: Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.**

⚠CAUTION **: Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

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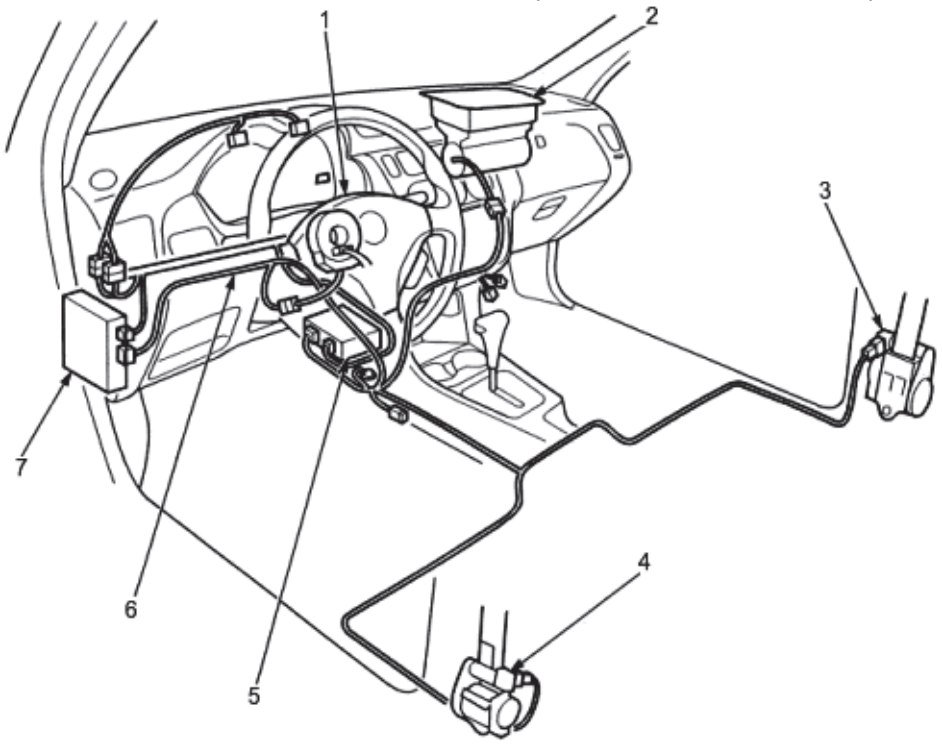
Service Precautions

Supplemental Restraint System (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box and seat belt tensioners located in the seat belt retractors. The SRS (Type III) unit is not part of the airbag assembly and has built-in sensors.
NOTE: The following precautions should be observed when performing sheet metal work, paint work and repair work around the locations of the SRS components.

1. The SRS unit (including safe sensor and impact sensor) is located under the dashboard. Avoid any strong impact with a hammer or other tools when repairing the front side frame and the lower part of the dashboard. Do not apply heat to these areas with a torch, etc.
2. Take extra care when painting or doing body work in the area below the centre pillar. Avoid direct exposure of the seat belt retractor with tensioners to heat guns, welding, or spraying equipment.
3. All SRS electrical wiring harnesses are located under the lowest part of the dashboard below the dashboard panel. (All SRS electrical wiring harnesses are indicated by yellow colour coding.) Care should be taken not to damage the harness when repairing this area.
4. Do not apply heat of more than 100°C (212°F) when drying painted surfaces anywhere around the locations of SRS components.
5. If strong impact or high temperature needs to be applied tot he areas around the locations of SRS components, remove the components before performing the repair work.
6. If any of the SRS related components are damaged or deformed, be sure to replace them.

NOTE: Refer to Restraints section of the Shop Manual for removal and replacement of SRS related components.



1. **DRIVER'S AIRBAG ASSEMBLY**
2. **FRONT PASSENGER'S AIRBAG ASSEMBLY**
3. **FRONT PASSENGER'S SEAT BELT RETRACTOR (With tensioner)**
4. **DRIVER'S SEAT BELT RETRACTOR (With tensioner)**
5. **SRS UNIT (With built-in sensor)**
6. **SRS MAIN HARNESS (Indicated by yellow colour coding)**
7. **UNDER-DASH FUSE/RELAY BOX**

General Safety Precautions

Before beginning work:

- Disconnect the battery to reduce the possibility of fire caused by electrical shorts.
- Check for fuel leaks and repair as necessary.
- Remove the fuel tank and/or fuel lines if welding equipment is to be used near the fuel system.
- Before welding, sanding or cutting, protect carpets and seats with fire-proof covers.

Use standard safety equipment when spraying paint, welding, cutting, sanding or grinding. Standard safety equipment includes:
Respirator and filter masks - Designed to filter out toxic fumes, mist, dust or other airborne particles. Use a respirator of filter mask designed to protect you from the hazards of the particular job; some respirators, for example, are designed to filter out only dust and airborne particles not toxic fumes.
Safety goggles or glasses - Designed to protect your eyes from projectiles, dust particles or splashing liquid.
Gloves - Rubber gloves protect against corrosive chemicals. Welding gloves protect against burns and abrasions caused by welding, sanding or grinding.
Safety shoes - Non-slip soles protect against slipping. Metal tow inserts protect against falling objects.
Ear plugs - Protect eardrums from harmful noise levels.
During work:

- Do not smoke while working near the fuel system.
- Deposit gas or solvent-soaked shop towels in an approved container.
- Always attach a safety cable when using a hydraulic ram or a frame straightening table; do not stand in direct line with the chains used on such equipment.
- Follow standard safety practices when using toxic or flammable liquids.

INTRODUCTION

How to Use This Manual

This supplement contains information for the 2000 HONDA HR-V. Refer to following shop manual for service procedures and data not included in this supplement.

Description	Code No.
HONDA HR-V MAINTENANCE, REPAIR and CONSTRUCTION 99	62S2H00

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.

Special Information

WARNING **: Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.**

CAUTION **: Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

NOTICE **: The purpose of these messages is intended to help prevent damage to the vehicle, other property, or the environment.**

NOTE: Gives helpful information.

⚠ CAUTION

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual contains warnings and cautions against some specific service methods which could cause PERSONAL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommend by HONDA, might be done, or of the possible hazardous consequences of every conceivable way, nor could HONDA investigate all such ways. Anyone using service procedures or tools, whether or not recommended by HONDA, must satisfy themselves thoroughly that neither personal safety nor vehicle safety will be jeopardized.

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Greyed out sections are not included in this manual.

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General Info
Specifications
Maintenance
Engine Electrical
Engine
Cooling
Fuel & Emissions
* Transaxle
* Steering
Suspension
* Brakes **(including ABS)**
* Body
***Heating & Air Conditioning**
* Body Electrical
* Restraints

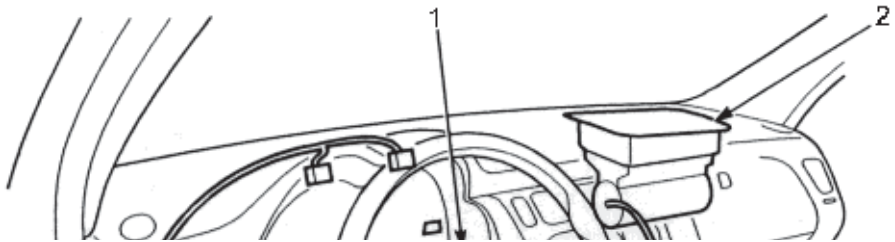
As sections with * include SRS components; special precautions are required when servicing.

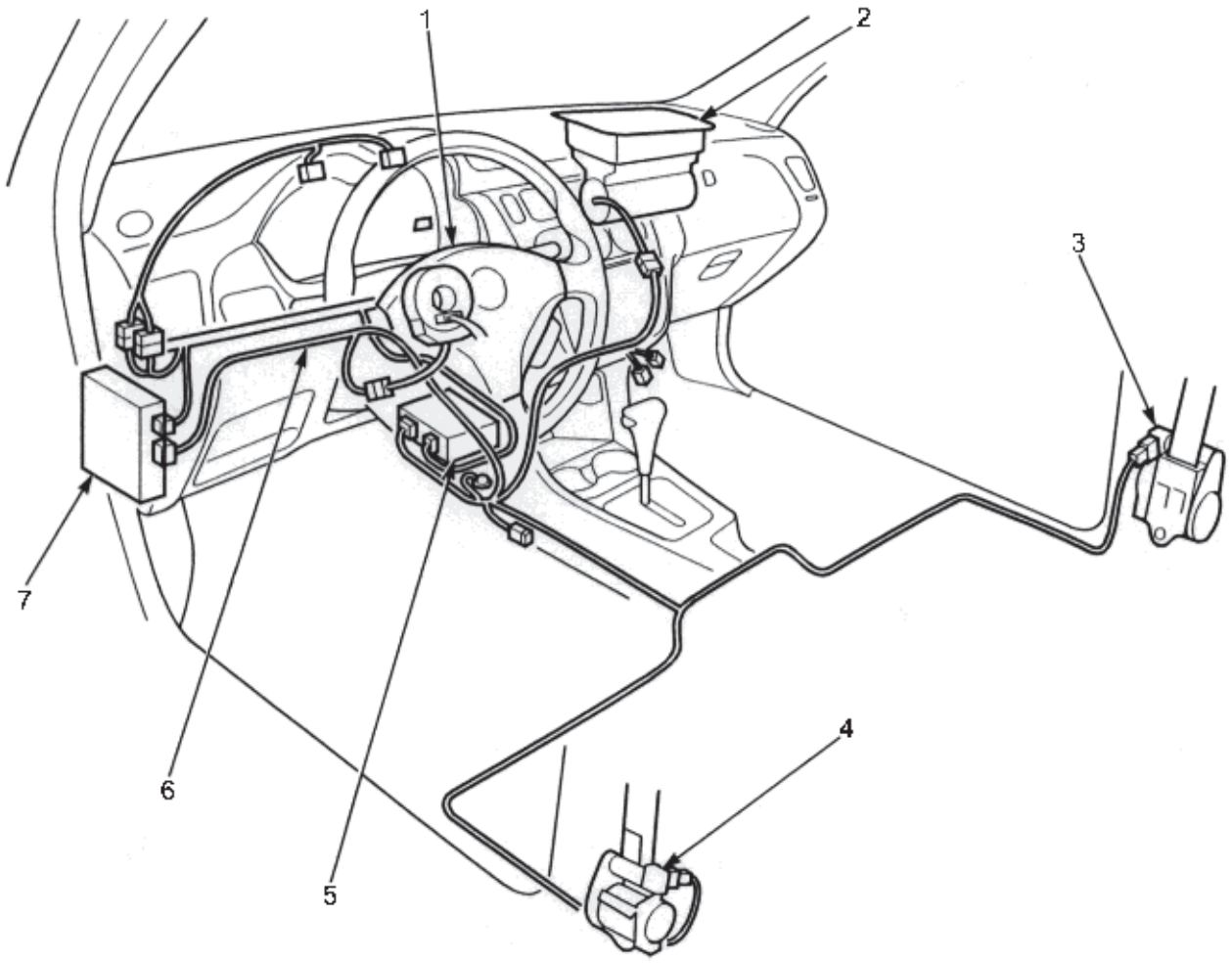
SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and a passenger's airbag located in the dashboard above the glove box and seat belt tensioners located in the seat belt retractors.
Information necessary to safely service the SRS is included in the Shop Manual, P/N 62S2H00.
Items marked with an asterisk (*) on the contents page include, or are located near, SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorised Honda dealer.

⚠ WARNING

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed by an authorised 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 and seat belt tensioners.
- SRS electrical wiring harnesses are indicated by yellow colour coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box. Do not use electrical test equipment on these circuits.





1. DRIVER'S AIRBAG ASSEMBLY
2. FRONT PASSENGER'S AIRBAG ASSEMBLY
3. FRONT PASSENGER'S SEAT BELT RETRACTOR (With tensioner)
4. DRIVER'S SEAT BELT RETRACTOR (With tensioner)
5. SRS UNIT (With built- in sensor)
6. SRS MAIN HARNESS (Indicated by yellow color coding)
7. UNDER- DASH FUSE/RELAY BOX

ITEM	DESCRIPTION	00 MODEL	REFERENCE SECTION
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Fuel and Emission	For KE and KG models: ♦ D16W5 engine has been added and changed the following: - Vacuum Connections - Electrical Connections - The knock Sensor has been added - Idle Speed Setting - Fuel Pressure Relieving/Inspection - Fuel Filter - Throttle Body - Fuel Injector Air Control System ♦ The ECM/PCM has been changed ♦ The EVAP control canister has been changed ♦ The EVAP Two Way valve has been changed For KQ and KU models: ♦ D16W5 engine has been added and changed the following: - Vacuum Connections - Electrical Connections - The knock Sensor has been added - Idle Speed Setting - Fuel Pressure Relieving/Inspection - Fuel Filter - Throttle Body	O	11
Automatic Transmission	For KE and KG models: ♦ Electrical troubleshooting procedures changed ♦ Electrical system symptom-to-component chart modified For KQ and KU models: ♦ S1 and S2 mode position driving system added	O	14
Body	♦ 5-door model added ♦ Roof spoiler with a built-in high mount brake light adopted	O	20
Body Electrical	♦ Some electrical circuits changed ♦ Power window master switch with light (LED) adopted ♦ A/T gear position console light added ♦ LED type high mount brake light added available as an option For KE and KG models: ♦ Rear fog light switch and headlight adjuster switch changed ♦ Hazard warning light removed For KG model: Seat heater switch changed	O	23
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INTRODUCTION

How to Use This Manual

This manual covers the repair of a 2000 HR-V that has been involved in an accident, and it describes the work related to the replacement of damaged body parts.
Please read through these instructions and familiarize yourself with them before actually using this manual.
NOTE: Refer to the 1999 HR-V Shop Manual, P/N 62S2H30, 1999 HR-V Shop Manual, P/N 62S2H00 and 2000 HR-V Shop Manual Supplement, P/N 62S2H20, for specifications, wire harness locations, safety stand support points etc.

Special Information

WARNING **: Indicates a strong possibility of severe personal injury or death if instructions are not followed.**

CAUTION **: Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

NOTE: Gives helpful information.

⚠ CAUTION

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause PERSONAL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings and cautions cannot cover all conceivable ways in which service, whether or not recommend by HONDA, might be done, or of the possible hazardous consequences of each conceivable way, nor could HONDA investigate all such ways. Anyone using service procedures or tools, whether or not recommended by HONDA, must satisfy themselves thoroughly that neither personal safety nor vehicle safety will be jeopardized.

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 any time without notice. No part of this publication may be reproduced, stored in 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, figures and tables.

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Service Publication Office

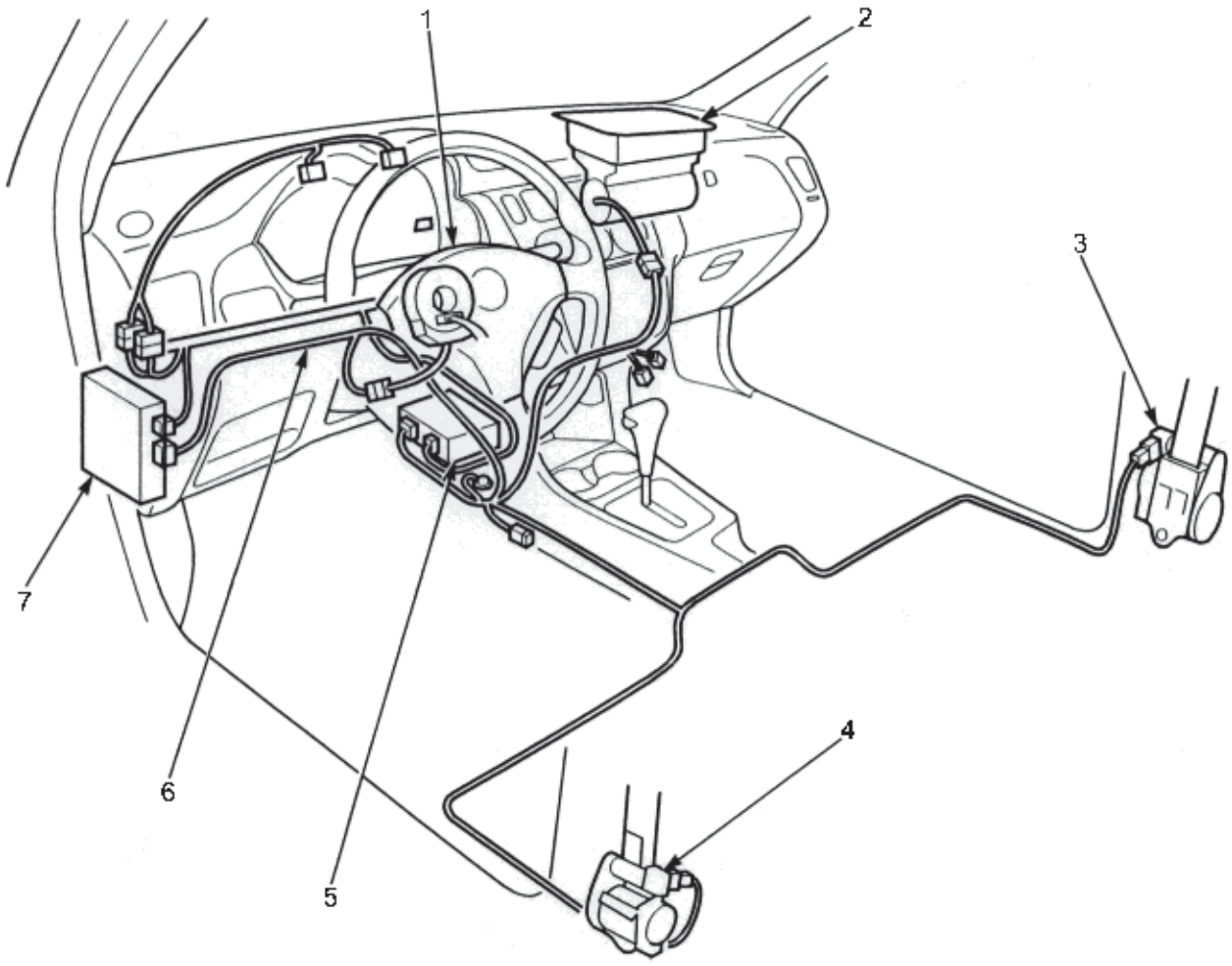
Service Precautions

Supplemental Restraint System (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and some types include a passenger's airbag located in the dashboard above the glove box and seat belt tensioners located in the seat belt retractors. The SRS (Type III) unit is not part of the airbag assembly and has built-in sensors.
NOTE: The following precautions should be observed when performing sheet metal work, paint work and repair work around the locations of the SRS components.

1. The SRS unit (including safing sensor and impact sensor) is located under the dashboard. Avoid any strong impact with a hammer or other tools when repairing the front side frame and the lower part of the dashboard. Do not apply heat to these areas with a torch, etc.
2. Take extra care when painting or doing body work in the area below the centre pillar. Avoid direct exposure of the seat belt retractor with tensioners to heat guns, welding, or spraying equipment.
3. All SRS electrical wiring harnesses are located under the lowest part of the dashboard below the dashboard panel. (All SRS electrical wiring harnesses are indicated by yellow colour coding.) Care should be taken not to damage the harness when repairing this area.
4. Do not apply heat of more than 100°C (212°F) when drying painted surfaces anywhere around the locations of SRS components.
5. If strong impact or high temperature needs to be applied tot he areas around the locations of SRS components, remove the components before performing the repair work.
6. If any of the SRS related components are damaged or deformed, be sure to replace them.

NOTE: Refer to Restraints section of the Shop Manual for removal and replacement of SRS related components.



1. **DRIVER'S AIRBAG ASSEMBLY**
2. **FRONT PASSENGER'S AIRBAG ASSEMBLY**
3. **FRONT PASSENGER'S SEAT BELT RETRACTOR**
   (With tensioner)
4. **DRIVER'S SEAT BELT RETRACTOR**
   (With tensioner)
5. **SRS UNIT**
   (With built-in sensor)
6. **SRS MAIN HARNESS**
   (Indicated by yellow colour coding)
7. **UNDER-DASH FUSE/RELAY BOX**

General Safety Precautions

Before beginning work:

- Disconnect the battery to reduce the possibility of fire caused by electrical shorts.
- Check for fuel leaks and repair as necessary.
- Remove the fuel tank and/or fuel lines if welding equipment is to be used near the fuel system.
- Before welding, sanding or cutting, protect carpets and seats with fire-proof covers.

Use standard safety equipment when spraying paint, welding, cutting, sanding or grinding. Standard safety equipment includes:

Respirator and filter masks - Designed to filter out toxic fumes, mist, dust or other airborne particles. Use a respirator of filter mask designed to protect you from the hazards of the particular job; some respirators, for example, are designed to filter out only dust and airborne particles not toxic fumes.

Safety goggles or glasses - Designed to protect your eyes from projectiles, dust particles or splashing liquid.

Gloves - Rubber gloves protect against corrosive chemicals. Welding gloves protect against burns and abrasions caused by welding, sanding or grinding.

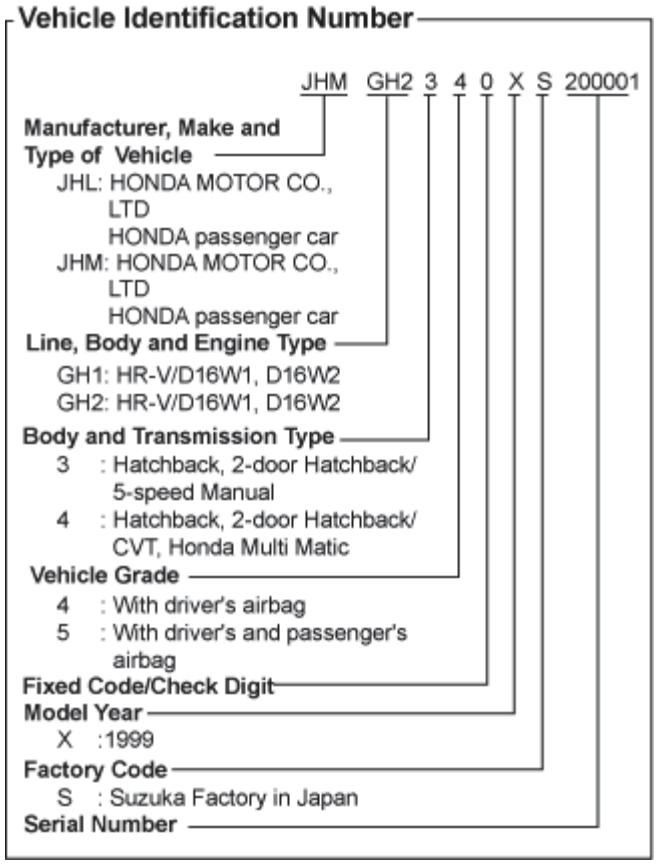
Safety shoes - Non-slip soles protect against slipping. Metal tow inserts protect against falling objects.

Ear plugs - Protect eardrums from harmful noise levels.

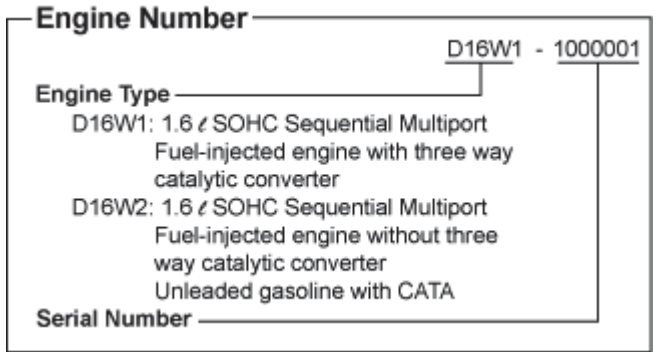
During work:

- Do not smoke while working near the fuel system.
- Deposit gas or solvent-soaked shop towels in an approved container.
- Always attach a safety cable when using a hydraulic ram or a frame straightening table; do not stand in direct line with the chains used on such equipment.
- Follow standard safety practices when using toxic or flammable liquids.

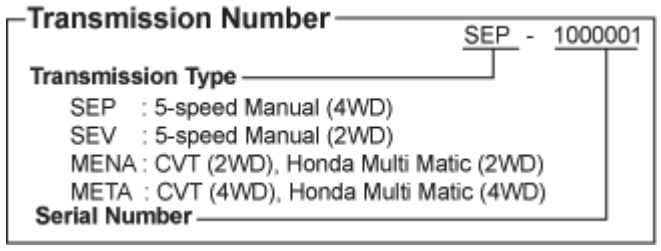
Vehicle Identification Number



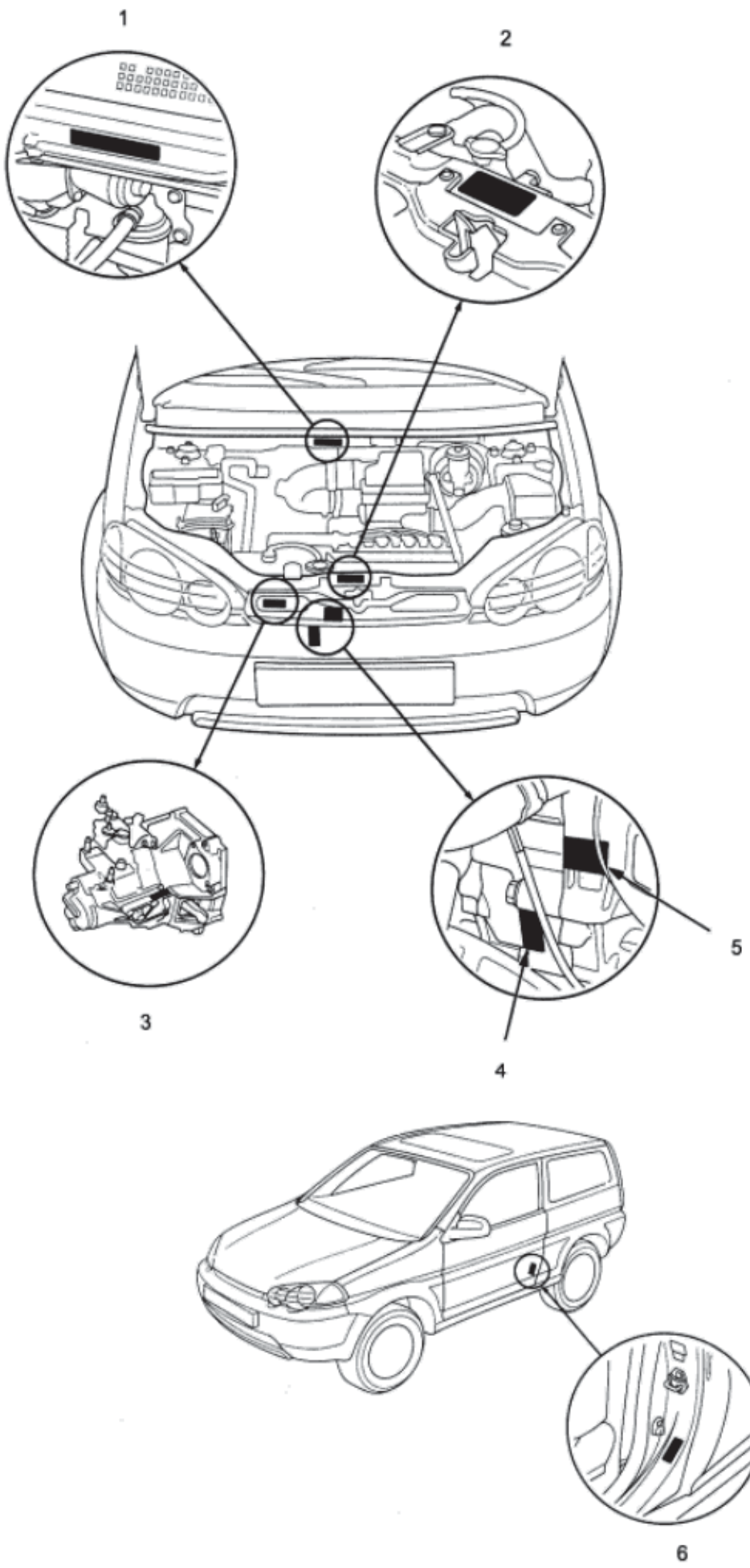
Engine Number



Transmission Number

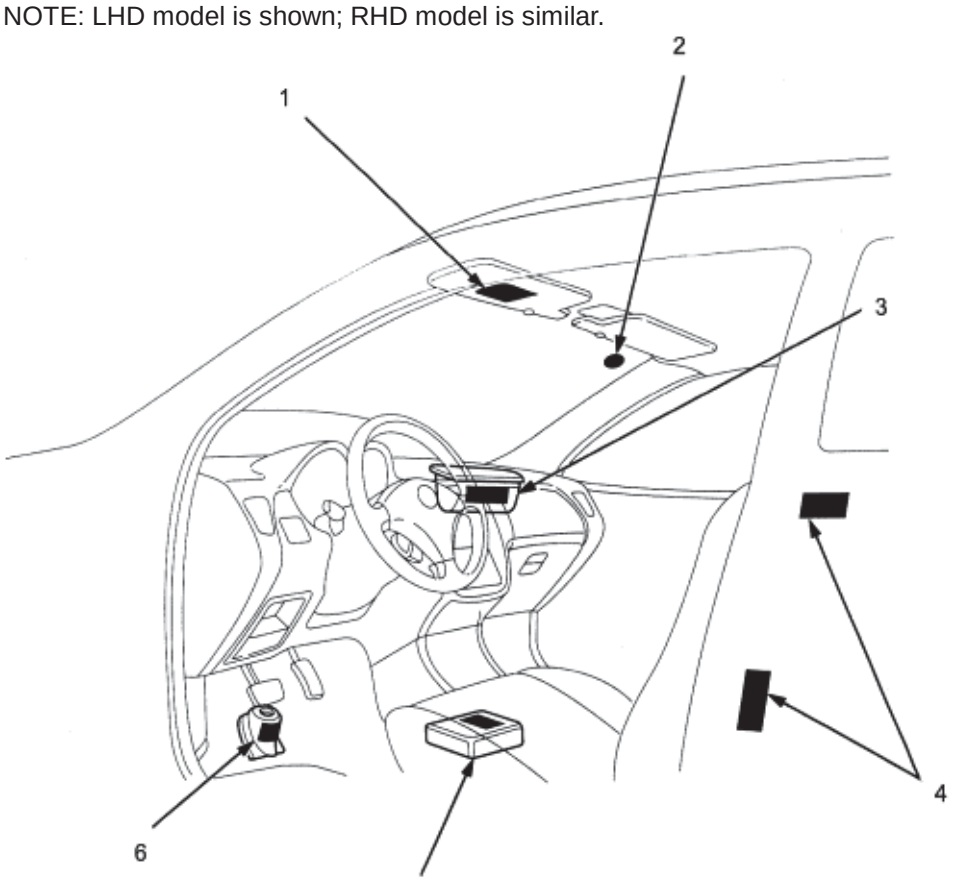


APPLICABLE AREA CODE	DRIVE-TRAIN	TRANSMISSION TYPE	VEHICLE IDENTIFICATION NUMBER	ENGINE NUMBER	TRANSMISSION NUMBER
KG	4WD	5MT	JHMGH2340XS200001~	D16W1-1000001~	SEP-1000001~
KG	4WD	CVT	JHMGH2440XS200001~	D16W1-1000001~	META-1000001~
KG	4WD	5MT	JHMGH2350XS200001~	D16W1-1000001~	SEP-1000001~
KG	4WD	CVT	JHMGH2450XS200001~	D16W1-1000001~	META-1000001~
KG	2WD	5MT	JHMGH1340XS200001~	D16W1-1000001~	SEV-1000001~
KG	2WD	CVT	JHMGH1440XS200001~	D16W1-1000001~	MENA-1000001~
KG	2WD	5MT	JHMGH1350XS200001~	D16W1-1000001~	SEV-1000001~
KG	2WD	CVT	JHMGH1450XS200001~	D16W1-1000001~	MENA-1000001~
KE	4WD	5MT	JHMGH2350XS200001~	D16W1-1000001~	SEP-1000001~
KE	4WD	CVT	JHMGH2450XS200001~	D16W1-1000001~	META-1000001~
KE	2WD	5MT	JHMGH1350XS200001~	D16W1-1000001~	SEV-1000001~
KE	2WD	CVT	JHMGH1450XS200001~	D16W1-1000001~	MENA-1000001~
KN	4WD	5MT	JHLGH2350XS200001~	D16W1-1000001~	SEP-1000001~
KN	2WD	5MT	JHMGH1350XS200001~	D16W1-1000001~	SEV-1000001~
KQ	4WD	5MT	JHLGH2350XS200001~	D16W1-1000001~	SEP-1000001~
KQ	4WD	CVT	JHLGH2450XS200001~	D16W1-1000001~	META-1000001~
KQ	2WD	5MT	JHMGH1350XS200001~	D16W1-1000001~	SEV-1000001~
KQ	2WD	CVT	JHMGH1450XS200001~	D16W1-1000001~	MENA-1000001~
KU	4WD	5MT	JHLGH2350XS200001~	D16W1-1000001~	SEP-1000001~
KU	4WD	Multi Matic	JHLGH2450XS200001~	D16W1-1000001~	META-1000001~
KU	2WD	5MT	JHMGH1350XS200001~	D16W1-1000001~	SEV-1000001~
KU	2WD	Multi Matic	JHMGH1450XS200001~	D16W1-1000001~	MENA-1000001~
KT	4WD	5MT	JHLGH2350XS200001~	D16W2-1000001~	SEP-1000001~
KT	2WD	5MT	JHMGH1350XS200001~	D16W2-1000001~	SEV-1000001~
KY	4WD	5MT	JHLGH2350XS400001~	D16W2-1000001~	SEP-1000001~

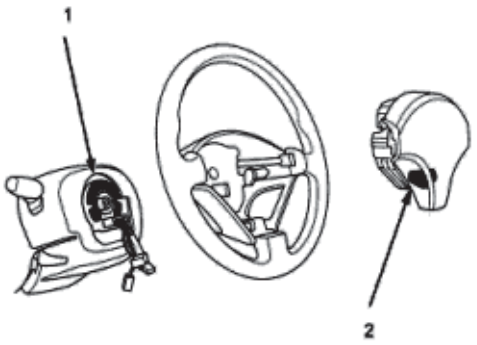


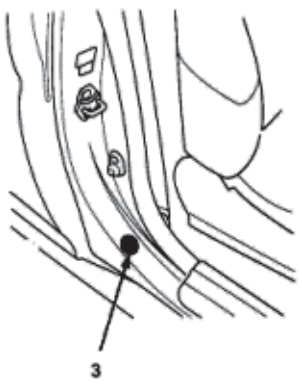
1. **VEHICLE IDENTIFICATION NUMBER**
2. **CERTIFICATION PLATE (KG, KE, KN, KQ, KU, KT)**
3. **TRANSMISSION NUMBER (MANUAL)**
4. **TRANSMISSION NUMBER (CVT/MULTI MATIC)**
5. **ENGINE NUMBER**
6. **CERTIFICATION PLATE (KY)**

NOTE: LHD model is shown; RHD model is similar.

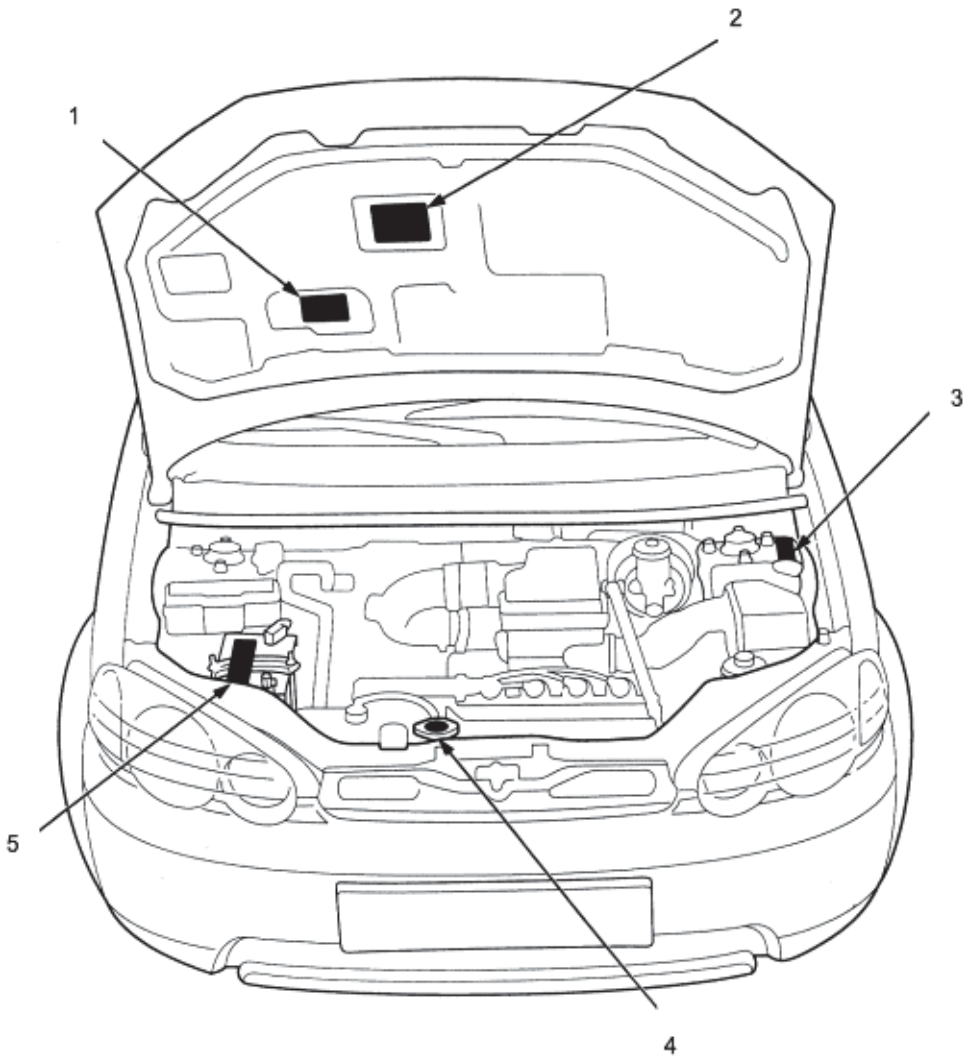


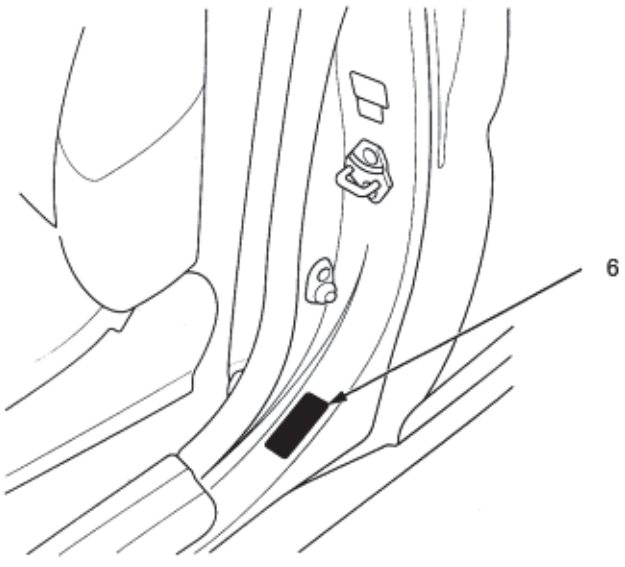
1. **DRIVER SRS AIRBAG INFORMATION**
2. **FRONT SEAT PASSENGER AIRBAG CHILD SEAT CAUTION**
3. **FRONT SEAT PASSENGER AIRBAG MODULE DANGER/WARNING**
4. **FRONT SEATBELT TENSIONER DANGER/WARNING**
5. **MONITOR NOTICE**
6. **STEERING COLUMN NOTICE**





1. **CABLE REEL CAUTION**
2. **DRIVER AIRBAG MODULE DANGER/WARNING**
3. **FRONT SEAT PASSENGER AIRBAG CHILD SEAT DANGER (LOCATED ON PASSENGER SIDE DOORJAMB)**
   NOTE: LHD model is shown, RHD model is symmetrical

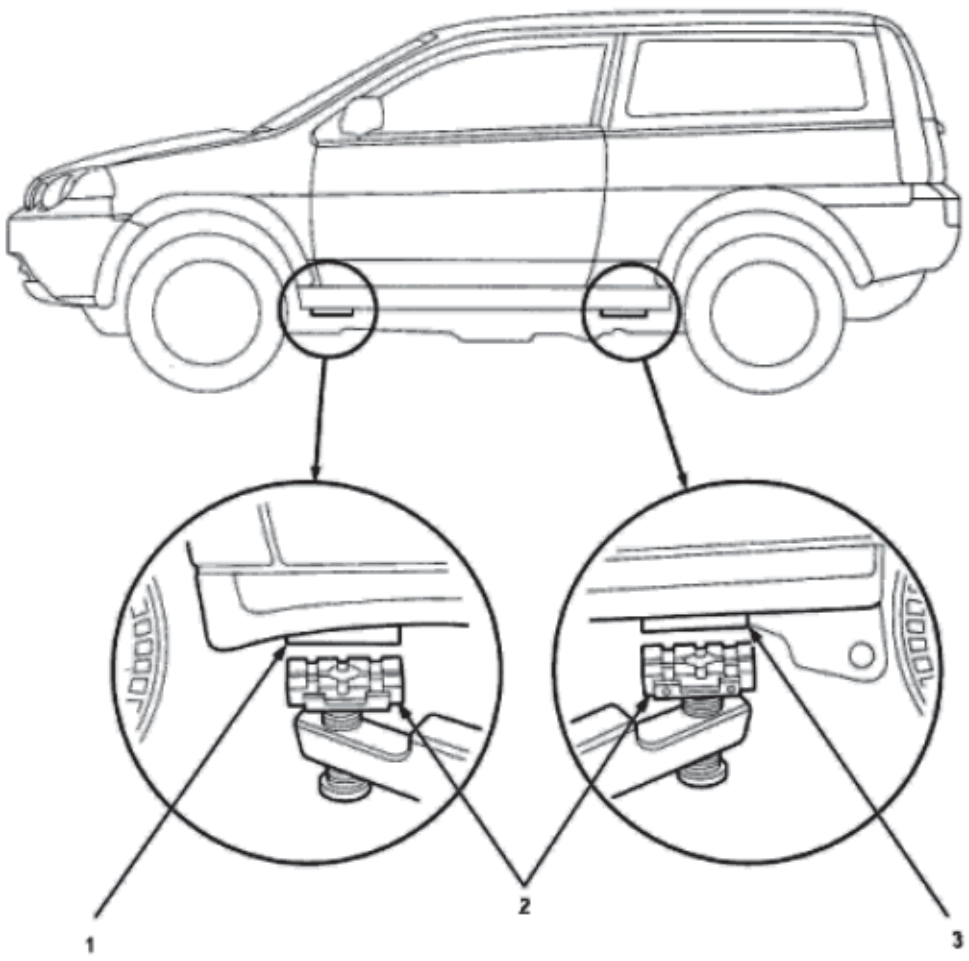




1. **SRS AIRBAG WARNING**
2. **COOLANT INFORMATION (KN, KT, KU, KY)**
   SERVICE INFORMATION (KQ)
3. **AIR CONDITIONING INFORMATION**
4. **RADIATOR CAP CAUTION**
5. **BATTERY CAUTION**
6. **TYRE INFORMATION**
   (LOCATED ON DRIVER SIDE DOORJAMB)
   NOTE: LHD model is shown, RHD model is symmetrical

1. Place the lift blocks as shown.
2. Raise the hoist a few inches (centimeters), and rock the vehicle to be sure it is firmly supported.
3. Raise the hoist to full height, and inspect the lift points for solid support.

NOTE: Use the same support points to support the vehicle on safety stands.



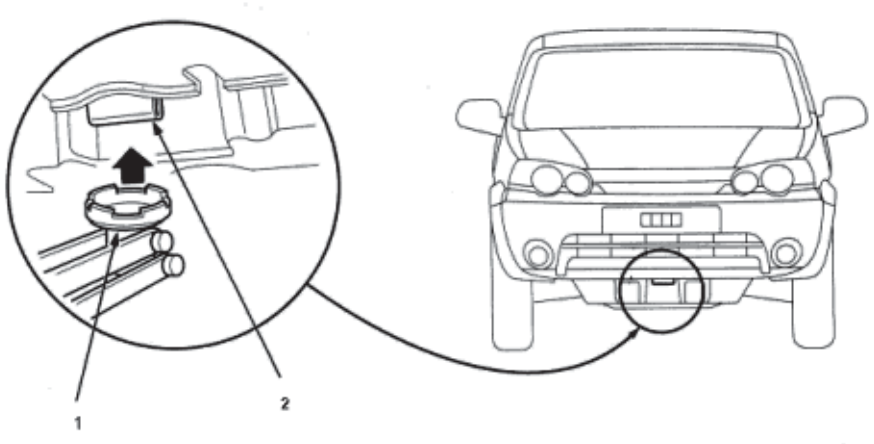
1. **FRONT SUPPORT POINT**
2. **LIFT BLOCKS**
3. **REAR SUPPORT POINT**

1. Set the parking brake and block the wheels that are not being lifted.
2. When lifting the rear of the vehicle, put the gearshift lever in reverse (CVT/Honda Multi Matic in [P] position).
3. Raise the vehicle high enough to insert the safety stands.
4. Adjust and place the safety stands so the vehicle will be approximately level, then lower the vehicle onto them.

⚠ WARNING

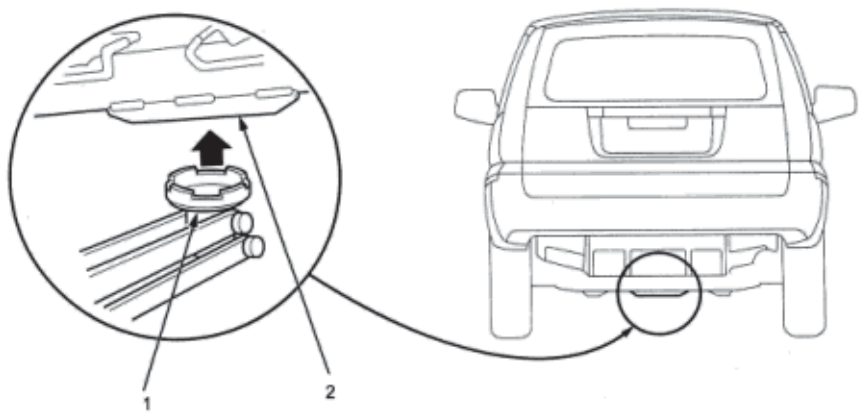
- Always use safety stands when working on or under any vehicle that is supported by only a jack.
- Never attempt to use a bumper jack for lifting or supporting the vehicle.

Front:



1. **JACK LIFT PLATFORM**
2. **CENTRE THE JACK BRACKET IN THE MIDDLE OF THE JACK LIFT PLATFORM**

Rear:



1. **JACK LIFT PLATFORM**
2. **CENTRE THE JACK BRACKET IN THE MIDDLE OF THE JACK LIFT PLATFORM**

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 Equipment

The operator loads the vehicle on the back of a truck. This is the best way of transporting the vehicle.

Wheel Lift Equipment

The tow truck uses two pivoting arms that go under the tyres (front or rear) and lifts them off the ground. The other two wheels remain on the ground.

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.

If the 2WD HR-V cannot be transported by the flat-bed, it should be towed with the front wheels off the ground. If due to damage, the vehicle must be towed with the front wheels on the ground, do the following.

- Release the parking brake.
- Shift the transmission to Neutral [N] position.

The only recommended way of towing the 4WD HR-V is on a flat-bed truck. It may also be towed with all four wheels on the ground.

NOTICE

Towing the 4WD HR-V with only two wheels on the ground can damage parts of the 4WD system. If this vehicle is damaged and cannot be towed with all four wheels on the ground, it should be towed on a flat-bed truck.

If the 4WD HR-V is towed with all four wheels on the ground, do the following:

- Release the parking brake.
- Shift the transmission to Neutral [N] position.

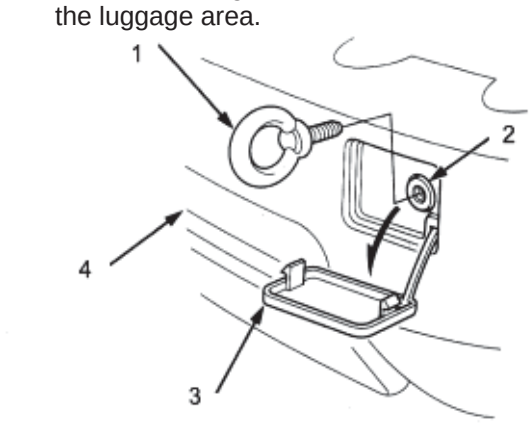
⚠ CAUTION

- Improper towing preparation will damage the transmission. Follow the above procedure exactly. If you cannot shift the transmission or start the engine (automatic transmission), the vehicle must be transported on a flat-bed.
- It is best to tow the vehicle no farther than 50 miles (80 km), and keep the speed below 35 mph (55 km/h).
- 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.

Towing Hook and Tie Down Bracket Locations:

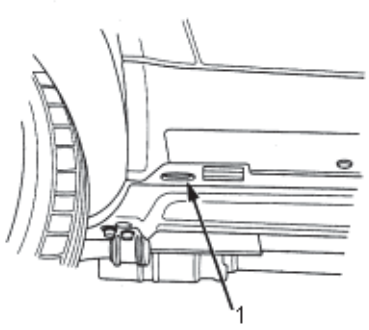
Towing Hook:

- Remove the cover from the front bumper.
- Install the front towing hook securely into the bolt hole.
  The front towing hook is located in the tool kit in the luggage area.



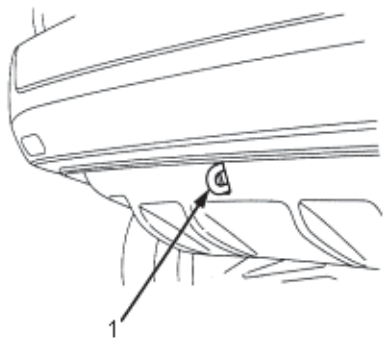
1. FRONT TOWING HOOK
2. BOLT HOLE
3. FRONT BUMPER
4. COVER

Front Tie Down Bracket Hole:



1. FRONT TIE DOWN BRACKET HOLE

Rear Tie Down Bracket:



1. REAR TIE DOWN BRACKET

This 4WD model does not have the feature that mechanically switches between 4WD and 2WD (front-wheel drive). Therefore, speedometer testing should be conducted using simplified free rollers under the rear wheels.

Precautions on using free rollers:

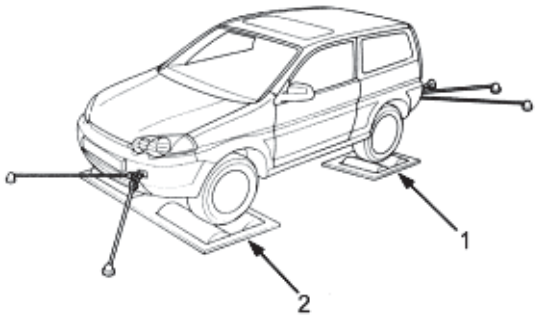
- **Inspecting and testing using a chassis dynamometer is not feasible.**
- **Do not operate the accelerator pedal, brake pedal or steering wheel abruptly. It may cause the vehicle to roll and create a hazardous condition.**
- **The maximum testing speed should be 50 km/h (31 mph).**
- **The maximum continuous operating time should be three minutes.**
- **Make sure to tie down the vehicle securely with the side anchor wires and centre tie down wire. The free rollers are to be set under the rear wheels.**

⚠ CAUTION

- Make sure to place the free rollers parallel to the roller of each speedometer tester.
- Putting the front and rear wheels on the speedometer testers and free rollers or over the free rollers and create a hazardous condition.
- The side anchor wires and centre tie-down wire must be approximately tensioned. If the wires have too much slack, the expected tie-down efficiency cannot be obtained.
- When attaching the side anchor wires and centre tie-down wire, make sure they are not interfering with the bumper and other parts of the vehicle body.
- Do not attach the wires to any place other than the designed areas.
- Do not operate the speedometer testers at a speed more than 50 km/h (31 mph) or for more than three minutes.

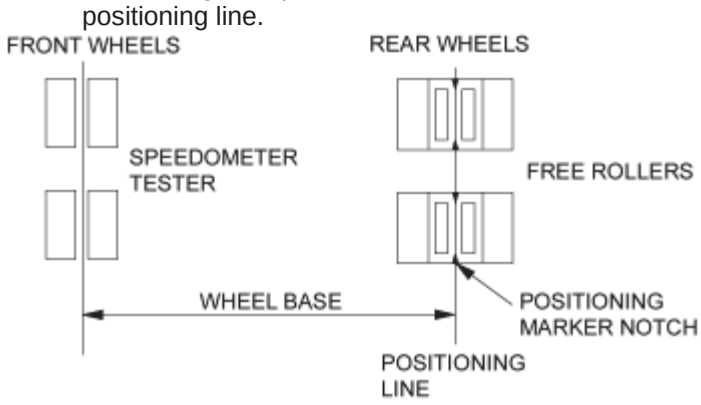
Testing Procedures

1. Set the free rollers according to the wheel base and tread of the vehicle.

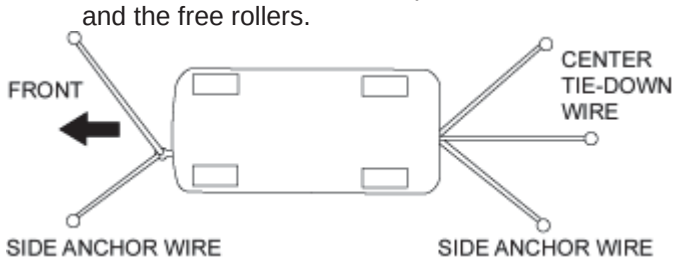


1. FREE ROLLER
2. SPEEDOMETER TESTER

NOTE: Align the position marker notch to the positioning line.



2. Move the vehicle to position the front wheels on the speedometer testers and the rear wheels on the free rollers. Make sure to align the centre of the wheels to the centre of the speedometer testers and the free rollers.



3. Tie down the vehicle securely using the towing hook and the rear tie-down hook bracket to prevent the vehicle from rolling off or over the free rollers.
4. Start the engine, shift the transmission to 3rd gear (manual transmission) and or to D4 position (CVT/Honda Multi Matic), accelerate the vehicle gradually, and measure the vehicle speed.
5. After measurement, use the brake pedal to gradually decelerate and stop the vehicle.

⚠ CAUTION

Observe all safety precautions and notes while working.

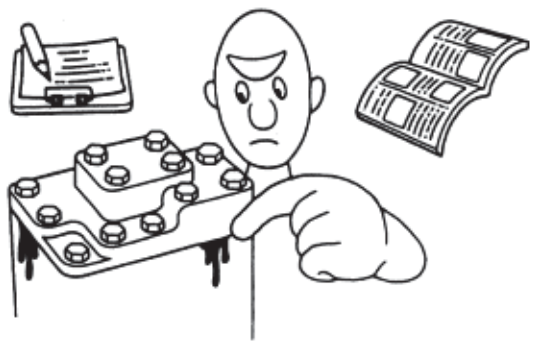
- Protect all painted surfaces and seats against dirt and scratches with a clean cloth or vinyl cover.



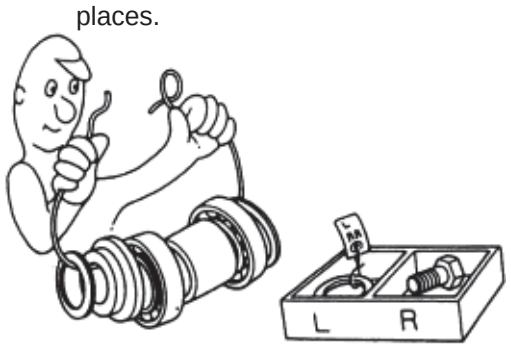
- Work safely and give your work your undivided attention. When either the front or rear wheels are to be raised, block the remaining wheels securely. Communicate as frequently as possible when work involves two or more workers. Do not run the engine unless the shop or working area is well ventilated.



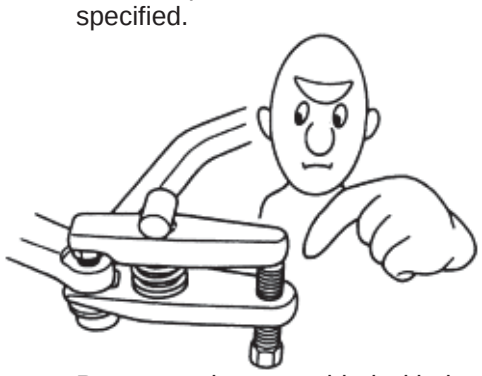
- Before removing or disassembling parts, they must be inspected carefully to isolate the cause for which service is necessary. Observe all safety notes and precautions and follow the proper procedures as described in this manual.



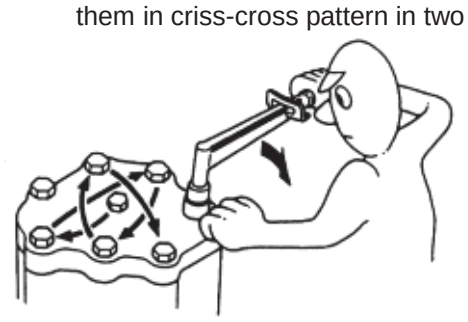
- Mark or place all removed parts in order in a parts rack so they can be reassembled in their original places.



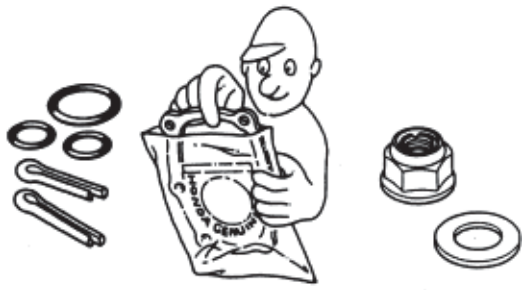
- Use the special tool when use of such a tool is specified.



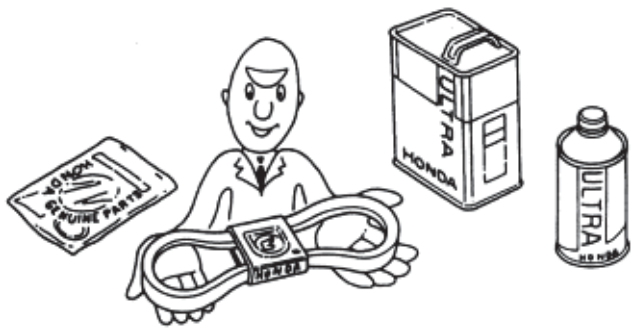
- Parts must be assembled with the proper torque according to the maintenance standards established.
- When tightening a series of bolts or nuts, begin with the centre or large diameter bolts and tighten them in criss-cross pattern in two or more steps.



- Use new packing, gaskets, O-rings and cotter pins whenever reassembling.
- Do not reuse parts that are required to be replaced. Always replace them.



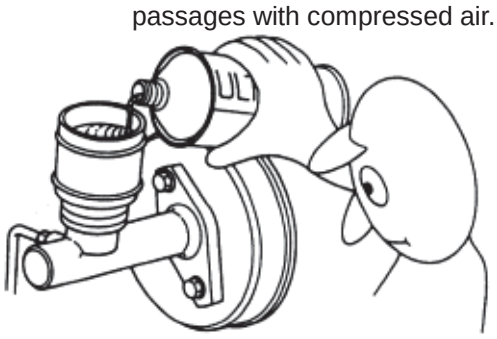
- Use genuine HONDA parts and lubricants or those equivalent. When parts are to be reused, they must be inspected carefully to make sure they are not damaged or deteriorated and are in good usable condition.



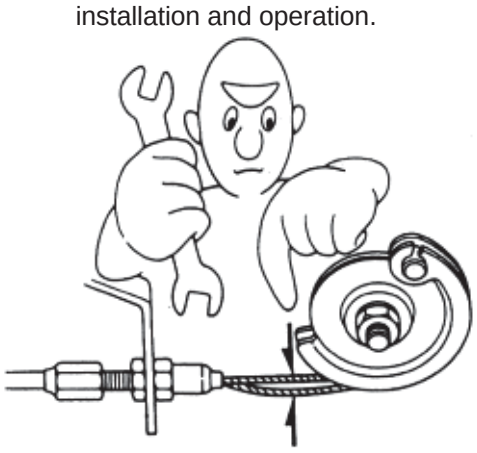
- Coat or fill parts with specified grease as specified (page 3-2). Clean all removed parts with solvent upon disassembly.



- Brake fluid and hydraulic components
  - When replenishing the system, use extreme care to prevent dust and dirt from entering the system.
  - Do not mix different brands of fluid as they may not be compatible
  - Do not reuse drained brake fluid.
  - Because brake fluid can cause damage to painted and resin surfaces, care should be taken not to spill it on such surfaces. If spilled accidentally, quickly rinse it off with water or warm water from all painted or resin surfaces.
  - After disconnecting brake hoses or pipes, be sure to plug the openings to prevent loss of brake fluid.
  - Clean all disassembled parts only in clean BRAKE FLUID. Blow open all holes and passages with compressed air.



  - Keep disassembled parts away from air-borne dust and abrasives.
  - Check that parts are clean before assembly.
- Avoid oil or grease getting on rubber parts and tubes, unless specified.
- Upon assembling, check every part for proper installation and operation.



Before Troubleshooting

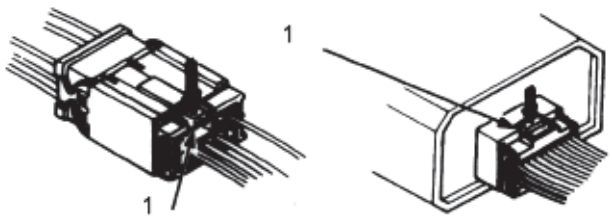
- Check applicable fuses in the appropriate fuse/relay box.
- Check the battery for damage, state of charge, and clean and tighten connections.
- Check the alternator belt tension.

⚠ CAUTION

- Do not quick-charge a 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 battery ground cable loosely connected or you will severely damage the wiring.

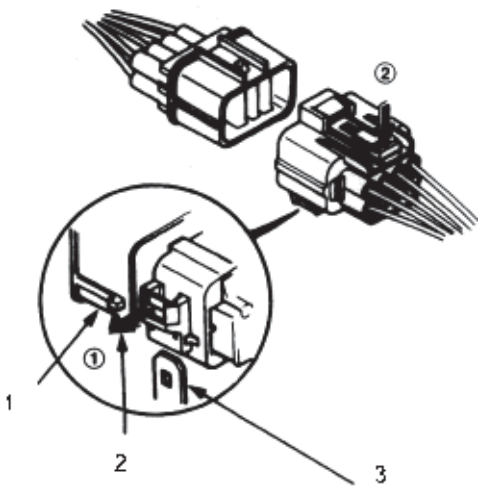
Handling Connectors

- Make sure the connectors are clean and have no loose wire terminals.
- Make sure multiple cavity connectors are packed with grease (except waterproof connectors).
- All connectors have push-down release type locks.



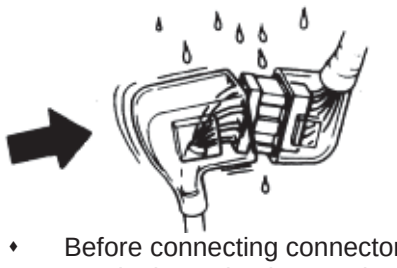
1. LOCKING TAB

- 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.

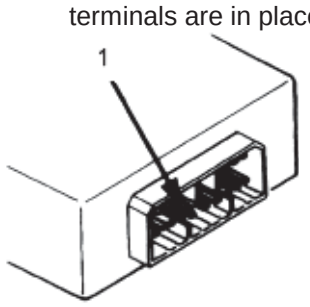


1. LOCKING PAWL ON OTHER HALF OF CONNECTOR
2. Pull to disengage
3. BRACKET

- Never try to disconnect connectors by pulling on their wires; pull on the connector halves instead.
- Always reinstall plastic covers.

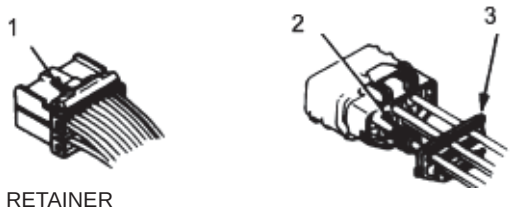


- Before connecting connectors, make sure the terminals are in place and not bent.



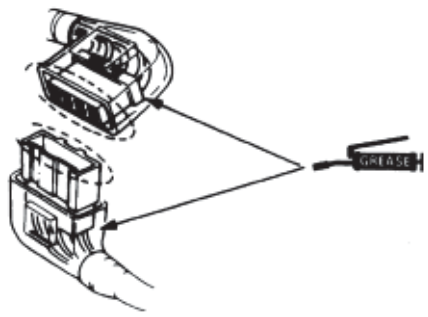
1. BENT TERMINAL

- Check for loose retainer and rubber seals.

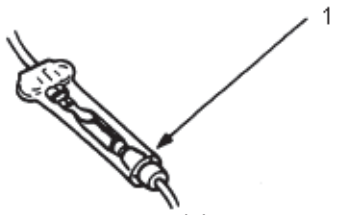


1. RETAINER
2. RUBBER SEAL
3. RETAINER

- The backs of some connectors are packed with grease. Add grease if necessary. If the grease is contaminated, replace it.



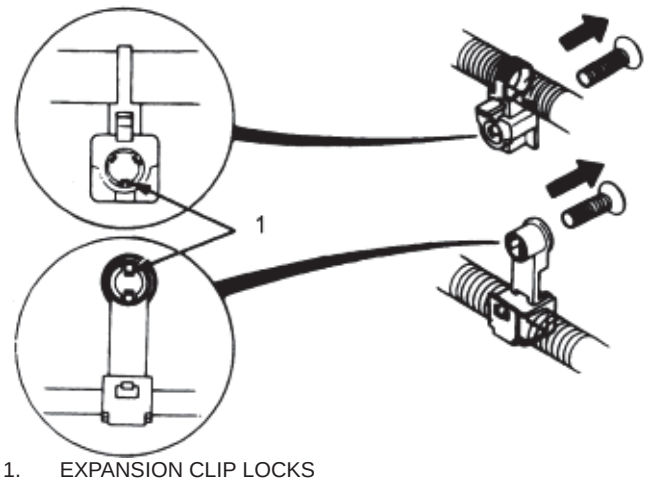
- Insert the connector all the way and make sure it is securely locked.
- Position wires so that the open end of the cover faces down.



1. Face open end down

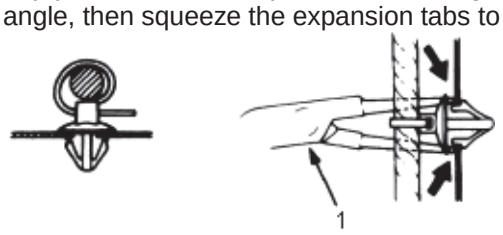
Handling Wires and Harnesses

- 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.



1. EXPANSION CLIP LOCKS

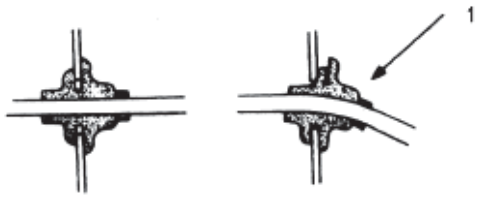
Slip pliers under the clip base and through the hole at an angle, then squeeze the expansion tabs to release the clip.



1. SNAP RING PLIERS

- After installing harness clips, make sure the harness doesn't interfere with any moving parts.
- Keep wire harnesses away from exhaust pipes and other hot parts, from sharp edges of brackets and holes, and from exposed screws and bolts.

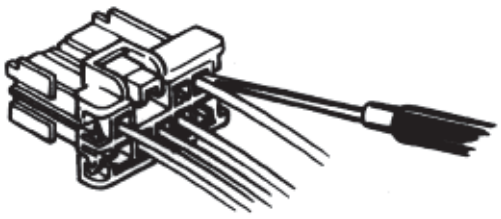
- Seat grommets in their grooves properly.



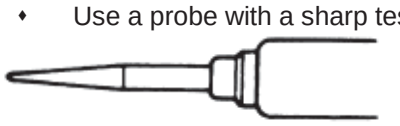
1. NOT GOOD

Testing and Repairs

- Do not use wires or harnesses with broken insulation. Replace them or repair them by wrapping the break with electrical tape.
- 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 connector).



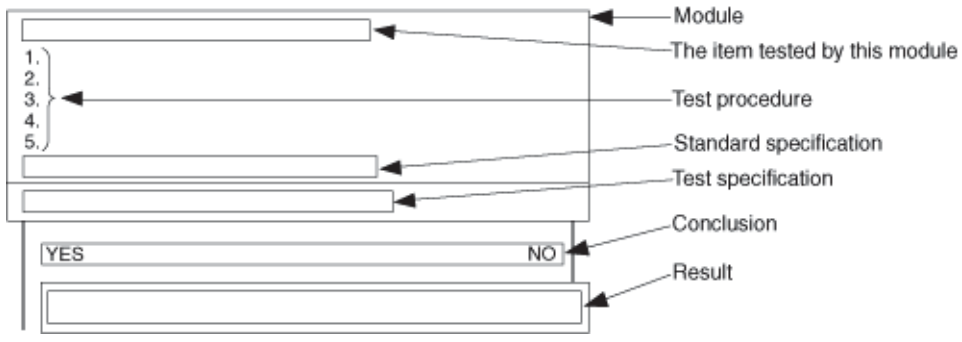
- Use a probe with a sharp tester probe.



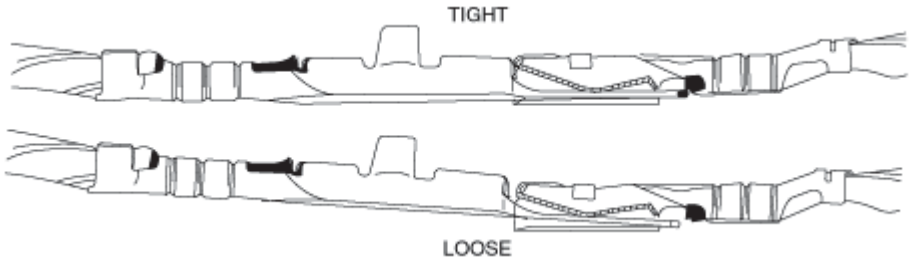
How to Read Flowcharts
Except SRS:
A flowchart is designed to be used from start to final repair. It's like a map showing you the shortest distance. But beware: if you go off the "map" anywhere but a "stop" symbol, you can easily get lost.

START (bold type)	Describes the conditions or situation to start a troubleshooting flowchart.
ACTION	Asks you to do something; perform a test, set up a condition etc.
DECISION	Asks you about the result of an action, then sends you in the appropriate troubleshooting direction.
STOP (bold type)	The end of a series of actions and decisions, describes a final repair action and sometimes directs you to an earlier part of the flowchart to confirm your repair.

SRS:
SRS troubleshooting flowcharts are comprised of modules, each of which contains all actions necessary to reach one decision. Except of the steps you must perform, the modules also include standard specifications of a correctly working system and test specifications. If the result of a test meets the specification shown in the module, the conclusion from this test is YES. If the specification is not met, the conclusion is NO. If you do not exactly follow the procedure described in the module, you may get the wrong test result.



NOTE:
- The term "Intermittent Failure" is used in these charts. It simply means a system may have had a failure, but it checks out OK at this time. If any indicator light on the dash does not come on, check for poor connections or loose wires at all connectors related to the circuit that you are troubleshooting (see illustration below).
- Most of the troubleshooting flowcharts have reset control module(s) or unit(s) and try to duplicate the Diagnostic Trouble Code (DTC). If the problem is intermittent and you cannot duplicate the code, do not continue through the flowchart. To do so will only result in confusion and, possibly, (a) needlessly replace control module(s) or unit(s).
- "Open" and "Short" are common electrical terms. An open is a break in a wire 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 will not work at all. In complex electronics, this can sometimes mean something works, but not the way it is supposed to.



Five-step Troubleshooting

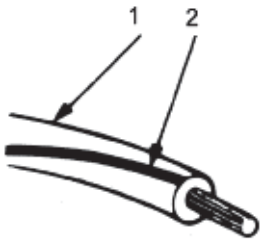
1. Verify The Complaint
   Turn on all the components in the problem circuit to verify the customer complaint. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the problem area.
2. Analyse The Schematic
   Look up the schematic for the problem circuit.
   Determine 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 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 have 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.

Wire Colour Codes

The following abbreviations are used to identify wire colours in the circuit schematics:

WHT	White
YEL	Yellow
BLK	Black
BLU	Blue
GRN	Green
RED	Red
ORN	Orange
PNK	Pink
BRN	Brown
GRY	Grey
PUR	Purple
LT BLU	Light Blue
LT GRN	Light Green

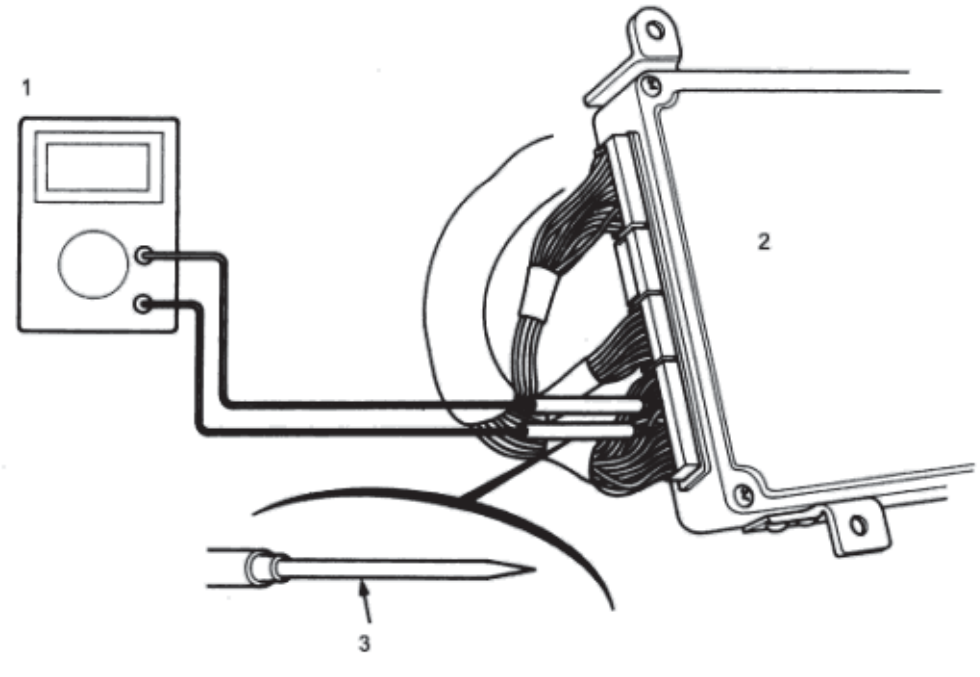
The wire insulation has one colour or one colour with another colour stripe. The second colour is the stripe.



1. WHT
2. BLK

NOTE:
Different wires with the same colour in the same system have been given number suffixes to distinguish them (for example, YEL1 and YEL2 are not the same).

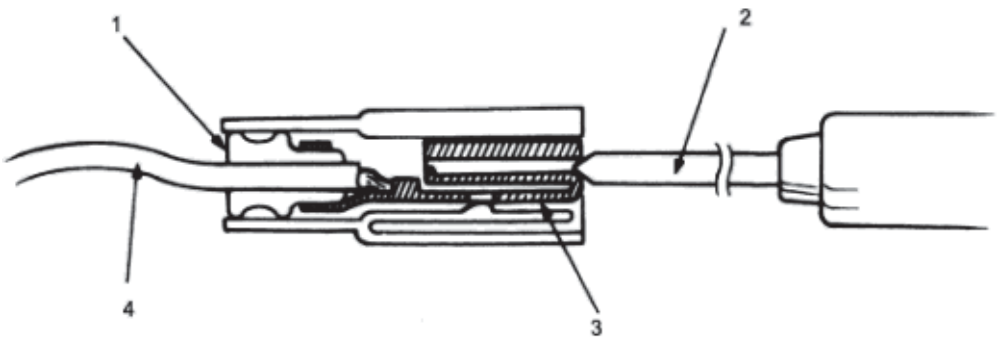
When checking any control module(s) or units(s) connector terminals, gently slide the sharp tester probe from the wire side into the connector until it comes in contact with the terminal end of the wire.



1. **DIGITAL CIRCUIT TESTER**
   (Commercially available) or
   07411-0020000
2. **ANY CONTROL MODULE OR UNIT**
3. **SHARP TESTER PROBE**

⚠ CAUTION

- Puncturing the insulation on a wire can cause poor or intermittent electrical connections.
- For testing at connectors, bring the tester probe into contact with the terminal from the connector side of wire harness connectors in the engine compartment.
- For female connectors, just touch lightly with the tester probe and do not insert the probe.



1. **RUBBER SEAL**
2. **TESTER PROBE**
3. **TERMINAL**
4. **WIRE HARNESS**

List of automotive abbreviations, which may be used in shop manual.

ABS	Anti-lock Brake System
A/C	Air Conditioning, Air Conditioner
ACL	Air Cleaner
A/F	Air Fuel Ratio
ALT	Alternator
AMP	Ampere (s)
ANT	Antenna
API	American Petroleum Institute
APPROX.	Approximately
ASSY	Assembly
A/T	Automatic Transmission
ATDC	After Top Dead Centre
ATF	Automatic Transmission Fluid
ATT	Attachment
ATTS	Active Torque Transfer System
AUTO	Automatic
AUX	Auxiliary
BARO	Barometric
BAT	Battery
BDC	Bottom Dead Centre
BTDC	Before Top Dead Centre
CARB	Carburettor
CAT or CATA	Catalytic Converter
CHG	Charge
CKF	Crankshaft Speed Fluctuation
CKP	Crankshaft Position
CO	Carbon Monoxide
COMP	Complete
CPB	Clutch Pressure Back up
CPC	Clutch Pressure Control
CPU	Central Processing Unit
CVT	Continuously Variable Transmission
CYL	Cylinder
CYP	Cylinder Position
DI	Distributor Ignition
DIFF	Differential
DLC	Data Link Connector
DOHC	Double Overhead Camshaft
DPI	Dual Point Injection
DTC	Diagnostic Trouble Code
EBD	Electronic Brake Distribution
ECM	Engine Control Module
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
ELD	Electrical Load Detector
EPR	Evaporator Pressure Regulator
EPS	Electrical Power Steering
EVAP	Evaporative
EX	Exhaust
F	Front
FIA	Fuel Injection Air
FL	Front Left
FP	Fuel Pump
FR	Front Right
FSR	Fail Safe Relay
FWD	Front Wheel Drive
GAL	Gallon
GND	Ground
GPS	Global Positioning System
H/B	Hatchback
HC	Hydrocarbons
HID	High Intensity Discharge
H02S	Heated Oxygen Sensor
lAB	Intake Air Bypass
lAC	Idle Air Control
IAR	Intake Air Resonator
IAT	Intake Air Temperature
ICM	Ignition Control Module
ID	Identification
ID or I.D.	Inside Diameter
IG or IGN	Ignition
IMA	Idle Mixture Adjustment
IMMOBI.	Immobilizer (Immobiliser)
IN	Intake
INJ	Injection
INT	Intermittent
KS	Knock Sensor
L	Left
L/C	Lock-up Clutch
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LF	Left Front
LH	Left Handle
LHD	Left Handle Drive
LR	Left Rear
LSD	Limited Slip Differential
L-4	In-line Four Cylinder (engine)

MAP	Manifold Absolute Pressure
MAX.	Maximum
MBS	Mainshaft Brake System
MCK	Motor Check
MCU	Moment Control Unit
MIL	Malfunction Indicator Light
MIN.	Minimum
MPI	Multi Point Injection
M/S	Manual Steering
M/T	Manual Transmission
N	Neutral
NOx	Oxides of Nitrogen
OBD	On-board Diagnostic
02S	Oxygen Sensor
OD or O.D.	Outside Diameter
P	Park
PAIR	Pulsed Secondary Air Injection
PCM	Powertrain Control Module
PCV	Positive Crankcase Ventilation Proportioning Control Valve
PGM-FI	Programmed-fuel Injection
PGM-IG	Programmed Ignition
PH	Pressure High
PL	Pilot Light or Pressure Low
PMR	Pump Motor Relay
P/N	Part Number
PRI	Primary
P/S	Power Steering
PSF	Power Steering Fluid
PSP	Power Steering Pressure
PSW	Pressure Switch
Qty	Quantity
R	Right
REF	Reference
RGB	Red, Green, Black
RHD	Right Handle Drive
RL	Rear Left
RON	Research Octane Number
RR	Rear Right
SAE	Society of Automotive Engineers
SCS	Service Check Signal
SEC	Second Secondary
SOHC	Single Overhead Camshaft
SQL	Solenoid
SPEC	Specification
S/R	Sun Roof
SRS	Supplemental Restraint System
STD	Standard
SW	Switch
T	Torque
TB	Throttle Body
T/B	Timing Belt
TC	Torque Converter
TCM	Transmission Control Module
TCS	Traction Control System
TDC	Top Dead Centre
TFT	Thin Film Transistor
T/N	Tool Number
TP	Throttle Position
TWC	Three Way Catalytic Converter
VC	Viscous Coupling
VIN	Vehicle Identification Number
VSS	Vehicle Speed Sensor
VTEC	Variable Valve Timing & Valve Lift Electronic Control
VVIS	Variable Volume Intake System
W	With
W/O	Without
WOT	Wide Open Throttle
2WD	Two Wheel Drive
4WD	Four Wheel Drive
2WS	Two Wheel Steering
4WS	Four Wheel Steering
4AT	4-speed Automatic Transmission
5MT	5-speed Manual Transmission
P	Park
R	Reverse
N	Neutral
D4	Drive (1st through 4th gear)
D3	Drive (1st through 3rd gear)
2	Second
1	First
D	Drive
S	Second
L	Low
1ST	Low (gear)
2ND	Second (gear)
3RD	Third (gear)
4TH	Fourth (gear)
5TH	Fifth (gear)

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	
Ignition coil	Rated voltage V		12	
	Primary winding resistance at 20°C (68°F) ohms:		0.63 - 0.77	
	Secondary winding resistance at 20°C (68°F) k ohms		12.8 - 19.2	
Spark plug	Type		See section 4	
	Gap		1.0 0, -0.1 (0.043, 0, -0.004)	
Ignition timing	At idle ° BTDC		12° ±2° (Red) BTDC	
Alternator belt *1	Deflection with 98 Nm (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt 6.0-8.5 (0.2-0.33) with new belt	
Alternator belt *1	Tension measured with belt tension gauge N (kgf, lbf)			
	Used belt		340 - 490 (35 - 50, 77 -110)	
	New belt		540 - 740 (55 - 75, 121 - 165)	
			Standard (New)	**Service Limit**
Alternator	MITSUBISHI			
	Output 13.5 V at hot	A	75	
	Coil resistance (rotor)	ohms	2.6- 2.9	-
	Slip ring O.D.		22.7 (0.89)	21.2 (0.83)
	Brush length		19 (0.75)	14. (0.55)
	Brush spring tension	g (oz)	340 - 420 (12.0 - 14.8)	-
			Standard (New)	**Service Limit**
Alternator	NIPPONDENSO			
	Output 13.5V at hot	A	75	
	Coil resistance (rotor)	ohms	2.9	-
	Slip ring O.D.		14.4 (0.567)	14.0 (0.551)
	Brush length		10.5 (0.41)	1.5 (0.06)
	Brush spring tension	g (oz)	330 (11.6)	-
			Standard (New)	**Service Limit**
Starter	MITSUBA: 1.0 kW			
	Type		Gear reduction	
	Mica depth		0.4-0.5 (0.016-0.020)	0.15 (0.006)
	Commutator runout		0-0.02 (0-0.001).	0.05 (0.002)
	Commutator O.D.		28.0-28.1 (1.102-1.106)	27.5 (1.083)
	Brush length		15.8-16.2 (0.62-0.64)	11.0 (0.43)
	Brush spring tension N (kg, lbf)		16-18 (1.6-1.8, 3.5-4.0)	-

*1: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 rpm (min-1) and	Nominal	1,520 (15.5, 220)	
	wide open throttle	Minimum	930 (9.5, 135)	
	kPa (kgf/cm2, psi)	Max. variation	200 (2.0, 28)	
Cylinder head	Warpage		-	0.05 (0.002)
	Height		92.95-93.05 (3.659-3.663)	-
Camshaft	End play		0.05-0.15 (0.002-0.006)	0.5 (0.02)
	Camshaft-to-holder oil clearance		0.060-0.099 (0.002-0.004)	0.15 (0.006)
	Total runout		0.03 (0.001) max.	0.04 (0.002)
	Cam lobe height	IN	35.299 (1.3897)	-
		EX	37.281 (1.4678)	
Valve	Valve clearance (cold)	IN	0.18-0.22 (0.007-0.009)	-
		EX	0.23-0.27 (0.009-0.011)	-
	Valve stem O.D.	IN	5.48-5.49 (0.2157-0.2161)	5.45 (0.2146)
		EX	5.45-5.46 (0.2146-0.2150)	5.42 (0.2134)
	Stem-to-guide clearance	IN	0.02-0.05 (0.001-0.002)	0.08 (0.003)
		EX	0.05-0.08 (0.002-0.003)	0.11 (0.004)
Valve seat	Width	IN	0.85-1.15 (0.033-0.045)	1.6 (0.063)
		EX	1.25-1.55 (0.049-0.061	2.0 (0.079)
	Stem installed height	IN	53.17-53.64 (2.093-2.112)	53.89 (2.122)
		EX	53.17-53.64 (2.093-2.112)	53.89 (2.122)
Valve spring	Free length	IN and EX	58.7 (2.31)	-
Valve guide	I.D.	IN	5.51-5.53 (0.217-0.218)	5.55 (0.219)
		EX	5.51-5.53 (0.217-0.218)	5.55 (0.219)
	Installed height	IN	17.85-18.35 (0.703-0.72)	-
		EX	18.65-19.15 (0.734-0.754)	-
Rocker arm	Arm-to-shaft clearance	IN	0.017-0.050 (0.0007-0.0020)	0.08 (0.003)
		EX	0.018-0.054 (0.0007-0.0021)	0.08 (0.003)

Engine Block - Section 6

	MEASUREMENT			STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface			0.07(0.003) max	0.10 (0.004)
	Bore diameter			75.00-75.02 (2.953-2.954)	75.07 (2.956)
	Bore taper			-	0.05 (0.002)
	Reboring limit			-	0.5 (0.02)
Piston	Skirt O.D at 5mm (0.2 in) from bottom of skirt			74.980-74.990 (2.9520-2.9524)	74.970 (2.9516)
	Clearance in cylinder			0.010-0.040 (0.0004-0.0016)	0.05 (0.002)
	Groove width (for ring)				
	Top	D16W1		1.020-1.030 (0.0402-0.0406)	1.05 (0.041)
		D16W2		1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
	Second	D16W1		1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
		D16W2		1.520-1.530 (0.0598-0.0602)	1.55 (0.061)
	Oil			2.805-2.820 (0.1104-0.1110)	2.85 (0.112)
Piston ring	Ring to groove clearance				
	Top	D16W1		0.035-0.060 (0.0014-0.0024)	0.13 (0.005)
		D16W2		0.030-0.060 (0.0012-0.0024)	0.13 (0.005)
	Second			0.030-0.055 (0.0012-0.0022)	0.13 (0.005)
	Ring end gap	Top		0.15-0.030 (0.006-0.012)	0.60 (0.024)
		Second		0.30-0.45 (0.012-0.018)	0.70 (0.028)
		Oil	D16W1	0.20-0.70 (0.008-0.028)	0.80 (0.031)
			D16W2	0.20-0.80 (0.008-0.031)	0.90 (0.035)

Engine Block – Section 7 Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Piston pin	O.D.	18.994-19.000 (0.7478-0.7480)	-
	Pin-to-piston clearance	0.010-0.022 (0.0004-0.0009)	-
Connecting rod	Pin-to-rod interference	0.014-0.040 (0.0006-0.0016)	-
	Small end bore diameter	18.96-18.98 (0.746-0.747)	-
	Large end bore diameter Nominal	48.0 (1.89)	-
	End play installed on crankshaft	0.15-0.30 (0.006-0.012)	-
Crankshaft	Main journal diameter	54.976-55.000 (2.1644-2.1654)	-
	Rod journal diameter	44.976-45.000 (1.7707-1.7717)	-
	Taper	0.0025 (0.00010) max.	0.005 (0.0002)
	Out of Round	0.0025 (0.00010) max.	0.005 (0.0002)
	End play	0.10-0.35 (0.004-0.014)	0.45 (0.018)
	Total runout	0.03 (0.001) max.	0.04 (0.002)
Bearing	Main bearing-to-journal oil clearance		
	No. 1 and 5 journals	0.018-0.036 (0.0007-0.0014)	0.05 (0.002)
	No. 2, 3 and 4 journals	0.024-0.042 (0.0009-0.0017)	0.05 (0.002)
	Rod bearing-to-journal oil clearance	0.020-0.038 (0.0008-0.0015)	0.05 (0.002)

Engine Lubrication - Section 8

	MAINTENANCE	STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity *l* (US qt, Imp qt)		
	KE, KG, KN, KQ models	3.7 (3.9, 3.3) for engine overhaul	
		3.3 (3.5, 2.9) for oil change, with filter	
		3.0 (3.2, 2.6) for oil change, without filter	
	KU, KT, KY models	4.3 (4.5, 3.8) for engine overhaul	
		3.6 (3.8, 3.2) for oil change, with filter	
		3.3 (3.5, 2.9) for oil change, without filter	
Oil pump	Inner-to-outer rotor radial clearance	0.02-0.14 (0.001-0.006)	0.20 (0.008)
	Pump body-to-outer rotor radial clearance	0.10-0.18 (0.004-0.007)	0.20 (0.008)
	Pump body-to-rotor axial clearance	0.03-0.08 (0.001-0.003)	0.15 (0.006)
Relief valve	Pressure setting 80°C (176°F) kPa (kgf/cm2, psi)		
	at idle	70 (0.7, 10) min.	
	at 3,000 rpm (min-1)	340 (3.5, 50) min.	

Cooling - Section 10

	MAINTENANCE	STANDARD (NEW)
Radiator	Coolant capacity *l* (US qt. Imp qt.) (including engine, heater, cooling line and reservoir)	M/T: 3.9 (4.1, 3.4) for overhaul 2.8 (3.0, 2.5) for coolant change
	Reservoir capacity 0.4 *l* (0.42 US qt. 0.35 Imp qt.)	CVT: Honda Multi Matic 4.1 (4.3, 3.6) for overhaul 3.0 (3.2, 2.6) for coolant change
Radiator cap	Opening pressure kPa (kgf/cm2, psi)	93-123 (0.95-1.25, 14-18)
Thermostat	Start to open °C (°F)	70-80 (169-176)
	Fully open °C (°F)	90 (194)
	Valve lift a fully open:	8.0 (0.31) min
Cooling fan	Thermostat “ON” temperature °C (°F)	91-95 (196-203)
	Thermostat “OFF” temperature °C (°F)	Subtract 3-8 (5-15) from actual “ON” temperature

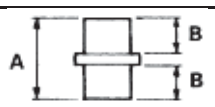
Fuel and Emissions - Section 11

	MEASUREMENT	STANDARD (NEW)
Pressure regulator	Pressure with regulator vacuum hose disconnected kPa (kgf/cm^2, psi)	260-310 (2.7-3.2, 38-46)
Fuel tank	Capacity *l* (US gal. Imp gal.)	55.0 (14.5, 12.1)
Engine	Idle speed with headlight and cooling fan off rpm (min-1)	M/T: neutral CVT/Honda Multi Matic **N** or **P** positions
		Except KU model: 750±50 700±50
		KU model: 670±50
	Idle CO %	With TWC model: 0.1 max.
		Without TWC model: 1.0 ±1.0

Clutch - Section 12 Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	to floor		
		LHD	179 (7.05)	-
		RHD	183 (7.20)	-
	Stroke		130-140 (5.12-5.51)	-
	Free play		8-18 (0.31-0.71)	-
	Disengagement height	to floor		
		LHD	87 (3.43) min.	-
		RHD	74 (2.91) min.	-
Flywheel	Clutch surface runout		0.05 (0.002) max.	0.15 (0.006)
Clutch disc	Rivet head depth		1.65-2.25 (0.06-0.09) min.	0.8 (0.03)
	Thickness		8.4-9.0 (0.33-0.35)	6.0 (0.24)
Pressure plate	Warpage		0.03 (0.001) max.	0.15 (0.006)
	Diaphragm spring finger alignment		0.6 (0.02) max.	0.8 (0.03)

Manual Transmission - Section 13

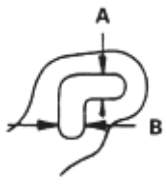
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity *l* (US qt. Imp qt.)	2WD	1.8 (1.9, 1.6) at oil change	
		2WD	2.0 (2.1, 1.8) at overhaul	
		4WD	1.65 (1.7, 1.5) at oil change	
		4WD	2.1 (2.2, 1.8) at overhaul	
Mainshaft	End play		0.11-0.18 (0.004-0.007)	Adjust
	Diameter of ball bearing contact area (clutch side)		27.977-27.990 (1.1015-1.1020)	27.94 (1.100)
	Diameter of needle bearing contact area		37.984-38.000 (1.4954-1.4961)	37.93 (1.493)
	Diameter of ball bearing contact area (transmission housing side)		27.987-28.000 (1.1018-1.1024)	27.94 (1.100)
	Runout		0.02 (0.001) max.	0.05 (0.002)
Mainshaft 3rd and 4th gears	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.30 (0.012)
	Thickness	3rd gear	34.92-34.97 (1.375-1.377)	34.8 (1.37)
		4th gear	31.42-31.47 (1.237-1.239)	31.3 (1.23)
Mainshaft 5th gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.30 (0.012)
	Thickness		30.92-30.97 (1.217-1.219)	30.8 (1.21)
Countershaft	Diameter of needle bearing contact area		36.000-36.015 (1.4173-1.4179)	35.95 (1.415)
	Diameter of ball bearing and needle bearing contact area		24.987-25.000 (0.9837-0.9843)	24.94 (0.982)
	Diameter of 1st gear contact area		36.984-37.000 (1.4561-1.4567)	36.93 (1.454)
	Runout		0.02 (0.001) max	0.05 (0.002)
Countershaft 1st gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.08 (1.696)
	End play		0.06-0.18 (0.002-0.007)	0.23 (0.009)
	Thickness		26.95-27.00 (1.061-1.063)	-
Countershaft 2nd gear	I.D.		47.009-47.025 (1.8507-1.8514)	47.08 (1.854)
	End play		0.07-0.14 (0.003-0.006)	0.18 (0.007)
	Thickness		28.92-28.97 (1.139-1.141)	-
Thrust washer (Countershaft 1st gear)	Thickness		1.95-1.97 (0.077-0.078)	-
Spacer collar (Countershaft 2nd gear)	I.D.		36.48-36.49 (1.43-1.44)	36.5 (1.44)
	O.D.		41.989-42.000 (1.653-1.654)	41.94 (1.65)
	Length		29.07-29.09 (1.14-1.15)	-
Spacer collar (Mainshaft 4th and 5th gears)	 I.D.		31.002-31.012 (1.2205-1.2209)	31.06 (1.223)
	O.D.		37.989-38.000 (1.4956-1.4961)	37.94 (1.494)
	Length			
	A		56.45-56.55 (2.222-2.226)	-
	B		26.03-26.08 (1.025-1.027)	26.01 (1.024)
Reverse idler gear	I.D.		20.016-20.043 (0.7880-0.7891)	20.09 (0.7909)
	Gear-to-reverse gear shaft clearance		0.036-0.084 (0.0014-0.0033)	0.16 (0.0063)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.85-1.10 (0.033-0.043)	0.4 (0.02)
Dual cone synchro	Clearance (ring pushed against synchro)			
	Outer synchro ring-to-synchro cone		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Synchro cone-to-gear		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Outer synchro ring-to-gear		0.95-1.68 (0.037-0.066)	0.6 (0.02)
Shift fork	Finger thickness	3rd/4rh fork	7.4-7.6 (0.29-0.30	-
		Except above	6.2-6.4 (0.24-0.25)	-
	Fork-to-synchro sleeve clearance		0.35-0.65 (0.014-0.026)	1.0 (0.039)

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Reverse Shift Fork	Pawl groove width		13.0-13.3 (0.51-0.52)	-
	Fork-to-reverse idle gear clearance		0.5-1.1 (0.02-0.04)	1.8 (0.07)
	Groove width *1	at A	7.05-7.25 (0.278-0.285)	-
		at B	7.4-7.7 (0.29-0.30)	-
	Fork-to-5th/reverse shift shaft clearance *2	at A'	0.05-0.35 (0.002-0.014)	0.5 (0.02)
		at B'	0.4-0.8 (0.02-0.03)	1.0 (0.04)
Shift arm A	Shift fork diameter at contact area		12.9-13.0 (0.508-0.512)	-
	Shift arm A-to-shift fork shaft clearance		0.2-0.5 (0.008-0.020)	0.6 (0.024)
Shift arm C	Shift arm C-to-shift arm B clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm B contact area		12.9-13.0 (0.508-0.512)	-
Select arm	Select arm-to-shift arm A clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm A contact area		7.9-8.0 (0.311-0.315)	-
Select lever	O.D.		15.941-15.968 (0.6276-0.6287)	-
	Transmission housing clearance		0.032-0.086 (0.0013-0.0034)	-
Differential carrier	Pinion shaft contact area I.D.			
		2WD	18.000-18.018 (0.7086-0.7093)	-
		4WD	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion shaft clearance			
		2WD	0.07-0.047 (0.0007-0.0081)	-
		4WD	0.027-0.057 (0.0011-0.0022)	0.1 (0.004)
	Driveshaft, intermediate shaft contact area I.D.		28.005-28.025 (1.1026-1.1033)	-
	Carrier-to-driveshaft clearance		0.025-0.066 (0.0010-0.0026)	0.12 (0.005)
	Carrier-to-intermediate shaft clearance		0.055-0.091 (0.0022-0.0036)	0.15 (0.006)
Differential pinion gear	Backlash		0.05-0.15 (0.002-0.006)	-
	I.D.		18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance		0.059-0.095 (0.0023-0.0037)	0.15 (0.006)
Differential tapered roller bearing preload Starting torque Nm (kgf/cm, lbf/in)			1.4-2.5 (14-26, 12-23)	Adjust
Transfer	Diameter of roller bearing contact area			
	Transfer shaft (driven gear side)		33.984-34.000 (1.337-1.339)	33.93 (1.336)
	Transfer shaft (middle gear side)		27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear		40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear shaft (driven gear side)		35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (spline side)		26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash		0.06-0.16 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)		2.68-3.47 (27.3-35.4, 23.7-30.7)	Adjust

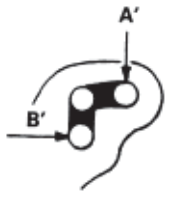
*1: Measuring points

1



*2: Measuring points

2



Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity *l* (US qt, lmp qt)			
	KE, KG models	2WD	6.7 (7.1, 5.9) for overhaul	
			4.0 (4.2, 3.5) for fluid change	
		4WD	7.1 (7.5, 6.2) for overhaul	
			3.9 (4.1, 3.4) for fluid change	
	KQ, KU models	2WD	6.5 (6.9, 5.7) for overhaul	
			3.8 (4.0, 3.3) for fluid change	
		4WD	6.9 (7.3, 6.1) for overhaul	
			3.7 (3.9, 3.3) for fluid change	
Hydraulic pressure MPa (kgf/cm2, psi)	Forward clutch pressure at 1,500 rpm (min-1) in D position		1.4-17. (14.3-17.8, 203-253)	
Hydraulic pressure MPa (kgf/cm2, psi)	Reverse brake pressure at 1,500 rpm (min-1) in R position		1.4-17. (14.3-17.8, 203-253)	
	Drive pulley pressure at 1,500 rpm (min-1) in N position		0.2-0.7 (2.0-7.1, 28-101)	
	Driven pulley pressure at 1,500 rpm (min-1) in N position		1.5-2.3 (15.3-23.5, 218-334)	
	Lubrication pressure at 3,000 rpm (min-1) in N position		Above 0.2 (2, 30)	
Stall speed rpm (min-1) (Check with vehicle on level ground				
	D position		2,500	2,350-2,650
	D position S mode, L and R positions		3,000	2,800-3,100
Clutch	Clutch initial clearance			
	Forward clutch		0.6-0.8 (0.024-0.031)	-
	Start clutch		0.5-0.7 (0.020-0.028)	-
	Reverse brake		0.45-0.75 (0.018-0.030)	-
	Clutch return spring free length			
	Forward clutch		30.5 (1.201)	28.5 (1.122)
	Start clutch		40.9 (1.610)	38.9 (1.531)
	Reverse brake		29.4 (1.157)	27.4 (1.079)
	Clutch disc thickness			
	Forward clutch		1.88-2.00 (0.074-0.079)	Until grooves worn out
	Start clutch		1.88-2.00 (0.074-0.079)	-
	Reverse clutch		1.94-2.06 (0.076-0.081)	Until grooves worn out
	Clutch plate thickness			
	Forward clutch		1.95-2.05 (0.077-0.081)	Discolouration
	Start clutch		2.25-2.35 (0.089-0.093)	-
	Reverse clutch		1.90-2.00 (0.075-0.079)	Discolouration

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Forward clutch end plate thickness		
	Mark 1 or 15	3.4-3.5 (0.134-0.138)	Discolouration
	Mark 2 or 16	3.5-3.6 (0.138-0.142)	Discolouration
	Mark 3 or 17	3.6-3.7 (0.142-0.146)	Discolouration
	Mark 4 or 18	3.7-3.8 (0.146-0.150)	Discolouration
	Mark 5 or 19	3.8-3.9 (0.150-0.154)	Discolouration
	Mark 6 or 20	3.9-4.0 (0.154-0.157)	Discolouration
	Mark 7 or 21	4.0-4.1 (0.157-0.161)	Discolouration
	Mark 8 or 22	4.1-4.2 (0.161-0.165)	Discolouration
	Mark 9 or 23	4.2-4.3 (0.165-0.169)	Discolouration
	Mark 10 or 24	4.3-4.4 (0.169-0.173)	Discolouration
	Mark 11 or 25	4.4-4.5 (0.173-0.177)	Discolouration
	Mark 12 or 26	4.5-4.6 (0.177-0.181)	Discolouration
	Mark 13 or 27	4.6-4.7 (0.181-0.185)	Discolouration
	Reverse brake end plate thickness		
	Mark 1	3.55-3.65 (0.140-0.144)	Discolouration
	Mark 2	3.75-3.85 (0.148-0.152)	Discolouration
	Mark 3	3.95-4.05 (0.156-0.159)	Discolouration
	Mark 4	4.15-4.25 (0.163-0.167)	Discolouration
	Mark 5	4.35-4.45 (0.171-0.175)	Discolouration
	Mark 6	4.55-4.65 (0.179-0.183)	Discolouration
	Mark 7	4.75-4.85 (0.187-0.191)	Discolouration
	Mark 8	4.95-5.05 (0.195-0.199)	Discolouration
ATF pump	ATF pump drive gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump driven gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump body bushing I.D.		
	Drive gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	Driven gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	ATF pump gear side clearance	0.015-0.035 (0.0006-0.0014)	Wear or damage
	ATF pump gear-to-body clearance		
	Drive gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
	Driven gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
Transmission	Diameter of needle bearing contact area		
	Input shaft - flywheel side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Input shaft - forward clutch side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Drive pulley shaft - start clutch side	43.981-43.991 (1.7315-1.7319)	Wear or damage
	Drive pulley shaft - fly wheel side	24.007-24.020 (0.945-0.0043)	Wear or damage
	Drive pulley shaft - forward clutch side	24.007-24.020 (0.945-0.946)	Wear or damage
	Thrust clearance		
	Carrier and ring gear	0.050-0.110 (0.0020-0.0043)	-
	Driven pulley shaft and start clutch hub	0.000-0.130 (0.000-0.005)	-
	Input shaft and ATF pump driven sprocket	0.370-0.650 (0.015-0.026)	-
	Secondary gear shaft and fly wheel ball bearing	0.00-0.15 (0.00-0.006)	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Thrust shim, 25 x 31 mm thickness	1.02-1.05 (0.040-0.041)	Wear or damage
		1.09-1.12 (0.043-0.044)	Wear or damage
		1.16-1.19 (0.046-0.047)	Wear or damage
		1.23-1.26 (0.048- 0.050)	Wear or damage
		1.30-1.33 (0.051-0.052)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.44-1.47 (0.057-0.058)	Wear or damage
		1.51-1.54 (0.059-0.061)	Wear or damage
		1.58-1.61 (0.062-0.063)	Wear or damage
		1.65-1.68 (0.065-0.066)	Wear or damage
		1.72-1.75 (0.068-0.069)	Wear or damage
		1.79-1.82 (0.070-0.072)	Wear or damage
		1.055-1.085 (0.0415-0.0427)	Wear or damage
		1.125-1.155 (0.0443-0.0454)	Wear or damage
		1.195-1.225 (0.0470-0.0482)	Wear or damage
		1.265-1.295 (0.0498-0.510)	Wear or damage
		1.335-1.365 (0.0526-0.0537)	Wear or damage
		1.405-1.435 (0.0553-0.0565)	Wear or damage
		1.475-1.505 (0.0580-0.0593)	Wear or damage
		1.545-1.575 (0.0608-0.0620)	Wear or damage
		1.615-1.645 (0.0636-0.0648)	Wear or damage
		1.685-1.715 (0.0663-0.0675)	Wear or damage
		1.755-1.785 (0.0691-0.0703)	Wear or damage
	Cotters thickness	2.87-2.90 (0.113-0.114)	Wear or damage
		2.97-3.00 (0.117-0.118)	Wear or damage
		3.07-3.10 (0.121-0.122)	Wear or damage
		3.17-3.20 (0.125-0.126)	Wear or damage
	ATF pump drive sprocket thrust shim, 22 x 28 mm thickness	1.12-1.15 (0.044-0.045)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.62-1.65 (0.064-0.065)	Wear or damage
		1.87-1.90 (0.074-0.075)	Wear or damage
		2.12-2.15 (0.083-0.085)	Wear or damage
		2.37-2.40 (0.093-0.094)	Wear or damage
	Secondary gear shaft thrust shim, 25 x 35 mm thickness	2.80-2.85 (0.110-0.112)	Wear or damage
		2.90-2.95 (0.114-0.116)	Wear or damage
		3.00-3.05 (0.118-0.120)	Wear or damage
		3.10-3.15 (0.122-0.124)	Wear or damage
		3.20-3.25 (0.126-0.128)	Wear or damage
		3.30-3.35 (0.130-0.132)	Wear or damage
		3.40-3.45 (0.134-0.136)	Wear or damage
		3.50-3.55 (0.138-0.140)	Wear or damage
		3.60-3.65 (0.142-0.144)	Wear or damage
		3.70-3.75 (0.146-0.148)	Wear or damage
		3.80-3.85 (0.150-0.152)	Wear or damage
Transmission (cont'd)	Input shaft feed pipe O.D.		
	Drive pulley feed pipe	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Forward clutch feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Input shaft bushing I.D.		
	Drive pulley feed pipe bushing	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Forward clutch feed pipe bushing	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Driven shaft feed pipe O.D.		
	Start clutch feed pipe (right side cover side)	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Driven pulley feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Start clutch feed pipe (fly wheel housing side)	8.97-8.98 (0.353-0.354)	8.95 (0.352)
	Driven pulley shaft bushing I.D.		
	Start clutch feed pipe (right side cover side)	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Driven pulley feed pipe	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Start clutch feed pipe (fly wheel housing side)	9.000-9.015 (0.354-0.355)	9.03 (0.356)
	Secondary driven gear sealing ring groove width	2.50-2.65 (0.098-0.104)	2.655 (0.105)
	Start clutch end plate I.D.	88.900-88.935 (3.500-3.501)	Wear or damaged
	Input shaft sealing ring groove width	2.00-2.10 (0.079-0.083)	2.105 (0.083)
	Drive pulley shaft I.D. at sealing ring	24.007-24.020 (0.945-0.946)	Wear or damage
Shifting device and parking brake control	Parking brake cone	-	Wear or other defect
	Parking brake pawl	-	Wear or other defect
	Parking gear	-	Wear or other defect

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	
Differential carrier	Pinion shaft contact area I.D.	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion clearance	0.023-0.057 (0.0009-0.0022)	0.1 (0.004)
	Drive shaft contact area I.D.	26.025-26.045 (1.0246-1.0254)	-
	Carrier-to-driveshaft clearance	0.045-0.086 (0.0018-0.0034)	0.12 (0.005)
Differential pinion gear	Backlash	0.05-0.15 (0.002-0.006)	-
	I.D.	18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance	0.055-0.095 (0.0022-0.0037)	0.15 (0.006)
Set ring-to-bearing outer race clearance		0-0.15 (0-0.006)	Adjust
Transfer	Diameter of roller bearing contact area		
	Transfer shaft (transfer gear side)	38-485-38-500 (1.515-1.516)	38.43 (1.513)
	Transfer shaft (middle of shaft)	27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear	40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear (driven gear side)	35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (splined side)	26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash	0.060-0.160 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)	2.68-3.47 (27.3,35.4, 23.7-30.7)	Adjust

	MEASUREMENT	Wire Dia.	O.D.	Free length	No of Coils
Springs	PH regulator valve spring	1.2 (0.047)	9.0 (0.354)	26.7 (1.051)	10.0
	PH control valve spring	1.7 (0.067)	13.4 (0.528)	39.4 (1.551)	8.7
	PL regulator valve spring	0.9 (0.035)	7.2 (0.283)	14.6 (0.575)	7.2
	PH-PL control valve spring	1.0 (0.039)	10.0 (0.394)	31.4 (1.236)	8.6
	Clutch reducing valve spring	1.9 (0.075)	16.8 (0.661)	44.4 (1.748)	8.0
	Lubrication valve spring	1.6 (0.063)	13.4 (0.528)	51.6 (2.031)	11.6
	Shift valve spring	1.4 (0.055)	8.2 (0.323)	34.1 (1.343)	13.0
	Shift control valve spring	1.0 (0.039)	7.4 (0.291)	19.3 (0.760)	7.5
	Start clutch control valve spring	0.4 (0.016)	4.1 (0.161)	12.1 (0.476)	6.8
	Pitot regulator valve spring	0.6 (0.024)	5.7 (0.224)	9.5 (0.374)	5.0
	Start clutch valve accumulator spring	1.2 (0.047)	8.3 (0.327)	29.8 (1.173)	12.3
	Reverse control valve spring	1.2 (0.047)	9.4 (0.370)	31.4 (1.236)	11.0
	Shift inhibitor valve spring	1.3 (0.051)	13.2 (0.520)	48.3 (1.902)	10.6

Differential (4WD) - Section 15

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Differential fluid	Capacity L (US qt. Imp qt)	1.2 (1.3, 1.1) at overhaul	-
		1.0 (1.1, 0.9) at fluid change	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)
Steering wheel	Rotation play at steering wheel circumference	0-10 (0-0.39)
	Starting load at steering wheel circumference N (kgf, lbf) Engine running	34 (3.5, 7.7)
Gearbox	Angle of rack-guide-screw loosened from locked position	10°-15°
Pump	Pump pressure with shut-off valve closed kPa (kgf/cm2, psi)	7,200-7,800 (73-80, 1,040-1,140)
Power steering fluid	Recommended fluid	Honda power steering fluid (V, II or S)
	Fluid capacity For overhaul RHD	0.65 (0.70, 0.57)
	/ (US qt. lmp qt) LHD	0.61 (0.64, 0.54)
Power steering belt*	Deflection with 98 N (10 kgf. 22lbf) between pulleys	10.5-14.0 (0.41-0.55) with used belt 7.5-10.0 (0.30-0.39) with new belt
Power steering belt*	Belt tension N (kgf, lbf) Measured with belt tension gauge	340-490 (35-50, 80-110) with used belt 640-780 (65-80, 140-180) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Suspension - Section 18

	MEASUREMENT		STANDARD (NEW)
Wheel alignment	Camber Front		-0°00' ± 1°
	Rear		-0°30' ± 1'
	Caster Front		2°15' ±1°
	Total toe Front		0 ± 3 (0 ± 0.12)
	Rear		IN 2 ± 5 (0.08 ± 0.2)
	Front wheel turning angle		
	Inward wheel		38°00’ ± 2°
	Outward wheel		30°00’ (Reference)
Wheel bearing	End play	Front	0-0.05 (0-0.002)
		Rear	0-0.05 (0-0.002)

				STANDARD (NEW)	SERVICE LIMIT
Wheel	Rim runout	Aluminium wheel	Axial	0-0.7 (0-0.03)	2.0 (0.08)
			Radial	0-0.7 (0-0.03)	1.5 (0.06)
		Steel wheel	Axial	0-1.0 (0-0.04)	2.0 (0.08)
			Radial	0-1.0 (0-0.04)	1.5 (0.06)

*1: KY model

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	
Parking brake lever	Play on stroke at 196 N (20 kgf, 44 lbf) lever force		To be locked when pulled 7-10 notches	
Foot brake pedal	Pedal height (With floor mat removed)			
		M/T	192	
		A/T	197	
	Free play		1-5 (0.04-0.20)	
Master cylinder	Piston-to-pushrod clearance		0-0.4 (0-0.02)	
			STANDARD (NEW)	**SERVICE LIMIT**
Disc brake	Disc thickness	Front	22.9-23.1 (0.902-0.909)	21.0 (0.83)
	Disc runout	Rear	-	0.10 (0.004)
	Disc parallelism	Front	-	0.015 (0.0006)
	Pad thickness	Front	10.5-11.5 (0.4-0.45)	1.6 (0.06)
Rear Drum brake	I.D.		199.9-200.0 (7.870-7.874)	201.0 (7.913)
	Lining thickness		4.0 (0.157)	2.0 (0.08)
Brake booster	Characteristics at 98 N (20 kgf, 44 lbf) pedal force			
	Vacuum		N (kgf, lbf)	kPa (kgf/cm2, psi)
	kPa (mm Hg. in Hg)			
	0 (0.0)		98 (10, 22)	0 (0, 0)
			294 (30, 66)	1,400 (14, 199)
	66.7 (500, 19.7)		98 (10, 22)	3,600 (37, 526)
			294 (30, 66)	9,000 (92, 1,308)

Air Conditioning - Section 22

	MEASUREMENT		STANDARD (NEW)
Air conditioning system	Lubricant type: SP-10 (P/N 38897-P13-003, 38898-P13-003 or 368899-P13-A01).		
	Lubricant capacity m/ (fl oz, lmp oz)	Condenser	20 (2/3, 0.7)
		Evaporator	35 (1 1/16, 1.2)
		Line or hose	10 (1/3, 0.4)
		Receiver	10 (1/3,0.4)
Compressor	Lubricant type: SP-10 (P/N 38899-003 or 38899-P13-A01)		
	Lubricant capacity m/ (fl oz, lmp oz)		130-150 (4.4-5.1, 4.6-5.3)
	Field coil resistance at 20°C (68°F) ohms		3.05-3.35
	Pulley-to-pressure plate clearance		0.5 ± 0.15 (0.02 ± 0.006)
Compressor belt	Deflection with 98 N (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt 5.0-7.0 (0.20-0.28) with new belt
	Belt tension N (kgf, lbf) Measured with belt tension gauge		330-480 (34-49, 75-108) with used belt 680-810 (69-83, 152-183) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

	ITEM		METRIC	ENGLISH	NOTES
Dimensions	Overall Length	Except KQ models	3,995 mm	157.3 in	
		KQ model	4,005 mm	157.7 in	
	Overall Width		1,695 mm	66.7 in	
	Overall Height		1,590 mm	62.6 in	
	KQ model with rear spoiler		1,700 mm	66.9 in	
	KY model with rear spoiler		1,695 mm	66.7 in	
	Wheelbase		2,360 mm	92.9 in	
	Track	Front	1,465 mm	57.7 in	
		Rear	1,455 mm	57.3 in	
	Seating capacity	Except KU model	Four (4)		
		KU model	Five (5)		
Weight	Curb Weight				
KE, KG Models	2WD	5MT	1,125 kgs	2,480 lbs	KE, KG
		5MT with sunroof	1,140 kgs	2,513 lbs	models
		CVT	1,150 kgs	2,535 lbs	are equipped
		CVT with sunroof	1,165 kgs	2,568 lbs	with power
	4WD	5MT	1,180 kgs	2,601 lbs	steering ABS
		5MT with sunroof	1,195 kgs	2,634 lbs	and SRS
		CVT	1,205 kgs	2,657 lbs	system
		CVT with sunroof	1,220 kgs	2,690 lbs	
	Weight Distribution (Front/Rear)				
	2WD	5MT	672/453 kgs	1,481/999 lbs	
		5MT with sunroof	683/457 kgs	1,506/1,007 lbs	
		CVT	699/451 kgs	1,541/994 lbs	
		CVT with sunroof	710/455 kgs	1,565/1,003 lbs	
	4WD	5MT	694/486 kgs	1,530/1,071 lbs	
		5MT with sunroof	705/490 kgs	1,554/1,080 lbs	
		CVT	721/484 kgs	1,590/1,067 lbs	
		CVT with sunroof	732/488 kgs	1,614/1,076 lbs	
	Max permissible weight (EU)				
		2WD	1,530 kgs	3,373 lbs	
		4WD	1,580 kgs	3,483 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			
KQ Models	2WD 5MT	1,140 kgs	2,513 lbs	KQ model are
	5MT with ABS	1,145 kgs	2,524 lbs	equipped with
	5MT with sunroof	1,150 kgs	2,535 lbs	power steering,
	5MT with ABS and sunroof	1,155 kgs	2,546 lbs	A/C and SRS
	CVT	1,165 kgs	2,568 lbs	system
	CVT with ABS	1,170 kgs	2,579 lbs	
	CVT with sunroof	1,175 kgs	2,590 lbs	
	CVT with ABS and sunroof	1,180 kgs	2,601 lbs	
	4WD 5MT	1,195 kgs	2,634 lbs	
	5MT with ABS	1,200 kgs	2,645 lbs	
	5MT with sunroof	1,205 kgs	2,656 lbs	
	5MT with ABS and sunroof	1,210 kgs	2,667 lbs	
	CVT	1,220 kgs	2,689 lbs	
	CVT with ABS	1,225 kgs	2,700 lbs	
	CVT with sunroof	1,230 kgs	2,711 lbs	
	CVT with ABS and sunroof	1,235 kgs	2,722 lbs	
	Weight Distribution (Front/Rear)			
	2WD 5MT	685/455 kgs	1,510/1,003 lbs	
	5MT with ABS	690/455 kgs	1,521/1,003 lbs	
	5MT with sunroof	690/460 kgs	1,521/1,014 lbs	
	5MT with ABS and sunroof	695/460 kgs	1,532/1,014 lbs	
	CVT	710/455 kgs	1,565/1,003 lbs	
	CVT with ABS	715/455 kgs	1,576/1,003 lbs	
	CVT with sunroof	715/460 kgs	1,576/1,014 lbs	
	CVT with ABS and sunroof	720/460 kgs	1,587/1,014 lbs	
	4WD 5MT	705/490 kgs	1,554/1,080 lbs	
	5MT with ABS	710/490 kgs	1,565/1,080 lbs	
	5MT with sunroof	710/495 kgs	1,565/1,091 lbs	
	5MT with ABS and sunroof	715/495 kgs	1,576/1,091 lbs	
	CVT	725/495 kgs	1,598/1,091 lbs	
	CVT with ABS	730/495 kgs	1,609/1,091 lbs	
	CVT with sunroof	730/500 kgs	1,609/1,102 lbs	
	CVT with ABS and sunroof	735/500 kgs	1,620/1,102 lbs	
	Max loaded vehicle weight (ADR)	1,580 kgs	3,483 lbs	

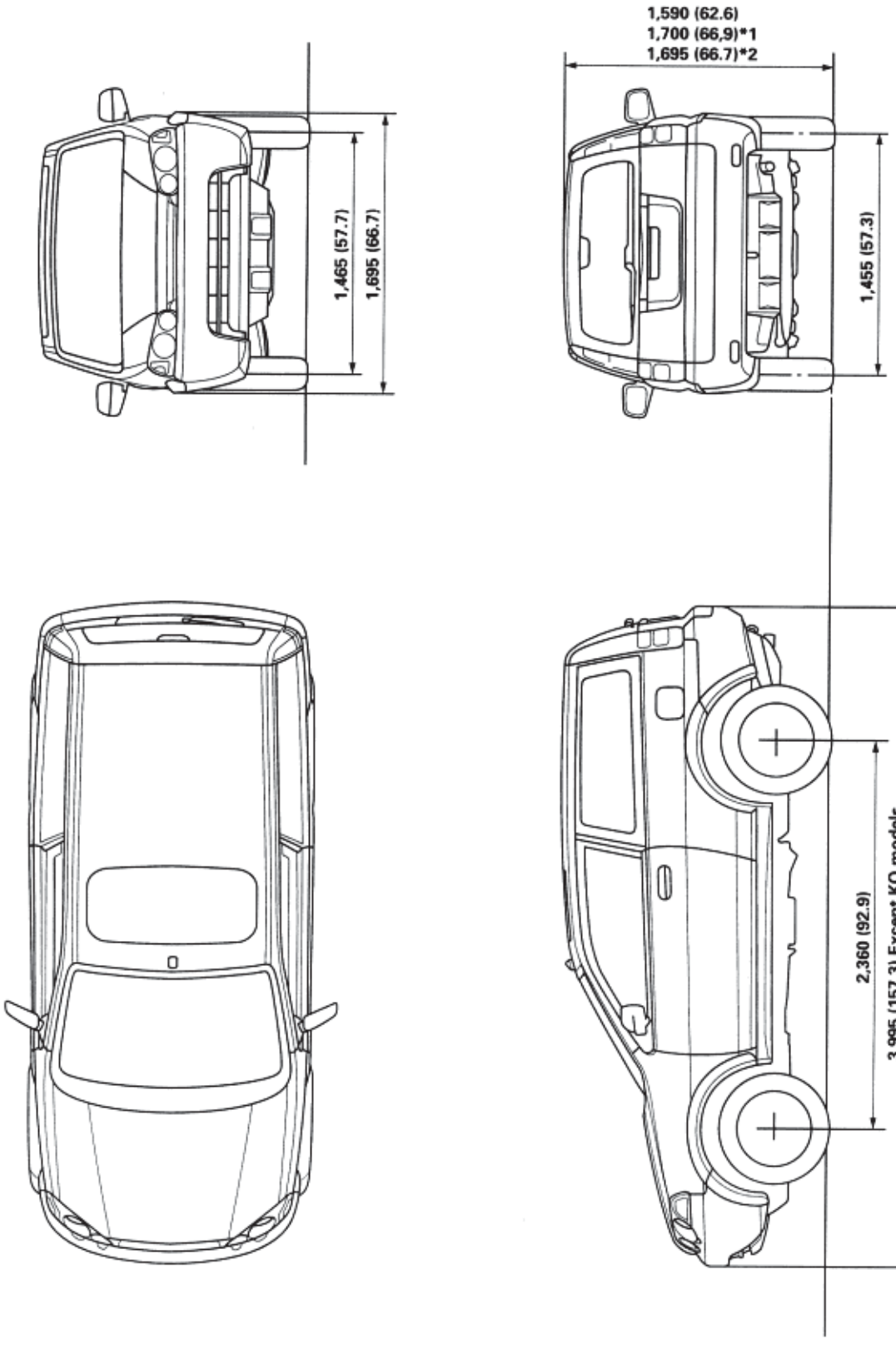
	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			
KU Model	2WD 5MT	1,140 kgs	2,513 lbs	KU model are
	5MT with ABS	1,145 kgs	2,524 lbs	equipped with
	5MT with sunroof	1,150 kgs	2,535 lbs	power steering,
	5MT with ABS and sunroof	1,155 kgs	2,546 lbs	A/C and SRS
	Honda Multi Matic	1,165 kgs	2,568 lbs	system
	Honda Multi Matic with ABS	1,170 kgs	2,579 lbs	
	Honda Multi Matic with sunroof	1,175 kgs	2,590 lbs	
	Honda Multi Matic with ABS and sunroof	1,180 kgs	2,601 lbs	
	4WD 5MT	1,195 kgs	2,634 lbs	
	5MT with ABS	1,200 kgs	2,645 lbs	
	5MT with sunroof	1,205 kgs	2,656 lbs	
	5MT with ABS and sunroof	1,210 kgs	2,667 lbs	
	Honda Multi Matic	1,220 kgs	2,689 lbs	
	Honda Multi Matic with ABS	1,225 kgs	2,700 lbs	
	Honda Multi Matic with sunroof	1,230 kgs	2,711 lbs	
	Honda Multi Matic with ABS and sunroof	1,235 kgs	2,722 lbs	
	Weight Distribution (Front/Rear)			
	2WD 5MT	685/455 kgs	1,510/1,003 lbs	
	5MT with ABS	690/455 kgs	1,521/1,003 lbs	
	5MT with sunroof	690/460 kgs	1,521/1,014 lbs	
	5MT with ABS and sunroof	695/460 kgs	1,532/1,014 lbs	
	Honda Multi Matic	710/455 kgs	1,565/1,003 lbs	
	Honda Multi Matic with ABS	715/455 kgs	1,576/1,003 lbs	
	Honda Multi Matic with sunroof	715/460 kgs	1,576/1,014 lbs	
	Honda Multi Matic with ABS and sunroof	720/460 kgs	1,587/1,014 lbs	
	4WD 5MT	705/490 kgs	1,554/1,080 lbs	
	5MT with ABS	710/490 kgs	1,565/1,080 lbs	
	5MT with sunroof	710/495 kgs	1,565/1,091 lbs	
	5MT with ABS and sunroof	715/495 kgs	1,576/1,091 lbs	
	Honda Multi Matic	725/495 kgs	1,598/1,091 lbs	
	Honda Multi Matic with ABS	730/495 kgs	1,609/1,091 lbs	
	Honda Multi Matic with sunroof	730/500 kgs	1,609/1,102 lbs	
	Honda Multi Matic with ABS and sunroof	735/500 kgs	1,620/1,102 lbs	
Weight	Curb weight			KY model are
KY Model	5MT	1,195 kgs	2,634 lbs	equipped with
	5MT with ABS	1,200 kgs	2,645 lbs	power steering,
	5MT with sunroof	1,210 kgs	2,667 lbs	A/C and SRS
	5MT with ABS and sunroof	1,215 kgs	2,678 lbs	system
	Weight distribution (Front/rear)			
	5MT	700/495 kgs	1,543/1,091 lbs	
	5MT with ABS	705/495 kgs	1,554/1,091 lbs	
	5MT with sunroof	710/500 kgs	1,565/1,102 lbs	
	5MT with ABS and sunroof	715/500 kgs	1,576/1,102 lbs	

	ITEM		DESCRIPTION	NOTES
ENGINE	Type		Water-cooled, 4-stroke SOHC gasoline engine	
	Cylinder Arrangement		Inline 4-cylinder, transverse	
			METRIC | **ENGLISH**	
	Bore and Stroke		75 x 90 mm | 3.0 x 3.5 in	
	Displacement		1,590 cm3 | 97 cu-in	
	Compression Ratio			
		D16W1 engine	9.6	
		D16W2 engine	9.2	
	Valve Train		Belt Driven, SOHC 4 valves per cylinder	
	Lubrication System		Forced and wet sump, trochoid pump	
	Oil pump Discharge rate		7.11 cm3/rev | 0.433 cu-in/rev	
	Water Pump Discharge rate at 6,000 rpm		125 *l* (132 US qt, 110 Imp qt/minute	
	Fuel Required			
		D16W1 engine		
		European models	Premium UNLEADED gasoline with a Research Octane Number (RON) of 95 or higher	
		Except European models	UNLEADED gasoline with a Research Octane number (RON) of 91 or higher	
		D16W2 engine	LEADED gasoline with a Research Octane Number (RON) of 91 or higher	Unleaded gasoline with RON of 91 or higher may also be used
Starter	Type		Gear reduction	
	Normal Output		1.0kW	
	Normal Voltage		12V	
	Hour Rating		30 seconds	
	Direction of Rotation		Clockwise as viewed from gear end	
	Weight		3.1 kg | 6.8 lbs	
Clutch	Type	M/T	Single plate dry diaphragm spring	
		A/T	Torque converter	
	Clutch facing area M/T		176 cm2 | 27 sq in	
Transmission	Type	M/T	Synchronised 5-speed forward, 1 reverse	
		CVT/Honda Multi Matic	Electronically controlled continuously variable transmission	
	Primary Gear Reduction	Type Ratio	Direct/1:1	
	Manual transmission			
	Gear Ratio	1st	3.500	
		2nd	1.956	
		3rd	1.344	
		4th	1.071	
		5th	0.870	
		Reverse	3.000	
	Final Reduction	Gear type	Single helical gear	
		Gear ratio	4.562	
	Transfer		0.434	
	Rear Differential		2.533	
	CVT/Honda Multi Matic			
	Gear Ratio	Low-High	2.466-0.449	
		Reverse	2.466	
	Final Reduction	Gear type	Single helical gear	
		Gear ratio	4.714	
	Transfer		0.433	
	Rear Differential		2.533	

	ITEM		DESCRIPTION	NOTES
Air Conditioning	Cooling Capacity			
	Except KY models		3,172 Kcal/h 12,580 BTU/h	
	KY model		3,529 Kcal/h 14,000 BTU/h	
Air Conditioning	Compressor			
	Type/Manufacturer		Scroll/KEIHIN	
	Capacity		85.7 cm^3/rev 5.23 cu-in/rev	
	Max. Speed		10,000 rpm (min^{-1})	
	Lubricant Capacity		130 cm^3 4 1/3 fl oz,	
	Lubricant Type		SP-10 (P/N 38899-P13-003 or 38899-P13-A01	
	Condenser	Type	Corrugated fin	
	Evaporator	Type	Corrugated fin	
Air Conditioning	Blower	Type	Sirocco fan	
		Motor Input	190 W/12 V	
		Speed Control	4-speed	
		Max. Capacity	380 m^3/h 23 cu-ft/h	With A/C filter
			410 m^3/h 25 cu-ft/h	Without A/C filter
	Temp. Control	Type	Air Mix	
	Compressor Clutch	Type	Dry, single plate, poly-V belt drive	
		Power Consumption	42 W max/12 V	
	Refrigerant	Type	HFC - 134a (R - 134a)	
		Quantity	600 + 0, -50 g 21.1 + 0 -1.8 oz	Except KY model
			650 + 0 -50 g 22.9 + 0 -1.8 oz	KY model
Steering System	Type		Power assisted, rack and pinion	
	Overall Ratio		15.1	
	Turns, Lock-to-Lock		2.75	
	Steering Wheel Dia.		375 mm 14.8 in	
Suspension	Type	Front	Independent double wishbone, coil spring with stabiliser	
		Rear	Independent double wishbone, coil spring with stabiliser	
	Shock Absorber	Front and Rear	Telescopic, hydraulic nitrogen gas-filled	
Wheel Alignment	Camber	Front	0°	
		Rear	-0°30'	
	Caster	Front	2°15'	
	Total Toe	Front	0 mm 0 in	
		Rear	In 2 mm In 0.08 in	
Brake System	Type	Front	Power-assisted self-adjusting ventilated disc	
		Rear	Power-assisted self-adjusting drum	
	Pad Surface Area	Front	51 cm^2 x 4 7.9 sq-in x 4	
	Lining Surface Area	Rear	67.2 cm^2 x 4 10.4 sq-in x 4	
	Parking brake	Type	Mechanical actuating, rear two wheel brakes	
Tyre	Size and pressure		See tyre label	
Washer Reservoir	Capacity		4.5 *l* (4.8 US qt, 4.0 Imp qt)	KE, KG models
			2.5 *l* (2.6 US qt, 2.2 Imp qt)	Except KE, KG models

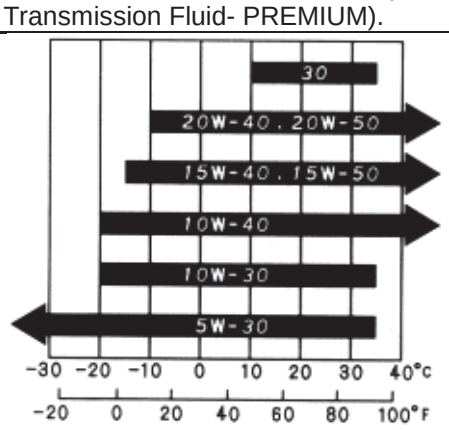
	ITEM	DESCRIPTION	NOTES
Electrical	Battery	12 V, 36 AH, 5 HR	
	Starter	12V - 1.0 kW	
	Alternator	12V - 75A	
	Fuses		
	In the Under-dash Fuse Box	7.5A, 10A, 15A, 20A	
	In the Under-hood Fuse/Relay box	7.5A, 10A, 15A, 20A, 30A, 40A, 50A, 80A	
	Headlights High/Low	12V - 55/55 W	
	Front Turn Signal Lights	12V - 21 W	
	Front Position Lights	12V - 5 W	
	Side Turn Signal Lights	12V - 5 W	
	Rear Turn Signal Lights	12V - 21 W	
	Brake/Taillights	12V - 21/5 W	
	High Mount Brake Light	12V - 21 W	
	Back-up Lights	12V - 21 W	
	License Plate Lights	12V - 5 W	
	Ceiling Lights Front	12V - 5 W	
	Rear	12V - 8 W	
	Cargo Area Lights	12V - 3.4 W	
	Gauge Lights	12V - 1.4 W, 3.0 W	
	Indicator Lights	12V - 0.84 W, 1.12 W, 1.4 W, 0.91 W	
	Illumination and Pilot Lights	12V - 0.84 W, 0.91 W, 1.4 W	
	Rear Fog Light	12V - 21 W	European odel
	Spot Lights	12V - 5 W	

Unit: mm (in)
*1: KQ model with rear spoiler
*2: KY model with rear spoiler



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

No.	LUBRICATION POINTS	LUBRICANT
1	Engine	Always use a fuel-efficient oil that says "API Service SG, SH or SJ." SAE Viscosity: See chart below
2	Transmission Manual CVT/Honda Multi Matic	Genuine Honda MTF*1 For European models: Genuine Honda CVT Fluid Except European Models: Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)
3	Brake line (includes Anti-lock brake line)	Brake fluid DOT3 or DOT4*2
4	Clutch line	Brake fluid DOT3 or DOT4*2
5	Power steering gearbox	Steering grease P/N 08733-B070E
6	Release fork (Manual transmission)	Urea Grease UM264 (P/N 41211-PY5-305)
7	Shift and select cable ends (Manual transmissions)	Urea Grease UM264 (P/N 41211-PY5-305)
8	Throttle cable end (Dashboard lower panel hole)	Silicone grease
9	Throttle cable end (Throttle link)	Multi-purpose grease
10	Brake master cylinder pushrod	Multi-purpose grease
11	Clutch master cylinder pushrod	Multi-purpose grease
12	Hood hinges and hood latch	Multi-purpose grease
13	Battery terminals	Multi-purpose grease
14	Fuel fill lid	Multi-purpose grease
15	Trunk hinges and latch	Multi-purpose grease
16	Door hinges, upper and lower	Multi-purpose grease
17	Door open detent	Multi-purpose grease
18	Rear brake shoe linkages	Multi-purpose grease
19	Brake calipers	Silicone grease
20	Power steering system	Genuine Honda Power Steering Fluid (V, II or S)
21	Air conditioning compressor	Compressor oil: SP-10 (P/N 38899-P13-003, 38899-P13-A01) (For Refrigerant: HFC-134a (R-134a))
22	Rear Differential	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid- PREMIUM).



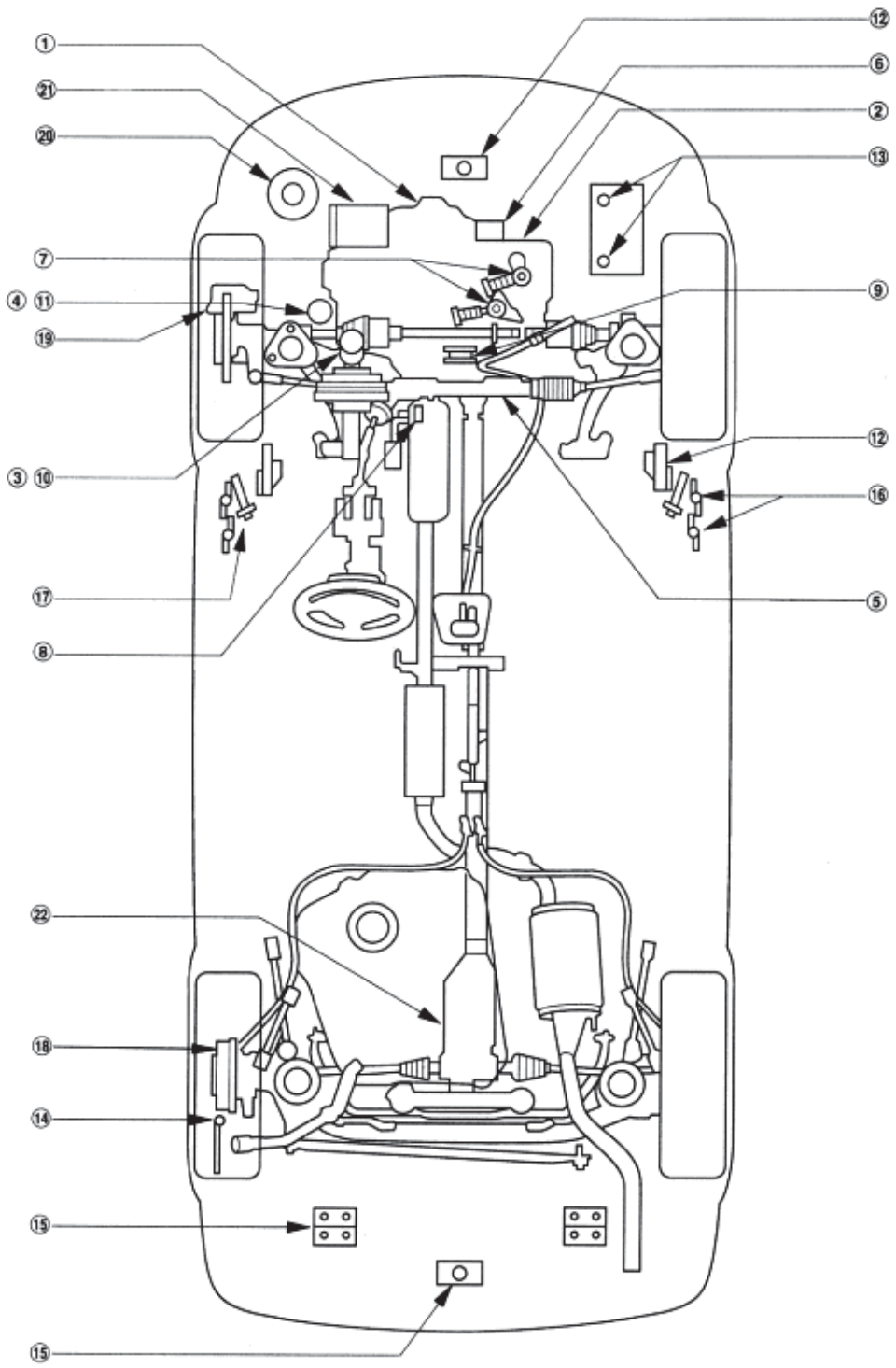
Recommended engine oil
Engine oil viscosity for ambient temperature ranges

⚠ CAUTION

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

*1: If Honda MTF is not available, you may use an AP1 service SG, SH or SJ-rated motor oil with viscosity of SAE 10W-30 or 10W-40 temporarily. Motor oil can cause increased transmission wear and higher shifting effort.

*2: We recommend Genuine Honda Brake Fluid.


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Follow the Normal Maintenance Schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-6 and 3-7 do not apply.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Replace engine oil and oil filter		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		**8-5** to **8-7**
Replace air cleaner element				♦			♦			♦				**11-99**
Inspect valve clearance				♦			♦			♦			Check the valve clearance	**6-3**
Replace fuel filter				♦			♦			♦				**11-36**
Replace spark plugs				♦			♦			♦				**4-21**
Replace timing belt and inspect water pump									♦				Check water pump for signs of seal leakage.	**6-8**, **10-11**
Inspect and adjust drive belts				♦			♦			♦			Check for cracks and damage. Check for deflection and tension.	**4-39**, **17-16**, **22-35**
Inspect idle speed								♦						**11-73**
Replace engine coolant						♦			♦			♦	Check specific gravity for freezing point.	**10-5**
Replace transmission fluid (X: Inspect)	MT				X				♦				Genuine Honda MTF	**13-4**
	CVT			♦			♦			♦			Genuine Honda CVT Fluid	**14-84**
Replace rear differential fluid									♦*1				Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	**15-14**
Inspect front and rear brakes		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the brake pad and disc thickness. Check for damage or cracks. Check the calipers for damage, leaks and tightness. Check the wheel cylinder for leaks. Check the brake linings for cracking, glazing, wear or contamination.	**19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid		Every 3 years											Use only DOT3 or DOT4 fluid (we recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	**19-A-7**
Check parking brake adjustment		♦	♦		♦		♦		♦		♦		Check the parking brake operation.	**19-A-6**
Replace pollen filter		Every 30,000 km (18,000 miles) or 12 months												**22-37**
Check lights alignment		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the position of the headlights.	**23-D-7**
Test drive (noise, stability, dashboard operation)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for road stability, noise, vibrations and dashboard operation.	

*1: Replace at 12,000 km (72,000 miles)/96 months, and every 60,000 km (36,000 miles)/48 months.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Visually inspect the following items													Check for correct installation and position, check for cracks, deterioration, rust and leaks. Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check rack grease and steerage linkage. Check the boot for damage and leaking grease. Check the fluid line for damage and leaks.	**11-27**, **11-28**
Suspension components		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the bolts for tightness. Check all the dust covers for deterioration and damage.	**18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check boots and boot band for cracks. Check rack grease	**16-3**
Brake hoses and lines (including ABS)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage	**19-A-4**, **19-A-25**
Exhaust system		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	**9-4**
Fuel lines and connections		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	**11-75**
Tyre condition		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for pressure, puncture or cuts and irregular tread wear	-

Maintenance Schedule
European Model - Severe Conditions

Service at the indicated distance or time whichever comes first — km x 1,000 / miles x 1,000 / months	7.5 / 4.5 / 6	15 / 9 / 12	22.5 / 13.5 / 18	30 / 18 / 24	37.5 / 22.5 / 30	45 / 27 / 36	52.5 / 31.5 / 42	60 / 36 / 48	67.5 / 40.5 / 54	75 / 45 / 60	82.5 / 49.5 / 66	90 / 54 / 72	97.5 / 58.5 / 78	105 / 63 / 84	113 / 67.5 / 90	120 / 72 / 96	NOTES	SECTION and PAGE
Replace engine oil and oil filter	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		8-5 to 8-7
Replace air cleaner element - Use normal schedule except in dusty conditions			♦			♦			♦		♦	♦	♦	?	♦			11-99
Inspect valve clearance						♦					?	♦		?			Check the valve clearance	6-3
Replace fuel filer						♦					?	♦						11-86
Replace spark plugs						♦					?	♦						4-21
Replace timing belt and inspect water pump											?					♦*1	Check water pump for signs of seal leakage	6-8, 10-11
Inspect and adjust drive belts						♦					?	♦					Check for cracks and damage. Check for deflection and tension	4-39, 17-16, 22-35
Inspect idle speed											?			♦				11-73
Replace engine coolant										♦	?					♦	Check specific gravity for freezing point	10-5
Replace transmission fluid MT								♦			?					♦	Genuine Honda MTF	13-4
Replace transmission fluid CVT								♦			?					♦	Genuine Honda CVT Fluid	14-84
Replace rear differential fluid											?	♦*3					Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	15-14
Inspect front and rear brakes	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the brake pad and disc thickness.	19-A-4, 19-A-9
											?						Check for damage or cracks.	19-A-11
											♦	♦	♦	♦	♦	♦	Check the calipers for damage, leaks and tightness.	19-A-12, 19-A-20
											?						Check the wheel cylinder for leaks.	19-A-21, 19-A-25
											?						Check the brake linings for cracking, glazing, wear or contamination.	
Replace brake fluid	Every three years																Use DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	19-A-7
Check parking brake adjustment		♦		♦				♦			?	♦				♦	Check the parking brake operation	19-A-6
Replace pollen filter	Every 30,000 km (18,000 miles) or 12 months																	22-39
Check lights alignment		♦		♦		♦		♦		♦	?	♦		♦		♦	Check the position of the headlights	23-D-7
Test drive (noise, stability, dashboard operations)		♦		♦		♦		♦		♦	?	♦		♦		♦	Check for road stability, noise, vibrations and dashboard operation	-

*1 The timing belt should normally be replaced at the intervals shown in the maintenance schedule. (Normal Conditions). Replace the timing belts at 75,000 km or 45,000 mile if the vehicle regularly is driven in one or more of these conditions:
- ♦ In very high temperatures [43°C, (110°F) above].
- ♦ In very low temperatures [-29°C, (-20°F) under].

*2: Replace CVT fluid every 22,500 km (13,500 miles)/18 months, if the vehicle is driven mainly at high speed in extremely hot (over 32°C, 90°F) condition.

*3: Replace at 90,000 km (54,000 miles)/72 months, thereafter 45,000 km (27,000 miles)/36 months.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	7.5 4.5 6	15 9 12	22.5 13.5 18	30 18 24	37.5 22.5 30	45 27 36	52.5 31.5 42	60 36 48	67.5 40.5 54	75 45 60	82.5 49.5 66	90 54 72	97.5 58.5 78	105 63 84	113 67.5 90	120 72 96	NOTES	SECTION and PAGE
Visually inspect the following items:																		Check for correct installation and position, check for cracks, deterioration, rust and leaks. Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check rack grease and steering linkage. Check the boot for damage and leaking grease. Check the fluid line for damage and leaks.	**17-27**, **17-28**
Suspension components		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the bolts for tightness. Check all the dust covers for deterioration and damage.	**18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check boots and boot band for cracks. Check rack grease.	**16-3**
Brake hoses and lines (including ABS)			♦		♦		♦		♦		♦	?	♦		♦		♦	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	**19-A-4**, **19-A-25**
Exhaust system			♦		♦		♦		♦		♦	?	♦		♦		♦	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	**9-4**
Fuel lines and connections			♦		♦		♦		♦		♦	?	♦		♦		♦	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	**11-75**
Tyre condition			♦		♦		♦		♦		♦	?	♦		♦		♦	Check for pressure, puncture or cuts and irregular tread wear.	-

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

- ♦ Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
- ♦ Driving in extremely hot (over 32°C, (90°F) conditions.
- ♦ Extensive idling or long periods of stop-and-go driving.
- ♦ Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
- ♦ Driving on muddy, dusty or de-iced roads.

Note: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-4 and 3-5.

Follow the maintenance schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-10 and 3-11 do not apply.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil		Every 10,000 km (6,000 miles) or 12 months											**8-5**
Replace engine oil filter		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		**8-6**
Replace air cleaner element			♦		♦		♦		♦		♦		**11-99**
Inspect valve clearance			♦		♦		♦		♦		♦	Check the valve clearance	**6-3**
Replace fuel filter			♦		♦		♦		♦		♦		**11-86**
Replace spark plugs			♦		♦		♦		♦		♦		**4-21**
Replace timing belt and inspect water pump						♦						Check water pump for signs of seal leakage	**6-8**, **10-11**
Inspect and adjust drive belts			♦		♦		♦		♦		♦	Check for cracks and damage. Check for deflection and tension.	**4-39**, **17-16**, **22-35**
Inspect idle speed						♦							**11-73**
Replace engine coolant					♦		♦		♦		♦	Check specific gravity for freezing point	**10-5**
Replace transmission fluid MT (X: Inspect)			X		♦		X		♦		X	Honda Genuine MTF	**13-4**
Replace transmission fluid CVT			♦	♦	♦	♦	♦	♦	♦	♦	♦	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM	**14-18**
Replace rear differential fluid							♦*1			♦		Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM	**15-14**
Inspect front and rear brakes		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the brake pad and disc thickness. Check for damage or cracks. Check the calipers for damage, leaks and tightness. Check the wheel cylinder for leaks. Check the brake linings for cracking, glazing, wear or contamination.	**19-A-4** **19-A-9** **19-A-11**, **19-A-12** **19-A-20** **19-A-21**, **19-A-25**
Replace brake fluid				♦			♦			♦		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	**19-A-7**
Check parking brake adjustment		♦	♦		♦		♦		♦		♦	Check the parking brake operation	**19-A-6**
Check lights alignment		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the position of the headlights	**23-D-7**
Test drive (noise, stability, dashboard operations)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for road stability, noise, vibrations and dashboard operation	-

*1: Replace at 120,000 km (72,000 miles)/72 months, thereafter 60,000 km (36,000 miles)/36 months

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												Check for correct installation and position. Check for cracks, deterioration, rust and leaks. Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check rack grease and steering linkage. Check the boot for damage and leaking grease. Check the fluid line for damage and leaks.	**17-27**, **17-28**
Suspension components		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the bolts for tightness. Check all the dust covers for deterioration and damage.	**18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check boots and boot band for cracks. Check rack grease.	**16-3**
Brake hoses and lines (including ABS)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check master cylinder, proportioning control valve and ABS modulator for damage and leakage.	**19-A-4**, **19-A-25**
Exhaust system		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	**9-4**
Fuel lines and connections		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	**11-75**
Tyre condition		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for pressure, puncture or cuts and irregular tread wear.	

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil and oil filter		Every 5,000 km (3,000 miles) or 6 months											**8-5** to **8-6**
Clean (X) or replace (♦) air cleaner element - Use normal schedule except in dusty conditions		X	♦	X	♦	X	♦	X	♦	X	♦		**11-99**
Inspect valve clearance			♦		♦		♦		♦		♦	Check the valve clearance	**6-3**
Replace fuel filter			♦		♦		♦		♦		♦		**11-86**
Replace spark plugs			♦		♦		♦		♦		♦		**4-21**
Replace timing belt and inspect water pump						♦						Check water pump for signs of seal leakage	**6-8**, **10-11**
Inspect and adjust drive belts			♦		♦		♦		♦		♦	Check for cracks and damage. Check for deflection and tension.	**4-39**, **17-16**, **22-35**
Inspect idle speed						♦							**11-73**
Replace engine coolant					♦		♦		♦		♦	Check specific gravity for freezing point	**10-5**
Replace transmission fluid MTF			♦		♦		♦		♦		♦	Honda Genuine MTF	**13-4**
Replace transmission fluid CVT			♦	♦	♦	♦	♦	♦	♦	♦	♦	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM	**14-84**
Replace rear differential fluid					♦*1		♦		♦		♦	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM	**15-14**
Inspect front and rear brakes		Every 10,000 km (6,000 miles) or 6 months										Check the brake pad and disc thickness. Check for damage or cracks. Check the calipers for damage, leaks and tightness. Check the wheel cylinder for leaks. Check the brake linings for cracking, glazing, wear or contamination.	**19-A-4** **19-A-9** **19-A-11**, **19-A-12** **19-A-20** **19-A-21**, **19-A-25**
Replace brake fluid				♦			♦			♦		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	**19-A-7**
Check parking brake adjustment		♦	♦		♦		♦		♦		♦	Check the parking brake operation	**19-A-6**
Check lights alignment		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the position of the headlights	**23-D-7**
Test drive (noise, stability, dashboard operations)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for road stability, noise, vibrations and dashboard operation	-

*1: Replace at 80,000 km (48,000 miles)/48 months, thereafter 40,000 km (24,000 miles)/24 months

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												Check for correct installation and position. Check for cracks, deterioration, rust and leaks. Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		Every 10,000 km (6,000 miles) or 6 months										Check rack grease and steering linkage. Check the boot for damage and leaking grease. Check the fluid line for damage and leaks.	**17-27**, **17-28**
Suspension components		Every 10,000 km (6,000 miles) or 6 months										Check the bolts for tightness. Check all the dust covers for deterioration and damage.	**18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		Every 10,000 km (6,000 miles) or 6 months										Check boots and boot band for cracks. Check rack grease.	**16-3**
Brake hoses and lines (including ABS)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check master cylinder, proportioning control valve and ABS modulator for damage and leakage.	**19-A-4**, **19-A-25**
Exhaust system		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	**9-4**
Fuel lines and connections		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	**11-75**
Tyre condition		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check for pressure, puncture or cuts and irregular tread wear.	-

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

- ♦ Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
- ♦ Driving in extremely hot (over 32°C, (90°F) conditions.
- ♦ Extensive idling or long periods of stop-and-go driving.
- ♦ Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
- ♦ Driving on muddy, dusty or de-iced roads.

Note: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-4 and 3-5.

This Maintenance Schedule outlines the minimum required maintenance that you should perform to ensure the trouble-free operations of the customer's vehicle. Due to regional and climatic differences, some additional servicing maybe required.
Please consult the warranty handbook for a more detailed description.

Service at the indicated distance or time whichever comes first	km x 1,000	20	40	60	80	100	120	140	160	180	200	NOTES	SECTION and PAGE
	miles x 1,000	12	24	36	48	60	72	84	96	108	120		
	months	12	24	36	48	60	72	84	96	108	120		
Replace engine oil		Every 5,000 km (3,000 miles) or 6 months											**8-5**
Replace engine oil filter		Every 5,000 km (3,000 miles) or 6 months											**8-5**
Clean or replace air cleaner element	Dry Type	Clean every 10,000 km (6,000 miles) or 6 months and replace every 20,000 km (12,000 miles) or 12 months											**11-99**
	Wet Type	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		
Inspect valve clearance	KN, KU models		♦		♦		♦		♦		♦	Check the valve clearance	**6-3**
	KT, KY models	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		
Replace fuel filter			♦		♦		♦		♦		♦		**11-86**
Replace spark plugs	KN, KU models		♦		♦		♦		♦		♦		**4-21**
	KY, KY models	♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		
Inspect distributor cap, rotor and ignition wiring			♦		♦		♦		♦		♦		**4-19**
Replace timing belt and inspect water pump						♦					♦	Check water pump for signs of seal leakage	**6-8**, **10-11**
Inspect and adjust drive belts			♦		♦		♦		♦		♦	Check for cracks and damage. Check for deflection and tension	**4-39**, **17-16**, **22-35**
Inspect idle speed and idle C0		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦		**11-73**
Replace engine coolant						♦					♦	Check specific gravity for freezing point	**10-5**
Inspect PCV valve			♦		♦		♦		♦		♦	Check the clicking sound of motion from the PCV valve of idling	**11-105**
Inspect ignition timing			♦		♦		♦		♦		♦		**4-16**
Inspect evaporative emission control system						♦					♦	Check the EVAPO control canister operation. Check the hose for blockage, cracks or disconnected.	**11-106**
Replace transmission fluid	MT		♦		♦		♦		♦		♦	Genuine Honda MTF	**13-4**
	CVT/Honda Multi Matic		♦	♦	♦	♦	♦	♦	♦	♦	♦	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	**14-84**
Replace rear differential fluid					♦*1		♦		♦		♦	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	**15-14**
Inspect front and rear brakes		Every 10,000 km (6,000 miles) or 6 months										Check the brake pad and disc thickness. Check for damage or cracks. Check the calipers for damage, leaks and tightness. Check the wheel cylinder for leaks. Check the brake linings for cracking, glazing, wear or contamination.	**19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**

*1: Replace at 80,000 km (48,000 miles)/48 months thereafter 40,000 km (24,000 miles)/24 months

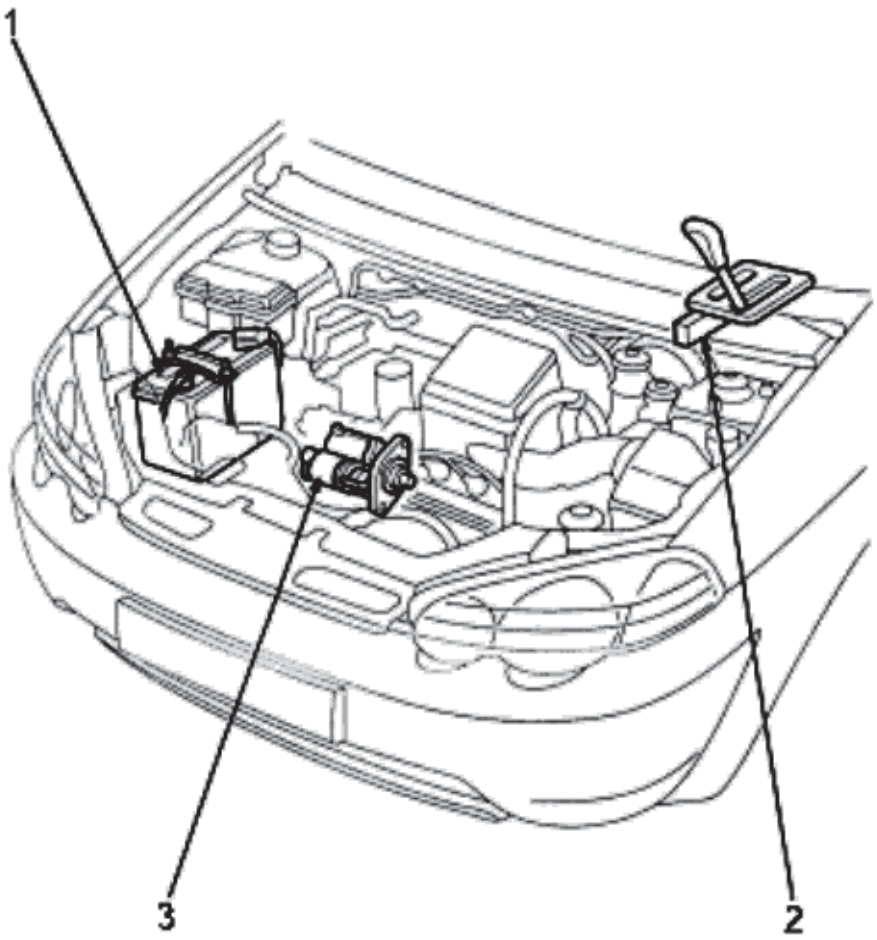
Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace brake fluid (including ABS)			♦		♦		♦		♦		♦	Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	**19-A-7**
Check parking brake adjustment		♦	♦		♦		♦		♦		♦	Check the parking brake operation	**19-A-6**
Rotate tyres (Check tyre inflation and condition at least once per month)		Rotate tyres every 10,000 km (6,000 miles)										The suggested rotation method is shown in the diagram of the Owner's Manual	-
Visually inspect the following items.												Check for correct installation and position. Check for cracks, deterioration, rust and leaks. Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		Every 10,000 km (6,000 miles) or 6 months										Check rack grease and steering linkage. Check the boot for damage and leaking grease. Check the fluid line for damage and leaks.	**17-27**, **17-28**
Suspension components		Every 10,000 km (6,000 miles) or 6 months										Check the bolts for tightness. Check all the dust covers for deterioration and damage.	**18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		Every 10,000 km (6,000 miles) or 6 months										Check boots and boot band for cracks. Check rack grease.	**16-3**
Brake hoses and lines (including ABS)		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check master cylinder, proportioning control valve and ABS modulator for damage and leakage.	**19-A-4**, **19-A-25**
Cooling system hoses and connection		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check all hoses for damage, leaks or deterioration. Check all hose clamps. Retighten if necessary.	**10-2**
Exhaust system		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	**9-4**
Fuel lines and connections		♦	♦	♦	♦	♦	♦	♦	♦	♦	♦	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	**11-75**

Ref No.	Tool Number	Description	Qty	Remark
1	07JGG - 0010100	Belt Tension Gauge	1	

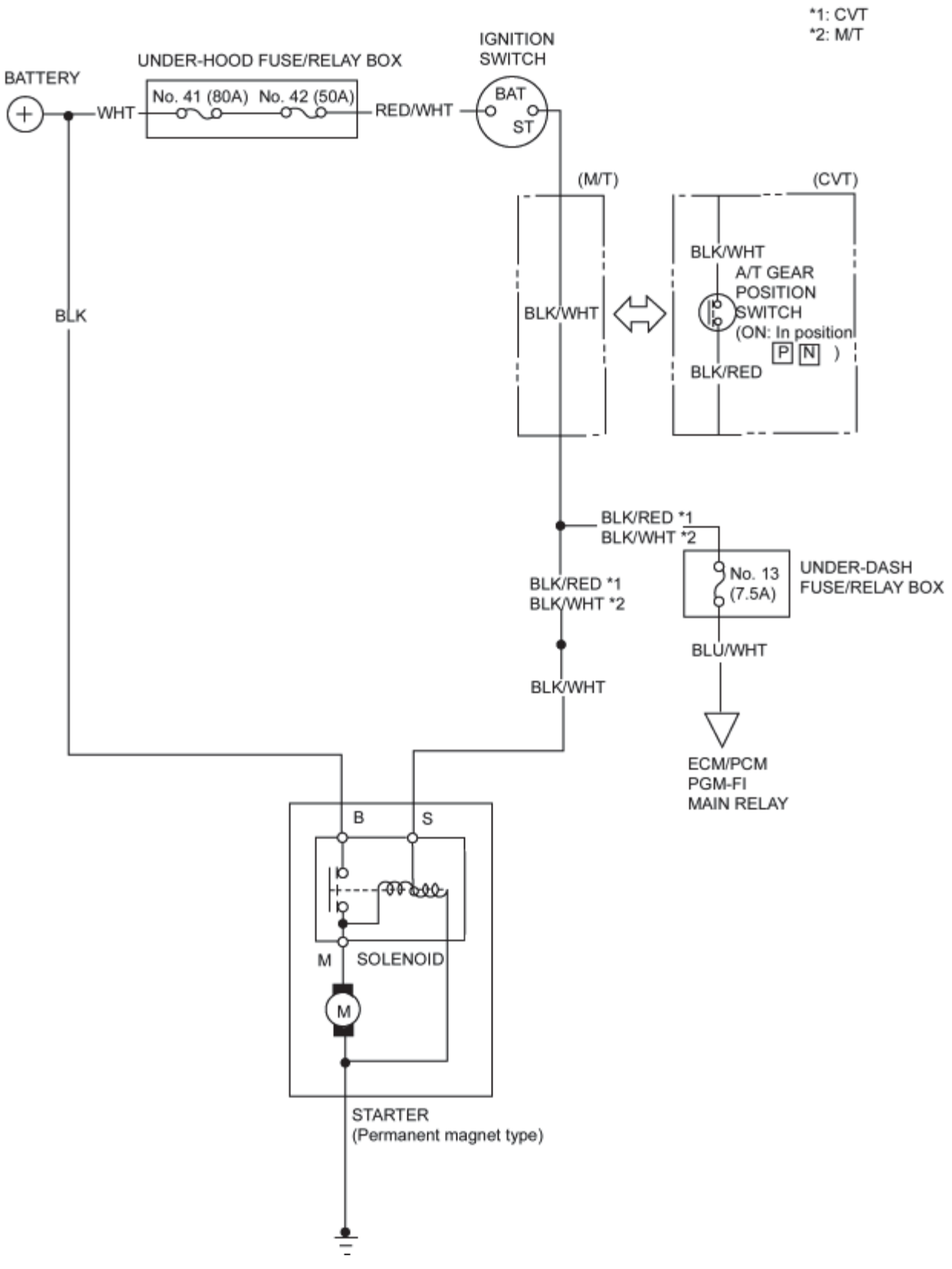


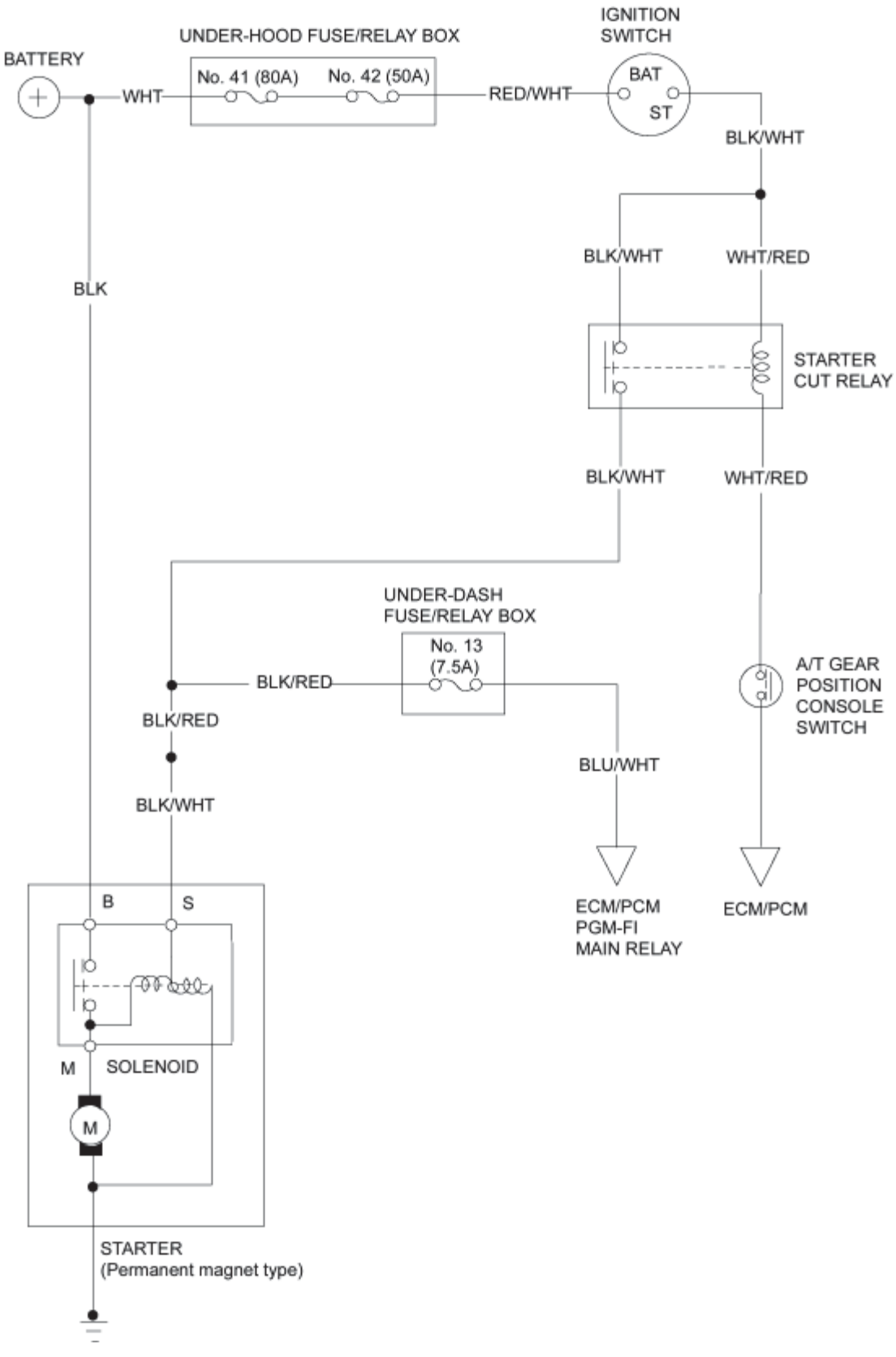
①

NOTE: LHD type is shown, RHD type is similar.



1. **BATTERY,** Test, section 23
2. **A/T GEAR POSITION SWITCH**
   Test, section 23
   Replacement, section 23
3. **STARTER**
   Test, (**See page** 4-6)
   Solenoid Test, (**See page** 4-7)
   Replacement, (**See page** 4-8)
   Overhaul, (**See page** 4-9)
   Reassembly, (**See page** 4-13)
   Performance Test, (**See page** 4-14)


*1: CVT
*2: M/T
BATTERY
UNDER-HOOD FUSE/RELAY BOX
No. 41 (80A)
No. 42 (50A)
WHT
RED/WHT
IGNITION SWITCH
BAT
ST
(M/T)
(CVT)
BLK/WHT
A/T GEAR POSITION SWITCH
(ON: In position P N)
BLK/RED
BLK
BLK/RED *1
BLK/WHT *2
No. 13 (7.5A)
UNDER-DASH FUSE/RELAY BOX
BLU/WHT
ECM/PCM
PGM-FI
MAIN RELAY
B
S
M
SOLENOID
STARTER
(Permanent magnet type)


BATTERY
UNDER-HOOD FUSE/RELAY BOX
No. 41 (80A)
No. 42 (50A)
IGNITION SWITCH
BAT
ST
WHT
RED/WHT
BLK/WHT
BLK
BLK/WHT
WHT/RED
STARTER CUT RELAY
BLK/WHT
WHT/RED
UNDER-DASH FUSE/RELAY BOX
No. 13 (7.5A)
BLK/RED
BLK/RED
BLK/WHT
BLU/WHT
A/T GEAR POSITION CONSOLE SWITCH
B
S
M
SOLENOID
M
STARTER (Permanent magnet type)
ECM/PCM PGM-FI MAIN RELAY
ECM/PCM

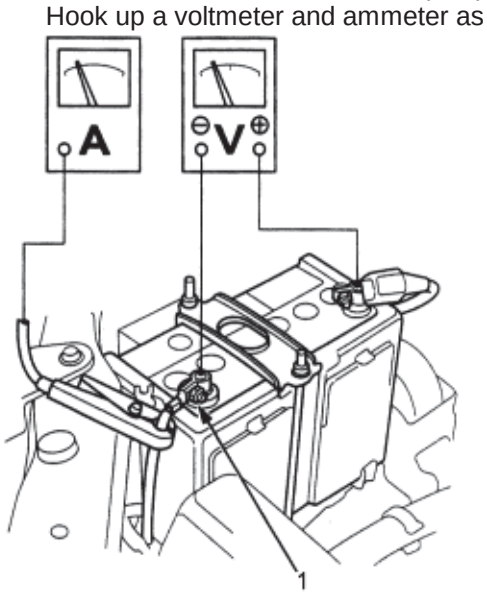
NOTE:The air temperature must be between 15 and 38° C (59 and 100°F) before testing.

Recommended Procedure:

- Use starter system tester.
- Connect and operate the equipment in accordance with the manufacturer's instructions.
- Test and troubleshoot as described.

Alternate Procedure:

- Use the following equipment:
  - Ammeter, 0 - 400 A
  - Voltmeter, 0 - 20 V (accurate within 0.1 volt)
  - Tachometer, 0 -1,200 rpm (min-1)
- Hook up a voltmeter and ammeter as shown.

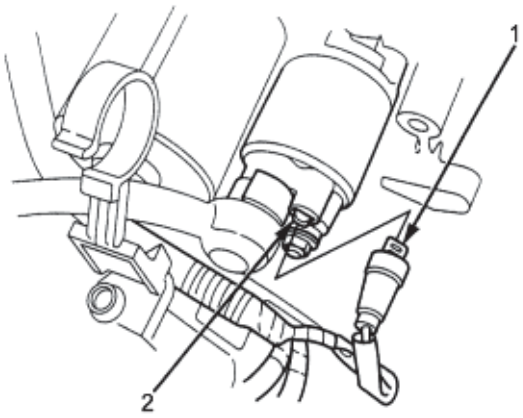


1. NEGATIVE TERMINAL

NOTE: After this test, or any subsequent repair, reset the ECM/PCM to clear any codes (see section 11).

Check the Starter Engagement:

1. Remove the No. 59 (15 A) fuse from the under-hood fuse/relay box.
2. Turn the ignition switch to START (III) with the shift lever in N or P position. The starter should crank the engine.
   - If the starter does not crank the engine, go to step 3.
   - If it cranks the engine erratically or too slowly, go to "Check for Wear and Damage" on the next page.
3. Check the battery, battery positive cable, ground, starter cut relay, and the wire connections for looseness and corrosion. Test again.
   If the starter still does not crank the engine, go to step 4.
4. Unplug the connector (BLK/WHT wire and solenoid terminal) from the starter.
5. Connect a jumper wire from the battery positive (+) terminal to the solenoid terminal.
   The starter should crank the engine.



1. BLK/WHT WIRE
2. SOLENOID TERMINAL

   - If the starter still does not crank the engine, remove it, and diagnose its internal problem.
   - If the starter cranks the engine, go to step 6.
6. Check the ignition switch (see section 23).
7. Check the starter cut relay (see section 23).
8. Check the immobiliser system (see section 23).
9. Check the A/T gear position switch (see section 14).
10. Check for an open in the wire between the ignition switch and starter.

Check for Wear and Damage
The starter should crank the engine smoothly and steadily. If the starter engages, but cranks the engine erratically, remove it, and inspect the starter drive gear and torque converter ring gear for damage.
Check the drive gear overrunning clutch for binding or slipping when the armature is rotated with the drive gear held. If damaged, replace the gears.

Check Cranking Voltage and Current Draw
Cranking voltage should be no less then 8.5 volts. Current draw should be no more than 350 amperes.
If cranking voltage is too low, or current draw too high, check for:

- dead or low battery.
- open circuit in starter armature commutator segments.
- starter armature dragging.
- shorted armature winding.
- excessive drag in engine.

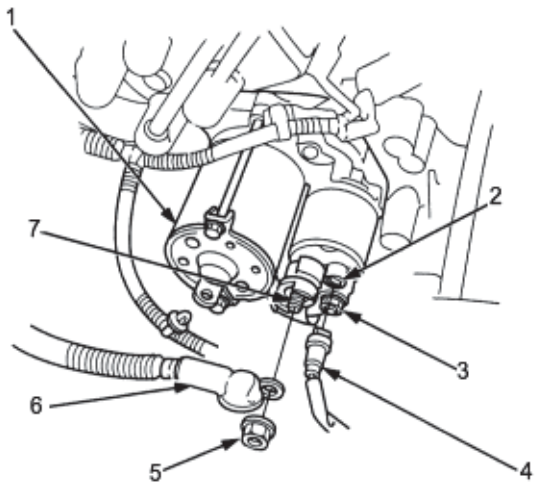
Check Cranking rpm
Engine speed during cranking should be above 100 rpm (min^{-1}).
If speed is too low, check for:

- loose battery or starter terminals.
- excessively worn starter brushes.
- open circuit in commutator segments.
- dirty or damaged helical splines or drive gear.
- defective drive gear overrunning clutch.

Check Starter Disengagement
With the shift lever in N or P position, turn the ignition switch to START (III), and release to ON (II).
The starter drive gear should disengage from the torque converter ring gear when you release the key.
If the drive gear hangs up on the torque converter ring gear, check for:

- solenoid plunger and switch malfunction.
- dirty drive gear assembly or damaged overrunning clutch.

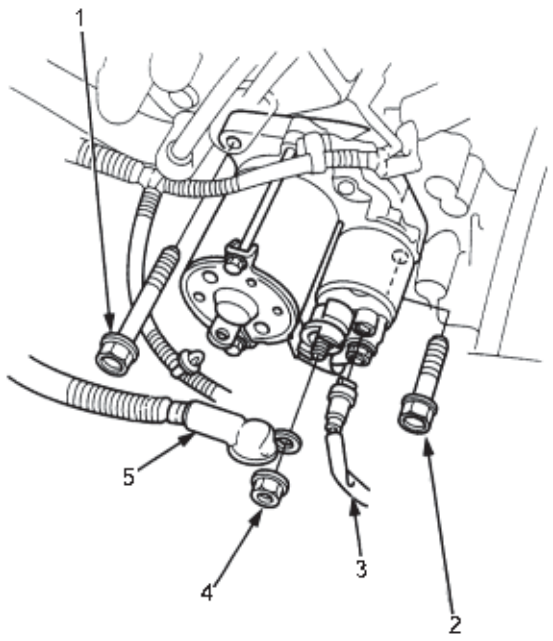
1. Check the hold-in coil for continuity between the S terminal and the armature housing (ground). The coil is OK if there is continuity.



1. ARMATURE HOUSING (GROUND)
2. S TERMINAL
3. M TERMINAL
4. BLK/WHT WIRE
5. B TERMINAL MOUNTING NUT, 9 Nm (0.9 kgf/m, 7 lbf/ft)
6. STARTER CABLE
7. B TERMINAL

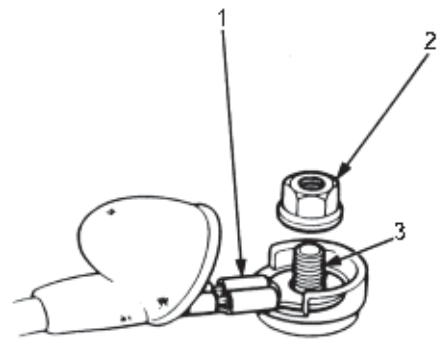
2. Check the pull-in coil for continuity between the S and M terminals. The coil is OK if there is continuity.

1. Disconnect the battery negative cable.
2. Disconnect the starter cable form the B terminal on the solenoid, then disconnect the BLK/WHT wire from the S terminal.



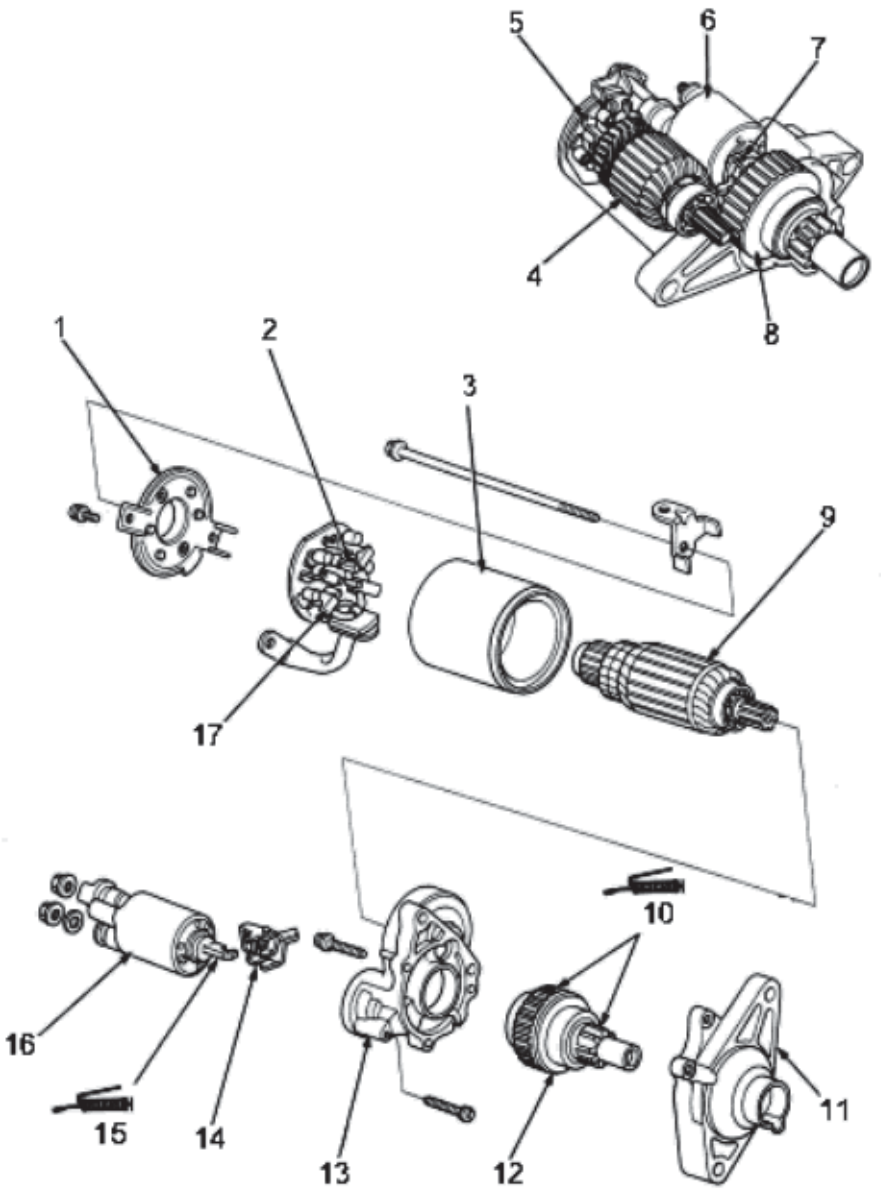
1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. BLK/WHT WIRE
4. B TERMINAL MOUNTING NUT, 9 Nm (0.9 kgf/m, 7 lbf/ft)
5. STARTER CABLE

3. Remove the two bolts holding the starter, then remove the starter.
4. Install in the reverse order of removal. When installing the starter cable, make sure that the crimped side of the ring terminal is facing out.



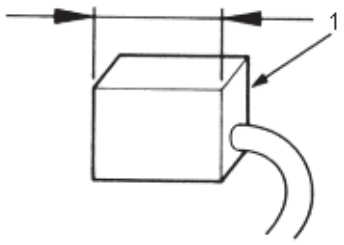
1. Crimped side of ring terminal
2. NUT
3. TERMINAL

5. Connect the battery positve cable and negative cable to the battery.



1. **END COVER**
2. **BRUSH**
   Inspection, (**See page** 4-10)
3. **ARMATURE HOUSING**
4. **ARMATURE**
5. **BRUSH HOLDER**
6. **STARTER SOLENOID**
7. **SOLENOID LEVER**
8. **OVERRUNNING CLUTCH**
9. **ARMATURE**
   Inspection and Test, (**See page** 4-10)
10. **MOLYBDENUM DISULFIDE**
11. **GEAR HOUSING COVER**
12. **OVERRUNNING CLUTCH**
    Inspection, (**See page** 4-10)
13. **GEAR HOUSING**
14. **SOLENOID LEVER**
15. **MOLYBDENUM DISULFIDE**
16. **STARTER SOLENOID**
    Test, (**See page** 4-7)
17. **BRUSH HOLDER**
    Test, (**See page**4-13)

Measure the brush length. If it is not within the service limit, replace the brush (or brush holder assembly).
Brush Length
Standard (New): 15.8 - 16.2 mm (0.62 - 0.64 in)
Service Limit: 11.0 mm (0.43 in)



1. BRUSH

NOTE: To seat new brushes after installing them in their holders, slip a slip of #500 or # 600 sandpaper, with the grit side up, over the commutator and smoothly rotate the armature. The contact surface of the brushes will be sanded to the same contour as the commutator.

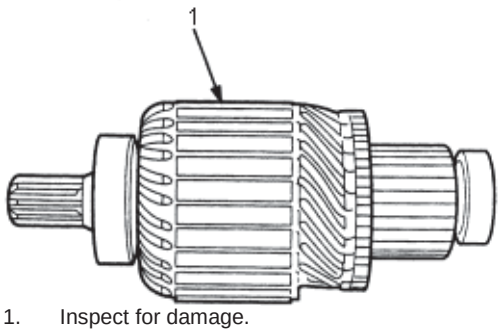
1. Slide the overrunning clutch along the shaft. Does it move freely? If not, replace it.
2. Rotate the overrunning clutch both ways. Does it lock in one direction and rotate smoothly in reverse? If it does not lock in either direction or it locks in both directions, replace it.



1. CLUTCH GEAR
2. DRIVE GEAR

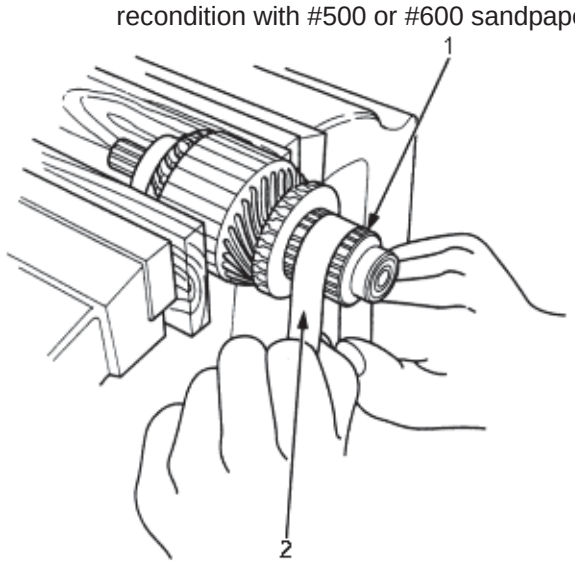
3. If the starter drive gear is worn or damaged, replace the overrunning clutch assembly; the gear is not available separately.
4. Check the condition of the torque converter ring gear if the starter drive gear teeth are damaged.

1. Inspect the armature for wear or damage due to contact with the field winding. If there is wear or damage, replace the armature.
2. Check commutator surface and diameter.



1. Inspect for damage.

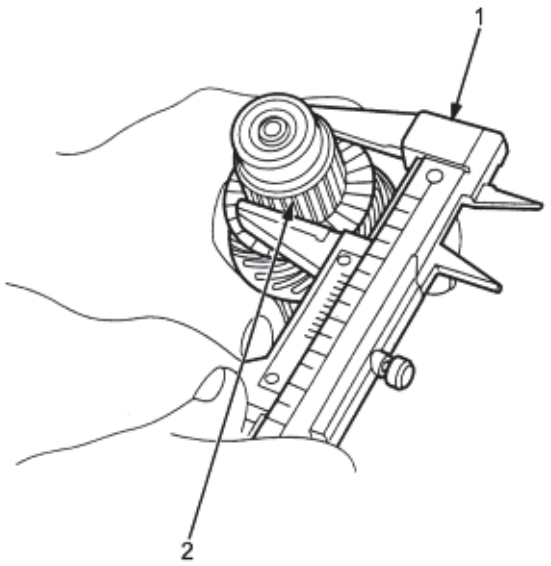
- If the surface is dirty or burnt, resurface with emery cloth or a lathe within the following specifications, or recondition with #500 or #600 sandpaper.



1. COMMUTATOR
2. SANDPAPER

- If commutator diameter is below the service limit, replace the armature.

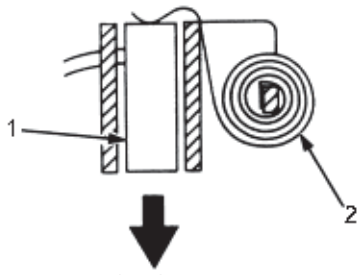
Commutator Diameter
Standard (New): 28.0 - 28.1 (1.102 - 1.106 in)
Service Limit: 27.5 mm (1.083 in)



1. VERNIER CALIPER
2. COMMUTATOR

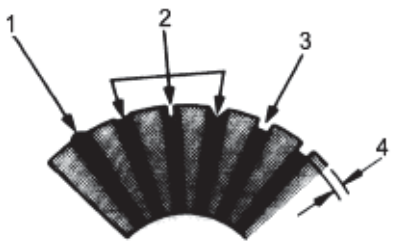
3. Measure the commutator runout.
   - If the commutator runout is within the service limit, check the commutator for carbon dust or brass chips between the segments.
   - If the commutator runout is not within the service limit, replace the armature.

Commutator Runout:
Standard (New) 0 - 0.02 mm (0 - 0008 in)
Service Limit: 0.05 - mm (0.002 in)



1. DIAL INDICATOR
2. COMMUTATOR

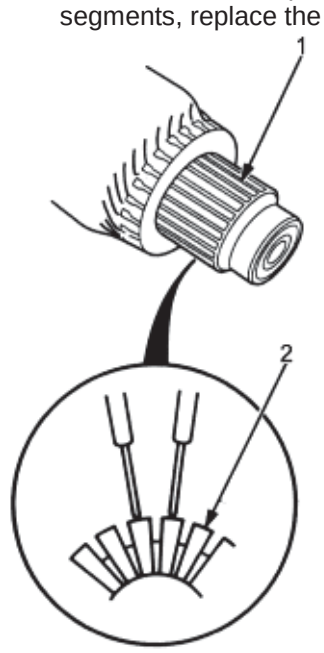
4. Check the mica depth. If necessary, undercut the mica with a hacksaw blade to achieve proper depth. If the service limit cannot be maintained, replace the armature.



1. HIGH MICA
2. NOT GOOD
3. GOOD
4. MICA DEPTH

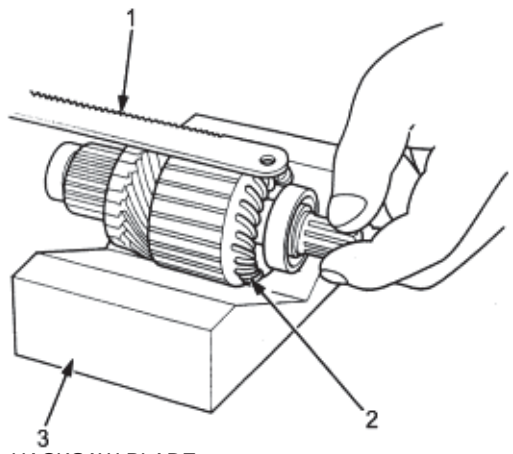
Commutator Mica Depth
Standard (New): 0.5 - 0.8 mm (0.02 - 0.03 in)
Service Limit: 0.2 mm (0.008 in)

5. Check for continuity between the segments of the commutator. If an open circuit exists between any segments, replace the armature.



1. COMMUTATOR
2. COMMUTATOR SEGMENT

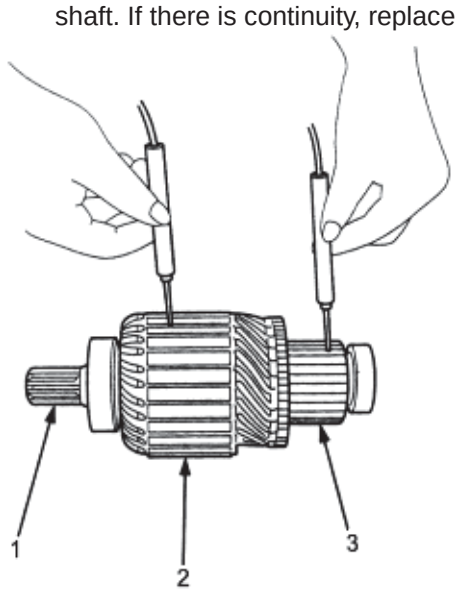
6. Place the armature on an armature tester. Hold a hacksaw blade on the armature core.



1. HACKSAW BLADE
2. ARMATURE
3. ARMATURE TESTER

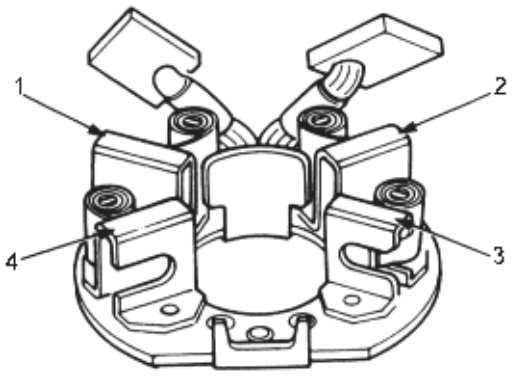
If the blade is attracted to the core or vibrates while the core is turned, the armature is shorted. Replace the armature.

7. With an ohmmeter, check that no continuity exists between the commutator and the armature coil core, and between the commutator and armature shaft. If there is continuity, replace the armature.



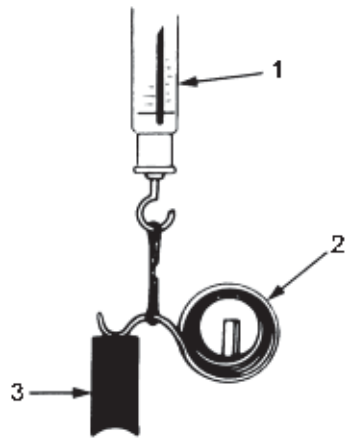
1. SHAFT
2. COIL CORE
3. COMMUTATOR

1. Check that there is no continuity between the + and - brush holders. If there is continuity, replace the brush holder assembly.



1. + BRUSH HOLDER
2. - BRUSH HOLDER
3. + BRUSH HOLDER
4. - BRUSH HOLDER

2. Insert the brush into the brush holder, and bring the brush into contact with the commutator, then attach a spring scale to the spring. Measure the spring tension at the moment the spring lifts off the brush.

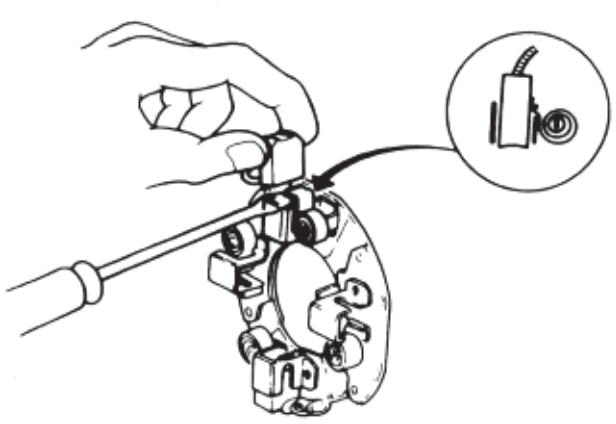


1. SPRING SCALE
2. SPRING
3. BRUSH

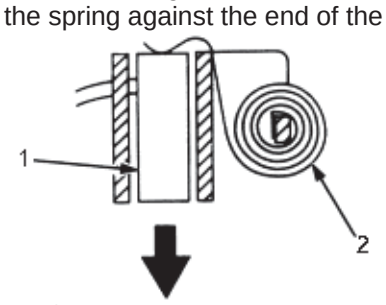
Spring Tension: 15.7 - 17.7 N
(1.60 1.80 kgf, 3.56 - 4.00 lbf)

NOTE: Use the illustration on page (**See page** 4-8) as reference for reassembly.

1. Pry back each brush spring with a screwdriver, then position the brush about halfway out of its holder, and release the spring to hold it there.



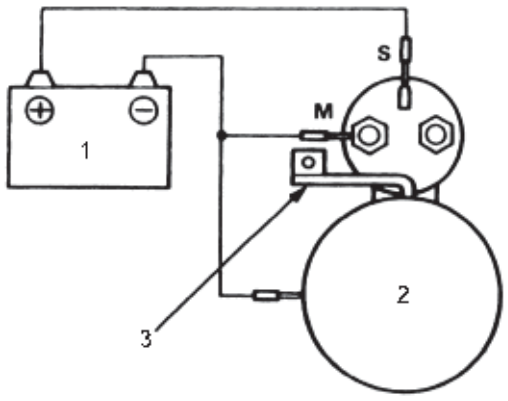
2. Install the armature in the housing. Next, pry back each brush spring again, and push the brush down until it seats against the commutator, then release the spring against the end of the brush.



1. BRUSH
2. BRUSH SPRING

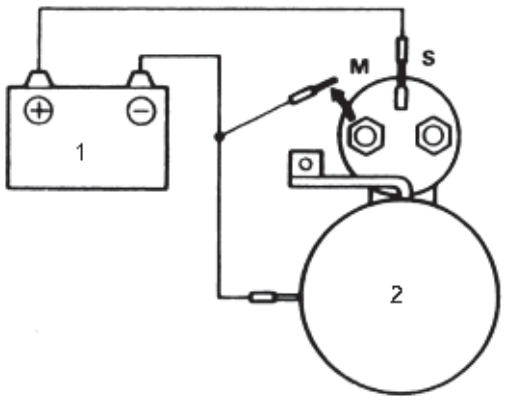
3. Install the end cover on the brush holder.

1. Disconnect the wire from the terminal M.
2. Make a connection as described below using as heavy a wire as possible (preferably equivalent to the wire used for the vehicle).
3. Connect the battery as shown. If the starter pinion pops out, it is working properly. To avoid damaging the starter, do not leave the battery connected for more than 10 seconds.



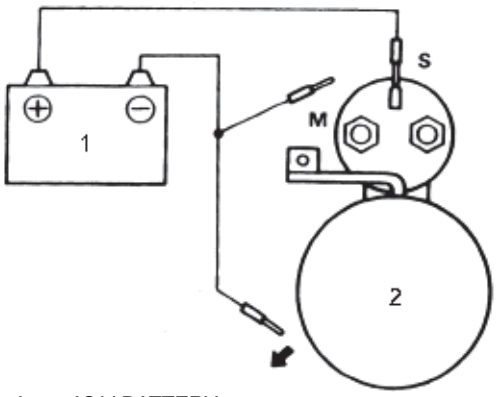
1. 12 V BATTERY
2. BODY (GROUND)
3. Disconnect the wire.

4. Disconnect the battery from the M terminal. if the pinion does not retract, the hold-in coil is working properly. To avoid damaging the starter, do not leave the battery connected for more than 10 seconds.



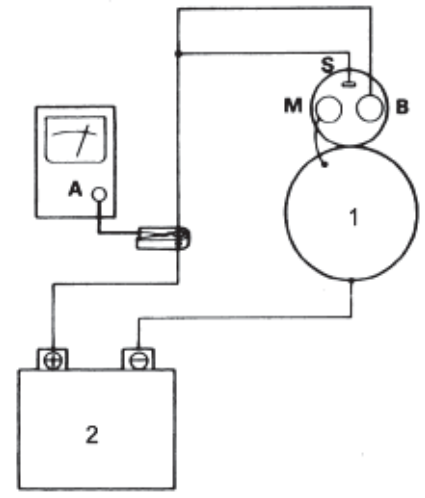
1. 12 V BATTERY
2. BODY (GROUND)

5. Disconnect the battery also from the body. If the pinion retracts immediately, it is working properly. To avoid damaging the starter, do not leave the battery connected for move than 10 second.



1. 12 V BATTERY
2. BODY GROUND

6. Clamp the starter firmly in a vice.
7. Connect the starter to the battery as described in the diagram below, and confirm that the motor starts and keeps rotating.



1. STARTER
2. 12 V BATTERY

8. If the electric current and motor speed meet the specifications when the battery voltage is at 11.5 V, the starter is working properly.

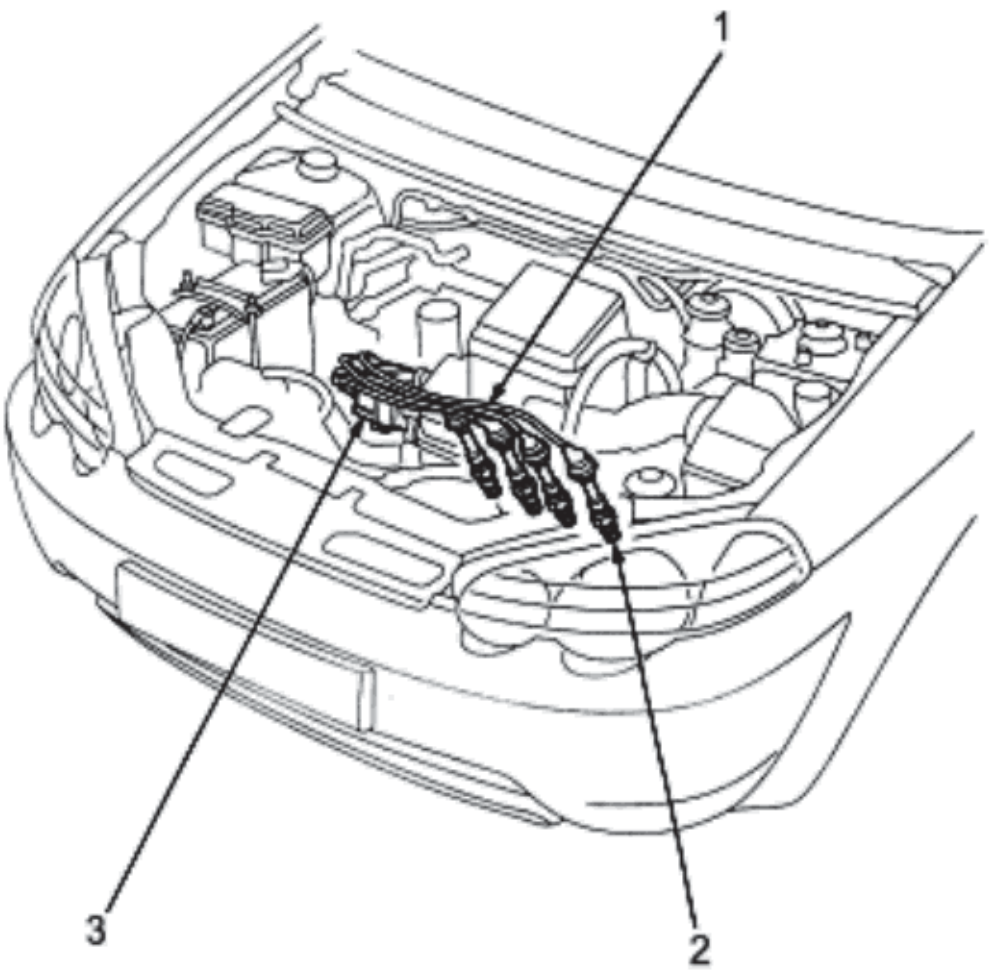
Specifications:

Electric current	Motor speed
80 A or less	2,600 rpm (min-1) or more

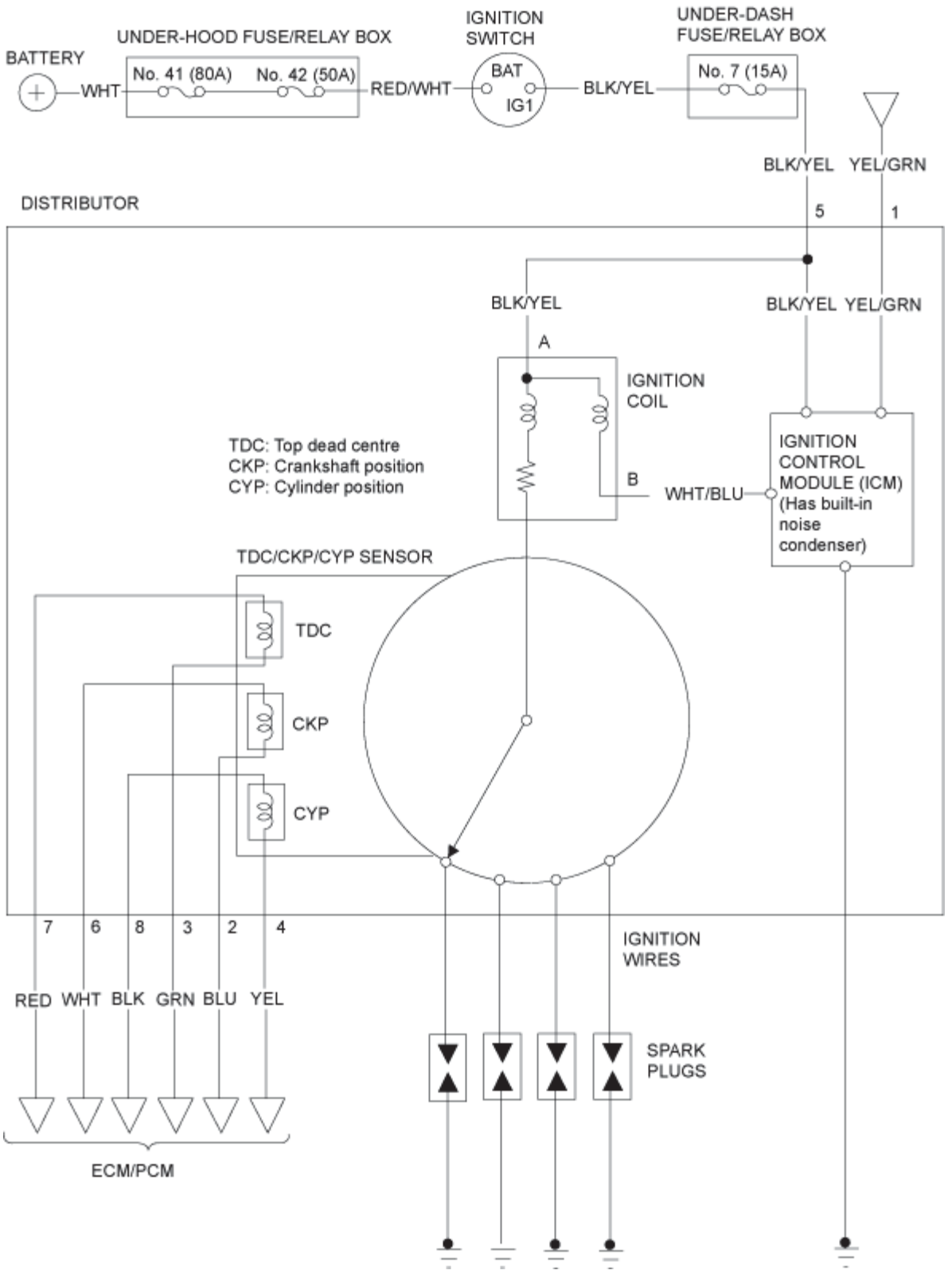
NOTE: LHD type is shown, RHD type is similar.

IGNITION TIMING CONTROL SYSTEM

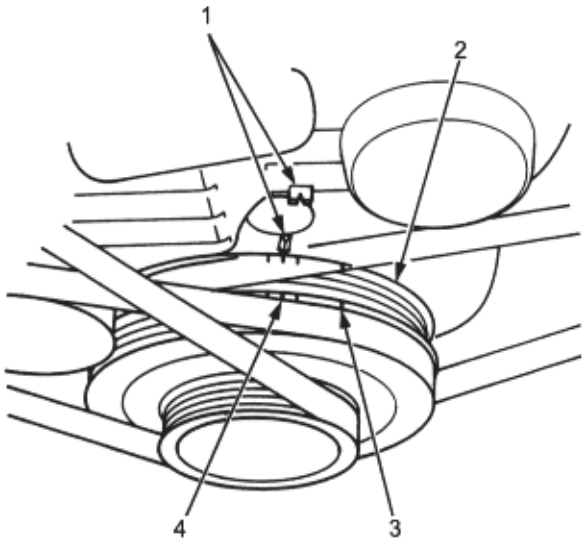
- Troubleshooting, section 11
- Idle speed Inspection/Adjustment, section 11
- Inspection and Setting (**See Page** 4-19)



1. **IGNITION WIRES**
   Inspection and Test, (**See page** 4-21)
2. **SPARK PLUGS**
   Inspection, (**See page** 4-21)
3. **DISTRIBUTOR**
   Replacement, (**See page** 4-18)
   Overhaul, (**See page** 4-19)
   Ignition Coil Test, (**See page** 4-20)
   Ignition Control Module (ICM) Input Test (**See page** 4-20)

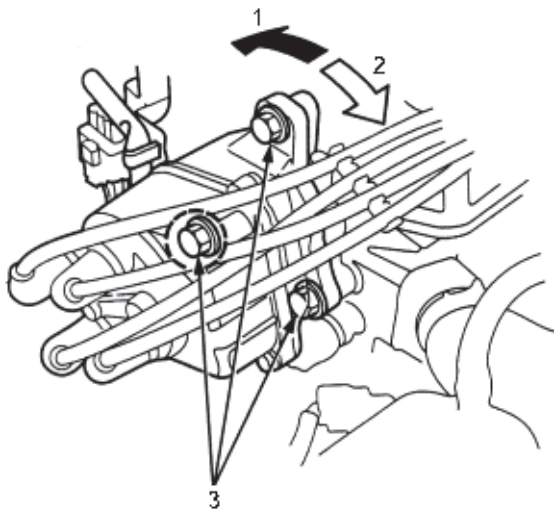

BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No. 41 (80A)
No. 42 (50A)
RED/WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No. 7 (15A)
BLK/YEL
YEL/GRN
DISTRIBUTOR
5
1
BLK/YEL
BLK/YEL
YEL/GRN
A
IGNITION COIL
B
WHT/BLU
IGNITION CONTROL MODULE (ICM) (Has built-in noise condenser)
TDC: Top dead centre
CKP: Crankshaft position
CYP: Cylinder position
TDC/CKP/CYP SENSOR
TDC
CKP
CYP
7
6
8
3
2
4
RED
WHT
BLK
GRN
BLU
YEL
ECM/PCM
IGNITION WIRES
SPARK PLUGS

1. Check the idle speed, and adjust it if necessary (see section 11).
2. Pull out the service check connector 2P (BRN and BLK wires), then connect the SCS short connector (P/N 07PAZ-0010100) to it (see section 11)
3. Start the engine. Hold the engine at 3,000 rpm (min.-1) with no load in N or P position, until the radiator fan comes on, then let it idle
4. Connect the timing light to the No. 1 ignition wire, then point the light towards the pointer on the timing belt cover.
5. Check the ignition timing in no load conditions: headlights, blower fan, rear window defogger, and air conditioner are not operating.
   Ignition Timing:
   12° ± 2° BTDC (RED) during idle in N or P



1. POINTERS
2. CRANKSHAFT PULLEY
3. WHT MARK (TDC)
4. RED MARK

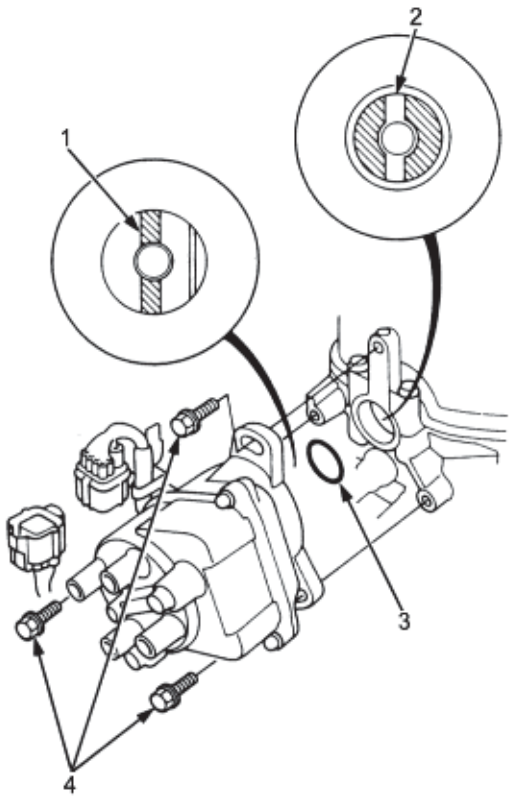
6. If necessary, adjust the ignition timing as follows. Loosen the distributor mounting bolts, and turn the distributor (DI) housing counterclockwise to advance the timing or clockwise to retard the timing.



1. To ADVANCE
2. To RETARD
3. MOUNTING BOLTS, 24 Nm (2.4 kgf/m, 17 lbf/ft)

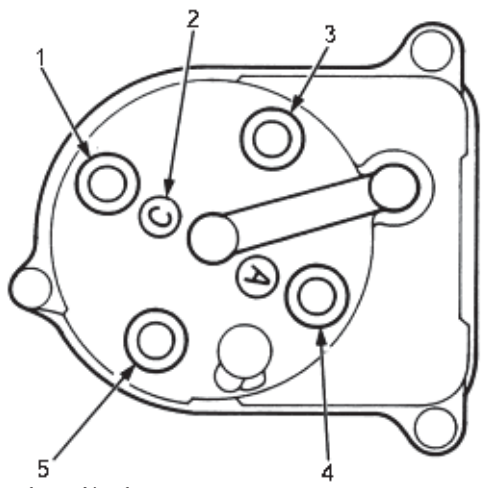
7. Tighten the distributor mounting bolts, and recheck the ignition timing.
8. Disconnect the SCS short connector from the service check connector.

Removal:
1. Disconnect the connector from the distributor.
2. Disconnect the ignition wires from the distributor ignition (DI) cap.
3. Remove the mounting bolts from the distributor, then remove the distributor from the cylinder head.



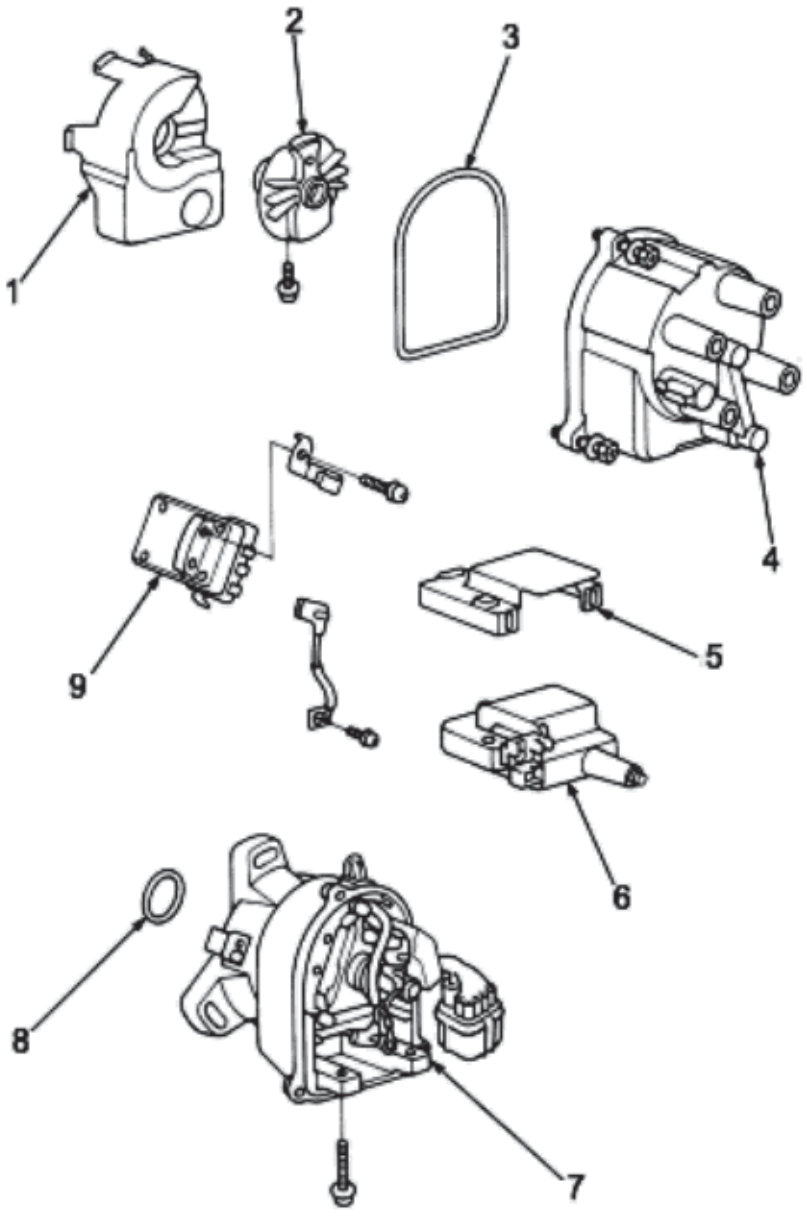
1. DISTRIBUTOR END
2. CAMSHAFT END
3. O-RING. Replace.
4. MOUNTING BOLTS. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

Installation:
1. Bring the No. 1 piston to compression stroke TDC.
2. Coat a new O-ring with engine oil, then install it.
3. Align the lug on the end of the distributor and its mating grooves in the camshaft end, then slip the distributor into position.
   NOTE: The lug on the end of the distributor and its mating grooves in the camshaft end are both offset to eliminate the possibility of installing the distributor 180° out of time.
4. Install the mounting bolts, and tighten them fully.
5. Connect the ignition wires to the distributor ignition (DI) cap as shown.



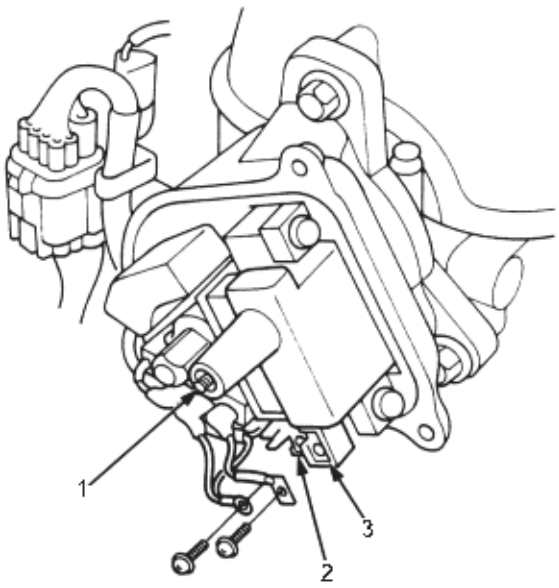
1. No. 1
2. No. 1 CYLINDER MARK
3. No.3
4. No. 4
5. No.2

6. Connect the connector to the distributor.
7. Set the ignition timing (see previous page).
8. After setting the ignition timing, tighten the mounting bolts.



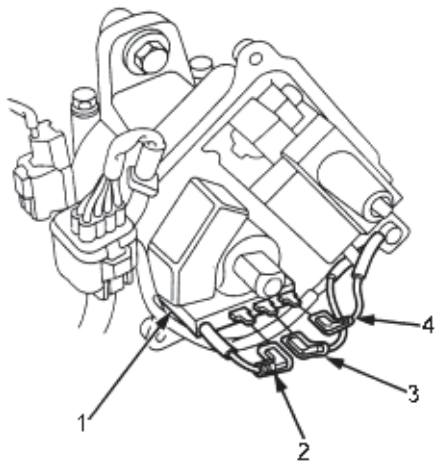
1. **LEAK COVER**
2. **DISTRIBUTOR IGNITION (DI) ROTOR**
3. **CAP SEAL.** Check for damage.
4. **DISTRIBUTOR IGNITION (DI) CAP** Check for cracks, wear, damage and fouling. Clean or replace.
5. **MAGNETIC SHIELD**
6. **IGNITION COIL** Test, (**See page** 4-20)
7. **DISTRIBUTOR IGNITION (DI) HOUSING.** Check for cracks and damage.
8. **O-RING.** Replace.
9. **IGNITION CONTROL MODULE (ICM)** Input Test, (**See page** 4-20)

Using an ohmmeter, measure the resistance between the terminals. If the resistance is not within specifications, replace the ignition coil.
NOTE: Resistance will vary with the coil temperature: specifications are at 20°C (68°F).
Primary Winding Resistance
(Between the A and B terminals):
0.63 - 0.77 ohm
Secondary Winding Resistance
(Between the A and B secondary winding terminals):
12.8 - 19.2 Kohms



1. SECONDARY WINDING TERMINAL
2. TERMINAL A (+)
3. TERMINAL B (-)

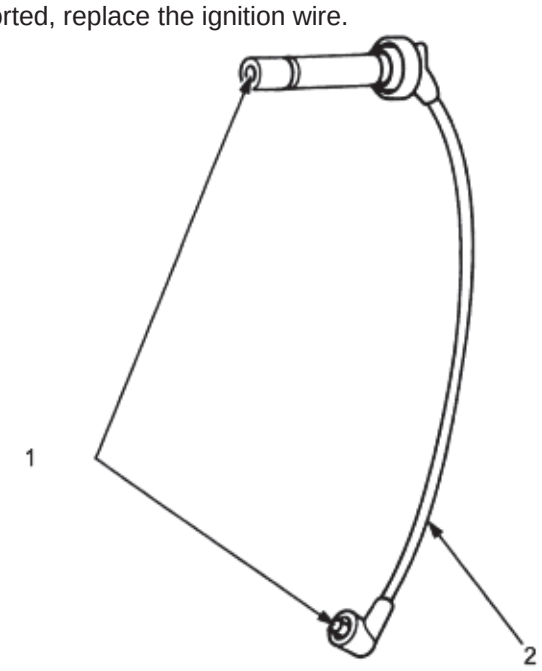
1. Remove the distributor ignition (DI) cap, the distributor ignition (DI) rotor and the leak cover.
2. Disconnect the wires from the ICM



1. ICM
2. YEL/GRN WIRE
3. BLK/YEL WIRE
4. WHT/BLU WIRE

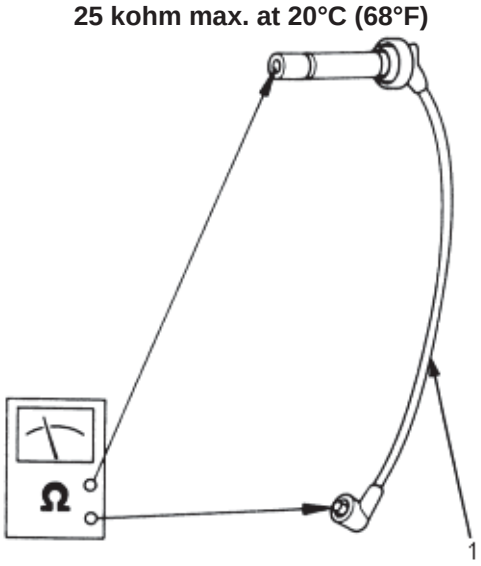
3. Turn the ignition switch ON (II). Check for voltage between the BLK/YEL wire and body ground. There should be battery voltage.
   - If there is no battery voltage, check the BLK/YEL wire between the under-dash fuse/relay box and the ICM.
   - If there is battery voltage, go to step 4.
4. Turn the ignition switch ON (II). Check for voltage between the WHT/BLU wire and body ground. There should be battery voltage.
   - If there is no battery voltage, check:
     - the ignition coil.
     - the WHT/BLU wire between the ignition coil and the ICM.
   - If there is battery voltage, go to step 5.
5. Check for continuity on the BLU wire between the test tachometer connector and the ICM. There should be continuity.
6. Check for continuity on the BLU wire to body ground. There should be no continuity.
7. If all tests are normal, replace the ICM.

1. Carefully remove the ignition wires by pulling on the rubber boots. Do not bend the wires; you might break them inside.
2. Check the condition of the ignition wire terminals. If any terminal is corroded, clean it, and if it is broken or distorted, replace the ignition wire.



1. Check for broken, corroded, and bent terminals.
2. IGNITION WIRE

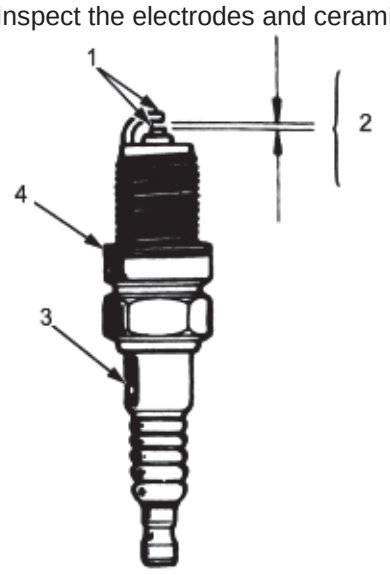
3. Connect the ohmmeter probes and measure resistance.
   Ignition Wire Resistance
   25 kohm max. at 20°C (68°F)



1. IGNITION WIRE

4. If the resistance exceeds 25 kohm, replace the ignition wire.

1. Inspect the electrodes and ceramic insulator for:



1. Worn or deformed electrodes
2. ♦ Improper gap
   ♦ Oil-fouling
   ♦ Carbon deposits
   ♦ Cracked centre electrode insulator
3. Cracked insulator
4. Damaged gasket

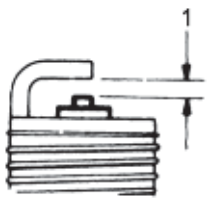
Burned or worn electrodes may be caused by:
- ♦ Advanced ignition timing
- ♦ Loose spark plug
- ♦ Plug heat range too hot
- ♦ Insufficient cooling

Fouled plug may be caused by:
- ♦ Retarded ignition timing
- ♦ Oil in combustion chamber
- ♦ Incorrect spark gap
- ♦ Plug heat range too cold
- ♦ Excessive idling/low speed running
- ♦ Clogged air cleaner element
- ♦ Deteriorated ignition wires

2. Check the electrode gap.
   - Adjust the gap with suitable gapping tool.

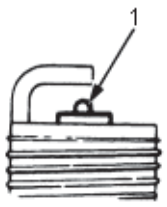
Electrode Gap

Standard	1.1 - 8.1 mm (0.043 - 8.004 in)



1. 1.1 mm (0.043 in)

   - Replace the plug if the centre electrode is rounded as shown below:



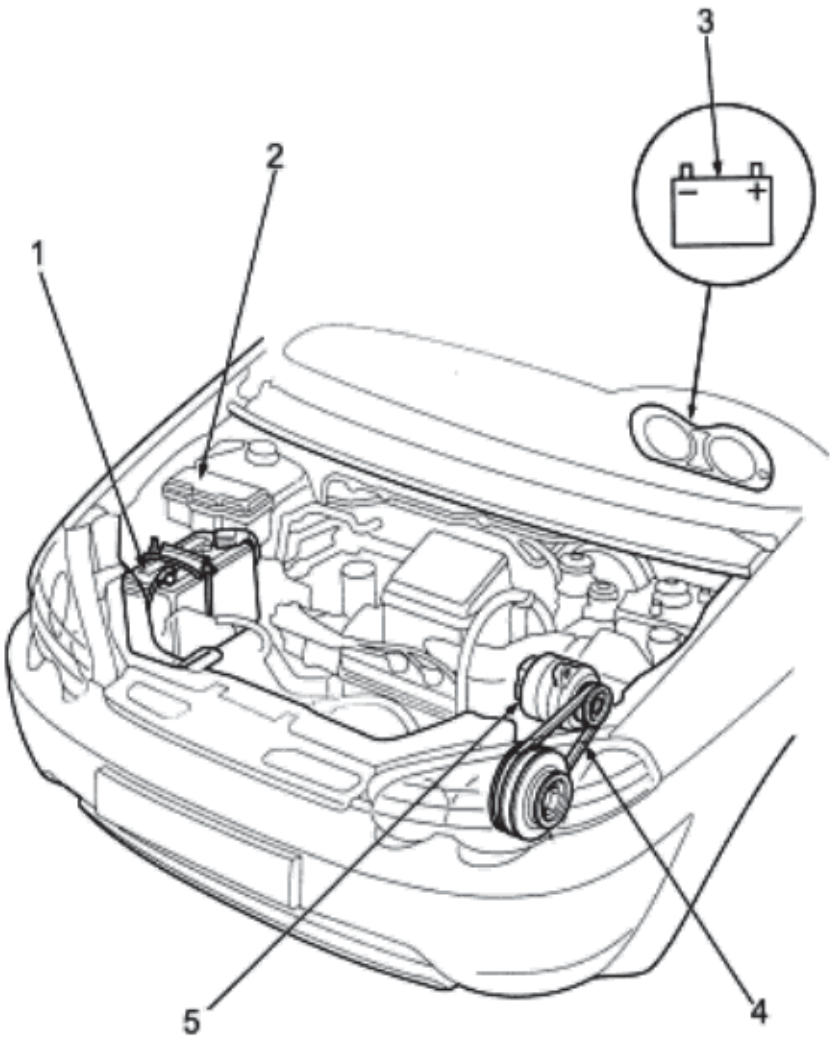
1. ROUNDED ELECTRODE

Spark Plugs

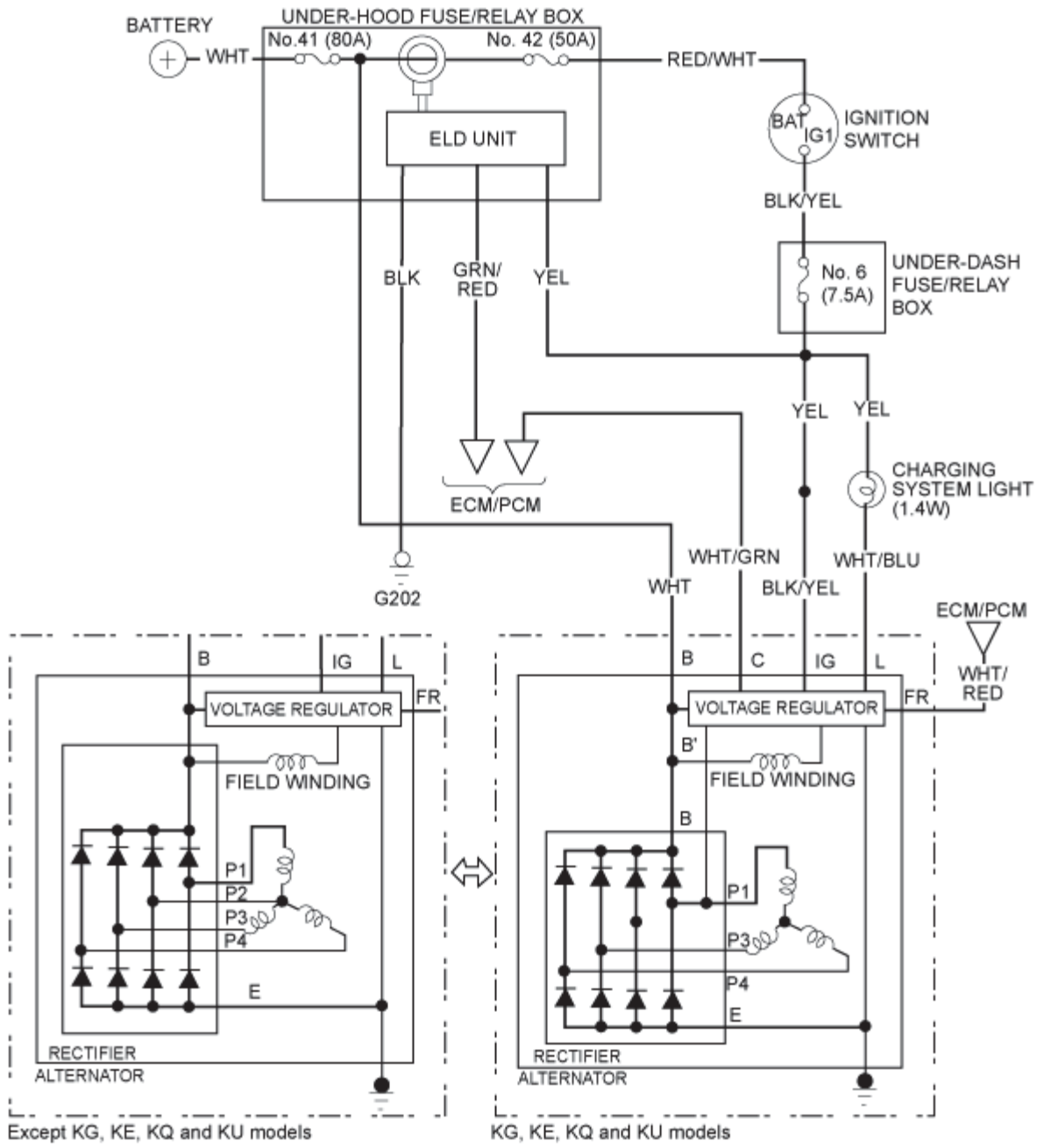
ZFR5J-11 (NGK) KJ16CR-L11 (DENSO)

3. Apply a small quantity of anti-seize compound to the plug threads, and screw the plus into the cylinder head finger-tight. Then torque then to 18 Nm (1.8 kgf/m, 13 lbf/ft).

NOTE: LHD type is shown, RHD type is similar.



1. **BATTERY**
   Test, section 23
2. **UNDER-HOOD FUSE/RELAY BOX**
   (* Has a built-in ELECTRICAL LOAD DETECTOR (ELD) UNIT)
3. **CHARGING SYSTEM LIGHT**
   (In the gauge assembly)
   Test, (**See page** 4-25)
4. **ALTERNATOR**
   Inspection and Adjustment, (**See page** 4-39)
5. **ALTERNATOR**
   Troubleshooting, (**See page** 4-25)
   Replacement, (**See page** 4-30)
   Overhaul, (**See page** 4-31)
   Rectifier, (**See page** 4-33)



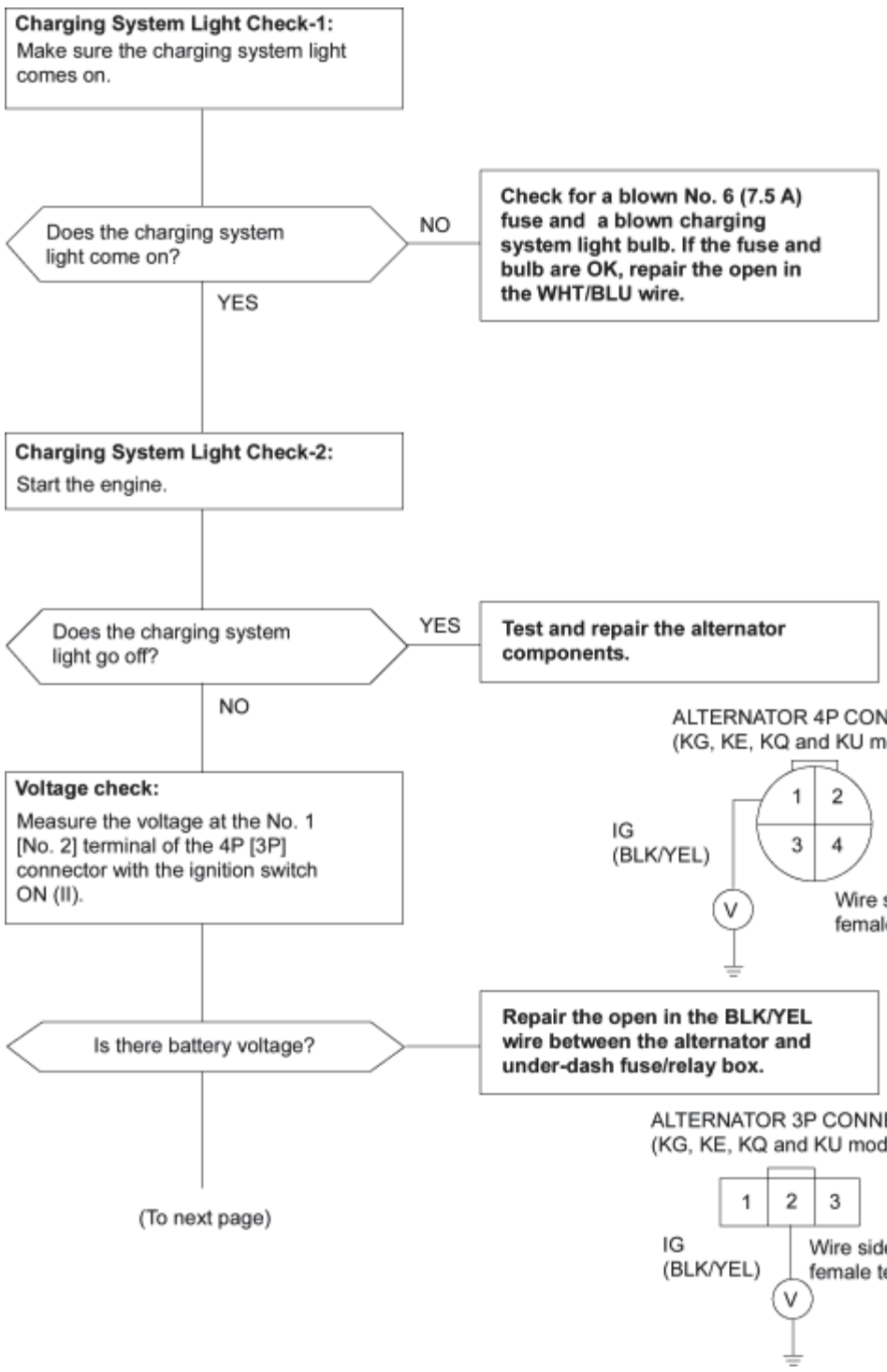
Except KG, KE, KQ and KU models

KG, KE, KQ and KU models

If the charging system light does not come on or does not go off, or the battery is dead or low, test the following items in the order listed below:

1. Battery (**See page** 23-B-2).
2. Charging system light.
3. Voltage.
4. Alternator control system (with ELD).
5. Alternator/regulator.

Charging System Light Test

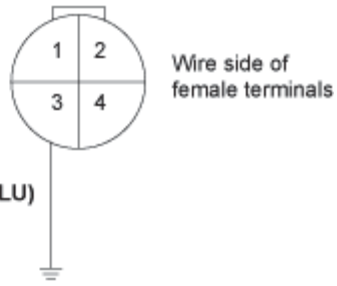


[ ] Except KG, KE, KQ and KU models

(From previous page)

Check for an open in the L circuit-1:
1. Turn the ignition switch OFF.
2. Disconnect the 4P [3P] connector from the alternator.
3. Ground the No. 3 terminal of the 4P [3P] connector.
4. Turn the ignition switch ON (II).

ALTERNATOR 4P CONNECTOR
(KG, KE, KQ and KU models)

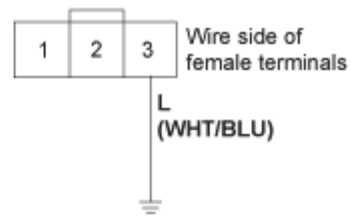


Does the charging system light come on?

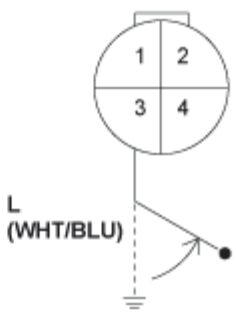
NO → **Turn the ignition switch OFF and repair the open in the WHT/BLU wire.**

YES

ALTERNATOR 3P CONNECTOR
(Except KG, KE, KQ and KU models)



Check for an open in the L circuit-2:
Disconnect the No. 3 terminal of the 4P [3P] connector from the ground.

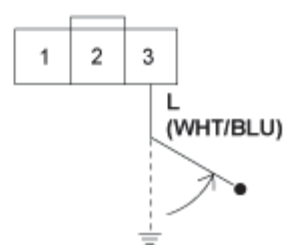


Does the charging system light go off?

YES → **Test and repair the alternator components.**

NO

Turn the ignition switch OFF and repair the short to ground in the WHT/BLU wire.



[ ] Except KG, KE, KQ and KU models

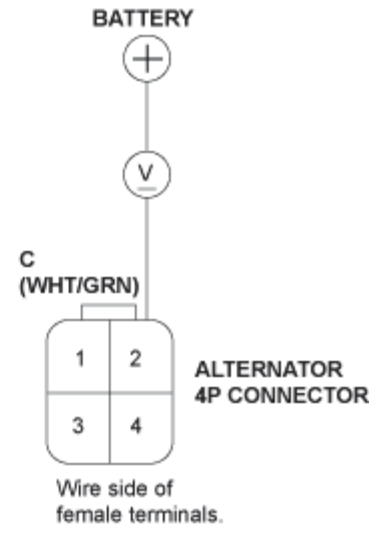
Alternator Control System Test (KG, KE, KQ, KU models)

NOTE: Before testing, check proper operation of the ELD by confirming with the MIL (see section 11).

Check for a short in the circuit (ALTC line):

1. Turn the ignition switch OFF.
2. Start the engine and turn the headlights (high beam) ON.
3. Measure voltage between the 4P connector terminal No. 2 and the positive terminal of the battery.

CAUTION: Be sure to use a voltmeter with its plus terminal connected to battery positive, and its negative terminal to the 4P connector terminal No. 2.



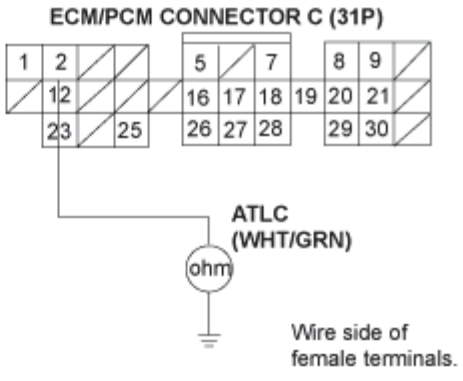
Is there 1 V or less?

NO → A (To next page)

YES

Check for a short in the wire (ALTC line):

1. Turn the headlight and ingition switch OFF.
2. Disconnect the ECM/PCM connector C (31P).
3. Check for continuity between the ECM/PCM connector terminal C2 and body ground.



Is there continuity?

NO →
- Test and repair the alternator components.
- Substitute a known-good ECM/PCM and recheck. If prescribed voltage is now available, replace the original ECM/PCM.

YES

Repair the short in the wire between the alternator and ECM/PCM.

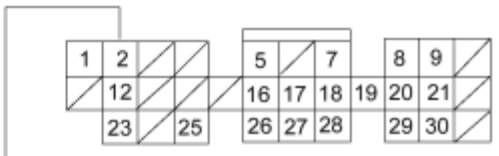
(From previous page)

A

Check for an open in the wire (ALTC line):

1. Turn the headlight and ignition switch OFF.
2. Disconnect the ECM/PCM connector C (31P).
3. Check for continuity between the ECM/PCM connector terminal C2 and alternator 4P connector terminal No. 2.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals.

ATLC (WHT/GRN)

ohm

C (WHT/GRN)



Wire side of female terminals.

ALTERNATOR 4P CONNECTOR

Is there continuity?

NO → **Repair open in the wire between the alternator and the ECM/PCM.**

YES

Test and repair the alternator components.

Alternator/Regulator Test

⚠ CAUTION

Be careful during testing as the radiator and condenser fans come on suddenly while the engine is running.

NOTE

Be sure to use an ammeter capable of measuring amperages higher than 120 A.

Alternator/Regulator Test:
1. Shift to [P] or [N] and start the engine.
2. Hold the engine at 3,000 rpm (min^{-1}) with no load until the radiator fan comes on, then let it idle.
3. Raise the engine speed to 2,000 rpm (min^{-1}) and hold it there.
4. Turn the headlights (high beam on and measure voltage at battery terminals.

Is the voltage between 13.9 and 15.1 V? — NO → **Test and repair the alternator components.**

YES

Turn the blower motor and the rear window defogger on and measure battery voltage?

Is the battery voltage less than 13.5 V? — NO → **Turn brake lights, etc. on also.**

YES

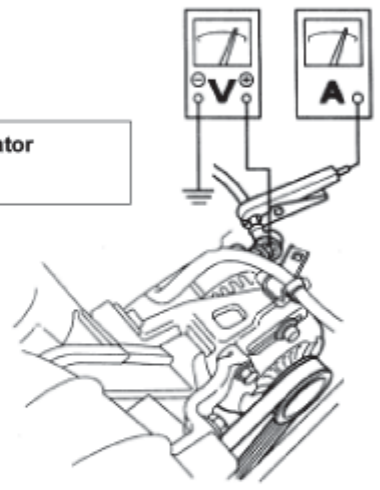
Read the amperage.

Is there more than 60 A? — NO → **Test and repair the alternator components.**

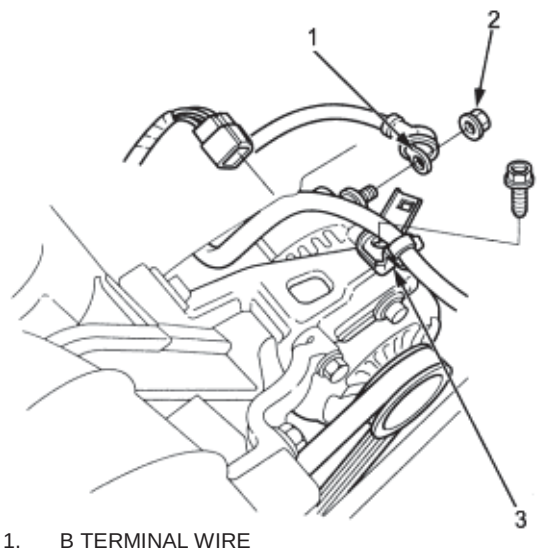
YES

Alternator/regulator operation is OK. Test the alternator components.

CAUTION: As the headlights warm up considerably, do not cover them.

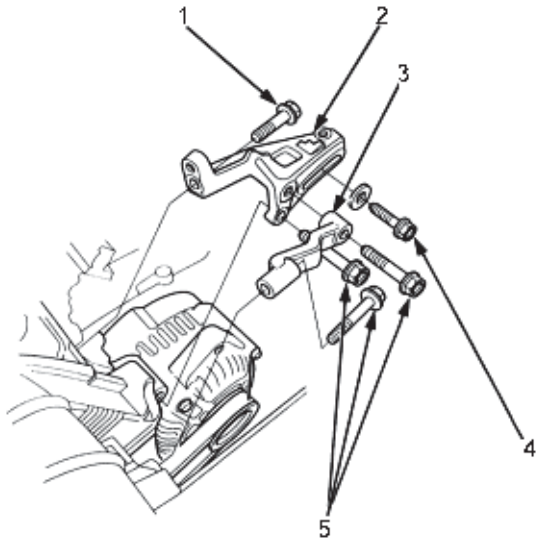


1. Disconnect the battery negative terminal first, then the positive terminal.
2. Remove the harness stay from the upper bracket.
3. Disconnect the 4P (or 3P) connector and B terminal wire from the alternator.



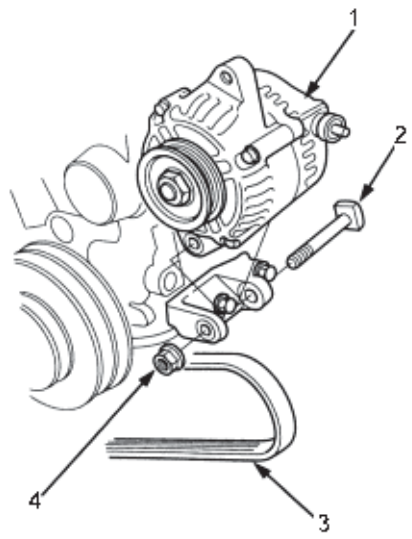
1. B TERMINAL WIRE
2. TERMINAL NUT, 8 Nm (0.8 kgf/m, 6 lbf/ft)
3. HARNESS STAY

4. Remove the adjusting bolt, mounting nut and mounting bolts, then remove the alternator bracket and engine mount bracket A.



1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. ALTERNATOR BRACKET
3. ENGINE MOUNT BRACKET A
4. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
5. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

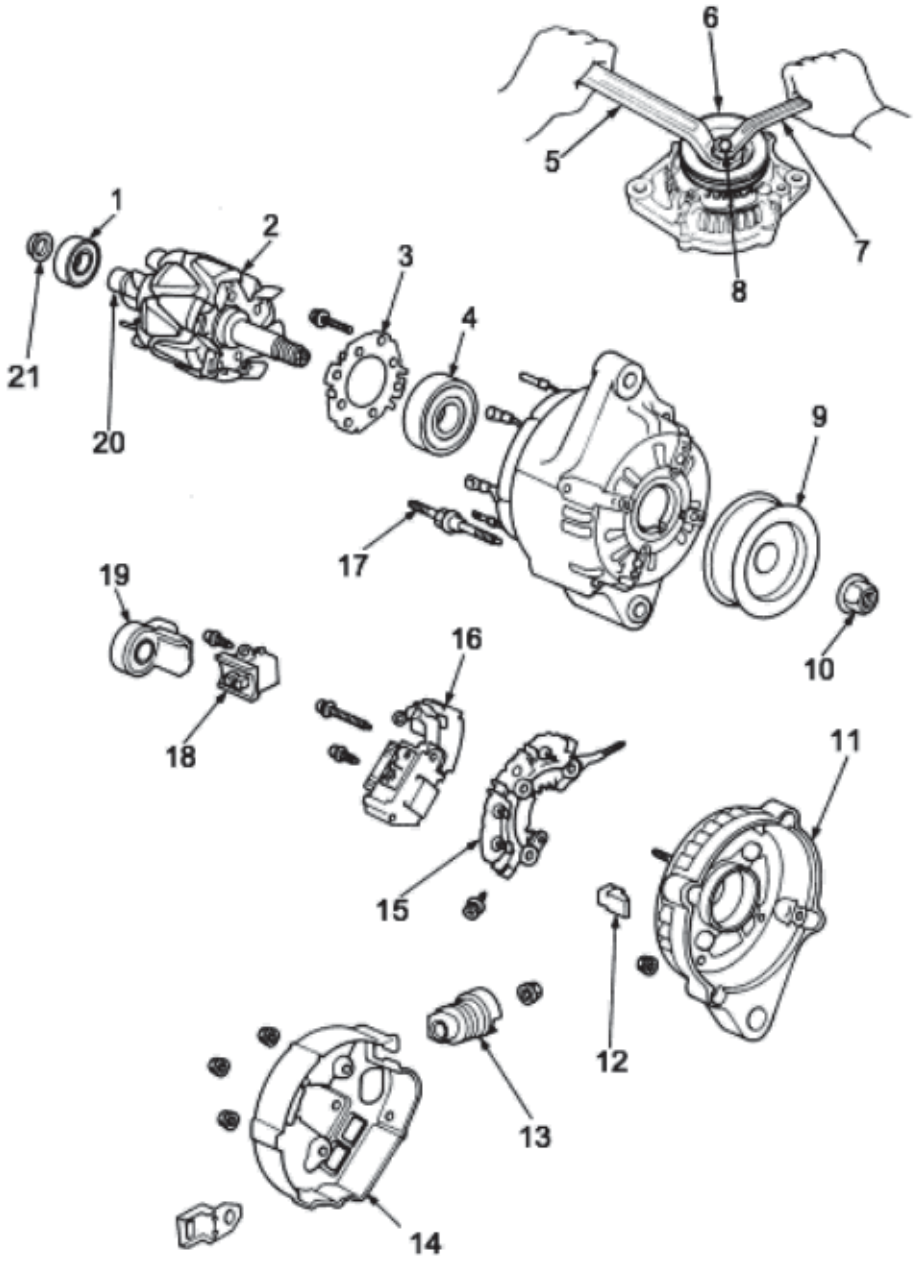
5. Pull out the through bolt, then remove the alternator belt and alternator.



1. ALTERNATOR
2. THROUGH BOLT MOUNTING NUT
3. ALTERNATOR BELT
4. LOCKNUT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

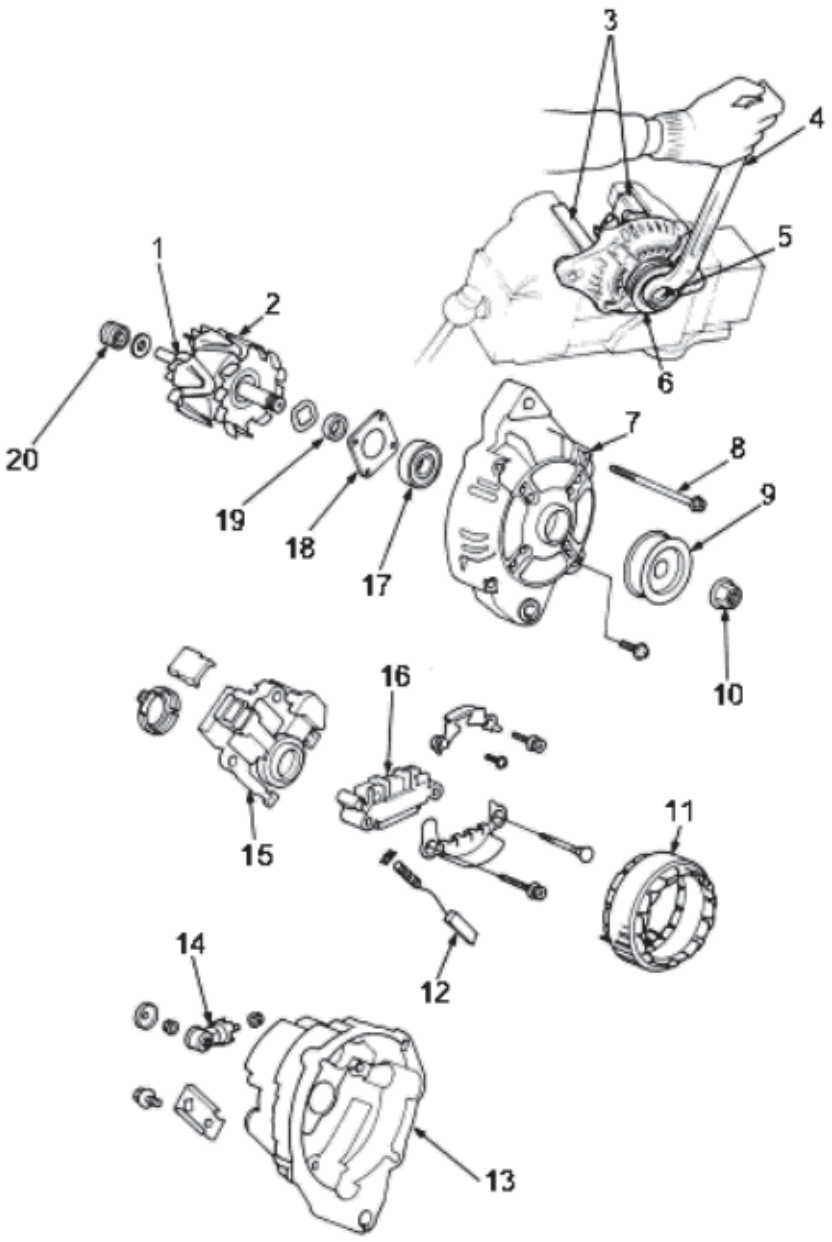
6. Install the alternator in reverse order of removal.
7. Adjust the alternator belt tension (**See Page** 4-40).

NOTE: It is necessary to separate the pulley, drive end housing and rotor only when the front bearing needs replacement. To loosen the pulley use tools as shown. If necessary, use an impact wrench.



1. **REAR BEARING**
2. **ROTOR**
   Test, (**See page** 4-37)
3. **BEARING INSULATOR**
4. **FRONT BEARING**
5. **22 mm BOX WRENCH**
6. **PULLEY**
7. **10 mm BOX WRENCH**
8. **PULLEY LOCKNUT, 111 Nm (11.3 kgf/m, 81.7 lbf/ft)**
9. **PULLEY**
10. **PULLEY LOCKNUT, 111 Nm (11.3 kgf/m, 81.7 lbf/ft)**
11. **REAR HOUSING**
12. **INSULATOR SLEEVE**
13. **TERMINAL INSULATOR**
14. **END COVER**
15. **RECTIFIER ASSEMBLY**
    Test, (**See page** 4-33)
16. **VOLTAGE REGULATOR**
17. **STATOR THROUGH BOLT**
18. **BRUSH ASSEMBLY**
    Inspection, (**See page** 4-36)
19. **BRUSH HOLDER INSULATOR**
20. **CAUTION: Do not get grease or oil on the slip rings.**
21. **SPACER RING**

NOTE: Do not remove the pulley unless the front bearing needs replacement.
To loosen the pulley locknut, use 10 mm and 22 mm wrenches. If necessary, use an impact wrench.



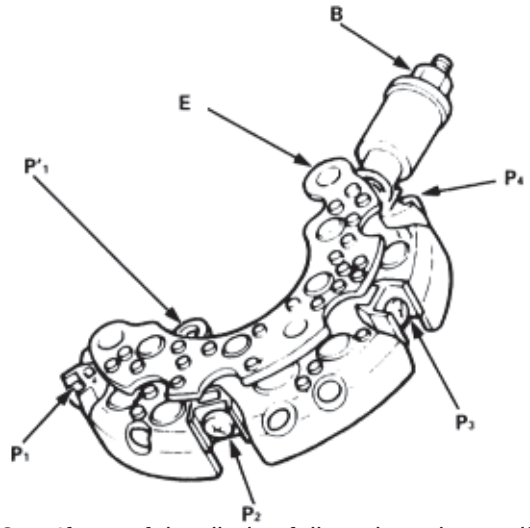
1. **CAUTION: Do not get grease or oil on the slip rings.**
2. **ROTOR**
   Test, (**See page** 4-37)
3. **ALUMINIUM PLATES**
4. **24 mm BOX WRENCH**
5. **PULLEY LOCKNUT, 111 Nm (11.3 kgf/m, 81.7 lbf/ft)**
6. **PULLEY**
7. **DRIVE-END HOUSING**
8. **THROUGH BOLT**
9. **PULLEY**
10. **PULLEY LOCKNUT, 11 Nm (11.3 kgf/m, 81.7 kgf/m)**
11. **STATOR**
    Test, (**See page** 4-37)
12. **BRUSH**
    Inspection, (**See page** 4-36)
13. **REAR HOUSING**
14. **TERMINAL**
15. **VOLTAGE REGULATOR**
16. **RECTIFIER ASSEMBLY**
    Test, (**See page** 4-33)
    Removal, (**See page** 4-34)
17. **FRONT BEARING**
18. **BEARING INSULATOR**
19. **SPACER RING**
20. **REAR BEARING**
    Replacement, (**See page** 4-38)

Rectifier Test (DENSO)

NOTE: The diodes are designed to allow current to pass in one direction while blocking it in the opposite direction. Since the alternator rectifier is made up of eight diodes (four pairs), each diode must be tested for continuity in both directions with an ohmmeter that has a diode checking capability; a total of 16 checks.

1. Check for continuity in each direction between
   - the B and P terminals.
   - E (ground) and P terminals.

   All diodes should have continuity in only one direction.



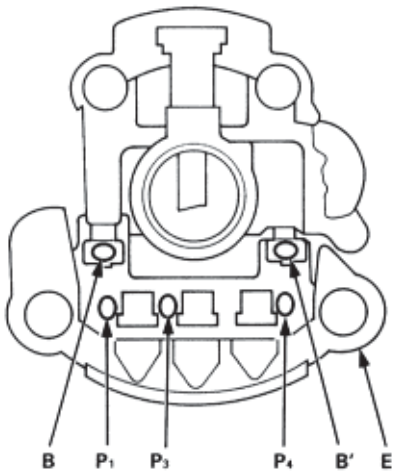
2. If any of the diodes fail, replace the rectifier assembly (diodes are not available separately).

Rectifier Test (MITSUBISHI)

NOTE: The diodes are designed to allow current to pass in one direction while blocking it in the opposite direction. Since the alternator rectifier is made up of six diodes each diode must be tested for continuity in both directions with an ohmmeter that has a diode checking capability; a total of 12 checks.

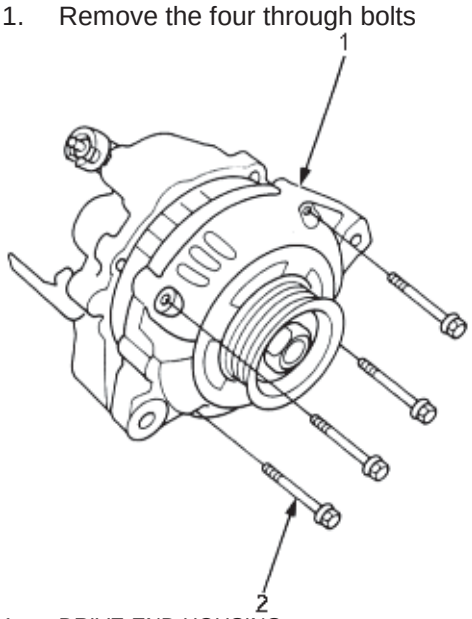
1. Check for continuity in each direction between.
   - the B and P (P_1, P_3, P_4) terminals.
   - the B' and P (P_1, P_3, P_4) terminals.
   - E (ground) and the P (P_1, P_3, P_4) terminals.

   All diodes should have continuity in only one direction.



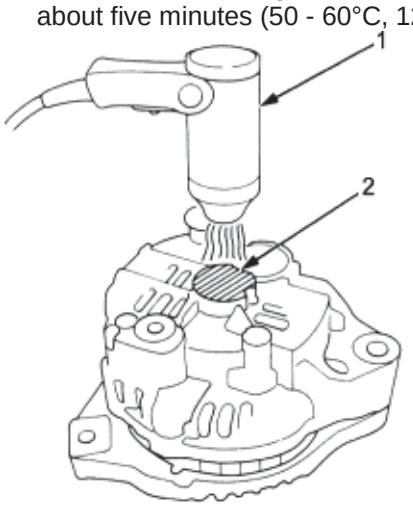
2. If any of the diodes fail, replace the rectifier assembly (diodes are not available separately).

1. Remove the four through bolts



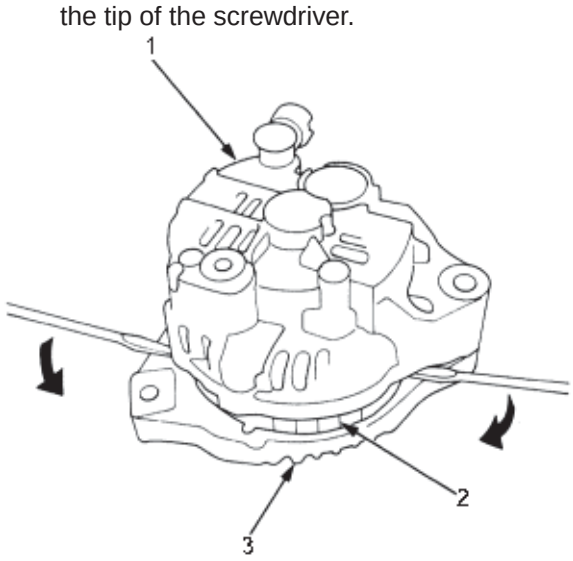
1. DRIVE-END HOUSING
2. THROUGH BOLT

2. Heat the rear bearing seat with a 1,000 W hair drier for about five minutes (50 - 60°C, 120 - 140°F).



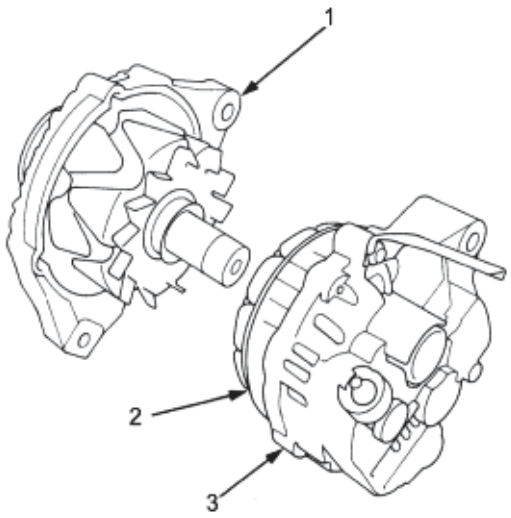
1. HAIR DRIER
2. REAR BEARING SEAT

3. Separate the rear housing from the drive-end housing by inserting a flat tip screwdriver into the openings and prying them apart.
NOTE: Be careful not to damage the stator with the tip of the screwdriver.



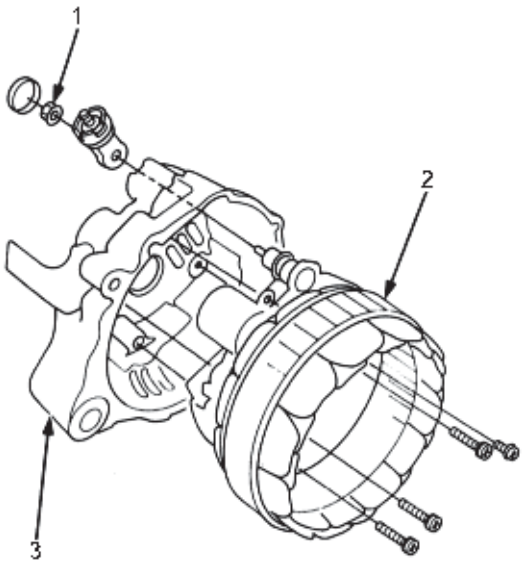
1. REAR HOUSING
2. STATOR
3. DRIVE-END HOUSING

4. Separate the rear housing and drive-end housing.
NOTE: Separate the rear housing and drive-end housing with the stator attached to the rear housing.



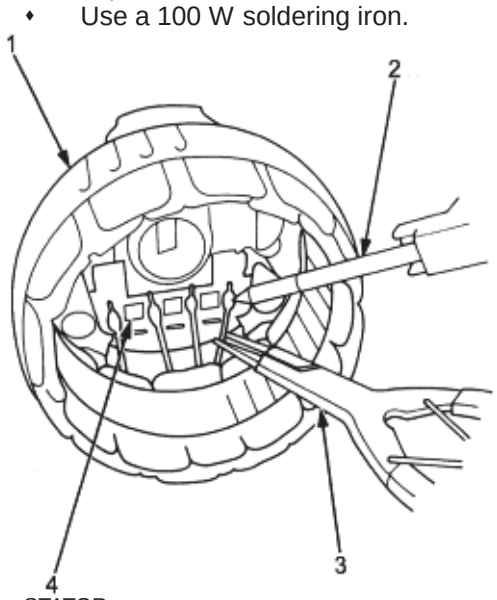
1. DRIVE-END HOUSING
2. STATOR
3. REAR HOUSING

5. Separate the rear housing from the stator/rectifier assembly by removing the four screws and the terminal nut.



1. TERMINAL NUT
2. STATOR/RECTIFIER ASSEMBLY
3. REAR HOUSING

6. Unsolder the rectifier from the stator leads.
   - To avoid damaging the diodes with heat, pinch the stator leads between pliers to carry heat off, and apply the soldering iron only long enough to separate the leads from the rectifier.
   - Use a 100 W soldering iron.

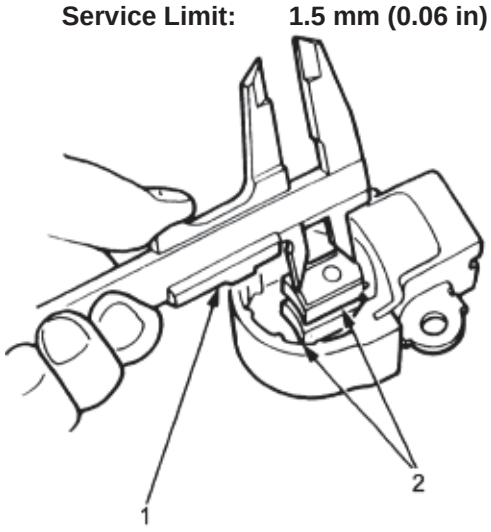


1. STATOR
2. SOLDERING IRON
3. PLIERS
4. RECTIFIER DIODE

7. Install the new rectifier in the reverse order of removal.
   - Apply the soldering iron only long enough to ensure a good connection so that the heat will not damage the diodes.
   - Use only a rosin core type solder or solder joints will corrode.

Alternator Brush Inspection (DENSO)

1. Remove the end cover, then take out the brush holder by removing its two screws.
2. Measure the length of the brushes with a vernier caliper.
   Alternator Brush Length:
   Standard (New): 10.5 mm (0.41 in)
   Service Limit: 1.5 mm (0.06 in)

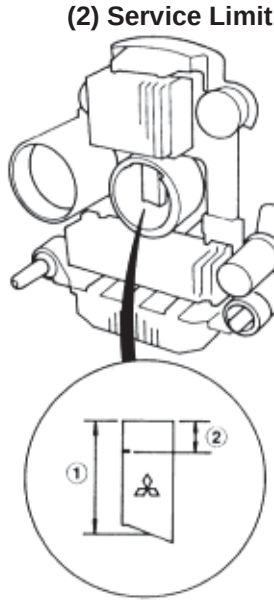


1. VERNIER CALIPER
2. ALTERNATOR BRUSHES

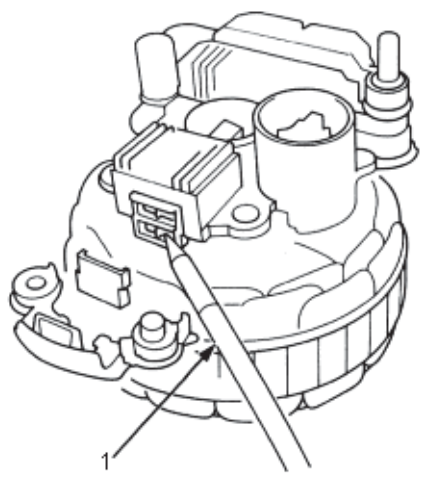
3. If the brushes are less than the service limit, replace the alternator brush assembly.

Alternator Brush Inspection (MITSUBISHI)

1. Separate the drive-end housing from the rear housing as described on page 4-34.
2. Separate the rear housing from the stator/rectifier assembly by removing the four screws and the terminal nut from the rear housing (**See page** 4-34).
3. Measure the length of the brushes with a vernier caliper.
   Alternator Brush Length:
   (1) Standard (New): 19 mm (0.75 in)
   (2) Service Limit: 5 mm (0.20 in)

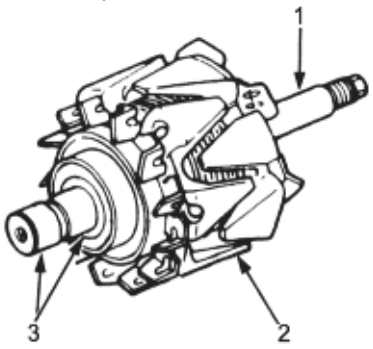


4. If the brushes are less than the service limit, replace them.



1. SOLDERING IRON

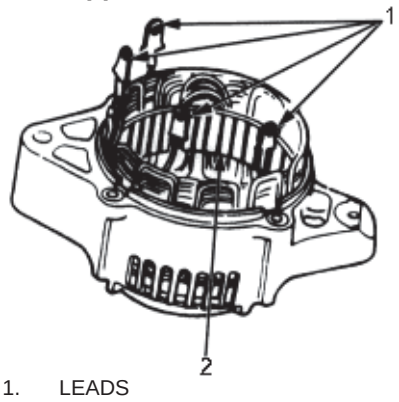
1. Check the resistance between the slip rings
   There should be 1.8 - 3.0 ohms.
   - If resistance meets the specification, go to step 2.
   - If resistance does not meet the specification, replace the alternator.



1. ROTOR SHAFT
2. ROTOR
3. SLIP RINGS

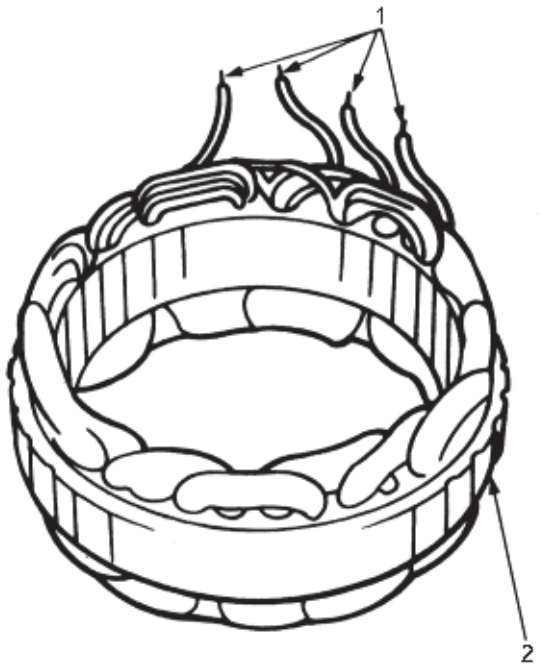
2. Check that there is no continuity between the slip rings and the rotor or rotor shaft.
3. If the rotor fails either continuity check, replace the alternator.

1. Check that there is continuity between each pair of leads.
   Nippondenso:



1. LEADS
2. COIL CORE

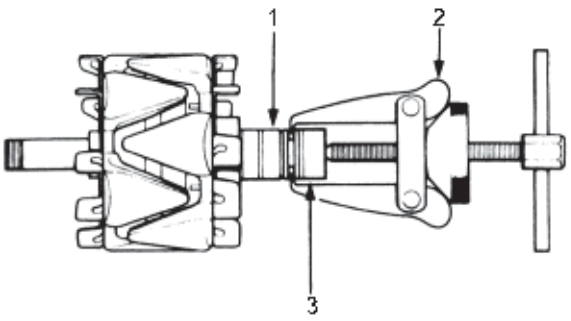
Mitsubishi:



1. LEADS
2. COIL CORE

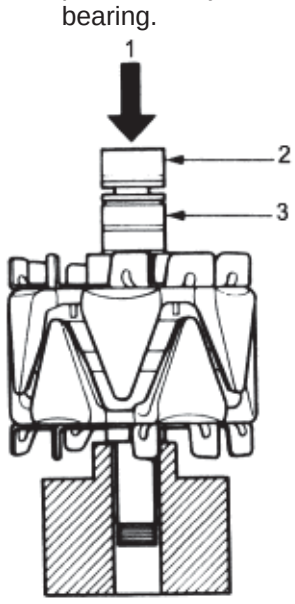
2. Check that there is no continuity between each lead and the coil core.
3. If the coil fails either continuity check, replace the alternator.

1. Pull off the rear bearing.
   - Make sure the tips of the bearing puller jaws are thin enough to fit between the bearing and the slip rings.
   - Do not reused the bearing.



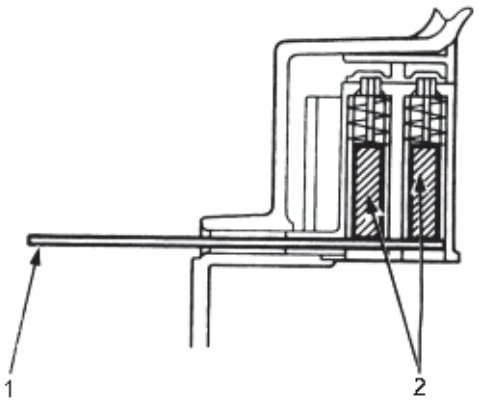
1. SLIP RINGS
2. BEARING PULLER
3. REAR BEARING

2. Use a hand press to install the new bearing. Apply pressure only on the inner race to avoid damaging the bearing.



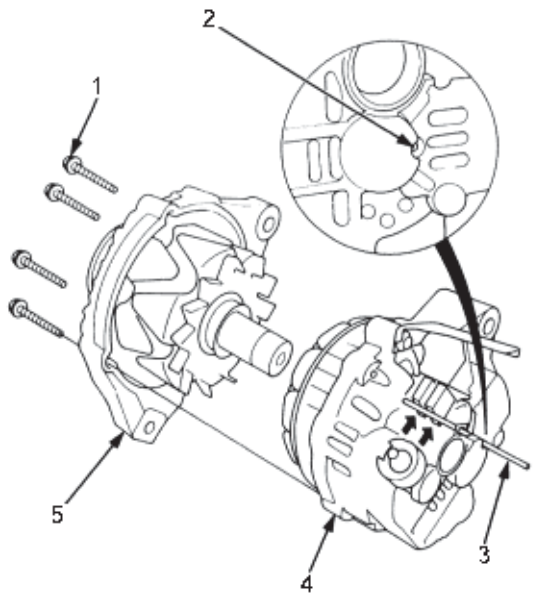
1. PRESS
2. REAR BEARING
3. SLIP RING

1. Push the brushes in, then insert a pin or drill bit (about 1.8 mm diameter) to hold them there.



1. PIN
2. BRUSHES

2. Heat the rear bearing seat in the rear housing (**See page** 4-34). After heating, continue immediately with assembling before the rear bearing seat cools completely.
3. Put the rear housing/stator assembly and drive-end housing/rotor assembly together, tighten the four through bolts and pull out the pin.



1. THROUGH BOLT
2. BRUSH ACCESS HOLE
3. PIN
4. REAR HOUSING/STATOR ASSEMBLY
5. DRIVE-END HOUSING/ROTOR ASSEMBLY

4. After assembling the alternator, turn the pulley by hand to make sure the rotor rotates smoothly and without noise.

NOTE: When using a new belt, first adjust the deflection or tension to the values for the new belt, then readjust the deflection or tension to the values for the used belt after running the engine for five minutes.

Deflection method:

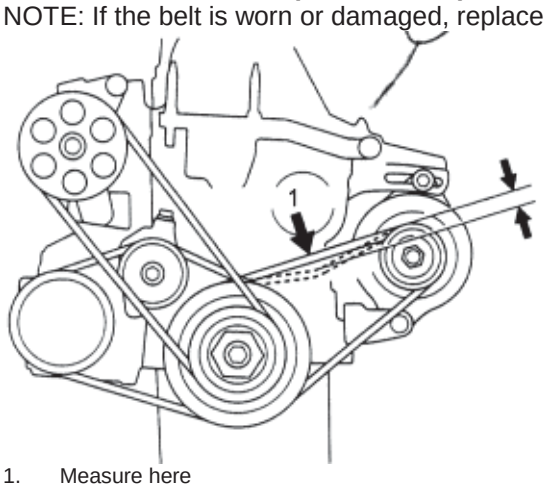
Apply a force of 98 Nm (10 kgf, 22 lbf), and measure the deflection between the alternator and crankshaft pulley.

Deflection:

Used Belt: 8.0 - 10.5 mm (0.31 - 0.41 in)

New Belt: 6.0 - 8.5 mm (0.24 - 0.41 in)

NOTE: If the belt is worn or damaged, replace it.



1. Measure here

Belt tension gauge method:

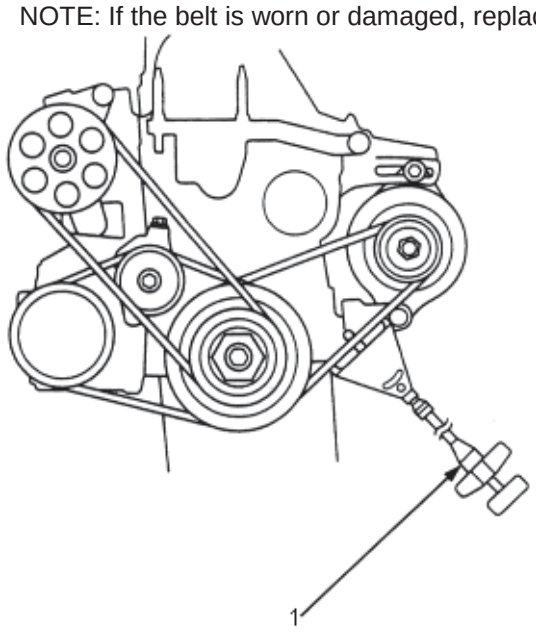
Attach the belt tension gauge to the belt and measure the tension. Follow the gauge manufacturer's instructions.

Tension:

Used Belt: 340 - 490 N (35 - 50 kgf, 77 - 110 lbf)

New Belt: 540 - 740 N (55 - 75 kgf, 120 - 170 lbf)

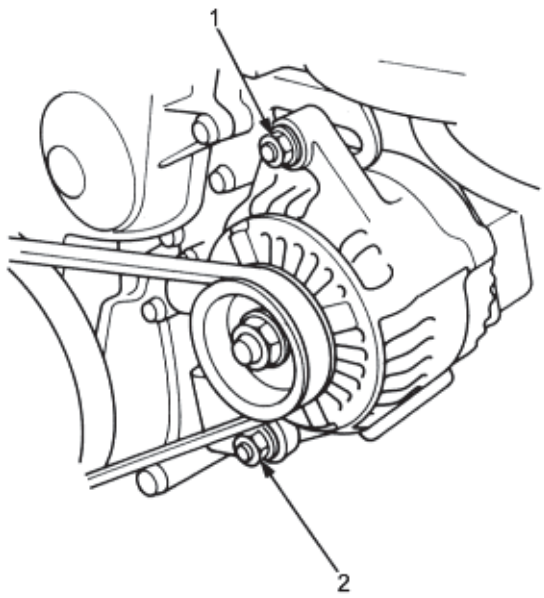
NOTE: If the belt is worn or damaged, replace it.



1. BELT TENSION GAUGE, 07JGG-0010101

If adjustment is necessary:

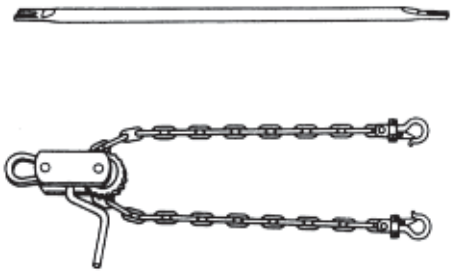
1. Loosen the mounting nut and the locknut.
2. Move the alternator to obtain the proper belt tension, then retighten the nuts.



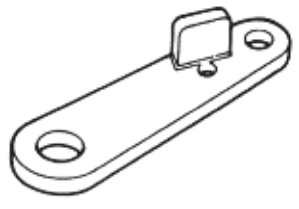
1. LOCKNUT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. MOUNTING NUT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

3. Recheck the deflection or tension of the belt.
   NOTE: For the power steering pump belt and A/C compressor belt adjustments, refer to sections 17 and 22.

Ref No.	Tool Number	Description	Qty	Remark
1	07KAK - SJ40101	Engine Tilt Hanger Set	1	Except EU
2	07MAK - PY30100	Engine Sub Hanger Stay	1	Except EU



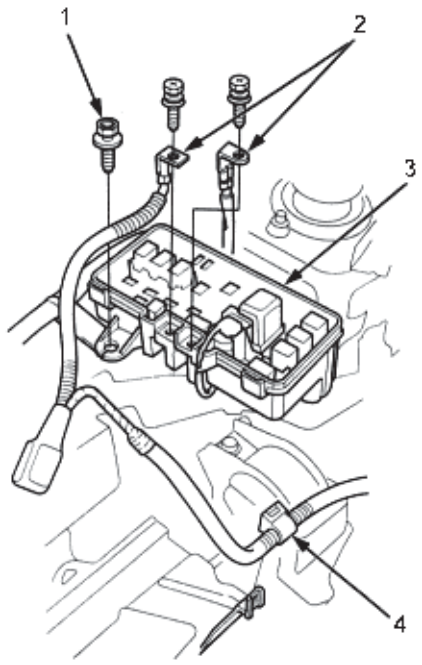
①



②

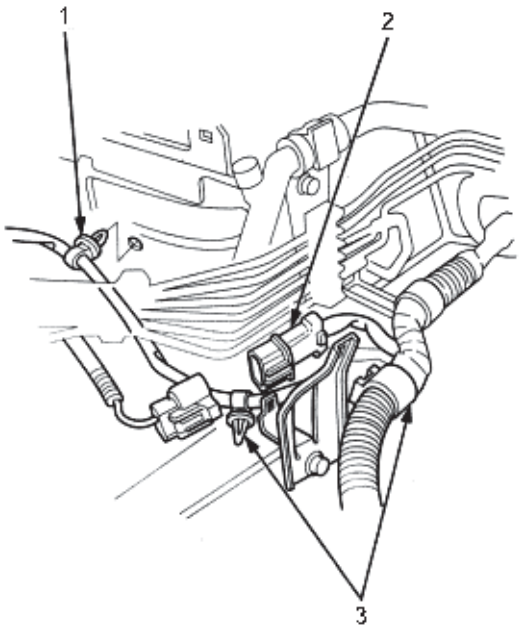
NOTE:
- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.
- Mark all wiring and hoses to avoid misconnection. Also, be sure that they do not contact other wiring or hoses, or interfere with other parts.

1. Secure the hood in the open position as possible.
2. Disconnect the battery negative terminal first, then the positive terminal.
3. Remove the battery cables from the under-hood fuse/relay box.
4. Remove the harness clamp.



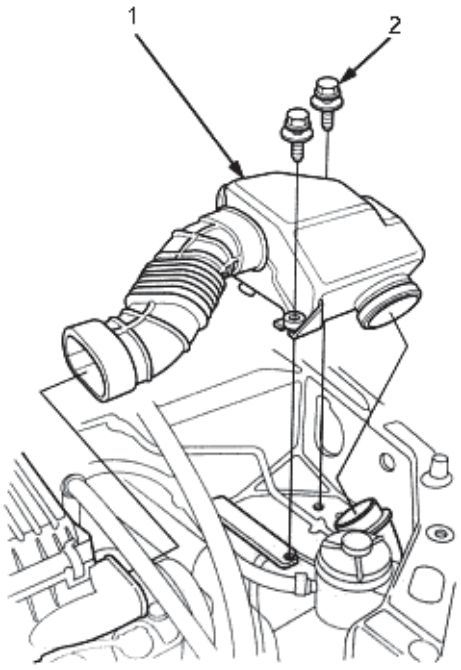
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. BATTERY CABLES
3. UNDER-HOOD FUSE/RELAY BOX
4. HARNESS CLAMP

5. Disconnect the engine wire harness connector on the right side of the engine compartment.
6. Remove the harness clamps.



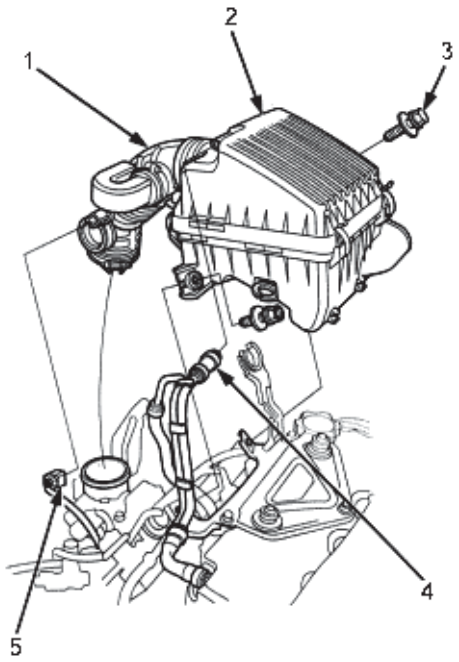
1. HARNESS CLAMP
2. ENGINE WIRE HARNESS CONNECTOR
3. HARNESS CLAMPS

7. Remove the intake air duct B.



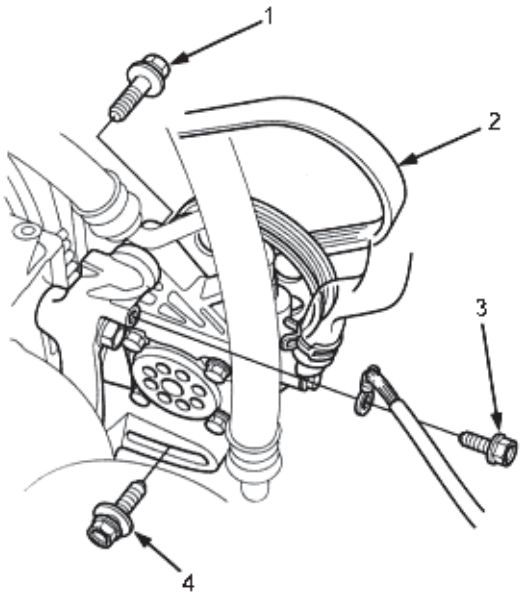
1. INTAKE AIR DUCT B
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

8. Remove the breather hose, then disconnect the intake air temperature (IAT) sensor connector.
9. Remove the air cleaner housing and the intake air duct.



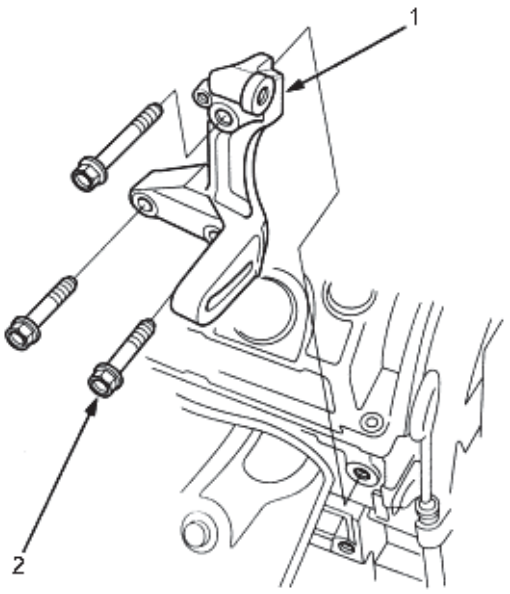
1. INTAKE AIR DUCT
2. AIR CLEANER HOUSING
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. BREATHER HOSE
5. IAT SENSOR CONNECTOR

10. Remove the mounting bolt and lock bolt, then remove the power steering (P/S) pump belt and pump without disconnecting the P/S hoses.



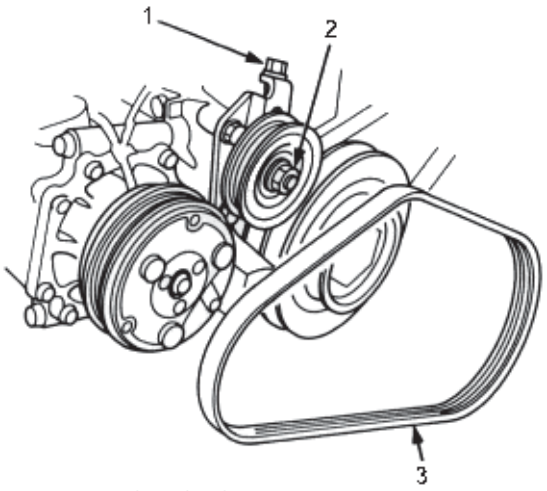
1. MOUNTING BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. P/S PUMP BELT
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

11. Remove the P/S pump bracket.



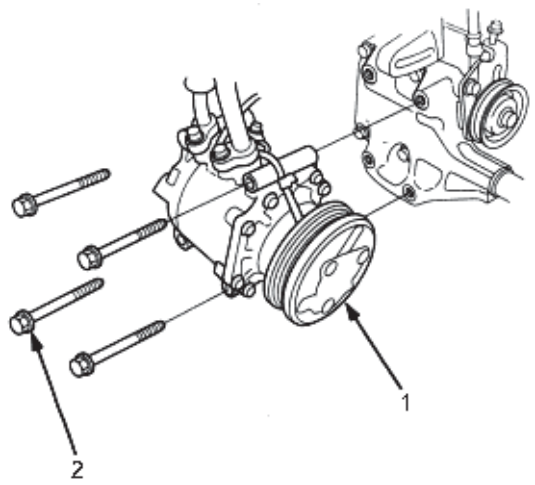
1. P/S PUMP BRACKET
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

12. Loosen the idler pulley centre nut adjusting bolt, then remove the air conditioning (A/C) compressor belt.



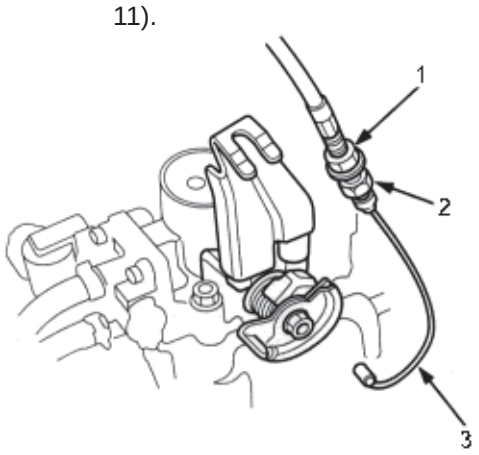
1. ADJUSTING BOLT
2. IDLER PULLEY CENTRE NUT 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. A/C COMPRESSOR BELT

13. Remove the A/C compressor without disconnecting the A/C hoses.



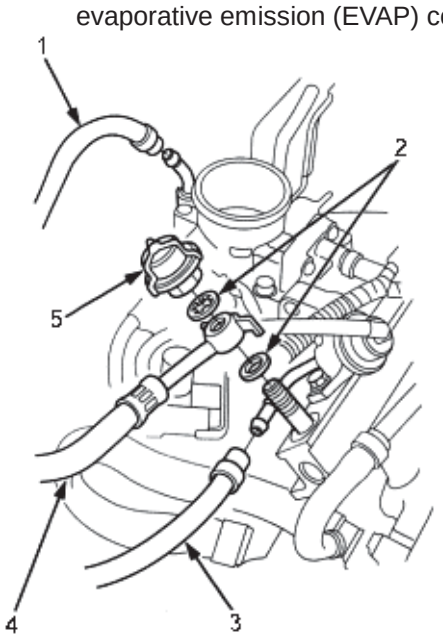
1. A/C COMPRESSOR
2. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

14. Remove the throttle cable by loosening the locknut, then slip the cable end out of the accelerator linkage.
    NOTE:
    - Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
    - Adjust the throttle cable when installing (see section 11).



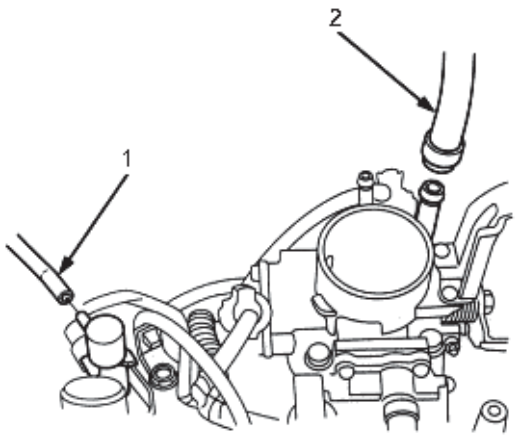
1. LOCKNUT
2. ADJUSTING NUT
3. THROTTLE CABLE

15. Relieve fuel pressure (see section 11).
16. Remove the fuel feed hose, fuel return hose and evaporative emission (EVAP) control canister hose.



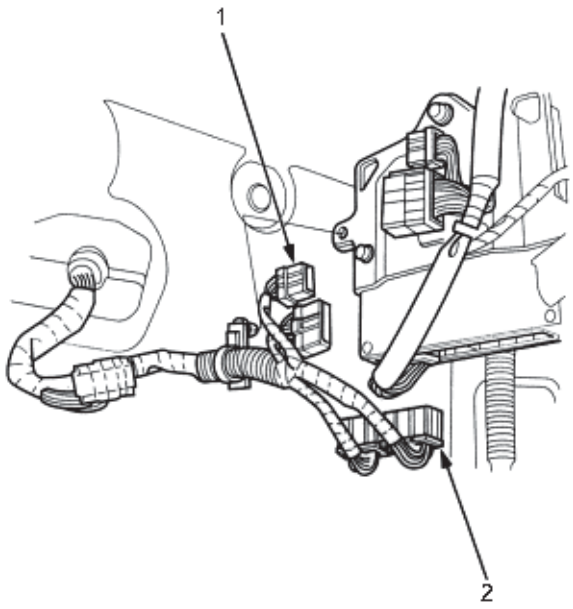
1. EVAP CONTROL CANISTER HOSE
2. WASHERS, Replace
3. FUEL RETURN HOSE
4. FUEL FEED HOSE
5. 33 Nm (3.4 kgf/m, 25 lbf/ft)

17. Remove the brake booster vacuum hose and vacuum hose.



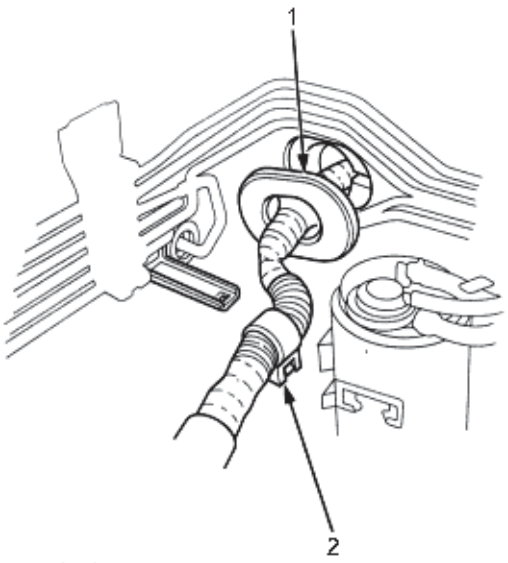
1. VACUUM HOSE
2. BRAKE BOOSTER VACUUM HOSE

18. Disconnect the engine control module (ECM)/ powertrain control module (PCM) connectors from the ECM/PCM, then disconnect the engine wire harness connectors.



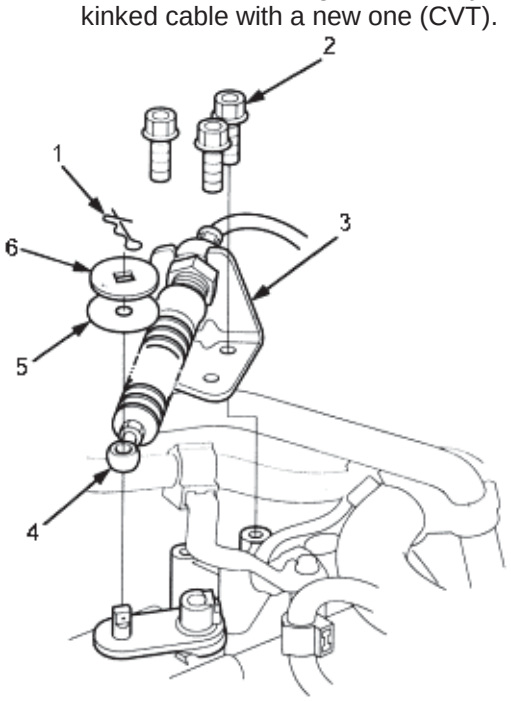
1. ENGINE WIRE HARNESS CONNECTORS
2. ECM/PCM CONNECTORS.

19. Remove the harness clamp and grommet, then pull out the ECM/PCM connectors.



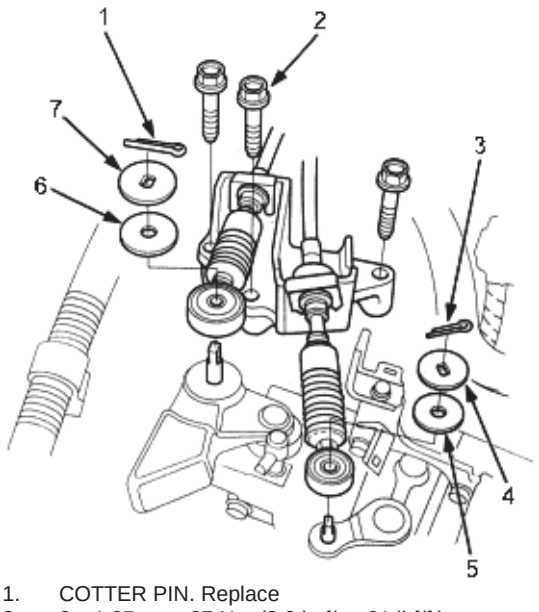
1. GROMMET
2. HARNESS CLAMP

20. Remove the shift cable. Take care not to bend the cable when removing them. Always replace any kinked cable with a new one (CVT).



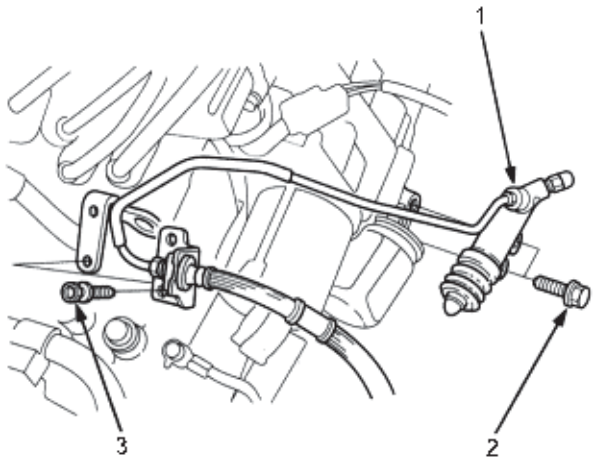
1. SPRING PIN
2. 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
3. SHIFT CABLE HOLDER
4. SHIFT CABLE
5. PLASTIC WASHER
6. STEEL WASHER

21. Remove the shift cable and select cable. Take care not to bend the cables when removing them. Always replace any kinked cable with a new one (M/T).



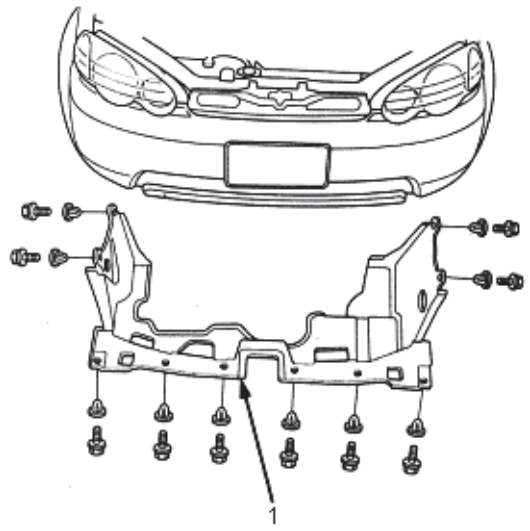
1. COTTER PIN. Replace
2. 8 x 1.25 mm, 27 Nm (2.8 kgf/m, 21 lbf/ft)
3. COTTER PIN, Replace
4. STEEL WASHER
5. PLASTIC WASHER
6. PLASTIC WASHER
7. STEEL WASHER

22. Remove the clutch slave cylinder and line/hose assembly (M/T).
    NOTE:
    - Do not disconnect the line/hose assembly.
    - Do not operate the clutch pedal once the slave cylinder has been removed.
- Take care not to bend the line.



1. SLAVE CYLINDER
2. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

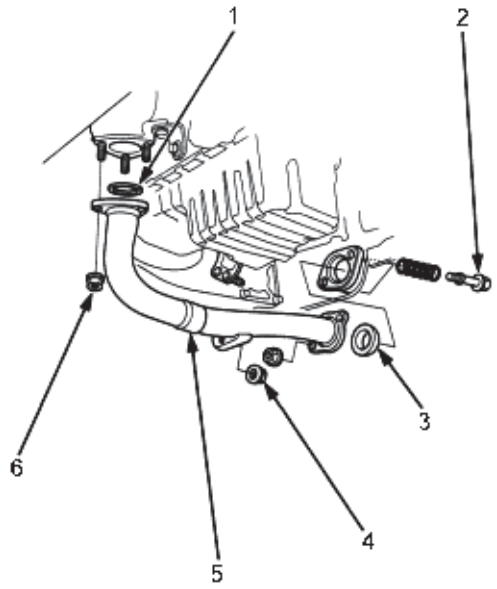
23. Remove the radiator cap.
24. Raise the hoist to full height.
25. Remove the front tires/wheels.
26. Remove the splash shield.



1. SPLASH SHIELD

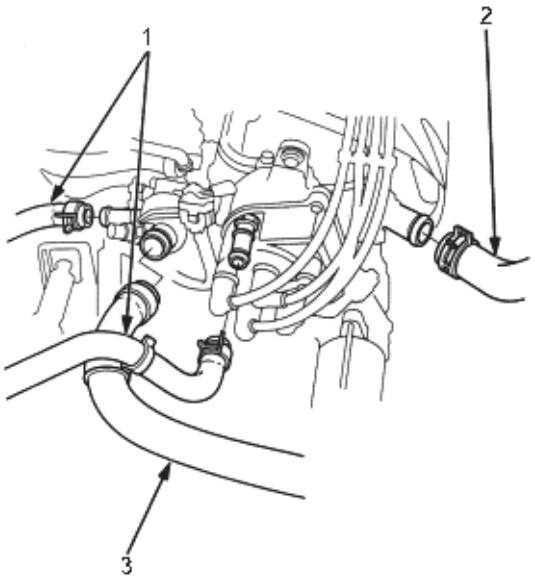
27. Loosen the drain plug in the radiator, drain the engine coolant (**See Page** 10-5).
28. Drain the transmission oil or fluid. Reinstall the drain plug using a new washer (see section 13 (M/T) or section 14 (CVT).
29. Drain the engine oil. Reinstall the drain bolt using a new washer (**See Page** 8-5).
30. Disconnect the stabiliser links (see section 18).
31. Disconnect the suspension lower arm ball joints (see section 18).
32. Remove the driveshafts (see section 16).
    NOTE: Coat all precision finished with clean engine oil. Tie plastic bags over the driveshaft ends.

33. Remove exhaust pipe A.



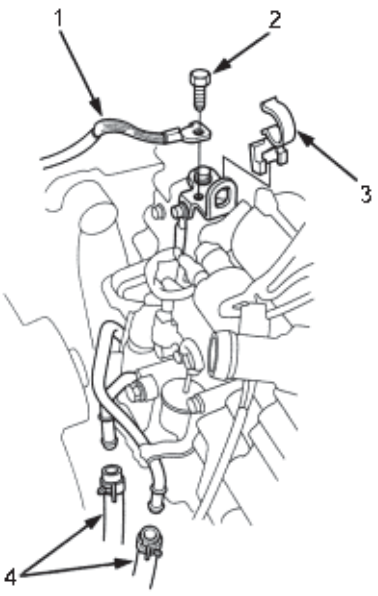
1. GASKET, Replace
2. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft). Replace
3. GASKET, Replace
4. SELF-LOCKING NUT 8 x 1.25 mm, 16 Nm (1.6 kgf/m, 12 lbf/ft), Replace
5. EXHAUST PIPE A
6. SELF-LOCKING NUT 10 x 1.25 mm, 54 Nm (5.4 kgf/m, 40 lbf/ft), Replace

34. Lower the hoist, then remove the upper radiator hose, lower radiator hose and the heater hoses.



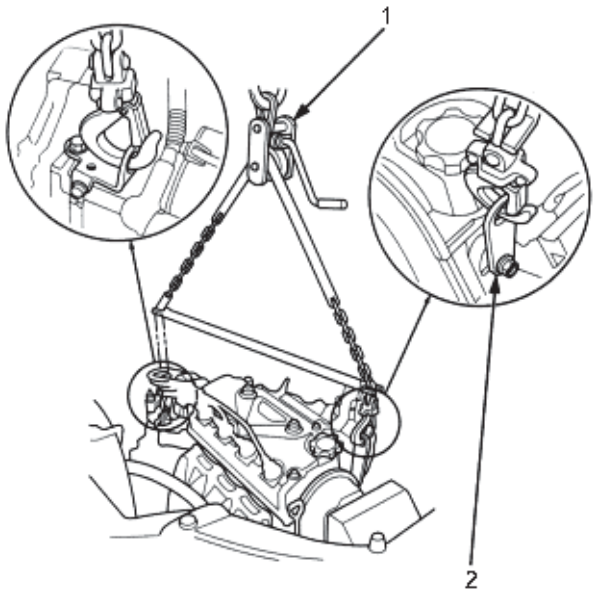
1. HEATER HOSES
2. UPPER RADIATOR HOSE
3. LOWER RADIATOR HOSE

35. Remove the hose clamp and ground cable.
36. Remove the ATF cooler hoses, then plug the ATF cooler hoses and lines.



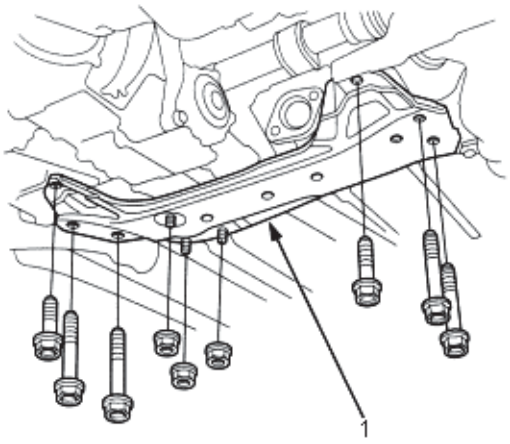
1. GROUND CABLE
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. HOSE CLAMP
4. ATF COOLER HOSES

37. Attach the chain hoist to the engine as shown.



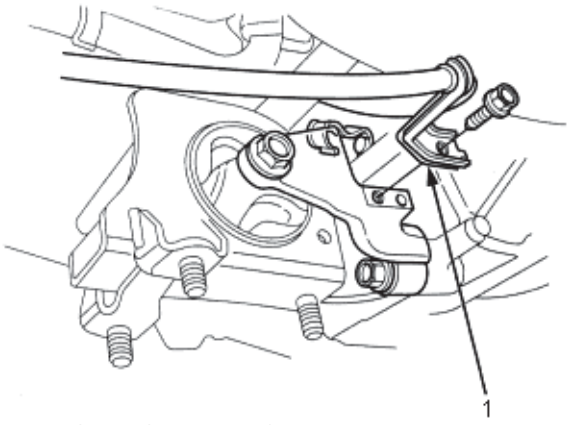
1. ENGINE TILT HANGER SET, 07KAK-SJ40101 (Except EU)
2. ENGINE SUB HANGER STAY, 07MAK-PY30100 (Except EU)

38. Raise the hoist to full height.
39. Remove the rear beam.



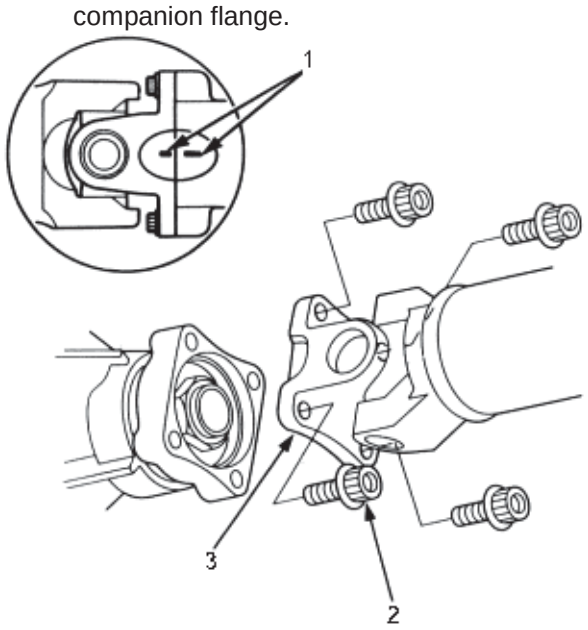
1. REAR BEAM

40. Remove the shift cable bracket from the rear mount bracket (CVT).



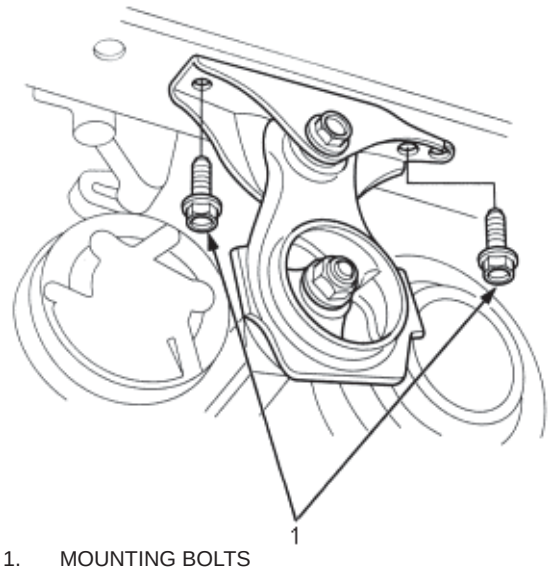
1. SHIFT CABLE BRACKET

41. When removing the propeller shaft, marks on the transfer companion flange and propeller shaft as shown. Use these marks to set the propeller shaft in the proper position when reinstalling.
42. Remove the four bolts securing the propeller shaft, then separate the propeller shaft from the transfer companion flange.



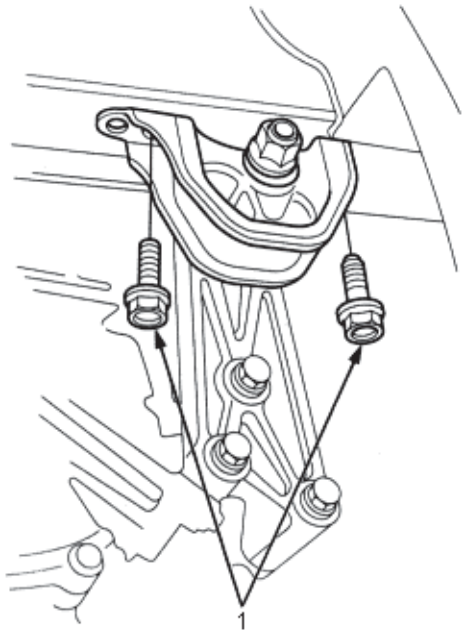
1. MARK
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)
3. PROPELLER SHAFT

43. Remove the left front mount bracket mounting bolts.



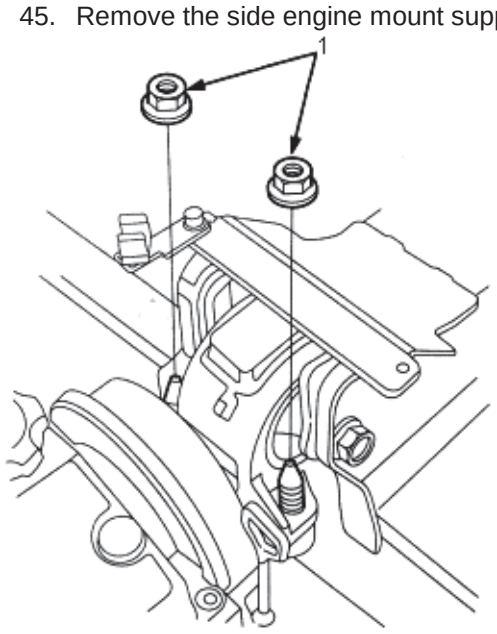
1. MOUNTING BOLTS

44. Remove the right front mount mounting bolts.



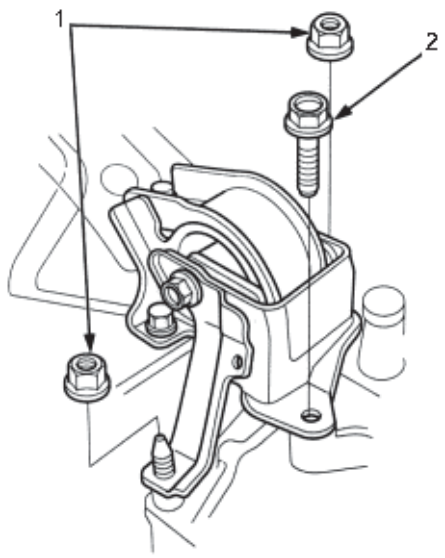
1. MOUNTING BOLTS

45. Remove the side engine mount support nuts.



1. SUPPORT BOLTS

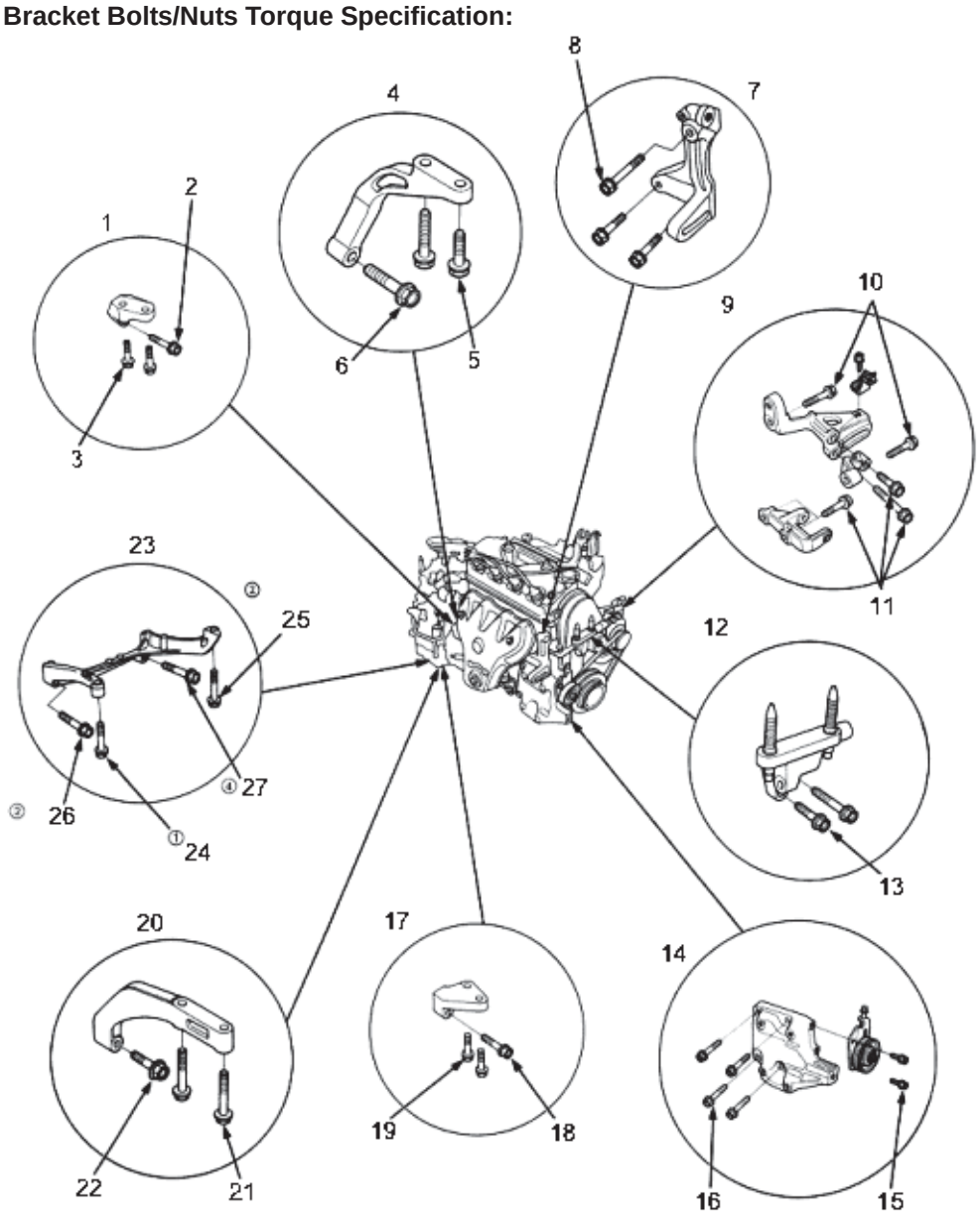
46. Remove the transmission mount bracket support bolt/nuts.



1. SUPPORT NUTS
2. SUPPORT BOLT

47. Check that the engine/transmission is completely free of vacuum hoses, fuel and coolant hoses, and electrical wiring.
48. Slowly lower the engine approximately 150 mm (6 in.). Check once again all hoses and wiring are disconnected from the engine.
49. Lower the engine all the way. Remove the chain hoist from the engine.
50. Remove the engine from under the vehicle.

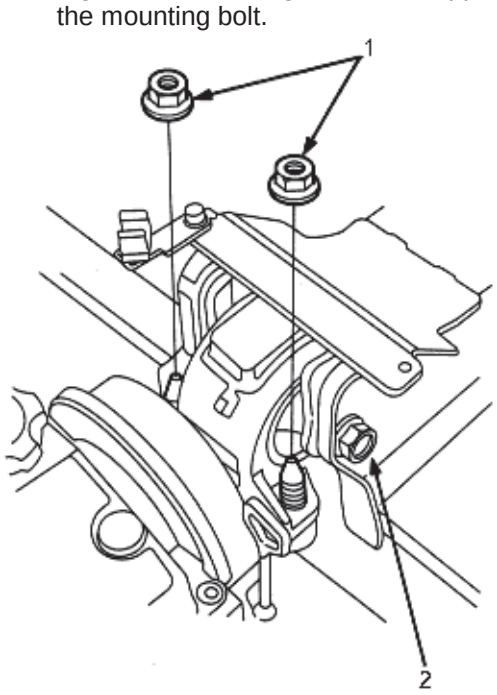
Bracket Bolts/Nuts Torque Specification:



1. **REAR STIFFENER**
2. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
3. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
4. **REAR STIFFENER**
5. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
6. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
7. **P/S PUMP BRACKET**
8. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
9. **ALTERNATOR BRACKET**
10. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
11. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
12. **SIDE ENGINE MOUNT BRACKET**
13. **10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**
14. **A/C COMPRESSOR BRACKET**
15. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
16. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
17. **FRONT STIFFENER**
18. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
19. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
20. **FRONT STIFFENER**
21. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
22. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
23. **STIFFENER**
    Tighten the bolts on the stiffener in the numbered sequence as shown (24 -27).
24. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
25. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
26. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
27. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**

Engine Installation:
Install the engine in the reverse order of removal.
Reinstall the mount bolts/nuts in the following sequence.
Failure to follow this procedure may cause excessive noise and vibration, and reduce bushing life.

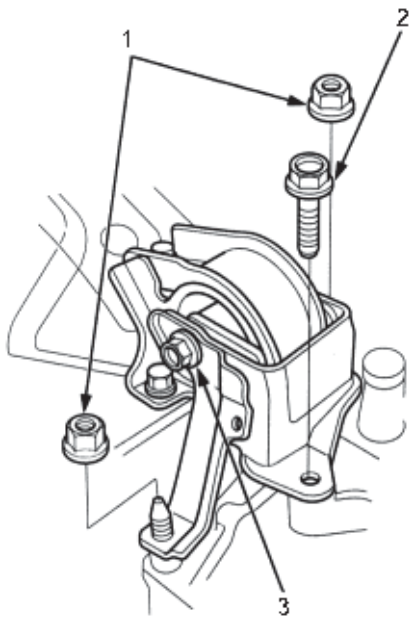
1. Push the engine under the vehicle. Attach the chain hoist to the engine, then lift the engine into position in the vehicle.
2. Tighten the side engine mount support nuts, then loosen the mounting bolt.



1. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)
2. MOUNTING BOLT

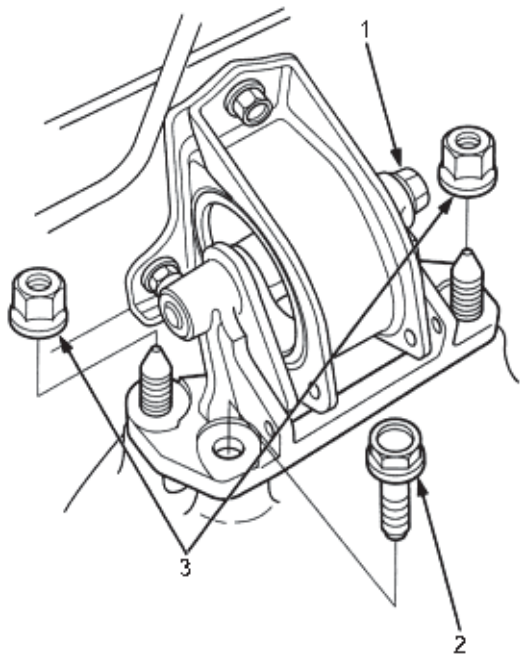
3. Tighten the transmission mount bracket support bolt/nuts, then loosen the mounting bolt.

CVT:



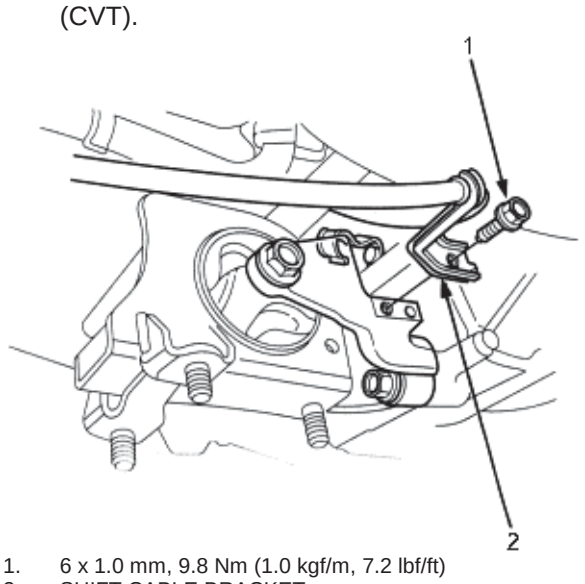
1. 12 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. 12 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. MOUNTING BOLT

M/T:



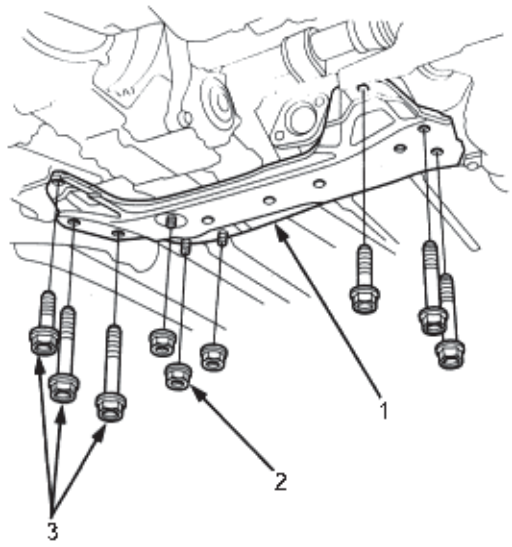
1. MOUNTING BOLT
2. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
3. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

4. Install the shift cable bracket on the rear mount bracket (CVT).



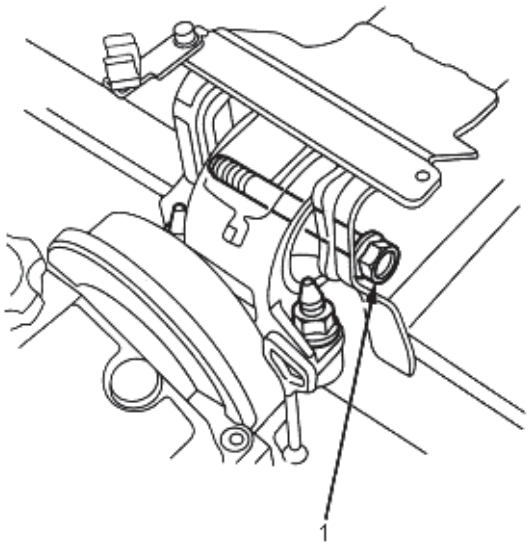
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. SHIFT CABLE BRACKET

5. Install the rear beam.



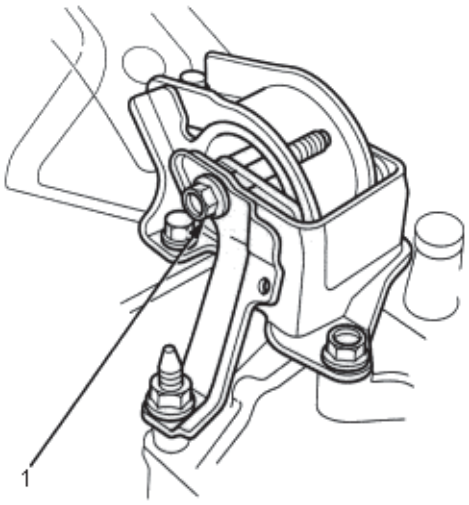
1. REAR BEAM
2. 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)
3. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

6. Tighten the side engine mount mounting bolt.



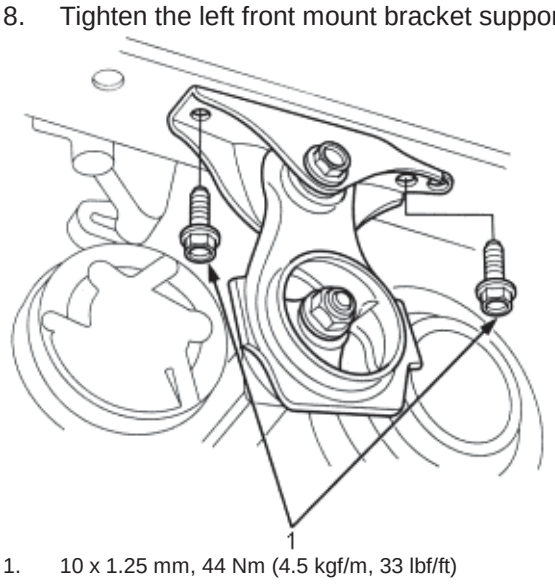
1. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)

7. Tighten the transmission mount bracket mounting bolt.



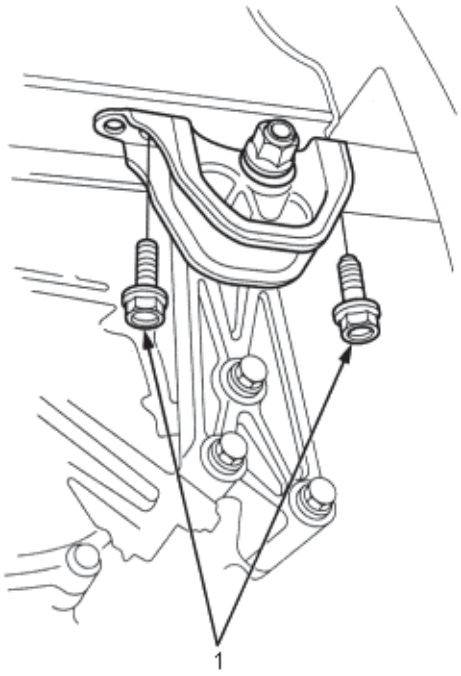
1. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)

8. Tighten the left front mount bracket support bolts.



1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

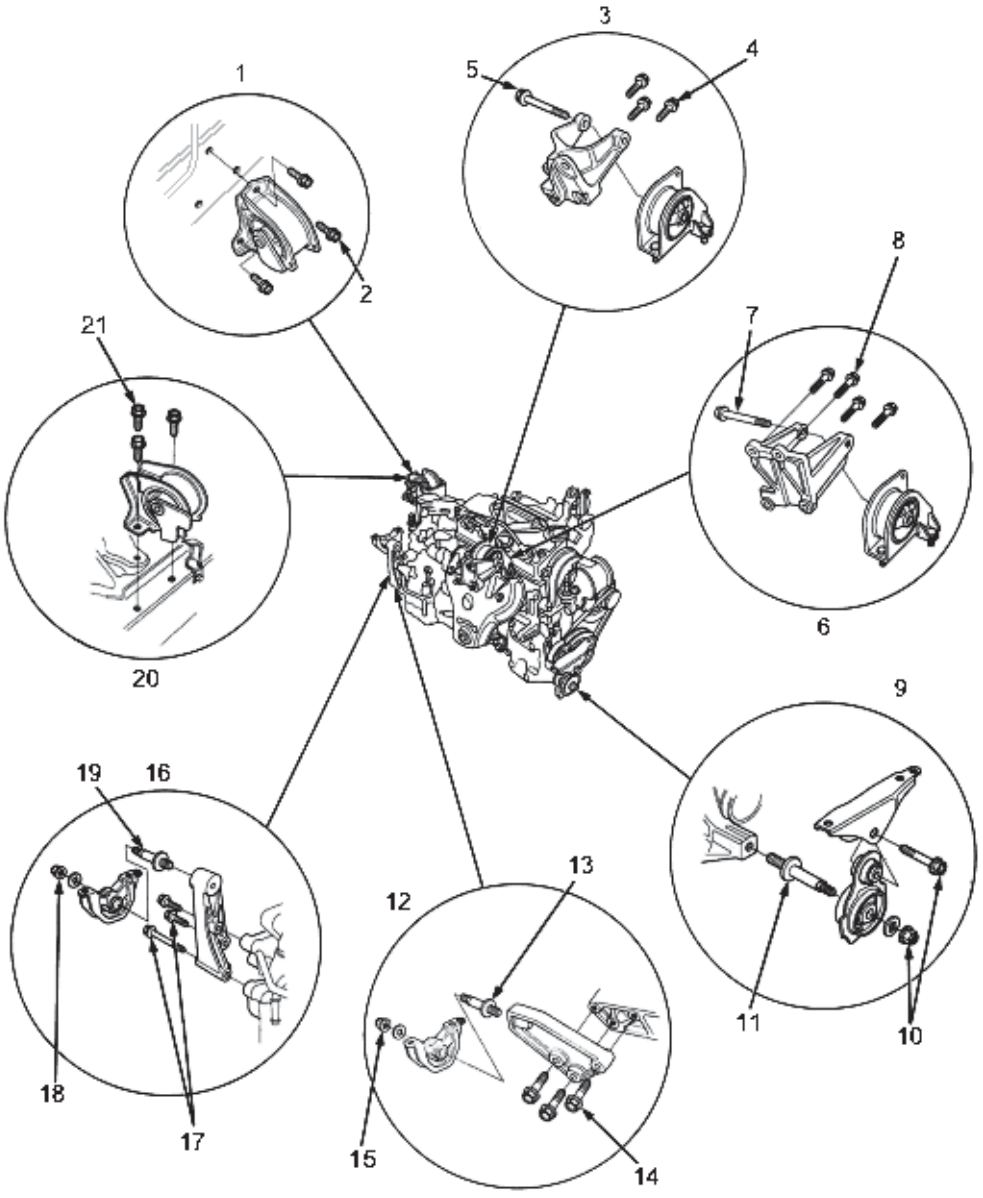
9. Tighten the right front mounting support bolts.



1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

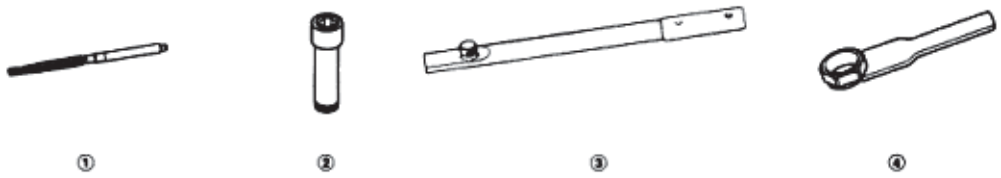
10. Adjust and make sure as follows:
    - Check that the set ring on the ends of the driveshaft and intermediate shaft set rings into place.
    - Adjust the throttle cable (see section 11).
    - Refill the engine with engine oil (**See Page** 8-5).
    - Refill the transmission with ATF (see section 14).
    - Refill the radiator with engine coolant, and bleed air from the cooling system (**See Page** 10-5).
    - Clean the battery posts and cable terminals with sandpaper, assemble them, then apply grease to prevent corrosion.
    - Inspect for fuel leakage (see section 11). After assembling fuel line parts, turn ON (II) the ignition switch (do not operate the starter) so that the fuel pump operates for approximately two seconds and the fuel line pressurises. Repeat this operation two or three times, and check for fuel leakage at any point in the fuel line.
    - Check the wheel alignment (see section 18).

Mount and Bracket Bolts/Nuts Torque Specification:



1. **TRANSMISSION MOUNT (M/T)**
2. **12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)**
3. **REAR MOUNT (CVT)**
4. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
5. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**, Replace.
6. **REAR MOUNT (M/T)**
7. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**, Replace.
8. **10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**
9. **LEFT FRONT MOUNT/BRACKET**
10. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**, Replace.
11. **12 x 1.25 mm 83 Nm (8.5 kgf/m, 61 lbf/ft)**
12. **RIGHT FRONT MOUNT/BRACKET (M/T)**
13. **12 x 1.25 mm, 83 Nm (8.5 kgf/m, 61 lbf/ft)**
14. **12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)**, Replace.
15. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**, Replace.
16. **RIGHT FRONT MOUNT/BRACKET (CVT)**
17. **10 X 1.25 mm, 54 Nm, 5.5 kgf/m, 40 lbf/ft)**
18. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)** Replace.
19. **12 x 1.25 mm, 83 Nm (8.5 kgf/m, 61 lbf/ft)**
20. **TRANSMISSION MOUNT (CVT)**
21. **10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)**

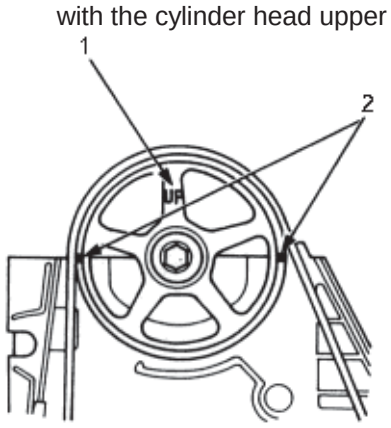
Ref No.	Tool Number	Description	Qty	Remark
1	07HAH - PJ70100	Valve Guide Reamer, 5.525 mm	1	
2	07JAA - 0010100	Socket Wrench, 17 mm	1	
3	07JAB - 0010200	Handle	1	
4	07JAB - 0010400	Pulley Holder Attachment, HEX 50 mm	1	
5	07PAD - 0010000	Stem Seal Driver	1	
6	07742 - 0010100	Valve Guide Driver, 5.5 mm	1	
7	07757 - 0010000	Valve Spring Compressor	1	





NOTE:
- Valves should be adjusted only when the cylinder head temperature is less than 38°C (100°F).
- After adjusting, loosen the crankshaft pulley bolt, then retorque the crankshaft pulley bolt to 20 Nm (2.0 kgf/m, 14 lbf/ft) + 90°

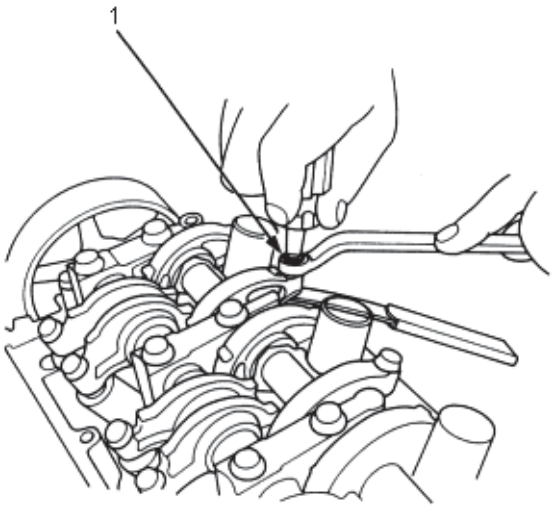
1. Remove the breather hose, then remove the air cleaner housing (**see page** 5-4).
2. Remove the cylinder head cover.
   NOTE: When installing the cylinder head cover (**see page** 6-30).
3. Remove the upper cover (**see page** 6-9).
4. Set the No. 1 piston at TDC. “UP” mark on the camshaft pulley should be at top, and TDC marks should align with the cylinder head upper surface.



1. “UP” MARK
2. TDC MARKS

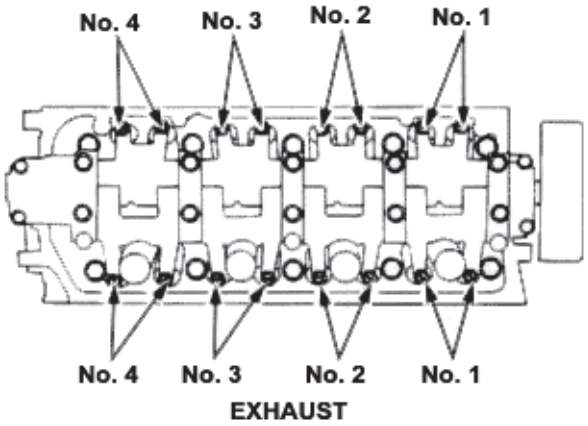
5. Adjust valves on No.1 cylinder.
   Intake: 0.20 mm (0.008 in) ± 0.02 mm (0.008 in)
   Exhaust: 0.25 mm (0.010 in) ± 0.02 mm (0.008 in)

6. Loosen locknut and turn adjustment screw until feeler gauge slides back and forth with slight amount of drag.
   NOTE: Do not overtighten the locknuts, for the rocker arms are made of aluminium.



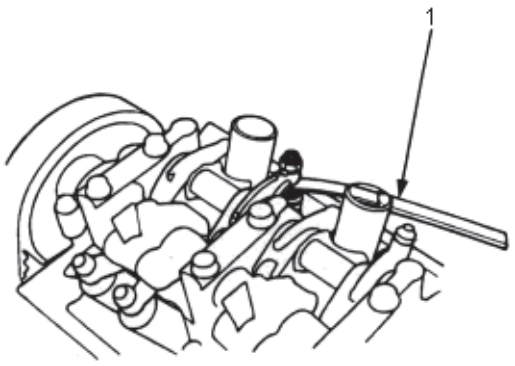
1. INTAKE and EXHAUST VALVE LOCKNUTS 18 Nm (1.8 kgf/m, 13 lbf/ft)

Adjusting screw location:



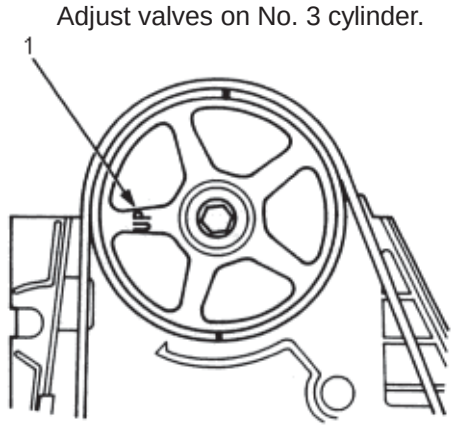
1. No.1
2. No.2
3. No.3
4. No.4
5. No.5
6. No.6
7. No.7
8. No.8

7. Tighten the locknut, and check clearance again. Repeat the adjustment if necessary.



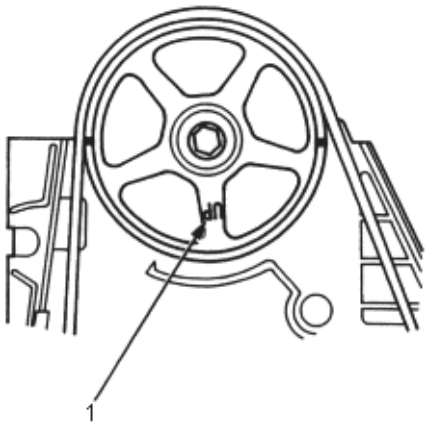
1. FEELER GAUGE

8. Rotate the crankshaft 180° counterclockwise (camshaft pulley turns 90°). The "UP" mark should be on the exhaust side.
Adjust valves on No. 3 cylinder.



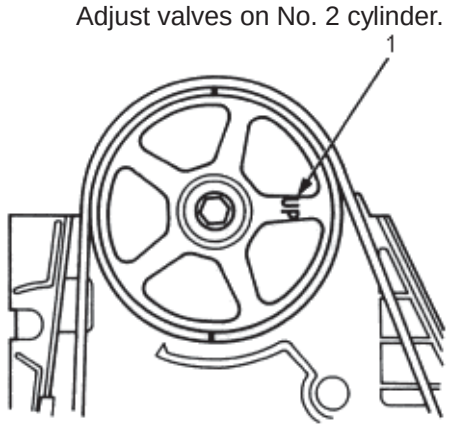
1. "UP" MARK

9. Rotate the crankshaft 180° counterclockwise to bring No. 4 piston to TDC. Both TDC grooves are once again visible. Adjust valves on No. 4 cylinder.



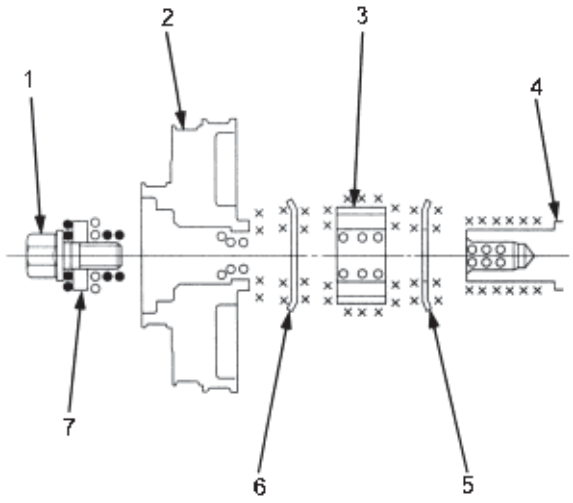
1. "UP" MARK

10. Rotate the crankshaft 180° counterclockwise to bring No. 2 piston to TDC. The "UP" mark should be on the intake side.
Adjust valves on No. 2 cylinder.



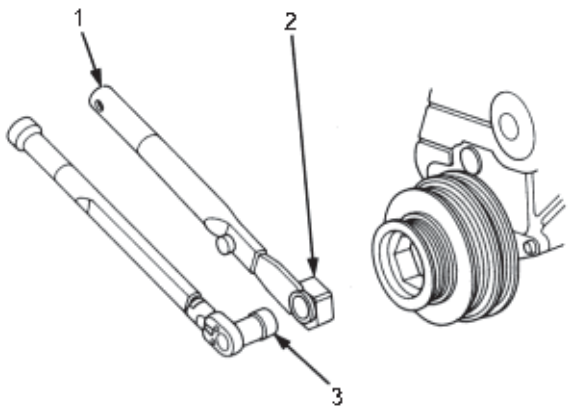
1. "UP" MARK

1. Remove any oil from the pulleys, crankshaft, bolt and washer. Clean and lubricate as shown below.
   O: Clean
   X: Remove any oil
   ●: Lubricate



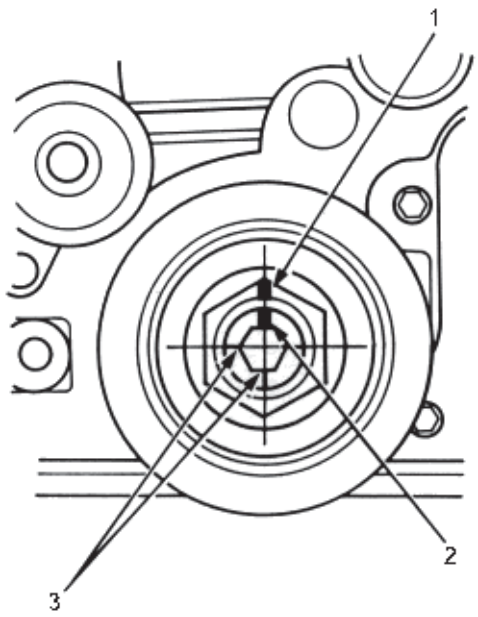
1. PULLEY BOLT
2. CRANKSHAFT PULLEY
3. TIMING BELT DRIVE PULLEY
4. CRANKSHAFT
5. TIMING BELT GUIDE PLATE
6. TIMING BELT GUIDE PLATE
7. WASHER

2. Tighten the pulley bolt to the specified torque.
   Torque: 20 Nm (2.0 kgf/m, 14 lbf/ft)



1. HANDLE, 07JAB-0010200
2. PULLEY HOLDER ATTACHMENT, HEX 50 mm, 07JAB-0010400
3. SOCKET WRENCH, 17 mm, 07JAA-0010100

3. Use a felt tip pen to mark the pulley bolt head and washer.



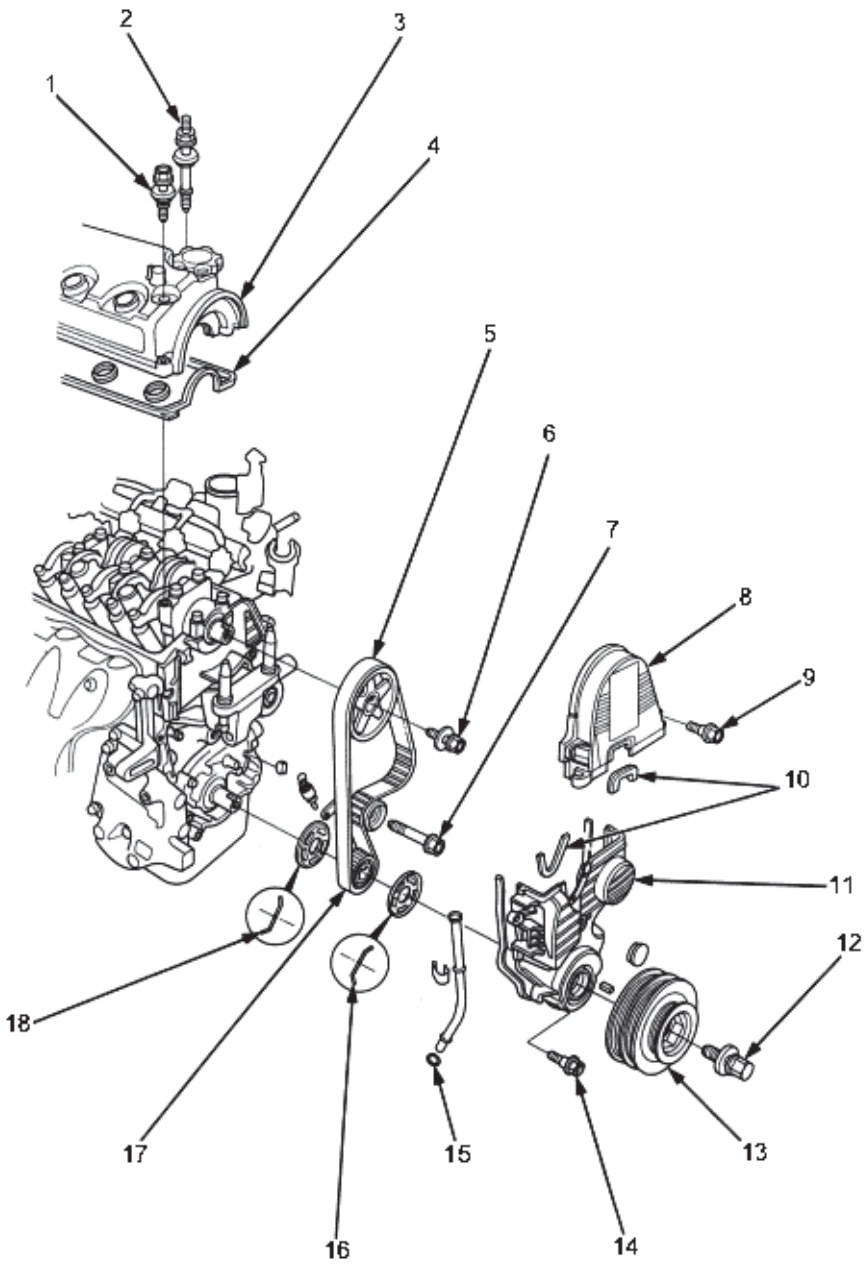
1. MARKING
2. MARKING
3. EMBOSSING MARKS

4. Tighten the pulley bolt an additional 90°.



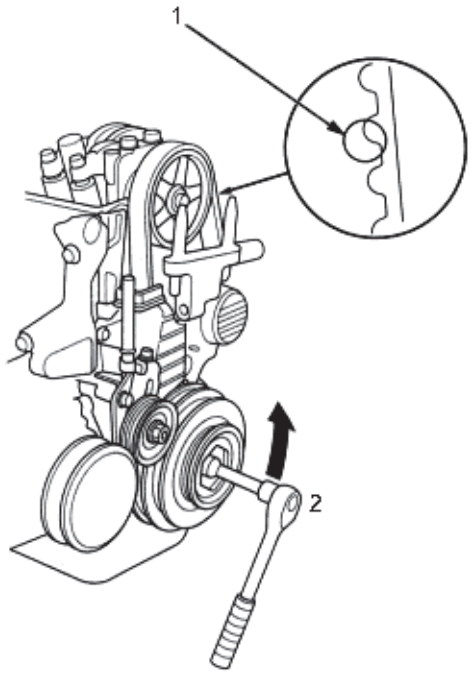
1. EMBOSSING MARKS
2. MARKING
3. MARKING

NOTE:
- For how to position the crankshaft and pulley before installing the belt (**see page** 6-10).
- Mark the direction of rotation on the belt before removing.
- Do not use the upper cover and lower cover for storing removed items.
- Clean the upper cover and lower cover before installing.
- Replace the camshaft seals and crankshaft seals if there is oil leakage.



1. **WASHER**, Replace when damaged or deteriorated
2. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
3. **CYLINDER HEAD COVER,** (**see page** 6-30) when installing.
4. **HEAD COVER GASKET**, Replace when leaking, damaged or deteriorated. Apply liquid gasket at the four corners of the recesses.
5. **TIMING BELT**, Inspection (**see page** 6-7).
   Tension adjustment (**see page** 6-7).
   Removal (**see page** 6-8).
   Installation (**see page** 6-10).
6. **8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft)**, Apply engine oil to the bolt threads.
7. **ADJUSTING BOLT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft).**
8. **UPPER COVER**
9. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
10. **RUBBER SEALS**, Replace when damaged or deteriorated.
11. **LOWER COVER**
12. **PULLEY BOLT, 14 x 1.25 mm, 20 Nm (2.0 kgf/m, 14 lbf/ft) + 90°** .
    Replacement, (**see page** 6-5). Do not use an impact wrench when installing.
13. **CRANKSHAFT PULLEY**,
    Replacement (**see page** 6-5).
14. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
15. **O-RING**, Replace.
16. **TIMING BELT GUIDE PLATE**, Install with concave surface facing in.
17. **TIMING BELT DRIVE PULLEY**, Replacement (**see page** 6-5).
18. **TIMING BELT GUIDE PLATE**, Install with concave surface out.

1. Remove the breather hose, then remove the air cleaner housing (**see page** 5-4).
2. Remove the cylinder head cover.
   - When installing (**see page** 6-30).
3. Remove the upper cover (**see page** 6-9).
4. Inspect the timing belt for cracks and oil or coolant soaking.
   NOTE:
   - Replace the belt if oil or coolant soaked.
   - Remove any oil or solvent that gets on the belt.

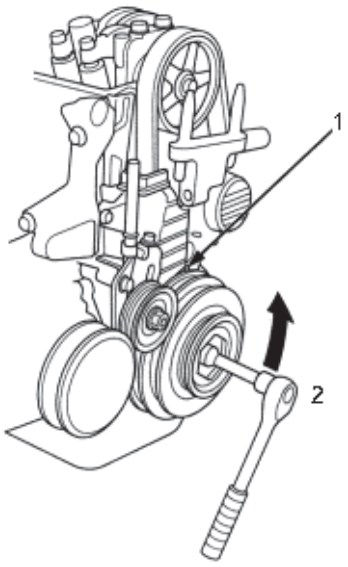


1. Inspect this area for wear.
2. Rotate pulley and inspect belt.

5. After inspecting, loosen the crankshaft pulley bolt, then retorque the crankshaft pulley bolt to 20 Nm (2.0 kgf/m, 14 lbf/ft) + 90°.

NOTE:
- Always adjust the timing belt tension with the engine cold.
- The tensioner is spring-loaded to apply tension to the belt automatically after making the following adjustment.
- Always rotate the crankshaft counterclockwise when viewed from the pulley side. Rotating it clockwise may result in improper adjustment of the belt tension.
- Inspect the timing belt before adjusting the belt tension.

1. Remove the breather hose, then remove the air cleaner housing (**see page** 5-4).
2. Remove the cylinder head cover.
   - When installing (**see page** 6-30).
3. Remove the upper cover (**see page** 6-9).
4. Rotate the crankshaft five or six revolutions to set the belt.
5. Set the No.1 piston at TDC (**see page** 6-11).
6. Loosen the adjusting bolt 180°.

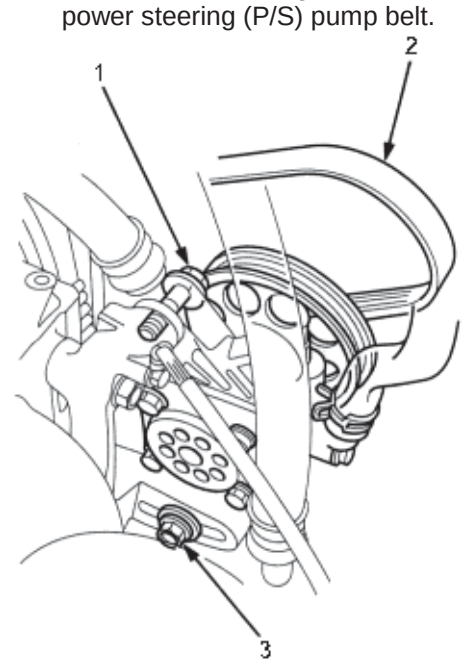


1. ADJUSTING BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft).
2. Direction of rotation.

7. Rotate the crankshaft counterclockwise three teeth on the camshaft pulley.
8. Tighten the adjusting bolt.
9. After inspecting, loosen the crankshaft pulley bolt, then retorque the crankshaft pulley bolt to 20 Nm (2.0 kgf/m, 14 lbf/ft) + 90°.

NOTE:
- Turn the crankshaft pulley so the No. 1 piston is at top dead centre (TDC) before removing the belt (**see page** 6-11).
- Inspect the water pump before installing the timing belt (**see page** 10-11)

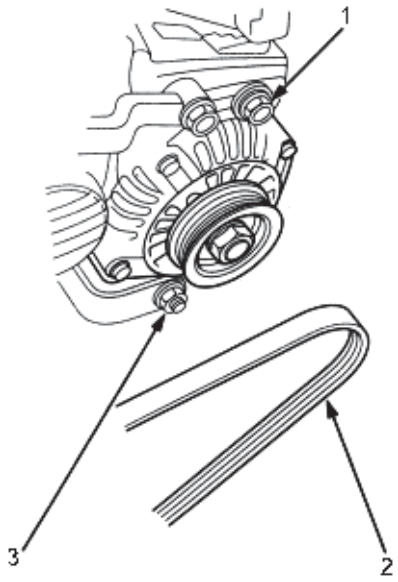
1. Remove the splash shield (**see page** 5-7).
2. Remove the intake air duct B (**see page** 5-3).
3. Remove the breather hose, then remove the air cleaner housing (**see page** 5-4).
4. Disconnect the intake air temperature (IAT) sensor connector, then remove the intake air duct (**see page** 5-4).
5. Loosen the mounting bolt and lock bolt, then remove the power steering (P/S) pump belt.



1. MOUNTING BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. P/S PUMP BELT
3. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

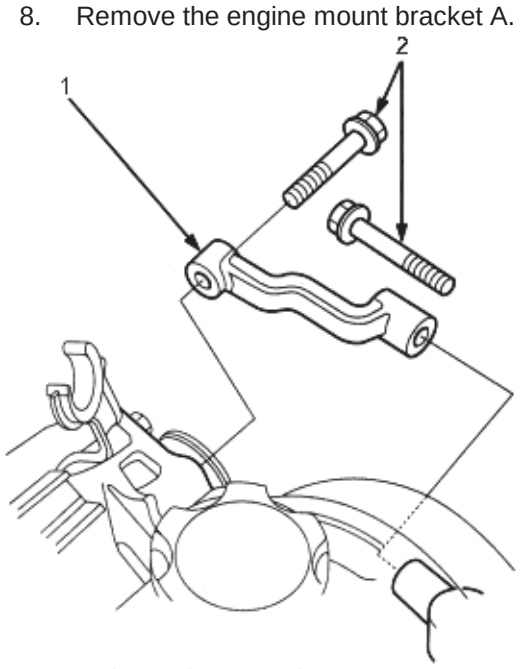
6. Loosen the idler pulley centre nut and adjusting bolt, then remove the air conditioning (A/C) compressor belt (**see page** 5-4).

7. Loosen the mounting nut and lock bolt, then remove the alternator belt.



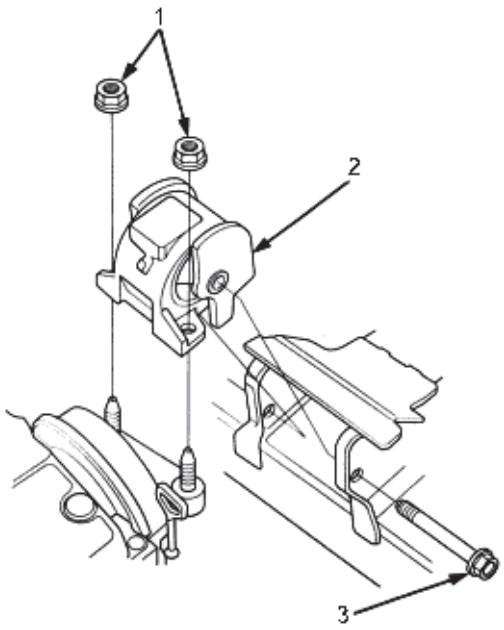
1. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. ALTERNATOR BELT
3. MOUNTING NUT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

8. Remove the engine mount bracket A.



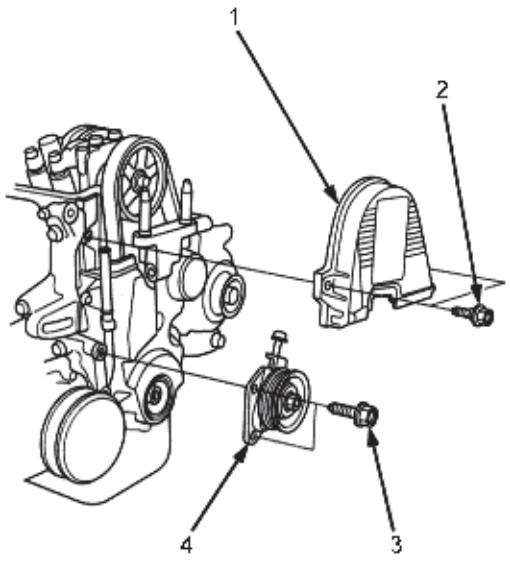
1. ENGINE MOUNT BRACKET A
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

9. Support the engine with the jack and wood block under the oil pan.
10. Remove the side engine mount.



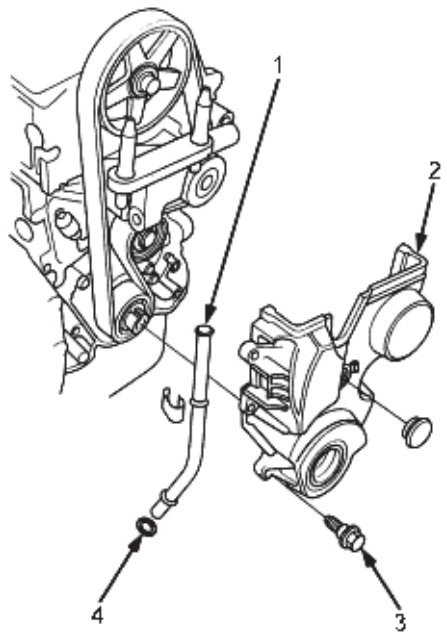
1. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)
2. SIDE ENGINE MOUNT
3. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)

11. Remove the dipstick, then remove the upper cover and idler pulley bracket.
NOTE: Do not use the upper cover for storing removed items.



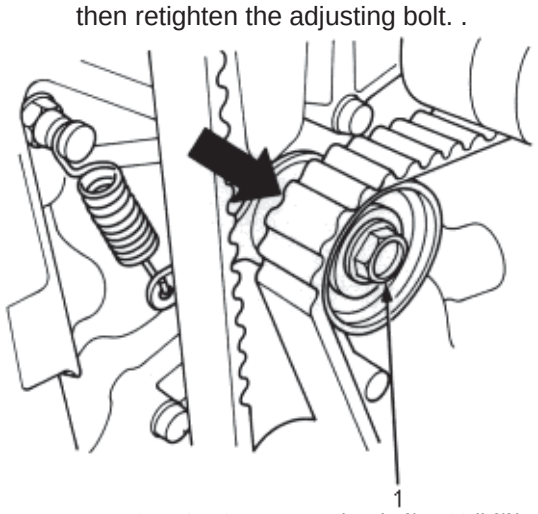
1. UPPER COVER
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
4. IDLER PULLEY BRACKET

12. Remove the dipstick tube and lower cover.
NOTE: Do not use the upper cover for storing removed items.



1. DIPSTICK TUBE
2. LOWER COVER
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. O-RING, Replace

13. Loosen the adjustment bolt 180°. Push the tensioner to remove tension from the timing belt, then retighten the adjusting bolt. .

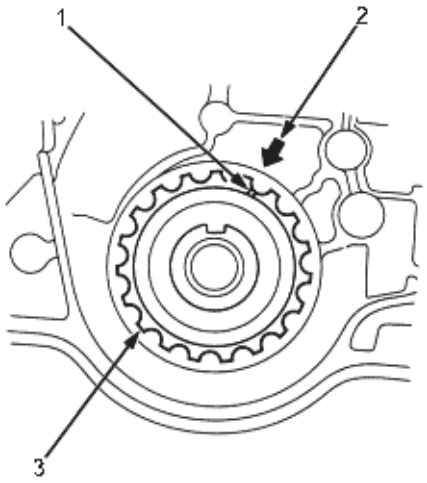


1. ADJUSTING BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft)

14. Remove the timing belt.

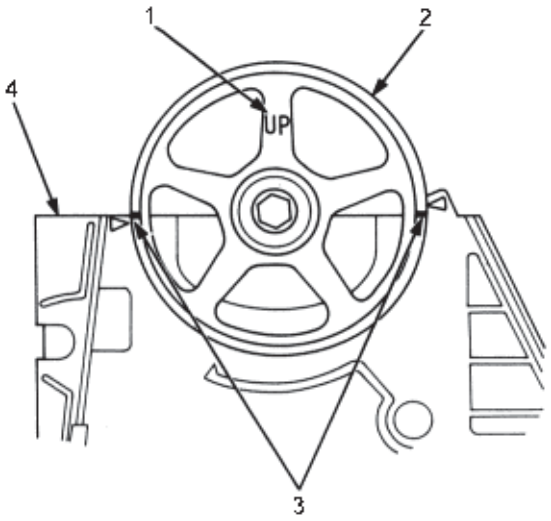
Install the timing belt in the reverse order of removal;
Only key points are described here.

1. Set the timing belt drive pulley so that the No. 1 piston is at top dead centre (TDC). Align the TDC mark on the timing belt drive pulley to the pointer on the oil pump.



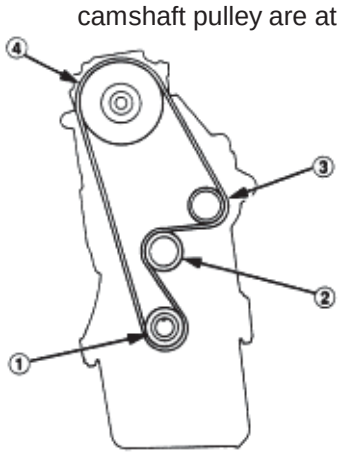
1. TDC MARK
2. POINTER
3. TIMING BELT DRIVE PULLEY, Clean

2. Set the camshaft pulley so that the No. 1 piston is at TDC. Align the TDC marks on the camshaft pulley with the cylinder head upper surface.



1. "UP" MARK
2. CAMSHAFT PULLEY, Clean
3. TDC MARKS
4. UPPER SURFACE

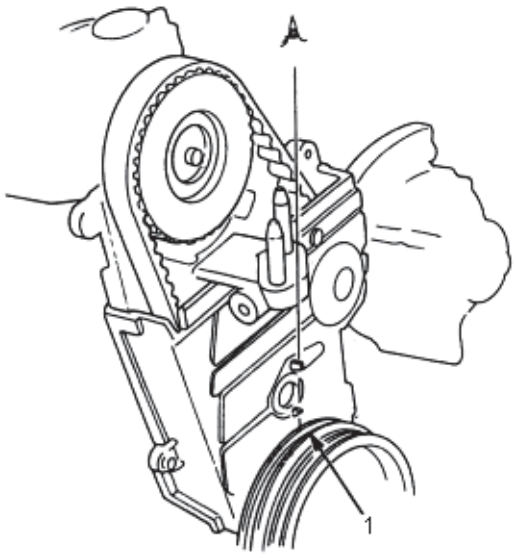
3. Install the timing belt tightly in the sequence shown. 1 - Timing belt pulley (crankshaft). 2 - Adjusting pulley. 3 - Water pump pulley. 4 - Camshaft pulley.
   NOTE: Make sure the timng belt drive pully and camshaft pulley are at TDC



4. Loosen and retighten the adjusting bolt to tension the timing belt.
5. Install the lower and upper covers.
   NOTE: Clean the upper and lower covers before installation.
6. Install the crankshaft pulley, then tighten the pulley bolt (**see page** 6-5).
7. Rotate the crankshaft pulley about five or six turns counterclockwise so that the timing belt positions on the pulleys.
8. Adjust the timing belt tension (**see page** 6-7).

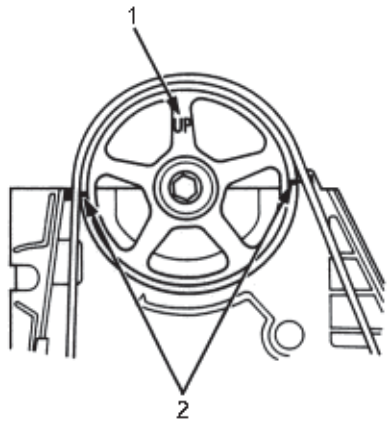
9. Check that the crankshaft pulley and camshaft pulley are both at TDC.

CRANKSHAFT PULLEY:



1. TDC MARK (WHITE)

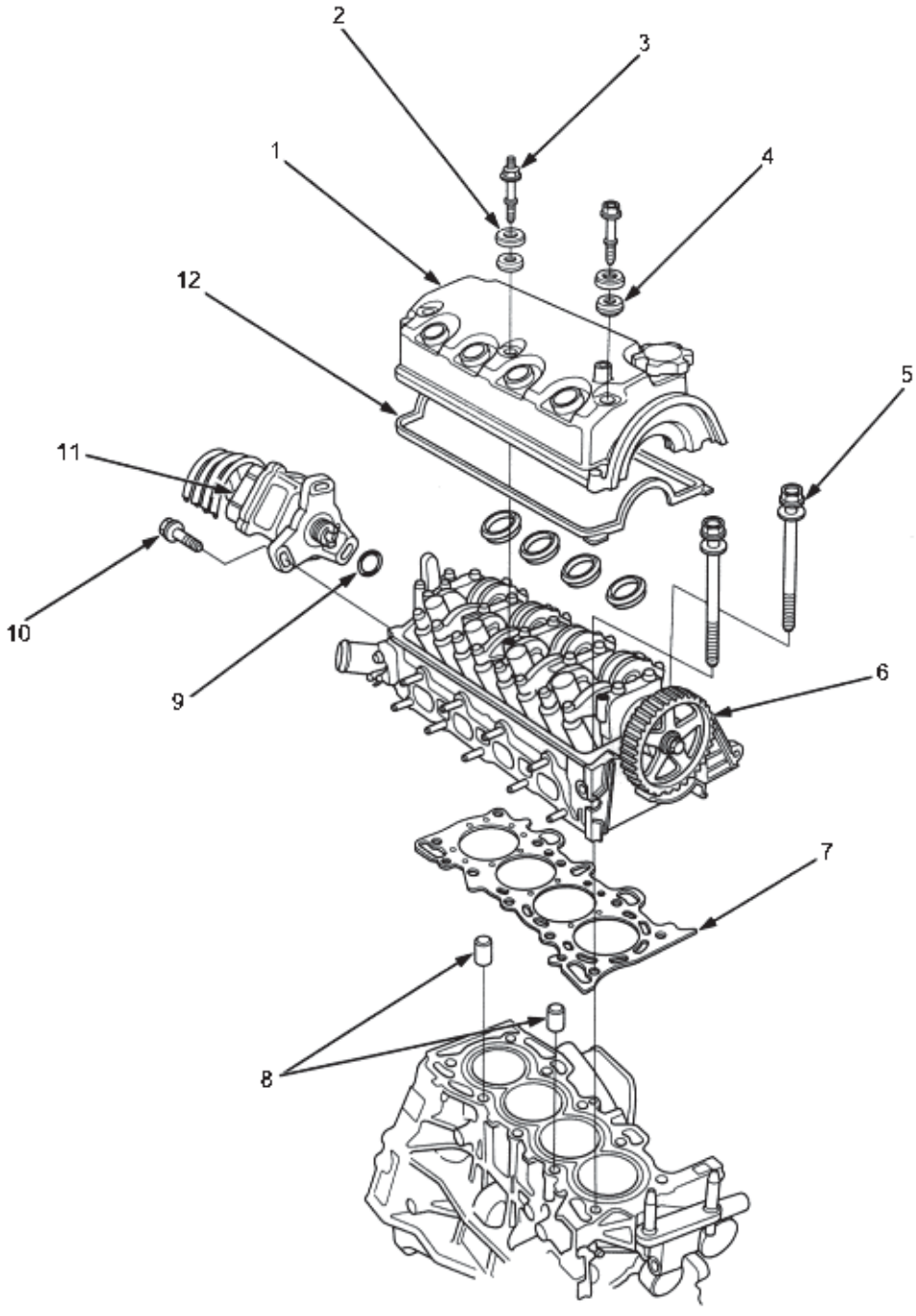
CAMSHAFT PULLEY:



1. UP MARK
2. TDC MARK

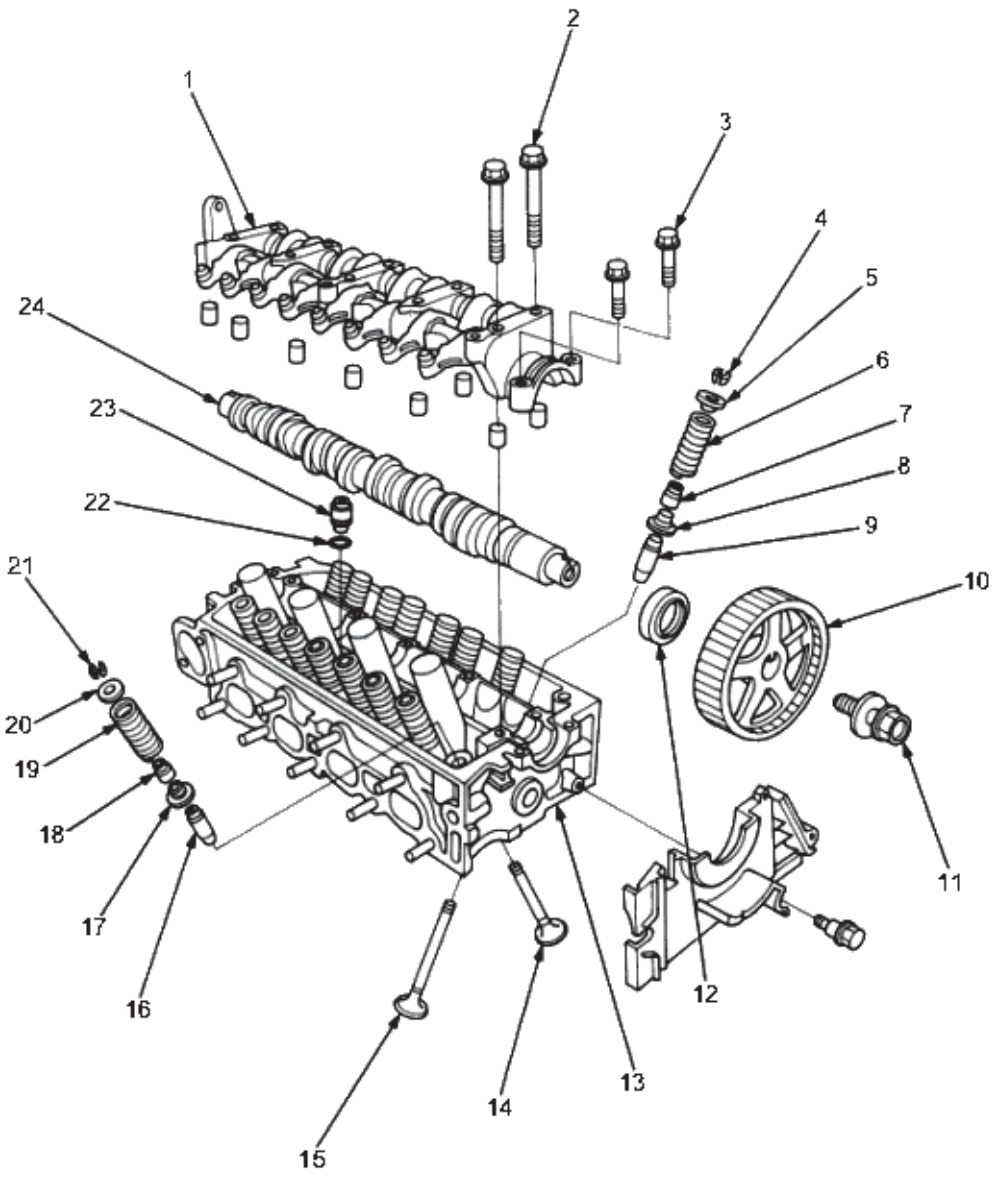
10. If the camshaft and crankshaft pulleys are not positioned at TDC remove the timing belt, and adjust the position following the procedure (**see page** 6-9), then reinstall the timing belt.
11. After installation, adjust the tension of each belt.
    - See section 4 for alternator belt tension adjustment.
    - See section 22 for A/C compressor belt tension adjustment.
    - See section 17 for P/S pump belt tension adjustment.

NOTE:
- To avoid damage, wait until the engine coolant temperature drops below 38 °C (100°F) before removing the cylinder head.
- When handling a metal gasket, take care not to fold it or damage the contact surface.
- Use new O-rings and gaskets when reassembling.



1. **CYLINDER HEAD COVER**, (**See Page** 6-30) when installing cylinder head cover.
2. **WASHER**, Replace when damaged or deteriorated.
3. **6 x 10, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft).** Apply soapsuds to threads and cylinder head contact surface when replacing the rubber seal, then remove any soapsuds after installing rubber seal.
4. **RUBBER SEAL**. Replace when damaged or deteriorated.
5. **CYLINDER HEAD BOLT, 10 x 1.25 mm, 67 Nm (6.8 kgf/m, 49 lbf/ft)** Tightening (**See Page** 6-30). Apply engine oil to the threads.
6. **CYLINDER HEAD**
7. **CYLINDER HEAD GASKET**, Replace.
8. **DOWEL PIN**
9 **O-RING**, Replace.
10. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
11. **DISTRIBUTOR**
12. **HEAD COVER GASKET**, Replace when leaking, damaged or deteriorated. Apply liquid gasket at four corners of the recesses.

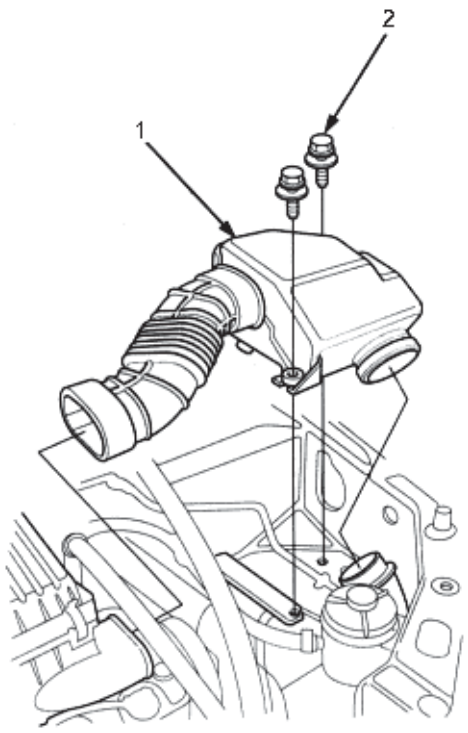
OIL Prior to reassembling, clean all the parts in solvent, dry them, and apply lubricant to any contact parts.



1. **ROCKER ARM ASSEMBLY**
   Removal (**See Page** 6-18)
   Inspection (**See Page** 6-19).
2. **8 x 1.25 mm, 20 Nm (2.0 kgf/m, 14 lbf/ft).**
   Apply engine oil to the threads.
3. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
4. **VALVE KEEPERS**
5. **SPRING RETAINER**
6. **INTAKE VALVE SPRING**
7. **INTAKE VALVE SEAL** , Replace.
8. **VALVE SPRING SEAT**
9. **INTAKE VALVE GUIDE**
10. **CAMSHAFT PULLEY**
11. **8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft)**,
    Apply engine oil to the threads.
12. **OIL SEAL**, Replace.
13. **CYLINDER HEAD**
    Removal, (**See Page** 6-14).
    Warpage, (**See Page** 6-24).
    Valve seat reconditioning, (**See Page** 6-25).
    Installation, (**See Page** 6-29).
14. **EXHAUST VALVE**
15. **INTAKE VALVE**
    Removal, (**See Page** 6-23)
    Installation, (**See Page** 6-27)
16. **EXHAUST VALVE GUIDE**
    Inspection, (**See Page** 6-24).
    Replacement, (**See Page** 6-26).
    Reaming, (**See Page** 6-26).
17. **VALVE SPRING SEAT**
18. **EXHAUST VALVE SEAL** , Replace.
19. **EXHAUST VALVE SPRING**
20. **SPRING RETAINER**
21. **VALVE KEEPERS**
22. **O-RING**, Replace.
23. **OIL CONTROL ORIFICE**, Clean.
24. **CAMSHAFT**
    Inspection, (**See Page** 6-21)

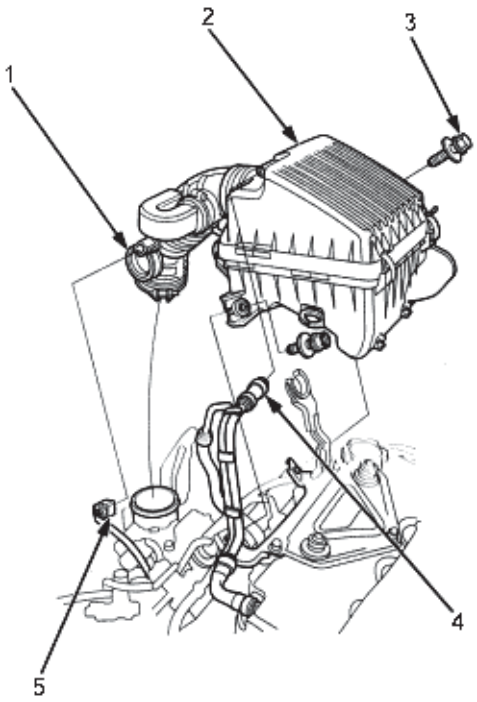
Engine Removal is not required in this procedure.
NOTE:
- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, carefully unplug the wiring connectors while holding the connector portion.
- To avoid damaging the cylinder head, wait until the engine coolant temperature drops below 38°C (100°F) before loosening the retaining 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.

1. Secure the hood in the open position.
2. Disconnect the battery negative terminal first, then the positive terminal.
3. Drain the engine coolant (**see page** 10-5).
4. Remove the intake air duct B.



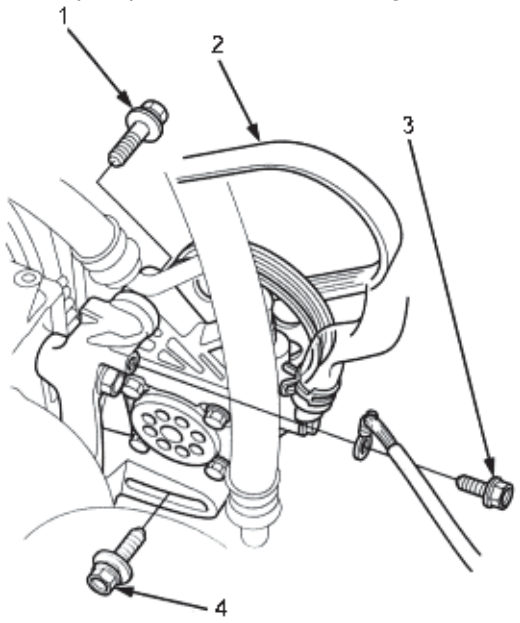
1. INTAKE AIR DUCT B
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

5. Remove the breather hose then disconnect the intake air temperature (IAT) sensor connector.
6. Remove the air cleaner housing and the intake air duct.



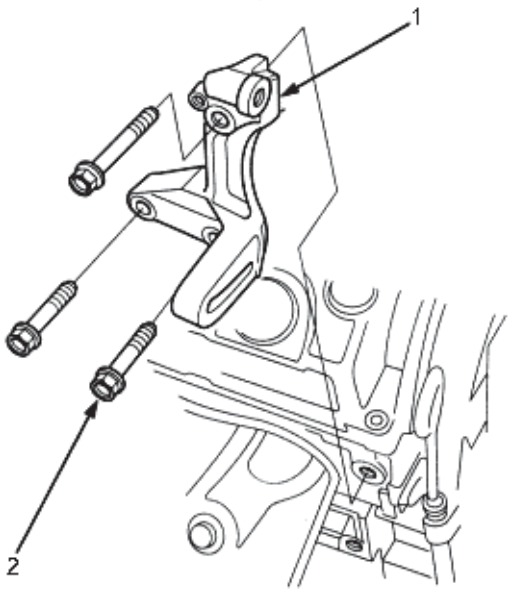
1. INTAKE AIR DUCT
2. AIR CLEANER HOUSING
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. BREATHER HOSE
5. IAT SENSOR CONNECTOR

7. Remove the mounting bolt and lock bolt, then remove the power steering (P/S) pump belt and pump without disconnecting the P/S hoses.



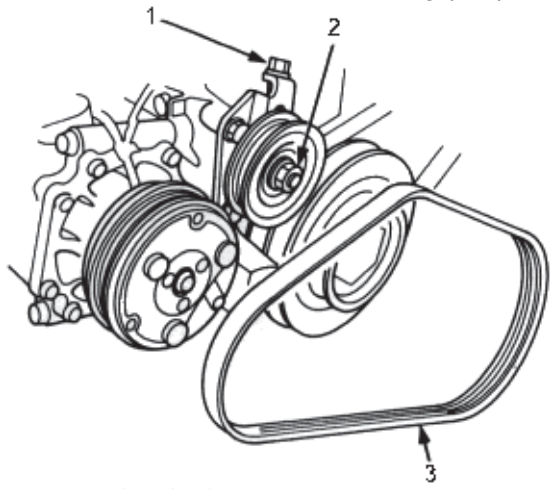
1. MOUNTING BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. P/S PUMP BELT
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

8. Remove the P/S pump bracket.



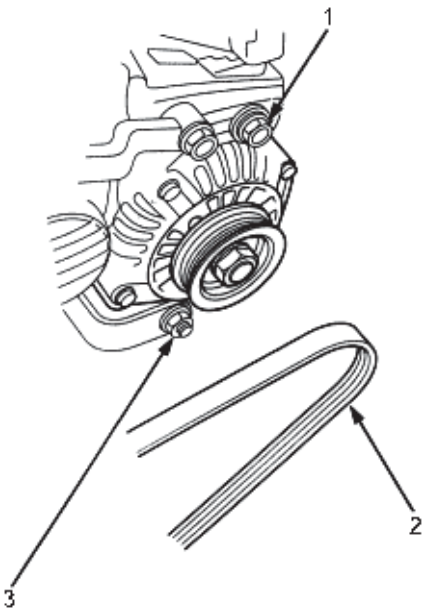
1. P/S PUMP BRACKET
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

9. Loosen the idler pulley centre nut and adjusting bolt, then remove the air conditioning (A/C) compressor belt.



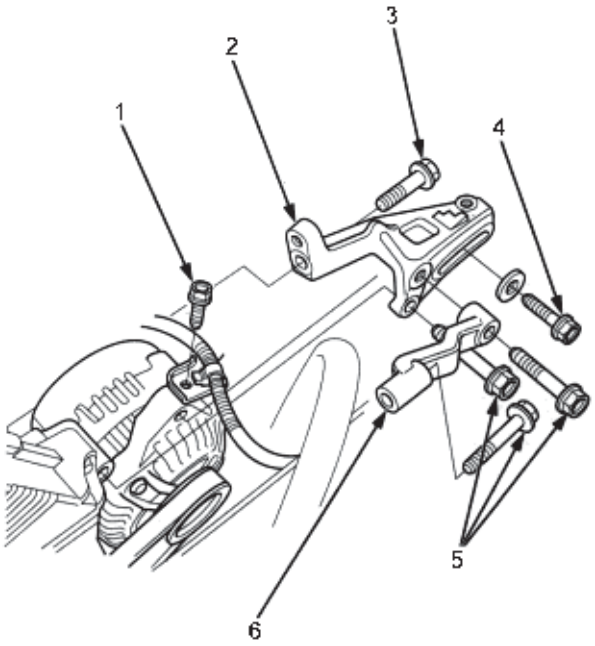
1. ADJUSTING BOLT
2. IDLER PULLEY CENTRE NUT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. A/C COMPRESSOR BELT

10. Loosen the mounting nut and lock bolt, then remove the alternator belt.



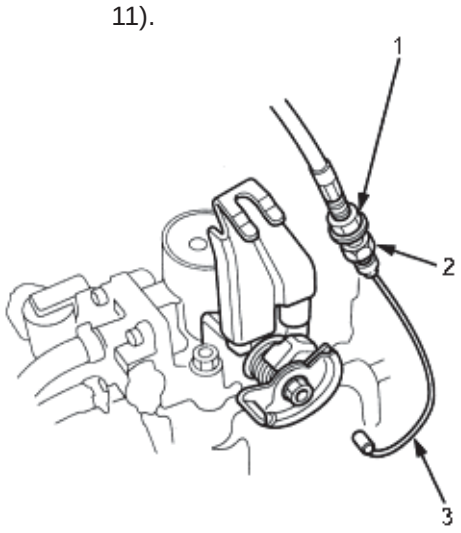
1. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. ALTERNATOR BELT
3. MOUNTING NUT, 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

11. Remove the engine mount bracket A and alternator upper bracket.



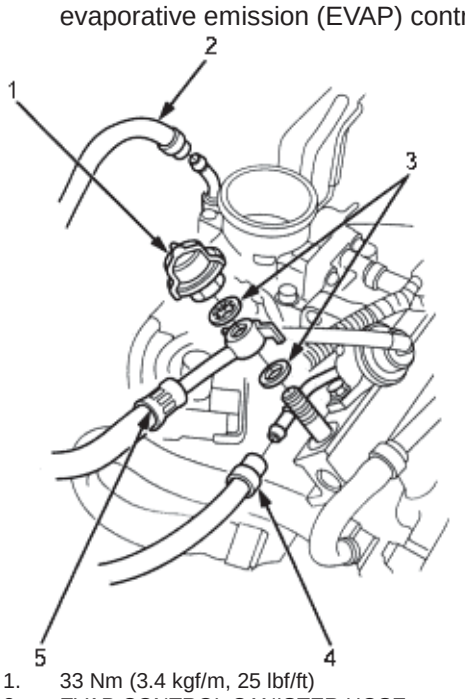
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. ALTERNATOR UPPER BRACKET
3. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
4. LOCK BOLT, 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
5. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
6. ENGINE MOUNT BRACKET A

12. Remove the throttle cable by loosen the locknut, then slip the cable end out of the accelerator linkage.
    NOTE:
    - Take care not to bend the cable when removing it. Always replace any kinked cable with a new one.
    - Adjust the throttle cable when installing (see section 11).



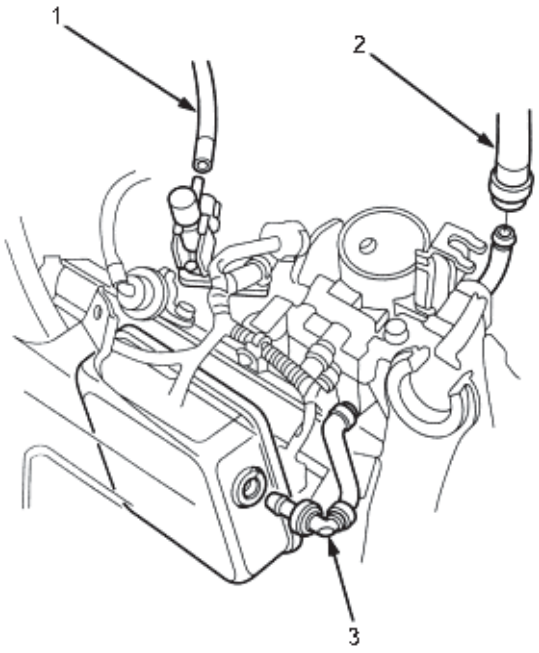
1. LOCKNUT
2. ADJUSTING NUT
3. THROTTLE CABLE

13. Relieve fuel pressure (see section 11).
14. Remove the fuel feed hose, fuel return hose and evaporative emission (EVAP) control canister hose.



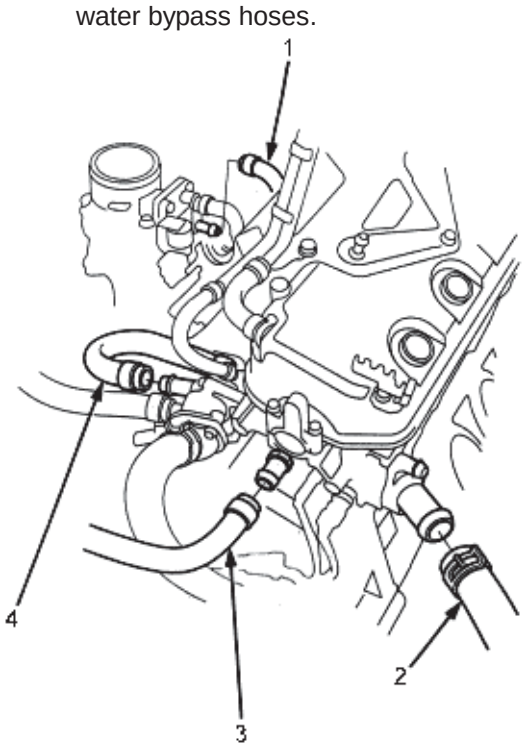
1. 33 Nm (3.4 kgf/m, 25 lbf/ft)
2. EVAP CONTROL CANISTER HOSE
3. WASHERS, Replace.
4. FUEL RETURN HOSE
5. FUEL FEED HOSE

15. Remove the brake booster vacuum hose, positive crankcase ventilation (PCV) hose and vacuum hose..



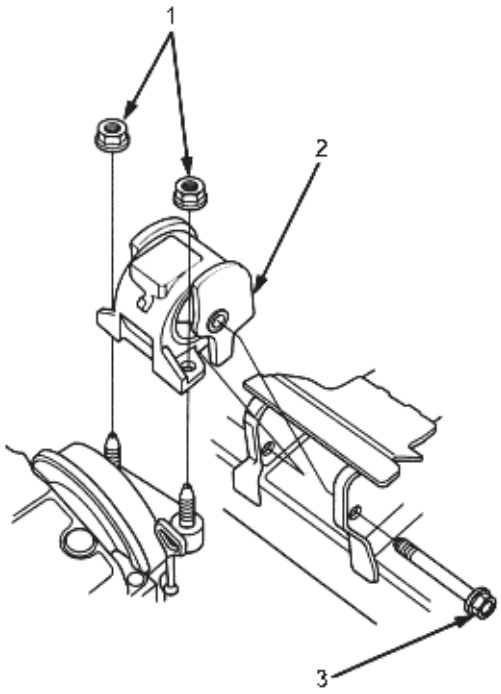
1. VACUUM HOSE
2. BRAKE BOOSTER VACUUM HOSE
3. PCV HOSE

16. Remove the upper radiator hose, heater hose and water bypass hoses.



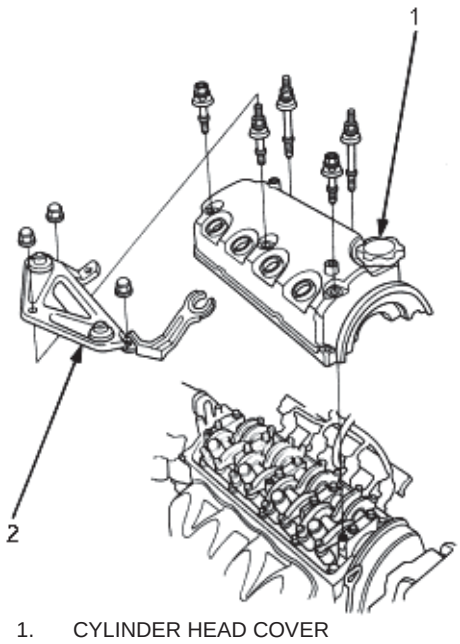
1. WATER BYPASS HOSE
2. RADIATOR UPPER HOSE
3. HEATER HOSE
4. WATER BYPASS HOSE

17. Remove the engine wire harness connectors and wire harness clamps from the cylinder head and the intake manifold.
    - Four injector connectors
    - Idler air control (IAC) valve connector
    - Throttle position sensor connector
    - Manifold absolute pressure (MAP) sensor connector
    - Engine coolant temperature (ECT) sensor connector
    - Radiator fan switch connector
    - Coolant temperature gauge sending unit connector
    - Heated oxygen sensor (HO2S) connector
18. Remove the spark plug caps and distributor from the cylinder head.
19. Support the engine with the jack and wood block under the oil pan.
20. Remove the side engine mount.



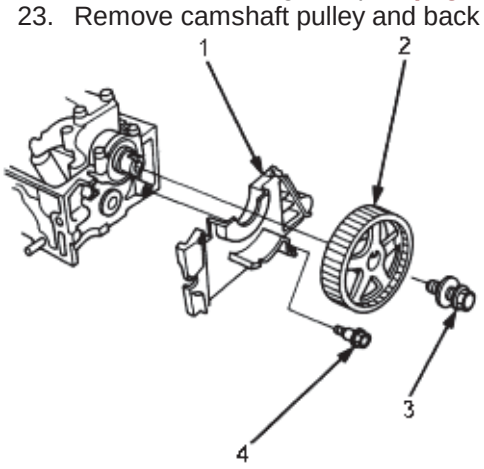
1. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)
2. SIDE ENGINE MOUNT
3. 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)

21. Remove air cleaner housing bracket, then remove the cylinder head cover



1. CYLINDER HEAD COVER
2. AIR CLEANER HOUSING BRACKET

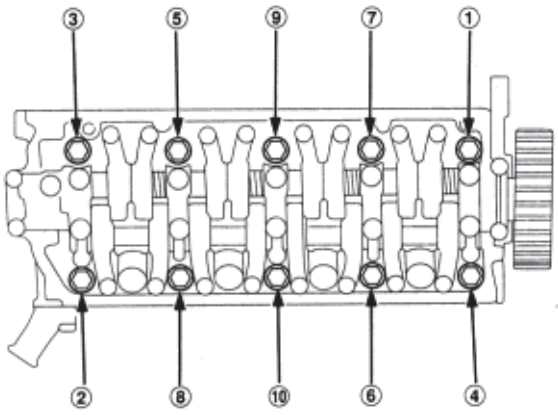
22. Remove the timing belt (**see page** 6-8).
23. Remove camshaft pulley and back cover.



1. BACK COVER
2. CAMSHAFT PULLEY. Clean when installing.
3. 8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft). Apply engine oil to the bolt threads.
4. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

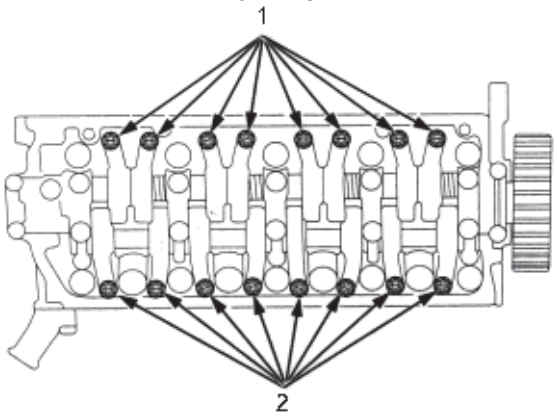
24. Remove the exhaust manifold (**see page** 9-3).
25. Remove the intake manifold (**see page** 9-2).
26. Remove the cylinder head bolts. To prevent warpage, unscrew the bolts in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened.

CYLINDER HEAD BOLT LOOSING SEQUENCE:



27. Remove the cylinder head.

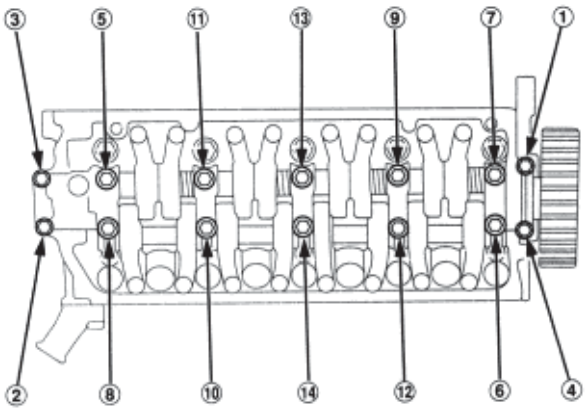
1. Loosen the adjusting screws.



1. ADJUSTING SCREWS
2. ADJUSTING SCREWS

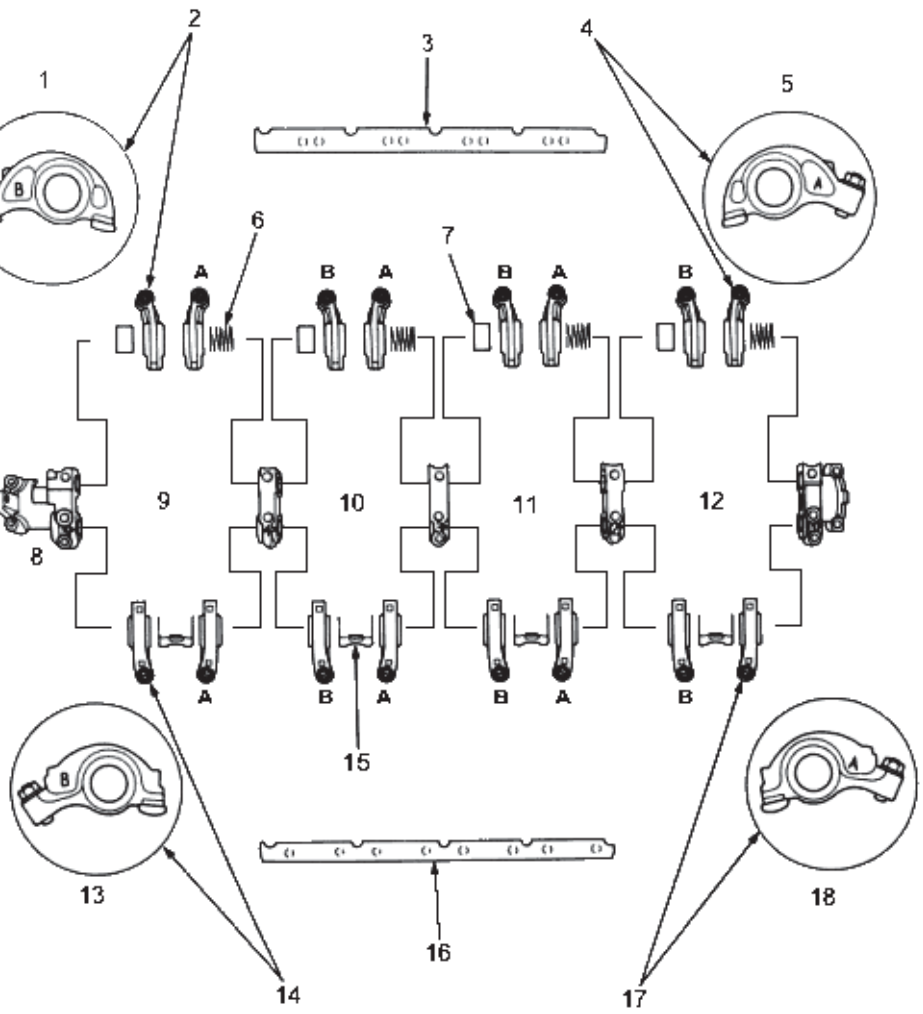
2. Unscrew the camshaft holder bolts, then remove the rocker arm assembly.
   NOTE:
   - Unscrew the camshaft holder bolts two turns at a time, in a criss-cross pattern, to prevent damaging the valves or rocker arm assembly.
   - When removing the rocker arm assembly, do not remove the camshaft holder bolts. The bolts will keep the camshaft holders, the springs and the rocker arms on the shaft.

CAMSHAFT HOLDER BOLTS LOOSENING SEQUENCE:



NOTE:

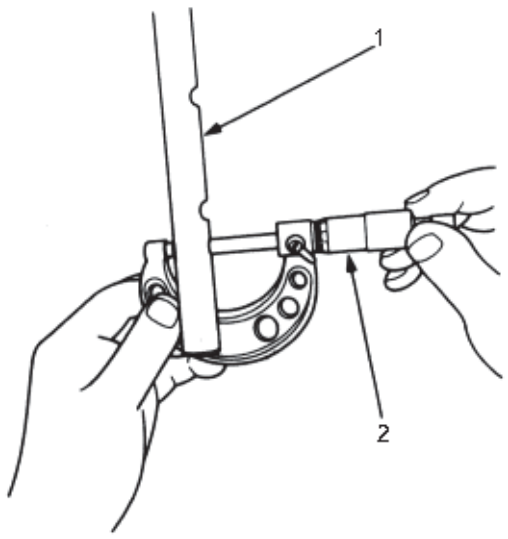
- Identify parts as they are removed to ensure reinstallation in original locations.
- Inspect rocker shafts and rocker arms (**see page** 6-20).
- Rocker arms must be installed in the same position if reused.
- When removing or installing rocker arm assembly, do not remove the camshaft holder bolts. The bolts will keep the holders, springs and rocker arms on the shaft.



1. Letter “B” is stamped on rocker arm
2. **INTAKE ROCKER ARM B (4 places)**
3. **INTAKE ROCKER SHAFT**
4. **INTAKE ROCKER ARM A (4 places)**
5. Letter “A” is stamped on rocker arm
6. **SPRING (4 places)**
7. **ROCKER SHAFT COLLAR (4 places)**
8. **No. 5 CAMSHAFT HOLDER**
9. **No. 4 CAMSHAFT HOLDER**
10. **No. 3 CAMSHAFT HOLDER**
11. **No. 2 CAMSHAFT HOLDER**
12. **No. 1 CAMSHAFT HOLDER**
13. Letter “B” is stamped on rocker arm
14. **EXHAUST ROCKER ARM B (4 places)**
15. **ROCKER SHAFT SPRING (4 places)**
16. **EXHAUST ROCKER SHAFT**
17. **EXHAUST ROCKER ARM A (4 places)**
18. Letter “A” is stamped on rocker arm

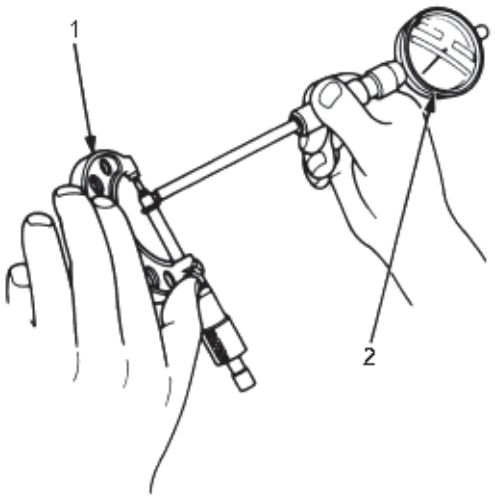
Measure both the intake rocker shaft and exhaust rocker shaft.

1. Measure the diameter of shaft at the first rocker location.



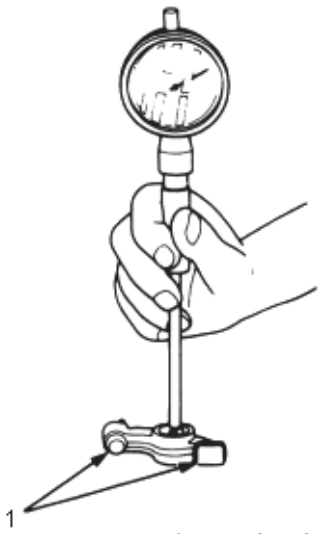
1. Surface should be smooth.
2. MICROMETER

2. Zero the gauge to the shaft diameter.



1. MICROMETER
2. CYLINDER BORE GAUGE

3. Measure inside diameter of rocker arm and check for out-of-round condition.
   Rocker Arm-to-Shaft Clearance:
   Standard (New):
   Intake: 0.017 - 0.050 mm (0.0007 - 0.0020 in)
   Exhaust: 0.018 - 0.054 mm (0.0007 - 0.0021 in)
   Service Limit: 0.08 mm (0.003 in)



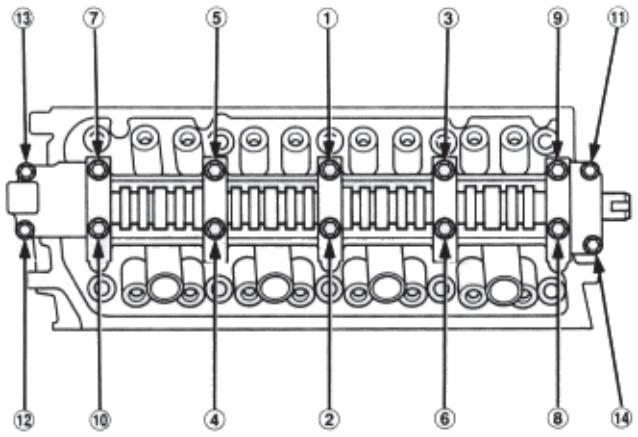
1. Inspect rocker arm face for wear.

4. Repeat for all the rockers.
   - If the clearance is over the service limit, replace the rocker shaft and all over tolerance rocker arms.

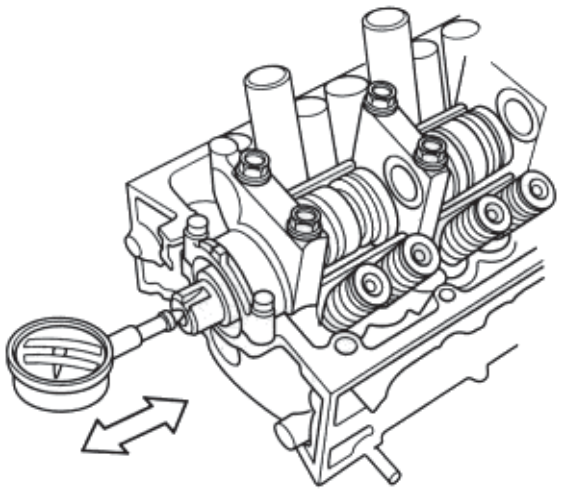
NOTE:
- Do not rotate the camshaft during inspection.
- Remove the rocker arms and rocker shafts.

1. Put the camshaft and the camshaft holders on the cylinder head, then tighten the bolts to the specified torque.
   Specified torque:
   8 mm bolts: 20 Nm (2.0 kgf/m 14 lbf/ft)
   Apply engine oil to the threads.
   6 mm bolts: 12 Nm (1.2 kgf/m 8.7 lbf/ft)

6 mm bolts: 11, 12, 13, 14

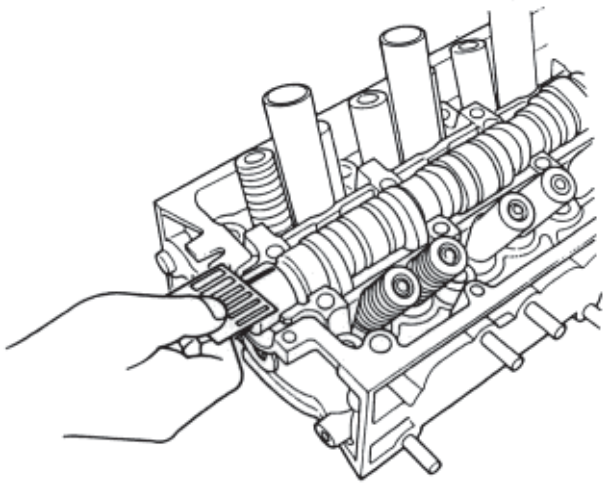


2. Seat the camshaft by pushing it toward the rear of the cylinder head.
3. Zero the dial indicator against the end of the camshaft. Push the camshaft back and forth, and read the end play.
   Camshaft End Play:
   Standard (New): 0.05 - 0.15 mm (0.002 - 0.006 in)
   Service Limit: 0.5 mm (0.02 in)



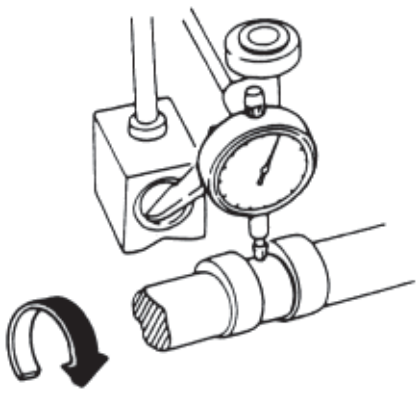
4. Remove the bolts, then remove the camshaft holders from the cylinder head.
   - Lift camshaft out of cylinder head, wipe clean, then inspect lift ramps. Replace camshaft if lobes are pitted, scored, or excessively worn.
   - Clean the camshaft bearing surfaces in the cylinder head, then set camshaft back in place.
   - Insert plastigage strip across each journal.
5. Install the camshaft holders and tighten the bolts to the specified torque.

6. Remove the camshaft holders, then measure the widest portion of the plastigage on each journal.
   Camshaft-to-Holder Oil Clearance:
   Standard (New): 0.060 - 0.089 mm (0.002 - 0.004 in)
   Service Limit: 0.15 mm (0.006 in)



7. If the camshaft-to-holder oil clearance is out of tolerance:
   - If the camshaft has already been replaced, you must replace the cylinder head.
   - If the camshaft has not been replaced, first check the total runout with the camshaft supported on V-blocks.

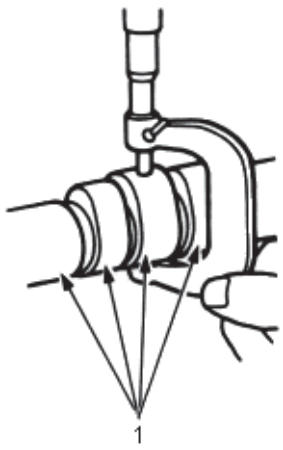
   Camshaft Total Runout:
   Standard (New): 0.03 mm (0.001 in) max.
   Service Limit: 0.04 mm (0.002 in)



1. Rotate camshaft while measuring.

   - If the total runout of the camshaft is within tolerance, replace the cylinder head.
   - If the total runout is out of tolerance, replace the camshaft and recheck. If the bearing clearance is still out of tolerance, replace the cylinder head.

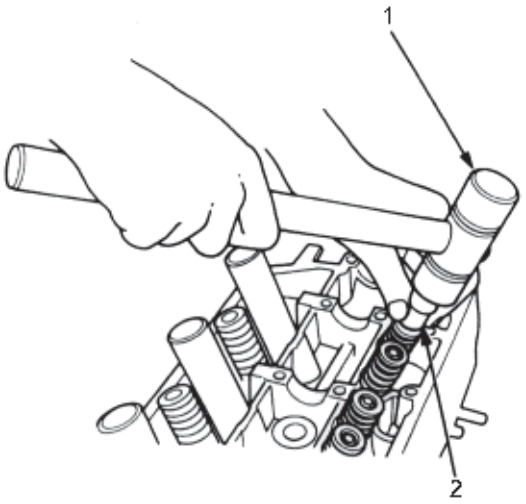
8. Check the cam lobe height wear.
   Cam Lobe Height Standard (New):
   Intake A: 35.299 mm (1.3897 in)
   Exhaust: 37.281 mm (1.4678 in)



1. Check this area for wear

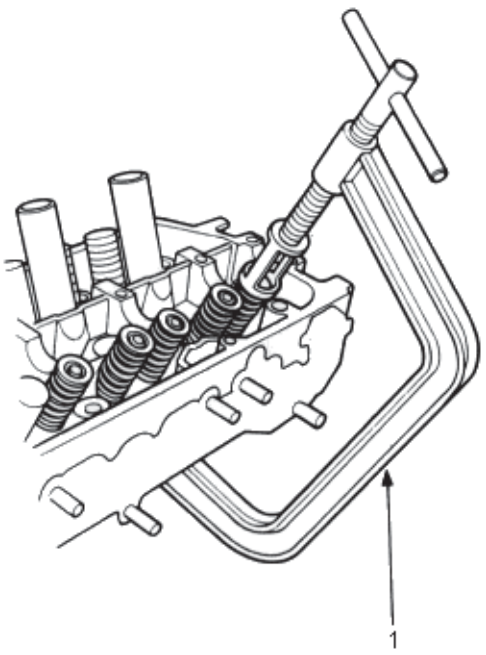
NOTE: Identify valves and valve springs as they are removed so that each item can be reinstalled in its original position.

1. Using an appropriate-sized socket and plastic mallet, lightly tap the valve retainer to loosen the valve keepers before installing the valve spring compressor.

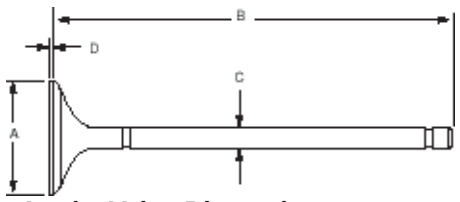


1. PLASTIC MALLET
2. SOCKET

2. Install the spring compressor. Compress the spring and remove the valve keeper.



1. VALVE SPRING COMPRESSOR, 07757-0010000



Intake Valve Dimensions

A Standard (New):	**29.90 - 30.10 mm (1.177 - 1.185 in)**
B Standard (New):	**117.42 - 117.72 mm (4.623 - 4.635 in)**
C Standard (New):	**5.48 - 5.49 mm (0.2157 - 0.2161 in)**
C Service Limit:	**5.45 mm (0.2146 in)**
D Standard (New):	**0.85 - 1.15 mm (0.033 - 0.045 in)**
D Service Limit:	**0.55 mm (0.022 in)**

Exhaust Valve Dimensions

A Standard (New):	**25.90 - 26.10 mm (1.020 - 1.028 in)**
B Standard (New):	**114.60 - 114.90 mm (4.512 - 4.524 in)**
C Standard (New):	**5.45 - 5.46 mm (0.2146 - 0.2150 in)**
C Service Limit:	**5.42 mm (0.2134 in)**
D Standard (New):	**1.05 - 1.35 mm (0.041 - 0.053 in)**
D Service Limit:	**0.85 mm (0.033 in)**

Measure the guide-to-stem clearance with a dial indicator while rocking the stem in the direction of normal thrust (wobble method).

Intake Valve Stem-to-Guide Clearance:
Standard (New): 0.04 - 0.10 mm (0.002 - 0.004 in)
Service Limit: 0.16 mm (0.006 in)
Exhaust Valve Stem-to-Guide Clearance:
Standard (New): 0.10 - 0.16 mm (0.004 - 0.006 in)
Service Limit: 0.22 mm (0.009 in)



1. Valve extended 10 mm out from seat

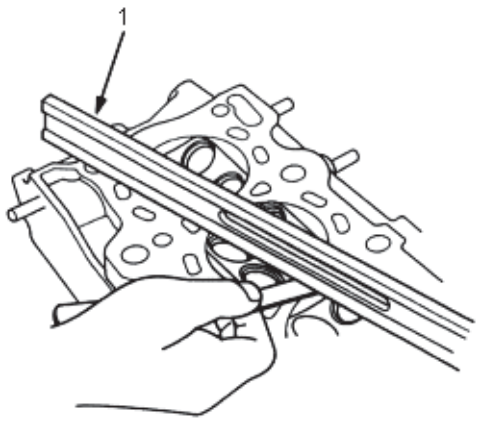
- If measurement exceeds the service limit, recheck using a new valve.
- If measurement is now within the service limit, reassemble using a new valve.
- If measurement still exceeds limit, recheck using alternate method below, then replace valve and guide, if necessary.

NOTE: An alternate method of checking guide to stem clearance is to 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 (0.001 - 0.002 in)
Service Limit: 0.08 mm (0.003 in)
Exhaust Valve Stem-to-Guide Clearance:
Standard (New): 0.05 - 0.08 mm (0.002 - 0.003 in)
Service Limit: 0.11 mm (0.004 in)

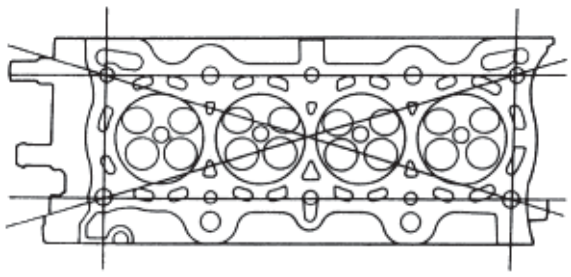
NOTE: If the camshaft-to-holder oil clearances (**see page** 6-21) are not within specification, the cylinder head cannot be resurfaced.
If the camshaft-to-holder oil clearances are within specifications, check the cylinder head for warpage.

- If warpage is less than 0.05 mm (0.002 in) cylinder head resurfacing is not required.
- If warpage is between 0.05 mm (0.002 in) and 0.2 mm (0.008 in), resurface cylinder head.
- Maximum resurface limit is 0.2 mm (0.008 in) based on a height of 93 mm (3.66 in).



1. PRECISION STRAIGHT EDGE

Measure along edges, and three ways across centre.



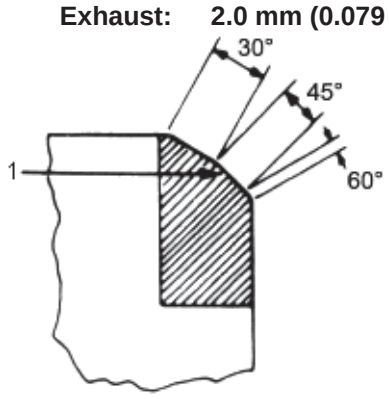
Cylinder Head Height:
Standard (New): 92.95 - 93.05 mm (3.659 - 3.663 in)

1. Renew the valve seats in the cylinder head using a valve seat cutter.
   NOTE: If the guides are worn (**see page** 6-24) replace them (**see page** 6-26) before cutting the valve seats.



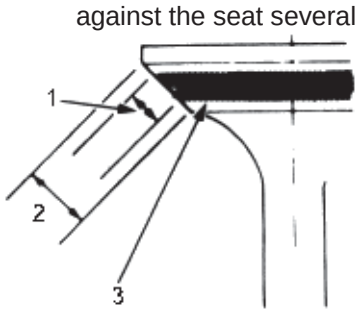
1. VALVE SEAT CUTTER (Commercially available)

2. Carefully cut a 45° seat, removing only enough material to ensure a smooth and concentric seat.
3. Bevel the upper edge of the seat with the 30° cutter and the lower edge of the seat with the 60° cutter. Check the width of seat and adjust accordingly.
4. Make one more very light pass with the 45° cutter to remove any possible burrs caused by the other cutters.
   Valve Seat Width:
   Standard (New):
   Intake: 0.85 - 1.15 mm (0.033 - 0.045 in)
   Exhaust: 1.25 - 1.55 mm (0.049 - 0.061 in)
   Service Limit:
   Intake: 1.6 mm (0.063 in)
   Exhaust: 2.0 mm (0.079 in)



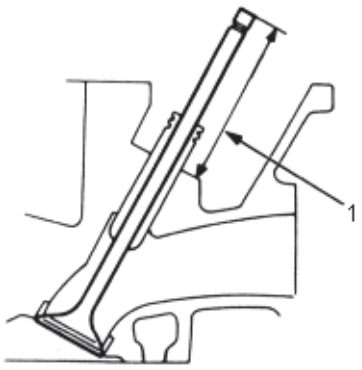
1. Seat Width

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



1. ACTUAL SEATING SURFACE
2. VALVE SEAT
3. PRUSSIAN BLUE COMPOUND

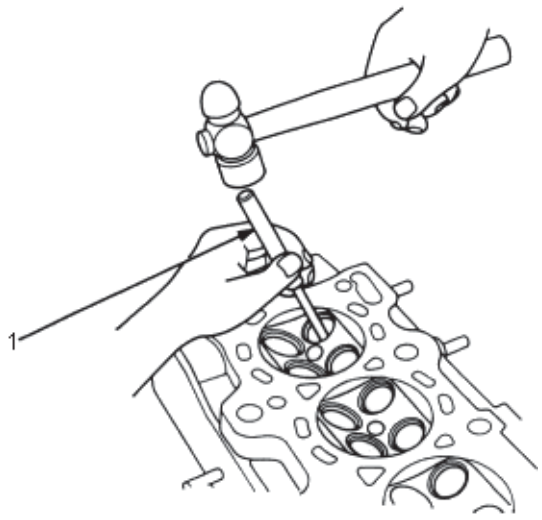
6. The actual valve seating surface, as shown by the blue compound, should be centred on the seat.
   - If it is too high (closer to the valve stem), you must make a second cut with the 60° cutter to move it down, then one more cut with the 45° cutter to restore seat width.
   - If it is too low (closer to the valve edge), you must make a second cut with the 30° cutter to move it up, then one more cut with the 45° cutter to restore seat width.
     NOTE: The final cut should always be made with the 45° cutter.
7. Insert the intake and exhaust valves in the head and measure the valve stem installed height.
   Intake, Exhaust Stem Installed Height:
   Standard (New): 53.17 - 53.64 mm (2.093 - 2.112 in)
   Service Limit: 53.89 mm (2.122 in)
8. If the 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.



1. VALVE STEM INSTALLED HEIGHT

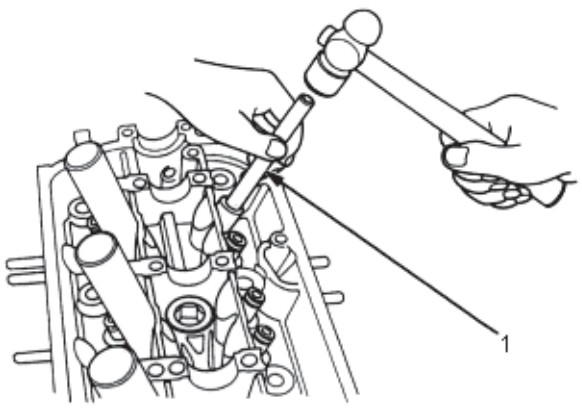
NOTE:
- For best results, heat cylinder head to 150°C (300°F) before removing or installing guides.
- It may be necessary to use an air hammer to remove some valve guides.

1. Drive the valve guide out from the bottom of the cylinder head.



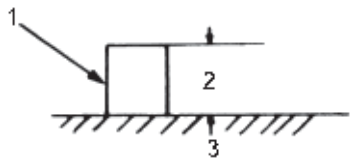
1. VALVE GUIDE DRIVER, 5.5 mm, 07742-0010100

2. Drive in a new valve guide to the specified depth.



1. VALVE GUIDE DRIVER, 5.5 mm, 07742-0010100

Valve Guide Installed Height:
Intake: 17.85 - 18.35 mm (0.703 - 0.722 in)
Exhaust: 18.65 - 19.15 mm (0.734 - 0.754 in)

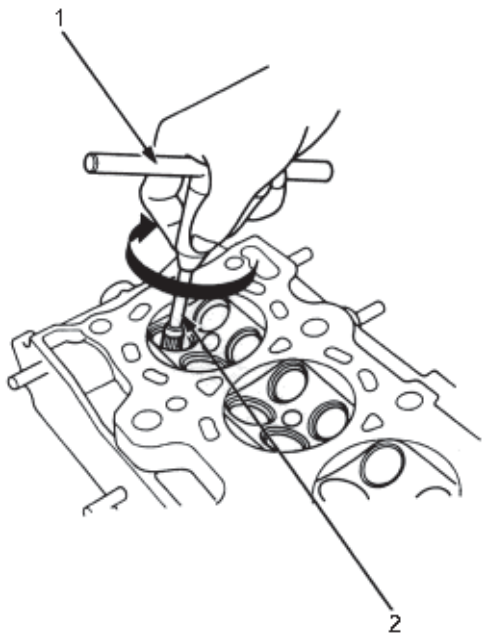


1. VALVE GUIDE
2. Measure here
3. CYLINDER HEAD

NOTE: For new valve guides only.

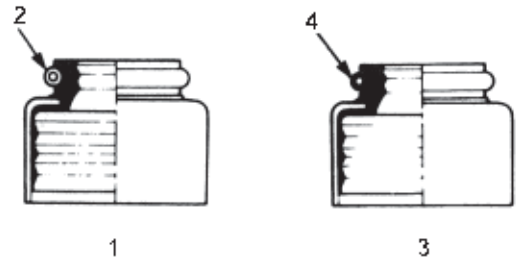
1. Coat both the reamer and valve guide with cutting oil.
2. Rotate the reamer clockwise the full length of the valve guide bore.
3. Continue to rotate the reamer clockwise while removing it from the bore.
4. Thoroughly wash the guide in detergent and water to remove any cutting residue.
5. Check the clearance with a valve (**see page** 6-24).
   - Verify that the valve slides in the valve guide without exerting pressure.

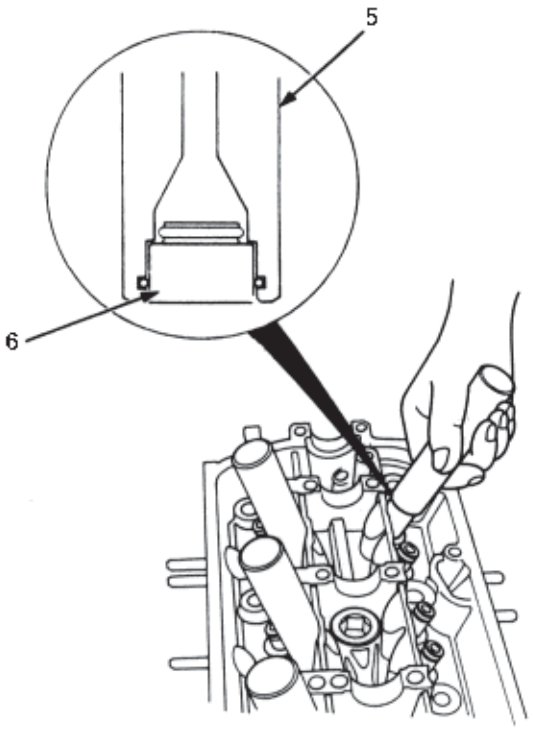
NOTE: Turn reamer in clockwise direction only



1. REAMER HANDLE
2. VALVE GUIDE REAMER, 5.525 mm, 07HAH-PJ70100

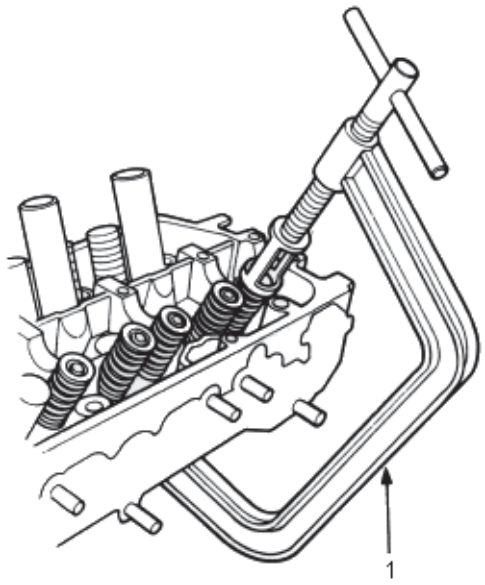
1. Insert the valves into the valve guides coat the valve stems with engine oil before inserting the valves.
   NOTE: Check the valves move up and down smoothly.
2. Install the spring seats on the cylinder head.
3. Install the valve seals using the special tool.
   NOTE: Exhaust and intake valve seal are not interchangeable.





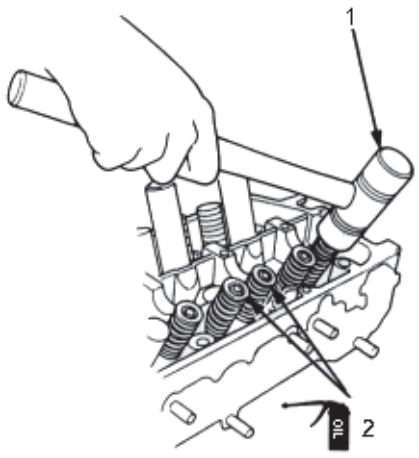
1. INTAKE VALVE SEAL
2. WHITE SPRING
3. EXHAUST VALVE SEAL
4. BLACK SPRING
5. STEM SEAL DRIVER, 07PAD-0010000. NOTE: Use 5.5 mm side.
6. VALVE SEAL. Replace.

4. Install the valve spring and valve retainer, then install the valve spring compressor. Compress the spring, and install the valve keepers.
   NOTE: Place the end of valve spring with closely wound coils toward the cylinder head.



1. VALVE SPRING COMPRESSOR, 07757-0010000

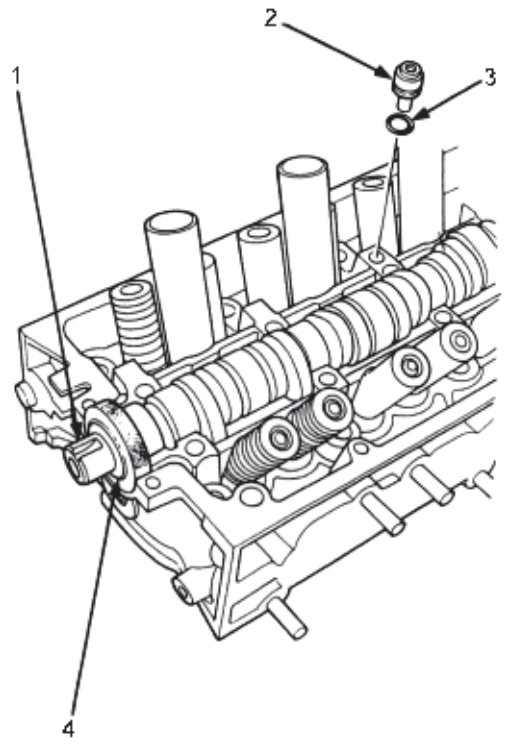
5. Lightly tap the end of each valve stem two or three times with a plastic mallet to ensure proper seating of valve and valve keepers.
   NOTE: Tap the valve stem only along its so you do not bend the stem.



1. PLASTIC MALLET
2. VALVE STEMS

NOTE:
- Make sure that all rockers are in alignment with valves when torquing rocker assembly bolts.
- Valve locknuts should be loosened and adjusting screws backed off before installation.
- To prevent rocker arm assembly from coming apart, leave camshaft holder bolts in the holes.

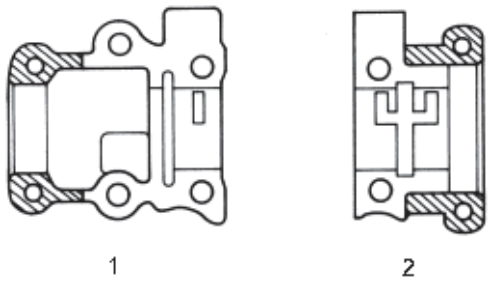
1. After wiping down the camshaft, camshaft seal and journals in the cylinder head, lubricate both surfaces and install the camshaft.
2. Clean and install the oil control orifice with new O-ring.



1. CAMSHAFT. Keyway up.
2. OIL CONTROL ORIFICE. Clean.
3. O-RING. Replace.
4. CAMSHAFT SEAL. Seal housing should be dry. Apply a light coat of oil to camshaft and inner lip of seal.

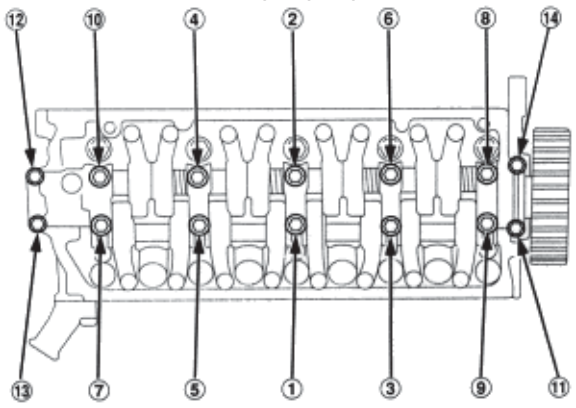
3. Turn the camshaft until its keyway is facing up (No. 1 piston TDC).

4. Apply liquid gasket (P/N 08C70 - K0234M, 08C70 - K0334M, or 08C70 - X0331S) to the head mating surfaces of the No. 1 and No. 5 camshaft holders.
   NOTE: Clean and dry the cylinder head mating surfaces before applying liquid gasket.
   - Apply liquid gasket to the shaded areas.

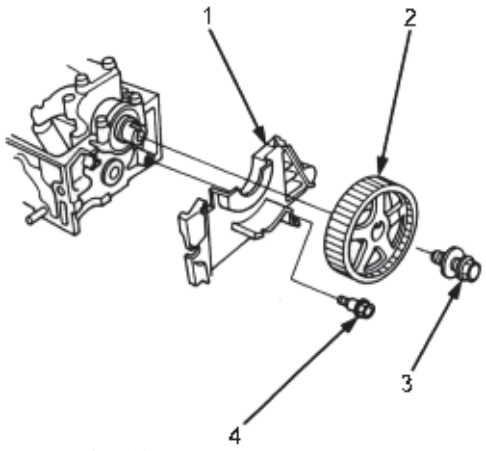


1. No. 5
2. No. 1

5. Set the rocker arm assembly in place and loosely install the bolts.
   - Make sure that the rocker arms are properly positioned on the valve stems.
6. Tighten each bolt two turns at a time in the sequence shown below to ensure that the rockers do not bind on the valves.
   NOTE: Wipe off the excess of liquid gasket from No. 1 and No. 5 camshaft holders with a shop towel.
   Specified torque:
   8 mm bolts: 20 Nm (2.0 kgf/m, 14 lbf/ft)
   Apply engine oil to the threads.
   6 mm bolts: 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
   6 mm bolts: 11, 12, 13, 14



7. Install the back cover, then install the camshaft pulley.

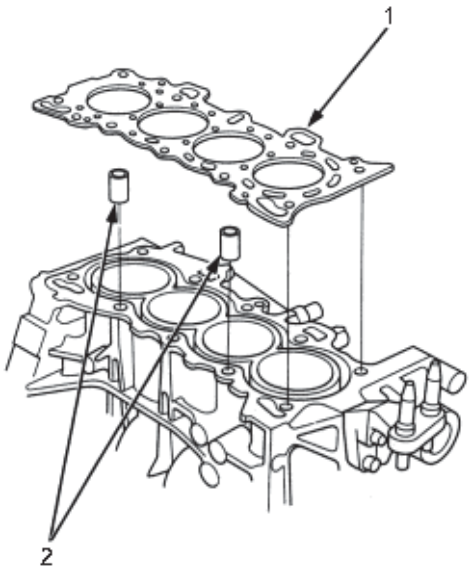


1. BACK COVER
2. CAMSHAFT PULLEY. Clean when installing.
3. 8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft). Apply engine oil to the bolts threads.
4. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

Install the cylinder head in the reverse order of removal:
NOTE:

- Always use a new head gasket.
- Cylinder head and cylinder block surface must be clean.
- "UP" mark on camshaft pulley should be at the top.
- Turn the crankshaft so the No. 1 piston is at TDC (**see page** 6-10).
- Clean the oil control orifice before installing.
- Do not use the upper cover and lower cover for storing items disassembled.
- Clean the upper cover and lower cover before installation.

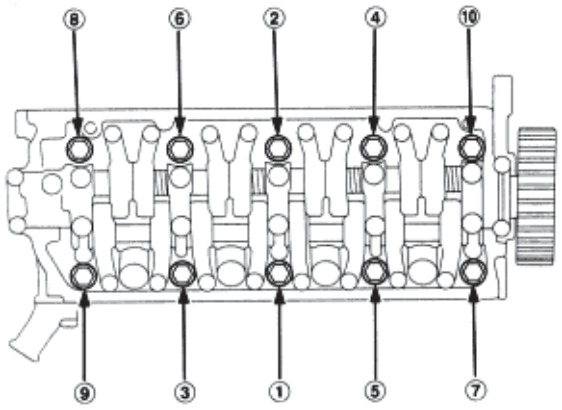
1. Cylinder head dowel pins must be aligned.



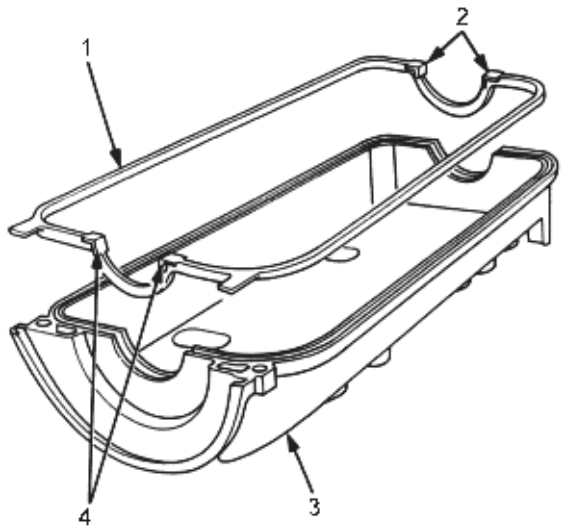
1. CYLINDER HEAD GASKET
2. DOWEL PINS

2. Position the camshaft correctly (**see page** 6-10).
3. Tighten the cylinder head bolts sequentially in four steps.
   1st step: (1) - (10) 20 Nm (2.0 kgf/m, 14 lbf/ft)
   2nd step: (1) - (10) 49 Nm (5.0 kgf/m, 36 lbf/ft)
   3rd step: (1) - (10) 67 Nm (6.8 kgf/m, 49 lbf/ft)
   4th step: (1),(2) 67 Nm (6.8 kgf/m, 49 lbf/ft)
   NOTE:
   - We recommend using a beam-type torque wrench. When using a preset-type torque wrench, be sure to tighten slowly and not to overtighten.
   - If a bolt makes any noise while you are torquing it, loosen the bolt, and retighten it from the 1st step.

CYLINDER HEAD BOLT TORQUE SEQUENCE:

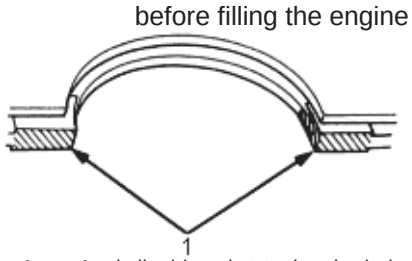


4. Install the intake manifold and tighten the nuts in a criss-cross pattern in two or three steps, beginning with the inner nuts (**see page** 9-2).
5. Install the exhaust manifold and tighten the nuts in a criss-cross pattern in two or three steps, beginning with the inner nut (**see page** 9-3).
6. Install the exhaust manifold bracket, then install the exhaust pipe A and the bracket, and then install the cover.
7. Install the timing belt (**see page** 6-10).
8. Adjust the valve clearance (**see page** 6-3).
9. Install the head cover gasket in the groove of the cylinder head cover. Seat the recesses for the camshaft first, then work it into the groove around the outside edges.
   NOTE:
   - Before installing the head cover gasket, thoroughly clean the seal and the groove.
   - When installing, make sure the head cover gasket is seated securely in the corners of the recesses with no gap.



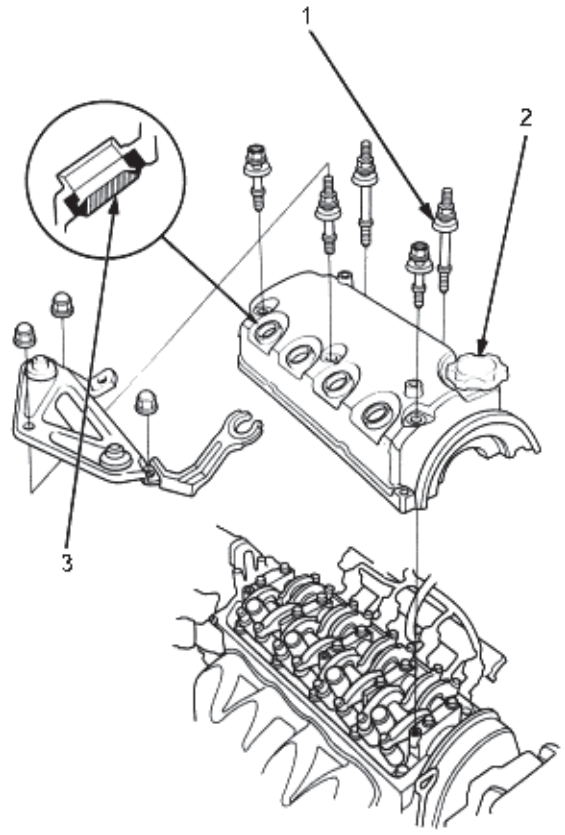
1. HEAD COVER GASKET. Clean
2. CORNERS OF THE RECESS
3. CYLINDER HEAD COVER
4. CORNERS OF THE RECESS

10. Apply liquid gasket to the head cover gasket at the four corners of the recesses.
    NOTE:
    - Use liquid gasket, Part No. 08C70 - K0234M, 08C70 - K0334M or 08C70 - X0331S.
    - Check that the mating surfaces are clean and dry before applying liquid gasket.
    - Do not install the parts if five minutes or more have elapsed since applying liquid gasket. Instead, reapply liquid gasket after removing old residue.
    - After assembly, wait at least 30 minutes before filling the engine with oil.



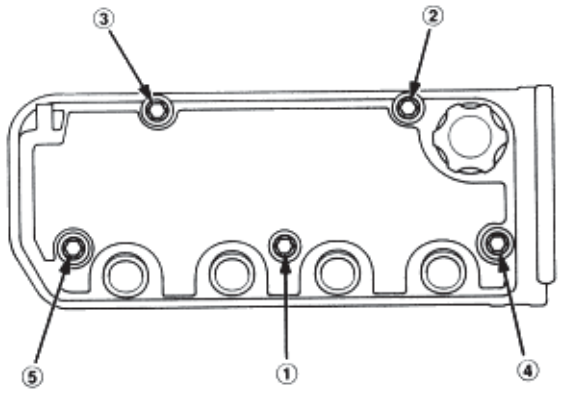
1. Apply liquid gasket to the shaded areas.

11. When installing the cylinder head cover, hold the head cover gasket in the groove by placing your fingers on the camshaft holder contacting surfaces (top of the semicircles).
    Set the spark plug seal on the spark plug pipe. Once the cylinder head cover is on the cylinder head, slide the cover slightly back and forth to seat the head cover gasket.
    NOTE:
    - Before installing the cylinder head cover, clean the cylinder head contacting surfaces with a shop towel.
    - Do not touch the parts where liquid gasket was applied.
    - Take care not to damage the spark plug seal when installing the cylinder head cover.
    - Visually check the spark plug seal for damage.
    - Replace the washer when damaged or deteriorated.



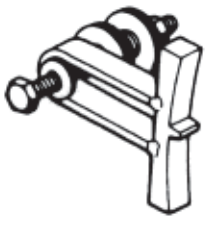
1. WASHER
2. CYLINDER HEAD COVER
3. SPARK PLUG SEAL

12. Tighten the nuts in two or three steps. In the final step, tighten all bolts, in sequence, to 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft).
    NOTE: After assembly, wait at least 30 minutes before filling the engine with oil.

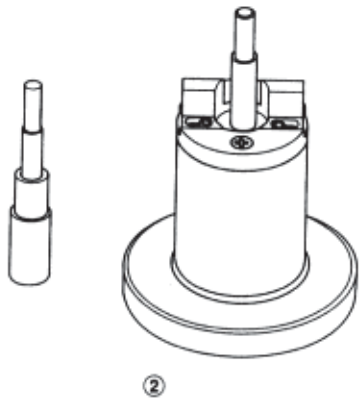


13. After installation, check that all tubes, hoses and connectors are installed correctly.

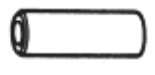
Ref No.	Tool Number	Description	Qty	Remark
1	07LAB - PV00100	Ring Gear Holder	1	
2	07PAF - 0010000	Piston Pin Assembly Tool Set	1	
2-1	07PAF - 0010650	Piston Collar, O.D. 19 mm	1	
3	07749 - 0010000	Handle Driver	1	
4	07948 - SB00101	Driver Attachment, 96 mm	1	



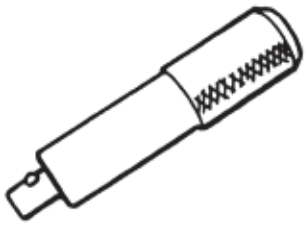
①



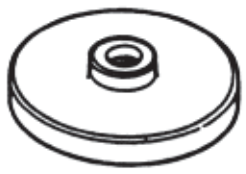
②



②-1



③

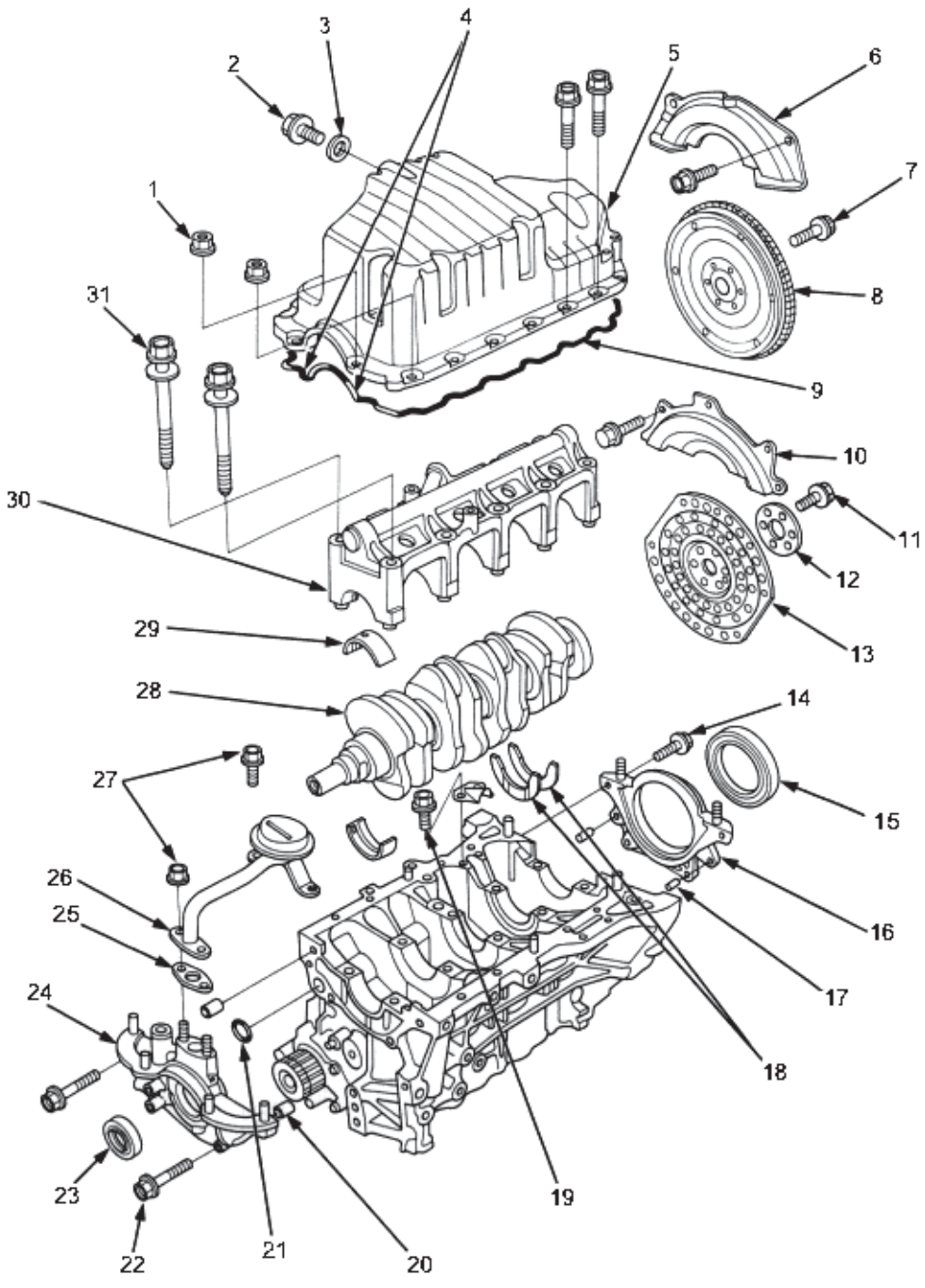


④

NOTE:
Apply liquid gasket to the mating surfaces of the right side cover and oil pump housing before installing them.
Use liquid gasket part No. 08C70-K0234M, 08C70-K0334M or, 08C70-X0331S.
Clean the oil pan gasket mating surfaces before installing it.

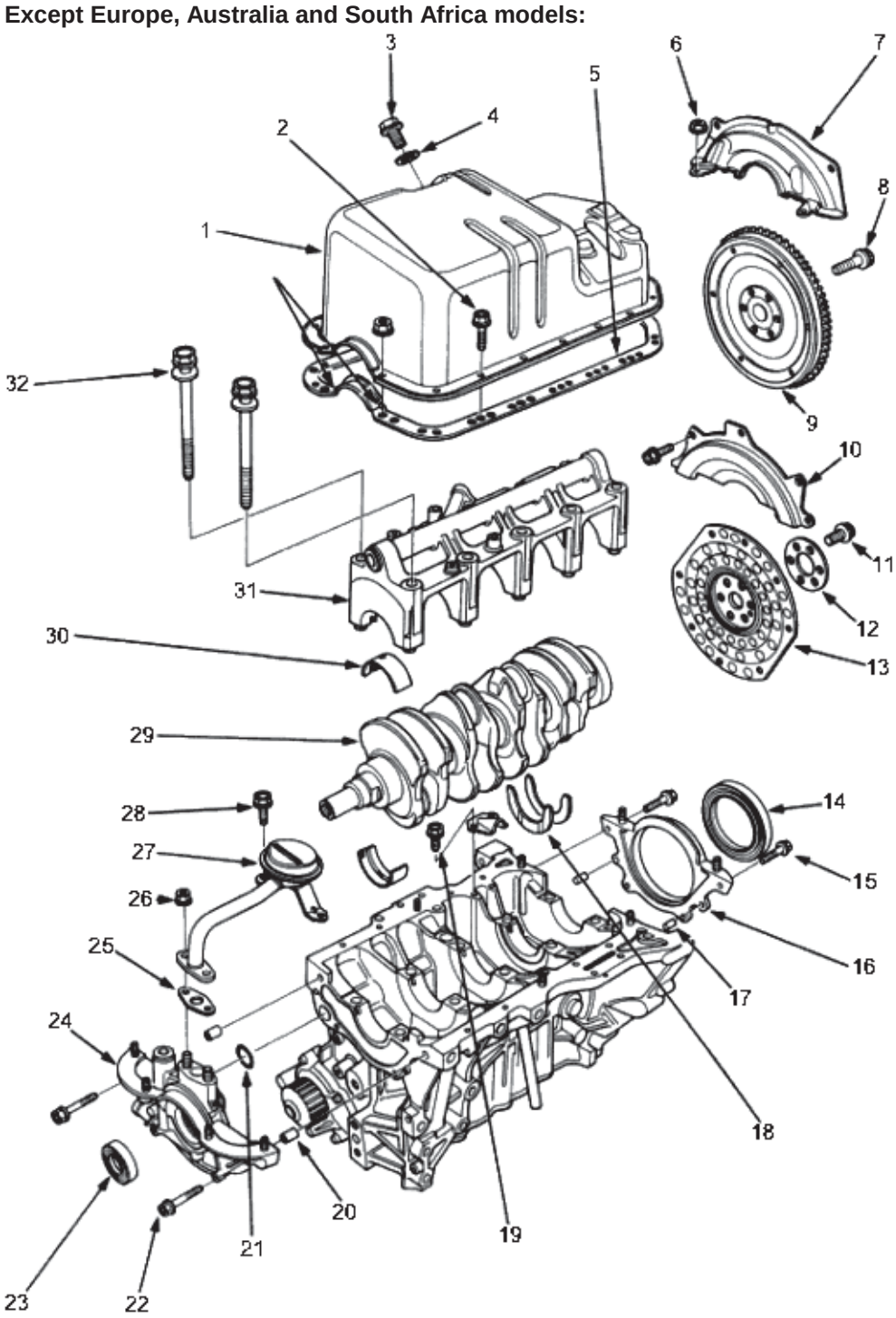
OIL Lubricate all internal parts with engine oil during reassembly.

Europe, Australia and South Africa models:



1. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
2. **DRAIN BOLT, 39 Nm (4.0 kgf/ft, 29 lbf/ft)**
3. **WASHER.** Replace.
4. Apply liquid gasket to these points.
5. **OIL PAN.** Installation (**see page** 7-25).
6. **FLYWHEEL COVER (M/T)**
7. **12 x 1.0 mm, 118 Nm (12.0 kgf/m, 87 lbf/ft)**
8. **FLYWHEEL (M/T)**
9. **OIL PAN GASKET.** Replace.
10. **DRIVE PLATE COVER (CVT)**
11. **12 X 1.0 MM, 74 Nm (7.5 kgf/m, 54 lbf/ft)**
12. **WASHER**
13. **DRIVE PLATE (CVT).** Check for cracks.
14. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
15. **CRANKSHAFT OIL SEAL.** Installation, (**see page** 7-21). Replace.
16. **RIGHT SIDE COVER.** Apply liquid gasket to mating surface.
17. **DOWEL PIN**
18. **THRUST WASHERS.** Grooved sides face outward.
    NOTE: Thrust washer thickness is fixed and must not be changed by grinding or shimming.
19. **BREATHING PORT COVER MOUNT BOLTS, 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft).** Apply liquid gasket to the bolt threads.
20. **DOWEL PIN**
21. **O-RING.** Replace
22. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
23. **CRANKSHAFT.** Installation, (**see page** 8-11). Replace.
24. **OIL PUMP.** Overhaul, (**see page** 8-9). Removal/Inspection, (**see page** 8-10). Apply liquid gasket to mating surface.
25. **GASKET.** Replace.
26. **OIL SCREEN**
27. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
28. **CRANKSHAFT.** Installation, (**see page** 7-13).
29. **MAIN BEARINGS**. Selection, (**see page** 7-9).
    NOTE: New main bearings must be selected by matching crank and block identification markings.
30. **MAIN BEARING CAP**
31. **11 x 1.5 mm, 51 Nm (5.2 kgf/m, 38 lbf/ft).** Apply engine oil to the bolt threads.
    NOTE: After torquing each cap, turn crankshaft to check for binding.

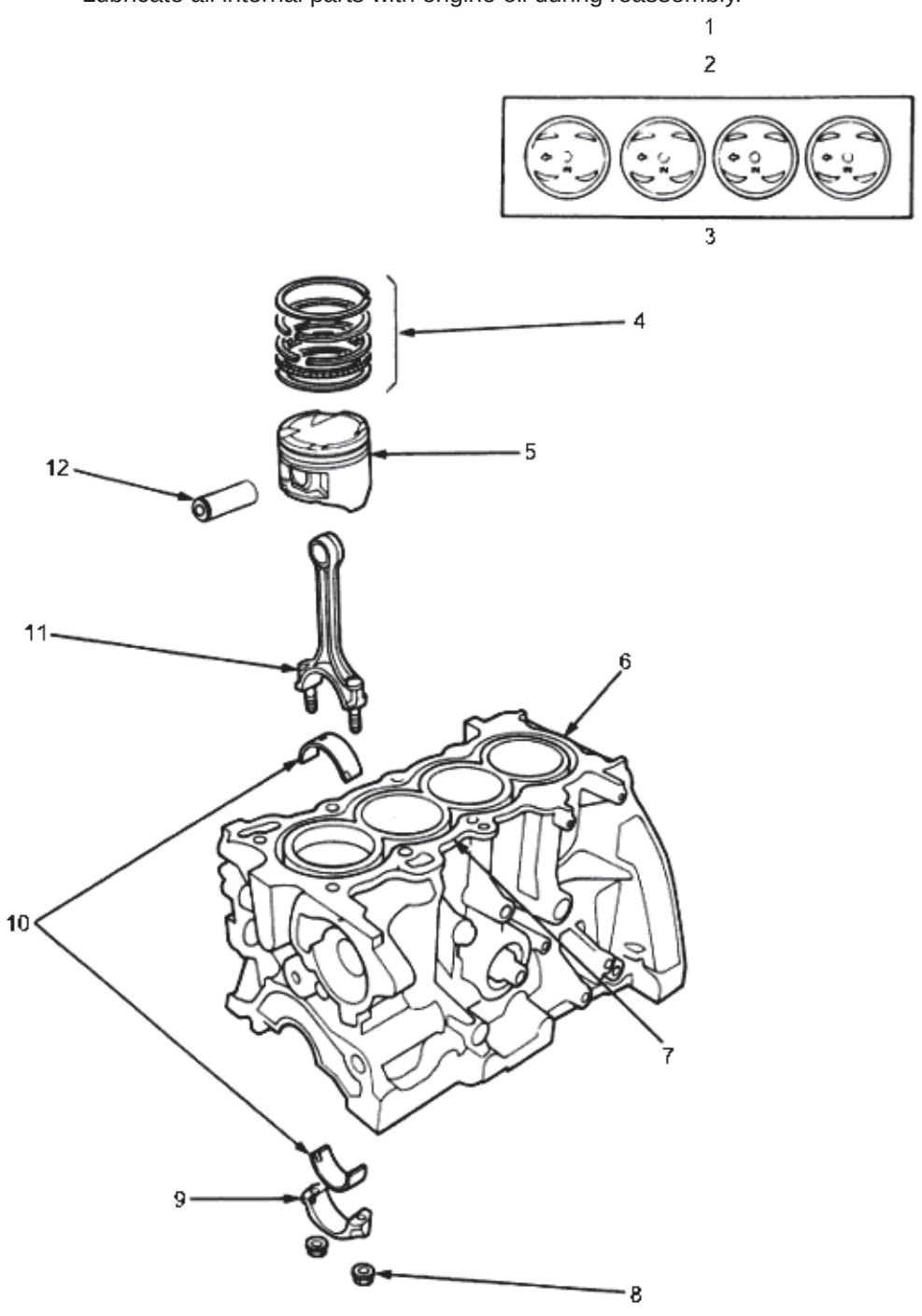
Except Europe, Australia and South Africa models:



1. **OIL PAN.** Installation (**see page** 7-26).
2. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
3. **DRAIN BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
4. **WASHER**. Replace.
5. **OIL PAN GASKET.** Replace.
6. **6 x 1.0, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
7. **FLYWHEEL COVER (M/T)**
8. **12 x 1.0 mm, 118 Nm (12.0 kgf/m, 87 lbf/ft)**
9. **FLYWHEEL (M/T)**
10. **DRIVE PLATE COVER (A/T)**
11. **12 x 1.0 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)**
12. **WASHER**
13. **DRIVE PLATE (CVT).** Check for cracks.
14. **CRANKSHAFT OIL SEAL.** Installation (**see page** 7-21). Replace.
15. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
16. **RIGHT SIDE COVER.** Apply liquid gasket to mating surface.
17. **DOWEL PIN**
18. **THRUST WASHERS.** Grooved sides face outward.
    NOTE: Thrust washer thickness is fixed and must not be changed by grinding or shimming.
19. **BREATHING PORT COVER MOUNT BOLTS. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft).** Apply liquid gasket to the bolt threads.
20. **DOWEL PIN**
21. **O-RING.** Replace.
22. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
23. **CRANKSHAFT SEAL**. Installation (**see page** 8-11). Replace.
24. **OIL PUMP.** Overhaul (**see page** 8-9). Removal/Inspection (**see page** 8-10). Apply liquid gasket to mating surface.
25. **GASKET.** Replace
26. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
27. **OIL SCREEN**
28. **6 x 1.0 mm, 11 Nm, (1.1 kgf/m, 8.0 lbf/ft)**
29. **CRANKSHAFT.** Installation (**see page** 7-13).
30. **MAIN BEARINGS**. Selection (**see page** 7-9).
    NOTE: New main bearings must be selected by matching crank and block identification markings.
31. **MAIN BEARING CAP**
32. **11 x 1.5 mm, 51 Nm (5.2 kgf/m, 38 lbf/ft).** Apply engine oil to the bolt threads.
    NOTE: After torquing each cap, turn crankshaft to check for binding.

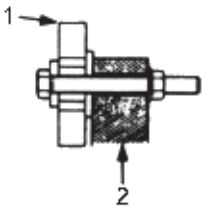
NOTE: New rod bearings must be selected by matching connecting rod assembly and crankshaft identification markings (**see page** 7-10).

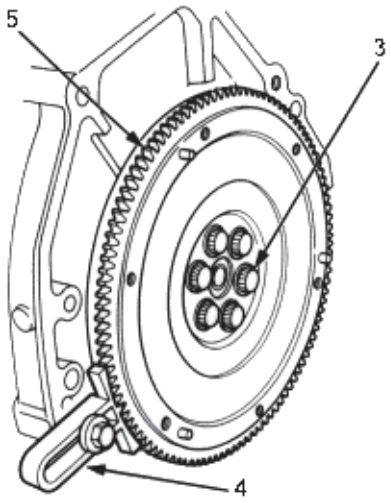
OIL Lubricate all internal parts with engine oil during reassembly.



1. **PISTON INSTALLATION DIRECTION**
2. **EXHAUST**
3. **INTAKE**
4. **PISTON RINGS**
   Replacement (**see page** 7-19).
   Measurement (**see page** 7-19)
   Alignment (**see page** 7-20)
5. **PISTON**
   Inspection (**see page** 7-14)
   NOTE: Before removing pistons, inspect the top of the cylinder bore for carbon build-up or ridge. Remove the ridge if necessary, (**see page** 7-12)
6. **ENGINE BLOCK**
   Cylinder bore inspection, (**see page** 7-15)
   Warpage inspection, (**see page** 7-15)
   Cylinder bore honing, (**see page** 7-16)
7. Inspect top of each cylinder bore for carbon build-up or ridge before removing piston. Remove ridge if necessary, (**see page** 7-12)
8. **CONNECTING ROD CAP NUT, 8x 0.75 mm, 31 Nm (3.2 kgf/m, 23 lbf/ft).**
   Apply engine oil to the nut threads.
   NOTE: After torquing each bearing cap, rotate crankshaft to check for binding.
9. **CONNECTING ROD BEARING CAP.**
   Installation, (**see page** 7-22)
   NOTE: Install caps so the bearing recess is on the same side as the recess in the rod.
10. **CONNECTING ROD BEARINGS.**
    Clearance, (**see page** 7-10)
    Selection, (**see page** 7-10)
11. **CONNECTING ROD**
    End play, (**see page** 7-7)
    Selection, (**see page** 7-17)
12. **PISTON PIN**
    Removal, (**see page** 7-16)
    Installation, (**see page** 7-17)
    Inspection, (**see page** 7-18)

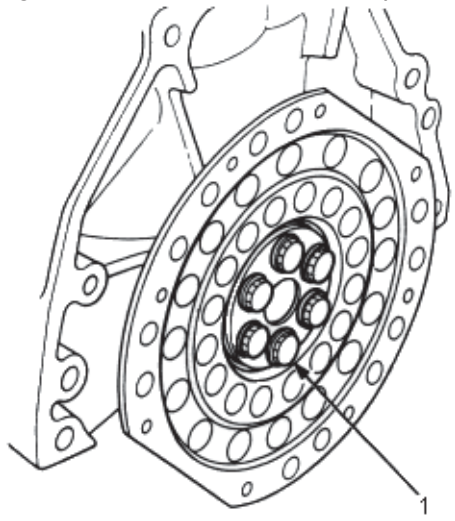
Manual Transmission
Remove the six flywheel bolts, then separate the flywheel from the crankshaft flange. After installation, tighten the bolts in a criss-cross pattern.





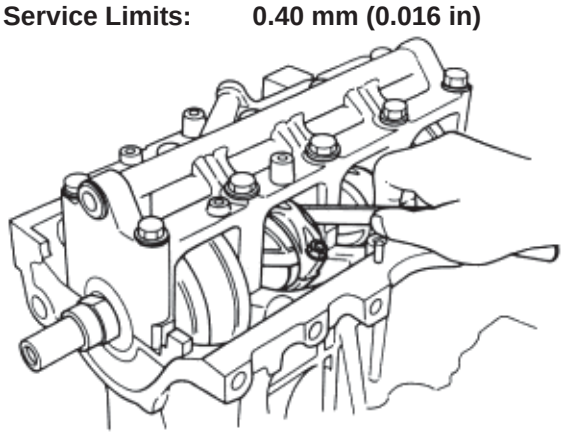
1. RING GEAR HOLDER, 07LAB-PV00100
2. ENGINE BLOCK
3. 12 X 1.0 mm, 118 Nm (12.0 kgf/m, 87 lbf/ft)
4. RING GEAR HOLDER, 07LAB-PV00100
5. RING GEAR. Inspect ring gear teeth of wear or damage.

Automatic Transmission
Remove the six drive plate bolts, then separate the drive plate from the crankshaft flange. After installation, tighten the bolts in a criss-cross pattern.



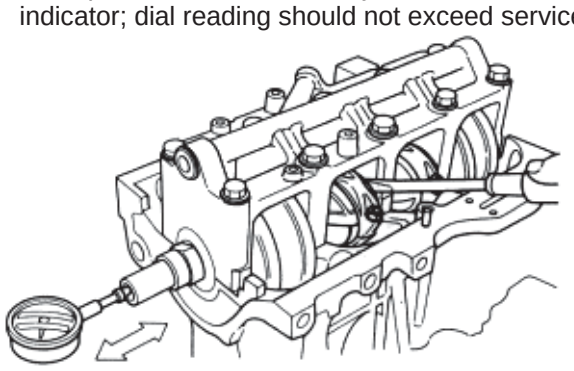
1. 12 x 1.0 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)

Connecting Rod End Play:
Standard (New): 0.15 - 0.30 mm (0.006 - 0.012 in)
Service Limits: 0.40 mm (0.016 in)



- If out-of-tolerance, install a new connecting rod.
- If still out-of-tolerance, replace the crankshaft (**See Page** 7-11) and (**See Page** 7-22).

Push the crankshaft firmly away from the dial indicator and zero the dial against the end of the crankshaft. Then pull the crankshaft firmly back towards the indicator; dial reading should not exceed service limit.



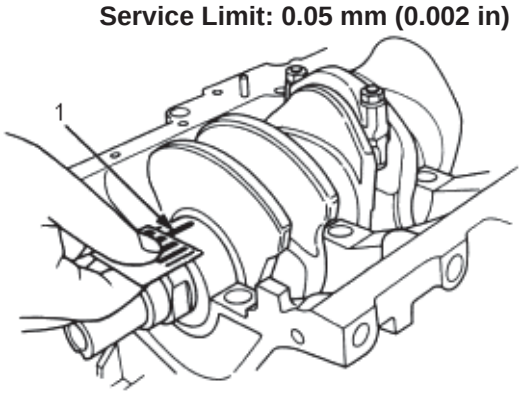
Crankshaft End Play:
Standard (New): 0.10 - 0.35 mm (0.004 - 0.014 in)
Service Limit: 0.45 mm (0.018 in)

- If end play is excessive, inspect the thrust washers and thrust surface on the crankshaft. Replace parts as necessary.

NOTE: Thrust washer thickness is fixed and must not be changed either by grinding or shimming.
Thrust washers are installed with grooved sides facing outwards.

1. To check main bearing-to-journal oil clearance, remove the main caps and bearing halves.
2. Clean each main journal and bearing half with a clean shop towel.
3. Place one strip of plastigage across each main journal.
   NOTE: If the engine is still in the car when you bolt the main cap down to check clearance, the weight of the crankshaft and flywheel will flatten the plastigage further than just the torque on the cap bolt and give you an incorrect reading. For an accurate reading, support the crank with a jack under the counterweights and check only one bearing at a time.
4. Reinstall the bearings and caps, then torque the bolts.
   1st step: 25 Nm (2.5 kgf/m, 18 lbf/ft)
   Final step: 51 Nm (5.2 kgf/m, 38 lbf/ft)
   NOTE: Do not rotate the crankshaft during inspection.
5. Remove the cap and bearing again and measure the widest part of the plastigage.

Main Bearing-to-Journal Oil Clearance:
Standard (New):
No. 1, 5 Journals:
0.018 - 0.036 mm (0.0007 - 0.0014 in)
No. 2, 3, 4 Journals:
0.024 - 0.042 mm (0.0009 - 0.0017 in)
Service Limit: 0.05 mm (0.002 in)



1. PLASTIGAGE STRIP

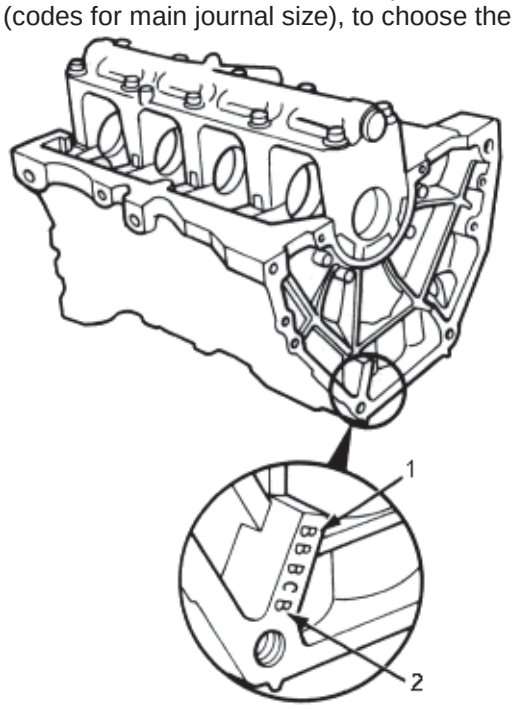
6. If the plastigage measure too wide or to narrow, (remove the engine if it's still in the car), remove the crankshaft and remove the upper half of the bearing. Install a new, complete bearing with the same colour code (select the colour as shown on the next page) and recheck the clearance.
7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the colour listed above or below the one selected) and check again.
   NOTE: If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the crankshaft and start over.

NOTE: 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.

Crankshaft Bore Code Location

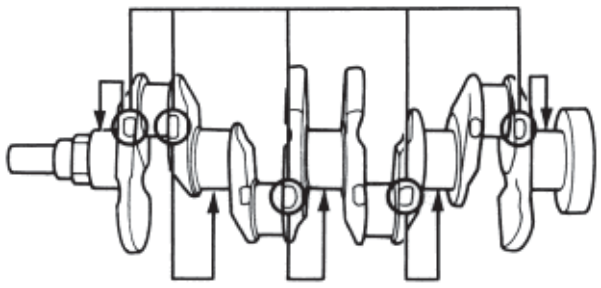
Letters have been stamped on the end of the block as a code for the size of each of the 5 main journal bores.

Use them and the numbers stamped on the crankshaft (codes for main journal size), to choose the correct bearing.



1. PULLEY END (No. 1 JOURNAL)
2. FLYWHEEL END (No. 5 JOURNAL)

Main Journal Code Location (Numbers)



Bearing Identification

Color code is on the edge of the bearing. → Larger crank bore

A	B	C	D

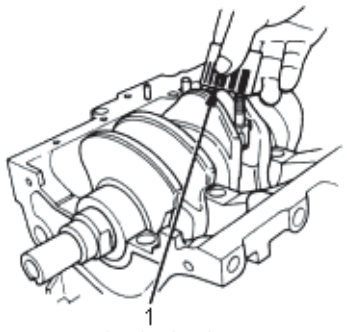
→ Smaller bearing (thicker)

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)

1. Remove the connecting rod cap and bearing half.
2. Clean the crankshaft rod journal and bearing half with a clean shop towel.
3. Place the plastigage across the rod journal.
4. Reinstall the bearing half and cap and torque the nuts.
   Torque: 31 Nm (3.2 kgf/m, 23 lbf/ft)
   NOTE: Do not rotate the crankshaft during inspection.
5. Remove the rod cap and bearing half and measure the widest part of the plastigage.
   Connecting Rod Bearing-to-Journal Oil Clearance:
   Standard (New): 0.020 - 0.038 mm (0.0008 - 0.0015 in)
   Service Limit: 0.05 mm (0.002 in)



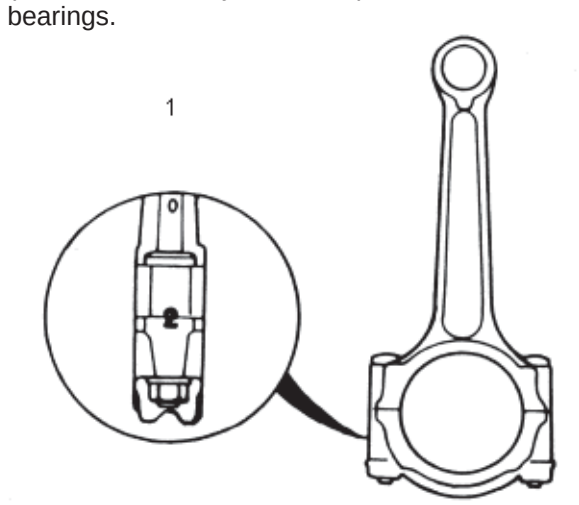
1. PLASTIGAGE STRIP

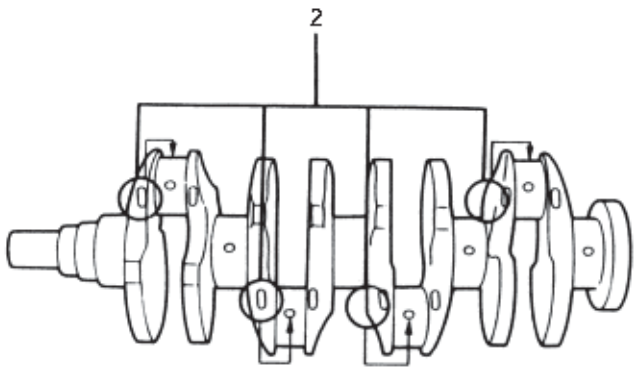
6. If the plastigage measures too wide or too narrow, remove the upper half of the bearing, install a new, complete bearing with the same colour code (select the colour as shown in the right column) and recheck the clearance.
7. If the plastigage shows the clearance is still incorrect, try the next larger or smaller bearing (the colour listed above or below the one selected) and check again.
   NOTE: If the proper clearance cannot be obtained by using the appropriate larger or smaller bearings, replace the crankshaft and start over

NOTE: 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.

Connecting Rod Code Location

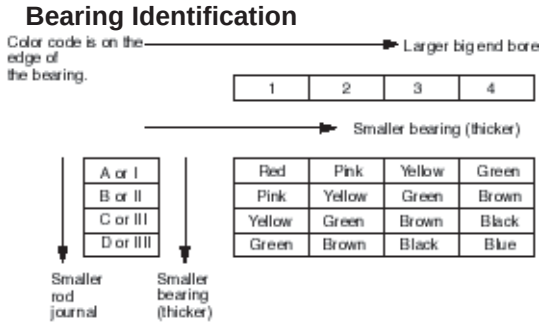
Numbers have been stamped on the side of each connecting rod as a code for the size of the big end. Use them and the letters stamped on the crankshaft (codes for the rod journal size), to choose the correct bearings.



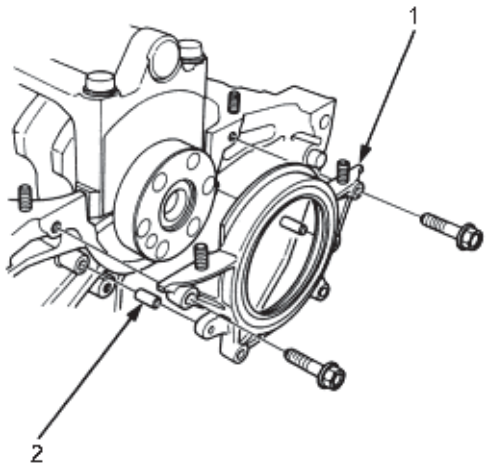


1. Half of the number is stamped on bearing cap and the other half is stamped on the rod.
2. Connecting Rod Journal Code Locations (Letters)

Bearing Identification

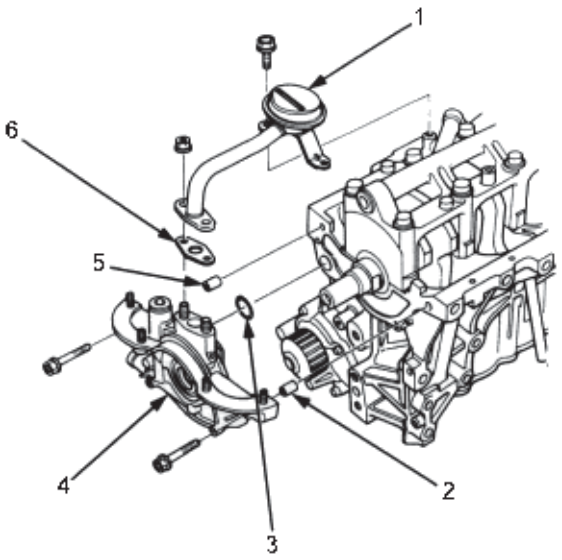


1. Removal the oil pan assembly.
2. Remove the right side cover.



1. RIGHT SIDE COVER
2. DOWEL PIN

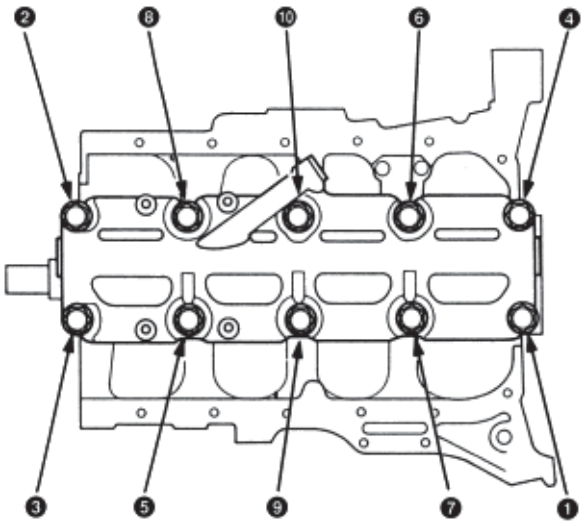
3. Remove the oil screen.
4. Remove the oil pump.



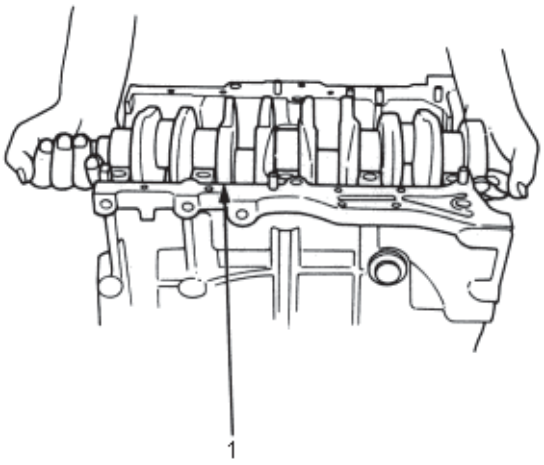
1. OIL SCREEN
2. DOWEL PIN
3. O-RING. Replace.
4. OIL PUMP
5. DOWEL PIN
6. GASKET. Replace.

5. Remove the bolts. To prevent warpage, unscrew the bolt in sequence 1/3 turn at a time; repeat the sequence until all bolts are loosened, then remove the bearing cap.

MAIN BEARING CAP BOLTS LOOSENING SEQUENCE

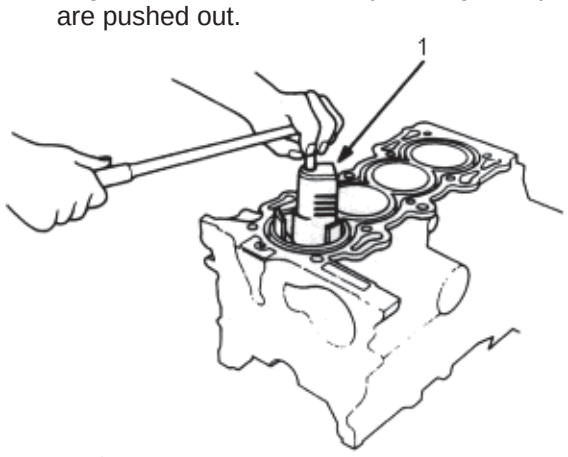


6. Remove the rod caps/bearings and main caps/bearings. Keep all caps/bearings in order.
7. Lift the crankshaft out of the engine, being careful not to damage the bearings.



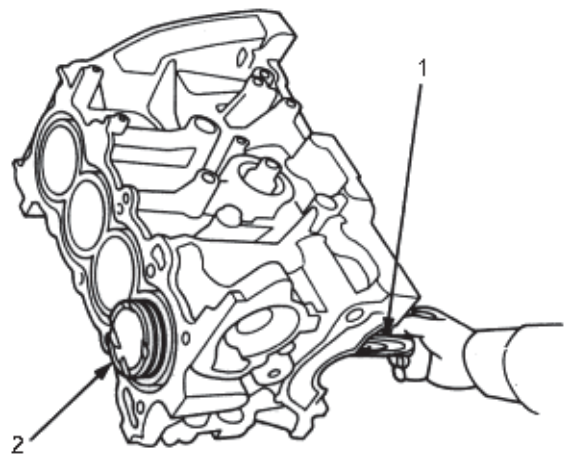
1. CRANKSHAFT

8. Remove the upper bearing halves from the connecting rods and set them aside with their respective caps.
9. Reinstall the main caps and bearings on the engine in the proper order.
10. If you can feel a ridge of metal or hard carbon around the top of each cylinder, remove it with a ridge reamer. Follow the reamer manufacturer's instructions. If the ridge is not removed, it may damage the pistons as they are pushed out.



1. RIDGE REAMER

11. Use the wooden handle of a hammer to drive the pistons out.



1. HAMMER HANDLE
2. PISTON

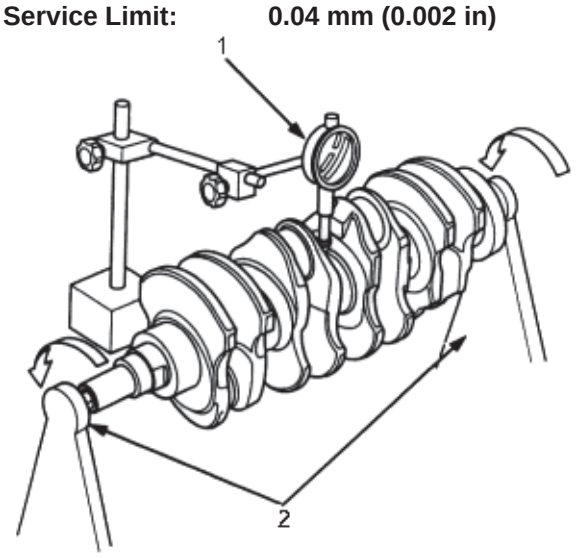
12. Reinstall the connecting rod bearings and caps after removing each piston/connecting rod assembly.
13. Mark each piston/connecting rod assembly with its cylinder number to avoid mix-up on assembly.
    NOTE: The existing number on the connecting rod does not indicate its position in the engine, it indicates the rod bore size.

- Clean the crankshaft oil passages with pipe cleaners or a suitable brush.
- Check the keyway and threads.

Alignment

- Measure runout on all main journals to make sure the crank is not bent.
- The difference between measurements on each journal must not be more than the service limit.

Crankshaft Total Indicated Runout:
Standard (New): 0.03 mm (0.001 in) max.
Service Limit: 0.04 mm (0.002 in)

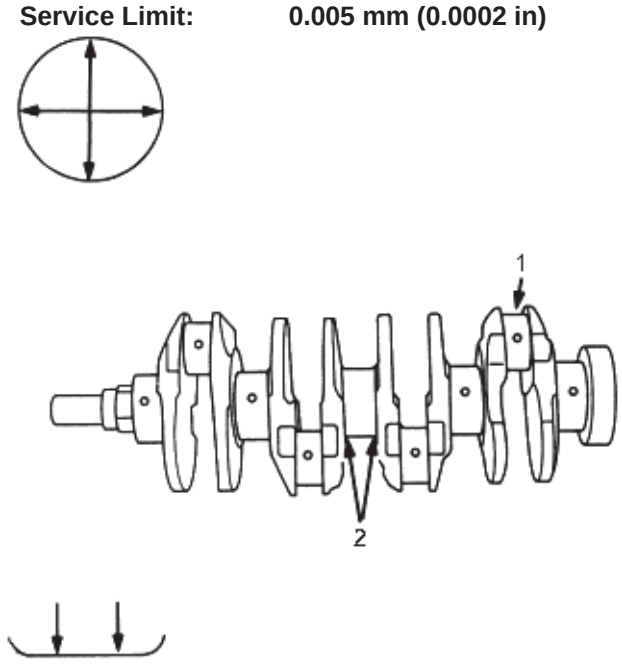


1. DIAL INDICATOR. Rotate tow complete revolutions
2. Support with lathe type tool or V-blocks.

Out-of-Round and Taper

- Measure out-of-round at the middle of each rod and 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): 0.0025 mm (0.00010 in) max.
Service Limit: 0.005 mm (0.0002 in)

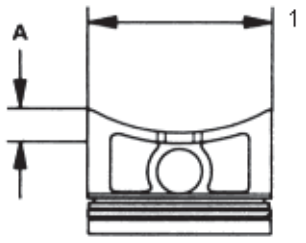


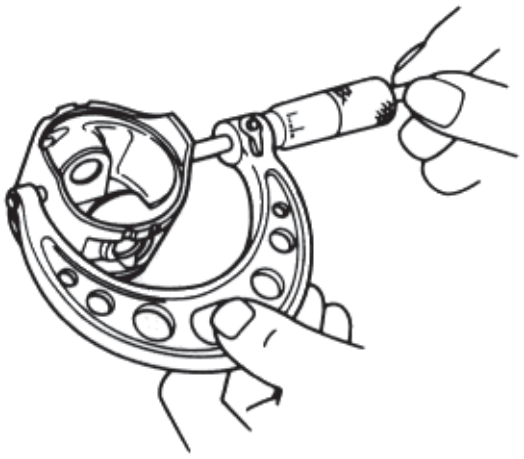
1. Measure out-of-round at middle
2. Measure taper at edges

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

Journal Taper:
Standard (New): 0.0025 mm (0.00010 in) max.
Service Limit: 0.005 mm (0.0002 in)

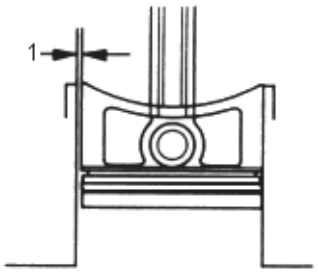
1. Check the pistons for distortion or cracks.
   NOTE: If cylinder is bored, an oversized piston must be used.
2. Measure piston diameter at a point A from bottom of skirt.
   A: 5 mm (0.2 in)
   Piston Diameter
   Standard (New): 74.980 - 74.990 mm (2.9520 - 2.9524 in)
   Service Limit: 74.970 mm (2.9516 in)





1. SKIRT DIAMETER

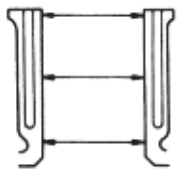
3. Calculate difference between cylinder bore diameter (**See Page** 7-15) and piston diameter.
   Piston-to-Cylinder Clearance
   Standard (New): 0.010 - 0.040 mm (0.0004 - 0.0016 in)
   Service Limit: 0.05 mm (0.002 in)

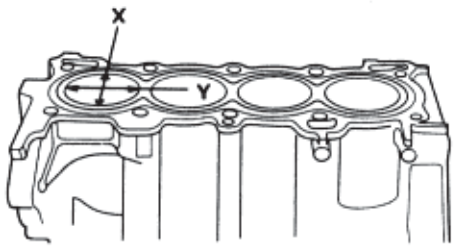


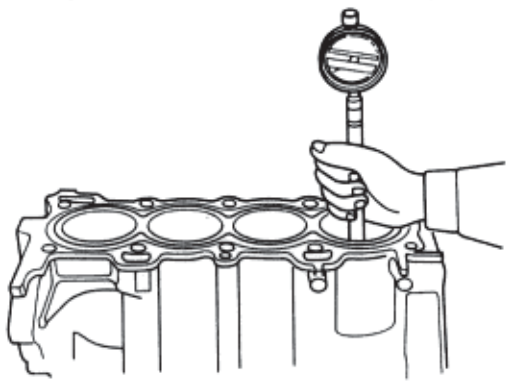
1. SERVICE LIMIT. 0.05 mm (0.002 in)

If the clearance is near or exceeds the service limit, inspect the piston and cylinder block for excessive wear.
Oversize Piston Diameter
0.25: 75.23 - 75.24 mm (2.9618 - 2.9622 in)
0.50: 75.48 - 75.49 mm (2.9716 - 2. 9720 in)

1. Measure wear and taper in directions X and Y at three levels in each cylinder as shown.



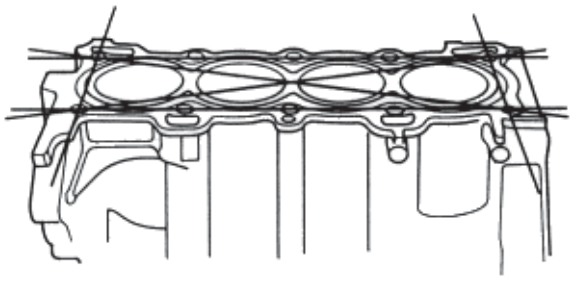




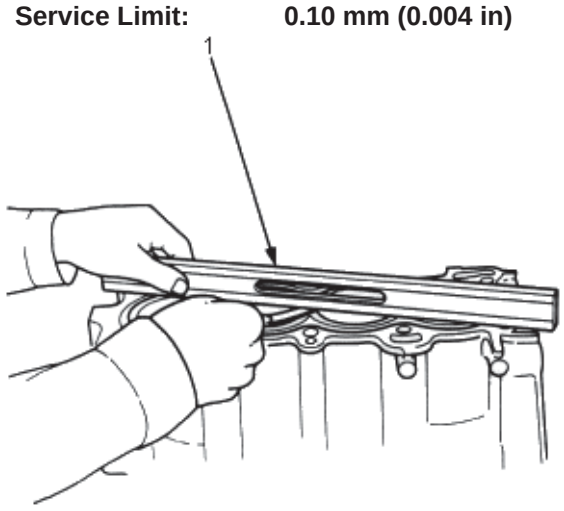
Cylinder Bore Size:
Standard (New): 75.00 - 75.02 mm (2.953 - 2.954 in)
Service Limit 75.07 mm (2.956 in)
Oversize
0.25: 75.25 - 75.27 mm (2.9626 - 2.9634 in)
0.50: 75.50 - 75.52 mm (2.9724 - 2.9732 in)
Bore Taper
Limit: (Difference between first and third measurement)
0.05 mm (0.002 in)

- Measurements in any cylinder are beyond Oversize Bore Service Limit, replace the block.
- If block is to be rebored, refer to Piston Clearance Inspection (**See Page** 7-14) after reboring.
  NOTE: Scored or scratched cylinder bores must be honed.
  Reboring Limit: 0.5 mm (0.02 in)

2. Check the top of the block for warpage.
   Measure along the edges and across the centre as shown.
   SURFACES TO BE MEASURED



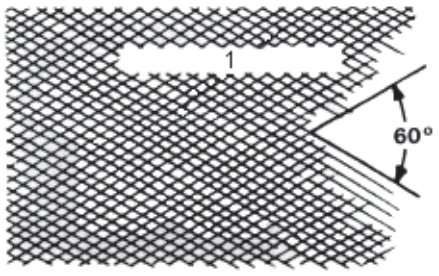
Engine Block Warpage:
Standard (New): 0.07 mm (0.003 in) max.
Service Limit: 0.10 mm (0.004 in)



1. PRECISION STRAIGHT EDGE

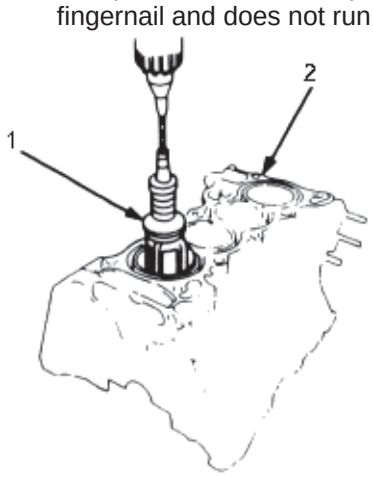
1. Measure cylinder bores as shown (**See Page** 7-15). If the block is to be reused, hone the cylinders and remeasure the bores.
2. Hone cylinder bores with honing oil and a fine (400 grit) stone in a 60 degree cross-hatch pattern.

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



1. HONING PATTERN

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 immediately to prevent rusting.
   NOTE: Never use solvents, they will only redistribute the grit on the cylinder walls.
4. If scoring or scratches are still present in cylinder bores after honing to service limit, rebore the cylinder block.
   NOTE: 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.

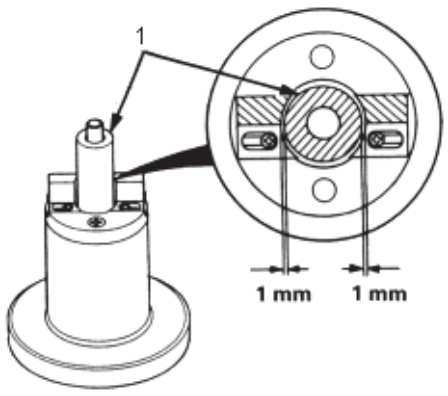


1. CYLINDER HONE
2. CYLINDER BLOCK

NOTE:
- After honing, clean the cylinder thoroughly with soapy water.
- Only a scored or scratched cylinder bore must be honed.

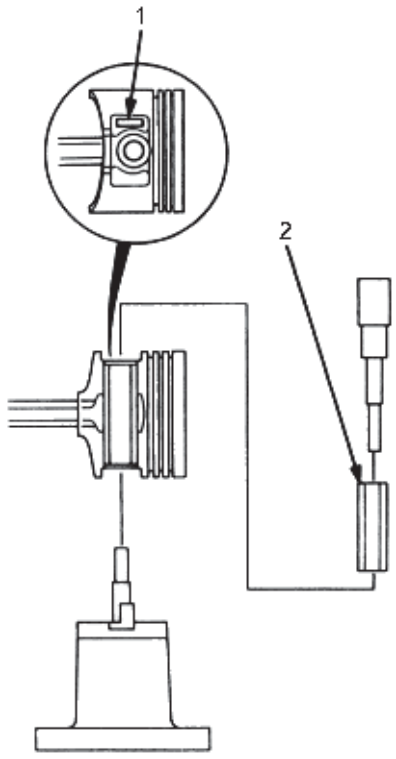
NOTE:
- Use the piston pin assembly tool set (No. 07PAF-0010000) for removal of piston pins.
- Be sure to use the pilot collar of the correct No. as designated.

1. Set the special tools as shown.



1. PILOT COLLAR, O.D. 19 mm, 07PAF-010650

2. Place the piston on the special tools and press the pin out using a hydraulic press.

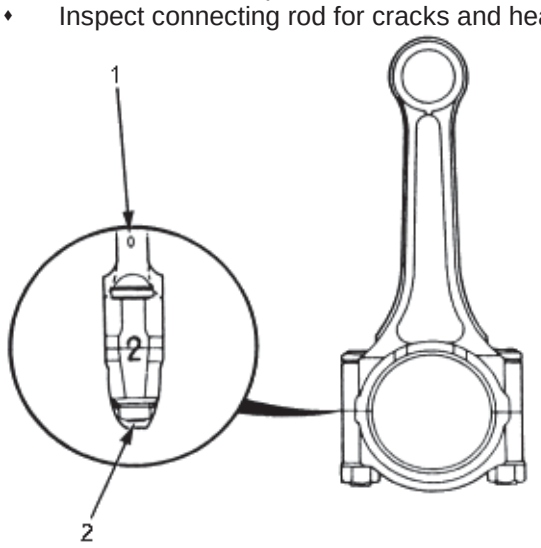


1. Embossed mark facing up.
2. PILOT COLLAR, O.D. 19 mm, 07PAF-0010650

NOTE: Use a hydraulic press. When pressing pin in or out, make sure that the recessed portion of the piston aligns with the lips on the collar.

Each rod falls into one of four tolerance ranges (from 0 to + 0.024 mm (0 to + 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.
Normal Bore Size: 48.0 mm (1.89 in)
NOTE:

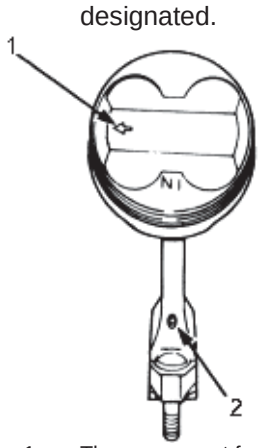
- Reference numbers are for big end bore size and do NOT indicate the position of the rod in the engine.
- Inspect connecting rod for cracks and heat damage.



1. CONNECTING ROD BORE REFERENCE NUMBER.
   Half of number is stamped on the bearing cap, the other half on the connecting rod.
2. Inspect bolts and nuts for stress cracks.

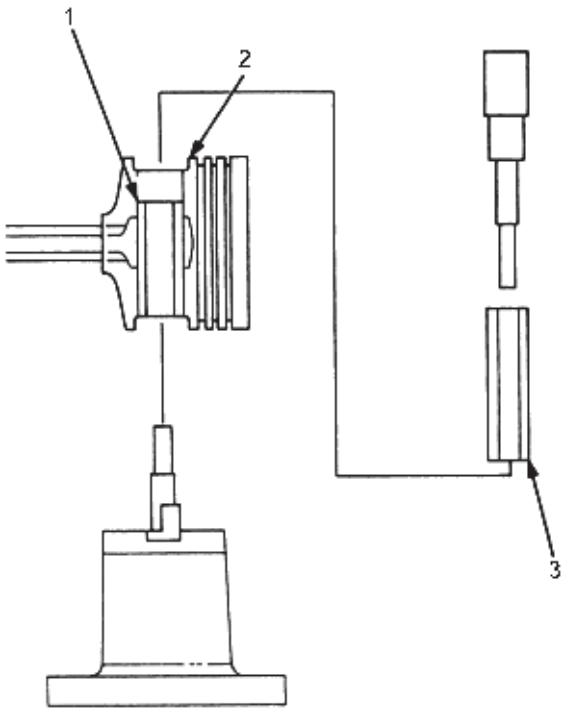
NOTE:

- Use the piston pin assembly tool set (No. 07PAF-010000) with a hydraulic press.
- Be sure to use the pilot collar of correct No. as designated.



1. The arrow must face the timing belt side of the engine and the engine and the connecting rod oil hole must face the rear of the engine.
2. CONNECTING ROD OIL HOLE

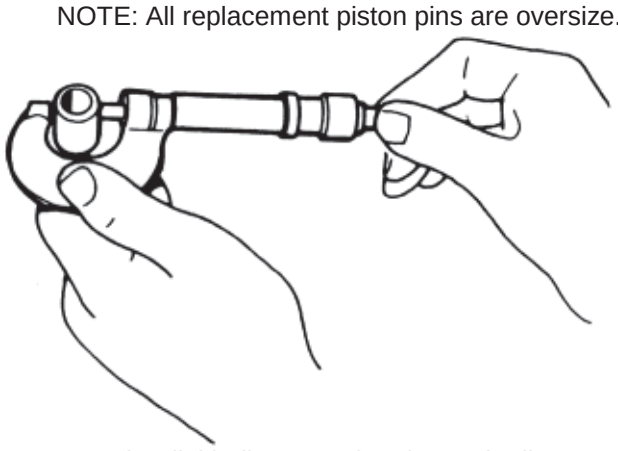
1. Install the piston pin as shown.



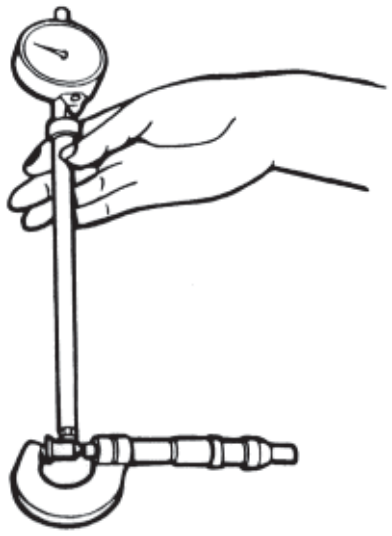
1. PILOT COLLAR, O.D. 19 mm, 07PAF-0010650
2. Embossed mark facing up.
3. PISTON PIN

NOTE: Install the assembled piston and rod with the oil hole facing the intake manifold.

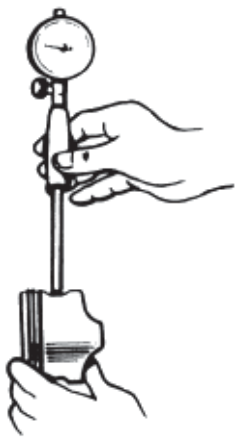
1. Measure the diameter of the piston pin.
   Piston Pin Diameter:
   Standard (New): 18.994 - 19.000 mm (0.7478 - 0.7480 in)
   Oversize: 18.997 - 19.003 mm (0.7479 - 0.7481 in)
   NOTE: All replacement piston pins are oversize.



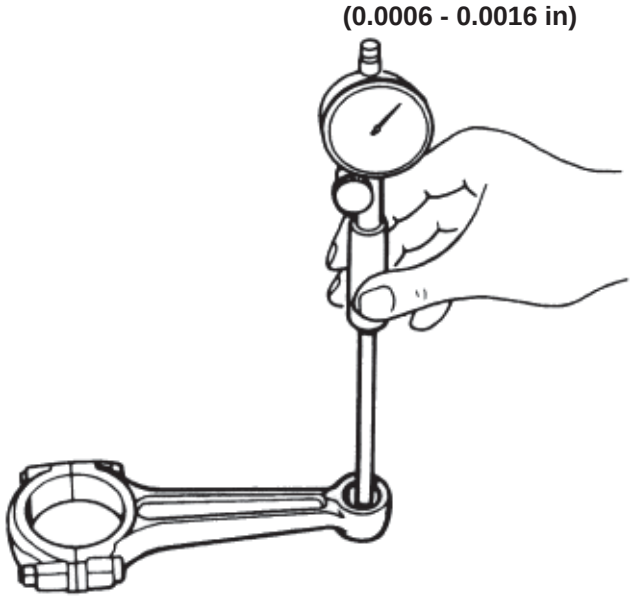
2. Zero the dial indicator to the piston pin diameter.



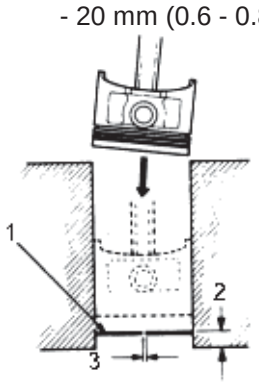
3. Measure the piston pin-to-piston clearance.
   NOTE: Check the piston for distortion or cracks. If the piston pin clearance is greater than 0.024 mm (0.0009 in), remeasure using an oversize piston pin.
   Piston Pin-to-Piston Clearance
   Standard (New): 0.010 - 0.022 mm (0.0004 - 0.0009 in)



4. Check the difference between piston pin diameter and connecting rod small end diameter.
   Piston Pin-to-Connecting Rod Interference
   Standard (New): 0.014 - 0.040 mm (0.0006 - 0.0016 in)



1. Using a piston, push a new ring into the cylinder bore 15 - 20 mm (0.6 - 0.8 in) from the bottom.

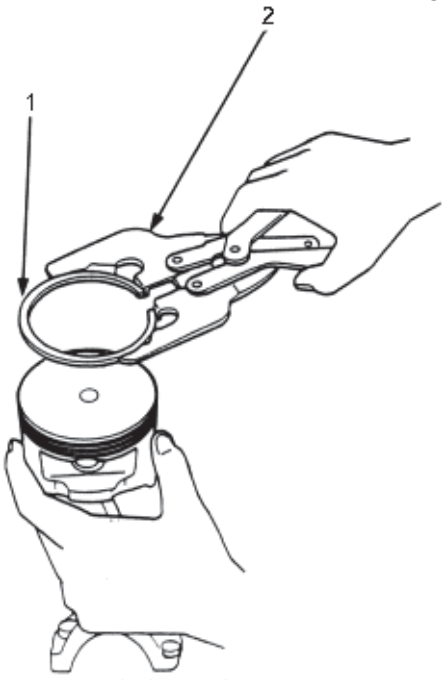


1. PISTON RING
2. 15 - 20 mm (0.6 - 0.8 in)
3. END GAP

2. Measure the piston ring end-gap 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 on page 7-15. If the bore is over the service limit, the cylinder block must be rebored.

Piston Ring End-Gap:
Top Ring
Standard (New): 0.15 - 0.30 mm (0.006 - 0.012 in)
Service Limit: 0.60 mm (0.025 in)
Second Ring
Standard (New): 0.30 - 0.45 mm (0.012 - 0.018 in)
Service Limit: 0.70 mm (0.028 in)
Oil Ring
D16W1 engine:
Standard (New): 0.20 - 0.70 mm (0.008 - 0.028 in)
Service Limit: 0.80 mm (0.031 in)
D16W2 engine:
Standard (New): 0.20 - 0.80 mm (0.008 - 0.032 in)
Service Limit: 0.90 mm (0.035 in)

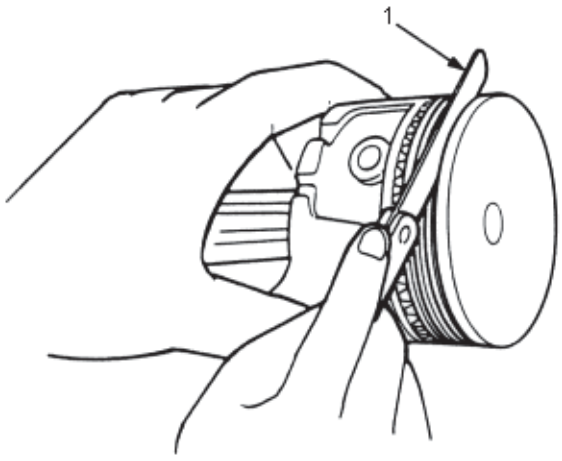
1. Using a ring expander, remove the old piston rings.
2. Clean all ring grooves thoroughly.
   NOTE:
   - Use a squared-off broken ring or ring groove cleaner with blade to fit piston grooves.
   - Top ring groove is 1.0 mm (0.039 in) wide (D16W1 engine) or 1.2 mm (0.047 in) wide (D16W2 engine).
   - Second ring groove is 1.2 mm (0.047 in) wide (D16W1 engine) or 1.5 mm (0.059 in) wide (D16W2 engine).
   - Oil ring groove is 2.8 mm (0.11 in) wide.
   - File down blade if necessary.
   - Do not use a wire brush to clean ring lands, or cut ring lands deeper with cleaning tool.
3. Install new rings in proper sequence and position (**See Page** 7-21).
   NOTE:
   - Do not reuse old piston rings.
   - If piston is to be separated from connecting rod, do not install new rings yet.



1. PISTON RING
2. RING EXPANDER

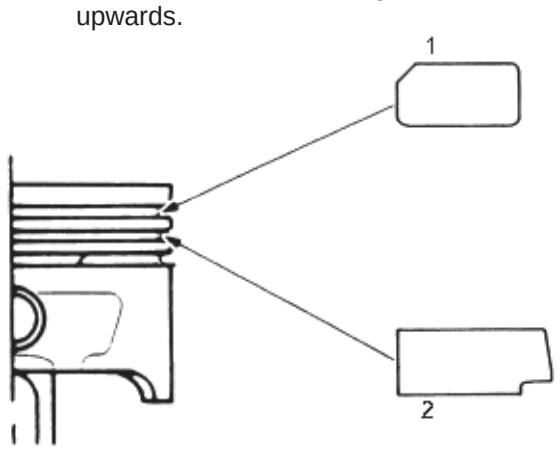
After installing a new set of rings, measure ring-to-groove clearances:

Top Ring Clearance
D16W1 engine:
Standard (New): 0.035 - 0.060 mm (0.0014 - 0.0024 in)
Service limit: 0.13 mm (0.005 in)
D16W2 engine:
Standard (New): 0.030 - 0.060 mm (0.0012 - 0.0024 in)
Service Limit: 0.13 mm (0.005 in)
Second Ring Clearance
Standard (New): 0.030 - 0.055 mm (0.0012 - 0.0022 in)
Service Limit: 0.13 mm (0.005 in)



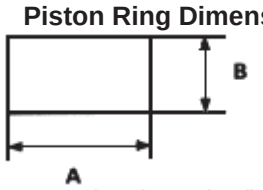
1. FEELER GAUGE

1. Install the rings as shown.
   NOTE: The manufacturing marks must be facing upwards.



1. TOP RING
2. SECOND RING

Piston Ring Dimensions:



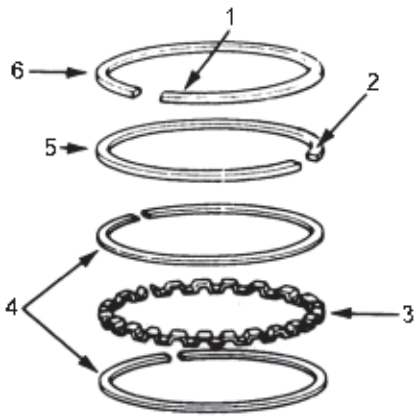
Top Ring (Standard) Unit mm (in)

	A	B
D16W1 engine	2.6 (0.10)	1.0 (0.04)
D16W2 engine	2.8 (0.11)	1.2 (0.05)

Second Ring (Standard) Unit mm (in)

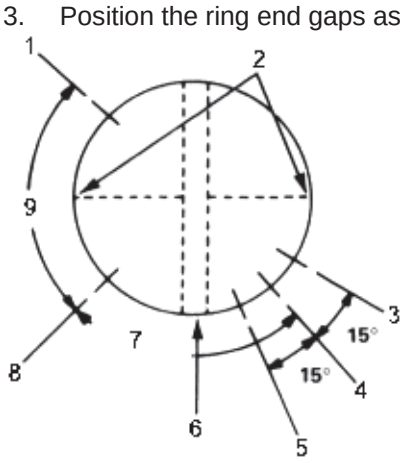
	A	B
D16W1 engine	3.0 (0.12)	1.2 (0.05)
D16W2 engine	3.2 (0.13)	1.5 (0.06)

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



1. MARK
2. MARK
3. SPACER
4. OIL RING
5. SECOND RING
6. TOP RING

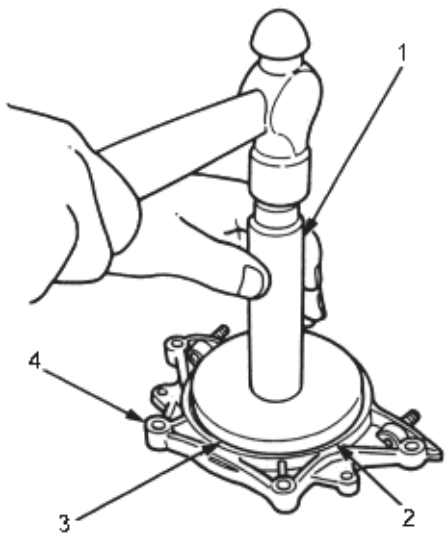
3. Position the ring end gaps as shown.



1. SECOND RING GAP
2. DO NOT position any ring gap at piston thrust surfaces.
3. OIL RING GAP
4. SPACER GAP
5. OIL RING GAP
6. DO NOT position any ring gap in line with the piston pin hole.
7. Approx. 90°
8. TOP RING GAP
9. Approx. 90°

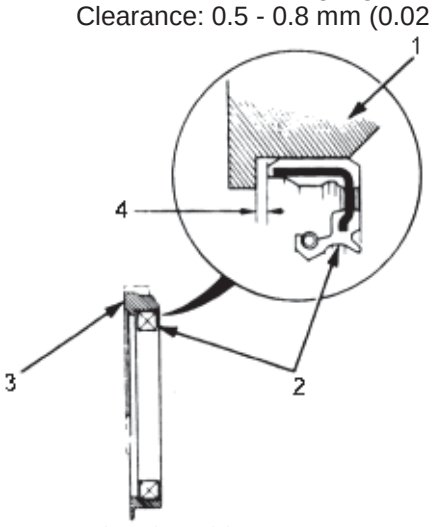
OIL The seal surface on the block should be dry. Apply a light coat of oil to the crankshaft and to the tip of the seal.

1. Drive in crankshaft oil seal against right side cover.
   NOTE: Drive the crankshaft oil seal in squarely.



1. HANDLE DRIVER, 07749-0010000
2. Install seal with the part number side facing out.
3. DRIVER ATTACHMENT, 96 mm, 07948-SB00101
4. RIGHT SIDE COVER.

2. Confirm that the clearance is equal all the way around with a feeler gauge.
   Clearance: 0.5 - 0.8 mm (0.02 - 0.03 in)



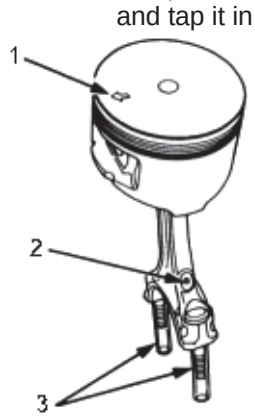
1. RIGHT SIDE COVER
2. CRANKSHAFT OIL SEAL
3. RIGHT SIDE COVER
4. 0.5 - 0.8 mm (0.02 - 0.03 in)

NOTE: (**See page** 8-11) for installation of the oil pump side crankshaft oil seal.

OIL Before installing the piston, apply a coat of engine oil to the ring grooves and cylinder bores.

1. If the crankshaft is already installed:
   - Set the crankshaft to BDC for each cylinder.
   - Remove the connecting rod caps and slip short sections of rubber hose over the threaded ends of the connecting rod bolts.
   - Install the ring compressor, check that the bearing is securely in place, then position the piston in the cylinder and tap it in using the wooden handle of a hammer.
   - Stop after the ring compressor pops free and check the connecting rod-to-journal alignment before pushing piston into place.
   - Install the rod caps with bearings and torque the nuts to:

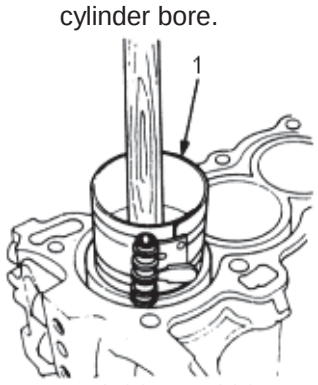
     31 Nm (3.2 kgf/m (23 lbf/ft)
     Apply engine oil to the bolt threads.
2. If the crankshaft is not installed:
   - Remove the rod caps and bearings, install the ring compressor, then position the piston in the cylinder and tap it in using the wooden handle of a hammer.



1. The arrow must face the timing belt side of the engine.
2. CONNECTING ROD OIL HOLE
3. RUBBER HOSES

   - Position all pistons at top dead centre.

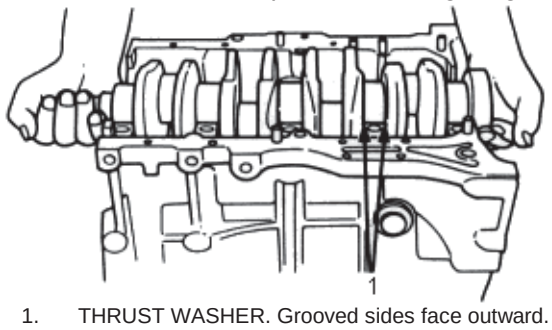
   NOTE: Maintain downward force on the ring compressor to prevent rings from expanding before entering the cylinder bore.



1. RING COMPRESSOR

OIL Before installing the crankshaft, apply a coat of engine oil the main bearings and rod bearings.

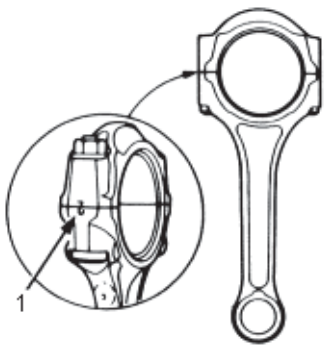
1. Insert the thrust washers in the No. 4 journal of the cylinder block.
2. Insert bearing halves in the cylinder block and connecting rods.
3. Hold the crankshaft so rod journals for cylinders No. 2 and No. 3 are straight down.
4. Lower the crankshaft into the block, seating the rod journals into connecting rods No. 2 and No. 3 and install the rod caps and nuts finger-tight.



1. THRUST WASHER. Grooved sides face outward.

5. Rotate the crankshaft clockwise, seat journals into connecting rods No. 1 and No. 4 and install the rod caps and nuts finger-tight.
   NOTE: Install caps so the bearing recess is on the same side as the recess in the rod.

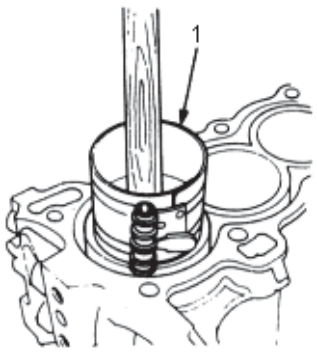
6. Check rod bearing clearance with plastigage (**See page** 7-10), then torque the cap nuts.
   31 Nm (3.2 kgf/m, 23 lbf/ft)
   Apply engine oil to the bolt threads.
   NOTE: Reference numbers on connecting rods are for big-end bore tolerance and do not indicate the position of the piston in the engine.
7. Install the thrust washers on the No. 4 journal. Oil the thrust washer surfaces.



1. Line up the mark when installing connecting rod cap.

8. Install the main bearing caps.
9. Check clearance with plastigage (**See page** 7-8), then tighten the bearing cap bolts in two steps.
   1st step: 25 Nm (2.5 kgf/m, 18 lbf/ft)
   2nd step: 51 Nm (5.2 kgf/m, 38 lbf/ft)
   NOTE: Coat the thrust washer surfaces and bolt threads with oil.

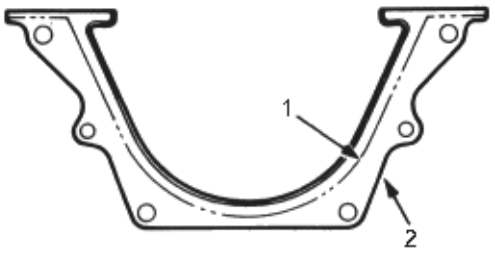
MAIN BEARING CAP BOLTS TIGHTENING SEQUENCE

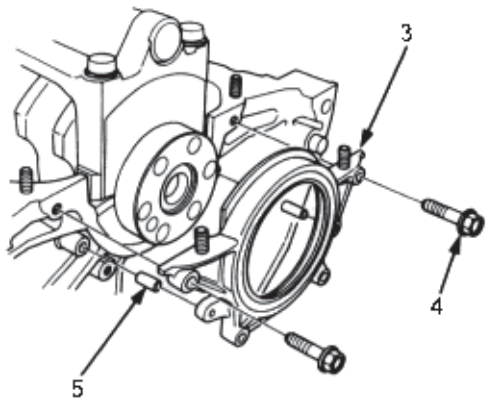


NOTE: Whenever any crankshaft or connecting rod bearing is replaced, it is necessary after reassembly to run the engine at idling speed until it reaches normal operating temperature, then continue to run it for approximately 15 minutes.

NOTE:
- Use liquid gasket, part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Apply liquid gasket evenly, being careful to cover all the mating surface.
- To prevent leakage of oil, apply liquid gasket to the inner threads of the bolt holes.
- Do not install the parts if five minutes or more have elapsed since applying the liquid gasket. Instead, reapply liquid gasket after removing the old residue.
- After assembly, wait at least 30 minutes before filling the engine with oil.

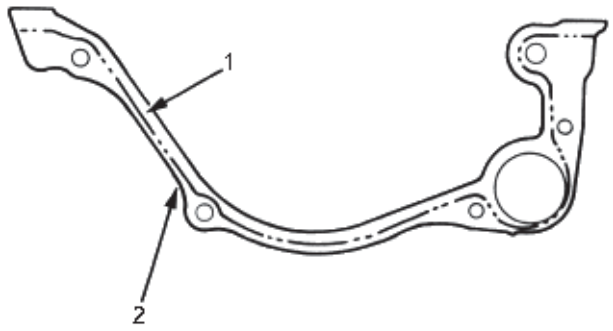
10 Apply liquid gasket to the block mating surface of the right side cover, then install it on the cylinder block.

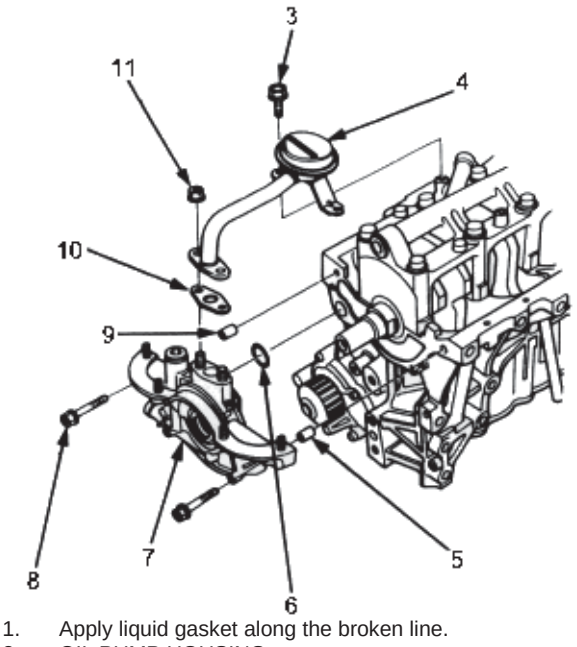




1. Apply liquid gasket along the broken line.
2. RIGHT SIDE COVER
3. RIGHT SIDE COVER
4. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
5. DOWEL PIN

11. Apply liquid gasket to the oil pump mating surface of the block, then install the oil pump on the cylinder block.
    - Apply grease to the lips of the oil seals. Then, install the oil pump while aligning the inner rotor, with the crankshaft. When the pump is in place, clean any excess grease off the crankshaft, then check that the oil seal are not distorted.

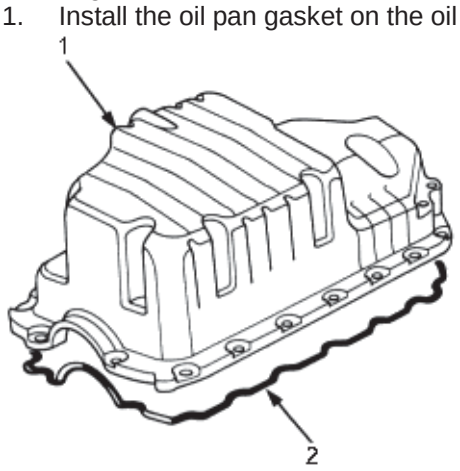




1. Apply liquid gasket along the broken line.
2. OIL PUMP HOUSING
3. 3 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
4. OIL SCREEN
5. DOWEL PIN
6. O-RING. Replace.
7. OIL PUMP
8. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
9. DOWEL PIN
10 GASKET. Replace.
11. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)

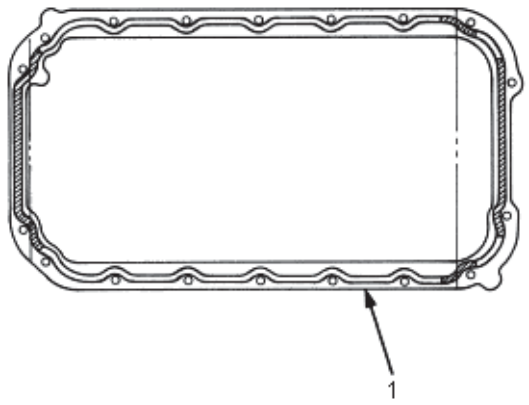
Europe, Australia and South Africa models:
NOTE:
- Use liquid gasket, part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Apply liquid gasket evenly, being careful to cover all the mating surface.
- To prevent leakage of oil, apply liquid gasket to the inner threads of the bolt holes.
- Do not install the parts if five minutes or more have elapsed since applying the liquid gasket. Instead, reapply liquid gasket after removing the old residue.
- After assembly, wait at least 30 minutes before filling the engine with oil.

1. Install the oil pan gasket on the oil pan.



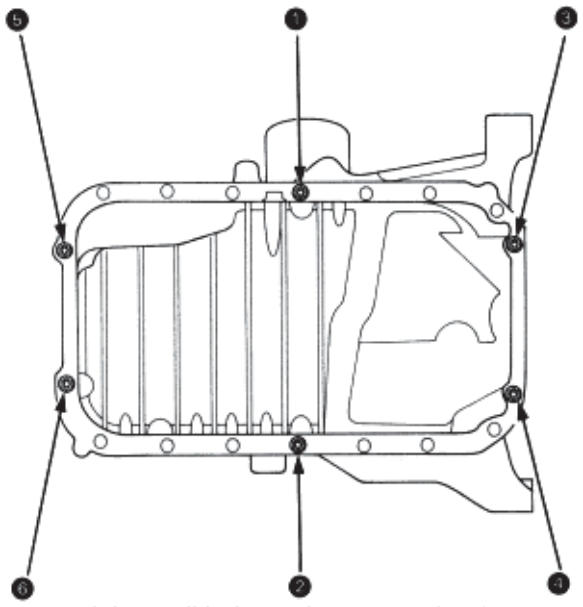
1. OIL PAN
2. OIL PAN GASKET. Replace.

2. Apply liquid gasket to the block mating surfaces of the oil pan, then install it.
   - Apply liquid gasket to the shaded areas.



1. OIL PAN

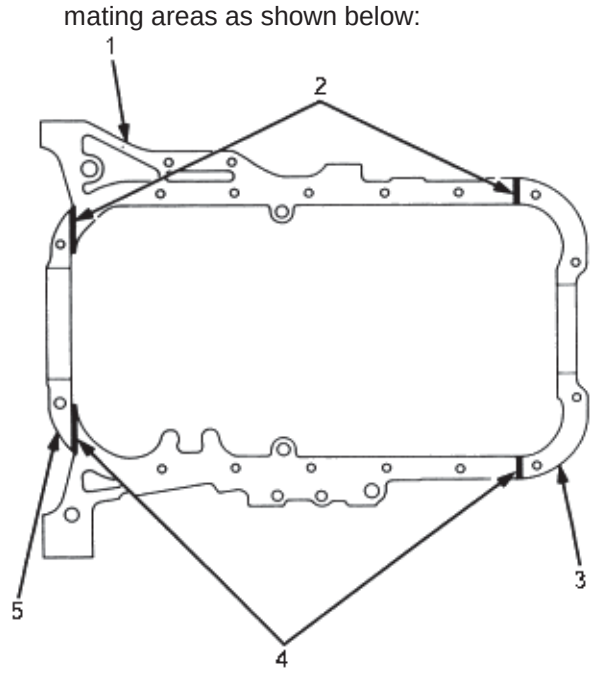
3. Tighten nuts finger-tight at six points as shown below.



4. Tighten all bolts and nuts, starting from nut (1), clockwise in three steps.
   NOTE: Excessive tightening can cause distortion of the oil pan gasket and oil leakage.
   Torque: 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

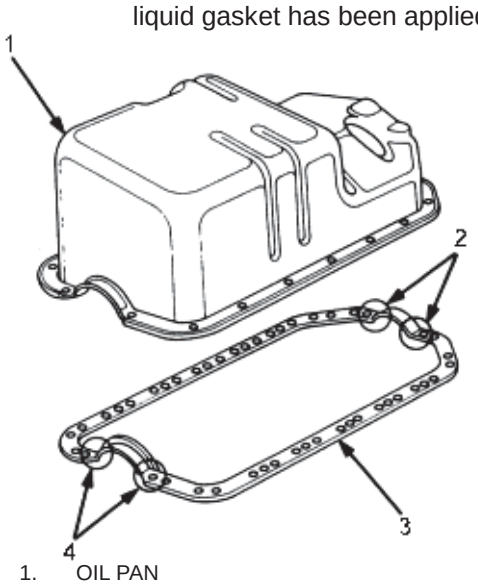
Except Europe, Australia and South Africa models:
NOTE:
- Use liquid gasket, part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Apply liquid gasket evenly, being careful to cover all the mating surface.
- To prevent leakage of oil, apply liquid gasket to the inner threads of the bolt holes.
- Do not install the parts if five minutes or more have elapsed since applying the liquid gasket. Instead, reapply liquid gasket after removing the old residue.
- After assembly, wait at least 30 minutes before filling the engine with oil.

1. Apply liquid gasket on the oil pump and right side cover mating areas as shown below:



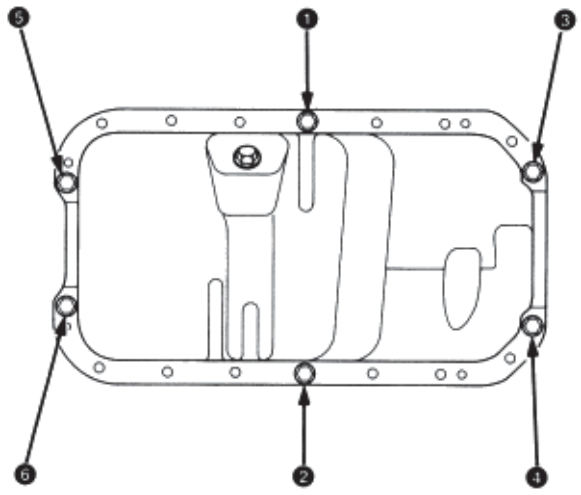
1. CYLINDER BLOCK
2. Apply liquid gasket to these points.
3. OIL PUMP
4. Apply liquid gasket to these points.
5. RIGHT SIDE COVER

2. Install the oil pan gasket and oil pan.
NOTE:
- Use a new oil pan gasket.
- Install oil pan no more than five minutes after liquid gasket has been applied.



1. OIL PAN
2. Apply liquid gasket to these points.
3. OIL PAN GASKET. Replace.
4. Apply liquid gasket to these points

3. Tighten nuts finger-tight at six points as shown below.

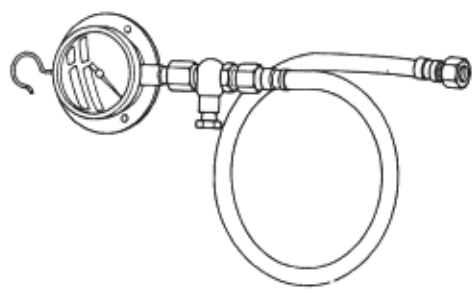


4. Tighten all bolts and nuts, starting from nut (1), clockwise in three steps.
NOTE: Excessive tightening can cause distortion of the oil pan gasket and oil leakage.
Torque: 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

Ref No.	Tool Number	Description	Qty	Remark
1	07406 - 0030000	Oil Pressure Gauge Attachment	1	
2	07506 - 3000000	Oil Pressure Gauge	1	
3	07746 - 0010400	Driver Attachment, 52 x 55 mm	1	
4	07749 - 0010000	Handle Driver	1	
5	07912 - 6110001	Oil Filter Wrench	1	



①



②



③



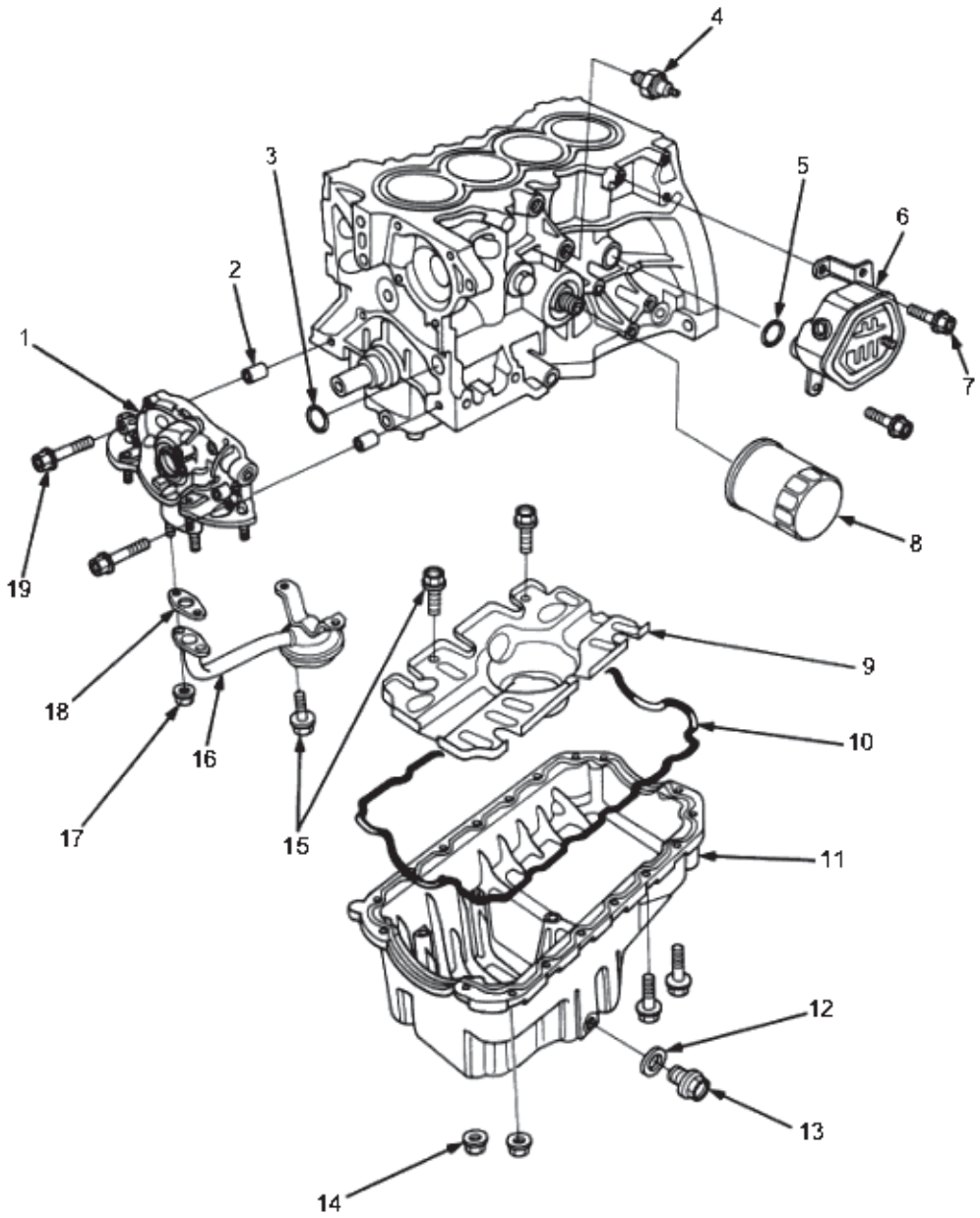
④



⑤

NOTE:
- Use new O-rings when reassembling.
- Apply oil to O-rings before installation.
- Use liquid gasket, Part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
- Clean the oil pan gasket mating surfaces before installing.

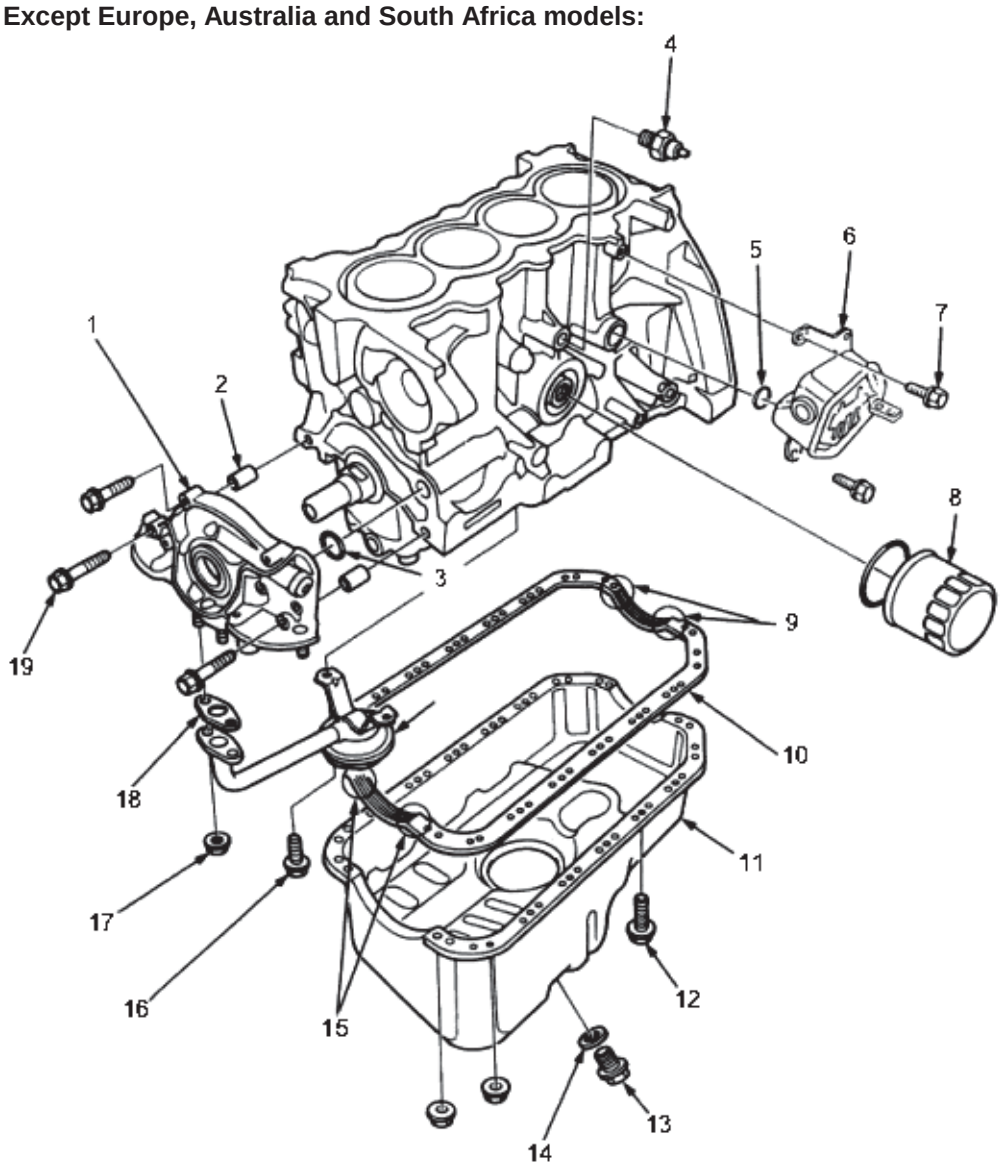
Europe, Australia and South Africa models:



1. **OIL PUMP**
   Overhaul, (**See Page** 8-9)
   Inspection, (**See Page** 8-10)
   Apply liquid gasket to the mating surface of the block.
2. **DOWEL PIN**
3. **O-RING.** Replace.
4. **ENGINE OIL PRESSURE SWITCH, 18 Nm (1.8 kgf/m, 13 lbf/ft)**
   1/8 in. BSPT (British Standard Pipe Taper) 28 Threads/Inch. Use proper liquid sealant.
5. **O-RING.** Replace.
6. **OIL BREATHER CHAMBER**
7. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
8. **OIL FILTER.** Replacement, (**See Page** 8-6)
9. **BAFFLE PLATE**
10. **OIL PAN GASKET.** Replace.
11. **OIL PAN.** Installation, (**See Page** 7-25)
12. **WASHER.** Replace.
13. **DRAIN BOLT, 39 Nm (4.0 kgf/m, 29 lbf/ft).** Do not over tighten.
14. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
15. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
16. **OIL SCREEN**
17. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
18. **GASKET.** Replace.
19. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**

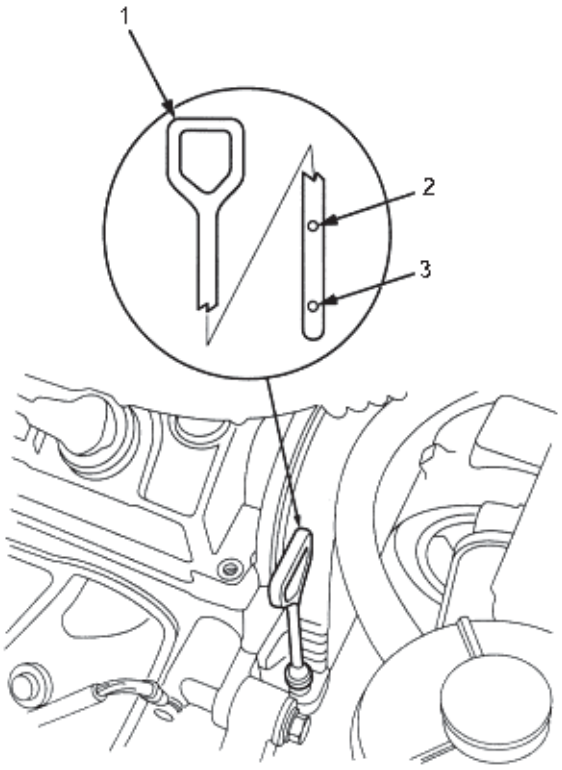
NOTE:
- Use new O-rings when reassembling.
- Apply oil to O-rings before installation.
- Use liquid gasket, Part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
- Clean the oil pan gasket mating surfaces before installing.

Except Europe, Australia and South Africa models:



1. **OIL PUMP**
   Overhaul, (**See Page** 8-9)
   Inspection, (**See Page** 8-10)
   Apply liquid gasket to the mating surface of the block.
2. **DOWEL PIN**
3. **O-RING.** Replace.
4. **ENGINE OIL PRESSURE SWITCH, 18 Nm (1.8 kgf/m, 13 lbf/ft)**
   1/8 in. BSPT (British Standard Pipe Taper) 28 Threads/Inch. Use proper liquid sealant.
5. **O-RING.** Replace.
6. **OIL BREATHER CHAMBER**
7. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
8. **OIL FILTER.** Replacement, (**See Page** 8-6)
9. **Apply liquid gasket to these points.**
10. **OIL PAN GASKET.** Replace.
11. **OIL PAN.** Installation, (**See Page** 7-26)
12. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
13. **DRAIN BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft).** Do not over tighten.
14. **WASHER**. Replace.
15. **Apply liquid gasket to these points.**
16. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
17. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
18. **GASKET.** Replace.
19. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**

1. Park the vehicle on level ground, and turn off the engine. Allow the oil a few minutes to drain back into the oil pan so that the dipstick will show the actual level.
2. Make certain that the oil level indicated on the dipstick is between the upper and lower marks.

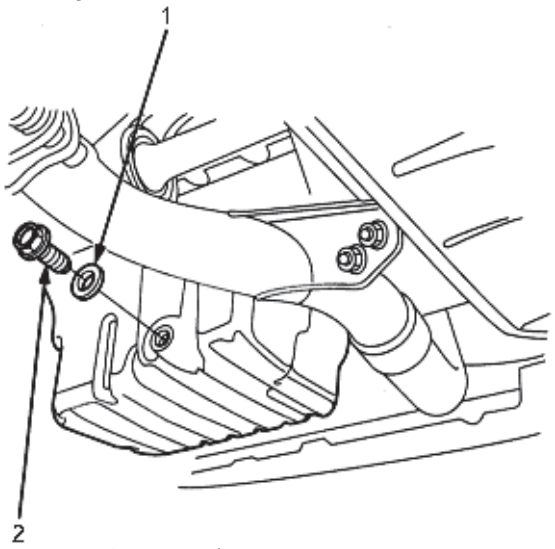


1. DIPSTICK
2. UPPER
3. LOWER

3. If the level has dropped close to the lower mark, add oil until it reaches the upper mark.

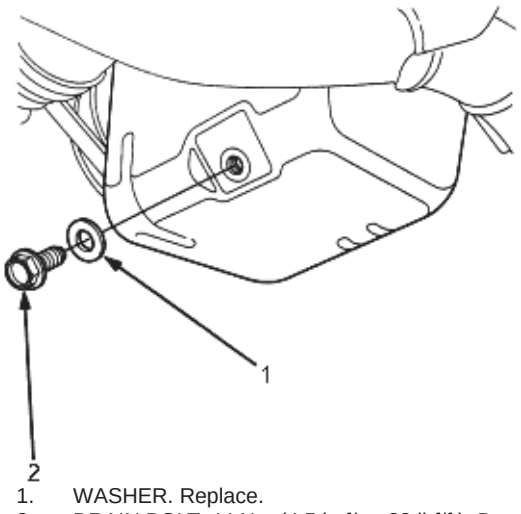
1. Warm up the engine.
2. Drain the engine oil.

Europe, Australia and South Africa models:



1. WASHER. Replace.
2. DRAIN BOLT, 39 Nm (4.0 kgf/m, 29 lbf/ft). Do not overtighten.

Except Europe, Australia and South Africa models:

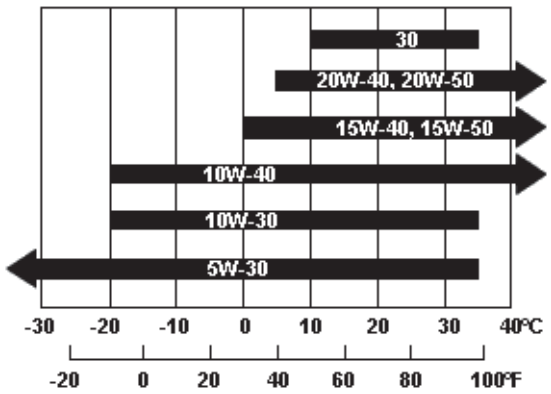


1. WASHER. Replace.
2. DRAIN BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft). Do not over tighten.

3. Reinstall the drain plug with new washer, and refill with the recommended oil.

Requirement
Always use a fuel efficient oil that says "API Service SG, SH or SJ".
SAE Viscosity; See chart in right hand column.
Capacity
Europe, Australia and South Africa models:
3.0 *l* (3.2 US qt, 2.6 Imp qt) at oil change.
3.3 *l* (3.5 US qt, 2.9 Imp qt) at oil change, including filter.
3.7 *l* (3.9 US qt, 3.3 Imp qt) after engine overhaul.
Except Europe, Australia and South Africa models:
3.3 *l* (3.5 US qt, 2.9 Imp qt) at oil change.
3.6 *l* (3.8 US qt, 3.2 Imp qt) at oil change, including filter.
4.3 *l* (4.5 US qt, 3.8 Imp qt) after engine overhaul.
Change Interval
Europe model:
Every 15,000 km (9,000 miles) or 12 months (Normal condition).
Every 7,500 km (6,000 miles) or 6 months (Severe conditions).
Australia model:
Every 10,000 km (6,000 miles) or 12 months (Normal condition).
Every 5,000 km (3,000 miles) or 6 months (Severe conditions).
Except Europe and Australia models:
Every 7,500 km (6,000 miles) or 6 months

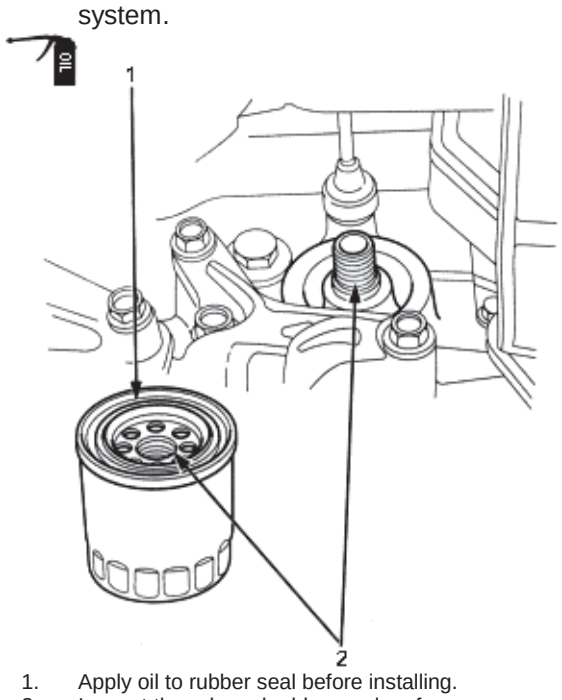
Engine Oil SAE Viscosity for Outside Temperature Ranges:



Ambient temperature ranges

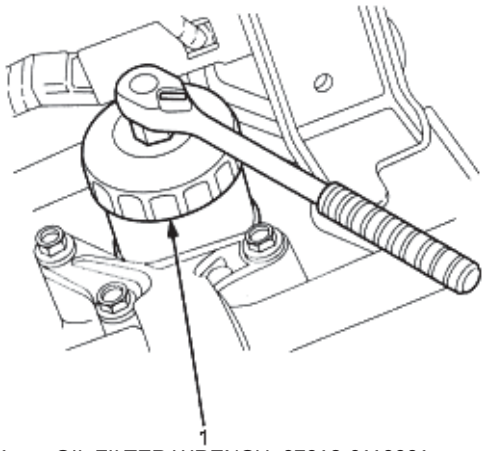
4. Fill the engine with oil up to the specified level, run the engine for more than three minutes, then check for oil leakage and oil level.

1. Remove the oil filter with the special oil filter wrench.
2. Inspect the threads and rubber seal on the new filter. Wipe off the seat on the engine block, then apply a light coat of oil to the filter rubber seal.
   NOTE: Use only filters with built-in bypass system.



1. Apply oil to rubber seal before installing.
2. Inspect threads and rubber seal surface.

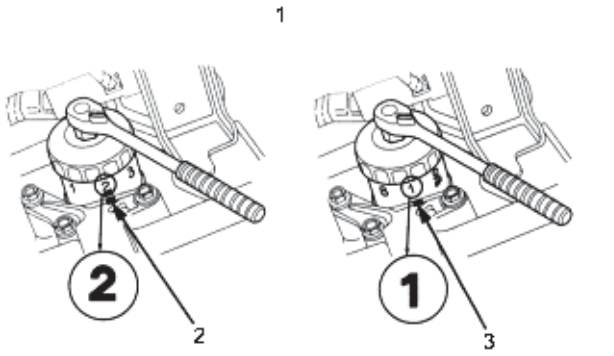
3. Install the oil filter by hand.
4. After the rubber seal seats, tighten the oil filter clockwise with the special tool.
   Tighten: 7/8 turn clockwise.
   Tightening Torque: 22 Nm (2.2 kgf/m, 16 lbf/ft)



1. OIL FILTER WRENCH, 07912-6110001

Eight numbers (1 to 8) are printed on the surface of the filter.
The following explains the procedure for tightening filters using these numbers.

1. Make a mark on the engine block under the number that shows at the bottom of the filter when the rubber seal is seated.
2. Tighten the filter by turning it clockwise seven numbers from the marked point. For example, if a mark is made under the number 2 when the rubber seal is seated, the filter should be tightened until the number 1 comes up to the marked point.



Number when rubber seal is seated.

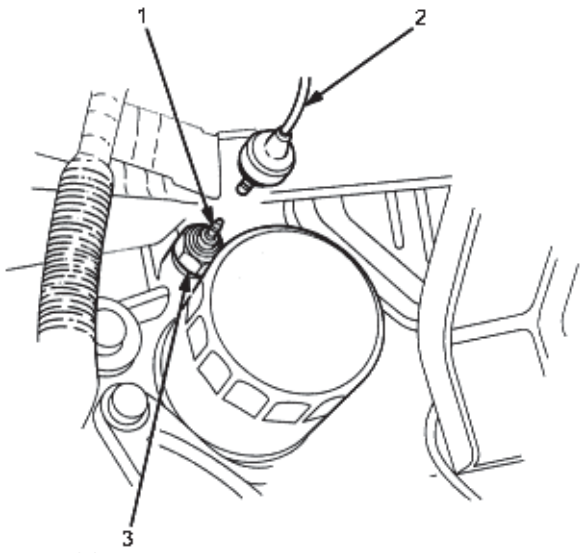
Number after tightening.

1. 7/8 turn clockwise
2. MARK
3. MARK

Number when rubber seal is seated	1	2	3	4	5	6	7	8
Number after tightening	8	1	2	3	4	5	6	7

5. After installation, fill the engine with oil up to the specified level, run the engine for move than three minutes, then check for oil leakage.

1. Remove the YEL/RED wire from the engine oil pressure switch.
2. Check for continuity between the positive terminal and the engine (ground).
   - There should be continuity with the engine stopped.
   - There should be no continuity with the engine running.

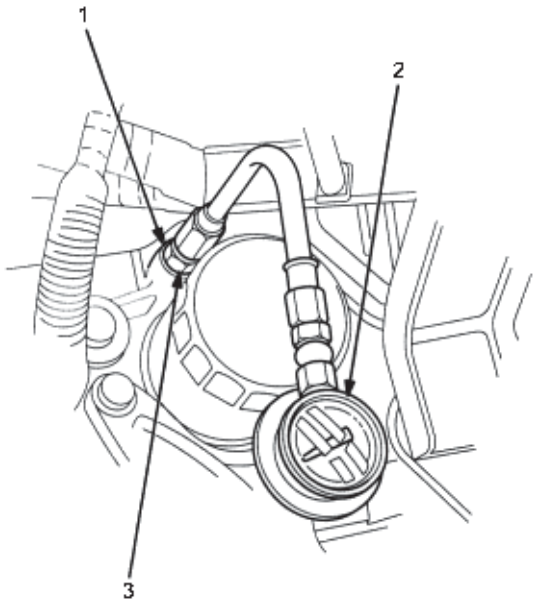


1. POSITIVE TERMINAL
2. YEL/RED WIRE
3. ENGINE OIL PRESSURE SWITCH

3. If the switch fails to operate, check the engine oil level. If the engine oil level is OK, check the engine oil pressure.

If the oil pressure warning light stays on with the engine running, check the engine oil level. If the oil level is correct:

1. Connect a tachometer.
2. Remove the engine oil pressure switch and install an oil pressure gauge.



1. ENGINE OIL PRESSURE MOUNTING HOLE
2. OIL PRESSURE GAUGE, 07506-3000000
3. OIL PRESSURE GAUGE ATTACHMENT, 07406-0030000

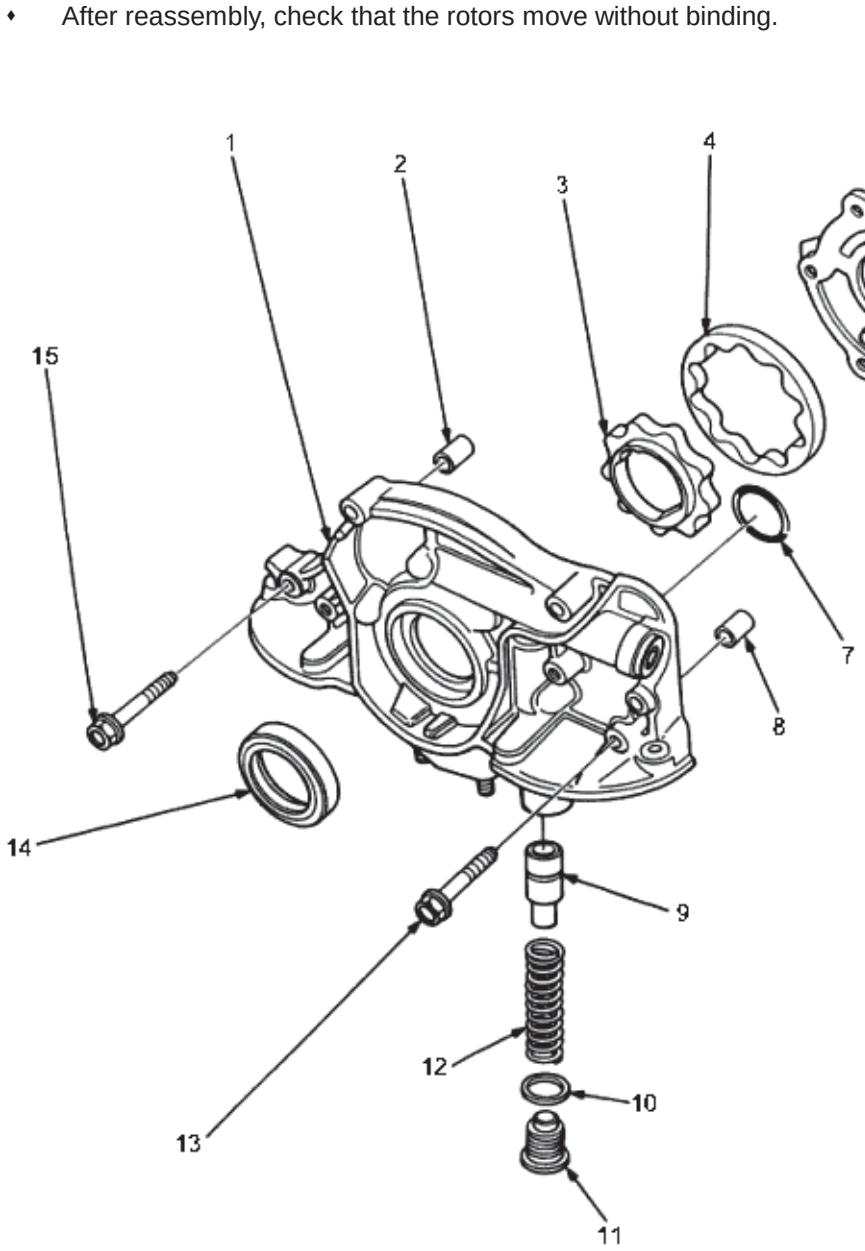
3. Start the engine. Shut it off immediately if the gauge registers no oil pressure. Repair the problem before continuing.
4. Allow the engine to reach operating temperature (fan comes on at least twice). The pressure should be:

Engine Oil Temperature: 80°C (176°F)
Engine oil Pressure:

At Idle:	**70 kPa (0.7 kgf/cm2, 10 psi) minimum.**
At 3,000 rpm (min-1)	**340 kPa (3.5 kgf/cm2, 50 psi) minimum.**

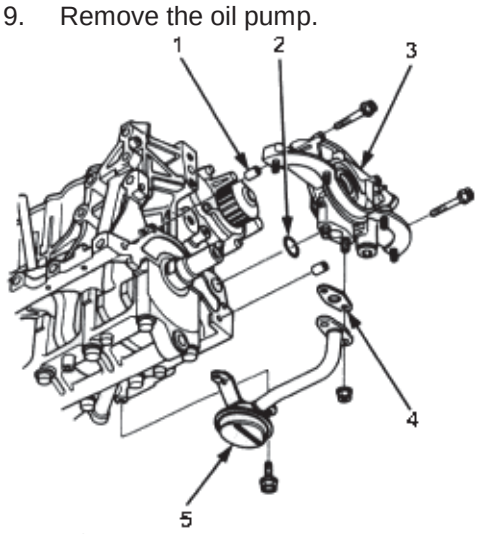
- If oil pressure is NOT within specifications, inspect the oil pump, (**See Page** 8-10).

NOTE:
- Use new O-rings when reassembling.
- Apply oil to O-rings before installation.
- Use liquid gasket, Part No. 08C70-K0234M, 08C70-K0334M or 08C70 -X0331S
- The rotors must be installed to the same direction.
- After reassembly, check that the rotors move without binding.



1. **PUMP HOUSING**
   Inspection, (**See Page** 8-10)
   Apply liquid gasket to mating surface of the cylinder block when installing.
2. **DOWEL PIN**
3. **INNER ROTOR**
   Inspection, (**See Page** 8-10)
4. **OUTER ROTOR**
   Inspection, (**See Page** 8-10)
5. **6 x 1.0 mm, 7 Nm (0.7 kgf/m, 5 lbf/ft)**
6. **PUMP COVER**
7. **O-RING**. Replace.
8. **DOWEL PIN**
9. **RELIEF VALVE.** Valve must slide freely in housing bore. Replace if scored.
10. **WASHER**
11. **SEALING BOLT, 39 Nm (40 kgf/m, 29 lbf/ft)**
12. **SPRING**
13. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
14. **OIL SEAL**
    Inspection, (**See Page** 8-10). Replace.
15. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**

1. Drain the engine oil.
2. Turn the crankshaft and align the white groove on the crankshaft pulley with the pointer on the lower cover.
3. Remove the cylinder head cover and upper cover.
4. Remove the power steering pump belt, air conditioner belt and the alternator belt.
5. Remove the crankshaft pulley and remove the lower cover
6. Remove the timing belt.
7. Remove the drive pulley.
8. Remove the oil pan and oil screen.
9. Remove the oil pump.

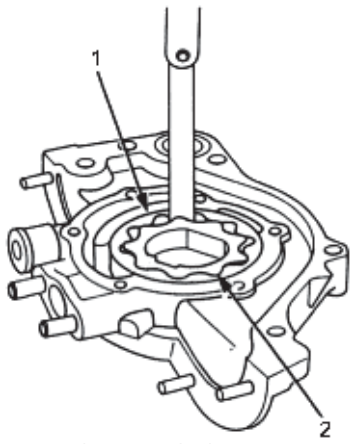


1. DOWEL PIN
2. O-RING. Replace.
3. OIL PUMP
4. GASKET. Replace.
5. OIL SCREEN

10. Remove the screws from the pump housing, then separate the housing and cover.
11. Check the inner-to-outer radial clearance on the pump rotor. If the inner-to-outer rotor clearance exceeds the service limit, replace the inner and outer rotors.

Inner Rotor-to Rotor Radial Clearance

Standard (New):	**0.02 - 0.14 mm (0.001 - 0.006 in)**
Service Limit:	**0.20 mm (0.008 in)**

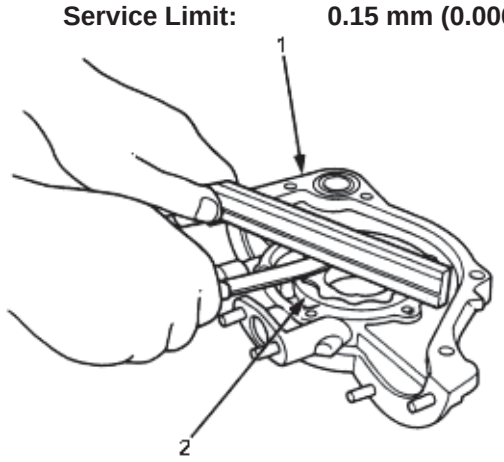


1. OUTER ROTOR
2. INNER ROTOR

12. Check the housing-to-rotor clearance on the pump rotor. If the housing-to-rotor axial clearance exceeds the service limit, replace the set of inner and outer rotors and/or the pump housing.

Housing-to-Rotor Clearance

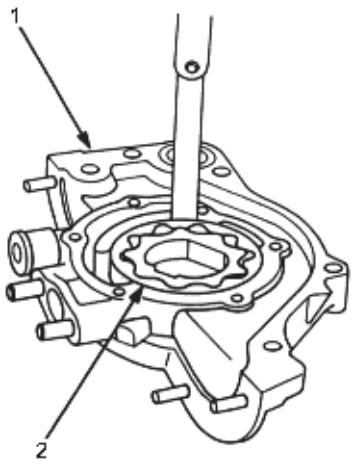
Standard (New):	**0.03 - 0.08 mm (0.001 - 0.003 in)**
Service Limit:	**0.15 mm (0.006 in)**



1. HOUSING
2. ROTORS

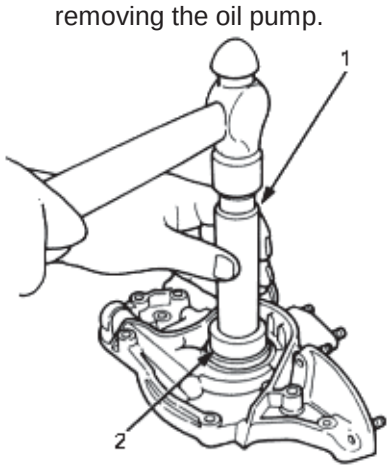
13. Check the housing-to-outer rotor radial clearance. If the housing-to-outer rotor radial clearance exceeds the service limit, replace the set of inner and outer rotors and/or pump housing.
    Housing-to-Outer Rotor Radial Clearance

Standard (New):	**0.10 - 0.18 mm (0.004 - 0.007 in)**
Service Limit:	**0.20 mm (0.008 in)**



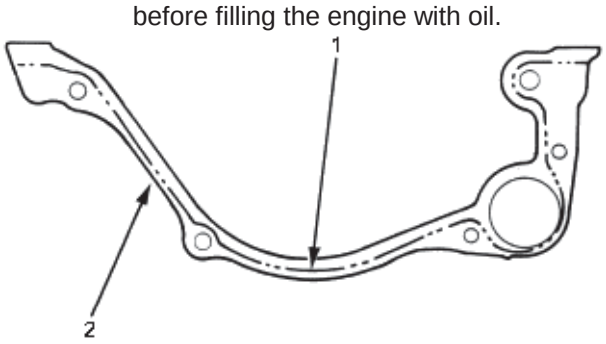
1. HOUSING
2. OUTER ROTOR

14. Inspect both rotors and pump housing for scoring or other damage. Replace parts if necessary.
15. Remove the old oil seal from the oil pump.
16. Using the special tool, gently tap in the new oil seal until the driver bottoms against the pump.
    NOTE: The oil seal alone can be replaced without removing the oil pump.



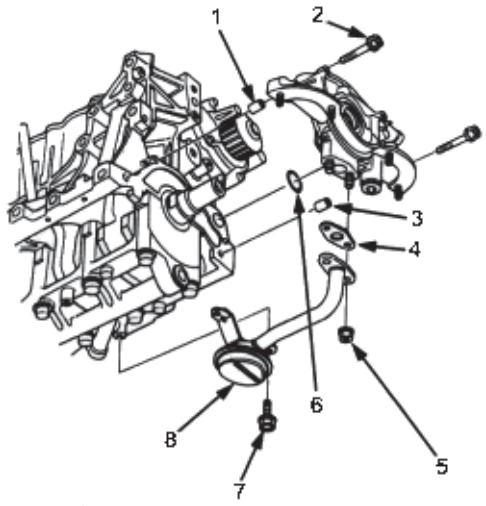
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 52 x 55 mm, 07746-0010400

17. Reassemble the oil pump, applying thread lock to the pump housing screws.
18. Check that the oil pump turns freely.
19. Apply alight coat of oil to the seal lip.
20. Install the two dowel pins and new O-ring on the oil pump.
21. Apply liquid gasket to the cylinder block mating surface of the oil pump.
    NOTE:
    - Use liquid gasket, part No. 08C70-K0234M, 08C70-K0334M or 08C70-X0331S.
    - Check that the mating surfaces are clean and dry before applying liquid gasket.
    - Apply liquid gasket evenly, being careful to cover all the mating surface.
    - To prevent leakage of oil, apply liquid gasket to the inner threads of the bolt holes.
    - Do not install the parts if five minutes or more have elapsed since applying the liquid gasket. Instead, reapply liquid gasket after removing the old residue.
    - After assembly, wait at least 30 minutes before filling the engine with oil.



1. Apply liquid gasket along the broken line.
2. PUMP HOUSING

22. Install the oil pump on the cylinder block.
    - Apply grease to the lip of the pump seal. Then, install the oil pump onto the crankshaft. When the pump is in place, clean any excess grease off the crankshaft and check that the oil seal lip is not distorted.
23. Install the oil screen.



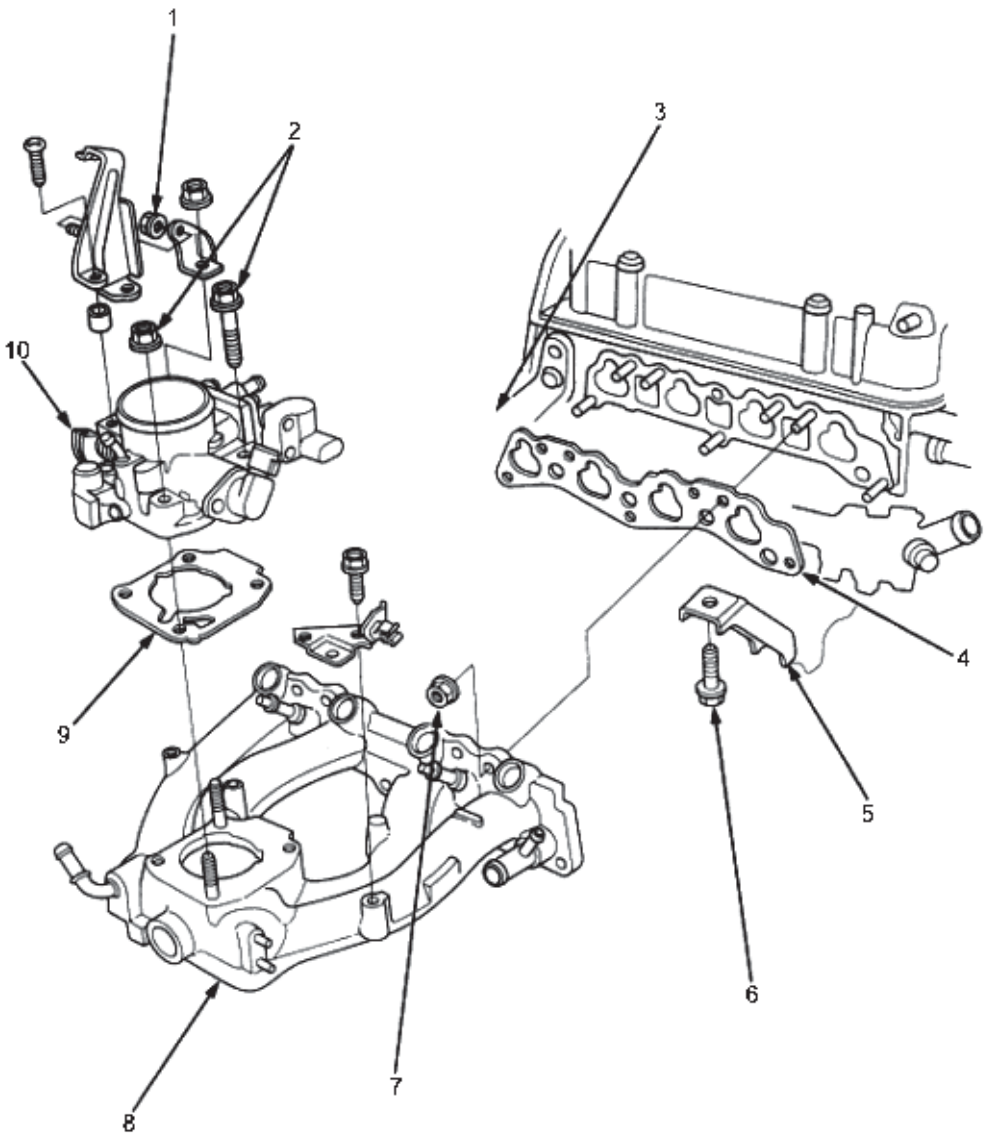
1. DOWEL PIN
2. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
3. DOWEL PIN
4. GASKET. Replace
5. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
6. O-RING. Replace
7. 6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)
8. OIL SCREEN

24. Install the oil pan, (**See Page** 7-25).

NOTE: Use new gaskets when reassembling.

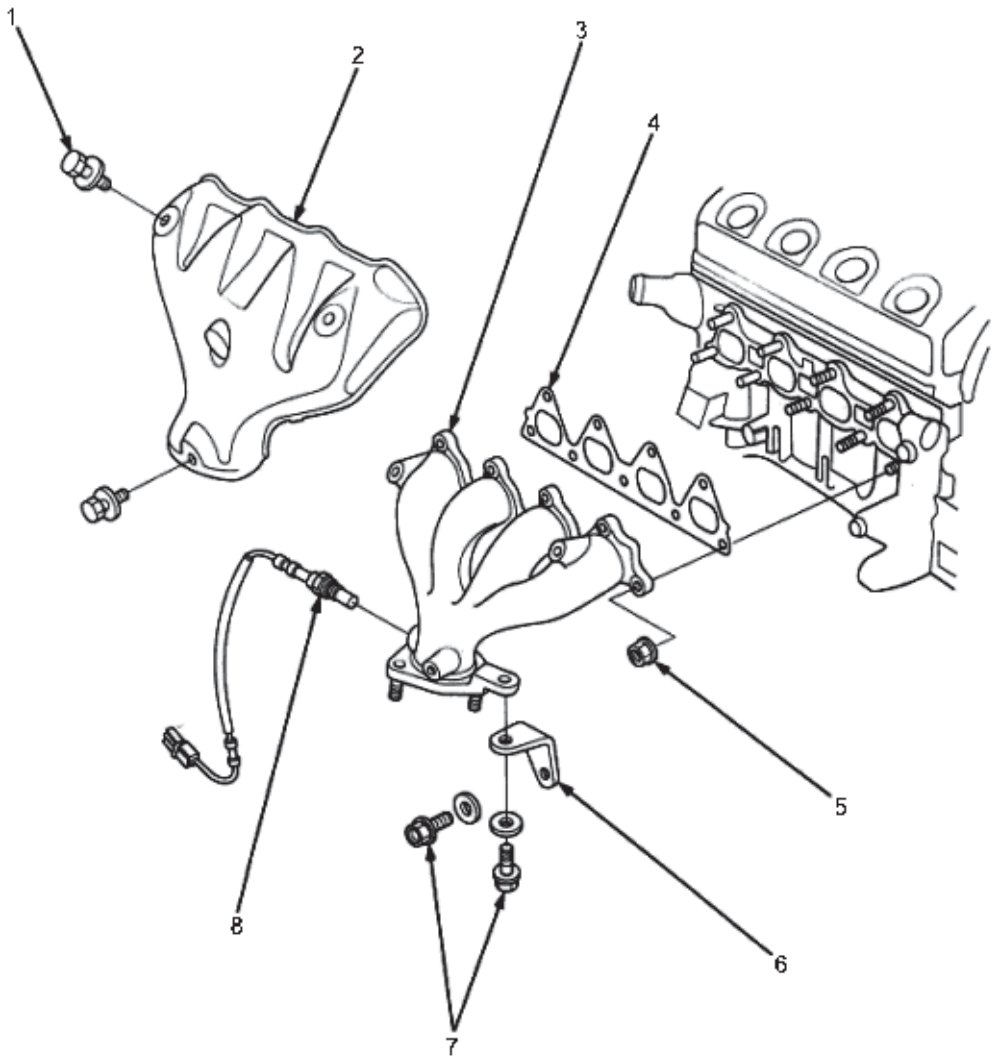
⚠ CAUTION

- Check for folds or scratches on the surface of the gaskets.
- Replace with a new gasket if damaged.



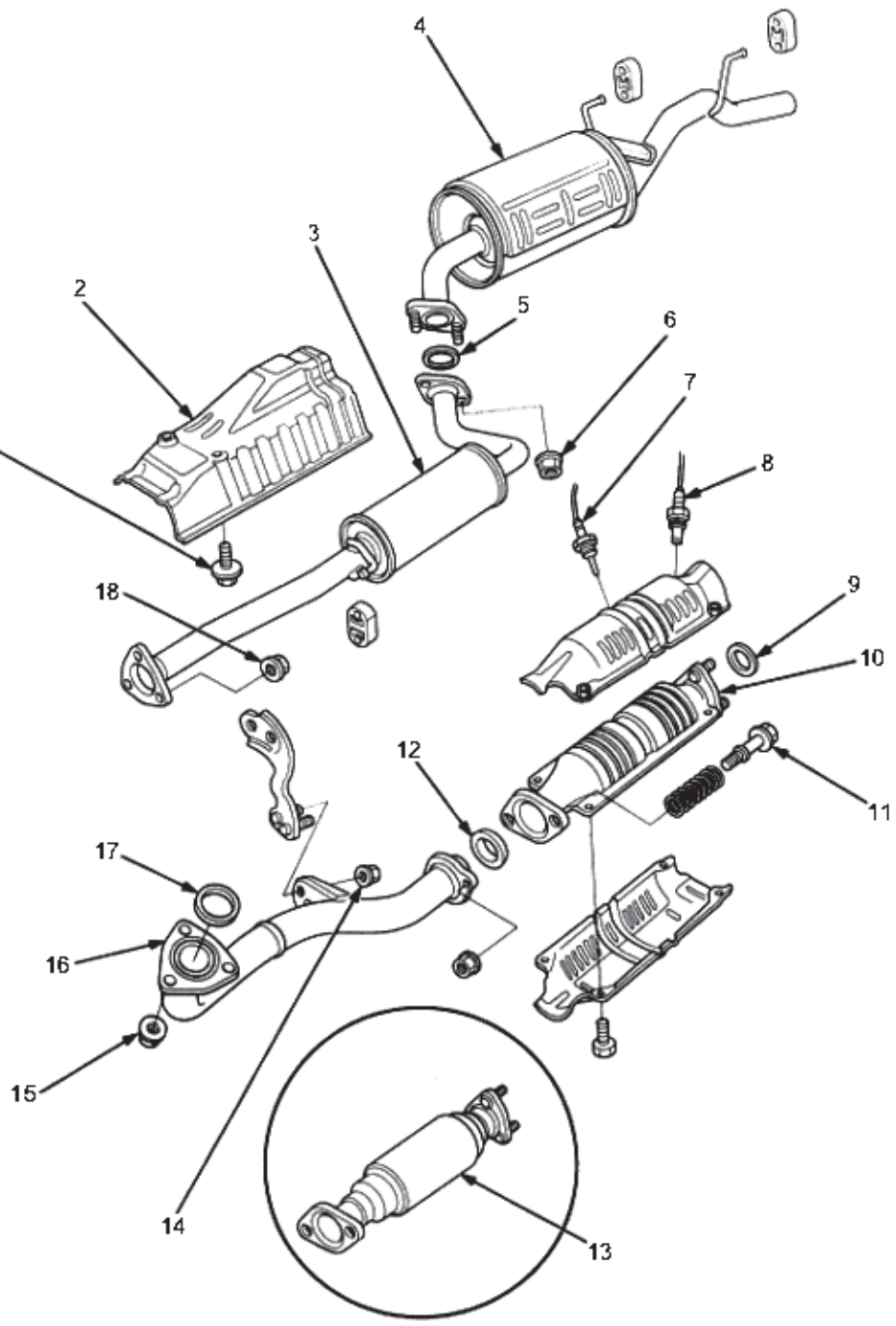
1. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
2. **8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)**
3. **GASKET**. Replace.
4. **GASKET**. Replace.
5. **INTAKE MANIFOLD BRACKET**
6. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
7. **8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
8. **INTAKE MANIFOLD**. Replace if cracked or if mating surfaces are damaged.
9. **GASKET**. Replace.
10. **THROTTLE BODY**. See section 11.

NOTE: Use new gaskets and self-locking nuts when reassembling.



1. **8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)**
2. **COVER**
3. **EXHAUST MANIFOLD**
4. **GASKET**. Replace.
5. **SELF-LOCKING NUT, 8 x 1.25 mm, 31 Nm (3.2 kgf/m, 23 lbf/ft)**. Replace.
6. **EXHAUST MANIFOLD BRACKET**
7. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
8. **HEAT OXYGEN SENSOR (HO2S) (D16W1 engine) 44Nm (4.5 kgf/m, 33 lbf/ft)**

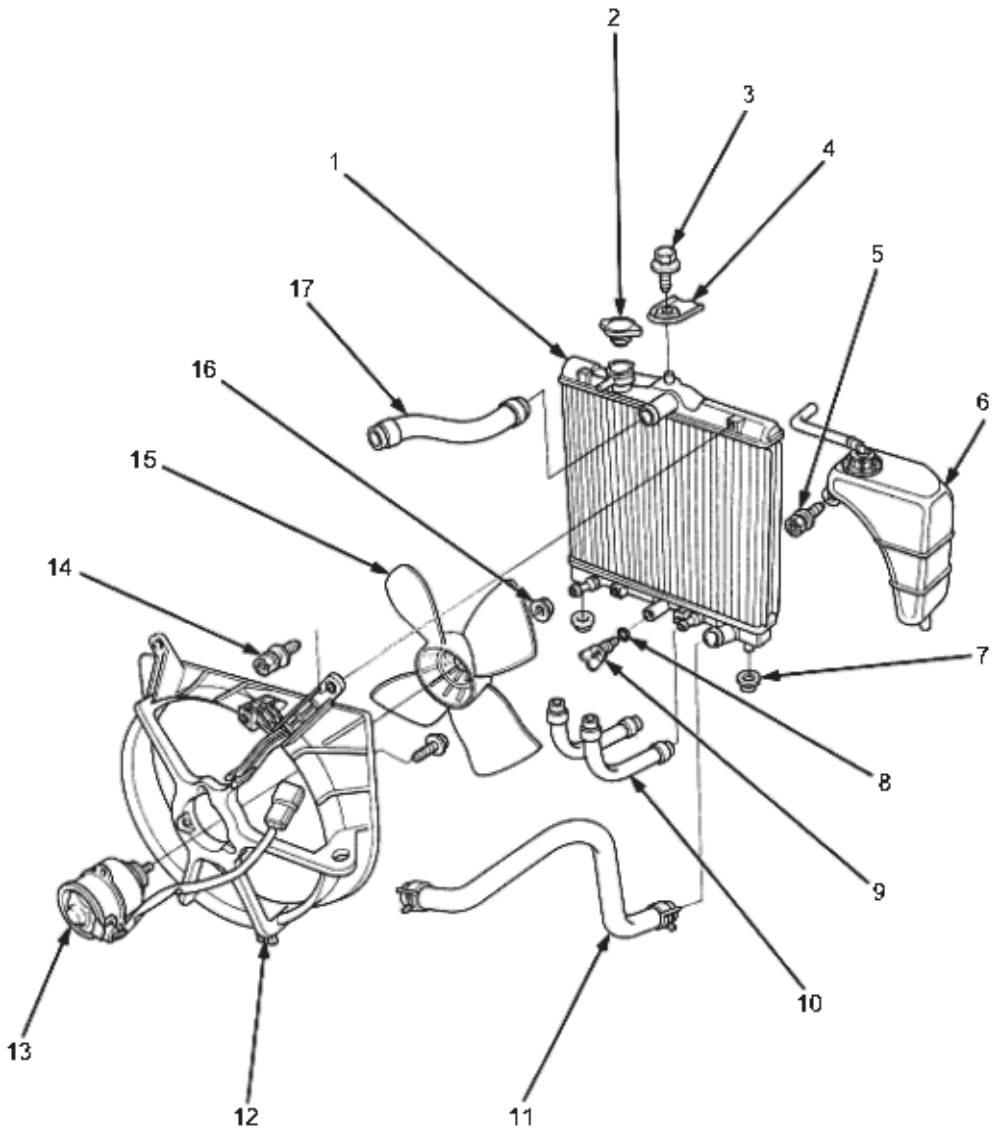
NOTE: Use new gaskets and self-locking nuts when reassembling.



1. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
2. **HEAT SHIELD**
3. **EXHAUST PIPE B**
4. **MUFFLER**
5. **GASKET.** Replace.
6. **SELF-LOCKING NUT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**. Replace.
7. **EXHAUST GAS TEMPERATURE (EGT) SENSOR (except KU models) 26 Nm (2.7 kgf/m, 20 lbf/ft)**
8. **SECONDARY HO_2S (except KU models) 44 Nm (4.5 kgf/m, 33 lbf/ft)**
9. **GASKET.** Replace.
10. **THREE WAY CATALYTIC CONVERTER (TWC) (D16W1 engine)**
11. **8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft).** Replace. Tighten the bolts in steps, alternating side-to-side.
12. **GASKET**. Replace.
13. **EXHAUST CHAMBER (D16W2 engine)**
14. **SELT-LOCKING NUT, 8 x 1.25 mm, 16 Nm (1.6 kgf/m, 12 lbf/ft)**. Replace.
15. **SELF-LOCKING NUT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**. Replace.
16. **EXHAUST PIPE A**
17. **GASKET.** Replace.
18. **SELF-LOCKING NUT, 10 x 1.25 mm, 33 Nm (3.4 kgf/m, 24 lbf/ft)**. Replace.

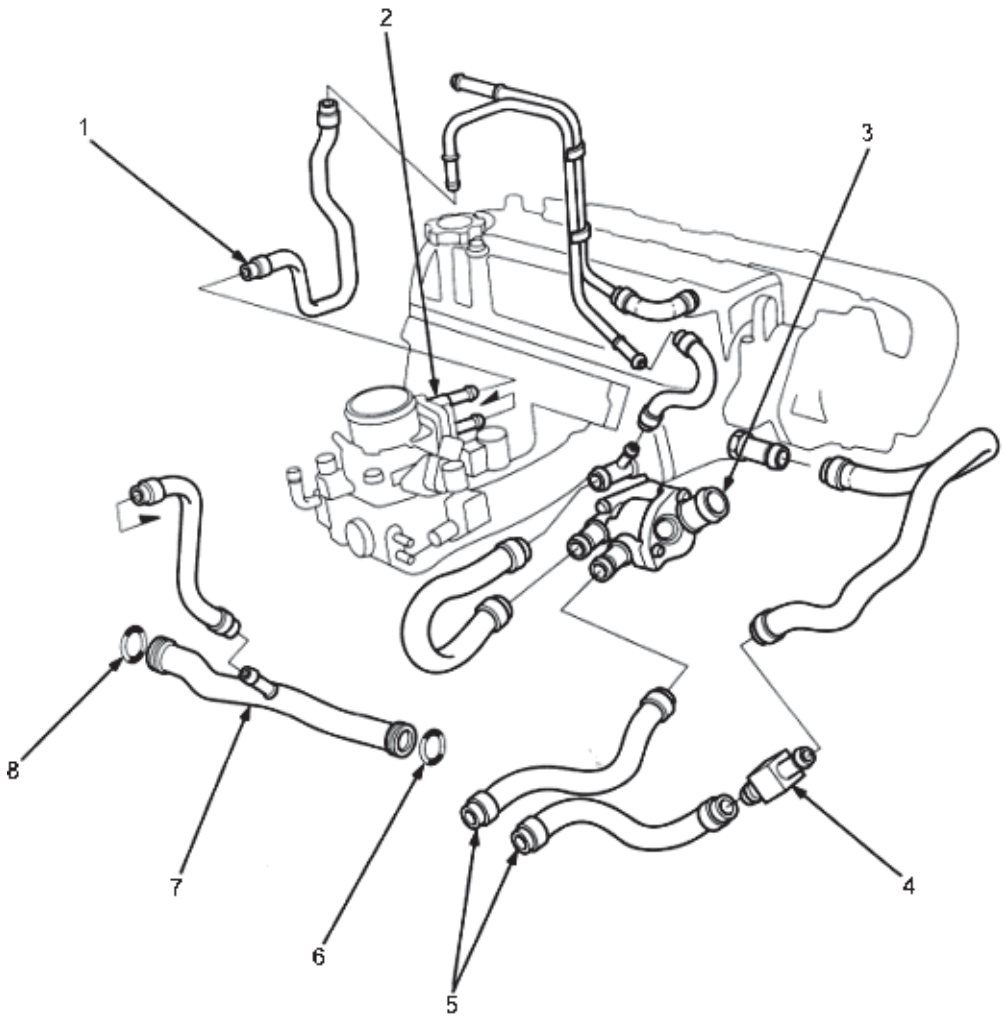
Total Cooling System Capacity [Including heater and reservoir]
M/T: 3.9 *l* (4.1 US qt, 3.4 Imp qt)
CVT: 4.1 *l* (4.3 US qt, 3,6 Imp qt)
Reservoir capacity: 0.4 *l* (0.42 Us qt, 0.35 Imp qt)

NOTE:
- Check all cooling system hoes for damage, leaks or deterioration and replace if necessary.
- Check all hose clamps and retighten if necessary.
- Use new O-rings when reassembling.



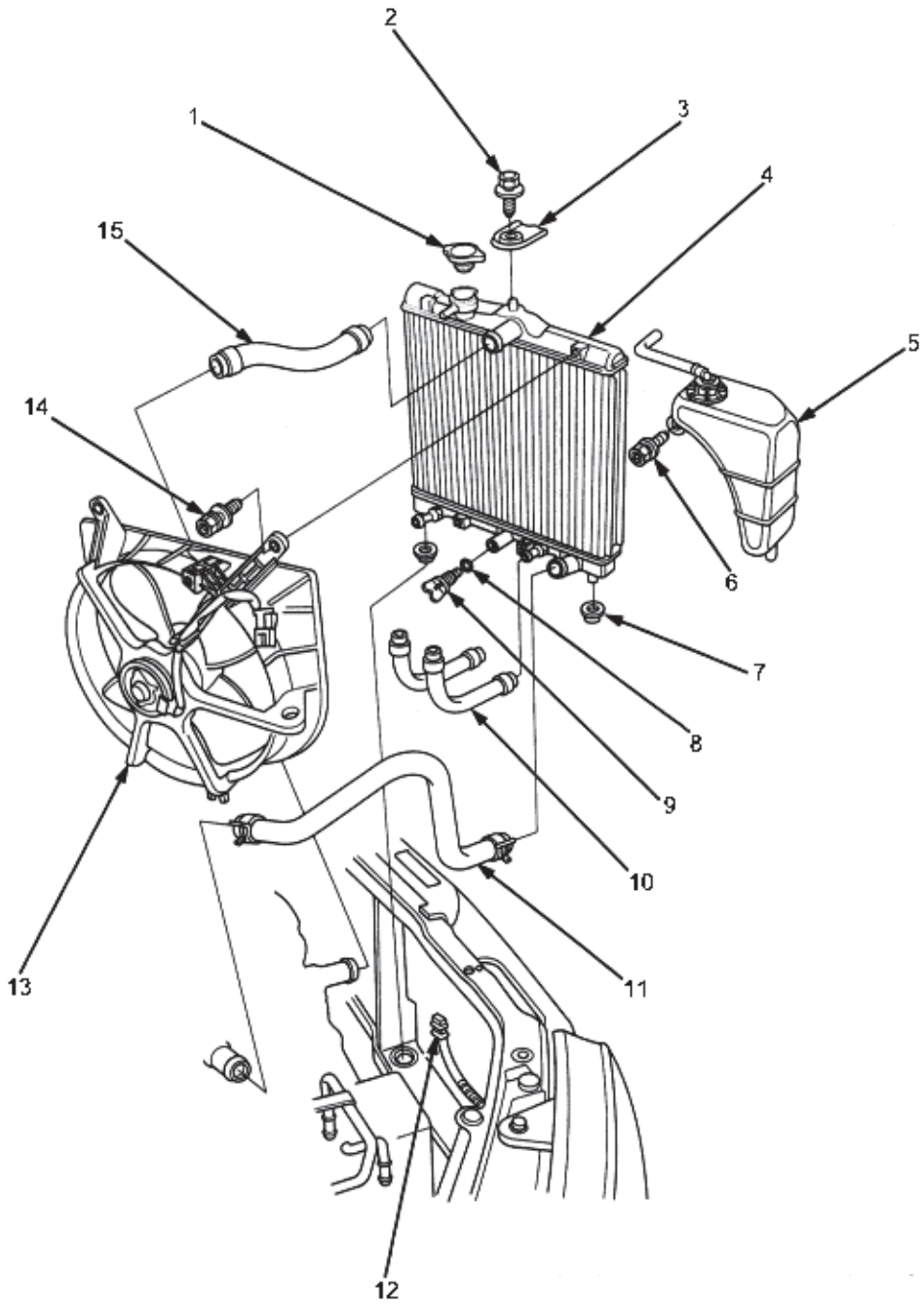
1. **RADIATOR**
   Engine coolant Refilling and bleeding, (**See Page** 10-5)
   Leak test, (**See Page** 10-7)
   Inspect soldered joints and seams for leaks.
   Blow out dirt from between core fins with compressed air. If insects, etc., are clogging radiator, wash them off with low pressure water.
2. **RADIATOR CAP**. Pressure testing, (**See Page** 10-7)
3. **6 x 1.00 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
4. **UPPER BRACKET AND CUSHION**
5. **6 x 1.0 mm, 7 Nm (0.7 kgf/m, 5 lbf/ft)**
6. **COOLANT RESERVOIR**
7. **LOWER CUSHION**
8. **O-RING.** Replace
9. **DRAIN PLUG**
10. **AFT COOLANT HOSE.** Refer to section 14 when installing.
11. **LOWER RADIATOR HOSE**
12. **RADIATOR FAN SHROUD**
13. **FAN MOTOR**
14. **6 x 1.0 mm, 7 Nm (0.7 kgf/m, 5 lbf/ft)**
15. **RADIATOR FAN**
16. **5.4 Nm (0.55 kgf/m, 4.0 lbf/ft)**
17. **UPPER RADIATOR HOSE**

Engine Hose Connections:



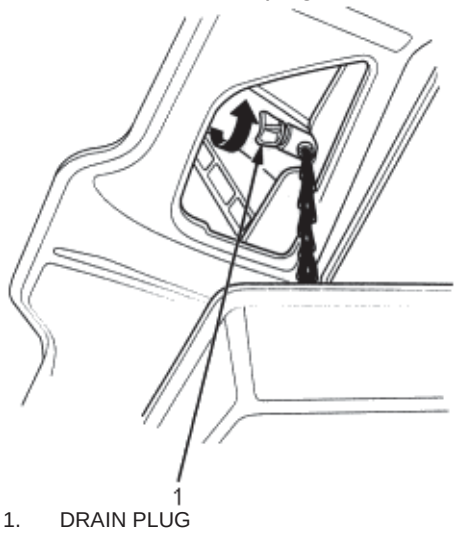
1. **WATER BYPASS HOSE**
2. **IDLE AIR CONTROL (IAC) VALVE**
3. **THERMOSTAT HOUSING**
4. **HEATER VALVE**
5. **HEATER HOSES**
6. **O-RING.** Replace
7. **CONNECTING PIPE**
8. **O-RING.** Replace

1. Drain the engine coolant.
2. Remove the upper and lower radiator hoses, and ATF cooler hoses.
3. Disconnect the fan motor connector.
4. Remove the radiator upper bracket, then pull up the radiator.
5. Remove the fan shroud assembly and other parts from the radiator.
6. Install the radiator in the reverse order of removal. make sure the upper and lower cushions are set securely.
7. Fill the radiator with engine coolant and bleed the air.



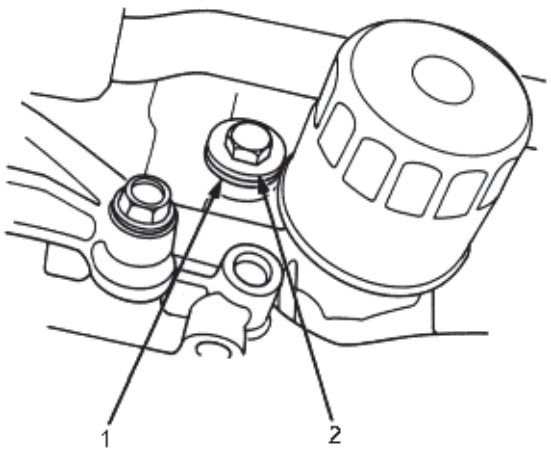
1. **RADIATOR CAP**
2. **6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
3. **UPPER BRACKET AND CUSHION**
4. **RADIATOR**
5. **COOLANT RESERVOIR**
6. **6 x 1.0 mm, 7 Nm (0.7 kgf/m, 5 lbf/ft)**
7. **LOWER CUSHION**
8. **O-RING.** Replace
9. **DRAIN PLUG**
10. **ATF COOLER HOSES**
11. **LOWER RADIATOR HOSE**
12. **FAN MOTOR CONNECTOR**
13. **RADIATOR FAN SHROUD ASSEMBLY**
14. **6 x 1.0 mm, 7 Nm (0.7 kgf/m, 5 lbf/ft)**

1. Start the engine. Set the heater temperature control dial to maximum heat, then turn off the engine. make sure the engine and radiator are cool to the touch.
2. Remove the radiator cap.
3. Loosen the drain plug, and drain the coolant.



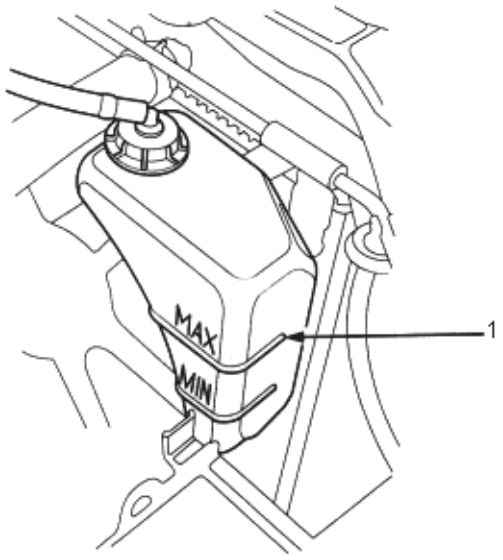
1. DRAIN PLUG

4. Remove the drain bolt from the rear side of the cylinder block.



1. WASHER. Replace
2. DRAIN BOLT, 83 Nm (8.5 kgf/m, 61 lbf/ft)

5. Apply liquid gasket to the drain bolt threads, then reinstall the bolt with a new washer and tighten it securely.
6. Tighten the radiator drain plug securely.
7. Remove, drain and reinstall the reservoir. Fill the tank halfway to the MAX mark with water, then up to MAX mark with antifreeze.

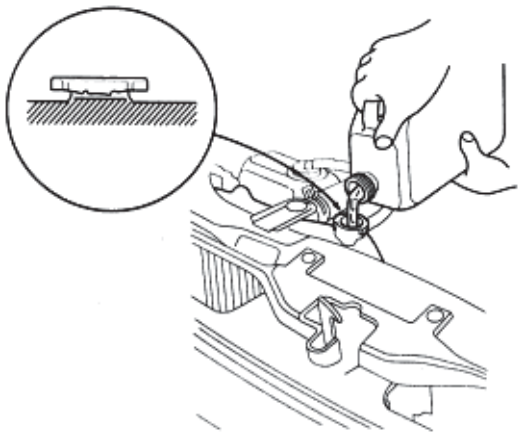


1. MAX MARK

8. Mix the recommended antifreeze with an equal amount of water in a clean container.
   NOTE:
   - Use only genuine Honda antifreeze/coolant.
   - For best corrosion protection, the coolant concentration must be maintained year-round at 50% minimum. Coolant concentrations less then 50% may not provide sufficient protection against corrosion or freezing.
   - Coolant concentrations greater than 60% will impair cooling efficiency and are not recommended.
   - Do not use additional rust inhibitors or anti-rust products; they may not be compatible with the coolant.

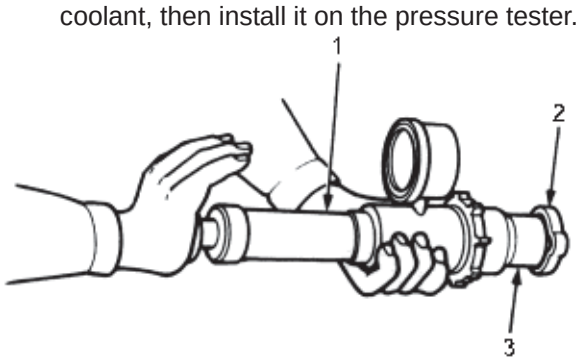
   Engine Cooling System Capacity [Including reservoir capacity: 0.4 *l* (0.42 US qt, 0.35 Imp qt)]
   M/T: 2.8 *l* (3.0 US qt, 2.5 Imp qt)
   CVT: 3.0 *l* (3.2 US qt, 2.6 Imp qt)

9. Pour coolant into the radiator up to the base of the filler neck.



10. Start the engine and let it run until it warms up (the radiator fan comes on at least twice).
11. Turn off the engine. Check the level in the radiator, add coolant if needed.
12. Put the radiator cap on tightly, then run the engine again and check for leaks.

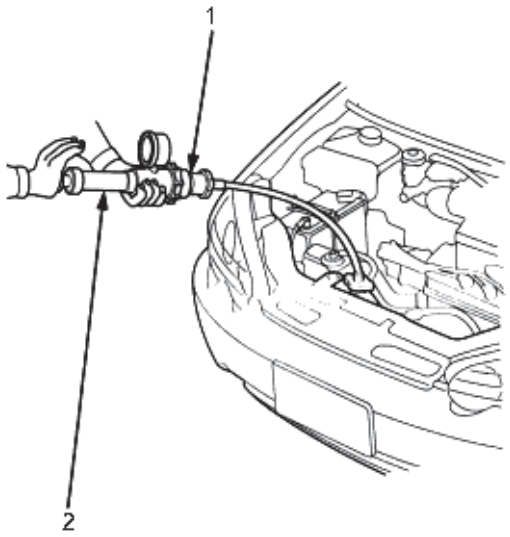
1. Remove the radiator cap, wet its seal with engine coolant, then install it on the pressure tester.



1. RADIATOR PRESSURE TESTER. (Commercially available)
2. RADIATOR CAP
3. SMALL ADAPTER. (Commercially available) H-901122-09

2. Apply a pressure of 93 - 123 kPa (0.95 - 1.25 kgf/cm2, 14 - 18 psi).
3. Check for a drop in pressure.
4. If the pressure drops, replace the cap.

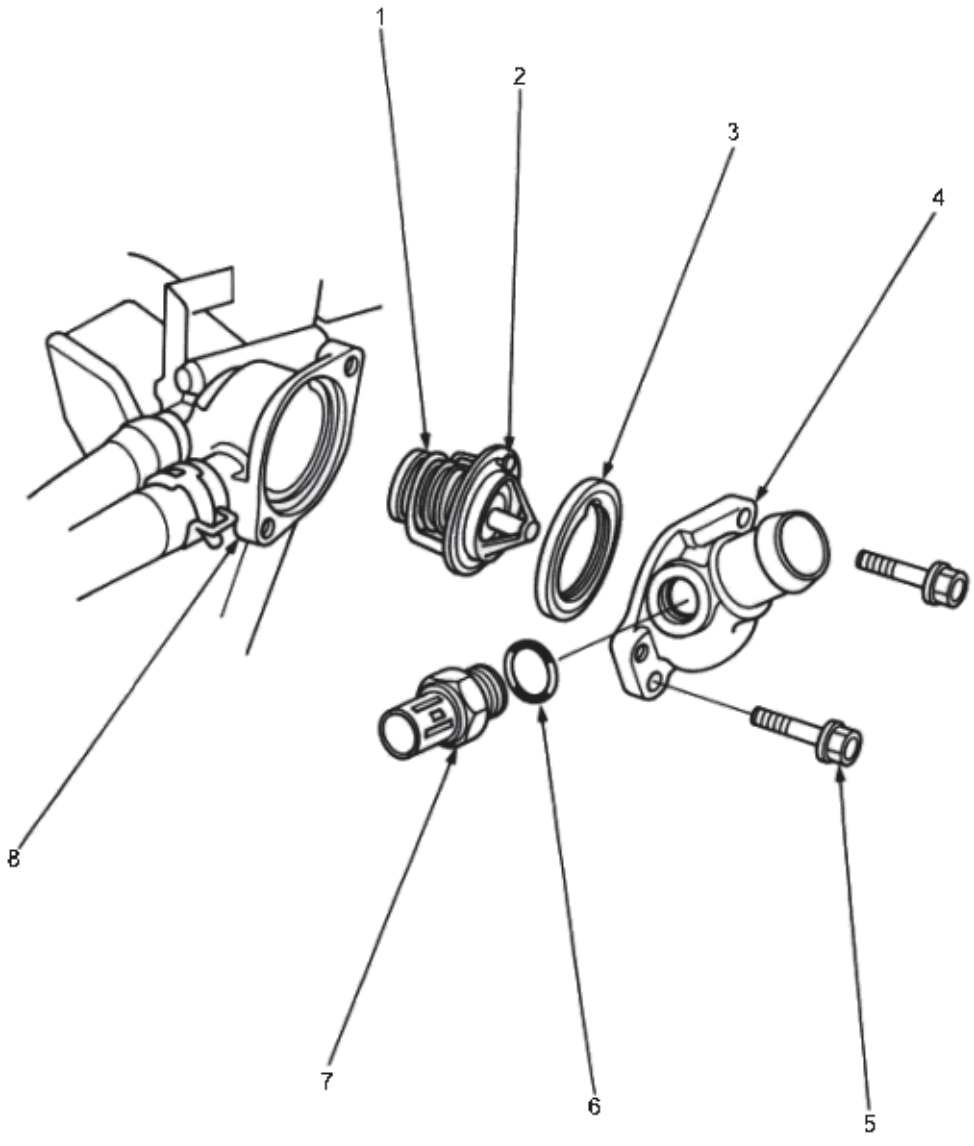
1. Wait until the engine is cool, then carefully remove the radiator cap and fill the radiator with engine coolant to the top of the filler neck.
2. Attach the pressure tester to the radiator and apply a pressure of 93 - 123 kPa (0.95 - 1.25 kgf/cm2, 14 - 18 psi).



1. SMALL ADAPTER. (Commercially available) H-901122-09
2. RADIATOR PRESSURE TESTER. (Commercially available)

3. Inspect for engine coolant leaks and a drop in pressure.
4. Remove the tester and reinstall the radiator cap
   NOTE: Check for engine oil in the coolant and/or coolant in engine oil.

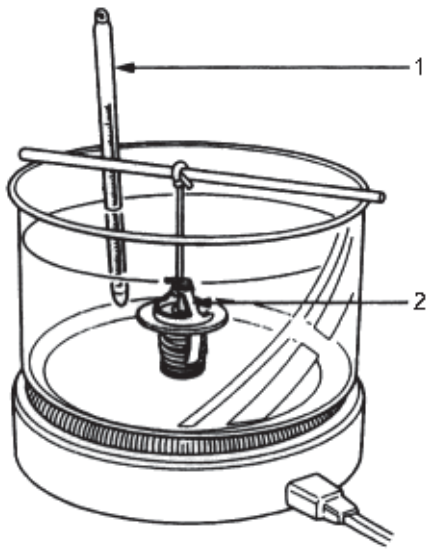
NOTE: Use new 0-rings when reassembling.



1. **THERMOSTAT.** Install with pin up.
2. **PIN**
3. **RUBBER SEAL.** Replace
4. **THERMOSTAT COVER**
5. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
6. **O-RING.** Replace
7. **RADIATOR FAN SWITCH, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
8. **THERMOSTAT HOUSING.**

Replace the thermostat if it is open at room temperature.
To test a close thermostat:

1. Suspend the thermostat in a container of water as shown.

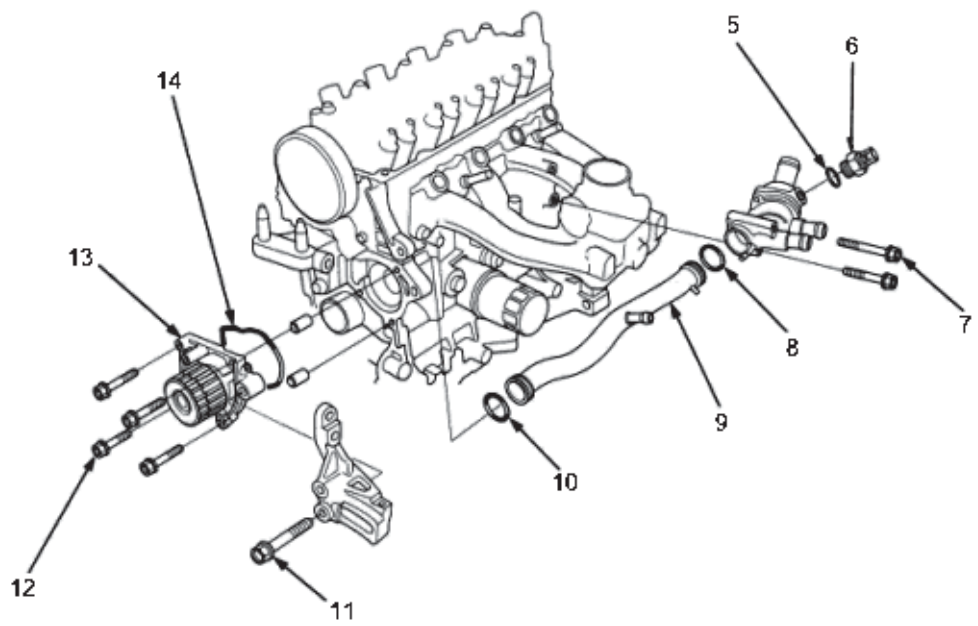


1. THERMOMETER
2. THERMOSTAT

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

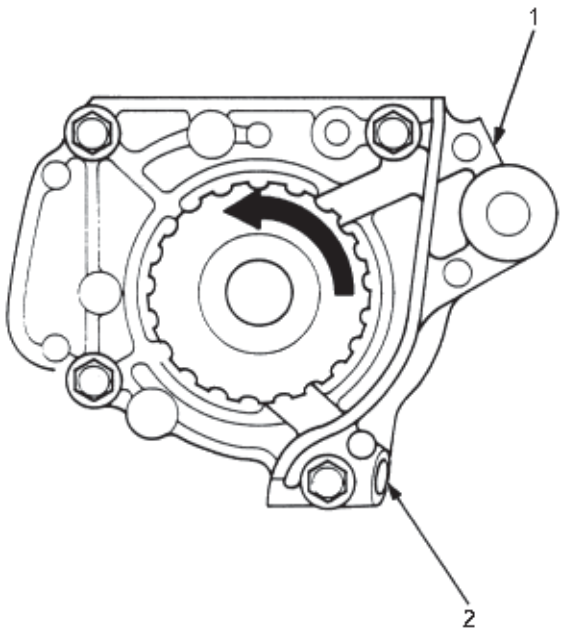
STANDARD THERMOSTAT
Lift height: above 8 mm (0.31 in)
Starts opening: 76 - 80°C (169 - 176°F)
Fully open: 90°C (194°F)

NOTE: Use new O-rings when reassembling



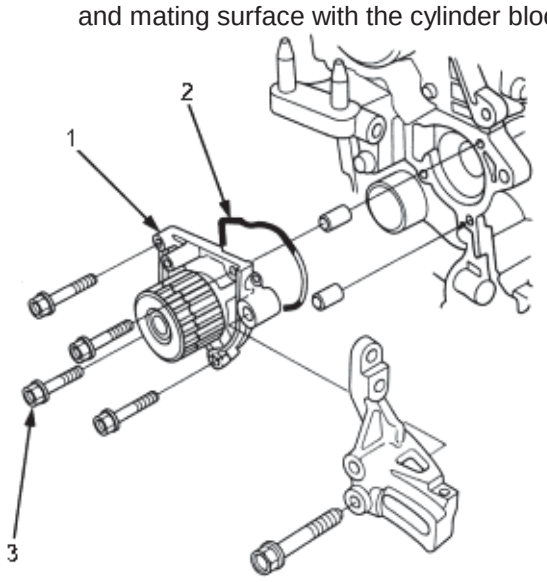
1. **COOLANT TEMPERATURE GAUGE SENDING UNIT, 9 Nm (0.9 kgf/m, 7 lbf/ft)**
   Apply liquid gasket to the threads.
2. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
3. **WATER OUTLET COVER.**
   Apply liquid gasket to mating surface.
4. **O-RING.** Replace.
5. **O-RING.** Replace.
6. **RADIATOR FAN SWITCH, 24 Nm (2.4 kgf/m, 17 lbf/ft)**
7. **6 x 1.0 mm, 11 Nm (1.1 kgf/m, 8.0 lbf/ft)**
8. **O-RING.** Replace.
9. **CONNECTING PIPE**
10. **O-RING.** Replace.
11. **10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
12. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
13. **WATER PUMP**
    Inspection, (**See Page** 10-11)
    Replacement, (**See Page** 10-11)
14. **O-RING.** Replace.
15. **ENGINE COOLANT TEMPERATURE (ECT) SENSOR, 18 Nm (1.8 kgf/m, 13 lbf/ft)**

1. Remove the timing belt, (**See Page** 6-8).
2. Check that the water pump turns counterclockwise.
3. Check for signs of seal leakage.
   NOTE: A small amount of “weeping” from the bleed hole is normal.



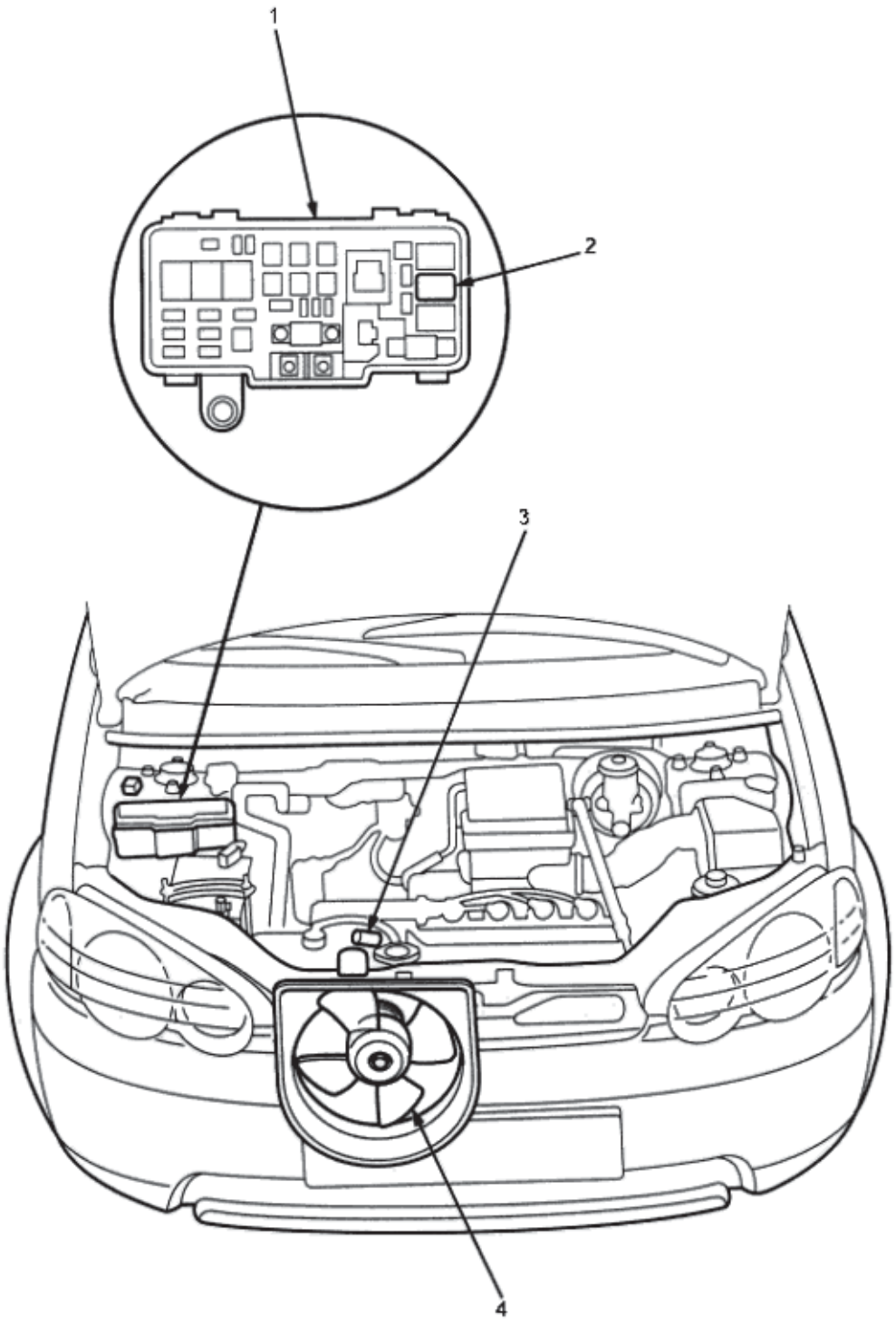
1. BLEED HOLE
2. BLEED HOLE

1. Remove the timing belt, (**See Page** 6-8).
2. Remove the water pump by removing five bolts.
   NOTE: Inspect, repair and clean the O-ring groove and mating surface with the cylinder block.

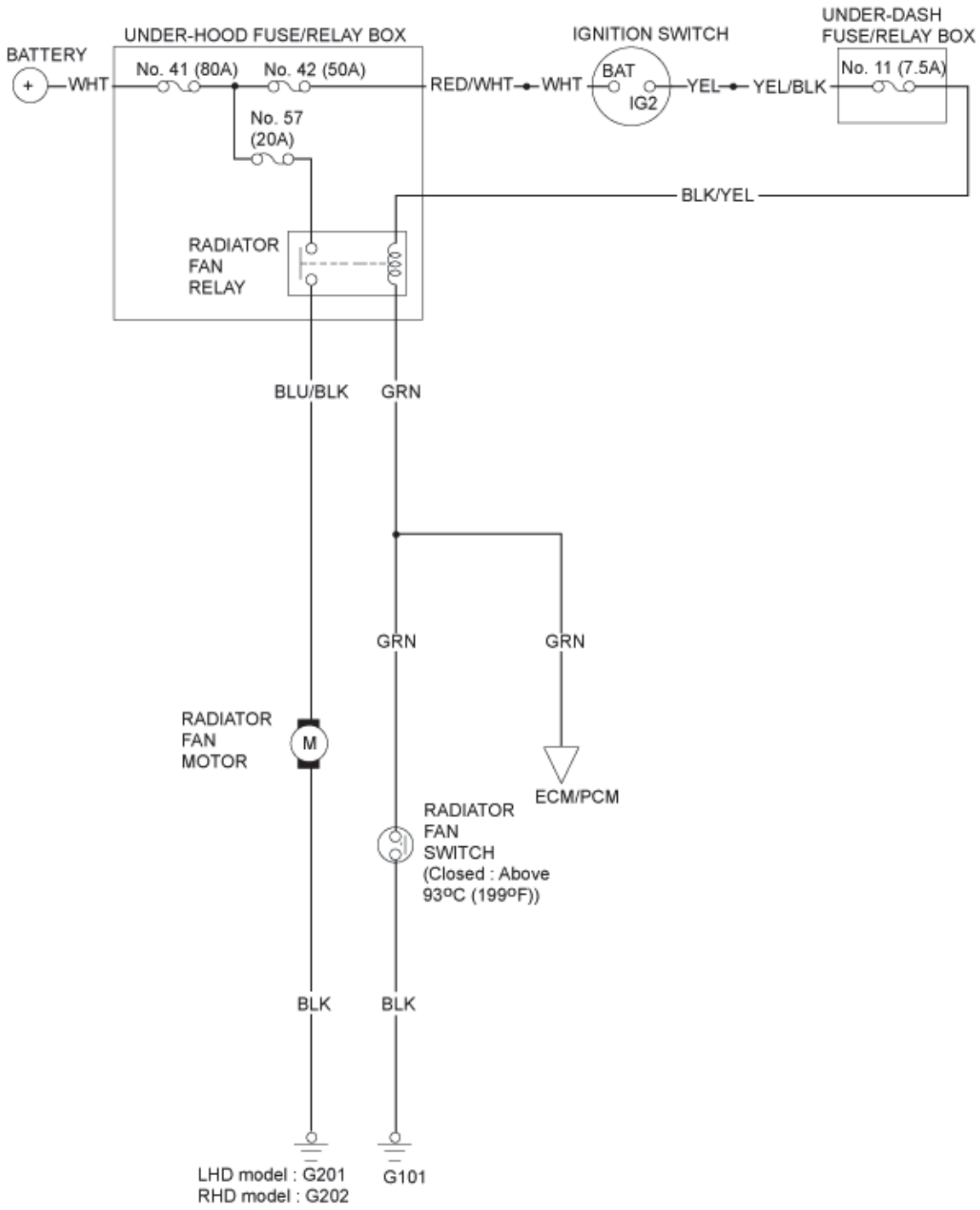


1. WATER PUMP
2. O-RING. Replace.
3. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

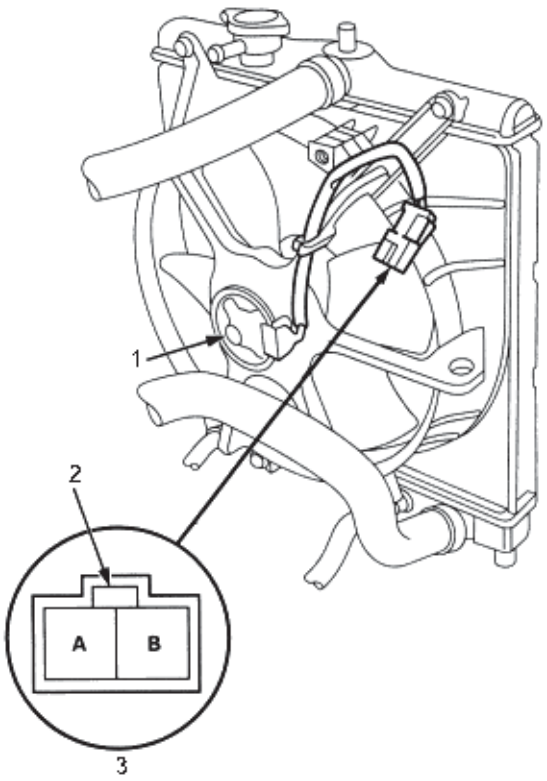
3. Install the water pump in the reverse order of removal.
   NOTE:
   - Keep the O-ring in position when installing.
   - Clean the spilled engine coolant.



1. **UNDER-HOOD FUSE/RELAY BOX**
2. **RADIATOR FAN RELAY.** Test, section 23
3. **RADIATOR FAN SWITCH.** Test, (**See Page** 10-14)
4. **RADIATOR FAN MOTOR.** Test (**See Page** 10-14)


BATTERY
+
WHT
UNDER-HOOD FUSE/RELAY BOX
No. 41 (80A)
No. 42 (50A)
No. 57
(20A)
RADIATOR
FAN
RELAY
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH
FUSE/RELAY BOX
No. 11 (7.5A)
BLK/YEL
BLU/BLK
GRN
GRN
GRN
RADIATOR
FAN
MOTOR
M
ECM/PCM
RADIATOR
FAN
SWITCH
(Closed : Above
93ºC (199ºF))
BLK
BLK
LHD model : G201
RHD model : G202
G101

1. Disconnect the 2P connectors from the radiator fan motor.

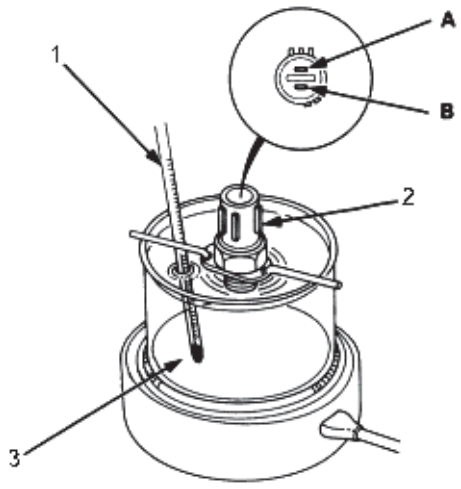


1. RADIATOR FAN MOTOR
2. LOCK
3. Terminal side of male terminals

2. Test the motor by connecting battery power to the B terminal, and ground the A terminal.
3. If the motor fails to run or does not run smoothly, replace it.

NOTE: Bleed air from the cooling system after installing the radiator fan switch, (**See Page** 10-5)

1. Remove the radiator fan switch from the thermostat cover, (**See Page** 10-8).
2. Suspend the radiator fan switch in a container of water as shown.

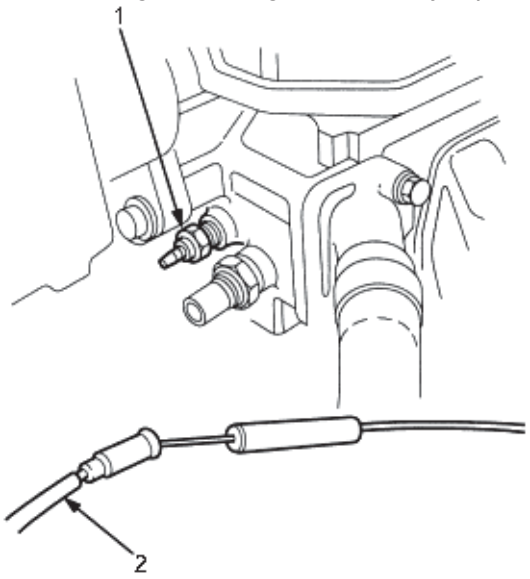


1. THERMOMETER
2. RADIATOR FAN SWITCH
3. WATER

3. Heat the water and check the temperature with a thermometer. Do not let the thermometer touch the bottom of hot container.
4. Measure the continuity between the A terminal and B terminal according to the table below.

Operation	Temperature	Terminal A	Terminal B
ON	91 - 95°C (196 - 203°F)	○—○	
OFF	3 - 8°C (5 - 15°F) lower than the temperature when it goes on		

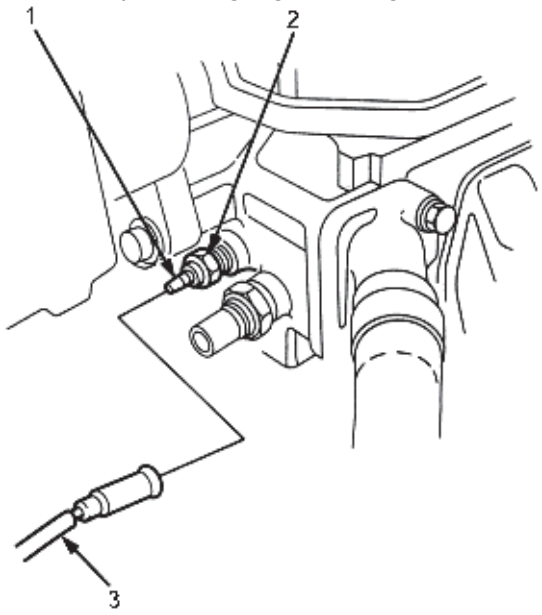
1. Check the No. 6 (7.5 A) fuse in the driver's under-dash fuse/relay box before testing.
2. Make sure the ignition switch is OFF, then disconnect the YEL/GRN wire from the coolant temperature gauge sending unit, and ground with a jumper wire.



1. GAUGE SENDING UNIT
2. YEL/GRN WIRE

3. Turn the ignition switch ON (II).
   Check that the pointer of the coolant temperature gauge starts moving towards the "H" mark. Turn the ignition switch OFF before the pointer reaches the "H" on the gauge dial. Failure to do so may damage the gauge.
   - If the pointer of the gauge does not move at all, check for an open in the YEL/GRN wire.
     If the wires are OK, replace the coolant temperature gauge.
   - If the coolant temperature gauge works, test the coolant temperature sending unit.

1. Disconnect the YEL/GRN wire from the coolant temperature gauge sending unit.



1. POSITIVE TERMINAL
2. SENDING UNIT
3. YEL/GRN WIRE

2. Using an ohmmeter, measure the change in resistance between the positive terminal and the engine (ground) with the engine cold and with the engine at operating temperature.

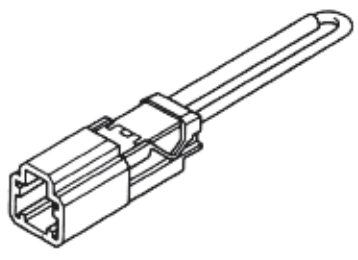
Temperature	56°C (133°F)	85 - 100°F (185 - 212°C)
Resistance ohms	137	46 - 30

3. If the obtained readings are substantially different from the specifications above, replace the sending unit.

Ref No.	Tool Number	Description	Qty	Remark
1	07LAA - PT50101	O2 Sensor Socket Wrench	1	
2	07PAZ - 0010100	SCS Short Connector	1	
3	07406 - 0040002	Fuel Pressure Gauge Set	1	
3-1	07406 - 0040202	Fuel Pressure Hose Assembly	(1)	Component Tools



①



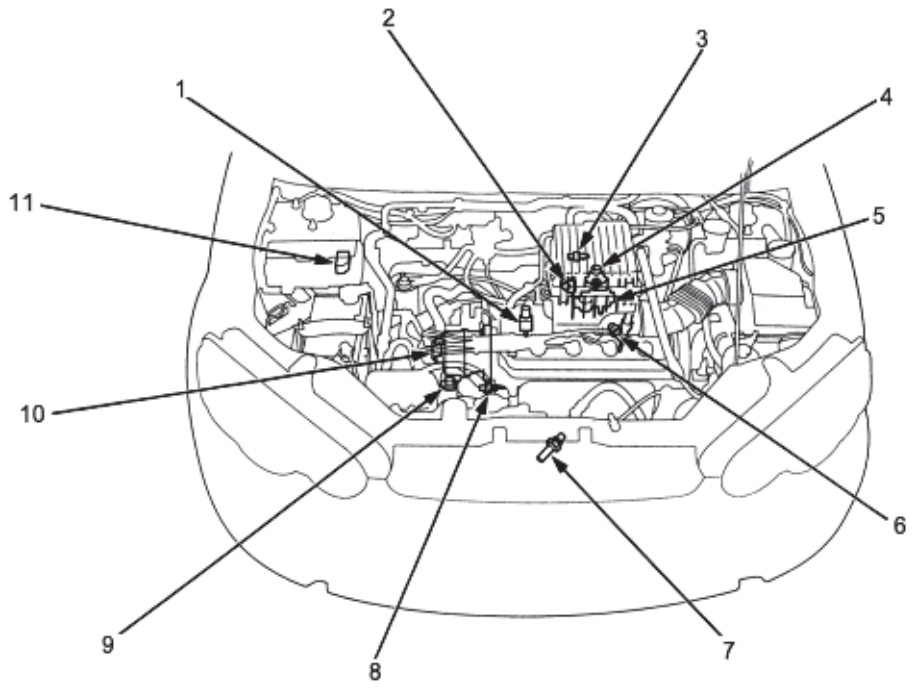
②



③

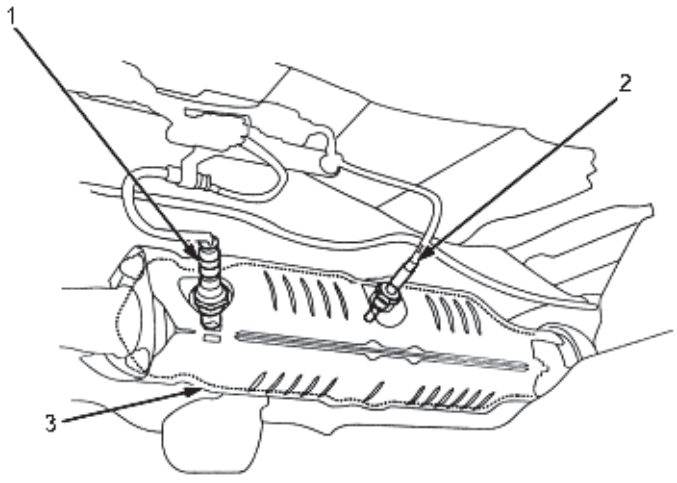


③-1

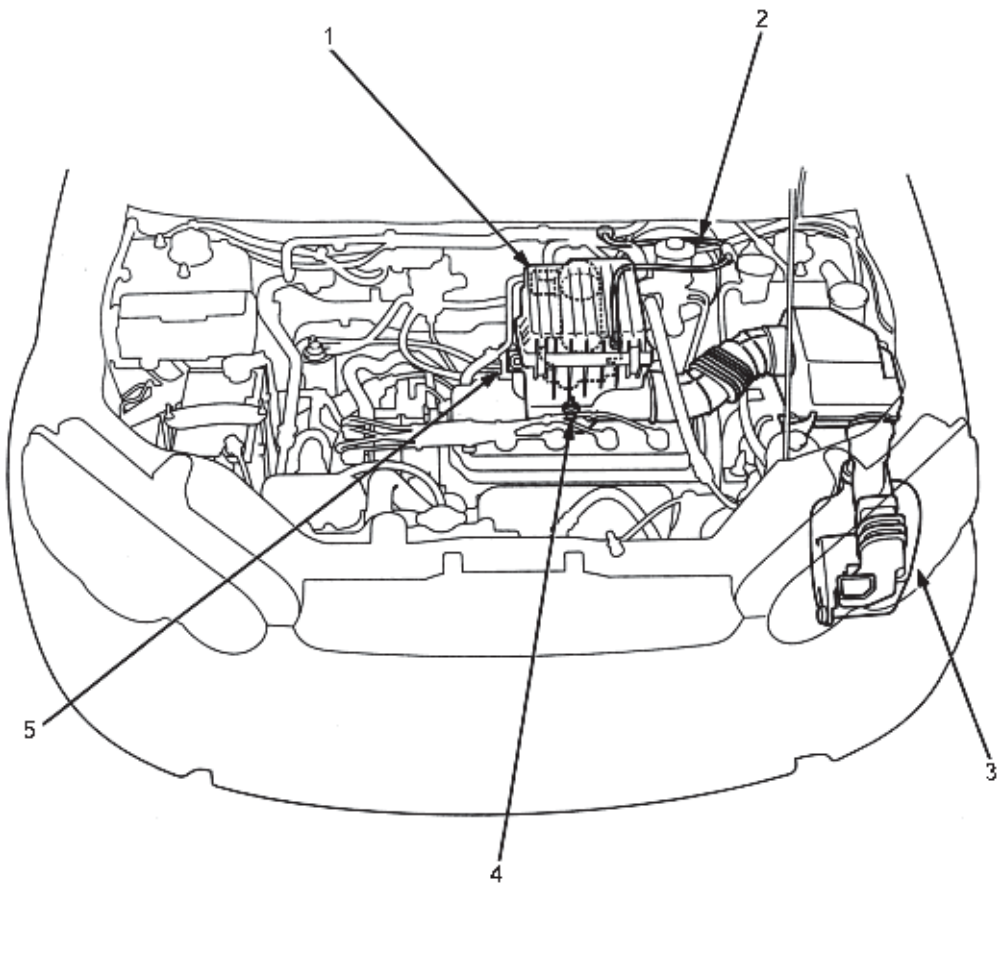


1. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE** (With TWC models)
   Troubleshooting, (**See Page** 11-108)
2. **THROTTLE POSITION (TP) SENSOR**
   Troubleshooting, (**See Page** 11-41)
3. **INTAKE AIR TEMPERATURE (IAT) SENSOR**
   Troubleshooting, (**See Page** 11-44)
4. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
   Troubleshooting, (**See Page** 11-34)
5. **IDLE AIR CONTROL (IAC) VALVE**
   Troubleshooting, (**See Page** 11-63)
6. **POWER STEERING PRESSURE (PSP) SWITCH**
   Troubleshooting, (**See Page** 11-71)
7. **PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)** (With TWC models)
   Troubleshooting, (**See Page** 11-32)
   Replacement (**See Page** 11-60)
8. **ENGINE COOLANT TEMPERATURE (ECT) SENSOR**
   Troubleshooting , (**See Page** 11-39)
9. **VEHICLE SPEED SENSOR (VSS)**
   Troubleshooting, (**See Page** 11-49)
10. **TOP DEAD CENTRE/CRANKSHAFT POSITION/CYLINDER POSITION (CKP/TDC/CYP) SENSOR** (Is built into the distributor)
    Troubleshooting, (**See Page** 11-37)
11. **ELECTRICAL LOAD DETECTOR (ELD)** (KG, KE, KQ, KU models)
    Troubleshooting, (**See Page** 11-51)

With TWC model:

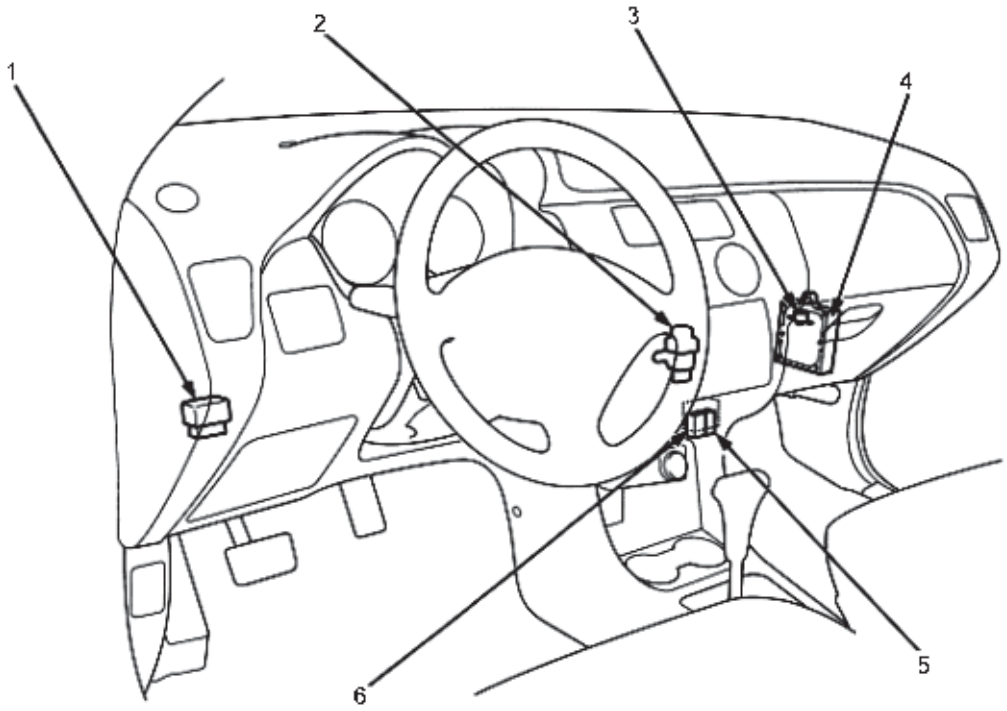


1. **SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)** (except KU model)
   Troubleshooting, (**See Page** 11-58)
   Replacement, (**See Page** 11-60)
2. **EXHAUST GAS TEMPERATURE (EGT) SENSOR** (except KU model)
   Troubleshooting, (**See Page** 11-56)
3. **THREE WAY CATALYTIC CONVERTER (TWC)**
   Inspection, (**See Page** 11-104)



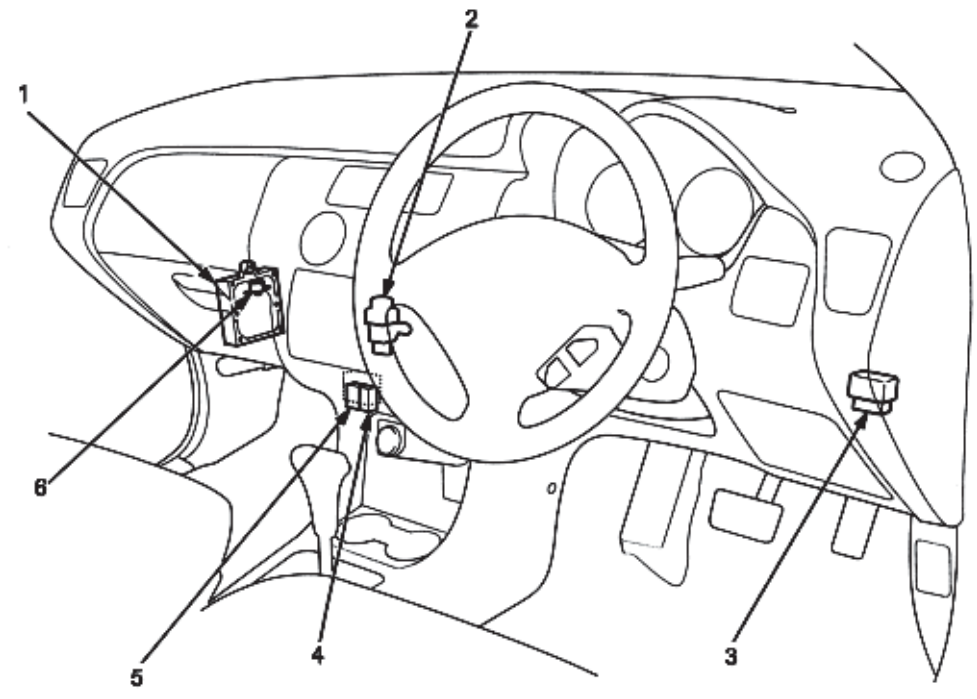
1. **AIR CLEANER (ACL)**
   Replacement**,** (**See Page** 11-99)
2. **THROTTLE CABLE**
   Inspection/Adjustment, (**See Page** 11-100)
   Installation, (**See Page** 11-100)
3. **RESONATOR**
4. **POSITIVE CRANKCASE VENTILATION (PCV) VALVE**
   Inspection, (**See Page** 11-105)
5. **THROTTLE BODY (TB)**
   Inspection(**See Page** 11-101)
   Disassembly, (**See Page** 11-102)

LHD:

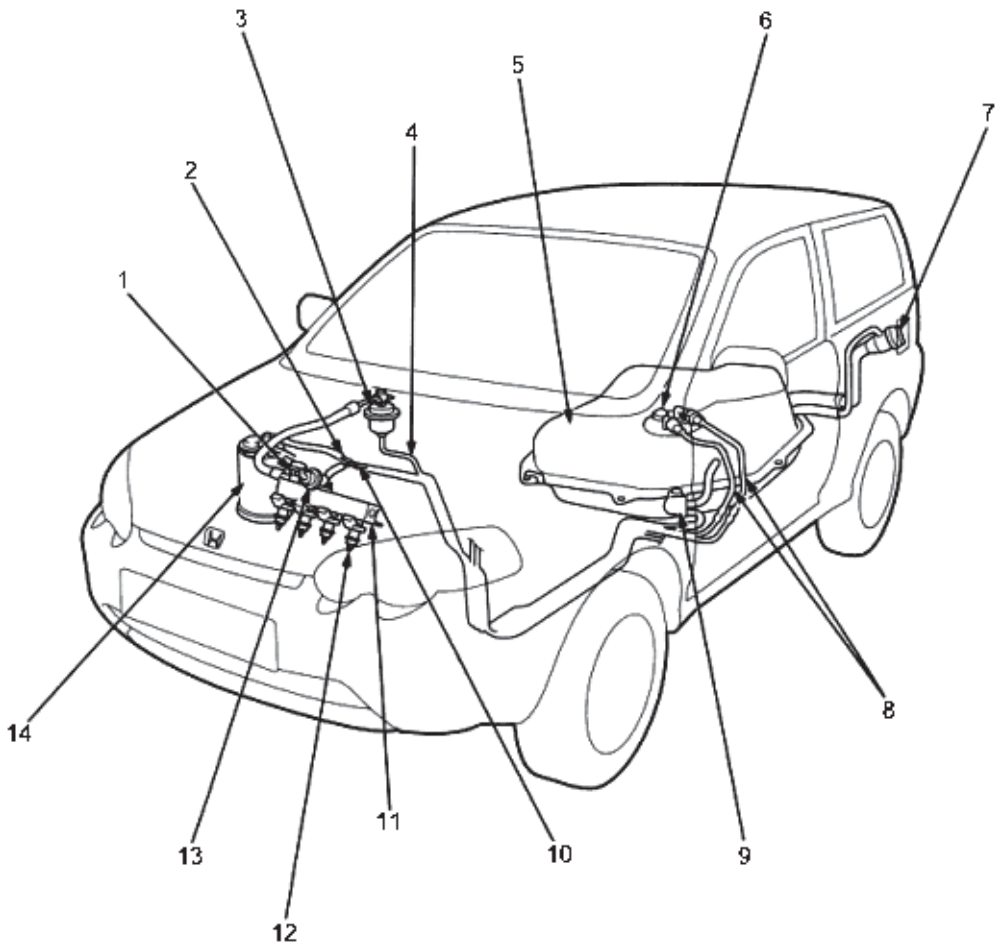


1. **PGM-FI MAIN RELAY**
   Relay testing, (**See Page** 11-92)
   Troubleshooting, (**See Page** 11-93)
2. **INERTIA SWITCH**
   Description, (**See Page** 11-91)
3. **IDLE MIXTURE ADJUSTER (IMA)**
   (Without TWC models)
   Troubleshooting, (**See Page** 11-46)
4. **ENGINE CONTROL MODULE (ECM/POWERTRAIN CONTROL MODULE (PCM)**
   Removal, (**See Page** 11-15)
   Troubleshooting Procedures, (**See Page** 11-13)
   Troubleshooting, (**See Page** 11-27)
5. **SERVICE CHECK CONNECTOR**
   Self-diagnostic Procedures, (**See Page** 11-13)
6. **DATA LINK CONNECTOR** (DLC) (3P)

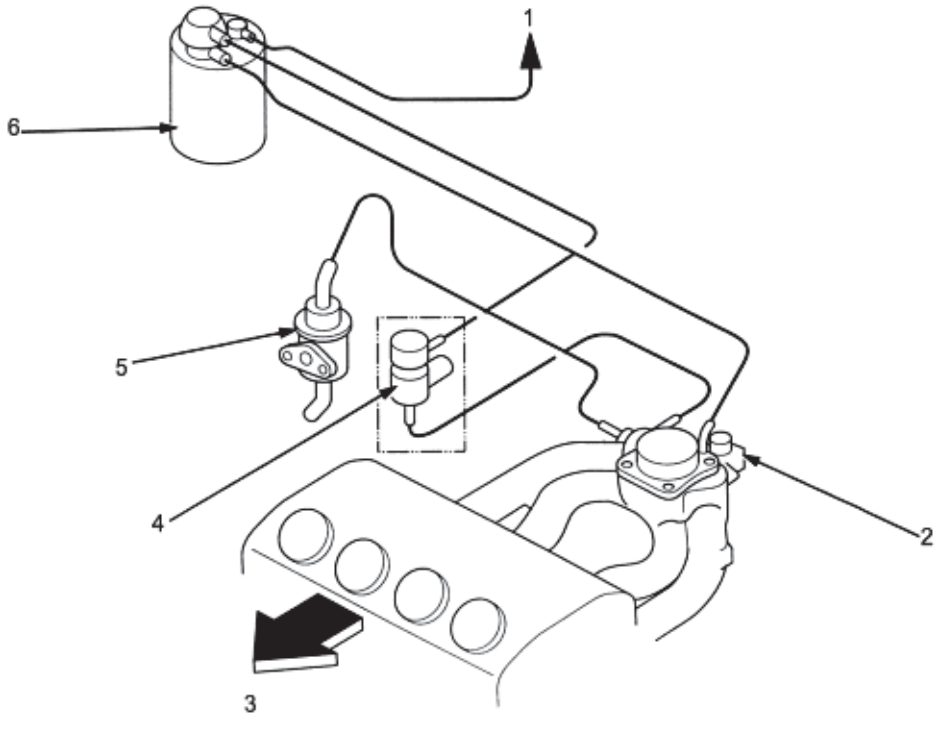
RHD:



1. **ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)**
   Removal, (**See Page** 11-15)
   Troubleshooting, Procedure, (**See Page** 11-13)
   Troubleshooting, (**See Page** 11-27)
2. **INERTIA SWITCH**
   Description, (**See Page** 11-91)
3. **PGM-FI MAIN RELAY**
   Relay testing, (**See Page** 11-92)
   Troubleshooting, (**See Page** 11-93)
4. **DATA LINK CONNECTOR** (DLC) (3P)
5. **SERVICE CHECK CONNECTOR**
   Self-diagnostic Procedures, (**See Page** 11-13)
6. **IDLE MIXTURE ADJUSTER (IMA)**
   (Without TWC models)
   Troubleshooting, (**See Page** 11-46)

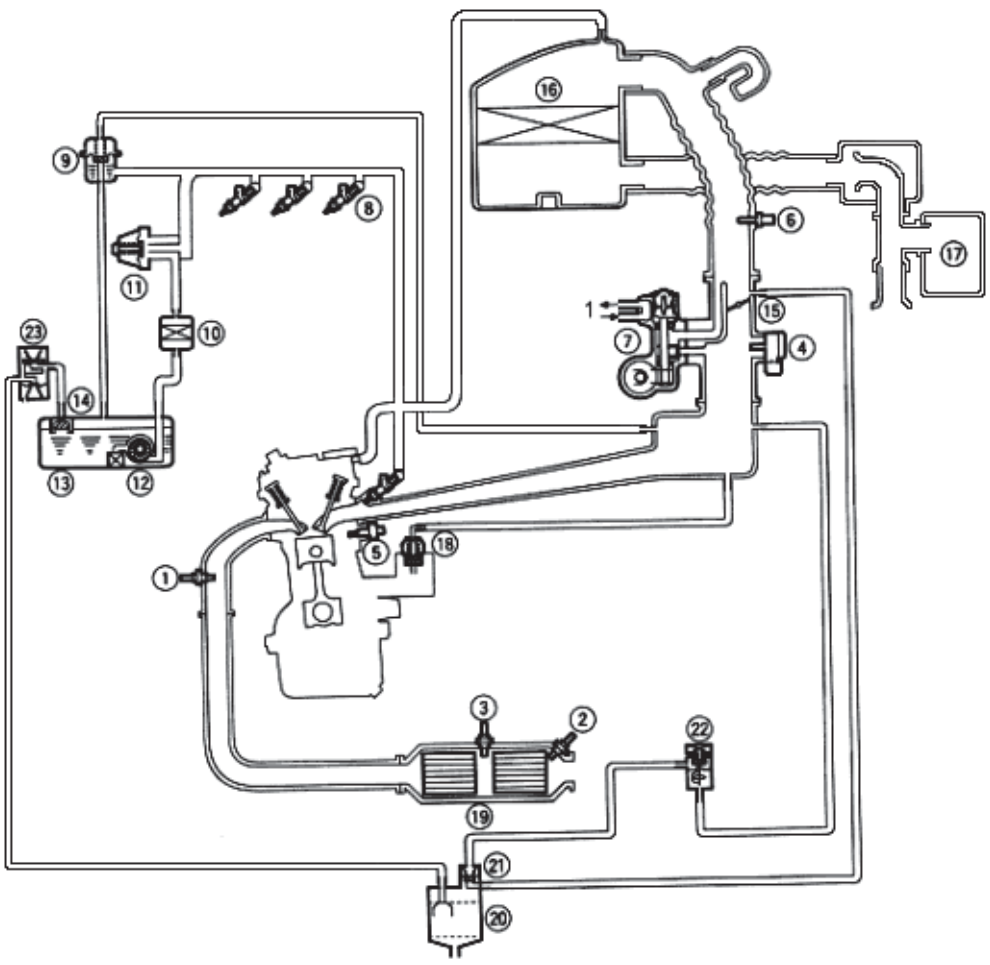


1. **FUEL PULSATION DAMPER**
2. **FUEL VAPOUR PIPE**
3. **FUEL FILTER**
   Replacement (**See Page** 11-86)
4. **FUEL FEED PIPE**
5. **FUEL TANK**
   Replacement (**See Page** 11-96)
6. **FUEL PUMP**
   Testing (**See Page** 11-87)
   Replacement (**See Page** 11-87)
   FUEL GAUGE SENDING UNIT
   Testing (**See Page** 11-89)
7. **FUEL FILL CAP**
8. **FUEL TUBE/QUICK-CONNECT FITTINGS**
   Precautions (**See Page** 11-77)
   Disconnection, (**See Page** 11-77)
   Connection (**See Page** 11-78)
9. **EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
   Testing (**See Page** 11-111)
10. **FUEL RETURN PIPE**
11. **FUEL RAIL**
12. **FUEL INJECTORS**
    Testing (**See Page** 11-82)
    Replacement (**See Page** 11-83)
13. **FUEL PRESSURE REGULATOR**
    Testing (**See Page** 11-85)
    Replacement, (**See Page** 11-86)
14. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
    Troubleshooting, (**See Page** 11-108)
    Testing, (**See Page** 11-110)



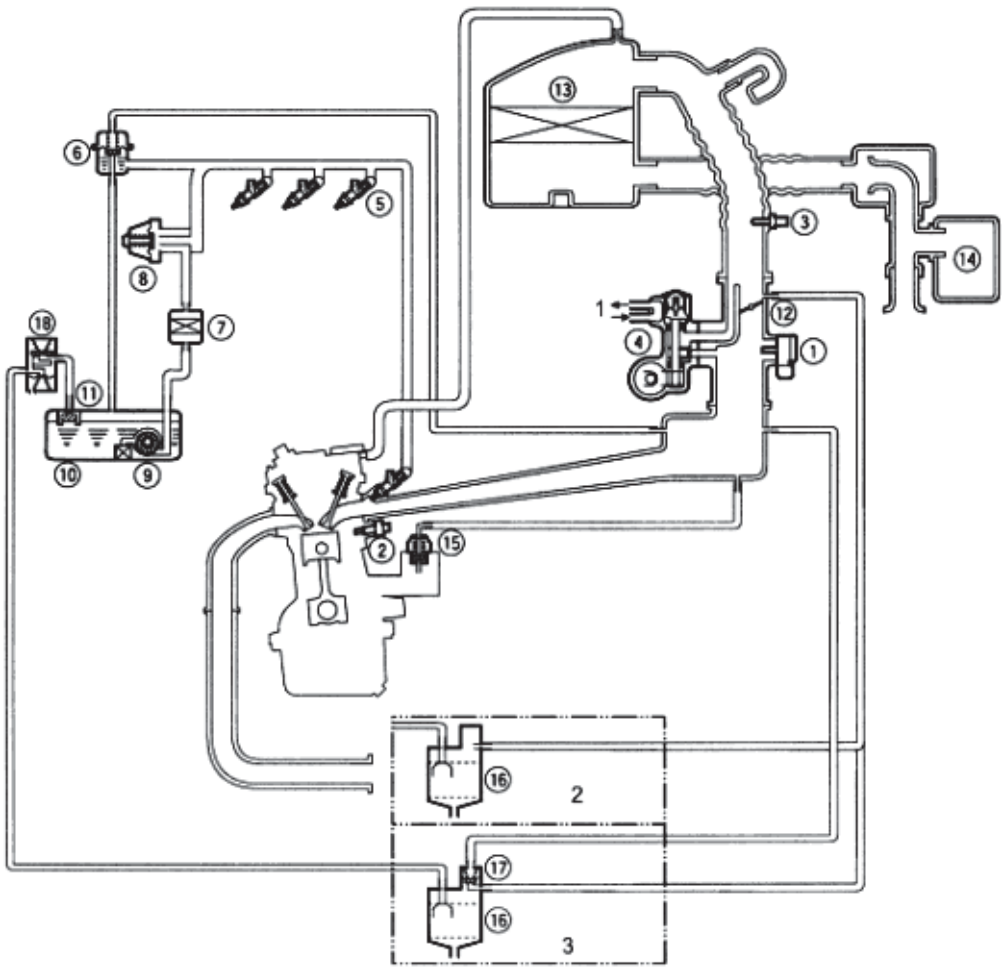
1. **To EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
2. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
3. **FRONT OF VEHICLE**
4. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE** (With TWC models)
5. **FUEL PRESSURE REGULATOR**
6. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**

With TWC models:

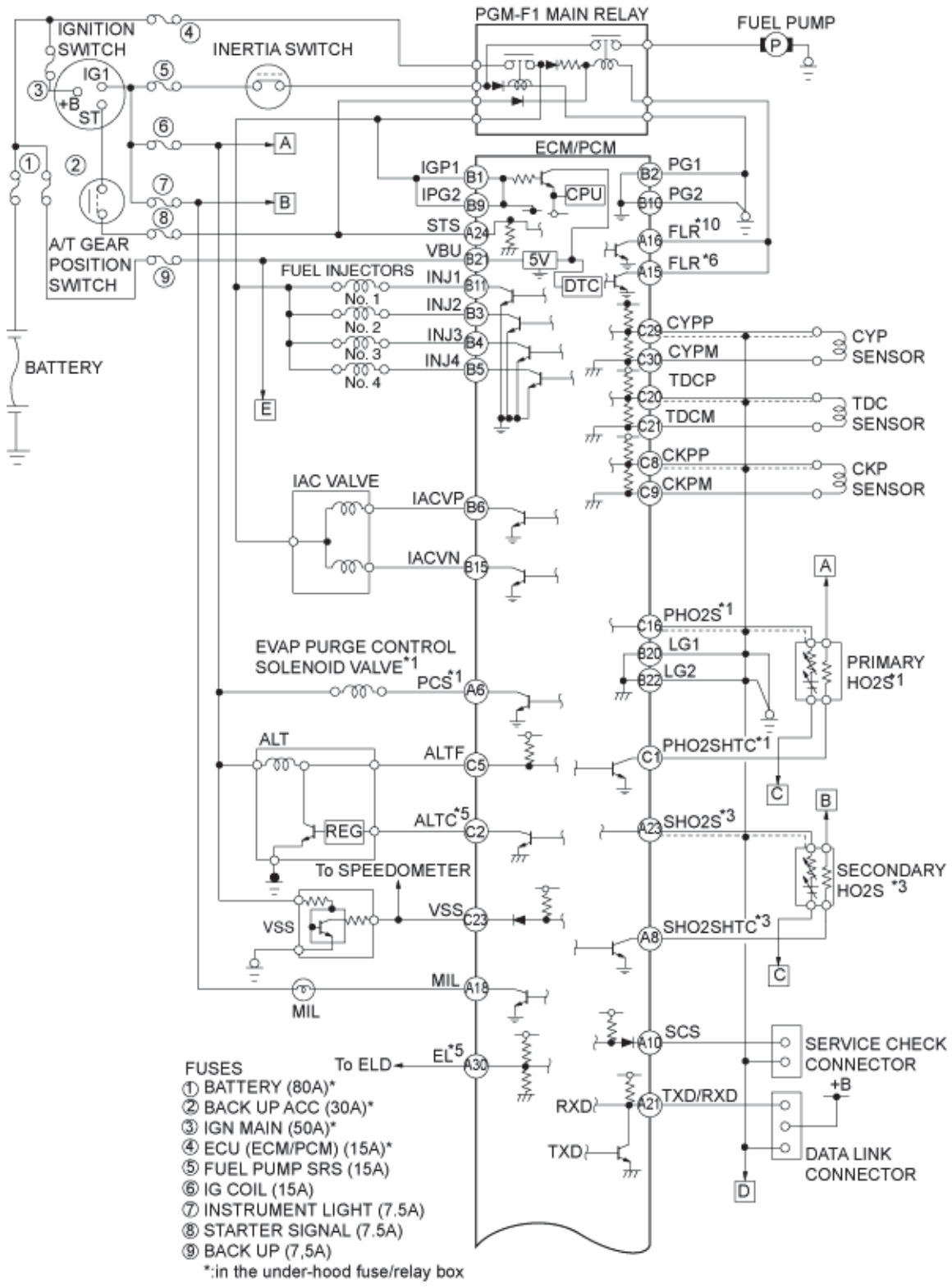


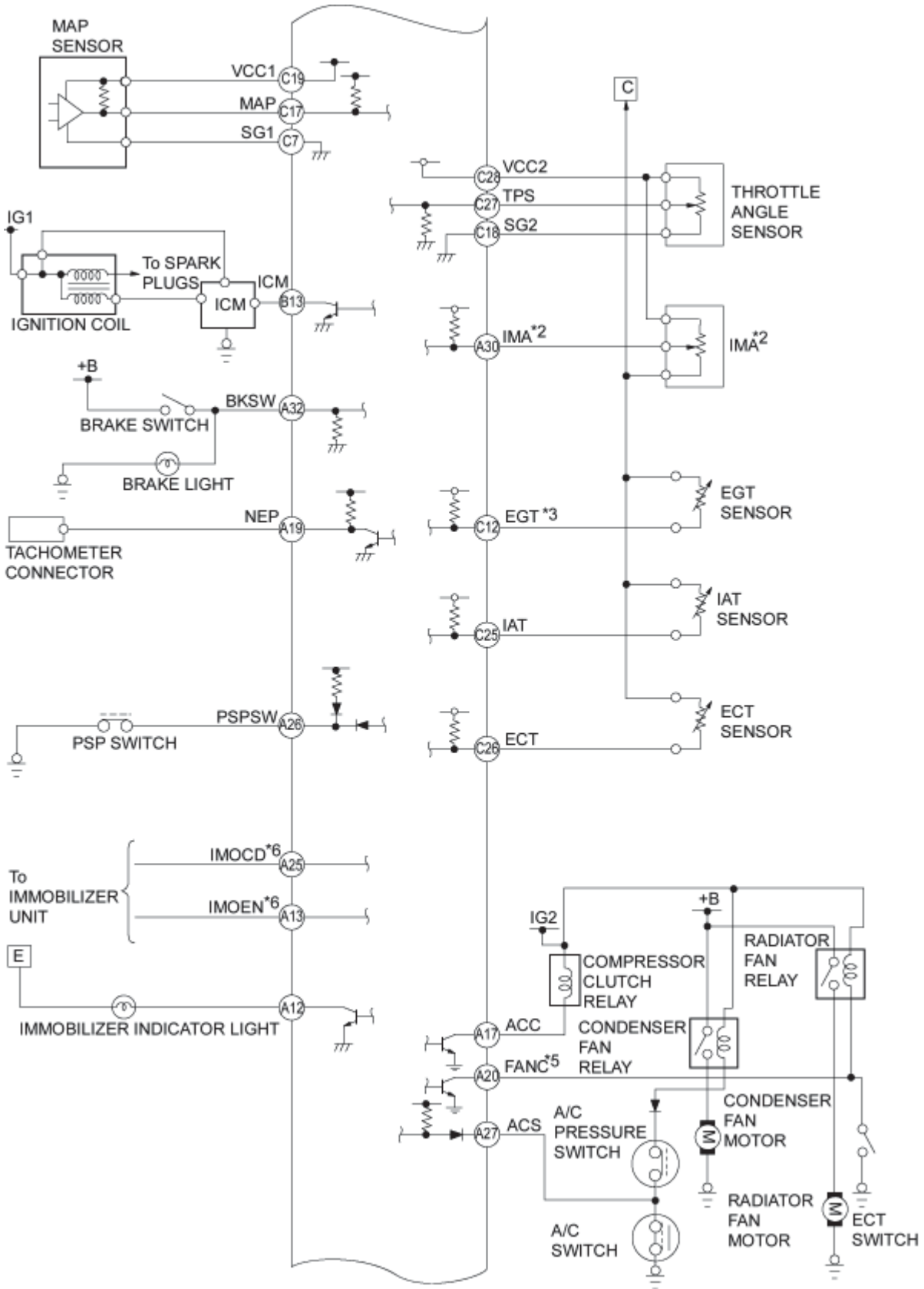
1 Primary heated oxygen sensor (Primary HO2S)
2 Secondary heated oxygen sensor (Secondary HO2S)
3 Exhaust gas temperature (EGT) sensor
4 Manifold absolute pressure (MAP) sensor
5. Engine coolant temperature (ECT) sensor
6 Intake air temperature (IAT) sensor
7 Idle air control (IAC) valve
8 Fuel injector
9 Fuel pressure regulator
10 Fuel filter
11 Fuel pulsation damper
12 Fuel pump (FP)
13 Fuel tank
14 Fuel tank evaporative emission (EVAP) valve
15 Throttle body (TB)
16 Air cleaner
17 Resonator
18 Positive crankcase ventilation (PCV) valve
19 Three way catalytic converter
20 Evaporative emission (EVAP) control canister
21 Evaporative emission (EVAP) purge control diaphragm valve
22 Evaporative emission (EVAP) purge control solenoid valve
23 Evaporative emission (EVAP) two way valve

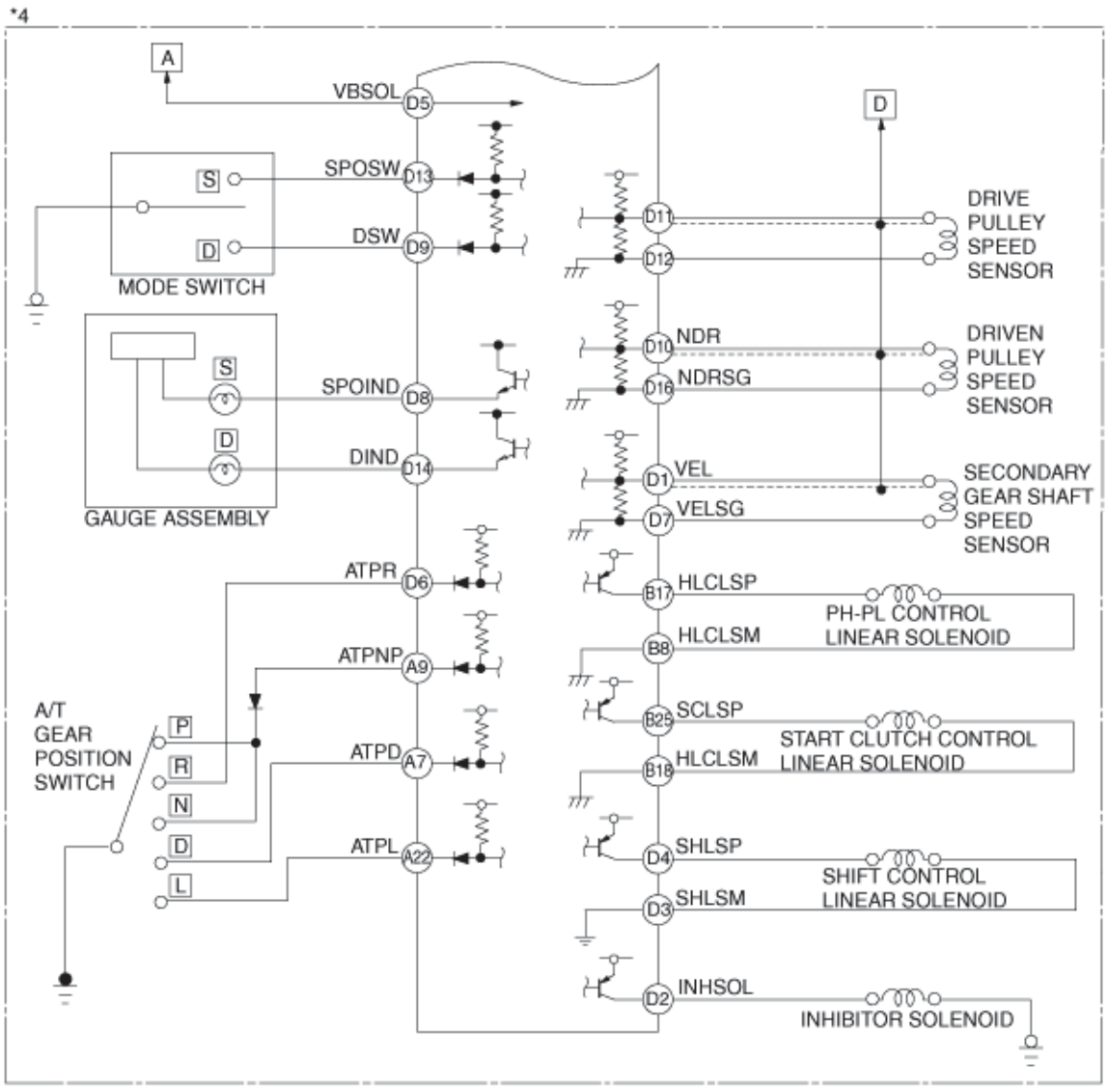
Without TWC models:



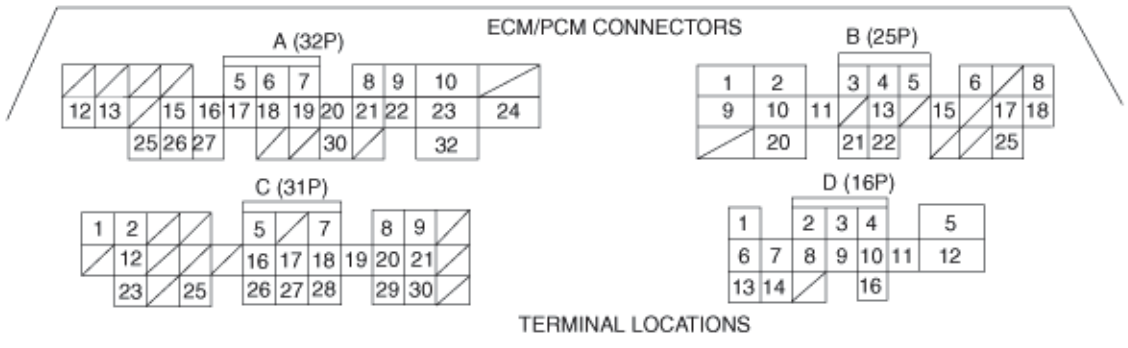
1 Manifold absolute pressure (MAP) sensor
2 Engine coolant temperature (ECT) sensor
3 Intake air temperature (IAT) sensor
4 Idle air control (IAC) valve
5 Fuel injector
6 Fuel pressure regulator
7 Fuel filter
8 Fuel pulsation damper
9 Fuel pump (FP)
10 Fuel tank
11 Fuel tank evaporative emission (EVAP) valve
12 Throttle body (TB)
13 Air cleaner
14 Resonator
15 Positive crankcase ventilation (PCV) valve
16 Evaporative emission (EVAP) control canister
17 Evaporative emission (EVAP) purge control diaphragm valve
18 Evaporative emission (EVAP) two way valve


IGNITION SWITCH
IG1
+B
ST
INERTIA SWITCH
PGM-F1 MAIN RELAY
FUEL PUMP
ECM/PCM
A/T GEAR POSITION SWITCH
BATTERY
FUEL INJECTORS
No. 1
No. 2
No. 3
No. 4
IGP1
IPG2
CPU
STS
VBU
5V
DTC
INJ1
INJ2
INJ3
INJ4
PG1
PG2
FLR*10
FLR*6
CYPP
CYPM
CYP SENSOR
TDCP
TDCM
TDC SENSOR
CKPP
CKPM
CKP SENSOR
IAC VALVE
IACVP
IACVN
PHO2S*1
LG1
LG2
PRIMARY HO2S*1
EVAP PURGE CONTROL SOLENOID VALVE*1
PCS*1
ALT
ALTF
PHO2SHTC*1
REG
ALTC*5
SHO2S*3
SECONDARY HO2S *3
To SPEEDOMETER
VSS
SHO2SHTC*3
MIL
SCS
SERVICE CHECK CONNECTOR
To ELD
EL*5
RXD
TXD
TXD/RXD
+B
DATA LINK CONNECTOR
FUSES
① BATTERY (80A)*
② BACK UP ACC (30A)*
③ IGN MAIN (50A)*
④ ECU (ECM/PCM) (15A)*
⑤ FUEL PUMP SRS (15A)
⑥ IG COIL (15A)
⑦ INSTRUMENT LIGHT (7.5A)
⑧ STARTER SIGNAL (7.5A)
⑨ BACK UP (7,5A)
*:in the under-hood fuse/relay box


MAP SENSOR
VCC1
C19
MAP
C17
SG1
C7
C
VCC2
C28
TPS
C27
SG2
C18
THROTTLE ANGLE SENSOR
IG1
To SPARK PLUGS
ICM
ICM
B13
IGNITION COIL
IMA*2
A30
IMA*2
+B
BKSW
A32
BRAKE SWITCH
BRAKE LIGHT
NEP
A19
TACHOMETER CONNECTOR
EGT *3
C12
EGT SENSOR
IAT
C25
IAT SENSOR
PSPSW
A26
PSP SWITCH
ECT
C26
ECT SENSOR
IMOCD*6
A25
To IMMOBILIZER UNIT
IMOEN*6
A13
E
A12
IMMOBILIZER INDICATOR LIGHT
IG2
+B
COMPRESSOR CLUTCH RELAY
RADIATOR FAN RELAY
ACC
A17
CONDENSER FAN RELAY
FANC*5
A20
CONDENSER FAN MOTOR
ACS
A27
A/C PRESSURE SWITCH
A/C SWITCH
RADIATOR FAN MOTOR
ECT SWITCH



*1 : with TWC model
*2 : without TWC model
*3 : with TWC model except KU model
*4: a/t
*5 : KG, KE, KQ, KU models
*6 : KG, KE, KQ, KN, KU models

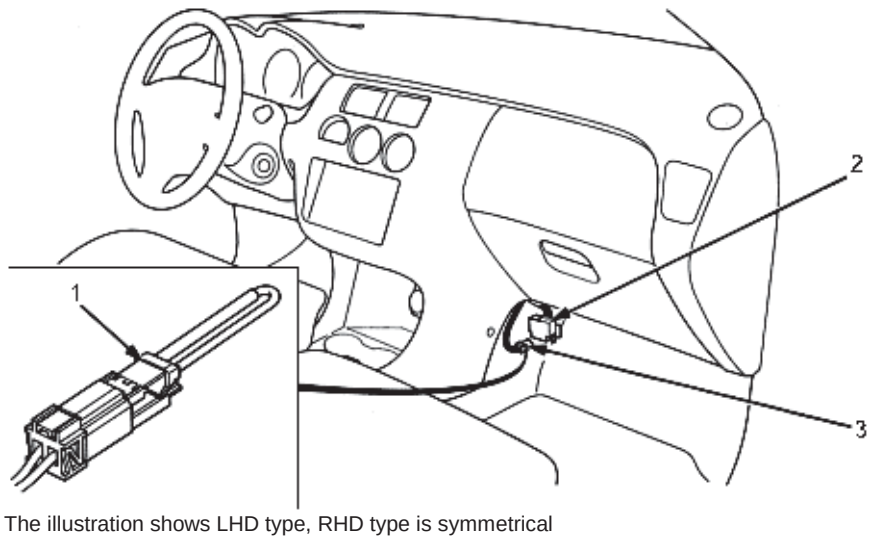


How To Begin Troubleshooting

When the Malfunction indicator Lamp (MIL) has been reported on, check the Diagnostic Trouble Code (DTC) as follows:

NOTE: This operation can also be carried out with Honda PGM Tester connected to data link connector (5P)).

1. Connect the SCS short connector to Service Check Connector as shown (The 2P Service Check Connector is located under the dash on the passenger side of the car). Turn the ignition switch ON (II).

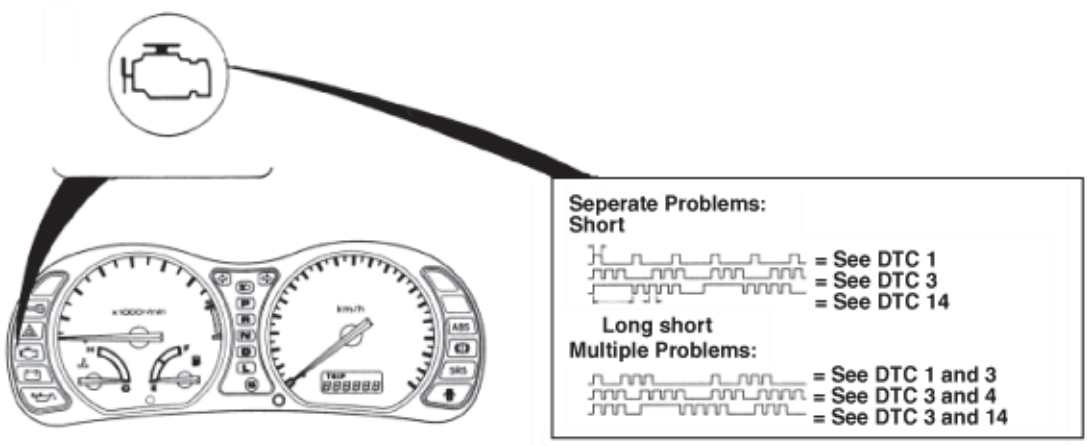


1. **SCS SHORT CONNECTOR, 07PAZ-0010100**
2. **DATA LINK CONNECTOR (3P)**
3. **SERVICE CHECK CONNECTOR (2P)**

The illustration shows LHD type, RHD type is symmetrical

2. Note the Diagnostic Trouble Code (DTC); The MIL indicates a code by the length and number of blinks. The MIL can indicate multiple problems by blinking separate codes, one after another. Codes 1 through to 9 are indicated by individual short blinks. Codes 10 through to 65 are indicated by a series of long and short blinks. The number of long blinks equals the first digit, the number of short blinks equals the second digit. Sometimes the first blink is difficult to see; always count the blinks at least twice to verify the code.

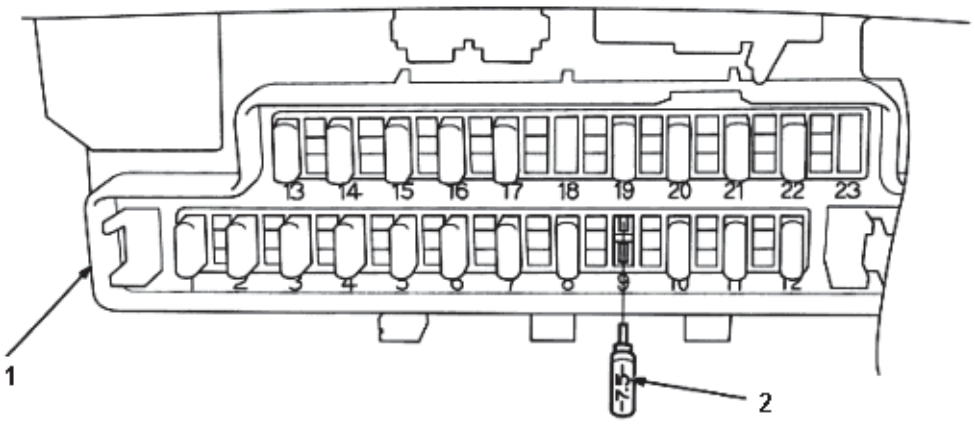
MALFUNCTION INDICATOR LAMP (MIL)



Engine/Powertrain Control Module (ECM/PCM) Reset Procedure

NOTE: This operation can also be carried out with Honda PGM Tester.

1. Turn the ignition switch off.
2. Remove the BACK UP (7.5 A) fuse from the under-dash fuse/relay box for 10 seconds to reset the ECM/PCM.



1. **UNDER-DASH FUSE/RELAY BOX**
2. **BACK UP (7.5 A) FUSE**

The illustration shows LHD type, RHD type is symmetrical

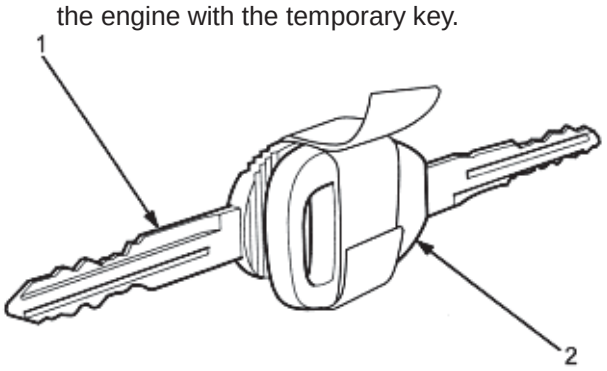
Final Procedure (this procedure must be done after any troubleshooting)

1. Remove the SCS Short Connector
   NOTE: If the SCS short connector is connected and there are not DTCs stored in the ECM/PCM, the MIL will stay on when the ignition switch is turned ON (II).
2. Do the ECM/PCM Reset Procedure.

Known-Good ECM/PCM Substitution (KG, KE, KQ, KU, KN models)

Use the following procedure if you need a known-good ECM/PCM to test a vehicle. It allows you to swap an ECM/PCM from a "donor" vehicle without having to program it to the test vehicle's ignition key.

1. Cut a temporary ignition key for the test vehicle with a non-immobiliser key blank.
2. Remove the ECM/PCM from the test vehicle.
3. Write the test vehicle's VIN on the ECM/PCM you just removed to avoid confusing it with the donor vehicle's ECM/PCM.
4. Remove the known-good ECM/PCM from the donor vehicle and install it in the test vehicle.
5. Tape the donor vehicle's ignition key head-to-head to the test vehicle's temporary key. The ECM/PCM will recognise the code from the donor vehicle's key and allow you to start the engine with the temporary key.

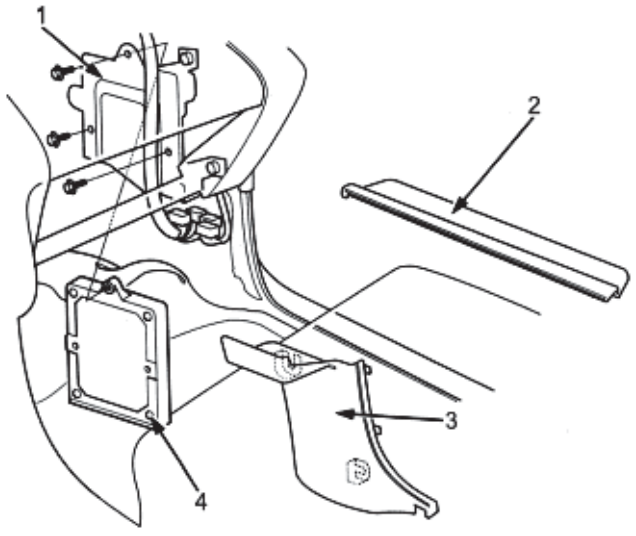


1. **TEMPORARY KEY**
2. **DONOR KEY**

6. After completing your tests, reinstall both ECM/PCMs and destroy the temporary key.

ECM/PCM Removal

If the inspection for a particular code requires voltage or resistance checks at the ECM/PCM connectors, remove the glove box, the passenger's door sill moulding and kick panel. Unbolt the ECM/PCM cover. Check the system according to the procedure described for the appropriate DTC listed on the following pages.

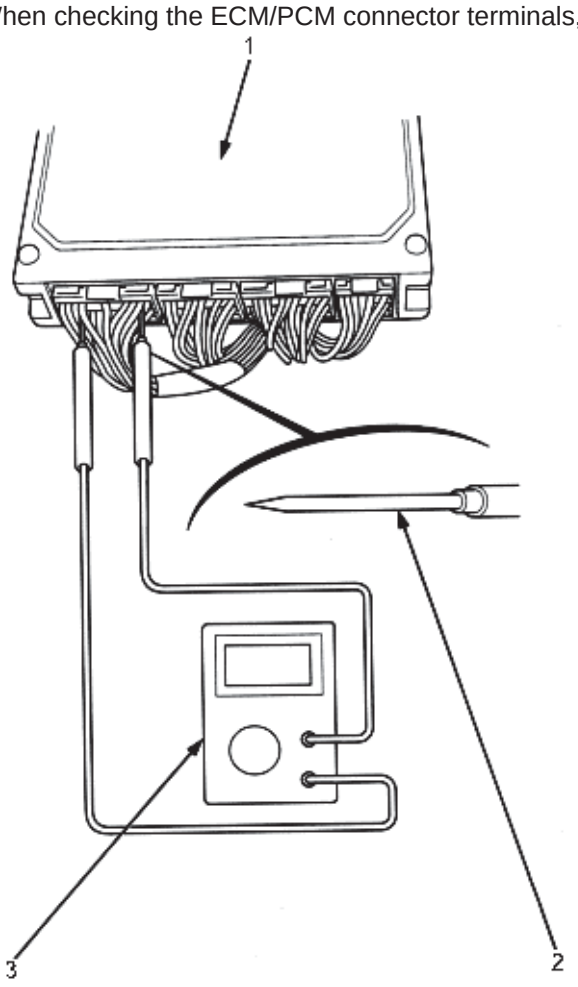


The illustration shows LHD type, RHD type is symmetrical

1. **ECM/PCM COVER**
2. **DOOR SILL MOULDING**
3. **KICK PANEL**
4. **ECM/PCM**

Checking The ECM/PCM Connector Terminals

When checking the ECM/PCM connector terminals, gently slide the sharp tester probe from the wire side into the connector until it comes in contact with the terminal end of the wire.



1. **ECM/PCM**
2. **SHARP TESTER PROBE**
3. **DIGITAL CIRCUIT TESTER**
   Commercially available or
   07411-0020000

NOTE: Across each row in the chart, the systems that could be sources of a symptom are ranked in the order they should be inspected starting with 1. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the tope of that column. If inspection shows the system is OK, try the next most likely system 2. etc.

PAGE / SYSTEM / SYMPTOM		ENGINE/ POWERTRAIN CONTROL MODULE	HEATED OXYGEN SENSOR*1	MANIFOLD ABSOLUTE PRESSURE SENSOR	TOP DEAD CENTRE/ CRANKSHAFT POSITION/ CYLINDER POSITION SENSOR	ENGINE COOLANT TEMPERATURE SENSOR	THROTTLE POSITION SENSOR	INTAKE AIR TEMPERATURE SENSOR	IDLE MIXTURE ADJUSTER*2
		11-27	11-32, 53, 58	11-34	11-37	11-39	11-41	11-44	11-45
MALFUNCTION INDICATOR LAMP (MIL) TURNS ON		or							
MALFUNCTION INDICATOR LAMP (MIL) BLINKS		0 or *	1 or 41 or 53*3 or 55*3	3	4 or 8 or 9	6	7	10	11
ENGINE WON'T START		1			3				
DIFFICULT TO START ENGINE WHEN COLD		BU		3	3	1			
IRREGULAR IDLING	WHEN COLD FAST IDLE OUT OF SPEC	BU				3			
	ROUGH IDLE	BU		3					
	WHEN WARM ENGINE SPEED TOO HIGH	BU				3			
	WHEN WARM ENGINE SPEED TOO LOW	BU							
FREQUENT STALLING	WHILE WARMING UP	BU				3			
	AFTER WARMING UP	BU							
POOR PERFORMANCE	MISFIRE OR ROUGH RUNNING	BU		2	3				
	FAILS EMISSION TEST	BU	3	2					
	LOSS OF POWER	BU		3			2		

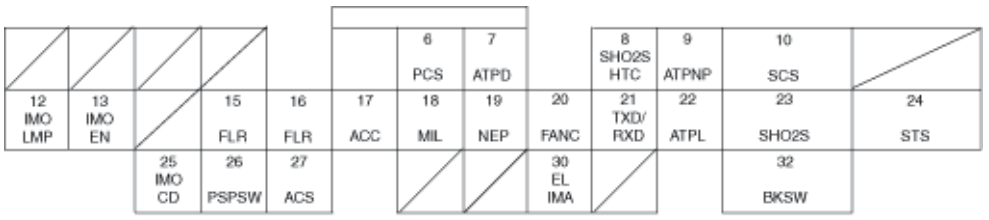
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-27)
(**See Page** 11-32)
(**See Page** 11-53)
(**See Page** 11-58)
(**See Page** 11-34)
(**See Page** 11-37)
(**See Page** 11-39)
(**See Page** 11-41)
(**See Page** 11-44)
(**See Page** 11-46)

* : If codes other than those listed above are indicated, count the number of blinks again. If the MIL is in fact blinking these codes, replace the ECM/PCM.
BU If the MIL is on while the engine is running, connect the SCS short connector to the service check connector. If no code is displayed (MIL stays on steady), the back-up system is in operation.
Substitute a known-good ECM/PCM and recheck. If the indication goes way, replace the original ECM/PCM.
*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model

PGM-Fi		IDLE CONTROL		FUEL SUPPLY			
VEHICLE SPEED SENSOR	EXHAUST GAS TEMPERATURE SENSOR *3	IDLE AIR CONTROL VALVE	OTHER IDLE CONTROLS	FUEL INJECTOR	OTHER FUEL SUPPLY	INTAKE AIR	EMISSION CONTROL
11-49	11-56	11-63	11-61	11-81	11-74	11-97	11-103
17	55	14					
					2		
					2		
		1	2				
		1	2	2			
		1	2				
		1	2		3		
		2			1		
				1			
							1
				3	1	3	3

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-49)
(**See Page** 11-56)
(**See Page** 11-63)
(**See Page** 11-61)
(**See Page** 11-81)
(**See Page** 11-74)
(**See Page** 11-97)
(**See Page** 11-103)

ECM CONNECTOR A (32P)



Wire side of female terminals

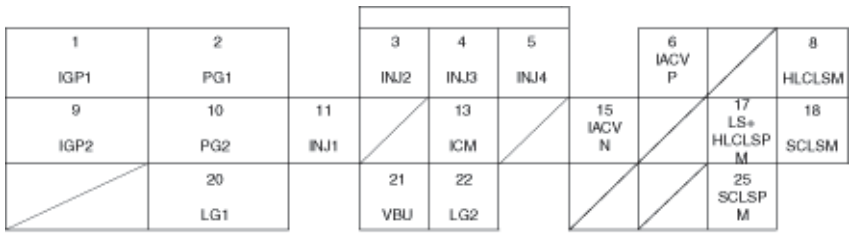
NOTE: Standard battery voltage is 12V.

Terminal No.	Wire Colour	Terminal Name	Description	Signal
6 *1	RED	PCS (EVAP purge control solenoid valve)	Drives EVAP purge control solenoid valve.	With engine running, engine coolant below 74°C (165°F): 0V: With engine running, engine coolant above 74°C (165°F): Battery voltage
7*4	GRN	ATPD (at gear position switch)	Detects A/T gear position switch signal.	In D position 0V In any other position: about 5V
8*3	BLK/WHT	SO2SHTC (Secondary heated oxygen sensor heater control)	Drives secondary heated oxygen sensor heater	With ignition ON (II): Battery voltage With fully warmed up engine running: Duty controlled
9 *4	LT/GRN	ATPNP (at gear position switch)	Detects A/T gear position switch signal	In N or P position 0V In any other position: Battery voltage
10	BRN	SCS (Service check signal)	Detect service check connector signal (the signal causing a DTC indication)	With the terminal connected: 0V With the terminal disconnected: about 5V or Battery voltage
12*6	PNK	IMOLMP (Immobiliser indicator light)	Drives immobiliser indicator light	With immobiliser indicator light turned ON: 0V With immobiliser indicator light turned OFF: Battery voltage
13*6	BLU	IMOEN (Immobiliser enable signal)	Sends immobiliser enable signal	
15*6	GRN/YEL	FLR (Fuel pump relay)	0V for two seconds after turning ignition switch ON (II), then battery voltage	0V for two seconds after turning ignition switch ON (II), then battery voltage
16	GRN/YEL	FLR (Fuel pump relay)	0V for two seconds after turning ignition switch ON (II), then battery voltage	0V for two seconds after turning ignition switch ON (II), then battery voltage
17	BLK/RED	ACC (A/C clutch relay)	Drives A/C clutch relay	With compressor ON: 0V With compressor OFF: Battery voltage
18	GRN/ORN	MIL (Malfunction indication light)	Drives MIL	With MIL turned ON: 0V With MIL turned OFF: Battery voltage
19	BLU/BLK	NEP (Engine speed pulse)	Outputs engine speed pulse	With engine running: Pulses
20*5	GRN	FANC (Radiator fan control)	Drives radiator fan relay	With radiator fan running: 0V With radiator fan stopped: Battery voltage
21	LT BLU	TXD/RXD (DLC)	Sends and receives Honda PGM Tester signal	With ignition switch ON (II): 5V
22	BLU	ATPL (At gear position switch)	Detects A/T gear position switch signal	In L position: 0V In any other position: Battery voltage
23*3	WHT/RED	SHO2S (Secondary heated oxygen sensor, sensor 2)	Detects secondary heated oxygen sensor (sensor 2) signal	With throttle fully opened from idle with fully warmed up engine: Above 0.6V With throttle quickly closed: Below 0.4V
24	BLU/WHT	STS (Starter switch signal)	Detects starter switch signal	With starter switch ON (II): Battery voltage With starter switch OFF: 0V
25*6	RED	IMOCD (Immobiliser code)	Detects immobiliser signal	
26	GRN	PSPSW (P/S pressure switch signal)	Detects PSP switch signal	AT idle with steering wheel in straight ahead position: 0V At idle with steering wheel at full lock: Battery voltage
27	BLU/RED	ACS (A/C switch signal)	Detects A/C switch signal	With A/C switch ON: 0V With A/C switch OFF: Battery voltage
30*5	ORN/RED	EL (ELD)	Detects ELD signal	With parking lights turned on at idle about 2.5-3.5V With A/C switch OFF: Battery voltage
30 *2	ORN/RED	IMA (Idle mixture adjusted)	Detects IMA signal	With ignition switch ON (II): about 0.5-4.5V (depending on idle mixture)
32	GRN/WHT	BKSW (Brake switch)	Detects brake switch	With brake pedal released: 0V

			signal	With brake pedal depressed: Battery voltage

*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model
*4 : A/T
*5 : KG, KE, KQ, KU models
*6 : KG, KE, KQ, KN, KU models

ECM/PCM CONNECTOR B (25P)



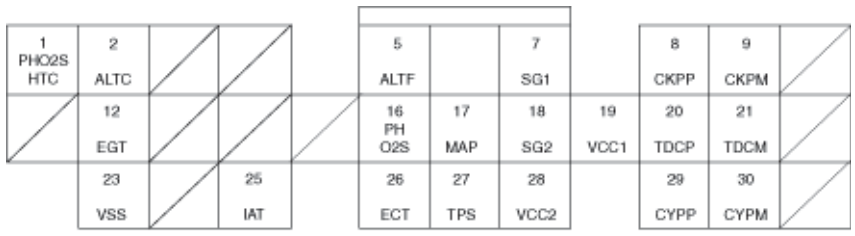
Wire side of female terminals

NOTE: Standard battery voltage is 12V.

Terminal No.	Wire Colour	Terminal Name	Description	Signal
1	YEL/BLK	IGP1 (Power source)	Power source for the ECM/PCM control circuit	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0V
2	BLK	PG1 (Power ground)	Ground for the ECM/PCM control circuit	Less than 1.0V at all times
3	RED	INJ2 (No. 2 fuel injector)	Drives No. 2 fuel injector	With engine running: Duty controlled
4	BLU	INJ3 (No. 3 fuel injector)	Drives No. 3 fuel injector	With engine running: Duty controlled
5	YEL	INJ4 (No. 4 fuel injector)	Drives No. 4 fuel injector	With engine running: Duty controlled
6	BLK/BLU	IACVP (Idle air control valve positive side)	Drives IAC valve (positive side)	With engine running: Duty controlled
8 *4	PNK/BLK	HLCLSM (PH-PL control linear solenoid M side)	PH-PL control linear solenoid power supply negative electrode	With ignition switch ON (II): Duty controlled
9	YEL/BLK	IGP2 (Power source)	Power source for the ECM/PCM control circuit	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0V
10	BLK	PG2 (Power ground)	Ground for the ECM/PCM control circuit	Less than 1.0V at all times
11	BRN	INJ1 (No. 1 fuel injector)	Drives No. 1 fuel injector	With engine running: Duty controlled
13	YEL/GRN	ICM (Ignition control module)	Sends ignition pulse	With ignition switch ON (II): Battery voltage With engine running: Pulses)
15	GRN	IACVN (Idle air control valve negative side)	Drives IAC valve (negative side)	With engine running, Duty controlled
17 *4	GRN/WHT	HLCLSP (PH-PL control linear solenoid P side)	PH-PL control linear solenoid power supply positive electrode	With ignition switch ON (II): Duty controlled
18 *4	PNK/BLU	SCLSM (Start clutch control linear solenoid M side	Start clutch control linear solenoid power supply negative electrode	With ignition switch ON (II): Duty controlled
20	BRN/BLK	LG1 (Logic ground)	Ground for the ECM/PCM control circuit	Less than 1.0V at all times
21	WHT/BLU	VBU (Voltage back up)	Power source for the ECM/PCM control circuit Power source for the DTC memory	Battery voltage at all times
22	BRN/BLK	LG2 (Logic ground)	Ground for the ECM/PCM control circuit	Less than 1.0V at all times
25 *4	YEL	SCLSP (Start clutch control linear solenoid **P** side)	Start clutch control linear solenoid power supply positive electrode	With ignition switch ON (II): Duty controlled

*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model
*4 : A/T
*5 : KG, KE, KQ, KU models
*6 : KG, KE, KQ KN, KU models

ECM/PCM CONNECTOR C (31P)



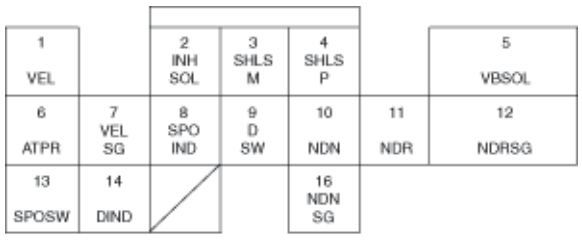
Wire side of female terminals

NOTE: Standard battery voltage is 12V.

Terminal No.	Wire Colour	Terminal Name	Description	Signal
1*1	BLK/WHT	PO2SHTC (Primary heated oxygen sensor heater control)	Drives primary heated oxygen sensor heater	With ignition switch ON (II): Battery voltage With fully warmed up engine running: Duty controlled
2*5	WHT/GRN	ALTC (Alternator control)	Sends alternator control signal	With fully warmed up engine running: Battery voltage During driving with small electrical load: 0V
5	WHT/RED	ALTF (Alternator FR signal)	Detects alternator FR signal	With fully warmed up engine running: 0V - battery voltage (depending on electrical load)
7	GRN/WHT	SG1 (Sensor ground)	Ground for MAP sensor	Less than 1.0V at all times
8	BLU	CKPP (CKP sensor P side)	Detects CKP sensor	With engine running: Pulses
9	WHT	CKPM (CKP sensor M side)	Ground for CKP sensor	
12	BLK/WHT	EGT (exhaust gas temperature sensor))	Detects EGT sensor signal	With ignition switch ON (II): about 0.1-4.8V (depending on exhaust gas temperature)
16*1	WHT	PHO2S (Primary heated oxygen sensor, sensor 1)	Detects primary heated oxygen sensor (sensor 1) signal	With throttle fully opened from idle with fully warmed up engine: Above 0.6V With throttle quickly closed: Below 0.4V
17	RED/GRN	MAP (Manifold absolute pressure sensor)	Detects MAP sensor signal	With ignition switch ON (II): About 3V At idle: About 1.0V (depending on engine speed)
18	GRN/BLK	SG2 (Sensor ground)	Sensor ground	Less than 1.0V at all times
19	YEL/RED	VCC1 (Sensor voltage)	Power source to MAP sensor	With ignition switch ON (II): About 5V With ignition switch OFF: 0V
20	GRN	TDCP (TDC sensor P side)	Detects TDC sensor	With engine running: Pulses
21	RED	TDCM (TDC sensor M side)	Ground for TDC sensor	
23	BLU/WHT	VSS (Vehicle speed sensor)	Detects VSS signal	With ignition switch ON (II) and front wheel rotating: Cycles 0V - 5V
25	RED/YEL	IAT (Intake air temperature sensor)	Detects IAT sensor signal	With ignition switch ON (II): About 0.1 - 4.8V (depending on intake air temperature)
26	RED/WHT	ECT (Engine coolant temperature sensor)	Detects ECT sensor signal	With ignition switch ON (II): About 0.1 - 4.8V (depending on engine coolant temperature)
27	RED/BLK	TPS (Throttle position sensor)	Detects TP sensor signal	With throttle fully open: About 4.8V With throttle fully closed: About 0.5V
28	YEL/BLU	VCC2 (Sensor voltage)	Provides sensor voltage	With ignition switch ON (II): About 5V With ignition switch OFF: 0V
29	YEL	CYPP (CYP sensor P side)	Detects CYP sensor	With engine running: Pulses
30	BLK	CYPM (CYP sensor P side)	Ground for CYP sensor	

*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model
*4 : A/T
*5 : KG, KE, KQ, KU models
*6 : KG, KE, KQ KN, KU models

PCM CONNECTOR D (16P) *4



Wire side of female terminals

NOTE: Standard battery voltage is 12V.

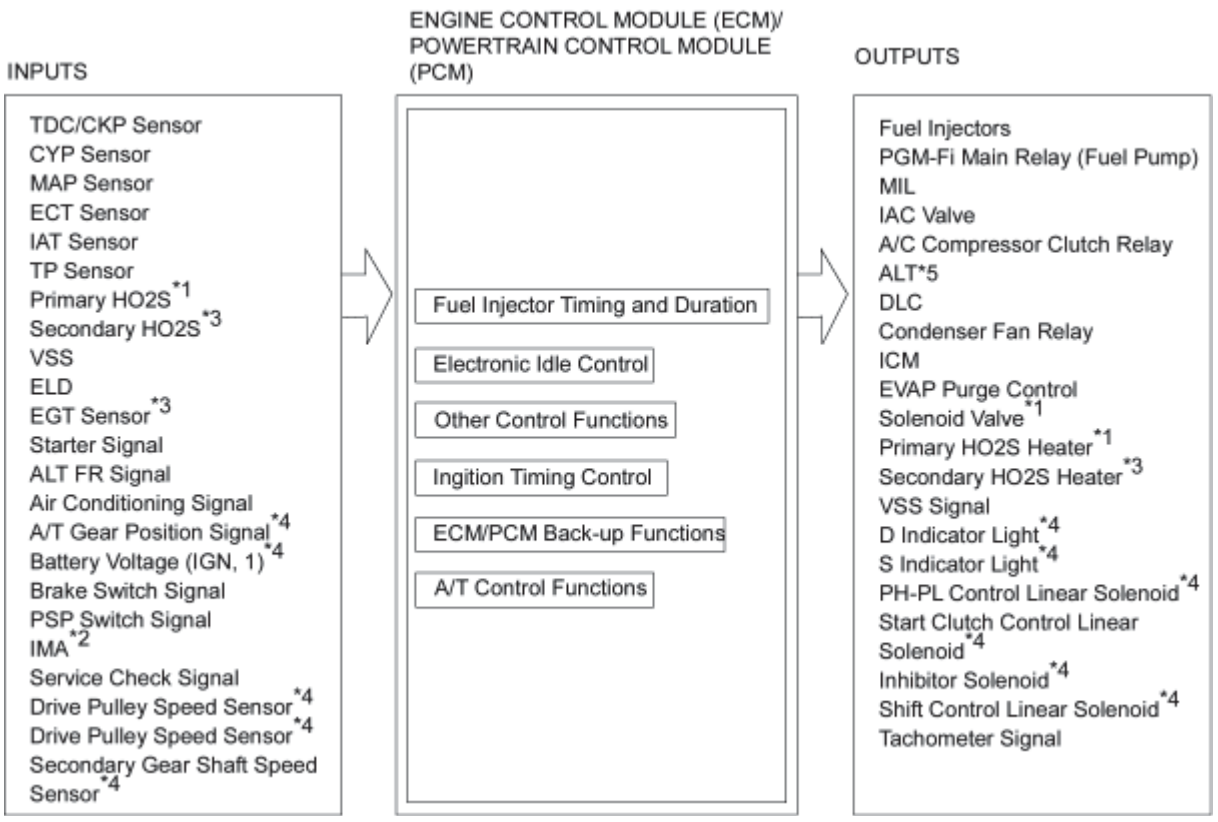
Terminal No.	Wire Colour	Terminal Name	Description	Signal
1	WHT/RED	VEL (Secondary gear shaft speed sensor)	Secondary gear shaft speed sensor	Depending on vehicle speed: Pulses When vehicle is stopped: 0V
2*4	GRN/BLK	INHSOL (Inhibitor solenoid control)	Inhibitor solenoid control	With inhibitor solenoid ON: Battery voltage With inhibitor solenoid OFF: 0V
3*4	GRN/YEL	SHLS M (Shift control linear solenoid M side)	Shift control linear solenoid power supply negative	With ignition switch ON (II): Pulses
4*4	BLU/WHT	SHLS P (Shift control linear solenoid P side)	Shift control linear solenoid power supply negative	With ignition switch ON (II): Pulses
5*4	BLK/YEL	VBSOL (Battery voltage for solenoid valve)	Power source of solenoid valve	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0V
6*4	WHT	ATPR (At gear position switch)	Detects A/T gear position switch signal	In **R** position: 0V In any other position: Battery voltage
7*4	BLK/WHT	VELSG (Secondary gear shaft speed sensor ground)	Ground for secondary gear shaft speed sensor	
8*4	LT GRN	SPOIND (S indicator light)	Drives **S** indicator	With **S** indicator turned ON: Battery voltage With **S** indicator turned OFF: 0V
9*4	BLU	DSW (D mode switch)	Detects **D** mode switch signal	With **D** mode switch ON: 0V With **D** mode switch OFF: Battery Voltage
10*4	WHT	NDN (Driven pulley speed sensor)	Detects driven pulley speed sensor signal	In other than **N** or **P** position: Pulses
11*4	RED/BLU	NDR (Drive pulley speed sensor)	Detects drive pulley speed sensor signal	In other than **N** or **P** position: Pulses
12*4	GRN	NDRSG (Drive pulley speed sensor ground)	Ground for drive pulley speed sensor	
13*4	YEL	SPOSW (S mode switch)	Detects **S** mode switch signal	With **S** mode switch ON: 0V With **S** mode switch OFF: Battery voltage
14*4	GRN/BLK	DIND (D indicator light)	Drives **D** indicator	With **D** indicator turned ON: Battery voltage With **D** indicator turned OFF: 0V
16	RED/WHT	NDNSG (Driven pulley speed sensor ground)	Ground for driven pulley speed sensor	

*4 : A/T

DIAGNOSTIC TROUBLE CODE (DTC)	SYSTEM INDICATED	Page
0	Engine/Powertrain control module (ECM/PCM)	(**see page**11-27)
1	Primary heated oxygen sensor (Primary HO2S)	(**see page**11-32)
3	Manifold absolute pressure (MAP) sensor	(**see page**11-34)
4	Crankshaft position (CKP) sensor	(**see page**11-37)
6	Engine coolant temperature (ECT) sensor	(**see page**11-39)
7	Throttle position (TP) sensor	(**see page**11-41)
8	Top dead centre position (TDC) sensor	(**see page**11-37)
9	No. 1 Cylinder position (CYP) sensor	(**see page**11-37)
10	Intake air temperature (IAT) sensor	(**see page**11-44)
11	Idle mixture adjuster (IMA)*2	(**see page**11-46)
14	Idle air control (IAC) valve	(**see page**11-63)
17	Vehicle speed sensor (VSS)	(**see page**11-49)
41	Primary heated oxygen sensor (Primary HO2S) heater*1	(**see page**11-53)
55*3	Exhaust gas temperature (EGT) sensor	(**see page**11-56)
63	Secondary heated oxygen sensor (Secondary HO2S)*3	(**see page**11-58)
65	Secondary heated oxygen sensor (Secondary HO2S) heater *3	(**see page**11-53)
70*4	Automatic transmission	Section 14

*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model
*4 : A/T

- If codes other tan those listed above are indicated, verify the code. If the code indicated is not listed above, replace the ECM/PCM (**see page** 11-15) for immobiliser information.
- The MIL may come on, indicating a system problem when, in fact, there is a poor or intermittent electrical connection. First, check the electrical connections, clean or repair connections if necessary.



*1 : with TWC models
*2 : without TWC models
*3 : with TWC models except KU model
*4 : A/T
*5 : KG, KE, KQ, KU models

PGM-FI System

The PGM-FI system on this model is a sequential multiport fuel injection system.

Fuel Injector Timing and Duration

The ECM/PCM contains memories for the basic discharge durations at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

Idle Air Control

When the engine is cold, the A/C compressor is on, the transmission is in gear*4, the brake pedal is depressed *5, the P/S load is high, or the alternator is charging, the ECM/PCM controls current to the IAC Valve to maintain the correct idle speed.

Ignition Timing Control

- The ECM/PCM contains memories for basic ignition timing at various engine speeds and manifold air flow rates. Ignition timing is also adjusted for engine coolant temperature.

Other Control Functions

1. Starting Control
   When the engine is started, the ECM/PCM provides a rich mixture by increasing fuel injector duration.
2. Fuel Pump Control
   - When the ignition switch is initially turned ON (II), the ECM/PCM supplies ground to the PGM-FI main relay that supplies current to the fuel pump for two seconds to pressurise the fuel system.
   - When the engine is running, the ECM/PCM supplies ground to the PGM-FI may relay that supplies current to the fuel pump.
   - When the engine is not running and the ignition is ON (II), the ECM/PCM cuts ground to the PGM-FI main relay which cuts current to the fuel pump.
3. Fuel Cut-off Control
   - During deceleration with the throttle valve closed, current to the fuel injectors is cut off to improve fuel economy at speeds over 1,100 rpm (min-1).
   - Fuel cut-off actin also takes place when engine speed exceeds, 6,900 rpm (min-1), regardless of the position of the throttle valve, to protect the engine from over-revving. With A/T model, when the vehicle stops, the ECM/PCM cuts the fuel at engine speed over 5,000 rpm (min-1).
4. A/C Compressor Clutch Relay
   When the ECM/PCM receives a demand for cooling from the air conditioning system, it delays the compressor from being energised and enriches the mixture to assure smooth transition to the A/C mode.
5. Alternator Control *5
   The system controls the voltage generated at the alternator in accordance with the electrical load and driving mode, which reduces the engine load to improve the fuel economy.
6. Evaporative Emission (EVAP) Purge Control Solenoid Valve*1
   When the engine coolant temperature is below 74°C (165°F), the ECM/PCM supplies a ground to the EVAP purge control solenoid valve which cuts vacuum to the EVAP purge control canister.

ECM/PCM Fail-safe/Back-up Functions

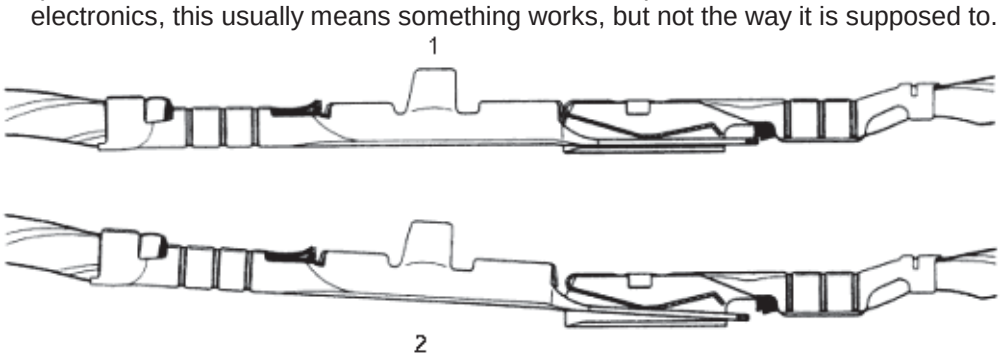
1. Fail-safe Function
   When an abnormality occurs in a signal from a sensor, the ECM/PCM ignores that signal and assumes a pre-programmed value for that sensor that allows the engine to continue to run.
2. Back-up Function
   When an abnormality occurs in the ECM/PCM itself, the fuel injectors are controlled by a back-up circuit independent of the system in order to permit minimal driving.
3. Self-diagnosis Function (Malfunction Indicator Lamp (MIL))
   When an abnormality occurs in a signal from a sensor, the ECM/PCM supplies ground for the MIL and stores the code in erasable memory. When the ignition is initially turned ON (II), the ECM/PCM supplies ground for the MIL for two seconds to check the MIL bulb conditions.

A flowchart is designed to be used from start to final repair. It's like a map showing you the shortest distance. But beware: if you go off the "map" anywhere but a "stop" symbol, you can easily get lost.

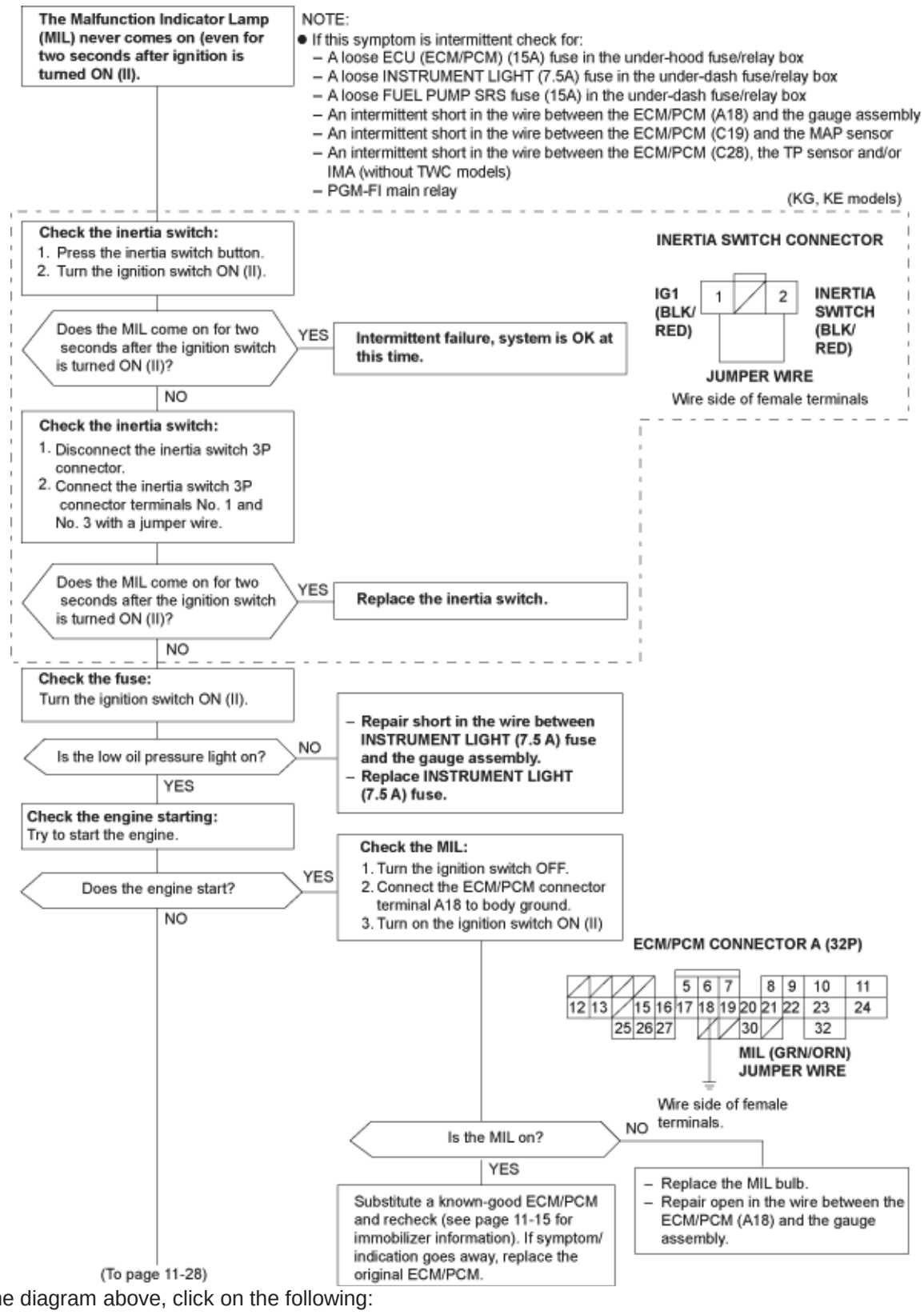
START (bold type)	Describes the conditions or situation to start a troubleshooting flowchart.
ACTION	Asks you to do something; perform a test, set up a condition etc.
DECISION	Asks you about the result of an action, then sends you in the appropriate troubleshooting direction.
STOP (bold type)	The end of a series of actions and decisions, describes a final repair action and sometimes directs you to an earlier part of the flowchart to confirm your repair.

NOTE:

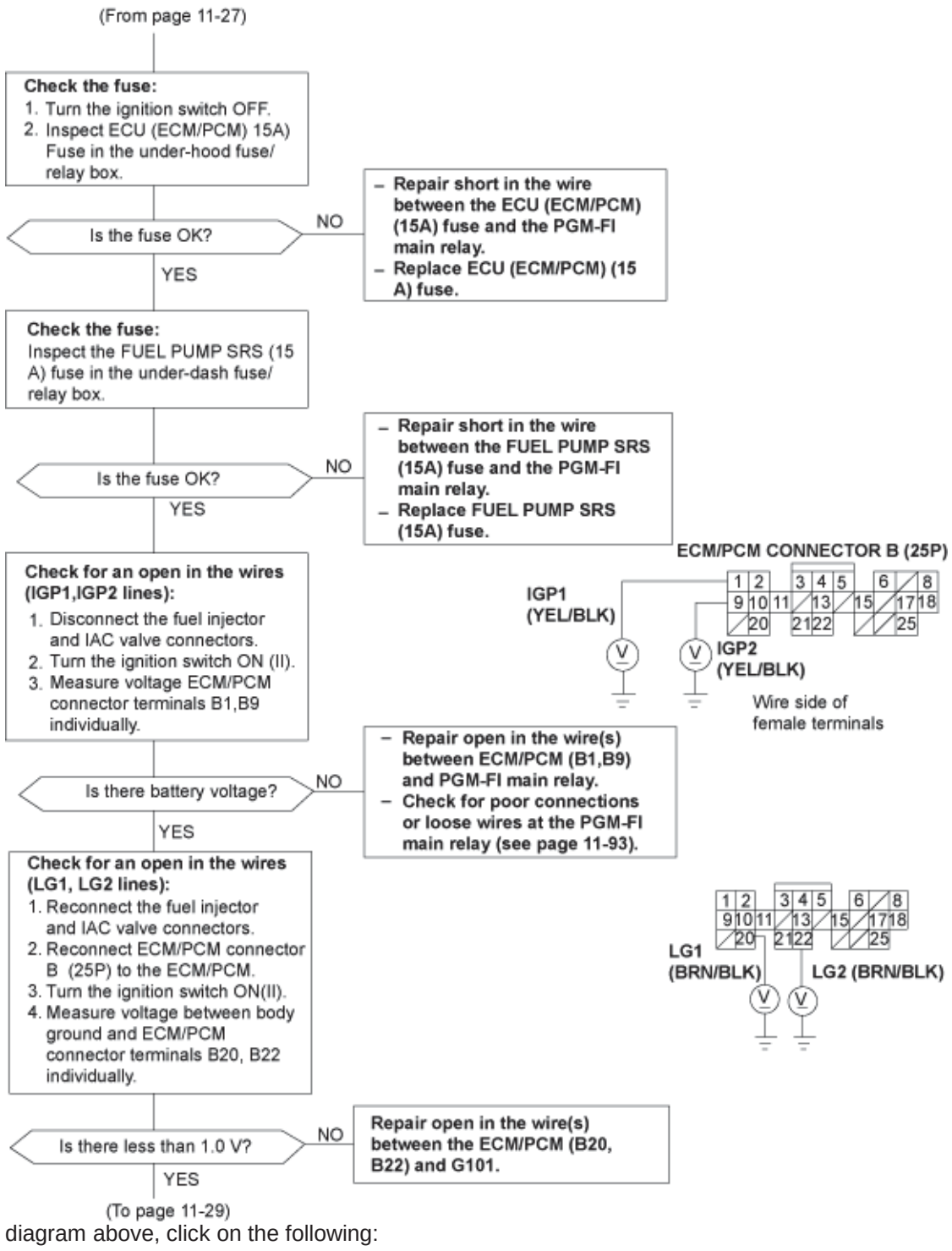
- The term "Intermittent Failure" is used in these charts. It simply means a system may have had a failure, but it checks out OK at this time. If the Malfunction Indicator Lamp (MIL) on the dash does not come on, check for poor connections or loose wires at all connectors related to the circuit that you are troubleshooting (see illustration below).
- Most of the troubleshooting flowcharts have you reset the Engine Control Module (ECM/Powertrain Control Module (PCM) and try to duplicate the Diagnostic Trouble Code (DTC). If the problem is intermittent and you cannot duplicate the code, do not continue through the flowchart. To do so will only result in confusion and, possibly, a needlessly replaced ECM/PCM.
- "pen" 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 works, but not the way it is supposed to.



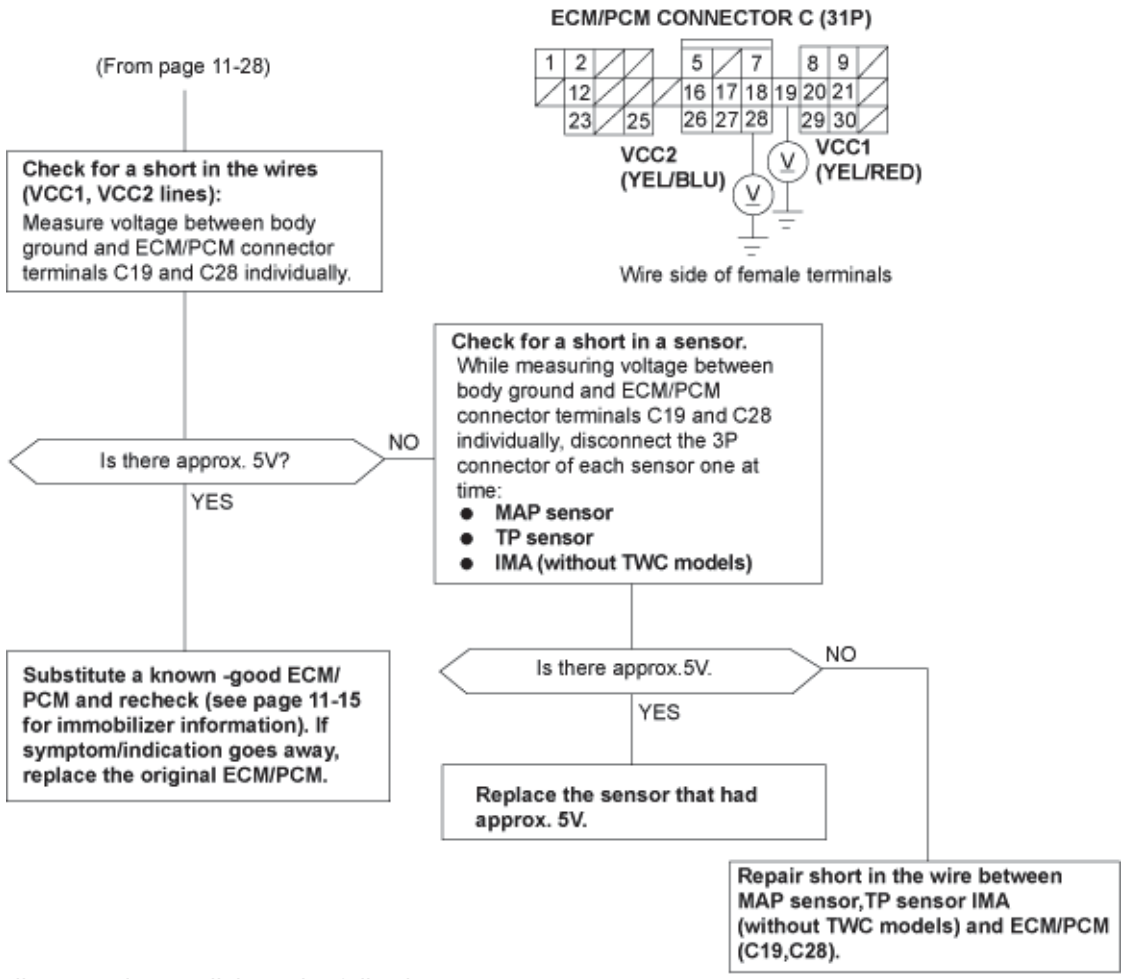
1. **TIGHT**
2. **LOOSE**



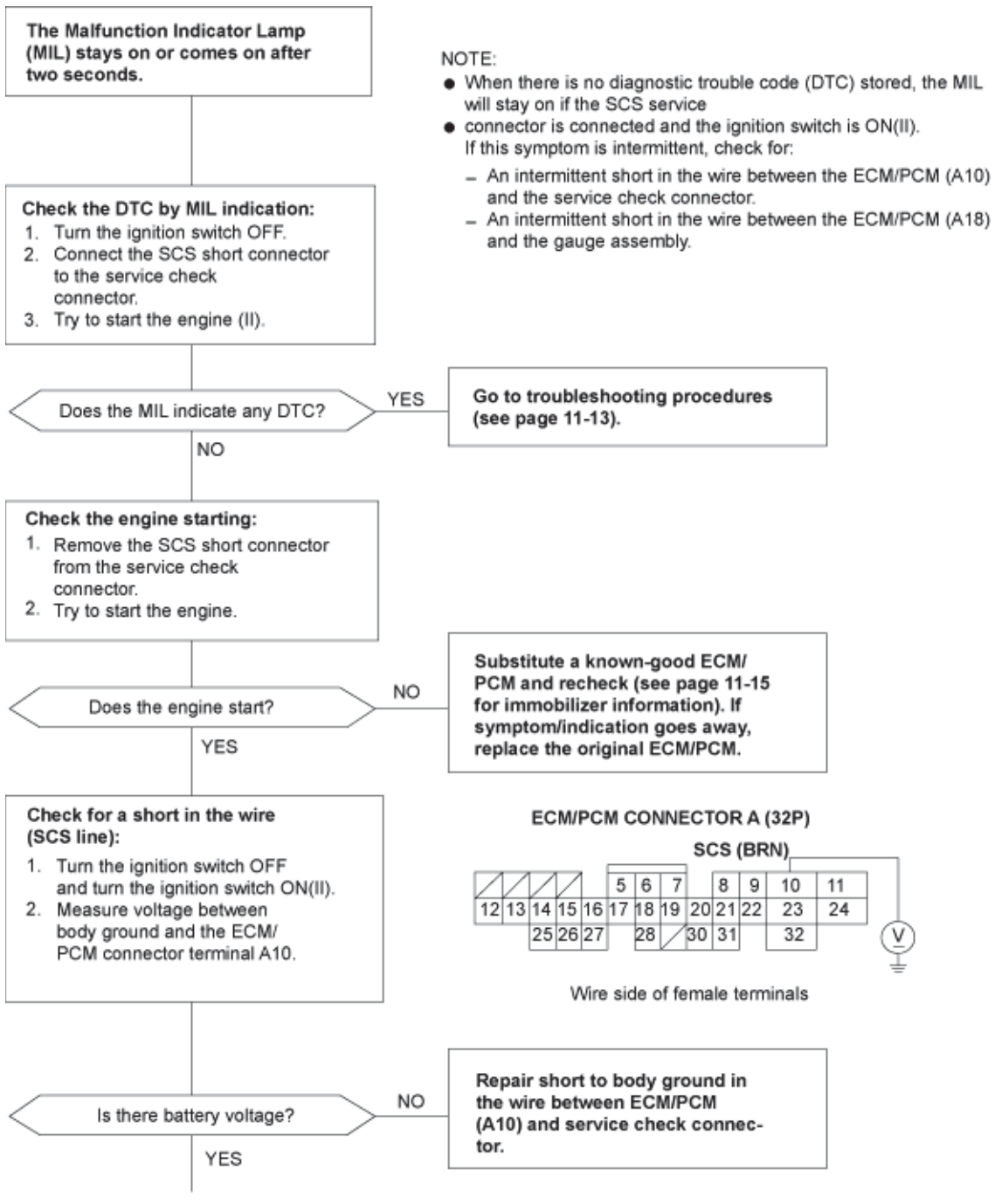
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-93)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



(To page 11-31)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
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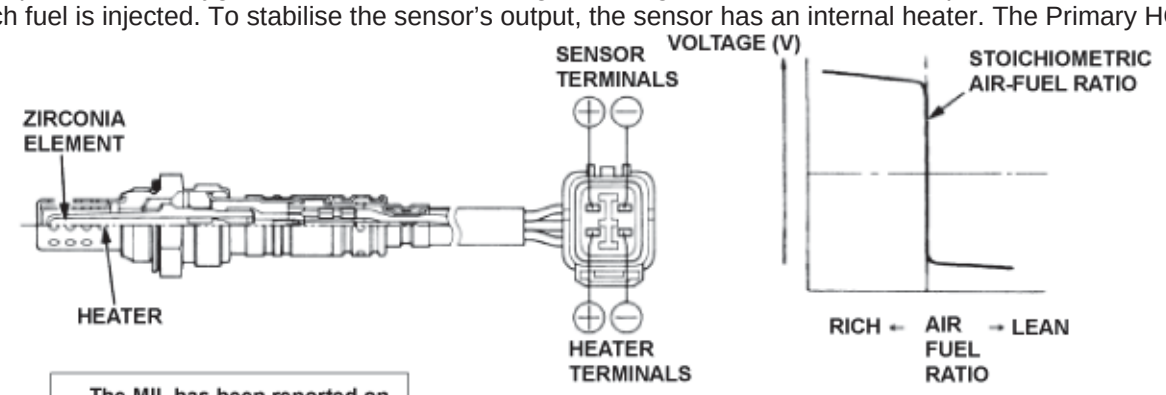
Check for a short in the wire (MIL line):
1. Turn the ignition switch OFF.
2. Disconnect the ECM/PCM connector A (32P).
3. Turn the ignition switch ON (II).

Is the MIL ON?

YES → **Repair short to body ground in the wire between the ECM/PCM (A18) and MIL.**

NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

1 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 1: A problem in the Primary Heated Oxygen Sensor (HO2S) circuit.
The Primary Heated Oxygen Sensor (HO2S) detects the oxygen content in the exhaust gas and signals the ECM/PCM in operation, the ECM/PCM receives the signals from the sensor and varies the duration during which fuel is injected. To stabilise the sensor's output, the sensor has an internal heater. The Primary HO2S is installed in the exhaust manifold.



- The MIL has been reported on.
- With the SCS short connector connected (see page 11-13), code 1 is indicated.

Check the fuel pressure:
Inspect fuel pressure (see page 11-80).

Is it normal? — NO → **Go to fuel supply system.**

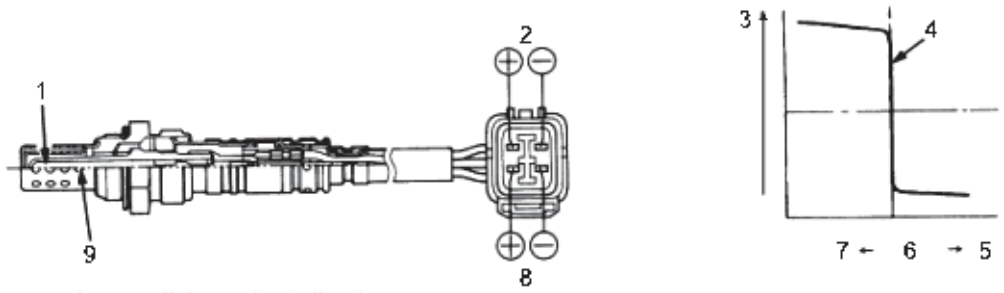
YES

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load (in park or neutral) until the radiator fan comes on, then let it idle for at least one minute before test-driving.
3. Test-drive under following conditions.
   - A/T in [L] position, M/T in 4th gear.
   - Accelerate using wide open throttle for at least five seconds, then decelerate for at least five seconds with the throttle completely closed.

Is the MIL on and does it indicate code 1? — NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires between the primary HO2S and the ECM/PCM.**

YES

(To page 11-33)



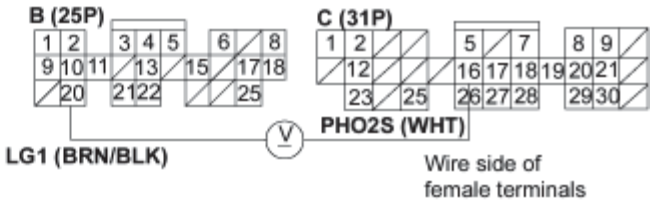
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-80)
(**See Page** 11-14)

(From page 11-32)

Check the ECM/PCM input voltage:

1. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load (in park or neutral) until the radiator fan comes on, then let it idle for at least one minute before test-driving.
2. Measure voltage between ECM/PCM connector terminals B20 and C16.
3. Open the throttle wide open the quickly release it.

ECM/PCM CONNECTORS



Is the voltage above 0.6V at wide open throttle to 4,500 rpm (min-1) and below 0.4V when the throttle is quickly released from 4,500 rpm (min-1)?

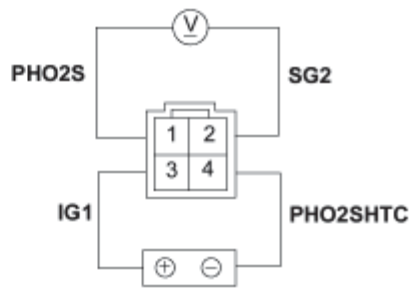
YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

NO

Check the Primary HO2S:

1. Turn the ignition switch OFF.
2. Disconnect the 4P connector from the primary HO2S.
3. At the primary HO2S harness side, connect the battery positive terminal to terminal No.3 and battery negative terminal to terminal No.4.
4. Start the engine.
5. After two minutes, measure voltage between primary HO2S 4P connector terminals No.1 and No.2.

PRIMARY HO2S 4P CONNECTOR



Terminals side of male terminals

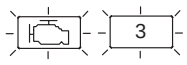
Is the voltage above 0.6V at wide open throttle to 4,500 rpm (min-1) and below 0.4V when the throttle is quickly released from 4,500 rpm (min-1)?

NO → **Replace the Primary HO2S.**

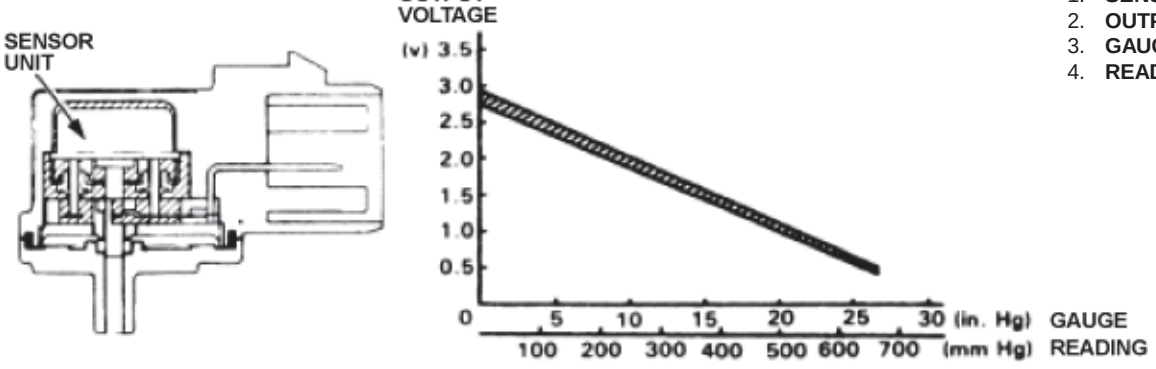
YES

Repair open or short in the wire ECM/PCM (C16) and the Primary HO2S.

To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 3: An electrical problem in the Manifold Absolute Pressure (MAP) Sensor circuit.
The MAP sensor converts manifold absolute pressure into electrical signals and inputs the ECM/PCM.



1. **SENSOR**
2. **OUTPUT VOLTAGE**
3. **GAUGE**
4. **READING**

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 3 is indicated.**

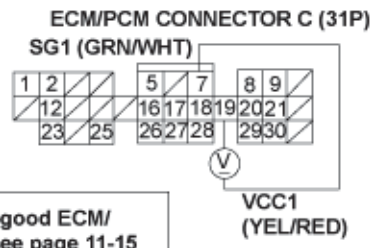
Problem Verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Start the engine and allow it to idle

Is the MIL on and does it indicate code 3?

NO → **Intermittent failure,system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the MAP sensor and the ECM/PCM.**

YES

Check the ECM/PCM output voltage (VCC1 line):
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II).
3. Measure voltage between ECM/PCM connector terminals C7 and C19.



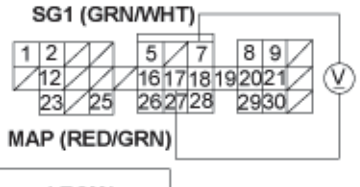
Wire side of female terminals

Is there approx. 5V?

NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

YES

Check the ECM/PCM output voltage (MAP line):
Measure voltage between ECM/PCM connector terminals C7 and C17.



Is there approx. 3V?

YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

NO

(To page 11-35)

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 3 is indicated.**

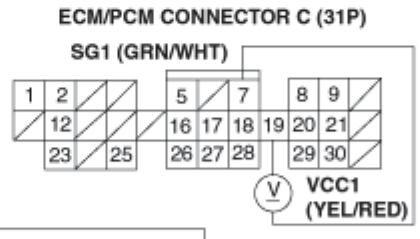
Problem Verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Start the engine and allow it to idle

Is the MIL on and does it indicate code 3?

NO → **Intermittent failure,system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the MAP sensor and the ECM/PCM.**

YES

Check the ECM/PCM output voltage (VCC1 line):
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON(II).
3. Measure voltage between ECM/PCM connector terminals C7 and C19.



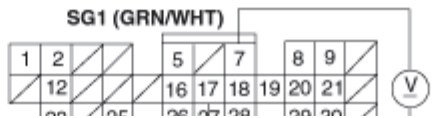
Is there approx. 5V?

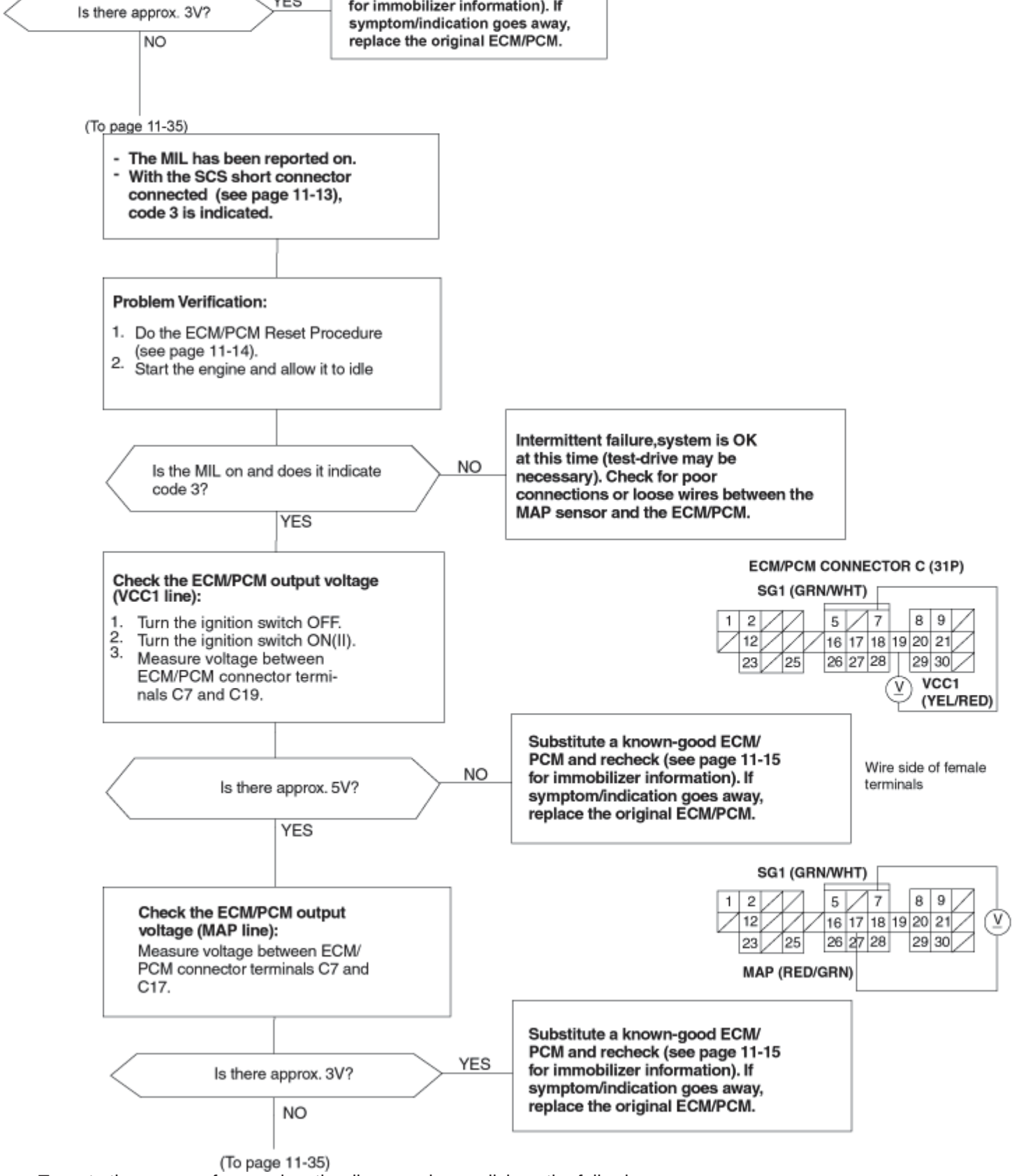
NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

YES

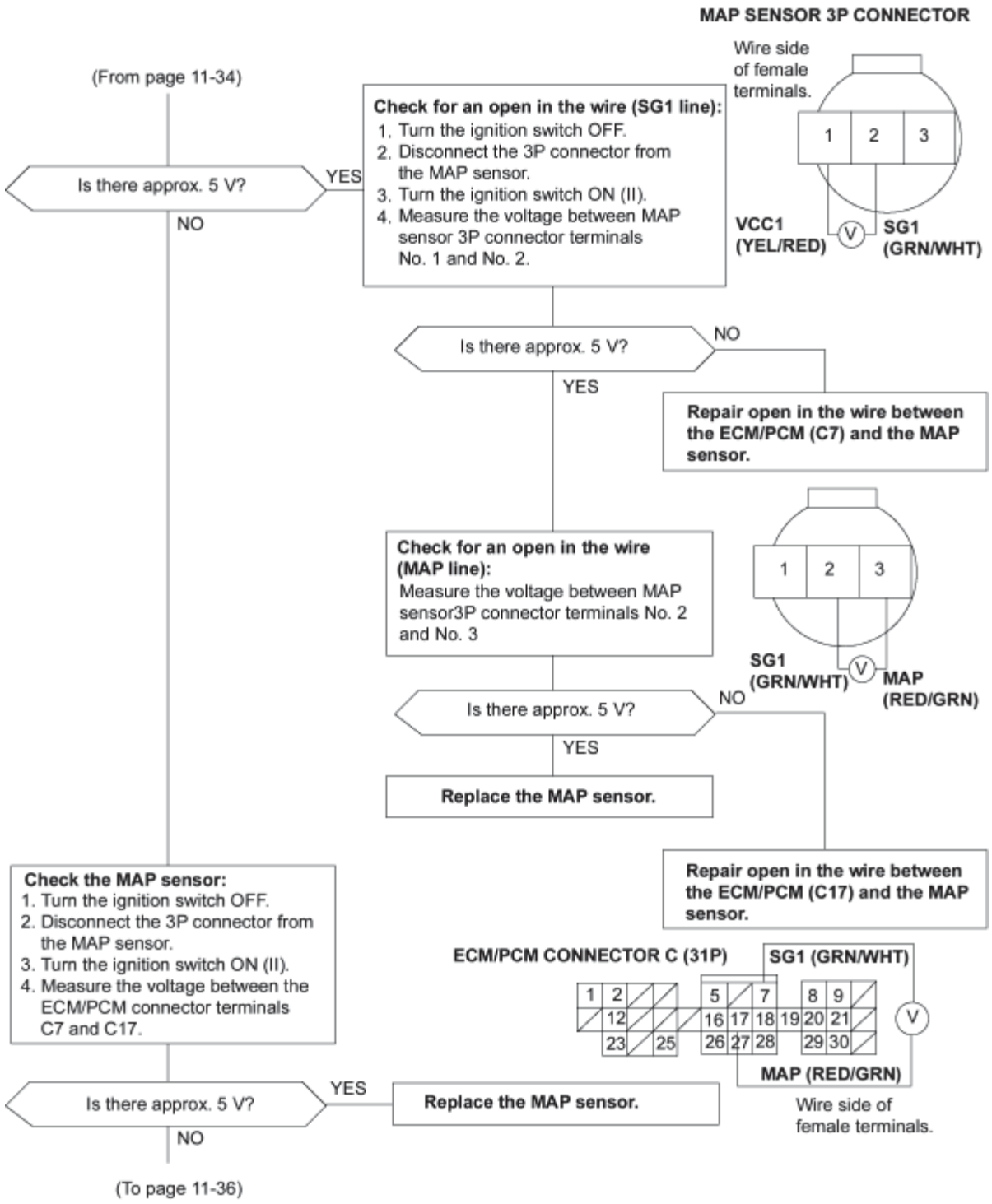
Wire side of female terminals

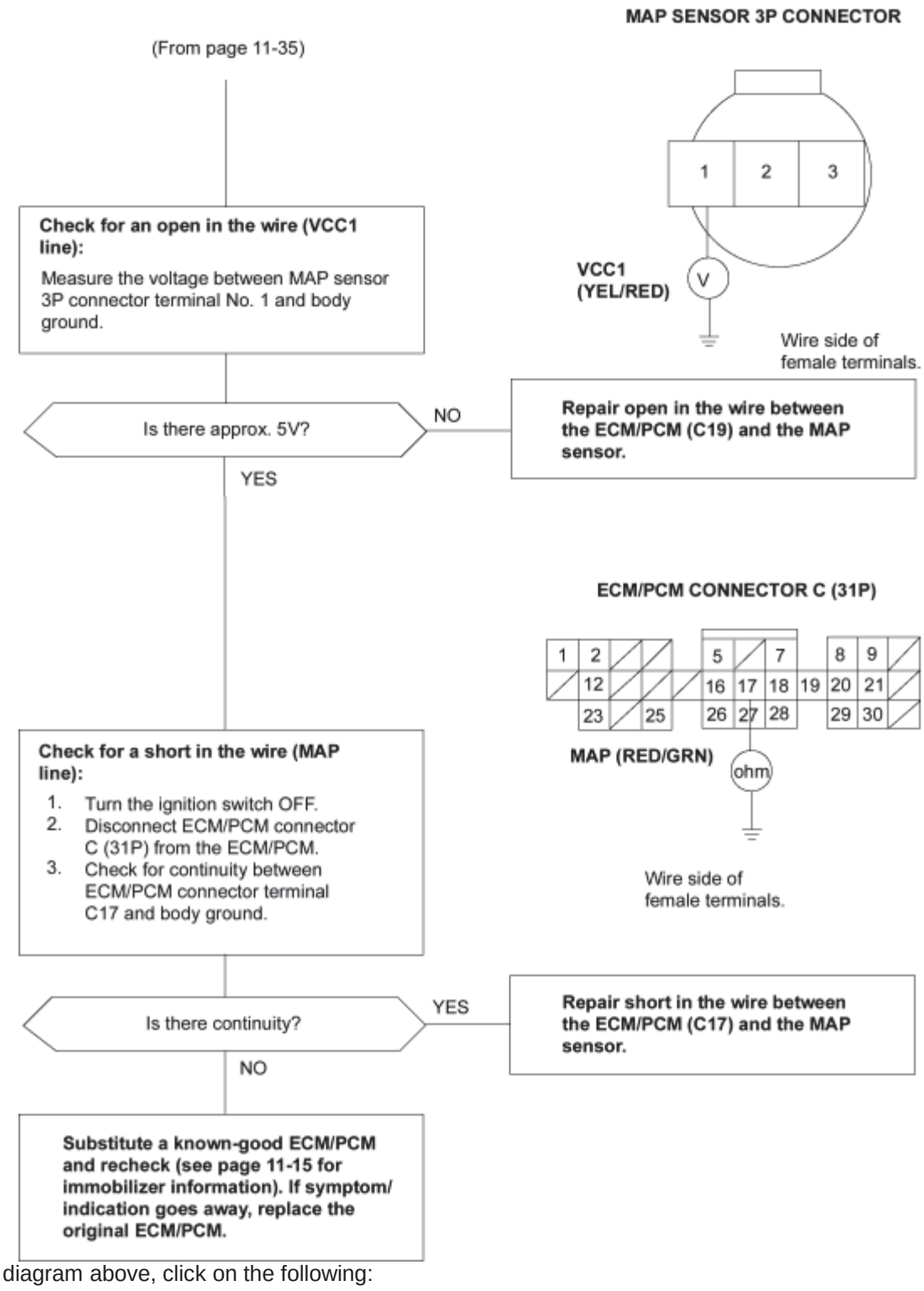
Check the ECM/PCM output voltage (MAP line):





To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)


MAP SENSOR 3P CONNECTOR
Wire side of female terminals.
1 2 3
VCC1 (YEL/RED)
SG1 (GRN/WHT)
(From page 11-34)
Is there approx. 5 V?
YES
NO
Check for an open in the wire (SG1 line):
1. Turn the ignition switch OFF.
2. Disconnect the 3P connector from the MAP sensor.
3. Turn the ignition switch ON (II).
4. Measure the voltage between MAP sensor 3P connector terminals No. 1 and No. 2.
Is there approx. 5 V?
NO
YES
Repair open in the wire between the ECM/PCM (C7) and the MAP sensor.
Check for an open in the wire (MAP line):
Measure the voltage between MAP sensor3P connector terminals No. 2 and No. 3
1 2 3
SG1 (GRN/WHT)
MAP (RED/GRN)
Is there approx. 5 V?
NO
YES
Replace the MAP sensor.
Repair open in the wire between the ECM/PCM (C17) and the MAP sensor.
Check the MAP sensor:
1. Turn the ignition switch OFF.
2. Disconnect the 3P connector from the MAP sensor.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the ECM/PCM connector terminals C7 and C17.
ECM/PCM CONNECTOR C (31P)
SG1 (GRN/WHT)
1 2
12
23 25
5 7
16 17 18 19
26 27 28
8 9
20 21
29 30
MAP (RED/GRN)
Wire side of female terminals.
Is there approx. 5 V?
YES
NO
Replace the MAP sensor.
(To page 11-36)



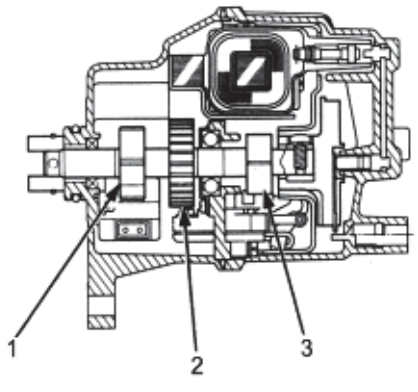
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

4 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 4: A problem in the Crankshaft Position (CKP) sensor circuit.

8 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 8: A problem in the Top Dead Centre (TDC) sensor circuit.

9 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 9: A problem in the Cylinder Position (CYP) sensor circuit.

The CKP Sensor determines timing or fuel injection and ignition of each cylinder and also detects engine speed. The TDC Sensor determines ignition timing at start-up (cranking) and when crank angle is abnormal. The CYP Sensor detects the position of No.1 cylinder for sequential fuel injection to each cylinder. The TDC/CKP/CYP Sensor is built into the distributor.



1. **TDC SENSOR ROTOR**
2. **CKP SENSOR ROTOR**
3. **CYP SENSOR ROTOR**

- **The MIL has been reported on.**
- **With the SGS short connector connected (see page 11-13), code 4, 8 and/or 9 are indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Start the engine.

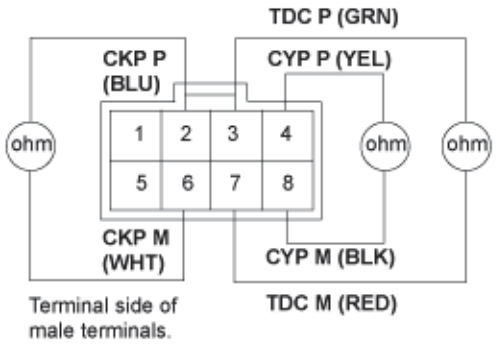
Is the MIL on and does it indicate code 4, 8 and/or 9?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary).**
Check for poor connections or loose wires between the distributor and the ECM/PCM.

YES

Check the sensor resistance:
1. Turn the ignition switch OFF.
2. Disconnect the distributor connector.
3. Measure the resistance between terminals of the indicated sensor.
   * see table.

DISTRIBUTOR 8P CONNECTOR



SENSOR	DTC	SENSOR TERMINAL	ECM/PCM TERMINAL	WIRE COLOUR
CKP	4	2	C8	BLU
		6	C9	WHT
TDC	8	3	C20	GRN
		7	C21	RED
CYP	9	4	C29	YEL
		8	C30	BLK

Is there 350 - 700 ohms?

NO → **Replace the distributor ignition housing (see section 23)**

YES

(To page 11-38)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)

(From page 11-37)

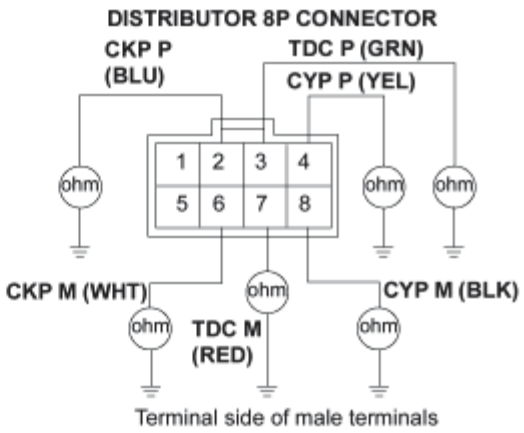
Check the sensor for a short:
Check for continuity to body ground on all terminals individually.
* see table.

Is there continuity?

YES → **Replace the distributor ignition housing (see section 23).**

NO

Check for an open in the wire (TDC/CKP/CYP line):
1. Reconnect the distributor connector.
2. Disconnect ECM/PCM connector C (31P) from the ECM/PCM.
3. Measure resistance between ECM/PCM connector terminal of the indicated sensor.
   * see table.

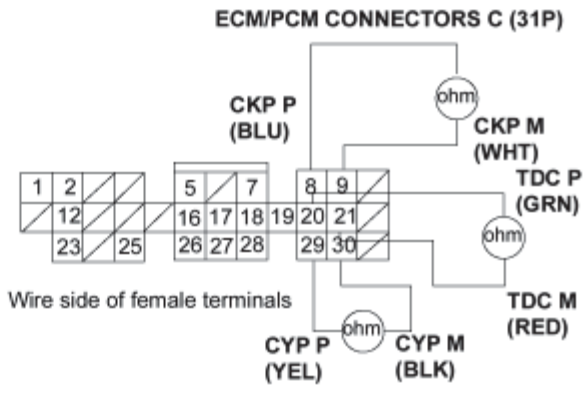


Is there 350 - 700 ohms?

NO → **Repair open or short in the indicated sensor wires. *see table.**

YES

Check for a short in the wire (TDC/CKP/CYP line):
Check for continuity between body ground and ECM/PCM connector terminals C8, C20 and/or C29 individually.

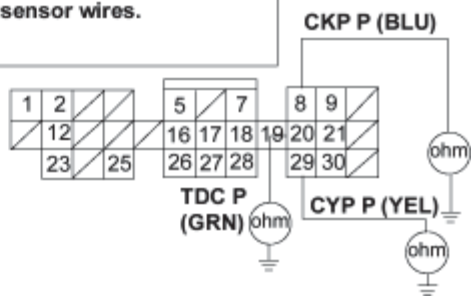


Is there continuity?

YES → **Repair short to body ground in the indicated sensor wires. *see table.**

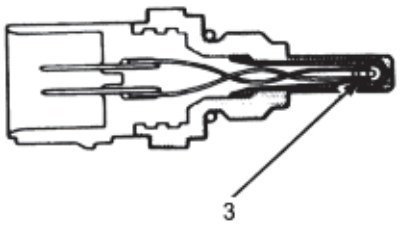
NO

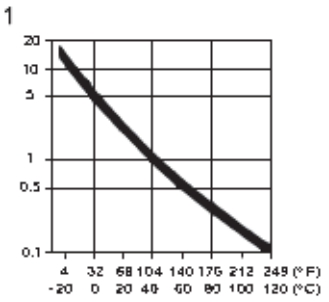
Substitute a known-good ECM/PCM and recheck (see page 11-15). If symptom/indication goes away, replace the original ECM/PCM.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

6 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 6: A problem in the Engine Coolant Temperature (ECT) sensor circuit.
The ECT Sensor is a temperature dependant resistor (thermistor). The resistance of the thermistor decreases as the engine coolant temperature increases as shown below:





1. **RESISTANCE (k ohm)**
2. **ENGINE COOLANT TEMPERATURE**
3. **THERMISTOR**

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 6 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Turn the ignition switch ON (II).

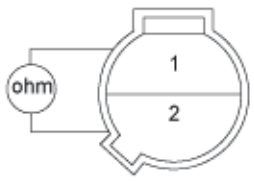
Is the MIL on and does it indicate code 6?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the ECT and ECM/PCM.**

YES

Check the sensor resistance:
1. Start the engine. Hold the engine at 3,00 rpm (min-1) with no load (in Park or netural) until the radiator fan comes on, then let it idle.
2. Turn the ignition switch OFF.
3. Disconnect the 2P connector
4. from the ECT sensor. Measure resistance between the two terminals on the ECT sensor.

ECT SENSOR 2P CONNECTOR



Terminal side of male terminals.

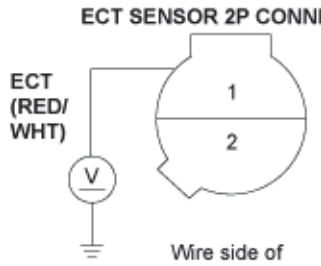
Is there 200 - 400 ohms?

NO → **Replace the ECT sensor.**

YES

Check the ECM/PCM output voltage (ECT line):
1. Turn the ignition switch ON (II).
2. At the engine harness side, measure the voltage between the ECT sensor 2P connector terminal No. 1 and body ground.

ECT SENSOR 2P CONNECTOR



Wire side of female terminals.

Is there approx. 5V?

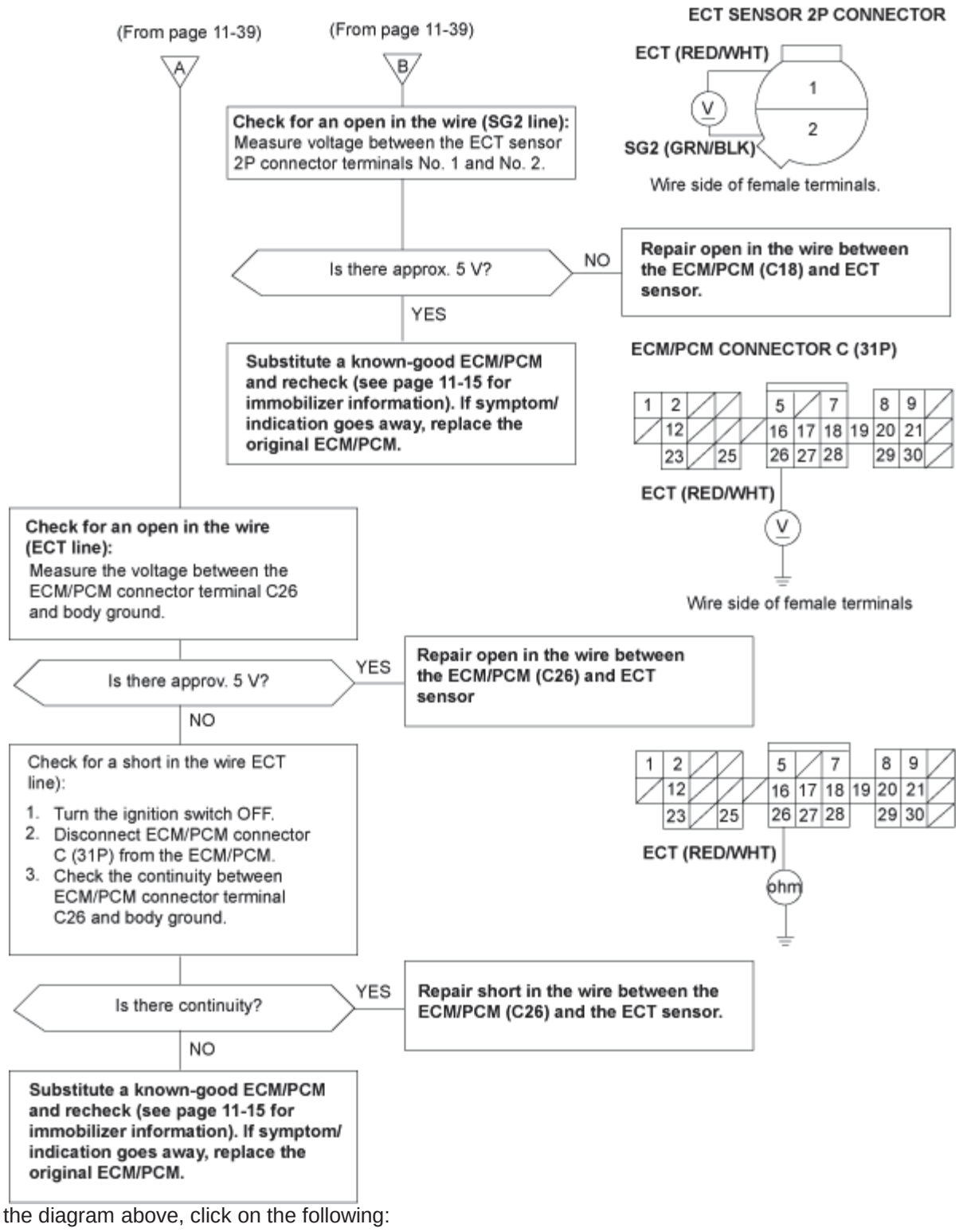
YES → B

NO → A

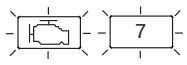
(To page 11-40)

(To page 11-40)

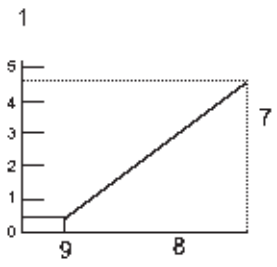
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)

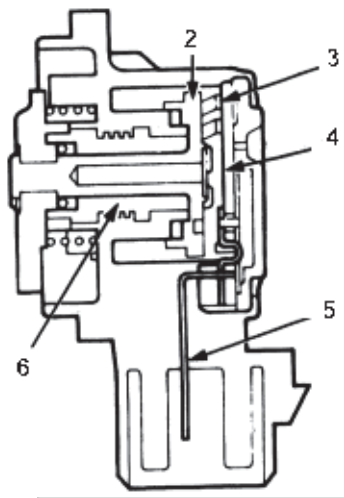


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 7: A problem in the Throttle Position (TP) sensor circuit.
The TP Sensor is a potentiometer. It is connected to the throttle valve shaft. As the throttle position changes, the throttle position sensor varies the voltage signal to the ECM/PCM.





1. **OUTPUT VOLTAGE (V)**
2. **BRUSH HOLDER**
3. **BRUSH**
4. **RESISTOR**
5. **TERMINAL**
6. **INNER BUSH**
7. **THROTTLE OPENING**
8. **FULL THROTTLE**
9. **IDLE**

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 7 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset procedure (see page 11-14)
2. Start the engine.

Is the MIL on and does it indicate code 7?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the TP sensor and the ECM/PCM.**

YES

Check the sensor output voltage:
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II).
3. Measure voltage betweeECM/PCM connector terminals C18 and C27.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals.

TPS (RED/BLK)



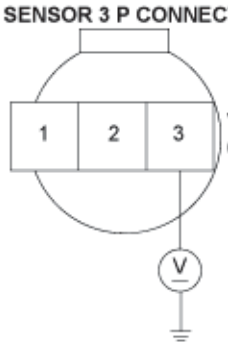
SG2 (GRN/BLK)

Is the voltage approx. 0.5 V at full close throttle and approx 4.5 V at fully opened throttle?
NOTE: There should be a smooth transition as the throttle is depressed.

YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). if symptom/ indication goes away, replace the original ECM/PCM.**

NO

TP SENSOR 3 P CONNECTOR



VCC2 (YEL/BLU)

Wire side of female terminals.

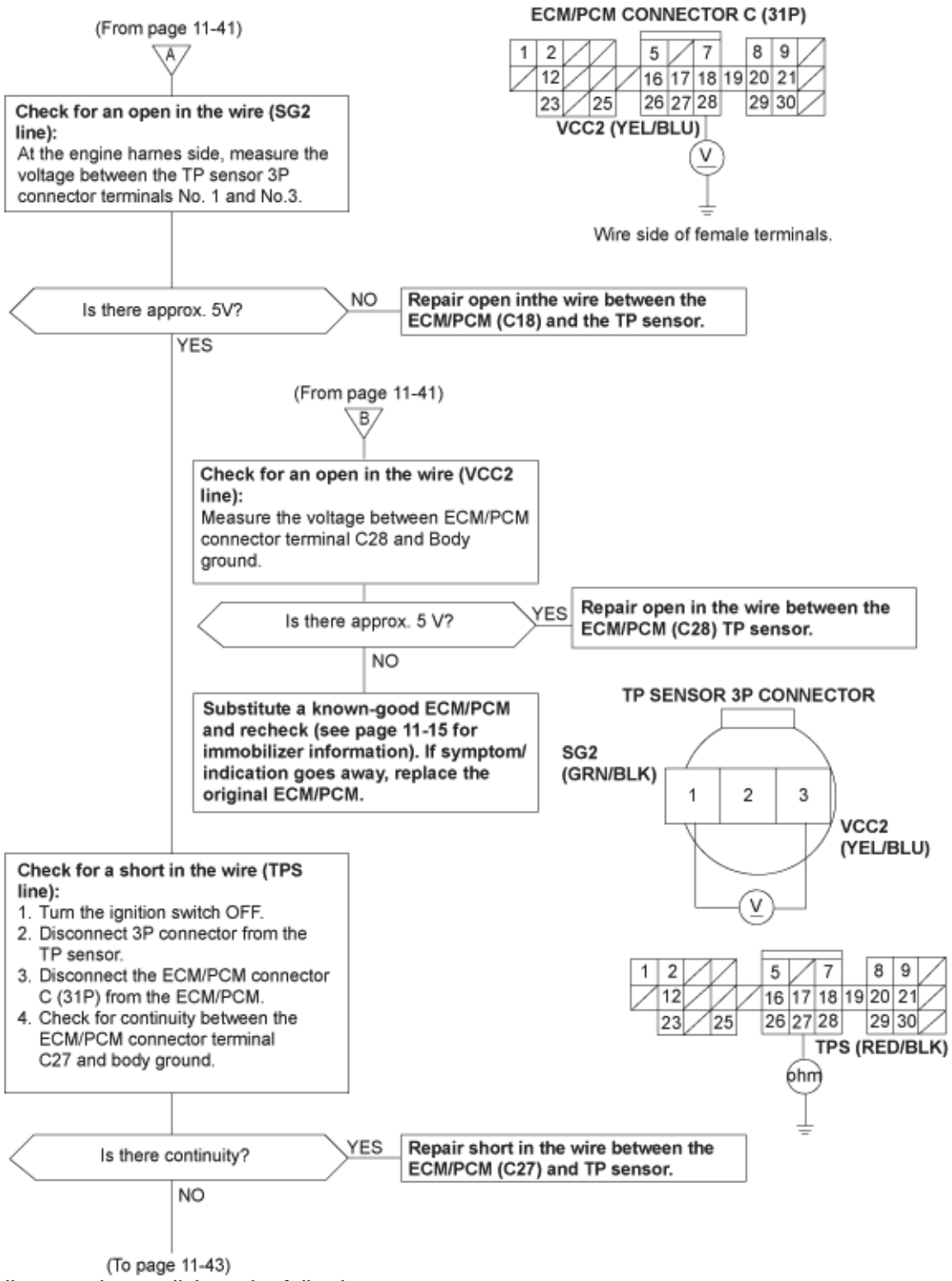
Check the TP circuit:
1. Turn the ignition switch OFF.
2. Disconnect 3P connector from the TP sensor.
3. Turn the ignition switch ON (II).
4. At the engine harness side, measure voltage between the TP sensor 3P connector terminal No. 3 and body ground.

Is there approx. 5V?

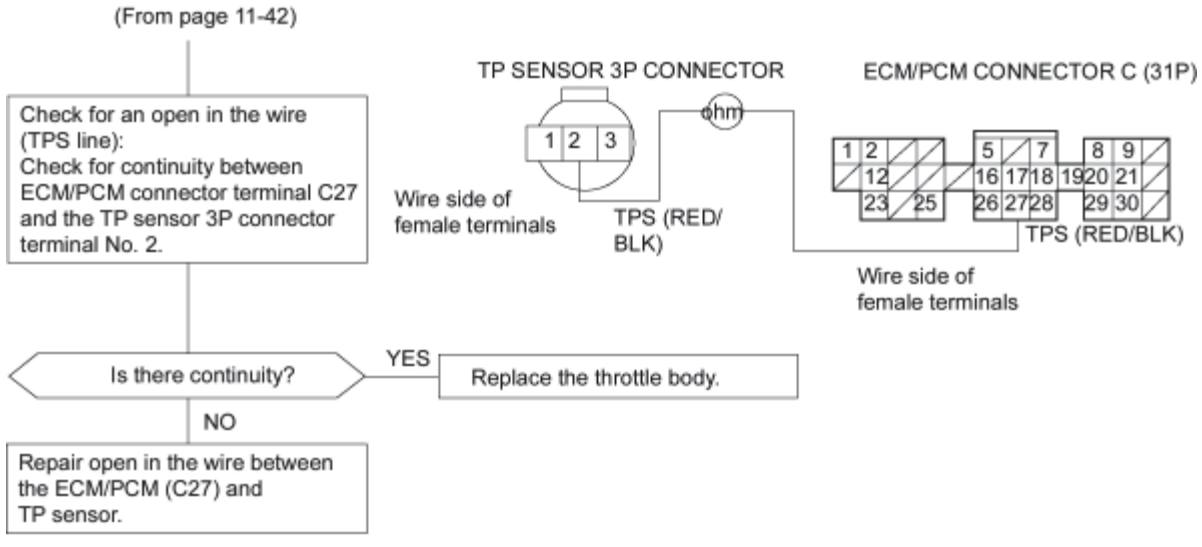
NO → B (To page 11-42)

YES → A (To page 11-42)

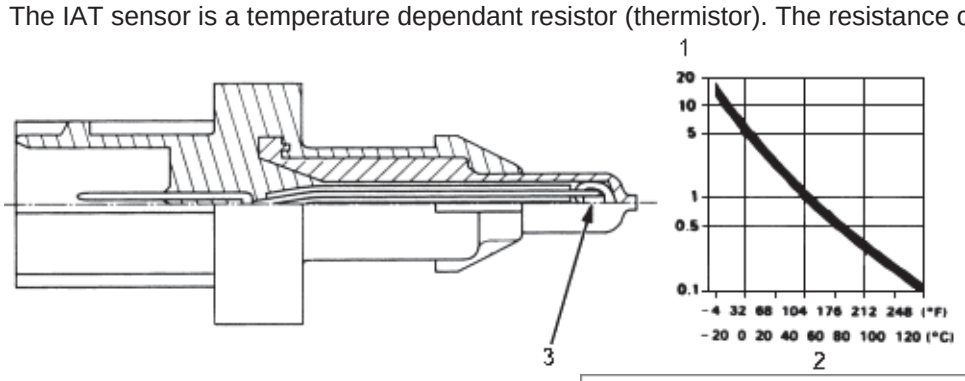
To go to the pages referenced on the diagram above, click on the following:
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(**See Page** 11-14)
(**See Page** 11-15)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)


(From page 11-42)
Check for an open in the wire (TPS line):
Check for continuity between ECM/PCM connector terminal C27 and the TP sensor 3P connector terminal No. 2.
TP SENSOR 3P CONNECTOR
1 2 3
ohm
Wire side of female terminals
TPS (RED/ BLK)
ECM/PCM CONNECTOR C (31P)
1 2
12
23 25
5 7
16 17 18 19
26 27 28
8 9
20 21
29 30
TPS (RED/BLK)
Wire side of female terminals
Is there continuity?
YES
Replace the throttle body.
NO
Repair open in the wire between the ECM/PCM (C27) and TP sensor.

10 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 10: A problem in the Intake Air Temperature (IAT) sensor circuit.
The IAT sensor is a temperature dependant resistor (thermistor). The resistance of the thermistor decreases as the intake air temperature increases as shown below:



1. **RESISTANCE (k ohm)**
2. **INTAKE AIR TEMPERATURE**
3. **THERMISTOR**

– The MIL has been reported on.
– With the SCS short connector connected (see page 11-13), code 10 is indicated.

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Turn the ignition switch ON (II).

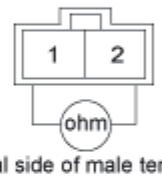
Is the MIL on and does it indicate code 10?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the IAT sensor and the ECM/PCM.**

YES

Check the sensor resistance:
1. Turn the ignition switch OFF.
2. Disconnect the 2P connector from the IAT sensor.
3. Measure resistance between the two terminals on the IAT sensor.

IAT SENSOR 2P CONNECTOR



Terminal side of male terminals.

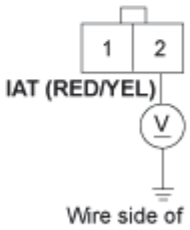
Is there 0.4 - 4.0 k ohm?

NO → **Replace the IAT sensor.**

YES

Check the ECM/PCM output voltage (IAT line):
1. Turn the ignition switch ON (II).
2. At the engine wire harness side, measure voltage between IAT sensor 2P connector terminal No. 2 and body ground.

IAT SENSOR 2P CONNECTOR



Wire side of female terminals.

Is there approx. 5V?

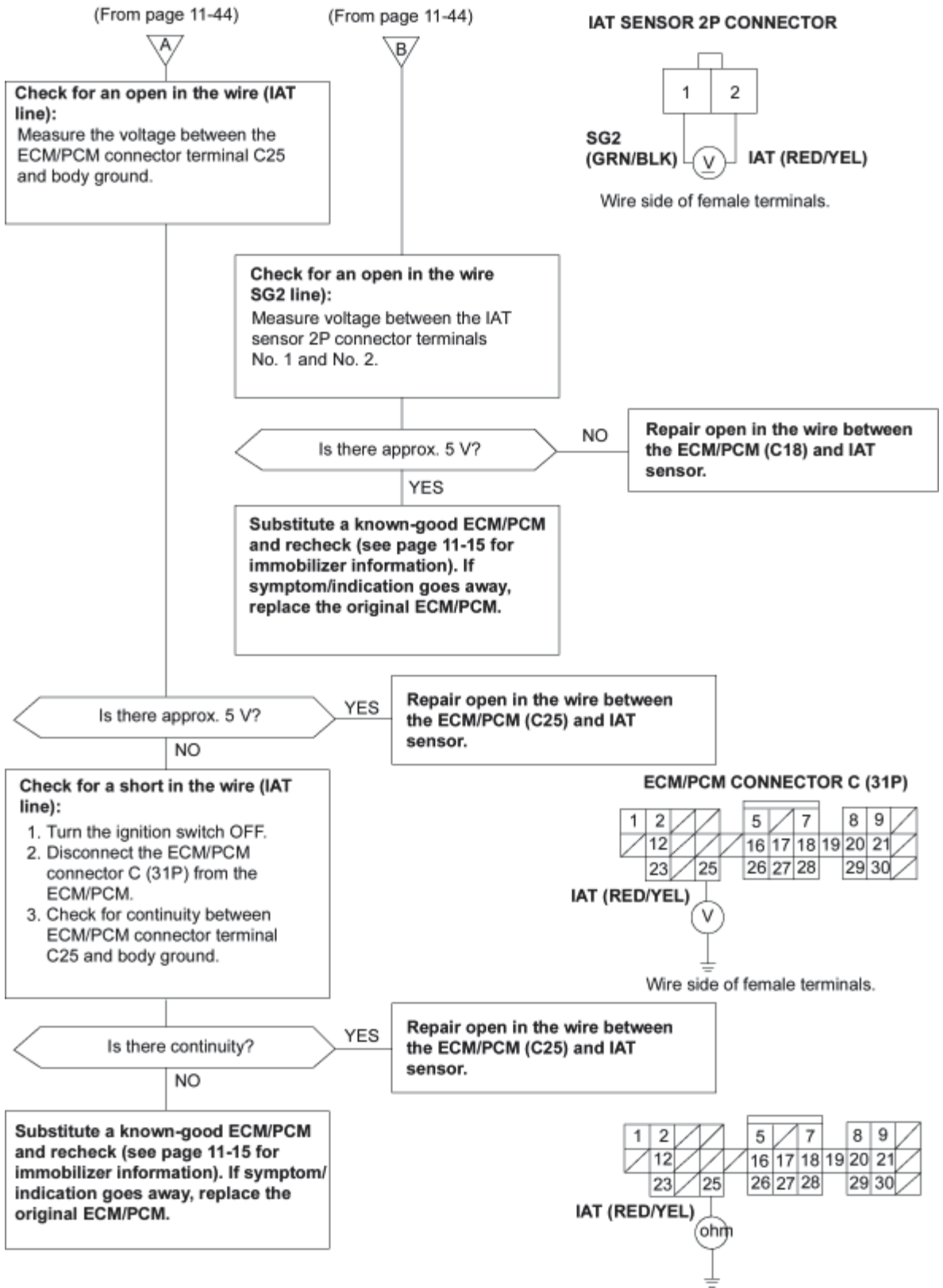
YES → B

NO → A

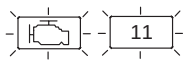
(To page 11-45)

(To page 11-45)

To go to the pages referenced on the diagram above, click on the following:
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(**See Page** 11-14)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 11: A problem in the Idle Mixture Adjuster (IMA) circuit.
The idle Mixture Adjuster (IMA) is selected resistance device used to control idle mixture.

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 11 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Turn the ignition switch ON (II).

Is the MIL on and does it indicate code 11?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the IMA and the ECM/PCM.**

YES

Check the ECM output voltage (VCC2 line):
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II).
3. Measure voltage between ECM/PCM connector terminals C18 and C28.

Is there approx. 5 V?

NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

YES

Check the ECM/PCM output voltage (IMA line):

Measure voltage between ECM/PCM connector terminals A30 and C18.

Is there approx. 0.5 - 4.5 V?

YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

NO

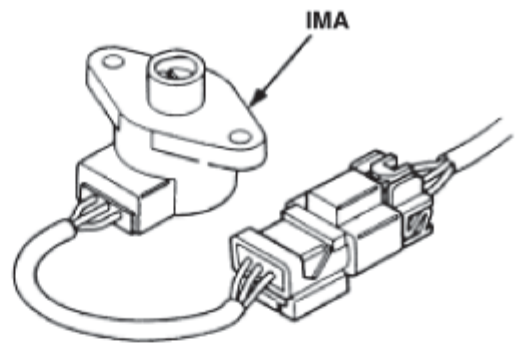
Is there approx. 5 V?

YES → B

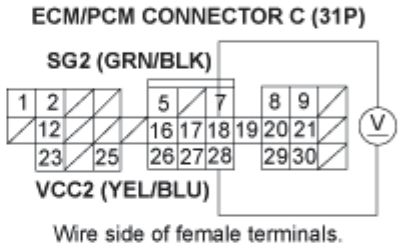
NO → A

(To page 11-47)

(To page 11-47)

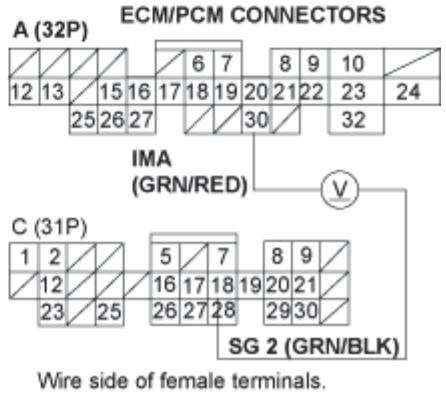


ECM/PCM CONNECTOR C (31P)



Wire side of female terminals.

ECM/PCM CONNECTORS



Wire side of female terminals.

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 11 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Turn the ignition switch ON (II).

Is the MIL on and does it indicate code 11?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the IMA and the ECM/PCM.**

YES

Check the ECM output voltage (VCC2 line):
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II).
3. Measure voltage between ECM/PCM connector terminals C18 and C28.

Is there approx. 5 V?

NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

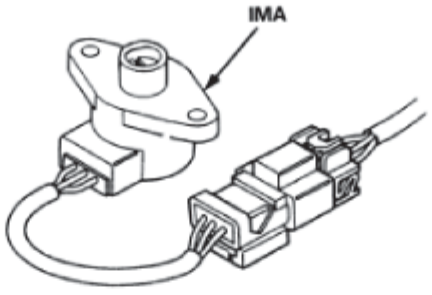
YES

Check the ECM/PCM output voltage (IMA line):

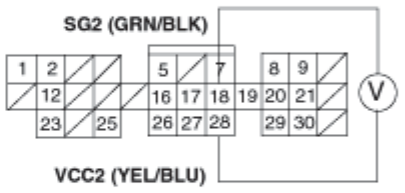
Measure voltage between ECM/PCM connector terminals A30 and C18.

Is there approx. 0.5 - 4.5 V?

YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

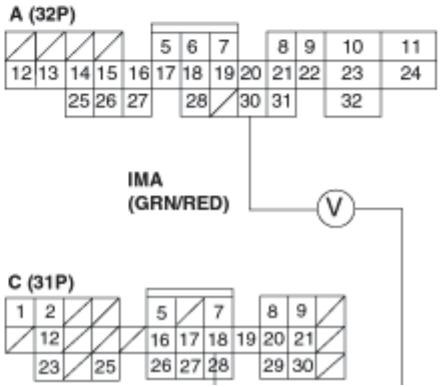


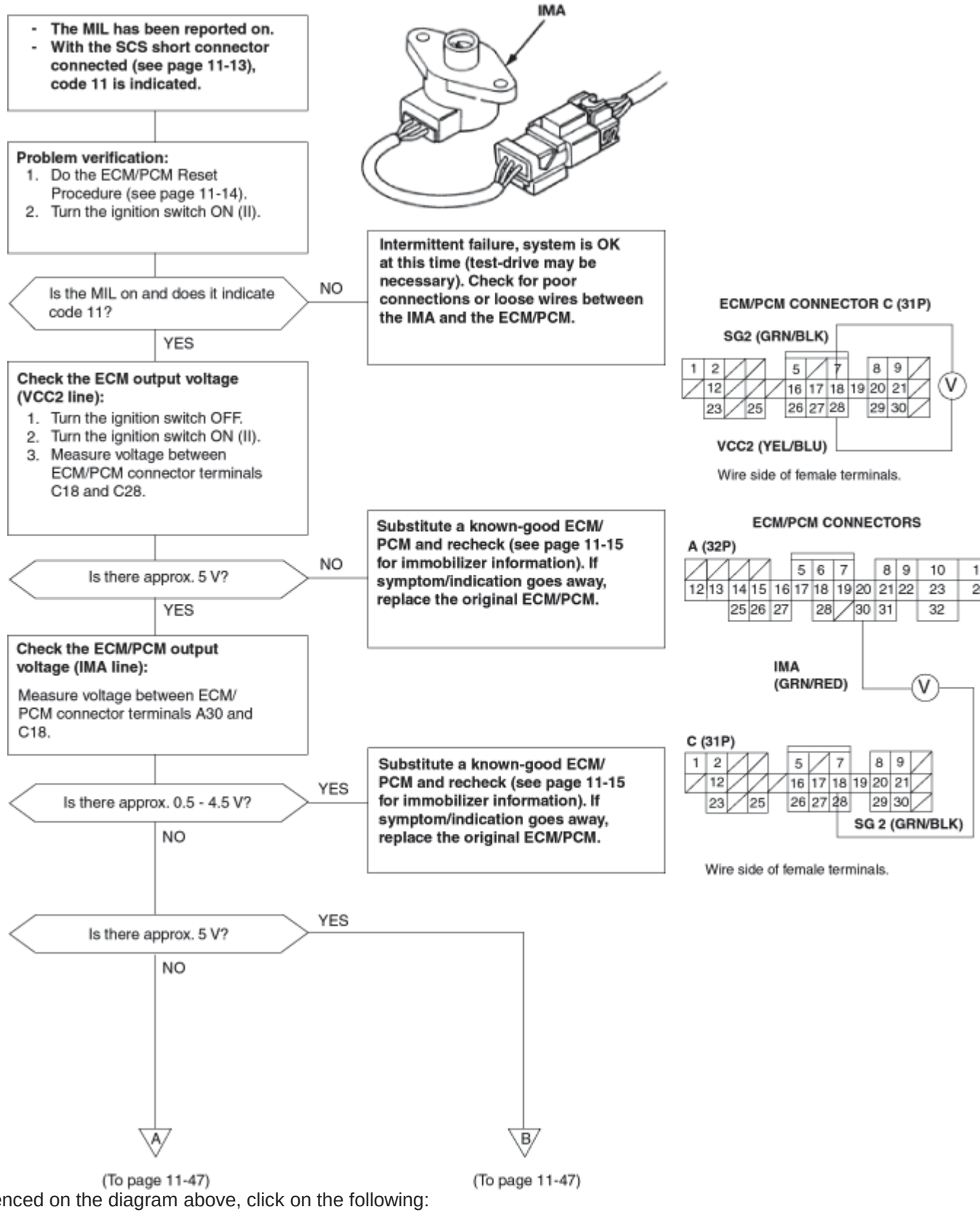
ECM/PCM CONNECTOR C (31P)



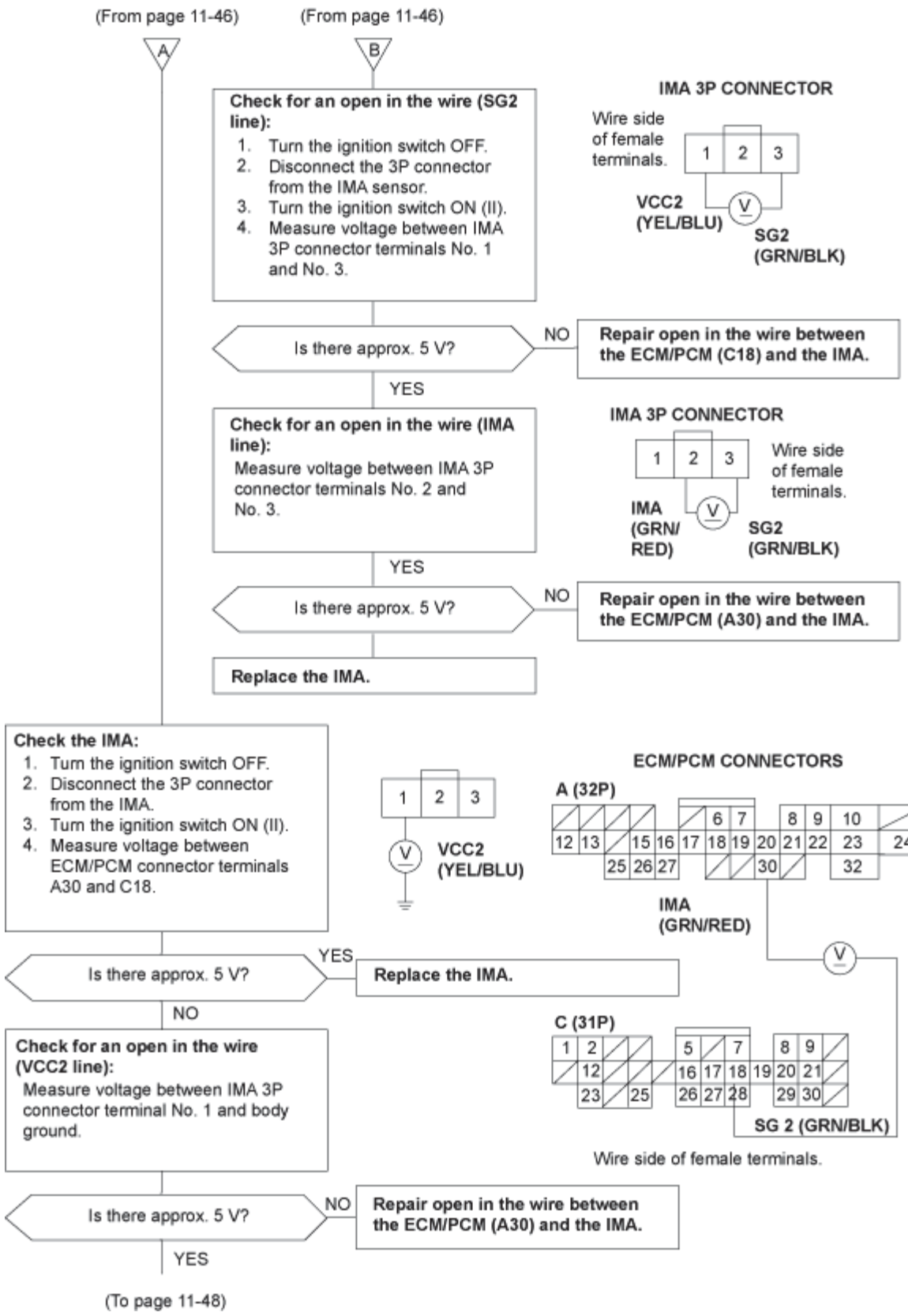
Wire side of female terminals.

ECM/PCM CONNECTORS





To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)


(From page 11-46)
A
(From page 11-46)
B
Check for an open in the wire (SG2 line):
1. Turn the ignition switch OFF.
2. Disconnect the 3P connector from the IMA sensor.
3. Turn the ignition switch ON (II).
4. Measure voltage between IMA 3P connector terminals No. 1 and No. 3.
IMA 3P CONNECTOR
Wire side of female terminals.
1 2 3
VCC2 (YEL/BLU)
SG2 (GRN/BLK)
Is there approx. 5 V?
NO
Repair open in the wire between the ECM/PCM (C18) and the IMA.
YES
Check for an open in the wire (IMA line):
Measure voltage between IMA 3P connector terminals No. 2 and No. 3.
IMA 3P CONNECTOR
1 2 3
Wire side of female terminals.
IMA (GRN/RED)
SG2 (GRN/BLK)
YES
Is there approx. 5 V?
NO
Repair open in the wire between the ECM/PCM (A30) and the IMA.
Replace the IMA.
Check the IMA:
1. Turn the ignition switch OFF.
2. Disconnect the 3P connector from the IMA.
3. Turn the ignition switch ON (II).
4. Measure voltage between ECM/PCM connector terminals A30 and C18.
1 2 3
VCC2 (YEL/BLU)
ECM/PCM CONNECTORS
A (32P)
6 7 8 9 10
12 13 15 16 17 18 19 20 21 22 23 24
25 26 27 30 32
IMA (GRN/RED)
Is there approx. 5 V?
YES
Replace the IMA.
NO
C (31P)
1 2 5 7 8 9
12 16 17 18 19 20 21
23 25 26 27 28 29 30
SG 2 (GRN/BLK)
Wire side of female terminals.
Check for an open in the wire (VCC2 line):
Measure voltage between IMA 3P connector terminal No. 1 and body ground.
Is there approx. 5 V?
NO
Repair open in the wire between the ECM/PCM (A30) and the IMA.
YES
(To page 11-48)

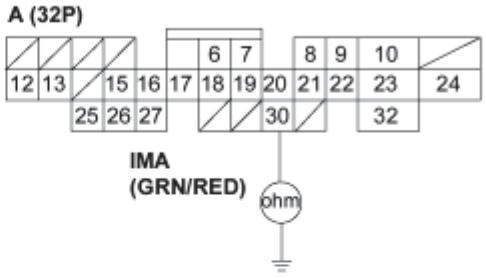
(From page 11-47)

Check for a short in the wire (IMA line):

1. Turn the ignition switch OFF.
2. Disconnect ECM/PCM connector A (32P) from the ECM/PCM.
3. Check for continuity between ECM/PCM connector terminal A30 and body ground.

ECM/PCM CONNECTOR

A (32P)



Wire side of female terminals.

Is there continuity?

YES → **Repair short in the wire between the ECM/PCM (A30) and the IMA.**

NO → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

17 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 17: A problem in the Vehicle Speed Sensor (VSS) circuit. The VSS generates a pulsing signal when the front wheels turn.

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 17 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procdeure (see page 11-14).
2. Test-drive transmission in neutral, accelerate to 4,000 rpm (min^{-1}), then decelerate to 1,500 rpm (min^{-1}) with throttle fully closed for at least 5 seconds.

Is the MIL on and does it indicate code 17?

NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires between the VSS and the ECM/PCM.**

YES

Check the ECM/PCM input voltage:
1. Turn the ignition switch OFF.
2. Block rear wheels and set the parking brake. Jack up the front of the car and support with safety stands.
3. Turn the ignition switch ON (II).
4. Block the right front wheel and slowly rotate the left front wheel and measure voltage between ECM/PCM connector terminal B20 and C23.

WARNING

Make sure lifts, jacks and safety stands are placed properly (see section 1).

ECM/PCM CONNECTORS

B (25P)

1	2		3	4	5	6		8
9	10	11		13		15	17	18
	20		21	22			25	

C (31P)

1	2				5		7	8	9
	12				16	17	18	19	20	21
	23		25		26	27	28		29	30

LG1 (BRN/BLK) — V — **VSS (BLU/WHT)**

Wire side of female terminals

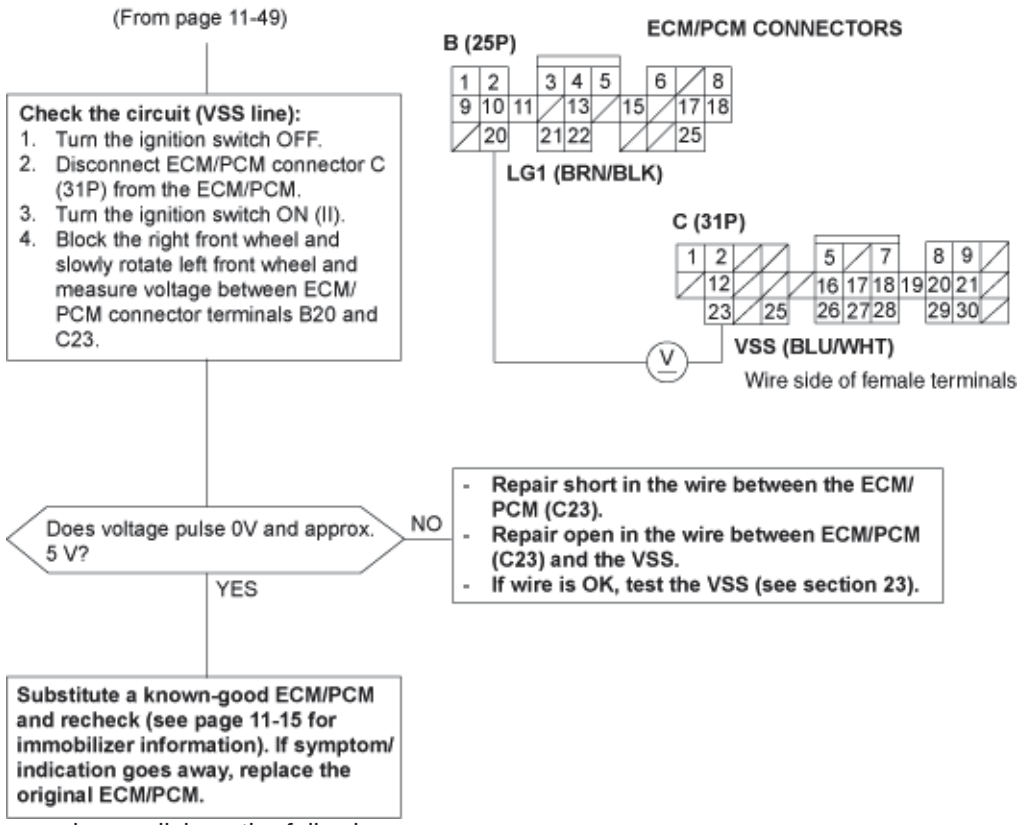
Does the voltage pulse 0 V and approx. 5 V?

YES → **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.**

NO

(To page 11-50)

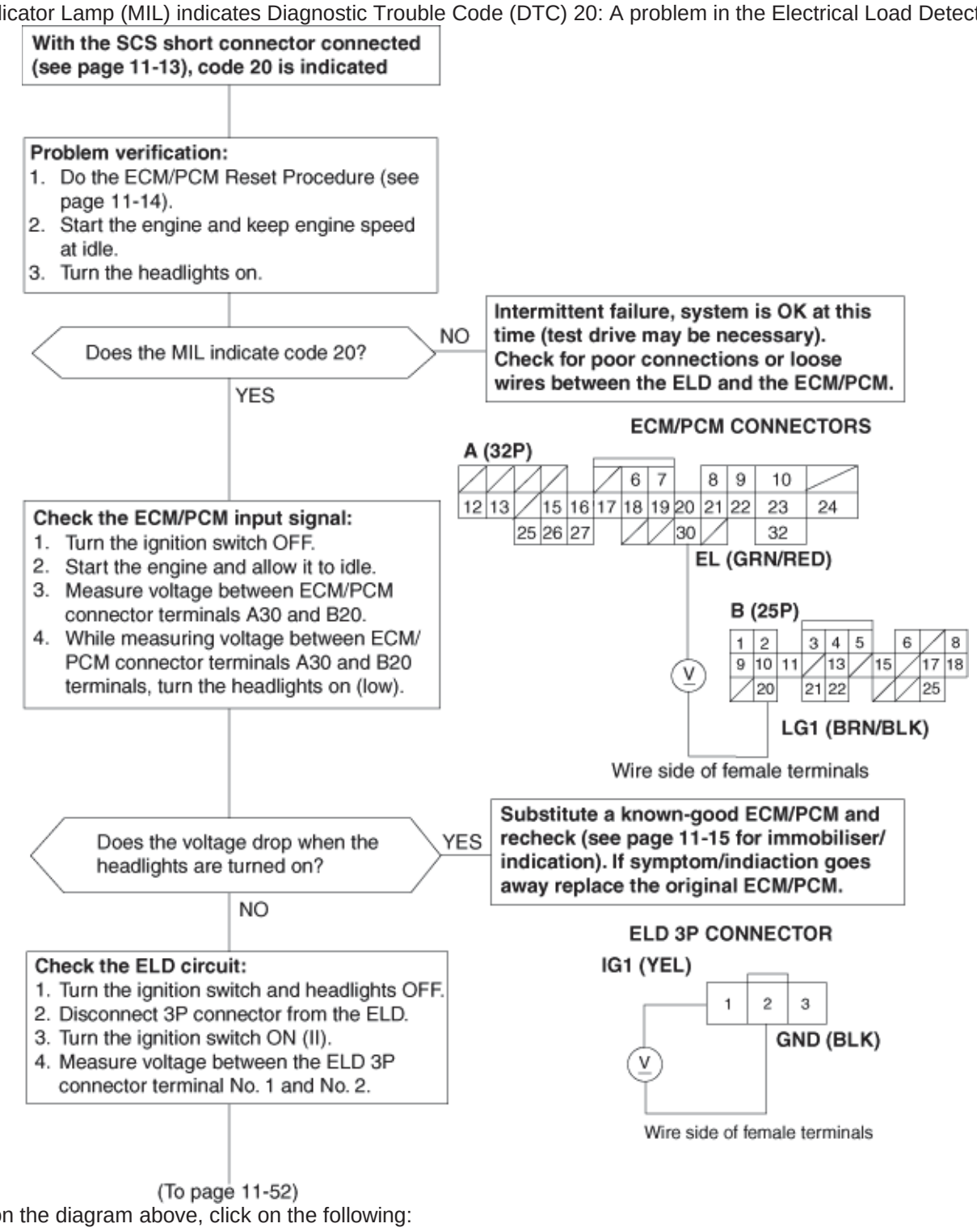
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)



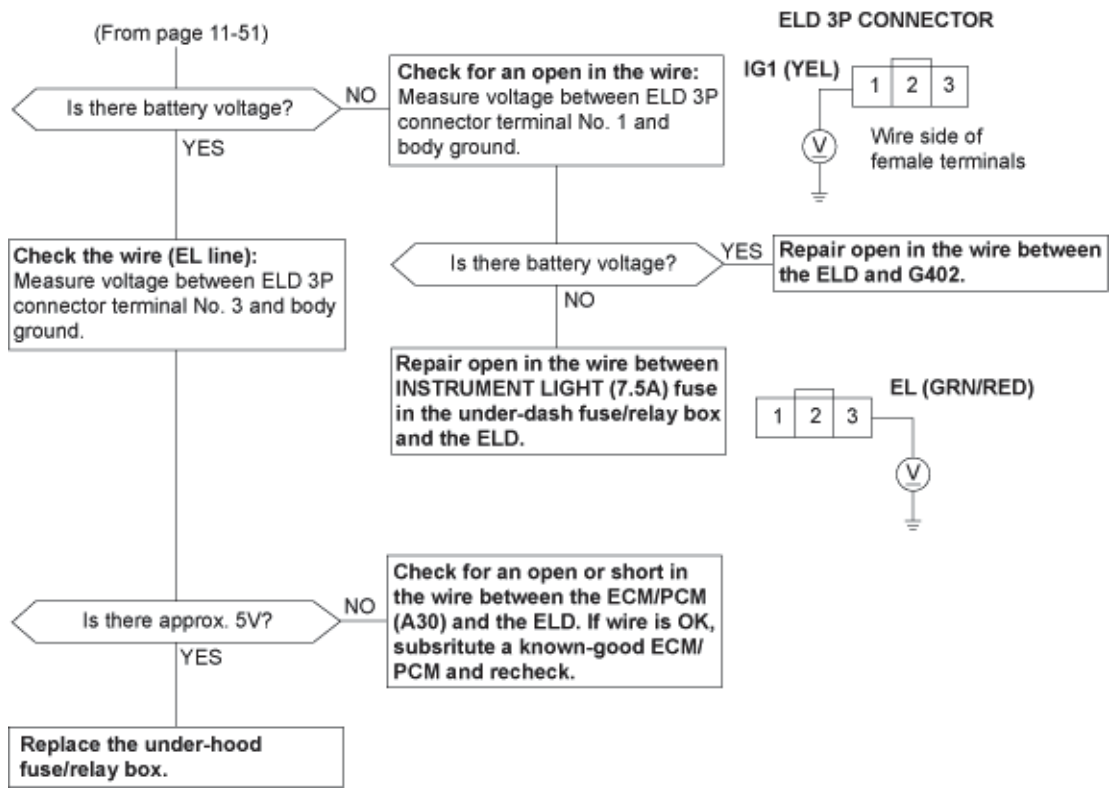
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

20

The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 20: A problem in the Electrical Load Detector (ELD) circuit.

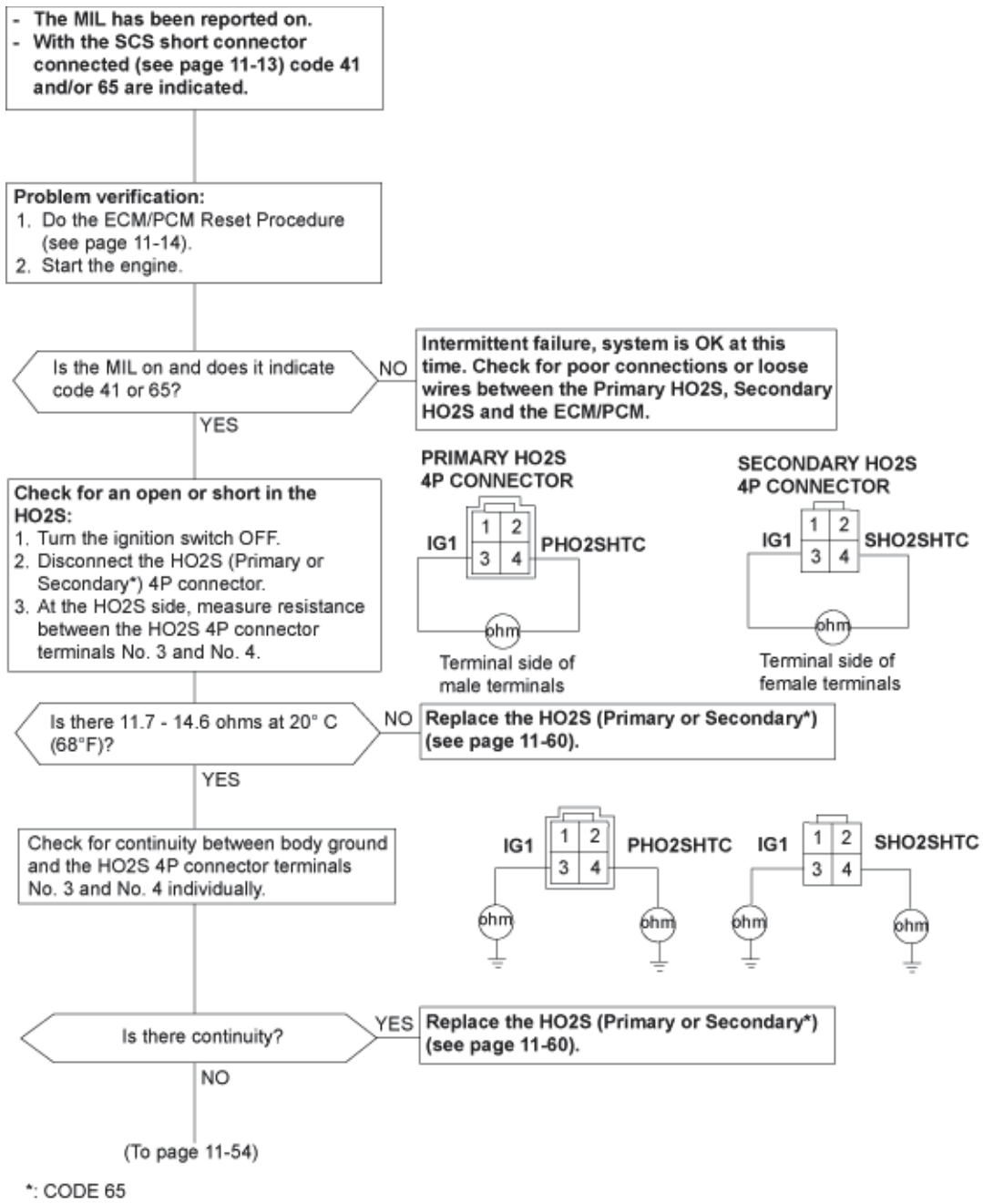


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)


(From page 11-51)
Is there battery voltage?
NO
YES
Check for an open in the wire: Measure voltage between ELD 3P connector terminal No. 1 and body ground.
ELD 3P CONNECTOR
IG1 (YEL)
1 2 3
V
Wire side of female terminals
Check the wire (EL line): Measure voltage between ELD 3P connector terminal No. 3 and body ground.
Is there battery voltage?
YES
Repair open in the wire between the ELD and G402.
NO
Repair open in the wire between INSTRUMENT LIGHT (7.5A) fuse in the under-dash fuse/relay box and the ELD.
EL (GRN/RED)
1 2 3
V
Is there approx. 5V?
NO
YES
Check for an open or short in the wire between the ECM/PCM (A30) and the ELD. If wire is OK, subsritute a known-good ECM/PCM and recheck.
Replace the under-hood fuse/relay box.

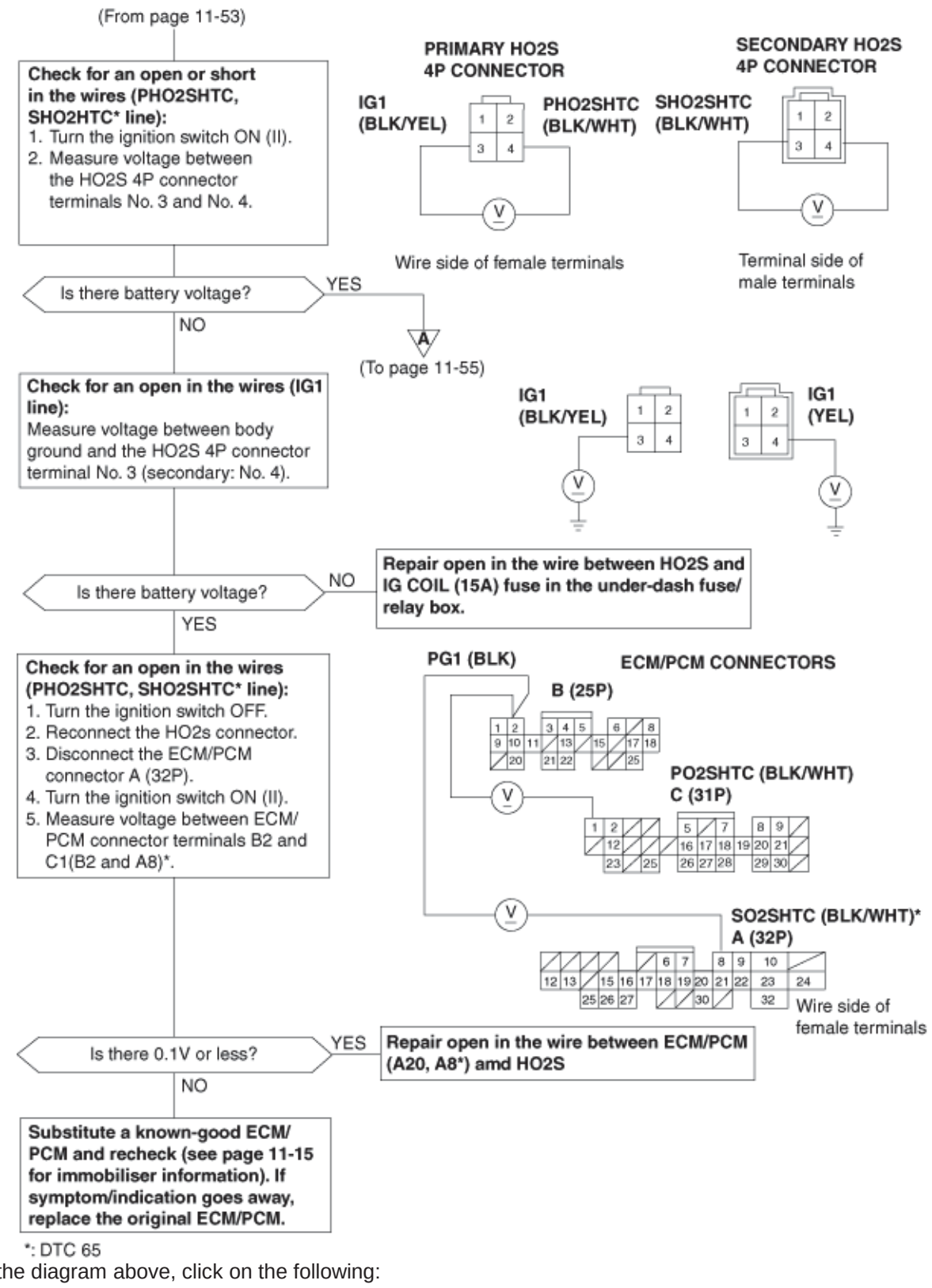
41 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 41: A problem in the Primary Heated Oxygen Sensor (HO2S) heater circuit.

65 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 65: A problem in the Secondary Heated Oxygen Sensor (HO2S) heater circuit (with TWC models except KU model.



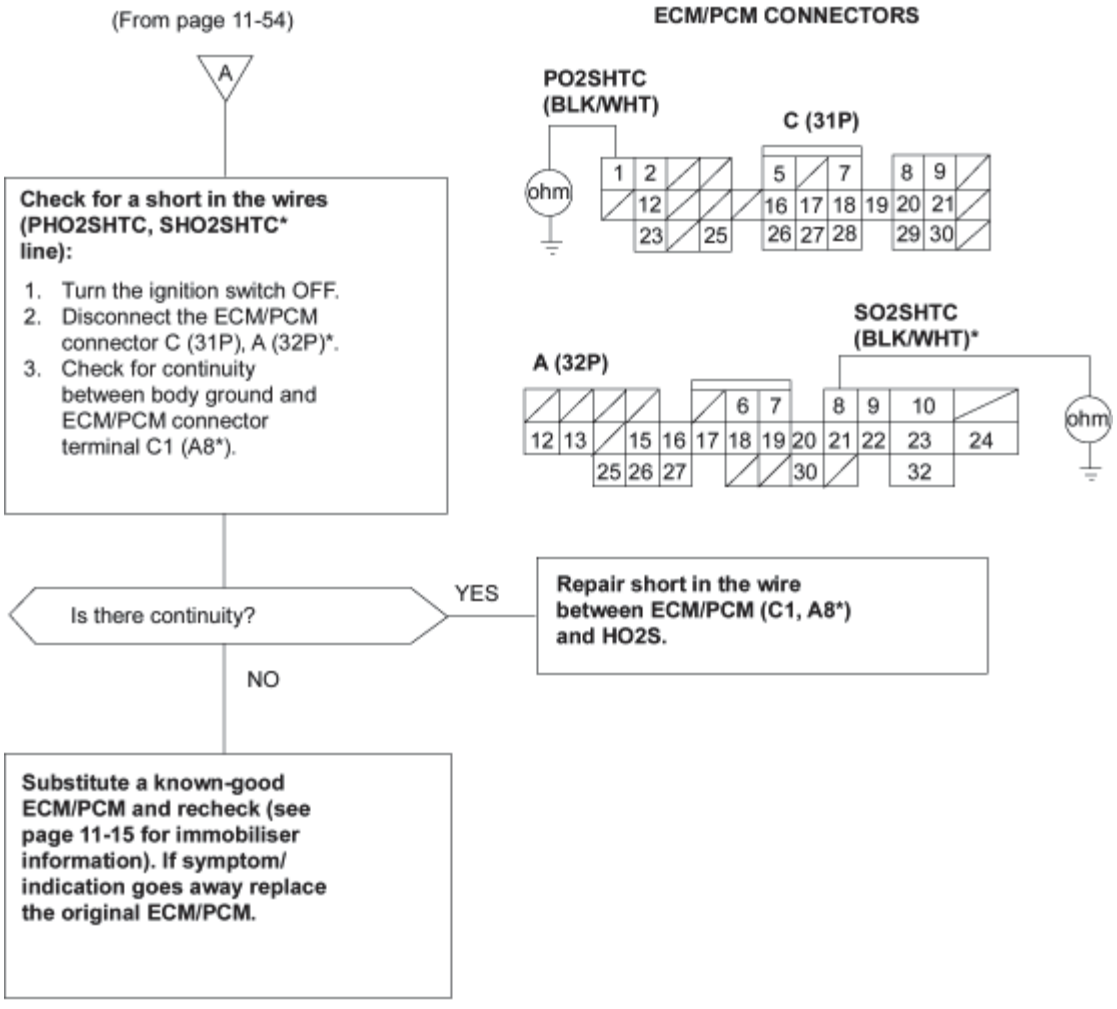
*: CODE 65

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
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*: DTC 65

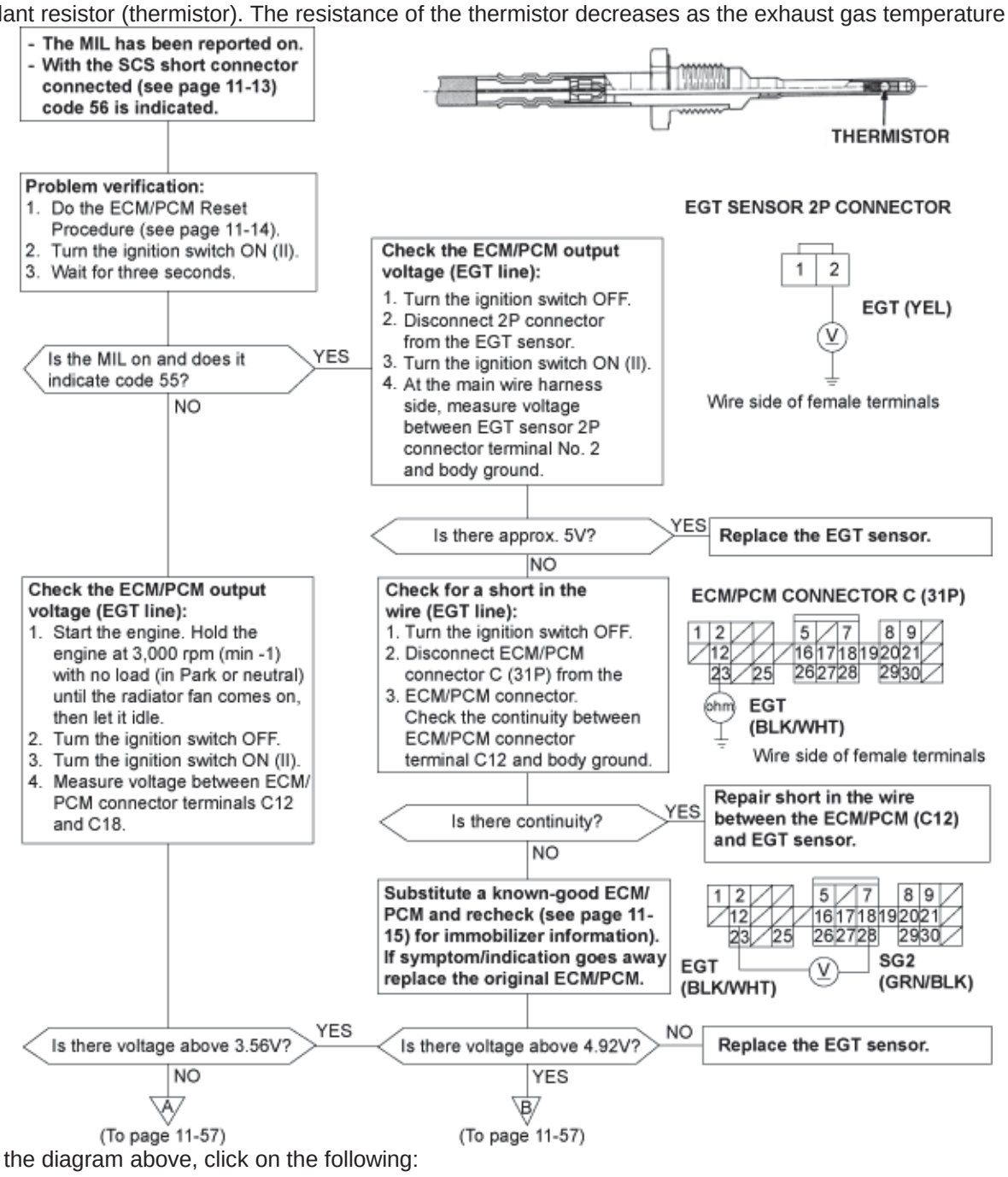
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

55

The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 55: A problem in the Exhaust Gas Temperature (EGT) Sensor circuit.
The EGT sensor is a temperature dependant resistor (thermistor). The resistance of the thermistor decreases as the exhaust gas temperature increases.



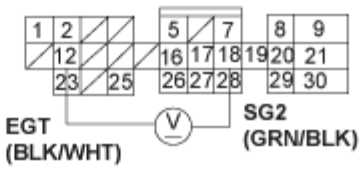
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)

(From page 11-56)

A

Check the ECM/PCM output voltage (EGT line):
1. Turn the ignition switch OFF and wait for 30 minutes.
2. Turn the ignition switch ON (II).
3. Measure voltage between ECM/PCM connector terminals C12 and C18.

ECM/PCM CONNECTOR C (31P)



Wire side of female terminals

Is there voltage above 4.59V?

NO → **Replace the EGT sensor.**

YES

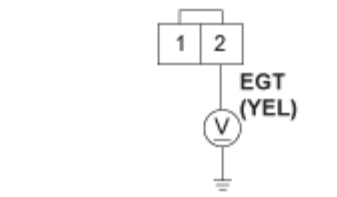
Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the EGT sensor and ECM/PCM.

(From page 11-56)

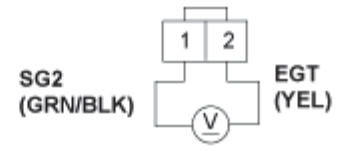
B

Check the ECM/PCM output voltage (EGT line):
1. Turn the ignition switch OFF.
2. Disconnect 2P connector from the EGT sensor.
3. Turn the ignition switch ON (II).
4. At the sensor wire harness side, measure voltage between sensor 2P connector terminal No. 2 and body ground

EGT SENSOR 2P CONNECTOR



Wire side of female terminals



Is there approx. 5V?

YES → **Check for an open in the wire (SG2 line):** Measure voltage between the EGT sensor 2P connector terminal No. 1 and No. 2.

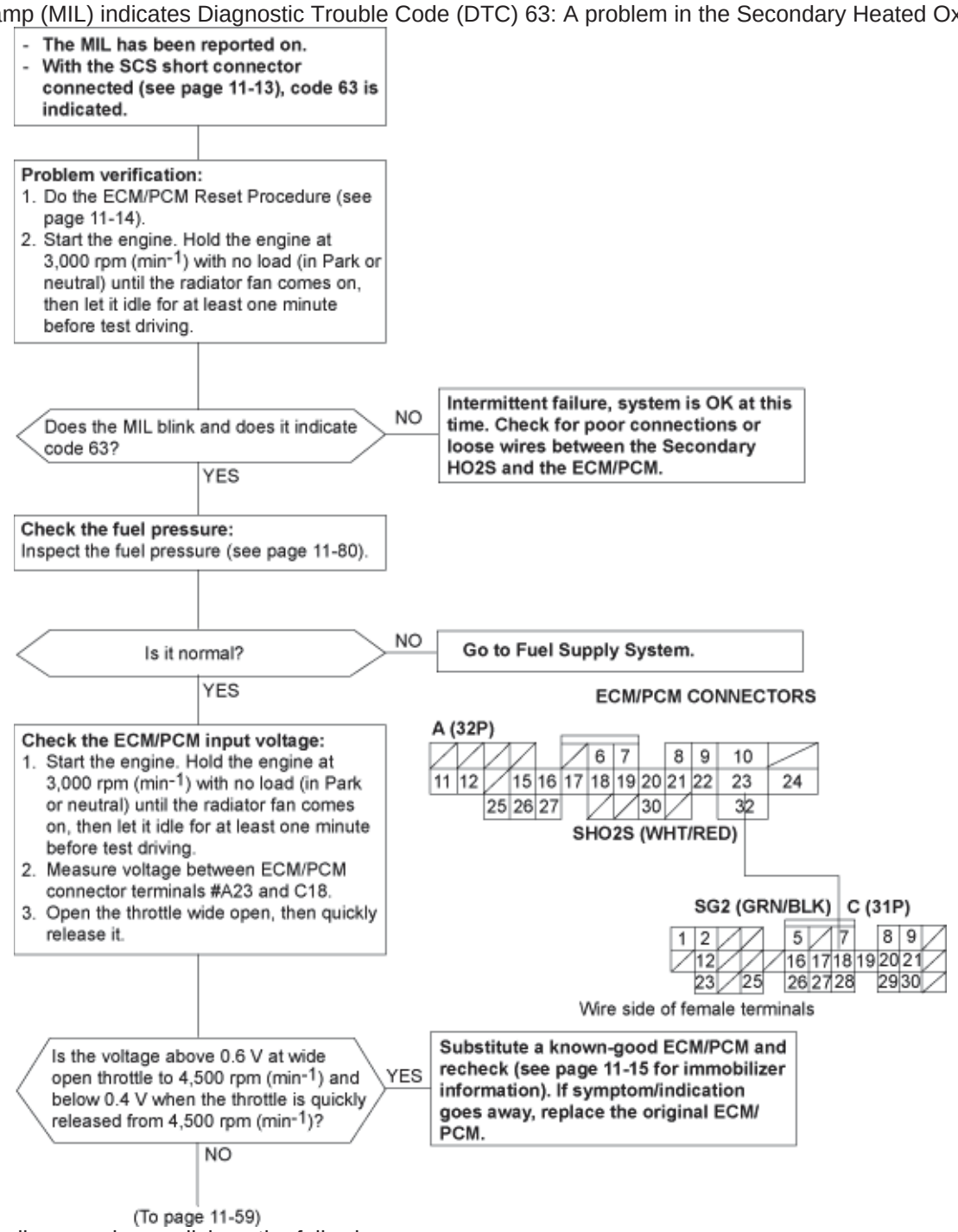
NO → **Repair open in the wire between the ECM/PCM (C12) and EGT sensor.**

Is there approx. 5V?

NO → **Repair open in the wire between the ECM/PCM (C18) and EGT sensor.**

YES → **Replace the EGT sensor.**

63 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 63: A problem in the Secondary Heated Oxygen Sensor (HO2S) heater circuit.

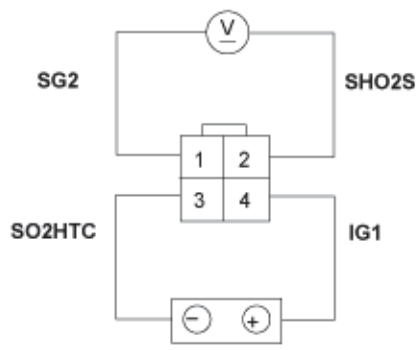


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)
(**See Page** 11-80)

(From page 11-58)

Check the HO2S:
1. Turn the ignition switch OFF.
2. Disconnect the 4P connector from the Secondary HO2S.
3. At the Secondary HO2S harness side, connect the battery positive terminal to terminal No. 4 and battery negative terminal to terminal No. 3.
4. Start the engine.
5. After two minutes, measure voltage between Secondary HO2S 4P connector terminals No. 1 and No. 2.

HO2S 4P CONNECTOR



Wire side of female terminals.

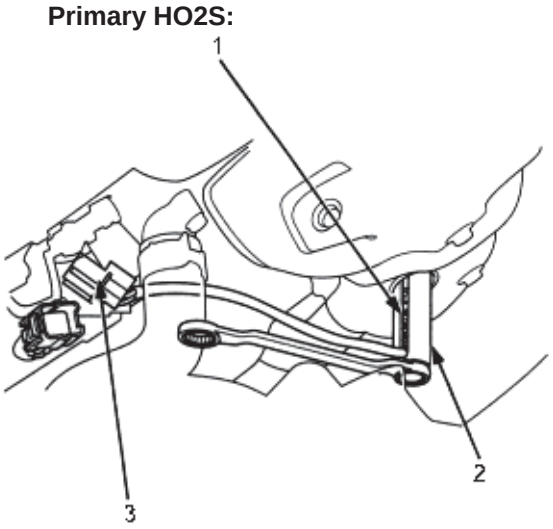
Is the voltage above 0.6 V at wide open throttle to 4,500 rpm (min^{-1}) and below 0.4 V when the throttle is quickly released from 4,500 rpm (min^{-1})?

NO → **Replace the Secondary HO2S.**

YES

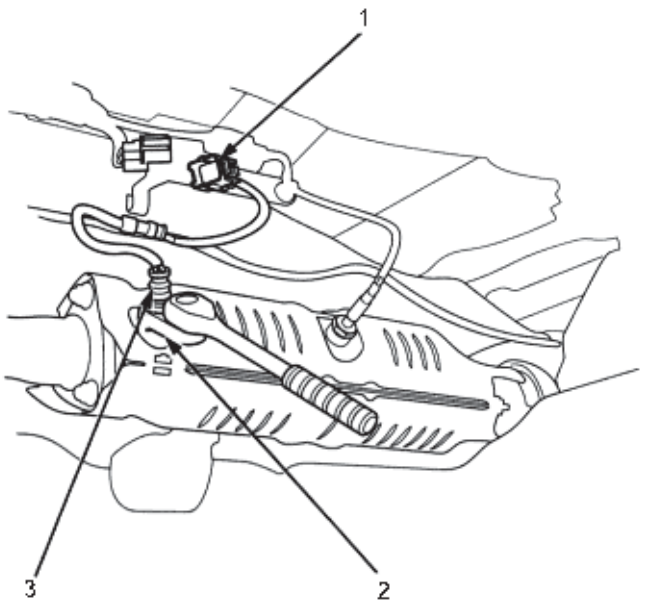
Repair open or short in the wire ECM/ PCM (A23) and the Secondary HO2S.

1. Disconnect the HO2S 4P connector, then remove the HO2S.
   Primary HO2S:



1. PRIMARY HO2S, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. O2 SENSOR SOCKET WRENCH, 07LAA-PT50101
3. HO2S 4P CONNECTOR

Secondary HO2S



1. HO2S 4P CONNECTOR
2. O2 SENSOR WRENCH, Snap-on YA 8875 or equivalent
3. SECONDARY HO2S, 44 Nm (4.5 kgf/m. 33 lbf/ft)

2. Install the HO2S in reverse order of removal.

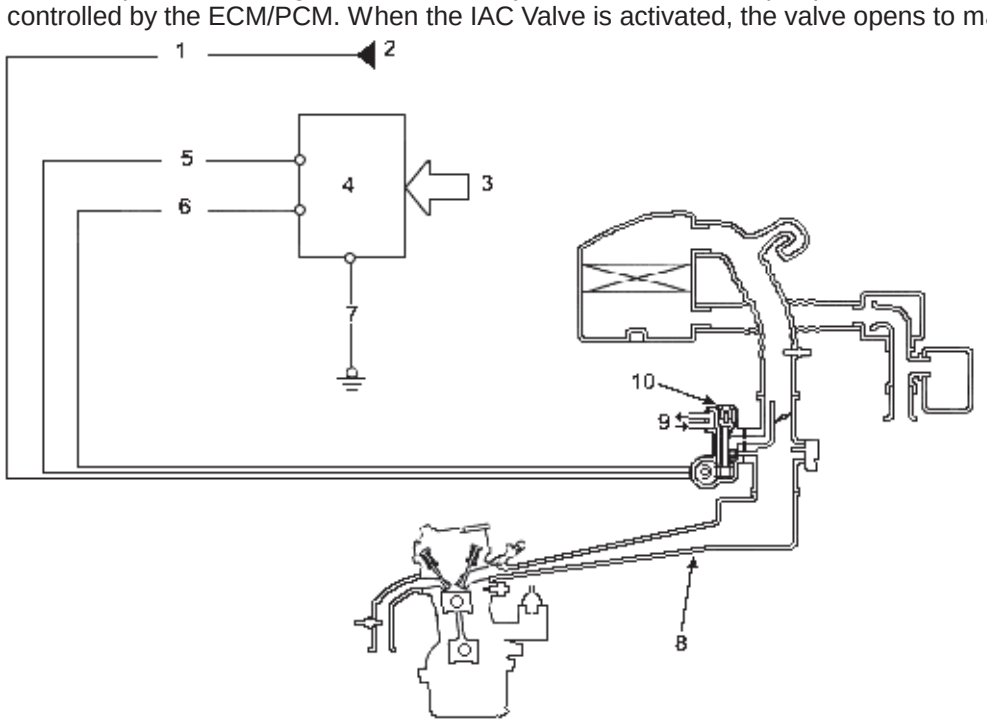
NOTE:

- Across each row in the chart, the sub-systems that could be sources of a symptom are ranked in the order they should be inspected, starting with 1. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspections shows the system is OK, try the next system 2. etc.
- If the idle speed is out of specification and the Malfunction Indicator Lamp (MIL) does not blink Diagnostic Trouble Code (DTC) 14, go to inspection (**See Page** 11-62).

SUB-SYSTEM		IDLE AIR CONTROL VALVE	AIR CONDITIONING SIGNAL	ALTERNATOR FR SIGNAL	BRAKE SWITCH SIGNAL	STARTER SWITCH SIGNAL	POWER STEERING PRESSURE SWITCH SIGNAL	AUTOMATIC TRANSAXLE GEAR POSITION SIGNAL *1	HOSES AND C0NNECTIONS
PAGE		**11-63**	**11-65**	**11-67**	**11-69**	**11-70**	**11-71**	Section 14	-
SYMPTOM									
DIFFICULT TO START ENGINE WHEN COLD						**1**			
WHEN COLD FAST IDLE OUT OF SPEC.[1,000-2,000 rpm (min-1)]		**1**							
ROUGH IDLE		**2**							**1**
WHEN WARM ENGINE SPEED TOO HIGH		**1**					**3**		**2**
WHEN WARM RPM TOO LOW	Idle speed is below specified rpm (no load	**1**							
WHEN WARM RPM TOO LOW	Idle speed does not increase after initial start up	**1**							
WHEN WARM RPM TOO LOW	On models with automatic transmission, the idle speed drops in gear.	**2**						**1**	
WHEN WARM RPM TOO LOW	Idle speeds drops when air conditioning is ON.	**2**	**1**						
WHEN WARM RPM TOO LOW	Idle speed drops when steering wheel is turning	**2**					**1**		
WHEN WARM RPM TOO LOW	Idle speed fluctuates with electrical load	**2**		**3**					**1**
FREQUENT STALLING	WHILE WARMING UP	**1**							
FREQUENT STALLING	AFTER WARMING UP	**1**							
FAILS EMISSION TEST									**1**

*1 : A/T

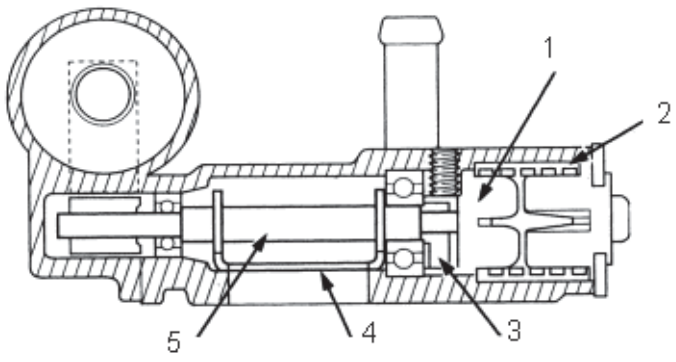
The idle speed of the engine is controlled by the Idle Air Control (IAC) Valve. The valve changes the amount of air bypassing into the intake manifold in response to electric current controlled by the ECM/PCM. When the IAC Valve is activated, the valve opens to maintain the proper idle speed.



1. **YEL/BLK**
2. **From PGM-FI MAIN RELAY**
3. **VARIOUS SENSORS**
4. **ECM/PCM**
5. **BLK/BLU**
6. **ORN**
7. **BLK**
8. **INTAKE MANIFOLD**
9. **ENGINE COOLANT**
10. **IAC VALVE**

1. After the engine starts, the IAC valve opens for a certain time. The amount of air is increased to raise the idle speed about 150-300 rpm (min-1)
2. When the coolant temperature is low, the IAC valve is opened to obtain the proper fast idle speed. The amount of bypassed air is thus controlled in relation to the engine coolant temperature.
3. When the idle speed is out of specification and the Malfunction Indicator Lamp (MIL) does not indicate Diagnostic Trouble Code (DTC) 14, check the following items:
   - Air conditioning signal (**See Page** 11-65)
   - ALT FR signal (**See Page** 11-67)
   - Brake switch signal (**See Page** 11-69)
   - Starter switch signal (**See Page** 11-70)
   - PSP switch signal (**See Page** 11-71)
   - A/T gear position signal (see section 14)
   - Hoses and connections
   - IAC valve and it's mounting O-rings
4. If the above items are normal (and the MIL does not indicate DTC 14), after IAC valve replacement, substitute a know-good ECM/PCM and recheck. If symptom goes away, replace the original ECM/PCM.

14 The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 14: A problem in the Idle Air Control (IAC) valve.
The IAC valve changes the amount of air bypassing the throttle body in response to a curretn signal from the ECM/PCM in order to maintain the proper idle speed.



1. **BIMETAL HOLDER**
2. **BIMETAL**
3. **STOPPER**
4. **VALVE**
5. **SHAFT**

- **The MIL has been reported on.**
- **With the SCS short connector connected (see page 11-13), code 14 is indicated.**

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-14).
2. Turn the ignition switch ON (II).

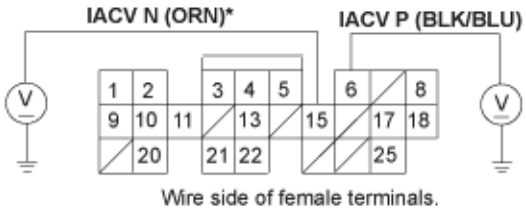
Does the MIL blink and does it indicate code 14?

NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires between the IAC valve and the ECM/PCM.**

YES

Check the ECM/PCM input voltage:
Measure voltage between body ground and ECM/PCM connector terminals B6, B15* individually

ECM/PCM CONNECTOR B (25P)



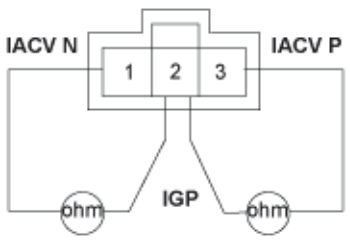
Wire side of female terminals.

Is there battery voltage?

NO → A (To page 11-64)

YES

IAC VALVE 3P CONNECTOR



Wire side of female terminals.

Check the IAC valve:
1. Turn the ignition switch OFF.
2. Disconnect the IAC valve 3P connector.
3. Measure resistance between IAC valve 3P connector terminals No. 2 and No. 1, No. 3 individually.

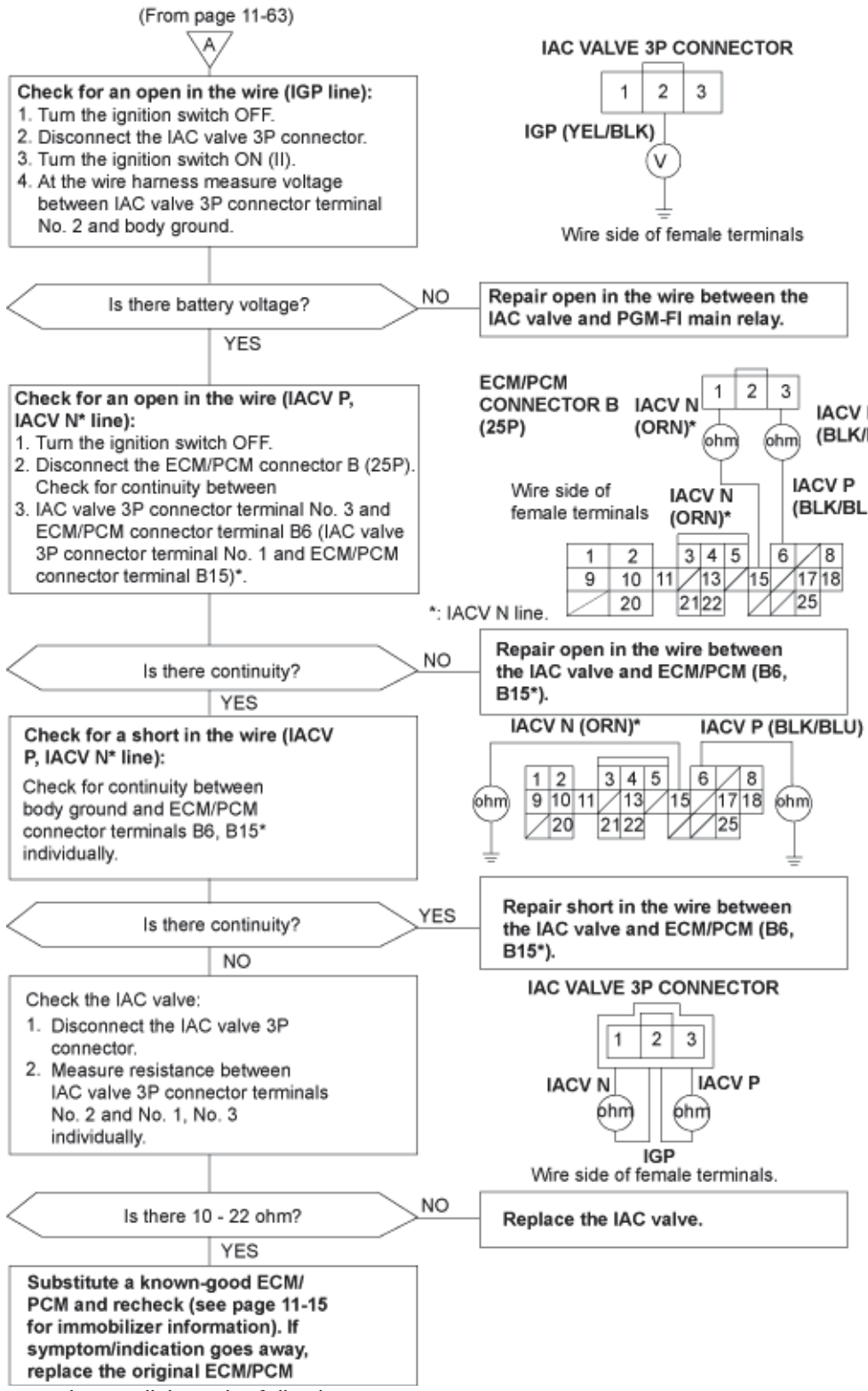
Is there 10 - 22 ohm?

NO → **Replace the IAC valve.**

YES

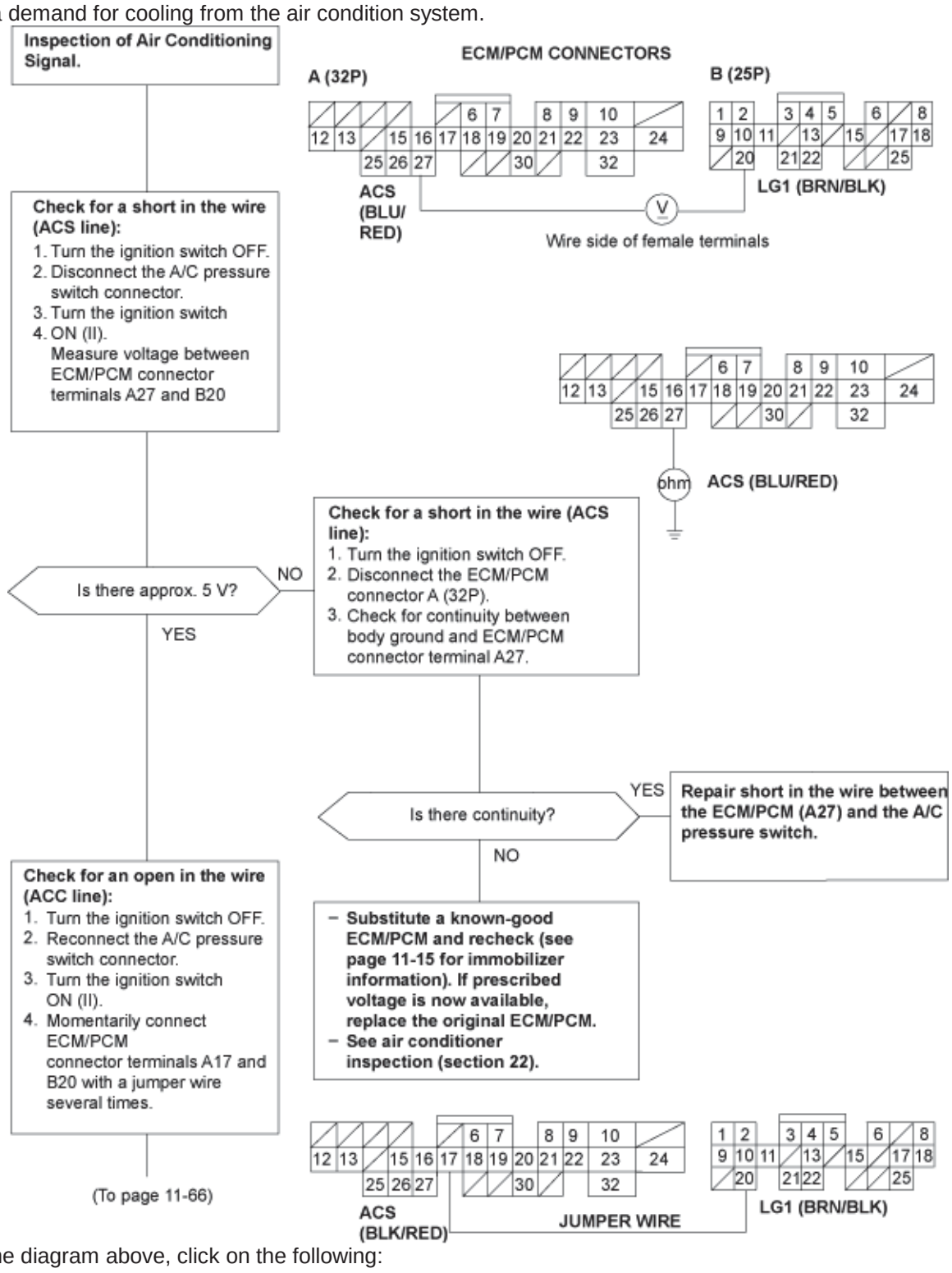
Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 11-13)
(**See Page** 11-14)
(**See Page** 11-15)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

The signals the ECM/PCM when there is a demand for cooling from the air condition system.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

(From page 11-65)

Is there a clicking noise from the A/C compressor clutch?

NO

Check for an open in the wire (ACC line):
Momentarily connect the under-hood fuse/relay box 16P connector terminal No. 11 to body ground with a jumper wire several times.

UNDER-HOOD FUSE/RELAY BOX 16P CONNECTOR



Wire side of female terminals

Is there a clicking noise from the A/C compressor clutch?

NO

See air conditioner inspection (see section 22).

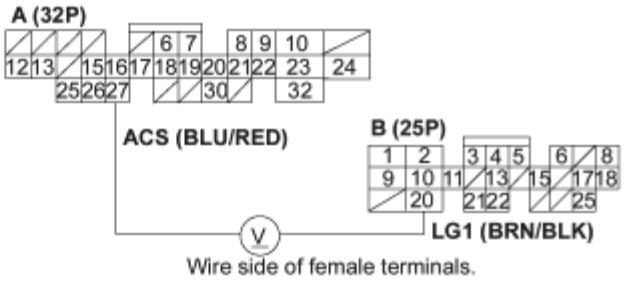
YES

Repair open in the wire between the ECM/PCM (A17) and the A/C clutch relay.

YES

Check for the operation of the A/C:
1. Start the engine.
2. Turn the blower switch ON.
3. Turn the A/C switch ON.

ECM/PCM CONNECTORS



Wire side of female terminals.

Does the A/C operate?

NO

Check for an open in the wire (ACC line):
Measure voltage between ECM/PCM connector terminal A27 and B20

YES

Air conditioning signal is OK

Is the voltage less than 1.0 V?

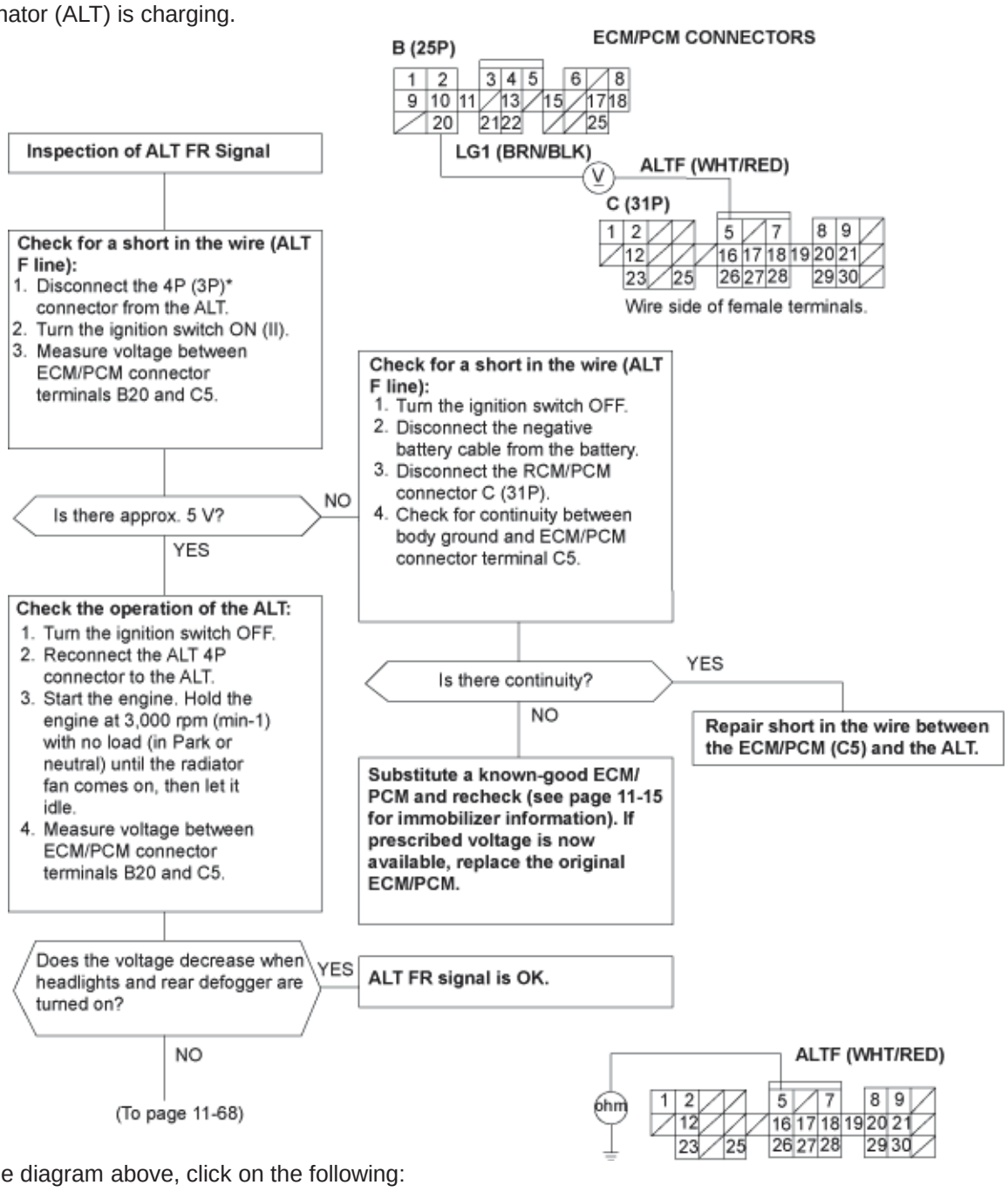
NO

Repair open in the wire between the ECM/PCM (A27) and the A/C switch.

YES

- **Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobilizer information). If prescribed voltage is now available, replace the original ECM/PCM.**
- **See air conditioner inspection (section 22).**

This signals the ECM/PCM when the Alternator (ALT) is charging.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

(From page 11-67)

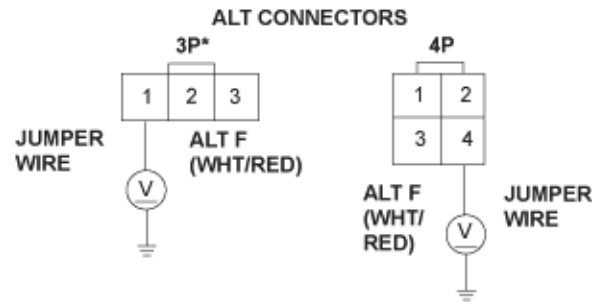
Check for an open in the wire (ALT F line):

1. Turn the ignition switch OFF.
2. Disconnect the 4P (3P)* connector from the ALT.
3. Turn the ignition switch ON (II).
4. Measure voltage between the ALT 4P (3P)* connector terminal No. 4 (No. 1)* and body ground.

Is there approx. 5 V?

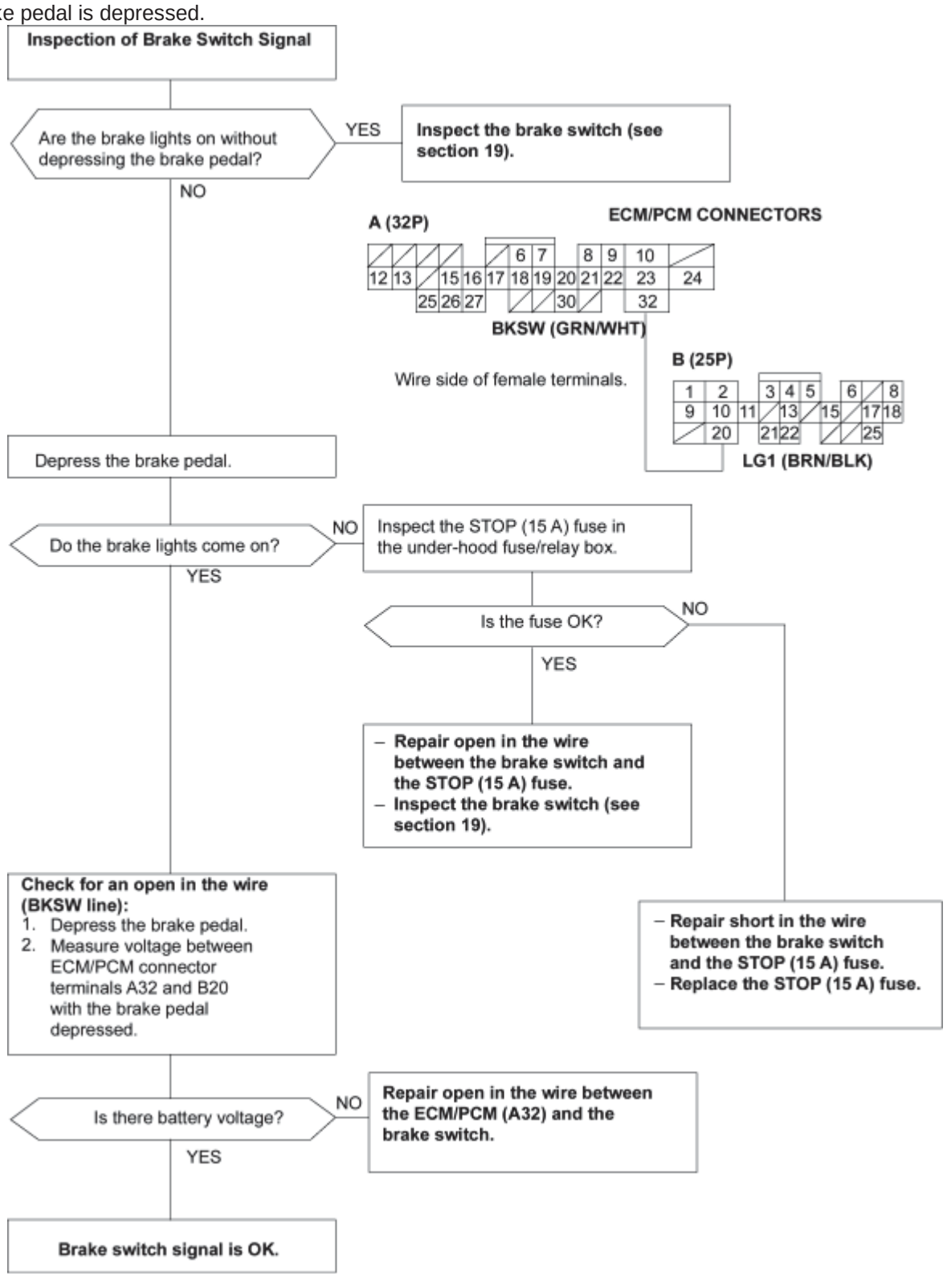
NO → **Repair open wire between the ECM/PCM (C5) and the ALT.**

YES → **See the ALT inspection (see section 23).**

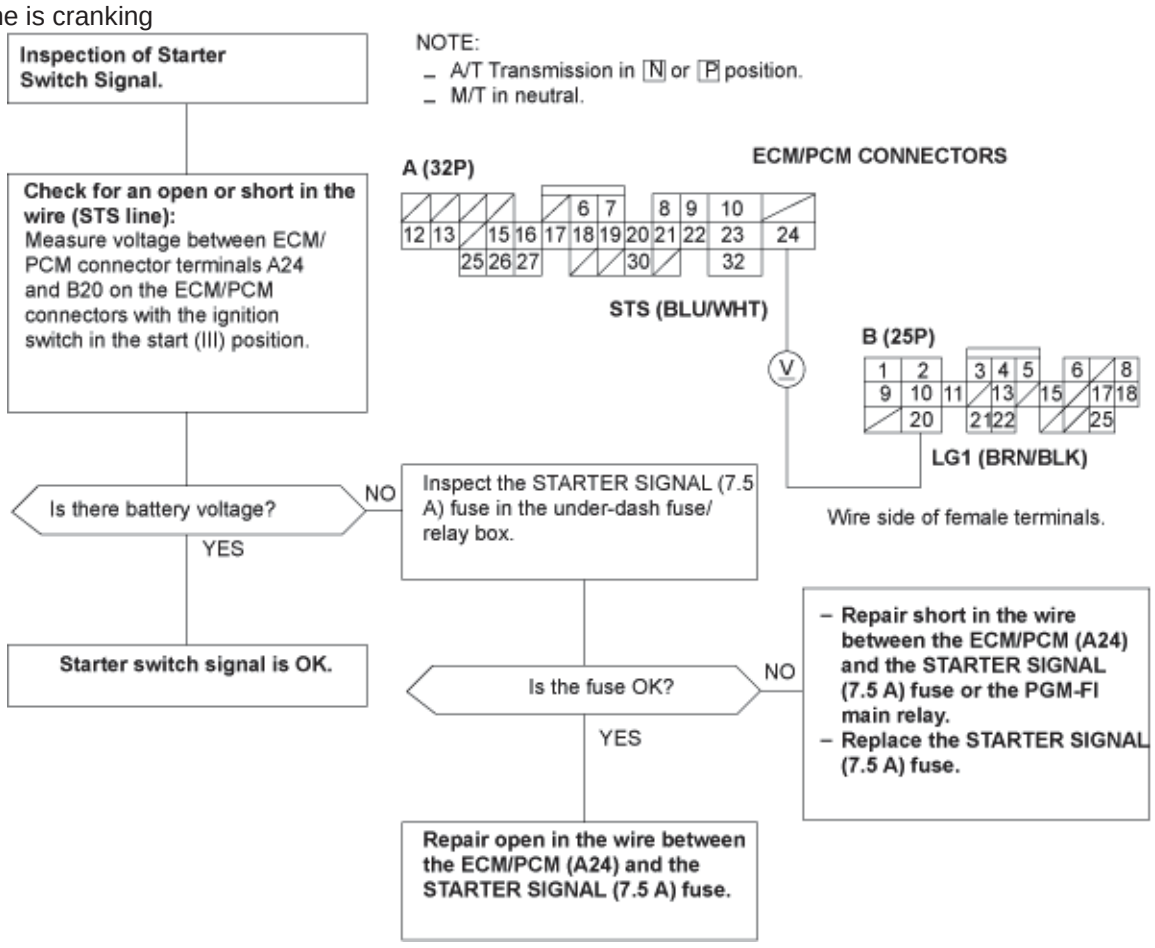


*: KU, KN, KY, KT models.

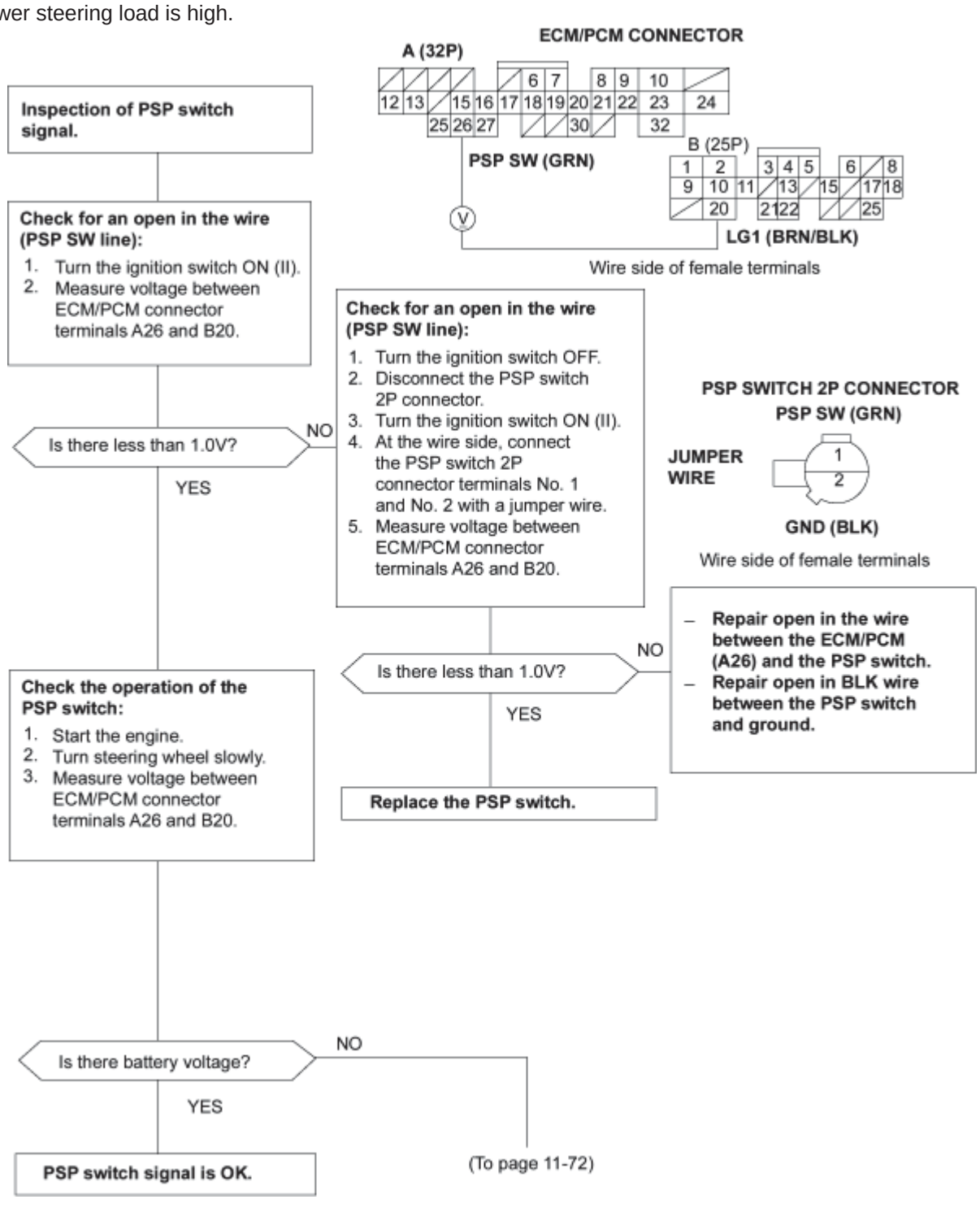
This signals the ECM/PCM when the brake pedal is depressed.

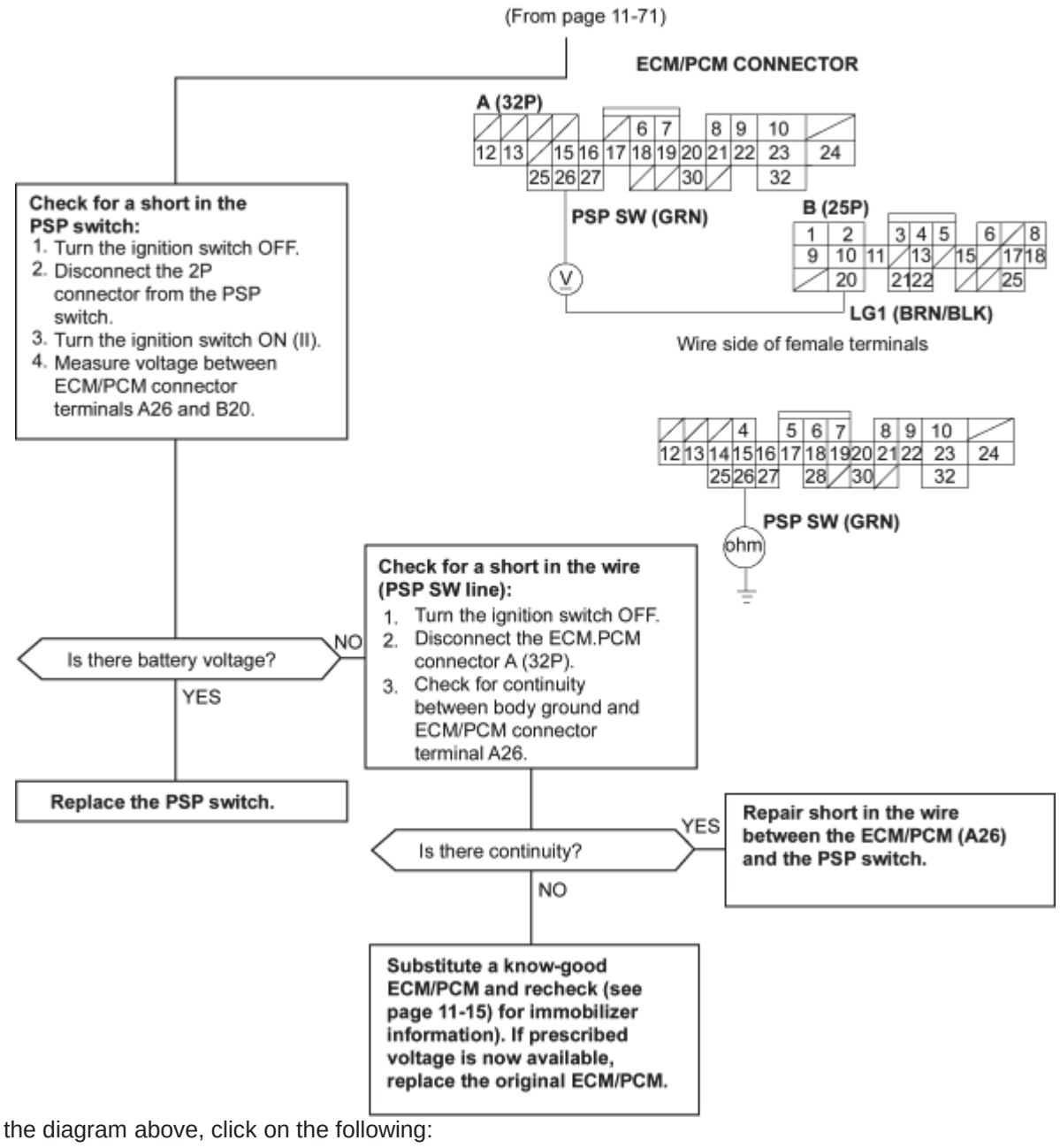


This signals the ECM/PCM when the engine is cranking



This signals the ECM/PCM when the power steering load is high.



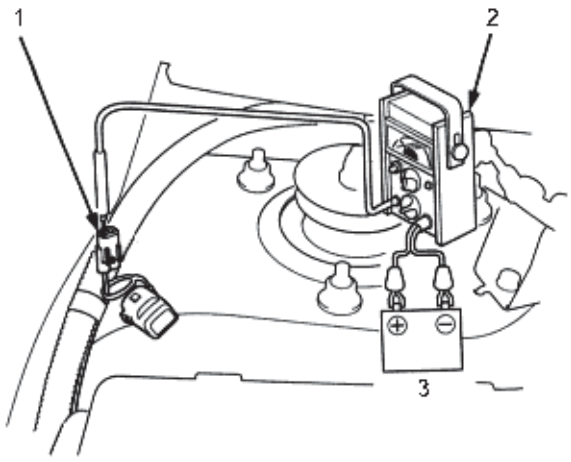


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

Inspection/Adjustment
Adjust the idle speed by means of a Honda PGM TESTER. If not, check the following:
NOTE: Before setting the idle speed, check the following items:

- The MIL has not been reported on.
- Ignition timing
- Spark plugs
- Air cleaner
- PCV system

1. Connect a tachometer



1. TEST TACHOMETER CONNECTOR
2. TACHOMETER
3. BATTERY

2. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load until the radiator fan comes on, then let it idle.
3. Check the idle speed with no-load conditions: headlights, blow fan, rear defogger, radiator fan and air conditioner not operating.

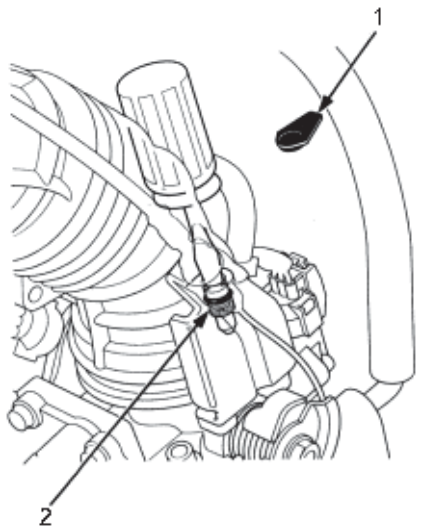
Idle speed should be:
Except KU model:

M/T	750 ± 50 rpm (min-1)
A/T	700 ± 50 rpm (min-1) (in N or P position)

KU model:

M/T	670 ± 50 rpm (min-1)
A/T	700 ± 50 rpm (min-1) (in N or P position)

4. Adjust the idle speed, if necessary, by turning the idle adjusting screw 1/2-turn clockwise or counter-clockwise.



1. CAP
2. IDLE ADJUSTING SCREW

5. After 1/2-turn the idle adjusting screw, check the idle speed again. If it is out of spec, turn the idle adjusting screw 1/2-turn again.
   NOTE: Do not turn the idle adjusting screw more than 1/2 without checking the idle speed.
6. Idle the engine for one minute with heater fan switch at HI and air conditioner on, then check the idle speed.
   Idle speed should be:

M/T	810 ± 50 rpm (min-1)
A/T	810 ± 50 rpm (min-1) (in N or P position)

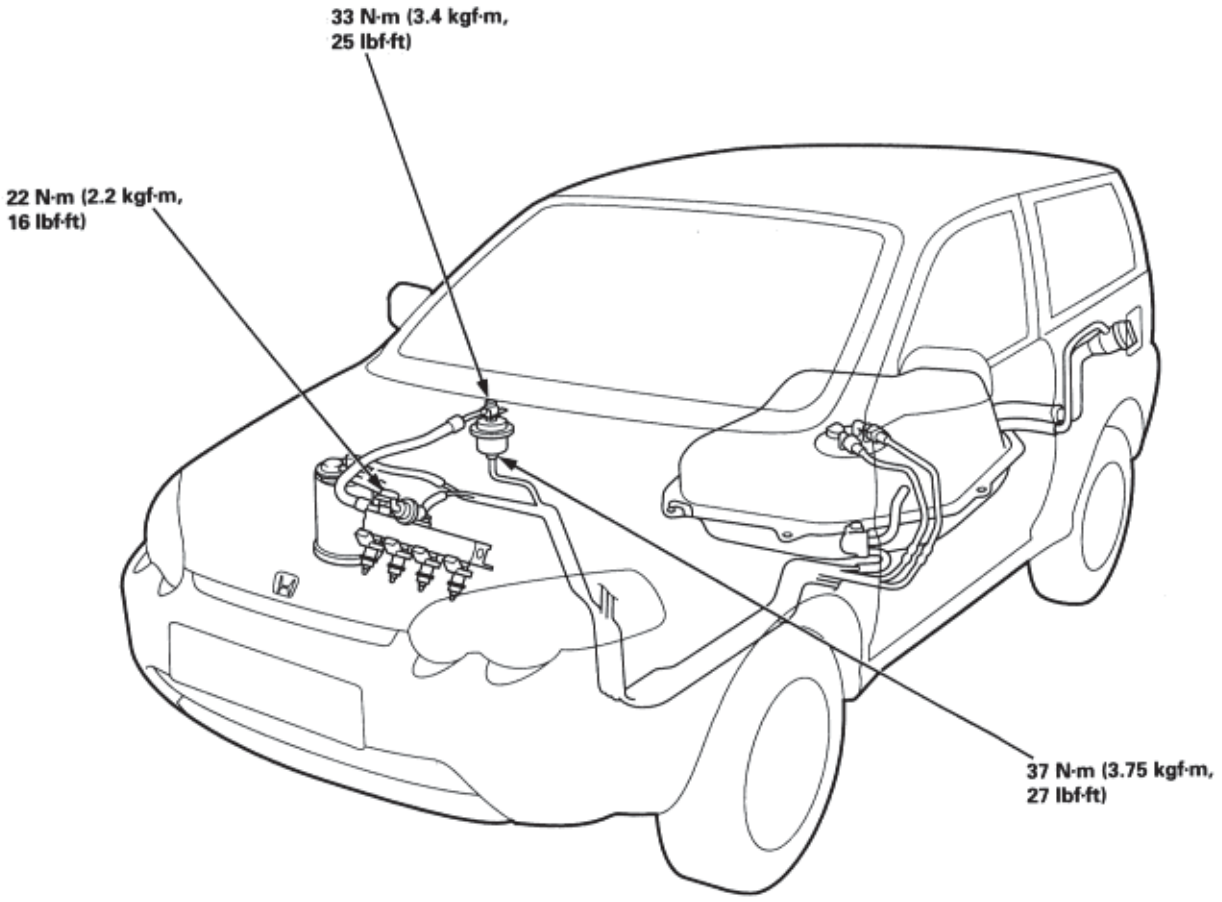
NOTE:

- Do not turn the idle adjusting screw when the air conditioner is on.
- If the idle speed is not within specification, refer to the System Troubleshooting Guide (**See Page** 11-61).

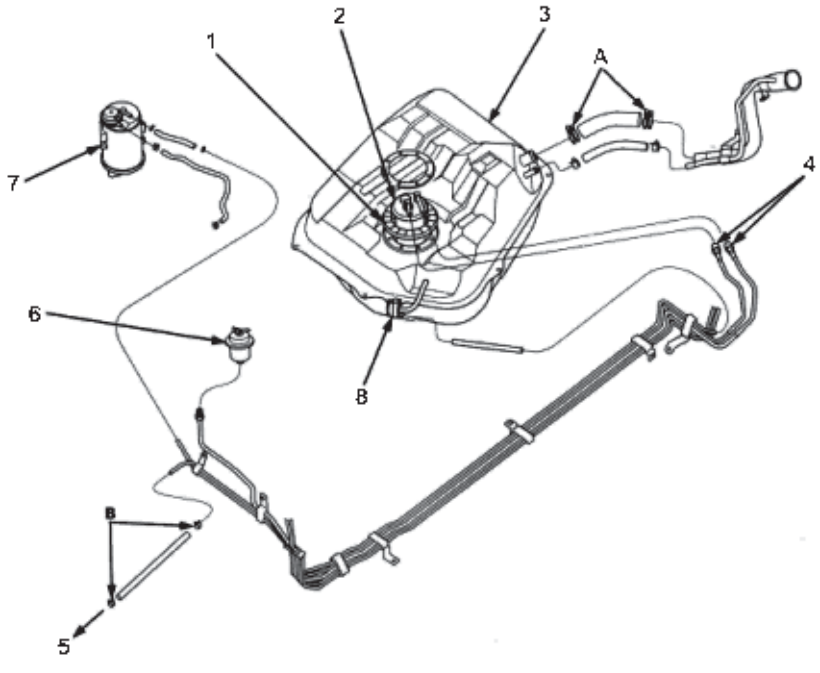
NOTE: Across each row in the chart, the sub-systems that could be sources of a symptom are ranked in the order they should be inspected starting with 1. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column, If inspection shows the system is OK, try the next most likely system 2. etc.

SUB-SYSTEM		FUEL LINES	FUEL INJECTOR	FUEL PRESSURE REGULATOR	FUEL FILTER	FUEL PUMP	PGM/FI MAIN RELAY	CONTAMINATED FUEL
PAGE		11-75	11-81	11-85	11-86	11-87	11-92	-
SYMPTOM								
ENGINE WILL NOT START			**3**		**3**	**1**	**2**	
DIFFICULT TO START ENGINE WHEN COLD OR HOT					**1**	**2**		
ROUGH IDLE			**1**					**2**
POOR PERFORMANCE	MISFIRE OR ROUGH RUNNING		**1**	**2**				**2**
POOR PERFORMANCE	FAILS EMISSION TEST		**2**	**1**				
POOR PERFORMANCE	LOSS OF POWER		**3**		**2**	**1**		
FREQUENT STALLING	WHILE WARMING UP			**1**				
FREQUENT STALLING	AFTER WARMING UP			**1**				

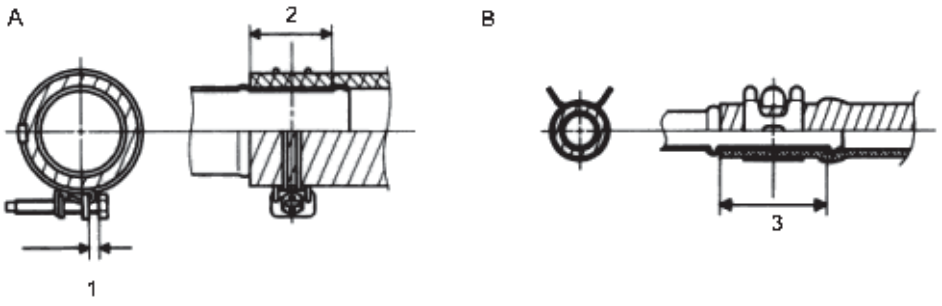
NOTE: Check fuel system lines, hoses and fuel filter for damage, leaks or deterioration and replace if necessary



NOTE: Check all hose clamps and retighten if necessary.



1. **BASE PACKING,** Replace
2. **FUEL PUMP/FUEL GAUGE SENDING UNIT**
3. **FUEL TANK**
4. **FUEL TUBE/QUICK-CONNECT FITTINGS**
5. **To FUEL PRESSURE REGULATOR**
6. **FUEL FILTER**
7. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
8. **EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**



1. **10-14 mm (0.39-0.55 in)**
2. Clamp in the middle
3. Clamp in the middle

Precautions

WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

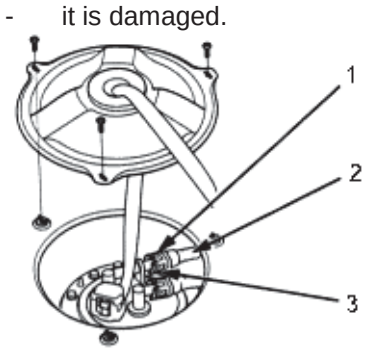
The fuel tube/quick-connect fittings assembly connects the in-tank fuel pump with the fuel filter and the fuel return pipe, the fuel filter with the fuel feed pipe. For removing or installing the fuel filter, the fuel pump and fuel tank, it is necessary to disconnect or connect the quick-connect fittings.

Pay attention to the following:

- The fuel tube/quick-connect fittings assembly is not hear-resistant, be careful not to damage it during welding or other heat-generating procedures.
- The fuel tube/quick-connect fittings assembly is not acid-proof, do not touch it with a shop towel which was used for wiping battery electrolyte. Replace the fuel tube/quick-connect fittings assembly if it came into contact with electrolyte or something similar.
- When connecting or disconnecting the fuel tube/quick-connect fittings assembly, be careful not to bend or twist it excessively. Replace it if damaged.

A disconnected quick-connect fittings can be reconnected, but the retainer on the mating pipe cannot be reused one it has been removed from the pipe. Replace the retainer when:

- replacing the fuel pump.
- replacing the fuel feed pip.
- it has been removed from the pipe.
- it is damaged.



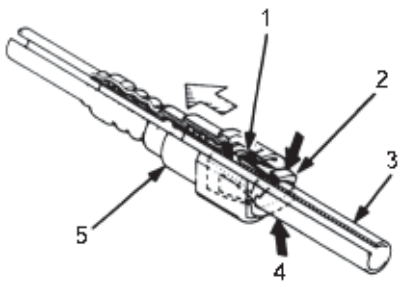
1. CONNECTOR
2. FUEL TUBE
3. RETAINER

Disconnections

WARNING

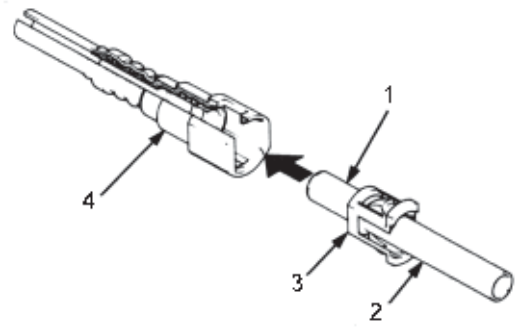
Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Disconnect the battery negative cable.
2. Remove the fuel fill cap and relieve fuel pressure in the tank.
3. Relieve fuel pressure (**See Page** 11-80).
4. Check the fuel quick-connect fittings for dirt and clean if necessary.
5. Hold the connector with one hand and press down the retainer tabs with the other hand, then pull the connector off.
   NOTE:
   - Be careful not to damage the pipe 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 pipe; once removed, the retainer must be replaced with a new one.



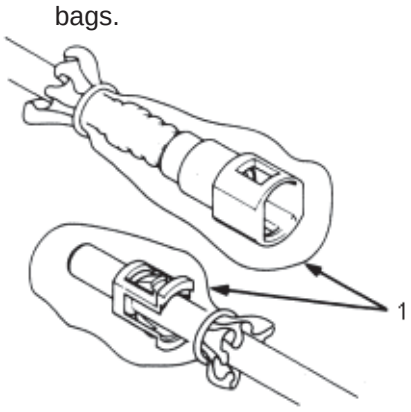
1. LOCKING PAWL
2. RETAINER TAB
3. PIPE
4. Press down
5. CONNECTOR

6. Check the contact area of the pipe for dirt and damage.
   - If the surface is dirty, clean it.
   - If the surface is rusty or damaged, replace the fuel pump or fuel feed pipe.



1. CONTACT AREA
2. PIPE
3. RETAINER
4. CONNECTOR

7. To prevent damage and keep out foreign matter cover the disconnected connector and pipe end with plastic bags.



1. PLASTIC BAGS

NOTE:

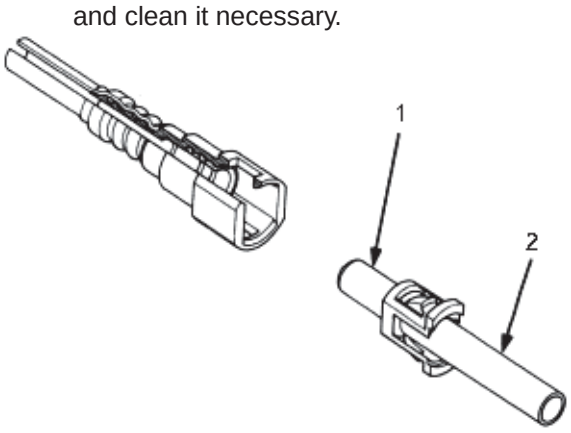
- The retainer cannot be reused once it has been removed from the pipe.
  Replace the retainer when
  - replacing the fuel pump.
  - replacing the fuel feed pipe.
  - it has been removed from the pipe.
  - it is damaged.

Connection

⚠ WARNING

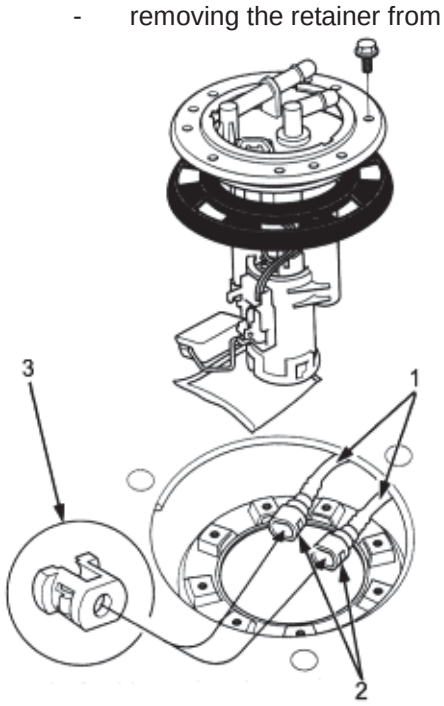
Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Check the pipe contact area for dirt and damage and clean it necessary.



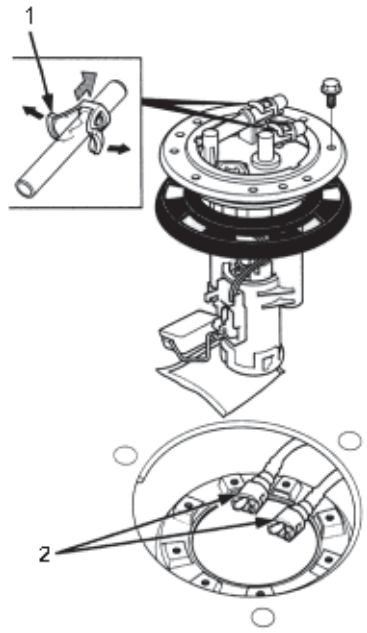
1. CONTACT AREA
2. PIPE

2. Insert a new retainer into the connector if the retainer is damaged, or after:
   - replacing the fuel pump.
   - replacing the fuel feed pipe.
   - removing the retainer from the pipe.



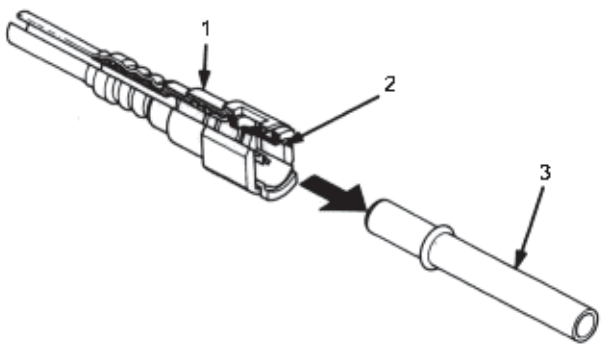
1. FUEL TUBES
2. CONNECTORS
3. New RETAINER (Insert into the connector.)

Before connecting a new fuel tube/quick-connect fitting assembly, remove the old retainer from the mating pipe.



1. RETAINER
   With the tabs pulled apart, pull the retainer off
2. New FUEL TUBE/QUICK-CONNECT FITTING ASSEMBLY

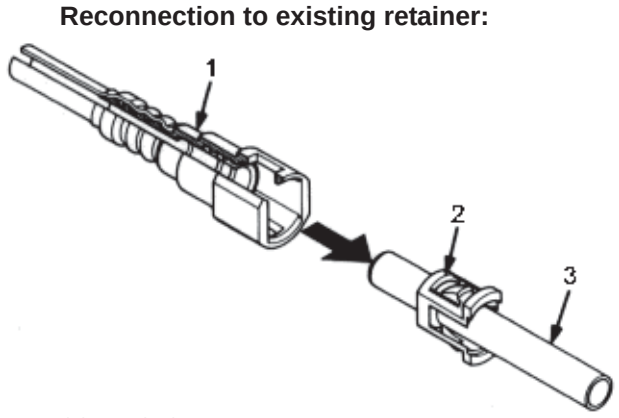
3. Align the quick-connect fittings with the pipe and align the retainer locking pawls with the connector grooves. Then press the quick-connect fittings onto the pipe until both retainer pawls lock with a clicking sound.
   NOTE: If it is hard to connect, put a small amount of new engine oil on the pipe end.
   Connection with new retainer:



1. CONNECTOR
2. RETAINER
3. PIPE

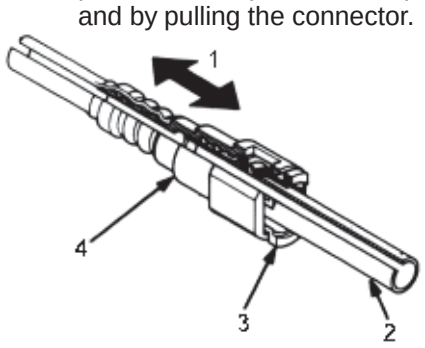
1. CONNECTOR
2. RETAINER
3. PIPE

   Reconnection to existing retainer:



1. CONNECTOR
2. RETAINER
3. PIPE

4. Make sure the connection is secure and that the pawls are firmly locked into place; check visually and by pulling the connector.



1. Pull apart.
2. PIPE
3. RETAINER
4. CONNECTOR

5. Reconnect the battery negative cable and turn the ignition switch ON (II). The fuel pump will run for about two seconds and fuel pressure will rise. Repeat two or three times and check that there is no leakage in the fuel supply system.

The fuel supply system consists of a fuel tank, in-tank high-pressure fuel pump, PGM-FI main relay, fuel filter, fuel pressure regulator, fuel injectors and fuel delivery and return lines. This system delivers pressure-regulated fuel to the fuel injectors and cuts the fuel delivery when the engine is not running.

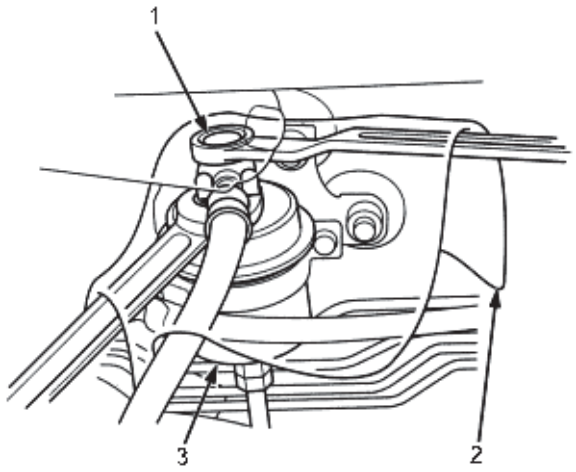
Relieving

Before disconnecting fuel pipes or hoses, release pressure from the system by loosening the 12 mm banjo bolt on top of the fuel filter.

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area. Be sure to relieve fuel pressure while the ignition switch is off.

1. Write down the frequencies for the radio's preset buttons.
2. Disconnect the battery negative cable from the battery negative terminal.
3. Remove the fuel fill cap.
4. Use a box end wrench on the 12 mm banjo bolt at the fuel filter, while holding the fuel filter with another wrench.
5. Place a rag or shop towel over the 12 mm banjo bolt.
6. Slowly loosen the 12 mm banjo bolt one complete turn.



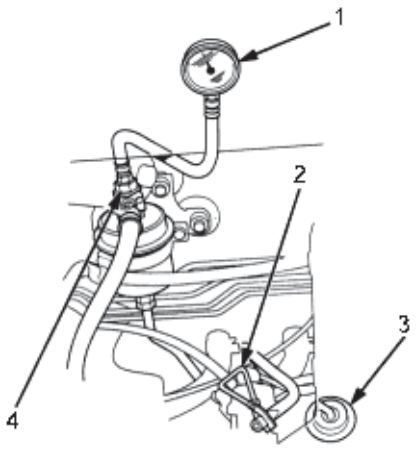
1. 12 mm BANJO BOLT, 33 Nm (3.4 kgf/m, 25 lbf/ft)
2. SHOP TOWEL
3. FUEL FILTER

NOTE: Replace the washers whenever the 12 mm banjo bolt is loosed or removed.

7. Reconnect the battery, then enter the customer's radio station presets.

Inspection

1. Relieve fuel pressure (**see page** 11-80).
2. Remove the 12 mm banjo bolt on the fuel filter while holding the fuel filter with another wrench. Attach the 12 mm fuel pressure adapter bolt and the special tool.



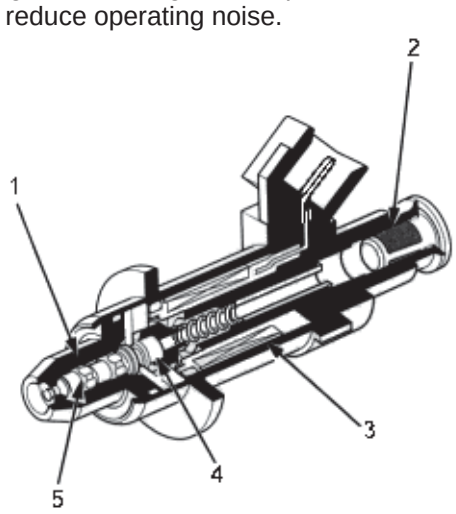
1. FUEL PRESSURE GAUGE SET 07406-0040002
2. CLAMP
3. FUEL PRESSURE REGULATOR
4. FUEL PRESSURE ADAPTER BOLT, 12 mm (90008-PD6-010)

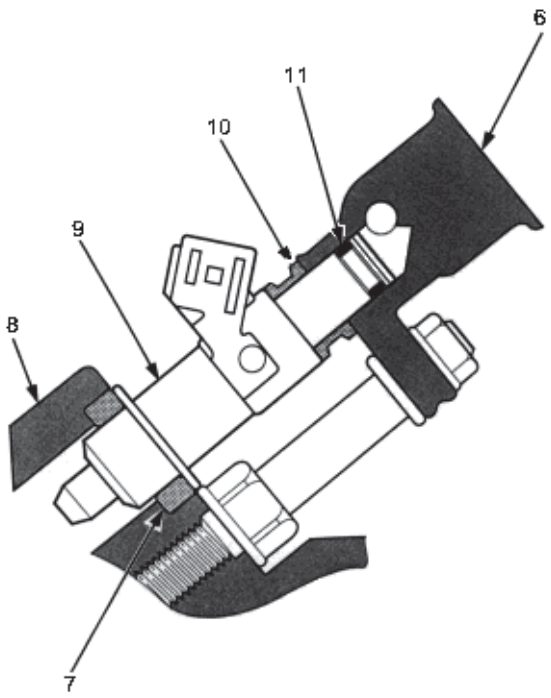
3. Start the engine. Measure the fuel pressure with the engine idling and the vacuum hose of the fuel pressure regulator disconnected from the fuel pressure regulator and pinched. If the engine will not start, turn the ignition switch ON (II). wait for two seconds, turn it off, then back on again and read the fuel pressure.
Pressure should be:
260-310 kPa (2.7-3.2 kgf/cm2, 38-46 psi)
4. Reconnect vacuum hose to the fuel pressure regulator.
Pressure should be:
200-250 kPa (2.0-2.5 kgf/cm2, 28-36 psi)
If the fuel pressure is not as specified, first check the fuel pump (**See Page** 11-87). If the fuel pump is OK, check the following:

- If the fuel pressure is higher than specified, inspect for:
  - Pinched or clogged fuel return hose or line.
  - Faulty fuel pressure regulator (**See Page** 11-85).
- If the fuel pressure is lower than specified, inspect for:
  - Clogged fuel filter.
  - Faulty fuel pressure regulator (**See Page** 11-85).
  - Leakage in the fuel line.

Description

The fuel injectors are a solenoid-actuated constant-stroke, pintle-type consisting of a solenoid, plunger needle valve and housing. When current is applied to the solenoid coil, the valve lifts up and pressurised fuel is injected. Because the needle valve lift and the fuel pressure are constant, the injection quantity is determined by the length of time and the valve is open (that is the duration the current is supplied to the solenoid coil). The fuel injector is sealed by an O-ring and seal ring at the top and bottom. These seals also reduce operating noise.





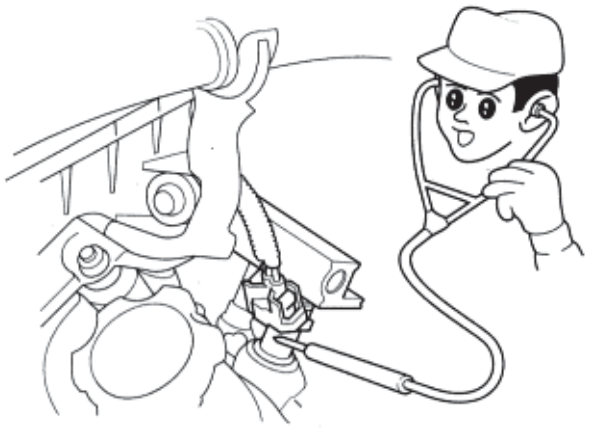
1. PLUNGER HOUSING
2. FILTER
3. SOLENOID COIL
4. CORE
5. PLUNGER
6. FUEL RAIL
7. SEAL RING
8. INTAKE MANIFOLD
9. FUEL INJECTOR
10. CUSHION RING
11 O-RING

Testing

NOTE: Check the following times before testing: idle speed, ignition timing and idle CO%.

If the engine runs:

1. With the engine idling, disconnect each fuel injector connector individually and inspect the change in the idle speed.
   - ♦ If the idle speed drop is almost the same for each cylinder, the fuel injectors are normal.
   - ♦ If the idle speed or quality remains the same when you disconnect a particular fuel injector, replace the fuel injector and retest.
2. Check the clicking sound of each fuel injector by means of a stethoscope when the engine is idling.

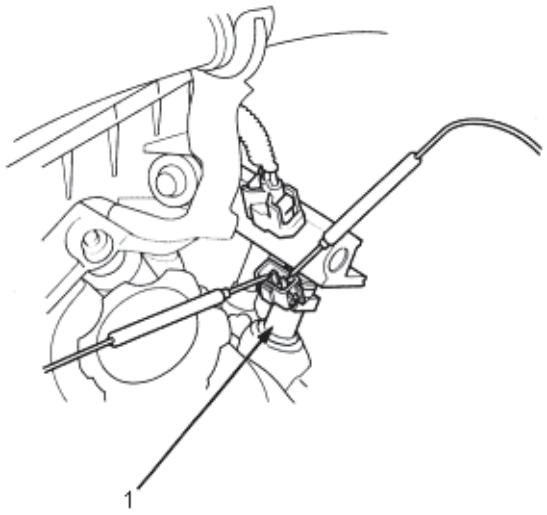


- ♦ If any fuel injector fails to make the typical clicking sound, check the sound again after replacing the fuel injector.
- \- If clicking sound is still absent, check the following:
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the PGM-FI main relay and the junction connector.
  - ♦ Whether the junction connector is open or corroded.
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the junction connector and the fuel injector.
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the wire between the fuel injector and the ECM/PCM.

  If all is OK, check the ECM/PCM (**See Page** 11-27) and PGM-FI main relay (**see page** 11-92).

Testing

1. Remove the connector of the fuel injector and measure the resistance between the 2 terminals of the fuel injector.
   Resistance should be: 12-15 ohm



1. FUEL INJECTOR

- ♦ If the resistance is not as specified, replace the fuel injector.
- ♦ If the resistance is as specified, check the fuel pressure (**see page** 11-81).
- \- If the fuel pressure is as specified, check the following:
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the PGM-FI main relay and the junction connector.
  - ♦ Whether the junction connector is open or corroded.
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the YEL/BLK wire between the junction connector and the fuel injector.
  - ♦ Whether there is any short-circuiting, wire breakage or poor connection in the wire between the fuel injector and the ECM/PCM.

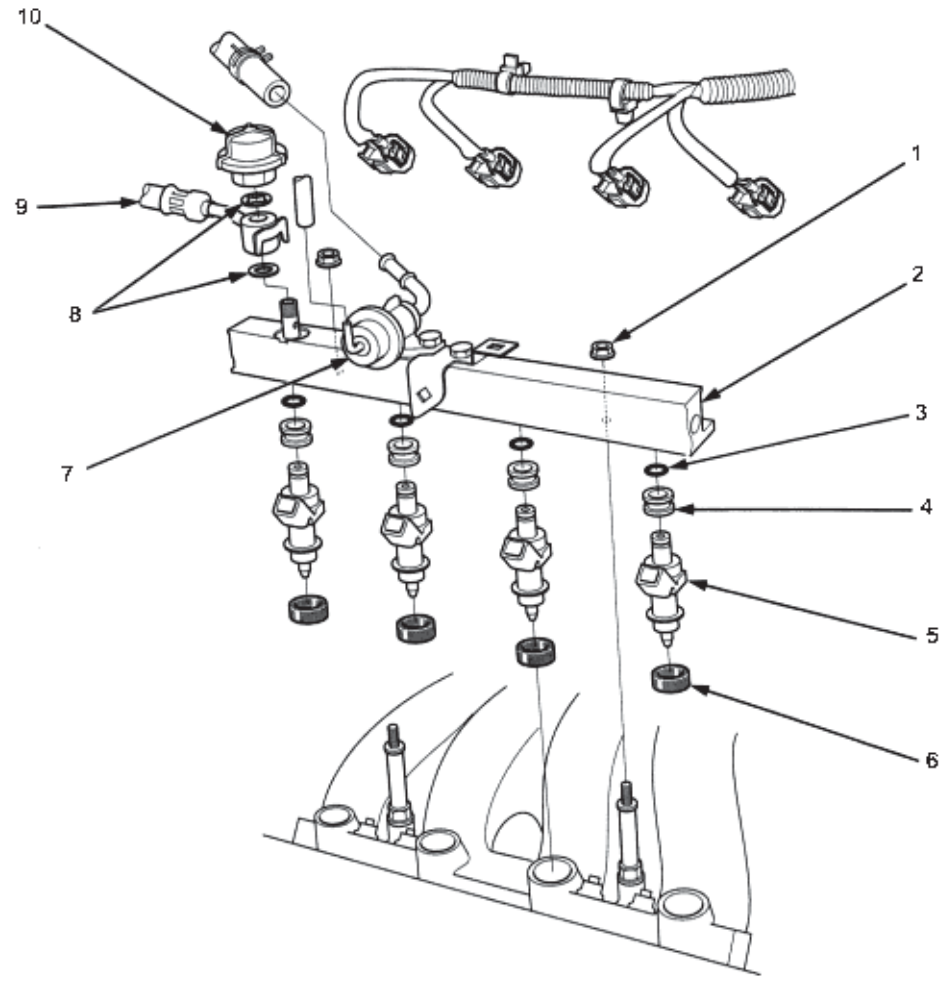
  If all is OK check the ECM/PCM (**See Page** 11-27).

Replacement

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

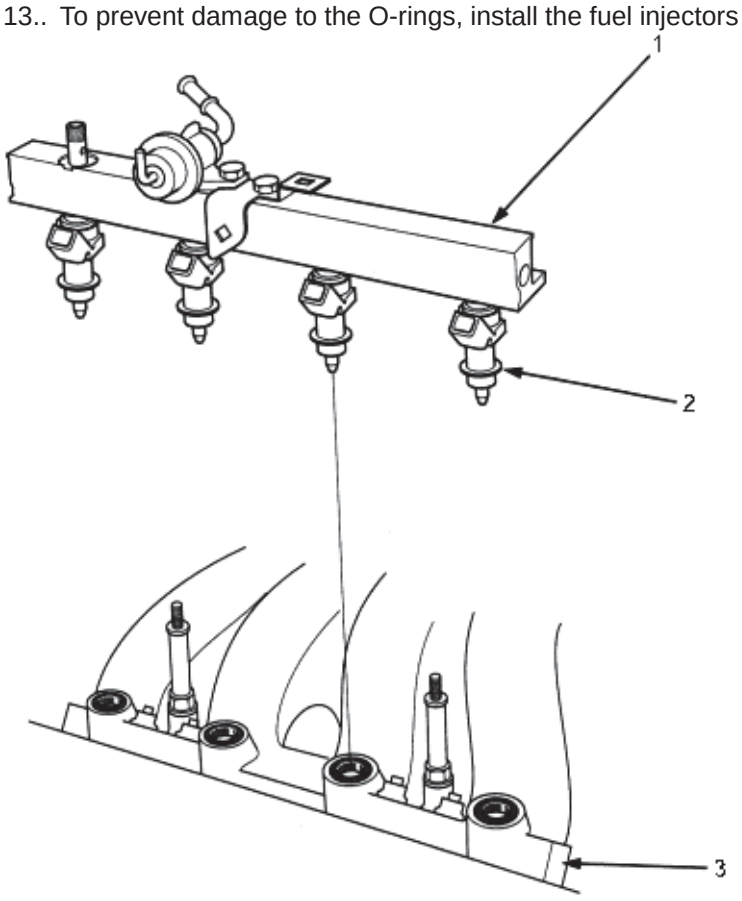
1. Relieve the fuel pressure (**See Page** 11-80).
2. Remove the air cleaner housing.
3. Disconnect the connectors from the fuel injectors.
4. Disconnect the vacuum hoses and fuel return hose from the fuel pressure regulator.
   NOTE: Place a rag or shop towel over the hoses before disconnecting them.
5. Disconnect the fuel feed hose from the fuel rail.
6. Remove the retainer nuts from the fuel rail.
7. Disconnect the fuel rail.
8. Remove the fuel injectors from the intake manifold.



1. **12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
2. **FUEL RAIL**
3. **O-RING,** Replace
4. **CUSHION RING,** Replace
5. **FUEL INJECTOR**
6. **SEAL RING,** Replace
7. **FUEL PRESSURE REGULATOR**
8. **WASHER,** Replace
9. **FUEL FEED HOSE**
10. **FUEL PULSATION DAMPER**
    22 Nm (2.2 kgf/m, 16 lbf/ft)

9. Slide new cushion rings onto the fuel injectors.
10. Coat new O-rings with clean engine oil and put them on the fuel injectors.
11. Insert the fuel injectors into the fuel rail first.
12. Coat new seal rings with clean engine oil and press them into the intake manifold.

.
13.. To prevent damage to the O-rings, install the fuel injectors in the fuel rail first, then install them in the intake manifold.



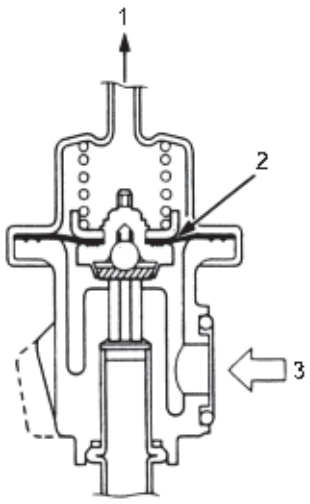
1. **FUEL RAIL**
2. **FUEL INJECTOR**
3. **INTAKE MANIFOLD**

14. Install and tighten the retainer nuts.
15. Connect the fuel hose to the fuel rail with new washers.
16. Connect the vacuum hoses and fuel return hose to the fuel pressure regulator.
17. Install the connectors on the fuel injectors.
18. Install the air cleaner housing.
19. Turn the ignition switch ON (II), but do not operate the starter. After the fuel pump runs for approximately two seconds, the fuel pressure in the fuel line rises. Repeat this two or three times, then check whether there is any fuel leakage.

Description

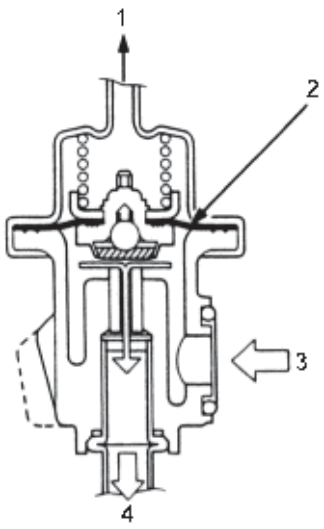
The fuel pressure regulator maintains a constant fuel pressure to the fuel injectors. When the difference between the fuel pressure and manifold pressure exceeds 290 kPa (3.0 kgf/m, 43 psi), the diaphragm is pushed upward, and the excess fuel is fed back into the fuel tank through the return line.

CLOSED:



1. To INTAKE MANIFOLD
2. DIAPHRAGM
3. FUEL INLET

OPEN:



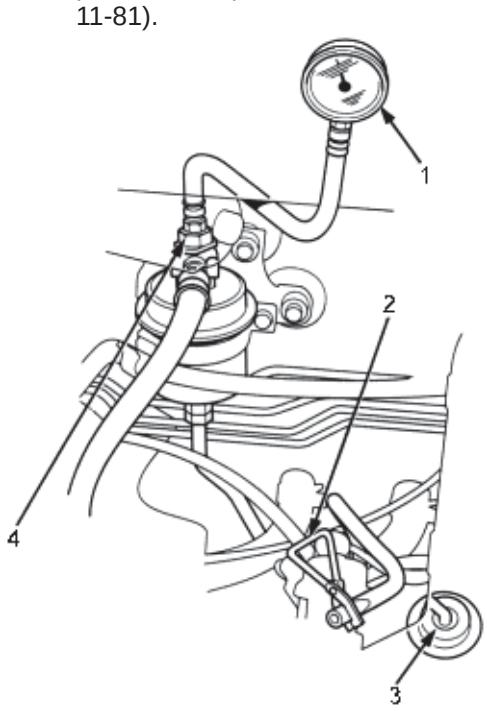
1. To INTAKE MANIFOLD
2. DIAPHRAGM
3. FUEL INLET
4. FUEL RETURN

Testing

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Attach the special tool and the 12 mm fuel pressure adapter bolt to the fuel filter (**See Page** 11-81).



1. FUEL PRESSURE GAUGE SET, 07406-0040002
2. CLAMP
3. FUEL PRESSURE REGULATOR
4. FUEL PRESSURE ADAPTER BOLT, 12 mm (90008-PD6-010)

Pressure should be:
260-310 kPa (2.7-3.2 kgf/cm2, 38-46 psi)
(with the fuel pressure regulator vacuum hose disconnected and pinched)

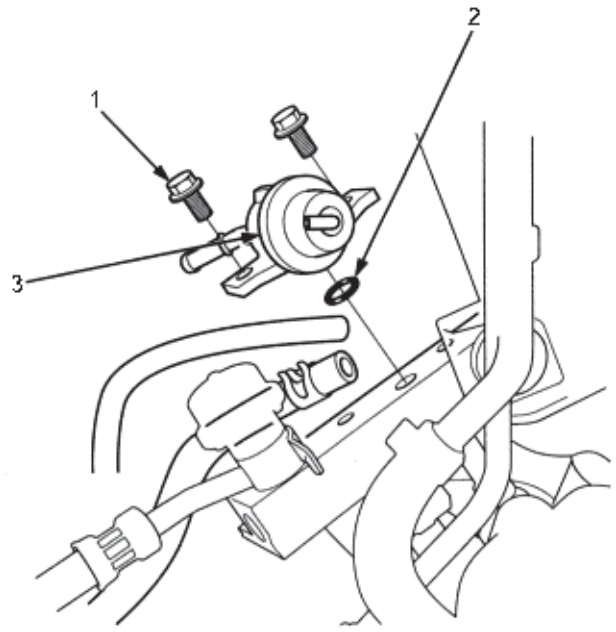
2. Reconnect the vacuum hose to the fuel pressure regulator.
3. Check that the fuel pressure rises when the vacuum hose from the fuel pressure regulator is disconnected again.
   - If the fuel pressure did not rise, replace the fuel pressure regulator.

Replacement

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Place a shop towel under the fuel pressure regulator, then relieve fuel pressure (**See Page** 11-80).
2. Disconnect the vacuum hose and fuel return hose.
3. Remove the two 6 mm retainer bolts and the fuel pressure regulator



1. 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. O-RING Replace.
3. FUEL PRESSURE REGULATOR

4. Apply clean engine oil to a new O-ring and carefully install it into its proper position.
5. Install the fuel pressure regulator in the reverse order of removal.

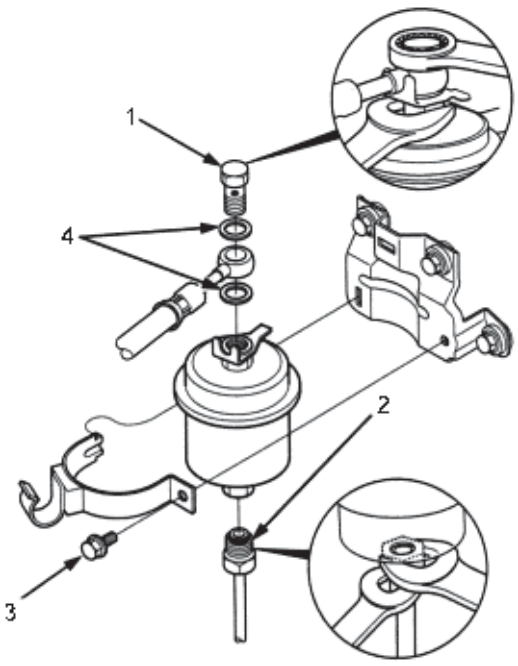
Replacement

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area. While replacing the fuel filter, be careful to keep a safe distance between battery terminals and any tools.

The fuel filter should be replaced whenever the fuel pressure drops below the specified value (260-310 kPa (2.7-3.2 kgf/cm^2, 38-46 psi) with the fuel pressure regulator vacuum hose disconnected and pinched), after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Disconnect the battery negative cable from the battery negative terminal.
2. Place a shop towel under and around the fuel filter.
3. Relieve fuel pressure (**See Page** 11-80).
4. Remove the 12 mm sealing bolt and the fuel feed pipe from the fuel filter, while supporting it with another wrench, as shown.
5. Remove the fuel filter clamp and fuel filter.
6. Install the new fuel filter in the reverse order of removal and note these items:
   - When assembling, use new washers as shown.
   - Clean the flared joint of high pressure hoses thoroughly before reconnecting them.



1. 12 mm SEALING BOLT 33 Nm (3.4 kgf/m, 25 lbf/ft)
2. 37 Nm (3.8 kgf/m, 27 lbf/ft)
3. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. WASHER Replace

Testing

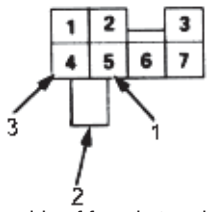
WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

If you suspect a problem with the fuel pump, check that the fuel pump actually runs; when it is ON (II), you will hear some noise if you hold your ear to the fuel fill port with the fuel fill cap removed. The fuel pump should run for two seconds when ignition switch is first turned ON (II). If the fuel pump does not make a noise, check it as follows.

1. Remove the access panel from the floor.
2. Turn the ignition switch OFF, then disconnect the 5P connector from fuel pump.
3. Connect the PGM-FI main relay 7P connector terminal No. 4 and No. 5 with a jumper wire.

PGM-FI MAIN RELAY 7P CONNECTOR

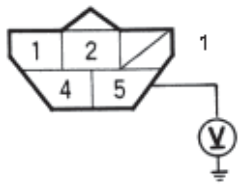


Wire side of female terminals

1. IG1 (BLK/RED)
2. JUMPER WIRE
3. FUEL PUMP (YEL/GRN)

4. Check that battery voltage is available between the fuel pump 5P connector terminal No. 5 and body ground when the ignition switch is turned ON (II).

FUEL PUMP 5P CONNECTOR



Wire side of female terminals

1. FUEL PUMP (YEL/GRN)

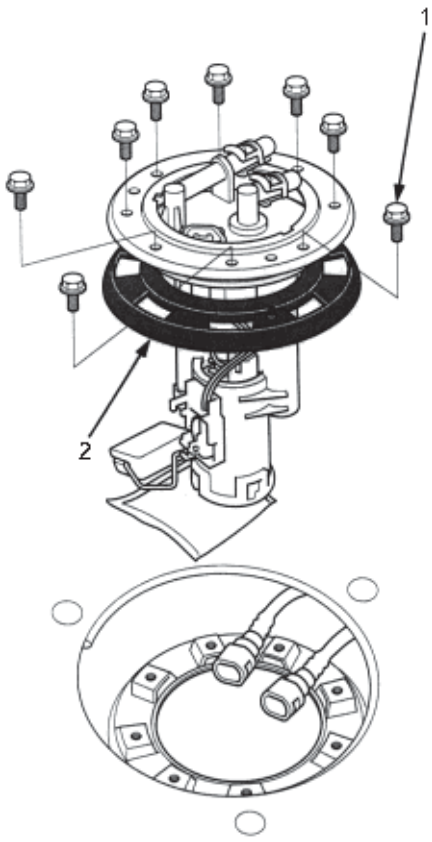
- If battery voltage is available, check the fuel pump ground. If the ground is OK, replace the fuel pump.
- If there is no voltage, check the wire harness (**see page** 11-93).

Replacement

WARNING

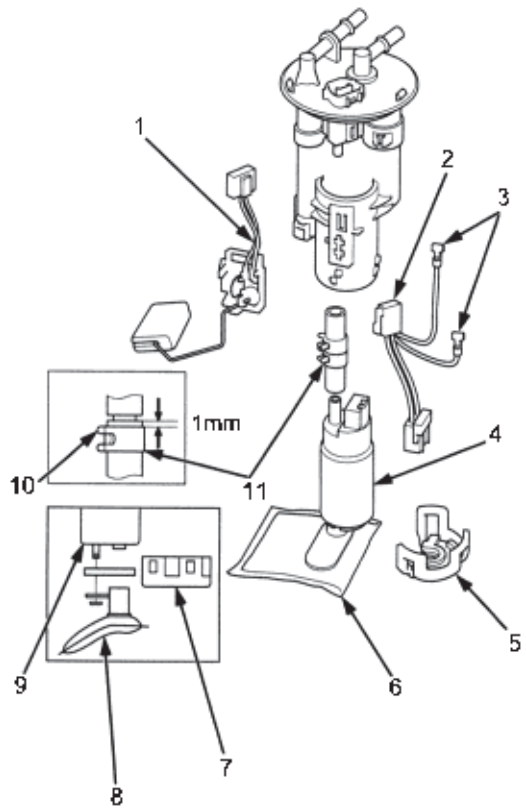
Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Relieve fuel pressure (**See Page** 11-80).
2. Remove the access panel from the floor.
3. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.
4. Disconnect the quick-connect fittings from the fuel pump.
5. Remove the bolts and the fuel pump assembly.



1. 4 Nm (0.4 kgf/m, 3 lbf/ft)
2. BASE GASKET Replace

5. Remove the bracket, the fuel gauge sending unit, the hose and the wire harness.



1. FUEL SENDING UNIT
2. WIRE HARNESS
3. TERMINAL
4. FUEL PUMP
5. BRACKET
6. SUCTION FILTER
7. BRACKET
8. SUCTION FILTER
9. FUEL PUMP
10. TAB
11. CLAMP

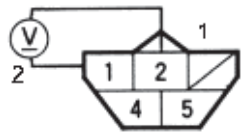
6. When connecting the fuel pump, make sure the connection is secure and the suction filter is firmly connected to the fuel pump.
7. Install the part in the reverse order of removal with a new base gasket, then checking these items:
   - When connecting the wire harness, make sure the connection is secure and the terminal is firmly locked into the place.
   - Check that the tab of the clamp do not interfere with the wire harness.
   - Do not push the lower part of suction filter.
   - When installing the fuel gauge sending unit, make sure the connection is secure and the connector is firmly locked into the place. Be careful not to bend or twist it excessively.

Testing

NOTE: See section 23 for the fuel gauge system circuit diagram.

1. Check the INSTRUMENT LIGHT (7.5A) fuse in the under-dash fuse/relay box before testing.
2. Remove the access panel from the floor.
3. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.
4. Measure voltage between the fuel pump 5P connector terminals No. 1 and No. 2 with the ignition switch ON (II).
   There should be between 5 and 8 V.

FUEL PUMP 5P CONNECTOR



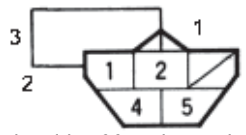
Wire side of female terminals

1. (YEL/BLK)
2. (BLK)

   - If the voltage is as specified, go to step 6.
   - If the voltage is not as specified, check for:
     - an open in the YEL/BLK or BLK wire.
     - poor ground (G501).

5. Turn the ignition switch OFF.
6. Connect the fuel pump 5P connector terminals No. 1 and No. 2 with a jumper wire, then turn the ignition switch ON (II).

FUEL PUMP 5P CONNECTOR



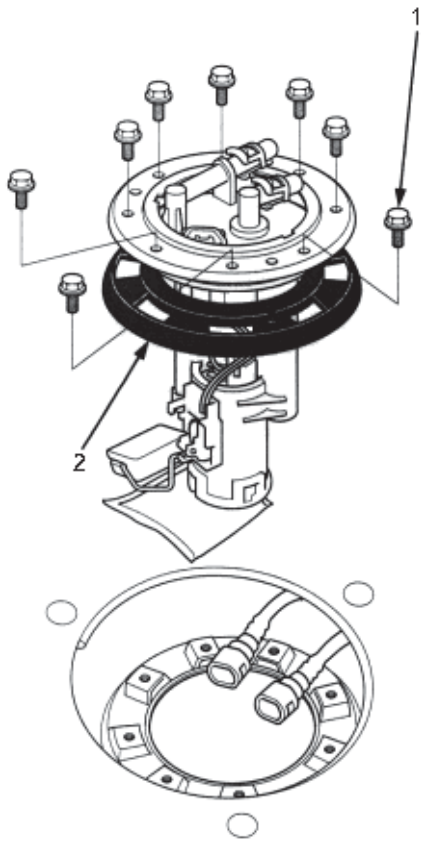
Wire side of female terminals

1. (YEL/BLK)
2. (BLK)
3. JUMPER WIRE

8. Check that the pointer of the fuel gauge starts moving toward the "F" mark.
   - If the pointer of the fuel gauge does not move at all, replace the gauge.
   - If the gauge is OK, inspect the fuel gauge sending unit.

   NOTE:
   - Turn the ignition switch OFF before the pointer reaches "F" on the gauge dial. Failure to do so may damage the fuel gauge.
   - The fuel gauge is a bobbin (cross-coil) type, hence the fuel level is continuously indicated even when the ignition switch is OFF, and the pointer moves more slowly than that of a bimetal type.

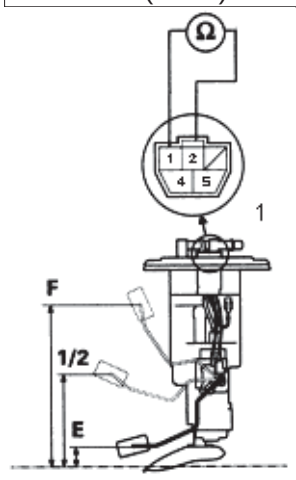
Testing
1. Relieve fuel pressure (**See Page** 11-80).
2. Remove the access panel from the floor.
3. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.
4. Disconnect the quick-connect fittings from the fuel pump.
5. Remove the bolts and the fuel pump assembly.



1. 4 Nm (0.4 kgf/m, 3 lbf/ft)
2. BASE GASKET, Replace

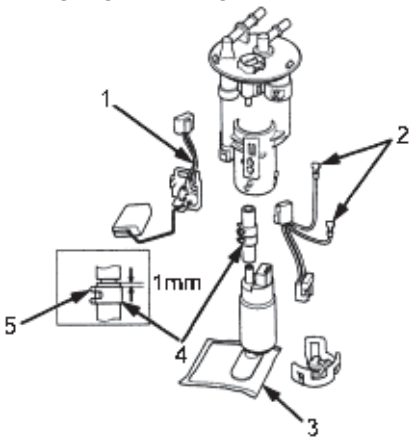
6. Measure the resistance between the No. 1 and No.2 terminals at E (EMPTY), 1/2 (HALF FULL) and F (FULL) by moving the float.

Float Position	E	1/2	F
Resistance (ohms)	130-132	68.5-74.5	11-13



Top of the workbench (Bottom of the fuel tank)
1. Terminal side of male terminals

If you do not get the above readings, replace the fuel gauge sending unit.



1. FUEL GAUGE SENDING UNIT
2. TERMINAL
3. SUCTION FILTER
4. CLAMP
5. TAB

7. Install the part in the reverse order of removal with a new base gasket, then checking these items:
   - When connecting the wire harness, make sure the connection is secure and the terminal is firmly locked into the place.
   - Check that the tab of the clamp do not interfere with the wire harness.
   - Do not push the lower part of suction filter.
   - When installing the fuel gauge sending unit, make sure the connection is secure and the connector is firmly locked into the place. Be careful not to bend or twist it excessively.

Indicator Light Testing

NOTE: See section 23 for the low fuel indicator circuit diagram:

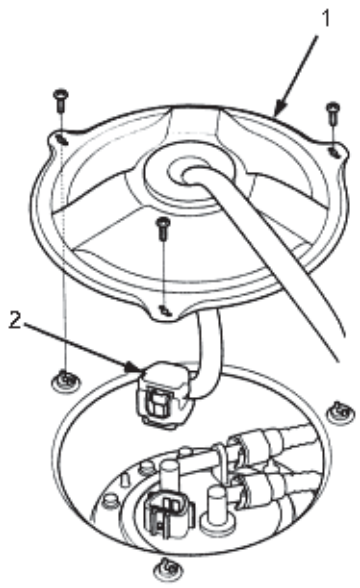
1. Check the INSTRUMENT LIGHT (7.5A) fuse in the under-dash fuse/relay before testing.
2. Park the vehicle on level ground.
3. Drain the fuel tank: Remove the fuel return line from the fuel pressure regulator and attach a suitable hose to the regulator fitting. Place the other end of the hose in a container suitable for gasoline. Start the engine and run it until the tank is empty (the engine stalls).
4. Add less than 6.9 *l* (1.8 U.S. Gal, 1.5 Imp, Gal) of fuel and turn the ignition switch ON (II). The low fuel indicator light should come on within four minutes.



LOW FUEL INDICATOR LIGHT

- If the light comes on within four minutes, go to step 9.
- If the light does not come on within four minutes, go to step 5.

5. Remove the access panel from the door.
6. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.



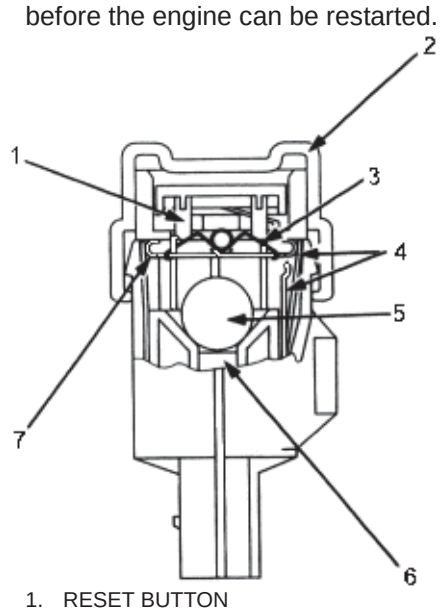
1. ACCESS PANEL
2. 5P CONNECTOR

7. Turn the ignition switch ON (II).
   - If the light comes on, replace the fuel gauge sending unit (**see page** 11-90).
   - If the light does not come on, check for:
     - an open in the YEL/BLK wire between the fuel gauge sending unit and fuel gauge assembly.
     - blown bulb.
     - poor ground (G501).
     - Faulty gauge assembly.
8. Add 4 *l* of fuel (1.1 U.S. Gal, 0.9 Imp. Gal). The light should go off within four minutes.
   - If the light does not go off, check for:
     - a short in the YEL/BLK wire between the fuel gauge sending unit and fuel gauge assembly.
     - faulty gauge assembly.
   - If the light goes off, low fuel indicator light is OK.

Description

The inertia switch is a safety device which automatically cuts off he fuel supply in the event of a collision or sudden impact.

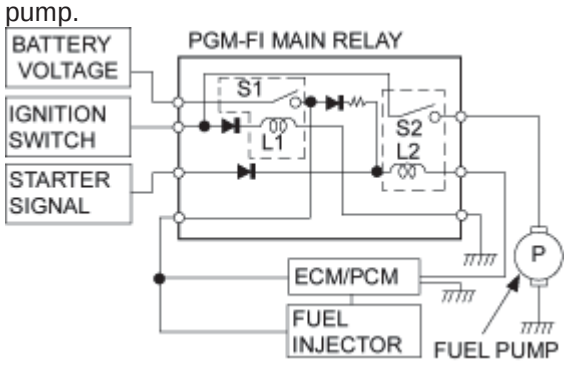
The switch is located behind the glove box. After an impact, the switch must be reset by pressing the button before the engine can be restarted.



1. RESET BUTTON
2. BOOT
3. SPRING
4. TERMINALS
5. STEEL BALL
6. MAGNET
7. MOVING CONTACT

Description

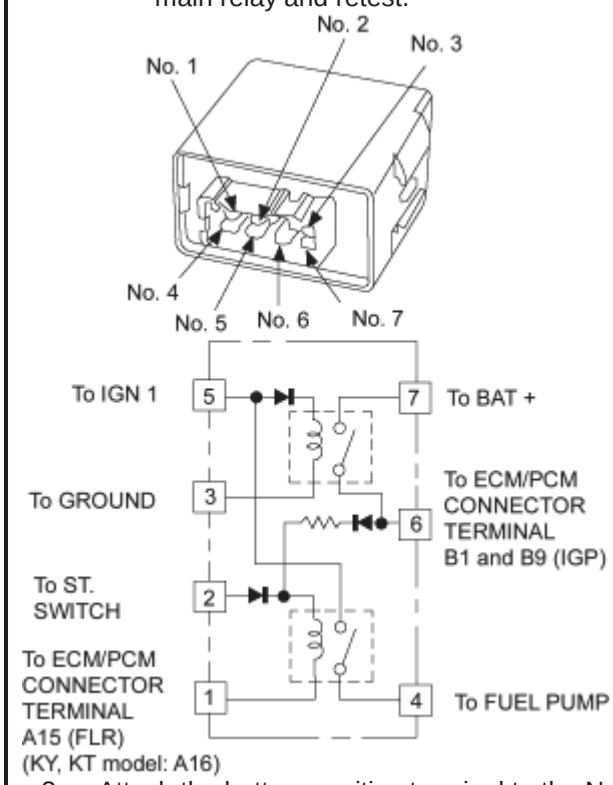
The PGM-FI main relay actually contains two individual relays. This relay is located at the driver side of the cowl. One relay is energised whenever the ignition is on which supplies the battery voltage to the ECM/PCM, power to the fuel injectors and power for the second relay. The second relay is energised for two seconds when the ignition is switched on and when the engine is running, to supply power to the fuel pump.



Relay Testing

NOTE: If the engine starts and continues to run, the PGM-FI main relay is OK.

1. Remove the PGM-FI main relay.
2. Attach the battery positive terminal to the No. 2 terminal and the battery negative terminal to the No. 1 terminal of the PGM-FI main relay. Then check for continuity between the No. 5 terminal and No. 4 terminal of the PGM-FI main relay.
   - If there is continuity, go on to step 3.
   - If there is no continuity, replace the PGM-FI main relay and retest.



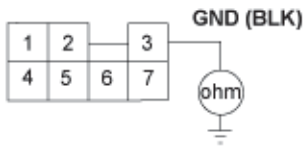
3. Attach the battery positive terminal to the No. 5 terminal and the battery negative terminal to the No. 3 terminal of the PGM-FI main relay. Then check that there is continuity between the No. 7 terminal and No. 6 terminal of the PGM-FI main relay.
   - If there is continuity, go on to step 4.
   - If there is no continuity, replace the PGM-FI main relay and retest.
4. Attach the battery positive terminal to the No. 6 terminal and the battery negative terminal to the No. 1 terminal of the PGM-FI main relay. Then check that there is continuity between the No. 5 terminal and No. 4 terminal of the PGM-FI main relay.
   - If there is continuity, the PGM-FI main relay is OK.
   - If there is no continuity, replace the PGM-FI main relay and retest.

Troubleshooting

- **Engine will not start.**
- **Inspection of PGM-FI main relay and relay harness.**

Check for an open in the wire (GND line):
1. Turn the ignition switch OFF.
2. Disconnect the PGM-FI main relay connector.
3. Check for continuity between the PGM-FI main relay 7P connector terminal and body ground.

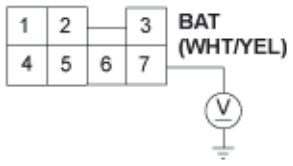
PGM-FI MAIN RELAY 7P CONNECTOR



Wire side of female terminals

Is there continuity?

NO → **Repair open in the wire between the PGM-FI main relay and G101.**

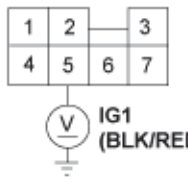


YES

Check for an open or short in the wire (BAT line):
Measure voltage between the PGM-FI main relay 7P connector terminal No. 7 and body ground.

Is there battery voltage?

NO →
- **Replace the ECU (ECM/PCM) (15A) fuse in the under-hood fuse/relay box.**
- **Repair open or short in the wire between the PGM-FI main relay and the ECU (ECM/PCM) (15A) fuse.**



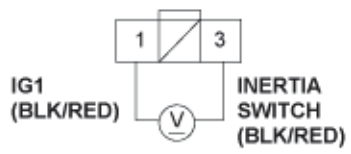
YES

Check for an open or short in the wire (IG1 line):
1. Turn the ignition switch ON (II).
2. Measure the voltage between the PGM-FI main relay 7P connector terminal No. 5 and body ground.

(KG, KE models)

Check the inertia switch:
1. Turn the ignition switch OFF.
2. Disconnect the 3P connector from the inertia switch.
3. Turn the ignition switch ON (II).
4. Measure voltage between the inertia switch 3P connector terminals No. 1 and No. 3.

INERTIA SWITCH CONNECTOR



Wire side of female terminals

Is there battery voltage?

NO →
- **Replace the FUEL PUMP SRS (15A) fuse in the under-dash fuse/relay box.**
- **Repair open or short in the wire between the PGM-FI main relay and the FUEL PUMP SRS (15A) fuse (except KG. KE models)**
- **Repair open in the wire between the inertia switch and FUEL PUMP SRS (15A) fuse (KG, KE models).**
- **Repair open in the wire between the PGM-FI main relay and inertia switch (KG, KE models).**

YES

Replace the inertia switch.

YES

(To page 11-94)

(From page 11-93)

Check for an open or short in the wire (STS line):
1. Turn the ignition switch to the START (III) position. NOTE: M/T in neutral, A/T in [N] or [P] position.
2. Measure the voltage between the PGM-FI main relay 7P connector terminal No. 2 and body ground.

Is there battery voltage?

NO

- **Replace the STARTER SIGNAL (7.5A) fuse in the under-dash fuse/relay box.**
- **Repair open or short in the wire between the PGM-FI main relay and the STARTER SIGNAL (7.5A) fuse.**

YES

Check for an open in the wire (FLR line):
1. Turn the ignition switch OFF.
2. Disconnect the ECM/PCM connector A (32P).
3. Check for continuity between the PGM-FI main relay 7P connector terminal No. 1 and ECM/PCM connector terminal A16 (A15)*.

Is there continuity?

NO

Repair open in the wire between the ECM/PCM (A16, A15*) and the PGM-FI main relay.

YES

Check for an open in the wires (IGP1, IGP2 lines):
1. Reconnect the ECM/PCM connector B (25P).
2. Reconnect the PGM-FI main relay 7P connector.
3. Turn the ignition switch ON (II).
4. Measure voltage between ECM/PCM connector terminals B1, B9 and B2.

Is there battery voltage?

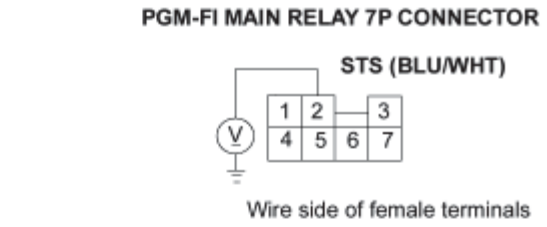
NO

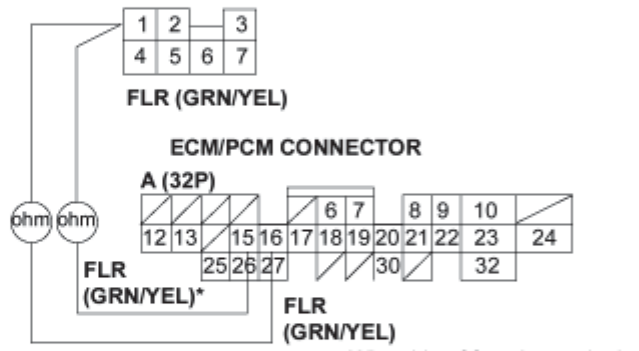
- **Repair open in the wire between the ECM/PCM (B1, B9) and the PGM-FI main relay.**
- **Replace the PGM-FI main relay.**

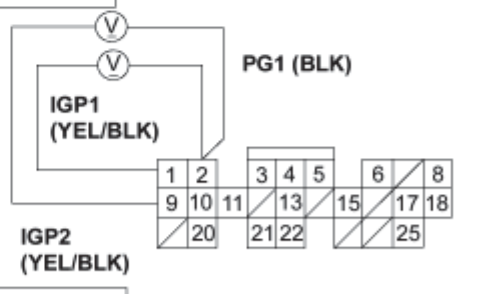
YES

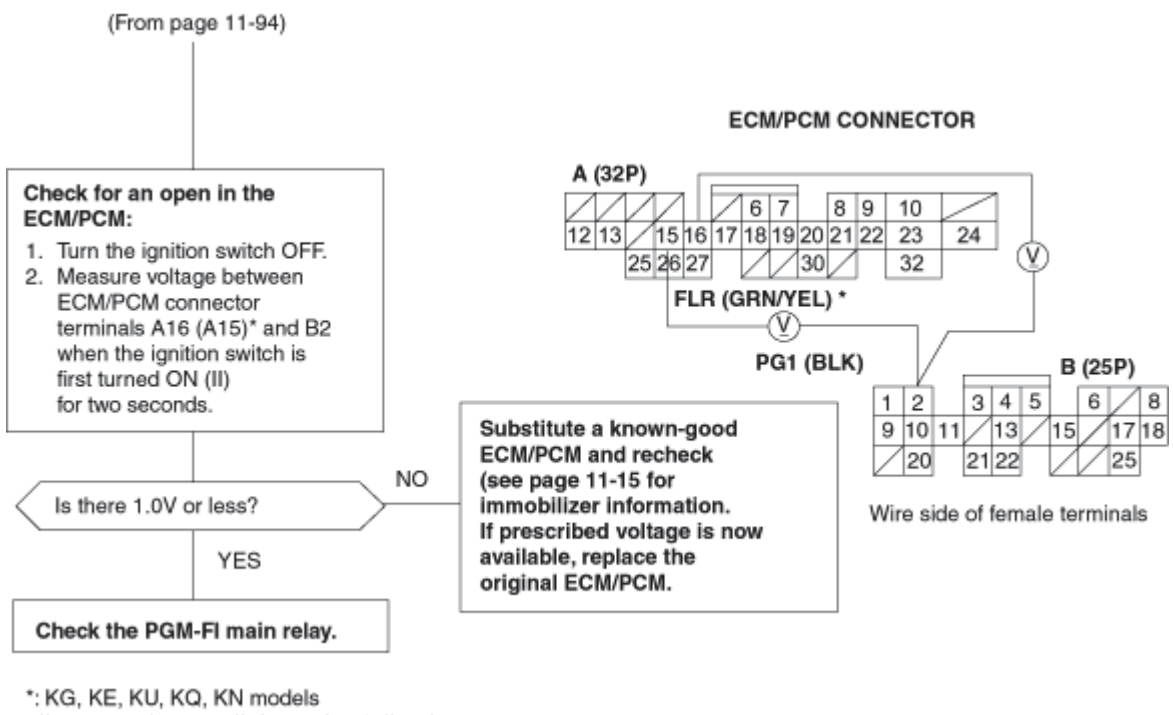
(To page 11-95)

*: KG, KE, KU, KQ, KN models









*: KG, KE, KU, KQ, KN models

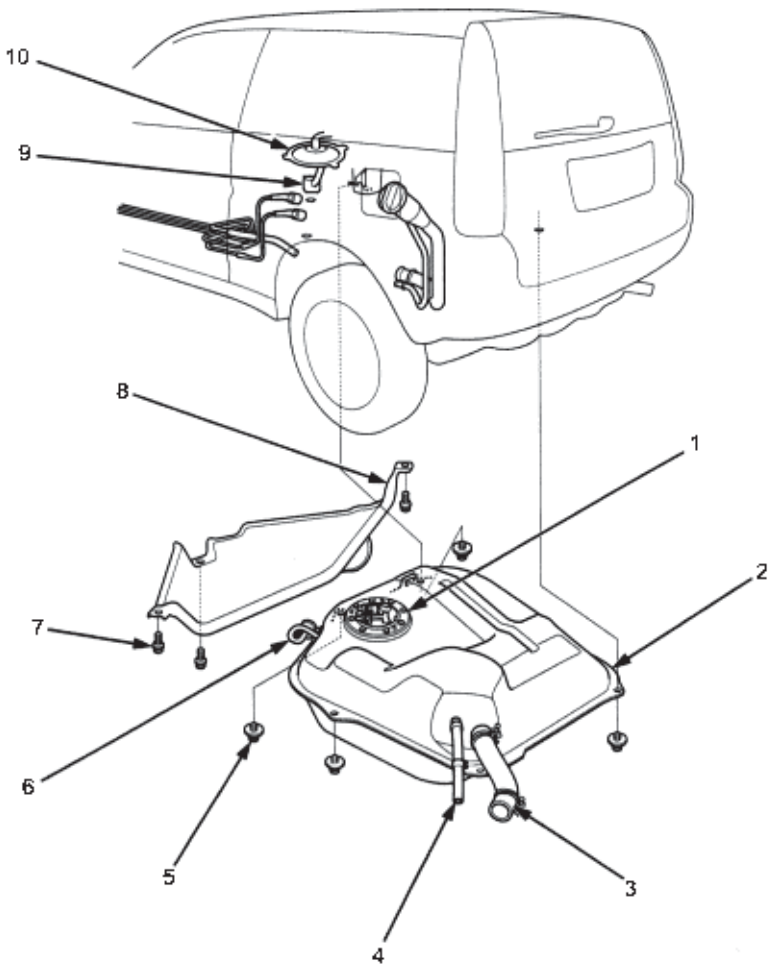
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-15)

Replacement

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

1. Relieve the fuel pressure (**See Page** 11-80).
2. Drain the fuel into an approved container with hand pump.
3. Jack up the vehicle and support it with jackstands.
4. Remove the fuel tank guard pipe.
5. Remove the access panel and disconnect the 5P connector from the fuel tank.
6. Disconnect the fuel return hose and quick-connect fittings (**See Page** 11-77).
7. Disconnect the filler neck connecting hose and fuel breather hose.
   NOTE: When disconnecting the hoses, slide back the clamps, then twist hoses as you pull, to avoid damaging them. Disconnect the fuel vapour tube from the EVAP two way valve.
8. Place a jack, or other support, under the tank.
9. Remove the mount bolt.
10. Remove the fuel tank. If it sticks on the undercoat applied to its mount, carefully pry it off the mount.
11. Install parts in the reverse order of removal. Clean the flared joint of high pressure hoses thoroughly before reconnecting them.

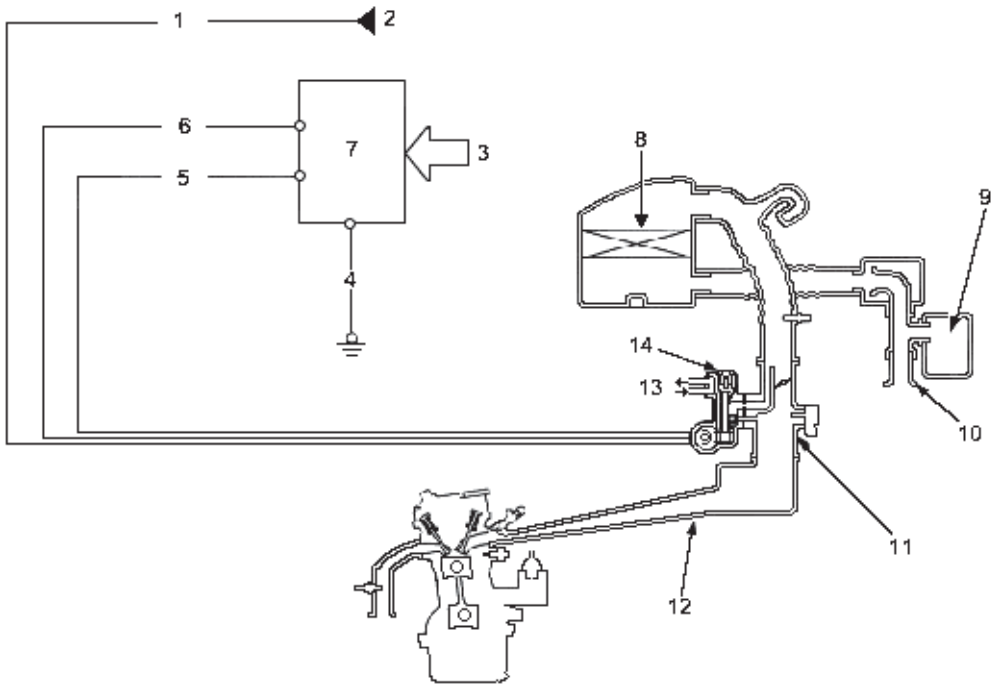


1. **FUEL PUMP**
2. **FUEL TANK**
3. **FILLER NECK CONNECTING HOSE**
4. **FUEL BREATHER HOSE**
5. **22 Nm (2.2 kgf/m, 16 lbf/ft)**
6. **EVAP TWO WAY VALVE**
7. **22 Nm (2.2 kgf/m, 16 lbf/ft)**
8. **FUEL TANK GUARD PIPE**
9. **5P CONNECTOR**
10. **ACCESS PANEL**

NOTE: Across each row in the chart, the sub-systems that could be sources of a symptom are ranked in the order they should be inspected starting with 1. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next system 2, etc.

SUB-SYSTEM	AIR CLEANER AND INTAKE AIR DUCT	THROTTLE CABLE	THROTTLE CABLE
PAGE	**11-99**	**11-100**	**11-101**
SYMPTOM			
WHEN COLD FAST IDLE OUT OF SPEC			**1**
WHEN WARM IDLE SPEED TOO HIGH		**2**	**1**
LOSS OF POWER	**2**	**1**	**1**

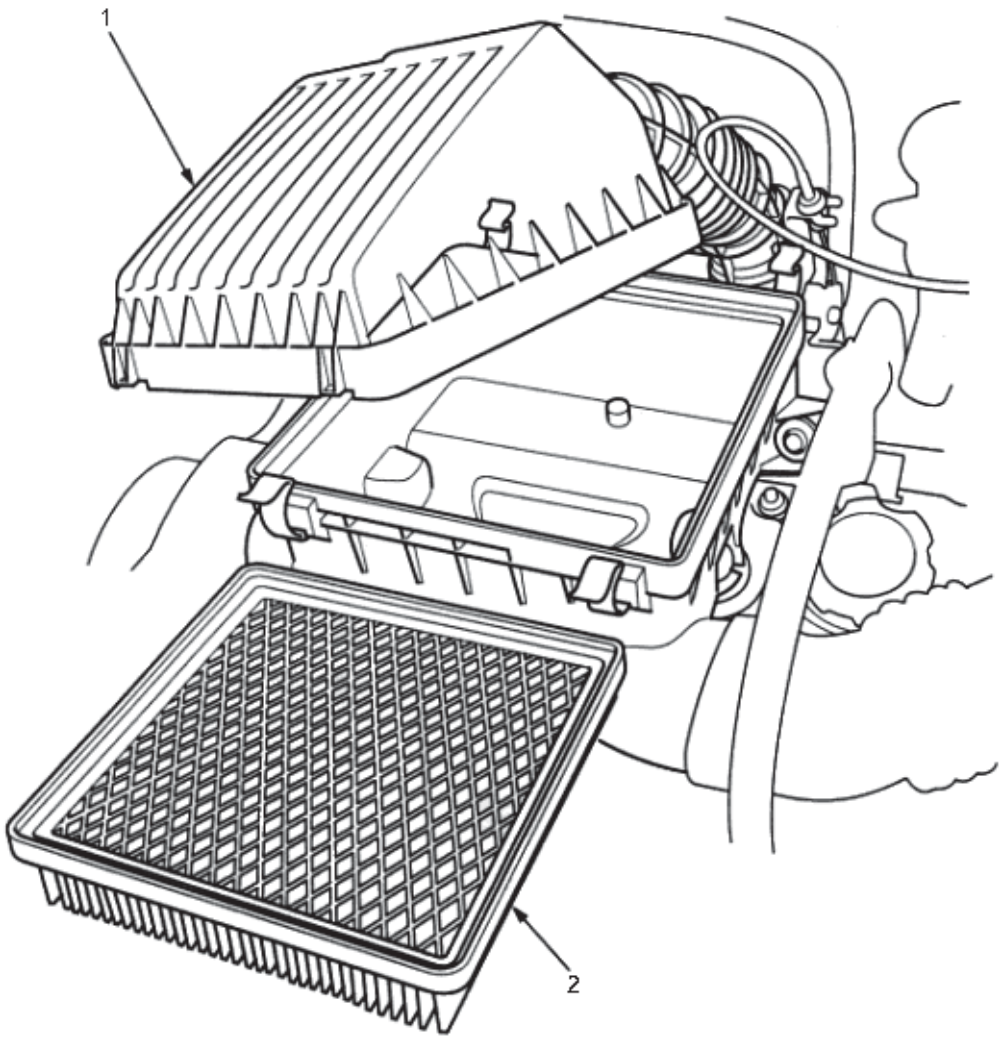
The system supplies air for all engine needs. It consists of the intake air pipe, Air Cleaner (ACL), Intake air duct, Throttle Body (TB), Idle Air Control (IAC) Valve and Intake manifold. A resonator in the intake air pipe provides additional silencing as air is drawn into the system.



1. **YEL/BLK**
2. **From PGM-FI MAIN RELAY**
3. **VARIOUS SENSORS**
4. **BLK**
5. **ORN**
6. **BLK/BLU**
7. **ECM/PCM**
8. **ACL**
9. **RESONATOR**
10. **AIR INTAKE DUCT**
11. **THROTTLE BODY**
12. **INTAKE MANIFOLD**
13. **ENGINE COOLANT**

ACL Element Replacement

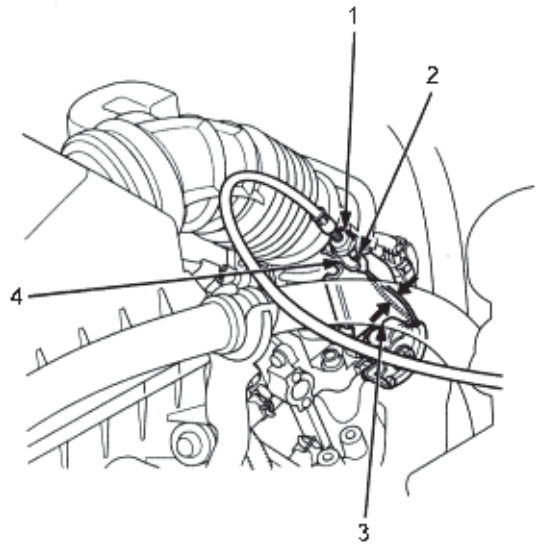
NOTE: Do not clean the ACL element by blowing it off with compressed air.



1. **ACL HOUSING**
2. **ACL ELEMENT**
   Maintenance Schedule, see section 3.

Inspection/Adjustment

1. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
2. Check that the throttle cable operates smoothly with no binding or sticking. Repair as necessary.
3. Check cable free play at the throttle link. Cable deflection should be 10-12 mm (3/8-1/2 in).

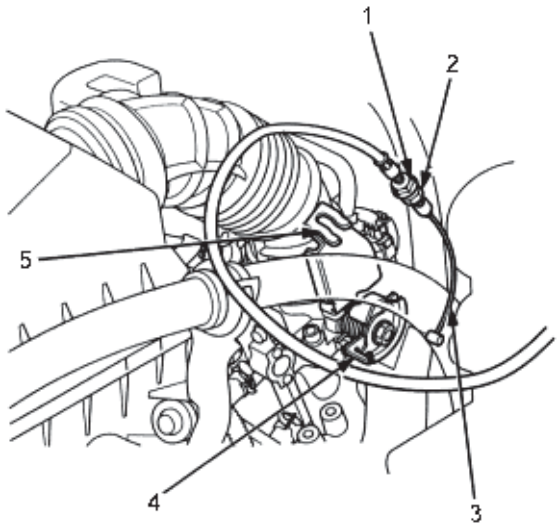


1. LOCKNUT
2. ADJUSTING NUT
3. DEFLECTION 10-12 mm (3/8-1/2 in)
4. CABLE BRACKET

4. If deflection is not within specs, loosen the locknut, turn the adjusting nut until the deflection is as specified, then retighten the locknut.
5. With the cable properly adjusted, check the throttle valve to be sure it opens fully when you push the accelerator pedal to the floor, Also check the throttle valve to be sure it returns to the idle position when ever you release the accelerator pedal.

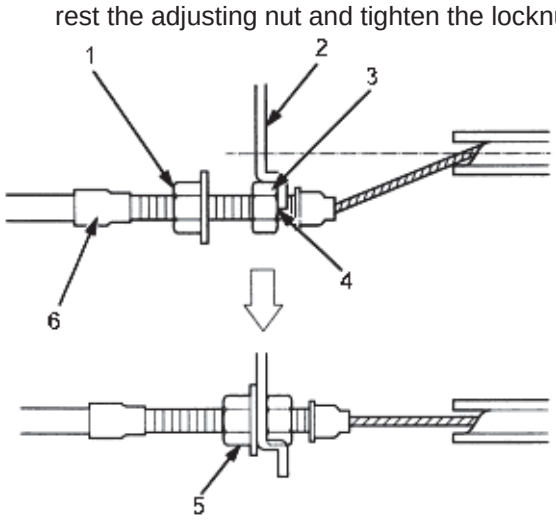
Installation

1. Open the throttle valve fully, then install the throttle cable in the throttle link and install the cable housing in the cable bracket.



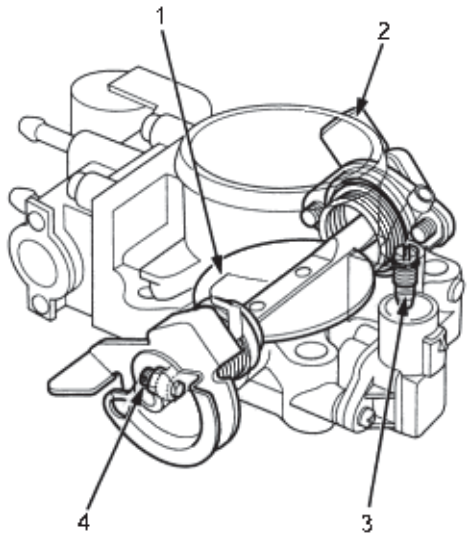
1. LOCKNUT
2. ADJUSTING NUT
3. INNER CABLE
4. THROTTLE LINK
5. CABLE BRACKET

2. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load (In Park or neutral) until the radiator fan comes on, then let it idle.
3. Hold the cable sheath, removing all slack from the cable.
4. Set the locknut on the cable bracket.
   Adjust the adjusting nut so that its free play is 0 mm (0 in).
5. Remove the cable sheath from the throttle bracket, rest the adjusting nut and tighten the locknut.



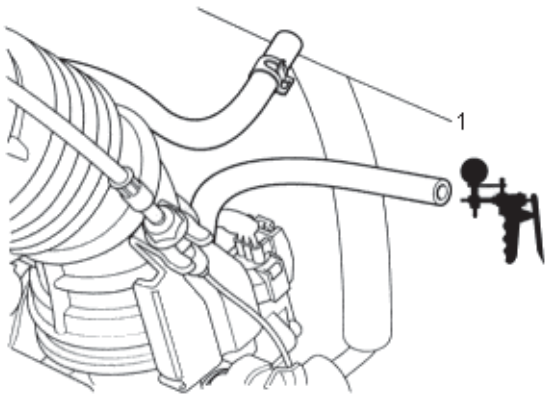
1. LOCKNUT
2. CABLE BRACKET
3. ADJUSTING NUT
4. There should be no clearance
5. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. CABLE SHEATH

Description
The throttle body is of a single-barrel side-draft type. The lower portion of the throttle valve is heated by engine coolant from the cylinder head. The idle adjusting screw which increases/decreases bypass air and the Evaporative Emission (EVAP) Control Canister port are located on the top of the throttle body.



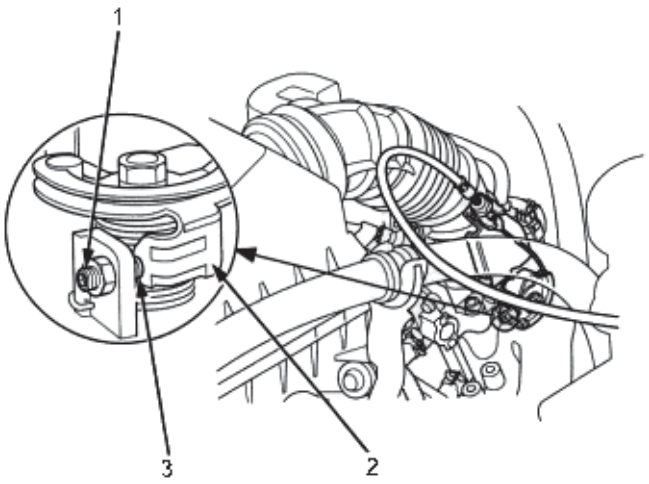
1. THROTTLE VALVE
2. THROTTLE POSITION (1P) SENSOR
3. IDLE ADJUSTING SCREW
4. THROTTLE STOP SCREW (Do not adjust.)

Inspection
1. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
2. Disconnect the vacuum hose (to the EVAP control canister) from the top of the throttle body; connect a vacuum gauge to the throttle body.



1. VACUUM PUMP/GAUGE

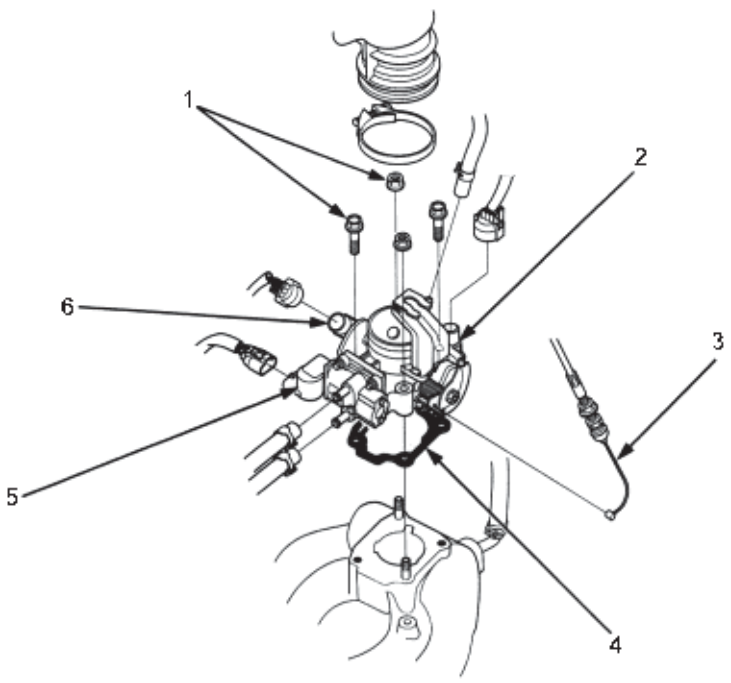
3. Allow the engine to idle and check that the gauge indicates no vacuum.
   If there is vacuum, check the throttle cable (**See Page** 11-100).
4. Check that vacuum is indicated on the gauge when the throttle is opened slightly from idle.
   If the gauge indicates no vacuum, check the throttle body port. If the throttle body port is clogged, clean it with carburettor cleaner.
5. Stop the engine, and check that the throttle cable operates smoothly without binding or sticking.
   If there are any abnormalities in the above steps, check for:
   - Excessive wear or play in the throttle valve shaft.
   - Sticky or binding throttle link at the fully closed position.
   - Clearance between throttle stop screw and throttle lever at the fully closed position



1. THROTTLE STOP SCREW (Do not adjust.)
2. THROTTLE LINK
3. There should be no clearance.

Replace the throttle body if there is excessive play in the throttle valve shaft or if the shaft is binding or sticking.

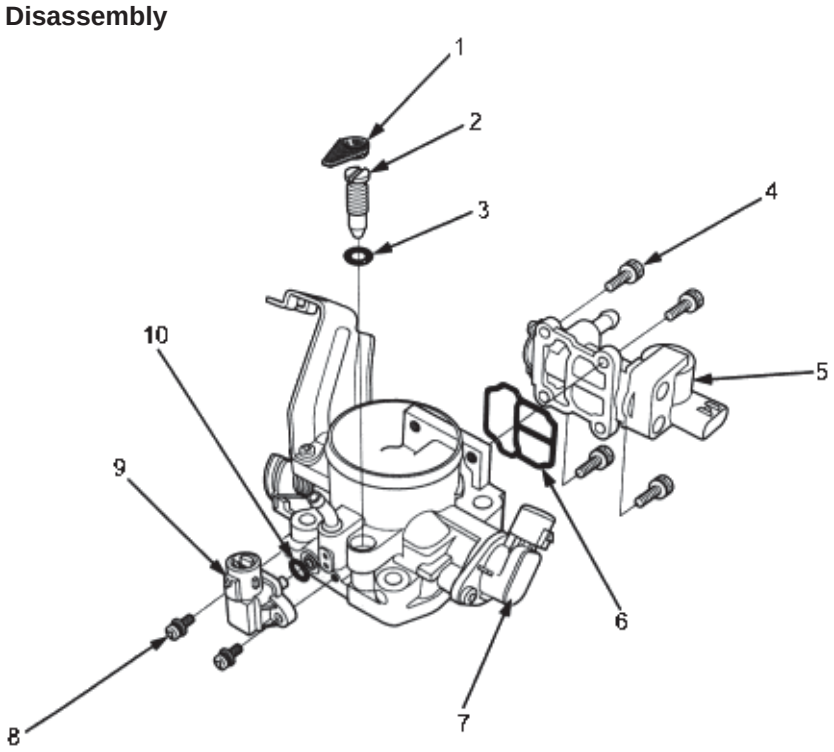
Removal



1. **22 Nm (2.2 kgf/m, 16 lbf/ft)**
2. **MAP SENSOR**
3. **THROTTLE CABLE**
4. **GASKET,** Replace.
5. **IAC VALVE**
6. **TP SENSOR**

NOTE:
- Do not adjust the throttle stop screw.
- After reassembly, adjust the throttle cable (**See Page** 11-100).
- The TP sensor is not removable.

Disassembly



1. **CAP**
2. **IDLE ADJUSTING SCREW**
3. **O-RING**
4. **3.5 Nm (0.35 kgf/m, 2.6 lbf/ft)**
5. **IAC VALVE** (**See Page** 11-63)
6. **O-RING.** Replace
7. **TP SENSOR** (**See Page** 11-41)
8. **2.1 Nm (0.21 kgf/m, 1.5 lbf/ft)**
9. **MAP SENSOR** (**See Page** 11-34)
10. **O-RING,** Replace

NOTE: Across each row in the chart, the sub-systems that could be sources of a symptom are ranked in the order they should be inspected starting with 1. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next system 2, etc.

SUB-SYSTEM		THREE WAY CATALYTIC CONVERTER	THROTTLE CABLE	THROTTLE CABLE
PAGE		**11-104**	**11-105**	**11-106**
SYMPTOM				
ROUGH IDLE			**1**	
POOR PERFORMANCE	FAILS EMISSION TEST	**1**		**2**
	LOSS OF POWER	**1**		

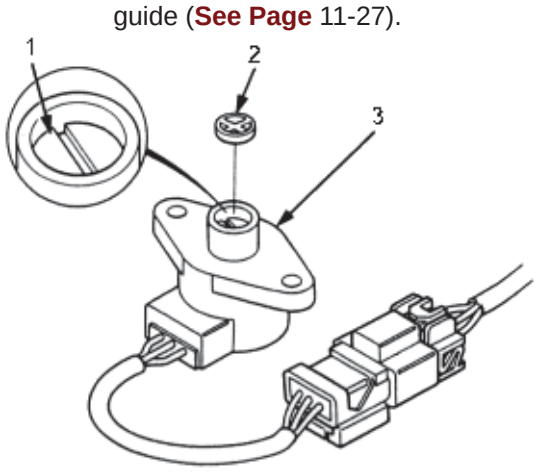
The emission control system includes a Three Way Catalytic Converter (TWC), Positive Crankcase Ventilation (PCV) system and Evaporative Emission (EVAP) Control system.

Tailpipe Emission
Inspection

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flame or sparks away from the work area.

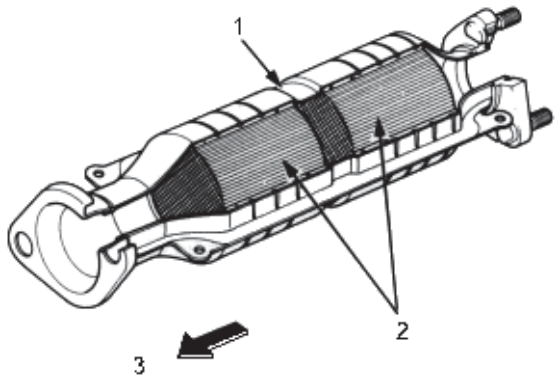
1. Connect a tachometer.
2. Start the engine. Hold the engine at 3,000 rpm (min-1) with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
3. Check the idle speed (**See Page** 11-73).
4. Warm up and calibrate the CO meter according to the meter manufacturer's instructions.
5. Check idle CO with headlights, heater blower, rear window defogger, cooling fan, and air conditioner off.
   Specified CO%:
   For cars with TWC model: 0.1% maximum
   For cars without TWC model: 1.0 ± 1.0%
   - If unable to obtain this reading:
   - Without TWC model, adjust by turning the adjusting screw of the IMA.
   - With TWC model, see ECM/PCM troubleshooting guide (**See Page** 11-27).



1. ADJUSTING SCREW
2. CAP
3. IMA

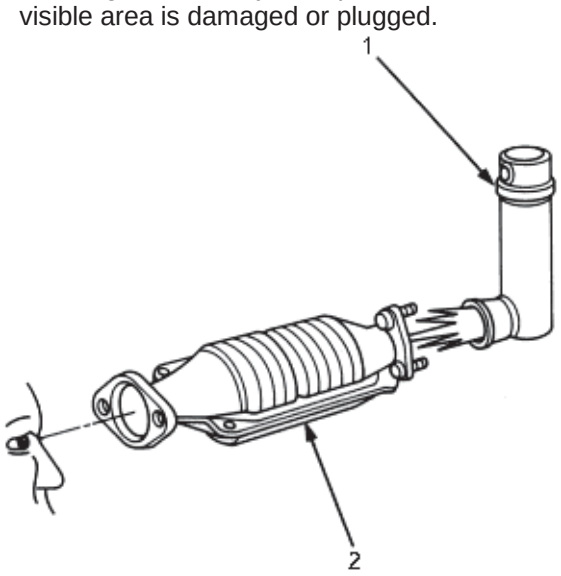
   - If unable to obtain a CO reading of specified % by this procedure, check the engine tune-up condition.

Description
The Three Way Catalytic Converter (TWC) is used to convert hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (Nox) in the exhaust gas, to carbon dioxide (CO2), dinitrogen (N2) and water vapour.



1. HOUSING
2. THREE WAY CATALYSTS
3. FRONT OF VEHICLE

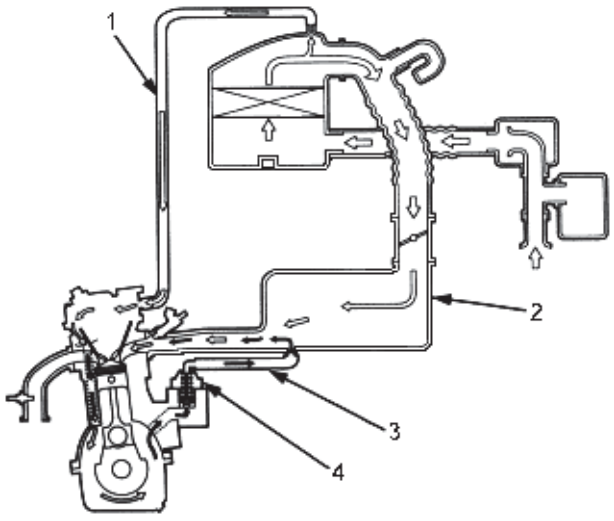
Removal/Installation (see section 9)
Inspection
If excessive exhaust system back pressure is suspected, remove the TWC from the car and using a flashlight, make a visual check for plugging, melting or cracking of the catalyst. Replace the TWC if any of the visible area is damaged or plugged.



1. FLASHLIGHT
2. TWC

Description

The Positive Crankcase Ventilation (PCV) system is designed to prevent blow-by gas from escaping to the atmosphere. The PCV valve contains a spring-loaded plunger. When the engine starts, the plunger in the PCV valve is lifted in proportion to intake manifold vacuum and the blow-by gas is drawn directly into the intake manifold.

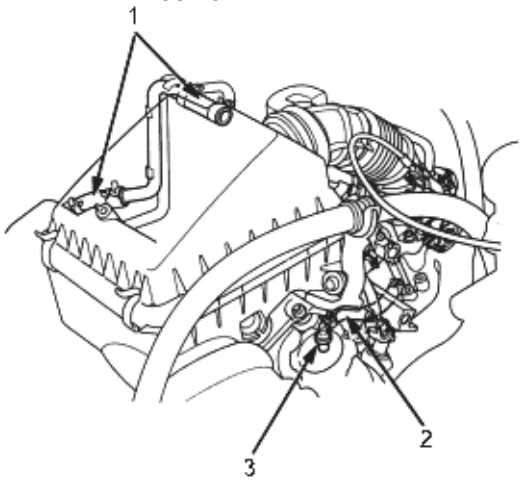


1. BREATHER PIPE
2. INTAKE MANIFOLD
3. PCV HOSE
4. PCV VALVE

BLACK ARROR: BLOW-BY VAPOUR
WHITE ARROR: FRESH AIR

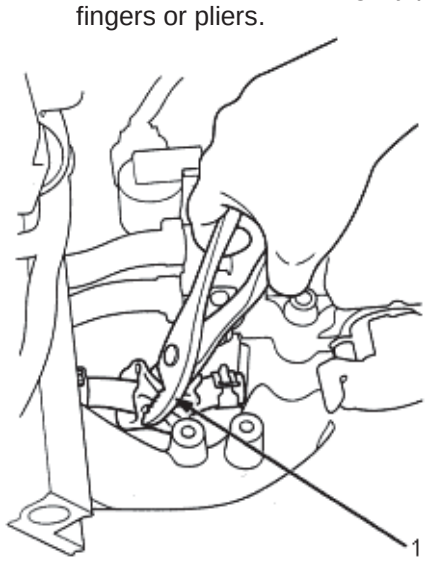
Inspection

1. Check the PCV hoses and connections for leaks and clogging.



1. BREATHER HOSE
2. PCV HOSE
3. PCV VALVE

2. At idle, make sure there is a clicking sound from the PCV valve when the hose between PCV valve and intake manifold in lightly pinched with your fingers or pliers.



1. Gently pinch here.

- If there is no clicking sound, check the PCV valve grommet for cracks or damage. If the grommet is OK, replace the PCV valve and recheck.

Description

The evaporative emission controls are designed to minimise the amount of fuel vapour escaping to the atmosphere. The system consists of the following components.

A. Evaporative Emission (EVAP) Control Canister

An EVAP control canister is used for the temporary storage of fuel vapour until the fuel vapour can be purged from the EVAP control canister into the engine and burned.

B. Vapour Purge Control System

EVAP control canister purging is accomplished by drawing fresh air through the EVAN control canister and into a port on the throttle body. The purging vacuum is controlled by the EVAN purge control diaphragm valve and the EVAN purge control solenoid valve (with TWICE models)

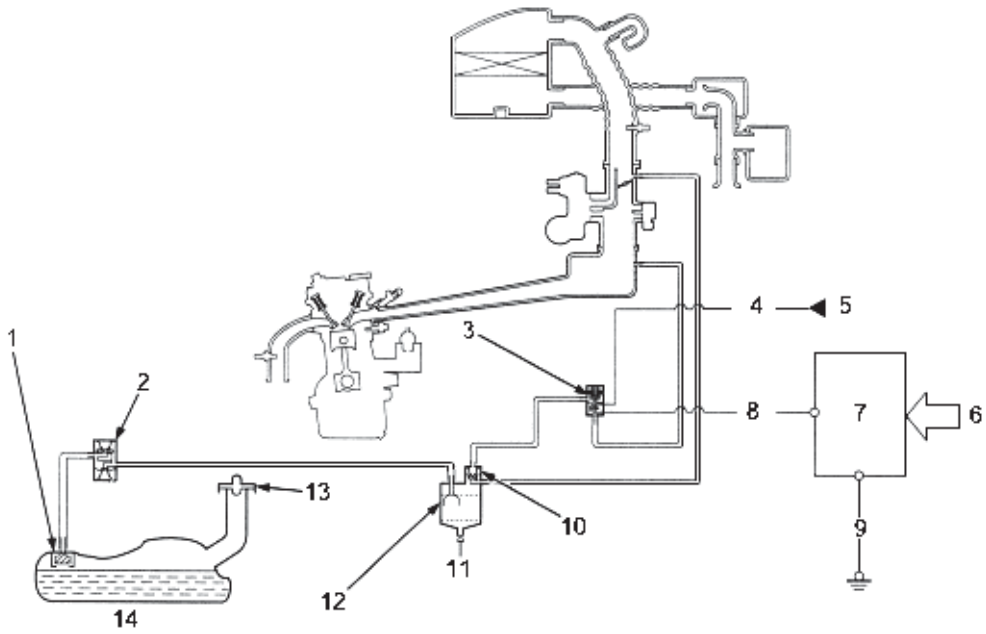
EVAP PURGE CONTROL DIAPHRAGM VALVE OPEN AFTER STARTING ENGINE
EVAP PURGE CONTROL SOLENOID VALVE OFF

↑

ENGINE COOLANT TEMPERATURE ABOVE 74˚C (165˚F)

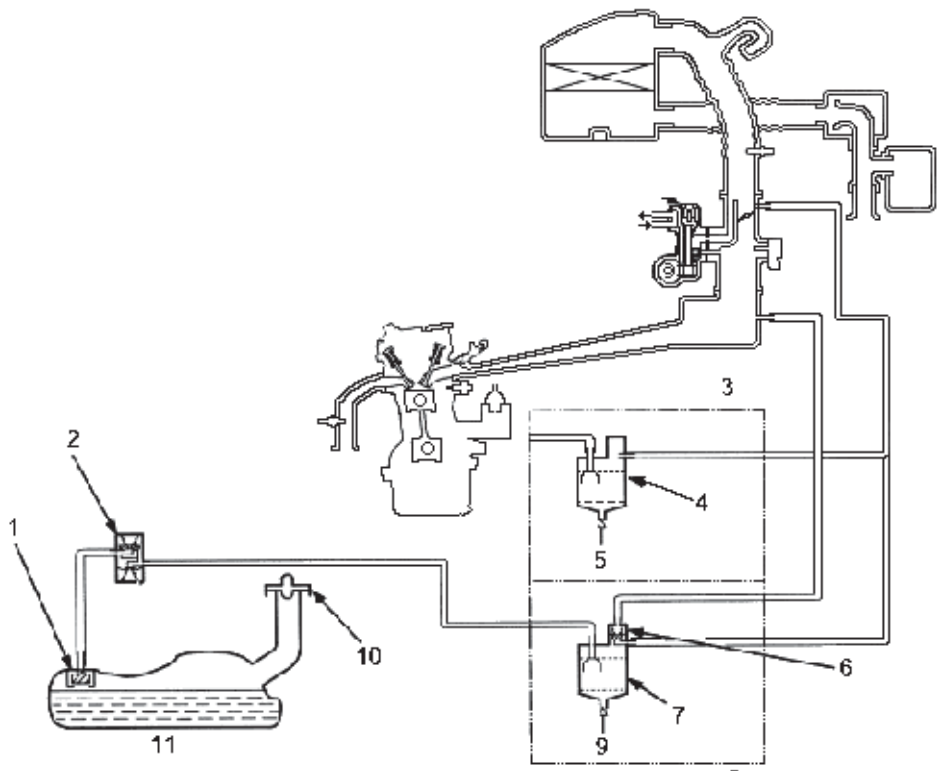
C. Fuel Tank Vapour Control System

When fuel vapour pressure in the fuel tank is higher than the set valve of the EVAP two way valve, the valve opens and regulates the flow of fuel vapour to the EVAP control canister.



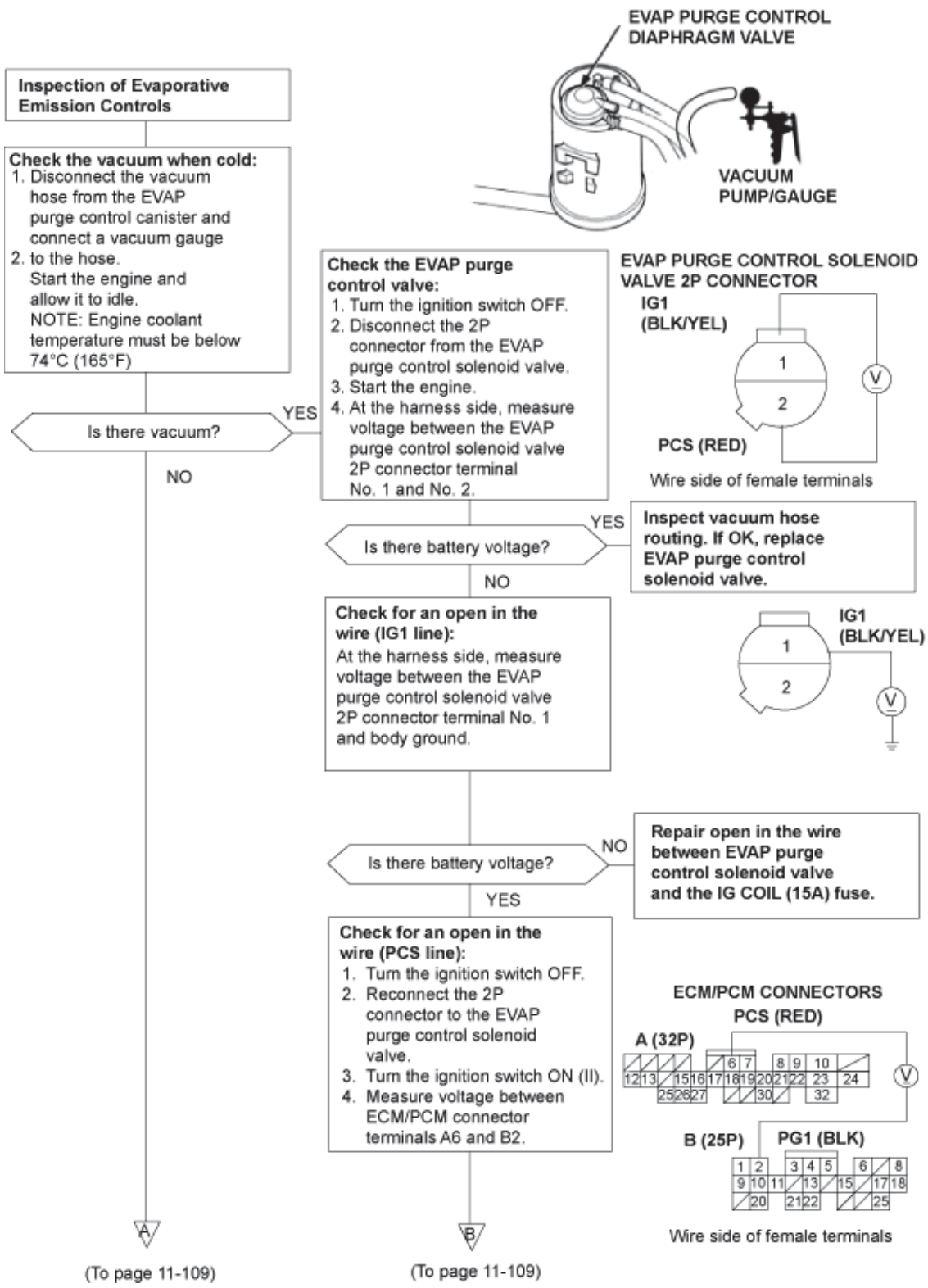
1. **FUEL TANK EVAP VALVE**
2. **EVAP TWO WAY VALVE**
3. **EVAP PURGE CONTROL SOLENOID VALVE**
4. **BLK/YEL**
5. **IG COIL (15A) FUSE**
6. **VARIOUS SENSORS**
7. **ECM/PCM**
8. **RED**
9. **BLK**
10. **EVAP PURGE CONTROL DIAPHRAGM VALVE**
11. **FRESH AIR**
12. **EVAP CONTROL CANISTER**
13. **FUEL FILL CAP**
14. **FUEL TANK**

without TWC models:



1. **FUEL TANK EVAP VALVE**
2. **EVAP TWO WAY VALVE**
3. **(without PCV)**
4. **EVAP CONTROL CANISTER**
5. **FRESH AIR**
6. **EVAP PURGE CONTROL DIAPHRAGM VALVE**
7. **EVAP CONTROL CANISTER**
8. **(with PCV)**
9. **FRESH AIR**
10. **FUEL FILL CAP**
11. **FUEL TANK**

Troubleshooting (with TWC models)



(From page 11-108)
A

Check the vacuum when hot:
1. Start the engine. Hold the engine at 3,000 rpm (min -1) with no load (in Park or neutral) until the radiator fan comes on, then let it idle.
2. Check for vacuum at the vacuum hose after starting the engine.

Is there vacuum?

NO

Check the EVAP purge control solenoid valve:
DIsconnect the 2P connector from the EVAP purge control solenoid valve.

YES

Is there vacuum?

YES

Inspect vacuum hose routing. If OK, replace the EVAP purge control solenoid valve.

NO

Check for a short in the wire (PCS line):
1. Turn the ignition switch OFF.
2. Disconnect ECM/PCM connector A (32P).
3. Check for continuity between the EVAP purge control solenoid valve 2P connector terminal No. 2 and body ground.

Is there continuity?

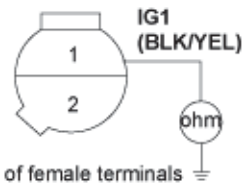
YES

Repair short in the wire between the EVAP purge control solenoid valve and the ECM/PCM.

NO

Substitute a known-good ECM/PCM and recheck (see page 11-15 for immobiliser information). If symptom/ indication goes away, replace the original ECM/PCM

EVAP PURGE CONTROL SOLENOID VALVE 2P CONNECTOR



(From page 11-108)
B

Is there battery voltage?

NO

Repair open in the wire between the EVAP purge control solenoid valve and the ECM/PCM (A6).

YES

Substitute a known-good ECM/PCM and retest (see page 11-15 for immobiliser information). If symptom/ indication goes away, replace the original ECM/PCM.

Check the EVAP control cannister:
1. Reconnect the vacuum hose to the EVAP purge control cannister.
2. Remove fuel filler cap.
3. Connect a vacuum gauge to cannister purge air hose.
4. Start the engine and raise speed to 3,500 rpm (min -1).

Does vacuum appear on gauge within 1 minute?

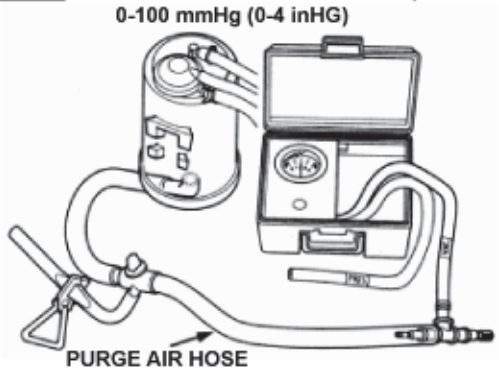
NO

Replace the EVAP control canister.

YES

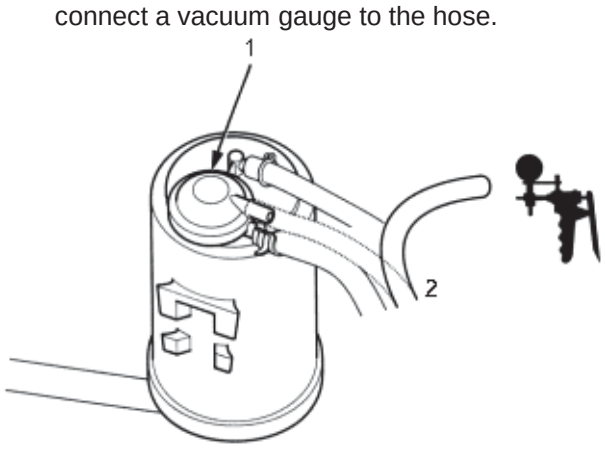
See EVAP two way valve test to complete. Evaporative emission controls are OK.

VACUUM/PRESSURE GAUGE, 0-100 mmHg (0-4 inHG)



Testing (without TWC models)

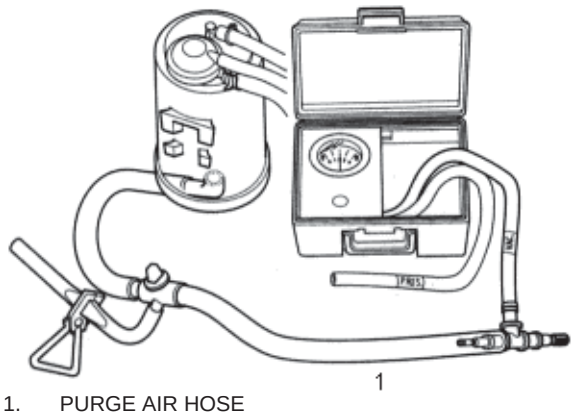
1. Remove the fuel fill cap.
2. Start the engine and allow to idle.
3. Disconnect vacuum hose at the EVAP purge control diaphragm valve (on the EVAP control canister) and connect a vacuum gauge to the hose.



1. EVAP PURGE CONTROL DIAPHRAGM VALVE
2. VACUUM PUMP/GAUGE

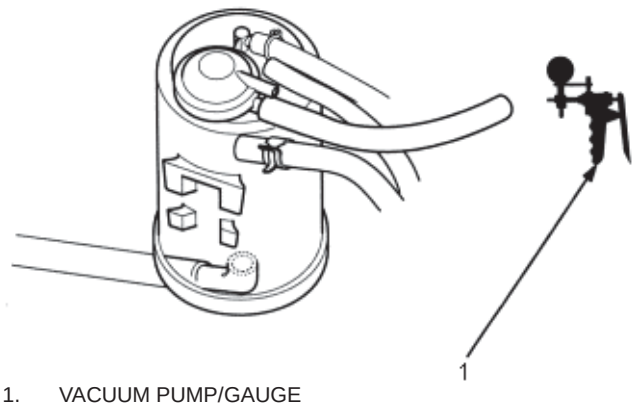
- If there is no vacuum, check vacuum hose for blockage, cracks or disconnected hose, as well as vacuum port for blockage.

4. Disconnect the vacuum gauge and reconnect the hose.
5. Connect a vacuum gauge to EVAP control canister purge air hose.
   VACUUM/PRESSURE GAUGE, 0-100 mmHg (0.4 in.Hg)



1. PURGE AIR HOSE

6. Raise engine speed to 3,500 rpm (min-1).
   Vacuum should appear on gauge within 1 minute.
   - If vacuum appears on gauge in 1 minute, remove gauge, test is complete.
   - If no vacuum, disconnect vacuum gauge and reinstall fuel fill cap.
7. Remove EVAP control canister and check for signs of damage or defects.
   - If detective, replace EVAP control canister
8. Stop engine. Disconnect upper vacuum hose from EVAP purge control diaphragm valve.
   Connect a vacuum pump to lower vacuum as shown, and apply vacuum.
   Vacuum should remain steady.



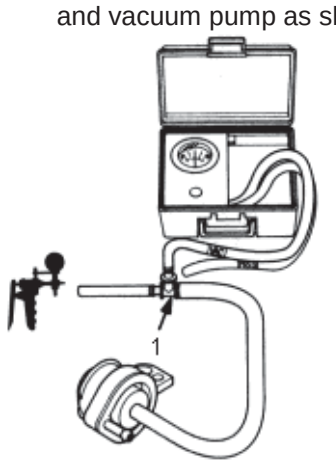
1. VACUUM PUMP/GAUGE

- If vacuum drops, replace the EVAP control canister and retest.

9. Restart engine. Reconnect upper vacuum hose to EVAP purge control diaphragm valve.
   Vacuum (lower vacuum hose side) should drop to zero.
   - If vacuum does not drop to zero, replace the EVAP control canister and retest.

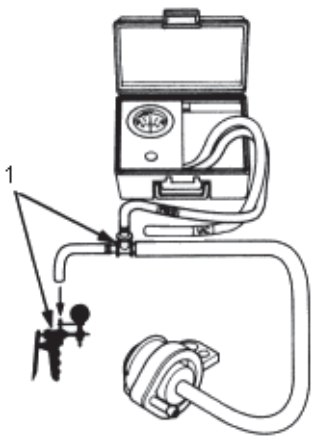
Evaporative Emission (EVAP) Two Way Valve Testing

1. Remove the fuel fill cap.
2. Remove the vapour line from the two way valve on the fuel tank and connect it to a T-fitting from vacuum gauge and vacuum pump as shown



1. T-FITTING

3. Apply vacuum slowly and continuously while watching the gauge.
   The vacuum should stabilise momentarily at 0.7-2.0 kPa (5-15 mmHg, 0.2-0.6 in.Hg).
   If the vacuum stabilises (valve opens) below 0.7 kPa (5 mmHg, 0.2 in.Hg) or above 2.0 kPa (15 mmHg, 0.6 in.Hg), install a new valve and retest.
4. Move the vacuum pump hose from the vacuum fitting to the pressure fitting and move the vacuum gauge hose from the vacuum side to pressure side as shown.

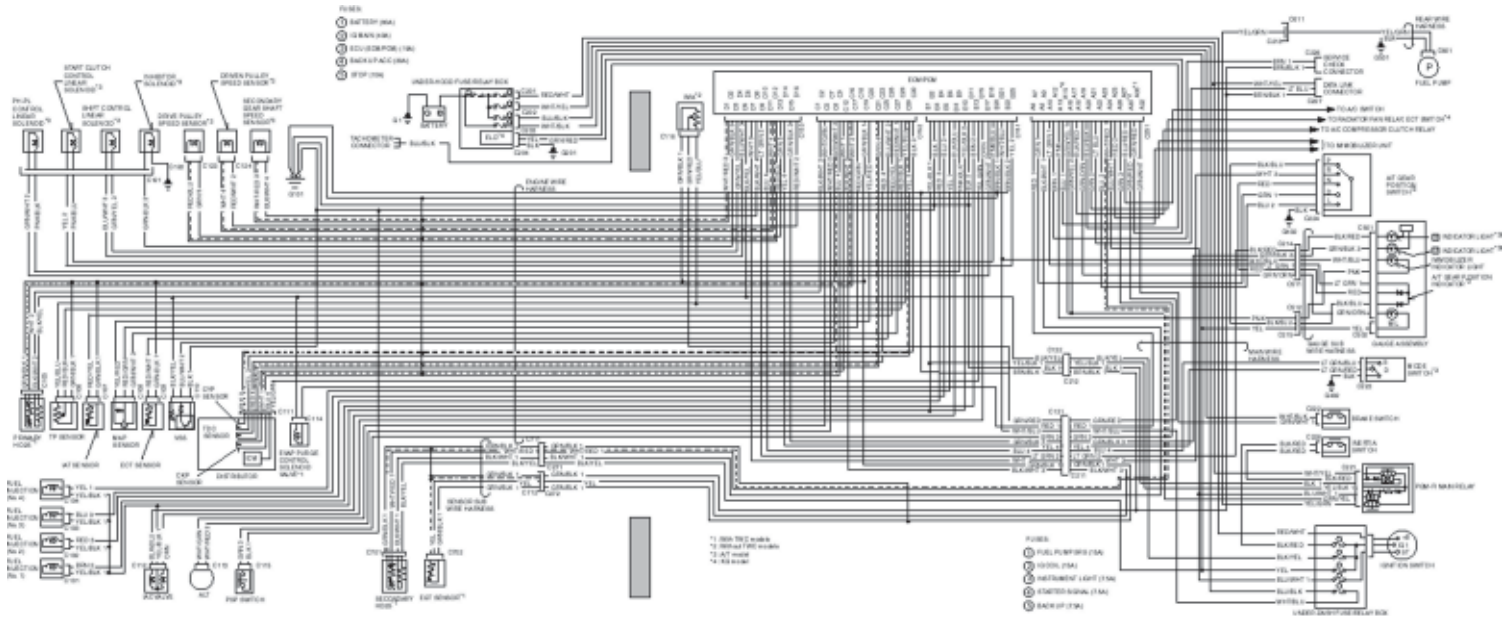


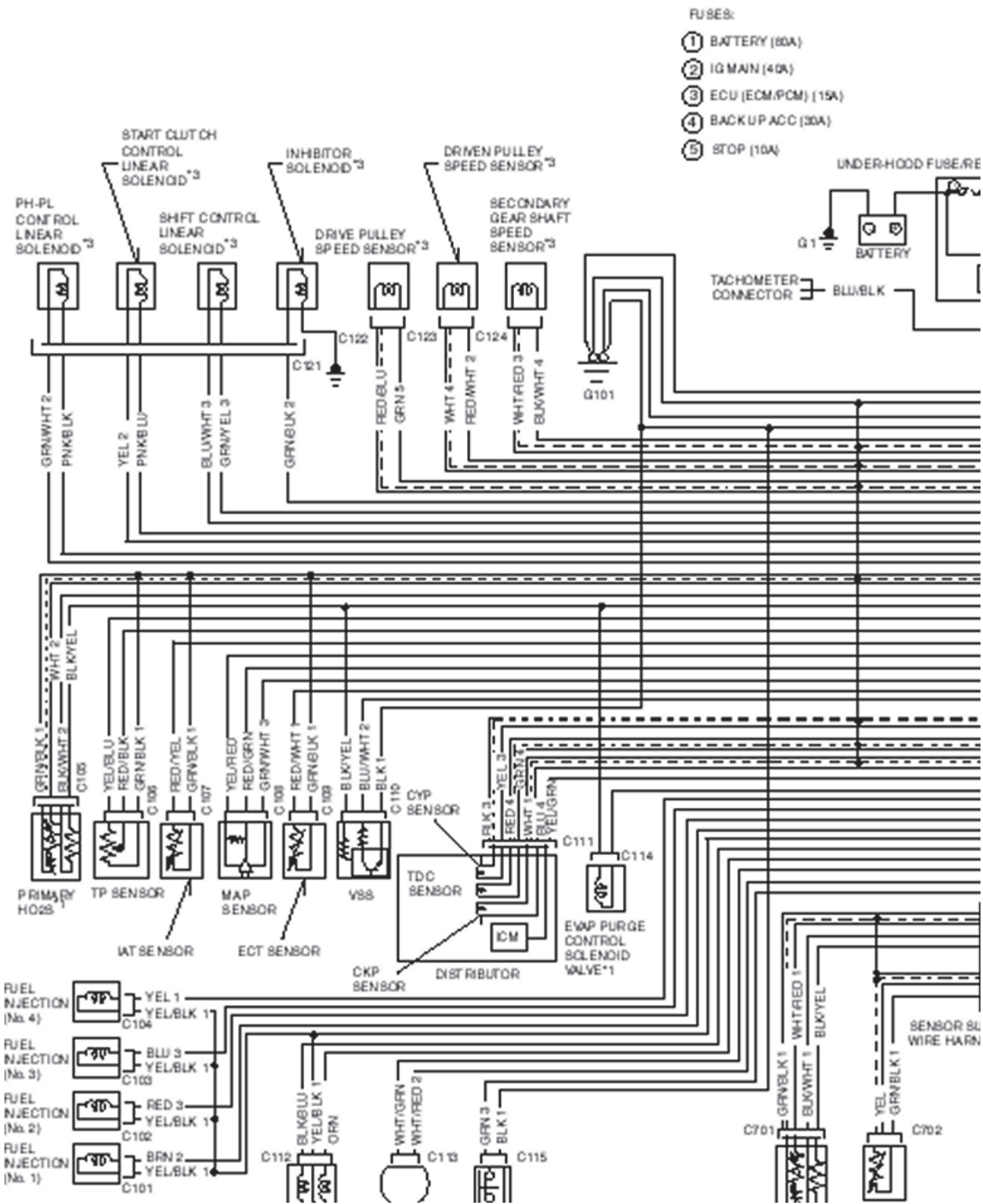
1. PRESSURE SIDE

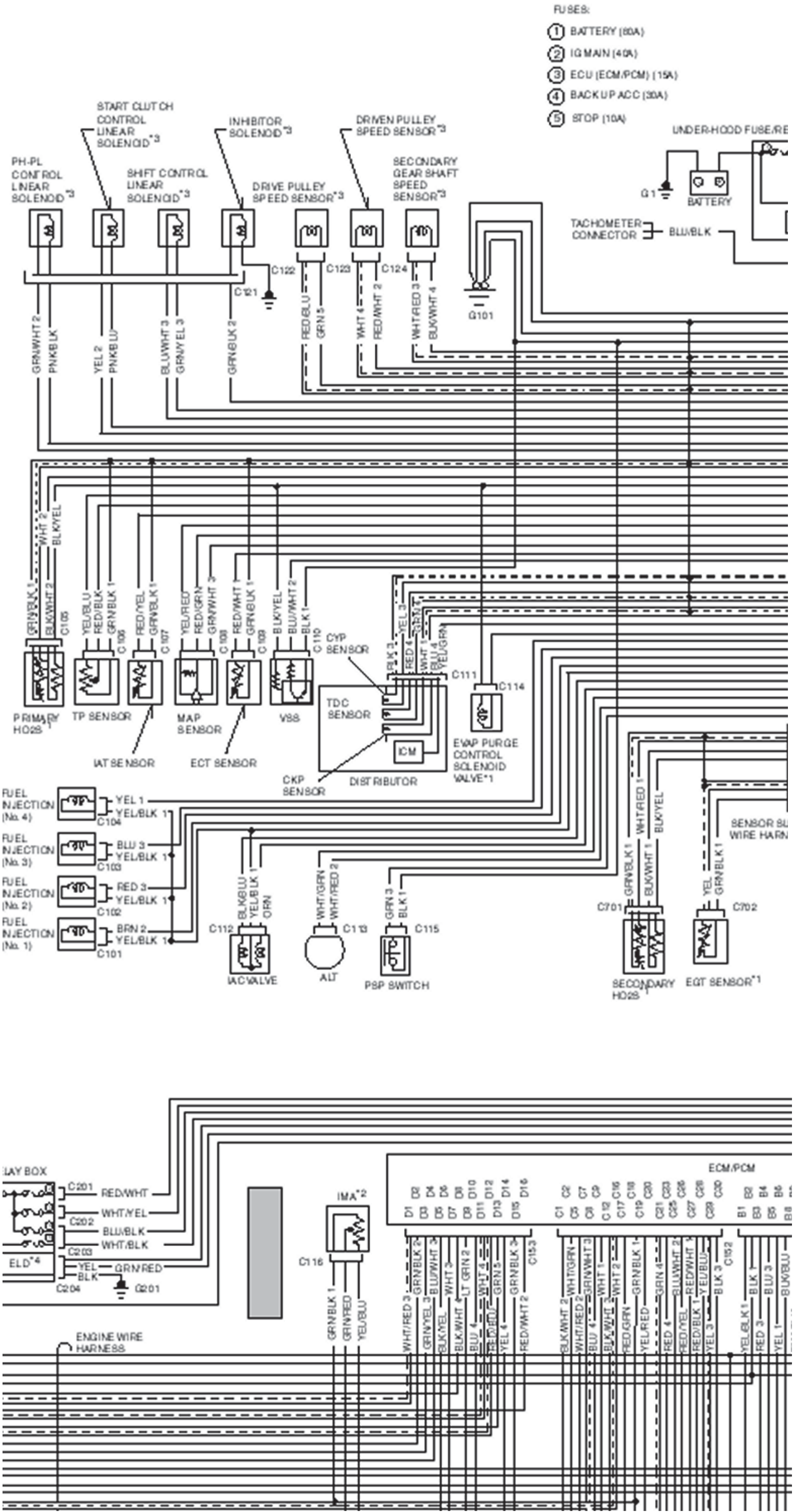
5. Slowly pressurise the vapour line while watching the gauge.
   The pressure should stabilise at 1.3-4.7 kPa (10-35 mmHg, 0.4-1.4 in.Hg).
   - If the pressure momentarily stabilises (valve opens) at 1.3-4.7 kPa (10-35 mmHg, 0.4-1.4 in.Hg), the valve is OK.
   - If the pressure stabilises below 1.3 kPa (10 mmHg, 0.4 in.Hg) or above 4.7 kPa (35 mmHg, 1.4 in.Hg), install a new valve and retest.

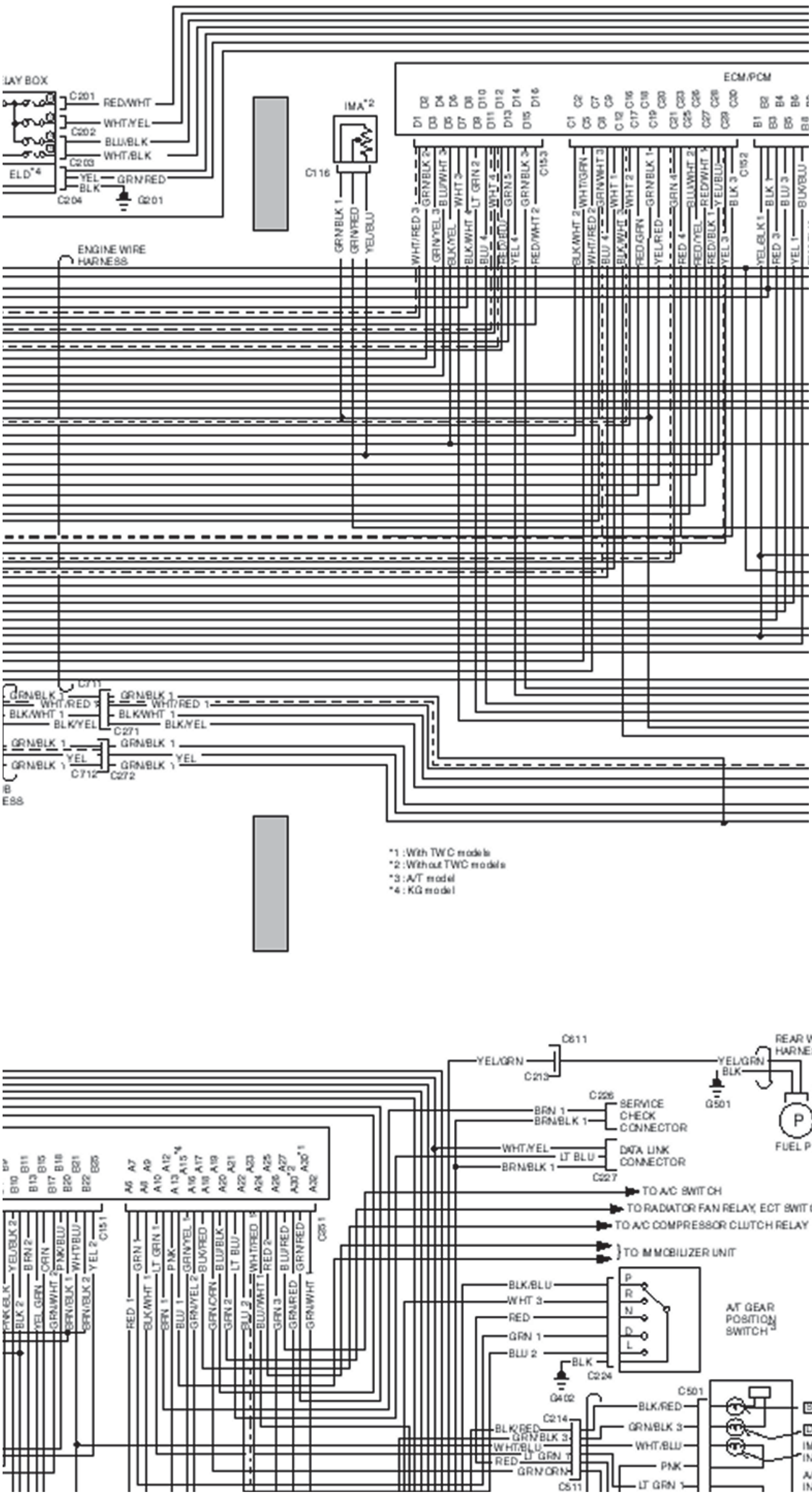
Fuel Injected System Diagram
LH

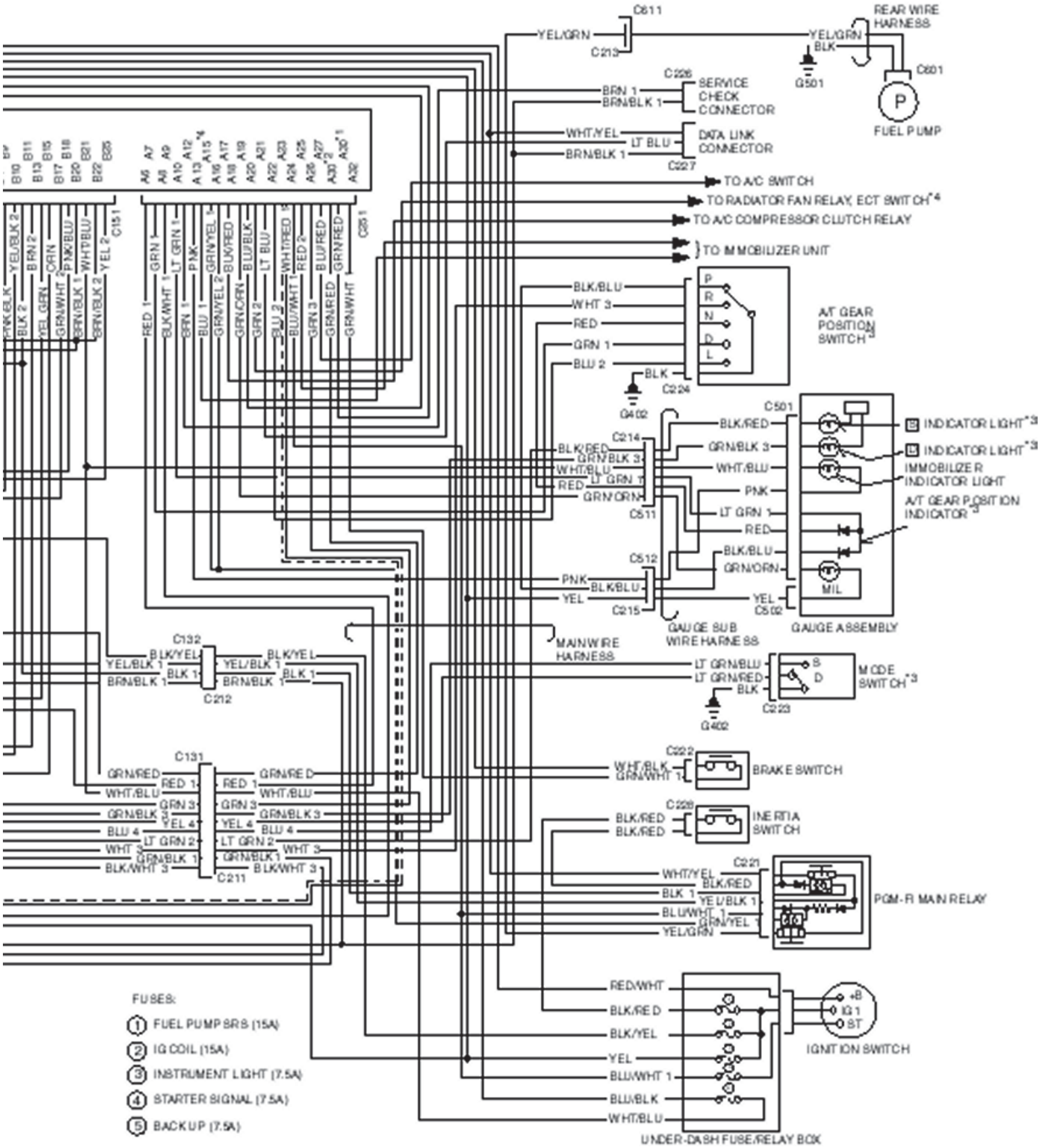
11-112






FUSES:
1 BATTERY (80A)
2 IG MAIN (40A)
3 ECU (ECM/PCM) (15A)
4 BACK UP ACC (30A)
5 STOP (10A)
UNDER-HOOD FUSE/RE
START CLUTCH CONTROL LINEAR SOLENOID*3
INHIBITOR SOLENOID*3
DRIVEN PULLEY SPEED SENSOR*3
PH-PL CONTROL LINEAR SOLENOID*3
SHIFT CONTROL LINEAR SOLENOID*3
DRIVE PULLEY SPEED SENSOR*3
SECONDARY GEAR SHAFT SPEED SENSOR*3
G1
BATTERY
TACHOMETER CONNECTOR
BLU/BLK
C122
C123
C124
C121
G101
GRN/WHT 2
PNK/BLK
YEL 2
PNK/BLU
BLU/WHT 3
GRN/YEL 3
GRN/BLK 2
RED/BLU
GRN 5
WHT 4
RED/WHT 2
WHT/RED 3
BLK/WHT 4
WHT 2
BLK/YEL
BLK 1
C105
C106
C107
C108
C109
C110
YEL/BLU
RED/BLK
GRN/BLK 1
RED/YEL
GRN/BLK 1
YEL/RED
RED/GRN
GRN/WHT 3
RED/WHT 1
GRN/BLK 1
BLK/YEL
BLU/WHT 2
CYP SENSOR
PRIMARY HO2S*3
TP SENSOR
MAP SENSOR
VSS
IAT SENSOR
ECT SENSOR
TDC SENSOR
CKP SENSOR
DISTRIBUTOR
ICM
C111
C114
EVAP PURGE CONTROL SOLENOID VALVE*1
FUEL INJECTION (No. 4)
FUEL INJECTION (No. 3)
FUEL INJECTION (No. 2)
FUEL INJECTION (No. 1)
C104
C103
C102
C101
YEL 1
YEL/BLK 1
BLU 3
RED 3
BRN 2
C112
C113
C115
BLK/BLU
YEL/BLK 1
ORN
WHT/GRN
WHT/RED 2
GRN 3
BLK 1
IAC VALVE
ALT
PSP SWITCH
C701
C702
GRN/BLK 1
BLK/WHT 1
WHT/RED 1
BLK/YEL
YEL
SECONDARY HO2S*3
EGT SENSOR*1
SENSOR SU
WIRE HARN
RELAY BOX
C201
C202
C203
C204
RED/WHT
WHT/YEL
BLU/BLK
WHT/BLK
YEL
GRN/RED
BLK
G201
ELD*4
IMA*2
C116
GRN/BLK 1
GRN/RED
YEL/BLU
ENGINE WIRE HARNESS
ECM/PCM
C153
C152
WHT/RED 3
GRN/BLK 2
GRN/YEL 3
BLU/WHT 3
BLK/YEL
BLK/WHT 4
LT GRN 2
BLU 4
RED/BLU
WHT 4
YEL 4
GRN 5
RED/WHT 2
GRN/BLK 3
BLK/WHT 2
WHT/GRN
WHT/RED 2
BLU 4
BLK/WHT 3
RED/GRN
YEL/RED
GRN 4
RED 4
BLU/WHT 2
RED/YEL
RED/WHT 1
RED/BLK 1
YEL/BLU
YEL 3
BLK 3
YEL/BLK 1
RED 3
BLK 1
BLU 3
YEL 1
BLK/BLU

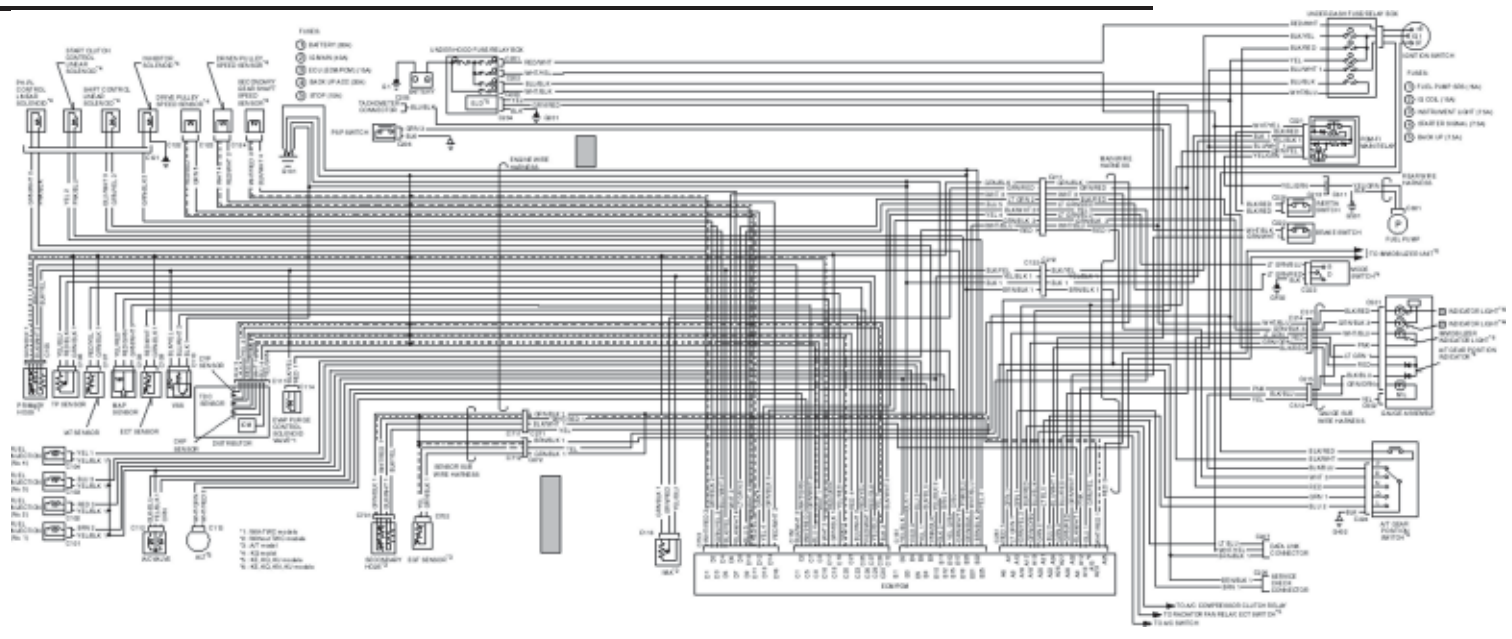

ECM/PCM
IMA*2
C116
GRN/BLK 1
GRN/RED
YEL/BLU
ENGINE WIRE HARNESS
C201
RED/WHT
WHT/YEL
C202
BLU/BLK
WHT/BLK
C203
ELD*4
YEL
BLK
GRN/RED
C204
G201
C711
C712
C271
C272
GRN/BLK 1
WHT/RED 1
BLK/WHT 1
BLK/YEL
YEL
*1 : With TWC models
*2 : Without TWC models
*3 : A/T model
*4 : KG model
C611
C213
YEL/GRN
REAR WIRE HARNESS
BLK
G501
C601
FUEL PUMP
C226
SERVICE CHECK CONNECTOR
BRN 1
BRN/BLK 1
C227
DATA LINK CONNECTOR
WHT/YEL
LT BLU
TO A/C SWITCH
TO RADIATOR FAN RELAY, ECT SWITCH*4
TO A/C COMPRESSOR CLUTCH RELAY
TO IMMOBILIZER UNIT
A/T GEAR POSITION SWITCH*3
P
R
N
D
L
C224
G402
C214
C511
C501
INDICATOR LIGHT*3
IMMOBILIZER INDICATOR LIGHT
A/T GEAR POSITION INDICATOR*3
C151
C251

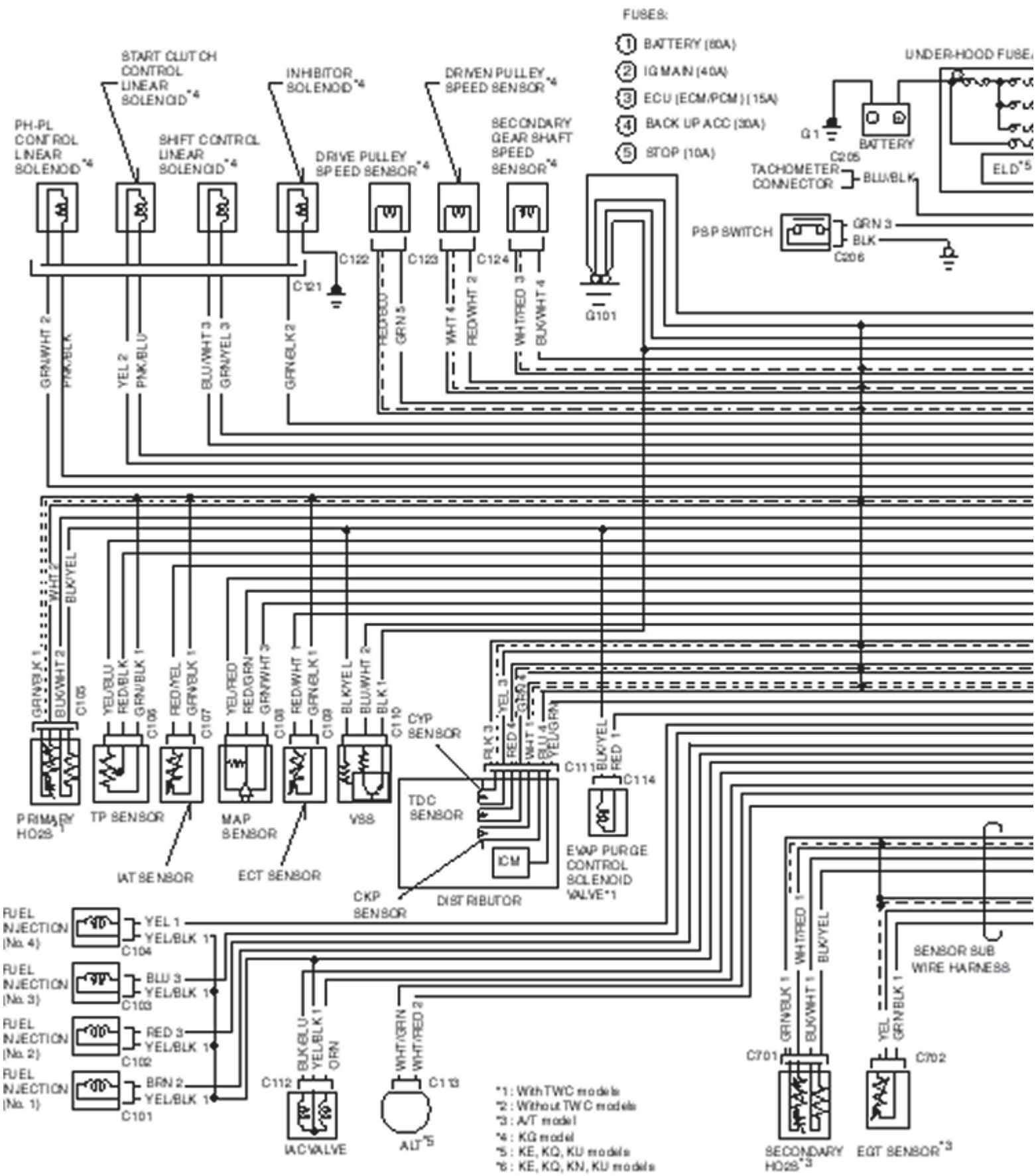

C611
YEL/GRN
C213
REAR WIRE HARNESS
YEL/GRN
BLK
G501
C601
P
FUEL PUMP
C226
SERVICE CHECK CONNECTOR
BRN 1
BRN/BLK 1
WHT/YEL
LT BLU
BRN/BLK 1
DATA LINK CONNECTOR
C227
TO A/C SWITCH
TO RADIATOR FAN RELAY, ECT SWITCH *4
TO A/C COMPRESSOR CLUTCH RELAY
TO IMMOBILIZER UNIT
C151
C251
BLK/BLU
WHT 3
RED
GRN 1
BLU 2
P
R
N
D
L
A/T GEAR POSITION SWITCH *3
BLK
C224
G402
C501
C214
BLK/RED
GRN/BLK 3
WHT/BLU
LT GRN 1
RED
GRN/ORN
C511
C512
PNK
BLK/BLU
YEL
C215
BLK/RED
GRN/BLK 3
WHT/BLU
PNK
LT GRN 1
RED
BLK/BLU
GRN/ORN
YEL
C502
MIL
INDICATOR LIGHT *3
INDICATOR LIGHT *3
IMMOBILIZER INDICATOR LIGHT
A/T GEAR POSITION INDICATOR *3
GAUGE SUB WIRE HARNESS
GAUGE ASSEMBLY
MAIN WIRE HARNESS
C132
BLK/YEL
YEL/BLK 1
BRN/BLK 1
BLK 1
C212
LT GRN/BLU
LT GRN/RED
BLK
S
D
MODE SWITCH *3
C223
G402
C131
GRN/RED
WHT/BLU
GRN 3
GRN/BLK 3
YEL 4
BLU 4
LT GRN 2
WHT 3
GRN/BLK 1
BLK/WHT 3
C211
C222
WHT/BLK
GRN/WHT 1
BRAKE SWITCH
C228
BLK/RED
BLK/RED
INERTIA SWITCH
C221
WHT/YEL
BLK 1
BLU/WHT 1
YEL/GRN
BLK/RED
YEL/BLK 1
GRN/YEL 1
PGM-FI MAIN RELAY
RED/WHT
BLK/RED
BLK/YEL
YEL
BLU/WHT 1
BLU/BLK
WHT/BLU
+B
IG 1
ST
IGNITION SWITCH
UNDER-DASH FUSE/RELAY BOX
FUSES:
1 FUEL PUMP SRS (15A)
2 IG COIL (15A)
3 INSTRUMENT LIGHT (7.5A)
4 STARTER SIGNAL (7.5A)
5 BACK UP (7.5A)

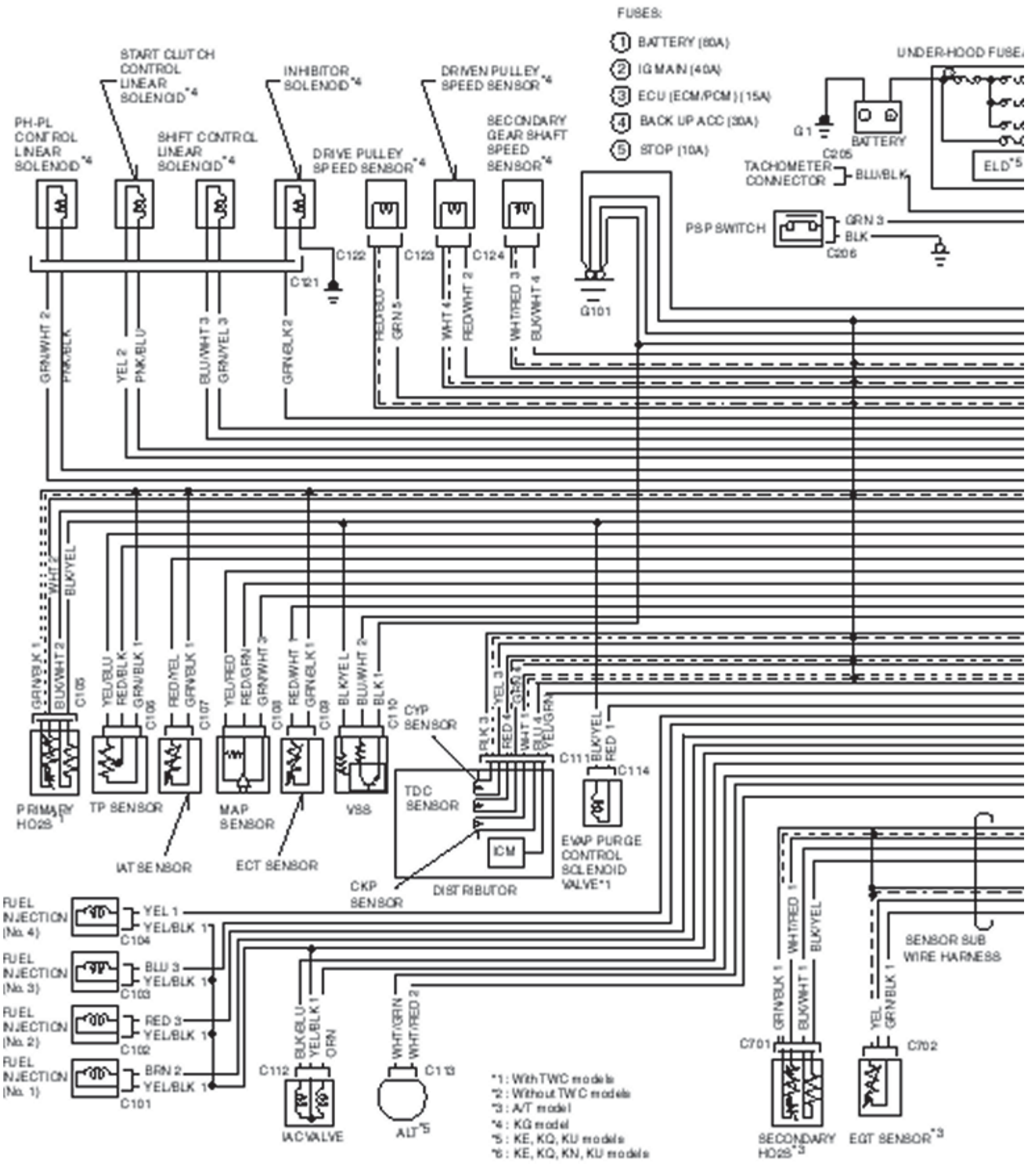
Fuel Injected System Diagram

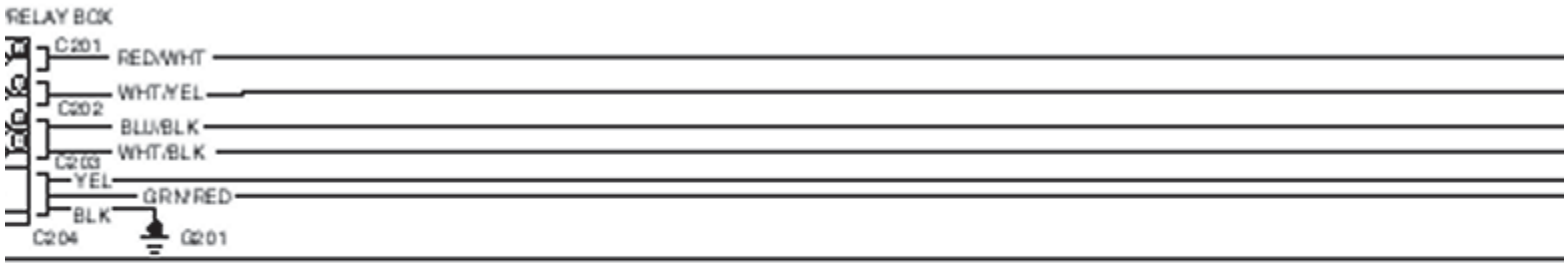
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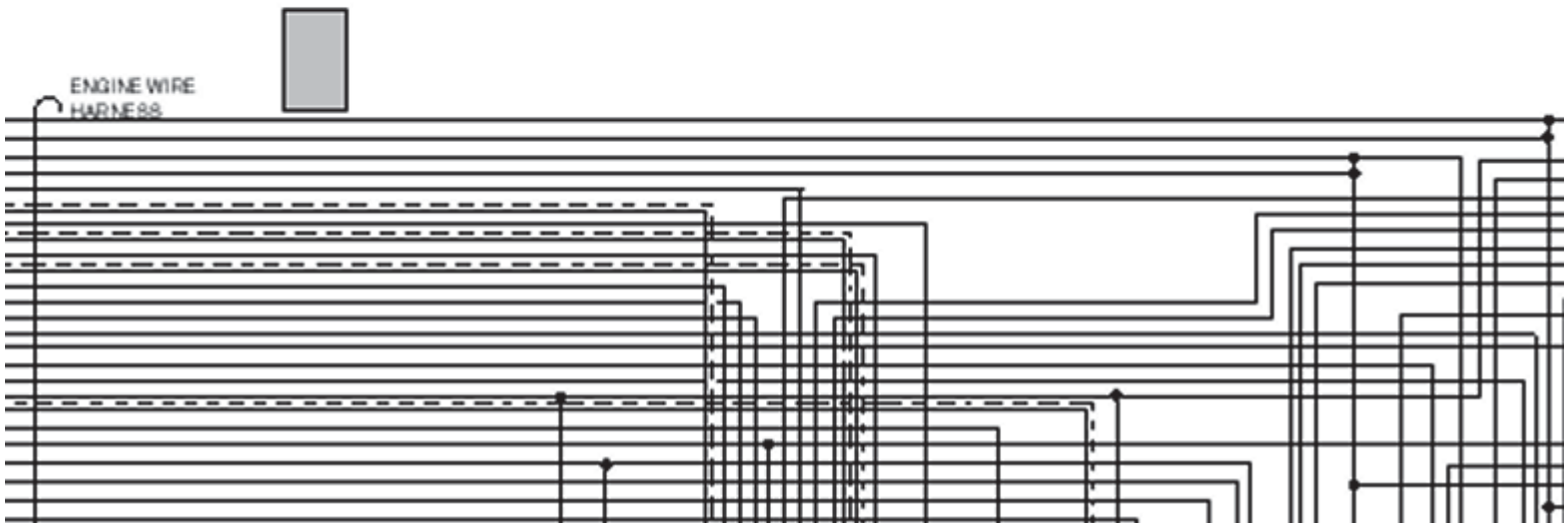
11-113






FUSES:
1 BATTERY (80A)
2 IG MAIN (40A)
3 ECU (ECM/PCM) (15A)
4 BACK UP ACC (30A)
5 STOP (10A)
START CLUTCH CONTROL LINEAR SOLENOID*4
INHIBITOR SOLENOID*4
DRIVEN PULLEY SPEED SENSOR*4
PH-PL CONTROL LINEAR SOLENOID*4
SHIFT CONTROL LINEAR SOLENOID*4
DRIVE PULLEY SPEED SENSOR*4
SECONDARY GEAR SHAFT SPEED SENSOR*4
UNDER-HOOD FUSE
BATTERY
G1
C205
TACHOMETER CONNECTOR
BLU/BLK
ELD*5
PSP SWITCH
GRN 3
BLK
C206
G101
C121
C122
C123
C124
GRN/WHT 2
PNK/BLK
YEL 2
PNK/BLU
BLU/WHT 3
GRN/YEL 3
GRN/BLK 2
RED/BLU
GRN 5
WHT 4
RED/WHT 2
WHT/RED 3
BLK/WHT 4
GRN/BLK 1
WHT 2
BLK/YEL
YEL/BLU
RED/BLK
GRN/BLK 1
RED/YEL
GRN/BLK 1
YEL/RED
RED/GRN
GRN/WHT 3
RED/WHT 1
GRN/BLK 1
BLK/YEL
BLU/WHT 2
BLK 1
C105
C106
C107
C108
C109
C110
PRIMARY HO2S*1
TP SENSOR
MAP SENSOR
VSS
CYP SENSOR
TDC SENSOR
ICM
DISTRIBUTOR
IAT SENSOR
ECT SENSOR
CKP SENSOR
BLK 3
YEL 3
RED 4
GRN 5
WHT 1
BLU 4
YEL/GRN
C111
BLK/YEL
RED 1
C114
EVAP PURGE CONTROL SOLENOID VALVE*1
FUEL INJECTION (No. 4)
YEL 1
YEL/BLK 1
C104
FUEL INJECTION (No. 3)
BLU 3
YEL/BLK 1
C103
FUEL INJECTION (No. 2)
RED 3
YEL/BLK 1
C102
FUEL INJECTION (No. 1)
BRN 2
YEL/BLK 1
C101
BLK/BLU
YEL/BLK 1
ORN
C112
IAC VALVE
WHT/GRN
WHT/RED 2
C113
ALT*5
WHT/RED 1
BLK/YEL
GRN/BLK 1
C701
SECONDARY HO2S*3
YEL
GRN/BLK 1
C702
EGT SENSOR*3
SENSOR SUB WIRE HARNESS
*1: With TWC models
*2: Without TWC models
*3: A/T model
*4: KQ model
*5: KE, KQ, KU models
*6: KE, KQ, KN, KU models


RELAY BOX
C201
RED/WHT
WHT/YEL
C202
BLU/BLK
WHT/BLK
C203
YEL
GRN/RED
BLK
C204
G201


ENGINE WIRE HARNESS

RELAY BOX
C201
RED/WHT
WHT/YEL
C202
BLU/BLK
WHT/BLK
C203
YEL
GRN/RED
BLK
C204
G201

ENGINE WIRE HARNESS

GRN/BLK 1
WHT/RED 1
BLK/WHT 1
YEL
C711
C271
BRN/BLK 1
YEL
GRN/BLK 1
C712
C272

C116
GRN/BLK 1
GRN/RED
YEL/BLU
IMA*2

C153
WHT/RED 3
GRN/YEL 3
BLK/YEL
BLK/WHT 4
BLU 5
RED/BLU
YEL 4
RED/WHT 2
GRN/BLK 2
BLU/WHT 3
WHT 3
LT GRN 2
WHT 4
GRN 5
GRN/BLK 3

C152
BLK/WHT 2
WHT/RED 2
BLU 4
WHT 2
GRN/BLK 1
GRN 4
BLU/WHT 2
RED/WHT 1
YEL/BLU
BLK 3
WHT/GRN
GRN/WHT 3
WHT 1
RED/GRN
YEL/RED
RED 4
RED/YEL
RED/BLK
YEL 3
BLK/WHT 3

C151
YEL/BLK 1
RED 3
BLU 3
YEL 1
PNK/BLK
BLK 2
YEL/GRN
GRN/WHT 2
BRN/BLK 1
BLK 1
BLK/BLU
YEL/BLK 2
BRN 2
ORN
PNK/BLU

ECM/PCM
B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B15 B17 B18 B20
C1 C5 C7 C8 C16 C17 C18 C19 C20 C21 C23 C25 C27 C28 C29 C30 C32
D1 D3 D5 D7 D9 D11 D12 D13 D14 D16

UNDER-DASH FUSE/RELAY BOX
RED/WHT
BLK/YEL
BLK/RED
YEL
BLU/WHT 1
BLU/BLK
WHT/BLU
+B
IG 1
ST
IGNITION SWITCH

FUSES:
1 FUEL PUMP SRS (15A)
2 IG COIL (15A)
3 INSTRUMENT LIGHT (7.5A)
4 STARTER SIGNAL (7.5A)
5 BACK UP (7.5A)

C221
WHT/YEL
BLK/RED
BLK 1
YEL/BLK 1
BLU/WHT 1
GRN/YEL 1
YEL/GRN
PGM-FI MAIN RELAY

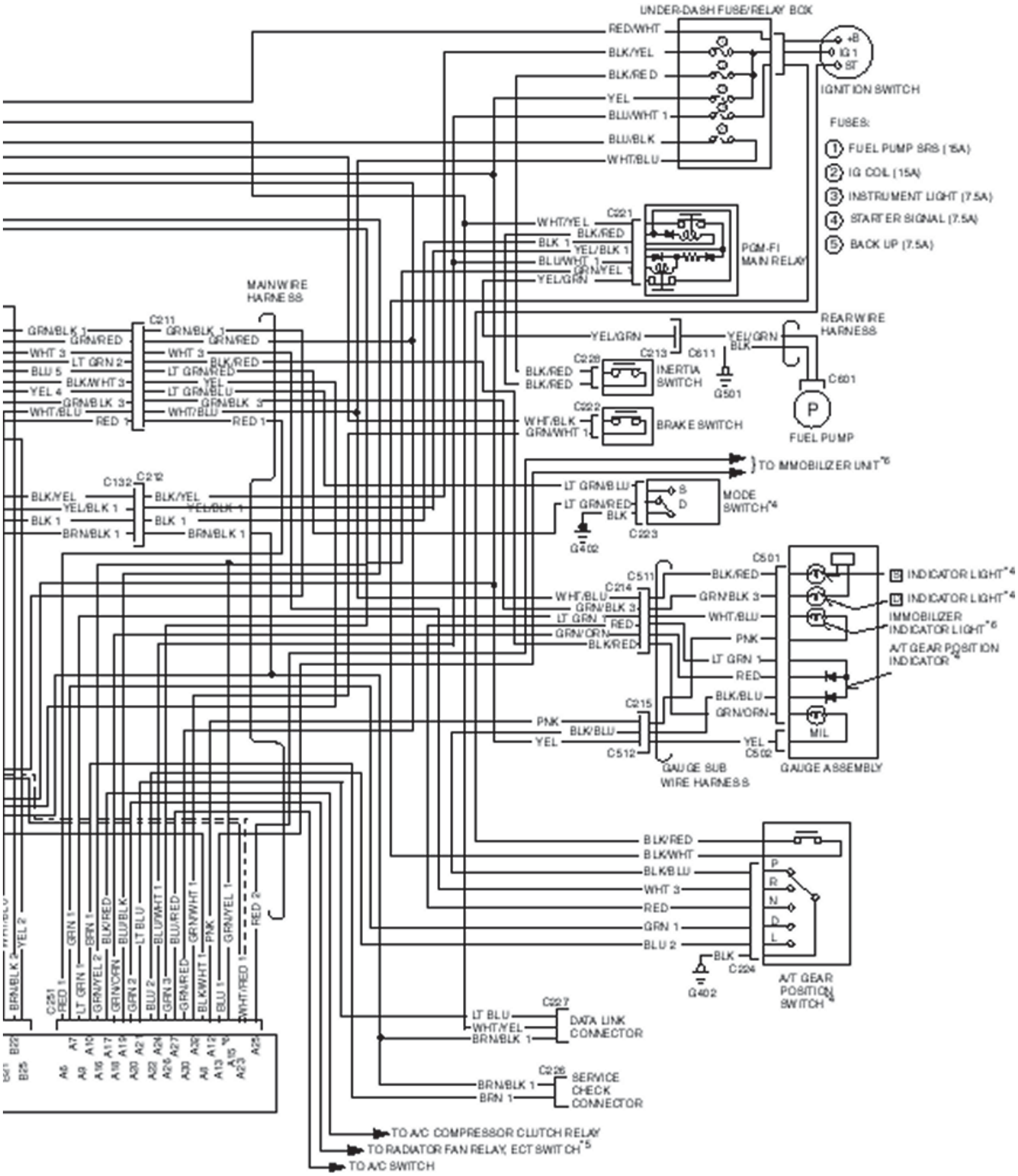
MAIN WIRE HARNESS

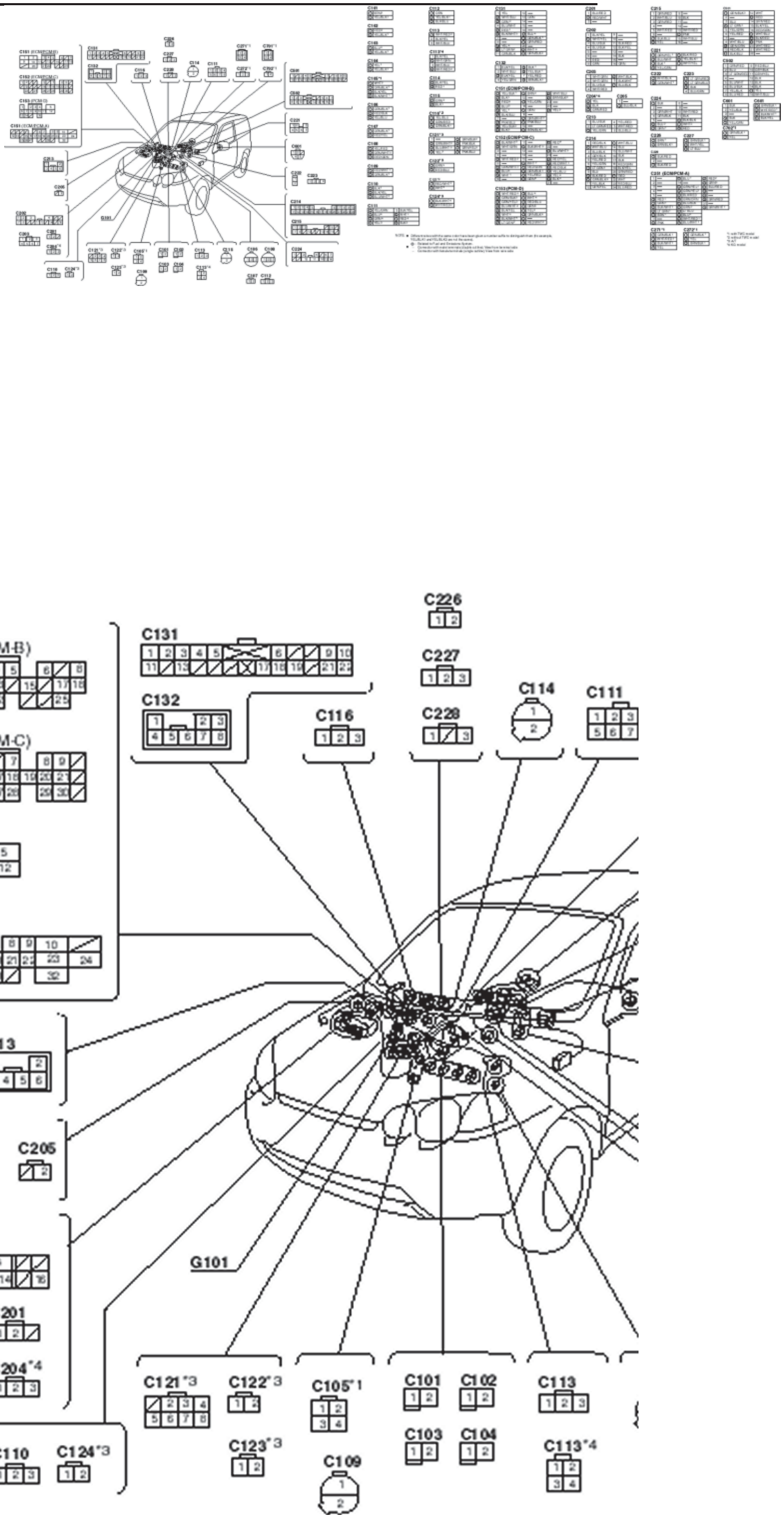
C211
GRN/BLK 1
GRN/RED
WHT 3
LT GRN 2
BLU 5
BLK/WHT 3
YEL 4
GRN/BLK 3
WHT/BLU
RED 1
BLK/RED
LT GRN/RED
YEL
LT GRN/BLU
WHT/BLU

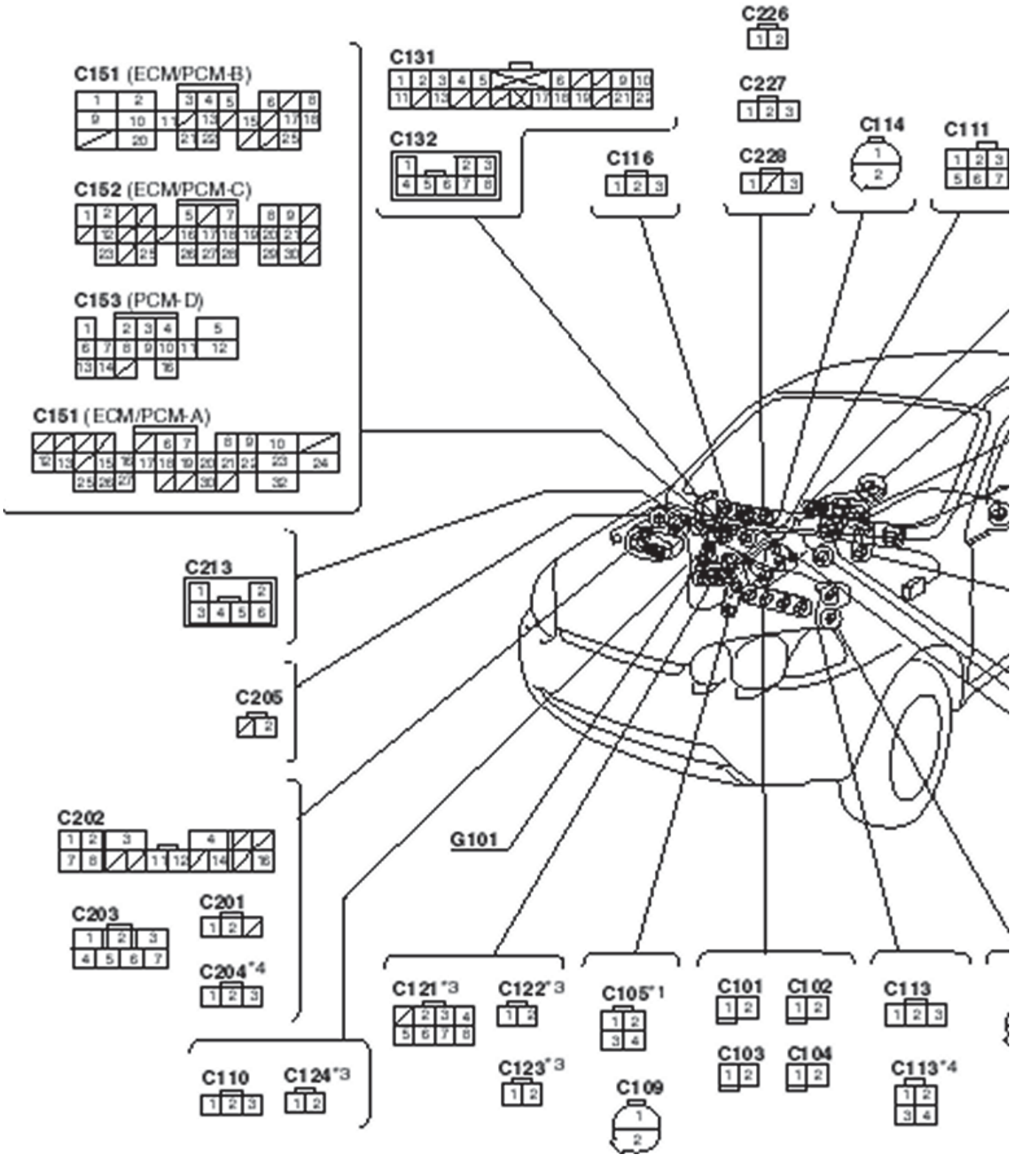
C213
C611
G501
YEL/GRN
BLK
REAR WIRE HARNESS
C601
C228
BLK/RED
BLK/RED
INERTIA SWITCH
C222
WHT/BLK
GRN/WHT 1
BRAKE SWITCH
P
FUEL PUMP

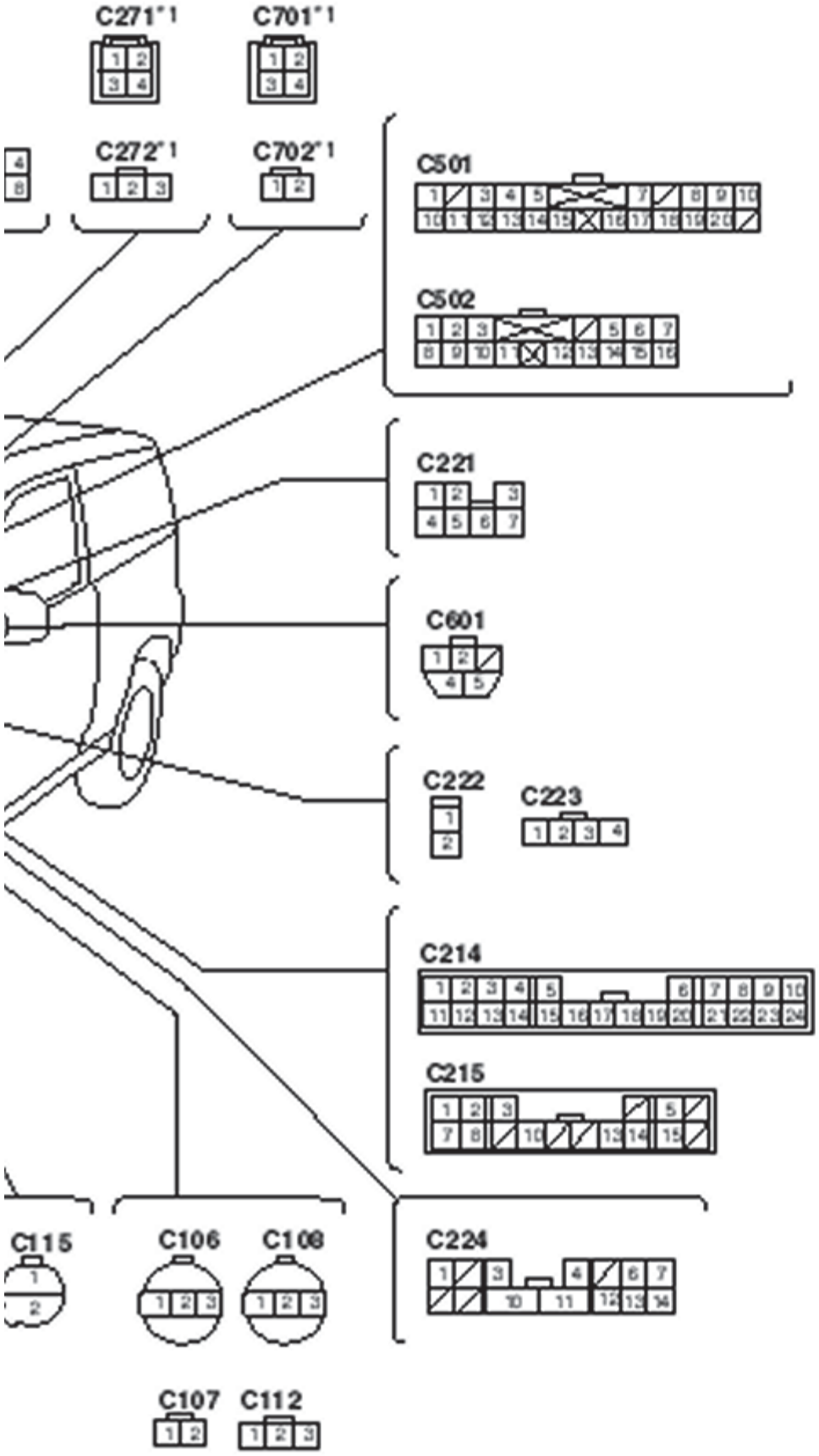
TO IMMOBILIZER UNIT*6

C132
C212
BLK/YEL
YEL/BLK 1
BLK 1
BRN/BLK 1
LT GRN/BLU
LT GRN/RED
BLK
S
D
MODE SWITCH*4
C223


UNDER-DASH FUSE/RELAY BOX
RED/WHT
BLK/YEL
BLK/RED
YEL
BLU/WHT 1
BLU/BLK
WHT/BLU
+B
IG 1
ST
IGNITION SWITCH
FUSES:
1 FUEL PUMP SRS (15A)
2 IG COIL (15A)
3 INSTRUMENT LIGHT (7.5A)
4 STARTER SIGNAL (7.5A)
5 BACK UP (7.5A)
C221
WHT/YEL
BLK/RED
BLK 1
YEL/BLK 1
BLU/WHT 1
GRN/YEL 1
YEL/GRN
PGM-FI MAIN RELAY
MAIN WIRE HARNESS
C211
GRN/BLK 1
GRN/RED
WHT 3
LT GRN 2
BLU 5
BLK/WHT 3
YEL 4
GRN/BLK 3
WHT/BLU
RED 1
BLK/RED
LT GRN/RED
YEL
LT GRN/BLU
C213
C611
YEL/GRN
BLK
REAR WIRE HARNESS
C228
INERTIA SWITCH
G501
C601
FUEL PUMP
C222
BRAKE SWITCH
WHT/BLK
GRN/WHT 1
TO IMMOBILIZER UNIT*6
C132
C212
BLK/YEL
YEL/BLK 1
BLK 1
BRN/BLK 1
LT GRN/BLU
LT GRN/RED
BLK
S
D
MODE SWITCH*4
C223
G402
C501
C511
C214
WHT/BLU
GRN/BLK 3
LT GRN 1
RED
GRN/ORN
BLK/RED
PNK
BLK/BLU
YEL
C215
C512
C502
INDICATOR LIGHT*4
INDICATOR LIGHT*4
IMMOBILIZER INDICATOR LIGHT*6
A/T GEAR POSITION INDICATOR*4
MIL
GAUGE SUB WIRE HARNESS
GAUGE ASSEMBLY
BLK/RED
BLK/WHT
BLK/BLU
WHT 3
RED
GRN 1
BLU 2
P
R
N
D
L
BLK
C224
G402
A/T GEAR POSITION SWITCH
C251
RED 1
LT GRN 1
GRN/YEL 2
GRN/ORN
GRN 2
BLU 2
GRN 3
GRN/RED
BLK/WHT 1
BLU 1
RED 2
C227
LT BLU
WHT/YEL
BRN/BLK 1
DATA LINK CONNECTOR
C226
BRN/BLK 1
BRN 1
SERVICE CHECK CONNECTOR
TO A/C COMPRESSOR CLUTCH RELAY
TO RADIATOR FAN RELAY, ECT SWITCH*5
TO A/C SWITCH


C151 (ECM/PCM-B)
C152 (ECM/PCM-C)
C153 (PCM-D)
C151 (ECM/PCM-A)
C131
C132
C226
C227
C228
C114
C111
C116
C213
C205
C202
C203
C201
C204*4
G101
C121*3
C122*3
C105*1
C123*3
C109
C101
C102
C103
C104
C113
C113*4
C110
C124*3


C151 (ECM/PCM-B)
C152 (ECM/PCM-C)
C153 (PCM-D)
C151 (ECM/PCM-A)
C131
C132
C116
C226
C227
C228
C114
C111
C213
C205
C202
C203
C201
C204*4
C110
C124*3
C121*3
C122*3
C123*3
C105*1
C109
C101
C102
C103
C104
C113
C113*4
G101
C271*1
C701*1
C272*1
C702*1
C501
C502
C221
C101
BRN*2
YEL/BLK*1
C102
RED*2
YEL/BLK*1
C103
BLU*2
YEL/BLK*1
C104
YEL*1
YEL/BLK*1
C105*1
WHT*2
GRN/BLK*1
BLK/YEL
BLK/WHT*1
C106
GRN/BLK*1
RED/BLK
YEL/BLU
C107
GRN/BLK*1
C112
C113
C113*
C114
C115
C116*



C101

	BRN[2]
	YEL/BLK[1]

C102

	RED[4]
	YEL/BLK[1]

C103

	BLU[4]
	YEL/BLK[1]

C104

	YEL[1]
	YEL/BLK[1]

C105*1

	WHT[2]
	GRN/BLK[1]
	BLK/YEL
	BLK/WHT[1]

C106

	GRN/BLK[1]
	RED/BLK
	YEL/BLU

C107

	GRN/BLK[1]
	RED/YEL

C108

	YEL/RED
	GRN/WHT[3]
	RED/GRN

C109

	RED/WHT[1]
	GRN/BLK[1]

C110

	BLK[1]
	BLK/YEL
	BLU/WHT[2]

C111

	YEL/GRN	5	BLK/YEL
	BLU[4]		WHT[1]
	GRN[4]		RED[4]
	YEL[3]		BLK[3]

C112

	GR
	YE
	BL

C113

	WH
2	BL
3	WH

C113*

1	BL
	WH
3	WH
	WH

C114

	BL
	RE

C115

	GR
	BL

C116*

	YE
	GR
	GR

C121*

1	—
	GR
	BL
	YE

C122*

	GR
	RE

C123*2

	RE
	WH

C124*

	BL
	WH

NOTE: ● Different wires with th
YEL/BLK1 and YEL/B
○ : Related to Fuel
● – Connector with
– Connector with

C131

1	YEL	12	—
	WHT/BLU	13	GRN
	GRN[4]	14	—
4	BLU/WHT	15	—
	RED[1]	16	—
	BLK/WHT[4]		BLU[4]
7	—		GRN/BLK[1]
8	—		GRN/RED
	YEL[4]	20	—
	LT GRN[2]		WHT[4]
11	GRN/BLK		GRN/BLK[4]

C132

1	BLK/YEL		BLK[1]
2	WHT/BLU		YEL/BLK[1]
	BLK/YEL	7	YEL/RED
4	YEL/GRN		BRN/BLK[1]

C151 (ECM/PCM-B)

	YEL/BLK[1]		BRN[2]		WHT/BLU
	BLK[1]	12	—		BRN/BLK[2]
	RED[4]		YEL/GRN	23	—
	BLU[4]	14	—	24	—
	YEL[1]		GRN		YEL[2]
	BLK/BLU	18	—		
7	—		GRN/WHT[2]		
	PNK/BLU		PNK/BLU		
	YEL/BLK[2]	19	—		
	BLK[2]		BRN/BLK[1]		

C201

1	BLU/RED
	RED/WHT
3	—

C202

1	BLK/YEL	9	—
	WHT/YEL	10	—
3	BLU/BLK	11	BLK/RED
4	BLU/BLK	12	BLK/YEL
5	—	13	—
6	—	14	BLK
7	RED	15	—
8	GRN	16	GRN

C203

1	WHT/GRN		WHT/BLK
2	WHT/GRN	6	BLK/WHT
3	BLU/BLK		BLU/BLK
4	WHT/RED		

C204*4

	YEL
	BLK
	GRN/RED

C205

1	—
	BLU/BLK

C213

1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
	YEL/GRN	6	BLU/BLU

C215

1	GRN/RED	9	—
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	WHT/RED	13	WHT/RED
6	—		PNK
	BLK/BLU	15	WHT/BLU
	YEL	16	—

C221

	GRN/YEL[1]		BLK/RED
	BLU/WHT		YEL/BLK[1]
	BLK[1]		WHT/YEL
	YEL/GRN		

C222

	WHT/BLK
	GRN/WHT[1]

C223

	LT GRN/RED
	LT GRN/BLU
	BLK
4	BLU/GRN

C224

	BLK	8	—
2	—	9	—
3	GRN/WHT	10	WHT/RED
4	GRN/BLK	11	BLK
5	—		BLK/BLK
	BLU[2]		WHT[4]
	GRN[1]		RED

C501

	GRN/BLK[3]
2	—
3	BLU
	LT GRN[1]
5	YEL/GRN
6	YEL/RED
7	—
8	WHT/BLU
	GRN/GRN
10	RED/BLK
	BLK/BLU

C502

1	GRN/RED
2	BLU
3	LT GRN/RED
4	—
5	BLU/WHT
6	BLU/BLK
7	YEL/BLK
8	BLU/RED

C601

1	BLK
2	YEL/BLK
3	—
	BLK
	YEL/GRN

C702*1

	GRN/BLK[1]

C131

1	YEL	12	—
2	WHT/BLU	13	GRN
3	GRN[4]	14	—
4	BLU/WHT	15	—
5	RED[1]	16	—
6	BLK/WHT[4]	17	BLU[4]
7	—	18	GRN/BLK[1]
8	—	19	GRN/RED
9	YEL[4]	20	—
10	LT GRN[2]	21	WHT[4]
11	GRN/BLK	22	GRN/BLK[4]

C132

1	BLK/YEL	5	BLK[1]
2	WHT/BLU	6	YEL/BLK[1]
3	BLK/YEL	7	YEL/RED
4	YEL/GRN	8	BRN/BLK[1]

C151 (ECM/PCM-B)

1	YEL/BLK[1]	11	BRN[2]	21	WHT/BLU
2	BLK[1]	12	—	22	BRN/BLK[2]
3	RED[4]	13	YEL/GRN	23	—
4	BLU[4]	14	—	24	—
5	YEL[1]	15	GRN	25	YEL[2]
6	BLK/BLU	16	—		
7	—	17	GRN/WHT[2]		
8	PNK/BLU	18	PNK/BLU		
9	YEL/BLK[2]	19	—		
10	BLK[2]	20	BRN/BLK[1]		

C152 (ECM/PCM-C)

1	BLK/WHT[2]	11	—	21	RED[4]
2	WHT/GRN	12	BLK/WHT[3]	22	—
3	—	13	—	23	BLU/WHT[2]
4	—	14	—	24	—
5	WHT/RED[2]	15	—	25	RED/YEL
6	—	16	WHT[2]	26	RED/WHT[1]
7	GRN/WHT[4]	17	RED/GRN	27	RED/BLK
8	BLU[4]	18	GRN/BLK[1]	28	YEL/BLU
9	WHT[1]	19	YEL/RED	29	YEL[4]
10	—	20	GRN[4]	30	BLK[4]
				31	—

C153 (PCM-D)

1	WHT/RED[3]	13	BLU[4]
2	GRN/BLK[2]	14	WHT[4]
3	GRN/YEL[4]	15	RED/BLU
4	BLU/WHT[3]	16	GRN[4]
5	BLK/YEL	17	YEL[4]
6	WHT[4]	18	GRN/BLK[4]
7	BLK/WHT[4]	19	—
8	LT GRN[2]	20	RED/WHT[2]

C201

1	BLU/RED		
2	RED/WHT		
3	—		

C202

1	BLK/YEL	9	—
2	WHT/YEL	10	—
3	BLU/BLK	11	BLK/RED
4	BLU/BLK	12	BLK/YEL
5	—	13	—
6	—	14	BLK
7	RED	15	—
8	GRN	16	GRN

C203

1	WHT/GRN	5	WHT/BLK
2	WHT/GRN	6	BLK/WHT
3	BLU/BLK	7	BLU/BLK
4	WHT/RED		

C204*4

1	YEL		
2	BLK		
3	GRN/RED		

C205

1	—		
2	BLU/BLK		

C213

1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
3	YEL/GRN	6	BLU/BLU

C214

1	RED/BLK	13	WHT/BLU
2	WHT/BLU	14	BLU
3	BLU/BLK	15	BLU/WHT
4	GRY/BLK	16	BLK
5	YEL/RED	17	BLK
6	YEL/GRN	18	RED/GRN
7	LT GRN[1]	19	BLK/YEL
8	BLU	20	GRN/RED
9	BLK/RED	21	RED
10	GRN/BLK[4]	22	WHT
11	YEL/BLK	23	RED/BLU
12	GRN/YEL	24	BLU/RED

C215

1	GRN/RED	9	—
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	WHT/RED	13	WHT/RED
6	—	14	PNK
7	BLK/BLU	15	WHT/BLU
8	YEL	16	—

C221

1	GRN/YEL[1]	5	BLK/RED
2	BLU/WHT	6	YEL/BLK[1]
3	BLK[1]	7	WHT/YEL
4	YEL/GRN		

C222

1	WHT/BLK		
2	GRN/WHT[1]		

C223

1	LT GRN/RED		
2	LT GRN/BLU		
3	BLK		
4	BLU/GRN		

C224

1	BLK	8	—
2	—	9	—
3	GRN/WHT	10	WHT/RED
4	GRN/BLK	11	BLK
5	—	12	BLK/BLK
6	BLU[2]	13	WHT[4]
7	GRN[1]	14	RED

C226

1	BRN[1]		
2	BRN/BLK[1]		

C227

1	BRN/BLK[1]		
2	WHT/YEL		
3	LT BLU		

C228

1	BLK/RED		
2	—		
3	BLK/RED		

C251 (ECM/PCM-A)

1	—	13	BLU[1]	25	RED[2]
2	—	14	—	26	GRN[4]
3	—	15	GRN/YEL[1]	27	BLU/RED
4	—	16	GRN/YEL[2]	28	—
5	—	17	BLK/RED	29	—
6	RED[1]	18	GRN/ORN	30	GRN/RED
7	GRN[1]	19	BLU/BLK	31	—
8	BLK/WHT[1]	20	GRN[2]	32	GRN/WHT[1]
9	LT GRN[1]	21	LT BLU		
10	BRN[1]	22	BLU[2]		
11	—	23	WHT/RED[1]		
12	PNK	24	BLU/WHT[1]		

C271*1

1	GRN/BLK[1]		
2	WHT/RED[1]		
3	BLK/WHT[1]		
4	YEL		

C272*1

1	GRN/BLK[1]		
2	YEL		
3	BRN/BLK[1]		

C501

1	GRN/BLK[3]		
2	—		
3	BLU		
4	LT GRN[1]		
5	YEL/GRN		
6	YEL/RED		
7	—		
8	WHT/BLU		
9	GRN/ORN		
10	RED/BLK		
11	BLK/BLU		

C502

1	GRN/RED		
2	BLU		
3	LT GRN/RED		
4	—		
5	BLU/WHT		
6	BLU/BLK		
7	YEL/BLK		
8	BLU/RED		

C601

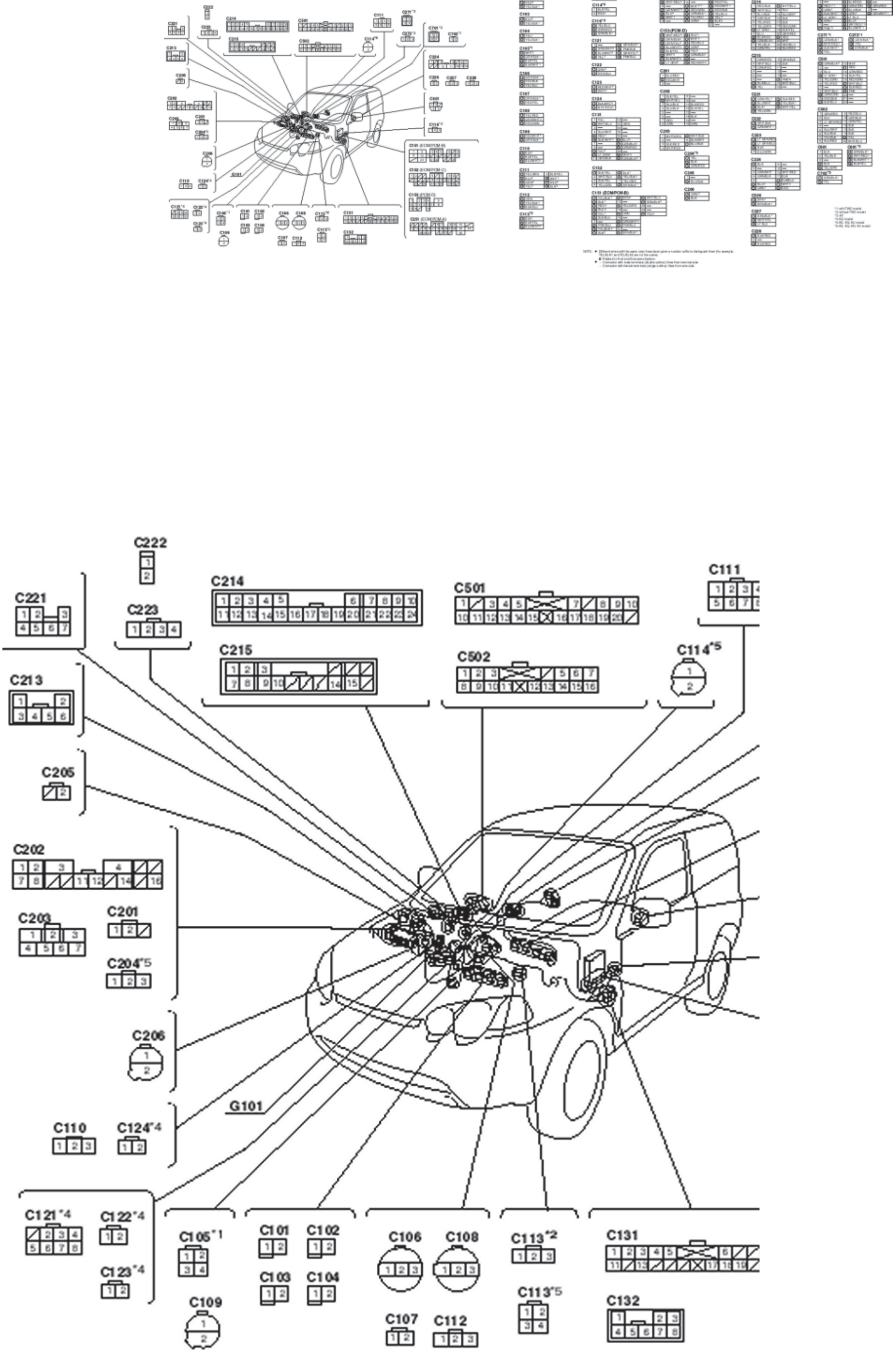
1	BLK		
2	YEL/BLK		
3	—		
4	BLK		
5	YEL/GRN		

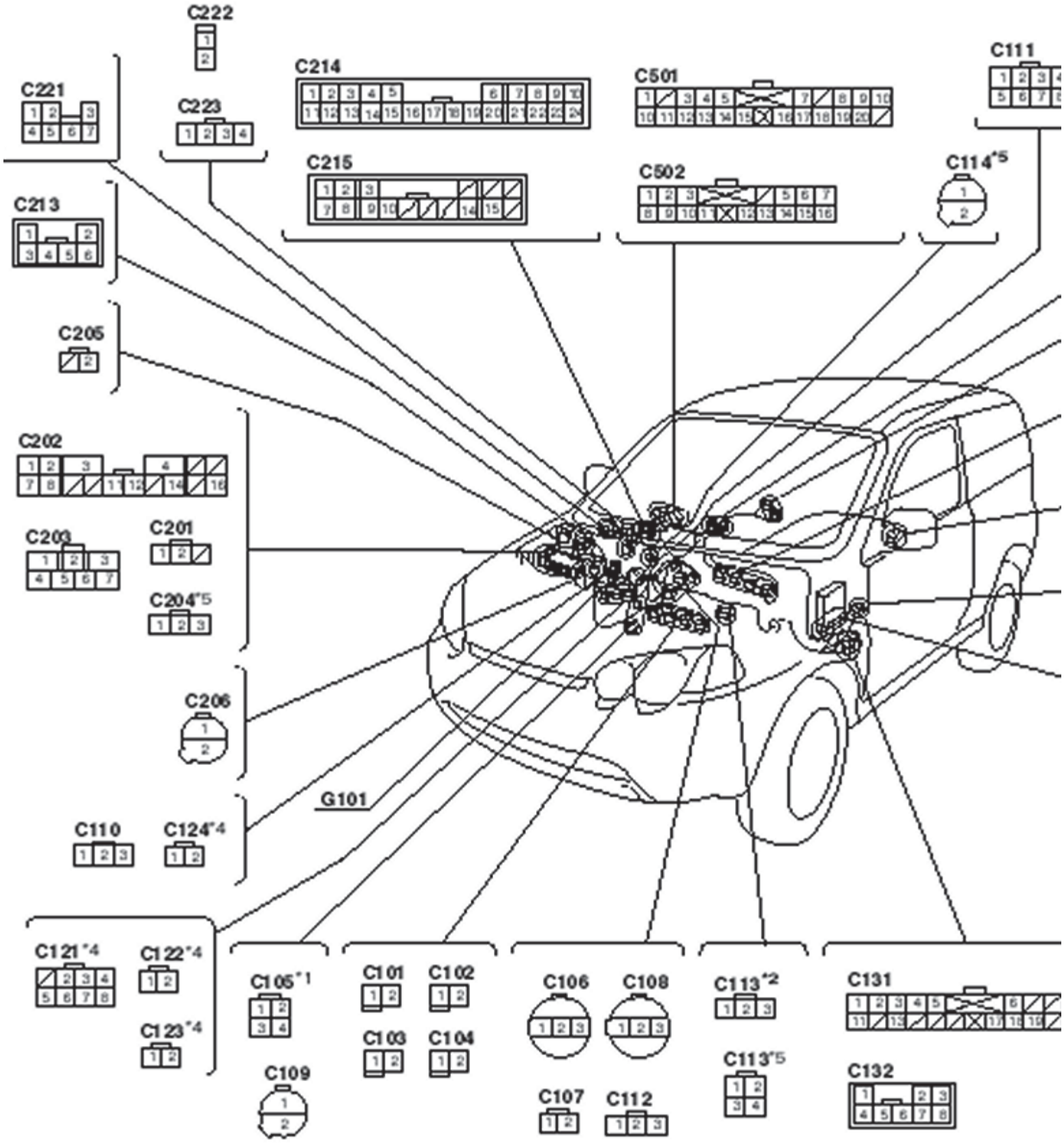
C702*1

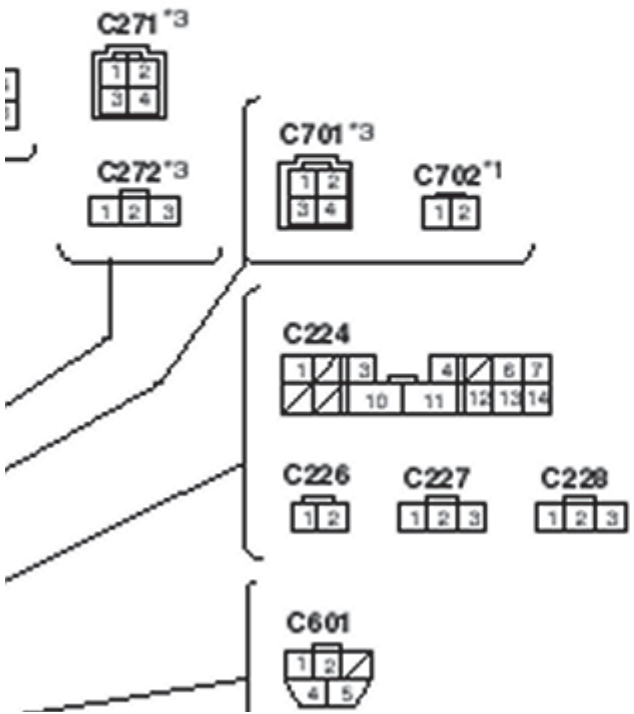
1	GRN/BLK[1]		
2	YEL		

*1: with TWC mo
*2: without TWC
*3: A/T
*4: KG model

...e same color have been given a number suffix to distinguish them (for example, ...LK2 are not the same).
...and Emissions System.
...ale terminals (double outline): View from terminal side
...emale terminals (single outline): View from wire side


C222
C221
C223
C214
C501
C111
C215
C502
C114*5
C213
C205
C202
C203
C201
C204*5
C206
G101
C110
C124*4
C121*4
C122*4
C123*4
C105*1
C109
C101
C102
C103
C104
C106
C108
C107
C112
C113*2
C113*5
C131
C132





C101
- BRN[2]
- YEL/BLK[1]

C102
- RED[4]
- YEL/BLK[1]

C103
- BLU[4]
- YEL/BLK[1]

C104
- YEL[1]
- YEL/BLK[1]

C105*1
- WHT[2]
- GRN/BLK[1]
- BLK/YEL
- BLK/WHT[1]

C106
- GRN/BLK[1]
- RED/BLK
- YEL/BLU

C107
- GRN/BLK[1]
- RED/YEL

C108

C113*5
- 1 BLK/YEL
- WHT/GRN
- 3 WHT/BLU
- WHT/RED[2]

C114*5
- 1 BLK/YEL
- 2 RED[1]

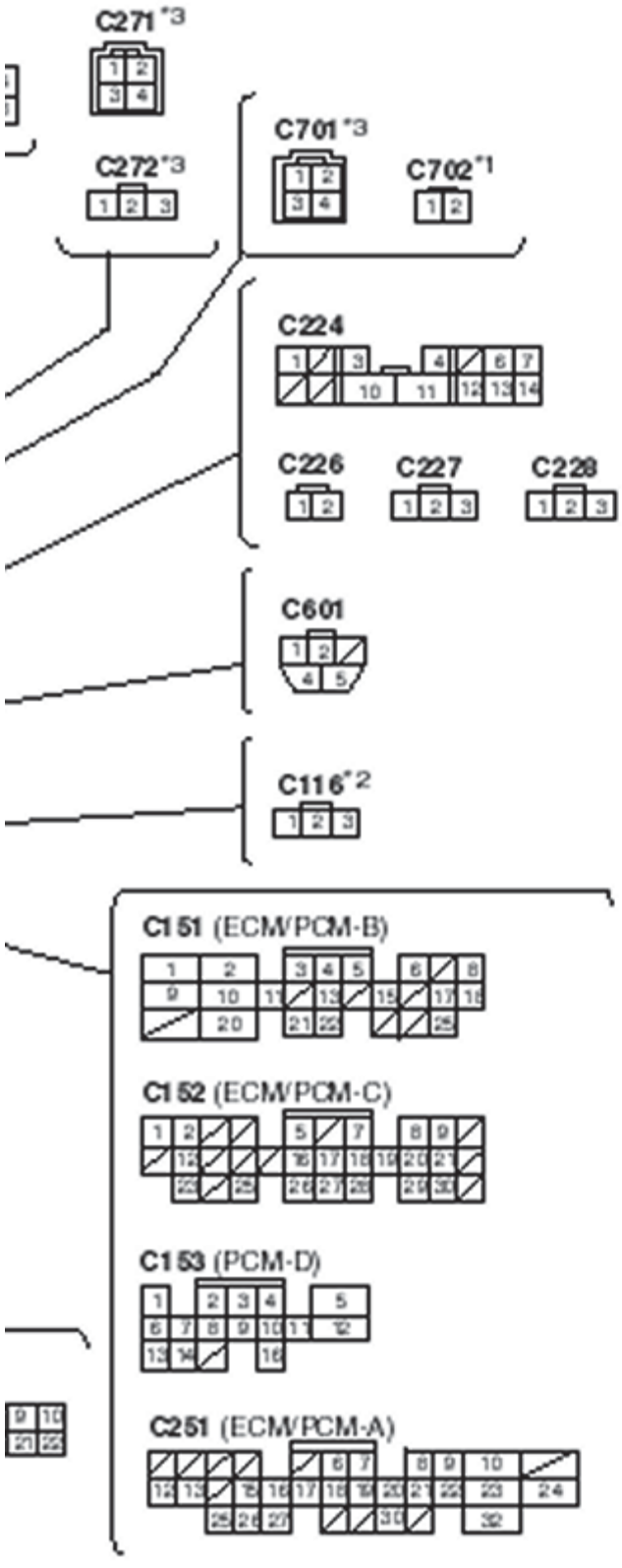
C116*2
- YEL/BLU
- GRN/RED
- GRN/BLK[1]

C121
- 1 —
- GRN/WHT[2]
- BLU/WHT[4]
- YEL[2]

C122
- GRN[3]
- RED/BLU

C123
- RED/WHT[2]
- WHT[4]

C124
- BLK/WHT[4]
- WHT/RED[4]



C101

	BRN[2]
	YEL/BLK[1]

C102

	RED[4]
	YEL/BLK[1]

C103

	BLU[4]
	YEL/BLK[1]

C104

	YEL[1]
	YEL/BLK[1]

C105*1

	WHT[2]
	GRN/BLK[1]
	BLK/YEL
	BLK/WHT[1]

C106

	GRN/BLK[1]
	RED/BLK
	YEL/BLU

C107

	GRN/BLK[1]
	RED/YEL

C108

	YEL/RED
	GRN/WHT[3]
	RED/GRN

C109

	RED/WHT[1]
	GRN/BLK[1]

C110

	BLK[1]
	BLK/YEL
	BLU/WHT[2]

C111

	YEL/GRN	5	BLK/YEL
	BLU[4]		WHT[1]
	GRN[4]		RED[4]
	YEL[4]		BLK[4]

C112

	ORN
	YEL/BLK[1]
	BLK/BLU

C113*2

	BLK[1]
	BLK/YEL
	BLU/WHT[2]

C113*5

1	BLK/YEL
	WHT/GRN
3	WHT/BLU
	WHT/RED[2]

C114*5

1	BLK/YEL
2	RED[1]

C116*2

	YEL/BLU
	GRN/RED
	GRN/BLK[1]

C121

1	—
	GRN/WHT[2]
	BLU/WHT[4]
	YEL[2]

C122

	GRN[5]
	RED/BLU

C123

	RED/WHT[2]
	WHT[4]

C124

	BLK/WHT[4]
	WHT/RED[4]

C131

1	YEL
	WHT/BLU
3	—
4	BLU/WHT
	RED[1]
	BLK/WHT[4]
7	—
8	—
	YEL[4]
	LT GRN[2]
11	GRN/BLK

C132

	BLK/YEL
2	WHT/BLU
3	BLK/YEL
4	YEL/GRN

C151 (ECM/

	YEL/BLK[1]
	BLK[1]
	RED[4]
	BLU[4]
	YEL[1]
	BLK/BLU
7	—
	PNK/BLU
	YEL/BLK[2]
	BLK[2]

NOTE: ● Different wir
YEL/BLK1 a
□ : Related t
● – Connecti
– Connecti

C152 (ECM/PCM-C)

	BLK/WHT[2,*1]	11	—		RED[4]
	WHT/GRN		BLK/WHT[4]	23	—
3	—	13	—		BLU/WHT[2]
4	—	14	—	24	—
	WHT/RED[2]	15	—		RED/YEL
6	—		WHT[2,*1]		RED/WHT[1]
	GRN/WHT[4]		RED/GRN		RED/BLK
	BLU[4]		GRN/BLK[1]		YEL/BLU
	WHT[1]		YEL/RED		YEL[4]
10	—		GRN[4]		BLK[4]
				31	—

C153 (PCM-D)

	WHT/RED[4]		BLU[5]
	GRN/BLK[2]		WHT[4]
	GRN/YEL[4]		RED/BLU
	BLU/WHT[3]		GRN[2]
	BLK/YEL		YEL[4]
	WHT[4]		GRN/BLK[4]
	BLK/WHT[4]		—
	LT GRN[2]		RED/WHT[2]

C201

1	BLU/RED
	RED/WHT
3	—

C202

1	BLK/YEL	9	—
	WHT/YEL	10	—
3	BLU/BLK	11	BLK/RED
4	BLU/BLK	12	BLK/YEL

C213

1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
	YEL/GRN	6	BLU/BLU

C214

1	RED/BLK		WHT/BLU
	WHT/BLU	14	BLU
3	BLU/BLK	15	BLU/WHT
4	GRY/BLK	16	BLK
5	YEL/RED	17	BLK
6	YEL/GRN	18	RED/GRN
	LT GRN[1]	19	BLK/YEL
8	BLU	20	GRN/RED
	BLK/RED		RED
	GRN/BLK[4]	22	WHT
11	YEL/BLK	23	RED/BLU
12	GRN/YEL	24	BLU/RED

C215

1	GRN/RED	9	GRN/BLK
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	—	13	—
6	—		PNK[*3]
	BLK/BLU	15	WHT/BLU
	YEL	16	—

C221

	GRN/YEL[1]		BLK/RED
	BLU/WHT		YEL/BLK[1]
	BLK[1]		WHT/YEL
	YEL/GRN		

C251 (ECM/PCM-A)

1	—		BLU[*3]		RED[2,*3]
2	—	14	—		GRN[4]
3	—		GRN/YEL[1,*3]		BLU/RED
4	—		GRN/YEL[2]		—
5	—		BLK/RED		—
	RED[1,*1]		GRN/ORN		GRN/RED
	GRN[1]		BLU/BLK	31	—
	BLK/WHT[1,*4]		GRN[2]		GRN/WHT[1]
	LT GRN[1]		LT BLU		
	BRN[1]		BLU[2]		
11	—		WHT/RED[1,*4]		
	PNK[1,*3]		BLU/WHT[1]		

C271 *1

	GRN/BLK[1]
	WHT/RED[1]
	BLK/WHT[1]
	YEL

C272*1

	GRN/BLK[1]
	YEL
	BRN/BLK[1]

C501

	GRN/BLK[4]	12	WHT
2	—		RED
3	BLU	14	GRN/RED
	LT GRN[1]	15	BLK/YEL
5	YEL/GRN	16	RED/GRN
6	YEL/RED		WHT/BLU
7	—		BLK/RED
8	WHT/BLU		PNK
	GRN/ORN	20	—
10	RED/BLK	21	—
	BLK/BLU	23	—

C502

	GRN/BLK[2]
	PNK/BLK
	GRN/YEL[4]
	PNK/BLU

	GRN/BLK*2				
	PNK/BLK				
	GRN/YEL*4				
	PNK/BLU				

12	—				
13	GRN				
14	—				
15	—				
16	—				
	BLU*5				
	GRN/BLK*1				
	GRN/RED				
20	—				
	WHT*4				
	GRN/BLK*4				

	BLK*1				
	YEL/BLK*1				
7	YEL/RED				
	BRN/BLK*1				

(PCM-B)

	BRN*2		WHT/BLU		
12	—		BRN/BLK*2		
	YEL/GRN	23	—		
14	—	24	—		
	GRN		YEL*2		
16	—				
	GRN/WHT*2				
	PNK/BLU				
19	—				
	BRN/BLK*1				

C152 (ECM/PCM-C)

	BLK/WHT*2*1	11	—		RED*6
	WHT/GRN		BLK/WHT*4	22	—
3	—	13	—		BLU/WHT*2
4	—	14	—	24	—
	WHT/RED*2	15	—		RED/YEL
6	—		WHT*2*1		RED/WHT*1
	GRN/WHT*4		RED/GRN		RED/BLK
	BLU*6		GRN/BLK*1		YEL/BLU
	WHT*1		YEL/RED		YEL*4
10	—		GRN*6		BLK*4
				31	—

C153 (PCM-D)

	WHT/RED*4		BLU*5
	GRN/BLK*2		WHT*4
	GRN/YEL*4		RED/BLU
	BLU/WHT*3		GRN*2
	BLK/YEL		YEL*4
	WHT*4		GRN/BLK*4
	BLK/WHT*4		—
	LT GRN*2		RED/WHT*2

C201

1	BLU/RED
	RED/WHT
3	—

C202

1	BLK/YEL	9	—
	WHT/YEL	10	—
3	BLU/BLK	11	BLK/RED
4	BLU/BLK	12	BLK/YEL
5	—	13	—
6	—	14	BLK
7	RED	15	—
8	GRN	16	GRN

C203

1	WHT/GRN		WHT/BLK
2	—	6	BLK/WHT
3	BLK/RED		BLU/BLK
4	WHT/RED		

C204*5

	YEL
	BLK
	GRN/RED

C205

1	—
	BLU/BLK

C206

	GRN*4
	BLK

C213

1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
	YEL/GRN	6	BLU/BLU

C214

1	RED/BLK		WHT/BLU
	WHT/BLU	14	BLU
3	BLU/BLK	15	BLU/WHT
4	GRY/BLK	16	BLK
5	YEL/RED	17	BLK
6	YEL/GRN	18	RED/GRN
	LT GRN*1	19	BLK/YEL
8	BLU	20	GRN/RED
	BLK/RED		RED
	GRN/BLK*4	22	WHT
11	YEL/BLK	23	RED/BLU
12	GRN/YEL	24	BLU/RED

C215

1	GRN/RED	9	GRN/BLK
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	—	13	—
6	—		PNK*6
	BLK/BLU	15	WHT/BLU
	YEL	16	—

C221

	GRN/YEL*1		BLK/RED
	BLU/WHT		YEL/BLK*1
	BLK*1		WHT/YEL
	YEL/GRN		

C222

	WHT/BLK
	GRN/WHT*1

C223

	LT GRN/RED
	LT GRN/BLU
	BLK
4	BLU/GRN

C224

	BLK	8	—
2	—	9	—
3	GRN/WHT	10	WHT/RED
4	GRN/BLK	11	BLK
5			BLK/BLU
	BLU*2		WHT*4
	GRN*1		RED

C226

	BRN*1
	BRN/BLK*1

C227

	BRN/BLK*1
	WHT/YEL
	LT BLU

C228

	BLK/RED
2	—
	BLK/RED

C251 (ECM/PCM-A)

1	—		BLU*6		RED*2*6
2	—	14	—		GRN*4
3	—		GRN/YEL*5*6		BLU/RED
4	—		GRN/YEL*2		—
5	—		BLK/RED		—
	RED*1*1		GRN/ORN		GRN/RED
	GRN*1		BLU/BLK	31	—
	BLK/WHT*1*4		GRN*2		GRN/WHT*1
	LT GRN*1		LT BLU		
	BRN*1		BLU*2		
11	—		WHT/RED*1*4		
	PNK*6		BLU/WHT*1		

C271*1

	GRN/BLK*1
	WHT/RED*1
	BLK/WHT*1
	YEL

C272*1

	GRN/BLK*1
	YEL
	BRN/BLK*1

C501

	GRN/BLK*4	12	WHT
2	—		RED
3	BLU	14	GRN/RED
	LT GRN*1	15	BLK/YEL
5	YEL/GRN	16	RED/GRN
6	YEL/RED		WHT/BLU
7	—		BLK/RED
8	WHT/BLU		PNK
	GRN/ORN	20	—
10	RED/BLK	21	—
	BLK/BLU	23	—

C502

1	GRN/RED	9	RED/BLU
2	BLU	10	GRY/BLK
3	LT GRN/RED	11	GRN/YEL
4	—	12	BLK
5	BLU/WHT	13	BLK
6	BLU/BLK	14	BLK
7	YEL/BLK		YEL
8	BLU/RED	16	WHT/BLU

C601

1	BLK
2	YEL/BLK
3	—
	BLK
	YEL/GRN

C601*3

	GRN/BLK*1
	WHT/RED*1
	BLK/WHT*1
	BLK/YEL

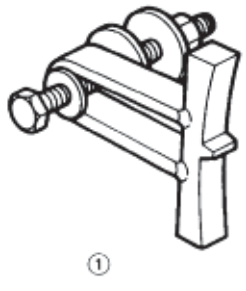
C702*3

	GRN/BLK*1
	YEL

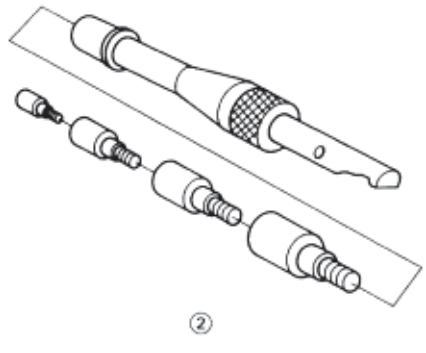
*1: with TWC model
*2: without TWC model
*3: A/T
*4: KG model
*5: KE, KQ, KU model
*6: KE, KQ, KN, KU model

es with the same color have been given a number suffix to distinguish them (for example, nd YEL/BLK2 are not the same).
o Fuel and Emissions System.
r with male terminals (double outline): View from terminal side
r with female terminals (single outline): View from wire side

Ref No.	Tool Number	Description	Qty	Remark
1	07LAB - PV00100 or 07924 - PD20003	Ring Gear Holder	1	
2	07PAF - 0020000	Clutch Alignment Tool Set	1	



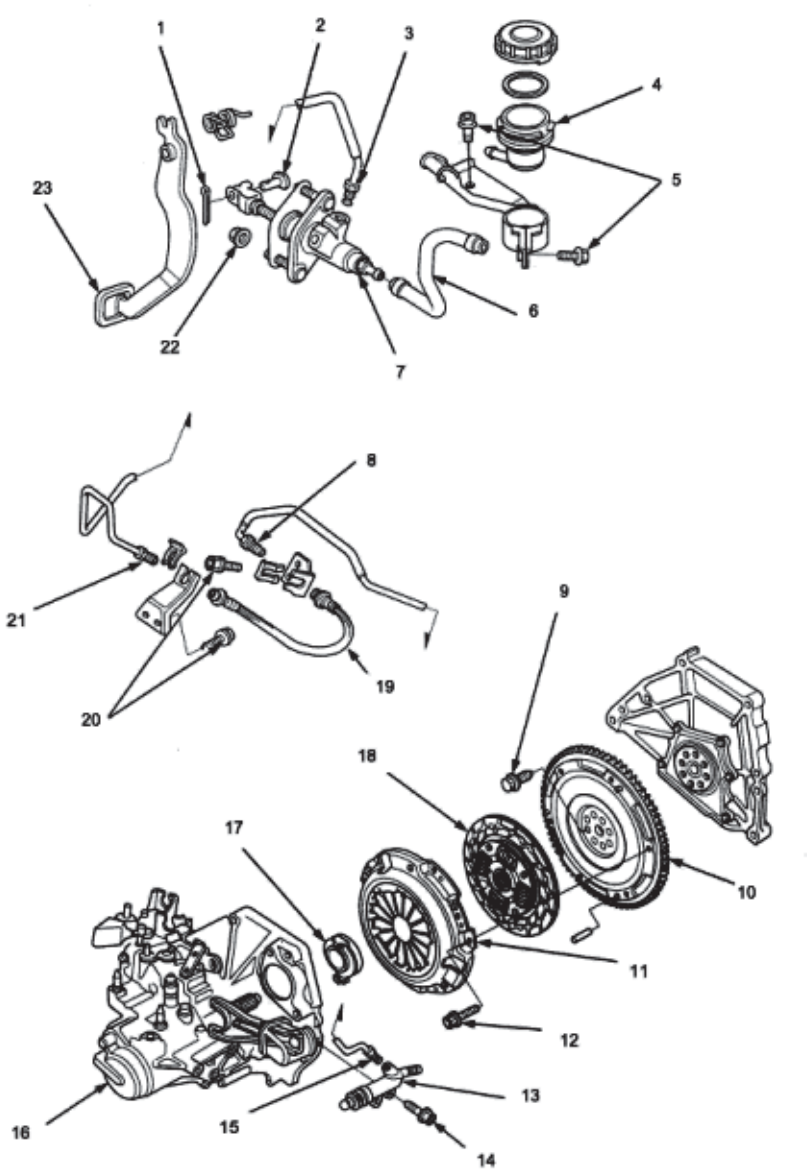
①



②

NOTE:

- Whenever the transmission is removed, clean and grease the release bearing sliding surface.
- If the parts marked * are removed, the clutch hydraulic system must be bled (**See page** 12-9).
- Inspect the hoses for damage, leaks, interference and twisting.
- LHD type as shown, RHD type is symmetrical.



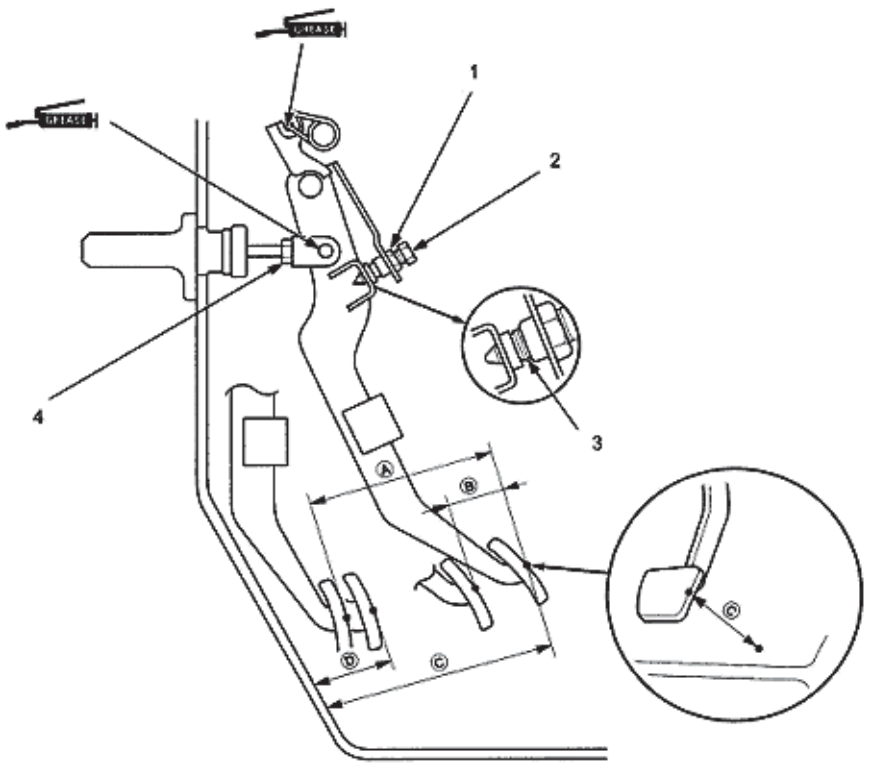
1. **COTTER PIN**, Replace
2. **PEDAL PIN**
3. *** CLUTCH LINE**, 19 Nm (1.9 kgf/m, 14 lbf/ft)
4. *** RESERVOIR TANK**
5. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. *** RESERVOIR HOSE**
7. *** CLUTCH MASTER CYLINDER**
   Overhaul/Inspection (**See page** 12-5)
   Replacement, (**See page** 12-6)
   Disassembly/Reassembly,(**See page** 12-7)
8. *** CLUTCH LINE**, 15 Nm (1.5 kgf/m, 11 lbf/ft)
9. 12 x 1.0 mm, 103 Nm (10.5 kgf/m, 75.9 lbf/ft)
10. **FLYWHEEL**
    Inspection, (**See page** 12-12)
    Replacement, (**See page** 12-12)
11. **PRESSURE PLATE**
    Removal/Inspection, (**See page** 12-10)
    Installation, (**See page** 12-13)
12. 8 x 1.25 mm, 25 Nm (2.6 kgf/m, 19 lbf/ft)
13. ***SLAVE CYLINDER**
    Overhaul/inspection, (**See page** 12-8)
    Removal/Installation, (**See page** 12-9)
14. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
15. *** CLUTCH LINE**, 15 Nm (1.5 kgf/m, 11 lbf/ft)
16. **TRANSMISSION**
    See Section 13
17. **RELEASE BEARING**
    Removal/Inspection, (**See page** 12-14)
    Installation, (**See page** 12-14)
18. **CLUTCH DISC**
    Removal/Inspection, (**See page** 12-11)
    Installation, (**See page** 12-11)
19. *** CLUTCH HOSE**
20. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2lbf/ft)
21. *** CLUTCH LINE**, 24Nm (2.4 kgf/m, 17 lbf/ft)
22. 8 x 1.25 mm, 13 Nm (1.3 kgf/m, 9.4 lbf/ft)
23. **CLUTCH PEDAL**
    Adjustment, (**See page** 12-4)

NOTE:
- To check the clutch switch, see section 23.
- The clutch is self adjusting to compensate for wear.

⚠ CAUTION

If there is no clearance between the clutch master cylinder piston and push rod the release bearing is held against the diaphragm spring, which can result in clutch slippage or other clutch problems.

1. Loosen locknut A and back off the clutch switch (or adjusting bolt) until it no longer touches the clutch pedal.
2. Loosen locknut B, and turn the push rod in or out to get the specified stroke (A) and height (C) at the clutch pedal.
3. Tighten locknut B.
4. Turn the clutch switch (or adjusting bolt) in until it contacts the clutch pedal.
5. Turn the clutch switch (or adjusting bolt) in an additional 3/4 to 1 full turn.
6. Tighten locknut A



1. **LOCKNUT A**, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. **ADJUSTING BOLT**
3. PEDAL IN CONTACT WITH SWITCH
4. **LOCKNUT B**, 18 Nm (1.8 kgf/m, 13 lbf/ft)

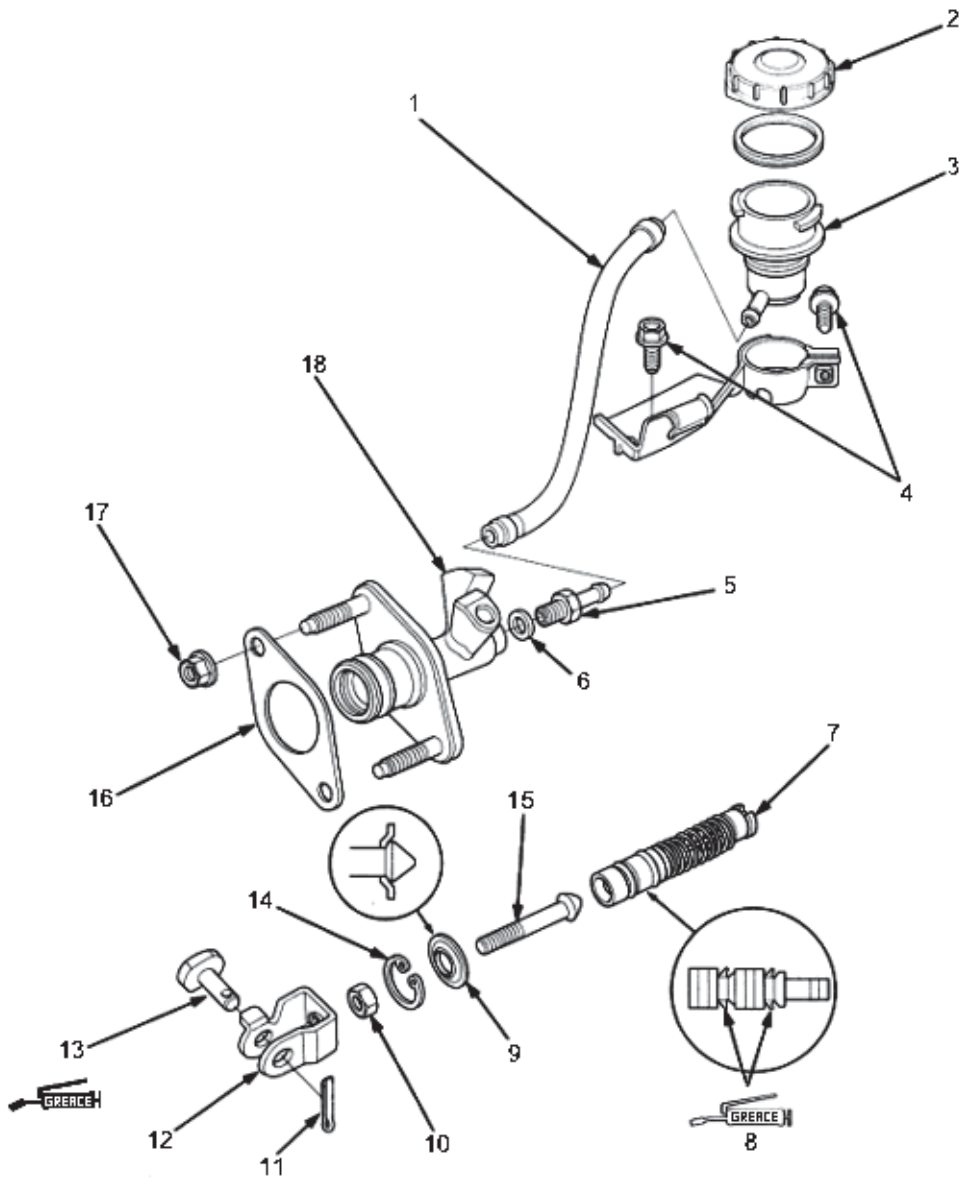
A (STROKE at PEDAL): 130 - 140 mm (5.12 - 5.51 in)
B (TOTAL CLUTCH PEDAL FREE PLAY): 8 - 18 mm (0.31 - 0.711 in) includes the pedal play 1.0 - 9.0 mm (0.04 - 0.35 in)
C (CLUTCH PEDAL HEIGHT): LHD: 179 mm (7.05 in) to the floor
RHD: 183 mm (7.2 in) to the floor
D (CLUTCH PEDAL DISENGAGEMENT HEIGHT) : LHD: 87 mm (3.43 in) minimum to the floor
RHD: 74 mm (2.91 in) minimum to the floor

⚠ CAUTION

- Do not spill brake fluid on the car; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- 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 dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not mix different brands of brake fluid as they may not be compatible.
- Do not reuse the drained fluid. Use only Genuine Honda Brake Fluid or an equivalent DOT 3 or DOT 4 brake fluid.

NOTE: LHD type is shown. RHD type is similar.

GREASE : Brake Assembly Lube or equivalent rubber grease.



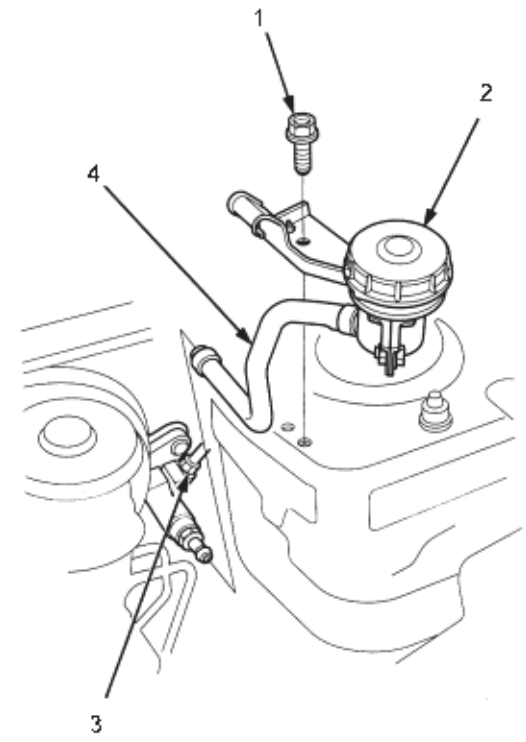
1. **RESERVOIR HOSE**
   Inspection for damage, leaks, interference and twisting
2. **RESERVOIR CAP**
3. **RESERVOIR**
4. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
5. **TUBE JOINT**, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. **WASHER**, Replace
7. **PISTON ASSEMBLY**
   Check for wear and damage
8. **GREASE** (Brake Assembly Lube)
9. **STOPPER**
   Check for damage and bending
10. 18 Nm (1.8 kgf/m, 13 lbf/ft)
11. **COTTER PIN**, Replace
12. **YOKE**
13. **PEDAL PIN** (Urea grease)
14. **CIRCLIP**
15. **PUSH ROD**
16. **CLUTCH MASTER CYLINDER SEAL**
17. 8 x 1.25 mm, 13 Nm (1.3 kgf/m, 9.4 lbf/ft)
18. **MASTER CYLINDER BODY**
    Check the cylinder wall for scoring and wear

⚠ CAUTION

- Do not spill brake fluid on the vehicle may damage the paint; if brake fluid does contact the paint, wash it off immediately with water
- Plug the end of the clutch line reservoir hose with a shop towel to prevent brake fluid from coming out.

NOTE: LHD type is shown, RHD type is symmetrical.

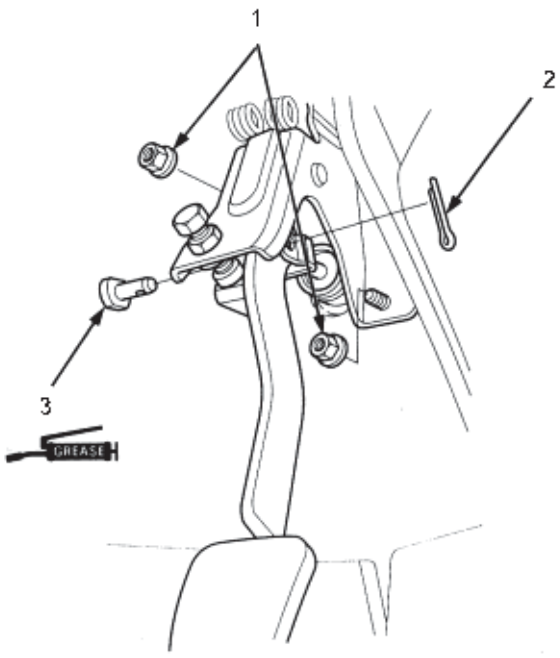
1. The brake fluid may be sucked out through the top of the master cylinder reservoir with a syringe.
2. Disconnect the clutch pipe and reservoir hose from the clutch master cylinder.



1. 6 x 1.0 mm, 9.8Nm (1.0 kgf/m, 7.2 lbf/ft)
2. RESERVOIR
3. CLUTCH PIPE, 19 Nm (1.9 kgf/m, 14 lbf/ft)
4. RESERVOIR HOSE

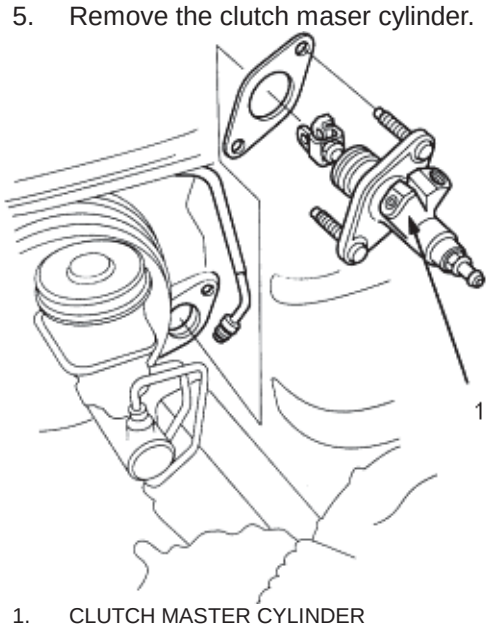
3. Remove the reservoir from the engine compartment bulkhead.

4. Pry out the cotter pin and pull the pedal pin out of the yoke. Remove the nuts.



1. NUTS, 8 x 1.25 mm, 13 Nm (1.3 kgf/m, 9.4 lbf/ft)
2. COTTER PIN, Replace
3. PEDAL PIN (Urea grease)

5. Remove the clutch maser cylinder.



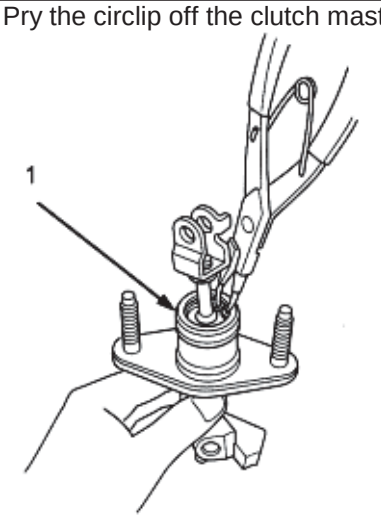
1. CLUTCH MASTER CYLINDER

6. Install the clutch master cylinder in the reverse order of removal.
7. Bleed the clutch hydraulic system (**See page** 12-9).

⚠ CAUTION

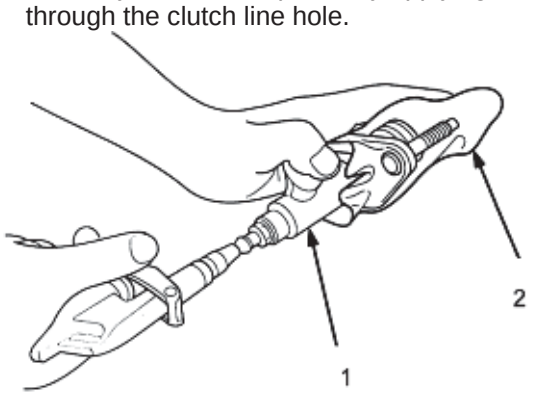
- Do not spill brake fluid on the vehicle may damage the paint; if brake fluid does contact the paint, wash it off immediately with water
- Before reassembling, check that all parts are free of dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Make sure that dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not mix different brands of brake fluid as they may not be compatible.
- Do not reuse the drained fluid. Use only Genuine Honda Brake Fluid or an equivalent DOT 3 or DOT 4 brake fluid.

1. Pry the circlip off the clutch master cylinder.



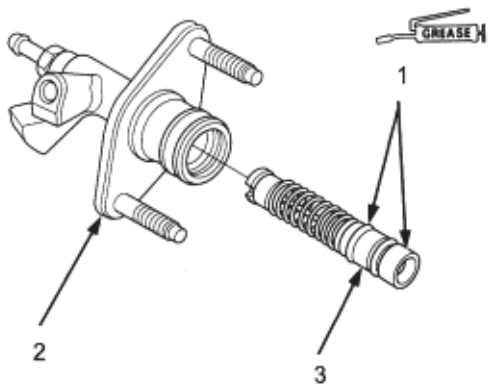
1. CLUTCH MASTER CYLINDER

2. Carefully remove the piston by applying air pressure through the clutch line hole.



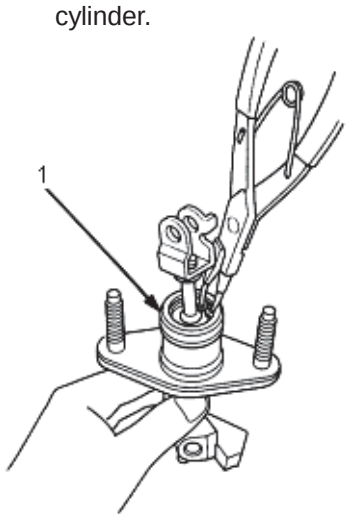
1. SHOP TOWEL
2. CLUTCH MASTER CYLINDER

3. Assemble the piston noting the proper direction of the parts (**See page** 12-5).
4. Slide the piston assembly into the clutch maser cylinder.



1. GREASE (Brake Assembly Lube)
2. MASTER CYLINDER BODY
3. PISTON ASSEMBLY
   Check for wear and damage

5. Install the circlip in the groove of the master clutch cylinder.



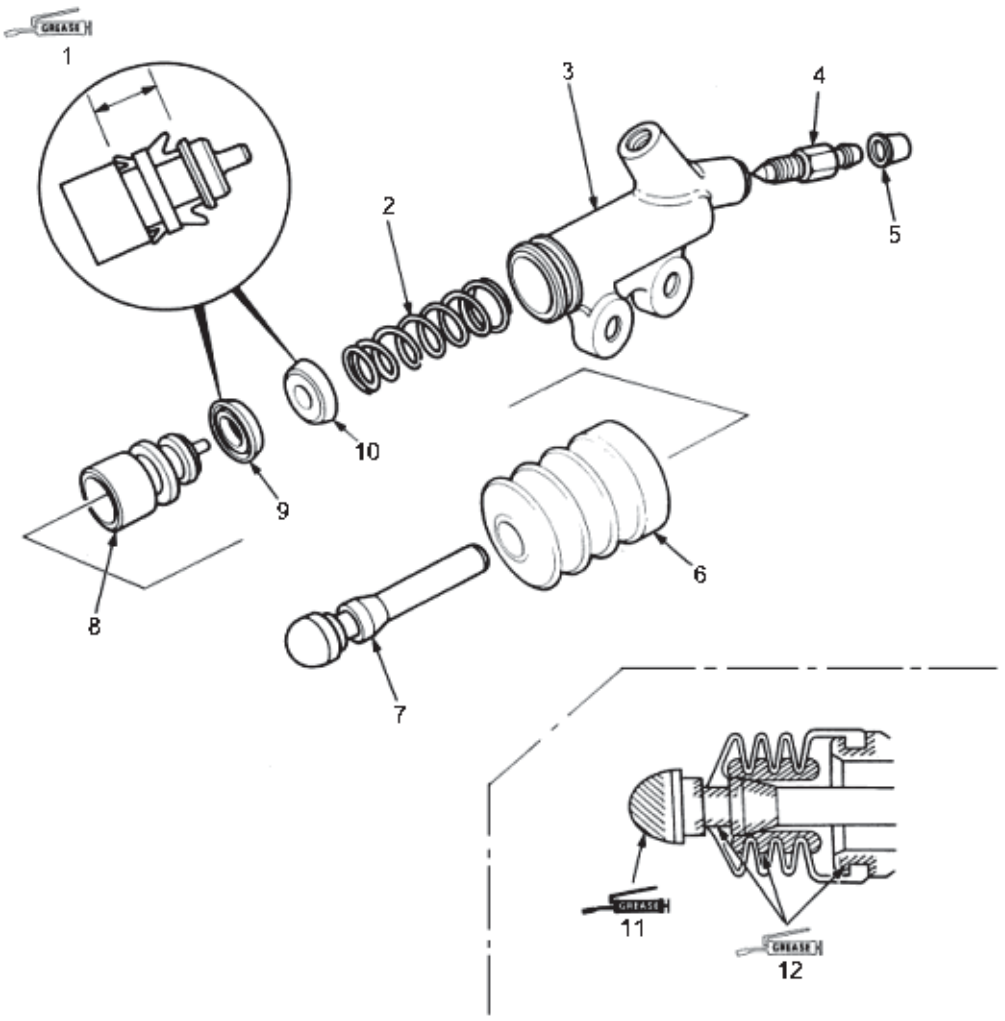
1. CLUTCH MASTER CYLINDER

⚠ CAUTION

- Do not spill brake fluid on the car; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- 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 dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not mix different brands of brake fluid as they may not be compatible.
- Do not reuse the drained fluid. Use only Genuine Honda Brake Fluid or an equivalent DOT 3 or DOT 4 brake fluid.

GREASE: HONDA Genuine Urea Grease UM264 (P/N41211-PY5-305).

GREASE: Brake Assembly Lube or equivalent rubber grease.



1. **GREASE** (Brake Assembly Lube)
2. **SLAVE CYLINDER SPRING**
   Install with small end facing piston
3. **SLAVE CYLINDER BODY**
   Check the cylinder wall for scoring and wear
4. **BLEEDER SCREW**
   7.8 Nm (0.8 kgf/m, 5.8 lbf/ft)
5. **BLEEDER SCREW CAP**
6. **BOOT**
   Check that it is fitted securely over the cylinder body
7. **PUSH ROD**
8. **SLAVE CYLINDER PISTON**
   Check for wear and damage
9. **PISTON CUP A**
   Replace
10. **PISTON CUP B**
    Replace
11. **UREA GREASE UM264** (P/N 41211-PY5-305)
12. **GREASE** (Brake Assembly Lube)

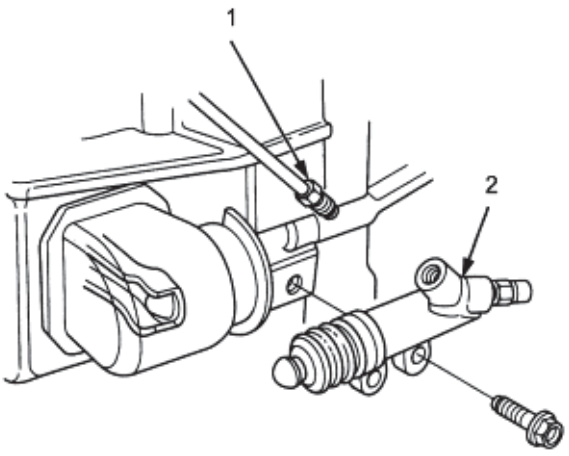
⚠ CAUTION

- Do not spill brake fluid on the car; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- Plug the end of the clutch line a shop towel to prevent brake fluid from coming out.

GREASE: HONDA Genuine Urea Grease UM264 (P/N41211-PY5-305).

GREASE: Brake Assembly Lube or equivalent rubber grease.

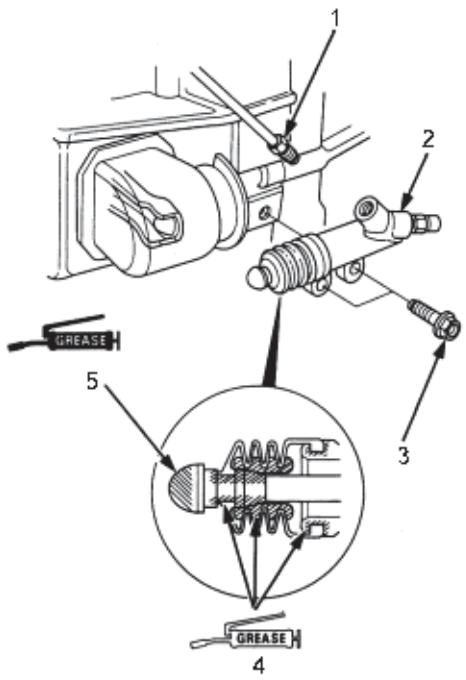
1. Disconnect the clutch pipe from the slave cylinder.



1. CLUTCH PIPE
2. SLAVE CYLINDER

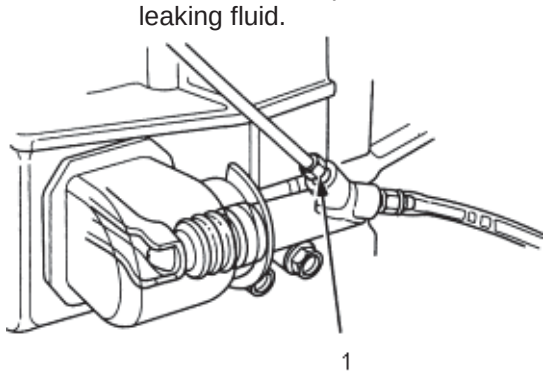
2. Remove the slave cylinder from the clutch housing.

3. Install the slave cylinder in the reverse order of removal.
   NOTE: Make sure the boot is installed on the slave cylinder.



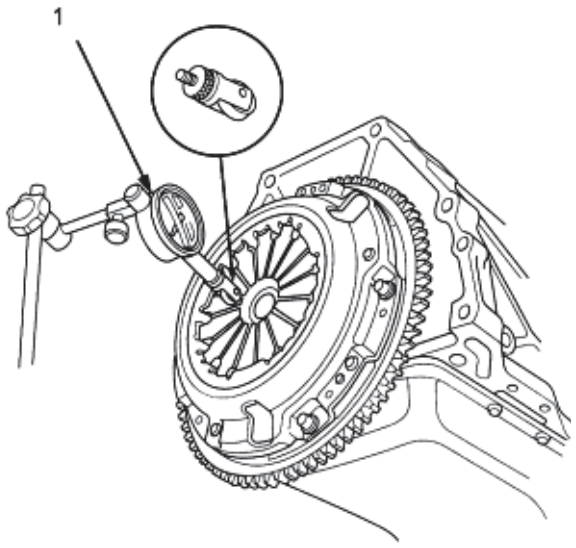
1. CLUTCH PIPE, 15 Nm (1.5 kgf/m, 11 lbf/ft)
2. SLAVE CYLINDER
3. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
4. GREASE (Brake Assembly Lube)
5. GREASE (P/N 41211-PY5-305)

4. Bleed the clutch hydraulic system.
   - Attach a hose to the bleeder screw, and suspend the hose in a container of brake fluid.
   - Make sure there is an adequate supply of fluid at the clutch master cylinder, then slowly pump the clutch pedal until no more bubbles appear at the bleeder hose.
   - Refill the clutch master cylinder with fluid when done.
   - Use only genuine Honda Super Duty DOT 3 brake fluid or an equivalent DOT 3 or DOT 4 brake fluid.
   - Confirm clutch operation and check for leaking fluid.



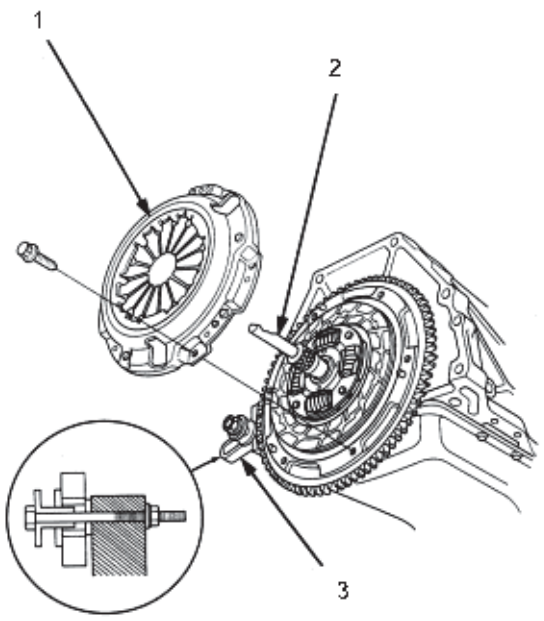
1. BLEEDER SCREW, 7.8 Nm (0.8 kgf/m, 5.8 lbf/ft)

1. Check the diaphragm spring fingers for height using the dial indicator.
   Standard (New): **0.6 mm (0.02 in) max**
   Service Limit: **0.8 mm (0.03 in)**



1. DIAL INDICATOR

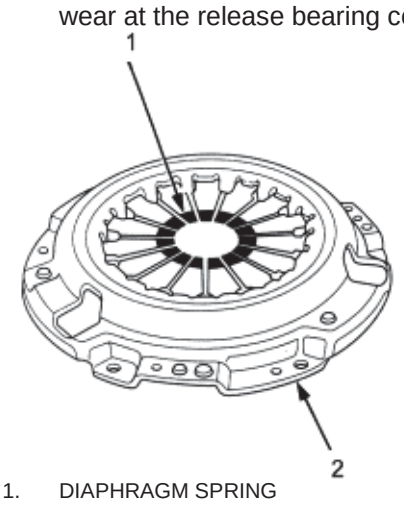
   If the height is more than the service limit, replace the pressure plate.
2. Install the special tools as shown.



1. PRESSURE PLATE
2. CLUTCH ALIGNMENT TOOL SET, 07PAF-0020000
3. RING GEAR HOLDER, 07LAB-PV00100 or 07924-PD20003

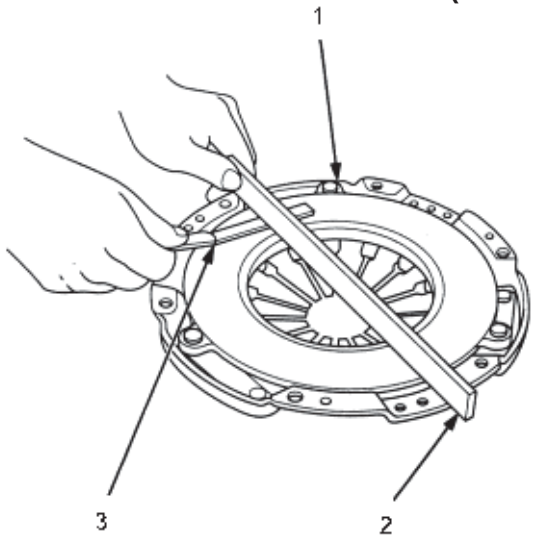
3. To prevent warping, unscrew the pressure plate mounting bolts in a crisscross pattern in several steps, then remove the pressure plate.

4. Inspect the fingers of the diaphragm spring for wear at the release bearing contact area.



1. DIAPHRAGM SPRING
2. PRESSURE PLATE

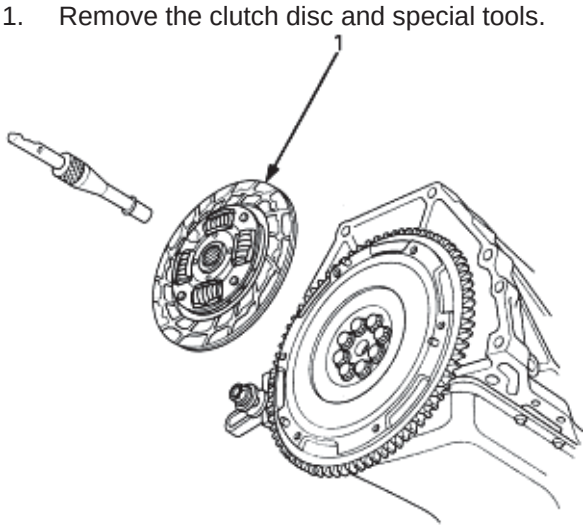
5. Inspect the pressure plate surface for wear, cracks and burning.
6. Inspect for warpage using a straight edge and feeler gauge.
   Standard (New): **0.03 mm (0.001 in) max**
   Service Limit: **0.15 mm (0.006 in)**



1. PRESSURE PLATE
2. STRAIGHT EDGE
3. FEELER GAUGE

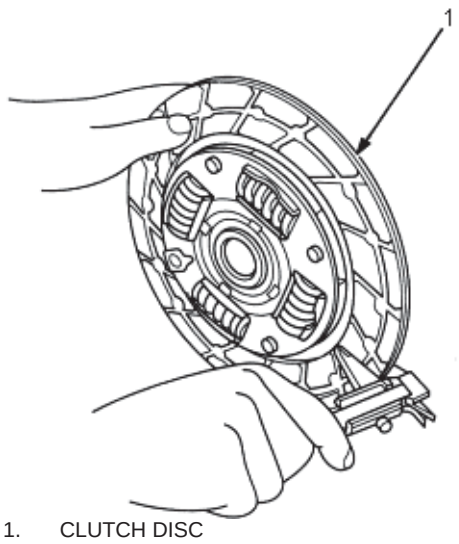
   If the warpage is more than the service limit replace the pressure plate.

1. Remove the clutch disc and special tools.



1. CLUTCH DISC

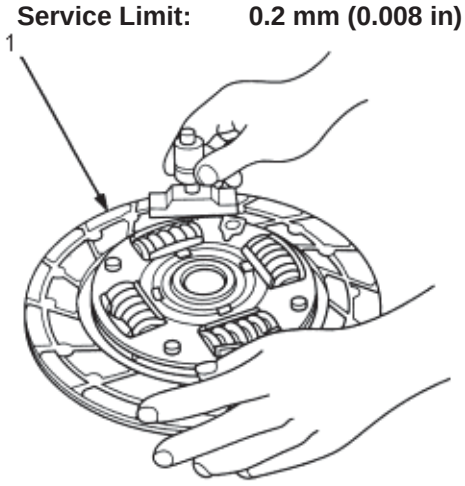
2. Inspect the lining of the clutch disc for signs of slippage or oil. If the clutch disc is burned or black or oil soaked, replace it.
3. Measure the clutch disc thickness.
   Standard (New): **8.4 - 9.0 mm (0.33 - 0.35 in)**
   Service Limit: **6.0 mm (0.24 in)**

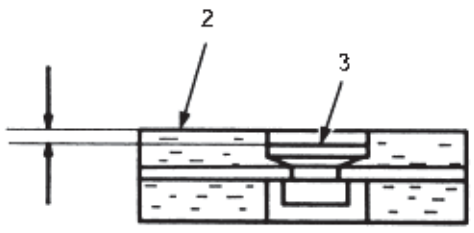


1. CLUTCH DISC

If the thickness is less than the service limit, replace the clutch disc.

4. Measure the rivet depth from the lining surface to the rivets, on both sides.
   Standard (New): **1.65 - 2.25 mm (0.065 - 0.089 in)**
   Service Limit: **0.2 mm (0.008 in)**

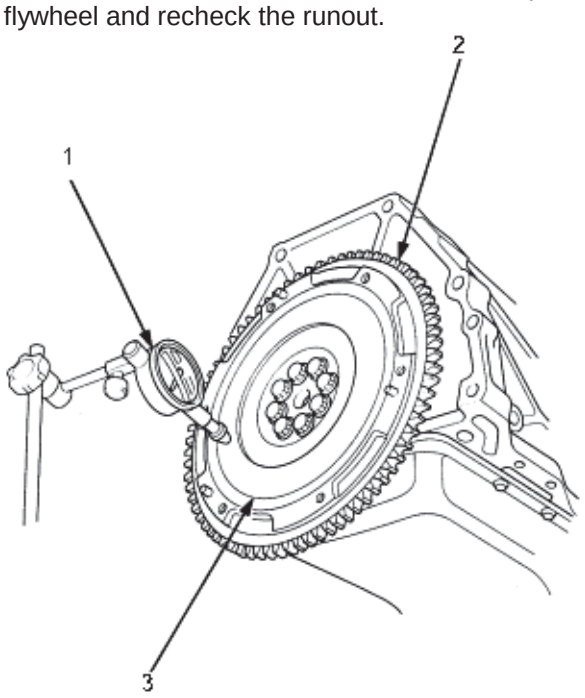




1. CLUTCH DISC
2. LINING SURFACE
3. RIVET

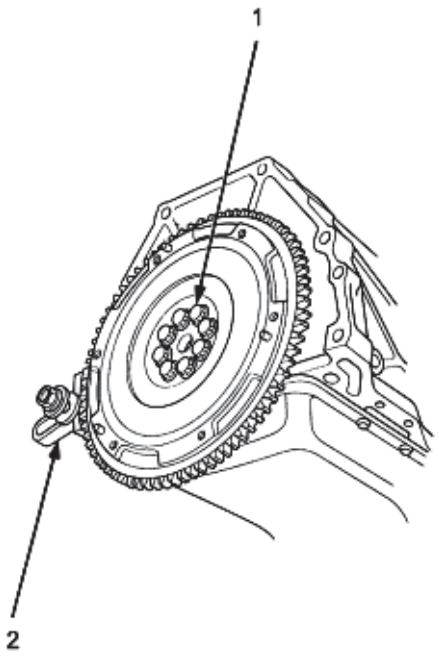
If the thickness is less than the service limit, replace the clutch disc.

1. Inspect the ring gear teeth for wear and damage.
2. Inspect the clutch disc mating surface on the flywheel for wear, cracks and burning.
3. Measure the flywheel runout using a dial indicator through at least two full turns. Push against the flywheel each time you turn it to take up the crankshaft thrust washer clearance.
   NOTE: The runout can be measured with engine installed.
   Standard (New): 0.05 mm (0.002 in) max.
   Service Limit: 0.15 mm (0.006 in)
   If the runout is more than the service limit, replace the flywheel and recheck the runout.



1. DIAL INDICATOR
2. RING GEAR
3. FLYWHEEL

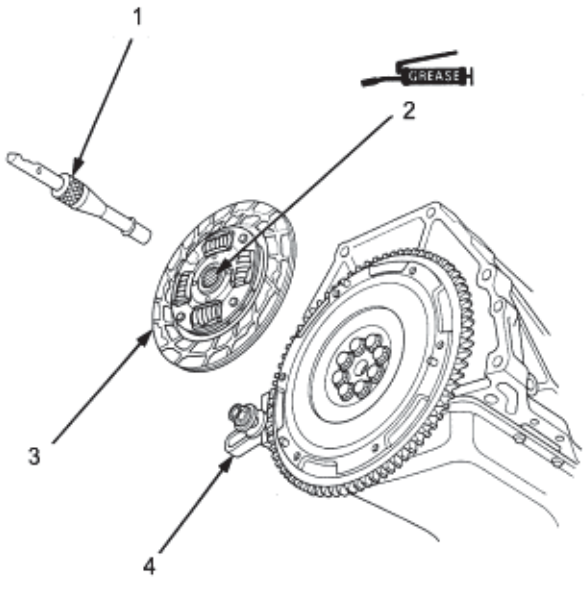
1. Install the special tool as shown.
2. Remove the flywheel mounting bolts in a crisscross pattern in several steps, and remove the flywheel.



1. 12 x 1.0 mm, 103 Nm (10.5 kgf/m, 75.9 lbf/ft)
2. RING GEAR HOLDER, 07LAB-PV00100 or 07924-PD20003

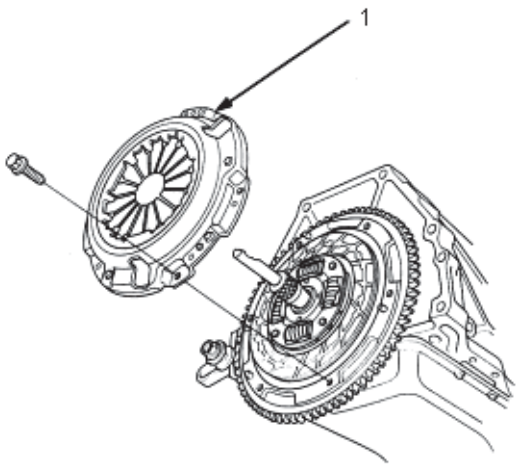
3. Install the flywheel in reverse order of removal.

1. Apply grease to inner dia. Spline thinly and uniformly, mate and slide mainshaft and remove extra overflow grease.
   NOTE: Use only HONDA Genuine Urea Grease UM264 (P/N 41211-PY5-305).
2. Install the ring gear holder.
3. Install the clutch disc using the special tools as shown.



1. CLUTCH ALIGNMENT TOOL SET, 07PAF-0020000
2. GREASE (P/N 41211-PY5-305)
3. CLUTCH DISC
4. RING GEAR HOLDER, 07LAB-PV00100 or 07924-PD20003

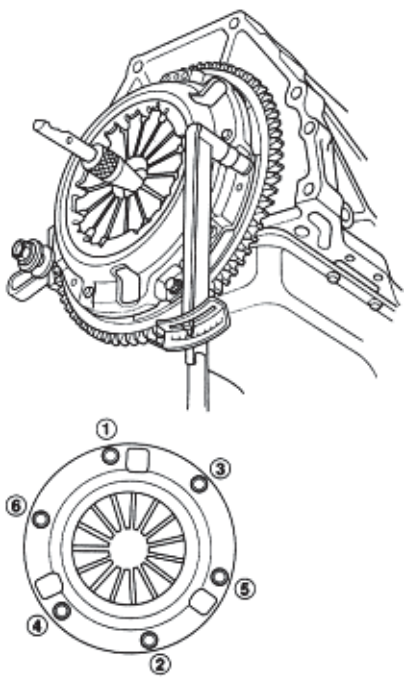
4. Install the pressure plate and the mounting bolts finger-tight.



1. PRESSURE PLATE

5. Torque the mounting bolts in a crisscross pattern as shown. Tighten the bolts in several steps to prevent warping the diaphragm spring.
   8 x 1.28 mm, 25 Nm (2.6 kgf/m, 19 lbf/ft)

1

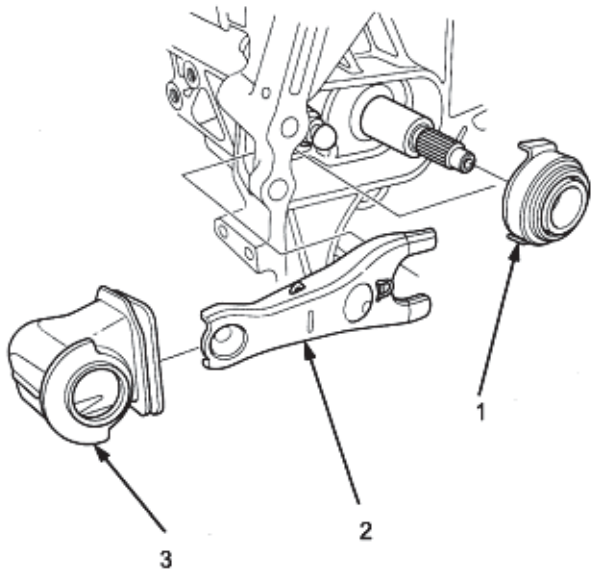


1. 8 x 1.25 mm, 25 Nm (2.6 kgf/m, 19 lbf/ft)

6. Remove the special tools.
7. Check the diaphragm spring fingers for height (**See page** 12-10).

Removal/Inspection

1. Remove the release fork boot from the clutch housing.
2. Remove the release fork and release bearing from the clutch housing.



1. RELEASE BEARING
2. RELEASE FORK
3. RELEASE FORK BOOT

3. Check the release bearing for play by spinning it by hand. If there is excessive play, replace the bearing with a new one.
   NOTE: The release bearing is packed with grease. Do not wash it in solvent.

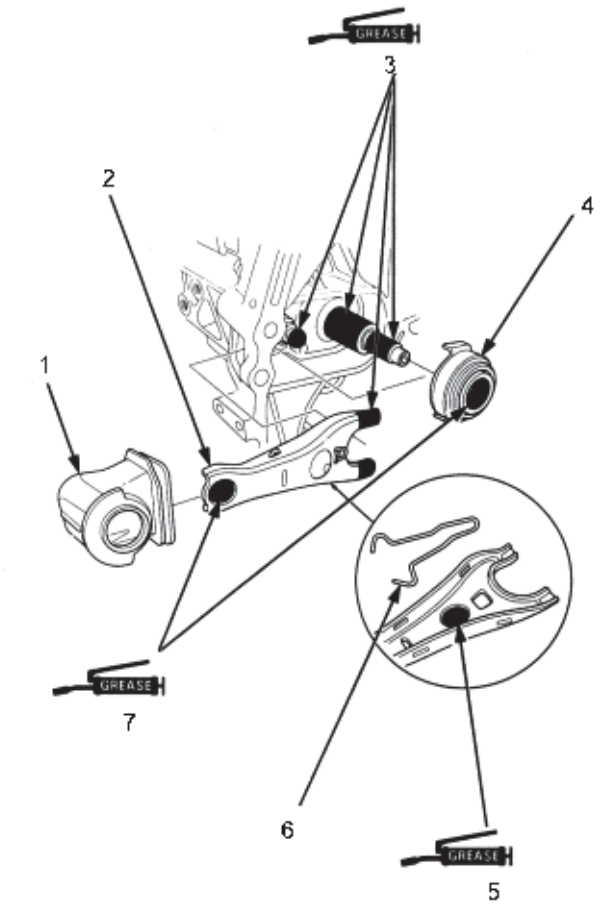


1. RELEASE BEARING

Installation

NOTE: Use only HONDA Genuine Urea Grease UM264 (P/N 41211-PY5-305)

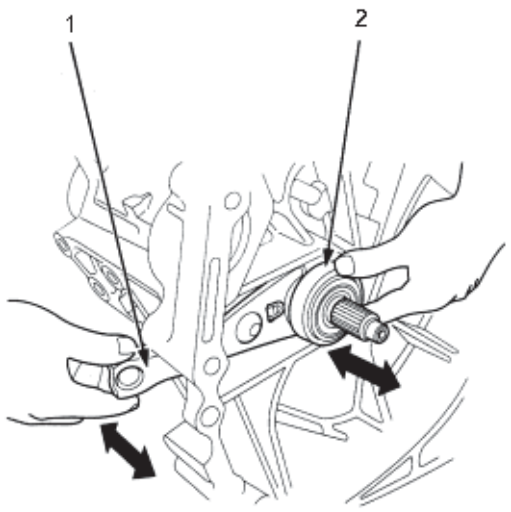
1. With the release fork slid between the release bearing pawls, install the release bearing on the mainshaft while inserting the release fork through the hole in the clutch housing.



1. RELEASE FORK BOOT
2. RELEASE FORK
3. GREASE (P/N41211-PY5-305)
4. RELEASE BEARING
5. GREASE, (P/N41211-PY5-305), 1.0 - 1.6 g (0.04 - 0.06 oz)
6. RELEASE FORK SPRING
7. GREASE, (P/N41211-PY5-305), 0.4 - 1.0 g (0.01 - 0.04 oz)

2. Align the detent of the release fork with the release fork bolt, then press the release fork over the release fork bolt squarely.

3. Move the release fork right and left to make sure that it fits properly against the release bearing, and that the release bearing slides smoothly.



1. RELEASE FORK
2. RELEASE BEARING

4. Install the release fork boot; make sure the boot seals around the release fork and clutch housing.

This 4WD model does not have the feature that mechanically switches between 4WD and 2WD (front-wheel drive). Therefore, speedometer testing should be conducted using simplified free rollers under the rear wheels.

Precautions on using free rollers:

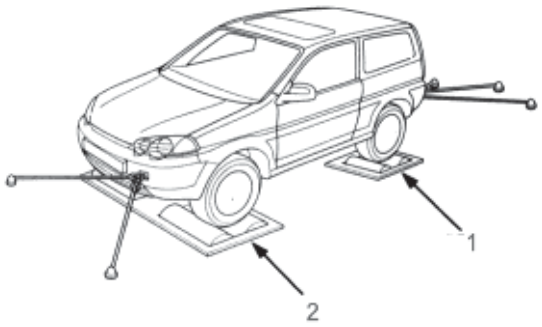
- **Inspecting and testing using a chassis dynamometer is not feasible.**
- **Do not operate the accelerator pedal, brake pedal or steering wheel abruptly. It may cause the vehicle to roll and create a hazardous condition.**
- **The maximum testing speed should be 50 km/p (31 mph).**
- **The maximum continuous operating time should be three minutes.**
- **Make sure you tie the vehicle down securely with the side anchor wires and centre tie down wire. The free rollers are to be set under the rear wheels.**

⚠ CAUTION

- Make sure to place the free rollers parallel to the roller of each speedometer tester.
- Putting the front and rear wheels on the speedometer testers and free rollers inappropriately may cause the vehicle to roll off or over the free rollers and create a hazardous condition.
- The side anchor wires and centre tie-down wire must be appropriately tensioned. If the wires have too much slack, the expected tie-down efficiency cannot be obtained.
- When attaching the side anchor wires and centre tie-down wire, make sure they are not interfering with the bumper and other parts of the vehicle body.
- Do not attach the wires to any place other than the designed areas.
- Do not operate the speedometer testers at a speed more than 50 km/h (31 mph) or for more than three minutes.

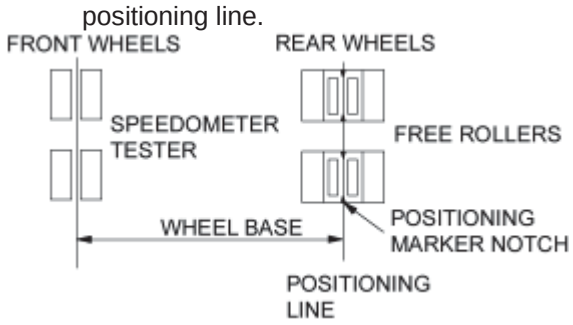
Testing Procedures

1. Set the free rollers according to the wheel base and tread of the vehicle.

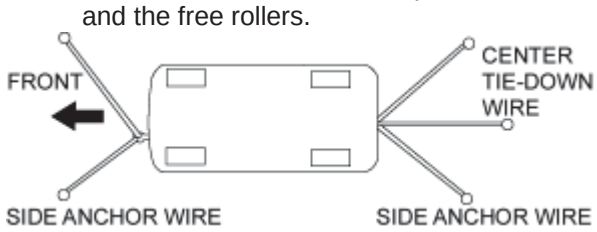


1. FREE ROLLER
2. SPEEDOMETER TESTER

NOTE: Align the position marker notch to the positioning line.

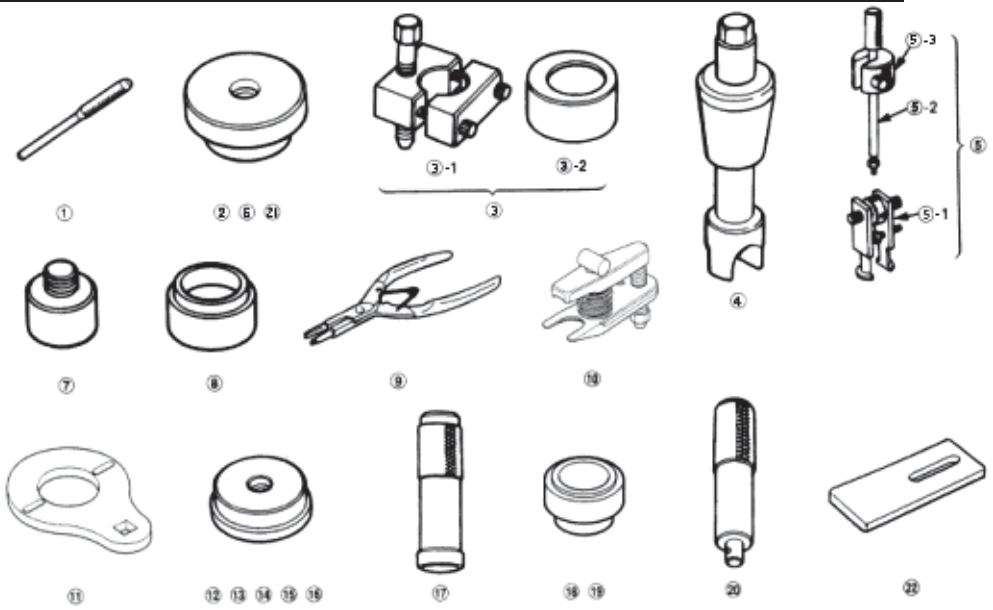


2. Move the vehicle to position the front wheels on the speedometer testers and the rear wheels on the free rollers. Make sure to align the centre of the wheels to the centre of the speedometer testers and the free rollers.

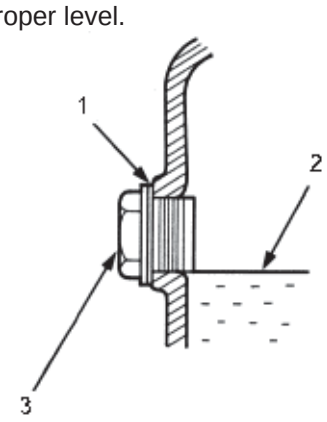


3. Tie down the vehicle securely using the towing hook and the rear tie-down hook bracket to prevent the vehicle from rolling off or over the free rollers.
4. Start the engine, shift the transmission to 3rd gear (manual transmission) or to [D] position (CVT/Honda Multi Matic), accelerate the vehicle gradually and measure the vehicle speed.
5. After measurement, use the brake pedal to gradually decelerate and stop the vehicle.

Ref No.	Tool Number	Description	Qty	Remark
1	07GAD - PG20100	Pin Driver, 5.0 mm	1	
2	07GAJ - PG40100	Driver Attachment	1	
3	07GAJ - PG20102	Mainshaft Clearance Inspection Tool Set	1	
3-1	07GAJ - PG20110	Mainshaft Holder	(1)	
3-2	07GAJ - PG20130	Mainshaft Base	(1)	
4	07HAJ - PK40201	Preload Inspection Tool	1	
5	07JAC - PH80000	Adjustable Bearing Remover Set	1	
5-1	07JAC - PH80100	Bearing Remover Attachment	(1)	
5-2	07JAC - PH80200	Remover Handle Assembly	(1)	
5-3	07741- 0010201	Remover Weight	(1)	
6	07JAD - PH80101	Driver Attachment	1	
7	07JAD - PH80400	Pilot, 28 x 30 mm	1	
8	07LAD - PW50601	Pin Driver, 8.0 mm	1	
9	07LGC - 0010100	Snap Ring Pliers	1	
10	07MAC - SL00200	Ball Joint Remover, 28 mm	1	
11	07PAB - 0020000	Companion Flange Holder	1	
12	07746 - 0010100	Driver Attachment, 32 x 35 mm	1	
13	07746 - 0010300	Driver Attachment, 42 x 47 mm	1	
14	07746 - 0010400	Driver Attachment, 52 x 55 mm	1	
15	07746 - 0010500	Driver Attachment, 62 x 68 mm	1	
16	07746 - 0010600	Driver Attachment, 72 x 75 mm	1	
17	07746 - 0030100	Driver, 40 mm I.D.	1	
18	07746 - 0030300	Attachment, 30 mm I.D.	1	
10	07746 - 0030400	Attachment, 35 mm I.D.	1	
20	07749 - 0010000	Handle Driver	1	
21	07947 - SD90200	Attachment	1	
22	07979 - PJ40001	Magnet Stand Base	1	

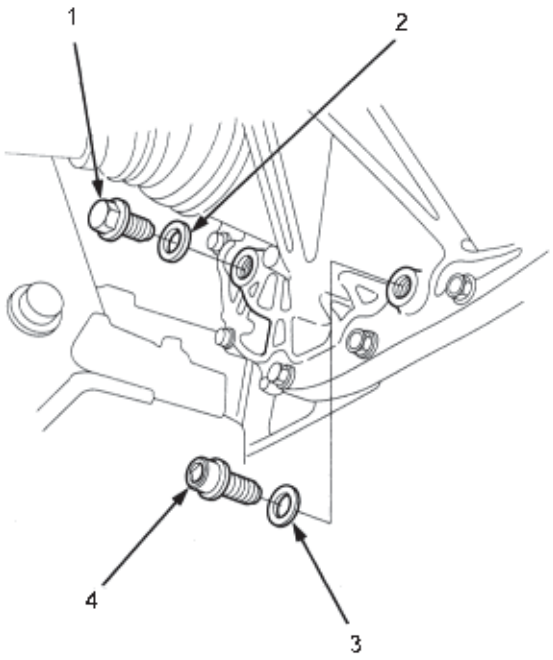


1. Park the vehicle on level ground and turn the engine OFF.
2. Remove the oil filler plug and washer, check the condition of the fluid and make sure the fluid is at the proper level.



1 WASHER
2. Proper Level
3. FILLER PLUG, 44 Nm (4.5 kgf/m, 33 lbf/ft)

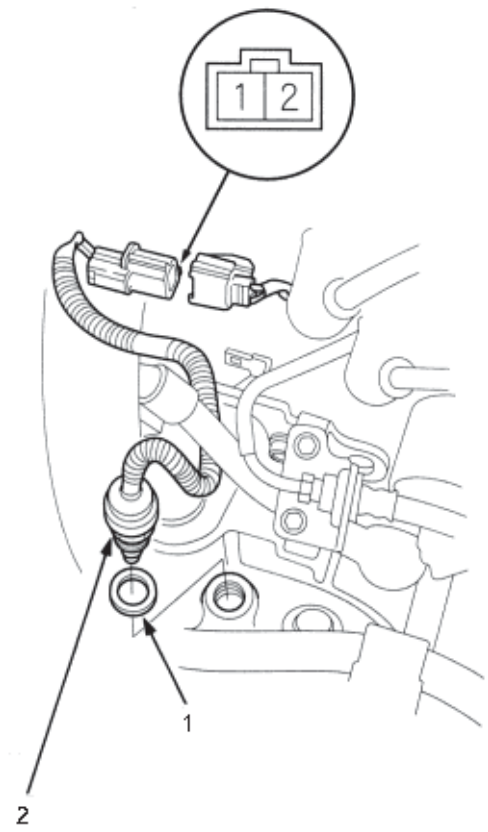
3. If the transmission fluid is dirty, remove the drain plug and drain the fluid.



1. FILLER PLUG, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. WASHER Replace
3. WASHER, Replace
4. DRAIN PLUG, 39 Nm (4.0 kgf/m, 29lbf/ft)

4. Reinstall the drain plug with a new washer, and refill the transmission fluid to the proper level.
   Oil Capacity
   SEVM Model Manual Transmission
   1.8 / (1.9 US qt, 1.6 Imp qt) at fluid change
   2.0 / (2.1 US qt, 1.8 Imp qt) at overhaul
   SEPM Model Manual Transmission
   1.65 / (1.74 US qt, 1.45 Imp qt) at fluid change
   2.1 / (2.2 US qt, 1.8 Imp qt) at overhaul
   Always use Genuine Honda Manual Transmission Fluid (MTF). If it is not available, you may use an API service SG, SH or SJ grade motor oil with a viscosity of SAE 10 W-30 or 10 W-40 as a temporary replacement.
5. Reinstall the oil filler plug with a new washer.

1. Disconnect the back-up light switch 2P connector.



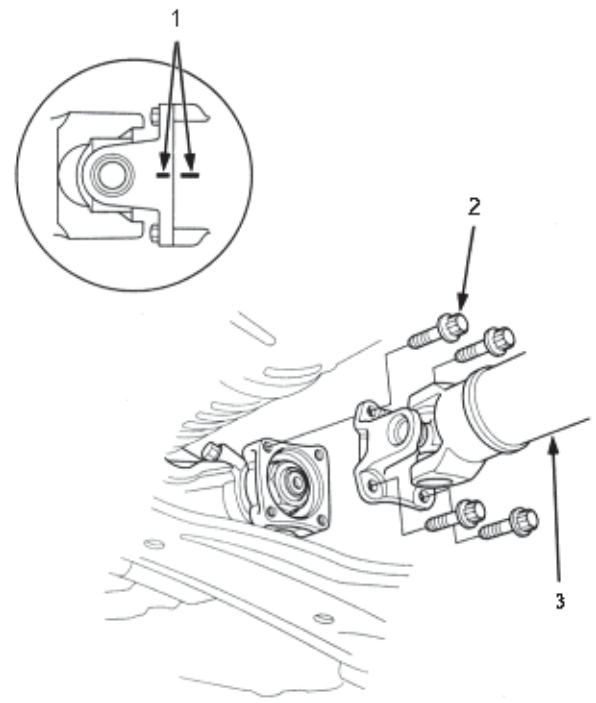
1 WASHER, Replace
2. BACK-UP LIGHT SWITCH, 25 Nm (2.5 kgf/m, 18 lbf/ft)

2. Check the continuity between the terminals. There should be continuity when the shift lever is shifted into reverse.
3. If necessary, replace the switch.

⚠ WARNING

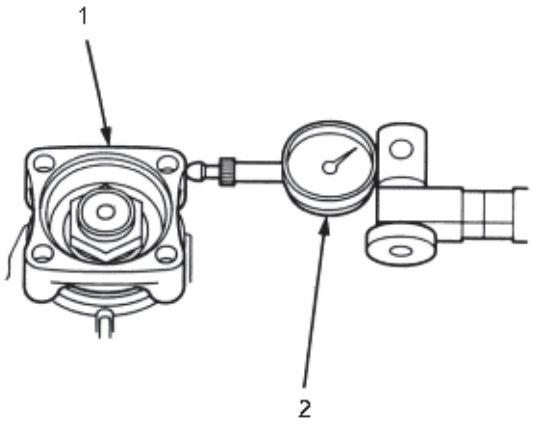
♦ Make sure jacks and safety stands are placed properly (see section 1).

1. Raise the front of the vehicle and support it with safety stands (see section 1).
2. Set the parking brake and block both rear wheels securely.
3. Shift to neutral position.
4. Make a reference mark across the propeller shaft and the transfer assembly flanges.
5. Separate the propeller shaft from the transfer assembly.



1. REFERENCE MARKS
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)
3. PROPELLER SHAFT

6. Set a dial indication on the transfer assembly flange, then measure the transfer gear backlash.
STANDARD: 0.06 - 0.16 MM (0.002 - 0.006 in)



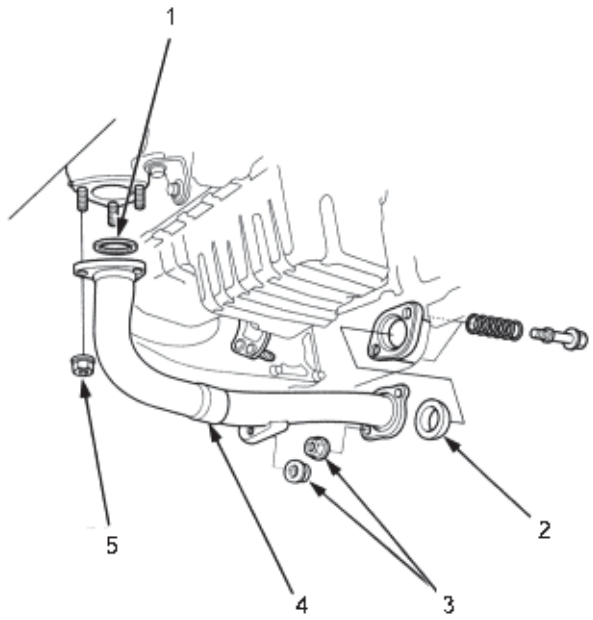
1 COMPANION FLANGE
2. DIAL INDICATOR

7. If the measurement is out of specification, remove the transfer assembly and adjust transfer gear backlash (**See page** 13-48) to (**See page** 13-65).
8. Check the transfer oil seal for damage and fluid leaks.
9. If oil seal replacement is required, remove the transfer assembly, replace the oil seal and adjust the total starting torque (**See page** 13-48) to (**See page** 13-65).
NOTE: Do not replace the oil seal when the transfer assembly is installed on the transmission.

⚠ WARNING

♦ Make sure jacks and safety stands are placed properly (see section 1).

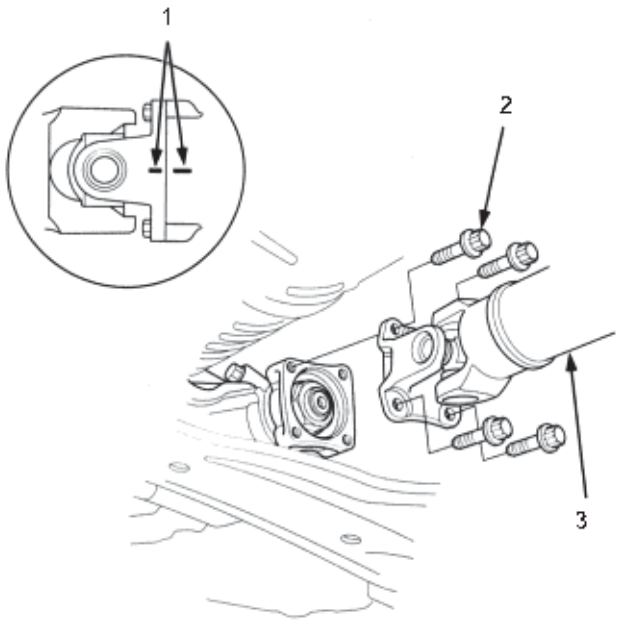
1. Raise the front of the vehicle and support it with safety stands (see section 1).
2. Set the parking brake and block both rear wheels securely.
3. Drain the MTF (**See page** 13-4).
4. Remove the exhaust pipe A.



1. GASKET, Replace
2. GASKET, Replace
3. SELF-LOCKING NUT, Replace
4. EXHAUST PIPE A
5. SELF-LOCKING NUT, Replace

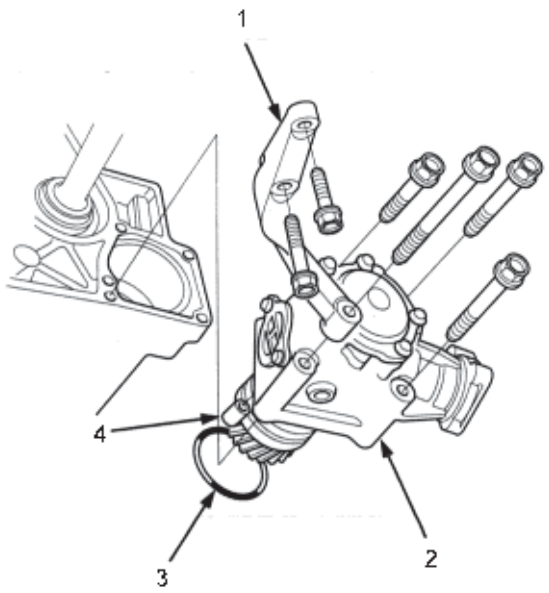
Removal (cont'd)

5. Make reference marks across the propeller shaft and the transfer assembly flanges.
6. Separate the propeller shaft from the transfer assembly flanges.



1 REFERENCE MARKS
2. 8 x 1.25 mm, Replace
3. PROPELLER SHAFT

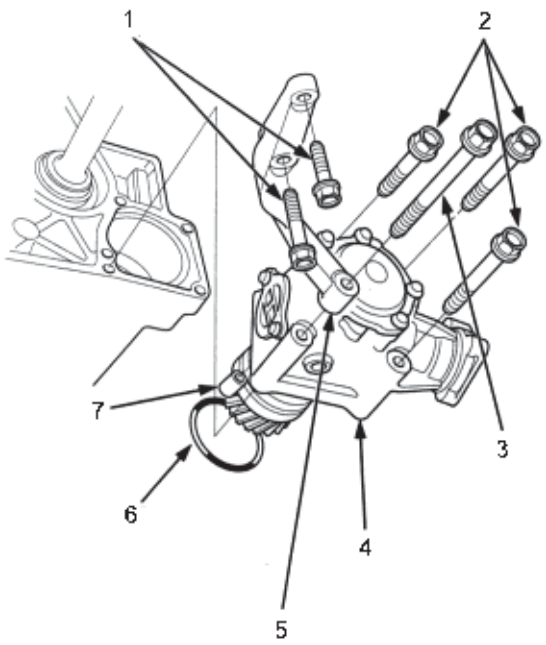
7. Remove the rear stiffener, then remove the transfer assembly.
   NOTE: While servicing the transfer assembly, do not allow dust or other foreign particles to enter the transmission.



1 REAR STIFFENER
2. TRANSFER ASSEMBLY
3. O-RING, Replace
4. DOWEL PIN

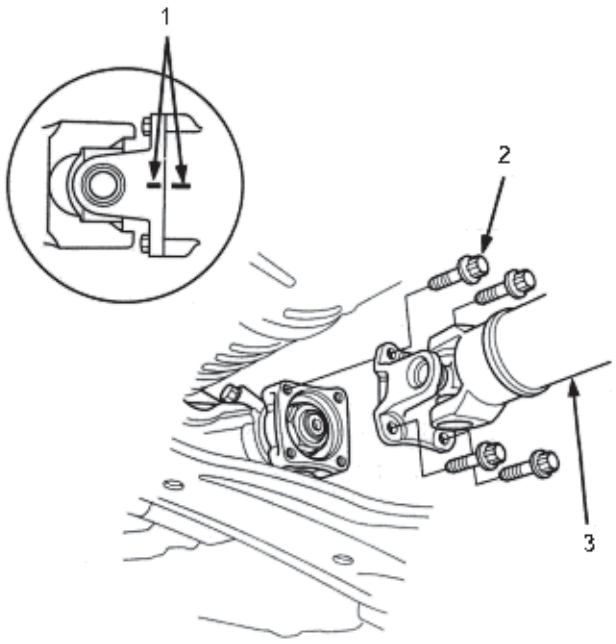
Installation

1. Install the new O-ring on the transfer assembly.
2. Clean the areas where the transfer assembly contacts the transmission with solvent or carburettor cleaner, and dry with compressed air. Then apply MTF to the contact areas.
3. Install the transfer assembly on the transmission.
   NOTE: While installing the transfer assembly on the transmission, do not allow dust or other foreign particles to enter the transmission.
4. Install the rear stiffener.



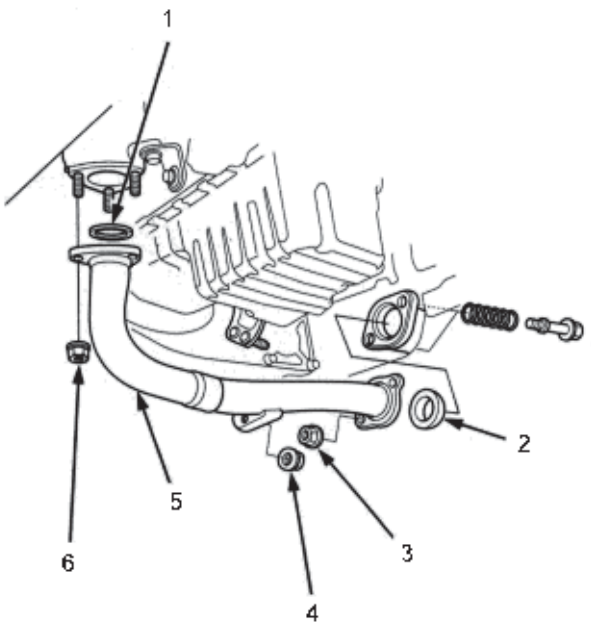
1. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. 10 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
4. TRANSFER ASSEMBLY
5. REAR STIFFENER
6. O-RING, Replace
7. DOWEL PIN

5. Install the propeller shaft to the transfer assembly by aligning the reference marks.



1 REFERENCE MARKS
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft) Replace
3. PROPELLER SHAFT

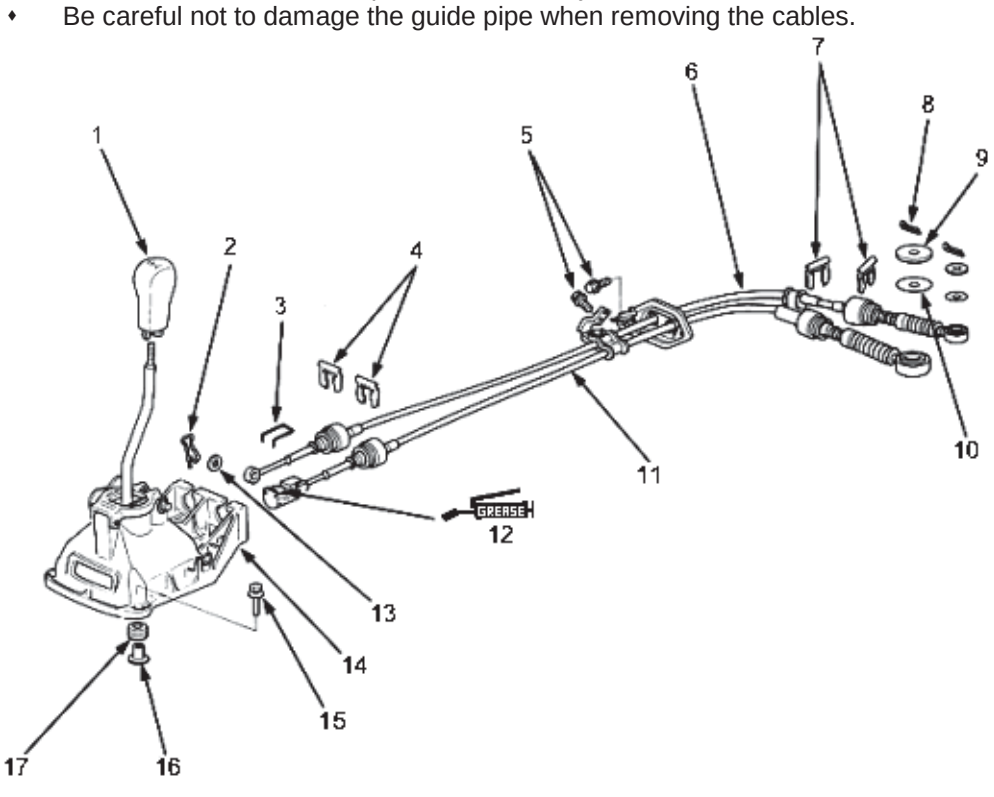
7. Install the exhaust pipe A.



1 GASKET, Replace
2. GASKET, Replace
3. SELF-LOCKING NUT, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft) Replace
4. SELF-LOCKING NUT, 8 x 1.25 mm, 16 Nm (1.6 kgf/m, 12 lbf/ft) Replace
5. EXHAUST PIPE A
6. SELF-LOCKING NUT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft) Replace

7. Refill the MTF (**See page** 13-4).
8. Start the engine and run it to normal operation temperature (the radiator fan comes on). Turn the engine OFF and check the fluid level.

NOTE:
- Inspect rubber parts for wear and damage when disassembling.
- Check that the new cotter pin is seated firmly.
- Be careful not to damage the guide pipe when removing the cables.



1. **CHANGE LEVER KNOB,** 8 Nm (0.8 kgf/m, 5.8 lbf/ft)
2. **COTTER PIN,** Replace
3. **CLAMP**
4. **PLATES**, Replace
5. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. **SELECT CABLE**
7. **PLATES**, Replace
8. **COTTER PIN**, Replace
9. **STEEL WASHER**
10. **PLASTIC WASHER**
11. **SHIFT CABLE**
12. **SILICONE GREASE**
13. **WASHER**
14. **CHANGE LEVER ASSEMBLY**
15. 8 x 1.25 mm, 13 Nm (1.3 kgf/m, 9.4 lbf/ft)
16. **FLOATING COLLAR**
17. **FLOATING RUBBER**

⚠ WARNING

- Make sure jacks and safety stands are placed properly (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

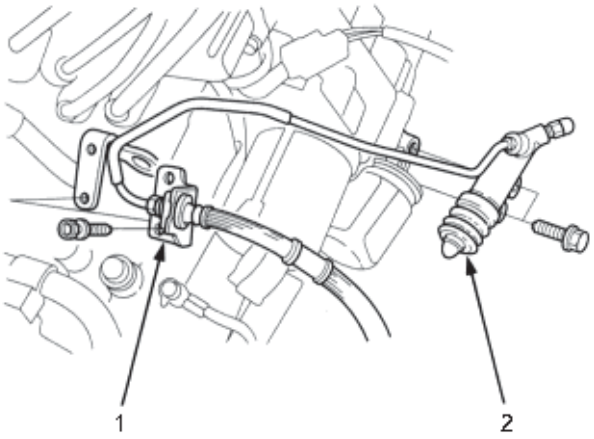
⚠ CAUTION

Use fender covers to avoid damaging painted surfaces

1. Disconnect the negative (-) cable first, then the positive (+) cable from the battery. Remove the battery.
2. Carefully remove the slave cylinder and clutch line clamp so as not to bend the clutch line.

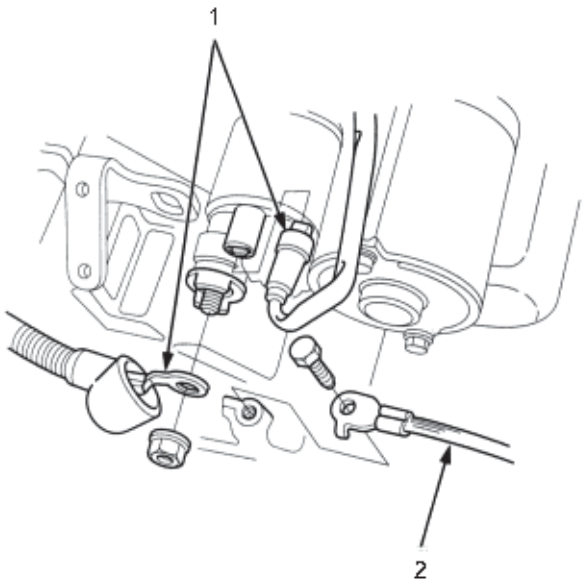
⚠ CAUTION

- Do not operate the clutch pedal once the slave cylinder has been removed.



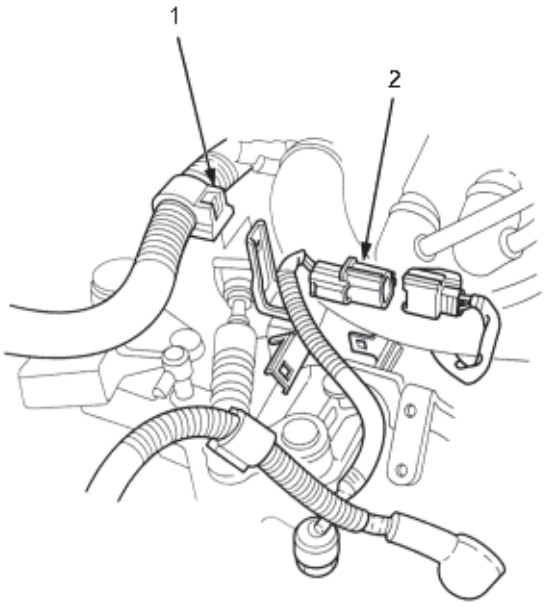
1. CLUTCH HOSE BRACKET
2. SLAVE CYLINDER

3. Disconnect the starter motor cable and transmission ground cable.



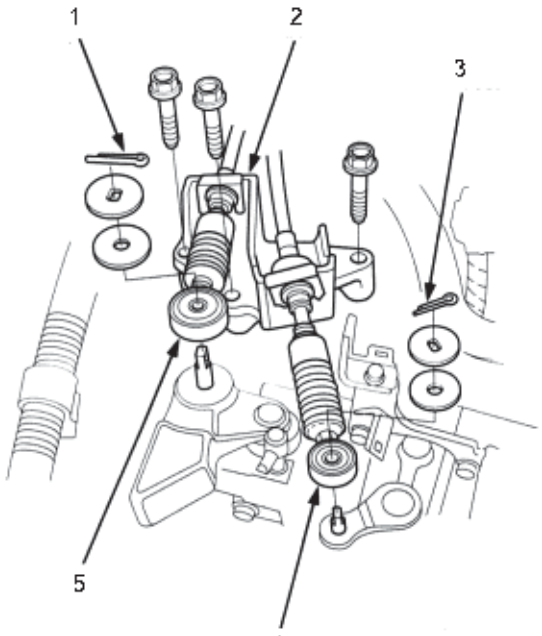
1. STARTER CABLES
2. TRANSMISSION GROUND CABLE

4. Remove the wire harness clamp.
5. Disconnect the back-up light switch connector.



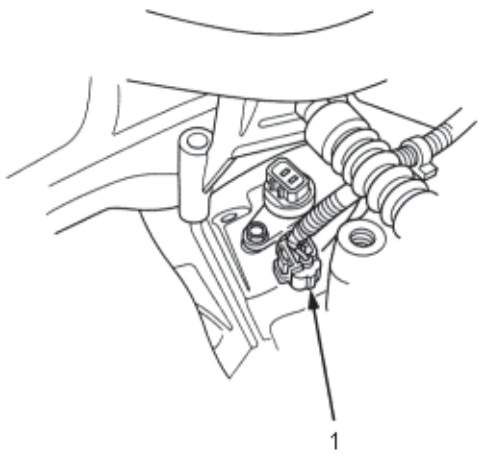
1. WIRE HARNESS CLAMP
2. BACK-UP LIGHT SWITCH CONNECTOR

6. Remove the cotter pins, then remove the steel washers, plastic washers, shift cables and select cable from the levers.
7. Remove the cable bracket from the clutch housing.



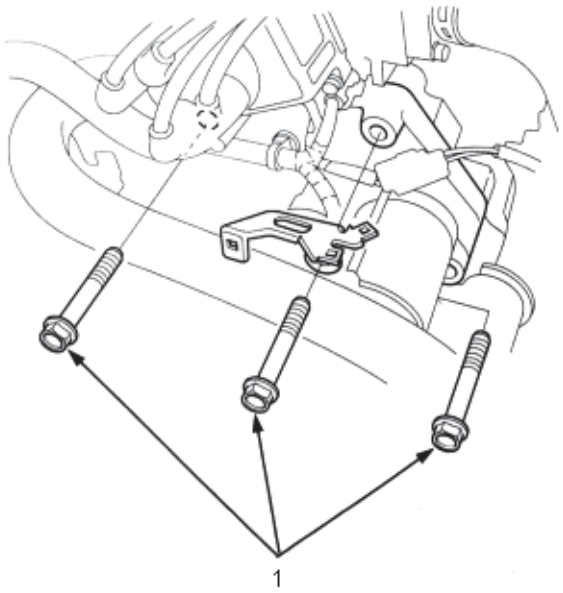
1. COTTER PIN, Replace
2. CABLE BRACKET
3. COTTER PIN, Replace
4. SELECT CABLE
5. SHIFT CABLE

8. Disconnect the vehicle speed sensor (VSS) connector.



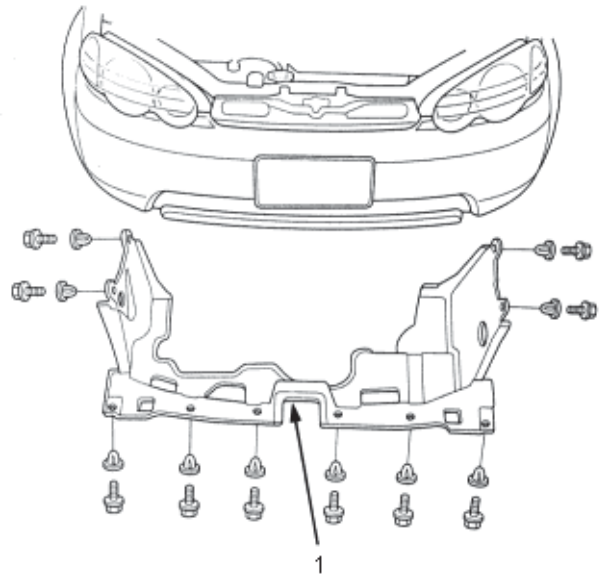
1. VSS CONNECTOR

9. Remove the three upper transmission mounting bolts.



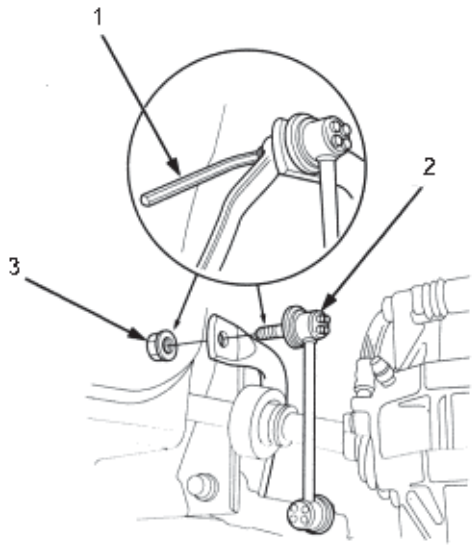
1. TRANSMISSION MOUNTING BOLTS

10. Drain the MTF (**See page** 13-4).
11. Remove the splash shield.



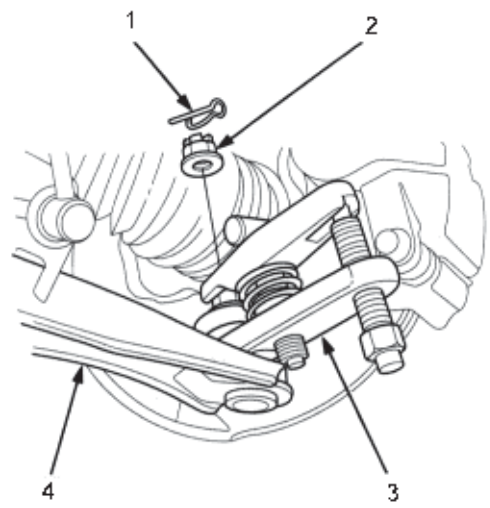
1. SPLASH SHIELD

12. Hold the stabiliser link ball joint pin with a hexagonal wrench and remove the flange nut, then separate the front stabiliser link and front stabiliser.



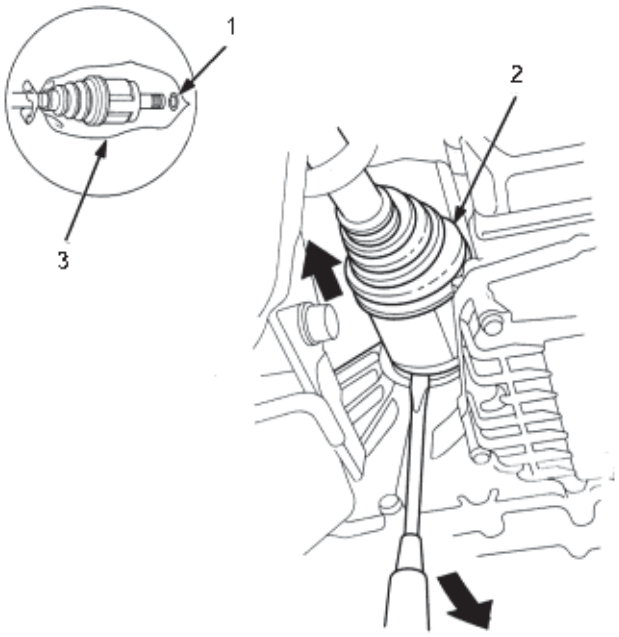
1. HEXAGONAL WRENCH
2. FRONT STABILISER LINK
3. FLANGE NUT

13. Remove the lock pins and loosen the castle nuts, then separate the knuckle and lower arms on both sides (see section 18).



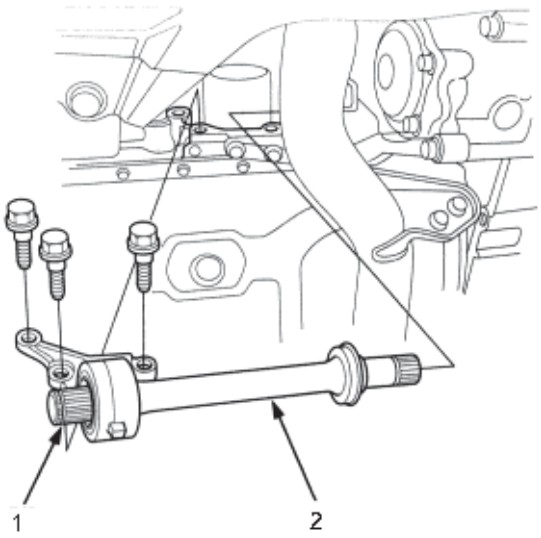
1. LOCK PIN, Replace
2. CASTLE NUT
3. BALL JOINT REMOVER, 28 mm, 07MAC-SL00200
4. LOWER ARMS

14. Pull the driveshafts out of the intermediate shaft and differential. Coat all the precision finished surfaces with clean engine oil grease. Tie plastic bags over the driveshaft ends.



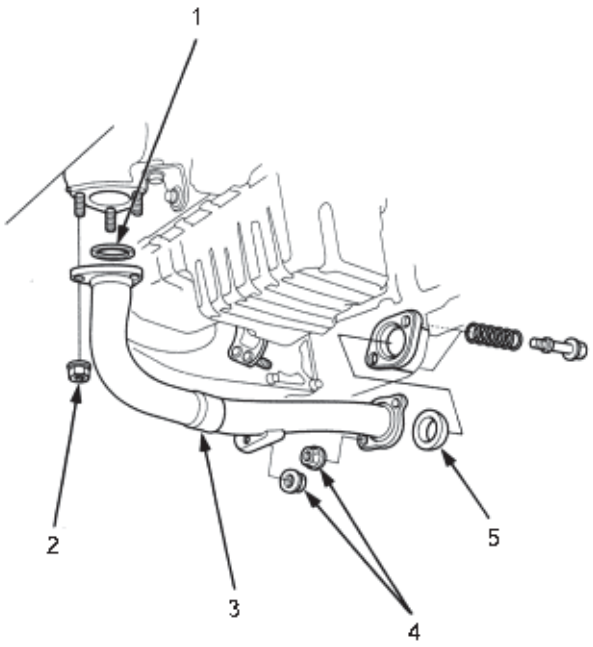
1. SET RING, Replace
2. DRIVE SHAFT
3. PLASTIC BAG

15. Remove the intermediate shaft. Coat all the precision finished surfaces with clean engine oil grease. Tie bags over the driveshaft ends.



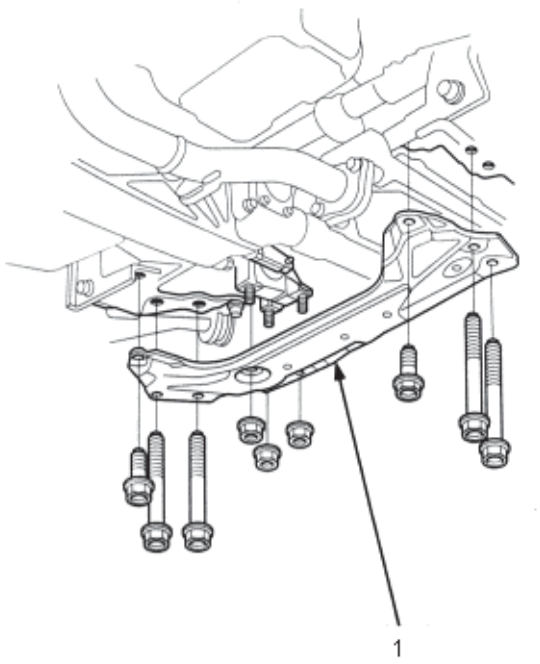
1. SET RING, Replace
2. INTERMEDIATE SHAFT

16. Remove the exhaust pipe A.



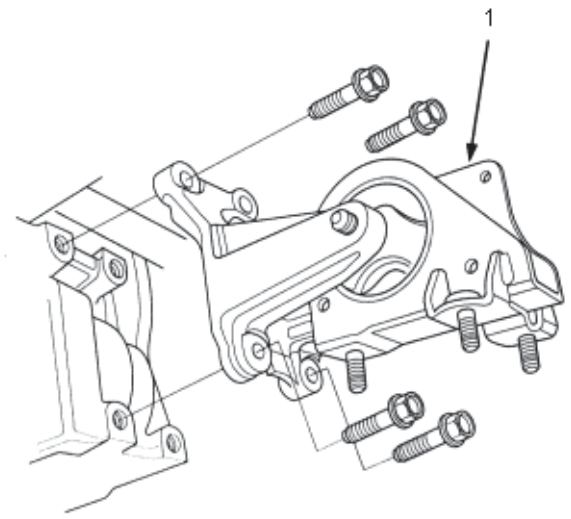
1. GASKET, Replace
2. SELF-LOCKING NUT, Replace
3. EXHAUST PIPE A
4. SELF-LOCKING NUT, Replace
5. GASKET, Replace

17. Remove the rear beam.



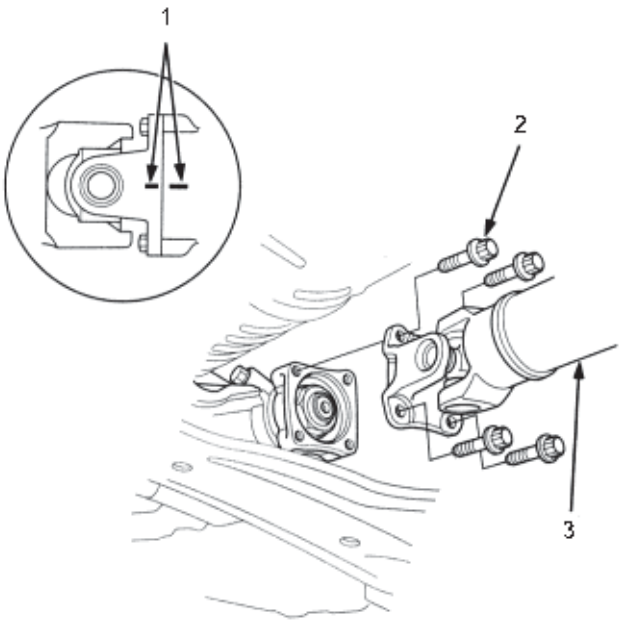
1. REAR BEAM

18. Remove the rear engine mount bracket/rubber assembly.



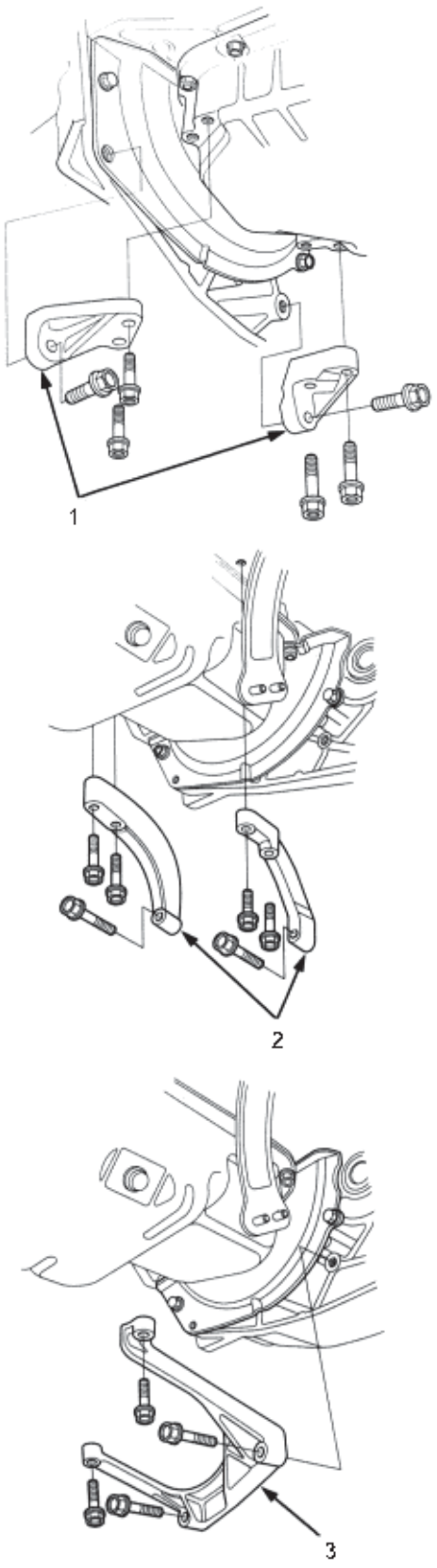
1. REAR ENGINE MOUNT BRACKET/RUBBER

19. Make reference marks across the propeller shaft and the transfer assembly flanges (only SEPM model manual transmission).
20. Separate the propeller shaft from the transfer assembly flanges (only SEPM model manual transmission).



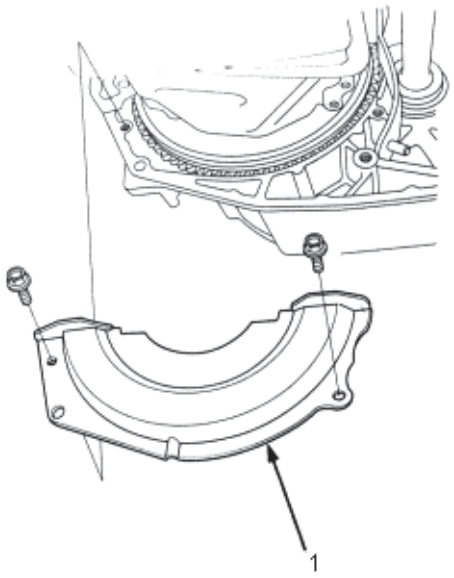
1. REFERENCE MARKS
2. 8 x 1.25 mm, Replace
3. PROPELLER SHAFT

21. Remove the engine stiffener(s).



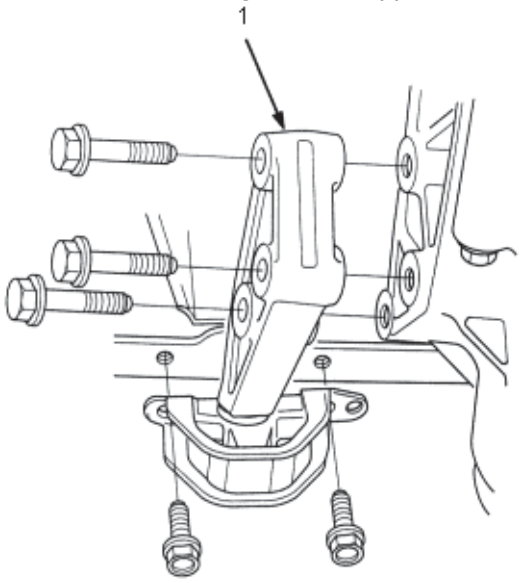
1. ENGINE STIFFENERS
2. ENGINE STIFFENERS
3. ENGINE STIFFENER

22. Remove the clutch cover.



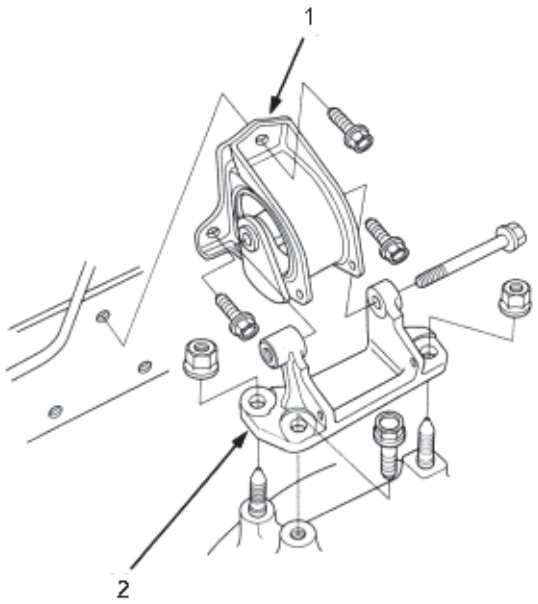
1. CLUTCH COVER

23. Remove the right front stopper rubber/bracket.



1. RIGHT FRONT STOPPER RUBBER/BRACKET

24. Place a floor jack under the transmission and raise the transmission just enough to take the weight off the mounts.
25. Remove the transmission mount bracket and transmission mount rubber.



1. TRANSMISSION MOUNT RUBBER
2. TRANSMISSION MOUNT BRACKET

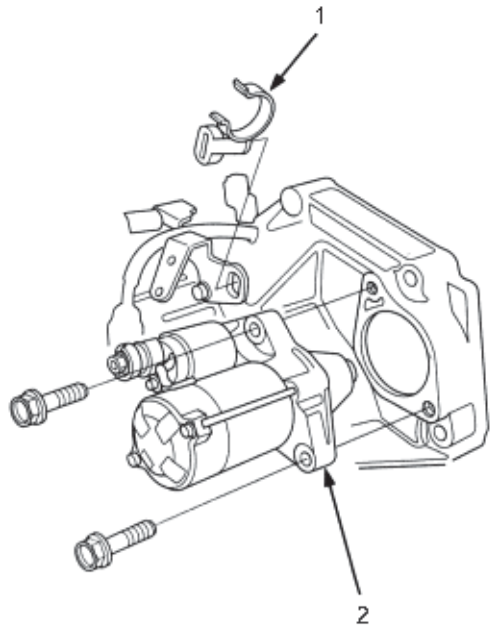
26. Remove the two lower transmission mounting bolts.



1. TRANSMISSION MOUNTING BOLTS

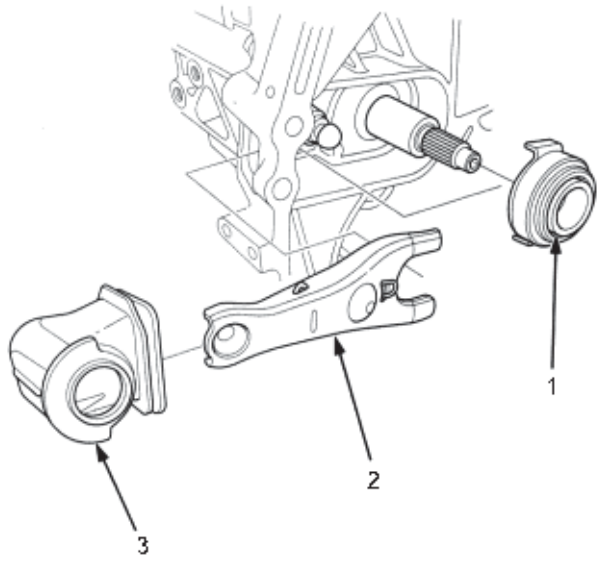
27. Pull the transmission away from the engine until it clears the mainshaft, then lower it on the transmission jack. Take care not to bend the clutch line.

28. Remove the starter motor and hose clamp from the transmission housing.



1. HOSE CLAMP
2. STARTER MOTOR

29. Remove the release fork boot, release bearing and release fork from the clutch housing.



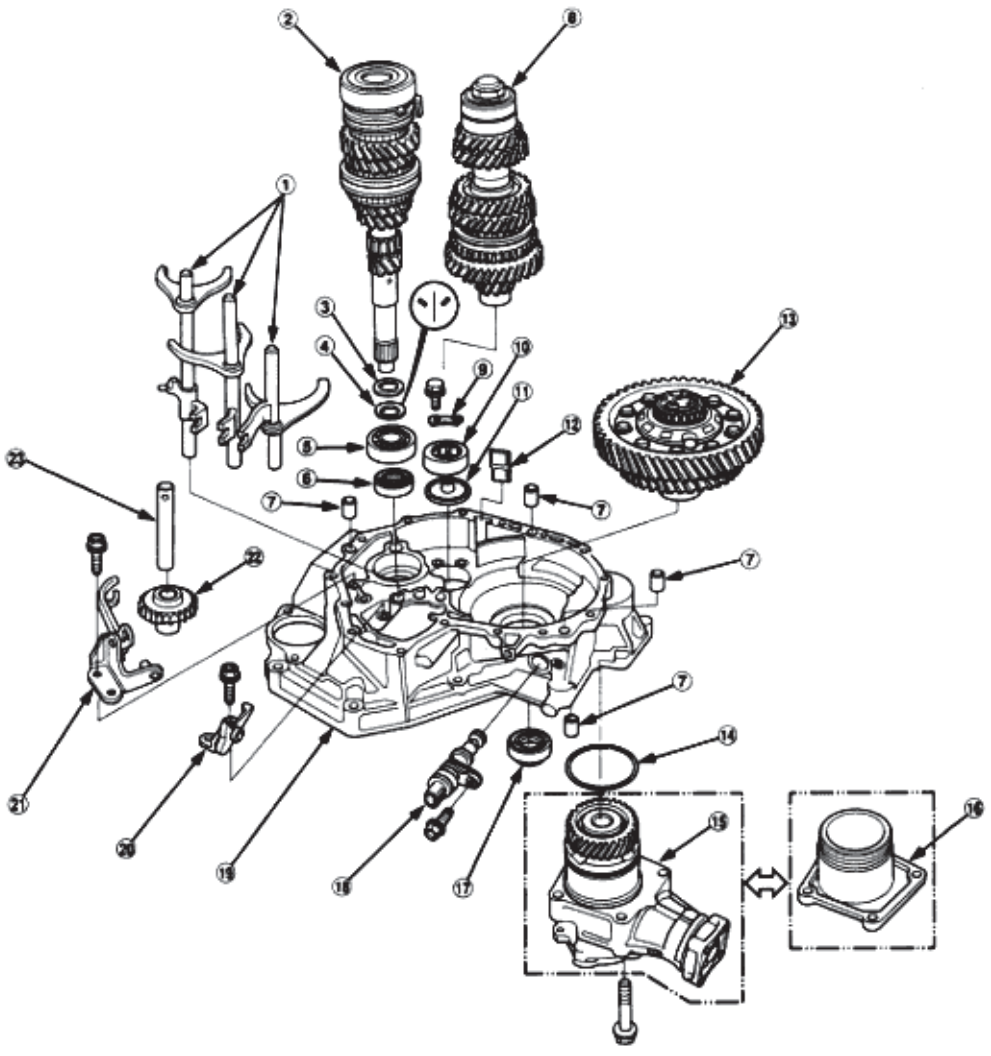
1. RELEASE BEARING
2. RELEASE FORK
3. RELEASE FORK BOOT

Refer to the drawing below for the transmission disassembly/reassembly.
Clean all parts thoroughly in solvent and dry with compressed air.

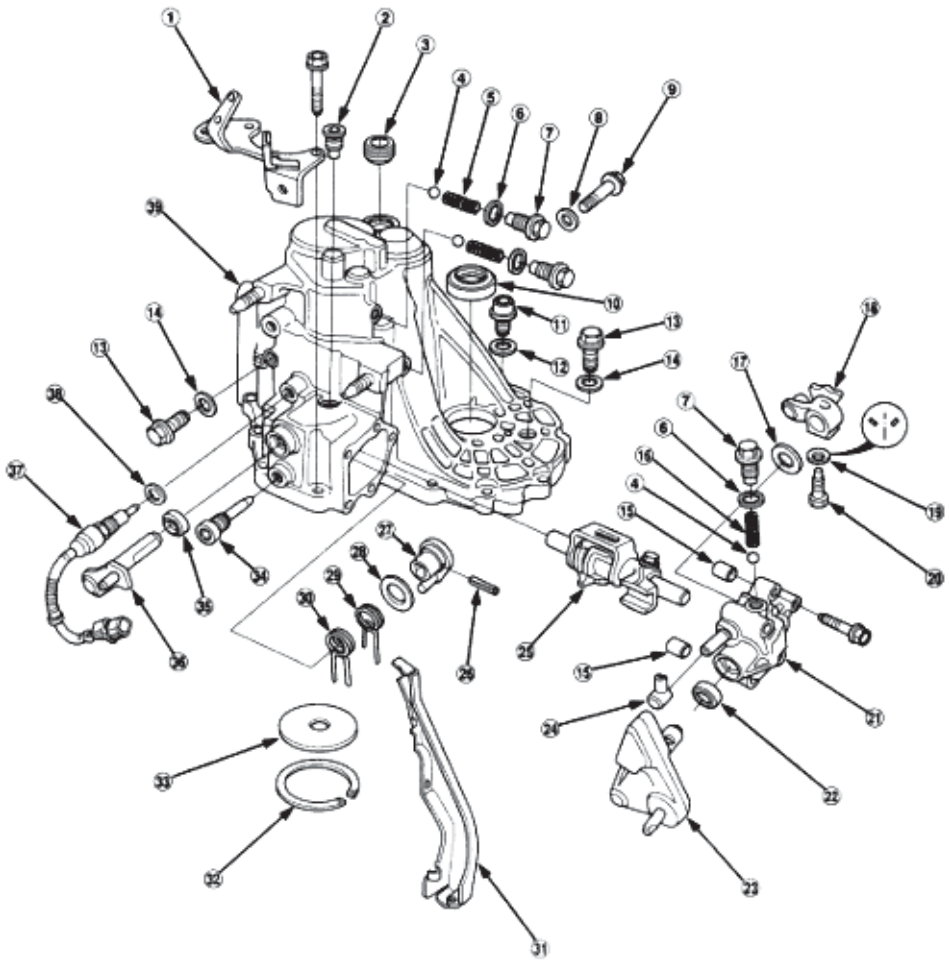
OIL Lubricate all the parts with MTF before reassembly.

NOTE:

- This transmission uses no gaskets between the major housings; use liquid gasket (08C70-K0234M) (**See page** 13-73) and (**See page** 13-75)
- Always clean the magnet **12** when ever the transmission housing is disassembled.
- Inspect all the bearings for wear and operation.



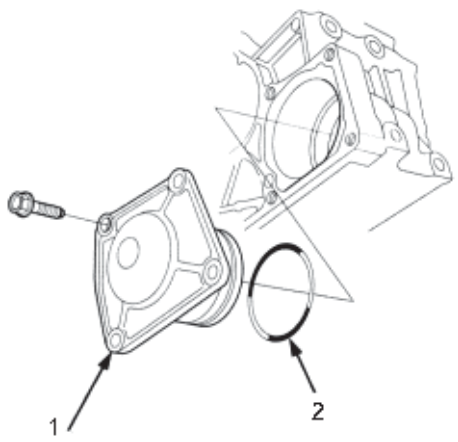
1. **SHIFT FORK ASSEMBLY**, Index page (**See page** 13-25)
2. **MAINSHAFT ASSEMBLY**, Index page (**See page** 13-27)
3. **28 mm WASHER**
4. **28 mm SPRING WASHER**
5. **BALL BEARING**
6. **OIL SEAL**, Replace
7. **14 x 20 mm DOWEL PIN**
8 **COUNTERSHAFT ASSEMBLY**, Index page (**See page** 13-32)
9. **NEEDLE SET PLATE**
10. **NEEDLE BEARING**
11. **OIL GUIDE C PLATE**
12. **MAGNET**
13. **DIFFERENTIAL ASSEMBLY**, Index page (**See page** 13-42)
14. **O-RING**, Replace
15. **TRANSFER ASSEMBLY**, Index page (**See page** 13-48)
16. **LEFT SIDE COVER**
17. **OIL SEAL**, Replace
18. **VEHICLE SPEED SENSOR**
19. **CLUTCH HOUSING**
20. **REVERSE LOCK CAM**
21. **REVERSE SHIFT HOLDER**
22. **REVERSE IDLER GEAR**
23. **REVERSE GEAR SHAFT**



1. **TRANSMISSION HANGER**
2. **INTERLOCK BOLT**
3. **32 mm SEALING BOLT**
4. **STEEL BALL (5/16 in)**
5. **SPRING 26.1 mm (1.03 in)**
6. **WASHER**, Replace
7. **SET BALL SCREW**
8. **WASHER**, Replace
9. **FLANGE BOLT**
10. **OIL SEAL**, Replace
11. **DRAIN PLUG**
12. **WASHER**, Replace
13. **FILLER PLUG**
14. **WASHER**, replace
15. **10 x 12 mm DOWEL PIN**
16. **SPRING 25.6 mm (1.01 in)**
17. **THRUST WASHER**
18. **SHIFT ARM C**
19. **CONICAL SPRING WASHER**
20. **SPECIAL BOLT**
21. **SHIFT ARM COVER**
22. **OIL SEAL**, Replace
23. **SHIFT ARM LEVER**
24. **BREATHER CAP**
25. **SHIFT ARM SHAFT ASSEMBLY**
26. **SPRING PIN**, Replace
27. **SELECT ARM**
28. **THRUST WASHER**
29. **5TH/REVERSE SELECT RETURN SPRING**
30. **SELECT RETURN SPRING**
31. **OIL GUTTER PLATE**
32. **78 mm SHIM**
33. **OIL GUIDE M PLATE**
34. **SELECT SPRING BOLT**
35. **OIL SEAL**, Replace
36. **SELECT LEVER**
37. **BACK-UP LIGHT SWITCH**
38. **WASHER**, Replace
39. **TRANSMISSION HOUSING**

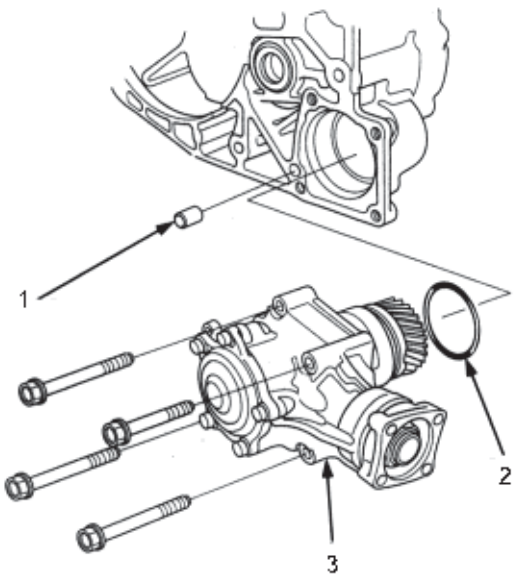
1. Remove the transfer assembly or left side cover.

2WD Model:



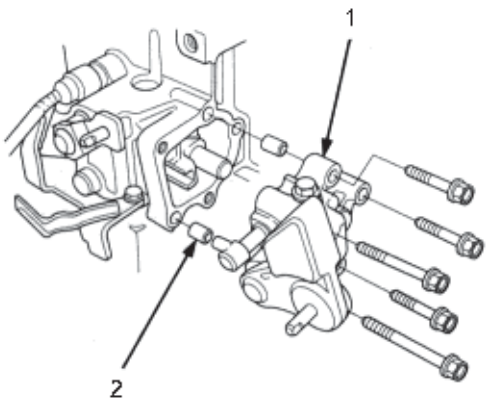
1. LEFT SIDE COVER
2. O-RING, Replace

4WD Model:



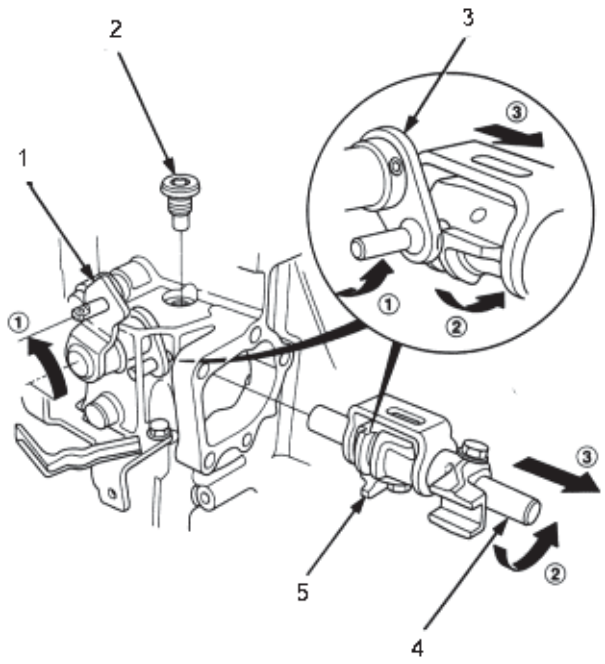
1. DOWEL PIN
2. O-RING, Replace
3. TRANSFER ASSEMBLY

2. Remove the shift arm cover assembly and wipe it clean of the sealant.



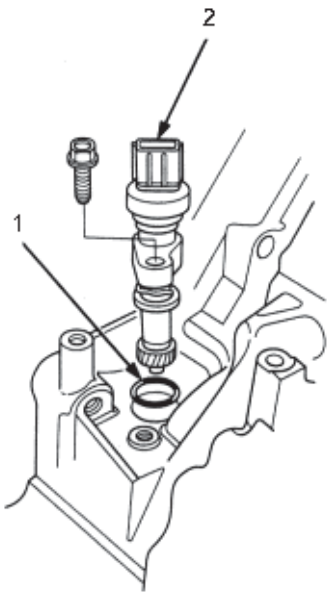
1. SHIFT ARM COVER ASSEMBLY
2. 10 x 12 mm DOWEL PIN

3. Remove the interlock bolt.



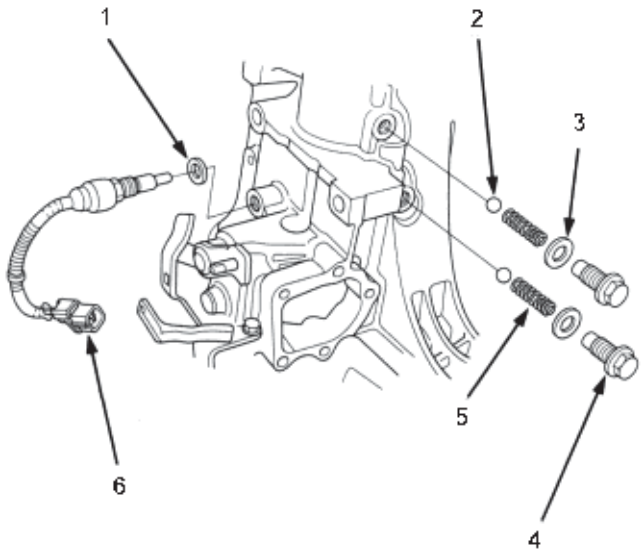
1. SELECT LEVER
2. INTERLOCK BOLT
3. SELECT ARM
4. SHIFT ARM SHAFT
5. SHIFT ARM A

4. Turn the select lever counterclockwise, then remove the shift arm A finger from the groove of the shift forks.
5. Turn the shift arm shaft counterclockwise and remove the select arm finger from the groove of the shift arm A, then remove the shift arm shaft assembly.
6. Remove the vehicle speed sensor (VSS).



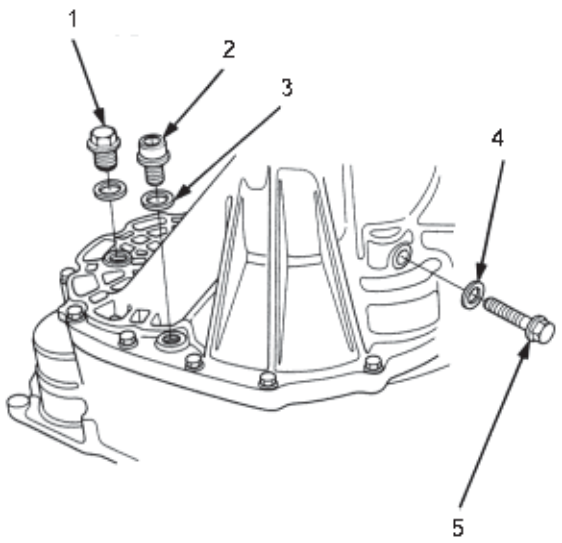
1. O-RING, Replace
2. VEHICLE SPEED SENSOR

7. Remove the set ball screws, washers, springs, steel balls and back-up light switch.



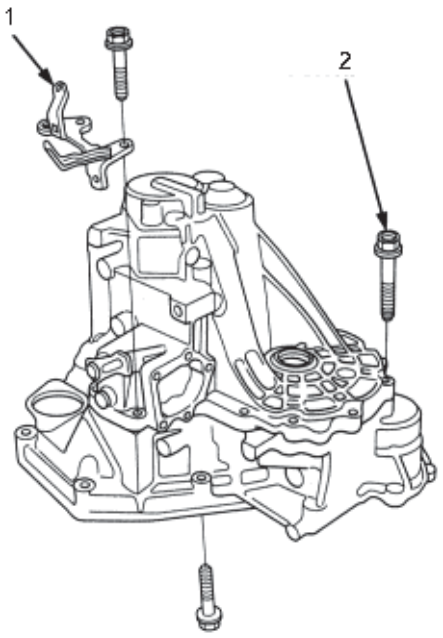
1. WASHER, Replace
2. STEEL BALL 5/16 in D.
3. WASHER, Replace
4. SET BALL SCREW
5. SPRING, 26.1 mm (1.03 in) L
6. BACK-UP LIGHT SWITCH

8. Remove the flange bolt, drain plug and filler plug.



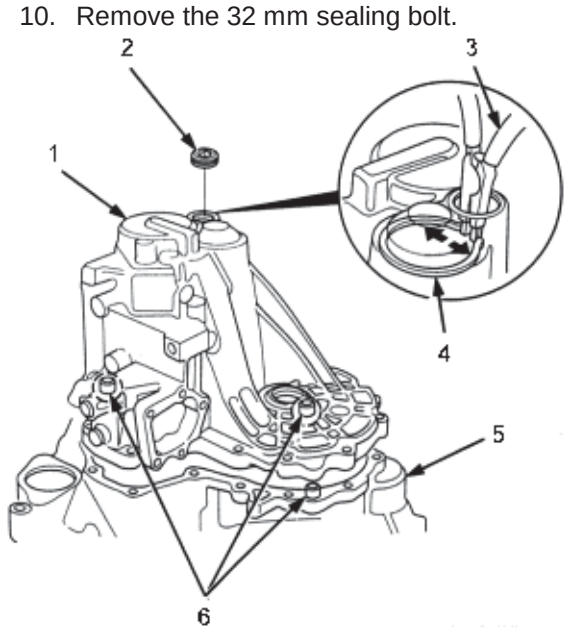
1. FILLER PLUG
2. DRAIN PLUG
3. WASHER, Replace
4. WASHER, Replace
5. FLANGE BOLT

9. Remove the transmission housing mounting bolts in a crisscross pattern in several steps.



1. TRANSMISSION HANGER
2. TRANSMISSION HOUSING MOUNTING BOLT

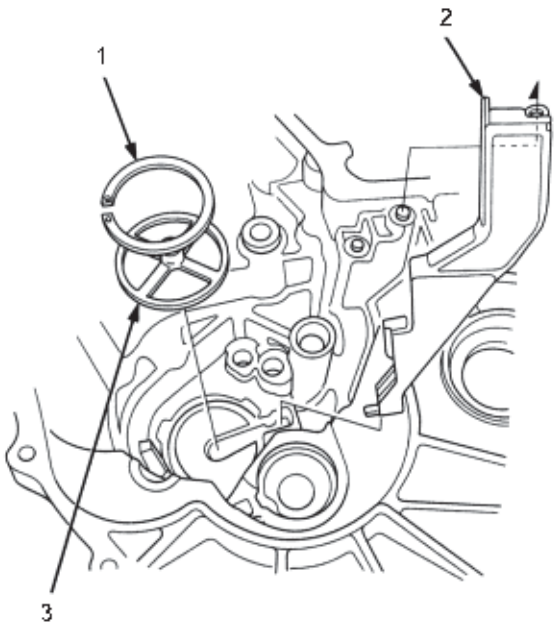
10. Remove the 32 mm sealing bolt.



1. TRANSMISSION HOUSING
2. 32 mm SEALING BOLT
3. SNAP RING PLIERS, 07LAC-0010100
4. SNAP RING
5. CLUTCH HOUSING
6. DOWEL PINS

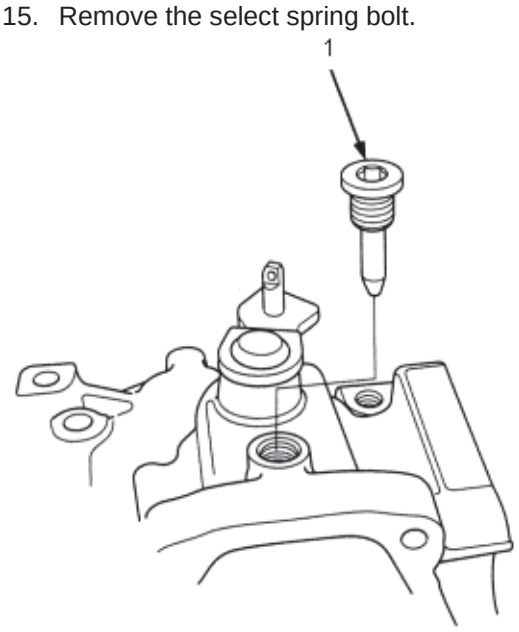
11. Expand the snap ring on the countershaft ball bearing and remove it from the groove using a pair of snap ring pliers.
12. Separate the transmission housing from the clutch housing.
13. Remove the dowel pins and wipe it clean of the sealant.

14. Remove the oil gutter plate, 78 mm shim and oil guide M plate.



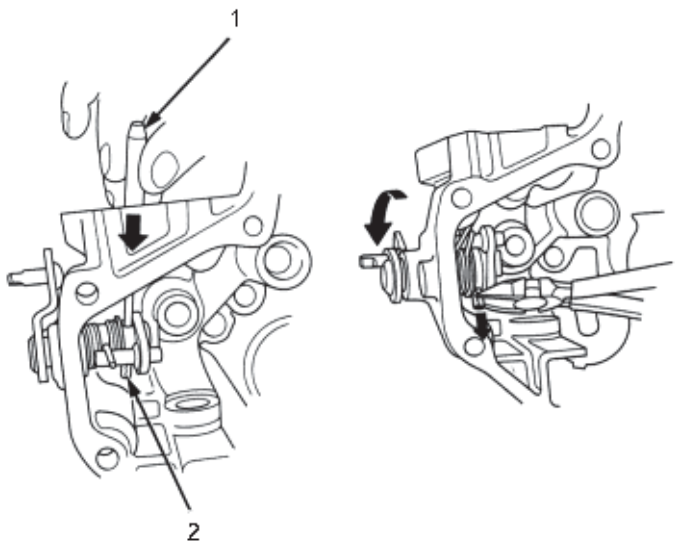
1. 78mm SHIM
2. OIL GUTTER PLATE
3. OIL GUIDE M PLATE

15. Remove the select spring bolt.



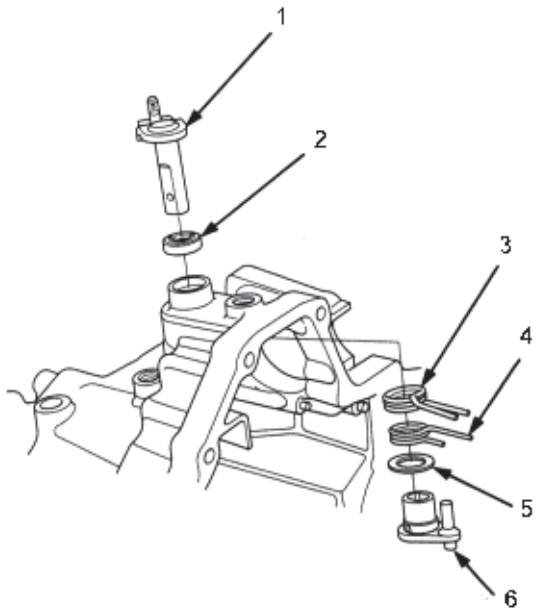
1. SELECT SPRING BOLT

16. Remove the spring pin using the pin driver to push it half way out, then pull out the spring pin using a nipper.



1. PIN DRIVER, 5.0 mm, 07GAD-PG20100
2. SPRING PIN, Replace

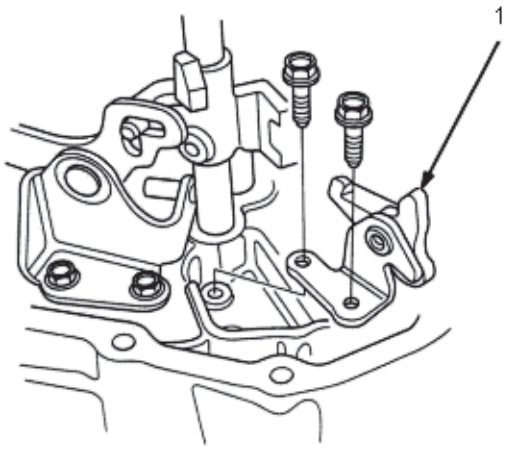
17. Remove the select lever, springs, washer and select arm



1. SELECT LEVER
2. OIL SEAL, Replace
3. SELECT RETURN SPRING
4. 5TH/REVERSE SELECT RETURN SPRING
5. THRUST WASHER
6. SELECT ARM

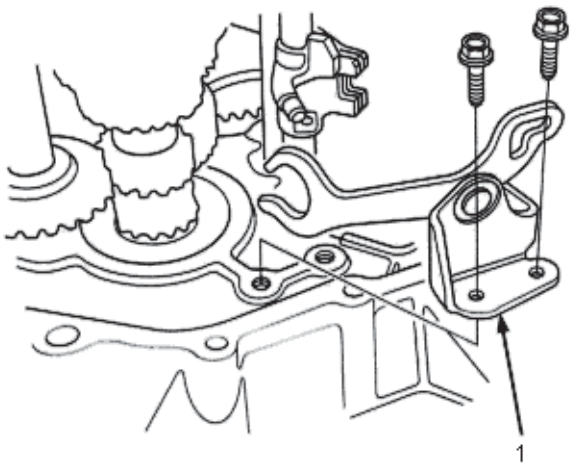
18. Remove the oil seal.

19. Remove the reverse lock cam.



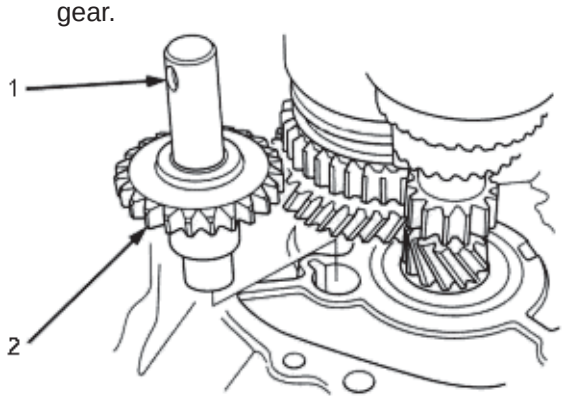
1. REVERSE LOCK CAM

20. If necessary, check the clearance of the reverse shift holder (**See page** 13-24).
21. Remove the reverse shift holder.



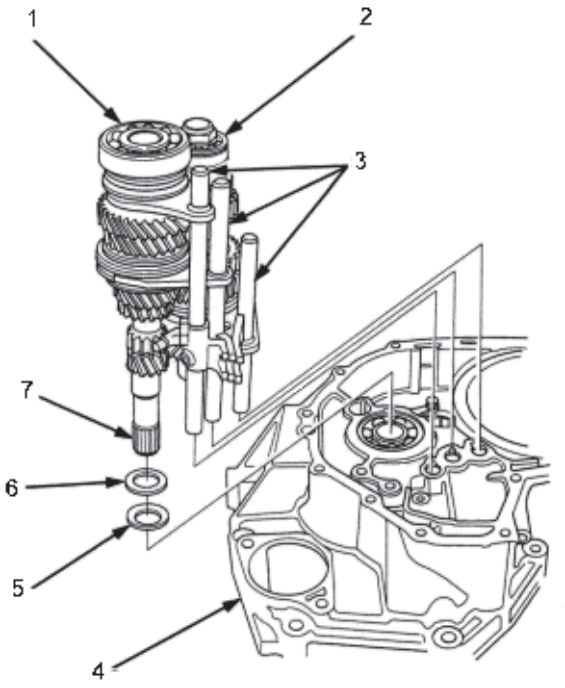
1. REVERSE SHIFT HOLDER

22. Remove the reverse gear shaft and the reverse idler gear.



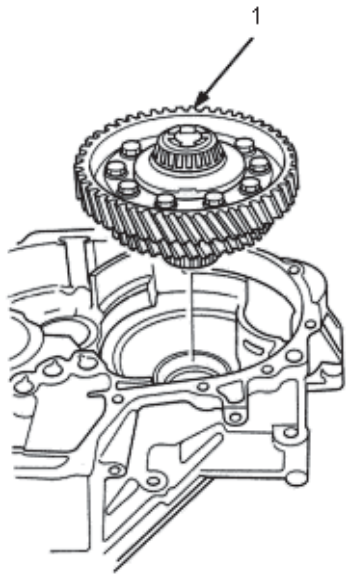
1. REVERSE GEAR SHAFT
2. REVERSE IDLER GEAR

23. Remove the mainshaft and countershaft assemblies with the shift forks, from the clutch housing
NOTE: Before removing the mainshaft and countershaft assemblies, tape the mainshaft spline to protect it.



1. MAINSHAFT ASSEMBLY
2. COUNTERSHAFT ASSEMBLY
3. SHIFT FORKS
4. CLUTCH HOUSING
5. SPRING WASHER
6. WASHER
7. Tape the main shaft splines

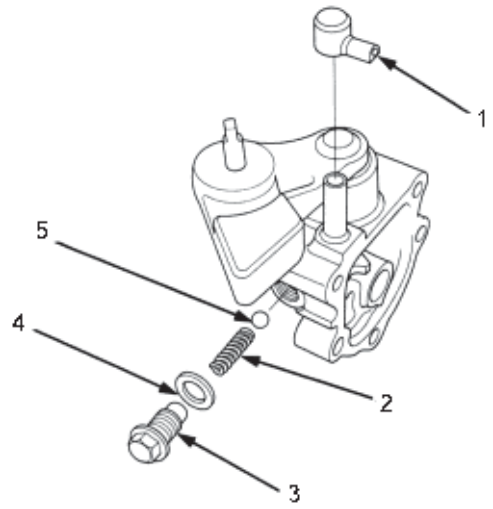
24. Remove the differential assembly.



1. DIFFERENTIAL ASSEMBLY

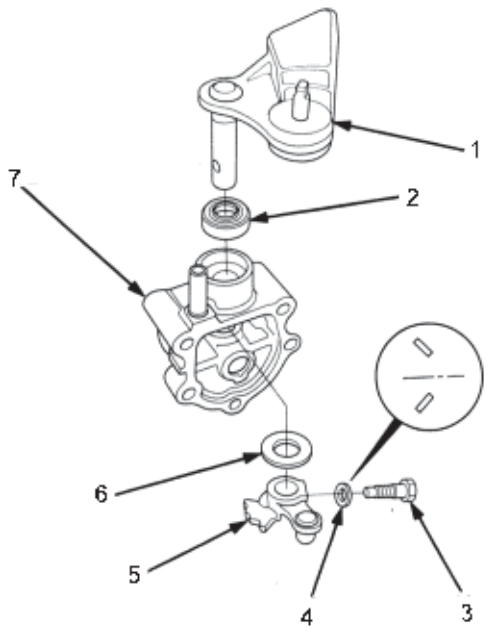
Shift Arm Cover Assembly

1. Remove the breather cap and set ball screw, washer, spring and steel ball.



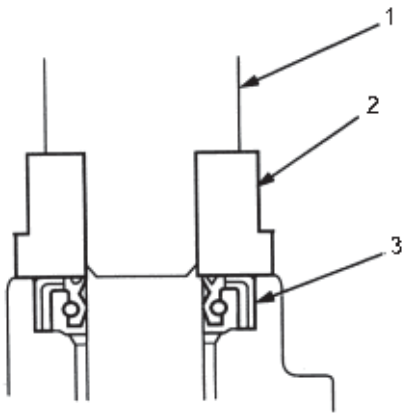
1. BREATHER CAP
2. SPRING, 25.6 mm (1.01 in) L
3. SET BALL SCREW, 22 Nm (2.2 kgf/m, 16 lbf/ft)
4. WASHER, Replace
5. STEEL BALL, 5/16 in D

2. Remove the special bolt and conical spring washers.
3. Remove the shift lever, shift arm C and thrust washer from the shift arm cover.
4. Remove the oil seal.
   NOTE: When installing, turn alloy surface of the thrust washer to the shift arm cover side.



1. SHIFT LEVER
2. OIL SEAL, Replace
3. SPECIAL BOLT, 8 x 1.0 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)
4. CONICAL SPRING WASHER
5. SHIFT ARM C
6. THRUST WASHER
7. SHIFT ARM COVER

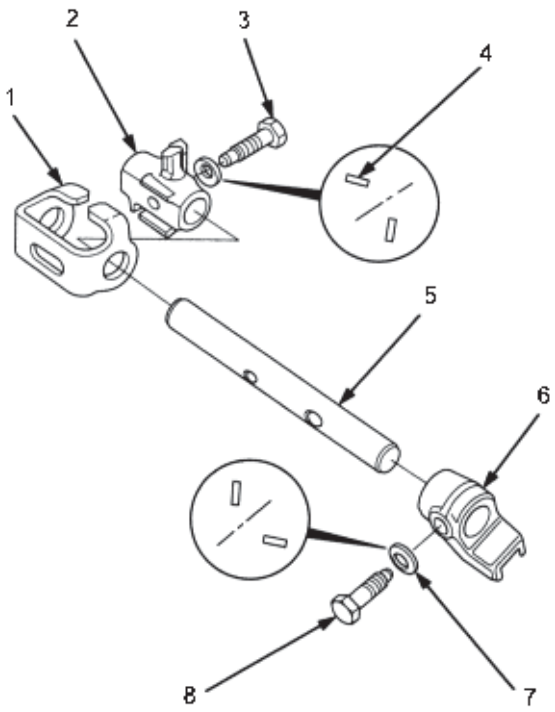
5. Install in the reverse order of removal.



1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 32 x 35 mm, 07746-0010100
3. OIL SEAL, Replace

Shift Arm Shaft Assembly

1. Remove the special bolts and conical spring washers.
2. Remove the interlock, shift arm A and shift arm B from the shift arm shaft.

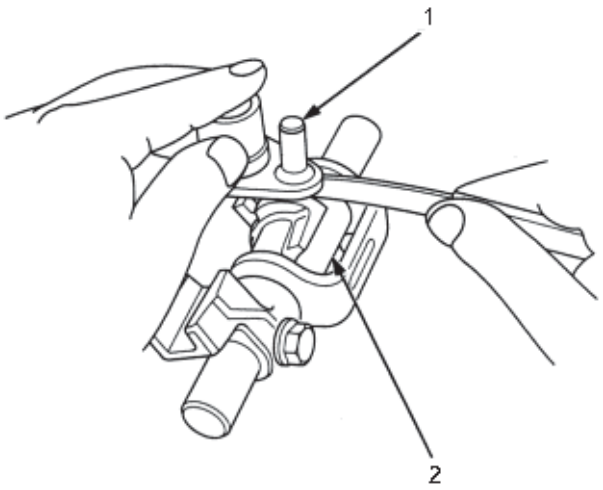


1. INTERLOCK
2. SHIFT ARM A
3. SPECIAL BOLT, 8 x 1.0 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)
4. CONICAL SPRING WASHER
5. SHIFT WARM SHAFT
6. SHIFT ARM B
7. CONICAL SPRING WASHER
8. SPECIAL BOLT, 8 x 10 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)

3. Install in the reverse order of removal.

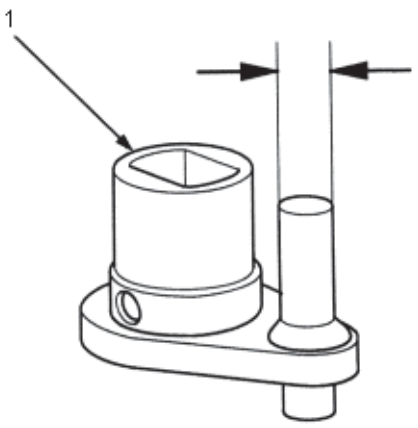
Clearance Inspection

1. Measure the clearance between the shift arm A and select arm.
   Standard: 0.05 - 0.25 mm (0.002 - 0.01 in)
   Service Limit: 0.5 mm (0.02 in)



1. SELECT ARM
2. SHIFT ARM A

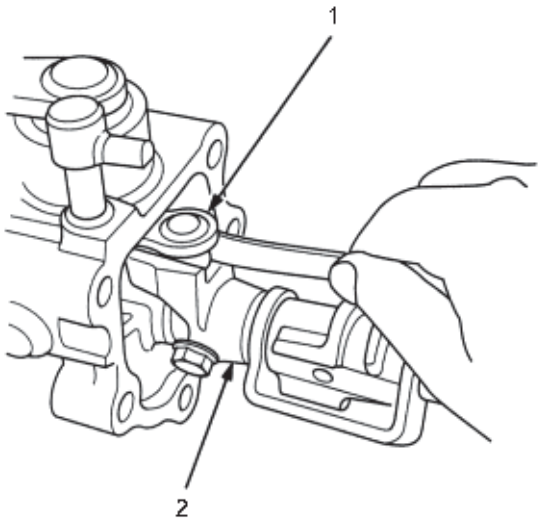
2. If the clearances are more than the service limit, measure the diameter of the select arm pin.
   Standard: 7.9 - 8.0 (0.311 - 0.315 in)



1. SELECT ARM

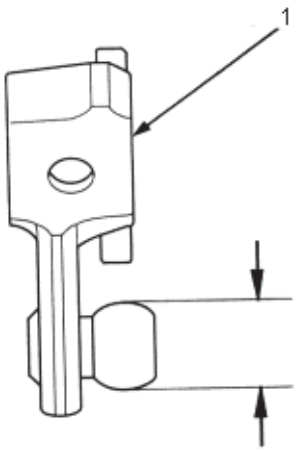
- If the diameter of the select arm pin is less than the service limit, replace the select arm with a new one.
- If the diameter of the select arm pin is within the service limit, replace the shift arm A with a new one.

3. Measure the clearance between the shift arm B and shift arm C.
   Standard: 0.05 - 0.25 mm (0.002 - 0.01 in)
   Service Limit: 0.5 mm (0.02 in)



1. SHIFT ARM C
2. SHIFT ARM B

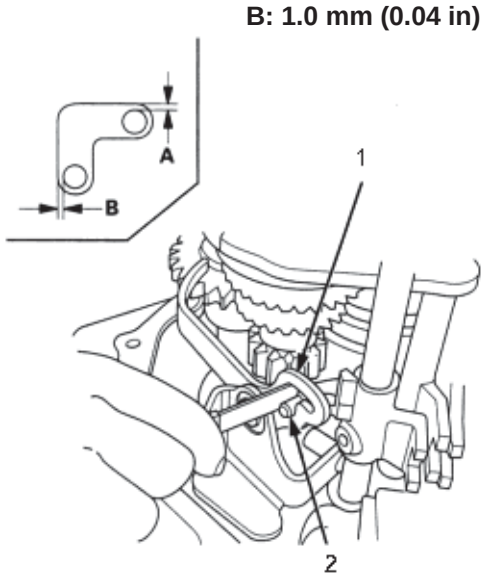
4. If the clearances are more than the service limit, measure the diameter of the shift arm C.
   Standard: 12.9 - 13.0 (0.508 - 0.512 in)



1. SHIFT ARM C

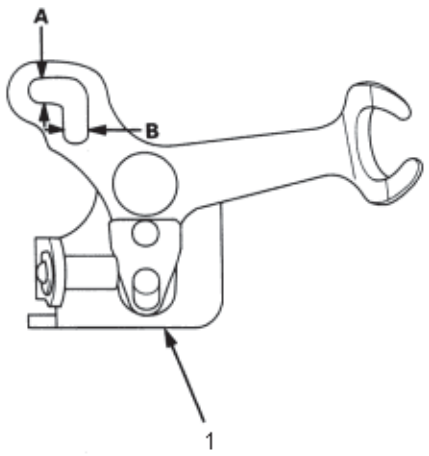
- If the diameter of the shift arm C is less than the service limit, replace the shift arm C with a new one.
- If the diameter of the shift arm C is within the service limit, replace the shift arm B with a new one.

1. Measure the clearances between the reverse shift holder and 5th/reverse shift piece pin.
   Standard: A: 0.05 - 0.35 mm (0.002 - 0.014 in)
   B: 0.4 - 0.8 mm (0.02 - 0.03 in)
   Service Limit: A: 0.5 mm (0.02 in)
   B: 1.0 mm (0.04 in)



1. REVERSE SHIFT HOLDER
2. 5TH/REVERSE SHIFT PIECE PIN

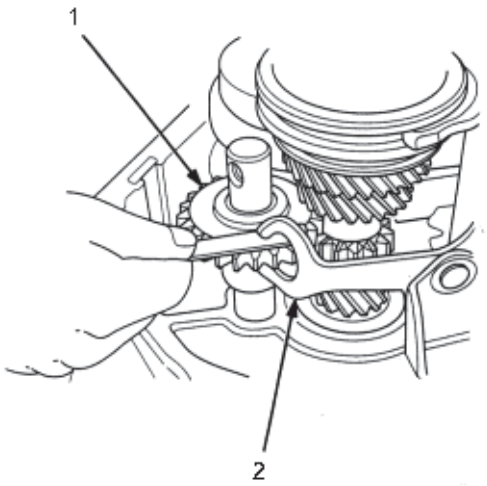
2. If the clearances are more than the service limit, measure the widths of the groove in the reverse shift holder.
   Standard: A: 7.05 - 7.25 mm (0.278 - 0.285 in)
   B: 7.4 - 7.7 mm (0.29 - 0.30 in)



1. REVERSE SHIFT HOLDER

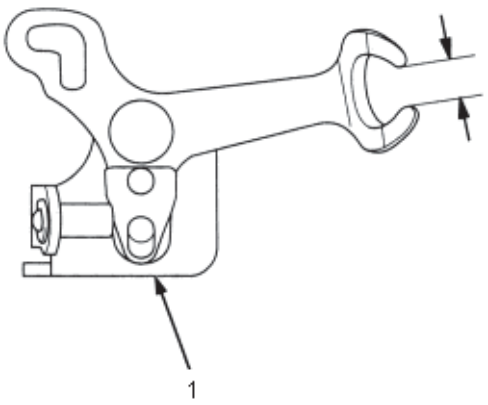
- If the widths of the grooves are not within the standard, replace the reverse shift holder with a new one.
- If the widths of the grooves are within the standard, replace the 5th/reverse shift piece with a new one.

3. Measure the clearance between the reverse idler gear and reverse shift holder.
   Standard: 0.5 - 1.1 mm (0.02 - 0.04 in)
   Service Limit: 1.8 mm (0.07 in)



1. REVERSE IDLER GEAR
2. REVERSE SHIFT HOLDER

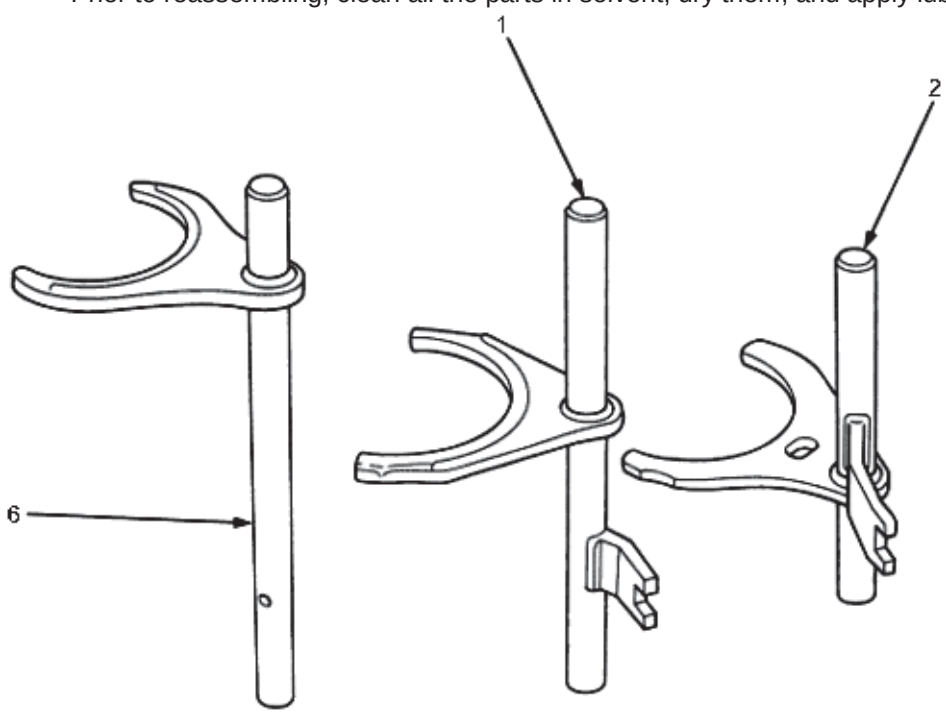
4. If the clearance is more than the service limit, measure the width of the reverse shift holder.
   Standard: 13.0 - 13.3 mm (0.512 - 0.524 in)



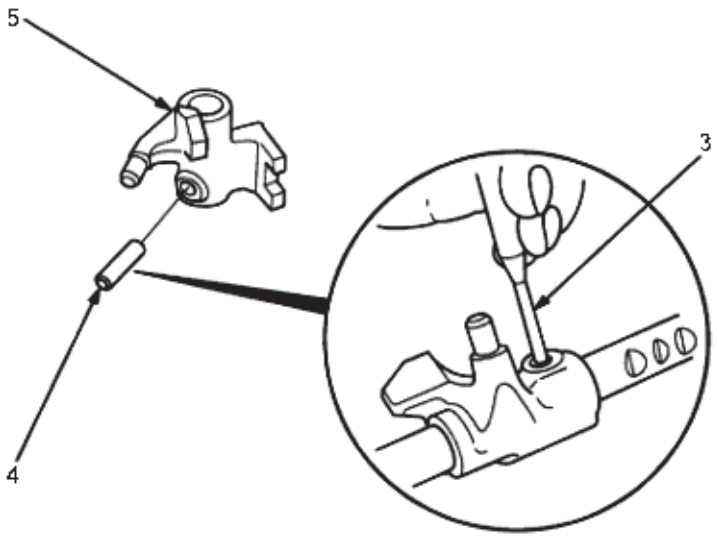
1. REVERSE SHIFT HOLDER

- If the width is not within the standard, replace the reverse shift holder with a new one.
- If the width is within the standard, replace the reverse idler gear with a new one.

OIL Prior to reassembling, clean all the parts in solvent, dry them, and apply lubricant to any contact parts.

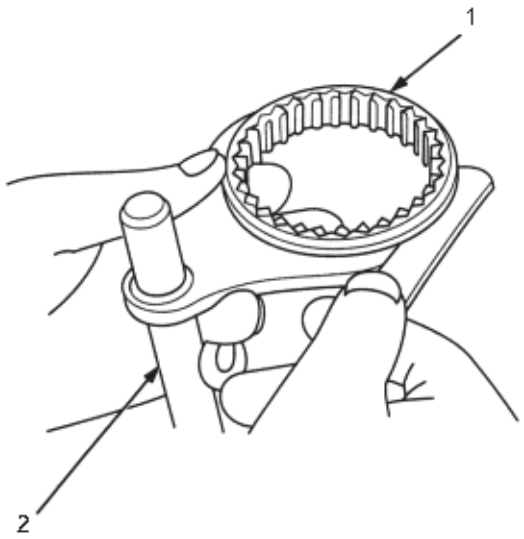


1. **3RD/4TH SHIFT FORK**
2. **1ST/2ND SHIFT FORK**
3. **PIN DRIVER** 5.0 mm, 07GAD-PG20100
4. 5 x 22 mm **SPRING PIN**, Replace
5. **5TH/REVERSE SHIFT PIECE**
6. **5TH/REVERSE SHIFT FORK**



NOTE: The synchro sleeve and synchro hub should be replaced as a set.

1. Measure the clearance between each shift fork and its matching synchro sleeve.
   Standard: **0.35 - 0.65 mm (0.014 - 0.026 in)**
   Service limit: **1.00 mm (0.039 in)**

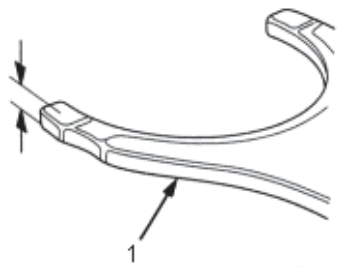


1. SYNCHRO SLEEVE
2. SHIFT FORK

2. If the clearance exceeds the service limit, measure the thickness of the shift fork fingers.

Standard:

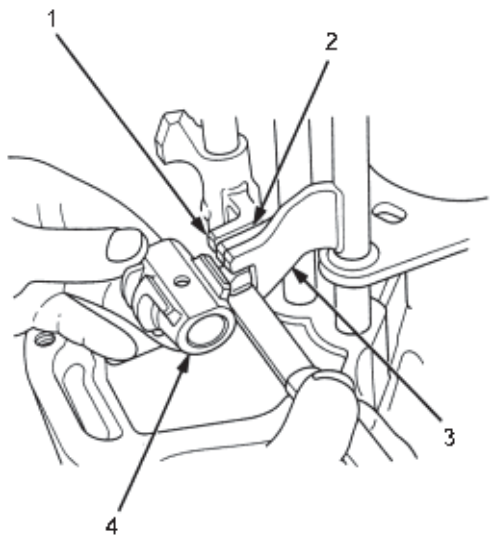
3rd/4thshift fork	7.4 - 7.6 mm (0.291 - 0.299 in)
1st/2nd shift fork	6.2 - 6.4 mm (0.244 - 0.252 in)
5th shift fork	



1. SHIFT FORK

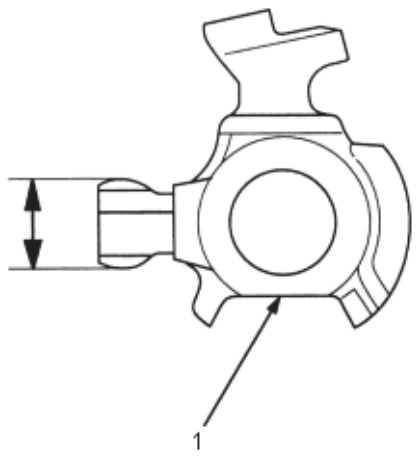
- If the thickness of the shift fork finger is less than the standard, replace the shift fork with a new one.
- If the thickness of the shift fork finger is within the standard, replace the synchro sleeve with a new one.

3. Measure the clearance between the shift fork and the shift arm A.
   Standard: **0.2 - 0.5 mm (0.008 - 0.019 in)**
   Service limit: **0.6 mm (0.024 in)**



1. 5TH/REVERSE SHIFT PIECE
2. 3RD/4TH SHIFT FORK
3. 1ST/2ND SHIFT FORK
4. SHIFT ARM A

4. If the clearance exceeds the service limit, measure the width of the shift arm A.
   Standard: 12.9 - 13.0 mm (0.508 - 0.512 in)

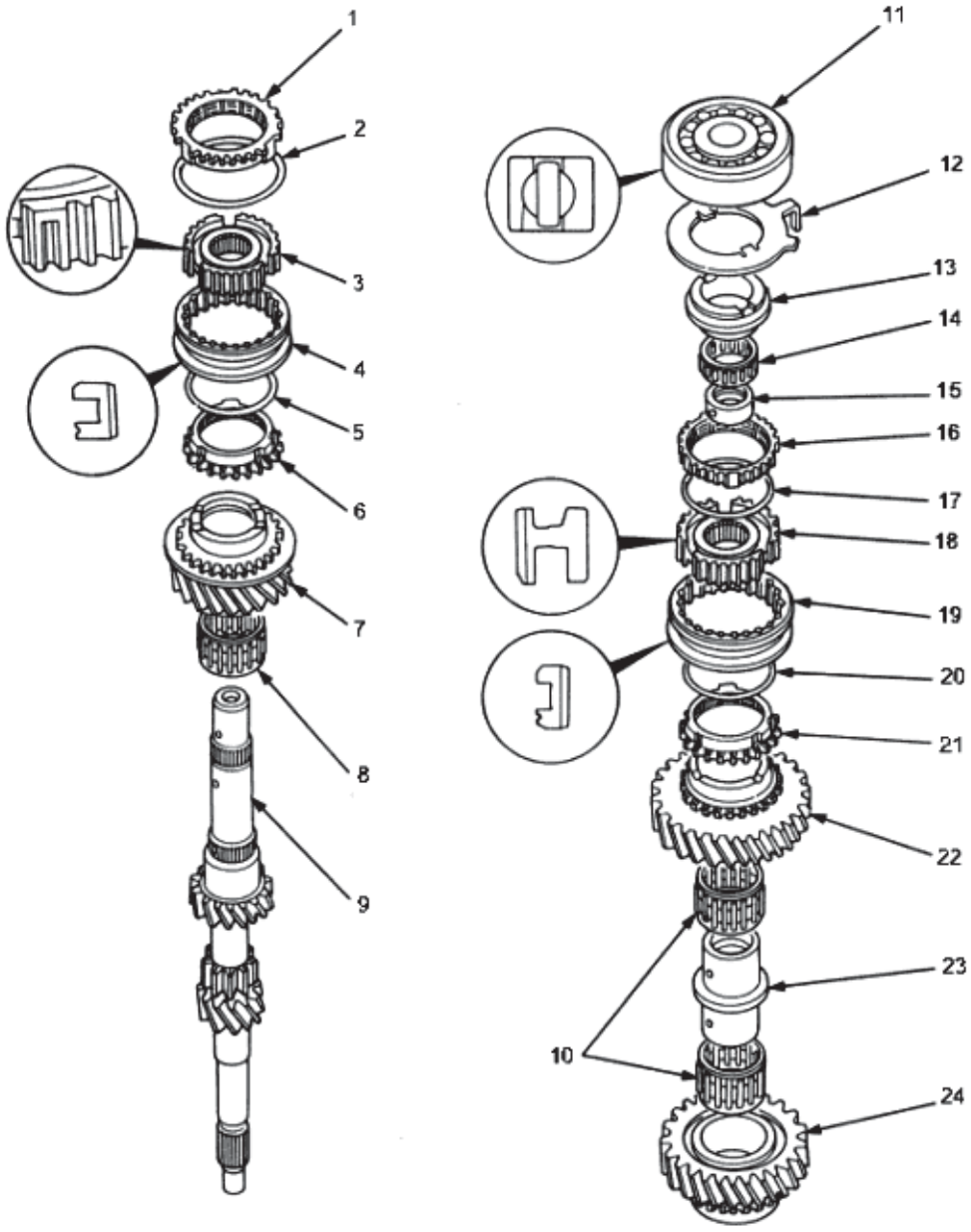


1. SHIFT ARM A

- If the width of the shift arm A is less than the standard, replace the shift arm A with a new one.
- If the width of the shift arm A is within the standard, replace the shift fork or shift piece with a new one.

NOTE: The 3rd/4th and 5th synchro hubs and the ball bearing are installed with a press.

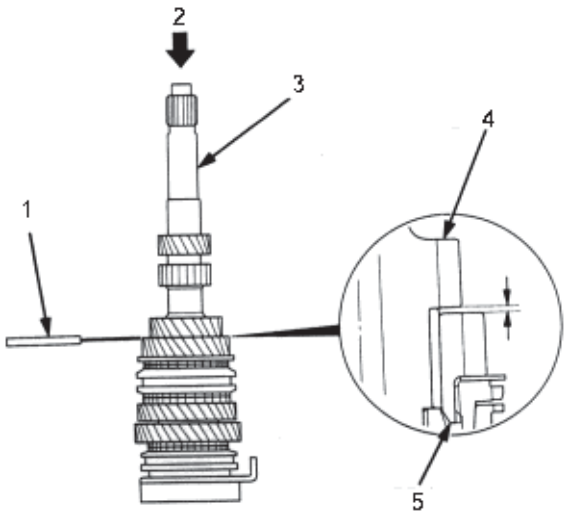
OIL Prior to reassembling, clean all the parts in solvent, dry them and apply lubricant to any contact surfaces. The 3rd/4th and 5th synchro hubs, however, should be installed with a press before lubricating them.



1. **SYNCHRO RING**
   Inspection, (**See page** 13-41)
2. **SYNCHRO SPRING**
3. **3RD/4TH SYNCHRO HUB**
   Inspection, (**See page** 13-40)
4. **3RD/4TH SYNCHRO SLEEVE**
   Inspection, (**See page** 13-40)
5. **SYNCHRO SPRING**
6. **SYNCHRO RING**
   Inspection, (**See page** 13-41)
7. **3RD GEAR**
   Inspection, (**See page** 13-28) and (**See page** 13-41)
8. **NEEDLE BEARING**
   Check for wear and operation
9. **MAINSHAFT**
   Inspection, (**See page** 13-30)
10. **NEEDLE BEARING**
    Check for wear and operation
11. **BALL BEARING**
    Check for wear and operation
12. **STOPPER RING**
13. **TAPER RING**
14. **NEEDLE BEARING**
    Check for wear and operation
15. **SPACER COLLAR**
16. **SYNCHRO RING**
    Inspection, (**See page** 13-41)
17. **SYNCHRO SPRING**
18. **5TH SYNCHRO HUB**
    Inspection, (**See page** 13-40)
19. **5TH SYNCHRO SLEEVE**
    Inspection, (**See page** 13-40)
20. **SYNCHRO SPRING**
21. **SYNCHRO RING**
    Inspection, (**See page** 13-41)
22. **5TH GEAR**
    Inspection, (**See page** 13-29) and (**See page** 13-41)
23. **SPACER COLLAR**
    Inspection, (**See page** 13-28) and (**See page** 13-41)
24. **4TH GEAR**
    Inspection, (**See page** 13-28) and (**See page** 13-41)

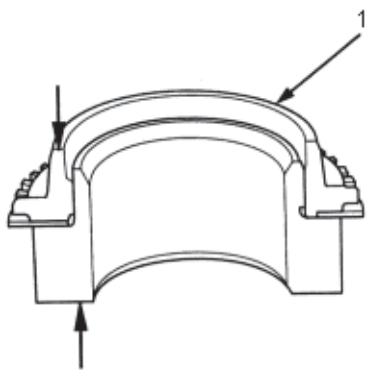
NOTE: If replacement is required, always replace the synchro sleeve and hub as a set.

1. Support the bearing inner race with a socket and push down on the mainshaft.
2. Measure the clearance between 2nd and 3rd gears.
   Standard: 0.06 - 0.21 mm (0.002 - 0.008 in)
   Service Limit: 0.3 mm (0.01 in)



1. FEELER GAUGE
2. PRESS
3. MAINSHAFT
4. 2ND GEAR
5. 3RD GEAR

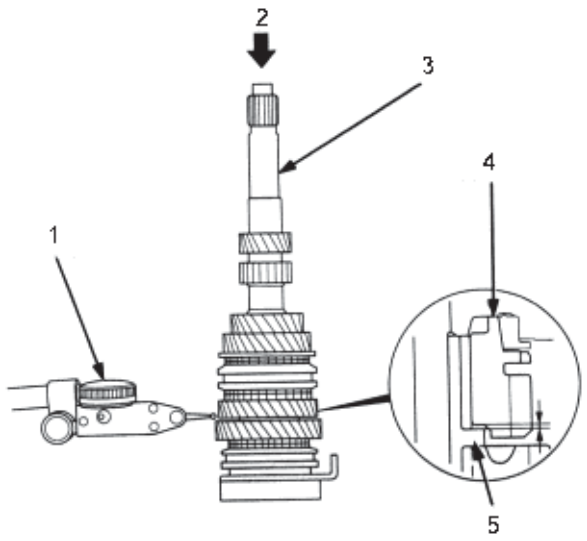
3. If the clearance is more than the service limit, measure the thickness of 3rd gear.
   Standard: 34.92 - 34.97 mm (1.375 - 1.377 in)
   Service Limit: 34.8 mm (1.370 in)



1. 3RD GEAR

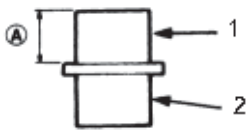
- If the thickness of 3rd gear is less than the service limit, replace 3rd gear with a new one.
- If the thickness of 3rd gear is within the service limit, replace the 3rd/4th synchro hub with a new one.

4. Measure the clearance between 4th gear and the spacer collar.
   Standard: 0.06 - 0.21 mm (0.002 - 0.008 in)
   Service Limit: 0.3 mm (0.01 in)



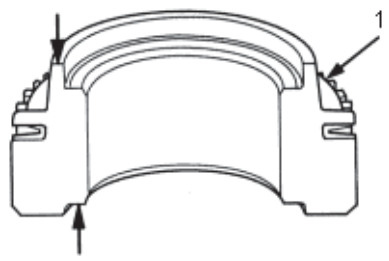
1. DIAL INDICATOR
2. PRESS
3. MAINSHAFT
4. 4TH GEAR
5. SPACER COLLAR

5. If the clearance is more than the service limit, measure distance (A) on the spacer collar.
   Standard: 26.03 - 26.08 mm (1.025 - 1.027 in)
   Service Limit: 26.01 mm (1.024 in)



1. 4TH GEAR SIDE
2. SPACER COLLAR

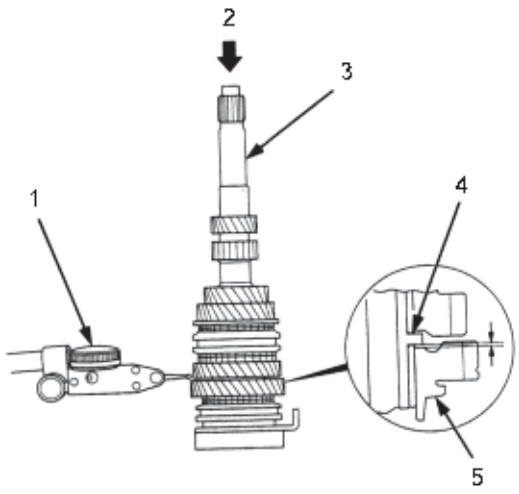
6. If distance (A) is less than the service limit, replace the spacer collar with a new one.
   If distance (A) is within the service limit, measure the thickness of 4th gear.
   Standard: 31.42 - 31.47 mm (1.237 - 1.239 in)
   Service Limit: 31.3 mm (1.232 in)



1. 4TH GEAR

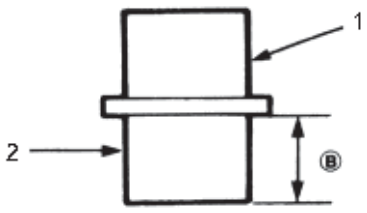
- If the thickness of 4th gear is less than the service limit, replace 4th gear with a new one.
- If the thickness of 4th gear is within the service limit, replace the 3rd/4th synchro hub with a new one.

7. Measure the clearance between the spacer collar and 5th gear.
   Standard: 0.06 - 0.21 mm (0.002 - 0.008 in)
   Service Limit: 0.3 mm (0.01 in)



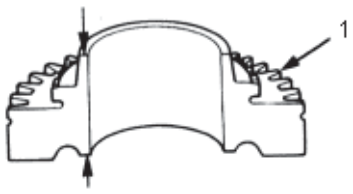
1. DIAL INDICATOR
2. PRESS
3. MAINSHAFT
4. SPACER COLLAR
5. 5TH GEAR

8. If the clearance is more than the service limit, measure distance (B) on the spacer collar.
   Standard: 26.03 - 26.08 mm (1.025 - 1.027 in)
   Service Limit: 26.01 mm (1.024 in)



1. SPACER COLLAR
2. 5TH GEAR SIDE

9. If distance (B) is less than the service limit, replace the spacer collar with a new one.
   If distance (B) is within the service limit, measure the thickness of 5th gear.
   Standard: 30.92 - 30.97 mm (1.217 - 1.219 in)
   Service Limit: 30.8 mm (1.21 in)



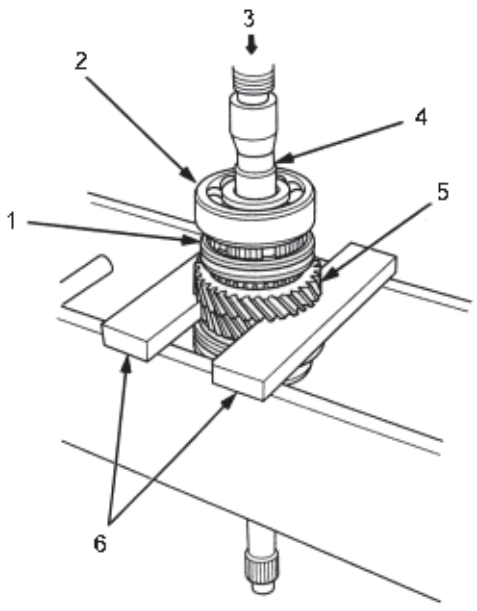
1. 5TH GEAR

- If the thickness of 5th gear is less than the service limit, replace 5th gear with a new one.
- If the thickness of 5th gear is within the service limit, replace the 5th synchro hub with a new one.

⚠ CAUTION

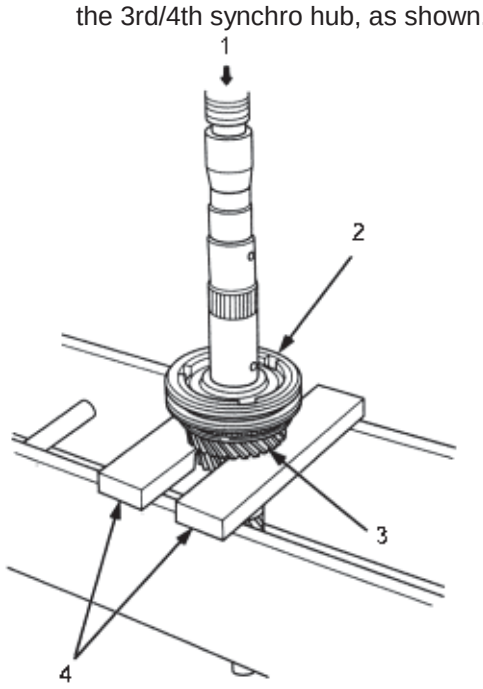
Remove the synchro hubs using a press and steel blocks as shown. Use of a jaw-type puller can cause damage to the gear teeth.

1. Support 5th gear on steel blocks and press the mainshaft out of the 5th gear synchro hub, as shown.



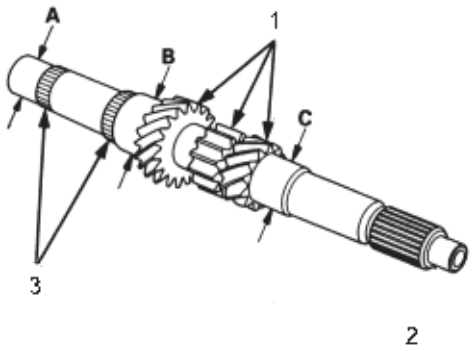
1. 5TH SYNCHRO HUB
2. BALL BEARING
3. PRESS
4. ATTACHMENT
5. 5TH GEAR
6. STEEL BLOCKS

2. In the same manner as above, support the 3rd gear on steel blocks and press the mainshaft out of the 3rd/4th synchro hub, as shown.



1. PRESS
2. 3RD/4TH SYNCHRO HUB
3. 3RD GEAR
4. STEEL BLOCKS

1. Inspect the gear surface and bearing surface for wear and damage, then measure the mainshaft at points A, B and C.
   Standard:
   A (Ball bearing surface): 27.987 - 28. 000 mm (1.1018 - 1.1024 in)
   B (Needle bearing surface): 37.984 - 38.000 mm (1.4954 - 1.4961 in)
   C (Ball bearing surface): 27.977 - 27. 990 mm (1.1015 - 1.1020 in)
   Service Limit: A: 27.94 mm (1.100 in)
   B: 37.93 mm (1.493 in)
   C: 27.94 mm (1.100 in)

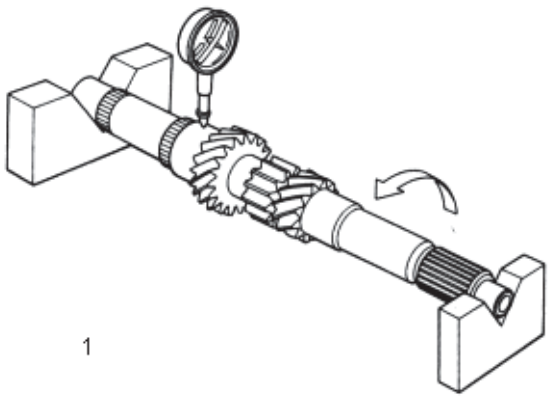


2

1. Inspect for wear and damage
2. Inspect oil passages for clogging
3. Inspect for wear and damage

- If any part of the mainshaft is less than the service limit, replace it with a new one.

2. Inspect for runout.
   Standard: 0.02 mm (0.0008 in) max.
   Service Limit: 0.05 mm (0.002 in)
   NOTE: Support the mainshaft at both ends as shown.

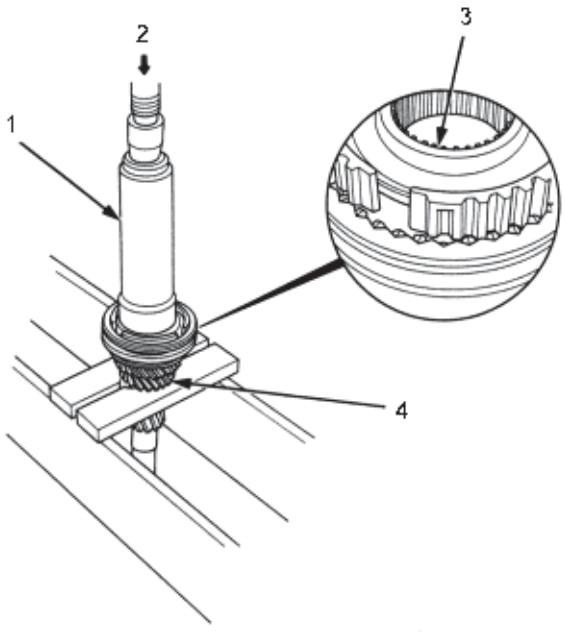


1. Rotate two complete revolutions

- If the runout is more than the service limit, replace the mainshaft with a new one.

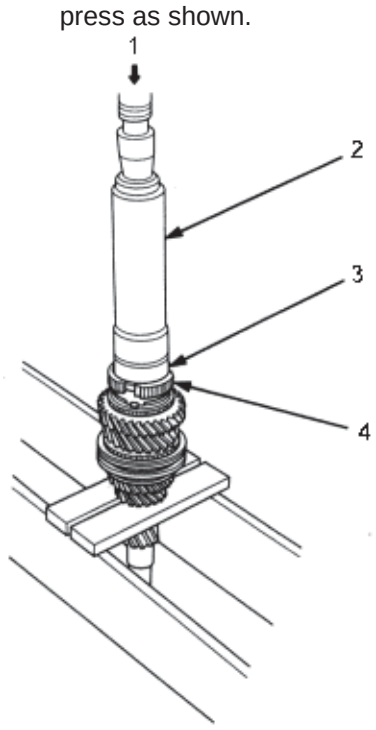
NOTE: For reassembly sequence (**See page** 13-27).

1. Support 2nd gear on steel blocks as shown, then install the 3rd/4th synchro hub using the special tools and a press as shown.
   NOTE: After installing, inspect the operation of the 3rd/4th synchro hub set.



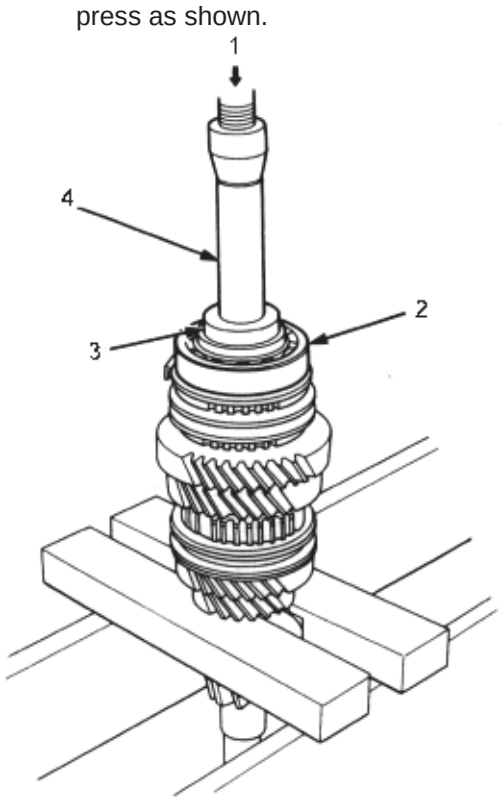
1. DRIVER, 40 mm I.D., 07746-0030100
2. PRESS
3. 3RD/4TH SYNCHRO HUB
4. 2ND GEAR

2. Install the 5th synchro hub using the special tools and a press as shown.



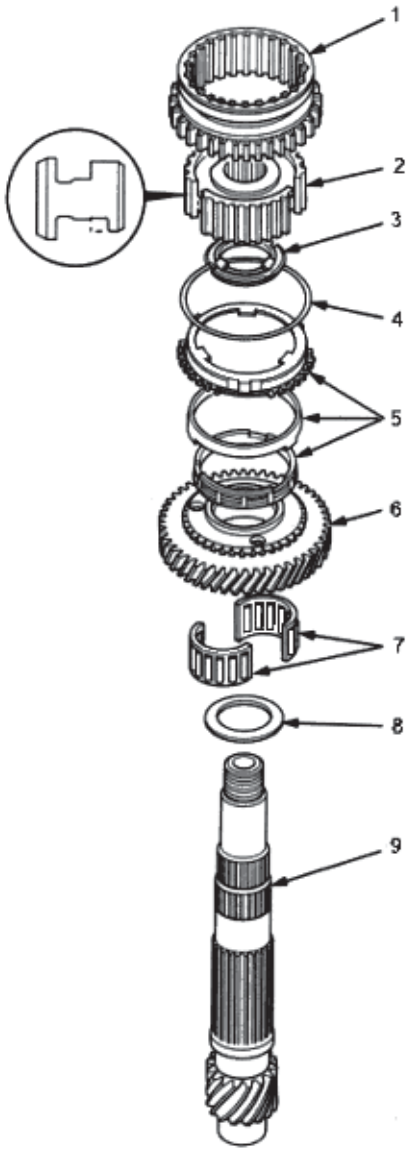
1. PRESS
2. DRIVER, 40 mm I.D., 07746-0030100
3. ATTACHMENT, 35 mm I.D., 07746-0030400
4. 5TH SYNCHRO HUB

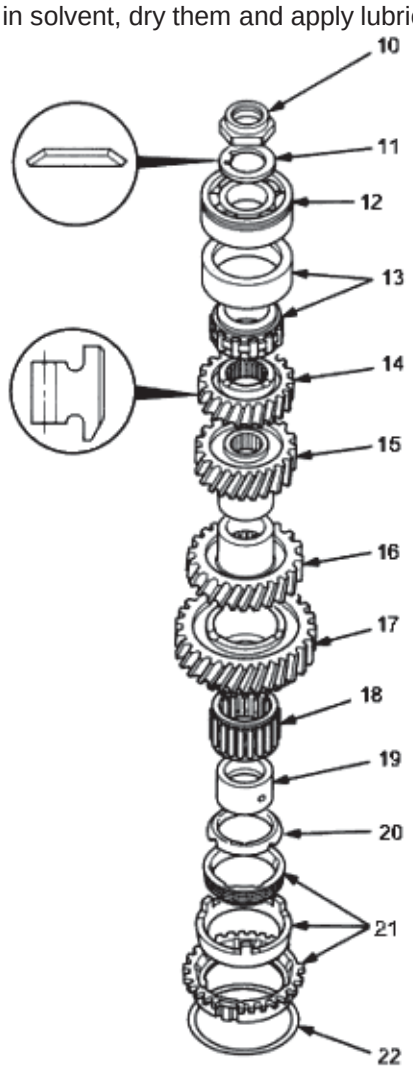
3. Install the ball bearing using the special tools and a press as shown.



1. PRESS
2. BALL BEARING
3. HANDLE DRIVER, 07749-0010000
4. DRIVER ATTACHMENT, 42 x 47 mm, 07746-0010300

OIL Prior to reassembling, clean all the parts in solvent, dry them and apply lubricant to any contact surfaces.

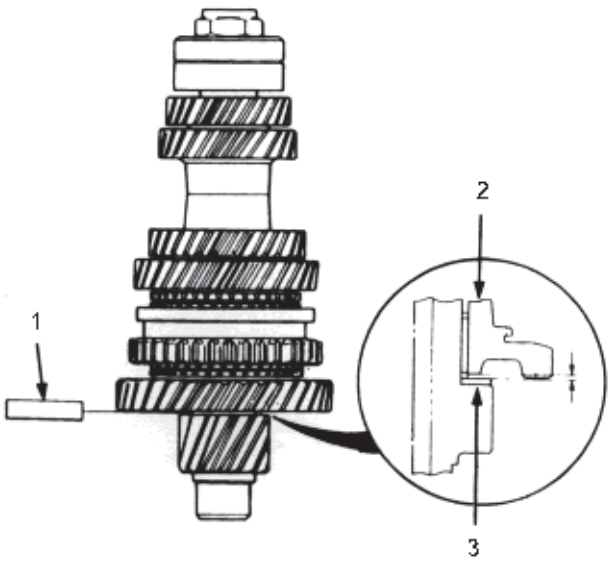




1. **REVERSE GEAR**
   Inspection, (**See page** 13-40)
2. **1ST/2ND SYNCHRO HUB**
   Inspection, (**See page** 13-40)
3. **FRICTION DAMPER**
   Check for wear and damage
4. **SYNCHRO SPRING**
5. **DOUBLE CONE SYNCHRO**
   Inspection, (**See page** 13-41)
6. **1ST GEAR**
   Inspection, (**See page** 13-33) and (**See page** 13-41)
7. **NEEDLE BEARING**
   Check for wear and damage
8. **THRUST WASHER**
   Inspection, (**See page** 13-33)
9. **COUNTERSHAFT**
   Inspection, (**See page** 13-36)
10. **LOCKNUT**, Replace
    127 to 0 to 127 Nm (13 to 0 to 13 kgf/m, 94 to 0 to 94 lbf/ft)
11. **SPRING WASHER**
12. **BALL BEARING**
    Check for wear and operation
13. **NEEDLE BEARING**
    Check for wear and operation
14. **5TH GEAR**
15. **4TH GEAR**
16. **3RD GEAR**
17. **2ND GEAR**
    Inspection, (**See page** 13-34) and (**See page** 13-41)
18. **NEEDLE BEARING**
    Check for wear and operation
19. **SPACER**
    Selection, (**See page** 13-34)
20. **FRICTION DAMPER**
    Check for wear and damage
21. **DOUBLE CONE SYNCHRO**
    Inspection, (**See page** 13-41)
22. **SYNCHRO SPRING**

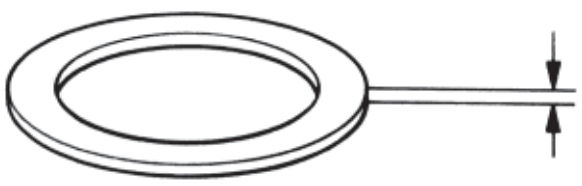
NOTE: If replacement is required, always replace the synchro sleeve and hub as a set.

1. Measure the clearance between the 1st gear and thrust washer.
   Standard: 0.06 - 0.18 mm (0.002 - 0.007 in)
   Service Limit: 0.23 mm (0.009 in)

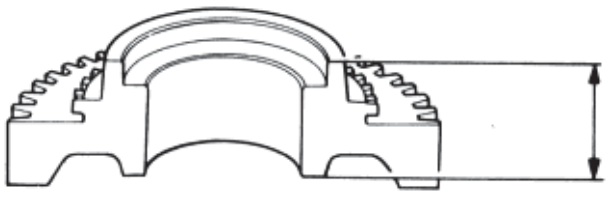


1. FEELER GAUGE
2. 1ST GEAR
3. THRUST WASHER

2. If the clearance is more than the service limit, measure the thickness of the thrust washer.
   Standard: 1.95 - 1.97 mm (0.077 - 0.078 in)

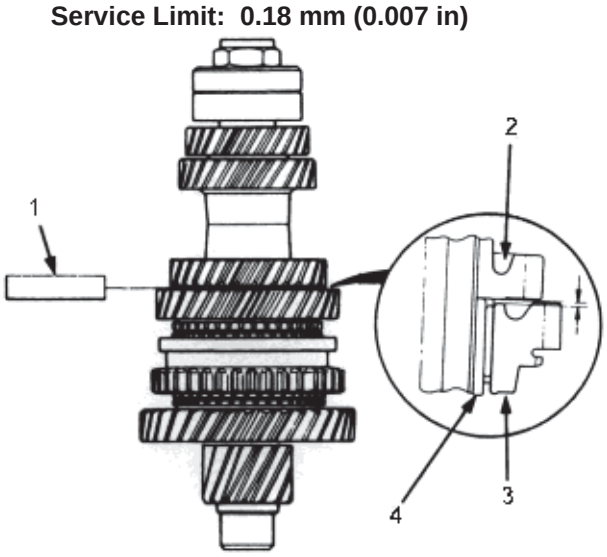


3. If the thickness is less than the standard, replace the thrust washer with a new one.
   If the thickness is within the service limit, measure the thickness of the 1st gear.
   Standard: 26.95 - 27.00 mm (1.061 - 1.063 in)



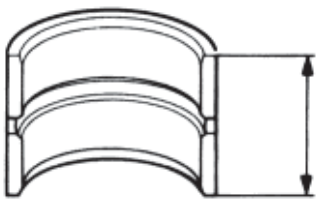
- If the thickness of 1st gear is less than the standard, replace 1st gear with a new one.
- If the thickness of 1st gear is within the standard, replace 1st/2nd synchro hub with a new one.

4. Measure the clearance between the 2nd gear and 3rd gear.
   Standard: 0.07 - 0.14 mm (0.003 - 0.006 in)
   Service Limit: 0.18 mm (0.007 in)

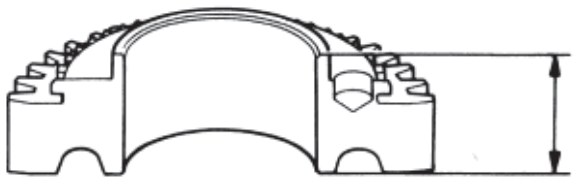


1. FEELER GAUGE
2. 3rd GEAR
3. 2ND GEAR
4. SPACER

5. If the clearance is more than the service limit, measure the thickness of the spacer.
   Standard: 29.07 - 29.09 mm (1.144 - 1.145 in)

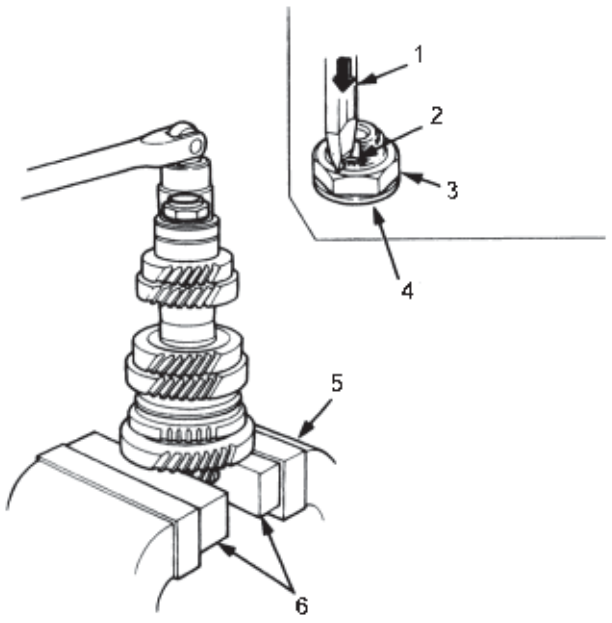


6. If the thickness is less than the standard, replace the spacer with a new one.
   If the thickness is within the standard, measure the thickness of the 2nd gear.
   Standard: 28.92 - 28.97 mm (1.139 - 1.141 in)



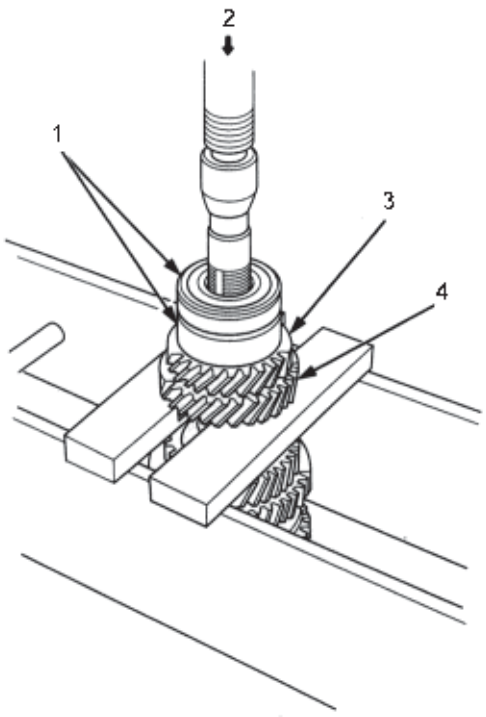
- If the thickness of 2nd gear is less than the standard, replace 2nd gear with a new one.
- If the thickness of 1st gear is within the standard, replace 1st/2nd synchro hub with a new one.

1. Securely clamp the countershaft assembly in a bench vice with wood blocks.
2. Raise the locknut tab from the groove in the countershaft, then remove the locknut and the spring washer.



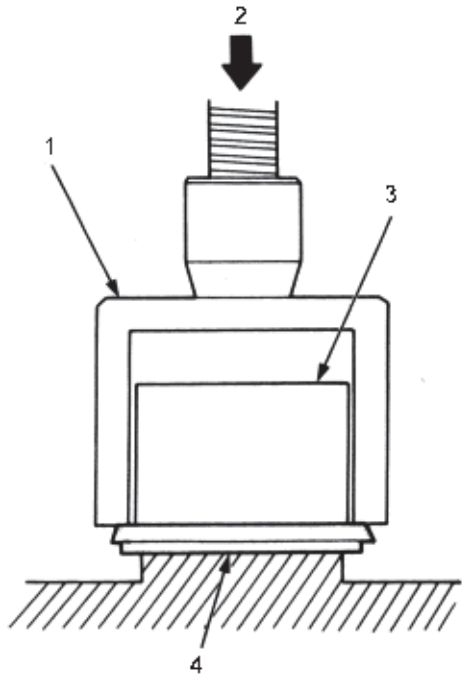
1. CHISEL
2. TAB
3. LOCKNUT, Replace
4. SPRING WASHER
5. BENCH VICE
6. WOOD BLOCKS

3. Remove the ball bearing using a press as shown.



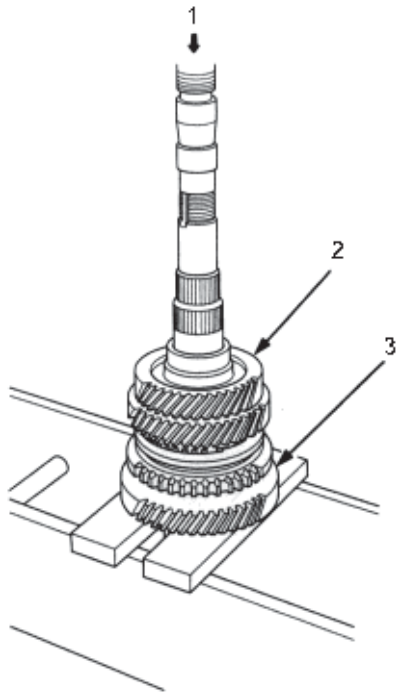
1. BEARINGS
2. PRESS
3. 5TH GEAR
4. 4TH GEAR

4. Remove the friction damper from the spacer using a press and a socket as shown.



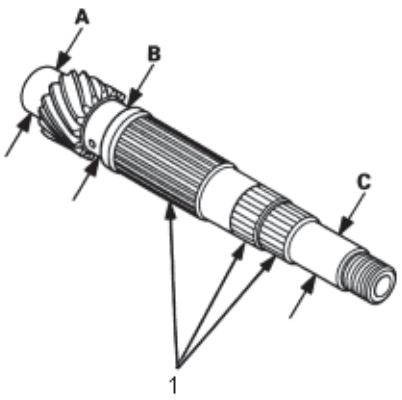
1. SOCKET
2. PRESS
3. SPACER
4. FRICTION DAMPER
   Inspect for wear and damage

5. Support 1st gear on steel blocks and press the countershaft out of 3rd gear as shown.



1. PRESS
2. 3RD GEAR
3. 1ST GEAR

1. Inspect the gear surface and bearing surface for wear and damage, then measure the countershaft at points A, B and C.
   Standard: **A: 36.000 - 36.015 mm (1.4173 - 1.4179 in)**
   B: 36.984 - 37.000 mm (1.4561 - 1.4567 in)
   C: 24.987 - 25.000 mm (0.9837 - 0.9843 in)
   Service Limit: **A: 35.95 mm (1.415 in)**
   B: 36.93 mm (1.454 in)
   C: 24.94 mm (0.982 in)

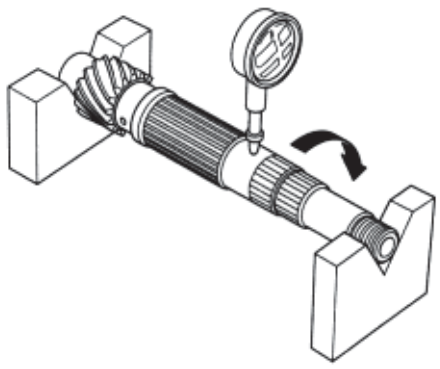


1. Inspect for wear and damage

   - If any part of the countershaft is less than the service limit, replace it with a new one.

2. Inspect for runout.
   Standard: **0.02 mm (0.0008 in) max.**
   Service Limit: **0.05 mm (0.002 in)**
   NOTE: Support the countershaft at both ends as shown.

1



1. Rotate two complete revolutions

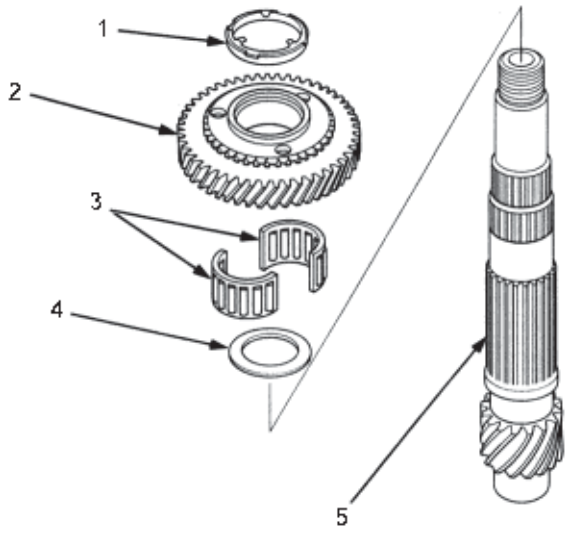
   - If the runout exceeds the service limit, replace the countershaft with a new one.

⚠ CAUTION

- Press the 3rd, 4th and 5th gear on the countershaft without lubrication.
- When installing the 3rd, 4th and 5th gears, support the shaft on steel blocks and install the gears using a press.
- Press the 3rd, 4th and 5th gear on the countershaft with press fit load 9,800 N (1,000 kgf, 2,205 lbf).
- Press fit load shall be 25,480 N (2,600 kgf, 5,732 lbf) to ensure complete press fit.

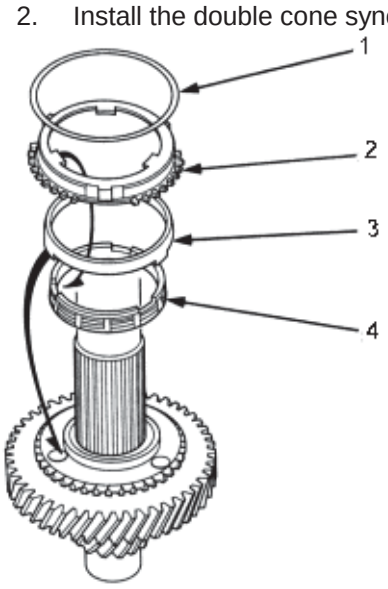
NOTE: For reassembly sequence (**See page** 13-32).

1. Install the thrust shim, needle bearing, 1st gear and friction damper.
   NOTE: Reassemble the friction damper on the 1st gear before installation.



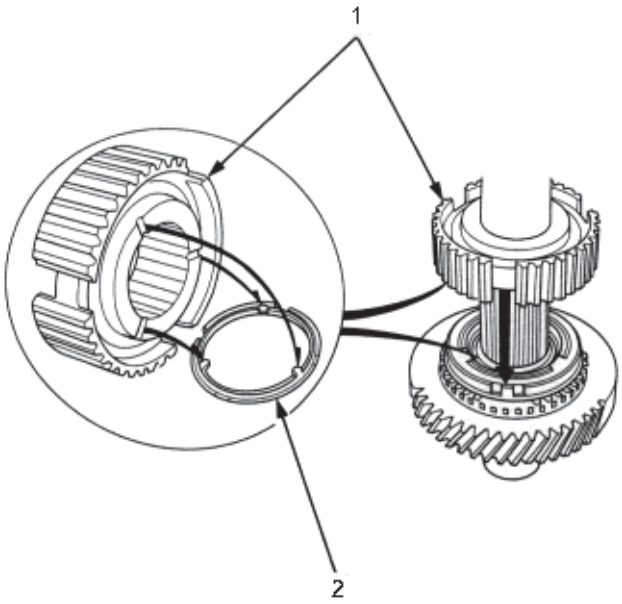
1. FRICTION DAMPER
2. 1ST GEAR
3. NEEDLE BEARING
4. THRUST SHIM
5. COUNTERSHAFT

2. Install the double cone synchro.



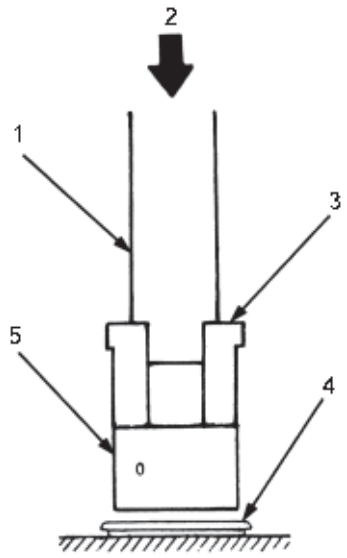
1. SYNCHRO SPRING
2. OUTER SYNCHRO RING
3. SYNCHRO CONE
4. INNER SYNCHRO RING

3. Install the 1st/2nd synchro hub by aligning the friction damper fingers with 1st/2nd synchro hub grooves.



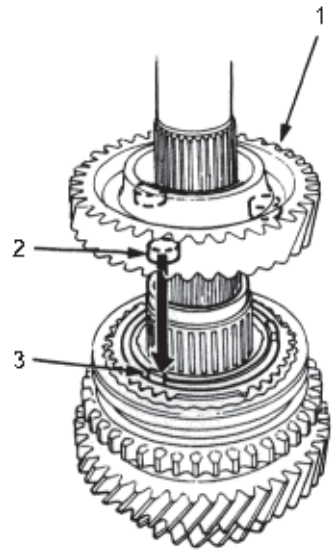
1. 1ST/2ND SYNCHRO HUB
2. FRICTION DAMPER

4. Reassemble the friction damper on the spacer using the special tools and a press as shown.



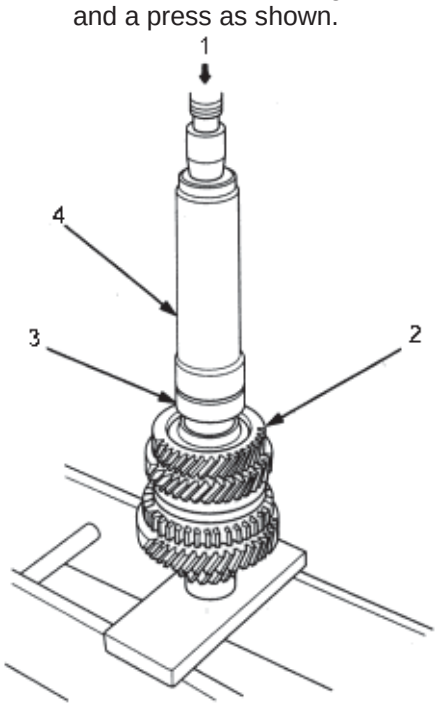
1. HANDLE DRIVER, 07749-0010000
2. PRESS
3. DRIVER ATTACHMENT, 42 x 47 mm, 07746-0010300
4. FRICTION DAMPER
   Inspect for wear and damage
5. SPACER

5. Install the 2nd gear by aligning the synchro cone fingers with the 2nd gear grooves.



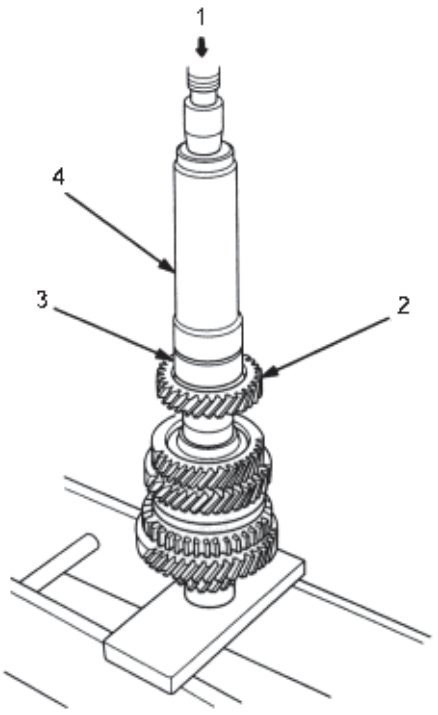
1. 2ND GEAR
2. GROOVE
3. FINGER

6. Support the countershaft on a steel block as shown and install 3rd gear using the special tools and a press as shown.



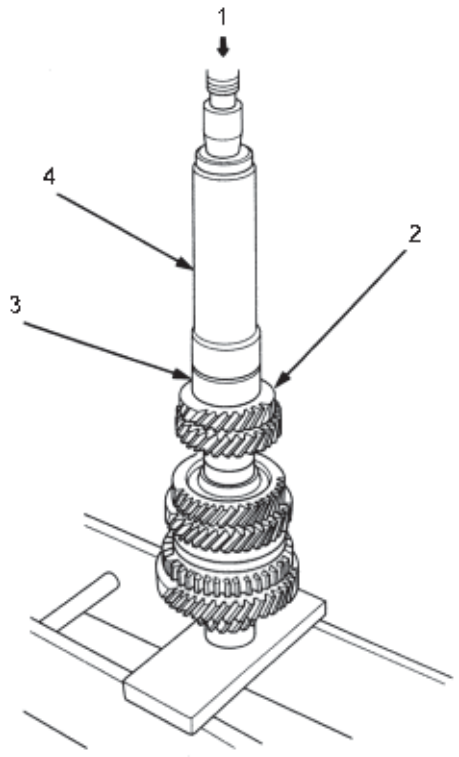
1. PRESS
2. 3RD GEAR
3. ATTACHMENT, 35 mm I.D., 07746-0030400
4. DRIVER, 40 mm I.D., 07746-0030100

7. Install 4th gear using the special tools and a press as shown.



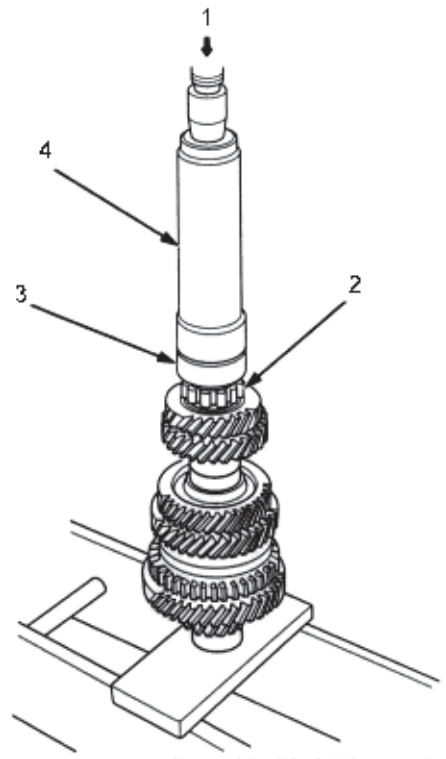
1. PRESS
2. 4TH GEAR
3. ATTACHMENT, 35 mm I.D., 07746-0030400
4. DRIVER, 40 mm I.D., 07746-0030100

8. Install 5th gear using the special tools and a press as shown.



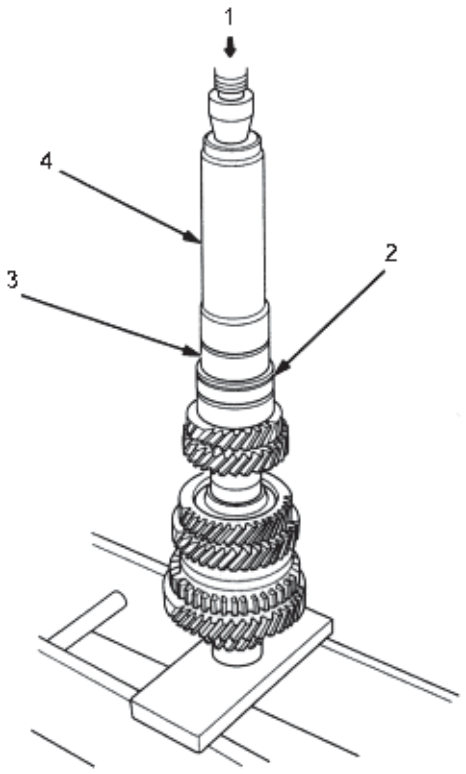
1. PRESS
2. 5TH GEAR
3. ATTACHMENT, 30 mm I.D. 07746-0030300
4. DRIVER, 40 mm I.D., 07746-030300

9. Install the needle bearing using the special tools and a press as shown and install the bearing outer race.



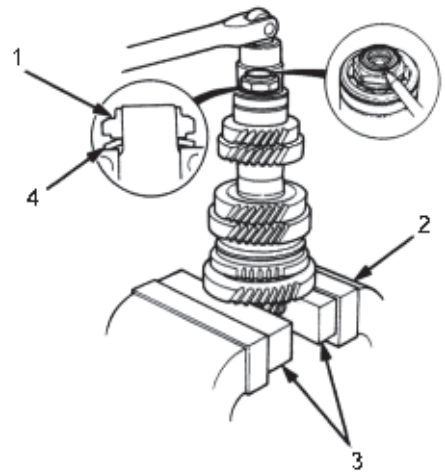
1. PRESS
2. NEEDLE BEARING
3. ATTACHMENT, 30 mm I.D., 07746-0030300
4. DRIVER, 40 mm I.D., 07746-0030010

10. Install the ball bearing using the special tools and a press as shown.



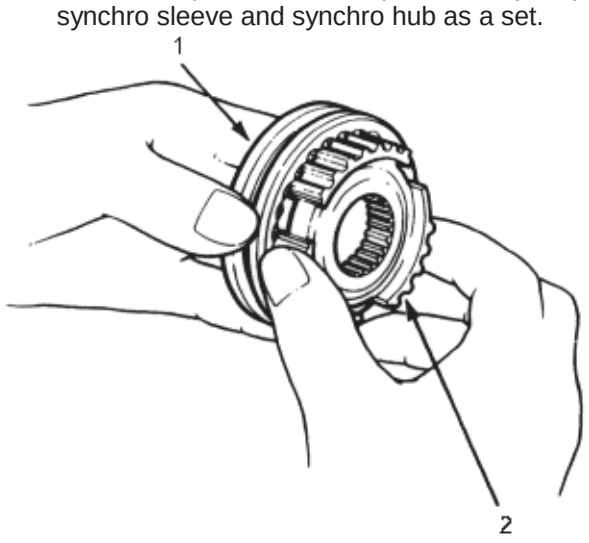
1. PRESS
2. BALL BEARING
3. ATTACHMENT, 30 mm I.D., 07746-0030300
4. DRIVER, 40 mm I.D., 07746-0030010

11. Securely clamp the countershaft assembly in a bench vice with wood blocks.
12. Install the spring washer.
13. Install the new locknut to the correct torque, then stake the locknut tab into the groove.
    Torque: 127 to 0 to 127 Nm (13 to 0 to 13 kgf/m, 94 to 0 to 94 lbf/ft)



1. LOCKNUT, Replace
2. BENCH VICE
3. WOOD BLOCKS
4. SPRING WASHER

1. Inspect gear teeth on all synchro hubs and synchro sleeves for rounded off corners, which indicate wear.
2. Install each synchro hub in its mating synchro sleeve and check for freedom of movement.
   NOTE: If replacement is required, always replace the synchro sleeve and synchro hub as a set.

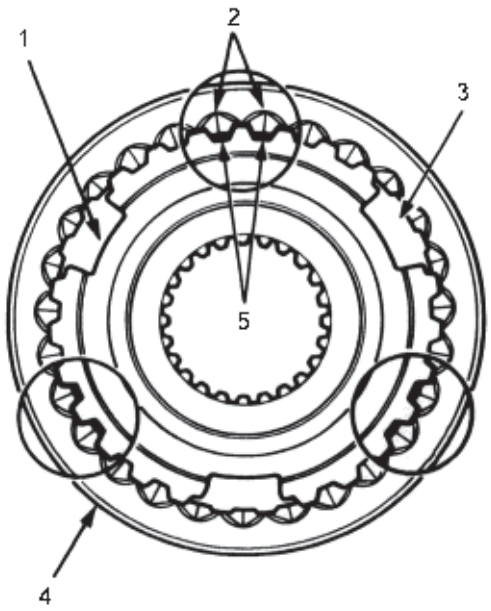


1. SYNCHRO SLEEVE
2. SYNCHRO HUB

When assembling the synchro sleeve and synchro hub, be sure to match the three sets of longer teeth (120 degrees apart) on the synchro sleeve with the three sets of deeper grooves in the synchro hub.

⚠ CAUTION

Do not install the synchro sleeve with its longer teeth in the 1st/2nd synchro hub slots because it will damage the spring ring.



1. SYNCHRO HUB
2. LONGER TEETH
3. SYNCHRO HUB SLOT
4. SYNCHRO SLEEVE

1. Inspect the synchro ring and gear.
   A. Inspect the inside of the synchro ring for wear.
   B. Inspect the synchro sleeve teeth and matching teeth on the synchro ring for wear (rounded off).



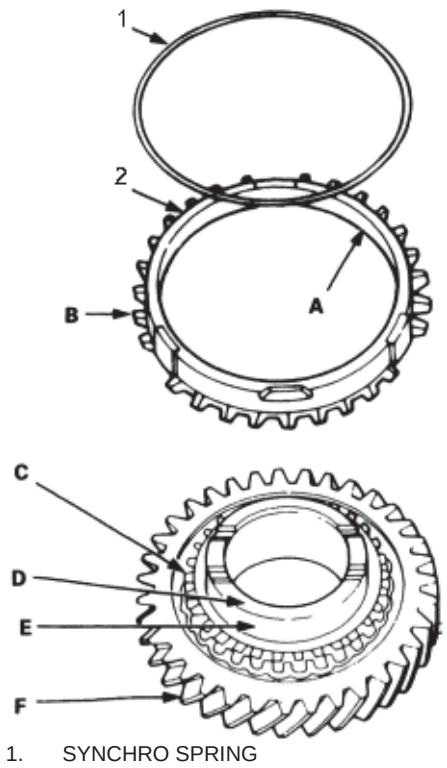
GOOD WORN

   C. Inspect the synchro sleeve teeth and matching teeth on the gear for wear (rounded off).

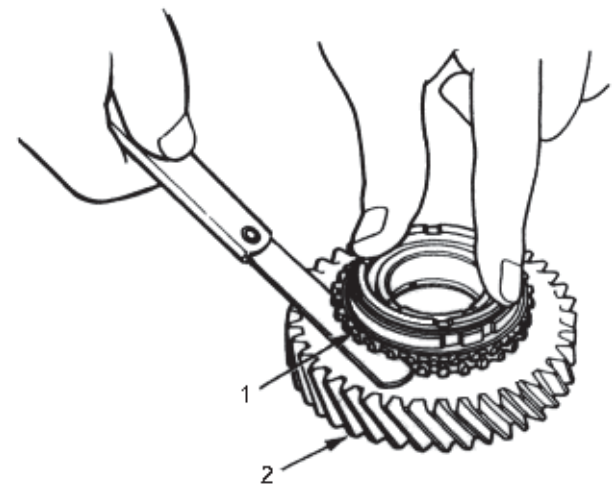


GOOD WORN

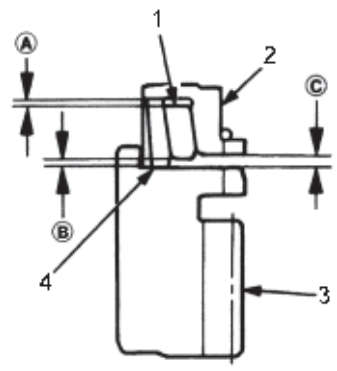
   D. Inspect the gear hub thrust surface for wear.
   E. Inspect the cone surface for wear and roughness.
   F. Inspect the teeth on al gears for uneven wear, scoring, galling and cracks.
2. Coat the cone surface of the gear with oil and place the synchro ring on the matching gear. Rotate the synchro ring, making sure that it does not slip.
   Measure the clearance between the synchro ring and gear all the way round.
   NOTE: Hold the synchro ring against the gear evenly while measuring the clearance.
   Synchro Ring-to-Gear Clearance
   Standard: 0.85 - 1.10 mm (0.033 - 0.043 in)
   Service Limit: 0.4 mm (0.02 in)
   Double Cone Synchro-to-Gear Clearance
   Standard:
   A: (Outer Synchro Ring to Synchro Cone)
   0.5 - 1.0 mm (0.02 - 0.04 in)
   B: (Synchro Cone to Gear)
   0.5 - 1.0 mm (0.02 - 0.04 in)
   C: (Outer Synchro Ring to Gear)
   0.95 - 1.68 mm (0.037 - 0.066 in)
   Service Limit:
   A: 0.3 mm (0.01 in)
   B: 0.3 mm (0.01 in)
   C: 0.6 mm (0.02 in)
   If the clearance is less than the service limit, replace the synchro ring and synchro cone.



1. SYNCHRO SPRING
2. SYNCHRO RING



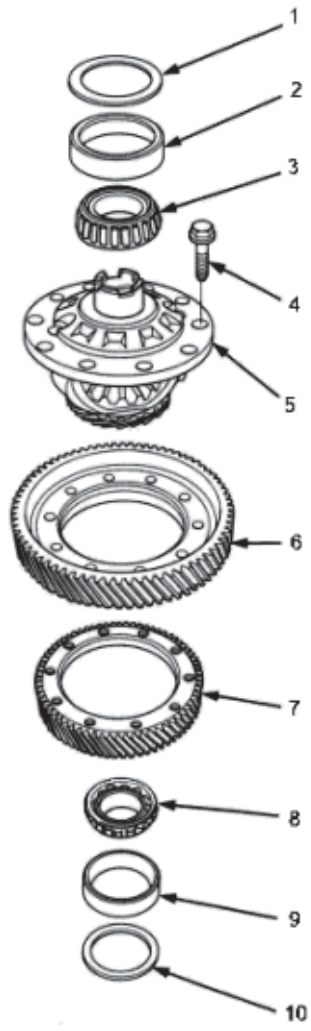
1. SYNCHRO RING
2. GEAR



1. SYNCHRO CONE
2. OUTER SYNCHRO RING
3. GEAR
4. INNER SYNCHRO RING

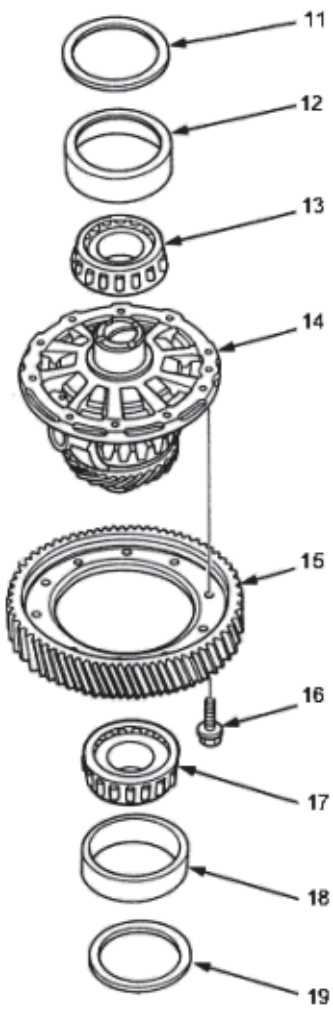
NOTE: If the * marked parts are replaced, the tapered roller bearing preload must be adjusted (**See page** 13-45).

SEPM Model Manual Transmission



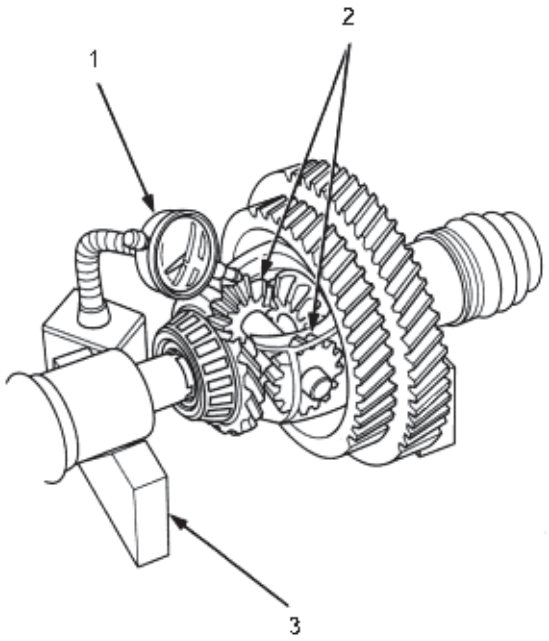
1. *** THRUST SHIM**
   Adjustment, (**See page** 13-45)
2. *** BEARING OUTER RACE**
   Replacement, (**See page** 13-44)
   Inspect for wear and damage
3. *** TAPERED ROLLER BEARING**
   Replacement, (**See page** 13-43)
   Inspect for wear and damage
4. **10 x 1.0 mm, 103 Nm (10.5 kgf/m, 75.9 lbf/ft)**
   Left hand threads
5. *** DIFFERENTIAL CARRIER**
   Backlash inspection, (**See page** 13-43)
   Inspect for cracks
6. **FINAL DRIVEN GEAR**
   Replacement, (**See page** 13-43)
   Inspect for wear and damage
7. **TRANSFER DRIVEN GEAR**
   replacement, (**See page** 13-43)
   Inspect for wear and damage
8. *** TAPERED ROLLER BEARING**
   Replacement, (**See page** 13-43)
   Inspect for wear and damage
9. *** BEARING OUTER RACE**
   Replacement, (**See page** 13-43)
   Inspect for wear and damage
10. *** 75 mm SHIM**

SEVM Model Manual Transmission



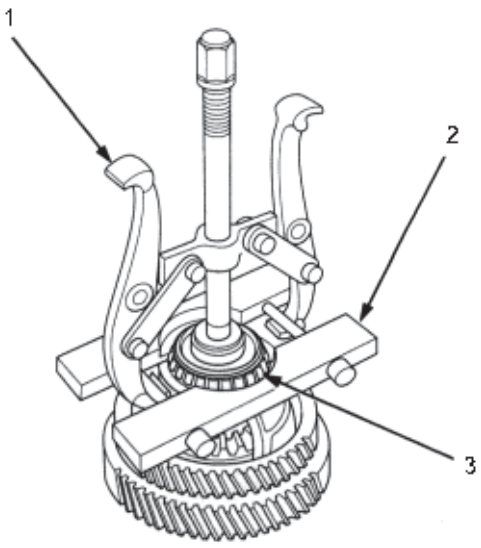
11. *** THRUST SHIM**
    Adjustment, (**See page** 13-45)
12. *** BEARING OUTER RACE**
    Replacement, (**See page** 13-44)
    Inspect for wear and damage
13. *** TAPERED ROLLER BEARING**
    Replacement, (**See page** 13-43)
    Inspect for wear and damage
14. *** DIFFERENTIAL CARRIER**
    Backlash inspection, (**See page** 13-43)
    Inspect for cracks
15. **FINAL DRIVEN GEAR**
    Replacement, (**See page** 13-43)
    Inspect for wear and damage
16. **10 x 1.0 mm, 103 Nm (10.5 kgf/m, 75.9 lbf/ft)**
    Left hand threads
17. *** TAPERED ROLLER BEARING**
    Replacement, (**See page** 13-43)
    Inspect for wear and damage
18. *** BEARING OUTER RACE**
    Replacement, (**See page** 13-43)
    Inspect for wear and damage
19. *** 75 mm SHIM**

1. Place the differential assembly on V-blocks and install both axles.
2. Measure the backlash of both pinion gears. If the backlash is not within the standard, replace the differential carrier.
   Standard (New): 0.05 - 0.15 mm (0.002 - 0.006 in)



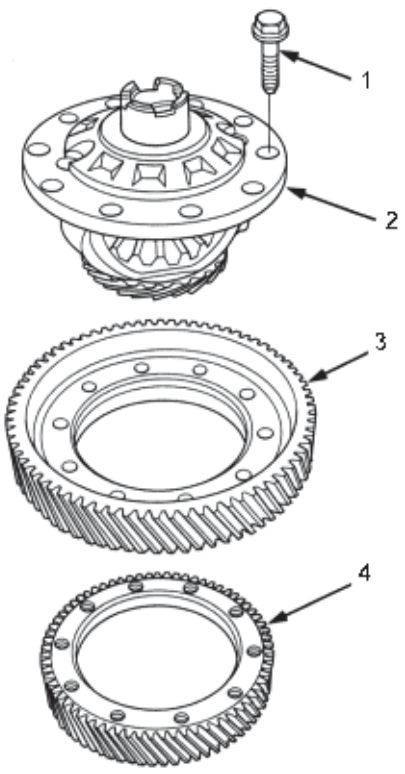
1. DIAL INDICATOR
2. PINION GEARS
3. V-BLOCK

3. Remove the tapered roller bearing using a bearing puller and a bearing separator as shown.
   NOTE: The tapered roller bearing and bearing outer race should be replaced as a set.



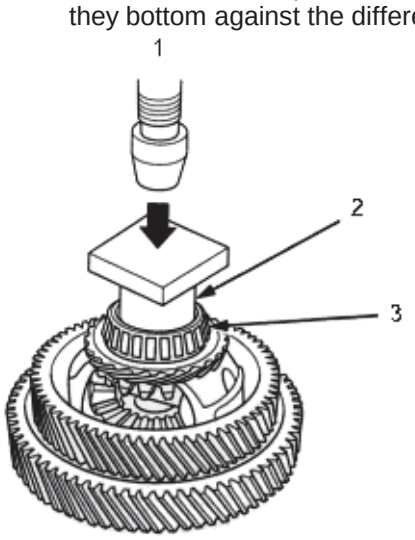
1. BEARING PULLER
2. BEARING SEPARATOR
   (Commercially available)
3. TAPERED ROLLER BEARING

4. Remove the bolts in a crisscross pattern in several steps, remove the final driven gear and transfer driven gear from the differential carrier.
   NOTE: The final driven gear bolts have left-hand threads.



1. 10 x 1.0 mm, 103 Nm (10.5 kgf/m, 75.9 lbf/ft)
   Left hand threads
2. DIFFERENTIAL CARRIER
3. FINAL DRIVEN GEAR
   Inspect for wear and damage
4. TRANSFER DRIVEN GEAR
   Inspect for wear and damage

5. Install the final driven gear and transfer driven gear to the differential carrier, tighten the bolts in a crisscross pattern in several steps.
6. Install new tapered roller bearings using the special tool as shown.
   NOTE: Drive the tapered roller bearings on until they bottom against the differential carrier.



1. PRESS
2. ATTACHMENT, 40 x 50 mm, 07LAD-PW50601
3. TAPERED ROLLER BEARING

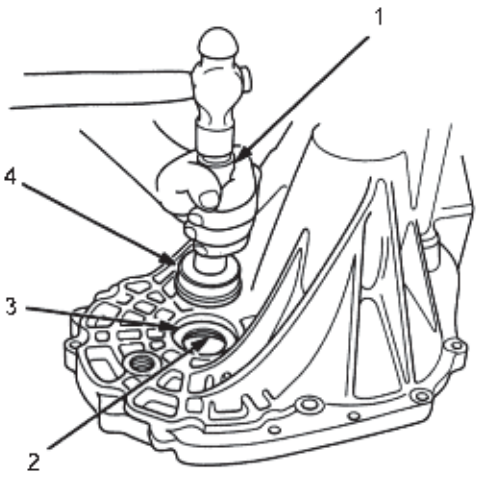
NOTE:
- The bearing outer race and tapered roller bearing should be replaced as a set.
- Inspect and adjust the tapered roller bearing preload whenever the tapered roller bearing is replaced.

1. Remove the oil seals from the transmission housing and clutch housing (**See page** 13-47).
2. Drive the bearing outer race and thrust shim out of the transmission housing, or remove the bearing outer race and 75 mm shim from the clutch housing by heating the clutch housing to about 212°F (100°C) with a heat gun.

⚠ CAUTION

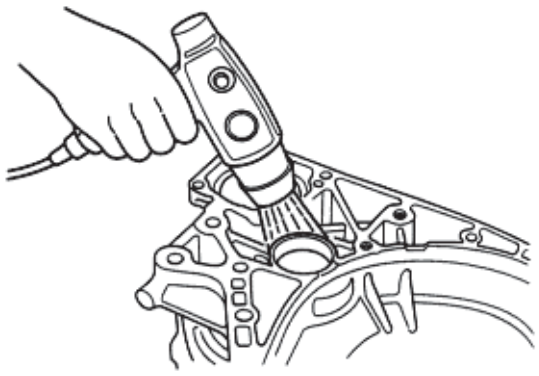
Do not reuse the thrust shim if the outer race was driven out.

TRANSMISSION HOUSING:



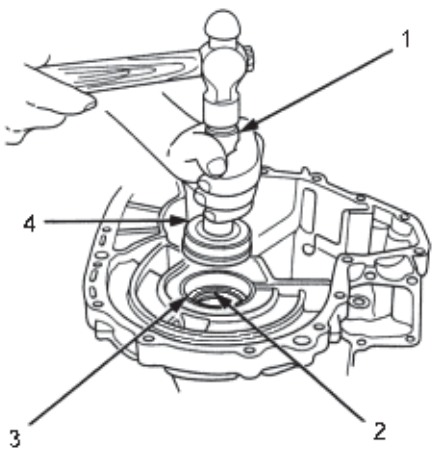
1. HANDLE DRIVER, 07749-0010000
2. BEARING OUTER RACE
3. THRUST SHIM
4. DRIVER ATTACHMENT, 52 x 55 mm, 07746-0010400

CLUTCH HOUSING:



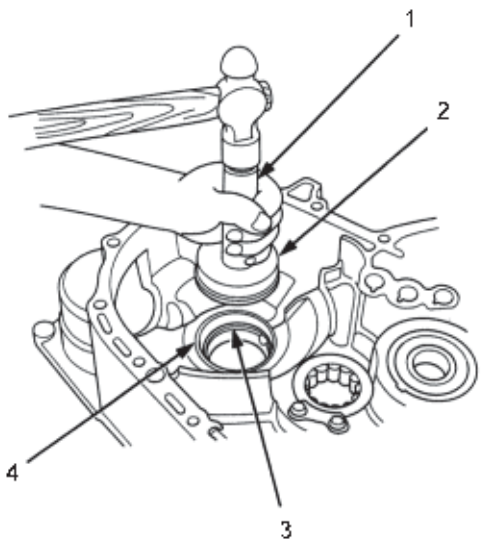
3. Install the thrust shim or 75 mm shim and the bearing outer race in the transmission housing and clutch housing using the special tools as shown.
   NOTE:
   - Install the bearing outer race squarely.
   - Check that there is no clearance between the bearing outer race, thrust shim or 75 mm shim and housing.

TRANSMISSION HOUSING:



1. HANDLE DRIVER, 07749-0010000
2. THRUST SHIM
3. BEARING OUTER RACE
4. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500

CLUTCH HOUSING:



1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 72 x 75 mm, 07746-0010600
3. 75 mm SHIM
4. BEARING OUTER RACE

4. Install the oil seal (**See page** 13-47).

NOTE: If any of the items listed below are replaced, the tapered roller bearing preload must be adjusted.

- Transmission housing
- Clutch housing
- Differential carrier
- Tapered roller bearing and bearing outer race
- Thrust shim
- 75 mm shim

1. Remove the bearing outer race and thrust shim from the transmission housing (**See page** 13-44).
   NOTE: Install the thrust shim only on the transmission housing side.

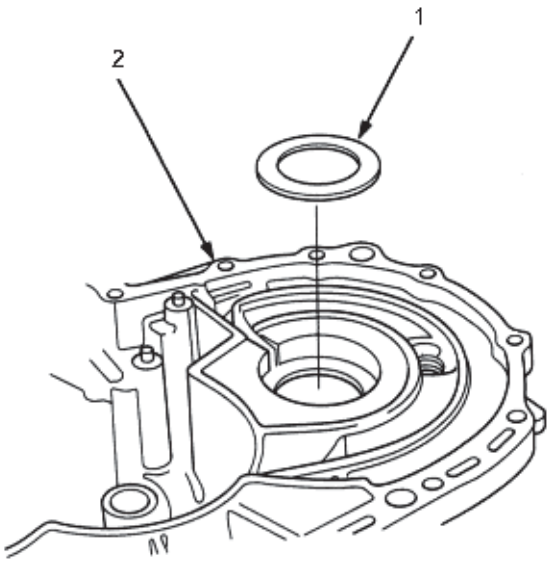
⚠ CAUTION

Do not reuse the thrust shim if the outer race was driven out.

   NOTE: Before adjusting the tapered roller bearing preload, let the transmission cool to room temperature if the bearing outer race was removed by heating the clutch housing.
2. First try the same size thrust shim that was removed.

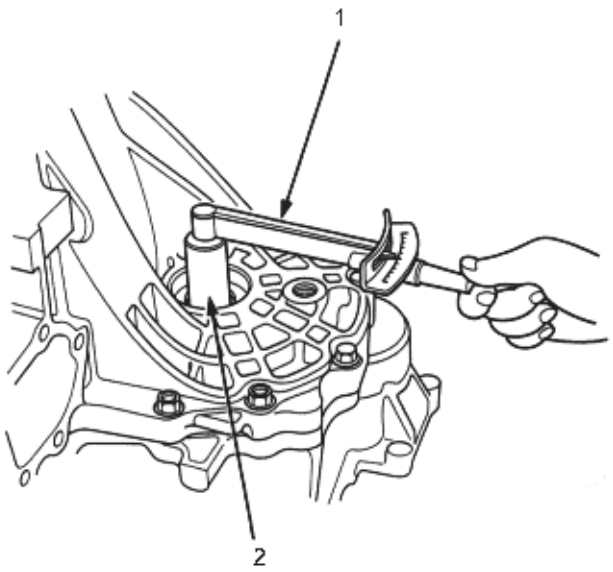
⚠ CAUTION

Use only one thrust shim.



1. THRUST SHIM
2. TRANSMISSION HOUSING

3. After installing the thrust shim, install the bearing outer race in the transmission housing (**See page** 13-40).
   NOTE:
   - Install the bearing outer race squarely.
   - Check that there is no clearance between the bearing outer race, thrust shim and transmission housing.
4. With the mainshaft and countershaft removed, install the differential assembly, and torque the clutch housing and transmission housing.
   NOTE: It is not necessary to use sealing agent between the housings.
   TORQUE: 8x 1.25 mm, 27 Nm (2.8 kgf/m, 20 lbf/ft)
5. Rotate the differential assembly in both directions to seat the tapered roller bearings.
6. Measure the starting torque of the differential assembly with the special tool and a torque wrench.
   STANDARD: 1.4 - 2.5 Nm (14 - 26 kgf/m, 12 - 23 lbf/ft)
   NOTE:
   - Measure the tapered roller bearing preload at normal room temperature.
   - Measure the tapered roller bearing preload in both directions.



1. TORQUE WRENCH
2. PRELOAD INSPECTION TOOL, 07HAJ-PK40201

7. If the tapered roller bearing preload is not within the standard, select the thrust shim which will give the correct tapered roller bearing preload from the following table.
   NOTE: Changing the thrust shim to the next size will increase or decrease tapered roller bearing preload by approx 0.3 - 0.4 Nm (3 -4 kgf/m, 2.6 - 3.5 lbf/in).

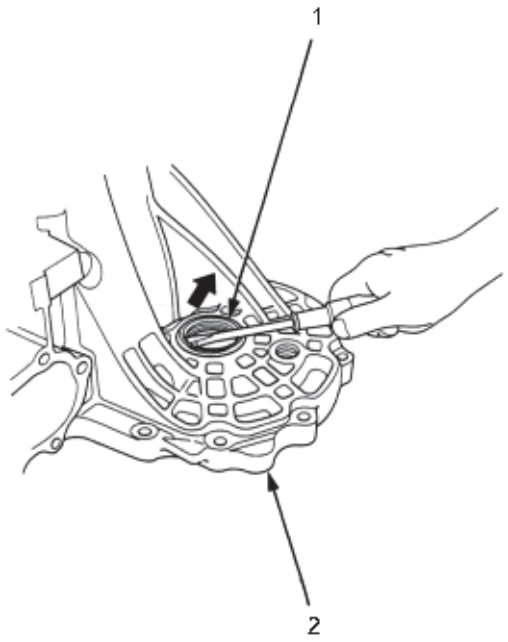
THRUST SHIM

	Part Number	Thickness
A	41381-PX5-B00	1.90 mm (0.0748 in)
B	41382-PX5-B00	1.93 mm (0.0760 in)
C	41383-PX5-B00	1.96 mm (0.0772 in)
D	41384-PX5-B00	1.99 mm (0.0783 in)
E	41385-PX5-B00	2.02 mm (0.0795 in)
F	41386-PX5-B00	2.05 mm (0.0807 in)
G	41387-PX5-B00	2.08 mm (0.0819 in)
H	41388-PX5-B00	2.11 mm (0.0831 in)
I	41389-PX5-B00	2.14 mm (0.0843 in)
J	41390-PX5-B00	2.17 mm (0.0854 in)
K	41391-PX5-B00	2.20 mm (0.0866 in)
L	41392-PX5-B00	2.23 mm (0.0878 in)
M	41393-PX5-B00	2.26 mm (0.0890in)
N	41394-PX5-B00	2.29 mm (0.0902 in)
O	41395-PX5-B00	2.32 mm (0.0913 in)
P	41396-PX5-B00	2.35 mm (0.0925in)
Q	41397-PX5-B00	2.38 mm (0.0937 in)
R	41398-PX5-B00	2.41mm (0.0949 in)
S	41399-PX5-B00	2.44mm (0.0961 in)
T	41400-PX5-B00	2.47mm 10.0972 in)
AA	41873-PX5-B00	1.66 mm (0.0654 in)
AB	41874-PX5-B00	1.69 mm (0.0665 in)
AC	41875-PX5-B00	1.72 mm (0.0677 in)
AD	41876-PX5-B00	1.75 mm (0.0689 in)
AE	41877-PX5-B00	1.78 mm (0.0701 in)
AF	41878-PX5-B00	1.81 mm (0.0713 in)
AG	41879-PX5-B00	1.84 mm (0.0724 in)
AH	41880-PX5-B00	1.87 mm (0.0736 in)

8. Recheck the tapered roller bearing preload.
9. How to select the correct thrust shim:
   -1) Compare the tapered roller bearing preload you get with the thrust shim that was removed, with the specified preload of 1.4 - 2.5 Nm (14 - 26 kgf/cm, 12 - 23 lbf/in).
   -2) If your measured tapered roller bearing preload is less than specified, subtract yours from the specified.
   If yours is more than the specified, subtract the specified from your measurement.
   For example with a 2.17 mm (0.0854 in) thrust shim:
   (A) specified 2.5 Nm (26 kgf/cm, 23 lbf/in)
   - you measure 0.6 Nm (6 kgf/cm, 5 lbf/in)
   1.9 Nm (20 kgf/cm, 18 lbf/in)
   less
   (B)
   you measure 3.3 Nm (34 kgf/cm, 30 lbf/in)
   - specified 2.5 Nm (26 kgf/cm, 23 lbf/in)
   0.8 Nm (8 kgf/cm, 7 lbf/in)
   -3) Each shim size up or down from standard makes about 0.3 - 0.4 Nm (3 -4 kgf/cm, 2.6 - 3.5 lbf/in) difference in tapered roller bearing preload.
   In an example (A), your measured tapered roller bearing preload was 1.9 Nm (20 kgf/cm, 18 lbf/in) less than standard so you need a thrust shim five sizes thicker than standard (try the 2.32 mm (0.0913 in) thrust shim and recheck).
   In example (B), your measurement was 0.8 Nm (8 kgf/cm, 7lbf/in) more than standard, so you need a thrust shim two sizes thinner (try the 2.1 mm (0.0831 in) thrust shim and recheck).

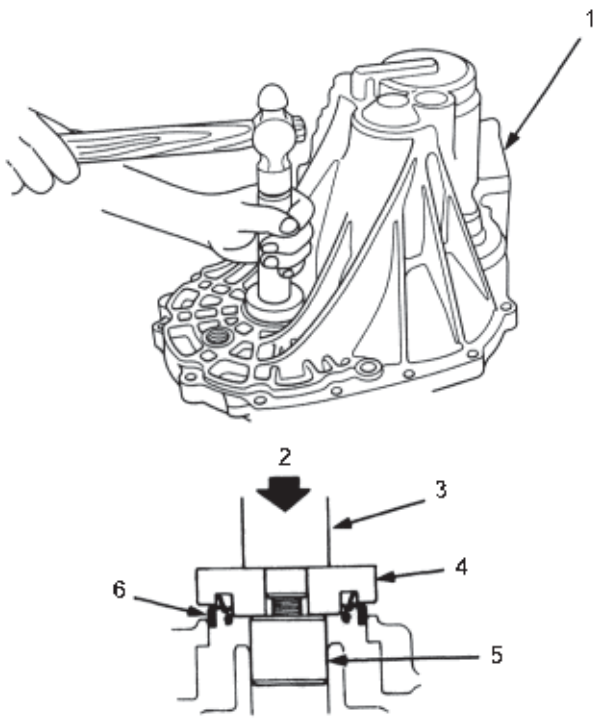
Transmission Housing:

1. Remove the oil seal from the transmission housing.



1. OIL SEAL
2. TRANSMISSION HOUSING

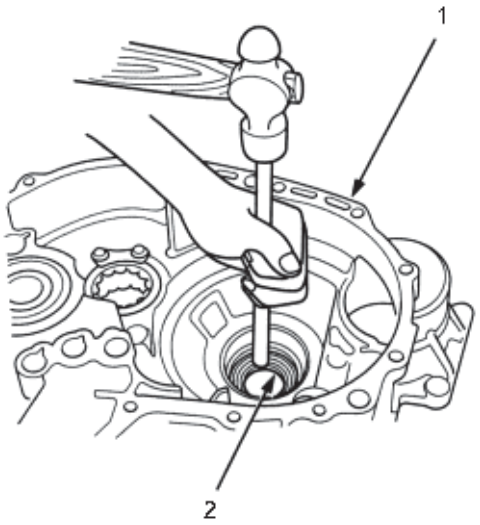
2. Install the new oil seal into the transmission housing using the special tools as shown.
   NOTE: Oil seal to be press fitted up to ±0.5 mm ±0.02 in) from transmission housing end surface.



1. TRANSMISSION HOUSING
2. PRESS
3. HANDLE DRIVER, 07749-0010000
4. DRIVER ATTACHMENT, 07GAD-PG40100
5. PILOT, 28 x 30 mm, 07JAD-PH80400
6. OIL SEAL, Replace

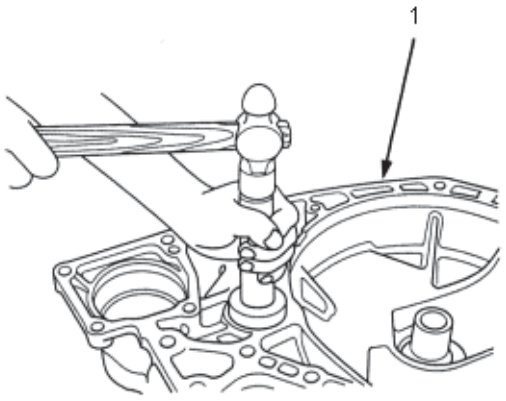
Clutch Housing:

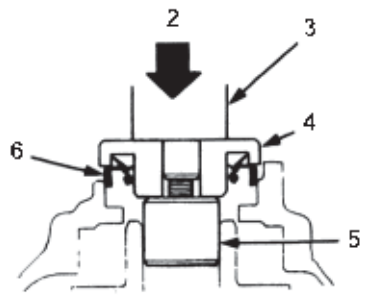
1. Remove the oil seal from the clutch housing.



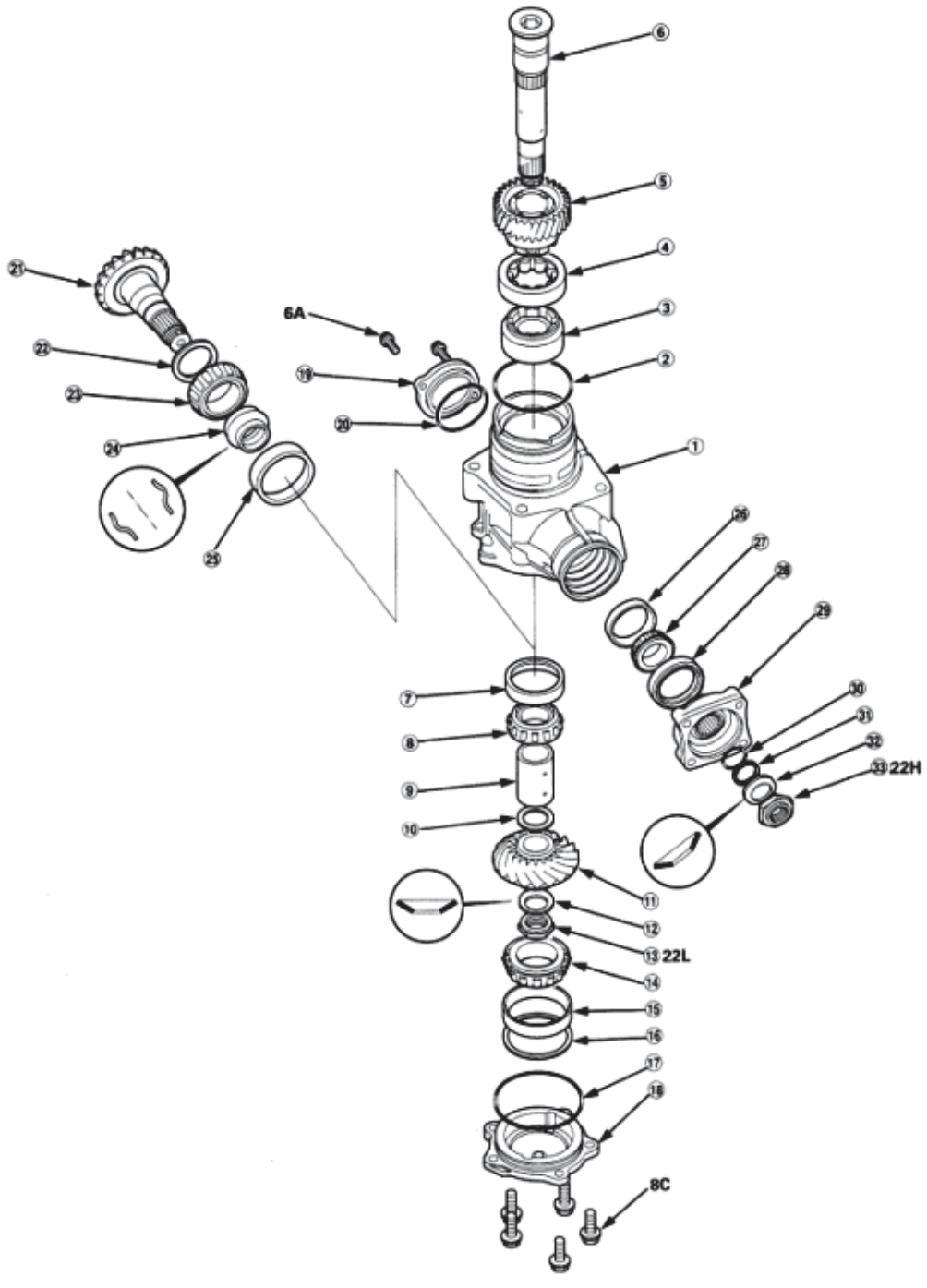
1. CLUTCH HOUSING
2. OIL SEAL, Replace

2. Install the new oil seal into the clutch housing using the special tools as shown.
   NOTE: Oil seal to be press fitted up to ±0.5 mm (±0.02 in) from transmission housing end surface.





1. CLUTCH HOUSING
2. PRESS
3. HANDLE DRIVER, 07749-0010000
4. DRIVER ATTACHMENT, 07JAD-PH80101
5. PILOT, 28 x 30 mm, 07JAD-PH80400
6. OIL SEAL, Replace


6
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6A
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22H
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22L
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17
18
8C

1. TRANSFER HOUSING
2. O-RING, Replace
3. DAMPER HUB
4. NEEDLE BEARING
5. TRANSFER DRIVEN GEAR
6. TRANSFER SHAFT
7. TAPERED ROLLER BEARING OUTER RACE
8. TAPERED ROLLER BEARING
9. TRANSFER SHAFT COLLAR
10. THRUST SHIM, 25 mm, Selective part
11. TRANSFER DRIVE GEAR (HYPOID GEAR)
12. CONICAL SPRING WASHER, Replace
13. TRANSFER SHAFT LOCKNUT, 22 x 1.25 mm, Left hand threads, replace
14. TAPERED ROLLER BEARING
15. TAPERED ROLLER BEARING OUTER RACE
16. THRUST SHIM, 68 mm, Selective part
17. O-RING, Replace
18. TRANSFER COVER A
19. TRANSFER COVER B
20. O-RING, Replace
21. TRANSFER DRIVEN GEAR SHAFT (HYPOID GEAR)
22. THRUST SHIM, 35 mm, Selective part
23. TAPERED ROLLER BEARING
24. TRANSFER SPACER, Replace
25. TAPERED ROLLER BEARING OUTER RACE
26. TAPERED ROLLER BEARING OUTER RACE
27. TAPERED ROLLER BEARING
28. OIL SEAL, Replace
29. COMPANION FLANGE
30. O-RING, Replace
31. BACK-UP RING
32. CONICAL SPRING WASHER, Replace
33. TRANSFER DRIVEN GEAR SHAFT LOCKNUT, 22 x 1.25 mm, Replace

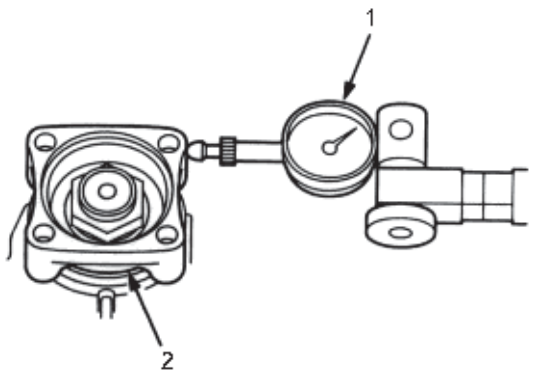
TORQUE SPECIFICATIONS

Bolt/Nut No	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
8C	24 Nm (2.4 kgf/m, 17 lbf/ft)	8 x 1.25 mm	
22L	118 Nm (12.0 kgf/m, 86.8 lbf/ft)	22 x 1.25 mm	Transfer shaft locknut: Left hand threads
22H	132 - 260 Nm (13.5 - 26.5 kgf/m, 97.6 - 192 lbf/ft)	22 x 1.25 mm	Transfer driven gear shaft locknut Tightening torque: depending on Total Starting Torque value

NOTE: To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.

Transfer Gear (Hypoid gear) Backlash Measurement

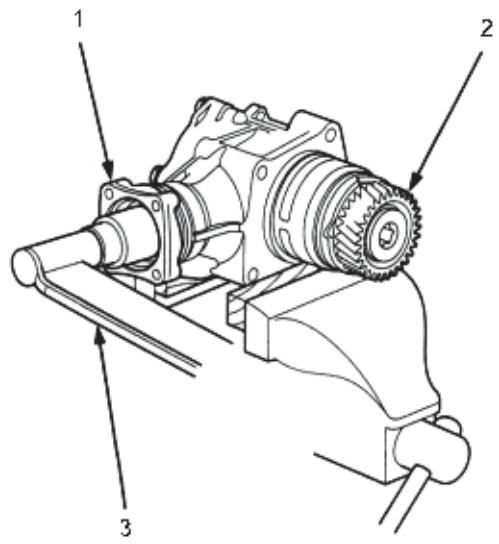
1. Set a dial indicator on the companion flange as shown.
2. Measure the transfer gear backlash.
   STANDARD: 0.06 - 0.16 mm (0.002 - 0.006 in)



1. DIAL INDICATOR
2. COMPANION FLANGE

Total Starting Torque Measurement

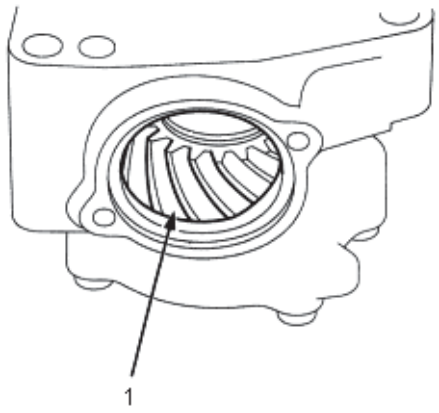
3. Rotate the companion flange several times to seat the tapered roller bearing.
4. Measure the starting torque (companion flange side) using a torque wrench as shown.
   STANDARD: 2.68 - 3.47 Nm
   (27.3 - 35.4 kgf/cm, 23.7 - 30.7 lbf/in)



1. COMPANION FLANGE
2. TRANSFER SHAFT
3. TORQUE WRENCH

Transfer Gear (Hypoid gear) Tooth Contact Inspection

5. Remove transfer cover B, then apply Prussian Blue to both sides of the transfer gear teeth lightly and evenly.



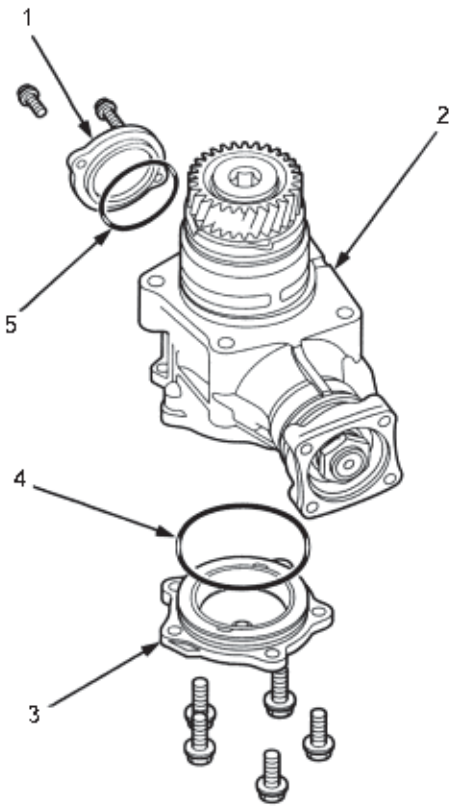
1. TRANSFER DRIVE GEAR

6. Rotate the companion flange in both directions until the transfer gear rotates one full turn in both directions.
7. Check the transfer gear tooth contact pattern.



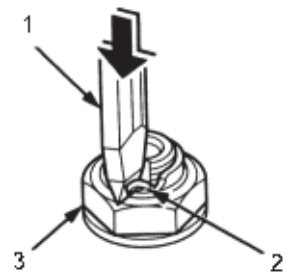
8. If the measurements or the tooth contact pattern are not within the standard, disassemble the transfer assembly, replace worn or damaged parts and reassemble it.

1. Remove the transfer covers A and B.



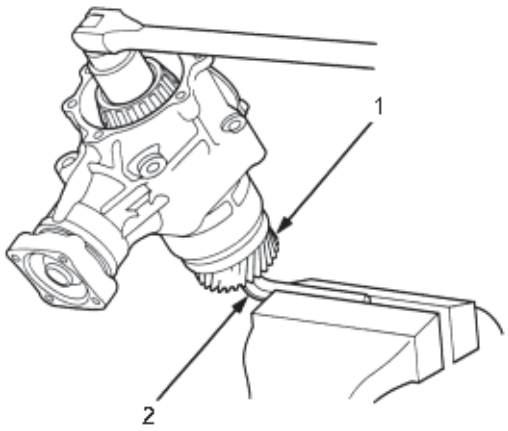
1. TRANSFER COVER B
2. TRANSFER HOUSING
3. TRANSFER COVER A
4. O-RING , Replace
5. O-RING, replace

2. Cut the lock tabs of the locknut using a chisel.



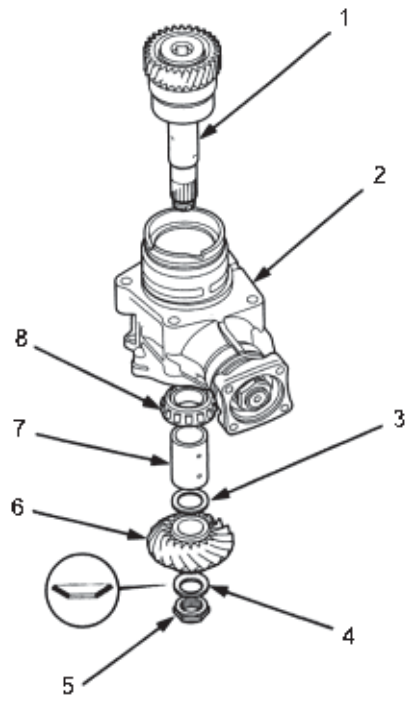
1. CHISEL
2. LOCK TAB
3. LOCKNUT

3. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice.
4. Loosen the transfer shaft locknut. The transfer shaft locknut has left hand threads.



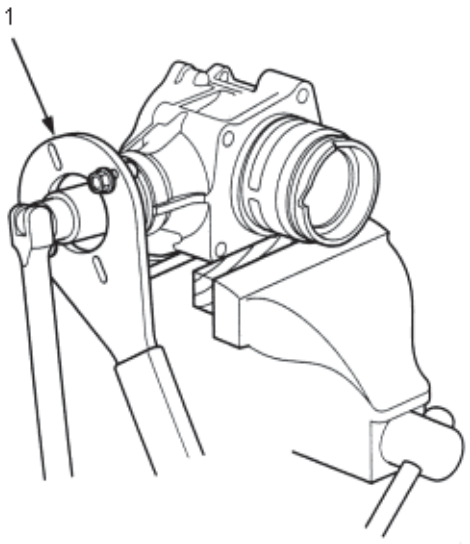
1. TRANSFER SHAFT
2. 14 mm ALLEN WRENCH

5. Remove the transfer shaft assembly, transfer drive gear, 25 mm thrust shim, transfer shaft collar and tapered roller bearing from the transfer housing.



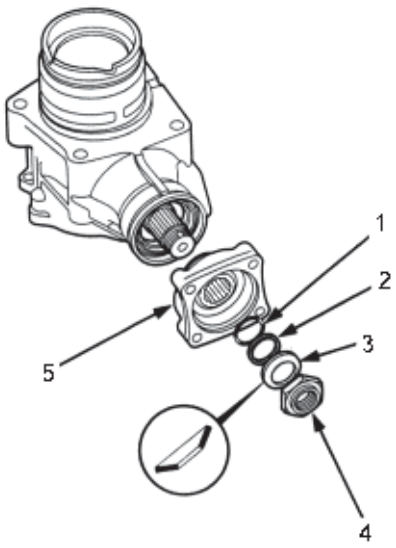
1. TRANSFER SHAFT ASSEMBLY
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

6. Secure the transfer housing in a bench vice with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.
7. Install the special tool on the companion flange, then loosen the transfer driven gear shaft locknut.



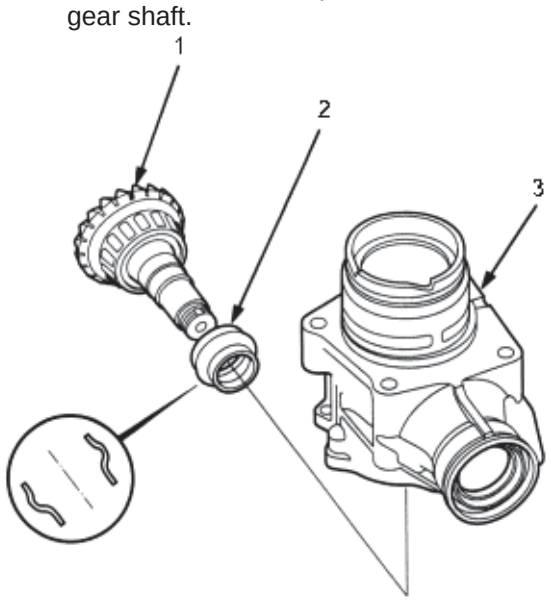
1. COMPANION FLANGE HOLDER, 09RAB-0020000

8. Remove the transfer driven gear shaft locknut, conical spring washer, back-up ring, O-ring and companion flange.



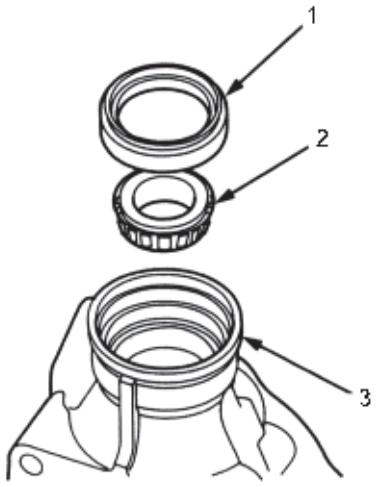
1. O-RING, Replace
2. BACK-UP RING
3. CONICAL SPRING WASHER, Replace
4. TRANSFER DRIVEN GEAR SHAFT LOCKNUT, Replace
5. COMPANION FLANGE

9. Remove the transfer driven gear shaft, then remove the transfer space from the transfer driven gear shaft.



1. TRANSFER DRIVEN GEAR SHAFT
2. TRANSFER SPACER, Replace
3. TRANSFER HOUSING

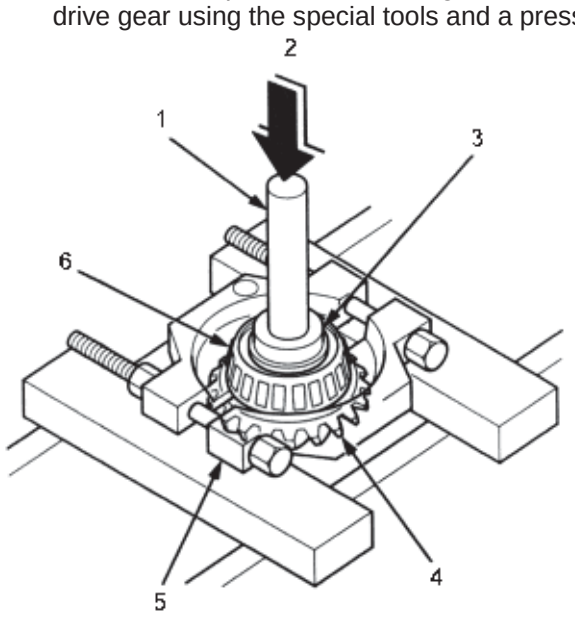
10. Remove the oil seal and the tapered roller bearing from the transfer housing.



1. OIL SEAL, Replace
2. TAPERED ROLLER BEARING
3. TRANSFER HOUSING

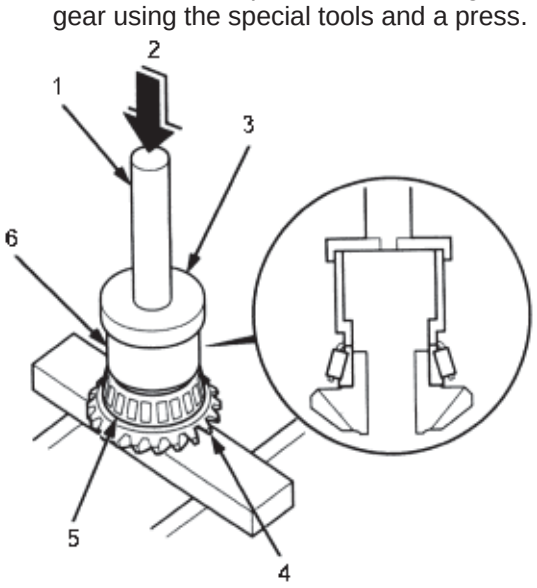
NOTE: Coat all parts with oil during reassembly.

1. Remove the tapered roller bearing from the transfer drive gear using the special tools and a press.



1. DRIVER, 07749-0010000
2. PRESS
3. ATTACHMENT, 37 x 40 mm, 07746-0010200
4. TRANSFER DRIVE GEAR
5. BEARING SEPARATOR, 0 - 4.5 in, (Commercially available)
6. TAPERED ROLLER BEARING

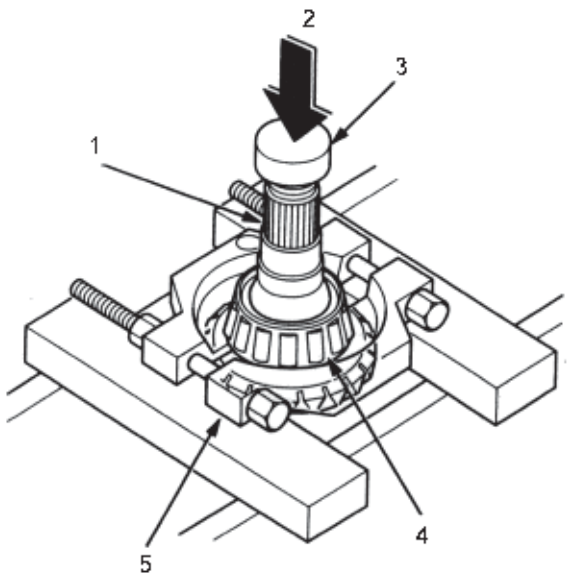
2. Install the new tapered roller bearing in the transfer drive gear using the special tools and a press.



1. DRIVER, 07749-0010000
2. PRESS
3. ATTACHMENT, such as 07947-SD90200
4. TRANSFER DRIVE GEAR
5. TAPERED ROLLER BEARING
6. ATTACHMENT, 40 x 50 mm, 07LAD-PW50601

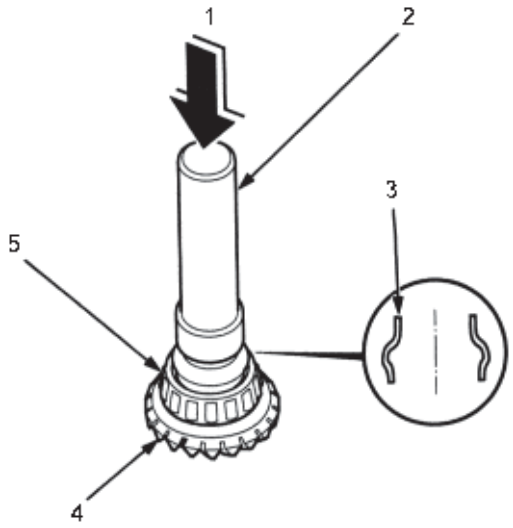
NOTE: Coat all parts with oil during reassembly.

1. Remove the tapered roller bearing from the transfer driven gear shaft using a press and a collar.



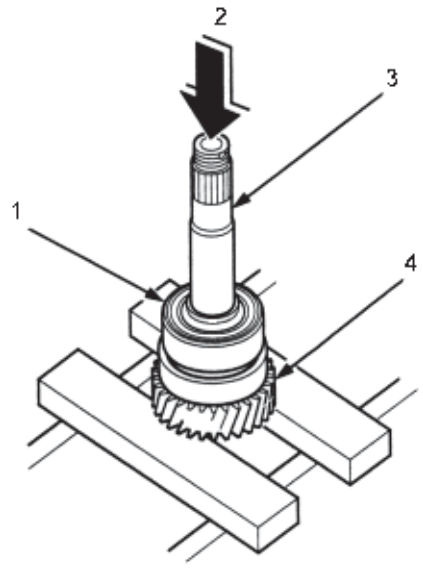
1. TRANSFER DRIVEN GEAR SHAFT
2. PRESS
3. COLLAR
4. TAPERED ROLLER BEARING
5. BEARING SEPARATOR, 0 - 4.5 in, (Commercially available)

2. Install the 35mm thrust shim on the transfer driven gear shaft.
3. Install the new tapered roller bearing on the transfer driven gear shaft using the special tools and a press as shown.
   NOTE: Use old transfer spacer for bearing installation, then discard it.



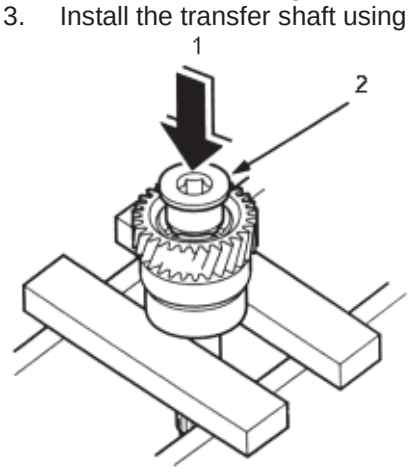
1. PRESS
2. DRIVER, 40 mm I.D., 07746-0030100
3. OLD TRANSFER SPACER
4. TRANSFER DRIVEN GEAR SHAFT
5. TAPERED ROLLER BEARING

1. Support the transfer driven gear on steel blocks, then press the transfer shaft out of damper hub as shown.



1. DAMPER HUB
2. PRESS
3. TRANSFER SHAFT
4. TRANSFER DRIVEN GEAR

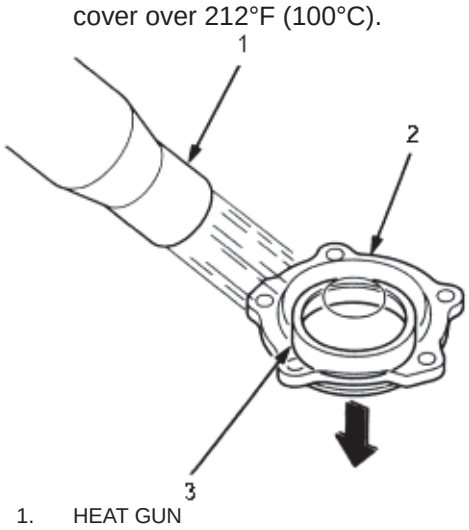
2. Align the damper hub grooves and transfer driven gear teeth and reassemble the damper hub, needle bearing and transfer driven gear.
3. Install the transfer shaft using a press as shown.



1. PRESS
2. TRANSFER SHAFT

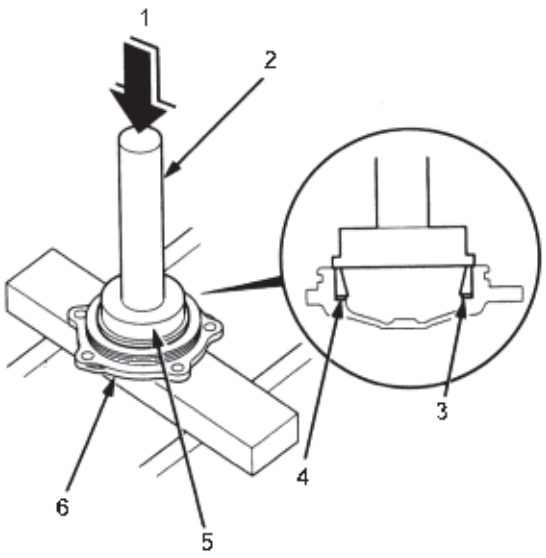
NOTE: Coat all parts with oil during reassembly.

1. Remove the tapered roller bearing outer race from transfer cover A by heating the cover to almost 212°F (100°C) using a heat gun. Do not heat the cover over 212°F (100°C).



1. HEAT GUN
2. TRANSFER COVER A
3. BEARING OUTER RACE

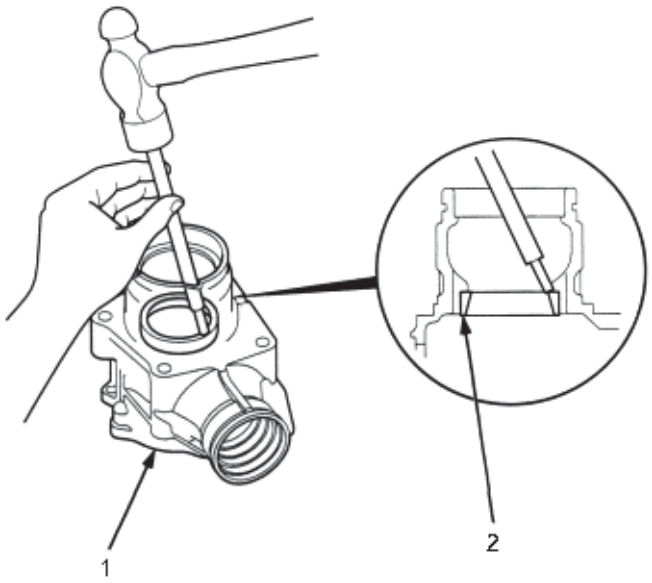
2. Install the 68 mm thrust shim in transfer cover A.
3. Install the tapered roller bearing outer race using the special tools and a press.



1. PRESS
2. DRIVER, 07749-0010000
3. THRUST SHIM, 68 mm
4. BEARING OUTER RACE
5. ATTACHMENT, 62 x 68 mm, 07746-0010500
6. TRANSFER COVER A

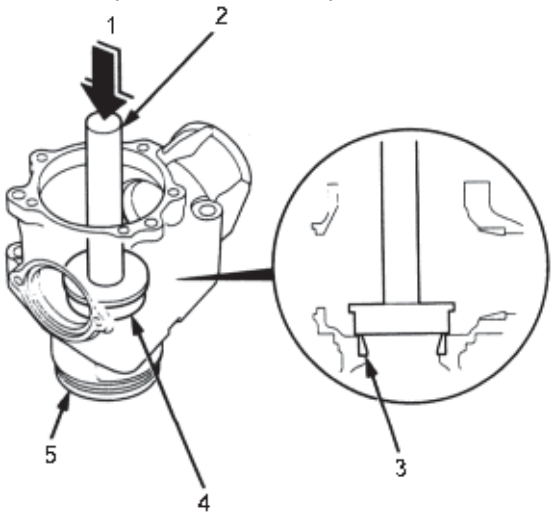
NOTE: Coat all parts with oil during reassembly.

1. Remove the tapered roller bearing outer race from the transfer housing.



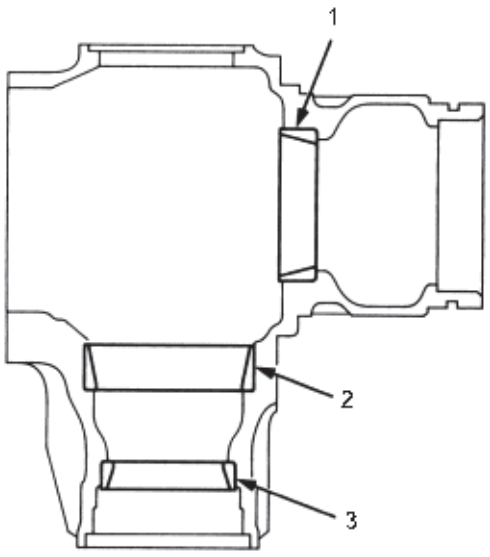
1. TRANSFER HOUSING
2. BEARING OUTER RACE

2. Install the new tapered roller bearing outer race using the special tools and a press.



1. PRESS
2. DRIVER, 07749-0010000
3. BEARING OUTER RACE
4. DRIVER ATTACHMENT
5. TRANSFER HOUSING

Bearing Outer Race Locations and Special Tool Applications
TRANSFER HOUSING
Sectional View



1. ATTACHMENT, 62 x 68 mm, 07746-0010500
2. ATTACHMENT, 62 x 68 mm, 07746-0010500
3. ATTACHMENT, 52 x 55 mm, 07746-0010400

NOTE:
- While reassembling the transfer assembly:
  - Check and adjust the transfer gear tooth contact.
  - Measure and adjust the transfer gear backlash.
  - Check and adjust the tapered roller bearing starting torque.
- Coat all parts with oil during reassembly.
- Replace the tapered roller bearing and the bearing outer race as a set if either part is replaced.
- Replace the transfer drive gear and the transfer driven gear shaft as a set if either part is replaced.

Outline of Assembly

1. **Select the 35 mm thrust shim.**
   Perform this procedure if the transfer driven gear shaft or the tapered roller bearing on the transfer driven gear shaft is replaced.
2. **Preassemble the parts to check and adjust transfer gear backlash and transfer gear tooth contact.**
3. **Disassemble the parts, then assemble the transfer driven gear shaft and its related parts.**
4. **Measure and adjust the starting torque of the transfer driven gear shaft tapered roller bearing.**
5. **Assemble the transfer shaft and its related parts.**
6. **Measure and adjust the total starting torque.**

35 mm Thrust Shim Selection

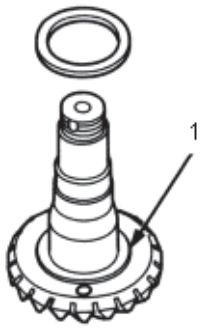
1. Select the 35 mm thrust shim, if the transfer driven gear shaft, or the tapered roller bearing on the transfer driven gear shaft is replaced.
   Calculate the thickness of the 35 mm thrust shim using the formula below:

$$\textbf{FORMULA: } \frac{A}{100} - \frac{B}{100} + C = X$$

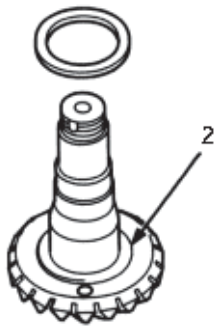
   A: Number on the existing transfer driven gear shaft.
   B: Number on the replacement transfer driven gear shaft.
   C: Thickness of the existing 35 mm thrust shim.
   X: Thickness needed for the replacement 35 mm thrust shim.
   NOTE: The number on the transfer driven gear shaft is shown in 1/100 mm.

EXAMPLE:

C: EXISTING 35 mm THRUST SHIM
Thickness: C= 1.05 mm



X: REPLACEMENT 35 mm THRUST SHIM
Thickness: X = ?? mm



1. Number: A = +2
2. Number B = -1

A: EXISTING TRANSFER DRIVEN GEAR SHAFT

B: REPLACEMENT TRANSFER DRIVEN GEAR SHAFT

$$X = \frac{A}{100} - \frac{B}{100} + C$$

$$= \frac{2}{100} - \frac{-1}{100} + 1.05$$

$$= 0.02 + 0.01 + 1.05$$

$$= 1.08 \text{ (mm)}$$

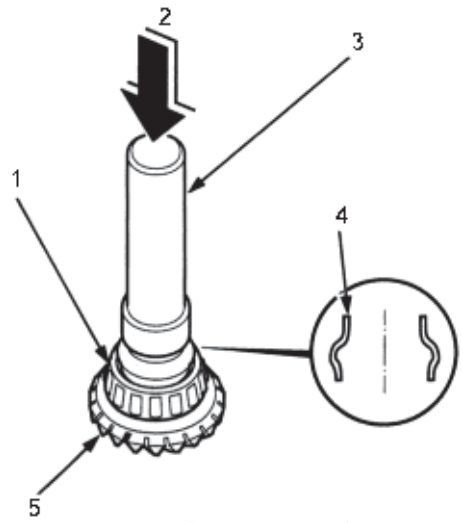
Select 35 mm thrust shim thickness of 1.08 mm (0.043 in). If the tapered roller bearing on the transfer driven gear shaft is replaced.
Measure the thickness of the replacement bearing and the existing bearing thickness. Adjust the thickness of the existing 35 mm thrust shim by the amount of difference in bearing thickness and select the replacement 35 mm thrust shim.

THRUST SHIM, 35 mm

Shim No.	Part Number	Thickness
A	41361-PS3-000	0.72 mm (0.028 in)
B	41362-PS3-000	0.75 mm (0.030 in)
C	41363-PS3-000	0.78 mm (0.031 in)
D	41364-PS3-000	0.81 mm (0.032 in)
E	41365-PS3-000	0.84 mm (0.033 in)
F	41366-PS3-000	0.87 mm (0.034 in)
G	41367-PS3-000	0.90 mm (0.035 in)
H	41368-PS3-000	0.93 mm (0.037 in)
I	41369-PS3-000	0.96 mm (0.038 in)
J	41370-PS3-000	0.99 mm (0.039 in)
K	41371-PS3-000	1.02 mm (0.040 in)
L	41372-PS3-000	1.05 mm (0.041 in)
M	41373-PS3-000	1.08 mm (0.043 in)
N	41374-PS3-000	1.11 mm (0.044 in)

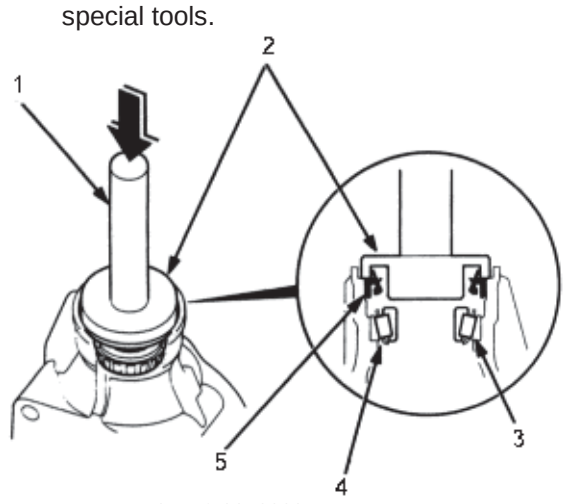
Transfer Gear Backlash Inspection and Transfer Gear Tooth Contact Inspection

2. Install the 35 mm thrust shim on the transfer driven gear shaft, then install the tapered roller bearing using the special tools and a press as shown.
   NOTE: Use old transfer spacer for bearing installation, then discard it.



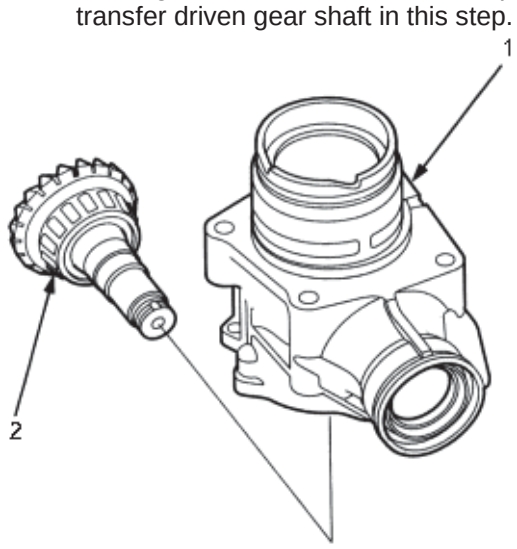
1. TAPERED ROLLER BEARING
2. PRESS
3. DRIVER, 40 mm I.D., 07746-0030100
4. OLD TRANSFER SPACER
5. TRANSFER DRIVEN GEAR SHAFT

3. Place the tapered roller bearing on the bearing outer race of the companion flange side of the transfer housing.
4. Install the new oil seal on the transfer housing using the special tools.



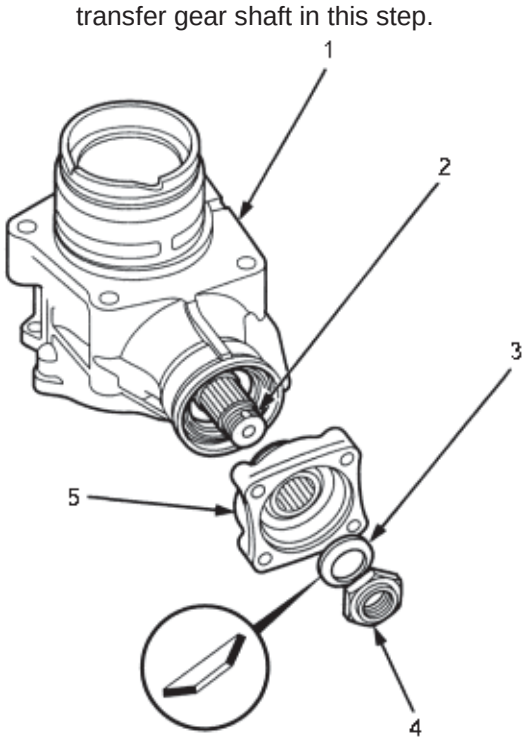
1. DRIVER, 07749-0010000
2. OIL SEAL DRIVER ATTACHMENT, 07JAD-PH80101
3. BEARING OUTER RACE
4. TAPERED ROLLER BEARING
5. OIL SEAL, Replace

5. Install the transfer driven gear shaft in the transfer housing. Do not install the transfer spacer on the transfer driven gear shaft in this step.



1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT

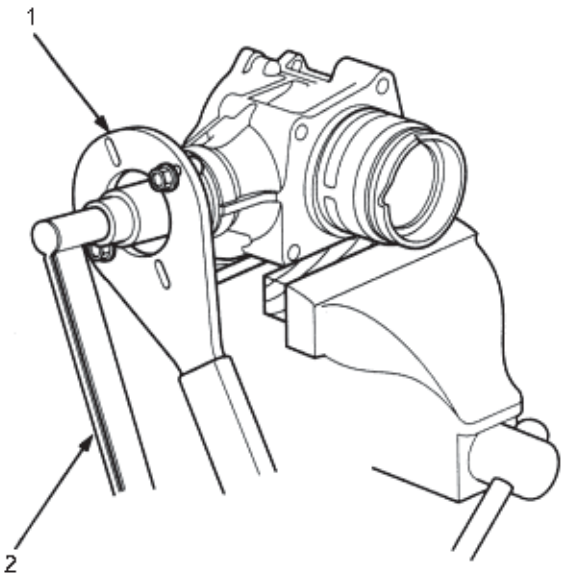
6. Install the companion flange, conical spring washer and locknut on the transfer driven gear shaft. Do not install the O-ring and the back-up ring on the transfer gear shaft in this step.



1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT
3. CONICAL SPRING WASHER, Install in this direction
4. LOCKNUT
5. COMPANION FLANGE

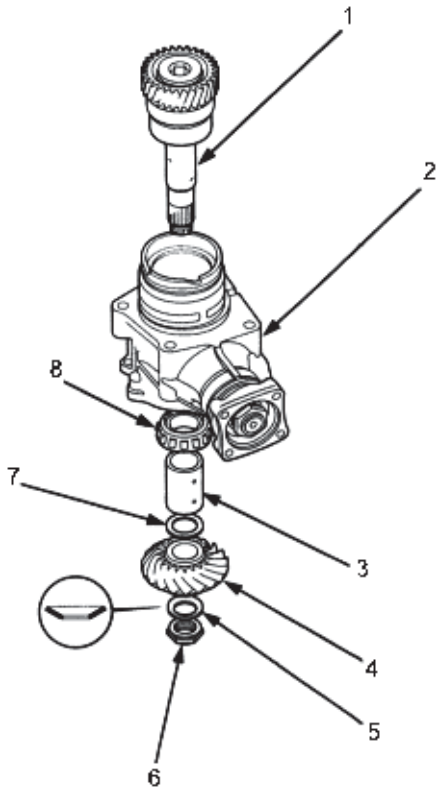
7. Secure the transfer housing in a bench vice with soft jaws, then install the special tool on the companion flange. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.
8. Tighten the locknut while measuring the starting torque so the starting torque is within 0.98 - 1.39 Nm (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in).
   NOTE:
   - Coat the threads of the locknut and the shaft with oil before installing the locknut.
   - Do not stake the locknut at this step.

   STARTING TORQUE:
   0.98 - 1.39 Nm
   (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in)



1. COMPANION FLANGE HOLDER, 07RAB-0020000
2. TORQUE WRENCH

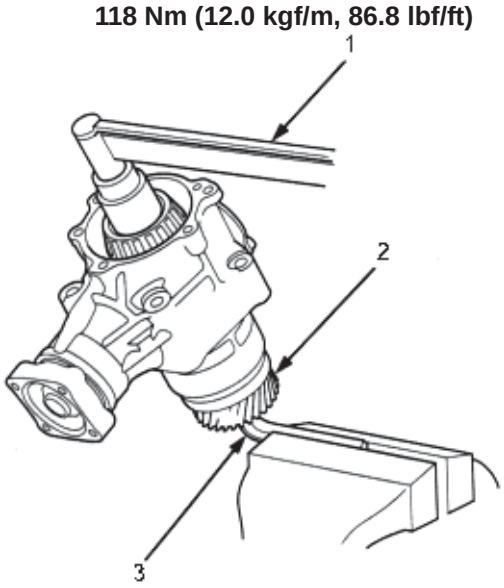
9. Install the transfer shaft assembly in the transfer housing, then install the tapered roller bearing, transfer shaft collar, 25 mm thrust shim, transfer drive gear, conical spring washer and locknut on the transfer shaft.
   NOTE:
   - Coat the threads of the locknut and the shaft with oil before installing the locknut.
   - Do not stake the locknut at this step.



1. TRANSFER SHAFT ASSEMBLY
2. TRANSFER HOUSING
3. TRANSFER SHAFT COLLAR
4. TRANSFER DRIVE GEAR
5. CONICAL SPRING WASHER, Replace
6. LOCKNUT, Replace
7. THRUST SHIM, 25 mm, Selective part
8. TAPERED ROLLER BEARING

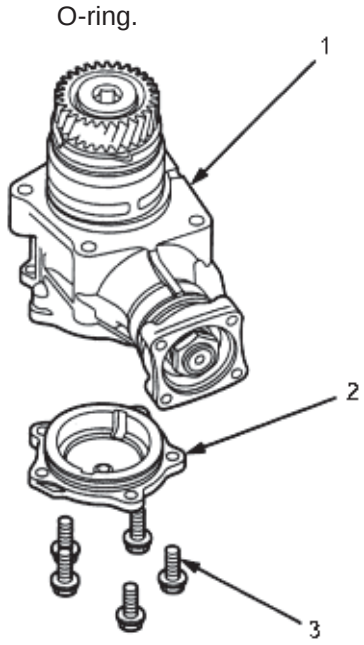
10. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice.
11. Tighten the transfer shaft locknut.
    NOTE:
    - The transfer shaft locknut has left hand threads.
    - Do not stake the locknut at this step.

    TORQUE:
    118 Nm (12.0 kgf/m, 86.8 lbf/ft)



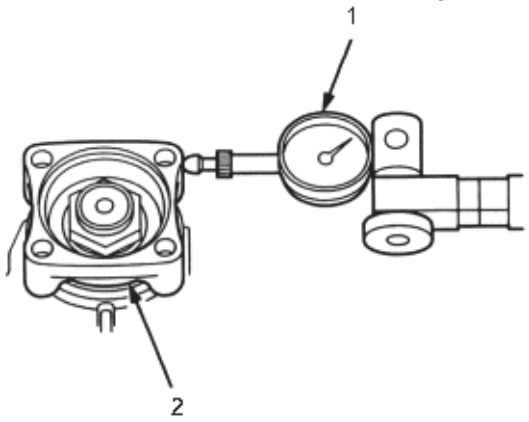
1. TORQUE WRENCH
2. TRANSFER SHAFT
3. 14 mm ALLEN WRENCH

12. Temporarily install the transfer cover A without the O-ring.



1. TRANSFER HOUSING
2. TRANSFER COVER A
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

13. Rotate the companion flange several times to seat the tapered roller bearing.
14. Set a dial indicator on the companion flange, then measure the transfer gear backlash.
    STANDARD: 0.06 - 0.16 mm (0.002 - 0.006 in)



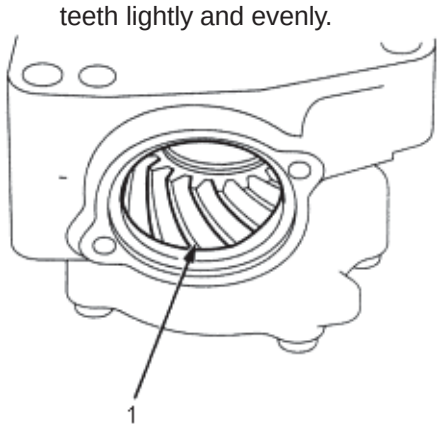
1. DIAL INDICATOR
2. COMPANION FLANGE

15. If the measurement is not within the standard, remove the transfer shaft locknut and replace the 25 mm thrust shim. Select and install a new 25 mm thrust shim, then recheck the measurement. Do not use more than one 25 mm thrust shim to adjust the transfer gear backlash.

THRUST SHIM, 25 mm

Shim No.	Part Number	Thickness
1	29411-P1C-000	1.70 mm (0.067 in)
2	29412-P1C-000	1.73 mm (0.068 in)
3	29413-P1C-000	1.76 mm (0.069 in)
4	29414-P1C-000	1.79 mm (0.070 in)
5	29415-P1C-000	1.82 mm (0.072 in)
6	29416-P1C-000	1.85 mm (0.073 in)
7	29417-P1C-000	1.88 mm (0.074 in)
8	29418-P1C-000	1.91 mm (0.075 in)
9	29419-P1C-000	1.94 mm (0.076 in)
10	29420-P1C-000	1.97 mm (0.078 in)
11	29421-P1C-000	2.00 mm (0.079 in)
12	29422-P1C-000	2.03 mm (0.080 in)
13	29423-P1C-000	2.06 mm (0.081 in)
14	29424-P1C-000	2.09 mm (0.082 in)
15	29425-P1C-000	2.12 mm (0.083 in)
16	29426-P1C-000	2.15 mm (0.085 in)
17	29427-P1C-000	2.18 mm (0.086 in)
18	29428-P1C-000	2.21 mm (0.087 in)
19	29429-P1C-000	2.24 mm (0.088 in)

16. Apply Prussian Blue to both sides of the transfer gear teeth lightly and evenly.



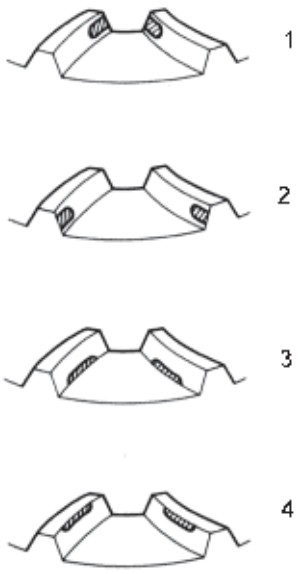
1. TRANSFER DRIVE GEAR

17. Rotate the companion flange in both directions until the transfer gear rotates one full turn in both directions.
18. Check the transfer gear tooth contact pattern.

CORRECT TOOTH CONTACT POSITION



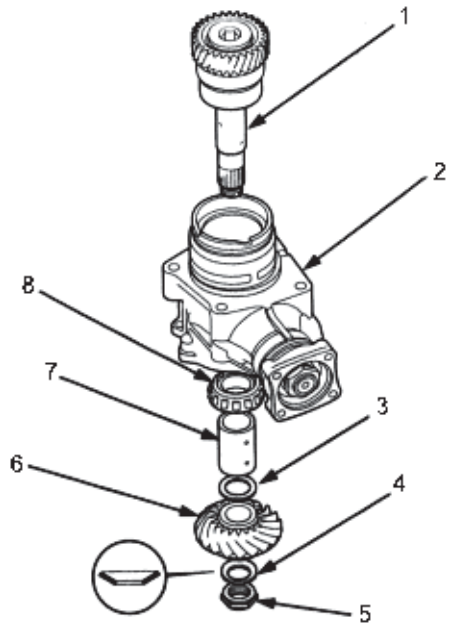
INCORRECT TOOTH CONTACT POSITION



1. TOE CONTACT
2. HEEL CONTACT
3. FLANK CONTACT
4. FACE CONTACT

19. If the transfer gear tooth contact is incorrect, adjust the transfer gear tooth contact with a 35 mm or 25 mm thrust shim.
NOTE:
    - To select a 35 mm thrust shim, (**See page** 13-52).
    - Do not use more than two 35 mm shim to adjust the transfer gear tooth contact.
    - To select the 25 mm thrust shim (**See page** 13-55).
    - Do not use more than one 25 mm shim to adjust the transfer gear tooth contact.
    - **Toe Contact**
      Use a thicker 35 mm thrust shim to move the transfer driven gear shaft toward the transfer drive gear. Because this movement causes the transfer drive gear backlash to change, move the transfer drive gear away from the transfer driven gear shaft to adjust the transfer gear backlash as follows:
        - Increase the thickness of the 25 mm thrust shim.
        - Reduce the thickness of the 68 mm thrust shim by the amount of increased thickness of the 25 mm thrust shim.
    - **Heel Contact**
      Use a thinner 35 mm thrust shim to move the transfer driven gear shaft away from the transfer drive gear. Because this movement causes the transfer gear backlash to change, move the transfer gear toward the transfer driven gear shaft to adjust the transfer gear backlash as follows:
        - Reduce the thickness of the 25 mm thrust shim.
        - Increase the thickness of the 68 mm thrust shim by the amount of reduced thickness of the 25 mm thrust shim.
    - **Flank Contact**
      Use a thinner thrust shim to move the transfer drive gear toward the transfer driven gear shaft. Flank contact must be adjusted within limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.
    - **Face Contact**
      Use a thicker thrust shim to move the transfer drive gear away from the transfer driven gear shaft. Face contact must be adjusted within limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

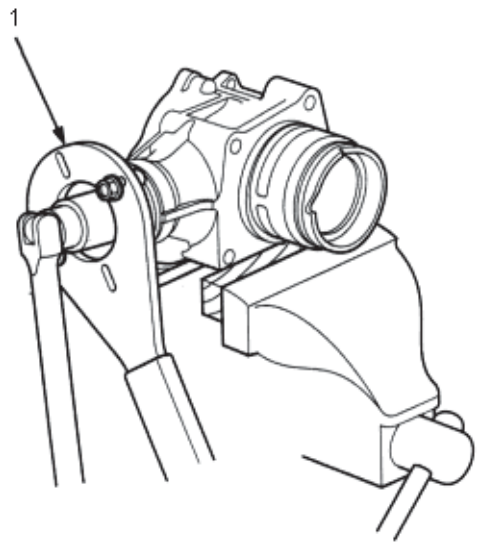
20. Remove the parts on the transfer shaft and remove the transfer shaft from the transfer housing.



1. TRANSFER SHAFT
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

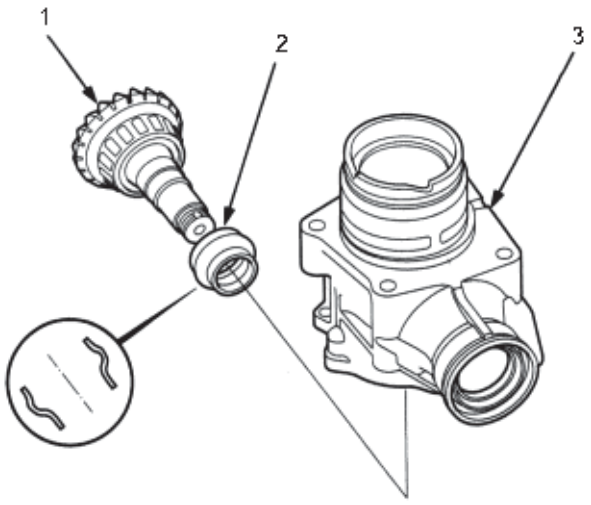
Transfer Driven Gear Shaft Starting Torque Inspection and Adjustment

21. Secure the transfer housing in a bench vice with soft jaws. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
22. Install the special tool on the companion flange, then remove the transfer driven gear shaft locknut and the conical spring washer.



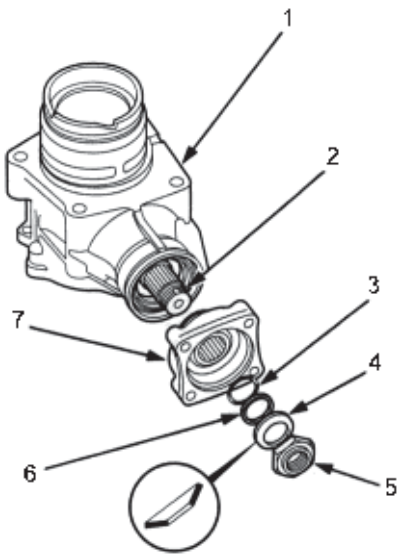
1. COMPANION FLANGE HOLDER, 07RAB-0020000

23. Remove the transfer driven gear shaft and the companion flange.
24. Install the new transfer spacer on the transfer driven gear shaft, then install them in the transfer housing.



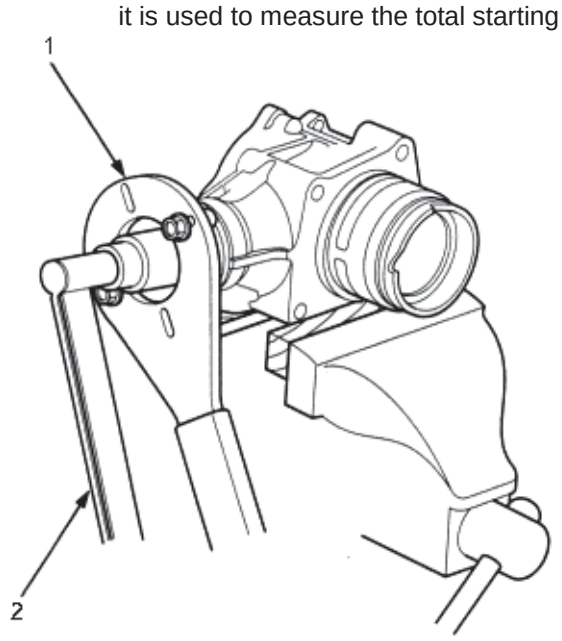
1. TRANSFER DRIVEN GEAR SHAFT
2. TRANSFER SPACER
   Install in this direction, Replace
3. TRANSFER HOUSING

25. Install the companion flange, O-ring, back-up ring, conical spring washer and locknut on the transfer driven gear shaft.
    NOTE:
    - Coat the threads of the locknut and transfer shaft with oil before installing the locknut.
    - Install the conical spring washer in the direction shown.



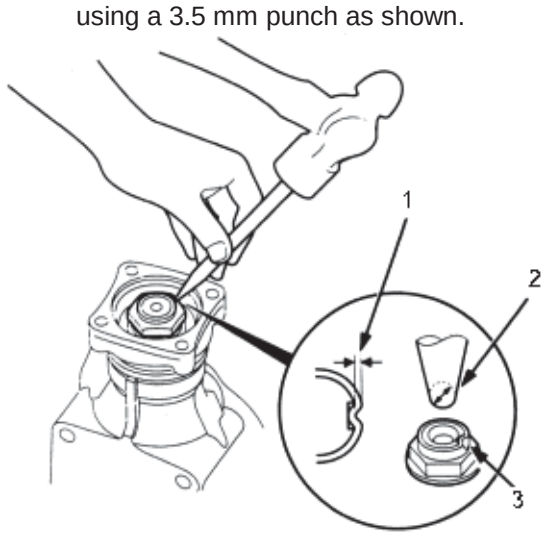
1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT
3. O-RING, Replace
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. BACK-UP RING
7. COMPANION FLANGE

26. Secure the transfer housing in a bench vice with soft jaws. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
27. Install the special tool on the companion flange, then tighten the transfer driven gear shaft locknut while measuring the starting torque of the transfer driven gear shaft.
    STARTING TORQUE:
    0.98 - 1.39 Nm
    (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in)
    TIGHTENING TORQUE
    132 - 260 Nm
    (13.5 - 26.5 kgf/m, 97.6 - 192 lbf/ft)
    NOTE:
    - Rotate the companion flange several times to seat the tapered roller bearing, then measure the starting torque.
    - If the starting torque exceeds 1.39 Nm (14.2 kgf/cm, 12.3 lbf/in), replace the transfer spacer and reassemble the parts. Do not adjust the torque with the locknut loose.
    - If the tightening torque exceeds 260 Nm (26.5 kg/fm, 192 lbf/ft), replace the transfer spacer and reassemble the parts.
    - Write down the measurement of the starting torque; it is used to measure the total starting torque.



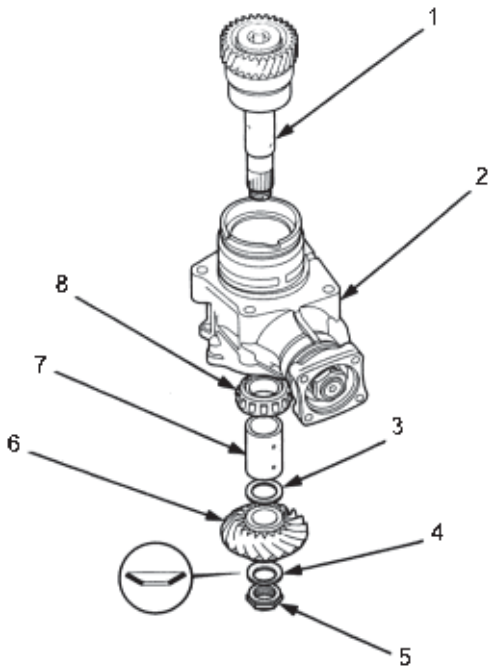
1. COMPANION FLANGE HOLDER, 07RAB-0020000
2. TORQUE WRENCH

28. Stake the locknut into the transfer driven gear shaft using a 3.5 mm punch as shown.



1. 0.7 - 1.2 mm (0.03 - 0.05 in)
2. PUNCH, 3.0 - 3.5 mm (0.12 - 0.14 in)
3. Point to be staked

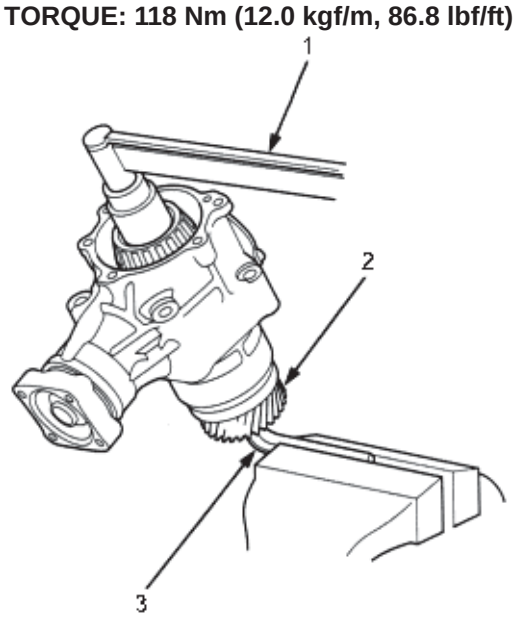
29. Install the transfer shaft assembly in the transfer housing, then install the tapered roller bearing, transfer shaft collar, 25 mm thrust shim, transfer drive gear, conical spring washer and transfer shaft locknut on the transfer shaft.
    NOTE:
    - Coat the threads of the locknut and transfer shaft with oil before installing the locknut.
    - Install the conical spring washer in the direction shown.



1. TRANSFER SHAFT ASSEMBLY
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

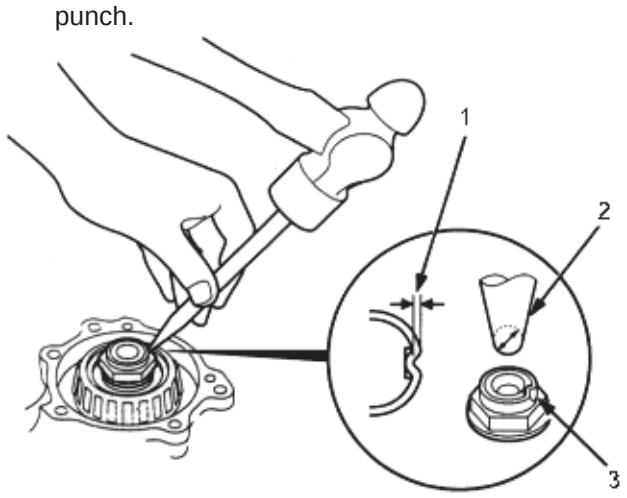
30. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice. Tighten the transfer shaft locknut. (The locknut has left hand threads.)

TORQUE: 118 Nm (12.0 kgf/m, 86.8 lbf/ft)



1. TORQUE WRENCH
2. TRANSFER SHAFT
3. 14 mm ALLEN WRENCH

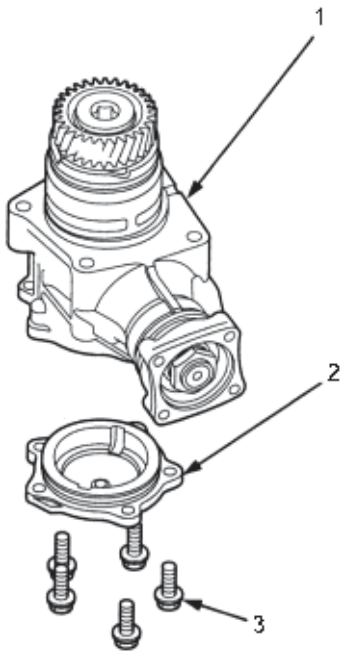
31. Stake the locknut on the transfer shaft using a 3.5 mm punch.



1. 0.7 - 1.2 mm (0.03 - 0.05 in)
2. PUNCH, 3.0 - 3.5 mm (0.12 - 0.14 in)

Total Starting Torque Inspection and Adjustment

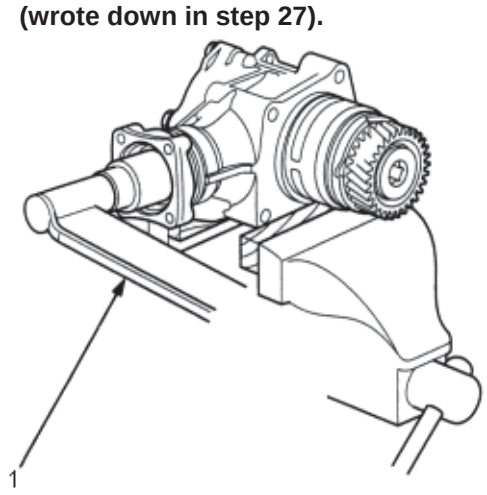
32. Temporarily install transfer cover A without the O-ring.



1. TRANSFER HOUSING
2. TRANSFER COVER A
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

33. Secure the transfer housing in a bench vice with soft jaws, then rotate the companion flange several times to fit the tapered roller bearing. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
34. Measure the total starting torque.

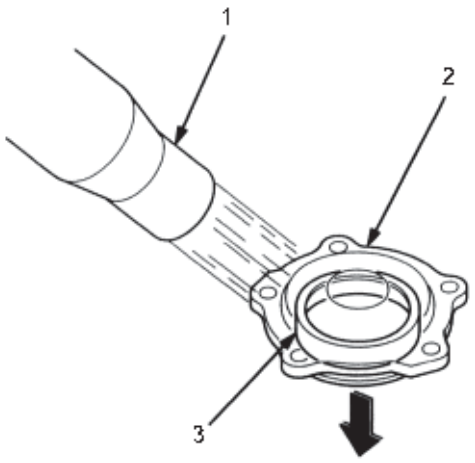
TOTAL STARTING TORQUE:
1.70 - 2.08 Nm (17.3 - 21.2 kgf/cm, 15.0 - 18.4 lbf/in)
+ Transfer Driven Gear Shaft Starting Torque Value (wrote down in step 27).



1. TORQUE WRENCH

35. Remove transfer cover A.
36. If the measurement is out of specification, remove the 68 mm thrust shim from transfer cover A by heating the cover to almost 212°F (100°C) using a heat gun. Do not heat the cover higher than 212°F (100°C). Let the cover cool to room temperature before adjusting the starting torque.

If the measurement is within the specification, go to step 40.



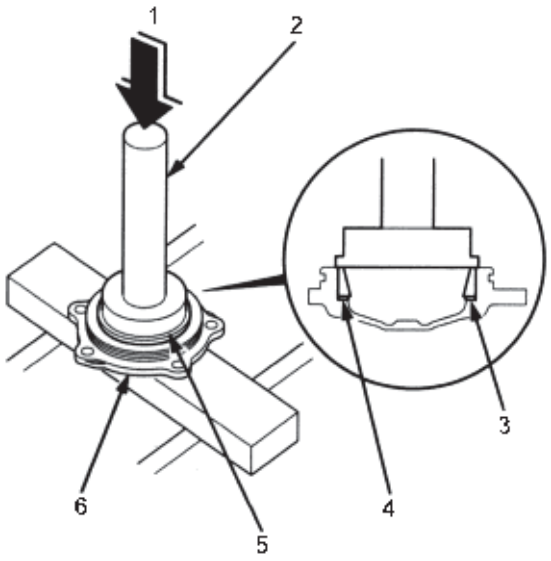
1. HEAT GUN
2. TRANSFER COVER A
3. BEARING OUTER RACE

37. Select the 68n mm thrust shim.

THRUST SHIM, 68 mm

Shim No.	Part Number	Thickness
ZV	23974-P1C-020	1.41 mm (0.056 in)
ZW	23975-P1C-020	1.44 mm (0.057 in)
ZX	23976-P1C-020	1.47 mm (0.058 in)
ZY	23977-P1C-020	1.50 mm (0.059 in)
ZZ	23978-P1C-020	1.53 mm (0.060 in)
A	23941-PW5-000	1.56 mm (0.061 in)
B	23942-PW5-000	1.59 mm (0.063 in)
C	23943-PW5-000	1.62 mm (0.064 in)
D	23944-PW5-000	1.65 mm (0.065 in)
E	23945-PW5-000	1.68 mm (0.066 in)
F	23946-PW5-000	1.71 mm (0.067 in)
G	23947-PW5-000	1.74 mm (0.069 in)
H	23948-PW5-000	1.77 mm (0.070 in)
I	23949-PW5-000	1.80 mm (0.071 in)
J	23950-PW5-000	1.83 mm (0.072 in)
K	23951-PW5-000	1.86 mm (0.073 in)
L	23952-PW5-000	1.89 mm (0.074 in)
M	23953-PW5-000	1.92 mm (0.076 in)
N	23954-PW5-000	1.95 mm (0.077 in)
O	23955-PW5-000	1.98 mm (0.078 in)
P	23956-PW5-000	2.01 mm (0.079 in)
Q	23957-PW5-000	2.04 mm (0.080 in)
R	23958-PW5-000	2.07 mm (0.081 in)
S	23959-PW5-000	2.10 mm (0.083 in)
T	23960-PW5-000	2.13 mm (0.084 in)
U	23961-PW5-000	2.16 mm (0.085 in)
V	23962-PW5-000	2.19 mm (0.086 in)
W	23963-PW5-000	2.22 mm (0.087 in)
X	23964-PW5-000	2.25 mm (0.089 in)
Y	23965-PW5-000	2.28 mm (0.090 in)
Z	23966-PW5-000	2.31 mm (0.091 in)
AA	23967-PW5-000	2.34 mm (0.092 in)
AB	23968-PW5-000	2.37 mm (0.093 in)
AC	23969-PW5-000	2.40 mm (0.094 in)
AD	23970-PW5-000	2.43 mm (0.096 in)
AZ	23971-PW8-000	2.46 mm (0.097 in)
BZ	23972-PW8-000	2.49 mm (0.098 in)
CZ	23973-PW8-000	2.52 mm (0.099 in)
DZ	23974-PW8-000	2.55 mm (0.100 in)
EZ	23975-PW8-000	2.58 mm (0.102 in)

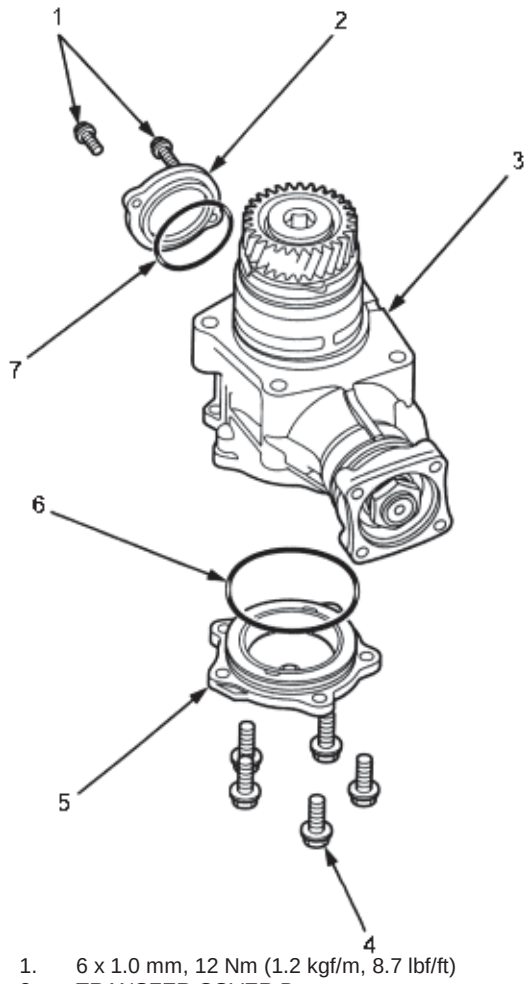
38. Install the 68 mm thrust shim using the special tools.



1. PRESS
2. DRIVER, 07749-0010000
3. THRUST SHIM, 68 mm, Selective part
4. BEARING OUTER RACE
5. ATTACHMENT, 62 x 68 mm, 07746-0010500
6. TRANSFER COVER A

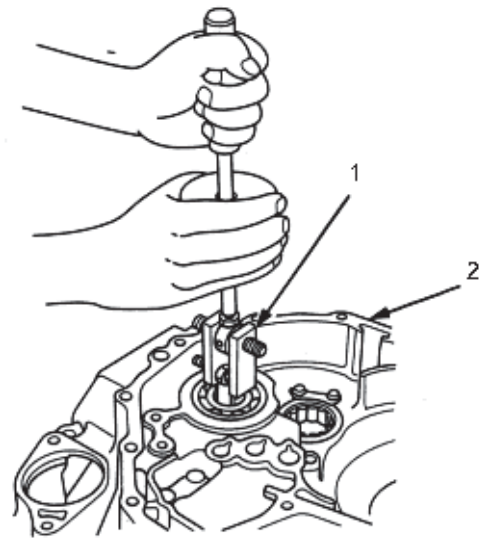
39. After replacing the 68 mm thrust shim, recheck and make sure the total starting torque is within the specification.

40. Install the new O-rings on transfer covers A and B, then install the covers on the transfer housing.



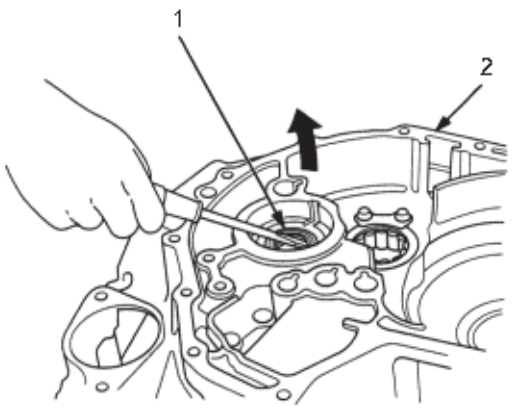
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. TRANSFER COVER B
3. TRANSFER HOUSING
4. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
5. TRANSFER COVER A
6. O-RING, Replace
7. O-RING, Replace

1. Remove the ball bearing using the special tool as shown.



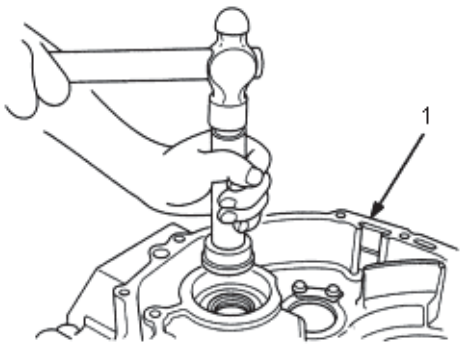
1. ADJUSTABLE BEARING REMOVER SET, 07JAC-PH80000
2. CLUTCH HOUSING

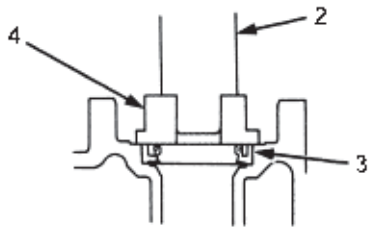
2. Remove the oil seal from the clutch housing.



1. OIL SEAL, Replace
2. CLUTCH HOUSING

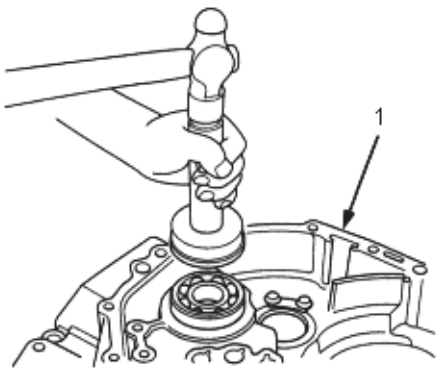
3. Drive the new oil seal in from the transmission side using the special tools as shown.

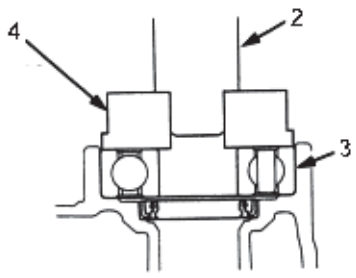




1. CLUTCH HOUSING
2. HANDLE DRIVER, 07749-0010000
3. OIL SEAL, Replace
4. DRIVER ATTACHMENT, 42 x 47 mm, 07746-0010300

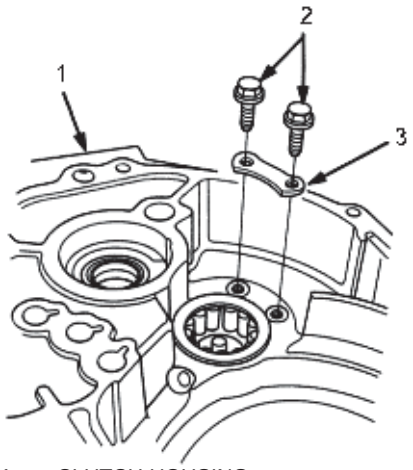
4. Drive the new ball bearing in from the transmission side using the special tools as shown.





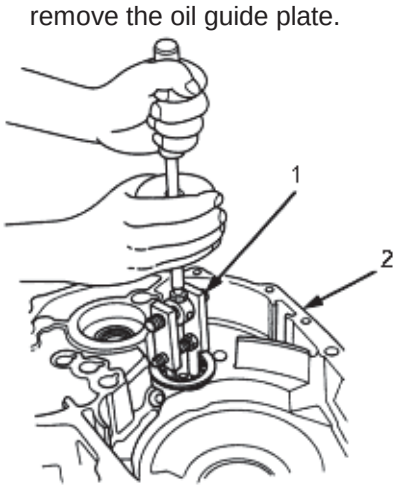
1. CLUTCH HOUSING
2. HANDLE DRIVER, 07749-0010000
3. BALL BEARING
4. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500

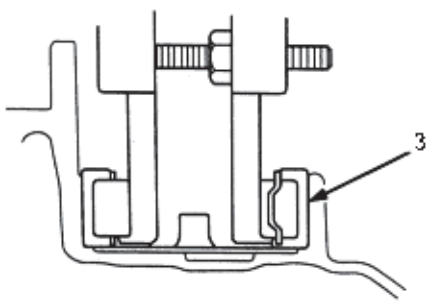
1. Remove the retaining plate from the clutch housing.



1. CLUTCH HOUSING
2. Replace
3. RETAINING PLATE

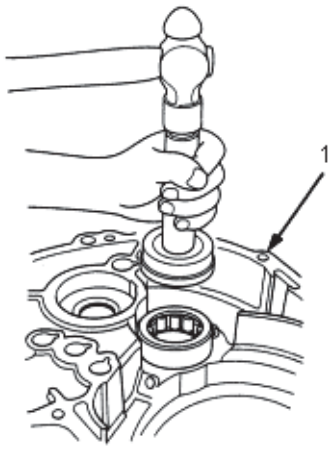
2. Remove the needle bearing using the special tool, then remove the oil guide plate.

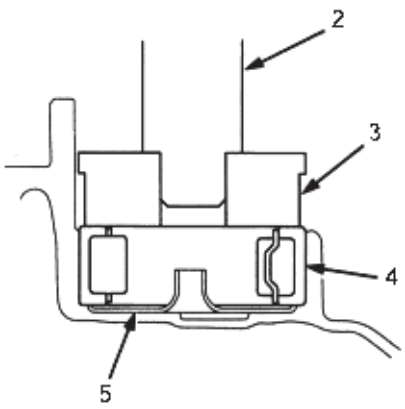




1. ADJUSTABLE BEARING REMOVER SET, 07JAC-PH80000
2. CLUTCH HOUSING
3. NEEDLE BEARING

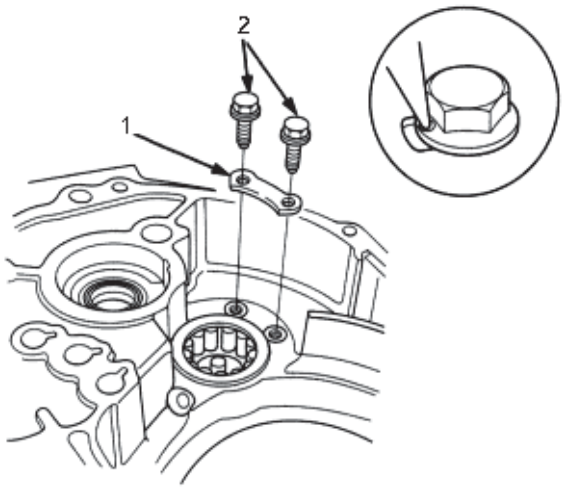
3. Position the oil guide plate.
4. Drive the needle bearing using the special tools as shown.





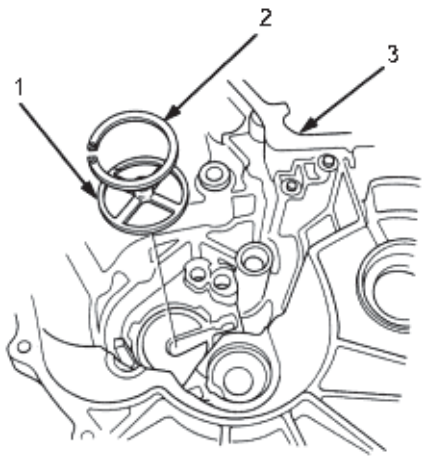
1. CLUTCH HOUSING
2. HANDLE DRIVER, 07749-0010000
3. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
4. NEEDLE BEARING
5. OIL GUIDE PLATE

5. Install the retaining plate and stake the bolt heads into the groove in the retaining plate.



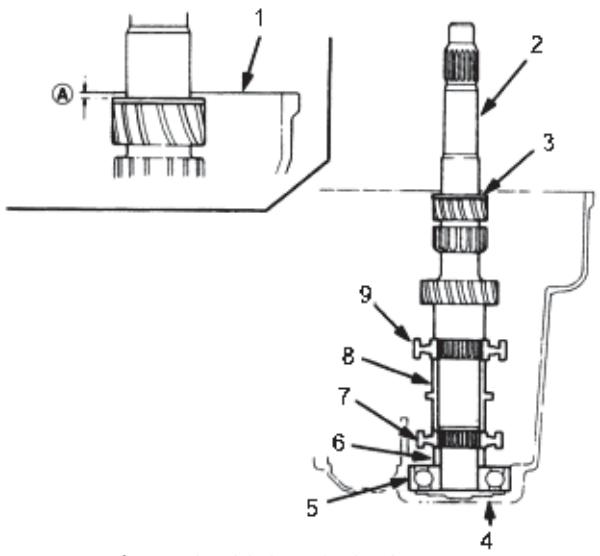
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. RETAINING PLATE

1. Remove the 78 mm shim and oil guide plate from the transmission housing.



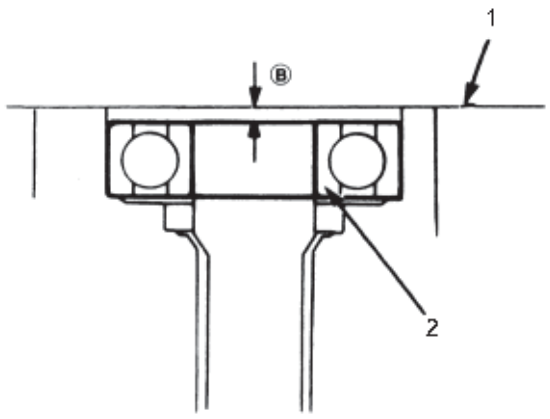
1. OIL GUIDE PLATE
2. 78 mm SHIM
3. TRANSMISSION HOUSING

2. Install the 3rd/4th synchro hub, spacer collar, 5th synchro hub, spacer and ball bearing on the mainshaft, then install the above assembly in the transmission housing.
3. Install the washer on the mainshaft.
4. Measure distance (A) between the end of the transmission housing and washer.
   NOTE:
   - Use a straight edge and vernier caliper.
   - Measure at three locations and average the reading.



1. END of TRANSMISSION HOUSING
2. MAINSHAFT
3. WASHER
4. TRANSMISSION HOUSING
5. BALL BEARING
6. SPACER
7. 5TH SYNCHRO HUB
8. SPACER COLLAR
9. 3RD/4TH SYNCHRO HUB

5. Measure distance (B) between the end of the clutch housing and bearing inner race.
   NOTE:
   - Use a straight edge and vernier caliper.
   - Measure at three locations and average the reading.



1. END of CLUTCH HOUSING
2. INNER RACE of BALL BEARING

6. Select the proper 78 mm shim from the chart by using the formula below.
   Shim Selection Formula
   From the measurements you made in steps 4 and 5:
   -1. Add distance (B) (step 5) to distance (A) (step 4).
   -2. From this number, subtract 0.93 (which is the midpoint of the flex range of the clutch housing bearing spring washer).
   -3. Take this number and compare it to the available shim sizes in the chart.
   (for example)

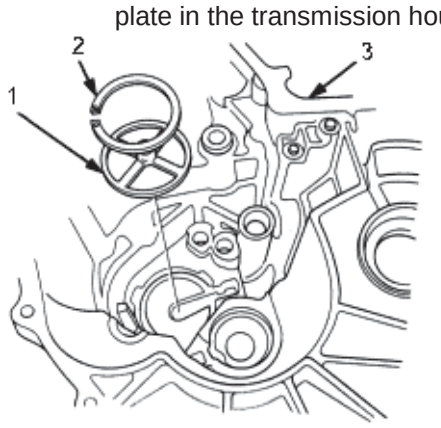
A: 2.39	2.61
+B: 0.22	-0.93
= 2.61	= 1.68

   - Try the 1.68 mm (0.0661 in) shim.

78 mm SHIM

	Part Number	Thickness
A	23941-P16-000	1.20 mm (0.0472 in)
B	23942-P16-000	1.23 mm (0.0484 in)
C	23943-P16-000	1.26 mm (0.0496 in)
D	23944-P16-000	1.29 mm (0.0508 in)
E	23945-P16-000	1.32 mm (0.0520 in)
F	23946-P16-000	1.35 mm (0.0531 in)
G	23947-P16-000	1.38 mm (0.0543 in)
H	23948-P16-000	1.41 mm (0.0555 in)
I	23949-P16-000	1.44 mm (0.0567 in)
J	23950-P16-000	1.47 mm (0.0579 in)
K	23951-P16-000	1.50 mm (0.0591 in)
L	23952-P16-000	1.53 mm (0.0602 in)
M	23953-P16-000	1.56 mm (0.0614 in)
N	23954-P16-000	1.59 mm (0.0626 in)
O	23955-P16-000	1.62 mm (0.0638 in)
P	23956-P16-000	1.65 mm (0.0650 in)
Q	23957-P16-000	1.68 mm (0.0661 in)
R	23958-P16-000	1.71 mm (0.0673 in)
S	23959-P16-000	1.74 mm (0.0685 in)
T	23960-P16-000	1.77 mm (0.0697 in)
U	23961-P16-000	1.80 mm (0.0709 in)
V	23962-P16-000	1.83 mm (0.0720 in)
W	23963-P16-000	1.86 mm (0.0732 in)
X	23964-P16-000	1.89 mm (0.0744 in)
Y	23965-P16-000	1.92 mm (0.0756 in)
Z	23966-P16-000	1.95 mm (0.0768 in)
AA	23967-P16-000	1.98 mm (0.0780 in)
AB	23968-P16-000	2.01 mm (0.0791 in)
AC	23969-P16-000	2.04 mm (0.0803 in)
AD	23970-P16-000	2.07 mm (0.0815 in)
AE	23971-P16-000	2.10 mm (0.0827 in)
F	23972-P16-000	2.13 mm (0.0839 in)
AG	23973-P15-000	2.16 mm (0.0850 in)
AH	23974-P16-000	2.19 mm (0.0862 in)
AI	23975-P16-000	2.22 mm (0.0874 in)
AJ	23976-P16-000	2.25 mm (0.0885 in)
AK	23977-P16-000	2.28 mm (0.0898 in)
AL	23978-P16-000	2.31 mm (0.0909 in)
AM	23979-P16-000	2.34 mm (0.0921 in)
AN	23980-P16-000	2.37 mm (0.0933 in)

7. Check the thrust clearance in the manner described below:
   NOTE: Measurement should be made at normal room temperature.
   -1. Install the 78 mm shim selected and oil guide plate in the transmission housing.



1. OIL GUIDE PLATE
2. 78 mm SHIM
3. TRANSMISSION

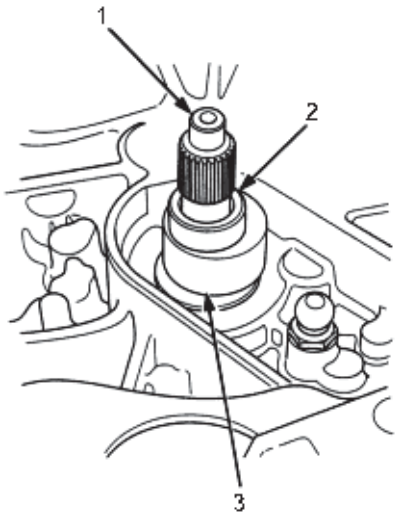
   -2. Install the spring washer and washer on the ball bearing.
   NOTE:
   - Clean the spring washer, washer and thrust shim thoroughly before installation.
   - Install the spring washer, washer and thrust shim properly.



1. WASHER
2. SPRING WASHER

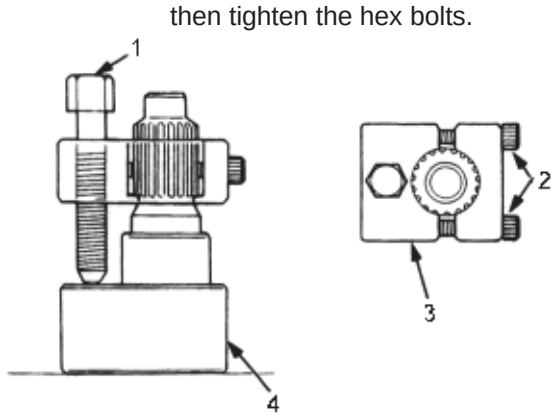
   -3. Install the mainshaft in the clutch housing.
   -4. Place the transmission housing over the mainshaft and onto the clutch housing.
   -5. Tighten the clutch and transmission housings with several 8 mm bolts.
   NOTE: It is not necessary to use sealing agent between the housings.
   -6. Tap the mainshaft with a plastic hammer.

-7. Slide the mainshaft base over the mainshaft.



1. MAINSHAFT
2. CLUTCH HOUSING
3. MAINSHAFT BASE, 07GAJ-PG20130

-8. Attach the mainshaft holder to the mainshaft as follows:
NOTE:
- Back-out the mainshaft holder bolt and loosen the two hex. bolts.
- Fit the holder over the mainshaft so its lip is towards the transmission.
- Align the mainshaft holder's lip around the groove at the inside of the mainshaft splines, then tighten the hex bolts.



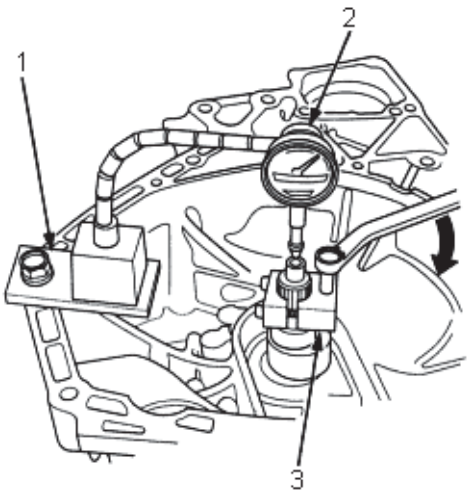
1. MAINSHAFT HOLDER BOLT
2. HEX BOLTS
3. MAINSHAFT HOLDER, 07GAJ-PG20110
4. MAINSHAFT BASE, 07GAJ-PG20130

-9. Seat the mainshaft fully by tapping its end with a 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 on the end of the mainshaft.

-12. Turn the mainshaft holder bolt clockwise; stop turning when the dial gauge has reached its maximum movement. The reading on the dial gauge is the amount of mainshaft end play.

⚠ CAUTION

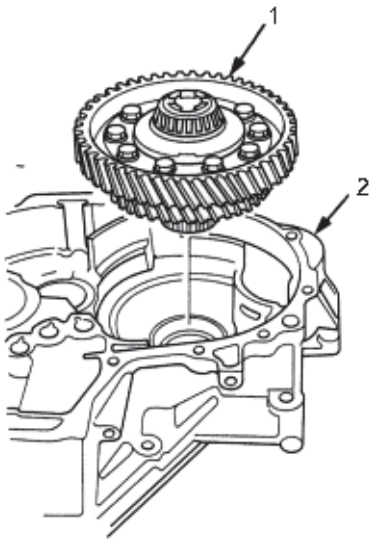
Turning the mainshaft holder bolt more than 60 degrees after the needle of the dial gauge stops moving may damage the transmission.



1. MAGNET STAND BASE, 07979-PJ40001
2. DIAL GAUGE
3. MAINSHAFT HOLDER, 07GAJ-PG20110

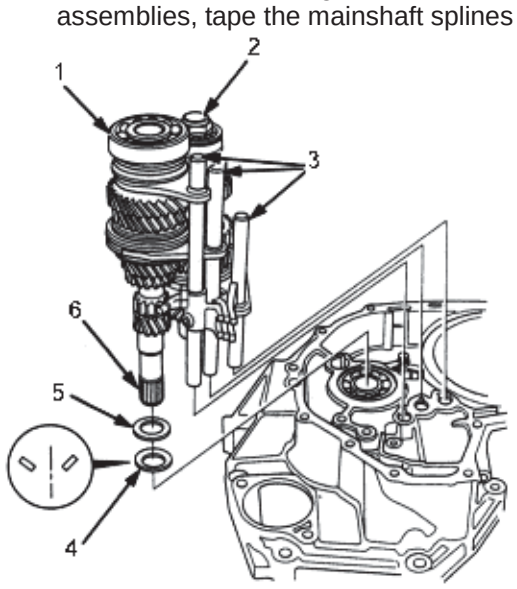
-13. If the reading is within the standard, the clearance is correct.
If the reading is not within the standard, recheck the shim thickness.
Standard: 0.11 - 0.18 mm (0.004 - 0.007 in)

1. Install the differential assembly in the clutch housing.



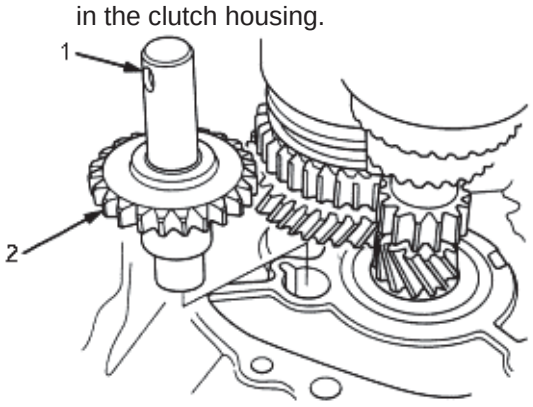
1. DIFFERENTIAL ASSEMBLY
2. CLUTCH HOUSING

2. Install the spring washer as washer with the angle against the clutch housing as shown.
3. Insert the mainshaft and countershaft into the shift forks and install them as an assembly.
   NOTE: Before installing the mainshaft and countershaft assemblies, tape the mainshaft splines to protect them.



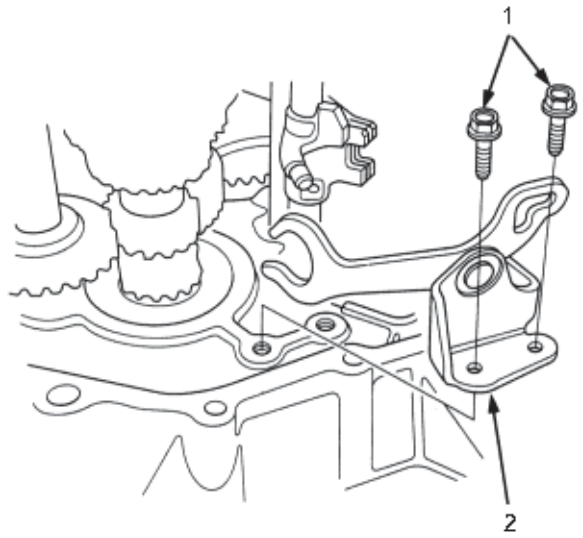
1. MAINSHAFT ASSEMBLY
2. COUNTERSHAFT ASSEMBLY
3. SHIFT FORKS
4. SPRING WASHER
5. WASHER
6. Tape the mainshaft splines

4. Install the reverse idle gear and reverse gear shaft in the clutch housing.



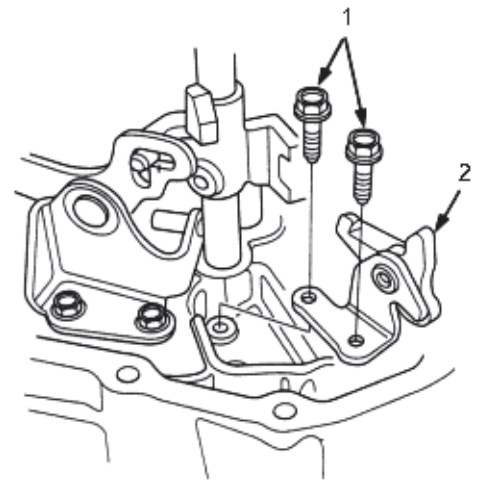
1. REVERSE GEAR SHAFT
2. REVERSE IDLE GEAR

5. Install the reverse shift holder in the clutch housing with the 5th/reverse shift piece pin positioned in the slot of the reverse shift fork.



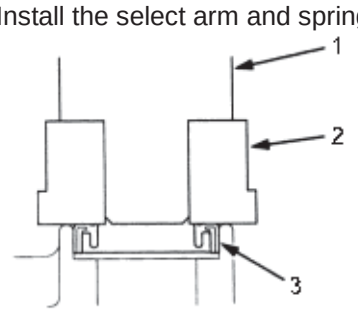
1. 6 x 1.0 mm, 15 Nm (1.5 kgf/m, 11 lbf/ft)
2. REVERSE SHIFT HOLDER

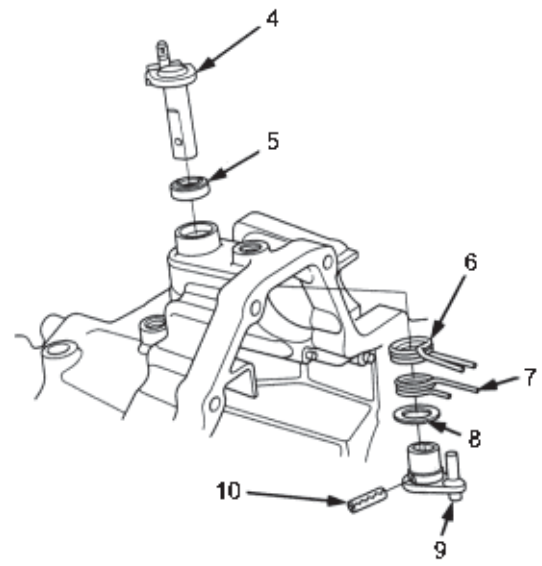
6. Install the reverse lock cam on the clutch housing.



1. 6 x 1.0 mm, 15 Nm (1.5 kgf/m, 11 lbf/ft)
2. REVERSE LOCK CAM

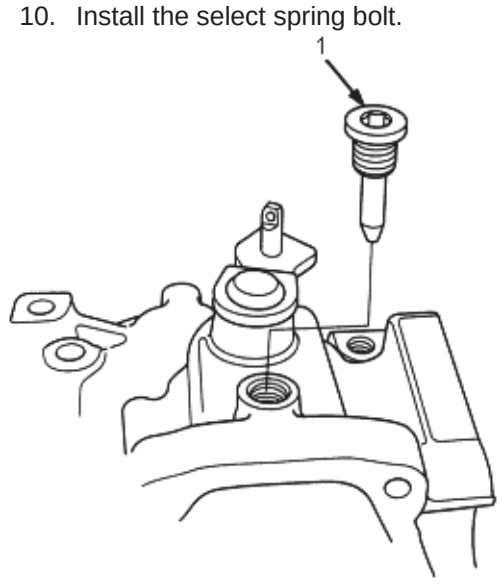
7. Install the oil seal.
8. Install the select lever, spring washer and springs on the select arm.
9. Install the select arm and spring pin.





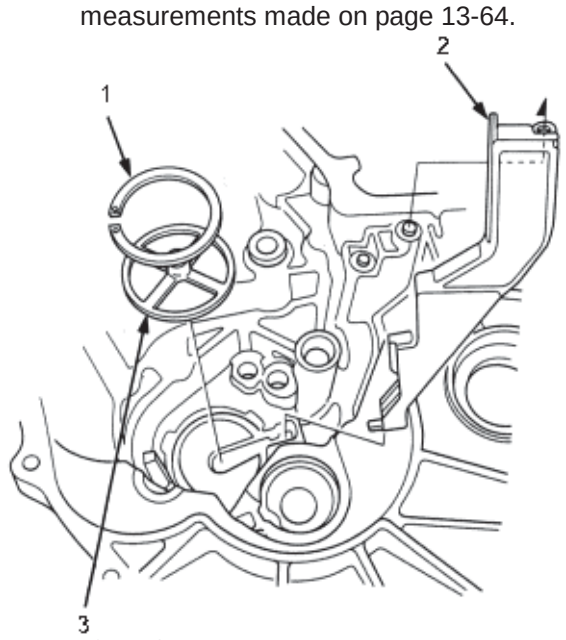
1. HANDLE DRIVER, 07749-001000
2. DRIVER ATTACHMENT, 32 x 35 mm, 07746-0010100
3. OIL SEAL, Replace
4. SELECT LEVER
5. OIL SEAL, Replace
6. SELECT RETURN SPRING
7. 5TH/REVERSE SELECT RETURN SPRING
8. THRUST WASHER
9. SELECT ARM
10. SPRING PIN, Replace

10. Install the select spring bolt.



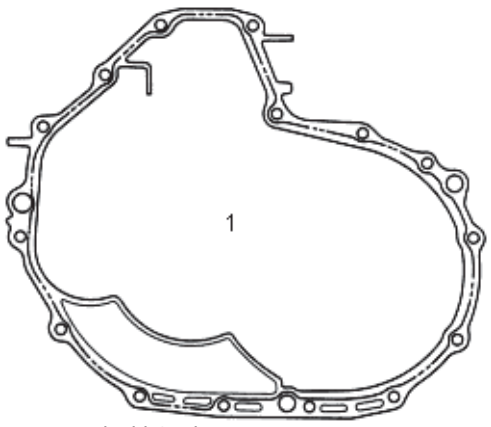
1. SELECT SPRING BOLT, 39 Nm (4.0 kgf/m, 29 lbf/ft)

11. Install the oil guide M plate, 78 mm shim and oil gutter plate in the transmission housing.
NOTE: Select the 78 mm shim according to the measurements made on page 13-64.



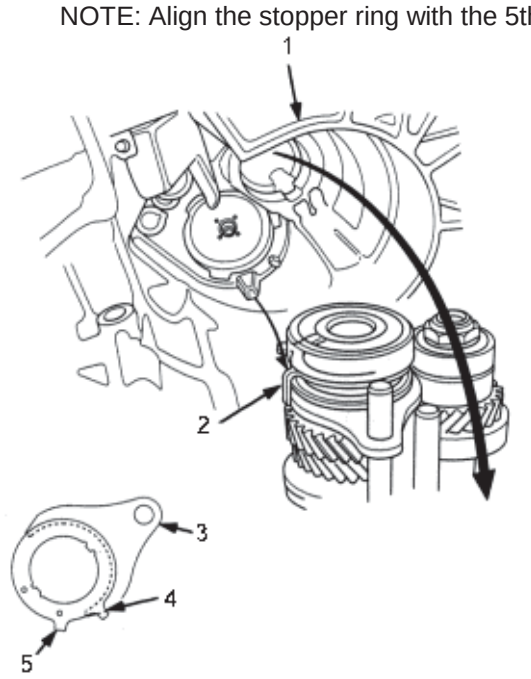
1. 78 mm SHIM
2. OIL GUTTER PLATE
3. OIL GUIDE M PLATE

12. Apply liquid gasket to the surface of the transmission housing as shown.
    NOTE:
    - Use liquid gasket (P/N 08C70-K00234M).
    - Remove the dirty fluid from the sealing surface.
    - Seal the entire circumference of the bolt holes to prevent fluid leakage.
    - If 20 minutes have passed after applying liquid gasket, reapply it and assemble the housings.
    - Allow it to cure at least 20 minutes after assembly before filling the transmission with oil.



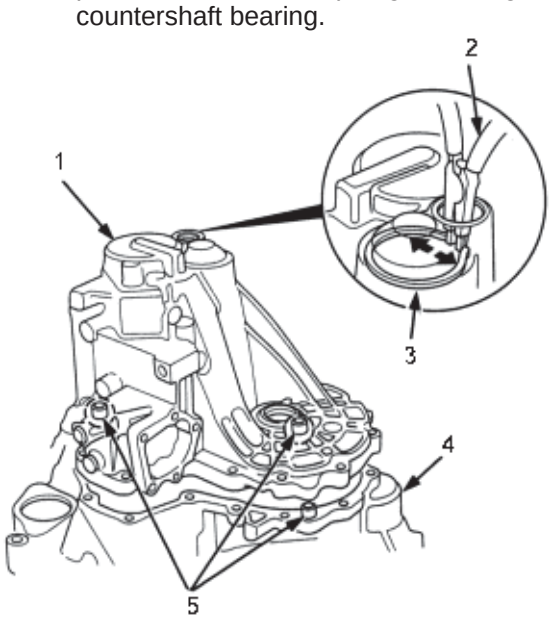
1. ---- Liquid Gasket

13. Install the 14 x 20 mm dowel pins.
14. Set the stopper ring as shown. Place the transmission housing over the clutch housing, being careful to line up the shafts.
    NOTE: Align the stopper ring with the 5th shift fork.



1. TRANSMISSION HOUSING
2. STOPPER RING
3. 5TH SHIFT FORK
4. Align point.
5. STOPPER RING

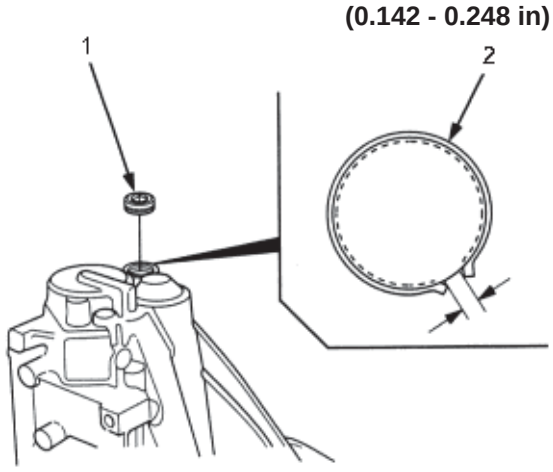
15. Lower the transmission housing with the snap ring pliers, and set the snap ring into the groove of the countershaft bearing.



1. TRANSMISSION HOUSING
2. SNAP RING PLIERS, 07LGC-0010100
3. SNAP RING
4. CLUTCH HOUSING
5. DOWEL PINS

16. Check that the snap ring is securely seated in the groove of the countershaft bearing.

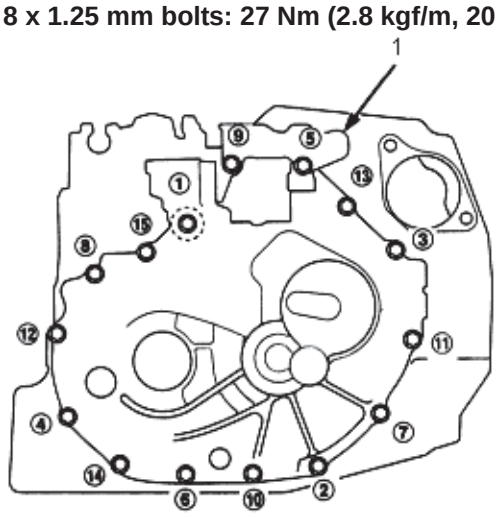
Dimension A as installed: 3.6 - 6.3 mm (0.142 - 0.248 in)



1. 32 mm SEALING BOLT, 25 Nm (2.5 kgf/m, 18 lbf/ft)
2. SNAP RING

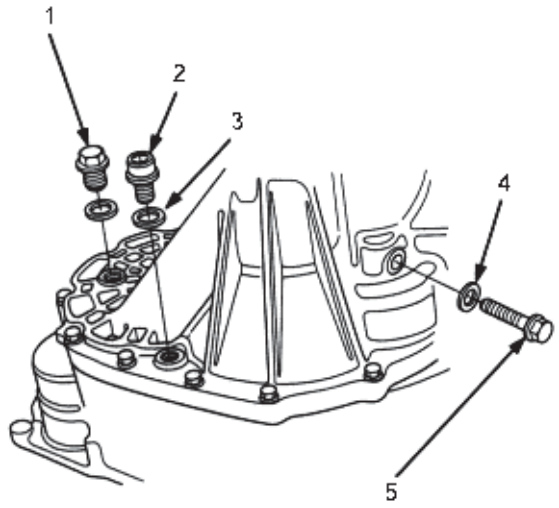
17. Install the 32 mm sealing bolt.
    NOTE: Apply liquid gasket (P/N 0Y740-99986 or 08C70-X0134S) to the threads.
18. Install transmission hanger, then tighten the bolts in a crisscross pattern in several steps as shown.

8 x 1.25 mm bolts: 27 Nm (2.8 kgf/m, 20 lbf/ft)



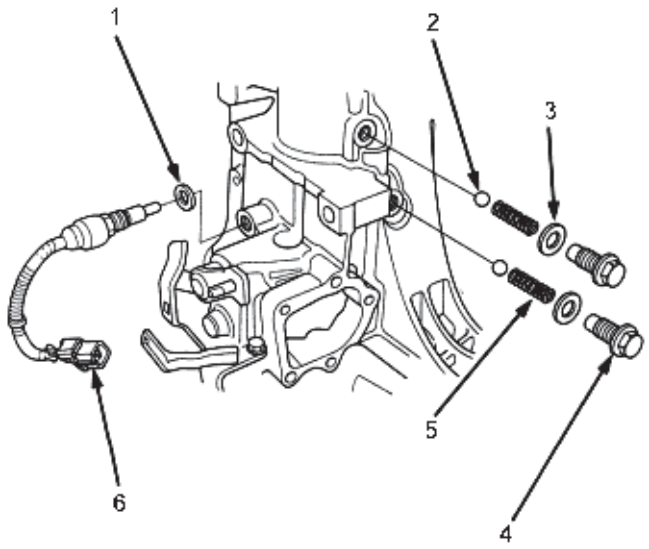
1. TRANSMISSION HANGER

19. Install flange bolt, washers, drain plug and filler plug.



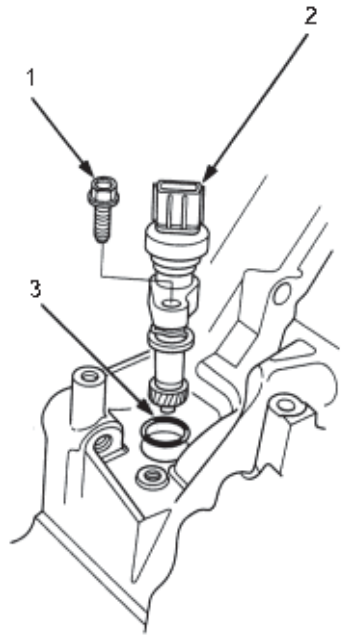
1. FILLER PLUG, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. DRAIN PLUG, 39 Nm (4.0 kgf/m, 29 lbf/ft)
3. WASHER, Replace
4. WASHER, Replace
5. FLANGE BOLT, 44 Nm (4.5 kgf/m, 33 lbf/ft)

20. Install the steel balls, springs, washers, set ball screws and back-up light switch.



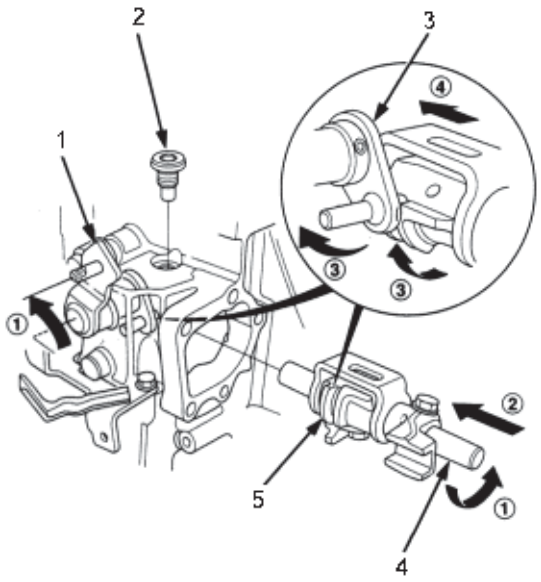
1. WASHER, Replace
2. STEEL BALL 5/16 in D.
3. WASHER, Replace
4. SET BALL SCREW, 22 Nm (2.2 kgf/m, 16 lbf/ft)
5. SPRING L. 26.1 mm (1.03 in)
6. BACK-UP LIGHT SWITCH, 22 Nm (2.2 kgf/m, 16 lbf/ft)

21. Install the vehicle speed sensor (VSS).



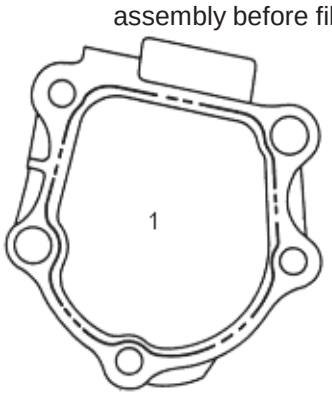
1. 8 x 1.25 mm, 22Nm (2.2 kgf/m, 16 lbf/ft)
2. VEHICLE SPEED SENSOR
3. O-RING, Replace

22. Turn the select lever and shift arm shaft counterclockwise, then insert the shift arm shaft.
23. Align the shift arm A groove and select arm finger by turning the shift arm shaft and select lever clockwise, then install the shift arm shaft assembly.
24. Apply liquid gasket (P/N 08C70-K0234M) to the threads, install the interlock bolt.



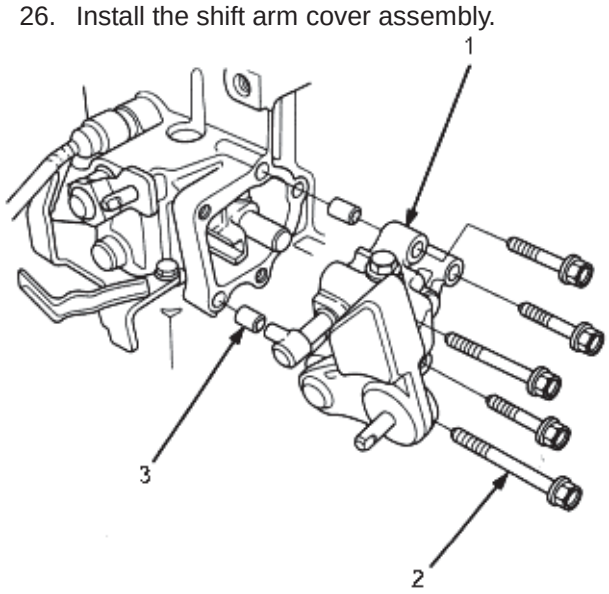
1. SELECT LEVER
2. INTERLOCK BOLT, 39 Nm (4.0 kgf/m, 29 lbf/ft)
3. SELECT ARM
4. SHIFT ARM SHAFT
5. SHIFT ARM A

25. Apply liquid gasket to the surface of the shift arm cover as shown.
    NOTE:
    - Use liquid gasket (P/N 08C70-K0234M).
    - Remove the dirty oil from the sealing surface.
    - Seal the entire circumference of the bolt holes to prevent oil leakage.
    - If 20 minutes have passed after applying liquid gasket, reapply it and assemble the housings.
    - Allow it to cure for at least 20 minutes after assembly before filling the transmission with oil.



1. ---- LIQUID GASKET

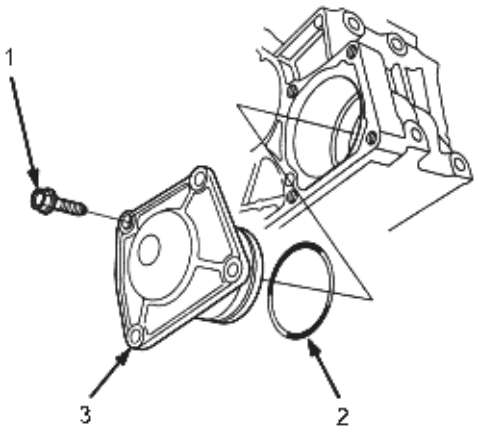
26. Install the shift arm cover assembly.



1. SHIFT ARM COVER ASSEMBLY
2. 8 x 1.25 mm, 27 Nm (2.8 kgf/m, 20 lbf/ft)
3. 10 x 12 mm DOWEL PIN

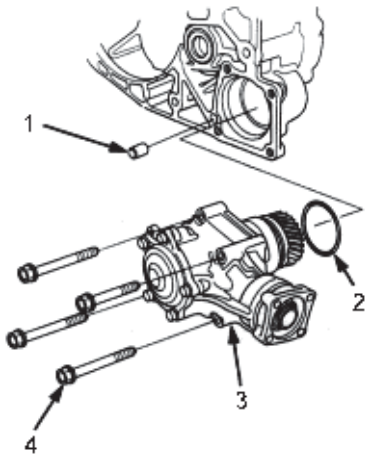
27. Install the transfer assembly or left side cover.

2WD Model:



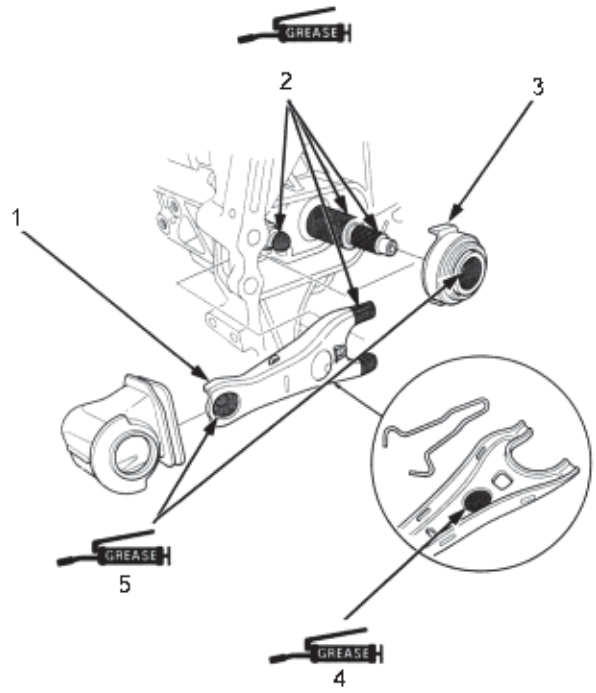
1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. O-RING, replace
3. LEFT SIDE COVER

4WD Model:



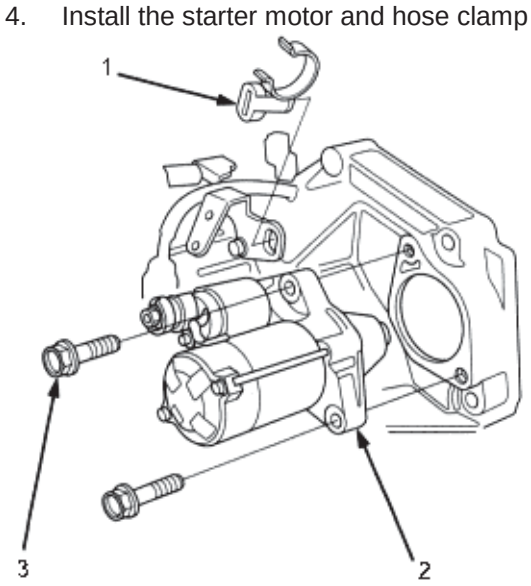
1. DOWEL PIN
2. O-RING, Replace
3. TRANSFER ASSEMBLY
4. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

1. Check the two dowel pins are installed in the clutch housing.
2. Apply HONDA Genuine Urea Grease UM264 (P/N 41211-PY-305) to the release fork, the release fork bolt, the release bearing and the release bearing guide.
3. Install the release bearing, release fork and boot on the transmission.



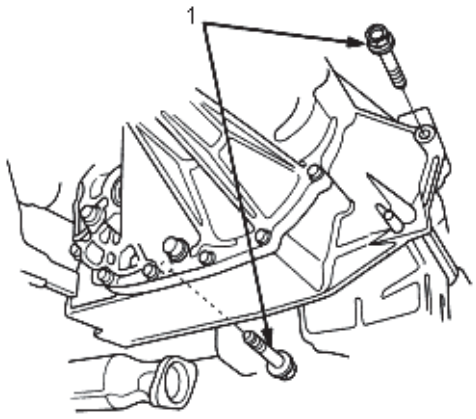
1. RELEASE FORK
2. GREASE (P/N 41211-PY5-305)
3. RELEASE BEARING
4. GREASE (P/N 41211-PY5-305), 0.4 - 1.0 g (0.01 - 0.04 oz)
5. GREASE (P/N 41211-PY5-305), 0.4 - 1.0 g (0.01 - 0.04 oz)

4. Install the starter motor and hose clamp



1. HOSE CLAMP
2. STARTER MOTOR
3. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 32 lbf/ft)

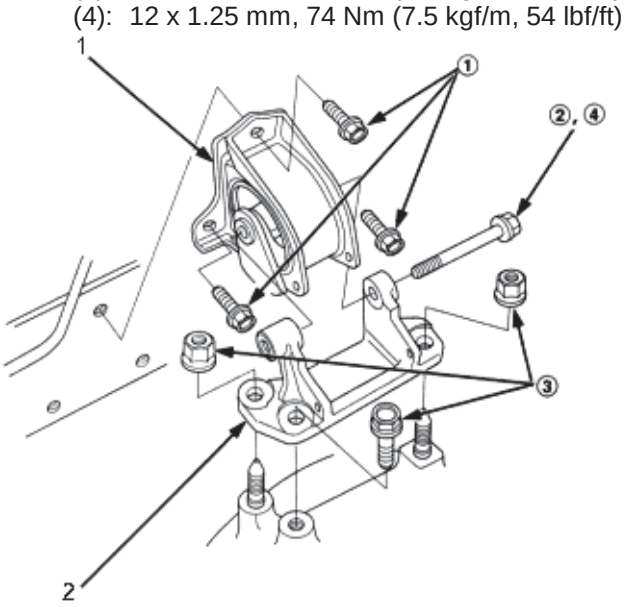
5. Place the transmission on the transmission jack and raise it to the engine level.
6. Install the two lower transmission mounting bolts.



1. TRANSMISSION MOUNTING BOLT, 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47b lbf/ft)

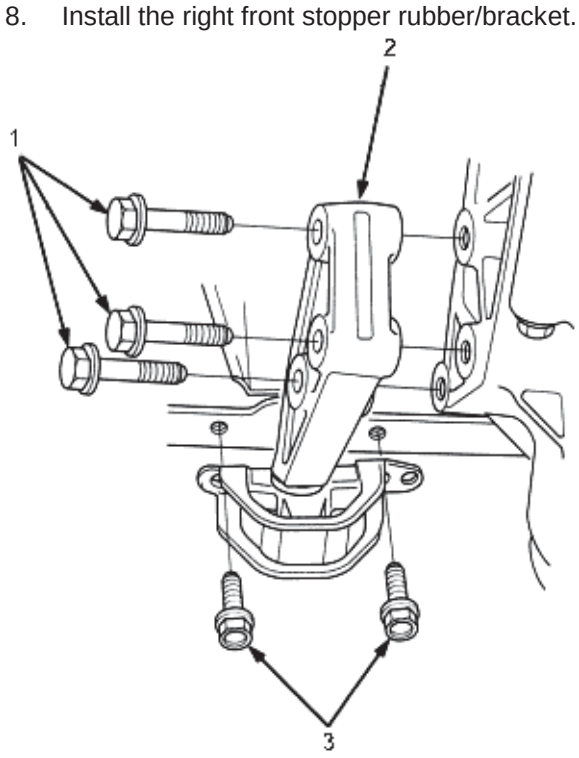
7. Raise the transmission, then install the transmission mount bracket and transmission mount rubber.
   - Torque the mounting bolts and nuts in the sequence shown.
   - Check that the bushings are not twisted or offset.

   (1): 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
   (2): Temporary tightening
   (3): 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
   (4): 12 x 1.25 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft)



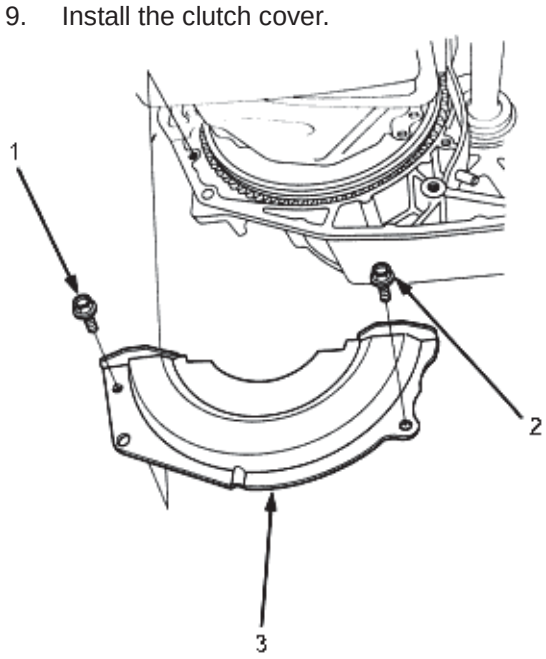
1. TRANSMISSION MOUNT RUBBER
2. TRANSMISSION MOUNT BRACKET

8. Install the right front stopper rubber/bracket.



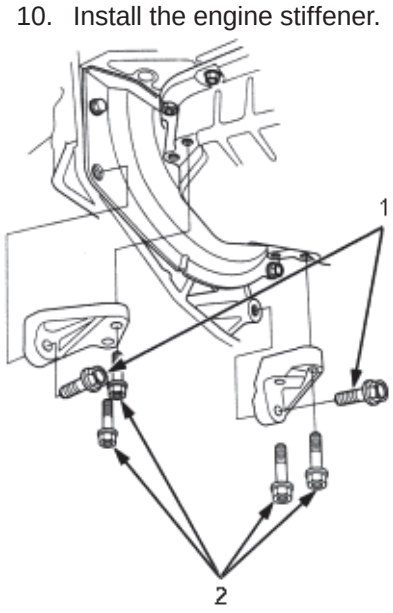
1. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft) Replace
2. RIGHT FRONT STOPPER RUBBER/BRACKET
3. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

9. Install the clutch cover.

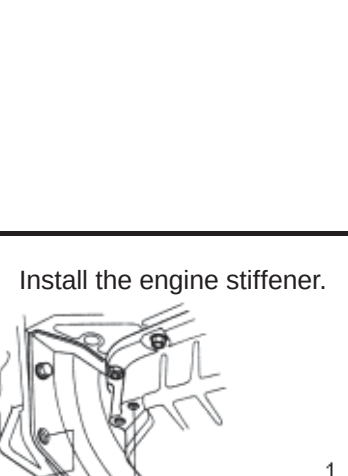


1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
3. CLUTCH COVER

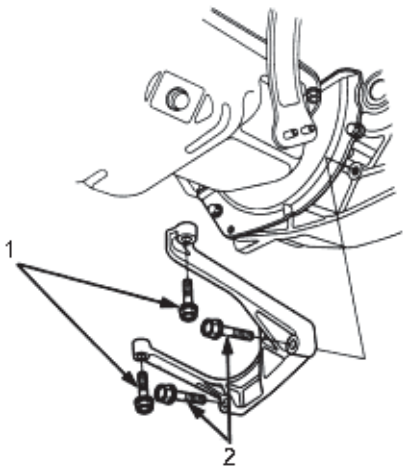
10. Install the engine stiffener.



1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

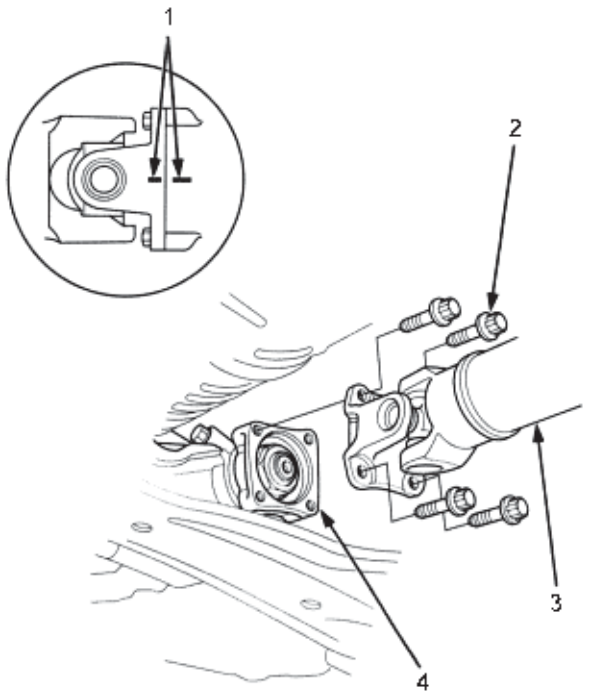


1. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)



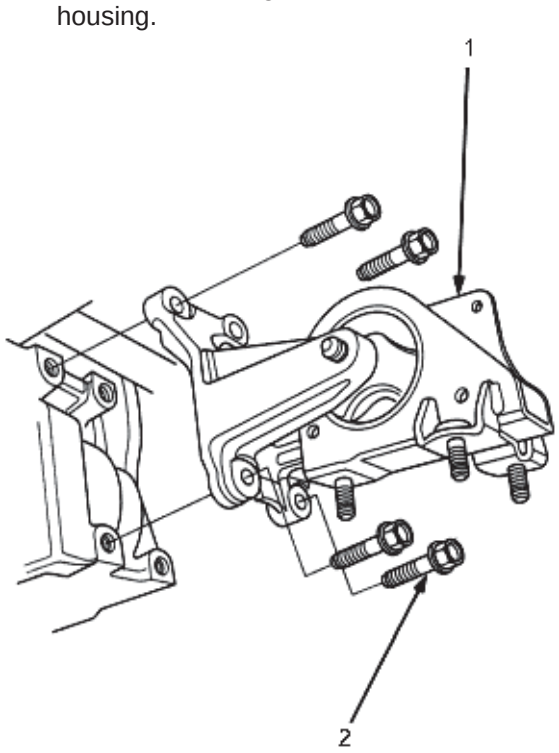
1. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

11. Install the propeller shaft to the transfer assembly by aligning the reference marks (only SEPM model manual transmission).



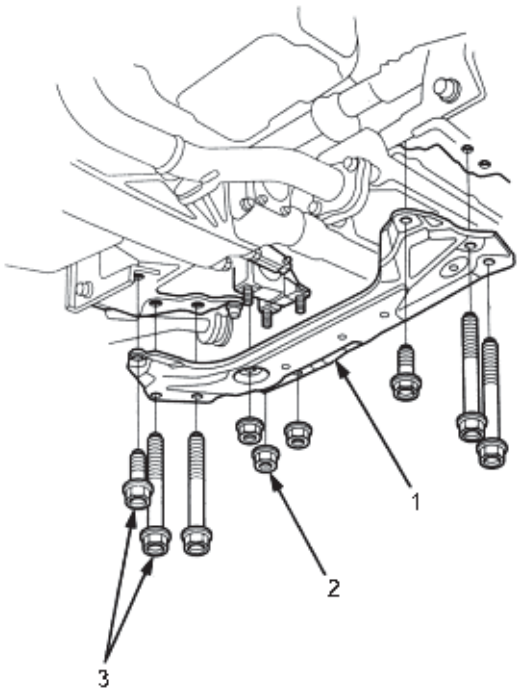
1. REFERENCE MARKS
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24lbf/ft)
3. PROPELLER SHAFT
4. TRANSFER

12. Install the rear engine mount bracket/rubber to clutch housing.



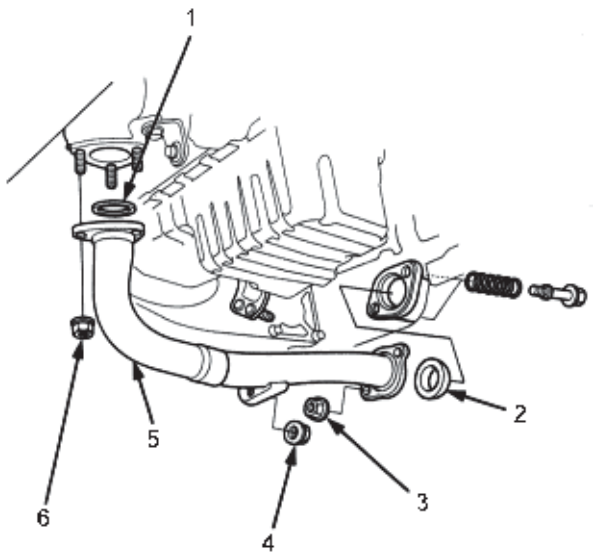
1. REAR ENGINE MOUNT BRACKET/RUBBER
2. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)

13. Install the rear beam.



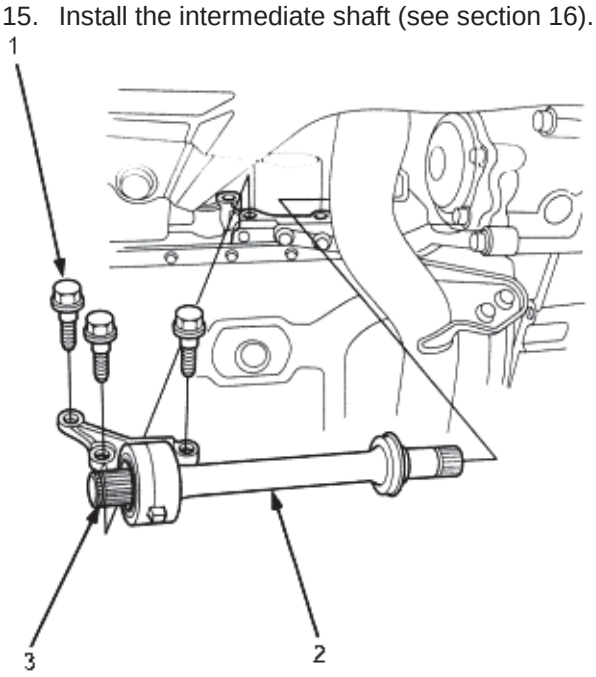
1. REAR BEAM
2. 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)
3. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

14. Install the exhaust pipe A.



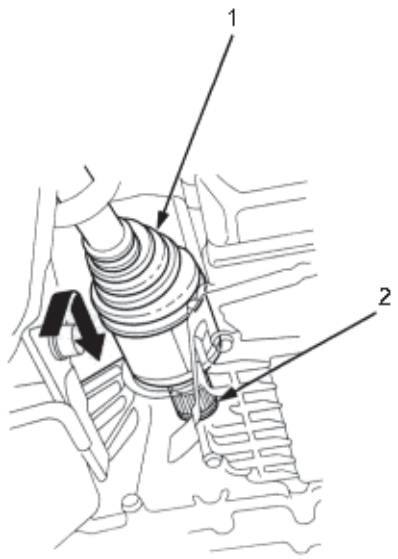
1. GASKET, Replace
2. GASKET, Replace
3. SELF-LOCKING NUT, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft) Replace
4. SELF-LOCKING NUT, 8 x 1.25 mm, 16 Nm (1.6 kgf/m, 12 lbf/ft) Replace
5. EXHAUST PIPE A
6. SELF-LOCKING NUT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft) Replace

15. Install the intermediate shaft (see section 16).



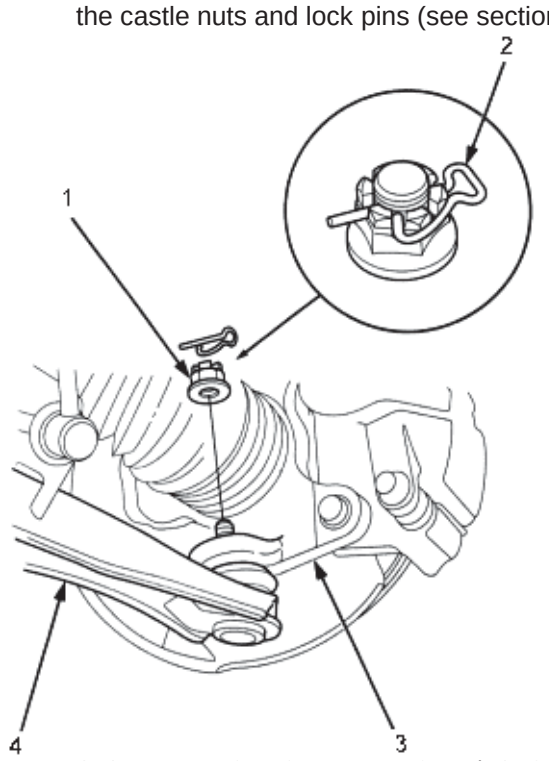
1. 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)
2. INTERMEDIATE SHAFT
3. SE RING, Replace

16. Install the driveshafts with new set rings (see section 16).



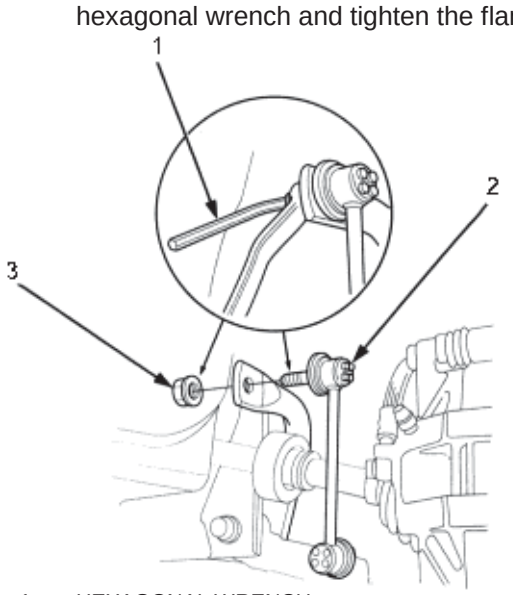
1. DRIVESHAFT
2. SET RING, Replace

17. Install the knuckle onto the lower arms and install the castle nuts and lock pins (see section 18).



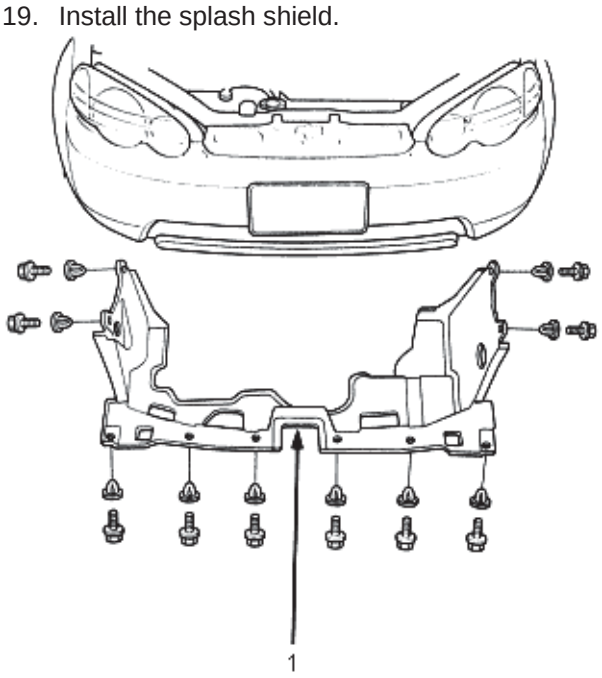
1. CASTLE NUT, 12 x 1.25 mm, 45 - 59 Nm (5.0 - 6.0 kgf/m, 36 - 43 lbf/ft)
2. LOCK PIN, Replace
3. KNUCKLE
4. LOWER ARM

18. Connect the from stabiliser link and front stabiliser, then hold the stabiliser link ball joint pin with a hexagonal wrench and tighten the flange nut.



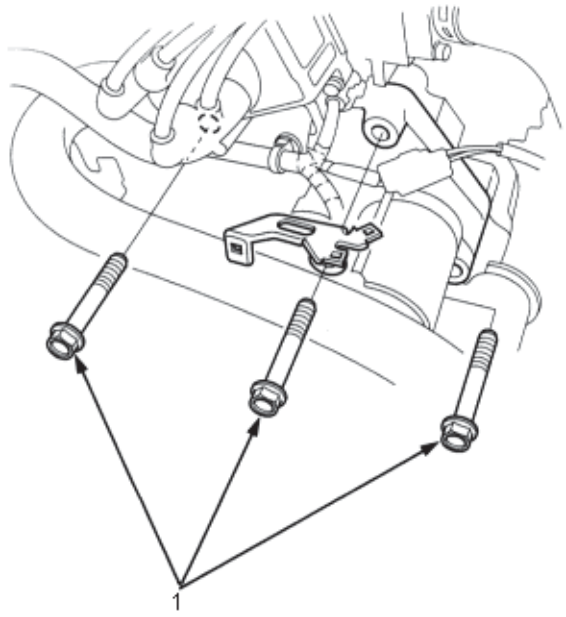
1. HEXAGONAL WRENCH
2. FRONT STABILISER LINK
3. 10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)

19. Install the splash shield.



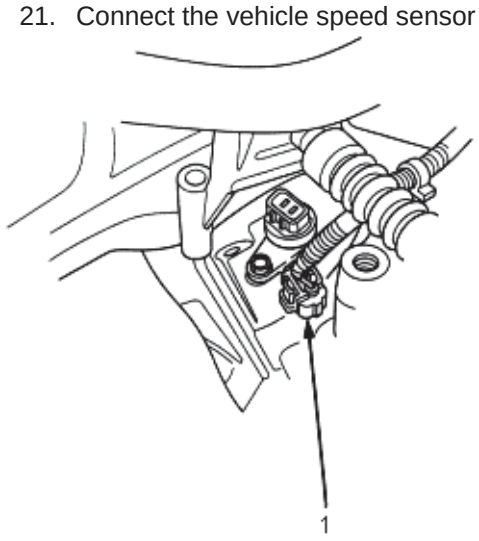
1. SPLASH SHIELD

20. Install the three upper transmission mounting bolts.



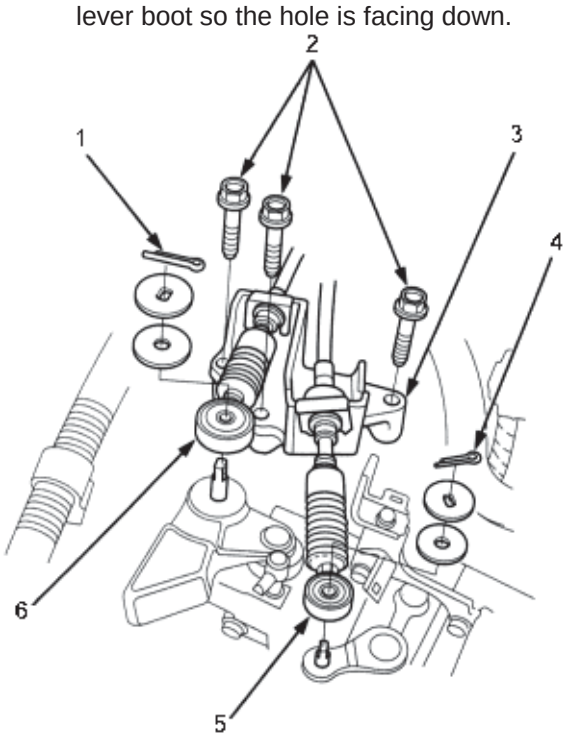
1. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

21. Connect the vehicle speed sensor (VSS) connector.



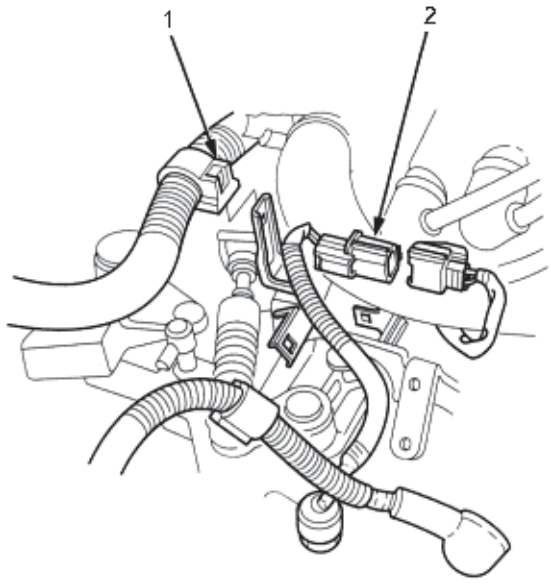
1. VSS CONNECTOR

22. Install the cable bracket and cables. turn the shift lever boot so the hole is facing down.



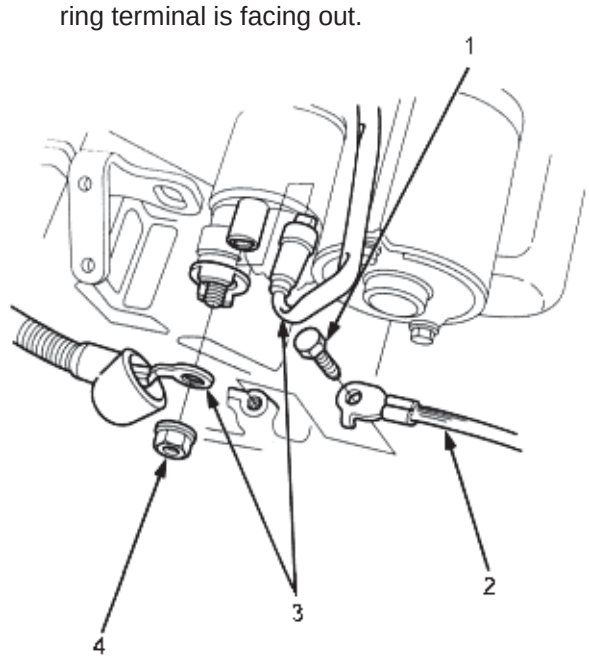
1. COTTER PIN, Replace
2. 8 x 1.25 mm, 27 Nm (2.8 kgf/m, 20 lbf/ft)
3. CABLE BRACKET
4. COTTER PIN, Replace
5. SELECT CABLE
6. SHIFT CABLE

23. Connect the back-up light switch connector.
24. Install the wire harness clamp.



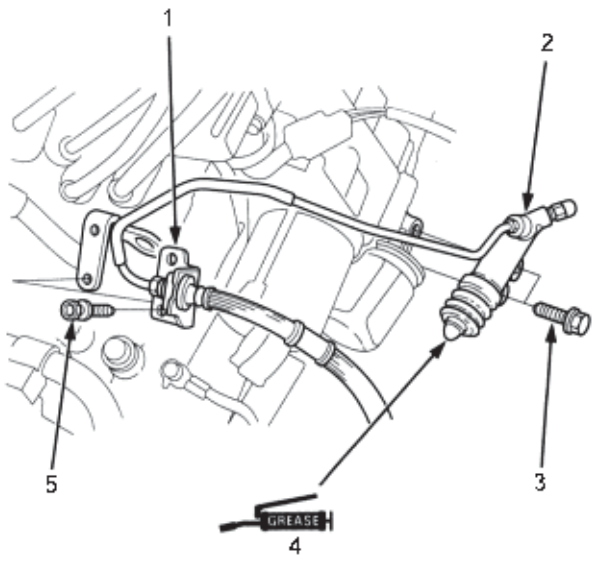
1. HARNESS CLAMP
2. BACK-UP LIGHT SWITCH CONNECTOR

25. Connect the starter motor cables and transmission ground cable. make sure that the crimped side of the ring terminal is facing out.



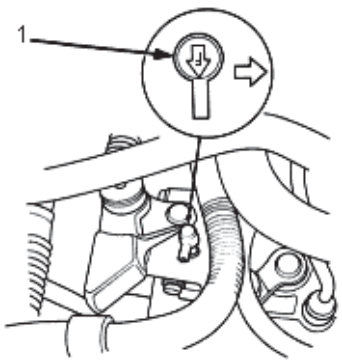
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. TRANSMISSION GROUND CABLE
3. STARTER MOTOR CABLES
4. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

26. Apply HONDA Genuine Urea Grease UM264 (P/N 41211-PY5-305) to the end of the slave cylinder rod. Install the slave cylinder and clutch line clamp. Take care not to bend the clutch line.



1. CLUTCH HOSE BRACKET
2. SLAVE CYLINDER
3. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
4. GREASE (P/N 41211-PY5-305)
5. 6 x 1.0 mm, 9.8 NM (1.0 kgf/m, 7.2 lbf/ft)

27. Turn the breather cap so that the "F" mark points towards the front of the vehicle.



1. BREATHER CAP

28. Install the battery. Connect the positive (+) cable first, then the negative (-) cable to the battery.
29. Refill the MTF (**See page** 13-4).
30. Test drive the vehicle.
31. Check the clutch operation.
32. Check the transmission for noise and smooth operation.
33. Check the front wheel alignment (see section 18).

This 4WD model does not have the feature that mechanically switches between 4WD and 2WD (front-wheel drive). Therefore, speedometer testing should be conducted using simplified free rollers under the rear wheels.

Precautions on using free rollers:

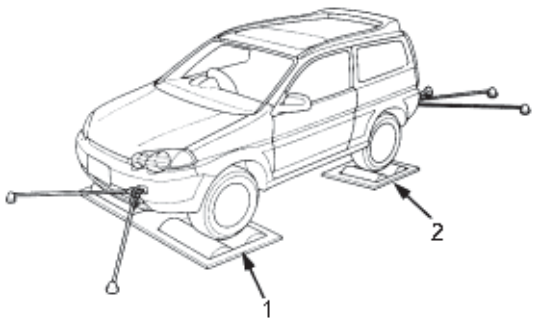
- **Inspecting and testing using a chassis dynamometer is not feasible.**
- **Do not operate the accelerator pedal, brake pedal or steering wheel abruptly. It may cause the vehicle to roll and create a hazardous condition.**
- **The maximum testing speed should be 50 km/h (31 mph).**
- **The maximum continuous operating time should be three minutes.**
- **Make sure to tie down the vehicle securely with the side anchor wires and centre tie down wire. The free rollers are to be set under the rear wheels.**

⚠ CAUTION

- Make sure to place the free rollers parallel to the roller of each speedometer tester.
- Putting the front and rear wheels on the speedometer testers and free rollers inappropriately may cause the vehicle to roll off or over the free rollers and create a hazardous condition.
- The side anchor wires and centre tie-down wire must be appropriately tensioned. If the wires have too much slack, the expected tie-down efficiency cannot be obtained.
- When attaching the side anchor wires and centre tie-down wire, make sure they are not interfering with the bumper and other parts of the vehicle body.
- Do not attach the wires to any place other than the designed areas.
- Do not operate the speedometer testers at a speed more than 50 km/h (31 mph) or for more than three minutes.

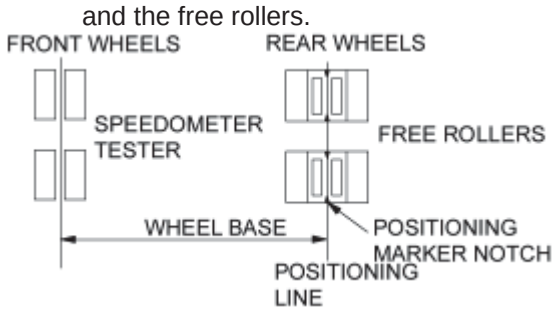
Testing Procedures

1. Set the free rollers according to the wheel base and tread of the vehicle.
   NOTE: Align the position marker notch to the positioning line

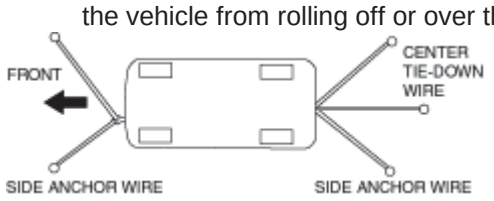


1. SPEEDOMETER TESTER
2. FREE ROLLER

2. Move the vehicle to position the front wheels on the speedometer testers and the rear wheels on the free rollers. Make sure to align the centre of the wheels to the centre of the speedometer testers and the free rollers.

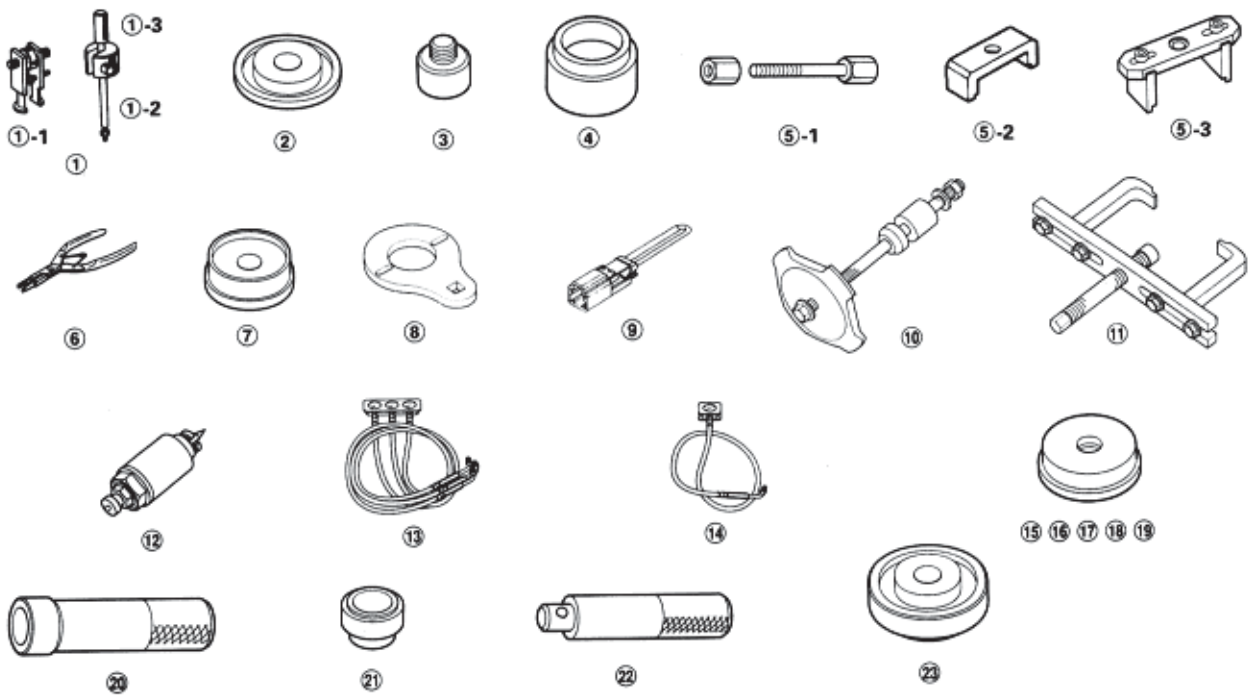


3. Tie down the vehicle securely using the towing hook and the rear tie-down hook bracket to prevent the vehicle from rolling off or over the free rollers.



4. Start the engine, shift the transmission to D position (CVT/Honda Multi Matic), accelerate the vehicle gradually and measure the vehicle speed.
5. After measurement, use the brake pedal to gradually decelerate and stop the vehicle.

Ref No.	Tool Number	Description	Qty	Remark
1	07JAC-PH80000	Adjustable Bearing Remover Set	1	
1-1	07JAC-PH80100	Bearing Remover Attachment	1	
1-2	07JAC-PH80200	Remover Handle Assembly	1	
1-3	07741-0010201	Remover Weight	1	
2	07JAD-PH80101	Driver Attachment, 58 mm	1	
3	07JAD-PH80200	Pilot, 26 x 30 mm	1	
4	07LAD-PW50601	Inner Race Driver	1	
5	07LAE-PX40000	Clutch Spring Compressor Set	1	
5-1	07GAE-PG40200	Clutch Spring Compressor Bolt Assembly	1	
5-2	07HAE-PL50100	Clutch Spring Compressor Attachment	1	
5-3	07LAE-PX40100	Clutch Spring Compressor Attachment	1	
6	07LGC-0010100	Snap Ring Pliers	1	
7	07NAD-PX40100	Driver Attachment, 78 x 80 mm	1	
8	07PAB-0020000	Companion Flange Holder	1	
9	07PAZ-0010100	SCS Short Connector	1	
10	07TAE-P4V0110	Reverse Brake Spring Compressor	1	
11	07TAE-P4V0120	Start Clutch Remover	1	
12	07TAE-P4V0130	Start Clutch Installer	1	
13	07406-0020004	A/T Oil Pressure Gauge Set	1	
14	07406-0070001	A/T Low Pressure Gauge	1	
15	07746-0010100	Driver Attachment, 32 x 35 mm	1	
16	07746-0010200	Driver Attachment, 37 x 40 mm	1	
17	07746-0010400	Driver Attachment, 52 x 55 mm	1	
18	07746-0010500	Driver Attachment, 62 x 68 mm	1	
19	07746-0010600	Driver Attachment, 72 x 75 mm	1	
20	07746-0030100	Driver 40 mm I.D.	1	
21	07746-0030400	Driver Attachment, 35 mm I.D.	1	
22	07749-0010000	Handle Driver	1	
23	07947-SD90200	Driver Attachment, 73 x 73 mm	1	



The Continuously Variable Transmission (CVT/Honda Multi Matic) is an electronically controlled automatic transmission with drive and driven pulleys and a steel belt. The CVT/Honda Multi Matic provides non-stage speeds forward and one reverse. The entire unit is positioned in line with the engine.

Transmission

Around the outside of the flywheel is a ring gear which meshes with the starter pinion when the engine is being started. The transmission has four parallel shafts: the input shaft, the drive pulley shaft, the driven pulley shaft and the secondary gear shaft. The input shaft is in line with the engine crankshaft. The drive pulley shaft and the driven pulley shaft consist of movable and fixed face pulleys. Both pulleys are linked by the steel belt.

The input shaft includes the sun gear. The drive pulley shaft includes the forward clutch which mounts the carrier assembly on the forward clutch drum. The carrier assembly includes the pinion gears which mesh with the sun gear and the ring gear. The ring gear has a hub-mounted reverse brake disc.

The driven pulley shaft includes the start clutch and the secondary drive gear which is integral with the parking gear. The secondary gear shaft is positioned between the secondary drive gear and the final driven gear. The secondary gear shaft includes the secondary driven gear which services to change the rotation direction, because the drive pulley shaft and the driven pulley shaft rotate the same direction. When certain combinations of planetary gears in the transmission are engaged by the clutches and the reverse brake, power is transmitted from the drive pulley shaft to the driven pulley shaft to provide L, D, R.

Electronic Control

The electronic control system consists of a Powertrain Control Module (PCM, sensors, three linear solenoids and an inhibitor solenoid. Shifting is electronically controlled for comfort under all conditions. Also a Grade Logic Control System has been adopted to control shifting in D position while the vehicle is ascending or descending a slope. The PCM is located below the dashboard, under the kick panel on the passenger's side.

Hydraulic Control

The lower valve body assembly includes the main valve body, the Pressure Low (PL) regulator valve body, the shift valve body, the start clutch control valve body and the secondary valve body. They are positioned on the lower part of the transmission housing.

The main valve body contains the Pressure High (PH) control valve, the lubrication valve and the pitot regulator valve.

The secondary valve body contains the PH regulator valve, the clutch reducing valve, the start clutch valve accumulator and the shift inhibitor valve. The PL regulator valve body contains the PL regulator valve and the PH-PL control valve which is joined with the PH-PL control linear solenoid. The inhibitor solenoid valve is bolted on the PL regulator valve body.

The shift valve body contains the shift valve and the shift control valve, which is joined with the shift control linear solenoid. The start clutch control valve body contains the start clutch control valve, which is joined with the start clutch control linear solenoid. The linear solenoids and the inhibitor solenoid are controlled by the PCM. The manual valve body which contains the manual valve and the reverse inhibitor valve, is bolted on the intermediate housing.

The ATF pump assembly is located on the transmission housing and it is linked with the input shaft by the sprockets and the sprocket chain. The pulleys and the clutch receive fluid from their respective fee pipes and the reverse brake receives fluid from internal hydraulic circuit.

Shift Control Mechanism

Input from various sensors located throughout the vehicle determines which linear solenoid the PCM will activate. Activating the shift control linear solenoid changes the shift control valve pressure, causing the shift valve to move. This pressurises the drive pulley pressure to the drive pulley and the driven pulley pressure to the driven pulley and changes their effective pulley ratio. Activating the start clutch control linear solenoid moves the start clutch control valve. The start clutch control valve uncovers the port, providing pressure to the start clutch to engage it.

Gear Selection

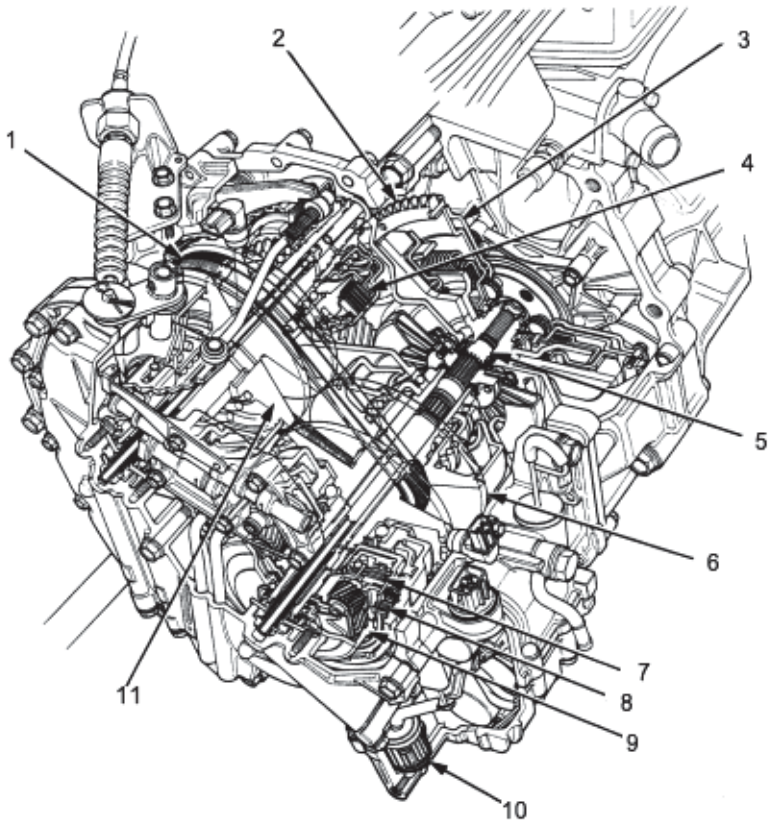
The shift lever has five positions: P, PARK, R REVERSE, N NEUTRAL, D DRIVE and L LOW.

Position	Description
P PARK	Front wheels locked; parking brake pawl engaged with the parking gear on the driven pulley shaft. The start clutch and the forward clutch released.
R REVERSE	Reverse; reverse brake engaged.
N NEUTRAL	Neutral; the start clutch and the forward clutch released.
D DRIVE	This position has two modes: Drive mode and Sport mode with switching the mode switch on the steering wheel. ♦ Drive mode with turning **D** mode switch on: General driving; the transmission automatically adjusts to keep the engine at the best speed for driving conditions. ♦ Sport mode with turning **S** mode switch on: For rapid acceleration; the transmission selects a wider range of ratios to give better acceleration.
L LOW	For engine braking and power for climbing; the transmission shifts into the lowest range of the ratios

Starting is possible only in P and N positions through the use of a slide-type, neutral-safety switch.

Automatic Transaxle (A/T) Gear Position Indicator

The A/T gear position indicator in the instrument panel shows which gear has been selected without having to look down at the console.



1. **STEEL BELT**
2. **RING GEAR**
3. **FLYWHEEL**
4. **START CLUTCH**
5. **INPUT SHAFT**
6. **DRIVE PULLEY**
7. **FORWARD CLUTCH**
8. **REVERSE BRAKE**
9. **PLANETARY GEAR SET**
10. **ATF FILTER**
11. **DRIVEN PULLEY**

Clutches/Reverse Brake

The CVT uses the hydraulically-actuated clutches and brake to engage or disengage the transmission gears. When hydraulic pressure is introduced into the clutch drum and the reverse brake piston cavity, the clutch piston and the reverse brake piston move. This presses the friction discs and the steel plates together, locking them so they don't slip. Power is then transmitted through the engaged clutch pack to its hub-mounted gear and through engaged ring gear to pinion gears.

Likewise, when the hydraulic pressure is bled from the clutch pack and the reverse brake piston cavity, the piston releases the friction discs and the steel plates, they are free to slide past each other. This allows the gear to spin independently on its shaft, transmitting no power.

Start Clutch

The start clutch, which is located at the end of the driven pulley shaft, engages/disengages the secondary drive gear.

The start clutch is supplied hydraulic pressure by its ATF feed pipes within the driven pulley shaft.

Forward Clutch

The forward clutch, which is located at the end of the drive pulley shaft, engages/disengages the sun gear.

The forward clutch is supplied hydraulic pressure by its ATF feed pipe within the drive pulley shaft.

Reverse Brake

The reverse brake, which is located inside the intermediate housing around the ring gear, locks the ring gear in R position. The reverse brake discs are mounted to the ring gear and the reverse brake plates are mounted to the intermediate housing. The reverse brake is supplied hydraulic pressure by a circuit connected to the internal hydraulic circuit.

Planetary Gear

The planetary gear consists of a sun gear, a carrier assembly and a ring gear. The sun gear is connected to the input shaft with splines. The pinion gears are mounted to the carrier which is mounted to the forward clutch drum. The sun gear inputs the engine power via the input shaft to the planetary gear and the carrier outputs the engine power. The ring gear is only used for switching the rotation direction of the pulley shafts.

In D and L positions (forward range), the pinion gears don't rotate and revolve with the sun gear, so the carrier rotates. In R position (reverse range), the reverse brake locks the ring gear and the sun gear drives the pinion gears to rotate. The pinion gears rotate and revolve in the opposite direction from the rotation direction of the sun gear and the carrier rotates with pinion gear revolution.

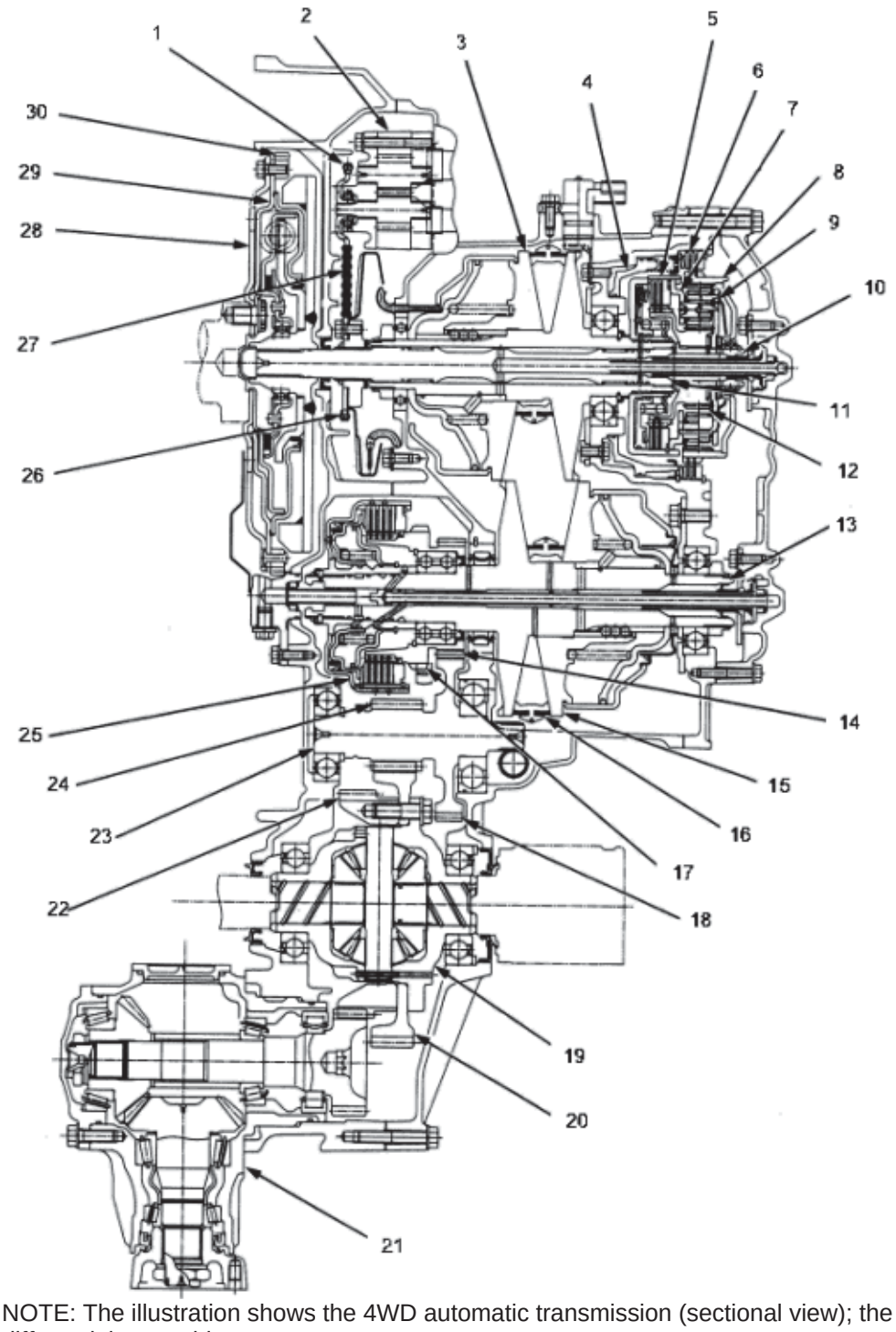
Pulleys

Each pulley consists 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 drive pulley to eliminate the steel belt slippage. To achieve a high pulley ratio, high hydraulic pressure works on the movable face of the driven pulley to eliminate the steel belt slippage.

Transfer Mechanism (4WD)

The transfer mechanism consists of the transfer shaft drive gear, the transfer shaft, the transfer drive gear, the transfer driven gear shaft and the companion flange. The transfer mechanism assembly is on the rear side of the transmission, beside the differential. The transfer shaft drive gear on the final driven gear drives the transfer shaft driven gear. Power is transmitted to the rear differential via the transfer shaft and the propeller shaft.



1. **ATF PUMP DRIVEN SPROCKET**
2. **ATF PUMP**
3. **DRIVE PULLEY**
4. **REVERSE BRAKE PISTON**
5. **FORWARD CLUTCH**
6. **REVERSE BRAKE**
7. **CARRIER**
8. **RING GEAR**
9. **PLANETARY PINION GEAR**
10. **INPUT SHAFT**
11. **DRIVE PULLEY SHAFT**
12. **SUN GEAR**
13. **DRIVEN PULLEY SHAFT**
14. **SECONDARY DRIVE GEAR**
15. **DRIVEN PULLEY**
16. **STEEL BELT**
17. **PARKING GEAR**
18. **SECONDARY DRIVEN GEAR**
19. **DIFFERENTIAL ASSEMBLY**
20. **FINAL DRIVEN GEAR**
21. **TRANSFER ASSEMBLY,** (4WD model)
22. **TRANSFER SHAFT DRIVE GEAR,** (4WD model)
23. **SECONDARY GEAR SHAFT**
24. **FINAL DRIVE GEAR**
25. **START CLUTCH**
26. **ATF PUMP DRIVE SPROCKET**
27. **ATF PUMP DRIVE CHAIN**
28. **DRIVE PLATE**
29. **FLYWHEEL**
30. **RING GEAR**

NOTE: The illustration shows the 4WD automatic transmission (sectional view); the 2WD transmission does not have a transfer assembly and transfer shaft drive gear on the differential assembly.

N Position

- Start Clutch: released
- Forward Clutch: released
- Reverse Brake: released

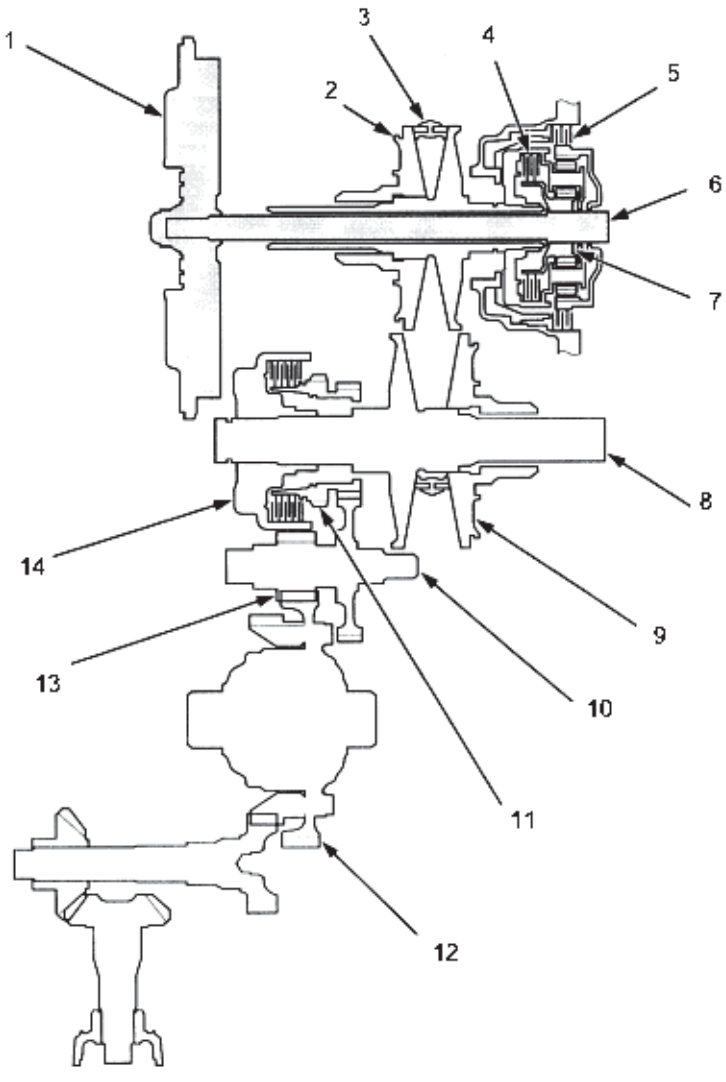
Hydraulic pressure is not applied to the start clutch, forward clutch and the reverse brake. Power is not transmitted to the secondary drive gear.

P Position

- Start Clutch: released
- Forward Clutch: released
- Reverse Brake: released

Hydraulic pressure is not applied to the start clutch, forward clutch and the reverse brake. Power is not transmitted to the secondary drive gear. The secondary drive gear is locked by the parking brake pawl interlocking the parking gear.

NOTE: The illustration shows the 4WD automatic transmission, power flow of the 2WD transmission is identical to the 4WD except for parts related to the transfer assembly.



1. **FLYWHEEL**
2. **DRIVE PULLEY**
3. **STEEL BELT**
4. **FORWARD CLUTCH**
5. **REVERSE BRAKE**
6. **INPUT SHAFT**
7. **SUN GEAR**
8. **DRIVE PULLEY SHAFT**
9. **DRIVEN PULLEY**
10. **SECONDARY DRIVE GEAR**
11. **PARKING GEAR**
12. **FINAL DRIVEN GEAR**
13. **FINAL DRIVE GEAR**
14. **START CLUTCH**

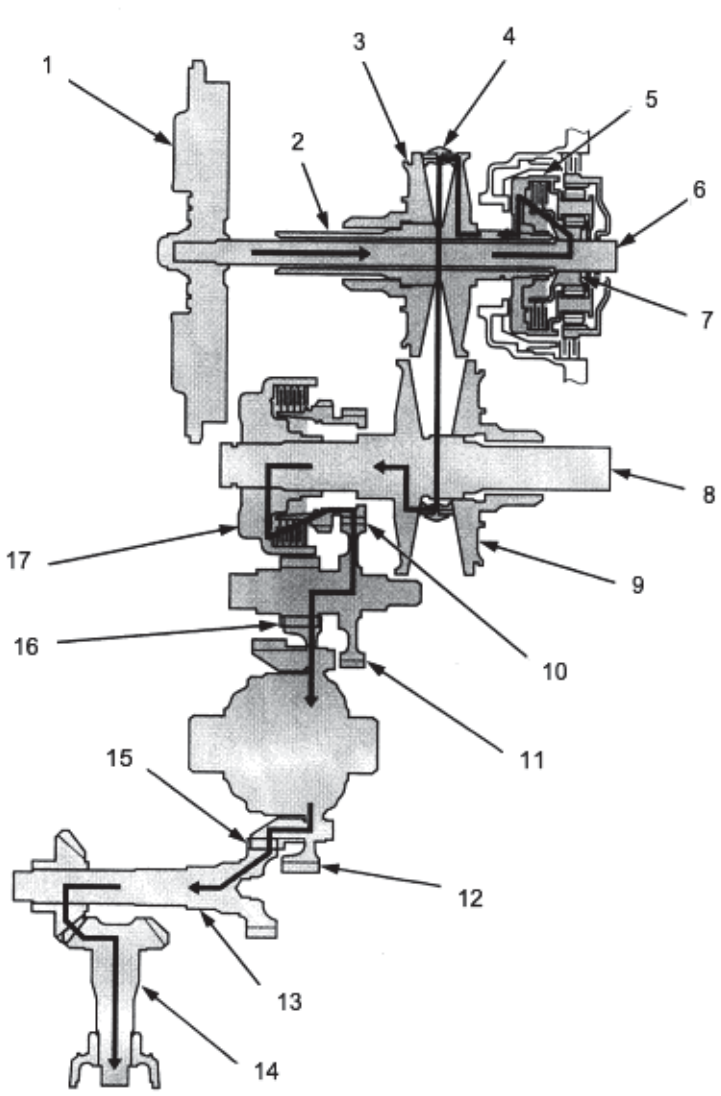
D and **L** **Positions (Forward Range)**

- Start Clutch: engaged
- Forward Clutch: engaged
- Reverse Brake: released

1. The hydraulic pressure is applied to the forward clutch and the start clutch and the sun gear drives the forward clutch.
2. The forward clutch drives the drive pulley shaft, which drives the driven pulley shaft linked by the steel belt.
3. The driven pulley shaft drives the secondary drive gear, via the start clutch.
4. Power is transmitted to the secondary driven gear, which drives the final driven gear.

NOTE:

- The working hydraulic pressure on the movable face of each shaft depends on the throttle opening position.
- The illustration shows the 4WD automatic transmission, power flow of the 2WD transmission is identical to the 4WD except for parts related to the transfer assembly.



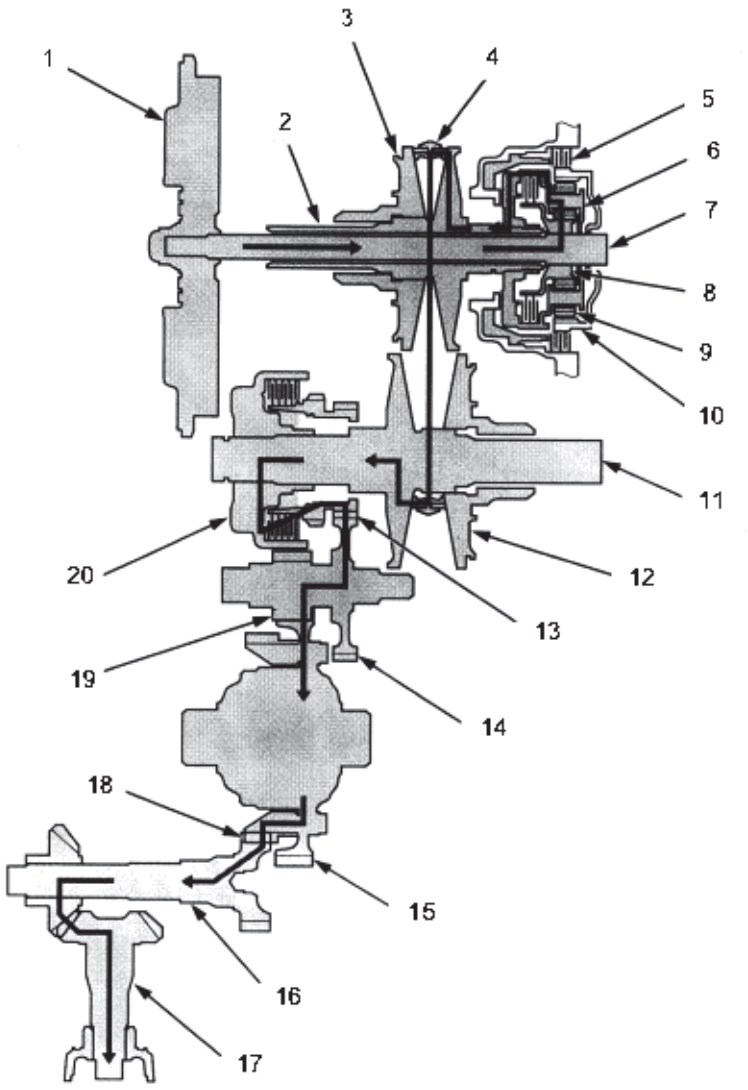
1. **FLYWHEEL**
2. **DRIVE PULLEY SHAFT**
3. **DRIVE PULLEY**
4. **STEEL BELT**
5. **FORWARD CLUTCH**
6. **INPUT SHAFT**
7. **SUN GEAR**
8. **DRIVE PULLEY SHAFT**
9. **DRIVEN PULLEY**
10. **SECONDARY DRIVE GEAR**
11. **SECONDARY DRIVEN GEAR**
12. **FINAL DRIVEN GEAR**
13. **TRANSFER SHAFT**
14. **TRANSFER DRIVEN GEAR SHAFT**
15. **TRANSFER SHAFT DRIVE GEAR**
16. **FINAL DRIVE GEAR**
17. **START CLUTCH**

R Position

- Start Clutch: engaged
- Forward Clutch: engaged
- Reverse Brake: released

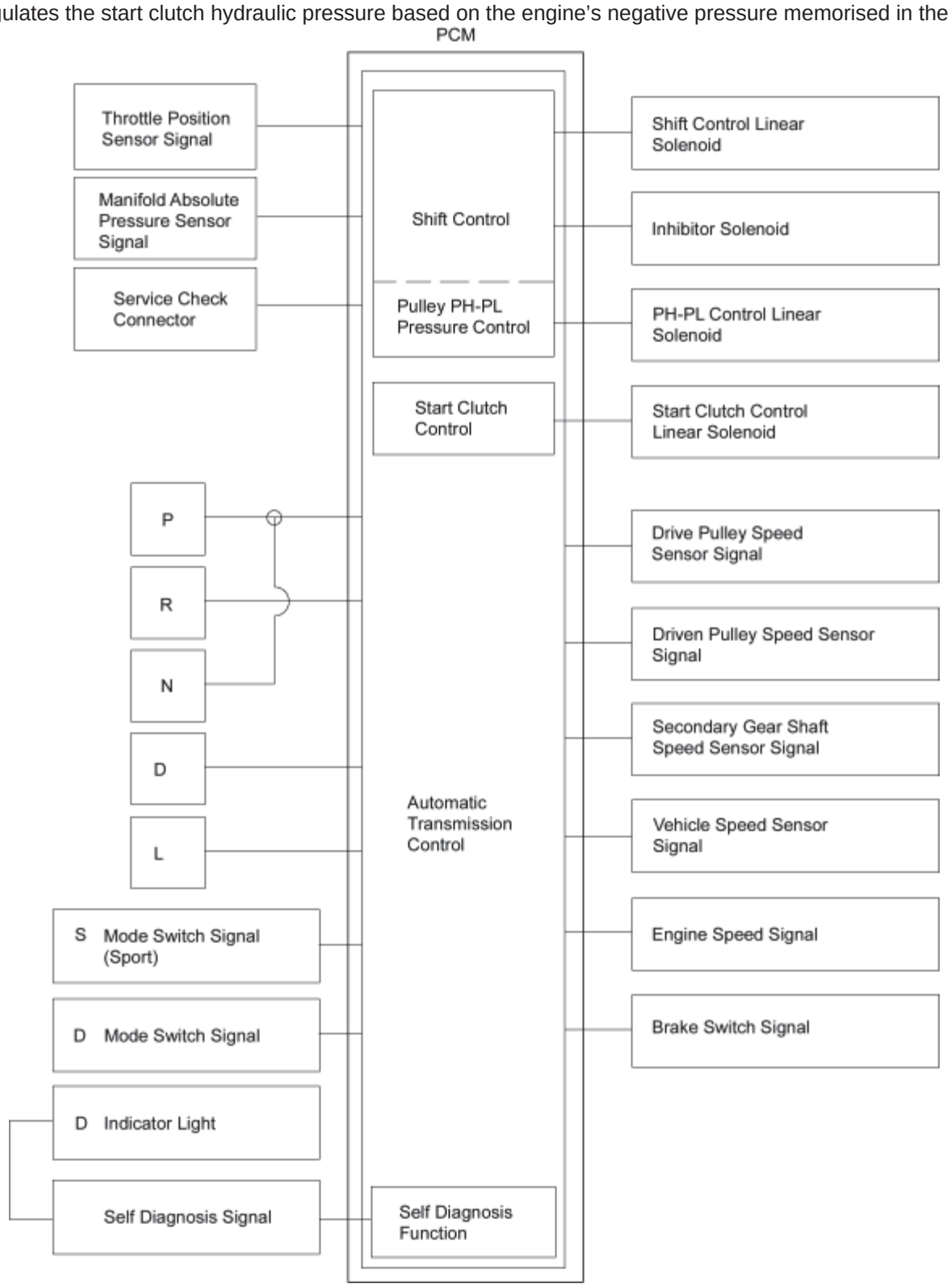
1. The hydraulic pressure is applied to the reverse brake and the start clutch. The sun gear drives gears and the pinion gears revolve around the sun gear. The carrier assembly rotates in the opposite direction from the rotation direction of the sun gear.
2. The carrier assembly drives the drive pulley shaft via the forward clutch drum and the drive pulley shaft drives the driven pulley shaft linked by the steel belt.
3. The driven pulley shaft drives the secondary drive gear via the start clutch.
4. Power is transmitted to the secondary driven gear, which drives the final driven gear.

NOTE: The illustrations shows the 4WD automatic transmission, power flow of the 2WD transmission is identical to the 4WD except for parts related to the transfer assembly.



1. **FLYWHEEL**
2. **DRIVE PULLEY SHAFT**
3. **DRIVE PULLEY**
4. **STEEL BELT**
5. **REVERSE BRAKE**
6. **CARRIER ASSEMBLY**
7. **INPUT SHAFT**
8. **SUN GEAR**
9. **PINION GEAR**
10. **RING GEAR**
11. **DRIVEN PULLEY SHAFT**
12. **DRIVEN PULLEY**
13. **SECONDARY DRIVE GEAR**
14. **SECONDARY DRIVEN GEAR**
15. **FINAL DRIVEN GEAR**
16. **TRANSFER SHAFT**
17. **TRANSFER DRIVEN GEAR SHAFT**
18. **TRANSFER SHAFT DRIVE GEAR**
19. **FINAL DRIVE GEAR**
20. **START CLUTCH**

The electronic control system consists of a Powertrain Control Module (PCM), sensors, three linear solenoids and an inhibitor solenoid. Shifting is electronically controlled for comfort under all conditions. Also a Grade Logic Control System has been adopted to control shifting in D position while the vehicle is ascending or descending a slope. The PCM is located below the dashboard, under the kick panel on the passenger's side.
The PCM controls the transmission in such a way as to reduce the engine speed to retain the engine's cooling efficiency when the car is driven with full throttle acceleration.
If the vehicle is driven with full throttle acceleration continuously, the PCM regulates the pulley hydraulic press to increase the pulley ration, which, as a result, reduces the engine speed and retains the designed cooling efficiency. After the car has been driven with lower engine speed for a while, the PCM increases the pulley ratio to the original ratio.
The start clutch functions to make smooth starting-off possible. Also it generates the creep the same as with the conventional automatic transmissions. The function of the start clutch and the creep in the D, L and R positions is controlled by the clutch hydraulic pressure and the clutch hydraulic pressure is electronically controlled by the PCM. To let the start clutch function appropriately, the PCM regulates the start clutch hydraulic pressure based on the engine's negative pressure memorised in the N position.



Start Clutch Function

The start clutch generates two types of creep, that is weak creep and strong creep, under the following conditions.

- Conditions of weak creep:
  D position (includes Sport mode), Brake ON and stopped, Throttle OFF, Engine Coolant Temperature above 75°C (167°F).
- Conditions of strong creep:
  Other conditions than those of weak creep in D position.

Grade Logic Control System

How it works:

The PCM compares actual driving conditions with memorised driving conditions, based on the input from the vehicle speed sensor, the throttle position sensor, the manifold absolute pressure sensor, the engine coolant temperature sensor, the brake switch signal and the shift lever position signal, to control shifting while the vehicle is ascending or descending a slope.

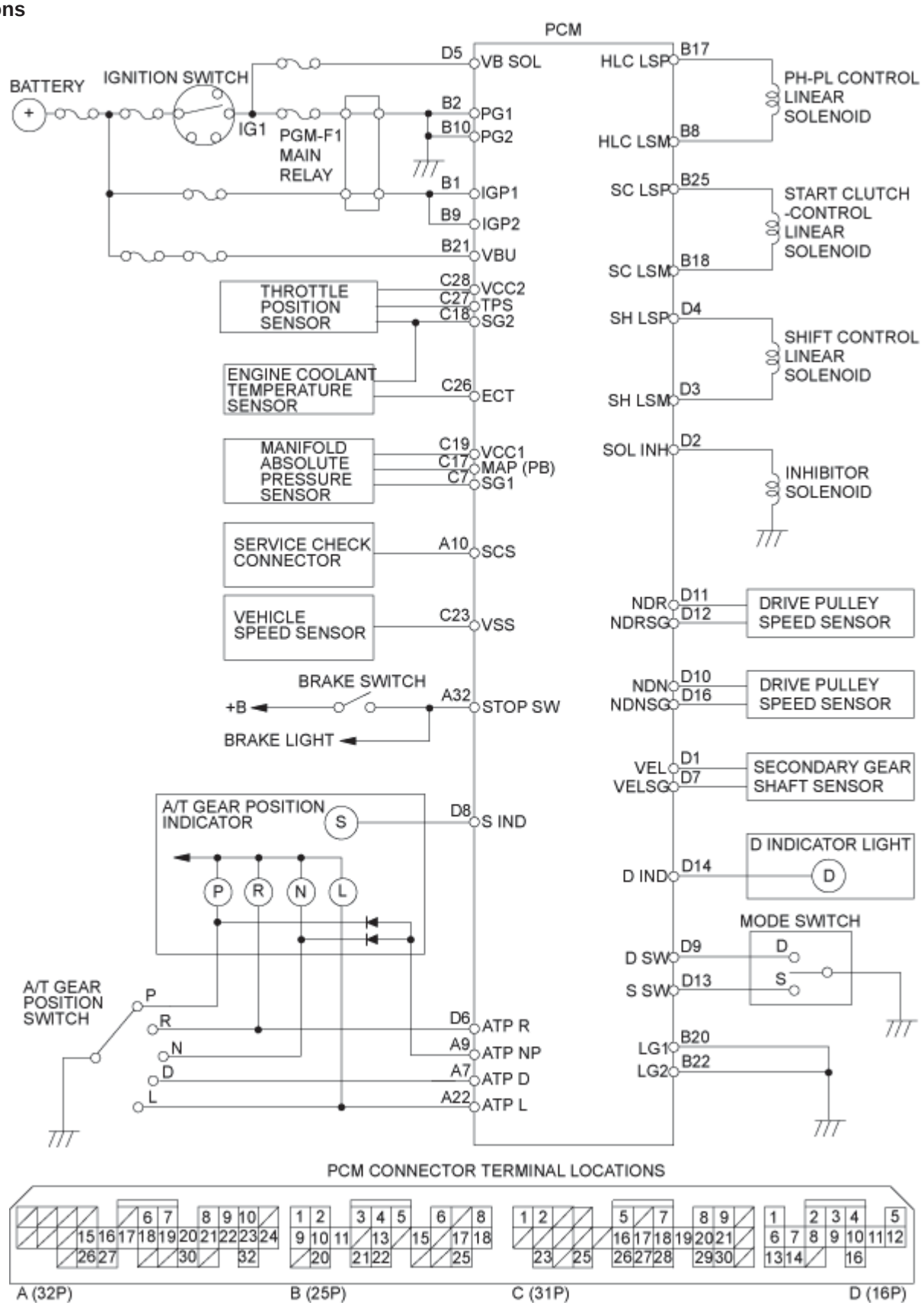
Ascending Control

When the PCM determines that the vehicle is climbing a hill in D position, the system selects the most suitable shift schedule (pulley ratio) according to the magnitude of a gradient, so the vehicle can run smooth and have more power when needed. There are three ascending modes with different shift schedules according to the magnitude of a gradient in the PCM.

Descending Control

When the PCM determines that the vehicle is going down a hill in D position, the system selects the most suitable shift schedule (pulley ratio) according to the magnitude of a gradient. This, in combination with engine braking, achieves smooth driving when the vehicle is descending. There are three descending modes with different shift schedules according to the magnitude of a gradient in the PCM.

Circuit Diagram and Terminal Locations

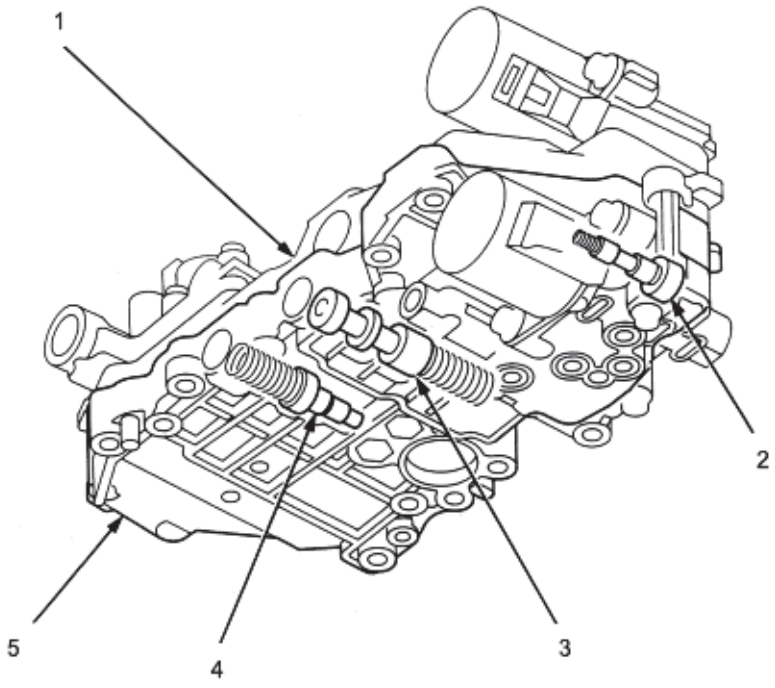


The hydraulic control system is controlled by the ATF pump, the valves and the solenoids. The ATF pump is driven by the input shaft. The ATF pump and the input shaft are linked by the ATF pump drive chain and the sprockets. The inhibitor solenoid valve and the linear solenoids, which are located on their valve body, are controlled by the PCM. Fluid from the ATF pump flows through the 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 PL regulator valve body, the shift valve body, the start clutch control valve body and the secondary valve body.
The lower valve body assembly includes the main valve body, the PL regulator valve body, the shift valve body, the start clutch control valve body and the secondary valve body.

Main Valve Body

The main valve body contains the PH control valve, the lubrication valve and the pitot regulator valve.

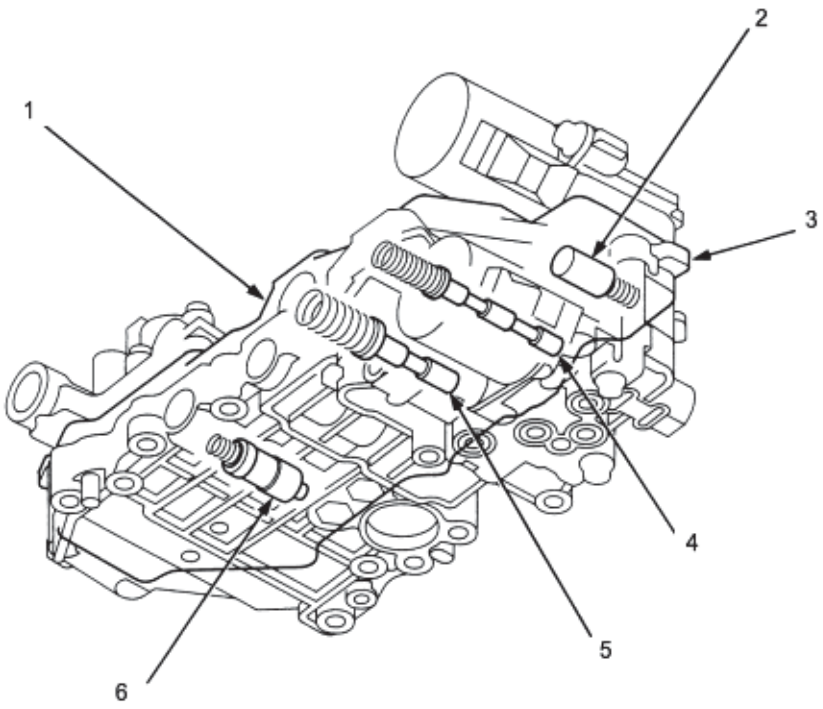
- **PH Control Valve**
  The PH control valve supplies PH control pressure (PHC) in accordance with the PH-PL control pressure (HLC) and supplies PH control pressure to the PH regulator valve, which also regulates PH pressure. At kick-down, it increases PH control pressure which increases the high (PH) pressure. This shortens the shift speed by releasing the reverse inhibitor pressure (RI) from the inhibitor solenoid valve.
- **Lubrication Valve**
  The lubrication valve controls the lubrication pressure to each shaft and maintains lubrication pressure. When the pressure is too high, the spring is compressed. This moves the lubrication valve and opens the fluid leak passage.
- **Pitot Regulator Valve**
  The pitot regulator valve controls the start clutch pressure (SC) in accordance with the engine speed, when the electronic control system is faulty.



1. **LOWER VALVE BODY ASSEMBLY**
2. **PITOT REGULATOR VALVE**
3. **LUBRICATION VALVE**
4. **PH CONTROL VALVE**
5. **MAIN VALVE BODY**

Secondary Valve Body
The secondary valve body contains the PH regulator valve, the clutch reducing valve, the start clutch valve accumulator and the shift inhibitor valve.

- **PH Regulator Valve**
  The PH regulator valve maintains hydraulic pressure supplied from the ATF 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 the PH control valve.
- **Clutch Reducing Valve**
  The clutch reducing valve receives PH pressure from the PH regulator valve and regulates the clutch reducing pressure (CR). The clutch reducing valve supplies clutch pressure (CR) to the manual valve and the start clutch control valve and supplies signal pressure to the PH-PL pressure control valve, the shift control valve and the inhibitor solenoid valve.
- **Start Clutch Valve Accumulator**
  The start clutch valve accumulator stabilises the hydraulic pressure that is supplied to the clutch.
- **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. It also supplies clutch reducing pressure (CR) to the pitot regulator valve and the pitot lubrication pipe.



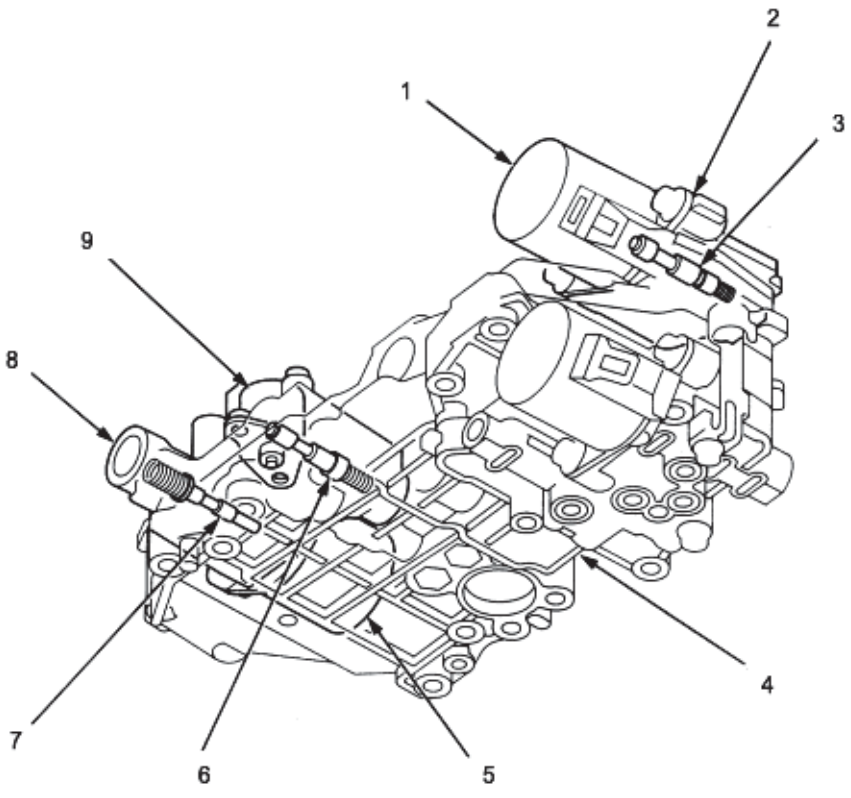
1. **LOWER VALVE BODY ASSEMBLY**
2. **START CLUTCH VALVE ACCUMULATOR**
3. **SECONDARY VALVE BODY**
4. **SHIFT INHIBITOR VALVE**
5. **CLUTCH REDUCING VALVE**
6. **PH REGULATOR VALVE**

PL Regulator Valve Body
The PL regulator valve body contains the PL regulator valve and the PH-PL control valve, which is joined with the PH-PL control linear solenoid. The inhibitor solenoid is bolted on the PL regulator valve body.

- **PL Regulator Valve**
  The PL regulator valve supplies low pressure (PL) to the pulley to eliminate steel belt slippage.
  The PL pressure is controlled by the PH-PL control pressure (HLC).
- **PH-PL Control Valve**
  The PH-PL control valve controls the PL regulator valve according to engine torque. The PH-PL control valve supplies PH-PL control pressure (HLC) to the PH control valve to regulate PH pressure higher than PL pressure. The PH-PL control valve is controlled by the PH-PL control linear solenoid, which is controlled by the TCM.
- **Inhibitor Solenoid**
  The inhibitor solenoid controls the reverse inhibitor valve by turning on and off. Also, the inhibitor solenoid controls PH control pressure (PHC) by applying reverse inhibitor pressure (R1) to the PH control valve. The inhibitor solenoid is controlled by the PCM.

Start Clutch Control Valve Body
The start clutch control valve body contains the start clutch control valve. Both are joined to the start clutch control linear solenoid.

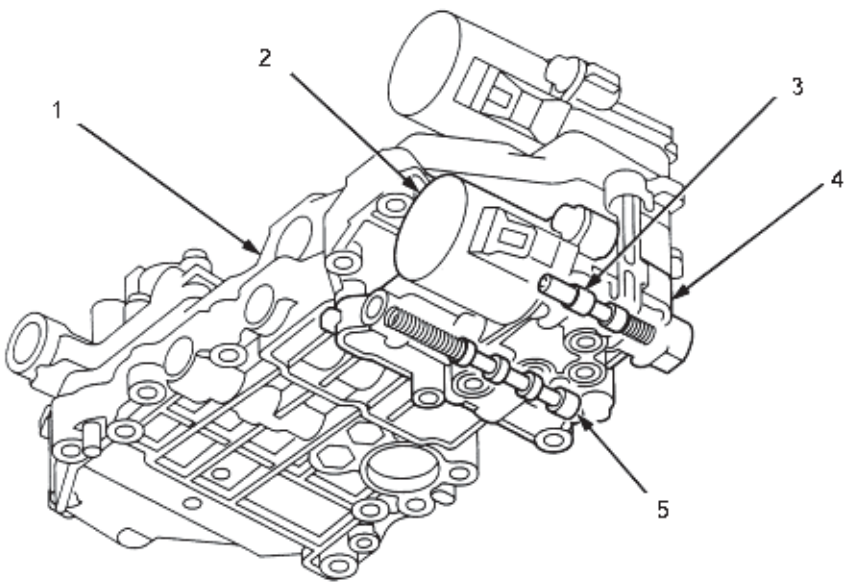
- **Start Clutch Control Valve**
  The start clutch control valve controls start clutch engagement according to the throttle opening. The start clutch control valve is controlled by the start clutch control linear solenoid, which is controlled by the PCM.



1. **START CLUTCH CONTROL LINEAR SOLENOID**
2. **START CLUTCH CONTROL VALVE BODY**
3. **START CLUTCH CONTROL VALVE**
4. **LOWER VALVE BODY ASSEMBLY**
5. **PH-PL CONTROL LINEAR SOLENOID**
6. **PL REGULATOR VALVE**
7. **PH-PL CONTROL VALVE**
8. **PL REGULATOR VALVE BODY**
9. **INHIBITOR SOLENOID**

Shift Valve Body
The shift valve body contains the shift valve and the shift control valve. Both are joined to the shift control linear solenoid.

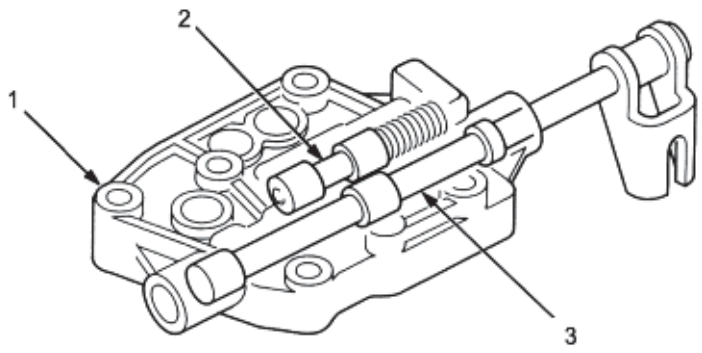
- **Shift Valve**
  The shift valve is controlled by shift valve pressure (SV) from the shift control valve. The shift valve distributes PH pressure and PL pressure to drive pulley and the driven pulley, to shift the transmission.
- **Shift Control Valve**
  The shift control valve controls the shift valve in accordance with the throttle opening and vehicle speed. The shift control valve is controlled by the shift control linear solenoid, which is controlled by the TCM. When the electronic control system is faulty, the shift control valve switches the shift inhibitor valve to uncover the port leading the pitot regulator pressure to the start clutch



1. **LOWER VALVE BODY ASSEMBLY**
2. **SHIFT CONTROL LINEAR SOLENOID**
3. **SHIFT CONTROL VALVE**
4. **SHIFT VALVE BODY**
5. **SHIFT VALVE**

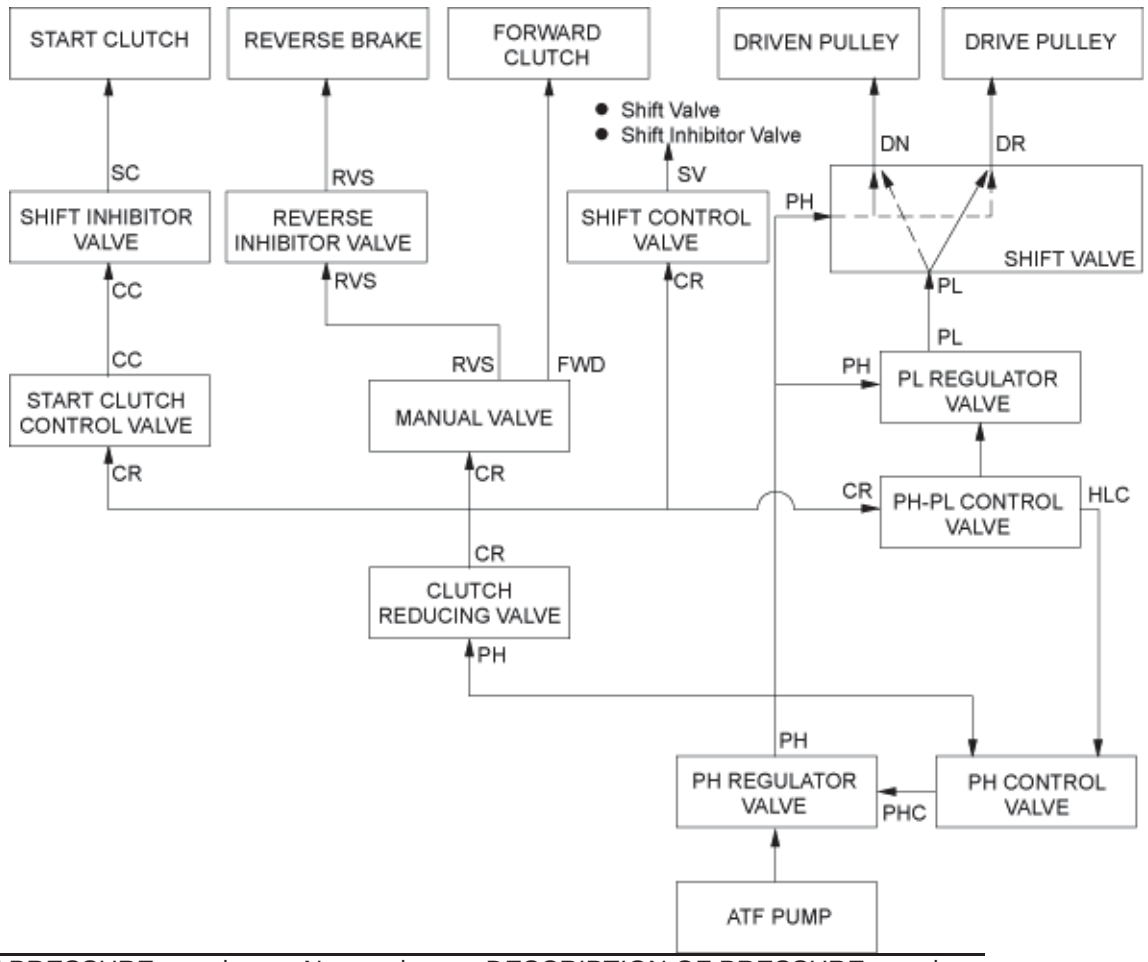
Manual Valve Body
The manual valve body contains the manual valve and the reverse inhibitor valve. The manual valve body is bolted to the intermediate housing.

- **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 the reverse inhibitor pressure (RI). It intercepts the hydraulic circuit to the reverse brake while the vehicle is moving forward at speeds over approximately 6 mph (10 km/h),



1. **MANUAL VALVE BODY**
2. **REVERSE INHIBITOR VALVE**
3. **MANUAL VALVE**

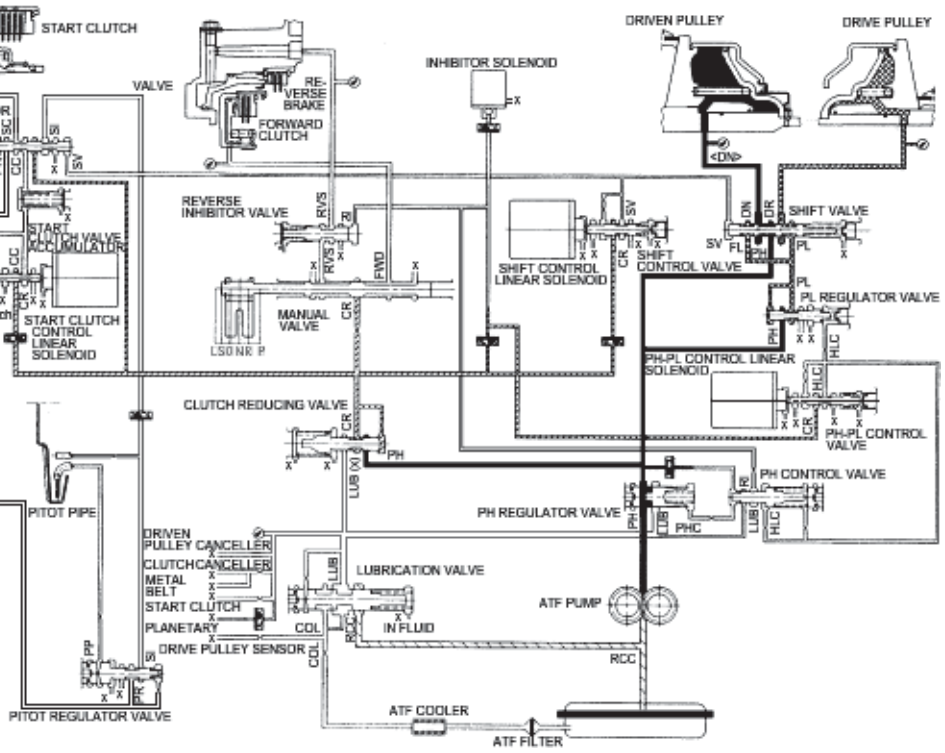
General Chart of Hydraulic Pressure



No	DESCRIPTION OF PRESSURE	No	DESCRIPTION OF PRESSURE
CC	CLUTCH CONTROL	PP	PITOT PIPE
COL	ATF COOLER	PR	PITOT REGULATOR
CR	CLUTCH REDUCING	RCC	RECIRCULATION
DN	DRIVEN PULLEY	RI	REVERSE INHIBITOR
DR	DRIVE PULLEY	RVS	REVERSE BRAKE
FWD	FORWARD CLUTCH	SC	START CLUTCH
HLC	PH-PL CONTROL	SI	SHIFT INHIBITOR
LUB	LUBRICATION	SUC	SUCTION
PH	PRESSURE HIGH	SV	SHIFT VALVE
PHC	PH CONTROL	X	LEAK
PL	PRESSURE LOW		

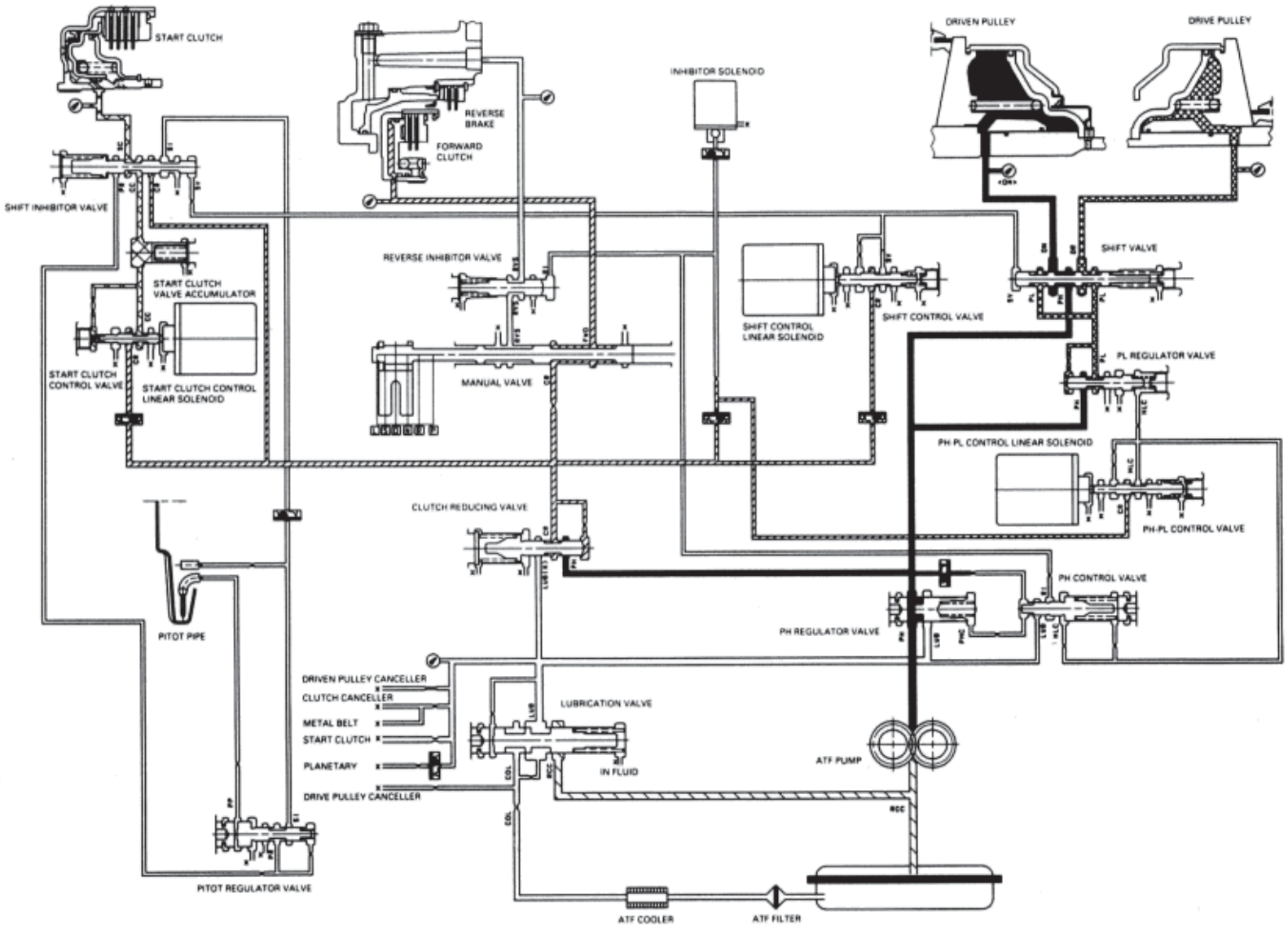
N Position

As the engine turns, the ATF pump also starts to operate. Fluid from the ATF pump flows to the PH regulator valve and the clutch reducing valve. The PH regulator valve regulates high pressure (PH) and sends it to the shift valve and the PL regulator valve. The high pressure (PH) flows to the movable face of the driven pulley via the shift valve and turns into low pressure (PL) at the PL regulator valve. The low pressure (PL) flows to the movable face of the drive pulley via the shift valve. At this time, the pulley ratio remains low.
The high pressure (PH) becomes the clutch reducing pressure (CR) at the clutch reducing valve. The clutch reducing pressure (CR) flows to the start clutch control valve, the manual valve, the PH-PL control valve and the shift control valve and is intercepted by those valves.
Under this condition, hydraulic pressure is not applied to the clutches and reverse brake.

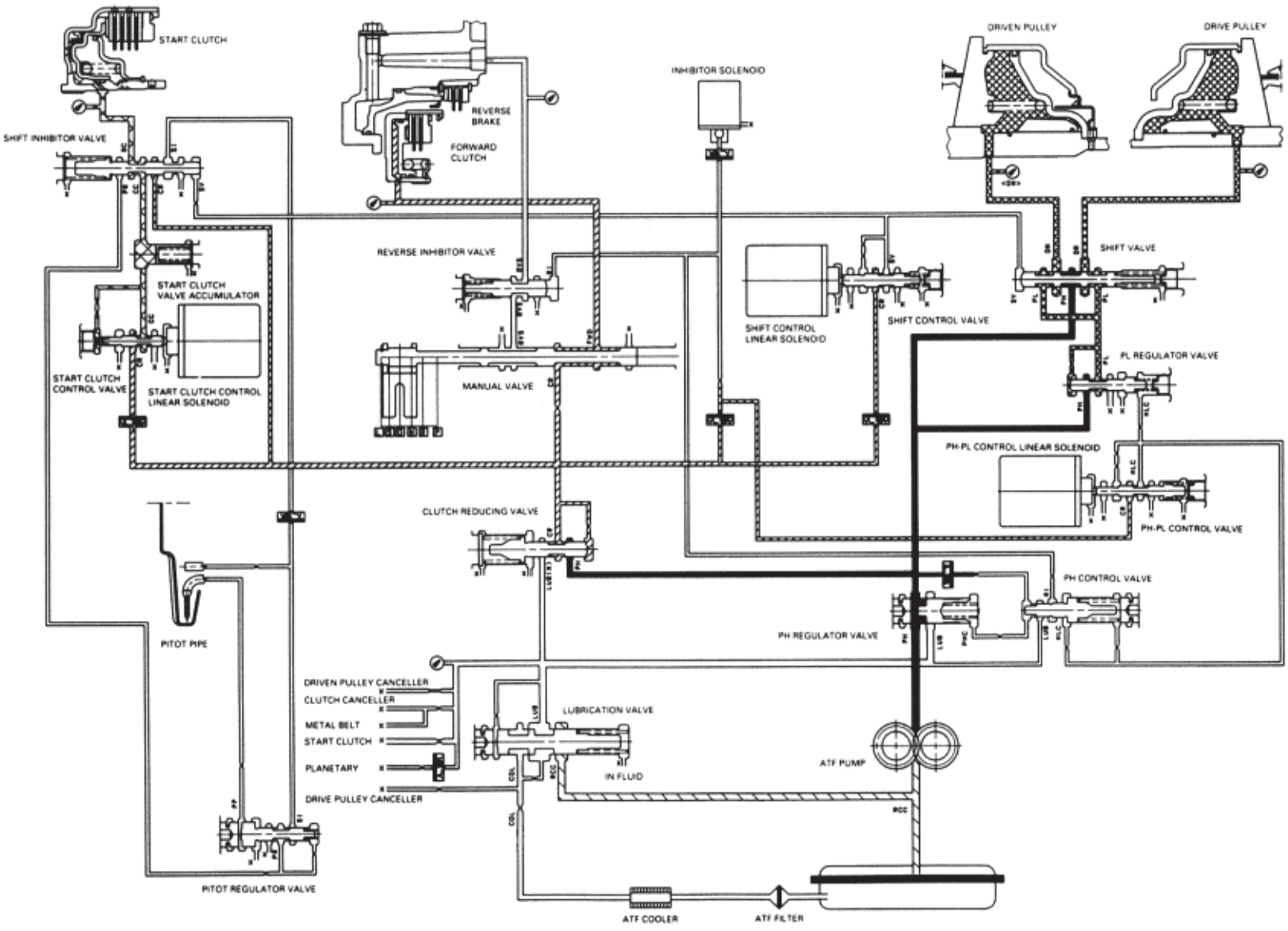


D position, at low speed range

The flow of fluid up to the drive pulley, the driven pulley and the clutch reducing valve is the same as in N position. The pulley ratio is low because the driven pulley receives high pressure (PH) and the drive pulley receives low pressure (PL). The clutch reducing pressure (CR) flows through the manual valve to the forward clutch, then forward clutch is engaged. The forward clutch then drives the drive pulley shaft, which drives the driven pulley shaft.
Also, clutch reducing pressure (CR) becomes start clutch pressure (SC) at the shift inhibitor valve. Start clutch pressure (SC) is applied to the start clutch to engage the start clutch.



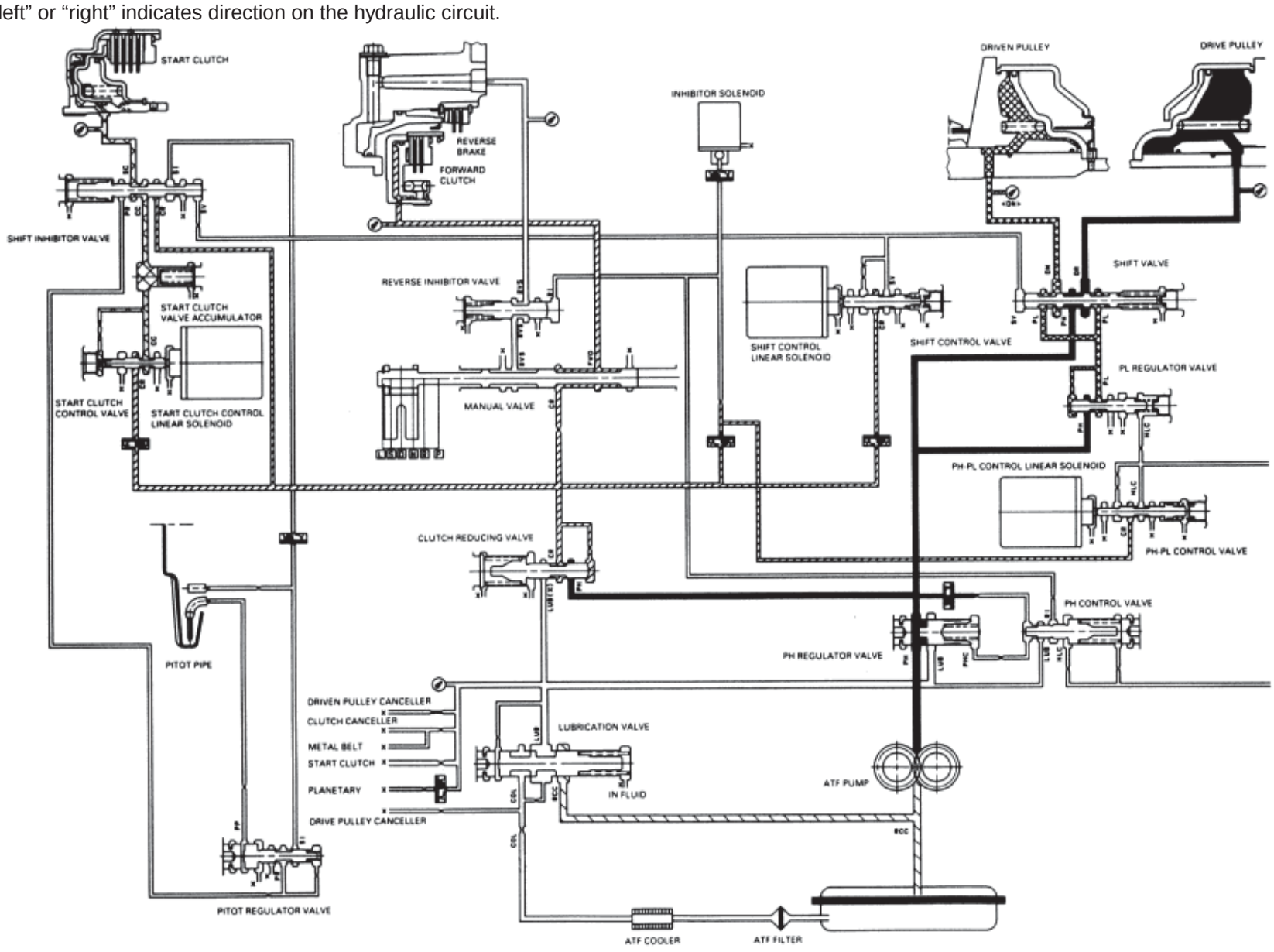
D position, at middle speed range.
As the speed of the vehicle reaches the prescribed value, the shift control linear solenoid is activated by the PCM. The shift control linear solenoid controls the shift control valve to activate shift valve pressure (SV). Clutch reducing pressure (CR) from the clutch reducing valve becomes shift valve pressure (SV) at the shift control valve. Shift valve pressure (SV) flows to the left end of the shift valve, the shift valve to the right side and positioning it in the middle of its travel. The shift valve covers the port to stop high pressure (PH) to the pulleys and uncovers the port leading low pressure (PL) to the pulleys. The drive pulley and the driven pulley receive low pressure (PL). A this time, the pulley ratio is in the middle. Pressure remains to apply the forward clutch and the start clutch.
NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



D position, at high speed range

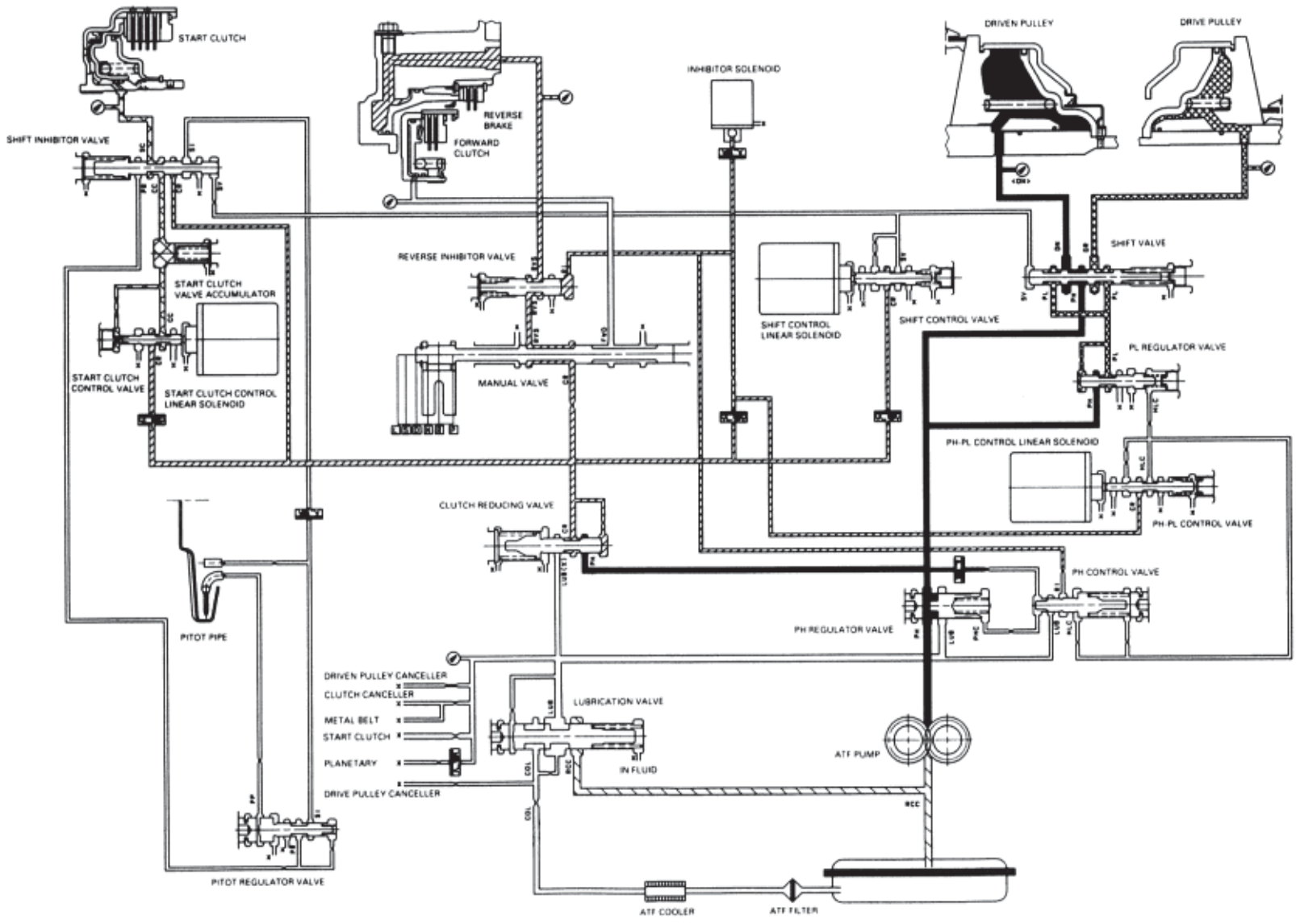
As the speed of the vehicle reaches the prescribed value, the shift control linear solenoid moves the shift control valve to increase shift valve pressure (SV) at the left end of the shift valve. The shift valve moves to the right side compared to its position at the middle pulley ratio. The shift valve uncovers the port leading high pressure (PH) to the drive pulley and uncovers the port leading low pressure (PL) to the driven pulley. The drive pulley receives high pressure (PH) and the driven pulley receives low pressure (PL). The pulley ratio is high. Pressure remains to apply the forward clutch and the start clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



[R] position

The flow of fluid up to the drive pulley, the driven pulley and the clutch reducing valve is the same as in [N] position. The pulley ratio is low because the driven pulley receives high pressure (PH) and the drive pulley receives low pressure (PL). The manual valve is shifted into the [R] position and it uncovers the port that leads reverse brake pressure (RVS) to the reverse inhibitor valve. The inhibitor solenoid turns off by means of the PCM and reverse inhibitor pressure (RI) is applied to the right end of the reverse inhibitor valve. The reverse inhibitor valve moves to the left side and uncovers the port that leads reverse brake pressure (RVS) to the reverse brake. Clutch reducing pressure (CR) becomes reverse brake pressure (RVS) at the manual valve and flows to the reverse brake. The reverse brake is engaged and it locks the ring gear.
NOTE: When used, "left" or " right" indicates direction on the hydraulic circuit.

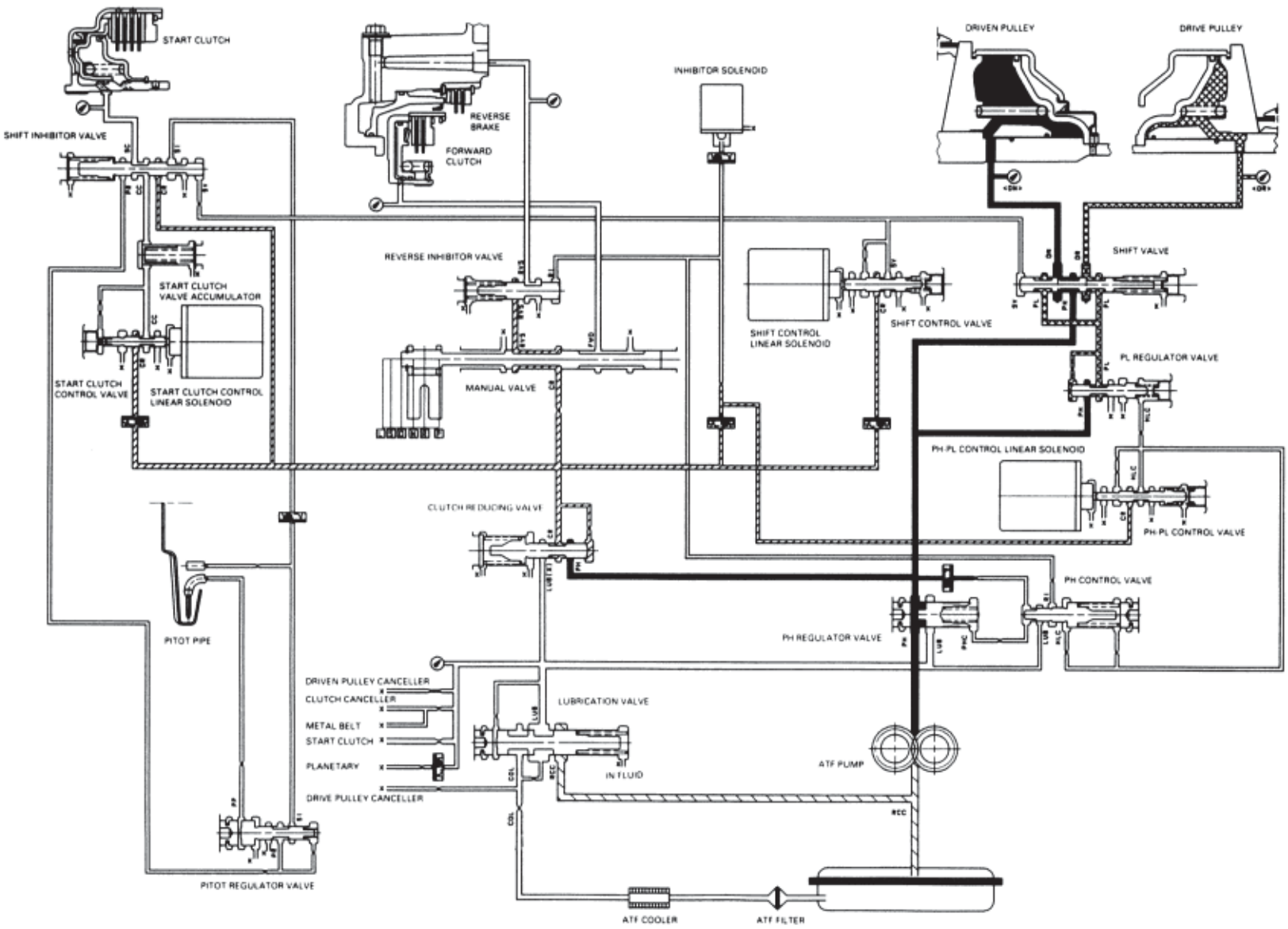


[R] position

Reverse Inhibitor Control

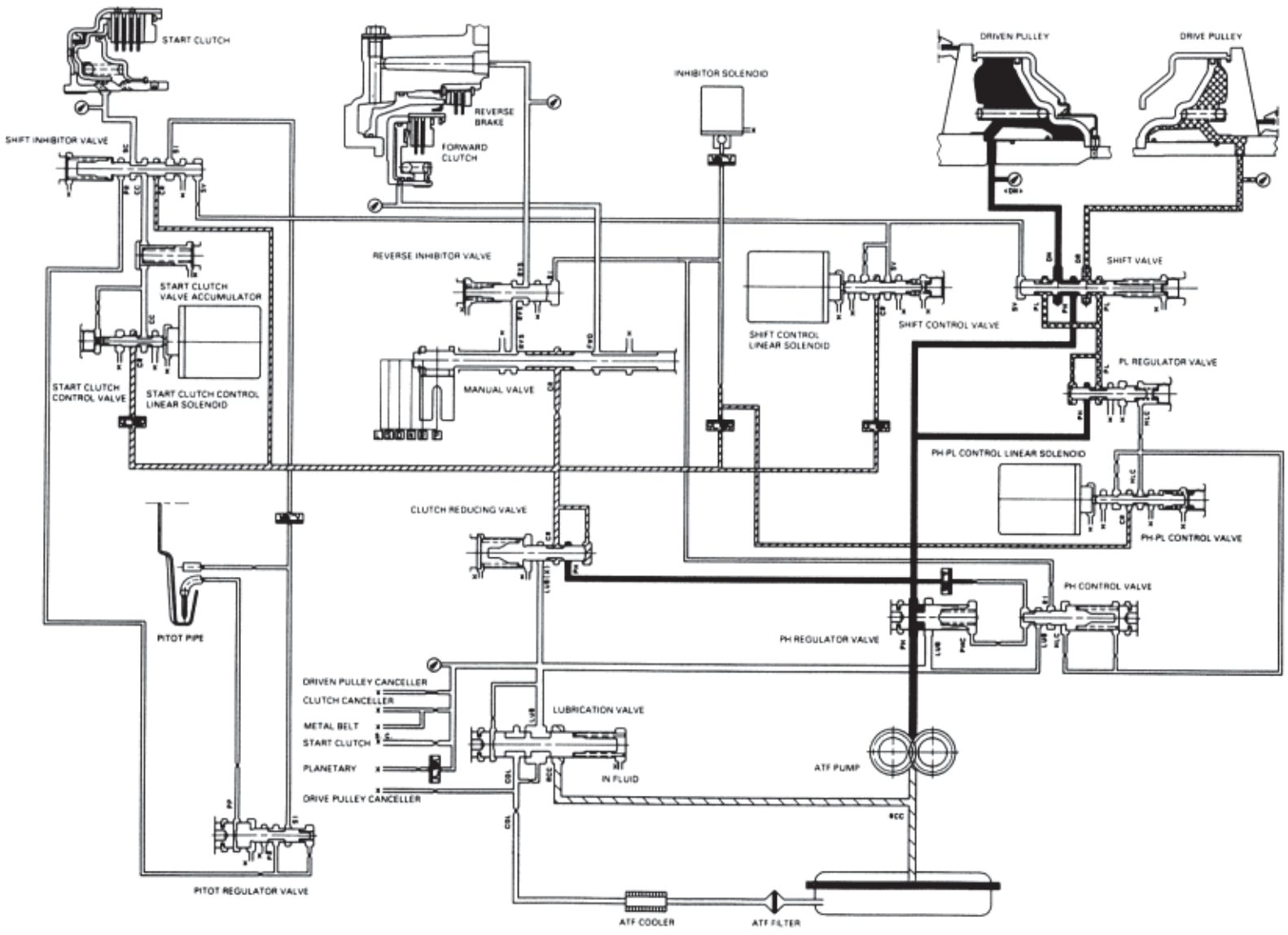
If the [D] position is selected while the vehicle is moving forward at speeds over 6 mph (10 km/h), the inhibitor solenoid does not turn off by means of the PCM. Reverse inhibitor pressure (RI) is not applied to the reverse inhibitor valve as the reverse inhibitor solenoid turns on. The reverse inhibitor valve is kept on the right side and covers the port to stop reverse brake pressure (RVS) to the reverse brake from the manual valve. 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.

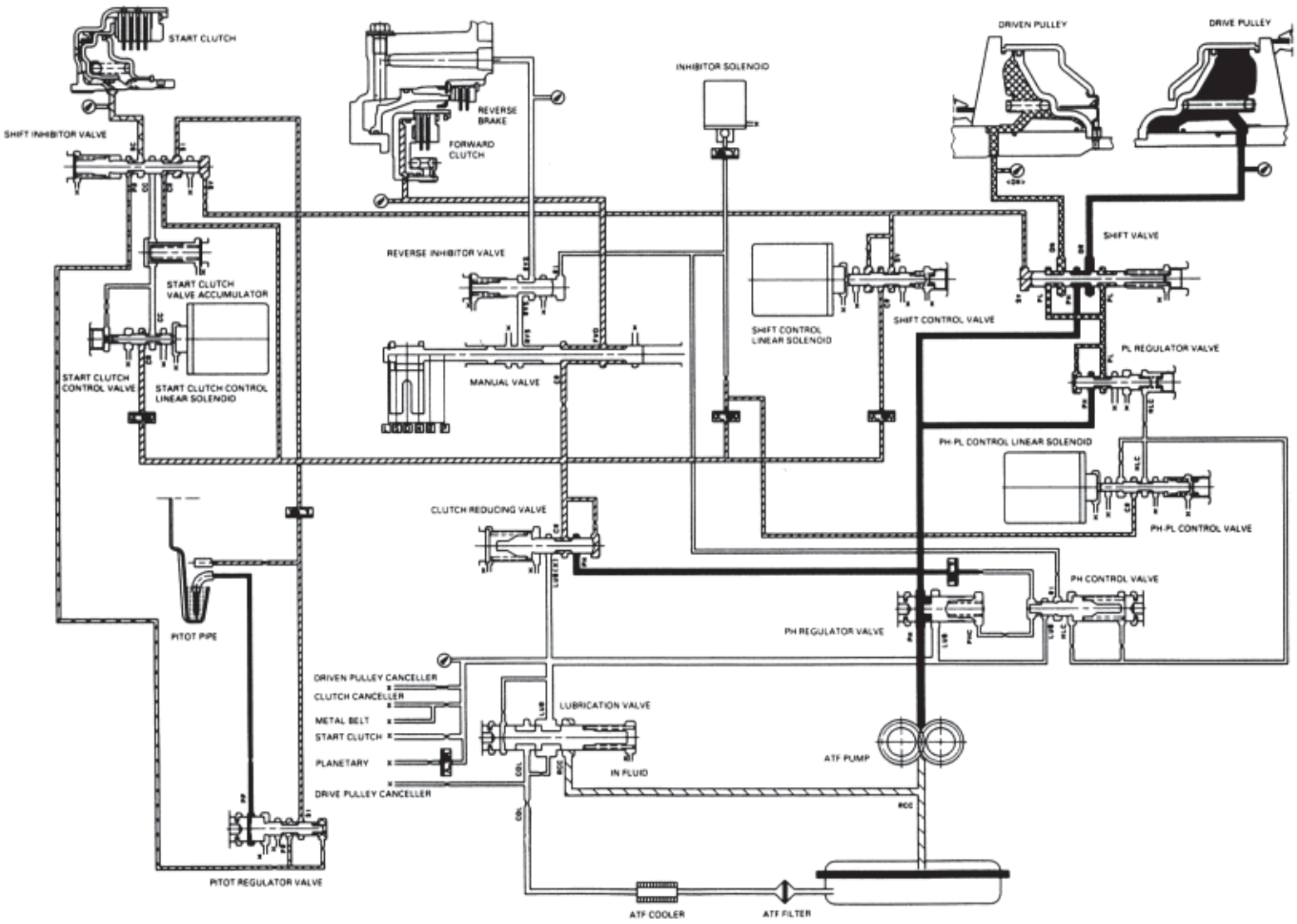


P position

The flow of fluid up to the drive pulley, the driven pulley and the clutch reducing valve is the same as in N position. Clutch reducing pressure (CR) flows to the start clutch control valve, the manual valve and the shift control valve and is intercepted by those valves.
Under this condition, hydraulic pressure is not applied to the clutches and reverse brake.



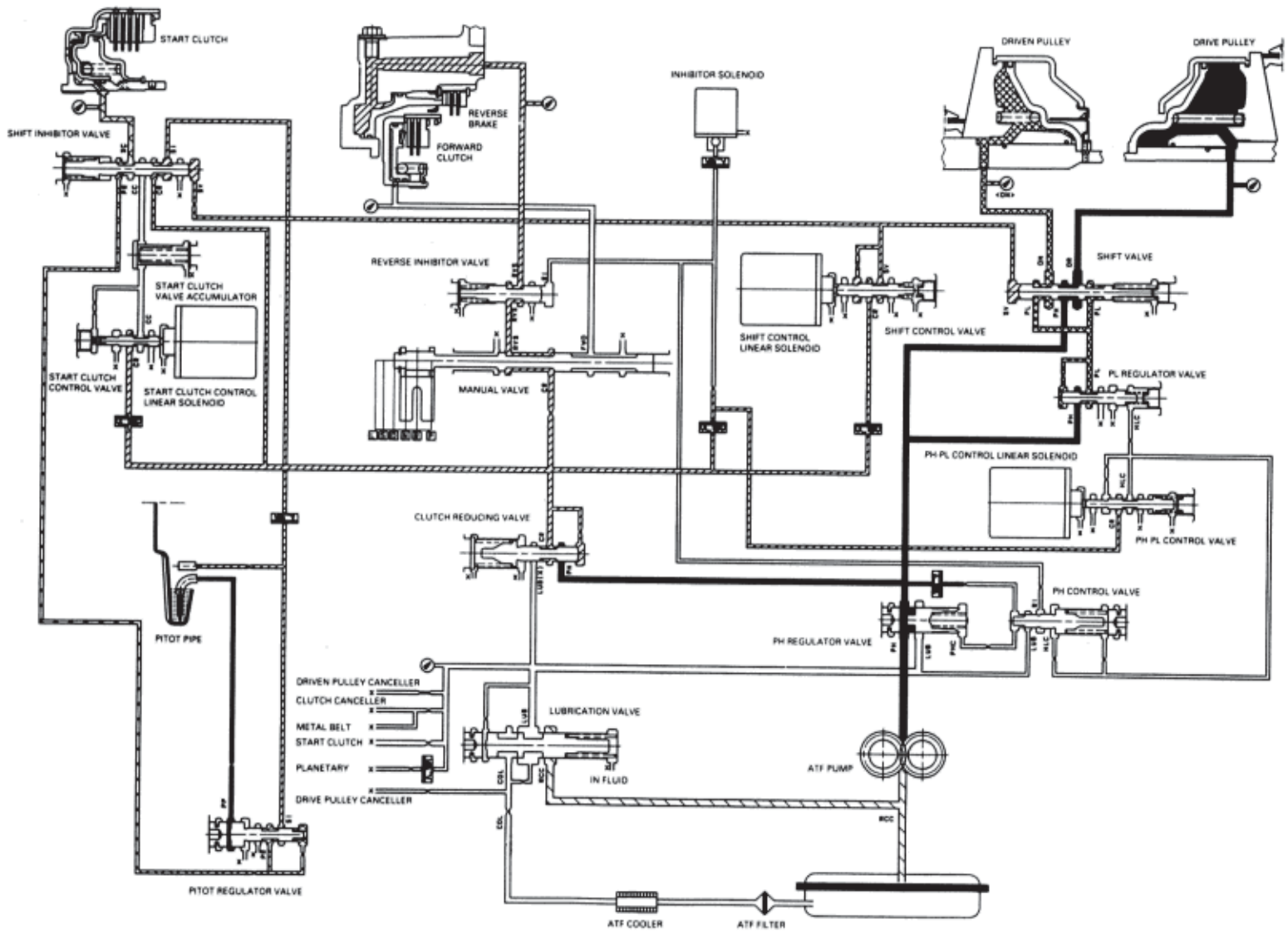
D position, when the electronic control system is faulty.
When the electronic control system (linear solenoids and sensors) is faulty, the transmission uses the pitot pipe pressure (PP) to allow the vehicle to drive.
When all linear solenoids and sensors are off because of a faulty electronic control system, clutch reducing pressure (CR) flows to the start clutch control valve, the manual valve, the PH-PL control valve and the shift control valve. Clutch reducing pressure (CR) becomes shift valve pressure (SV) at the shift control valve and shift valve pressure (SV) is applied to the left end of the shift valve and the right end of the shift inhibitor valve. The shift valve moves to the right side and uncovers the port that leads high pressure (PH) to the drive pulley and uncovers the port that leads low pressure (PL) to the driven pulley. At this time, the pulley ratio is high. The shift inhibitor valve moves to the left side and uncovers the port that leads shift inhibitor pressure (SI) to the pitot lubrication pipe and the pitot regulator valve. The pitot lubrication pipe discharges fluid inside of the pitot flange and discharged fluid enters into the pitot pipe and it is applied to the left end of the pitot regulator valve. The pitot regulator valve moves to the right side and uncovers the port that leads pitot regulator pressure (PR) to the shift inhibitor valve. Pitot regulator pressure (PR) becomes start clutch pressure (SC) at the shift inhibitor valve and is applied to the start clutch. The start clutch is engaged. the forward clutch pressure (FWD) is applied to the forward clutch and the forward clutch is engaged. This allows the vehicle to drive.
NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



[R] position, when the electronic control system is faulty

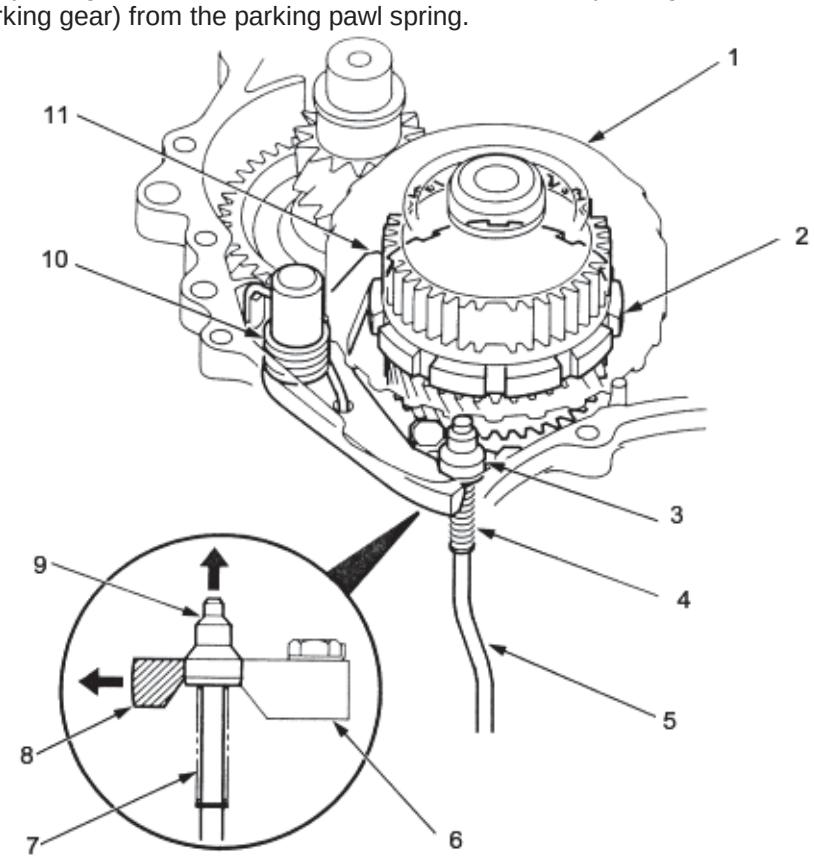
The flow of fluid up to the drive pulley, the driven pulley and the start clutch is the same as in [D] position. The manual valve is shifted into the [R] position and it uncovers the port that leads reverse brake pressure (RVS) to the reverse inhibitor valve. Reverse inhibitor pressure (RI) is applied to the right end of the reverse inhibitor valve because of a faulty inhibitor solenoid. The reverse inhibitor valve moves to the left side and uncovers the port that leads reverse brake pressure (RVS) to the reverse brake. Clutch reducing pressure (CR) becomes reverse brake pressure (RVS) at the manual valve and flows to the reverse brake. The reverse brake is engaged and locks the ring gear. This allows the vehicle to drive in reverse.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



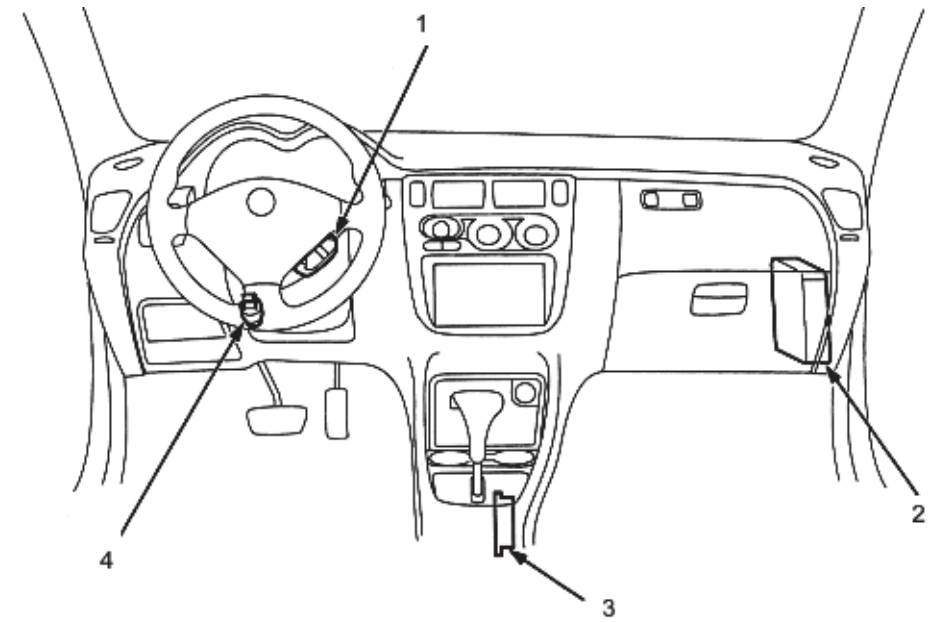
The parking brake mechanism locks the transmission by engaging the parking brake pawl with the parking gear which is integral with the secondary drive gear. The secondary drive gear engages with the secondary driven gear which engages with the final driven gear.

Shifting to P position causes the parking cone (installed at the end of the parking brake rod) to press the parking brake pawl onto the parking gear. Even if the end of the parking brake pawl rides on the top of the parking gear teeth, slight movement of the vehicle will cause the parking brake pawl and the parking gear to mesh with each other completely because the parking brake cone receives the tension from the parking brake rod spring. The parking brake pawl receives the tension (which acts to separate the parking brake pawl from the parking gear) from the parking pawl spring.



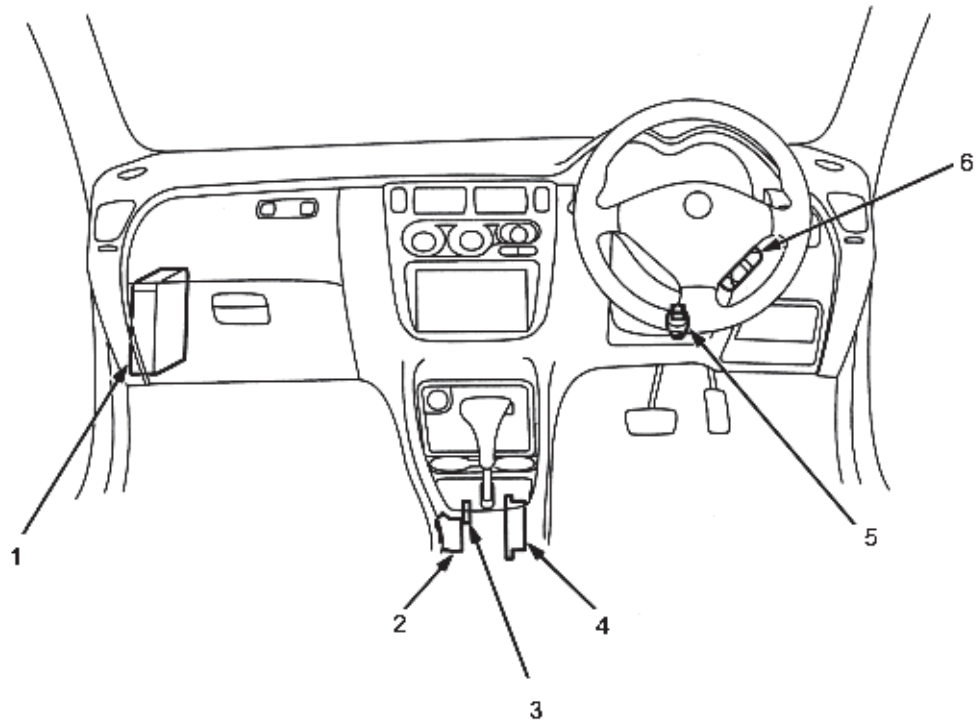
1. **START CLUTCH**
2. **PARKING GEAR**
3. **PARKING BRAKE CONE**
4. **PARKING BRAKE ROD SPRING**
5. **PARKING BRAKE ROD**
6. **PARKING BRAKE ROD HOLDER**
7. **PARKING BRAKE ROD SPRING**
8. **PARKING BRAKE PAWL**
9. **PARKING BRAKE CONE**
10. **PARKING BRAKE PAWL SPRING**
11. **PARKING BRAKE PAWL**

LHD:



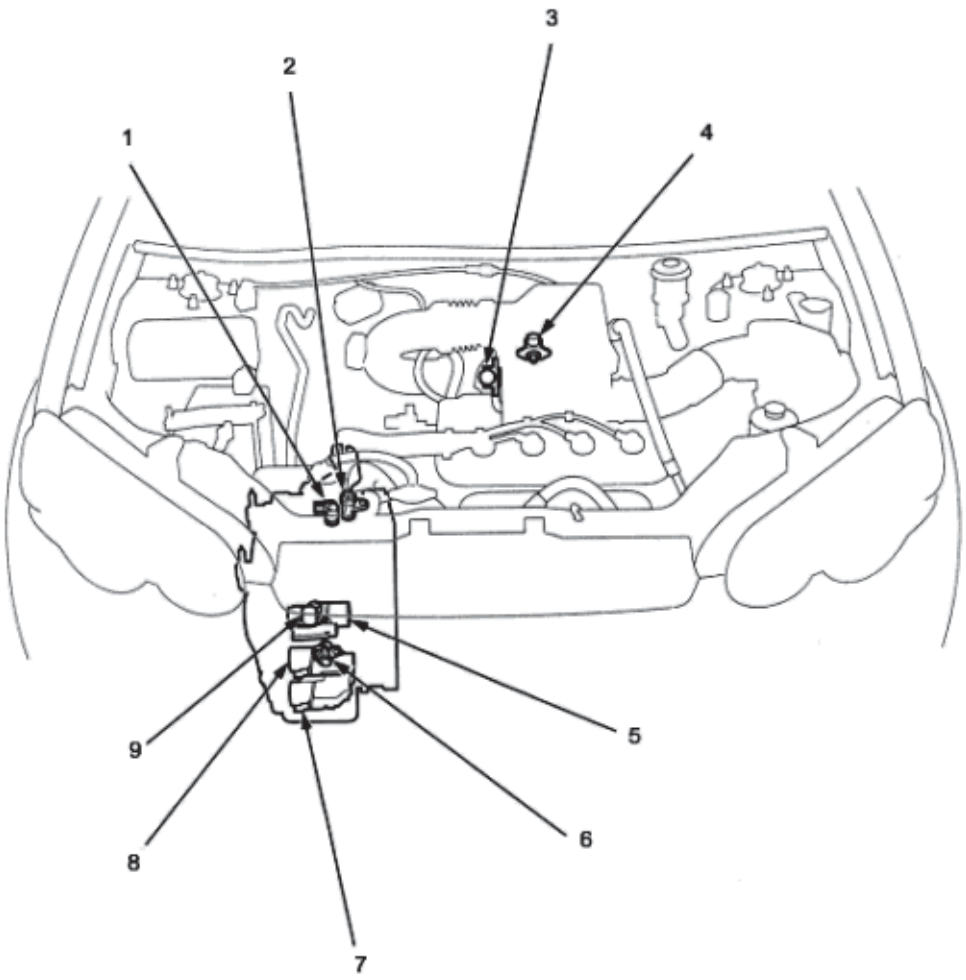
1. **MODE SWITCH**
2. **POWERTRAIN CONTROL MODULE (PCM)**
3. **AUTOMATIC TRANSAXLE (A/T) GEAR POSITION SWITCH**
4. **BRAKE SWITCH**

RHD:

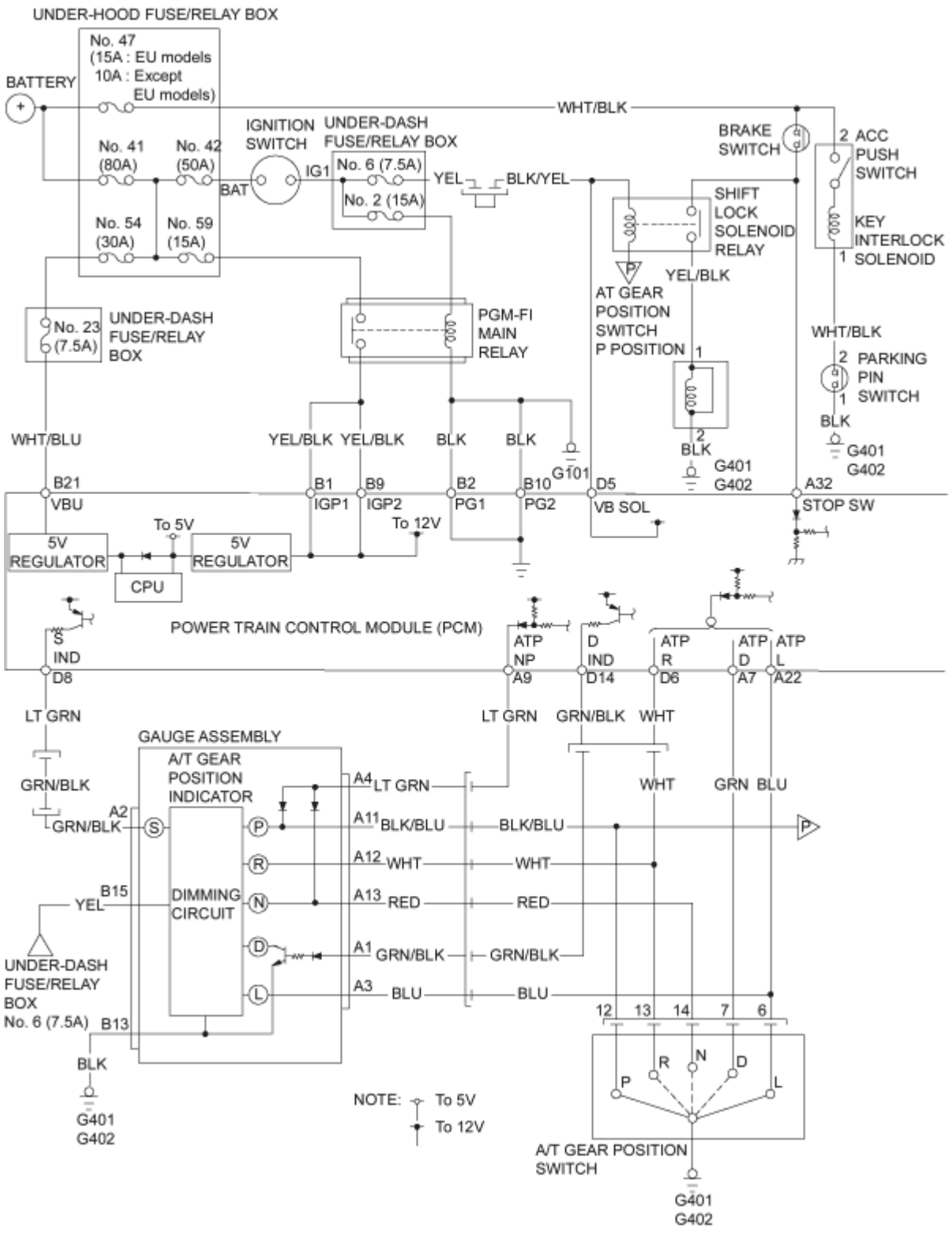


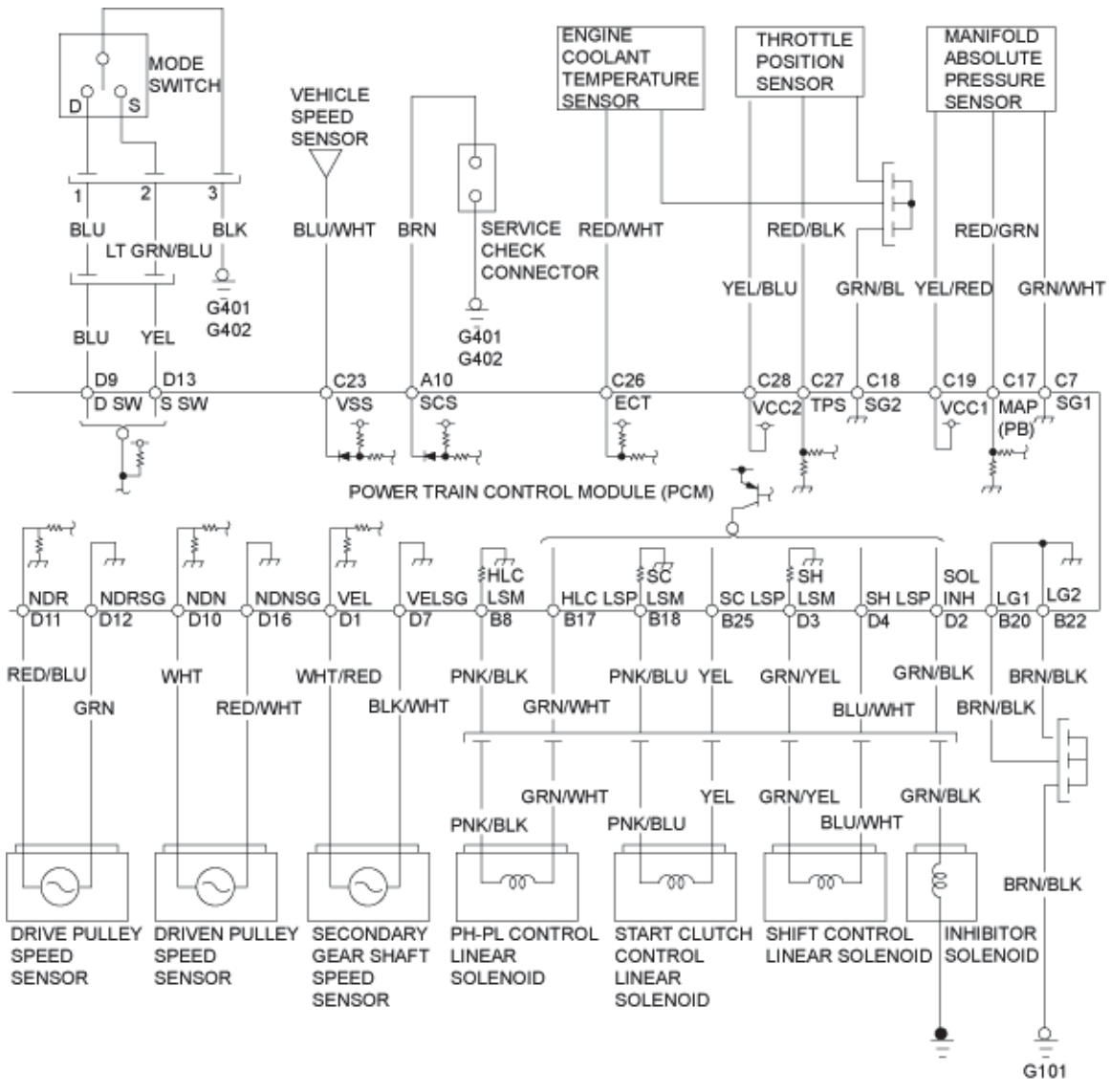
1. **POWERTRAIN CONTROL MODULE (PCM)**
2. **SHIFT LOCK SOLENOID** (KQ, KU models)
3. **PARKING PIN SWITCH** (KQ, KU models)
4. **AUTOMATIC TRANSAXLE (A/T) GEAR POSITION SWITCH**
5. **BRAKE SWITCH**
6. **MODE SWITCH**

Engine compartment:
NOTE: LHD model is shown; RHD is similar

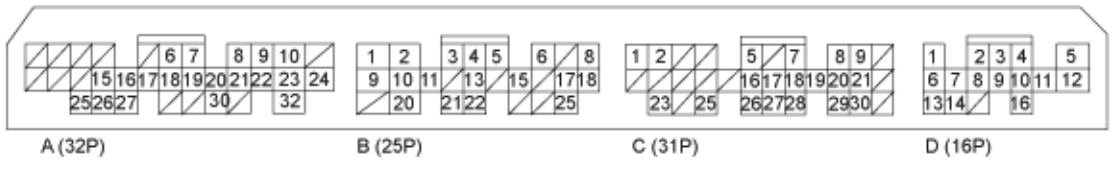


1. **DRIVEN PULLEY SPEED SENSOR**
2. **SECONDARY GEAR SHAFT SPEED SENSOR**
3. **THROTTLE POSITION (TP) SENSOR**
4. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
5. **PH-PL CONTROL LINEAR SOLENOID**
6. **DRIVE PULLEY SPEED SENSOR**
7. **SHIFT CONTROL LINEAR SOLENOID**
8. **START CLUTCH PRESSURE CONTROL LINEAR SOLENOID**
9. **INHIBITOR SOLENOID**


UNDER-HOOD FUSE/RELAY BOX
No. 47
(15A : EU models
10A : Except
EU models)
BATTERY
WHT/BLK
IGNITION SWITCH
UNDER-DASH FUSE/RELAY BOX
No. 41 (80A)
No. 42 (50A)
BAT
IG1
No. 6 (7.5A)
No. 2 (15A)
YEL
BLK/YEL
No. 54 (30A)
No. 59 (15A)
BRAKE SWITCH
2 ACC PUSH SWITCH
KEY INTERLOCK SOLENOID
1
SHIFT LOCK SOLENOID RELAY
YEL/BLK
AT GEAR POSITION SWITCH P POSITION
No. 23 (7.5A)
UNDER-DASH FUSE/RELAY BOX
PGM-FI MAIN RELAY
WHT/BLK
2 PARKING PIN SWITCH
1
BLK
G401
G402
WHT/BLU
YEL/BLK YEL/BLK
BLK
BLK
G101
B21
VBU
B1
IGP1
B9
IGP2
B2
PG1
B10
PG2
D5
VB SOL
A32
STOP SW
To 5V
To 12V
5V REGULATOR
5V REGULATOR
CPU
POWER TRAIN CONTROL MODULE (PCM)
S
IND
D8
ATP NP
A9
D IND
D14
ATP R
D6
ATP D
A7
ATP L
A22
LT GRN
LT GRN
GRN/BLK
WHT
GAUGE ASSEMBLY
A/T GEAR POSITION INDICATOR
GRN/BLK
A2
A4 LT GRN
A11 BLK/BLU
BLK/BLU
A12 WHT
WHT
A13 RED
RED
A1 GRN/BLK
GRN/BLK
A3 BLU
BLU
WHT
GRN
BLU
B15
YEL
DIMMING CIRCUIT
UNDER-DASH FUSE/RELAY BOX No. 6 (7.5A)
B13
BLK
G401
G402
NOTE: To 5V
To 12V
12 13 14 7 6
P R N D L
A/T GEAR POSITION SWITCH
G401
G402



PCM Terminal Locations

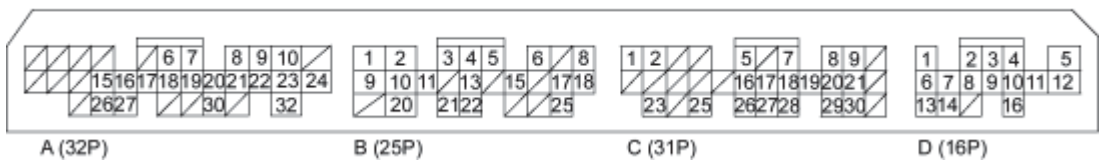


PCM Terminal Voltage/Measuring Conditions

A/T Control System

The PCM terminal voltage and measuring conditions are shown for the connector terminals that are related to the A/T control system. The other PCM terminal voltage and measuring conditions are described in section 11.

PCM Connector Terminal Locations



PCM CONNECTOR A(32P)

Terminal No.	Signal	Description	Measuring Conditions/Terminal Voltage
A7	ATP D	A/T gear position switch D position input	In D position: 0 V In other than D position: Approx. 10 V
A9	ATP NP	A/T gear position switch P and N positions input	In P and N positions: 0 V In other than P and N position: Approx. 10 V
A10	SCS	Timing and adjustment service check signal	With ignition switch ON (II) and service check connector open: 5 V With ignition switch ON (II) and service check connector connected with special tool: 0V
A22	ATP L	A/T gear position switch L position input	In L position: 0V In other than L position: Approx. 10 V
A32	STOP SW	Brake switch signal output	Brake pedal depressed: Battery voltage Brake pedal released : 0 V.

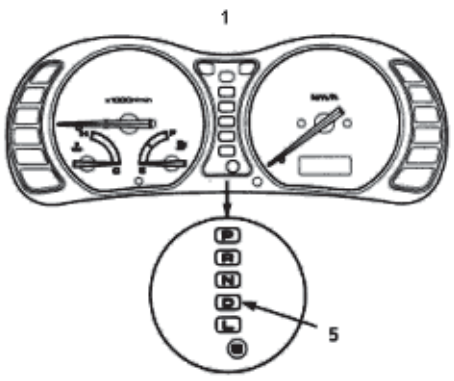
PCM CONNECTOR B (25P)

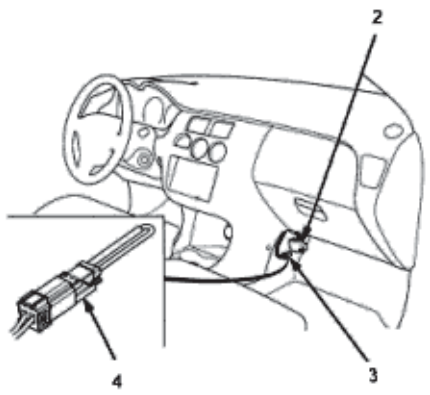
Terminal No.	Signal	Description	Measuring Conditions/Terminal Voltage
B1	IGP1	Power supply circuit from main relay	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0 V
B2	PG1	Ground	
B8	HLC LSM	PH-PL control linear solenoid power supply negative electrode	
B9	IGP2	Power supply circuit from main relay	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0 V
B10	PG2	Ground	
B17	HLC LSP	PH-PL control linear solenoid power supply negative electrode	With ignition switch ON (II): Pulsing signal
B18	SC LSM	Start clutch control linear solenoid power supply negative electrode	
B20	LG1	Ground	
B21	VBU	Back-up power supply	Always battery voltage
B22	LG2	Ground	
B25	SC LSP	Start clutch control linear solenoid power supply negative electrode	With ignition switch ON (II): Pulsing signal

PCM CONNECTOR D (16P)

Terminal No.	Signal	Description	Measuring Conditions/Terminal Voltage
D1	VEL	Secondary gear shaft speed sensor signal input	Depending on vehicle speed: Pulsing signal When vehicle is stopped: Approx. 0V
D2	SOL INH	Inhibitor solenoid control	With inhibitor solenoid ON: Battery voltage With inhibitor solenoid OFF: 0V
D3	SH LSM	Shift control linear solenoid power supply negative electrode	
D4	SH LSP	Shift control linear solenoid power supply negative electrode	With ignition switch ON (II): Pulsing signal
D5	VB SOL	Power supply for solenoid valve	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0 V
D6	ATP R	A/T gear position switch R position input	In R position: 0 V In other than R position: Approx. 10 V
D7	SC LSM	Secondary gear shaft speed sensor ground	
D8	S IND	S indicator light control	With S mode switch ON and S indicator light comes on: Battery voltage S indicator light OFF: 0V
D9	D SW	D mode switch signal input	With D mode switch ON: 0 V With D mode switch OFF: Approx. 5 V
D10	NDN	Driven pulley speed sensor signal input	In other than P and N position: Pulsing signal
D11	NDR	Drive pulley speed sensor signal input	In other than P and N position: Pulsing signal
D12	NDR SG	Drive pulley speed sensor ground	
D13	S SW	S mode switch signal input	With S mode switch ON: 0 V With S mode switch OFF: Approx. 5V
D14	D IND	D indicator light control	When ignition switch is first turned ON (II): Battery voltage for two seconds In D position: Battery voltage
D15	-	Not used	
D16	NDN SG	Driven pulley speed sensor ground	

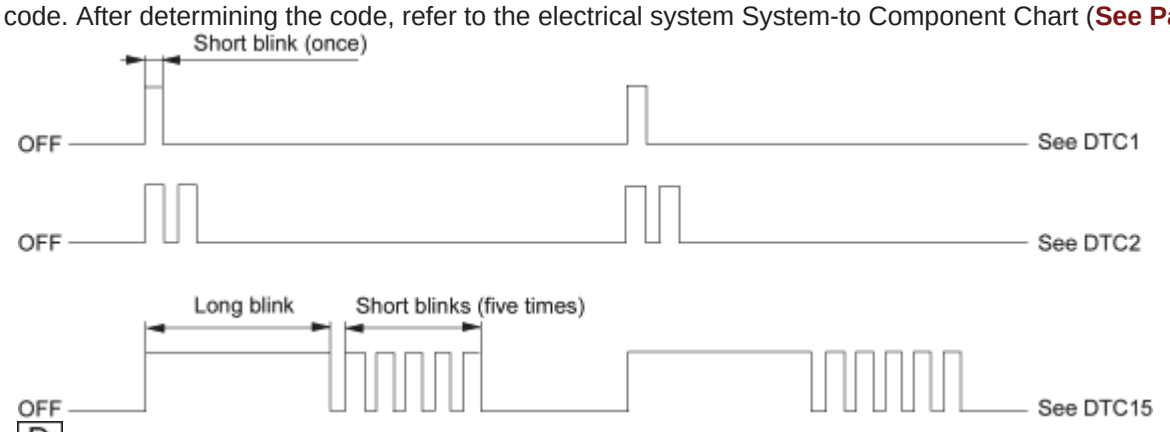
When the PCM senses an abnormality in the input or output systems, the D indicator light in the gauge assembly will blink. What the Service Check Connector (located under the dash on the passenger side) is connected with the special tool as shown, the D indicator light will blink the Diagnostic Trouble Code (DTC) when the ignition switch is turned ON (II). When the D indicator light has been reported on, connect the Service Check Connector with the special tool.
Then turn ON (II) the ignition switch and observe the D indicator light.





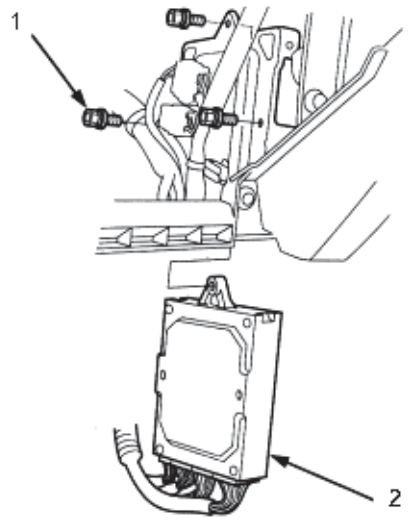
1. **GAUGE ASSEMBLY**
2. **DATA LINK CONNECTOR (3P)**
3. **SERVICE CHECK CONNECTOR (2P)**
4. **SCS SHORT CONNECTOR 07PAZ-0010100**
5. **INDICATOR LIGHT**

Codes 1 through 9 are indicated by individual short blinks. Codes 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks. Add the long and short blinks together to determine the code. After determining the code, refer to the electrical system System-to Component Chart (**See Page** 14-38) and (**See Page** 14-39).



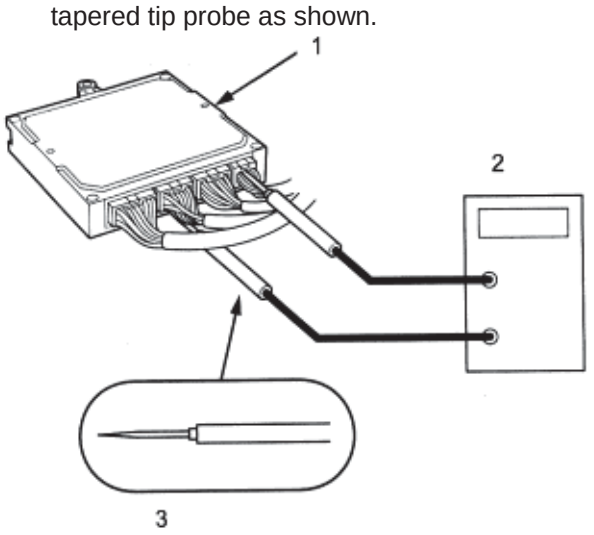
Some PGM-FI problems will also make the D indicator light come on. After repairing the PGM-FI system, disconnect the BACK-UP fuse (7.5 A) in the under-dash fuse/relay box for more than 10 seconds to reset the PCM memory, then recheck.
NOTE: Disconnecting the BACK-UP fuse also cancels the radio preset stations, clock setting and the feed back signal for the start clutch control. Make note of the radio presets before removing the fuse so you can reset them and to memorise the feedback signal for the start clutch control again follow the Memorising Feedback Signal procedures (**See Page** 14-71).

1. Remove the glove box (see section 20).
2. Remove the PCM.
   NOTE: RHD is shown: LHD is symmetrical.



1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. PCM

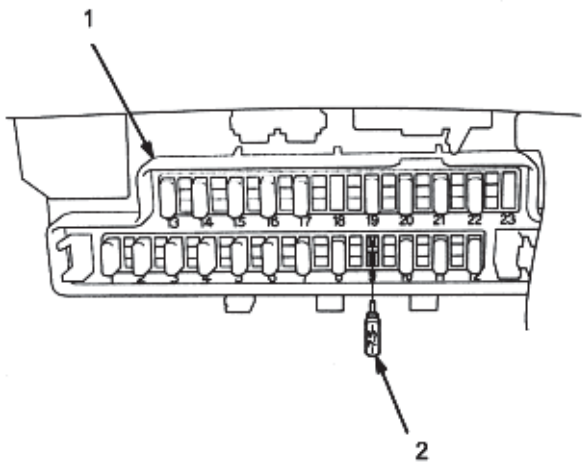
3. Inspect the circuit on the PCM according to the troubleshooting flowchart with a digital multitester and a tapered tip probe as shown.



1. PCM
2. DIGITAL MULTITESTER Commercially available or 07411-0020000
3. TAPERED TIP PROBE

♦ **PCM Reset Procedure**

1. Turn the ignition switch off.
2. Remove the BACK-UP fuse (7.5 A) from the under-dash fuse/relay box for 10 seconds to reset the PCM.
   NOTE: Disconnecting the BACK-UP fuse also cancels the radio preset stations, clock setting and the feed back signal for the start clutch control. Make note of the radio presets before removing the fuse so you can reset them and to memorise the feedback signal for the start clutch control again follow the Memorising Feedback Signal procedures (**See Page** 14-71).



1. UNDERHOOD FUSE/RELAY BOX
2. BACK-UP FUSE (7.5 A)

♦ **Final Procedure**

NOTE: This procedure must be done after any troubleshooting.

1. Remove the special tool from the Service Check Connector.
2. Reset the PCM
3. Set the radio preset stations and clock setting.
4. Follow the Start Clutch Control Memorising Feedback Signal procedures to store in the PCM (**See Page** 14-71).

Diagnostic Trouble Code*	D Indicator Light	Symptom	Possible Cause	Refer to Page
5	Blinks	• Transmission shifts same as D position in any of the positions.	• Short in A/T gear position switch wire • Faulty A/T gear position switch	(**See page** 14-40)
6	OFF	• Transmission shifts same as D position in any positions.	• Disconnected A/T gear position switch connector • Open in A/T gear position switch wire • Faulty A/T gear position switch	(**See page** 14-42)
30	Blinks	• Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in shift control linear solenoid wire • Faulty shift control linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-44)
31	Blinks	• Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in PH-PL control linear solenoid wire • Faulty PH-PL control linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-46)
32	Blinks	• Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in start clutch control linear solenoid wire • Faulty start clutch control linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-48)
33	Blinks	• No specific symptom appears.	• Disconnected solenoid harness connector • Short or open in inhibitor solenoid wire • Faulty inhibitor solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-50)
34	Blinks	• Poor acceleration, flares on starting off.	• Disconnected drive pulley speed sensor connector • Short or open in drive pulley speed sensor wire • Faulty drive pulley speed sensor	(**See page** 14-52)
35	Blinks	• Poor acceleration, flares on starting off.	• Disconnected driven pulley speed sensor connector • Short or open in driven pulley speed sensor wire • Faulty driven pulley speed sensor	(**See page** 14-54)
36	Blinks	• Poor acceleration, flares on starting off.	• Disconnected secondary gear shaft speed sensor connector • Short or open in secondary gear shaft speed sensor wire • Faulty secondary gear shaft speed sensor	(**See page** 14-56)
42	Blinks	• Poor acceleration, flares on starting off.	• Faulty shift control system	(**See page** 14-58)
43	Blinks	• Poor acceleration, flares on starting off.	• Faulty start clutch control system	(**See page** 14-59)

Diagnostic Trouble Code*: The DTCs are the number of the D indicator light blinks when the service check connector is connected with the special tool (SCS Short Connector)

If the self-diagnostic D indicator light does not blink, perform an inspection according to the table below.

Symptom	Inspection	Ref. Page
D indicator light is on constantly (not blinking) whenever the ignition switch is ON (II)	-	(**see page** 14-61)
D indicator light does not come on for two seconds after ignition switch is first turned ON (II)	-	(**see page** 14-62)
Transmission does not shift up into **S** mode with turning the mode switch on.	Inspect mode switch.	(**see page** 14-64)
S indicator light does not come on when **S** mode selected in D position	Inspect **S** mode indicator light circuit	(**see page** 14-66)
Shift lever cannot be moved from P position with the brake pedal depressed. (KQ, KU model only)	Check shift lock system	(**see page** 14-67)
Ignition key cannot be moved from ACC (I) position to LOCK (0) position with the shift lever in P position. (KQ, KU model only)	Check key interlock system	(**see page** 14-68)

NOTE:

- If a customer described the symptom for code 6, it will be necessary to recreate the symptom by test driving, then recheck the DTC.
- Sometime the indicator light and the Malfunction Indicator Lamp (MIL) may come on simultaneously. If so, repair the PGM-FI system according to the DTC, then reset the memory by removing the BACK-UP fuse in the under-dash fuse/relay box for more than 10 seconds. Drive the car for several minutes at a speed over 30 mph (50 km/h), then recheck the DTC.

Self-diagnosis D indicator light blinks five times.

Possible Cause

- **Short in A/T gear position switch wire**
- **Faulty A/T gear position switch.**

Observe the A/T Gear Position Indicator.
1.Turn the ignition switch ON (II).
2.Observe the A/T gear position indicator, and shift each position separately.

NOTE: Code 5 is caused when the PCM received two gear position inputs at the same time.

Does any indicator stay on when the shift lever is not in that position?

NO → **The system is OK at this time. Check the wire harness for damage.**

YES

Disconnect the A/T gear position switch connector.

Do all gear position indicators go out?

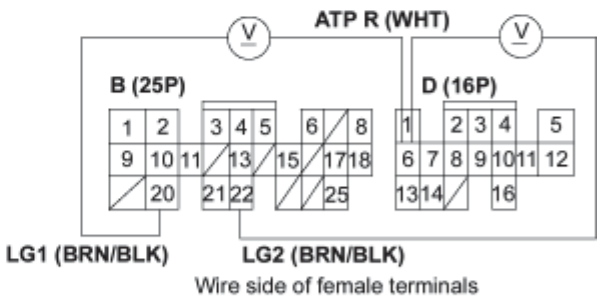
YES → **Replace the A/T gear position switch.**

NO

Connect the A/T gear position switch connector.

Measure ATP R Voltage:
1. Shift to all positions other than R .
2. Measure the voltage between the D6 and B20 or B22 terminals.

PCM CONNECTORS



Wire side of female terminals

Is there approx. 10 V?

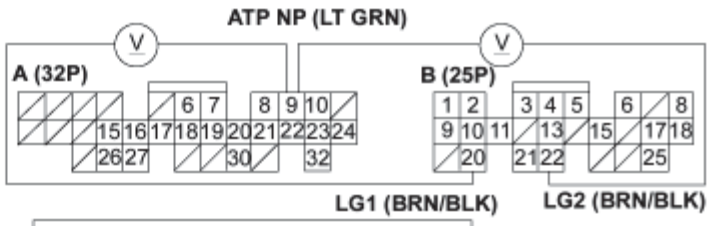
NO → **Check for short in the wire between the D6 terminal and the A/T gear position switch or A/T gear position indicator, and check for open in the wires between the B20 and B22 terminals and body ground (G101). If wires are OK, check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.**

YES

To page 14-41

From page 14-40

Measure ATP NP Voltage:
1. Shift to all positions other than [P] or [N].
2. Measure the voltage between the A9 and B20 or B22 terminals.

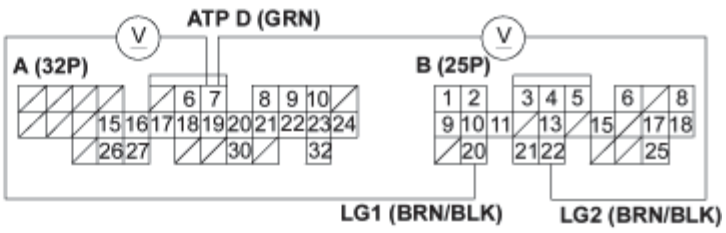


Is there approx. 10V?

NO → **Check for a short in the wire between the A9 terminal and the A/T gear position switch, and in the [P] and [N] position signal wires between the A/T gear position indicator and the A/T gear position switch. If wirers are OK, check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck**

YES

Measure ATP D Voltage:
1. Shift to all positions other than [D].
2. Measure the voltage between the A7 and B20 or B22 terminals.

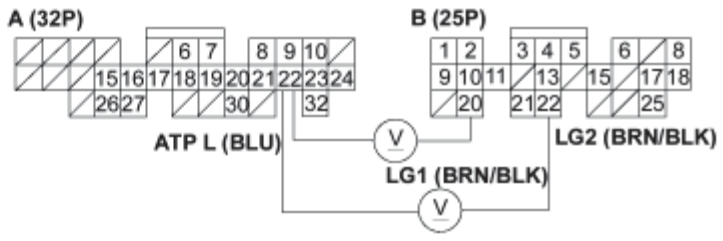


Is there approx. 10V?

NO → **Check for short in the wire between the A7 terminal and the A/T gear position switch. If wires are OK, check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.**

YES

Measure ATP L Voltage:
1. Shift to all positions other than [L]
2. Measure the voltage between the A22 and B20 or B22 terminals.

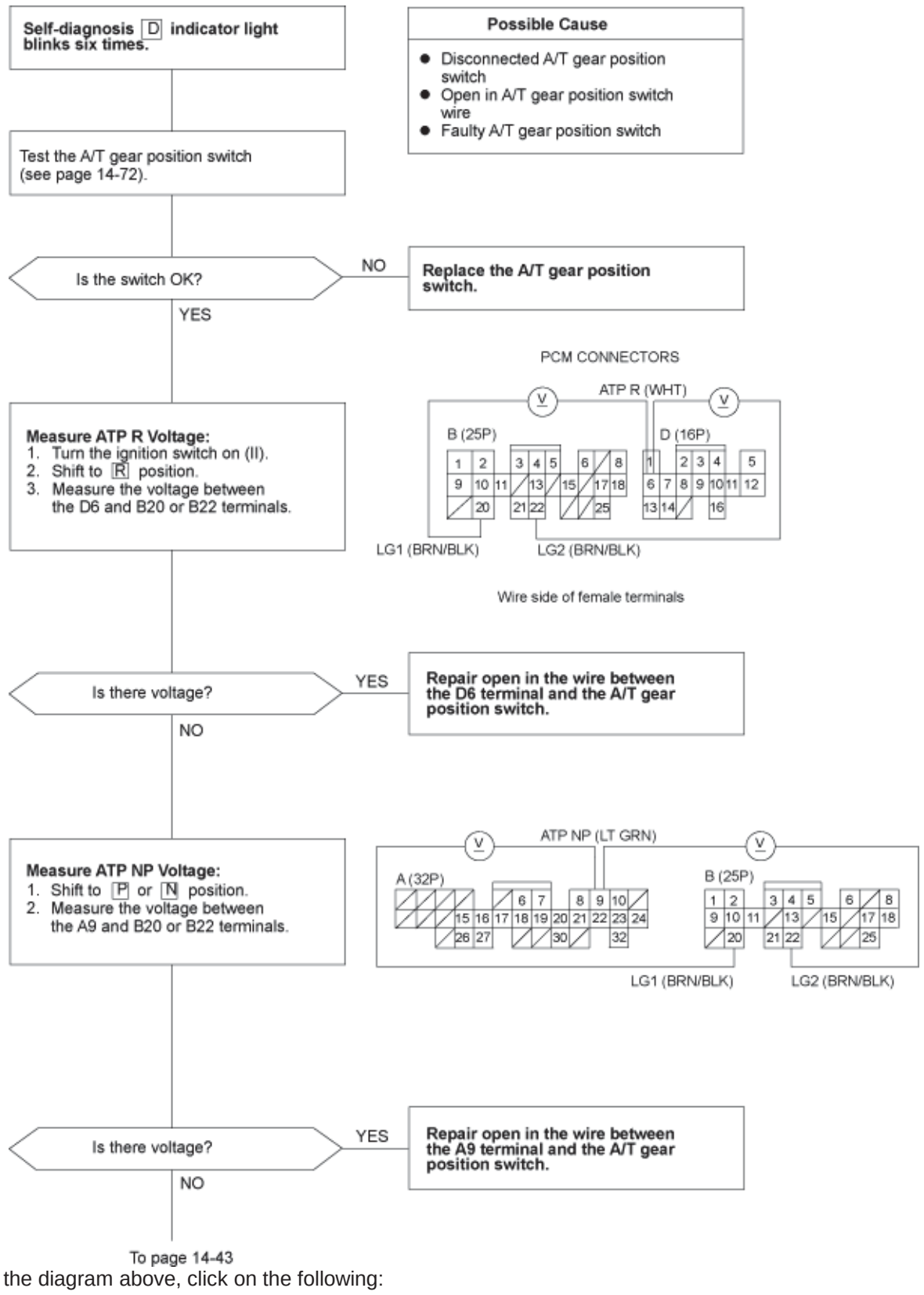


Is there approx. 10V?

NO → **Check for short in the wire between the A22 terminal and the A/T gear position switch or A/T gear position indicator. If wires are OK, check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.**

YES

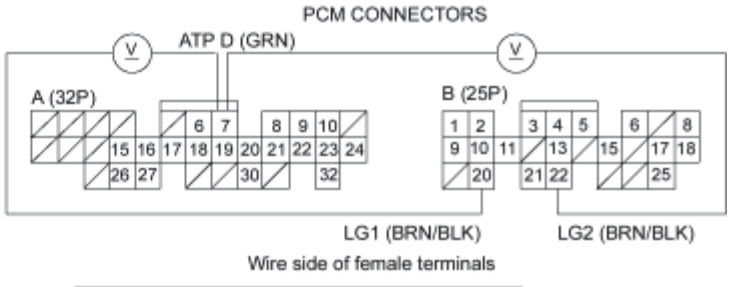
Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.



To go to the pages referenced on the diagram above, click on the following:
(**See Page** 14-72)

From page 14-42

Measure ATP D voltage:
1. Shift to [D] position.
2. Measure the voltage between the A7 and B20 or B22 terminals.

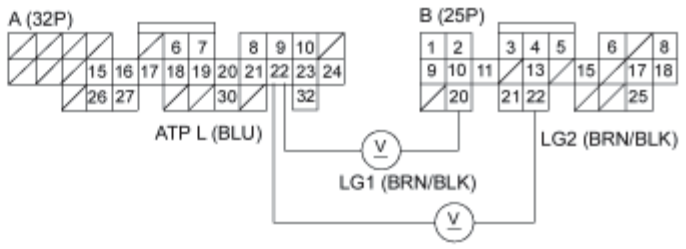


Is there voltage?

YES → **Repair open in the wire between the A7 terminal and the A/T gear position switch.**

NO

Measure ATP L Voltage:
1. Shift to [L] position.
2. Measure the voltage between the A22 and B20 or B22 terminals.

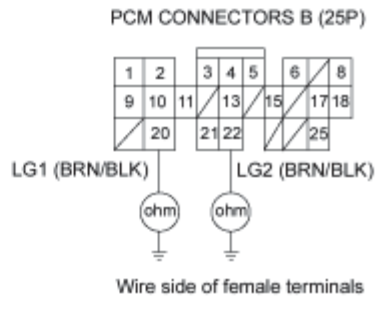


Is there voltage?

YES → **Repair open in the wire between the A22 terminal and the A/T gear position switch.**

NO

Check LG Wire for an Open Circuit:
1. Turn the ignition switch OFF.
2. Check for continuity between the B20 terminal and body ground, and between the B22 terminal and body ground.



Is there continuity?

NO → **Repair open in the wires between the B20 and B22 terminals and body ground, and repair poor ground (G101).**

YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

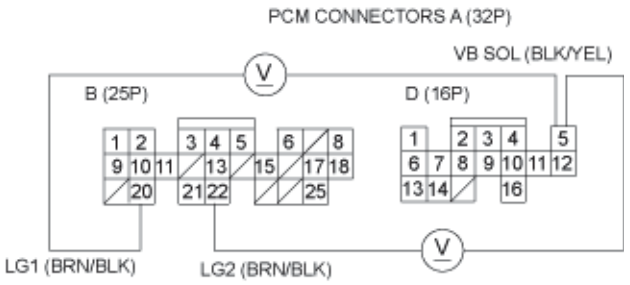
Self-diagnosis D indicator light indicates Code 30.

Possible Cause

- Disconnected solenoid harness connector.
- Short or open in shift control linear solenoid wire.
- Faulty shift control linear solenoid.
- Open in VB SOL wire.
- Open in PG1 and PG2 wires or poor ground (G101).

Measure VB SOL Voltage:

1. Turn the ignition switch OFF.
2. Disconnect the B (25P) and D (16P) connectors from the PCM.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the D5 and B20 or B22 terminals.



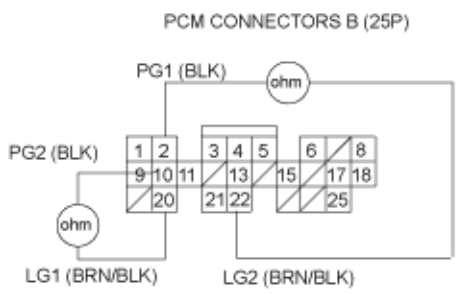
Is there battery voltage?

NO → **Repair open or short in the wire between the D5 terminal and the under-dash fuse/relay box.**

YES

Check the Ground Circuit:

1. Turn the ignition switch OFF.
2. Check for continuity between the terminals B2 and B22 and between terminals B10 and B20.



Is there continuity?

NO → **Repair open in the wire between the terminals B2, B10, B20 and B22 and G101. Repair poor ground (G101)**

YES

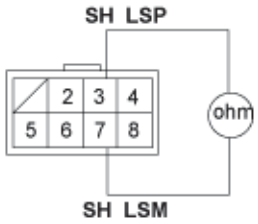
To page 14-45

From page 14-44

Measure Shift Control Linear Solenoid Resistance at the Solenoid Harness Connector:

1. Disconnect the solenoid harness 8P connector.
2. Measure the resistance between the No. 3 and No. 7 terminals of the solenoid harness 8P connector.

SOLENOID HARNESS 8P CONNECTOR



Terminal side of male terminals

Is the resistance 3.8 - 6.8 ohms?

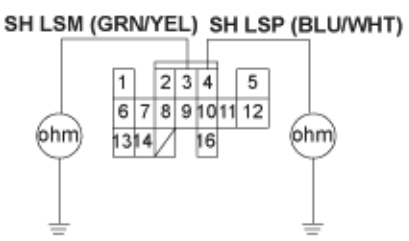
NO → **Replace the lower valve body assembly.**

YES

Check Shift Control Linear Solenoid for a Short Circuit:

Check for continuity between the body ground and the D3 terminal and D4 terminal individually.

PCM CONNECTOR D (16P)



Wire side of female terminals

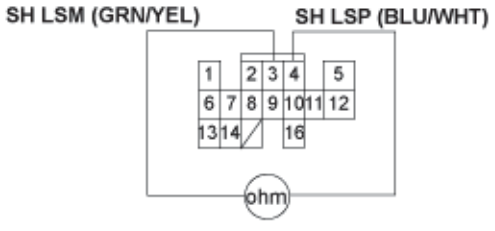
Is there continuity?

YES → **Repair short in the wire between the D3 and D4 terminals and the shift control linear solenoid.**

NO

Measure Shift Control Linear Solenoid Resistance:

1. Connect the solenoid harness 8P connector.
2. Measure the resistance between the D3 and D4 terminals.



Is the resistance 3.8 - 6.8 ohms?

NO → **Repair loose terminal or open in the wire between the D3 and D4 terminals and the shift control linear solenoid.**

YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

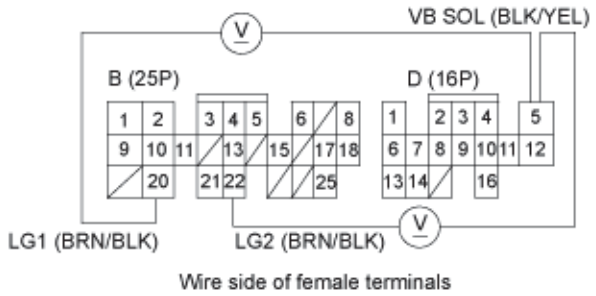
Self-diagnosis D indicator light indicates Code 31.

Possible Cause

- Disconnected solenoid harness connector
- Short or open in PH-PL control linear solenoid wire
- Faulty PH-PL control linear solenoid
- Open in VB SOL wire
- Open in PG1 and PG2 wires or poor ground (G101)

Measure VB SOL Voltage:
1. Turn the ignition switch OFF.
2. Disconnect the B (25P) and D (16P) connectors from the PCM.
   Turn the ignition switch ON (II).
3. Measure the voltage between
4. the D5 and B20 or B22 terminals.

PCM CONNECTORS



Wire side of female terminals

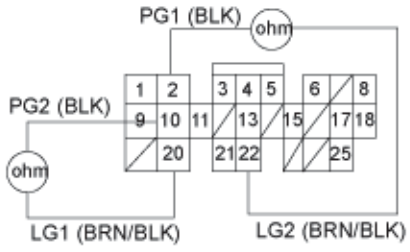
Is there battery voltage?

NO → **Repair open or short in the wire between the D5 terminal and the under-dash fuse/relay box.**

YES

Check the Ground Circuit:
1. Turn the ignition switch OFF.
2. Check for continuity between the terminals B2 and B22 and between terminals B10 and B20.

PCM CONNECTOR B (25P)



Is there continuity?

NO → **Repair open in the wire between the terminals B2, B10, B20 and B22 and G101. Repair poor ground (G101).**

YES

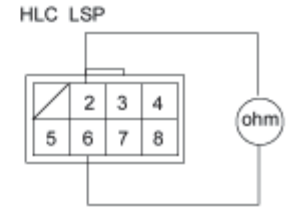
To page 14-47

From page 14-46

Measure PH-PL Control Linear Solenoid Resistance at the Solenoid Harness Connector:

1. Disconnect the solenoid harness 8P connector .
2. Measure the resistance between the No. 2 and No. 6 terminals of the solenoid harness 8P connector.

SOLENOID HARNESS 8p CONNECTOR



Terminal side of male terminals

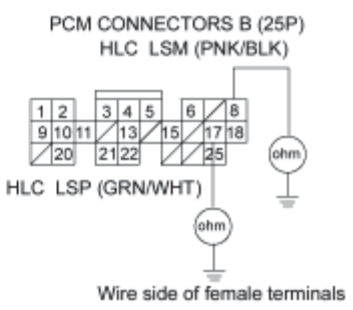
Is the resistance 3.8 - 6.8 ohms?

NO → **Replace the lower valve body assembly.**

YES

Check PH-PL Control Linear Solenoid for a Short Circuit:
Check for continuity between the body ground and the B8 terminal and B17 terminal individually.

PCM CONNECTORS B (25P)



Wire side of female terminals

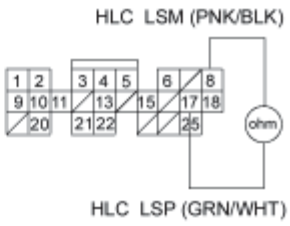
Is there continuity?

NO → **Repair the short in the wire between the B8 and B17 terminals and the PH-PL control linear solenoid.**

YES

Measure PH-PL Control Linear Solenoid Resistance:

1. Connect the solenoid harness 8P connector.
2. Measure the resistance between the B8 and B17 terminals.



Is the resistance 3.8 - 6.8 ohms?

NO → **Repair loose terminal or open in the wires between the B8 and B17 terminals and the PH-PL control linear solenoid.**

YES

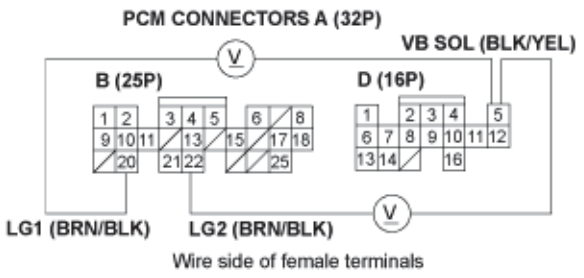
Check for loose terminal fit in the PCM connectors. If necessay, subsitute a known-good PCM and recheck.

Self-diagnosis D indicator light indicates Code 32.

Possible Cause

- Disconnected solenoid harness connector.
- Short or open in start clutch control linear solenoid wire
- Faulty start clutch control linear solenoid
- Open in VB SOL wire
- Open in PG1 and PG2 wires or poor ground (G101)

Measure VB SOL Voltage:
1. Turn the ignition switch OFF.
2. Disconnect the B (25P) and D (16P) connectors from the PCM.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the D5 and B20 or B22 terminals.

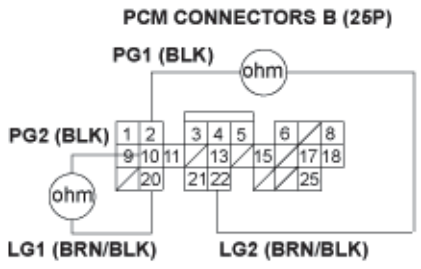


Is there battery voltage?

NO → **Repair open or short in the wire between the D5 terminal and the under-dash fuse/relay box.**

YES

Check the Ground Circuit:
1. Turn the ignition switch OFF.
2. Check for continuity between the terminals B2 and B22 and between terminals B10 and B20.



Is there continuity?

NO → **Repair open in the wire between the terminals B2, B10, B20 and B22 and G101. Repair poor ground (G101).**

YES

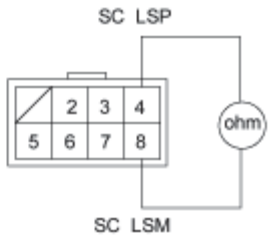
To page 14-49

From page 14-48

Measure Start Clutch Control Linear Solenoid Resistance at the Solenoid Harness Connector:

1. Disconnect the solenoid harness 8P connector.
2. Measure the resistance between the No. 4 and No. 8 terminals of the solenoid harness 8P connector.

SOLENOID HARNESS 8p CONNECTOR



Terminal side of male terminals

Is the resistance 3.8 - 6.8 ohms?

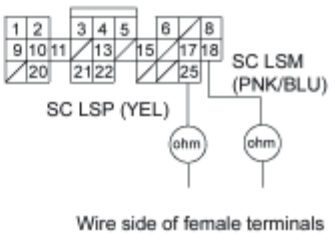
NO → **Replace the lower valve body assembly.**

YES

Check Start Clutch Control Linear Solenoid for a Short Circuit:

Check for continuity between the body ground and the B18 terminal and B25 terminal individually.

PCM CONNECTORS B (25P)



Wire side of female terminals

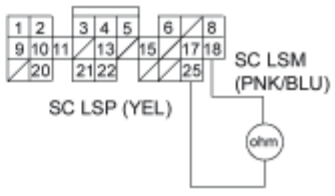
Is there continuity?

YES → **Repair short in the wire between the B18 and B25 terminals and the shift control linear solenoid.**

NO

Measure Start Clutch Control Linear Solenoid Resistance:

1. Connect the solenoid harness 8P connector.
2. Measure the resistance between the B18 and B25 terminals.



Is the resistance 3.8 - 6.8 ohms?

YES → **Repair loose terminal or open in the wires between the B18 and B25 terminals and the start clutch control linear solenoid.**

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

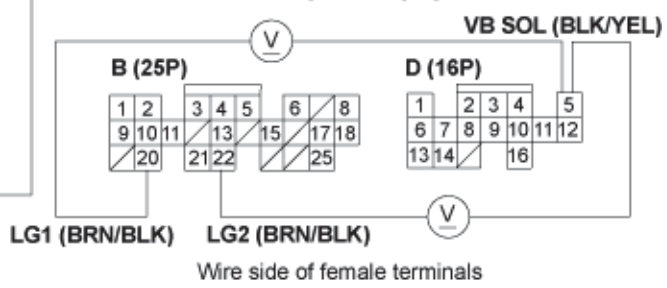
Self-diagnosis D indicator light indicates Code 33.

Possible Cause

- Disconnected solenoid harness connector
- Short or open in inhibitor solenoid valve
- Faulty inhibitor solenoid
- Open in VB SOL wire
- Open in PG1 and PG2 wires or poor ground (G101)

Measure VB SOL Voltage:

1. Turn the ignition switch OFF.
2. Disconnect the B (25P) and D (16P) connectors from the PCM.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the D5 and B20 or B22 terminals



Wire side of female terminals

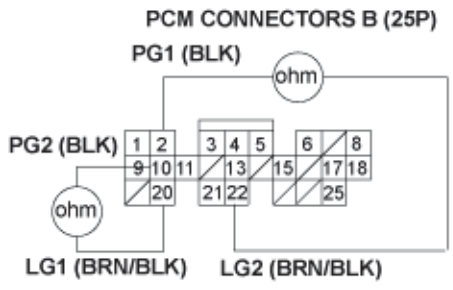
Is there battery voltage?

NO → **Repair open or short in the wire between the D5 terminal and the under-dash fuse/relay box.**

YES

Check the Ground Circuit:

1. Turn the ignition switch OFF.
2. Check for continuity between the terminals B2 and B22 and between terminals B10 and B20.



Is there continuity?

NO → **Repair open in the wire between the terminals B2, B10, B20 and B22 and G101. Repair poor ground (G101).**

YES

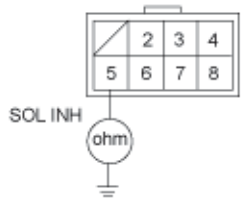
To page 14-51

From page 14-50

Measure Inhibitor Solenoid Resistance at the Solenoid Harness Connector:

1. Disconnect the solenoid harness 8P connector.
2. Measure the resistance between the No. 5 terminal of the solenoid harness 8P connector and body ground.

SOLENOID HARNESS 8p CONNECTOR



Terminal side of male terminals

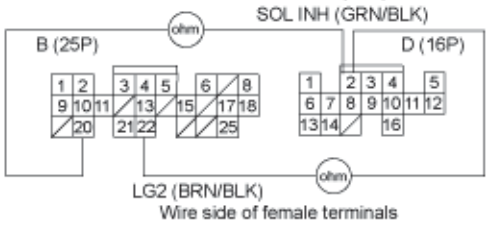
Is the resistance 11.7 - 21.0 ohms?

NO → **Replace the lower valve body assembly**

YES

Check Inhibitor Solenoid for a Short Circuit:
Check for continuity between the D2 and B20 or B22 terminals.

PCM CONNECTORS A (32P)



Wire side of female terminals

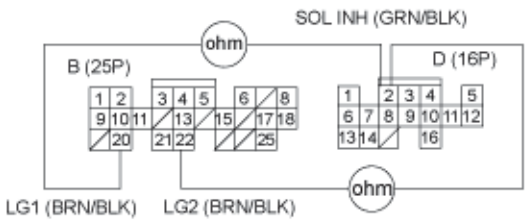
Is there continuity?

YES → **Repair short in the wire between the D2 terminal and the inhibitor solenoid.**

NO

Measure Inhibitor Solenoid Resistance:

1. Connect the solenoid harness 8P connector.
2. Measure the resistance between the D2 and B20 or B22 terminals.



Is the resistance 11.7 - 21.0 ohms?

NO → **Repair loose terminal or open in the wire between the D2 terminal and the inhibitor solenoid.**

YES

Check for loose terminal fit in the PCM connectors. If necessary, subsitutea known-good PCM and recheck.

Self-diagnosis D indicator light indicates Code 34.

Check the drive pulley speed sensor installation, and check it for damage.

Is the drive pulley speed sen sor installed properly, and not damaged?

NO → **Reinstall or replace and recheck**

YES

Measure Drive Pulley Speed Sensor Resistance at the Sensor connector:
1. Disconnect the 2P connector from the drive pulley speed sensor.
2. Measure drive pulley speed sensor resistance at the sensor connector.

Is the resistance 350 - 600 ohm?

NO → **Replace the drive pulley speed sensor.**

YES

Check Drive Pulley Speed Sensor for a Short Circuit:
1. Disconnect the D (16P) connector from the PCM.
2. Check for continuity between body ground and the D11 terminal and D12 terminal individually.

Is there continuity?

NO → **Repair short in the wires between the D11 and D12 terminals and the drive pulley speed sensor.**

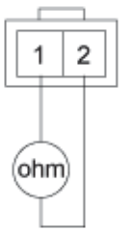
YES

To page 14-53

Possible Cause

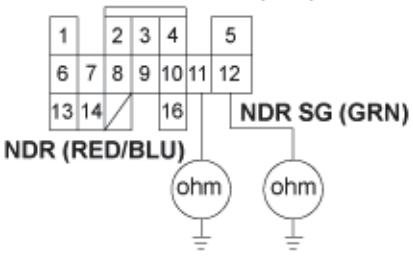
- Disconnected drive pulley speed sensor connector.
- Short or open in drive pulley speed sensor wire
- Faulty drive pulley speed sensor.

DRIVE PULLEY SPEED SENSOR CONNECTOR



Terminal side of male terminals

PCM CONNECTOR D (16P)

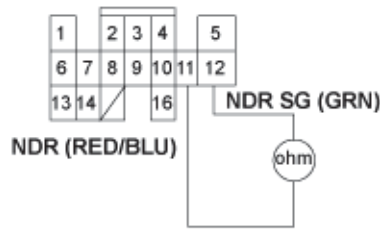


Wire side of female terminals

From page 14-52

Measure Driven Pulley Speed Sensor Circuit for an open:
1. Connect the driven pulley speed sensor connector.
2. Measure the resistance between the D11 and D12 terminals.

PCM CONNECTOR D (16P)



Is the resistance 350 - 600 ohm?

NO → **Repair loose terminal or open in the wires between the D11 and D12 terminals and the driven pulley speed sensor.**

YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

Self-diagonsis [D] indicator light indicates Code 35.

Possible Cause

- Disconnect driven pulley speed sensor connection.
- Short or open in driven pulley speed sensor wire.
- Faulty driven pulley speed sensor.

Check the driven pulley speed sensor installation, and check it for damage.

Is the driven pulley speed sensor installed properly, and not damaged?

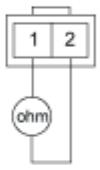
NO → **Reinstall or replace and recheck.**

YES

Measure Driven Pulley Speed Sensor Resistance at the Sensor Connector:

1. Disconnect the 2P connector from the driven pulley speed sensor.
2. Measure driven pulley speed sensor resistance at the sensor connector.

DRIVEN PULLEY SPEED SENSOR CONNECTOR



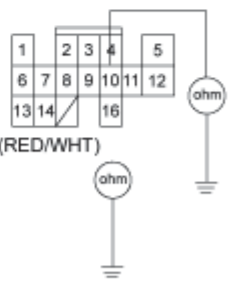
Terminal side of male terminals

Is the resistance 350 - 600 ohm?

NO → **Replace the driven pulley speed sensor.**

YES

PCM CONNECTOR D (16P)
NDN (WHT)



Wire side of female terminals

Check Driven Pulley Speed Sensor for a Short Circuit:

1. Disconnect the D (16P) connector from the PCM.
2. Check for continuity between body ground and the D10 terminal and the D16 terminal individually.

Is there continuity?

YES → **Repair short in the wires between the D10 and the D16 terminals and the driven pulley speed sensor.**

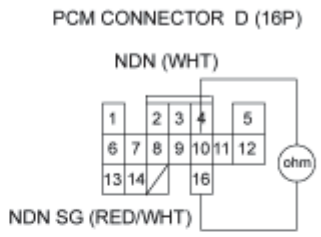
NO

To page 14-55

From page 14-54

Measure Driven Pulley Speed Sensor Circuit for an open:

1. Connect the driven pulley speed sensor connector.
2. Measure the resistance between the D10 and D16 terminals.



Is the resistance 350 - 600 ohm?

NO

Repair loose terminal or open in the wires between the D10 and D16 terminals and the driven pulley speed sensor.

YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

Self-diagnosis D light indicates Code 36.

Possible Cause

- Disconnected secondary gear shaft speed sensor connector
- Short or open in secondary gear shaft speed sensor wire
- Faulty secondary gear shaft speed sensor

Check the secondary gear shaft speed sensor installation, and check it for damage.

Is the secondary gear shaft speed sensor installed properly, and not damaged?

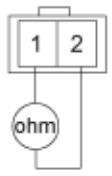
NO → **Reinstall or replace and recheck.**

YES

Measure Secondary Gear Shaft Speed Sensor Resistance at the Sensor Connector:

1. Disconnect the 2P connector from the secondary gear shaft speed sensor.
2. Measure secondary gear shaft speed sensor resistance at the sensor connector.

SECONDARY GEAR SHAFT SPEED SENSOR CONNECTOR



Terminal side of male terminals

Is the resistance 350 - 600 ohm?

NO → **Replace the secondary gear shaft speed sensor.**

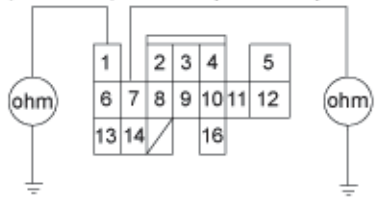
YES

Check Secondary Gear Shaft Speed Sensor for a Short Circuit:

1. Disconnect the D (16P) connector from the PCM.
2. Check for continuity between body ground and the D1 terminal and D7 terminal individually.

PCM CONNECTOR D (16P)

VEL (WHT/RED) **VEL SG (BLK/WHT)**



Wire side of female terminals

Is there continuity?

YES → **Repair short in the wires between the D1 and D7 terminals and the secondary gear shaft speed sensor.**

NO

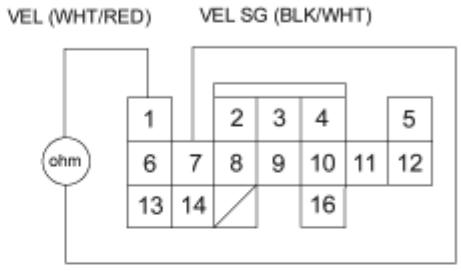
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From page 14-56

Measure Secondary Gear Shaft Speed Sensor Circuit for an Open:

1. Connect the secondary gear shaft speed sensor connector.
2. Measure the resistance between the D1 and D7 terminals

PCM CONNECTOR D (16P)



Wire side of female terminals

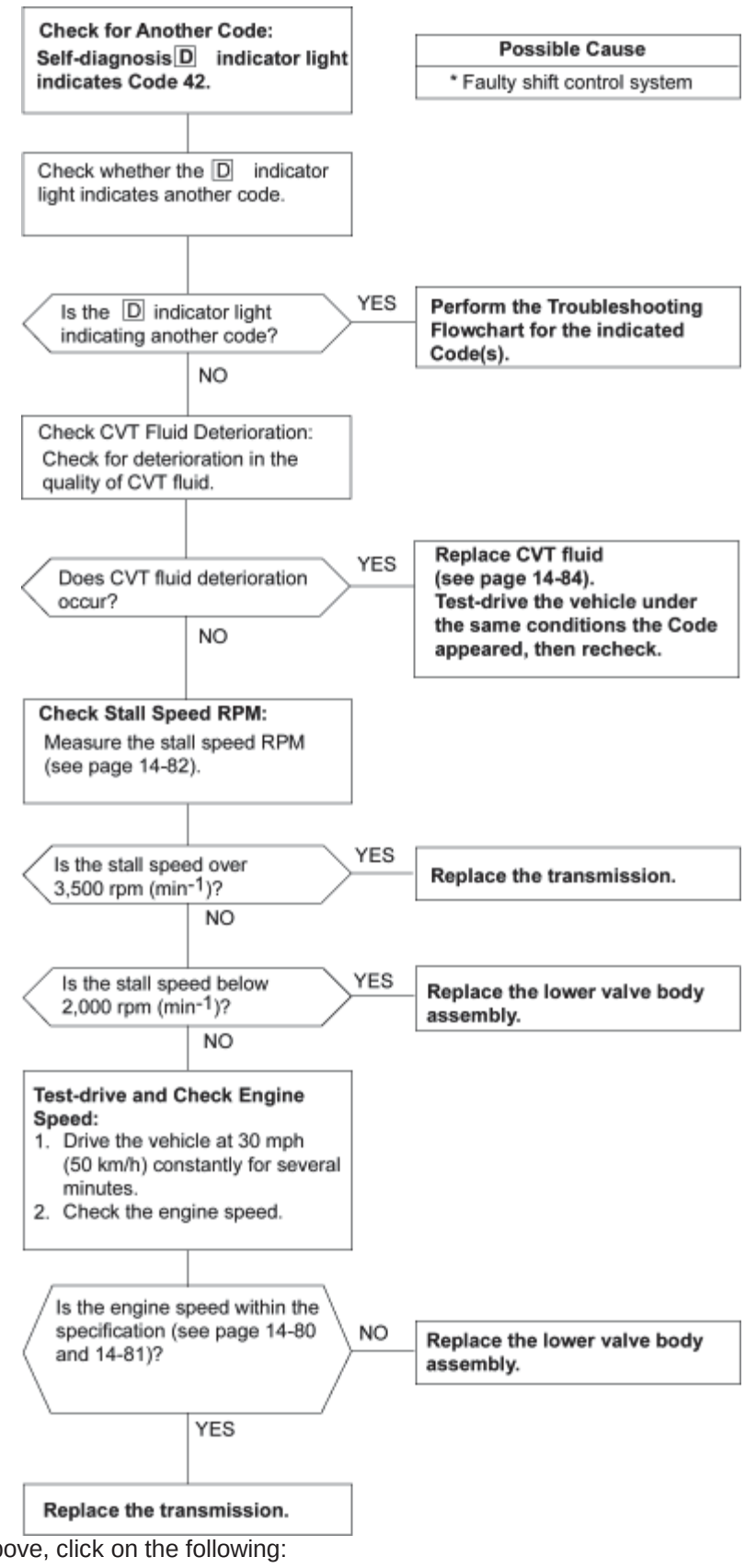
Is the resistance 350 - 600 ohms?

NO

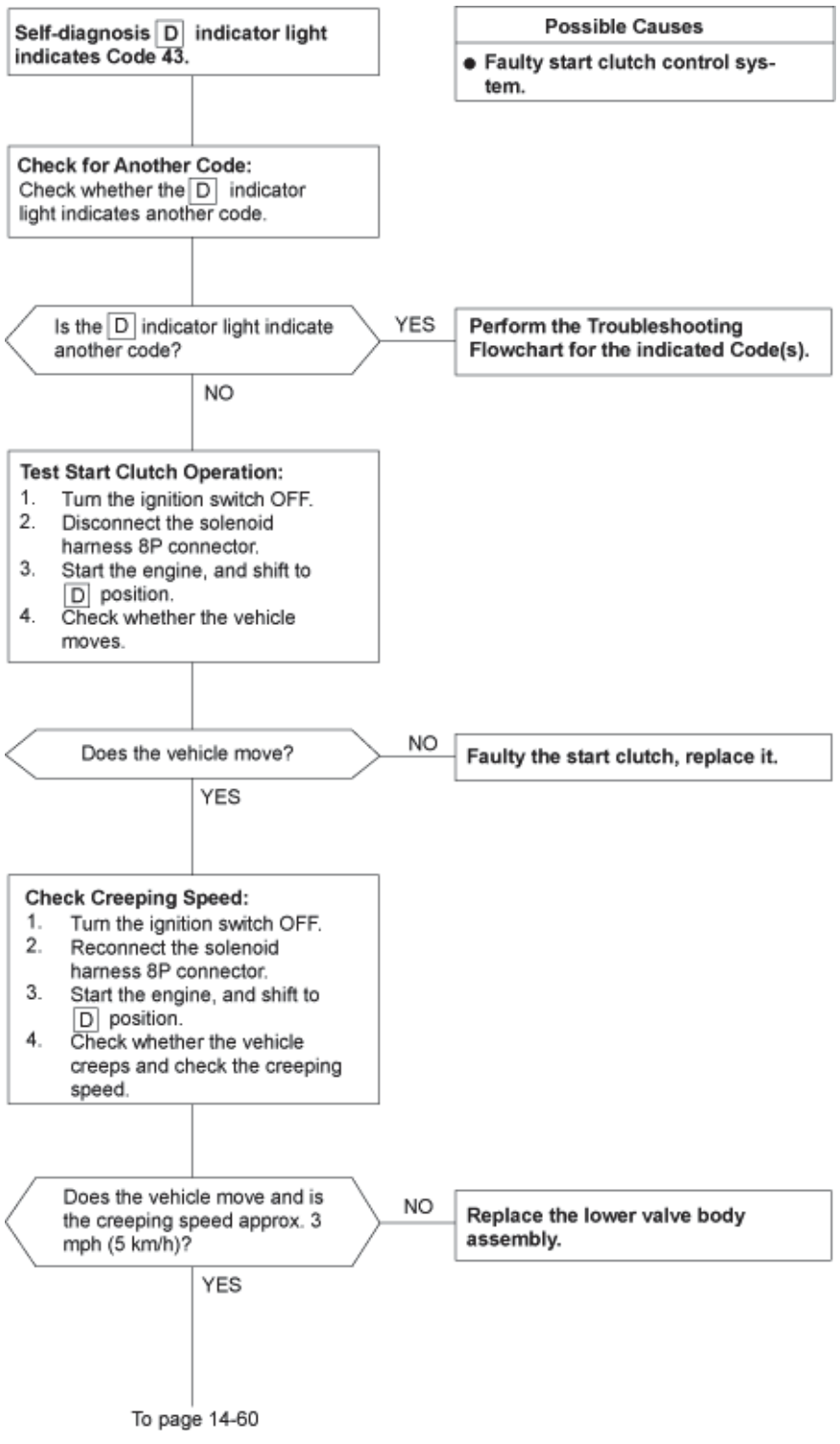
Repair loose terminal or open in the wires between the D1 and D7 terminals and the secondary gear shaft speed sensor.

YES

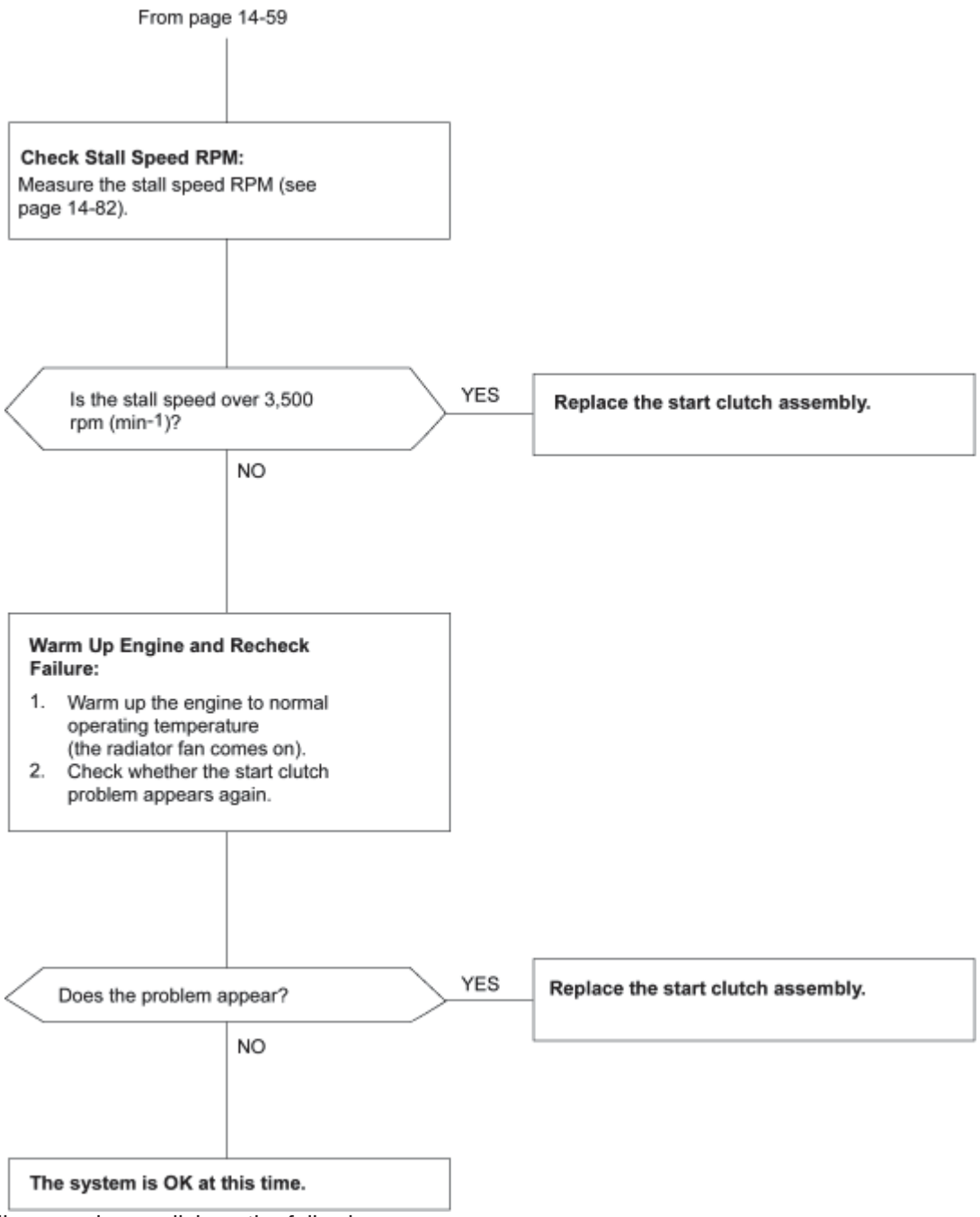
Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.



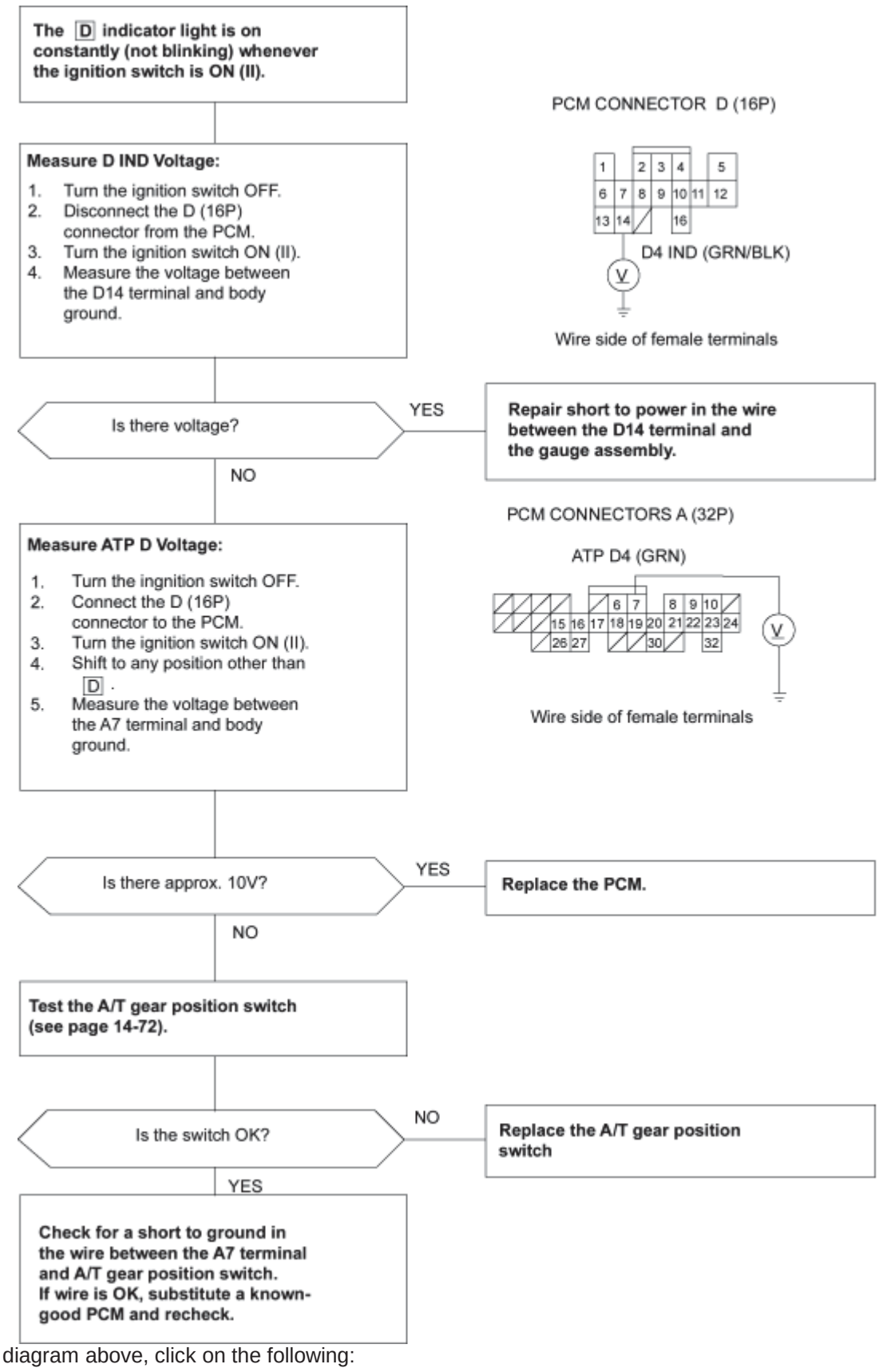
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 14-82)
(**See Page** 14-80)
(**See Page** 14-81)


Self-diagnosis D indicator light indicates Code 43.
Possible Causes
● Faulty start clutch control system.
Check for Another Code:
Check whether the D indicator light indicates another code.
Is the D indicator light indicate another code?
YES
Perform the Troubleshooting Flowchart for the indicated Code(s).
NO
Test Start Clutch Operation:
1. Turn the ignition switch OFF.
2. Disconnect the solenoid harness 8P connector.
3. Start the engine, and shift to D position.
4. Check whether the vehicle moves.
Does the vehicle move?
NO
Faulty the start clutch, replace it.
YES
Check Creeping Speed:
1. Turn the ignition switch OFF.
2. Reconnect the solenoid harness 8P connector.
3. Start the engine, and shift to D position.
4. Check whether the vehicle creeps and check the creeping speed.
Does the vehicle move and is the creeping speed approx. 3 mph (5 km/h)?
NO
Replace the lower valve body assembly.
YES

To page 14-60



To go to the page referenced on the diagram above, click on the following:
(**See Page** 14-82)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 14-72)

The D indicator light does not come on when the ignition switch is first turned ON (II). (It should come on for about two seconds).

Check the Service Check Connector:
Make sure the special tool (SCS Short Connector) is not connected to the service check connector.

Is the special tool (SCS Short Connector) connected to the service check connector?

YES → **Disconnect the special tool from the service check connector and recheck.**

NO

Check the D Indicator Light:
Shift to D position.

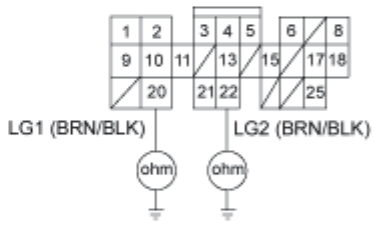
Does the D indicator light come on?

YES → **Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.**

NO

Check the Ground Circuit:
1. Turn the ignition switch OFF.
2. Disconnect the B (25P) connector from the PCM.
3. Check for continuity between the B20 terminal and body ground, and between the B22 terminal and body ground.

PCM CONNECTOR B (25P)



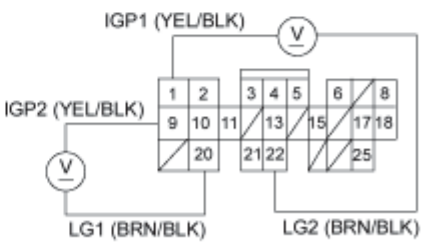
Wire side of female terminals

Is there continuity?

NO → Repair open in the wires between the B20 and B22 terminals and ground (G101), and repair poor ground (G101).

YES

Measure Power Supply Circuit Voltage:
1. Turn the ignition switch ON (II).
2. Measure the voltage between terminals B1 and B20 and between terminals B9 and B22.



Is there battery voltage?

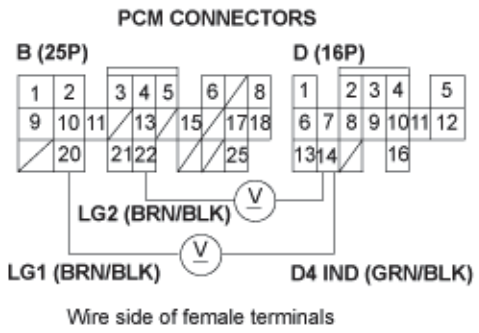
NO → **Repair open or short in the wire between the B1 and/or B9 terminals and the PGM-FI main relay, and between the PGM-FI main relay and the under-hood fuse/ relay box.**

YES

To page 14-63

From page 14-62

Measure D IND Voltage:
1. Turn ignition switch OFF.
2. Connect the B (25P) connector to the PCM.
3. Connect a digital multimeter to the D14 and B20 or B22 terminals.
4. Turn the ignition switch ON (II), and make sure that voltage is available for two seconds.

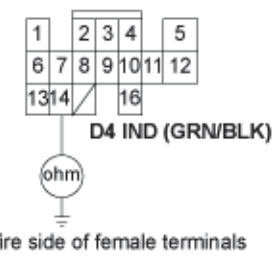


Is there voltage?

YES → **Check for open in the wire between the D14 terminal and the gauge assembly. If wire is OK, check for a faulty indicator light bulb or a faulty gauge assembly printed circuit board.**

NO

Check D IND for a Short Circuit:
Check for continuity between the D14 terminal and body ground.



Is there continuity?

YES → **Repair short in the wire between the D14 terminal and the gauge assembly.**

NO

Check for loose terminal fit in the PCM connectors. check the A/T gear position switch. If necessary, substitute a known-good PCM and recheck.

Transmission does not shift into S mode with turning the S mode switch ON.

Check Mode Switch:
1. Turn the ignition switch OFF.
2. Disconnect the mode switch connector from the cable reel harness.
3. Check for continuity between the No. 1 and No. 3 terminals of the mode switch connector when pushing the D mode switch and when pushing S mode switch.
4. Check for continuity between the No. 2 and the No. 3 terminal when pushing the S mode switch and when pushing D mode switch.

MODE SWITCH/HORN CONNECTOR



Terminal side of male terminals

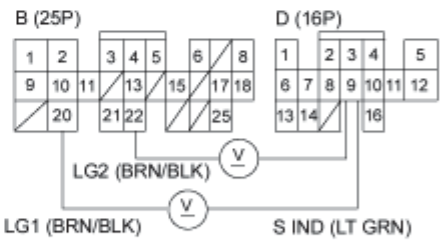
Are there continuity when pushing the mode switch between terminals and no continuity when pushing the other switch?

NO → **Check for open or short in the cable reel harness, and check the mode switch.**

YES

Measure D SW Voltage in [D] position:
1. Connect the mode switch connector.
2. Turn the ignition switch ON (II).
3. Shift to [D] position.
4. Measure the voltage between the D9 and B20 or B22 terminals when pushing the D mode switch and pushing the S mode switch.

B (25P) D (16P)



Wire side of female terminals

Is there approx. 5 V while pushing the D mode switch, and 0 V when pushing the S mode switch?

NO → **Check for open in the wire between the D9 terminal and D mode switch. If the wire is OK, replace the mode switch.**

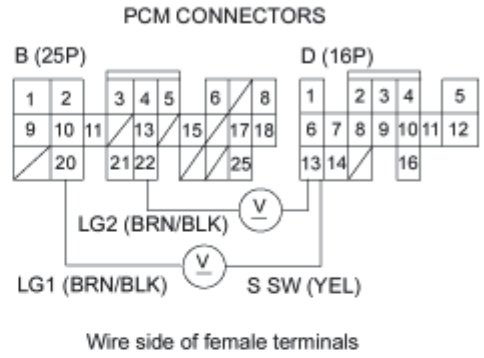
YES

To page 14-65

From page 14-64

Measure S SW voltage in D position:

Measure the voltage between the D13 and B20 or B22 terminals when pushing the S mode switch and pushing the D mode switch.



Wire side of female terminals

Is there approx. 5 V while pushing the S mode switch, and 0 V when pushing the D mode switch?

NO

Check for open in the wire between the D13 terminal and S mode switch. If the wire is OK, replace the mode switch.

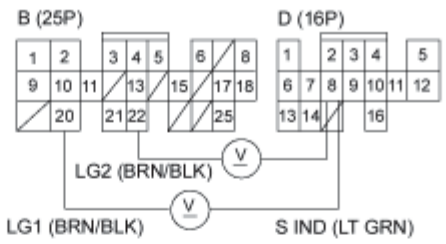
YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

The S mode indicator light does not come on when S mode selected in [D] position.

Measure S IND Voltage:
1. Turn the ignition switch ON (II).
2. Shift to [D] position.
3. Measure the voltage between the D8 and B20 or B22 terminals in S mode position.

PCM CONNECTORS



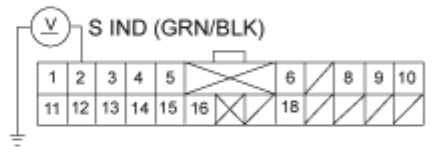
Wire side of female terminals

Is there approx. 10 V?

YES

Measure S ind Voltage at Gauge Assembly Connector:
Measure the voltage between the No. 2 terminal of the gauge assembly A (22P) connector and body ground in S mode position.

GAUGE ASSEMBLY CONNECTOR A (22P)



Wire side of female terminals

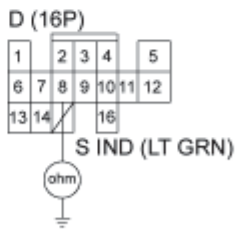
Is there approx. 10 V?

NO

Check for open in the wire between the D8 terminal and the gauge assembly. If wire is OK, check the gauge assembly.

YES

PCM CONNECTOR (16P)



Wire side of female terminals

NO

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck

Is there continuity?

YES

Check S IND for a Short Circuit:
1. Turn the ignition switch OFF.
2. Disconnect the D (16P) connector from the PCM.
3. Disconnect the gauge assembly A (22P) connector.
4. Check for continuity between the D8 terminal and body ground.

Repair short in the wire between the D8 terminal and the gauge assembly.

Shift lever cannot be moved from the [P] position when the brake pedal is depressed.

Check Brake Lights Operation:
Depress the brake pedal.

Are the brake lights ON?

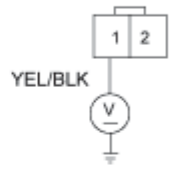
NO → **Repair faulty brake switch circuit (see section 23).**

YES

Measure Shift Lock Solenoid Voltage:

1. Turn the ignition switch ON (II).
2. remove the center console (see section 20).
3. Disconnect the shift lock solenoid connector.
4. Measure the voltage between the No. 1 terminal of the shift lock solenoid connector and body ground with depressing the brake pedal.

SHIFT LOCK SOLENOID CONNECTOR



Wire side of female terminals

Is there battery voltage?

NO → **Check for open in the wire between the No. 1 terminal of the shift lock solenoid connector and the brake switch via the shift lock solenoid relay. If wire is OK, replace the shift lock solenoid relay.**

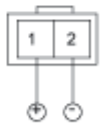
YES

Check Shift Lock solenoid Operation:

1. Connect the No. 1 terminal of the shift lock solenoid connector to the battery positive terminal, and connect the No. 2 terminal to the battery negative terminal.
2. Check that the shift lock solenoid operates.

NOTE: Do not connect the No. 2 terminal to the battery positive terminal, or you will damage the diode inside the shift lock solenoid.

SHIFT LOCK SOLENOID CONNECTOR (directly on solenoid)



Terminal side of male terminals

Does the shift lock solenoid operate properly?

NO → **Replace the shift lock solenoid**

YES

Repair open in the wire between the No. 2 terminal of the shift lock solenoid connector and the ground (G401, G402), and repair poor ground.

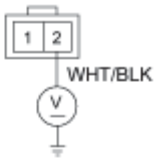
Ignition key cannot be removed from ACC (I) position to LOCK (0) position while pushing the ignition key with the shift lever in [P] position.

Check Power Supply Voltage:
1. Disconnect the key interlock switch connector.
2. Measure the voltage between the No. 2 terminal of the key interlock switch connector and body ground.

Is there battery voltage?

NO → **Repair open or short in the wire between the No. 2 terminal of the key interlock switch connector and the under-hood fuse/relay box.**

KEY INTERLOCK SWITCH CONNECTOR

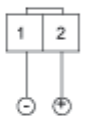


Terminal side of male terminals

YES

Check Key Interlock Solenoid Operation:
1. Connect the No. 2 terminal of the key interlock switch connector to the battery positive terminal, and connect the No. 1 terminal to the battery negative terminal.
2. Turn the ignition switch to ACC (I), then push it.
3. Check that the key interlock solenoid operation. A clicking sound should be heard.

KEY INTERLOCK SWITCH CONNECTOR



Wire side of female terminals

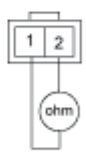
Does the key interlock solenoid operate properly?

NO → **Faulty key interlock solenoid. Replace the ignition key cylinder/ steering lock assembly.**

YES

Check Parking Pin Switch Operation:
1. Remove the center console (see section 20).
2. Disconnect the parking pin switch connector.
3. Check for continuity between the parking pin switch connector terminals.

PARKING PIN SWITCH CONNECTOR



Terminal side of male terminals

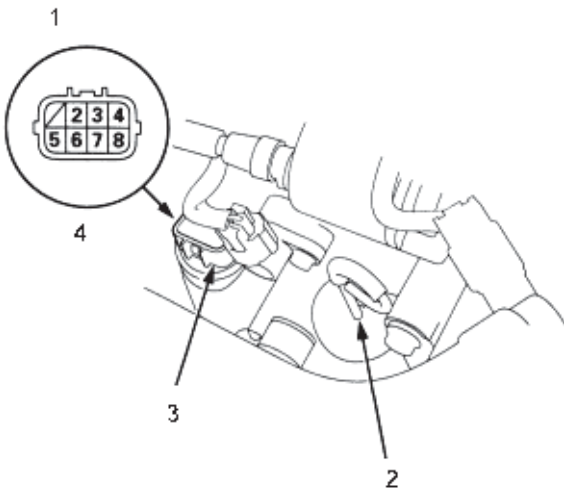
Is there continuity?

YES → **Repair open in the wire between the No. 1 terminal of the parking pin switch connector and the key interlock switch connector, or repair open in the wire between the No. 2 terminal of the parking pin switch connector and the ground (G401, G402), and repair poor ground.**

NO

Faulty the parking pin switch. replace the detent plate (the parking pin switch is integrated into the detent plate).

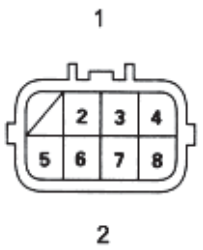
1. Disconnect the 8P connector from the solenoid harness connector.
2. Measure the resistance of the shift control linear solenoid between the No. 3 and No. 7 terminals of the solenoid harness connector.
   STANDARD: 3.8 - 6.8 ohms
3. Measure the resistance of the PH-PL control linear solenoid between the No. 2 and No. 6 terminals.
   STANDARD: 3.8 - 6.8 ohms
4. Measure the resistance of the start clutch control linear solenoid between the No. 4 and No. 8 terminals.
   STANDARD: 3.8 - 6.8 ohms
5. Measure the resistance of the inhibitor solenoid between the No. 5 terminal and body ground.
   STANDARD: 11.7 - 21.0 ohms



1. SOLENOID HARNESS CONNECTOR
2. ATF DIPSTICK
3. SOLENOID HARNESS CONNECTOR
4. Terminal side of male terminals

6. Replace the lower valve body assembly if any of the solenoids resistance is beyond the standard.

7. If all of the resistances are within the standard, a clicking sound should be heard when connecting the battery terminals to the solenoid harness connector terminals below:
   - **Shift control linear solenoid**
     No. 3: Battery positive terminal
     No. 7: Battery negative terminal
   - **PH-PL control linear solenoid**
     No. 2: Battery positive terminal
     No. 6: Battery negative terminal
   - **Start clutch control linear solenoid**
     No. 4: Battery positive terminal
     No. 8: Battery negative terminal
   - **Inhibitor solenoid**
     No. 5: Battery positive terminal
     Body ground: Battery negative terminal



1. SOLENOID HARNESS CONNECTOR
2. Terminal side of male terminals

8. If no clicking sound is heard, replace the lower valve body assembly.
   NOTE: If the lower valve body assembly replacement is required, refer to Lower Valve Body Assembly Replacement (**See Page** 14-87).

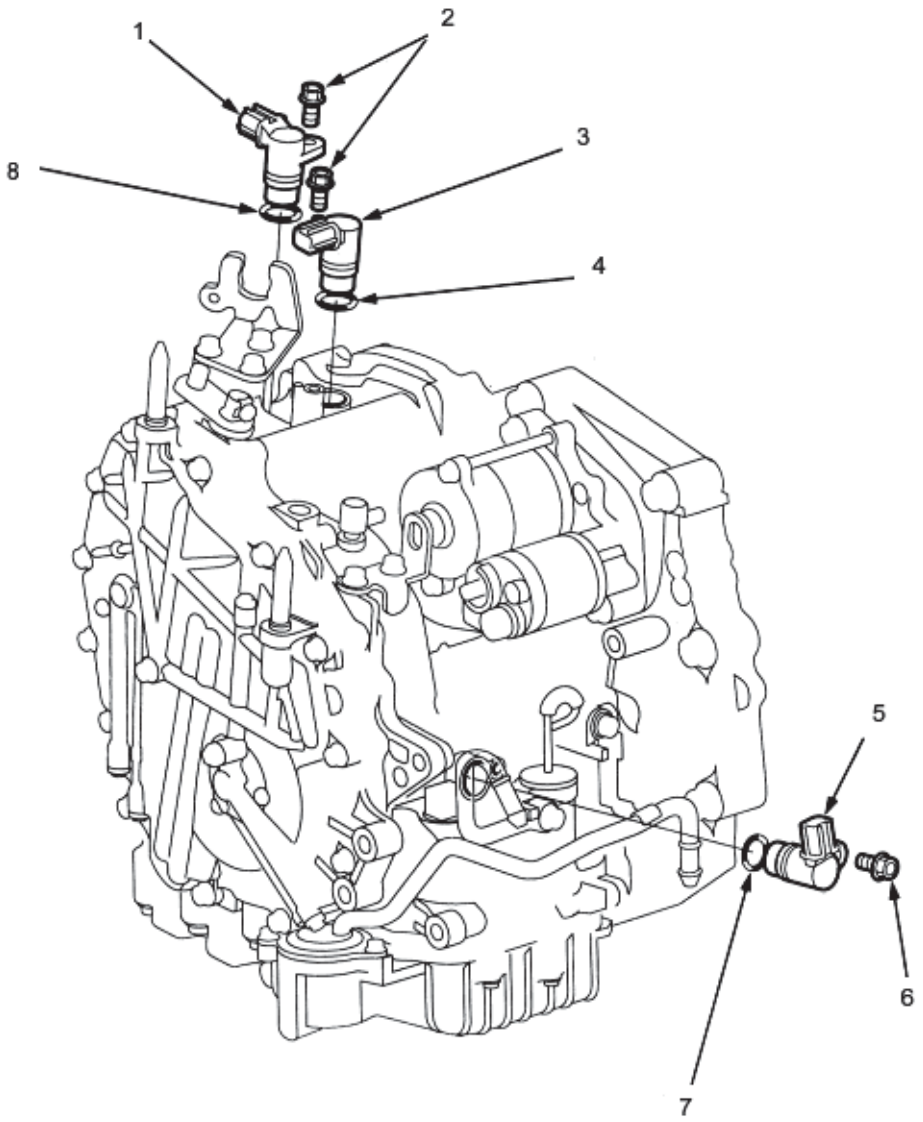
Drive Pulley/Driven Pulley/Secondary Gear Shaft Speed Sensors

Replacement

⚠ CAUTION

While replacing the speed sensor, be sure not to allow dust and other foreign particles to enter into the transmission.

1. Disconnect the drive pulley, the driven pulley, or the secondary gear shaft speed sensor connector.
2. Remove the 6 mm bolt from the transmission housing and remove the drive pulley, the driven pulley, or the secondary gear shaft speed sensor.
3. Replace the O-ring with a new one before reinstalling the drive pulley, the driven pulley, or the secondary gear shaft speed sensor.



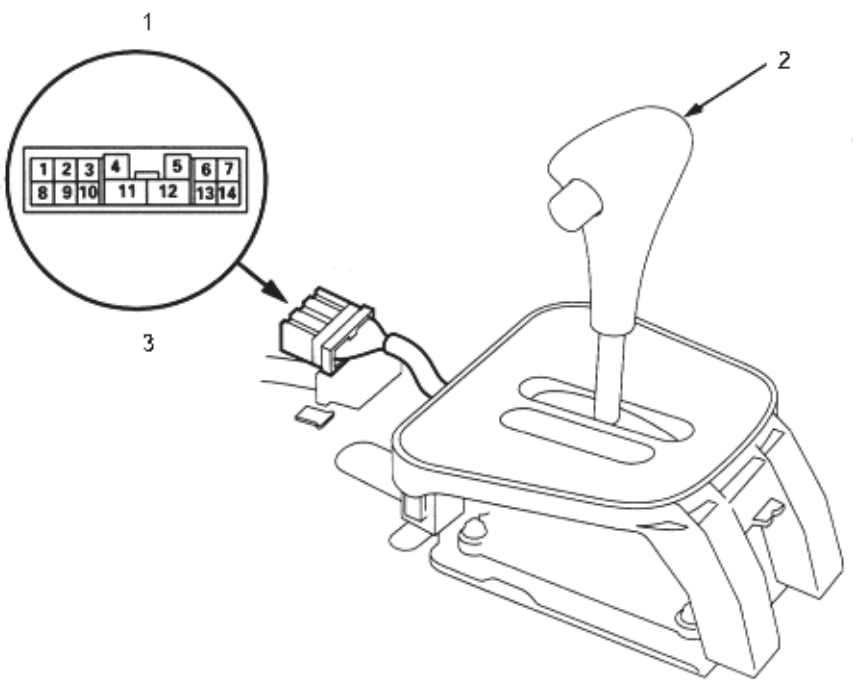
1. **SECONDARY GEAR SHAFT SPEED SENSOR**
2. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
3. **DRIVEN PULLEY SPEED SENSOR**
4. **O-RING** Replace.
5. **DRIVE PULLEY SPEED SENSOR**
6. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
7. **O-RING** Replace.
8. **O-RING** Replace.

When the following the parts are replaced, the PCM must memorise the feedback signal for the start clutch control.

- PCM
- Transmission assembly
- Start clutch assembly
- Lower valve body assembly
- Engine assembly or overhaul

1. Start the engine and warm up to normal operating temperature (the radiator fan comes on).
2. Shift to [D] position.
3. Turn all electrical system OFF.
   NOTE: Except headlights; you can calibrate with the headlights stay on.
4. Drive the vehicle on a flat road
5. Accelerate to the speed 37 mph (60 km/h), the release the accelerator and decelerate for 5 seconds.
   NOTE:
   - Do not depress the brake pedal to decelerate.
   - The start clutch feedback control signal have been memorised in the PCM.
6. Test-drive the vehicle and check that the engine does not stall and the vehicle can start off smoothly.
   - If the engine stalls or any shifting failure occurs at starting off, re-calibrate the start clutch feedback control signal.

1. Remove the front console (see section 20), then disconnect the A/T gear position switch connector (14P).
2. Check for continuity between the terminals in each position according to the following table.
   - Move the shift lever back and forth at each position without pushing the push button and check for continuity within the range of free play.
   - If there is no continuity within the range of free play, adjust the installing position of the A/T gear position switch as described on the next page.

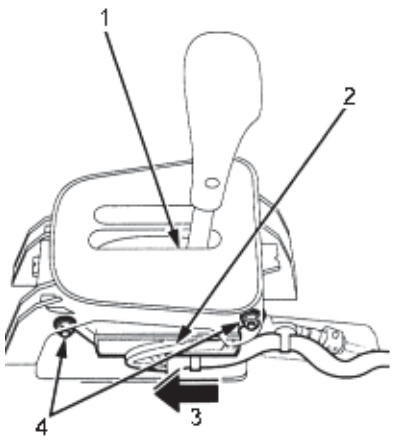


1. **A/T GEAR POSITION SWITCH CONNECTOR (14P)**
2. **SHIFT LEVER**
3. Terminal side of male terminals

A/T Gear Position Switch Continuity check

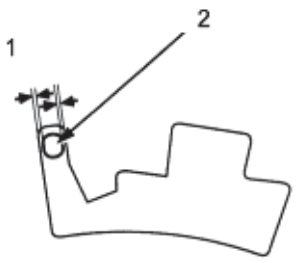
Position \ Terminal	1	6	7	12	13	14	Back-up Light Switch 3	Back-up Light Switch 4	Neutral Position Switch 9	Neutral Position Switch 10
P	○			○					○	○
R	○				○		○	○		
N	○					○			○	○
D	○		○							
L	○	○								

1. Shift to the [P] position and loosen the nuts.
2. Slide the switch in the direction of the arrow within 2.0 mm (0.79 in.) so that there is continuity between the No. 1 and No. 12 terminals in the range of free play of the shift lever.



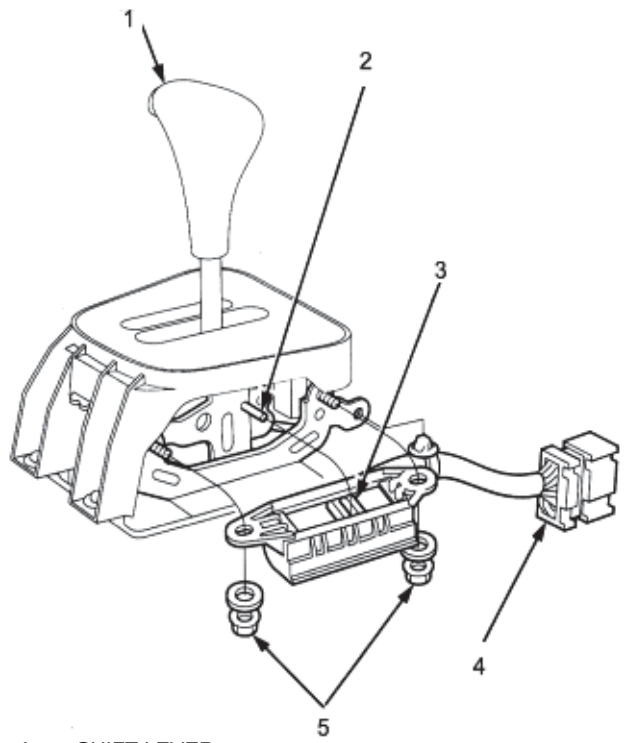
1. Position
2. A/T GEAR POSITION SWITCH
3. Slide within 2.0 mm, (0.079 in).
4. NUTS

3. Recheck for continuity between each of the terminals.
   NOTE:
   - If adjustment is not possible, check for damage to the shift lever detent and/or the bracket. If there is no damage, replace the switch.
   - The engine should start when the shift lever is in [N] position in the range of free play.



1. Free play
2. LOCK PIN

1. Remove the front console, then disconnect the A/T gear position switch connector (14P).
2. Remove the two mounting nuts.



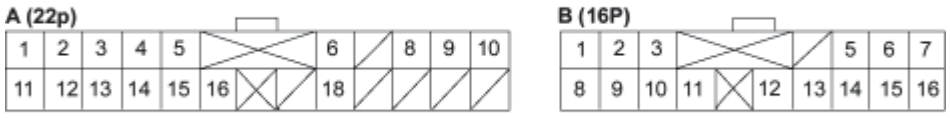
1. SHIFT LEVER
2. PIN
3. SWITCH SLIDER
4. 14P CONNECTOR
5. MOUNTING NUTS

3. Position the switch slider to “Neutral” as shown above.
4. Move the shift lever to “Neutral”, then slip the switch into position.
5. Attach the switch with the two mounting nuts.
6. Test the switch in the [P] and [N] position of the shift lever. The engine should start when the shift lever is in position [P] anywhere in the range of free play.
7. Connect the 14P connector, clamp the harness and install the front console.

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS (section 23) before performing repairs or service.

1. Remove the gauge assembly from the dashboard (see section 20), then disconnect the A (22P) and B (16P) connectors from the gauge assembly.
2. Inspect the connectors and connector terminals to be sure they are making good contact.
3. If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
4. Perform the following input test at the gauge assembly A (22P) and B (16P) connectors.
5. If all the input tests prove OK, but the indicator is faulty, replace the printed circuit board.

GAUGE ASSEMBLY CONNECTOR

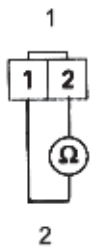


Wire side of female terminals

Cavity	Wire Colour	Test Condition	Test: Desired Result	Possible Cause (if result is not obtained)
A1	GRN/BLK	Ignition switch ON (II) and shift lever in D	Check for voltage to ground: There should be battery voltage.	• Faulty A/T gear position switch • Faulty PCM • An open in the wire
A2	GRN/BLK	Ignition switch ON (II), shift lever in D and **S** mode switch is turned on	Check for voltage to ground: There should be battery voltage.	• Faulty A/T gear position switch • Faulty **S** mode switch • Faulty PCM • An open in the wire
A3	BLU	Ignition switch ON (II) and shift lever in 2	Check for voltage to ground: There should be 1 V or less. NOTE: There should be battery voltage in any other shift lever position.	• Faulty A/T gear position switch • An open in the wire
A4	LT GRN	Ignition switch ON (II) and shift lever in N	Check for voltage to ground: There should be 1 V or less. NOTE: There should be battery voltage in any other shift lever position.	• Faulty A/T gear position switch • An open in the wire
A11	BLK/BLU	Shift lever in P	Check for continuity to ground: There should be no continuity.	• Faulty A/T gear position switch • An open in the wire
A12	WHT	Ignition switch ON (II) and shift lever in R	Check for voltage to ground: There should be 1 V or less. NOTE: There should be battery voltage in any other shift lever position.	• Faulty A/T gear position switch • An open in the wire
A13	RED	Ignition switch ON (II) and shift lever in N	Check for voltage to ground: There should be 1 V or less. NOTE: There should be battery voltage in any other shift lever position.	• Faulty A/T gear position switch • An open in the wire
B13	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G401, 402) • An open in the wire
B15	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Brown No. 6 (7.5 A) fuse in the under-dash fuse/relay box) • An open in the wire

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS (section 23) before performing repairs or service.

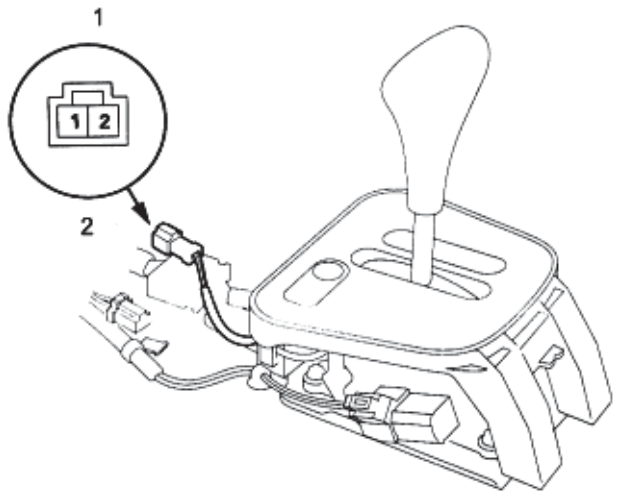
1. Remove the dash board lower cover (see section 20)
2. Disconnect the key interlock switch connector from the steering lock assembly.
3. Shift the shift lever into P position.
4. Check for continuity between connector terminal while the key is pushed and check for no continuity when the key is released.



1. KEY INTERLOCK SWITCH CONNECTOR
2. Wire side of female terminals

5. Check that the key cannot be removed with power connected to the No. 2 terminal and ground to the No. 1 terminal.
   - If the key cannot be removed, the key interlock solenoid is OK.
   - If the key can be removed, replace the steering lock assembly (the key interlock solenoid is not available separately).

1. Remove the front console (see section 20)
2. Disconnect the parking pin switch connector
3. Shift the shift lever into P position, then check for continuity between the connector terminals. There should be continuity.

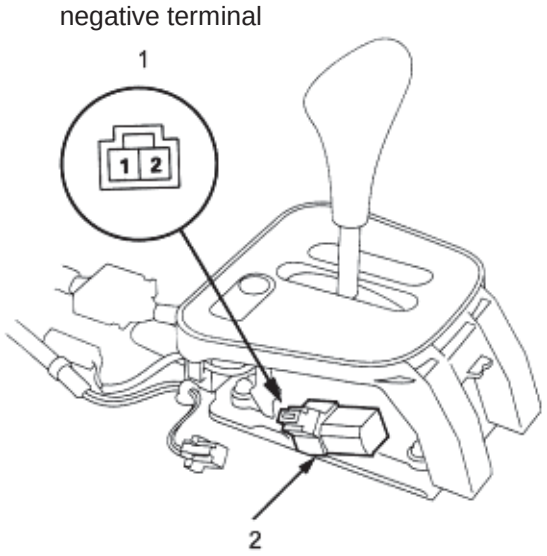


1. PARKING PIN SWITCH CONNECTOR
2. Terminal side of male terminals

4. Shift the shift lever out of the P position and check for continuity. There should be no continuity.
5. If the parking pin switch is faulty, replace the detent plate.
   NOTE:
   - The parking pin switch is not available separately from the detent plate; it is integrated into the detent plate.
   - If the parking pin switch replacement is required, refer to detailed shift lever disassembly (**See Page** 14-172).

Shift Lock Solenoid Test

1. Remove the front console (see section 20).
2. Disconnect the shift lock solenoid connector.
3. Connect the No. 1 terminal to the battery positive terminal and connect the No. 2 terminal to the battery negative terminal

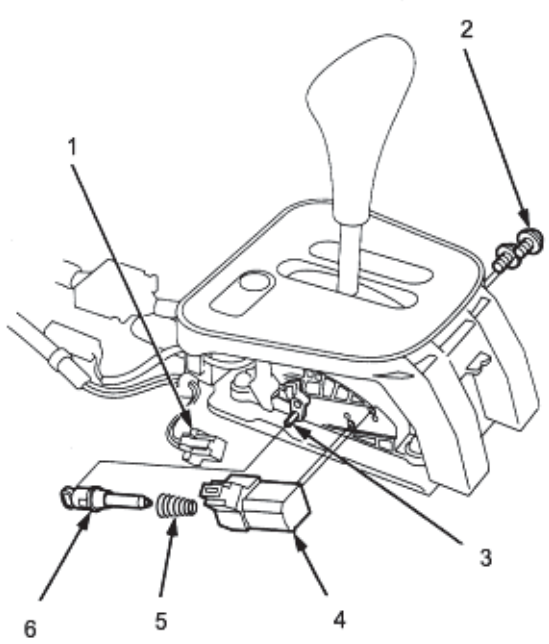


1. SHIFT LOCK SOLENOID CONNECTOR
2. SHIFT LOCK SOLENOID

4. Check that the shift lever can be moved from [P] position. Release the battery terminals from the shift lock solenoid connector. Move the shift lever back to the [P] position and make sure it locks.
   NOTE: Do not connect the power to the No. 2 terminal (reverse polarity) or you will damage the diode inside the solenoid.
5. Check the shift lock release when the release lever is pushed and check that it locks when the release lever is released.
6. If the solenoid does not work, replace it.

Shift Lock Solenoid Replacement

1. Remove the front console (see section 20).
2. Disconnect the shift lock solenoid connector.
3. Remove the two screws from the A/T gear position switch side, then remove the shift lock solenoid.
4. Install the shift lock solenoid plunger and plunger spring in the new shift lock solenoid.
5. Apply silicone grease to the tip of the shift lock stop on the detent plate and the plunger.
6. Install the shift lock solenoid by aligning the joint of the shift lock solenoid plunger with the shift lock stop tip.
7. Secure the shift lock solenoid with the two screws, then connect the connector.



1. SHIFT LOCK SOLENOID CONNECTOR
2. SCREW 3 Nm (0.3 kgf/m, 2 lbf/ft).
3. SHIFT LOCK STOP TIP
4. SHIFT LOCK SOLENOID
5. PLUNGER SPRING
6. PLUNGER

SYMPTOM	Check these items on the PROBABLE CAUSE List
Engine runs, but vehicle does move in any position.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 34, 35, 36, 38, 41
Vehicle does not move in **D**, **L** positions.	10, 11, 12, 20, 41
Vehicle does not move in **R** position.	5, 10, 11, 12, 17, 18, 19, 20, 39, 41
No shift to higher ratio.	9, 13, 14, 15, 16, 35, 37, 40
Poor acceleration.	9, 13, 14, 15, 16, 20, 35, 37, 38, 40
Flares on moving.	9, 10, 20, 21, 35, 36, 38, 40, 42
Excessive shock when depressing and releasing accelerator pedal.	9, 10, 20, 21, 35, 36, 38, 42
No engine braking.	9, 20, 21, 35, 36, 38
Vehicle does not accelerate in **R** position	9, 17, 18, 19, 20, 35, 36, 38
Vehicle moves in **N** position. (Shift cable adjustment is proper).	10, 22, 23
Late shift from **N** position to **D** position and from **D** position to **N** position.	10, 11, 12, 22, 41
Late shift from **N** position to **R** position and from **R** position to **N** position.	11, 12, 17, 18, 22, 41
Engine stops when shifted to **D** position from **N** position.	9, 10, 20, 35, 37, 38, 42
Engine stops when shifted to **R** position from **N** position.	9, 18, 19, 20, 25, 26, 35, 37, 38, 42
Noise from transmission in **R** position. *1	5, 17, 18, 19, 25, 26
Excessive idle vibration.	2, 3, 8, 27, 28
Noise from transmission **N** and **P** position.	2, 3, 19, 24, 25, 28
Hunting engine speed.	16, 35, 37, 38
Vibration in all position.	8, 28
Shift lever does not operate smoothly.	11, 29, 41
Transmission will not shift in **P** position or transmission cannot be removed from **P** position.	11, 29, 30, 31, 32, 33
Vehicle does not accelerate to more than a certain speed.	9, 10, 14, 15, 16, 20, 35, 37
Excessive shock on starting off.	38, 42
Flares on accelerating at low speed.	20, 21, 38, 42
Excessive vibration in **D**, **L**, **R** positions.	20, 21, 38, 42
Low engine speed in **D**, **L**, **R** positions.	20, 21, 38, 42
Stall speed high.	10, 20, 38
Stall speed low.	9, 20, 27, 37, 38
Judder on starting off..	20, 43

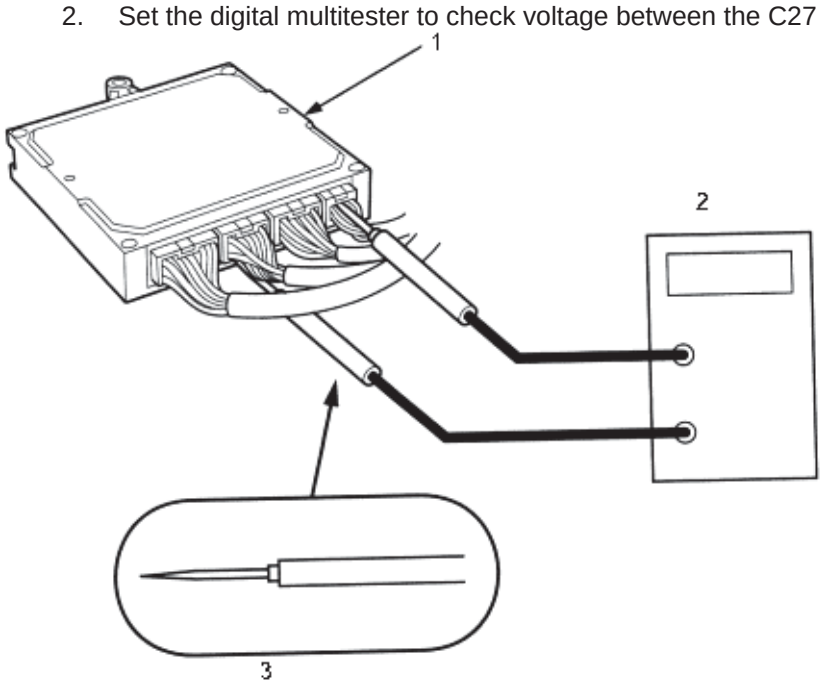
*1: Some gear noise is normal in **R** position due to planetary gear action.

	PROBABLE CAUSE LIST
1	Low CVT fluid level.
2	ATF pump worn. AT gears worn or damaged. Foreign material in ATF pump.
3	ATF pump chain/ATF pump sprocket worn or damaged.
4	Input shaft worn or damaged.
5	Sun gear worn or damaged.
6	Final driven gear worn or damaged.
7	Secondary drive gear/secondary driven gear worn or damaged.
8	Flywheel/drive plate worn or damaged.
9	Intermediate housing assembly worn or damaged
10	Forward clutch defective.
11	Shift cable broken/out of adjustment
12	Manual lever pin worn.
13	ATF feed pipe (pulley pressure) worn or damaged.
14	Drive pulley speed sensor/driven pulley speed sensor defective
15	Vehicle speed sensor defective.
16	PCM defective.
17	Reverse brake defective.
18	Reverse brake piston and related parts worn or damaged.
19	Planetary gear worn or damaged.
20	Start clutch defective.
21	ATF feed pipe (start clutch pressure) worn or damaged
22	Clutch clearance/reverse brake clearance incorrect..
23	Reverse brake return spring/retainer worn or damaged.
24	Needle bearing on input shaft worn or damaged.
25	Thrust needle bearing on carrier worn or damaged.
26	Thrust washer on carrier worn or damaged.
27	Engine output low.
28	Flywheel assembly defective.
29	Control lever worn or damaged.
30	Parking brake pawl/parking brake pawl shaft worn or damaged.
31	Detent lever/parking brake rod assembly worn or damaged.
32	Parking gear worn or damaged.
33	Parking brake pawl spring worn or damaged.
34	ATF strainer/ATF filter clogged.
35	Lower valve body assembly defective..
36	Lower valve body assembly defective (PL regulator valve body assembly defective)..
37	Lower valve body assembly defective (shift valve body assembly defective).
38	Lower valve body assembly defective (start clutch control valve body assembly defective).
39	Lower valve body assembly defective (inhibitor solenoid defective).
40	Solenoid harness worn or damaged.
41	Manual valve body worn or damaged.
42	Start clutch control system memory in PCM defective.
43	CVT fluid deteriorated.

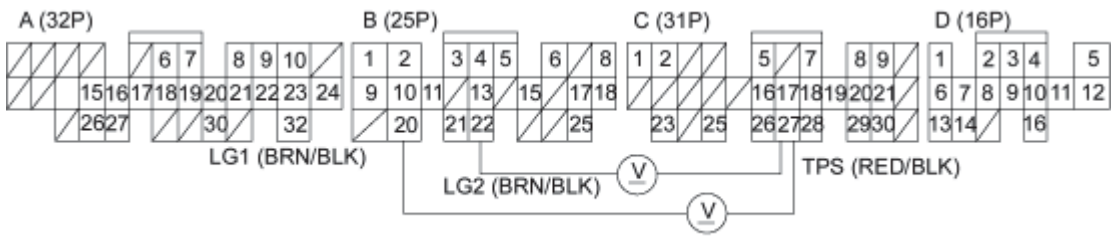
NOTE: Warm up the engine to normal operating temperature (the radiator fan comes on).

1. Apply the parking brake and block the wheels. Start the engine, then shift to the [D] position while depressing the brake pedal. Depress the accelerator pedal and release it suddenly. The engine should not stall.
2. Test in [P] position

   Park the car on a slope (approx. 16°), apply the parking brake and shift into [P] position. Release the brake; the car should not move.
3. Test drive the car on a flat road in the position shown in the table. Check that the engine speeds meet the approximate vehicle speeds shown in the table.
   NOTE: Throttle position sensor voltage represents the throttle opening.
   1. Remove the kick panel to expose the PCM for road testing; (**See Page** 14-37).
   2. Set the digital multitester to check voltage between the C27 (+) terminal and B20 (-) or B22 (-) terminal of the PCM for throttle position sensor.



1. **PCM**
2. **DIGITAL MULTITESTER**
   Commercially available or
   07411-0020000
3. **TAPERED TIP PROBE**



♦ D **position: Engine Speed rpm (min-1)**

Throttle Opening	Vehicle Speed)		
	25 mph (40 km/h)	37 mph (60 km/h	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	1,150 - 1,550	-	-
Throttle position sensor voltage: 2.0 V	2.300 - 2,900	2,500 - 3,100	2,700 - 3,300
Throttle position sensor voltage: 4.5 V Full-throttle position	4.050 - 4,650	4,800 - 5,400	5,400 - 6,000

♦ D **position S mode: Engine Speed rpm (min*1)**

Throttle Opening	Vehicle Speed)		
	25 mph (40 km/h)	37 mph (60 km/h	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	1,900 - 2,300	2,150 - 2,750	3,300 - 3,900
Throttle position sensor voltage: 2.0 V	2.700 - 3,300	2,900 - 3,500	3,500 - 4,100
Throttle position sensor voltage: 4.5 V Full-throttle position	4.900 - 5,500	5,900 - 6,500	5,900 - 6,500

♦ D **position: Engine Speed rpm (min -1)**

Throttle Opening	Vehicle Speed		
	25 mph (40 km/h)	37 mph (60 km/h	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	2,700 - 3,300	3,650 - 4,250	4,450 - 5,050
Throttle position sensor voltage: 2.0 V	3.400 - 4,000	3,900 - 4,500	4,700 - 5,300
Throttle position sensor voltage: 4.5 V Full-throttle position	4.900 - 5,500	5,900 - 6,500	5,900 - 6,500

⚠ CAUTION

- To prevent transmission damage, do not test stall speed for more than 10 seconds at a time.
- Do not shift the lever while raising the engine speed.
- Be sure to remove the pressure gauge before testing stall speed.

NOTE: Stall speed test should be used for diagnostic purposes only.

1. Engage the parking brake and block the front wheels.
2. Connect a tachometer to the engine and start the engine.
3. Make sure the A/C switch is OF.
4. After the engine has warmed up to normal operating temperature (the radiator fan comes on), shift into [D] position.
5. Fully depress the brake pedal and accelerator for 6 to 8 seconds and note engine speed.
6. Allow two minutes for cooling, then repeat the test in [L] and [R] positions.

Stall Speed RPM in [D] position:
Specification: 2,500 rpm
Service Limit: 2,350 - 2,650 rpm
Stall Speed RPM in [D] position S mode, [L] and [R] positions:
Specification: 3,000 rpm
Service Limit: 2,800 - 3,100 rpm

TROUBLE	PROBABLE CAUSE
Stall rpm high in **D**, **L** and **R** positions	• Low fluid level or ATF pump output • Clogged ATF strainer • PH regulator valve stuck closed • Slippage of forward clutch • Faulty start clutch
Stall rpm high in **R** position	• Slippage of reverse brake • Faulty start clutch
Stall rpm low in **D**, **L** and **R** positions	• Engine output low • Faulty start clutch • Stuck shift valve

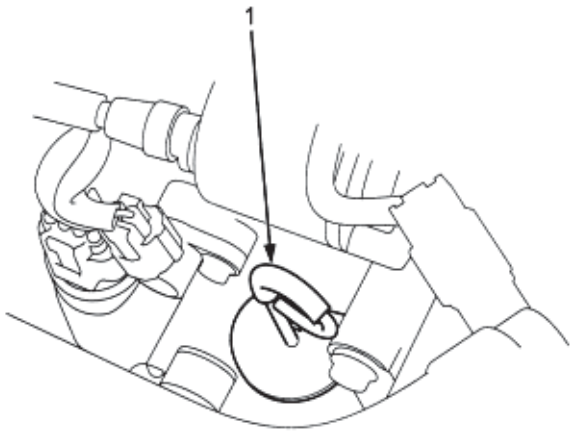
⚠ CAUTION

While checking, be sure not to allow dust and other foreign particles to enter into the transmission.

NOTE:

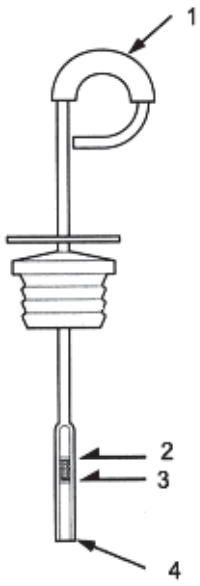
- Check the fluid level with the engine normal temperature (the radiator fan comes on twice).
- Check the fluid level 60 to 90 seconds after shutting off the engine.

1. Park the vehicle on the level ground, then turn the engine off.
2. Remove the dipstick (yellow loop) from the transmission and wipe it with clean cloth.
3. Insert the dipstick back into the transmission, then remove it.



1. DIPSTICK (YELLOW LOOP)

4. Check the fluid level at the dipstick level gauge. It should be between the upper mark and lower mark on the gauge.



1. DIPSTICK
2. UPPER MARK
3. LOWER MARK
4. LEVEL GAUGE

5. If the level is below the lower mark, add fluid into the filter hole to bring it to the upper mark. Use the following recommended fluid only.
   - European models: Genuine Honda CVT Fluid.
   - Except European models: Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM).

   Using other fluids can affect transmission operation and may reduce transmission life.
6. Insert the dipstick back into the transmission.

⚠ CAUTION

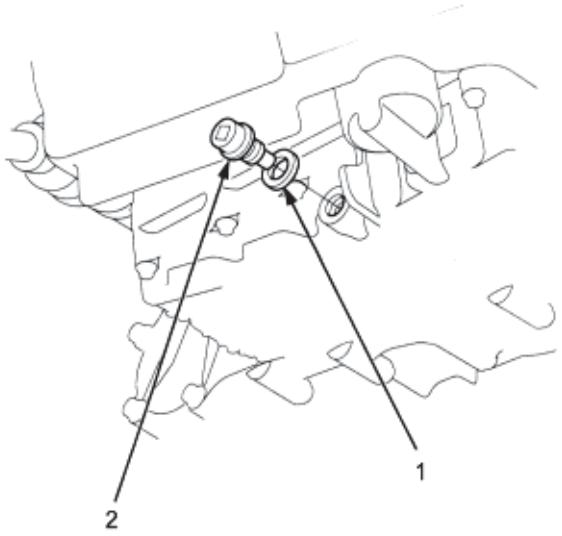
While changing, be sure not to allow dust and other foreign particles to enter into the transmission.

Change Intervals:

- European Models:
  - Normal and Severe Conditions: Every 45,000 km (27,000 miles) or 36 months.

  NOTE: Replace CVT fluid every 22,500 km (13,500 miles/18 months, if the vehicle is driven mainly at high speed in extremely hot (32°C, 90°F) conditions in addition to driving under sever conditions (**See Page** 3-6).
- Except European Models:
  Change at 40,000 km (24,000 miles) or 24 months, thereafter every 20,000 km (12,000 miles) or 12 months.

1. Bring the transmission up to normal operating temperature (the radiator fan comes on) by driving the vehicle.
2. Park the vehicle on level ground and turn the engine off.
3. Remove the drain plug and drain the transmission fluid.
4. Reinstall the drain plug and a new sealing washer.



1. SEALING WASHER Replace
2. DRAIN PLUG 18 x 1.5 mm, 49 Nm (5.0 kgf/m, 36 lbf/ft)

5. Refill the transmission with the recommended fluid into the filler hole to the upper mark on the dipstick level gauge. Always use the recommended fluid as follows:
   - European models: Genuine Honda CVT Fluid.
   - Except European models: Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM).

   Using other fluids can affect transmission operation and may reduce transmission life

Transmission Fluid Capacity:

KE and KG models

2WD: 4.0 *l* (4.2 US qt., 3.5 Imp qt.) at changing
6.7 *l* (7.1 US qt., 5.9 Imp qt.) at overhaul
4WD: 3.9 *l* (4.1 US qt., 3.4 Imp qt.) at changing
7.1 *l* (7.5 US qt., 6.2 Imp qt.) at overhaul

KQ and KU models

2WD: 3.8 *l* (4.0 US qt., 3.3 Imp qt.) at changing
6.5 *l* (6.9 US qt., 5.7 Imp qt.) at overhaul
4WD: 3.7 *l* (3.9 US qt., 3.3 Imp qt.) at changing
6.9 *l* (7.3 US qt., 6.1 Imp qt.) at overhaul

⚠ WARNING

- While testing, be careful of the rotation wheels.
- Make sure lifts, jacks and safety stands are placed properly (see section 1).

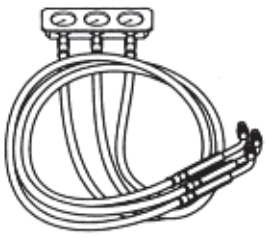
⚠ CAUTION

- Before testing, be sure the transmission is filled to the proper level.
- Warm up the engine to normal operating temperature before testing.
- While testing, be sure not to allow dust and other foreign particles to enter into the transmission.

1. Be sure the transmission fluid is filled to the proper level.
2. Raise the vehicle (see section 1):
   - 2WD:
     Raise the front of the vehicle and make sure it is securely supported. Set the parking brake and block rear wheels securely.
   - 4WD:
     Raise the vehicle.
3. Allow the raised wheels to rotate freely.
4. Warm up the engine (radiator fan comes on), then stop and connect a tachometer.
5. Connect the special tool to each inspection hole.
   TORQUE: 18 Nm (1.8 kgf/m, 13 lbf/ft)
   NOTE:
   - Drive pulley pressure may be above 3,430 kPa (3.43 Mpa, 35.0 kgf/cm2, 498 psi) when there is a transmission problem that causes the PCM to go into the fail-safe mode.
   - Use a commercially available oil pressure gauge that measures 4,900 kPa (4.90 Mpa, 50.0 kgf/cm2, 711 psi) or more and use the A/T Oil Pressure Gauge Set and the A/T Low Pressure Gauge.

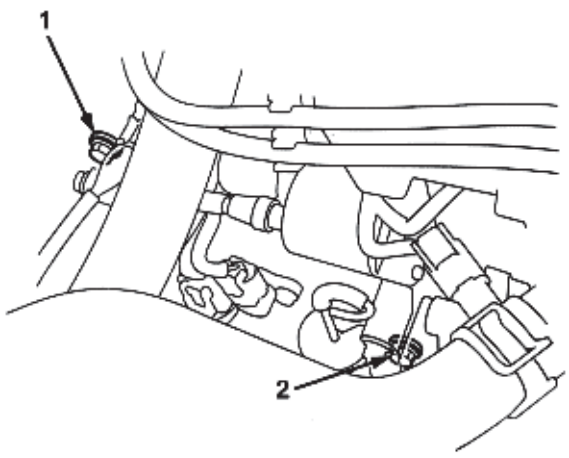
⚠ CAUTION

- Connect the oil pressure gauge securely, be sure not to allow dust and other foreign particles to enter the inspection hole.
- When troubleshooting by the [D] indicator light indicates a problem, you must use an oil pressure gauge that measures 4,900 kPa (4.90 Mpa, 50.0 kgf/cm2, 711 psi) or more when measuring drive pulley pressure and driven pulley pressure.

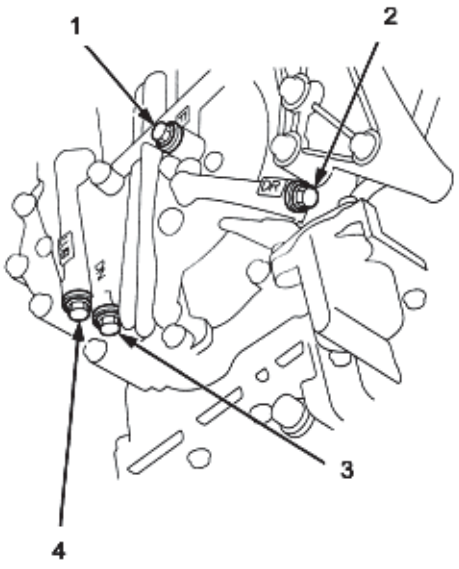




1. A/T OIL PRESSURE GAUGE SET 07406-0020004
2. A/T LOW PRESSURE GAUGE 07406-0070001



1. REVERSE BRAKE PRESSURE INSPECTION HOLE
2. START CLUTCH PRESSURE INSPECTION HOLE
   (Marked with “SC”)



1. FORWARD CLUTCH PRESSURE INSPECTION HOLE
   (Marked with “F”)
2. DRIVE PULLEY PRESSURE INSPECTION HOLE
   (Marked with “DR”)
3. DRIVEN PULLEY PRESSURE INSPECTION HOLE
   (Marked with “DN”)
4. LUBRICATION PRESSURE INSPECTION HOLE
   (Marked with “LUB”)

6. Start the engine.
7. Shift the respective shift lever position as in the table and measure the following pressures at 1,500 rpm.
   - Forward Clutch Pressure
   - Reverse Brake Pressure
   - Drive Pulley Pressure
   - Driven Pulley Pressure
8. Shift to [N] position and measure the lubrication pressure at 3,000 rpm.

Pressure	Shift lever Position	Symptom	Probable cause	Fluid Pressure Standard	Service Limit
Forward Clutch	D	No or low forward clutch pressure	Forward Clutch	1.4 - 1.75 Mpa (14.3 - 17.8 kgf/cm2, 203 - 253 psi)	
Reverse Brake	R	No or low reverse brake pressure	Reverse Brake	1.4 - 1.75 Mpa (14.3 - 17.8 kgf/cm2, 203 - 253 psi)	
Drive Pulley	N	No or low drive pulley pressure	ATF pump, PH regulator valve, PL regulator valve, Shift valve	0.2 - 0.7 Mpa (2 - 7.1 kgf/cm2, 28 - 101 psi)	
Drive Pulley	N	Drive pulley pressure too high	PH regulator valve, PL regulator valve, Shift valve, Shift control linear solenoid	0.2 - 0.7 Mpa (2 - 7.1 kgf/cm2, 28 - 101 psi)	
Driven Pulley	N	No or low driven pulley pressure	ATF pump, PH regulator valve, Shift valve, Shift control linear solenoid	1.5 - 2.3 Mpa (15.3 - 23.5 kgf/cm2, 218 - 334 psi)	
Driven Pulley	N	Driven pulley pressure too high	PH regulator valve	1.5 - 2.3 Mpa (15.3 - 23.5 kgf/cm2, 218 - 334 psi)	
Lubrication	N	No or low lubrication pressure	ATF pump, Lubrication valve	Above 0.2 Mpa (Above 2 kgf/cm2, 30 psi)	

9. Disconnect the special tool after pressure testing.
10. Install the sealing bolt with a new sealing washer in the inspection hole and tighten to the specified torque.
    TORQUE: 18 Nm (1.8 kgf/m, 13 lbf/ft)

⚠ CAUTION

Keep all of the foreign particles out of the transmission

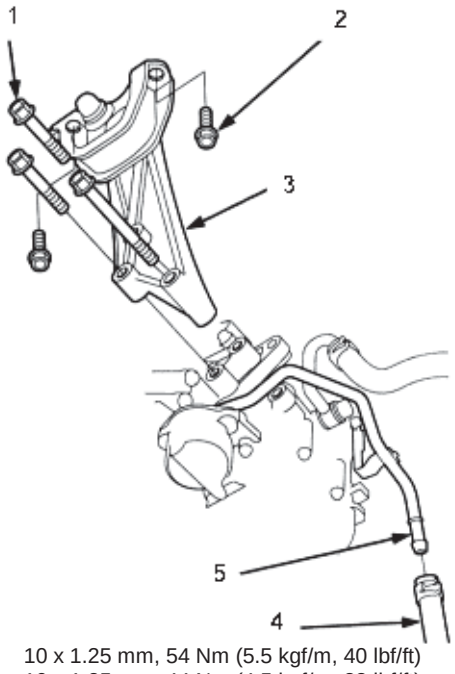
⚠ WARNING

- Make sure lifts, jacks and safety stands are placed properly (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

⚠ CAUTION

While removing and installing the lower valve body assembly, be sure not to allow dust and other foreign particles to enter into the transmission.

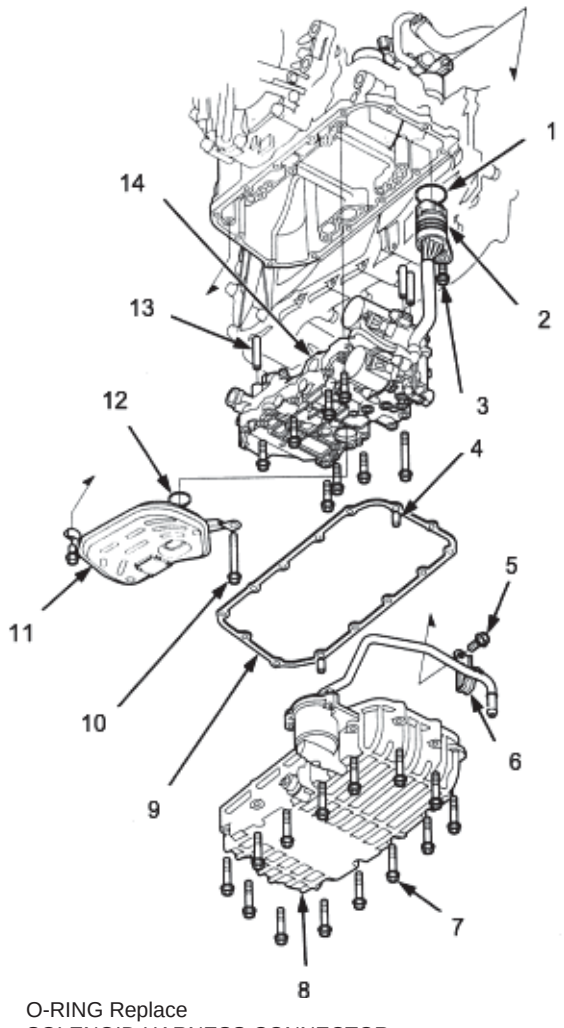
1. Raise the front of the vehicle and make sure it is securely supported.
2. Set the parking brake and block both rear wheels securely.
3. Remove the drain plug and drain the transmission fluid. Reinstall the drain plug with a new sealing washer (**See Page** 14-84).
4. Disconnect the solenoid harness connector.
5. Disconnect the ATF cooler inlet hose at the cooler line. Turn the end of the hose up to prevent ATF from flowing out, then plug the hose and line.
6. Remove the right front mount/bracket.



1. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. RIGHT FRONT MOUNT/BRACKET
4. ATF COOLER INLET HOSE
5. ATF COOLER INLET LINE

7. Remove the ATF cooler inlet line bracket bolt.
8. Remove the ATF pan (14 bolts).
9. Remove the ATF strainer, then remove the bolt securing the solenoid harness connector.
10. Remove the lower valve body assembly (8 bolts).

Torque Specification: 6 x 1.0 mm bolts in this illustration 12 Nm (1.2 kgf/m 8.7 lbf/ft)



1. O-RING Replace
2. SOLENOID HARNESS CONNECTOR
3. 6 x 1.0 mm
4. DOWEL PIN
5. 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
6. ATF COOLER INLET LINE BRACKET
7. 6 x 1.0 mm
8. ATF PAN
9. ATF PAN GASKET Replace
10. 6 X 1.0 MM
11. ATF STRAINER
12. O-RING Replace
13. DOWEL PIN
14. LOWER VALVE BODY ASSEMBLY

11. Install the lower valve body assembly in the reverse order of the removal.
    NOTE:
    - Replace the following parts when installing:
      - O-rings
      - ATF pan gasket
      - Sealing washer
12. Calibrate the feedback signal for the start clutch control in the PCM (**See Page** 14-71).

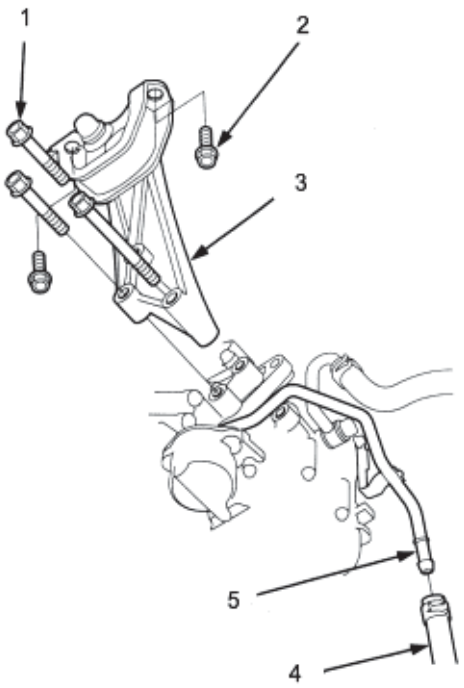
⚠ WARNING

- Make sure lifts, jacks and safety stands are placed properly (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

⚠ CAUTION

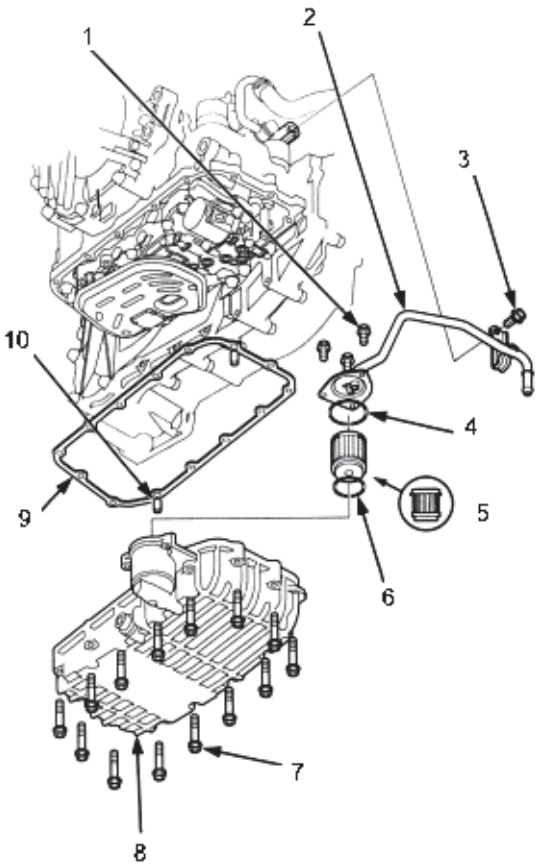
While removing and installing the lower valve body assembly, be sure not to allow dust and other foreign particles to enter into the transmission.

1. Raise the front of the vehicle and make sure it is securely supported.
2. Set the parking brake and block both rear wheels securely.
3. Remove the drain plug and drain the transmission fluid. Reinstall the drain plug with a new sealing washer (**See Page** 14-84).
4. Disconnect the ATF cooler inlet hose at the cooler line. Turn the end of the hose up to prevent ATF from flowing out, then plug the hose and line.
5. Remove the right front mount/bracket



1. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. RIGHT FRONT MOUNT/BRACKET
4. ATF COOLER INLET HOSE
5. ATF COOLER INLET LINE

6. Remove the ATF cooler inlet line bracket bolt.
7. Remove the ATF pan (14 bolts).
8. Remove the ATF cooler inlet line from the ATF pan.
9. Remove the ATF filter and clean it.
10. Check that the ATF filter is in good condition.
11. Replace the ATF filter if it is clogged.



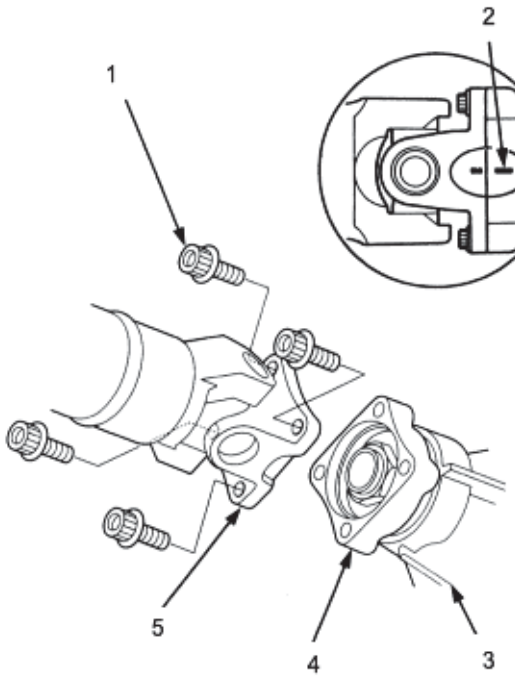
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. ATF COOLER INLET LINE
3. 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
4. O-RING Replace.
5. ATF FILTER
6. O-RING Replace.
7. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
8. ATF PAN
9. ATF PAN GASKET Replace.
10. DOWEL PIN

12. Install the ATF filter in the reverse order of the removal.
    NOTE:
    - Replace the following parts when installing:
      - O-rings
      - ATF pan gasket
      - Sealing washer

⚠ WARNING

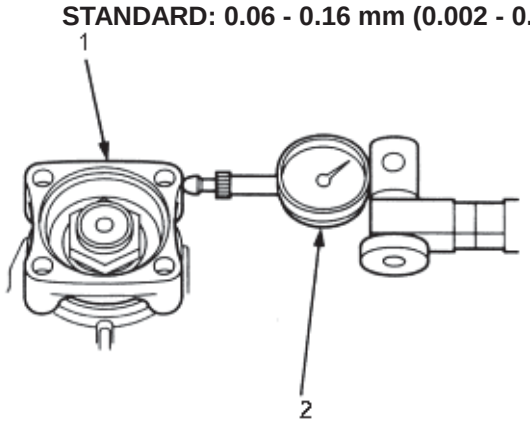
- Make sure lifts, jacks and safety stands are placed properly (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

1. Raise the front of the vehicle and make sure it is securely supported.
2. Set the parking brake and block both rear wheels securely.
3. Shift to [N] position.
4. Make a reference mark across the propeller shaft and the transfer companion flange.
5. Separate the propeller shaft from the transfer assembly.



1. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)
2. REFERENCE MARK
3. TRANSFER ASSEMBLY
4. COMPANION FLANGE
5. PROPELLER SHAFT

6. Set a dial indicator on the transfer companion flange, then measure the transfer gear backlash.
   STANDARD: 0.06 - 0.16 mm (0.002 - 0.0006 in)



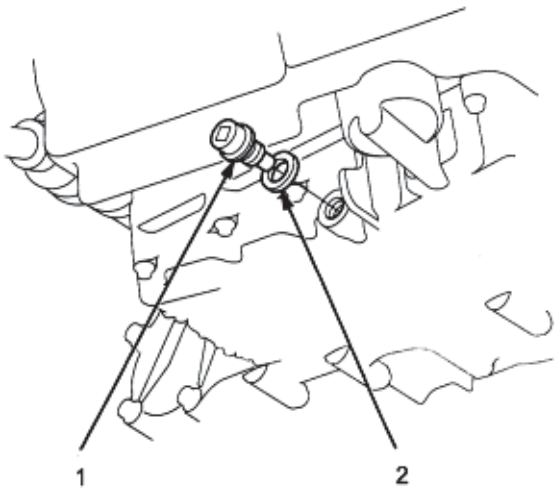
1. COMPANION FLANGE
2. DIAL INDICATOR

7. If the measurement is out of standard, remove the transfer assembly and adjust transfer gear backlash (**See Page** 14-143).
8. Check the entire transfer assembly for damage and fluid leaks.
   - If the fluid leaks between the transfer housing and the transfer cover, remove the transfer cover and replace the O-ring.
   - If the fluid leaks between the flywheel housing and the transfer housing, remove the transfer assembly and replace the O-ring.
   - If the fluid leaks between the transfer companion flange and the oil seal, remove the transfer assembly and replace the oil seal and O-ring on the transfer shaft. If the oil seal replacement is required, assemble the transfer assembly with checking and adjusting the transfer gear tooth contact, transfer gear backlash, the tapered roller bearing starting torque and the total starting torque (**See Page** 14-140) through (**See Page** 14-149).
     Do not replace the oil seal with the transfer assembly on the transmission.

⚠ WARNING

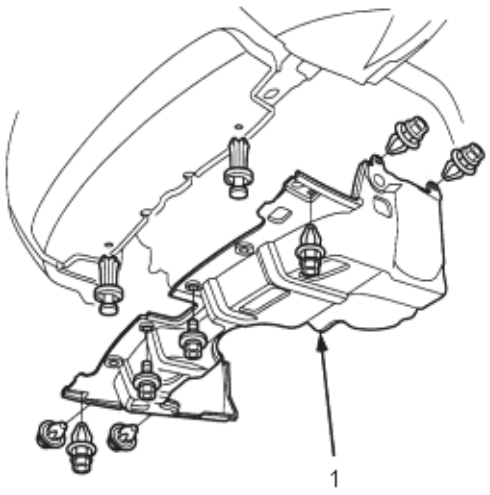
- Make sure lifts, jacks and safety stands are placed properly (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

1. Raise the front of the vehicle and make sure it is securely supported.
2. Set the parking brake and block both rear wheels securely.
3. Remove the drain plug and drain the transmission fluid. Reinstall the drain plug with a new sealing washer.



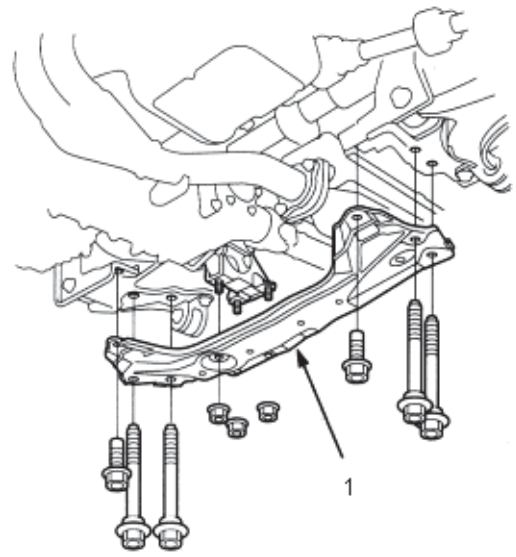
1. DRAIN PLUG 18 x 1.5 mm, 49 Nm (5.0 kgf/m, 36 lbf/ft)
2. SEALING WASHER Replace

4. Remove the splash shield.



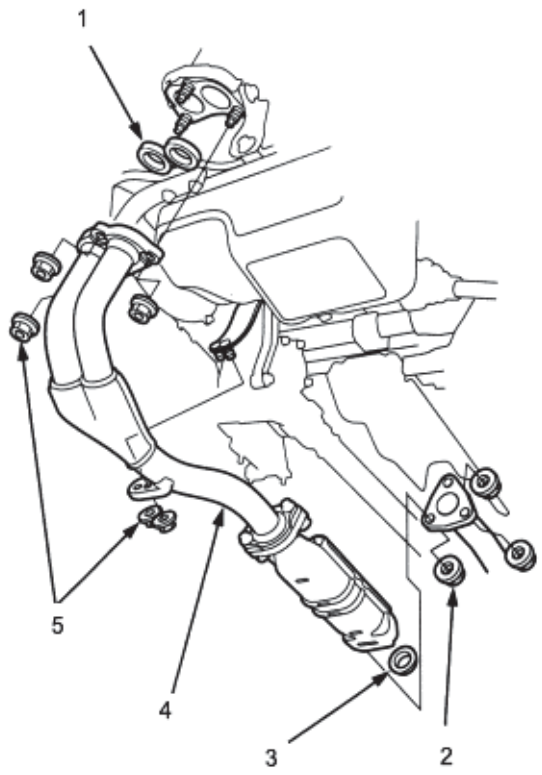
1. SPLASH SHIELD

5. Remove the rear beam



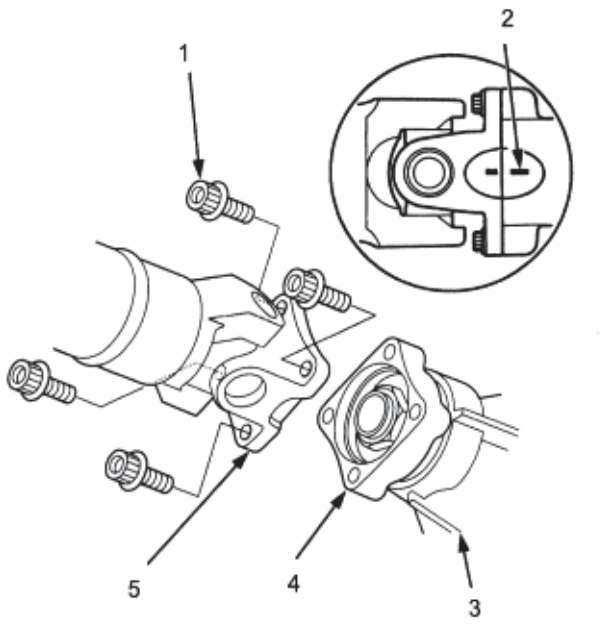
1. REAR BEAM

6. Remove the exhaust pipe A.



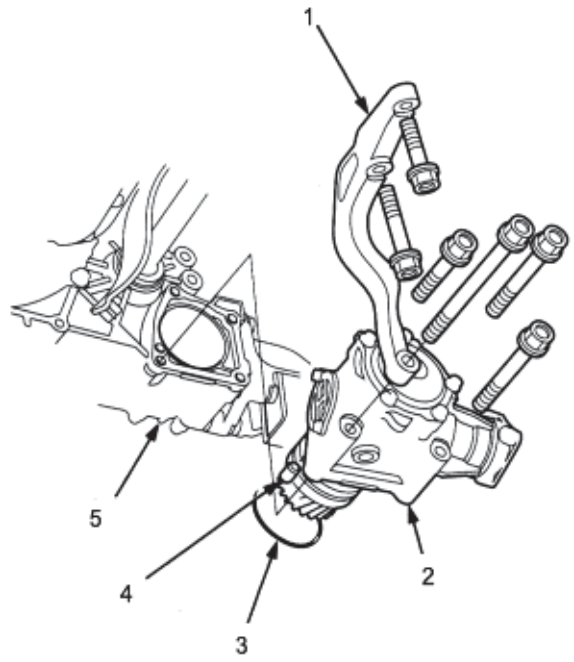
1. GASKET Replace.
2. SELF-LOCKING NUT Replace.
3. GASKET Replace.
4. EXHAUST PIPE A
5. SELF-LOCKING NUT Replace.

7. Make a reference mark across the propeller shaft and the transfer assembly flange.
8. Separate the propeller shaft from the transfer assembly.



1. 8 x 1.25 mm, Replace
2. REFERENCE MARK
3. TRANSFER ASSEMBLY
4. TRANSFER FLANGE
5. PROPELLER SHAFT

9. Remove the rear stiffener, then remove the transfer assembly from the transmission.

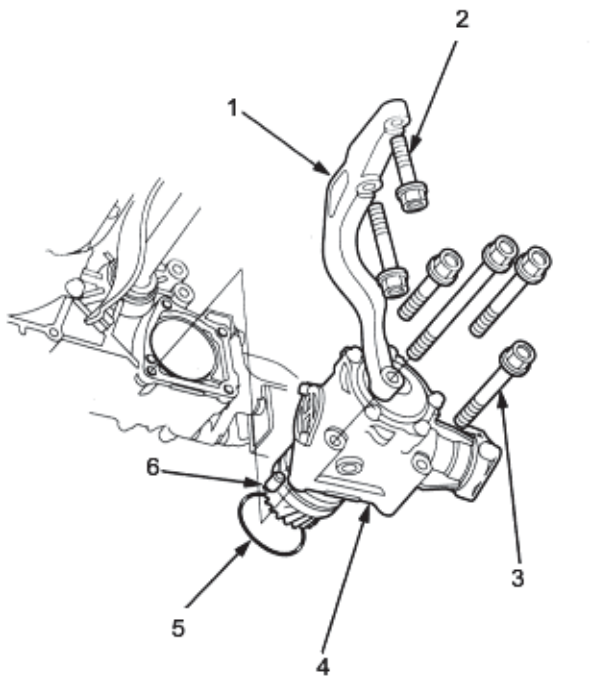


1. REAR STIFFENER
2. TRANSFER ASSEMBLY
3. O-RING Replace.
4. DOWEL PIN
5. TRANSMISSION

⚠ CAUTION

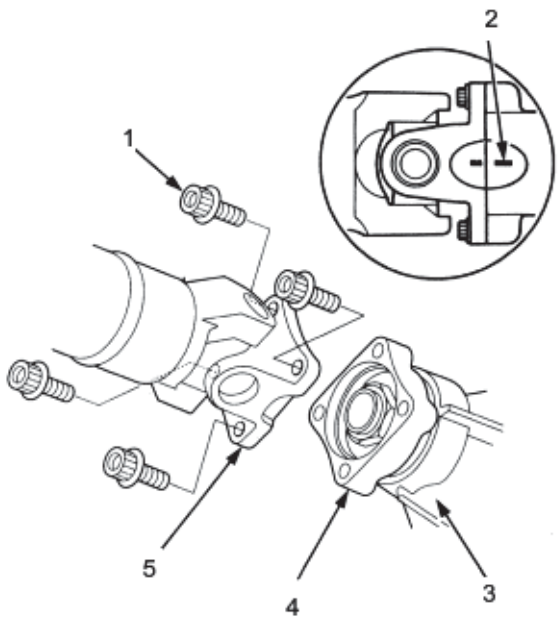
While installing the transfer assembly, be sure not to allow dust and other foreign particles to enter into the transmission.

1. Install the new O-ring on the transfer assembly.
2. Clean the areas where the transfer assembly contacts the transmission with solvent or carburettor cleaner and dry with compressed air. Then apply transmission fluid to the contact areas.
3. Install the transfer assembly on the transmission.
4. Install the rear stiffener.



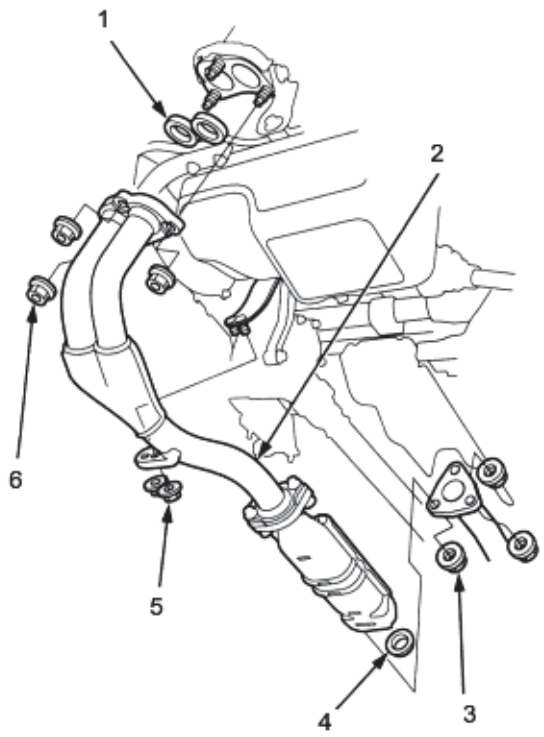
1. REAR STIFFENER
2. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
3. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
4. TRANSFER ASSEMBLY
5. O-RING Replace.
6. DOWEL PIN

5. Install the propeller shaft to the transfer assembly by aligning the reference mark.



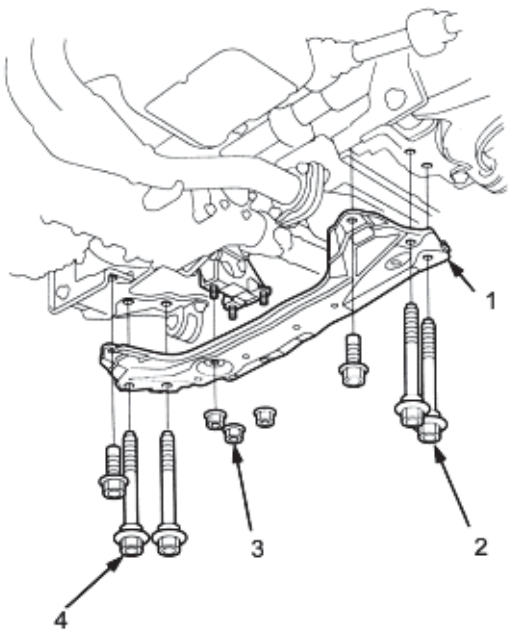
1. 8 x 1.25 32 Nm (3.3 kgf/m, 24 lbf/ft)
2. REFERENCE MARK
3. TRANSFER ASSEMBLY
4. TRANSFER FLANGE
5. PROPELLER SHAFT

6. Install the exhaust pipe A



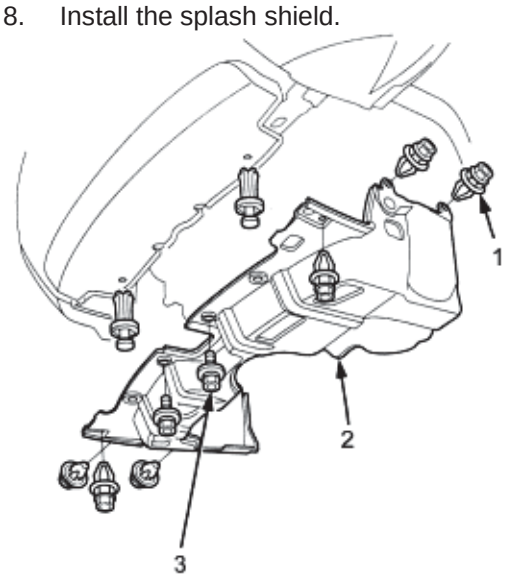
1. GASKET Replace.
2. EXHAUST PIPE A
3. 10. 1.25 mm, 33 Nm (3.4 kgf/m, 25 lbf/ft) Replace.
4. GASKET Replace
5. 8 x 1.25 mm, 16 Nm (1.6 kgf/m, 12 lbf/ft) Replace
6. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft) Replace.

7. Install the rear beam



1. REAR BEAM
2. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
3. 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)
4. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

8. Install the splash shield.



1. CLIP
2. SPLASH SHIELD
3. 6 x 1.0 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

9. Refill the transmission with transmission fluid (**See Page** 14-84).
10. Start the engine and run it to normal operating temperature (the radiator fan comes on). Turn the engine OFF and check the fluid level.

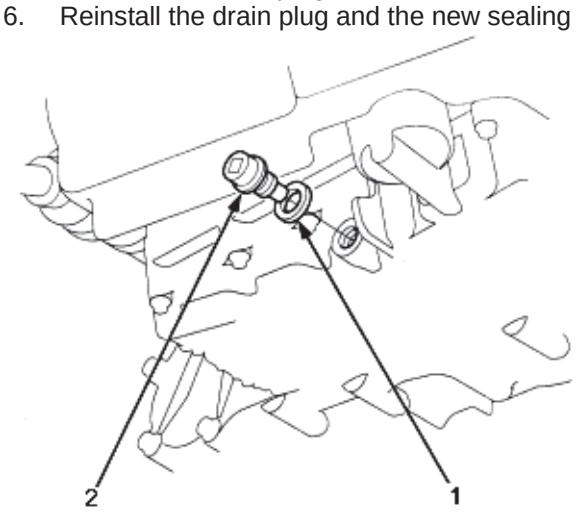
⚠ WARNING

- Make sure lifts, jacks and safety stands are placed properly and hoist brackets are attached to the correct position on the engine (see section 1).
- Apply parking brake and block rear wheels so vehicle will not roll off stands and fall on you while working under it.

⚠ CAUTION

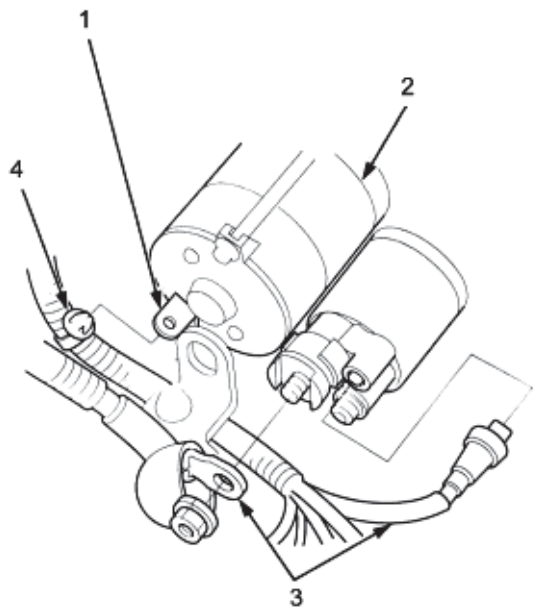
Use fender covers to avoid damaging painted surfaces.

1. Shift to [N] position
2. Disconnect the battery negative terminal, then disconnect the positive terminal.
3. Remove the battery hold-down bracket, then remove the battery.
4. Remove the battery base.
5. Remove the drain plug and drain the transmission fluid.
6. Reinstall the drain plug and the new sealing washer.



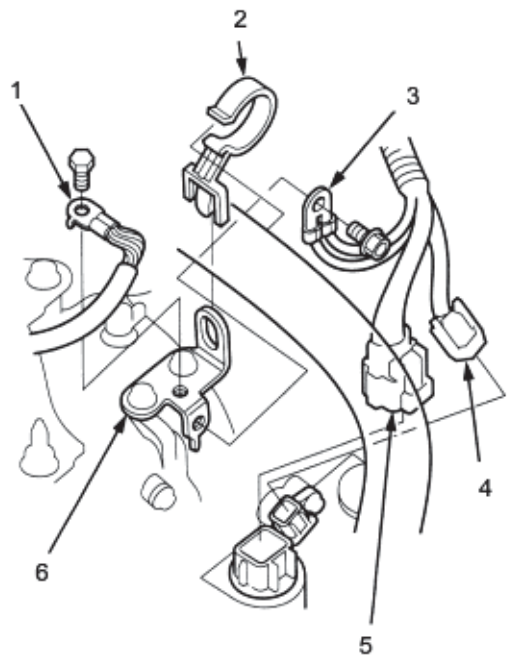
1. SEALING WASHER Replace.
2. DRAIN PLUG 18 x 1.5 mm, 49 Nm (5.0 kgf/m, 36 lbf/ft)

7. Remove the harness clamp from the clamp bracket, then disconnect the starter cables.



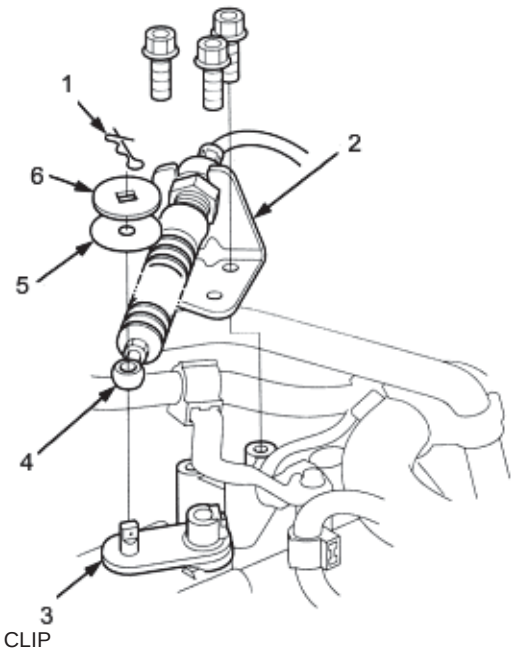
1. CLAMP BRACKET
2. STARTER
3. STARTER CABLES
4. HARNESS CLAMP

8. Remove the transmission ground cable terminals and the radiator hose clamp from the transmission hanger, then disconnect the solenoid harness connector and the drive pulley speed sensor connector.



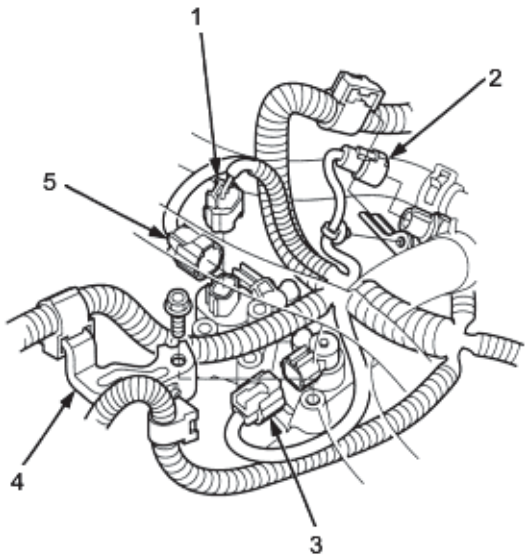
1. TRANSMISSION GROUND CABLE TERMINAL
2. RADIATOR HOSE CLAMP
3. TRANSMISSION GROUND CABLE TERMINAL
4. DRIVE PULLEY SPEED SENSOR CONNECTOR
5. SOLENOID HARNESS CONNECTOR
6. TRANSMISSION HANGER

9. Remove the clip from the shift cable end, then separate the cable end from the control lever..
10. Remove the shift cable bracket with shift cable. Do not bend the shift cable excessively.



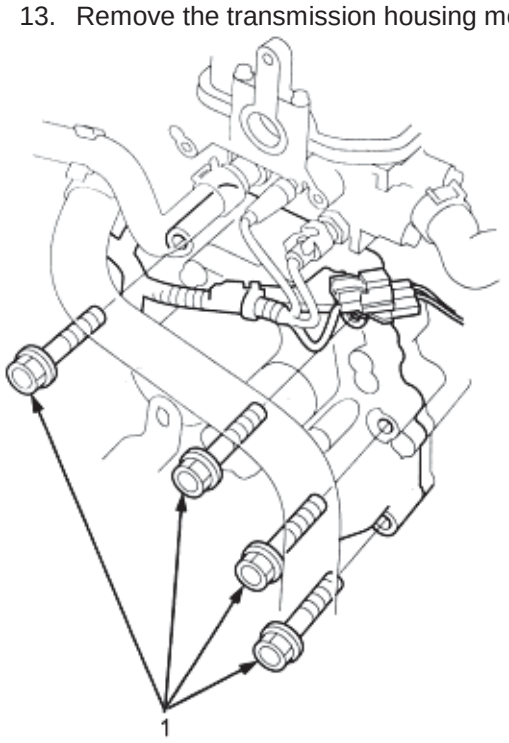
1. CLIP
2. SHIFT CABLE BRACKET
3. CONTROL LEVER
4. SHIFT CABLE END
5. PLASTIC WASHER
6. WASHER

11. Remove the harness clamp bracket, then disconnect the engine coolant temperature (ECT) sensor, secondary gear shaft speed sensor, driven pulley speed sensor and vehicle speed sensor (VSS) connectors.



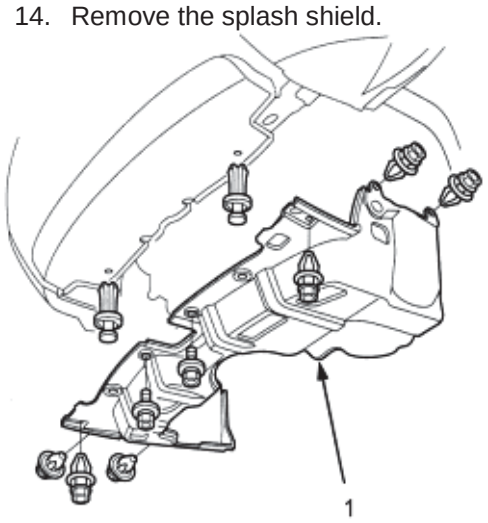
1. VSS CONNECTOR
2. ECT SENSOR CONNECTOR
3. DRIVEN PULLEY SPEED SENSOR CONNECTOR
4. HARNESS CLAMP BRACKET
5. SECONDARY GEAR SHAFT SPEED SENSOR CONNECTOR

12. Remove the distributor.
13. Remove the transmission housing mounting bolts.



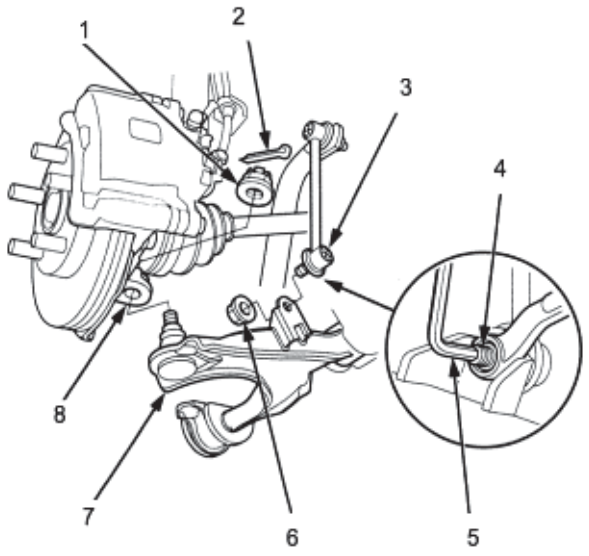
1. TRANSMISSION HOUSING MOUNTING BOLTS

14. Remove the splash shield.



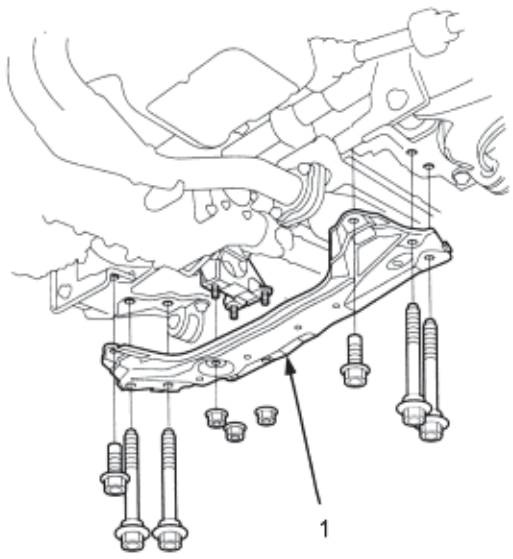
1. SPLASH SHIELD

15. Install a 5 mm Allen wrench into the tip of the ball joint pins, then remove the flange nuts from the ball joint pins on the front stabiliser link. Separate the front stabiliser links from the lower arms.
16. Remove the cotter pins and ball joint nuts, then separate the knuckles from the lower arms (see section 18).



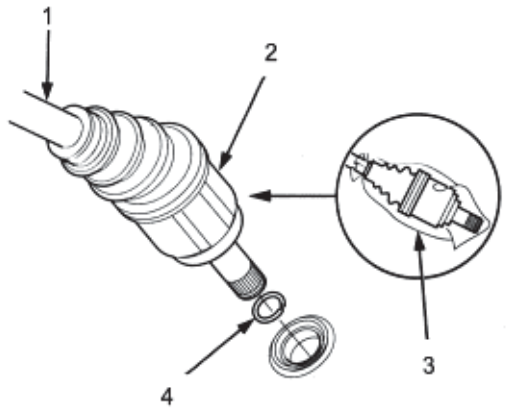
1. BALL JOINT NUT
2. COTTER PIN Replace.
3. FRONT STABILISER LINK
4. BALL JOINT PIN
5. ALLEN WRENCH, 5 mm
6. FLANGE NUT Replace.
7. LOWER ARM
8. KNUCKLE

17. Remove the rear beam.



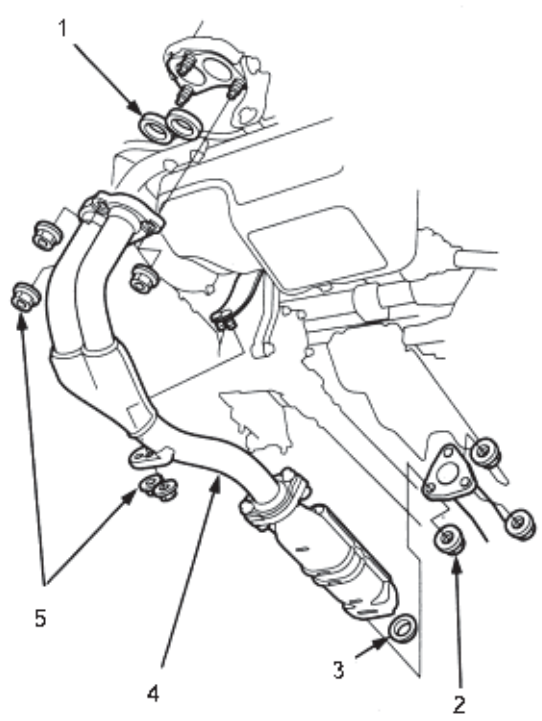
1. REAR BEAM

18. Pry the driveshaft out of the differential and the intermediate shaft, then pull on the inboard joints to remove the right driveshaft from the differential and to remove the left driveshaft from the intermediate shaft (see section 16).
19. Move the right driveshaft to the front side.
20. Coat all precision finished surfaces with clean engine oil, then tie the plastic bags over the driveshaft ends.



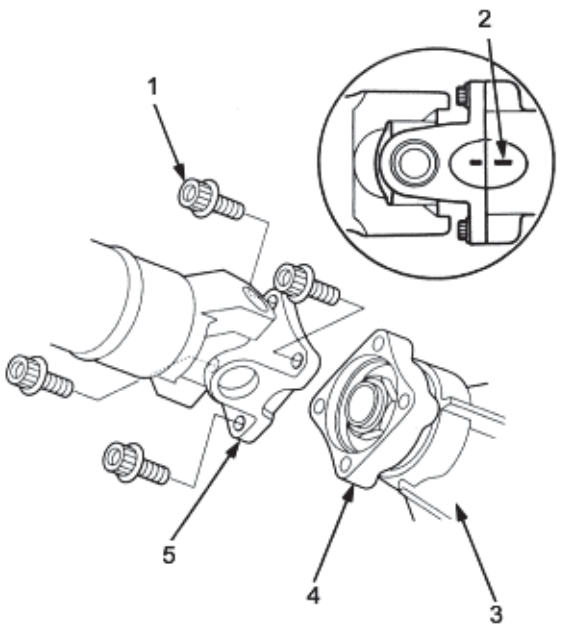
1. DRIVESHAFT
2. INBOARD JOINT
3. PLASTIC BAG
4. SET RING Replace.

21. Remove the exhaust pipe A.



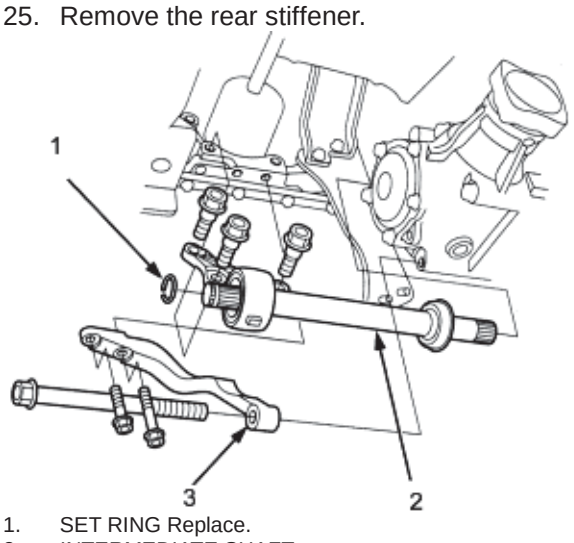
1. GASKET Replace.
2. SELF-LOCKING NUT Replace.
3. GASKET Replace.
4. EXHAUST PIPE A
5. SELF-LOCKING NUT Replace.

22. Make a reference mark across the propeller shaft and the transfer assembly flange, then separate the propeller shaft from the transfer assembly for 4WD model.



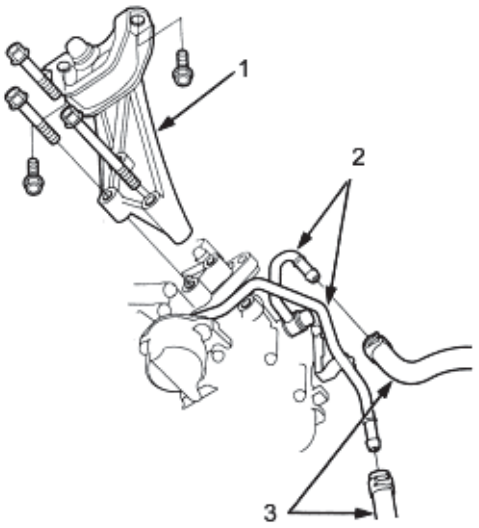
1. 8 x 1.25 mm, Replace.
2. REFERENCE MARK
3. TRANSFER ASSEMBLY
4. TRANSFER FLANGE
5. PROPELLER SHAFT

23. Remove the intermediate shaft.
24. Coat all precision finished surfaces with clean engine oil, then tie the plastic bags over the both ends of the intermediate shaft.
25. Remove the rear stiffener.



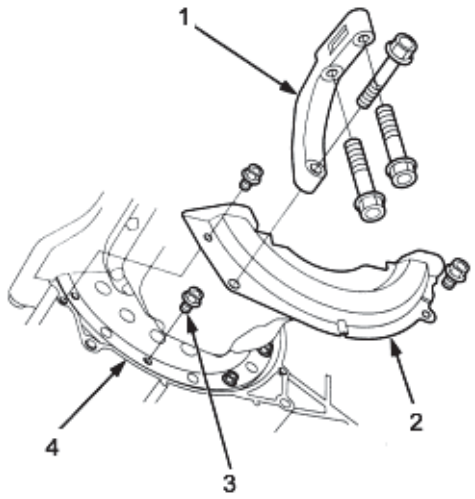
1. SET RING Replace.
2. INTERMEDIATE SHAFT
3. REAR STIFFENER

26. Remove the ATF cooler hoses from the ATF cooler lines. Turn the ends of the ATF cooler hoses up to prevent ATF flowing out, then plug the ATF cooler hoses and lines. Check for any signs of leakage at the hose points.
27. Remove the right front mount/bracket.



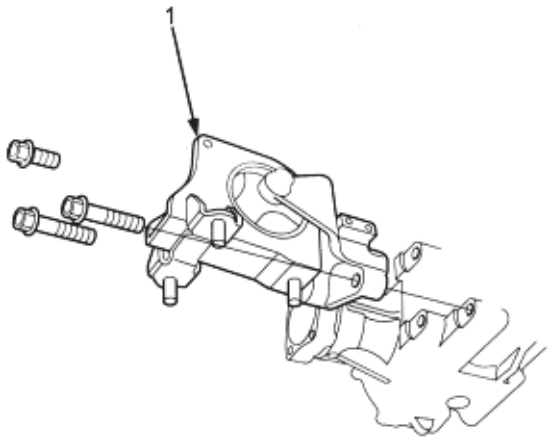
1. RIGHT FRONT MOUNT/BRACKET
2. ATF COOLER LINES
3. ATF COOLER HOSES

28. Remove the front stiffener and flywheel cover.
29. Remove the eight drive plate bolts one at a time while rotating the crankshaft pulley.



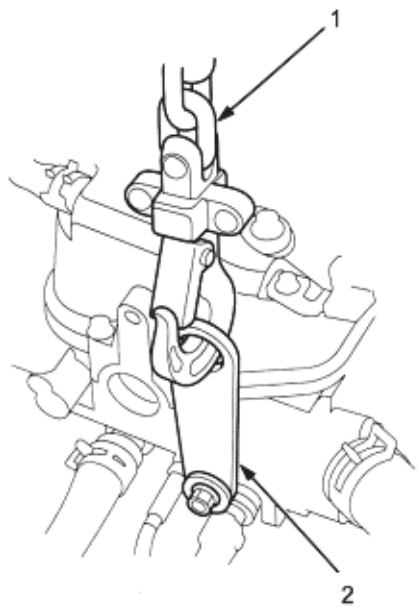
1. FRONT STIFFENER
2. FLYWHEEL COVER
3. DRIVE PLATE BOLT
4. DRIVE PLATE

30. Remove the rear mount/bracket.



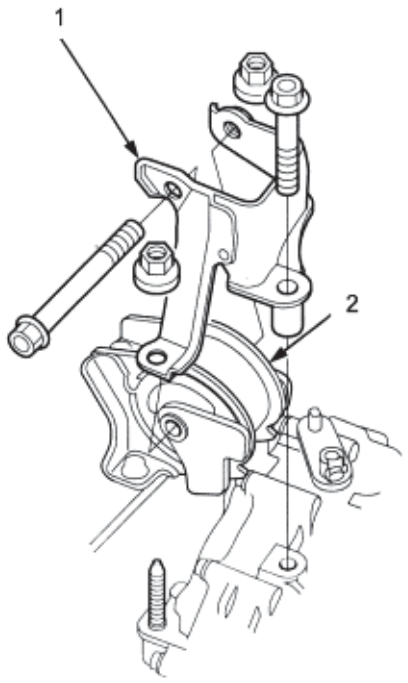
1. REAR MOUNT BRACKET

31. Attach a hoist bracket to the engine, then lift the engine slightly.



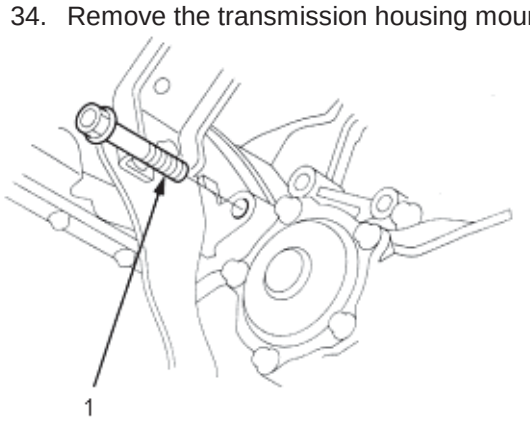
1. HOIST CHAIN
2. HOIST BRACKET

32. Place a jack under the transmission and raise the transmission just enough to take weight off mounts.
33. Remove the transmission mount bracket.



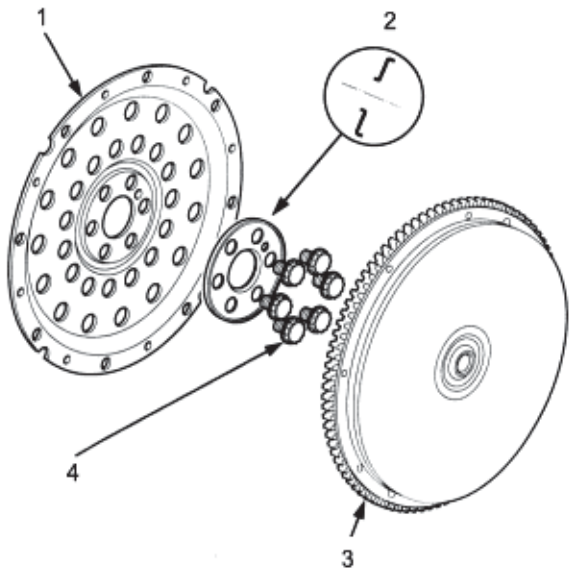
1. TRANSMISSION MOUNT BRACKET
2. TRANSMISSION MOUNT

34. Remove the transmission housing mounting bolt.

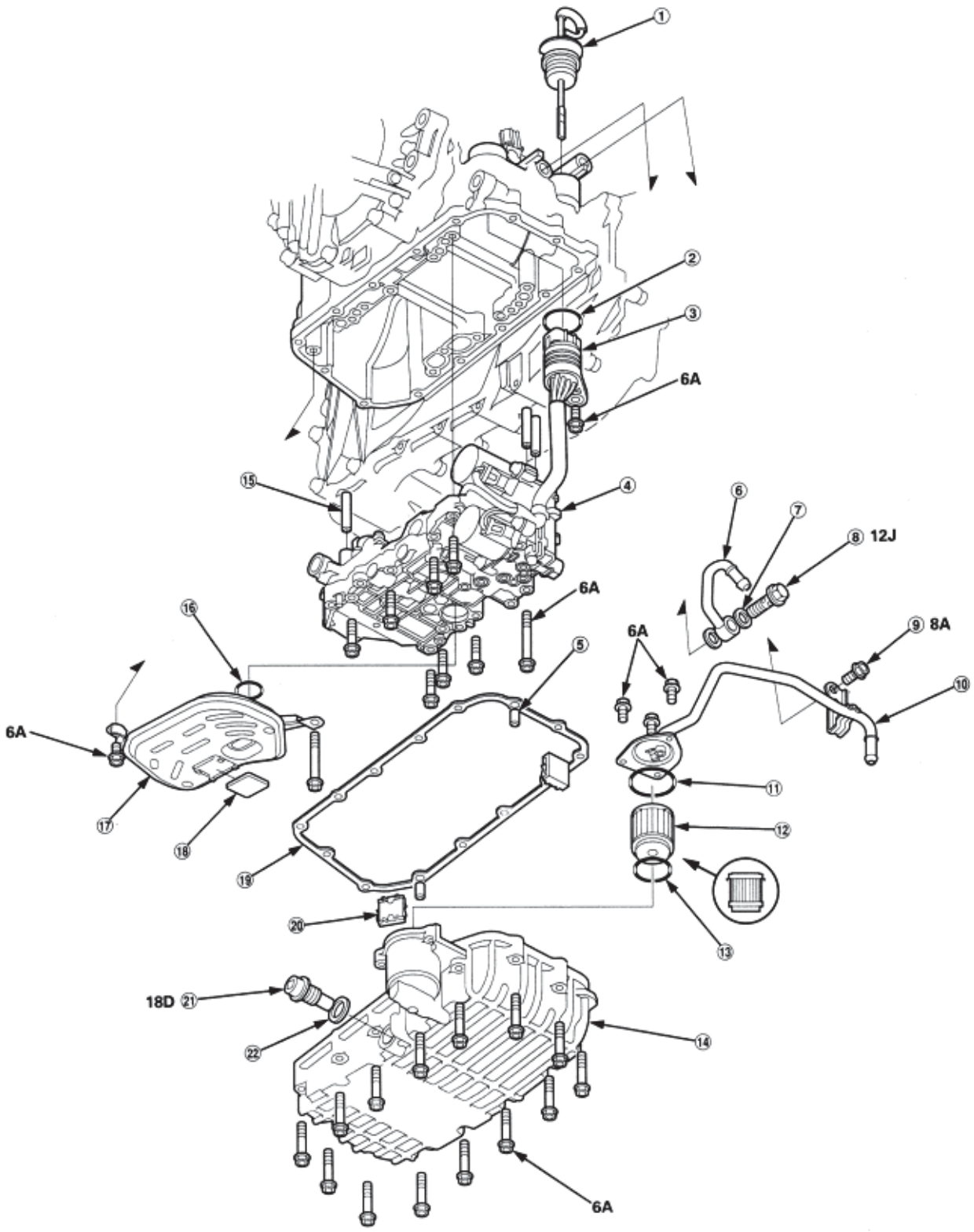


1. TRANSMISSION HOUSING MOUNTING BOLT

35. Pull the transmission away from the engine until it clears the dowel pin.
36. Remove the starter from the transmission.
37. Remove the flywheel from the transmission.
38. Inspect the drive plate and replace it if damaged.



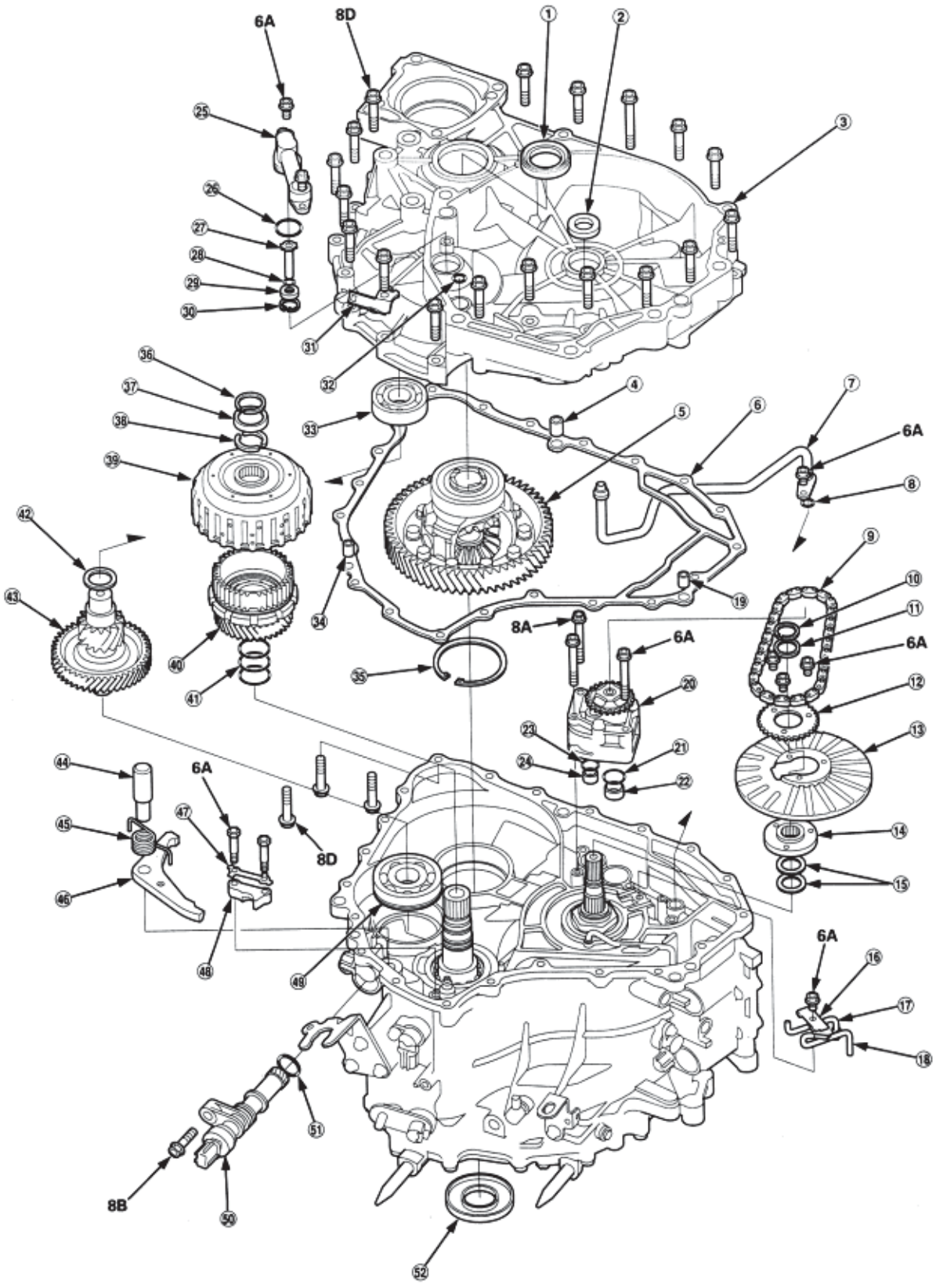
1. DRIVE PLATE
2. WASHER Install in this direction.
3. FLYWHEEL/RING GEAR Inspect the ring gear teeth for excessive wear.
4. 12 x 1.0 mm, 74 Nm (7.5 kgf/m 54 lbf/ft) Tighten in a criss-cross pattern.


1
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6A
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8 12J
6A
9 8A
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6A
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6A
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18D 21
22
14
6A

1 ATF Dipstick
2 O-ring. Replace.
3 Solenoid harness connector
4 Lower valve body assembly
5 Dowel pin
6 ATF cooler outlet line
7 Sealing washer Replace.
8 Line bolt
9 ATF cooler inlet line bracket bolt
10 Inlet line assembly
11 O-ring Replace.
12 ATF filter
13 O-ring Replace.
14 ATF pan
15 Dowel pin
16 O-ring Replace.
17 ATF strainer
18 ATF magnet
19 ATF pan gasket Replace.
20 ATF magnet
21 Drain plug
22 Sealing washer Replace.

TORQUE SPECIFICATIONS

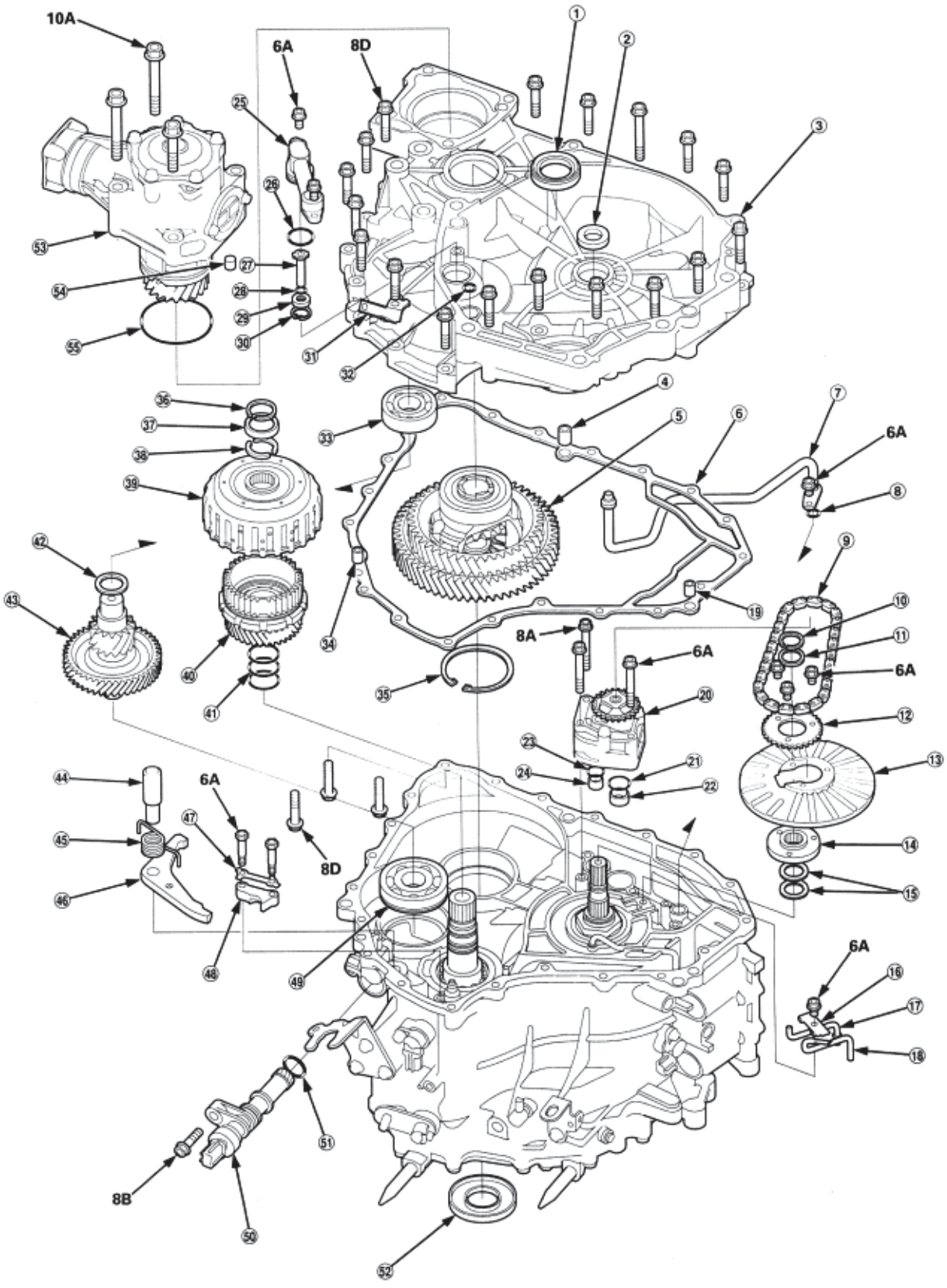
Bolt/Nut No.	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
8A	26 Nm (2.7 kgf/m, 20 lbf/ft)	8 x 1.25 mm	
12J	28 Nm (2.9 kgf/m, 21 lbf/ft)	12 x 1.25 mm	Line bolt
18D	49 Nm (5.0 kgf/m, 36 lbf/ft)	18 x 1.5 mm	Drain plug


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6A
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6A
8A
6A
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6A
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8D
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6A
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8B
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35

1 Oil seal Replace.
2 Oil seal Replace.
3 Flywheel housing
4 Dowel pin 12 x 20 mm
5 Differential assembly
6 Flywheel housing gasket Replace.
7 ATF passage pipe assembly.
8 O-ring Replace.
9 ATF pump drive chain
10 Snap ring
11 Thrust shim, 22 x 28 mm Selective part.
12 ATF pump drive sprocket
13 Pitot flange.
14 ATF pump sprocket hub
15 Thrust washers
16 Pitot pipe bracket.
17 Pitot lubrication pipe
18 Pitot pipe
19 Dowel pin, 10 x 16 mm.
20 ATF pump assembly
21 O-ring Replace.
22 Dowel pin, 22 x 10 mm.
23 O-ring Replace
24 Dowel pin, 18 x 10 mm
25 ATF passage pipe holder assembly
26 O-ring Replace.
27 Start clutch ATF feed pipe
28 O-ring Replace.
29 Feed pipe flange
30 Snap ring
31 Connector bracket
32 O-ring Replace.
33 Ball bearing
34 Dowel pin, 10 x 16 mm
35 Set ring, 80 mm Selective part.
36 Snap ring
37 Cotter retainer
38 Cotters, 25.5 mm Selective part.
39 Start clutch assembly
40 Secondary drive gear assembly
41 O-ring Replace
42 Thrust Shim, 25 x 35 mm Selective part.
43 Secondary gear shaft
44 Parking brake pawl shaft
45 Parking brake pawl spring
46 Parking brake pawl
47 Lock washer Replace.
48 Parking brake rod holder
49 Ball bearing
50 Vehicle speed sensor (VSS)
51 O-ring Replace.
52 Oil seal Replace.

TORQUE SPECIFICATIONS

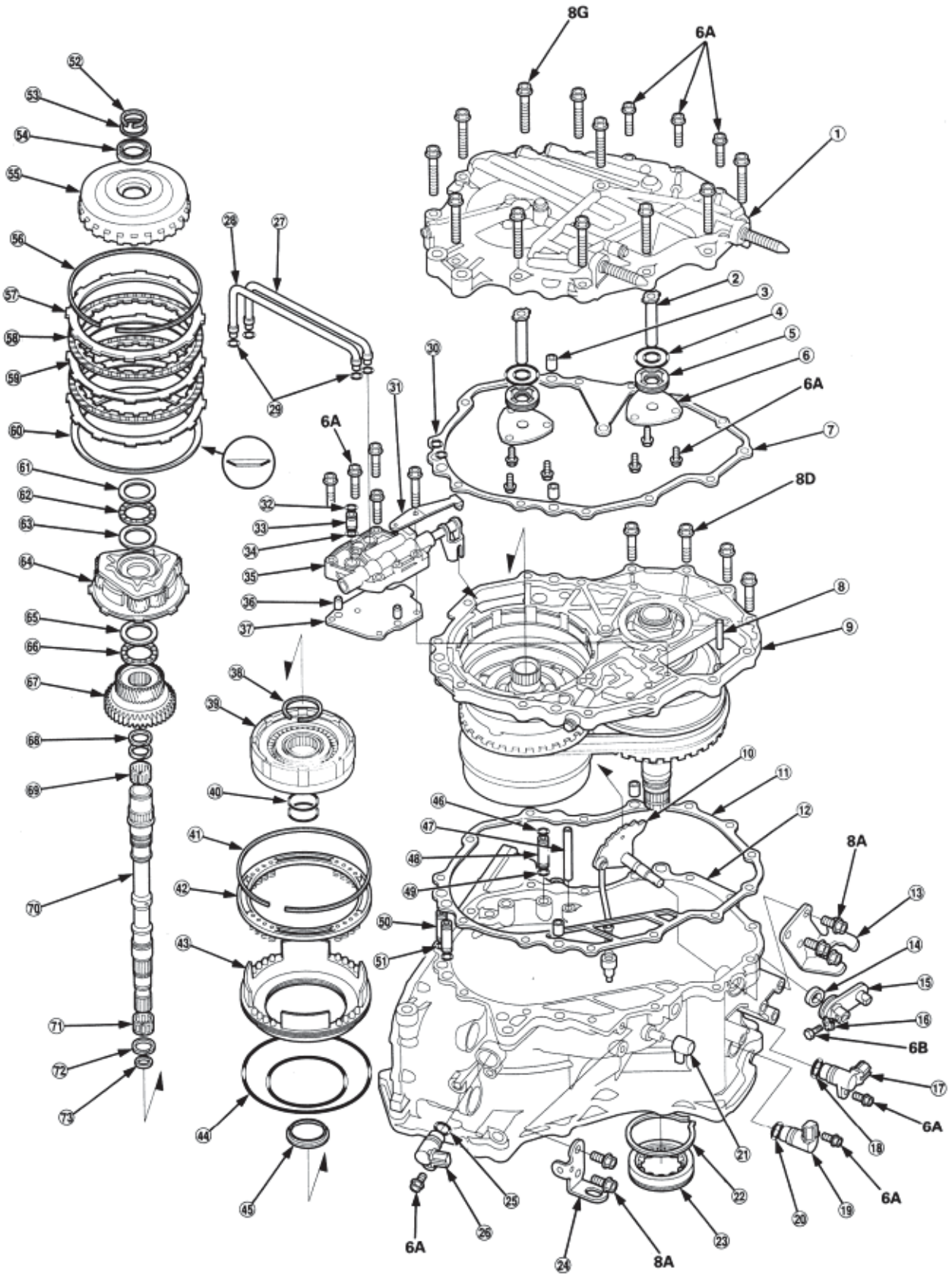
Bolt/Nut No.	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
8A	26 Nm (2.7 kgf/m, 20 lbf/ft)	8 x 1.25 mm	
8B	22 Nm (2.2 kgf/m, 16 lbf/ft)	8 x 1.25 mm	
8D	29 Nm (3.0 kgf/m, 22 lbf/ft)	8 x 1.25 mm	


10A
6A
8D
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6A
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8A
6A
20
23
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6A
47
45
46
48
8D
49
6A
16
17
18
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8B
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52

1 Oil seal Replace.
2 Oil seal Replace.
3 Flywheel housing
4 Dowel pin 12 x 20 mm
5 Differential assembly
6 Flywheel housing gasket Replace.
7 ATF passage pipe assembly.
8 O-ring Replace.
9 ATF pump drive chain
10 Snap ring
11 Thrust shim, 22 x 28 mm Selective part.
12 ATF pump drive sprocket
13 Pitot flange.
14 ATF pump sprocket hub
15 Thrust washers
16 Pitot pipe bracket.
17 Pitot lubrication pipe
18 Pitot pipe
19 Dowel pin, 10 x 16 mm.
20 ATF pump assembly
21 O-ring Replace.
22 Dowel pin, 22 x 10 mm.
23 O-ring Replace
24 Dowel pin, 18 x 10 mm
25 ATF passage pipe holder assembly
26 O-ring Replace.
27 Start clutch ATF feed pipe
28 O-ring Replace.
29 Feed pipe flange
30 Snap ring
31 Connector bracket
32 O-ring Replace.
33 Ball bearing
34 Dowel pin, 10 x 16 mm
35 Set ring, 80 mm Selective part.
36 Snap ring
37 Cotter retainer
38 Cotters, 25.5 mm Selective part.
39 Start clutch assembly
40 Secondary drive gear assembly
41 O-ring Replace
42 Thrust Shim, 25 x 35 mm Selective part.
43 Secondary gear shaft
44 Parking brake pawl shaft
45 Parking brake pawl spring
46 Parking brake pawl
47 Lock washer Replace.
48 Parking brake rod holder
49 Ball bearing
50 Vehicle speed sensor (VSS)
51 O-ring Replace.
52 Oil seal Replace.
53 Transfer assembly
54 Dowel pin
55 O-ring Replace

TORQUE SPECIFICATIONS

Bolt/Nut No.	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
8A	26 Nm (2.7 kgf/m, 20 lbf/ft)	8 x 1.25 mm	
8B	22 Nm (2.2 kgf/m, 16 lbf/ft)	8 x 1.25 mm	
8D	29 Nm (3.0 kgf/m, 22 lbf/ft)	8 x 1.25 mm	
10A	44 Nm (4.5 kgf/m, 33 lbf/ft)	10 x 1.25 mm	


8G
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8A
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6A
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1 Right side cover.
2 ATF feed pipe.
3 Dowel pin
4 O-ring Replace.
5 Feed pipe flange
6 Feed pipe flange plate.
7 Right side cover gasket Replace.
8 Roller.
9 Intermediate housing assembly
10 Control shaft assembly
11 Transmission housing gasket Replace.
12 Transmission housing
13 Shift cable bracket.
14 Oil seal Replace.
15 Control lever
16 Lock washer Replace.
17 Secondary gear shaft speed sensor
18 O-ring Replace.
19 Driven pulley speed sensor
20 O-ring Replace.
21 Breather cap.
22 Snap ring.
23 Transmission housing driven pulley shaft roller bearing
24 Transmission hanger
25 O-ring Replace.
26 Drive pulley speed sensor.
27 Manual valve body line A
28 Manual valve body line B.
29 O-ring Replace.
30 O-ring Replace.
31 Detent spring
32 O-ring Replace.
33 ATF feed pipe
34 O-ring Replace.
35 Manual valve body
36 Dowel pin
37 Manual valve body separate plate
38 Snap ring
39 Forward clutch assembly
40 O-ring Replace.
41 Snap ring
42 Spring retainer/return spring assembly
43 Reverse brake piston
44 O-ring Replace.
45 Snap ring retainer
46 O-ring Replace.
47 ATF feed pipe
48 ATF feed pipe
49 O-ring Replace.
50 ATF feed pipe
51 O-ring Replace.
52 Snap ring.
53 Thrust shim, 25 x 31 mm Selective part
54 Ball bearing
55 Ring gear
56 Snap ring
57 Reverse brake end plate Selective part
58 Reverse brake disc
59 Reverse brake plate
60 Disc spring
61 Thrust washer
62 Thrust needle bearing
63 Thrust washer
64 Carrier assembly
65 Thrust washer
66 Thrust needle bearing
67 Sun gear
68 Sealing Ring Replace.
69 Needle bearing
70 Input shaft
71 Needle bearing
72 Sealing ring Replace.
73 Sealing ring (rubber) Replace.

TORQUE SPECIFICATIONS

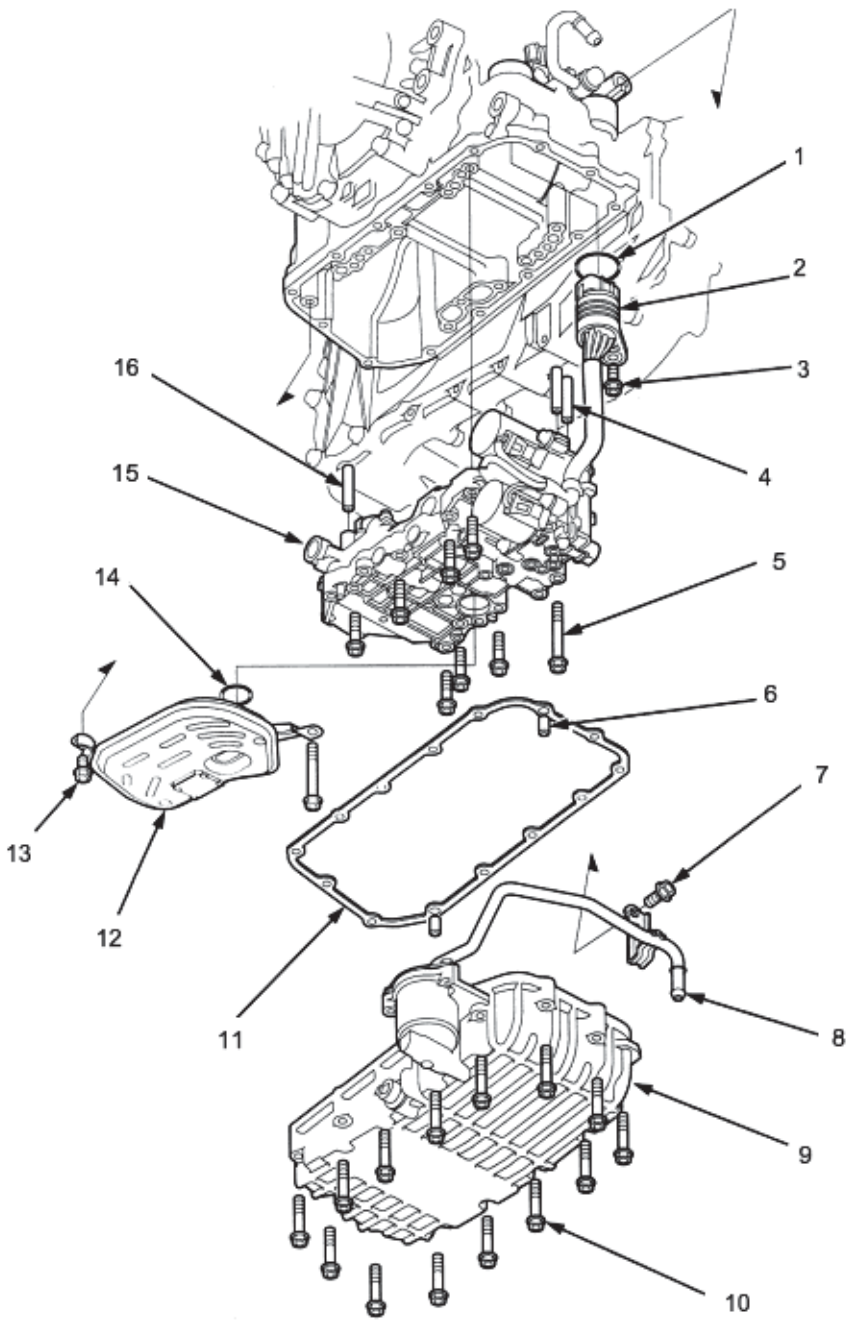
Bolt/Nut No.	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
6B	14 Nm (1.4 kgf/m, 10 lbf/ft)	6 x 1.0 mm	
8A	26 Nm (2.7 kgf/m, 20 lbf/ft)	8 x 1.25 mm	
8D	29 Nm (3.0 kgf/m, 22 lbf/ft)	8 x 1.25 mm	
8G	37 Nm (3.8 kgf/m, 27 lbf/ft)	8 x 1.25 mm	

Transmission Housing/Lower Valve Body Assembly

Removal

NOTE:

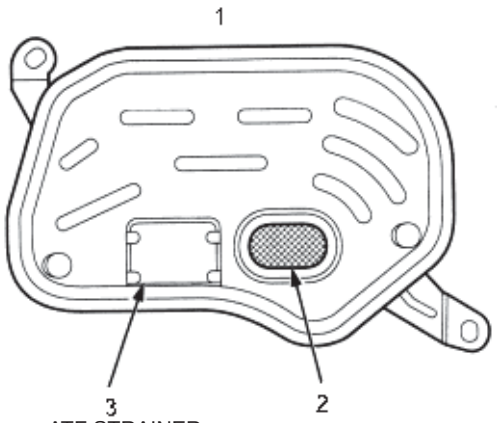
- Clean all parts thoroughly in solvent or carburettor cleaner and dry them with compressed air.
- Blow out all passages.
- When removing the lower valve body assembly, replace the following:
  - O-rings
  - ATF pan gasket



1. **O-RINGS** Replace.
2. **SOLENOID HARNESS CONNECTOR**
3. **6 x 1.0 mm, BOLT**
4. **DOWEL PIN**
5. **6 x 1.0 mm, 8 BOLTS**
6. **DOWEL PIN**
7. **ATF COOLER INLET LINE BRACKET BOLT 8 x 1.25 mm**
8. **ATF COOLER INLET LINE ASSEMBLY**
9. **ATF PAN**
10. **6 x 1.0 mm, 14 BOLTS**
11. **ATF PAN GASKET** Replace.
12. **ATF STRAINER**
13. 6 x 1.0 mm, 2 Bolts
14. **O-RING** Replace.
15. **LOWER VALVE BODY ASSEMBLY**
16. **DOWEL PIN**

Removal (cont'd)

1. Remove the ATF cooler inlet line bracket bolt.
2. Remove the ATF pan (fourteen bolts).
3. Remove the ATF strainer (two bolts).
4. Remove the one bolt securing the solenoid harness connector, then push the connector.
5. Remove the lower valve body (eight bolts).
6. Clean the inlet opening of the ATF strainer thoroughly with compressed air, then check that it is in good condition and the inlet opening is not clogged.

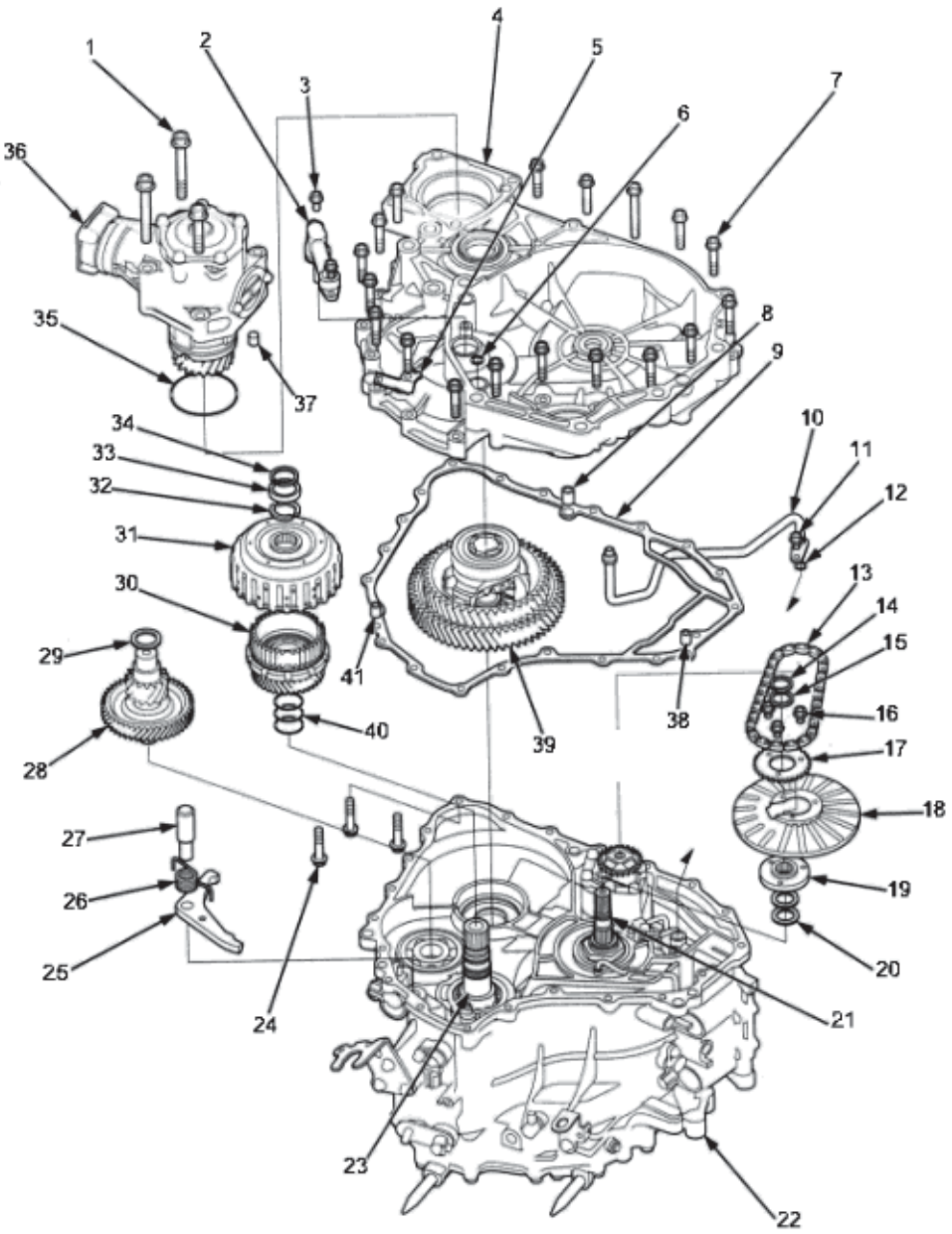


1. ATF STRAINER
2. INLET OPENING
3. ATF MAGNET

7. Replace the ATF strainer if it is clogged or damaged.
   NOTE: The ATF strainer can be reused if it is not clogged.

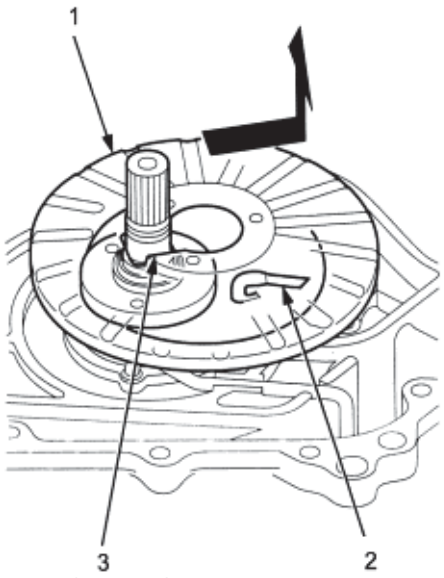
NOTE:

- The illustration shows the 4WD transmission; the 2WD transmission does not have the transfer assembly and related parts to the transfer.
- Clean all parts thoroughly in solvent or carburettor cleaner and dry them with compressed air.
- Blow out all passages.
- When remove the transmission housing/flywheel housing, replace the following:
  - O-rings
  - Start clutch assembly
  - Secondary drive gear assembly
  - Flywheel housing gasket



1. 10 x 1.25 mm, 3 Bolts.
2. **ATF PASSAGE PIPE HOLDER ASSEMBLY**
3. 6 x 1.0 mm, 2 Bolts
4. **FLYWHEEL HOUSING**
5. **CONNECTOR BRACKET**
6. **O-RING** Replace.
7. **FLYWHEEL HOUSING MOUNTING BOLTS** 18 Bolts
8. **DOWEL PIN**
9. **FLYWHEEL HOUSING GASKET** Replace.
10. **ATF PASSAGE PIPE ASSEMBLY**
11. 6 x 1.0 mm, 1 Bolt.
12. **O-RING** Replace**.**
13. **ATF PUMP DRIVE CHAIN**
14. **SNAP RING**.
15. **THRUST SHIM,** 22 x 28 mm Selective part
16. 6 x 1.0 mm, , 3 Bolts
17. **ATF PUMP DRIVE SPROCKET**
18. **PITOT FLANGE**
19. **ATF PUMP DRIVE SPROCKET HUB**
20. **THRUST WASHER**
21. **INPUT SHAFT**
22. **TRANSMISSION HOUSING**
23. **DRIVEN PULLEY SHAFT**
24. **FLYWHEEL HOUSING MOUNTING BOLT,** 3 Bolts
25. **PARKING BRAKE PAWL**
26. **PARKING BRAKE PAWL SPRING**
27. **PARKING BRAKE PAWL SHAFT**
28. **SECONDARY GEAR SHAFT**
29. **THRUST SHIM**, 25 x 35 mm Selective part.
30. **SECONDARY DRIVE GEAR ASSEMBLY**
31. **START CLUTCH ASSEMBLY**
32. **COTTERS**, 25.5 mm Selective part.
33. **COTTER RETAINER**
34. **SNAP RING**
35. **O-RING Replace**.
36. **TRANSFER ASSEMBLY (4WD**)
37. **DOWEL PIN**
38. **DOWEL PIN**
39. **DIFFERENTIAL ASSEMBLY**
40. **O-RING** Replace.
41. **DOWEL PIN**

1. Remove the transfer assembly from the transmission for 4WD transmission.
2. Remove the ATF passage pipe holder assembly.
3. Remove the flywheel housing mounting bolts:
   - 18 bolts from the flywheel housing side.
   - 3 bolts from the transmission housing side.
4. Remove the flywheel housing.
5. Remove the ATF pump drive sprocket (three bolts), then remove the ATF pump drive chain.
7. Move the pitot flange toward its cutout, then remove the pitot flange.



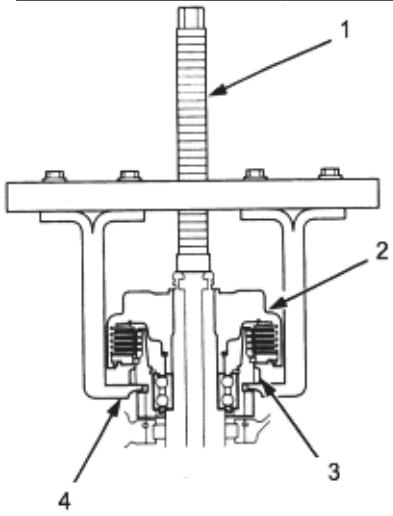
1. PITOT FLANGE
2. PITOT PIPE
3. CUTOUT

8. Remove the snap ring securing the ATF pump drive sprocket hub, then remove the 22 x 28 mm thrust shim, the ATF pump drive sprocket hub and the thrust washers.
9. Remove the differential assembly.
10. Remove the parking brake pawl shaft, the parking brake pawl spring and the parking brake pawl.
11. Remove the snap ring securing the start clutch, then remove the cotter retainer and the cotters.

12. Set the special tool on the start clutch and attach the pawl of the special tool to the parking gear securely as shown.

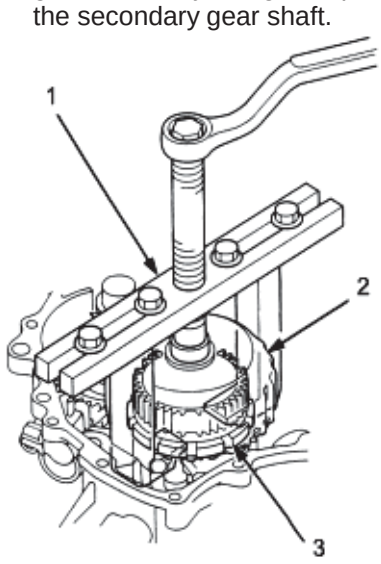
⚠ CAUTION

- Do not place the pawl of the special tool on the start clutch guide. If the pawl of the special tool contacts the start clutch guide, the start clutch guide may be damaged.
- Be sure not to allow dust and other foreign particles to enter into the driven pulley shaft.



1. START CLUTCH REMOVER 07TAE-P4V0120
2. START CLUTCH ASSEMBLY Replace.
3. PARK GEAR
4. PAWL

13. Remove the start clutch and the secondary drive gear assembly using the special tool, then remove the secondary gear shaft.

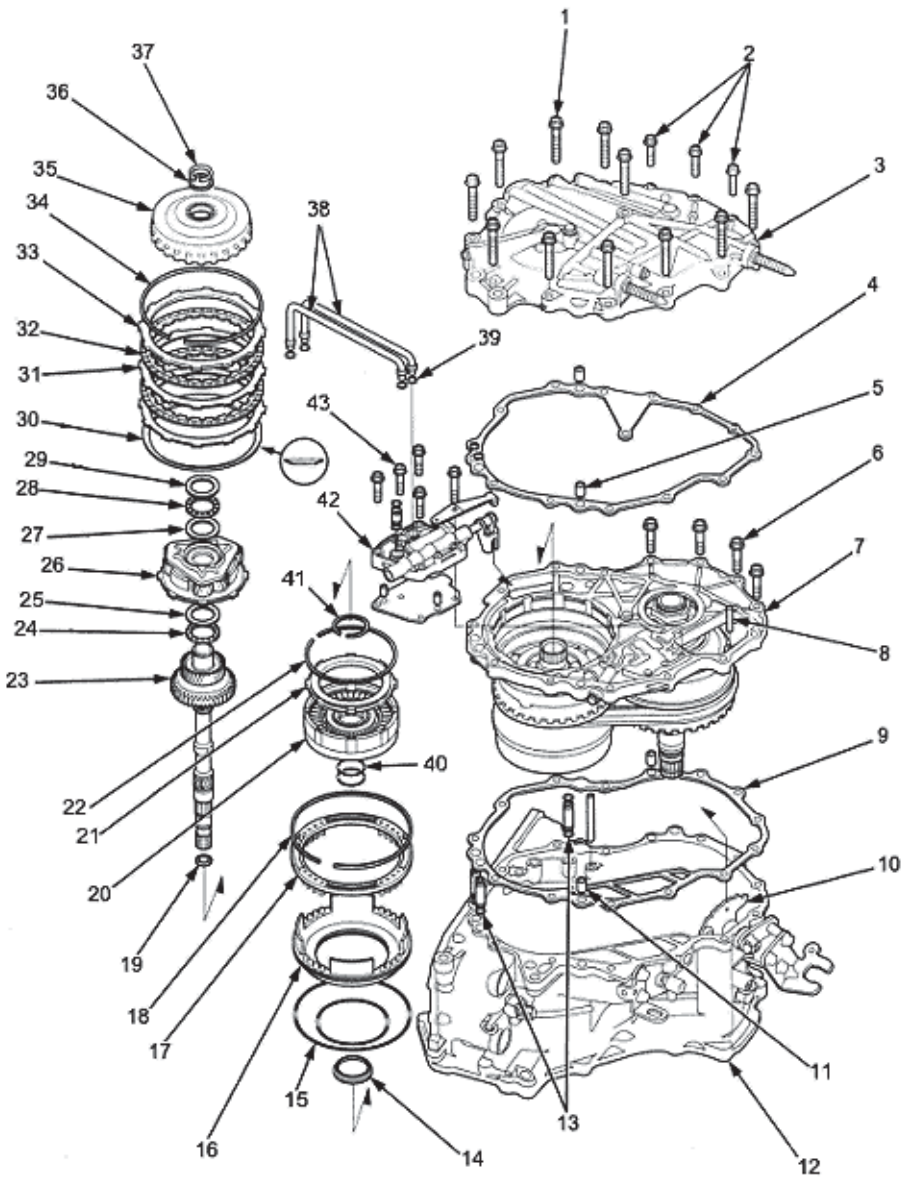


1. START CLUTCH REMOVER 07TAE-P4V0120
2. START CLUTCH ASSEMBLY
3. PARK GEAR

Removal

NOTE:

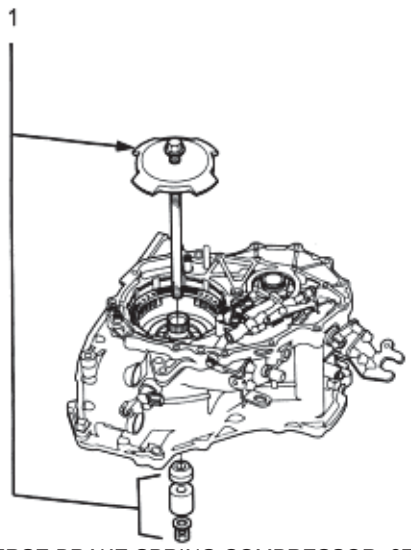
- Clean all parts in solvent or carburettor cleaner and dry them with compressed air.
- Blow out all passages.
- When removing the right side cover/intermediate housing, replace the following parts.
  - O-rings
  - Right side cover gasket
  - Transmission housing gasket
  - Sealing washers



1. 8 x 1.25 mm, 11 Bolts.
2. 6 x 1.0 mm, 3 Bolts
3. **RIGHT SIDE COVER**
4. **RIGHT SIDE COVER GASKET** Replace
5. **DOWEL PIN**
6. 8 x 1.25 mm, 4 Bolts.
7. **INTERMEDIATE HOUSING ASSEMBLY**
8. **ROLLER**
9. **TRANSMISSION HOUSING GASKET** Replace
10. **CONTROL SHAFT ASSEMBLY**
11. **DOWEL PIN**
12. **TRANSMISSION HOUSING**
13. **O-RINGS** Replace
14. **SNAP RING RETAINER**
15. **O-RINGS** Replace
16. **REVERSE BRAKE PISTON**
17. **SPRING RETAINER/RETURN SPRINGS ASSEMBLY**
18. **SNAP RING**
19. **SEALING RING (RUBBER)** Replace
20. **FORWARD CLUTCH ASSEMBLY**
21. **CLUTCH END PLATE**
22. **SNAP RING**
23. **SUN GEAR/INPUT SHAFT ASSEMBLY**
24. **THRUST NEEDLE BEARING**
25. **THRUST WASHER**
26. **CARRIER ASSEMBLY**
27. **THRUST WASHER**
28. **THRUST NEEDLE BEARING**
29. **THRUST WASHER**
30. **DISC SPRING**
31. **PLATE**
32. **DISC**
33. **REVERSE BRAKE END PLATE**.
34. **SNAP RING**
35. **RING GEAR**
36. **THRUST SHIM** 25 x 31 mm Selective part.
37. **SNAP RING**
38. **MANUAL VALVE BODY LINES**
39. **0-RINGS** Replace
40. **O-RING** Replace
41. **SNAP RING**
42. **MANUAL VALVE BODY**
43. 6 x 1.0 mm, **BOLT**

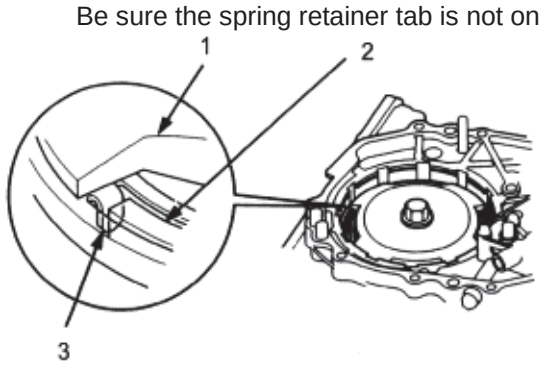
Removal

1. Remove the right side cover (three 6 mm bolts, eleven 8 mm bolts).
2. Remove the manual valve body lines A and B.
3. Remove the snap ring securing the ring gear, then remove the thrust shim and the ring gear.
4. Remove the snap ring securing the reverse brake discs and plates, then remove the reverse brake end plate, brake discs, brake plates and disc spring.
5. Remove the carrier assembly with the thrust washers and the thrust needle bearing, from the forward clutch.
6. Remove the sun gear/input shaft assembly by pulling it.
7. Remove the snap ring securing the forward clutch and remove the snap ring securing the forward clutch end plate, then remove the forward clutch end plate.
8. Reinstall the carrier on the forward clutch, then secure the carrier assembly with the snap ring on the forward clutch end plate.
9. Remove the forward clutch and carrier assembly together.
10. Install the special tool to remove the snap ring securing the reverse brake return spring retainer as shown.



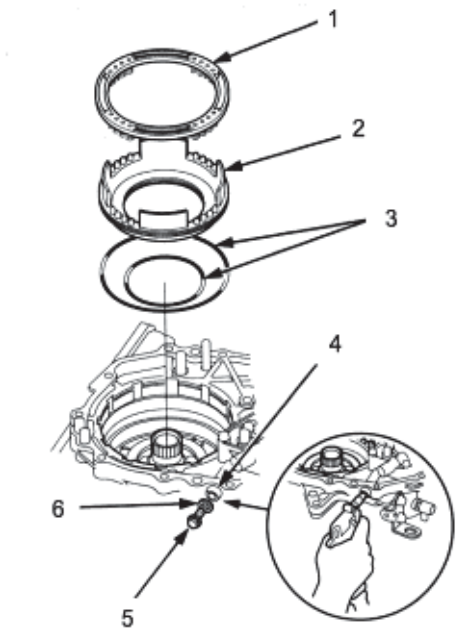
1. REVERSE BRAKE SPRING COMPRESSOR, 07TAE-P4V0110

11. Compress the return springs, then remove the snap ring.
    NOTE: If the spring retainer tab is on the reverse brake piston, the spring retainer may be damaged. Be sure the spring retainer tab is not on the piston.



1. SPECIAL TOOL
2. PISTON
3. SPRING RETAINER TAB

12. Remove the special tool, then remove the spring retainer/return spring assembly.
13. Remove the sealing bolt securing the reverse brake pressure inspection hole.
14. Apply air pressure to the inspection hole to remove the reverse brake piston.

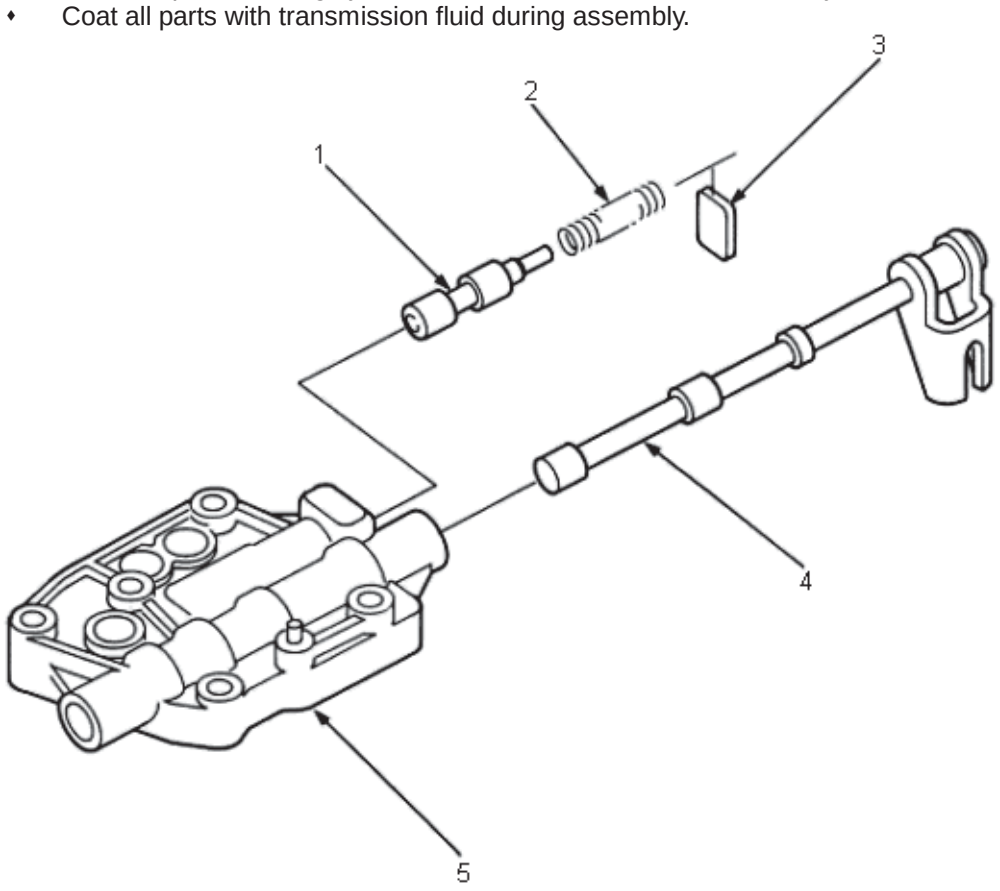


1. SPRING RETAINER/RETURN SPRING ASSEMBLY
2. REVERSE BRAKE PISTON
3. O-RINGS Replace.
4. REVERSE BRAKE PRESSURE INSPECTION HOLE
5. 8 x 1.25 mm, 18 Nm (1.8 kgf/m, 13 lbf/ft)
6. SEALING WASHER Replace.

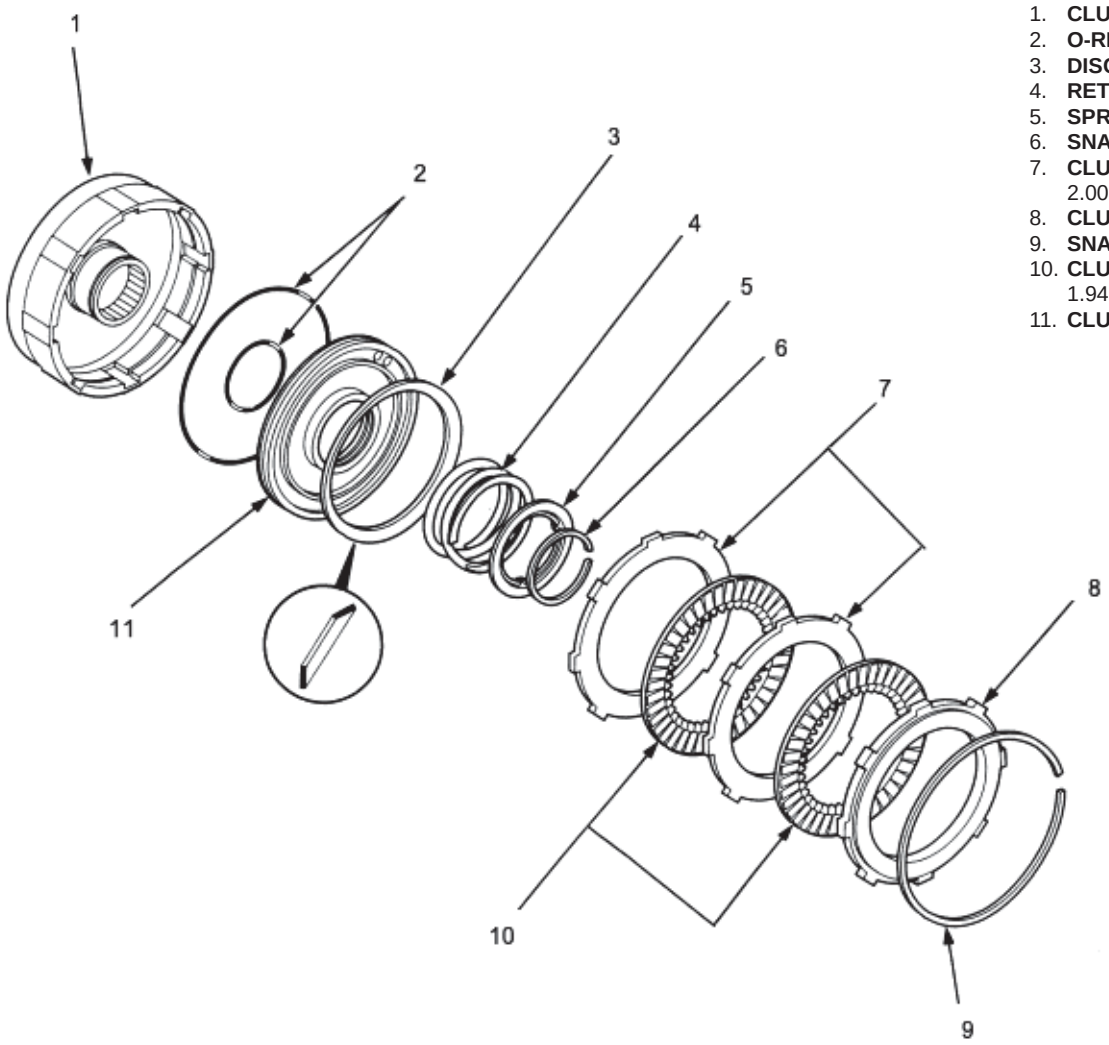
15. Remove the snap ring retainer from the drive pulley shaft.
16. Remove the manual valve body (five bolts).
17. Remove the roller and push the control shaft assembly toward the outside of the transmission housing, then remove the intermediate housing (four bolts).

NOTE:

- Clean all parts thoroughly in solvent or carburettor cleaner and dry them with compressed air. Blow out all passages.
- Coat all parts with transmission fluid during assembly.

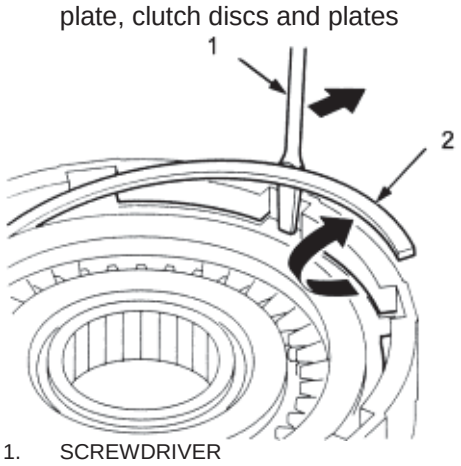


1. **REVERSE INHIBITOR VALVE**
2. **REVERSE INHIBITOR VALVE SPRING**
3. **SPRING SEAT**
4. **MANUAL VALVE**
5. **MANUAL VALVE BODY** Inspect for wear, scratches and scoring.



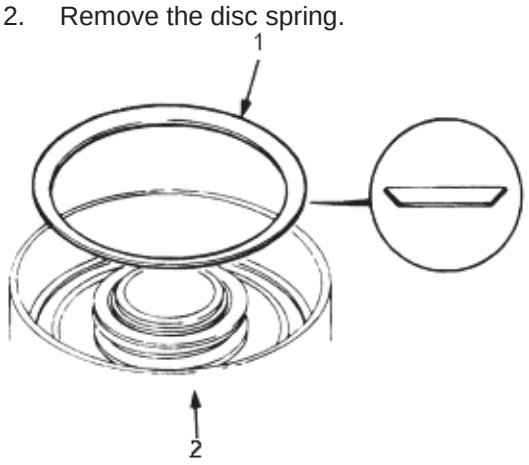
1. **CLUTCH DRUM**
2. **O-RINGS** Replace.
3. **DISC SPRING**
4. **RETURN SPRING**
5. **SPRING RETAINER**
6. **SNAP RING**
7. **CLUTCH PLATES** Standard thickness: 2.00 mm, (0.079 in).
8. **CLUTCH END PLATE**
9. **SNAP RING**
10. **CLUTCH DISCS** Standard thickness: 1.94 mm, (0.076 in).
11. **CLUTCH PISTON**

1. Remove the snap ring, then remove the clutch end plate, clutch discs and plates



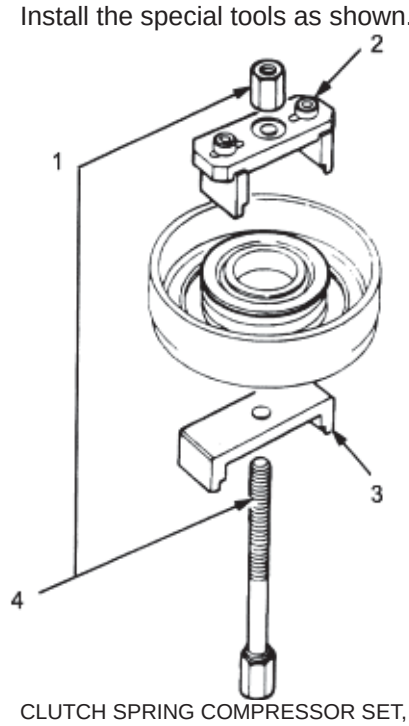
1. SCREWDRIVER
2. SNAP RING

2. Remove the disc spring.



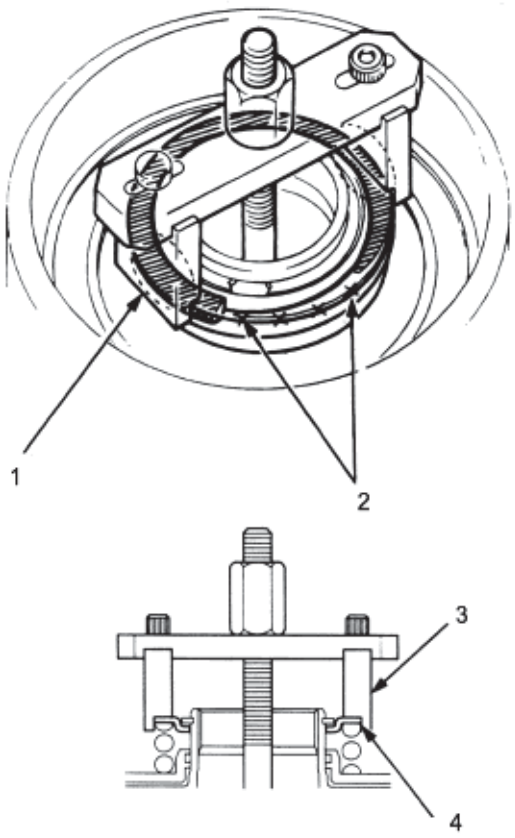
1. DISC SPRING
2. CLUTCH DRUM

3. Install the special tools as shown.



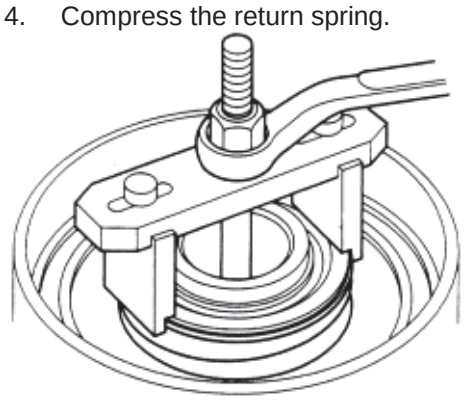
1. CLUTCH SPRING COMPRESSOR SET, 07LAE-PX40000
2. CLUTCH SPRING COMPRESSOR ATTACHMENT, 07LAE-PX40100
3. CLUTCH SPRING COMPRESSOR ATTACHMENT, 07HAE-PL50100
4. CLUTCH SPRING COMPRESSOR BOLT ASSEMBLY, 07GAE-PG40200

NOTE: If either end of the special tool is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged. Be sure the special tool is adjusted to have full contact with the spring retainer.

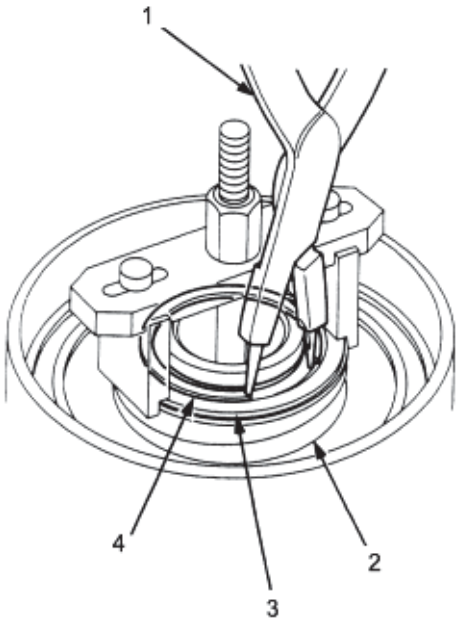


1. Set here
2. Do not set here
3. SPECIAL TOOL
4. SPRING RETAINER

4. Compress the return spring.

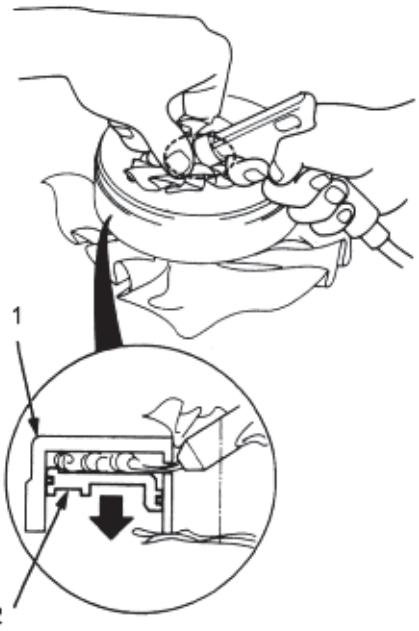


5. Remove the snap ring. Then remove the special tools, spring retainer and return spring.



1. SNAP RING PLIERS 07LGC-0010100
2. RETURN SPRING
3. SPRING RETAINER
4. SNAP RING

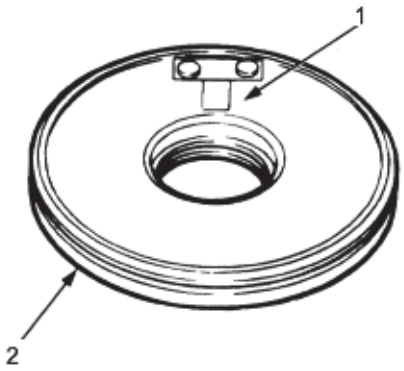
6. Wrap a shop rag around the clutch drum and apply air pressure to the fluid passage to remove the piston. Place a finger tip on the other end while applying air pressure.



1. CLUTCH DRUM
2. PISTON

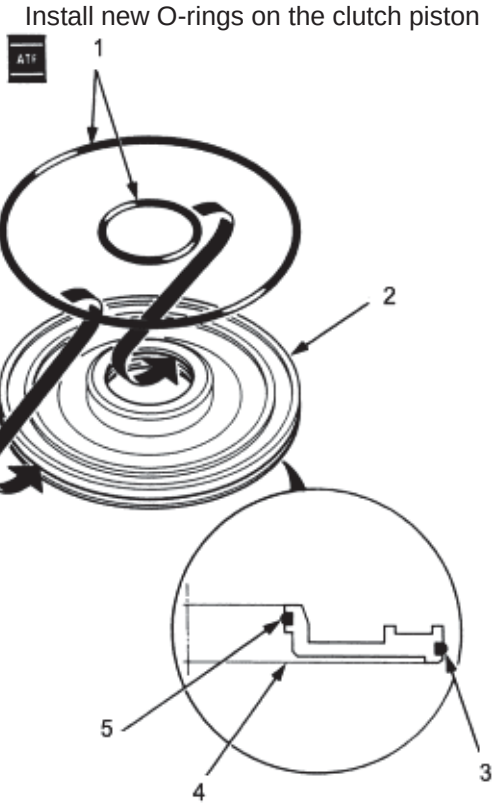
NOTE:
- Clean all parts thoroughly in solvent or carburetor cleaner and dry them with compressed air.
- Blow out all passages.
- Lubricate all parts with transmission fluid before reassembly.

1. Inspect the check valve; if it is loose, replace the piston.



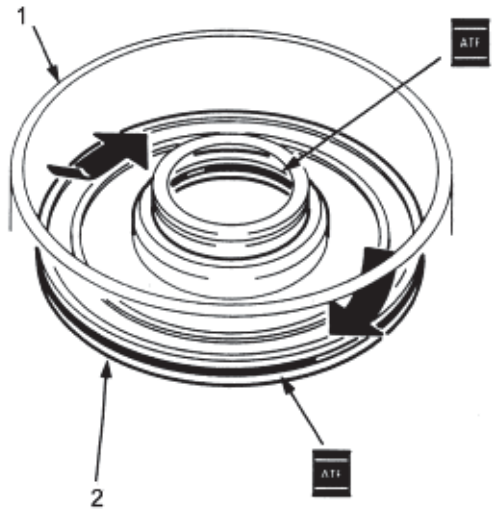
1. CHECK VALVE
2. PISTON

2. Install new O-rings on the clutch piston



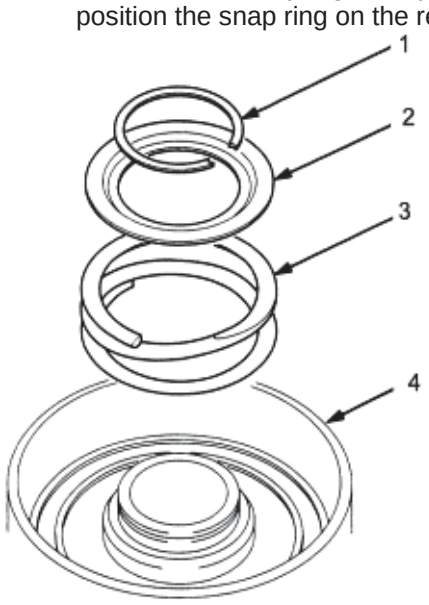
1. O-RINGS
2. PISTON
3. O-RING
4. PISTON
5. O-RING

3. Install the piston in the clutch drum. Apply pressure and rotate to ensure proper seating.
NOTE: Do not pinch the O-ring by installing the piston with too much force.



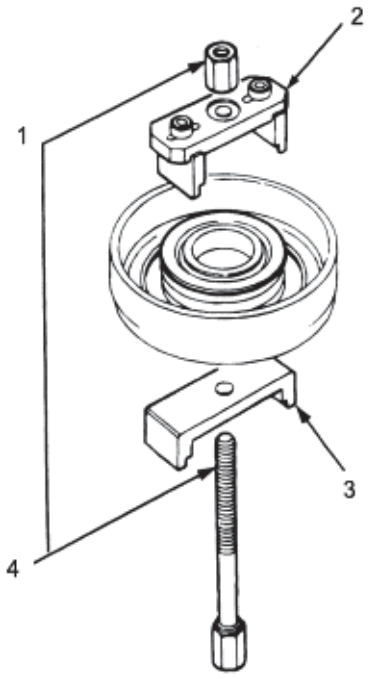
1. CLUTCH DRUM
2. PISTON

4. Install the return spring and spring retainer and position the snap ring on the retainer.



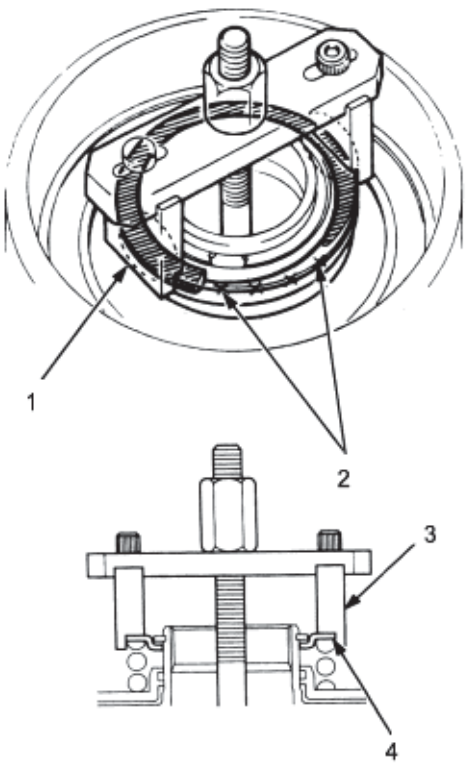
1. SNAP RING
2. SPRING RETAINER
3. RETURN SPRING
4. CLUTCH DRUM

5. Install the special tools as shown.



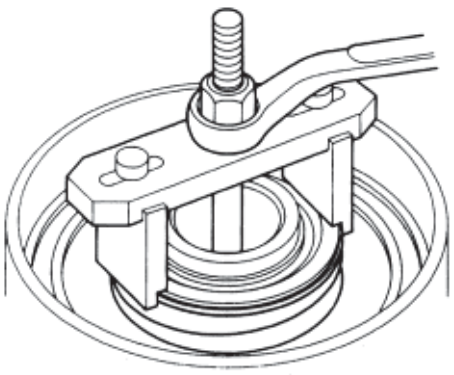
1. CLUTCH SPRING COMPRESSOR SET 07LAE-PX40000
2. CLUTCH SPRING COMPRESSOR ATTACHMENT 07LAE-PX40100
3. CLUTCH SPRING COMPRESSOR ATTACHMENT 07HAE-PL50100
4. CLUTCH SPRING COMPRESSOR BOLT ASSEMBLY 07GAE-PG40200

NOTE: If either end of the special tool is set over an area of the spring retainer which is unsupported by the return spring, the retainer may be damaged. Be sure the special tool is adjusted to have full contact with the spring retainer

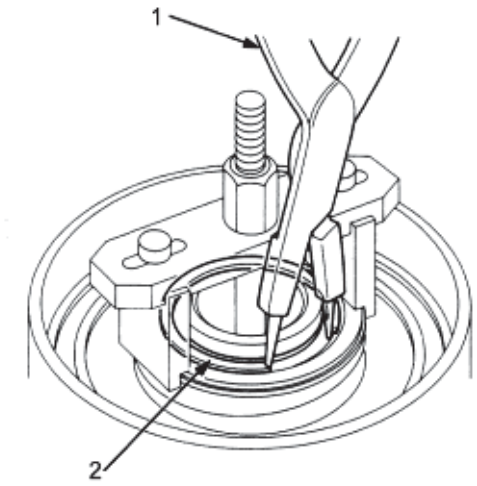


1. Set here
2. Do not set here
3. SPECIAL TOOL
4. SPRING RETAINER

6. Compress the return spring



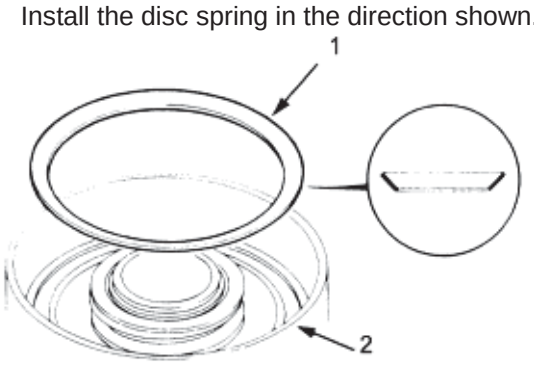
7. Install the snap ring



1. SNAP RING PLIERS 07LGC-0010100
2. SNAP RING

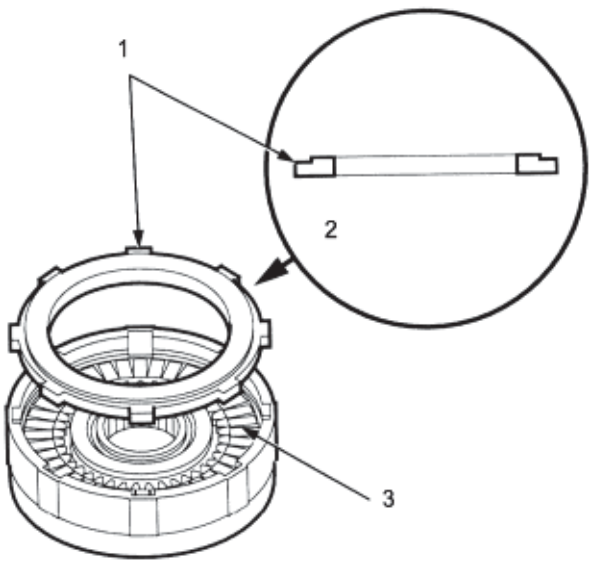
8. Remove the special tools.

9. Install the disc spring in the direction shown.



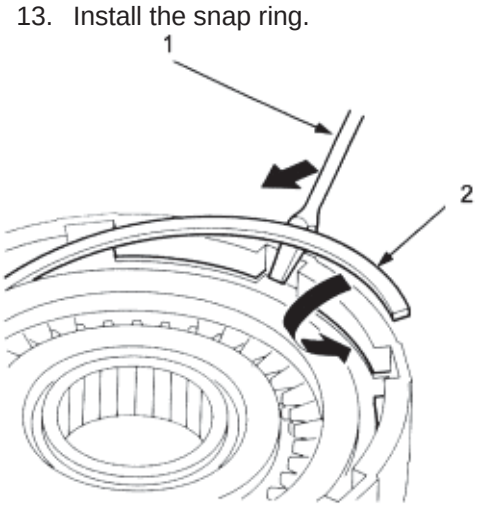
1. DISC SPRING
2. CLUTCH DRUM

10. Soak the clutch discs thoroughly in recommended transmission fluid for a minimum of 30 minutes.
11. Make sure the inside of the clutch drum is free of dirt or other foreign matter.
12. Starting with a clutch plate, alternately install the clutch plates an discs. Install the clutch end plate with flat side toward the disc.



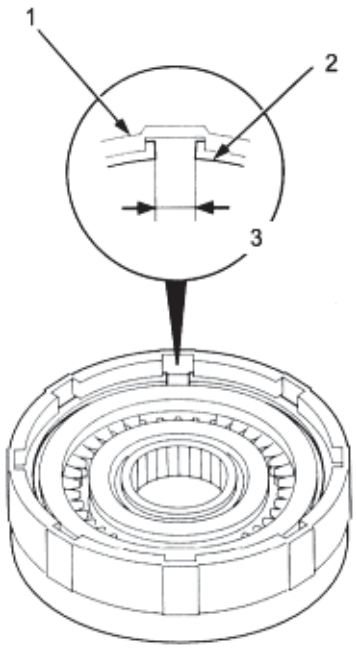
1. CLUTCH END PLATE
2. Install this side facing clutch disc.
3. CLUTCH DISC

13. Install the snap ring.



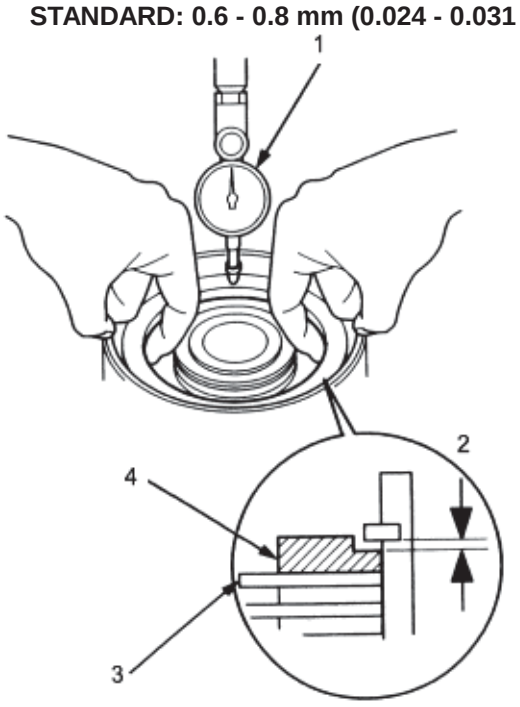
1. SCREWDRIVER
2. SNAP RING

14. Verify that the snap ring end gap is correct.



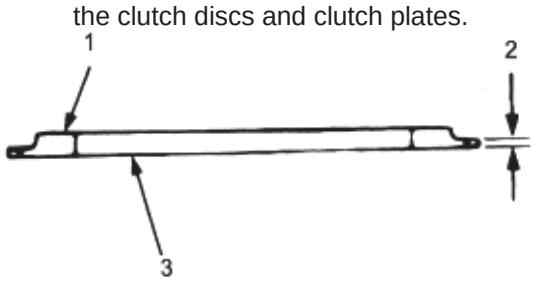
1. CLUTCH DRUM
2. SNAP RING
3. Minimum 7.9 mm, (0.31 in).

15. Measure the clearance between the clutch end plate and top disc with a dial indicator. Zero the dial indicator with the clutch end plate lowered and lift it up to the snap ring. The distance that the clutch end plate moves is the clearance between the clutch end plate and top disc.
NOTE: Take measurements in at least three places and use the average as the actual clearance.
Clutch End Plate-to-Top Disc Clearance:
STANDARD: 0.6 - 0.8 mm (0.024 - 0.031 in)



1. DIAL INDICATOR
2. Clearance
3. CLUTCH DISC
4. CLUTCH END PLATE

16. If the clearance is out of tolerance, select a new clutch end plate from the following table, then recheck.
NOTE: If the thickest clutch end plate is installed but the clearance is still over the standard, replace the clutch discs and clutch plates.



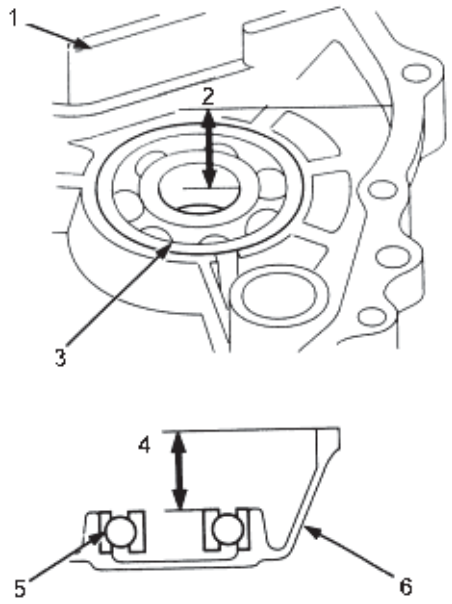
1. PLATE NUMBER
2. Thickness
3. CLUTCH END PLATE

FORWARD CLUTCH END PLATE

Plate No.	Part Number	Thickness
1 or 15	22561-P4V-003	3.5 mm (0.138 in)
2 or 16	22562-P4V-003	3.6 mm (0.142 in)
3 or 17	22563-P4V-003	3.7 mm (0.146 in)
4 or 18	22564-P4V-003	3.8 mm (0.150 in)
5 or 19	22565-P4V-003	3.9 mm (0.154 in)
6 or 20	22566-P4V-003	4.0 mm (0.157 in)
7 or 21	22567 P4V-003	4.1 mm (0.161 in)
8 or 22	22568-P4V-003	4.2 mm (0.165 in)
9 or 23	22569-P4V-003	4.3 mm (0.169 in)
10 or 24	22570-P4V-003	4.4 mm (0.173 in)
11 or 25	22571-P4V-003	4.5 mm (0.177 in)
12 or 26	22572-P4V-003	4.6 mm (0.181 in)
13 or 27	22573-P4V-003	4.7 mm (0.185 in)

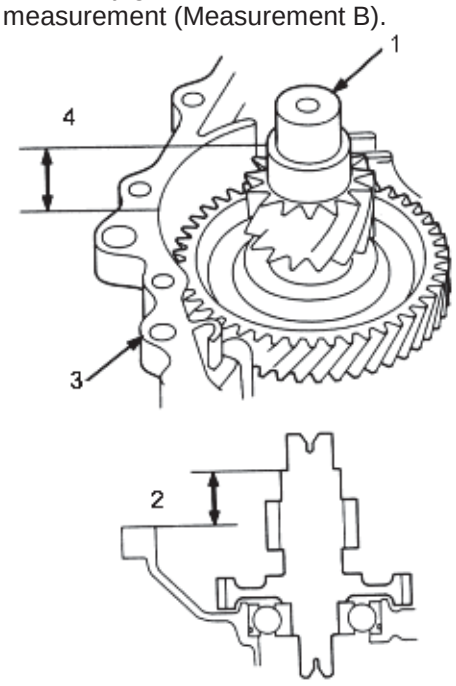
17. After replacing the clutch end plate, make sure that the clearance is within tolerance.

1. Measure the distance between the flywheel housing surface and the ball bearing as shown, then note the measurement (Measurement A)



1. FLYWHEEL HOUSING
2. Measuring Distance A
3. BALL BEARING
4. Measuring Distance A
5. BALL BEARING
6. FLYWHEEL HOUSING

2. Install the secondary gear shaft in the transmission housing.
3. Measure the distance between the transmission housing surface and the thrust washer mounting surface of the secondary gear shaft as shown, then note the measurement (Measurement B).



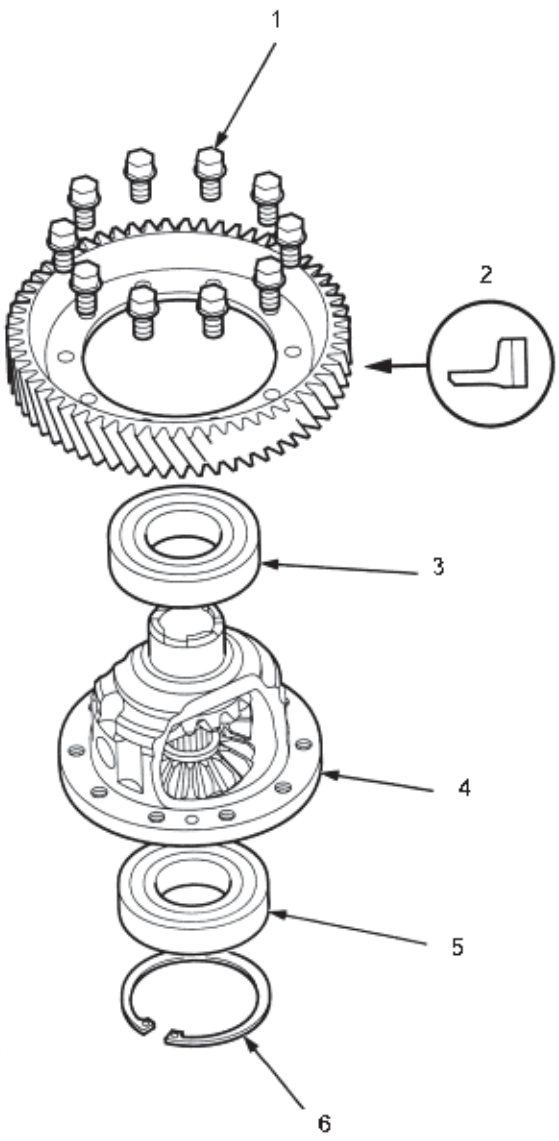
1. SECONDARY GEAR SHAFT
2. Measuring Distance B
3. TRANSMISSION HOUSING
4. Measuring Distance B

4. Calculate 25 x 35 mm thrust shim thickness by following formula.
   FORMULA:
   25 x 35 mm Thrust Shim Thickness
   = Measure A - Measure B + Flywheel Housing Gasket Thickness: 0.5 mm (0.020 in)
   Example:
   Measurement A: 32.7 mm (1.287 in)
   Measurement B: 30.1 mm (1.185 in)
   25 x 35 mm Thrust Shim Thickness
   = 32.7 mm (1.287 in) - 30.1 mm (1.185 in)
   + 0.5 mm (0.020 in)
   = 3.1 mm (0.122 in)
   Select 25 x 35 mm Thrust Shim D.
5. Select the 25 x 35 mm thrust shim from the following table:

THRUST SHIM, 25 X 35 mm

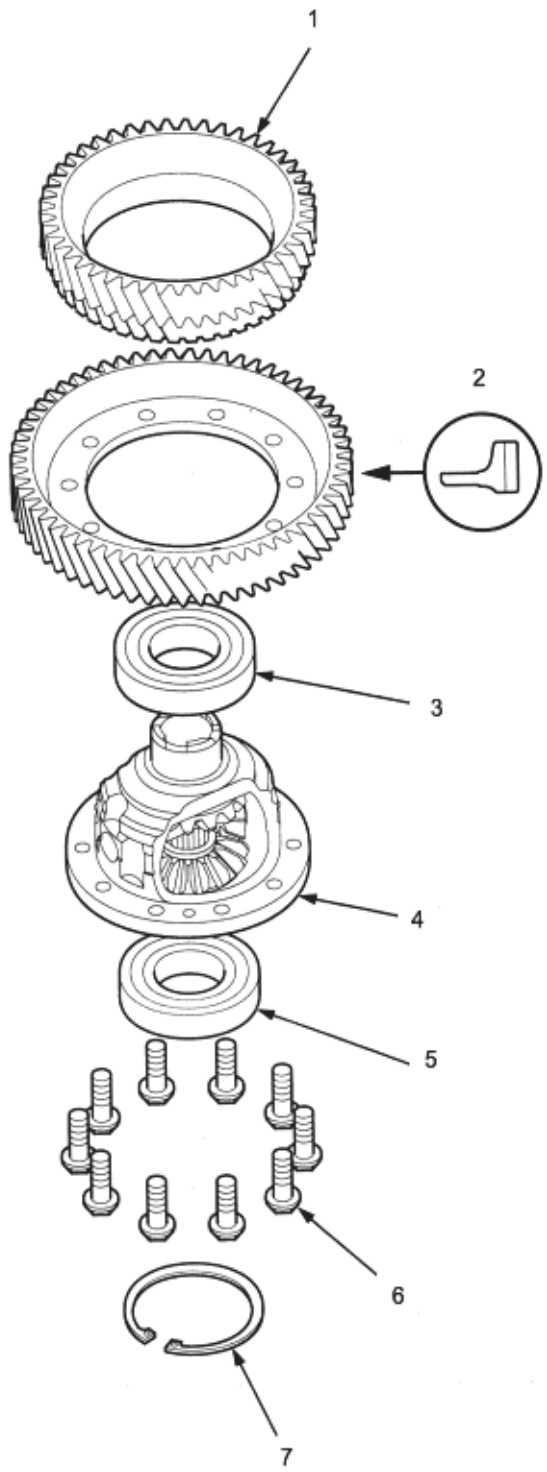
No.	Part Number	Thickness
A	90551-P4V-000	2.8 mm (0.110 in)
B	90552-P4V-000	2.9 mm (0.114 in)
C	90553-P4V-000	3.0 mm (0.118 in)
D	90554 P4V-000	3.1 mm (0.122 in)
E	90555-P4V-000	3.2 mm (0.126 in)
F	90556-P4V-000	3.3 mm (0.130 in)
G	90557 P4V-000	3.4 mm (0.134 in)
H	90558-P4V-000	3.5 mm (0.138 in)
I	90559-P4V-000	3.6 mm (0.142 in)
J	90560-P4V-000	3.7 mm (0.146 in)
K	90561-P4V-000	3.8 mm (0.150 in)

2WD



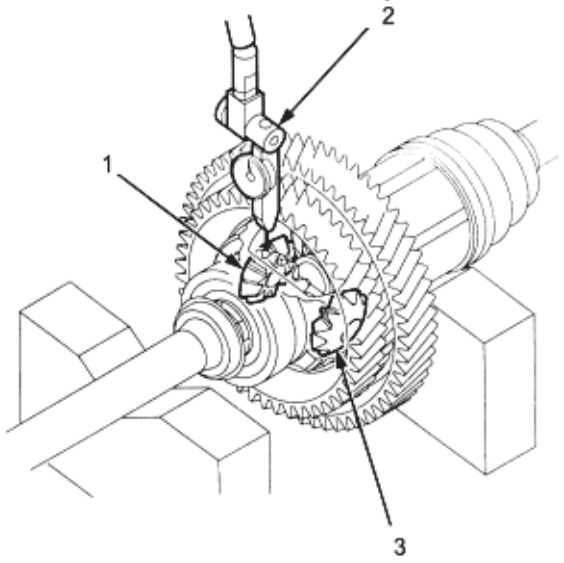
1. 10 x 1.5 mm, BOLT, 98.0 Nm (10.0 kgf/m, 72.3 lbf/ft) Left-hand threads
2. FINAL DRIVEN GEAR, Inspect for excessive wear.
3. BALL BEARING
4. DIFFERENTIAL CARRIER, Inspect for cracks
5. BALL BEARING
6. SET RING, 80 mm, Selective part.

4WD



1. TRANSFER DRIVE GEAR, Inspect for excessive wear.
2. FINAL DRIVEN GEAR, Inspect for excessive wear.
3. BALL BEARING
4. DIFFERENTIAL CARRIER, Inspect for cracks
5. BALL BEARING
6. 10 x 1.5 mm, BOLT, 98.0 Nm (10.0 kgf/m, 72.3 lbf/ft) Left-hand threads
7. SET RING, 80 mm, Selective part

1. Place the differential assembly on V-blocks and install both axles.
2. Set a dial indicator to the pinion gear.
3. Check the backlash of the pinion gears.
   STANDARD: 0.05 - 0.15 mm (0.002 - 0.006 in)

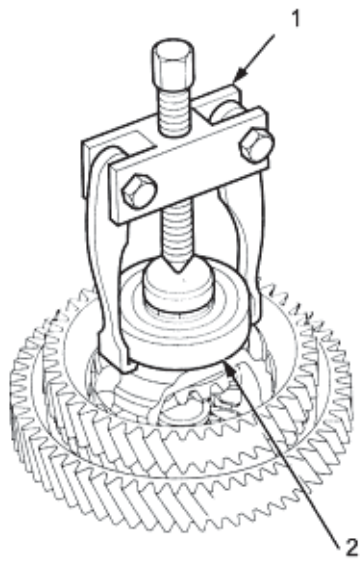


1. PINION GEAR
2. DIAL INDICATOR
3. PINION GEAR

4. If the backlash is out of standard, replace the differential carrier.

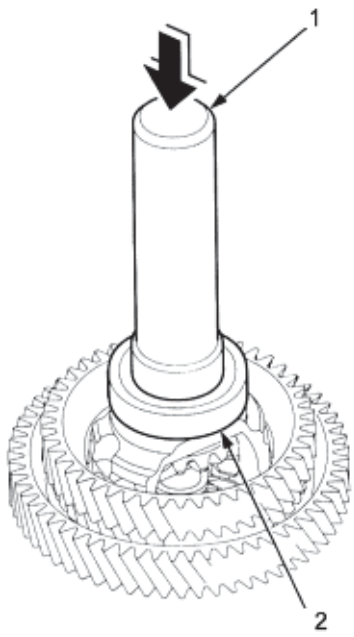
NOTE: Check the bearings for wear and rough rotation, if the bearing is OK, removal is not necessary.

1. Remove the bearings using the bearing puller



1. BEARING PULLER (Commercially available)
2. BALL BEARING

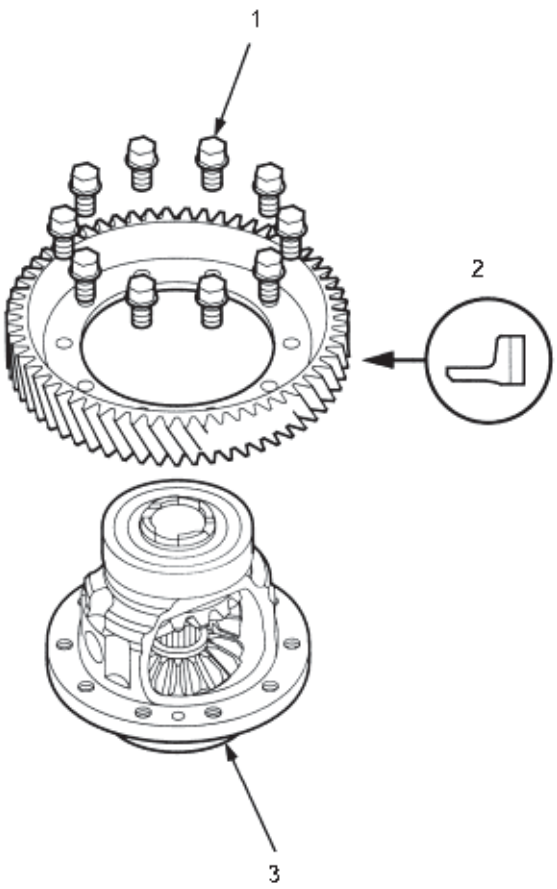
2. Install the new bearings using the special tool and a press.



1. DRIVER 40 mm, I.D. 07746-0030100
2. BALL BEARING

2WD

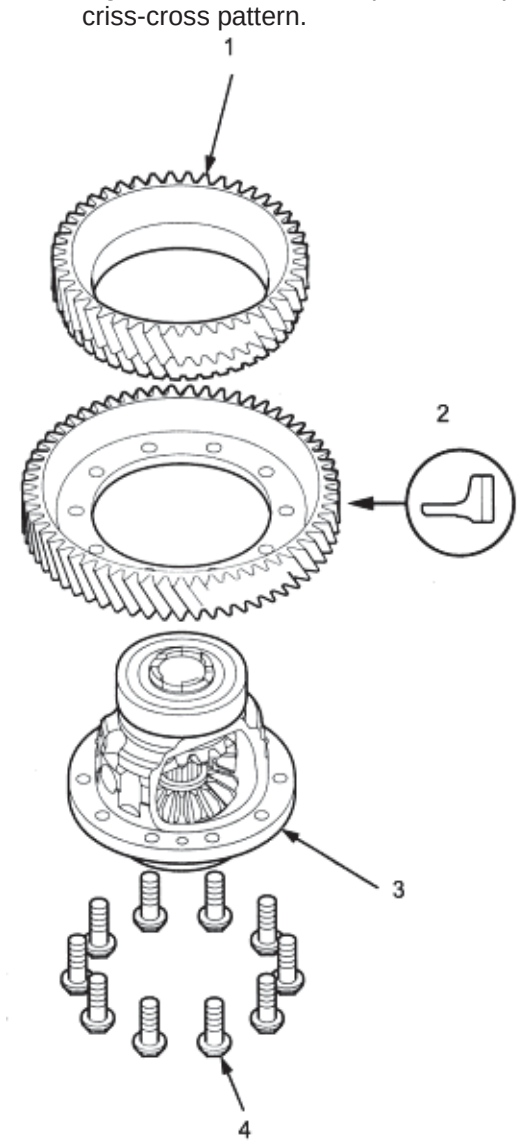
1. Remove the final driven gear from the differential carrier.
   NOTE: The final driven gear bolts have left-hand threads.
2. Install the final driven gear with its chamfered side on the inner bore facing the differential carrier.
3. Tighten the bolts to the specified toque in a criss-cross pattern.



1. 10 x 1.5 mm, BOLT, 98.0 Nm (10.0 kgf/m, 72.3 lbf/ft), Left-hand threads.
2. FINAL DRIVEN GEAR, Install in this direction.
3. DIFFERENTIAL CARRIER

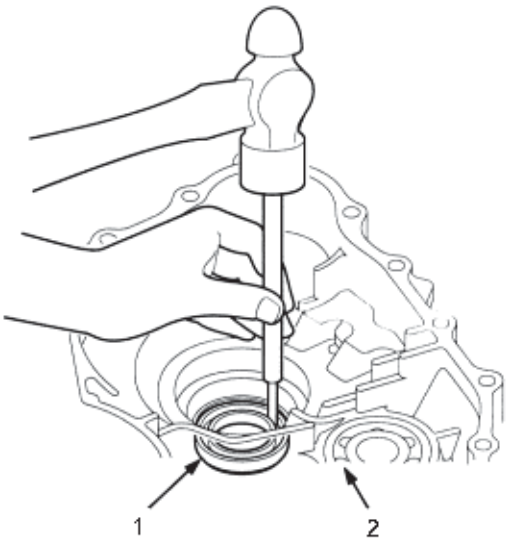
4WD:

1. Remove the transfer drive gear and the final driven gear from the differential carrier.
   NOTE: The final driven gear bolts have left-hand threads.
2. Install the final driven gear with its chamfered side on the inner bore facing the differential carrier, then install the transfer drive gear on the final driven gear.
3. Tighten the bolts to the specified toque in a criss-cross pattern.



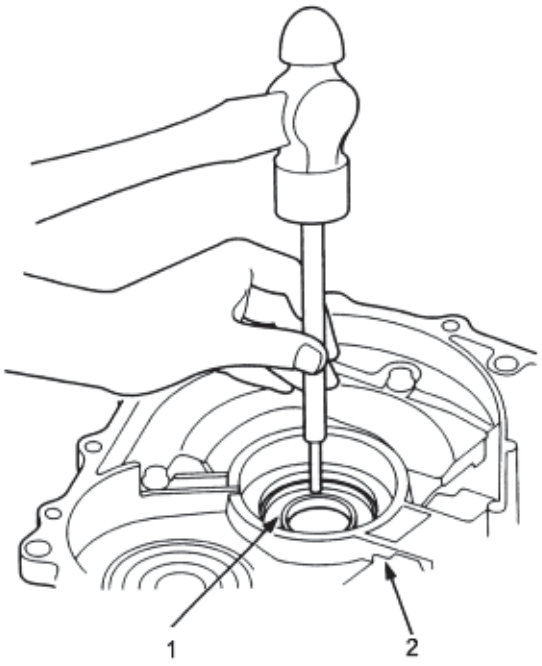
1. TRANSFER DRIVE GEAR
2. FINAL DRIVEN GEAR, Install in this direction.
3. DIFFERENTIAL CARRIER
4 10 x 1.5 mm, BOLT, 98.0 Nm (10.0 kgf/m, 72.3 lbf/ft) Left-hand threads.

1. Remove the differential assembly.
2. Remove the oil seal from the transmission housing.



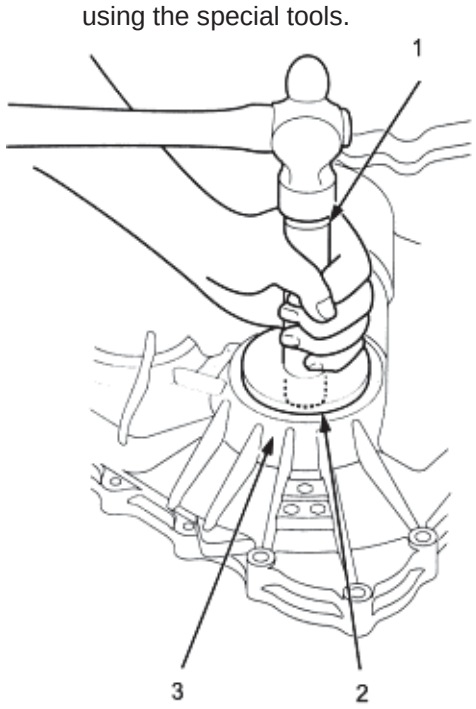
1. OIL SEAL, Replace.
2. TRANSMISSION HOUSING

3. Remove the oil seal from the flywheel housing.



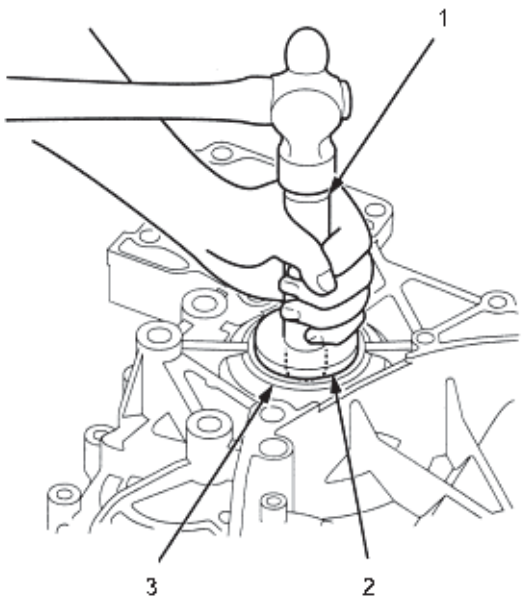
1. OIL SEAL, Replace.
2. FLYWHEEL HOUSING

1. Install the oil seal in the transmission housing using the special tools.



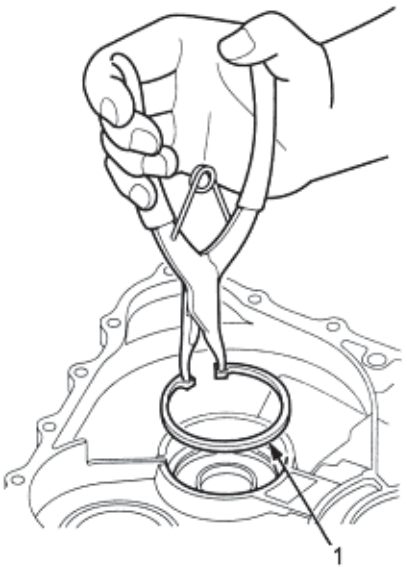
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 78 x 80 mm, 07NAD-PX40100
3. PITOT, 26 x 30 mm, 07JAD-PH80200

2. Install the oil seal in the flywheel housing using the special tools.



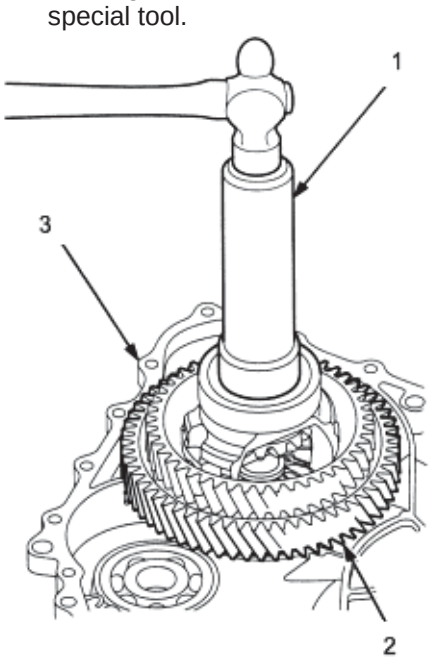
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 58mm, 07JAD-PH80101
3. PITOT, 26 x 30 mm, 07JAD-PH80200

1. Install the 2.50 mm (0.098 in) thick 80 mm set ring in the transmission housing.
   NOTE: Do not install the oil seal.



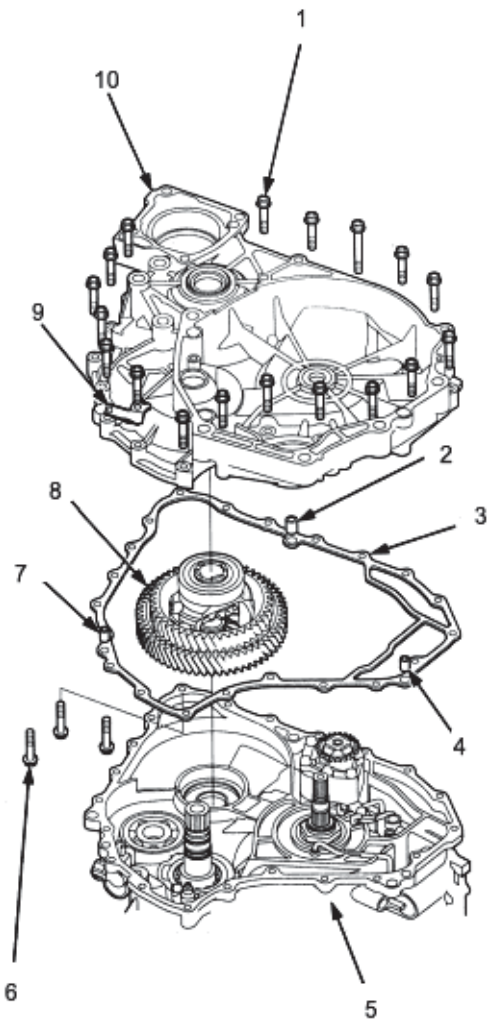
1. SET RING, 80 mm, Selective part.

2. Install the differential assembly into the transmission housing and drive it into the housing securely using the special tool.



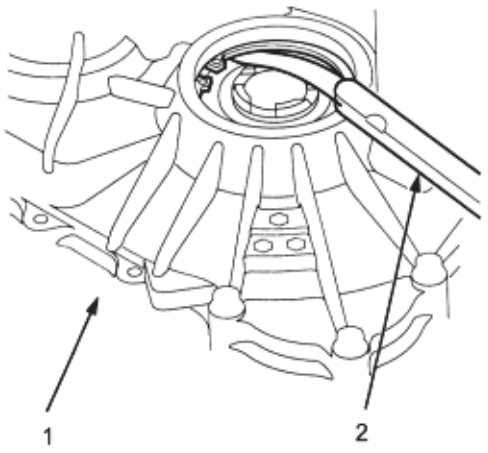
1. DRIVER 40 mm, I.D. 07746-0030100
2. DIFFERENTIAL ASSEMBLY
3. TRANSMISSION HOUSING

3. Install the flywheel housing with new gasket, dowel pins an connector bracket.
4. Tighten the bolts to the specified torque.



1. FLYWHEEL HOUSING MOUNTING BOLTS
   8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft), 18 Bolts.
2. DOWEL PIN, 12 x 20 mm
3. FLYWHEEL HOUSING GASKET
4. DOWEL PIN, 10 x 16 mm
5. TRANSMISSION HOUSING
6. FLYWHEEL HOUSING MOUNTING BOLTS
   8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft), 3 Bolts
7. DOWEL PIN, 10 x 16 mm
8. DIFFERENTIAL ASSEMBLY
9. CONNECTOR BRACKET
10. FLYWHEEL HOUSING

5. Measure the side clearance between the 80 mm set ring and outer race of the ball bearing in the transmission housing.
STANDARD: 0 - 0.15 mm (0 - 0006 in)



1. TRANSMISSION HOUSING
2. FEELER GAUGE

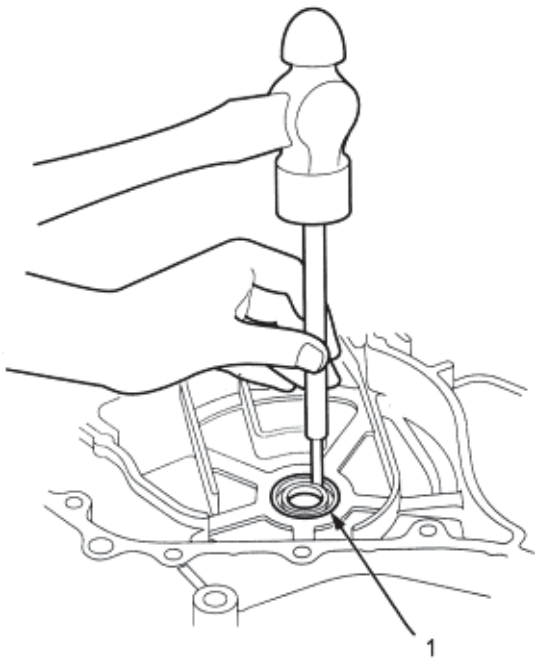
6. If the clearance is more than the standard select a new set ring from the table and install it.
SET RING, 80 mm

Part Number	Thickness
90414-689-00	2.50 mm (0.098 in)
90415-689-00	2.60 mm (0.102 in)
90416-689-00	2.70 mm (0.106 in)
90417-689-00	2.80 mm (0.110 in)
90418-689-00	2.90 mm (0.114 in)
90419-PH8-00	3.00 mm (0.118 in)

NOTE: If the clearance measured in step 5 is standard, it is not necessary to perform steps 7 and 8.

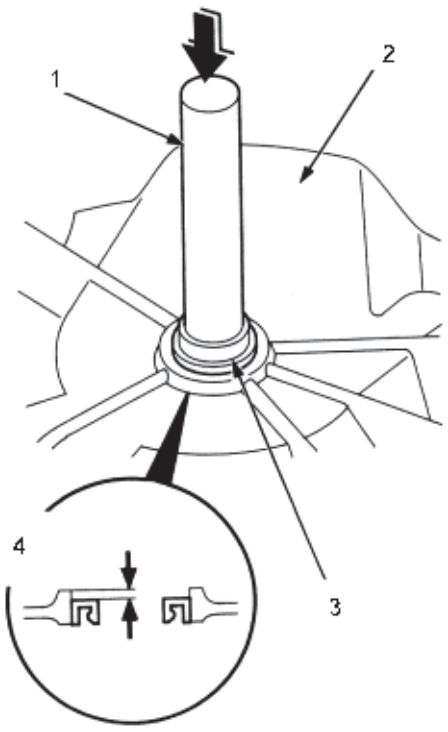
7. Remove the flywheel housing.
8. Replace the 2.50 mm (0.098 in) set ring, 80 mm with the one of the correct thickness selected in step 5.

1. Remove the input shaft oil seal from the flywheel housing.



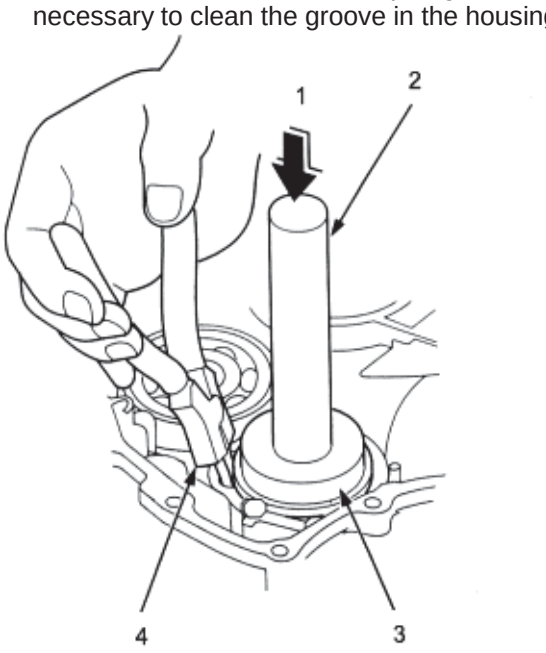
1. OIL SEAL

2. Install the oil seal in the flywheel housing using the special tools.

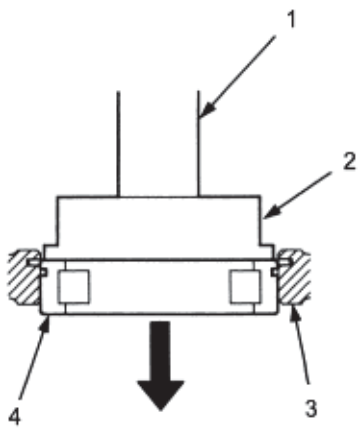


1. HANDLE DRIVER, 07749-0010000
2. FLYWHEEL HOUSING
3. DRIVER ATTACHMENT, 32 x 35 mm, 07746-0010100
4. Installed depth: 2.5 - 3.5 mm, (0.098 - 0.138 in)

1. To remove the driven pulley shaft bearing from the transmission housing, expand the snap ring with snap ring pliers, then push the bearing out using the special tools and a press as shown.
   NOTE: Do not remove the snap ring unless it is necessary to clean the groove in the housing.

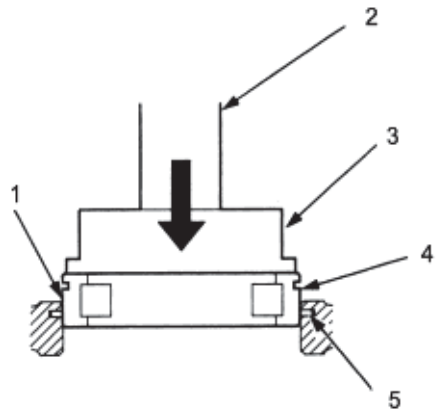


1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. DRIVER ATTACHMENT, 72 x 75 mm, 07746-0010600
4. SNAP RING PLIERS, 07LGC-0010100



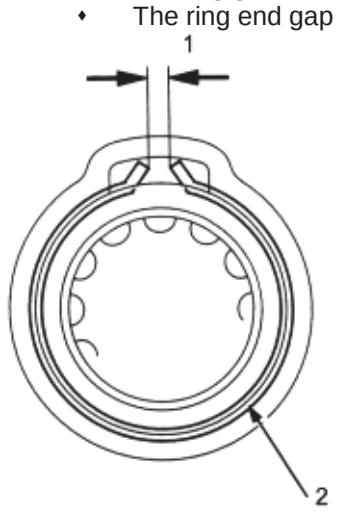
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 72 x 75 mm, 07746-0010600
3. TRANSMISSION HOUSING
4. BEARING

2. Expand the snap ring with snap ring pliers, insert the new bearing part-way into the housing using the special tools and a press as shown. Install the bearing with the groove facing outside the housing.
   NOTE: Coat all parts with CVT Fluid.
3. Release the pliers, then push the bearing down into the housing until the ring snaps in place around it, using the special tools as shown.



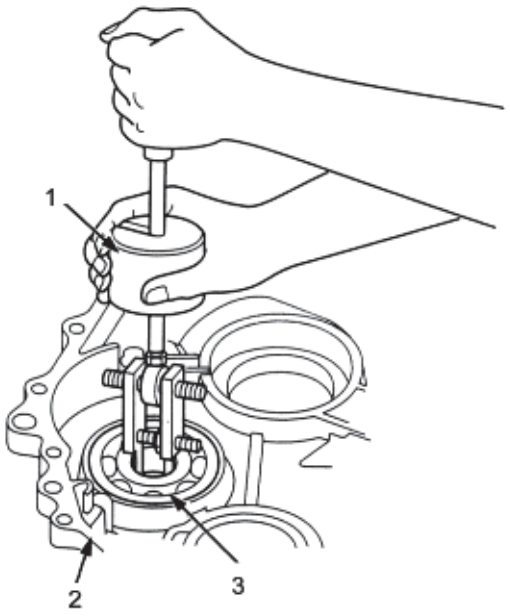
1. BEARING
2. DRIVER, 07749-0010000
3. ATTACHMENT, 72 x 75 mm, 07746-0010600
4. GROOVE
5. SNAP RING

4. After installing the bearing verify the following:
   - The snap ring is seated in the bearing and housing grooves.
   - The ring end gap is correct.



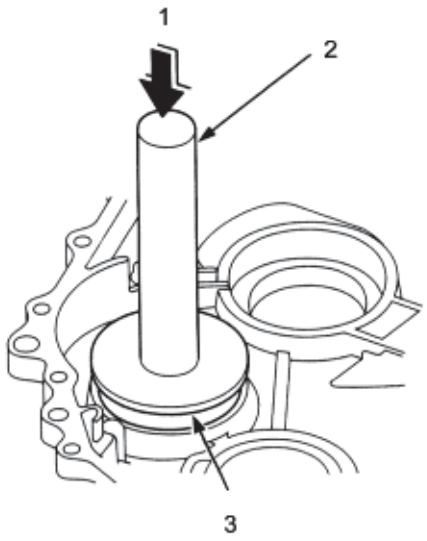
1. END GAP, 0 - 9 mm, (0 - 0.35 in)
2. SNAP RING

1. Remove the secondary gear shaft bearing using the special tool as shown.



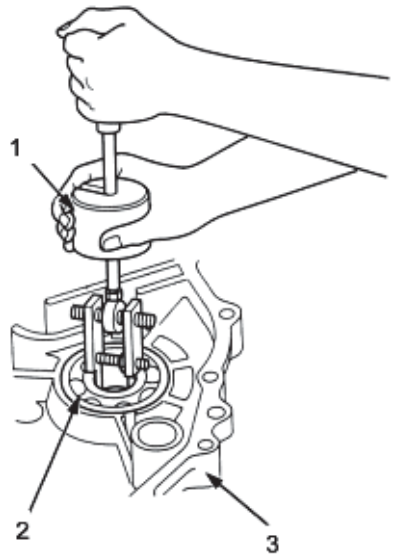
1. ADJUSTABLE BEARING REMOVER SET, 07JAC-PH80000
2. TRANSMISSION HOUSING
3. SECONDARY GEAR SHAFT BEARING

2. Install the new secondary gear shaft bearing until it bottoms in the transmission housing, using the special tools as shown



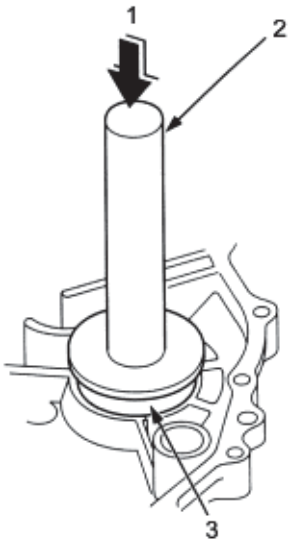
1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. DRIVER ATTACHMENT, 72 x 75 mm, 07746-0010600

1. Remove the secondary gear shaft bearing using the special tool as shown.



1. ADJUSTABLE BEARING REMOVER SET, 07JAC-PH80000
2. SECONDARY GEAR SHAFT BEARING
3. FLYWHEEL HOUSING

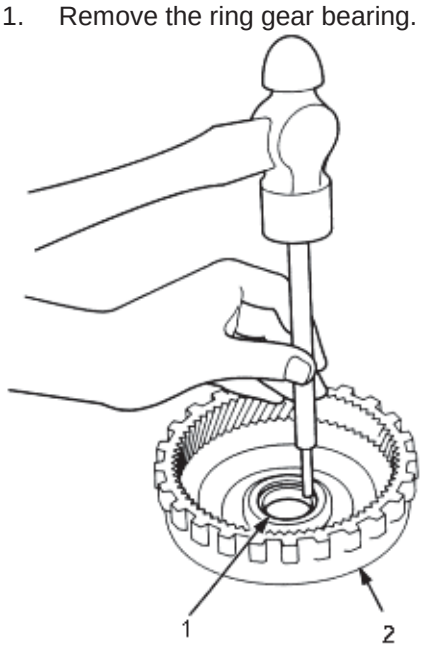
2. Install the new secondary gear shaft bearing until it bottoms in the flywheel housing, using the special tools as shown



1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500

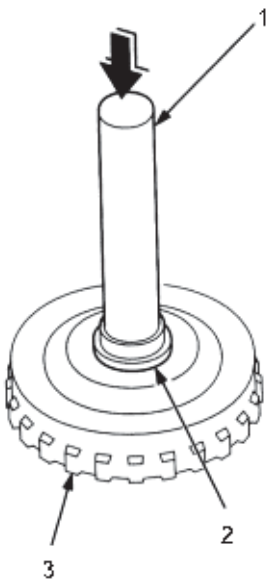
Ring Gear Bearing
Replacement

1. Remove the ring gear bearing.



1. RING GEAR BEARING
2. RING GEAR

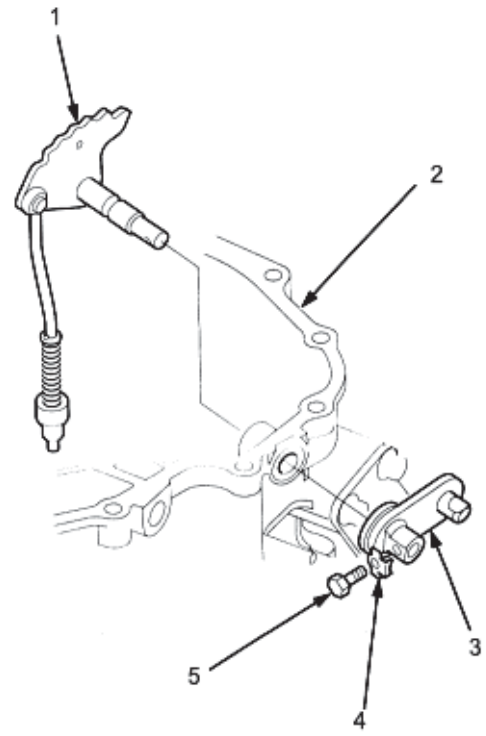
2. Install the new ring gear bearing until it bottoms in the ring gear, using the special tools as shown.



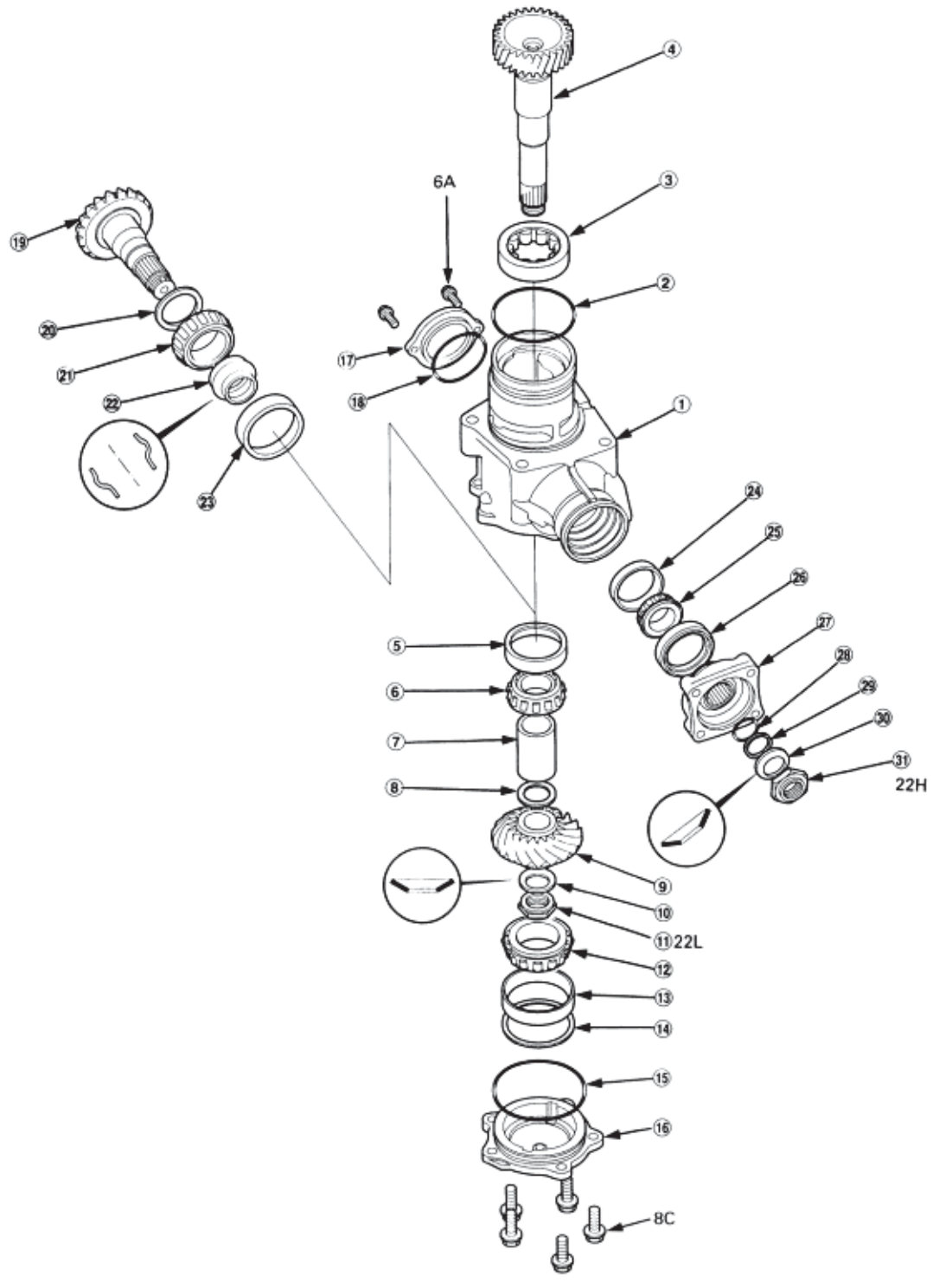
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 32 x 35 mm, 07746-0010100
3. RING GEAR

Control Shaft Assembly
Removal/Installation

1. Remove the bolt and lock washer, then remove the roller.
2. Remove the control lever from the control shaft.
3. Remove the control shaft assembly.
4. Install the control shaft assembly in the transmission housing.
5. Install the control lever to the control shaft.
6. Install and tighten the bolt with a new lock washer.



1. CONTROL SHAFT ASSEMBLY
2. TRANSMISSION HOUSING
3. CONTROL LEVER
4. LOCK WASHER, Replace.
5. 6 x 1.0 mm, 14 Nm (1.4 kgf/m, 10 lbf/ft).


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6A
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22H
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22L
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16
8C

1 Transfer housing.
2 O-ring Replace.
3 Transfer housing roller bearing
4 Transfer shaft
5 Tapered roller bearing out race
6 Tapered roller bearing.
7 Transfer shaft collar.
8 Thrust shim, 25 mm Selective part.
9 Transfer drive gear (Hypoid gear)
10 Conical spring washer Replace.
11 Transfer shaft locknut, 22 x 1.25 mm Left-hand threads Replace.
12 Tapered roller bearing
13 Tapered roller bearing out race.
14 Thrust shim, 68 mm Selective part.
15 O-ring Replace.
16 Transfer cover A
17 Transfer cover B
18 O-ring Replace.
19 Transfer driven gear shaft (Hypoid gear)
20 Thrust shim, 35 mm Selective part.
21 Tapered roller bearing.
22 Transfer spacer Replace.
23 Tapered roller bearing outer race
24 Tapered roller bearing outer race
25 Tapered roller bearing
26 Oil seal Replace.
27 Companion flange
28 O-ring Replace
29 Back-up ring
30 Conical spring washer Replace.
31 Transfer driven gear shaft locknut, 22 x 1.25 mm Replace.

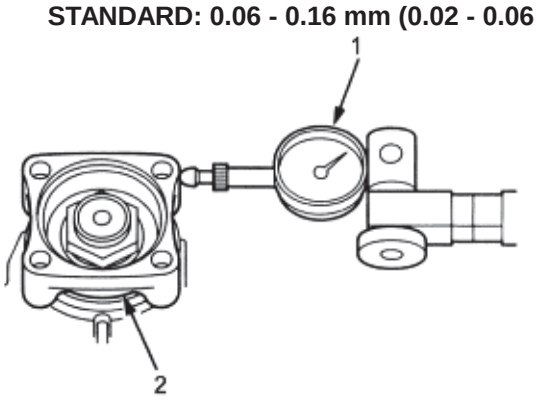
TORQUE SPECIFICATIONS

Bolt/Nut No.	Torque Value	Size	Remarks
6A	12 Nm (1.2 kgf/m, 8.7 lbf/ft)	6 x 1.0 mm	
8C	24 Nm (2.4 kgf/m, 17 lbf/ft)	8 x 1.25mm	
22L	118 Nm (12.0 kgf/m, 87 lbf/ft)	22 x 1.25 mm	Transfer shaft locknut: Left-hand threads.
22H	132 - 216 Nm (13.5 - 22.0 kgf/m, 98 - 159 lbf/ft)	22 x 1.25 mm	Transfer driven gear shaft locknut Tighten torque: depending on Total Starting Torque valve

NOTE: To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.

Transfer Gear (Hypoid gear) Backlash Measurement

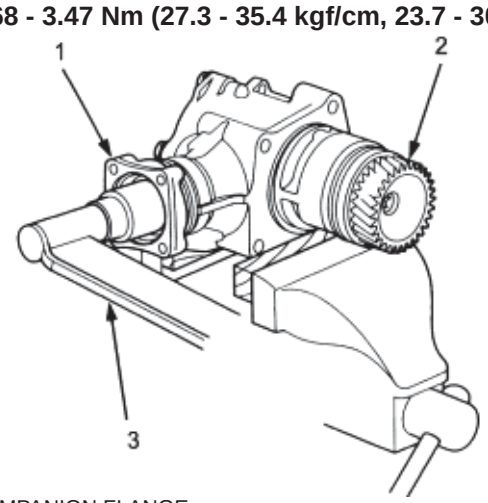
1. Set a dial indicator on the companion flange as shown.
2. Measure the transfer gear backlash.
   STANDARD: 0.06 - 0.16 mm (0.02 - 0.06 in)



1. DUAL INDICATOR
2. COMPANION FLANGE

Total Starting Torque Measurement

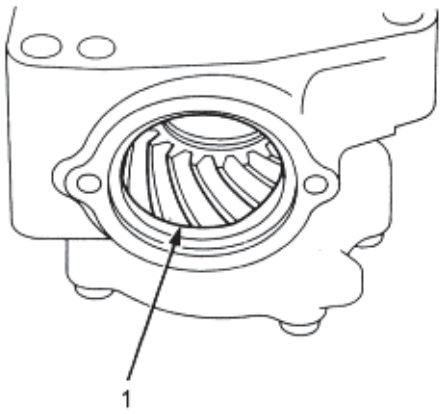
3. Rotate the companion flange several times to seat the tapered roller bearing.
4. Measure the starting torque (companion flange side) using a torque wrench as shown.
   STANDARD:
   2.68 - 3.47 Nm (27.3 - 35.4 kgf/cm, 23.7 - 30.7 lbf/in)



1. COMPANION FLANGE
2. TRANSFER SHAFT
3. TORQUE WRENCH

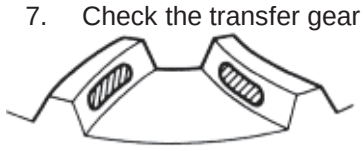
Transfer Gear (Hypoid gear) Tooth Contract Inspection

5. Remove transfer cover B, then apply Prussian Blue to both sides of the transfer gear teeth lightly and evenly.



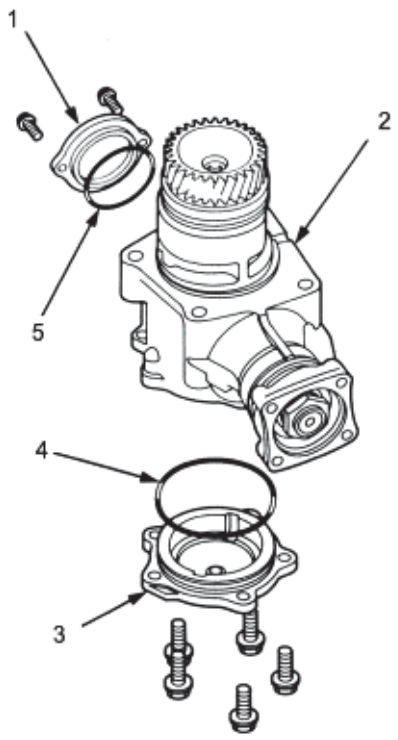
1. TRANSFER DRIVE GEAR

6. Rotate the companion flange in both directions until the transfer gear rotates one full turn in both directions.
7. Check the transfer gear tooth contact pattern.



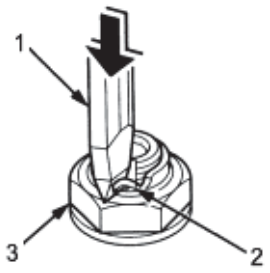
8. If the measurements or the tooth contact pattern are not within the standard, disassembly the transfer assembly, replace worn or damaged parts and reassemble it.

1. Remove the transfer covers A and B.



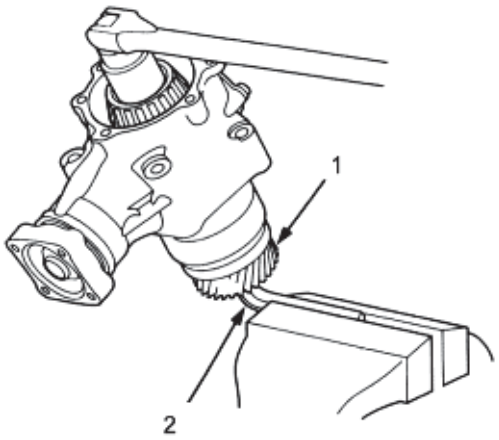
1. TRANSFER COVER B
2. TRANSFER HOUSING
3. TRANSFER COVER A
4. 0-RING, Replace
5. O-RING, Replace

2. Cut the lock tabs of the locknut using a chisel.



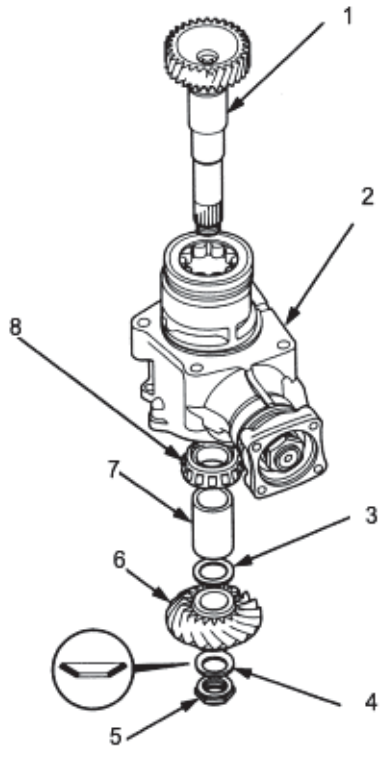
1. CHISEL
2. LOCK TAB
3. LOCKNUT

3. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice.
4. Remove the transfer shaft locknut and the conical spring washer. The transfer shaft locknut has left-hand threads.



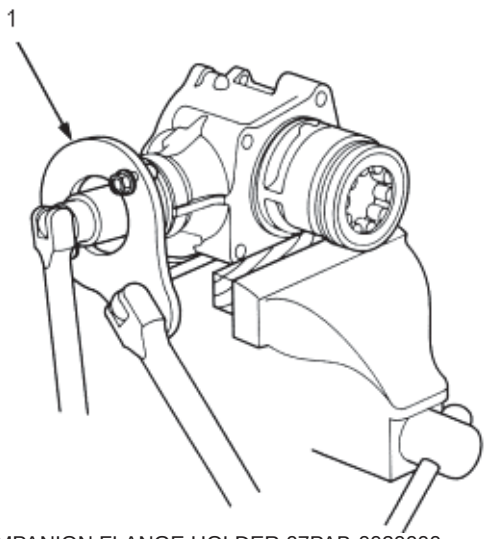
1. TRANSFER SHAFT
2. 14 mm, ALLEN WRENCH

5. Remove the transfer shaft, transfer drive gear, 25 mm thrust shim, transfer shaft collar and tapered roller bearing from the transfer housing.



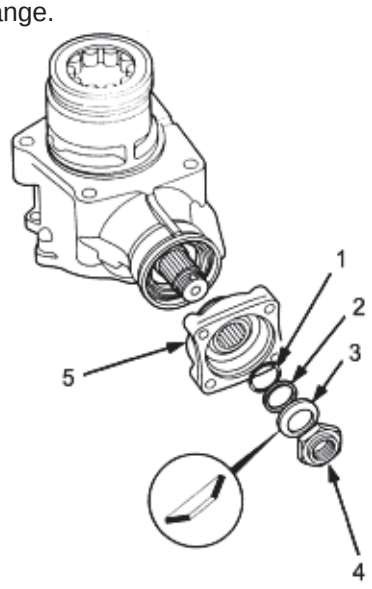
1. TRANSFER SHAFT
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

6. Secure the transfer housing in a bench vice with soft jaws. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.
7. Install the special tool on the companion flange, then loosen the transfer driven gear shaft locknut.



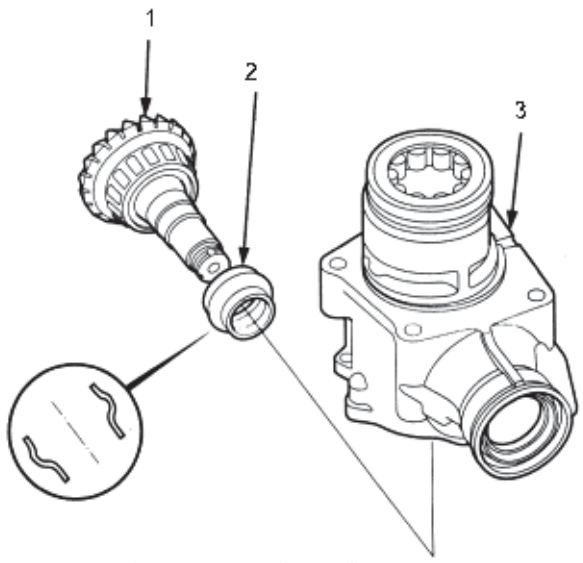
1. COMPANION FLANGE HOLDER 07PAB-0020000

8. Remove the transfer driven gear shaft locknut, conical spring washer, back-up ring, O-ring and companion flange.



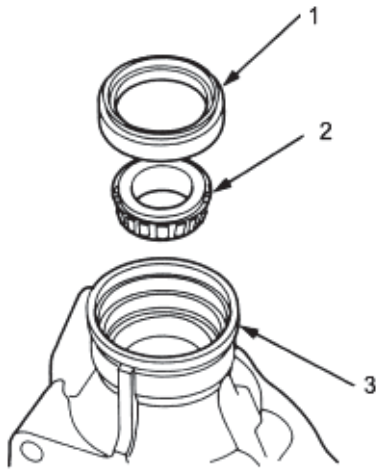
1. O-RING, Replace
2. BACK-UP RING
3. CONICAL SPRING WASHER, Replace
4. TRANSFER DRIVEN GEAR SHAFT LOCKNUT, Replace
5. COMPANION FLANGE

9. Remove the transfer driven gear shaft, then remove the transfer spacer from the transfer driven gear shaft.



1. TRANSFER DRIVEN GEAR SHAFT
2. TRANSFER SPACER, Replace
3. TRANSFER HOUSING

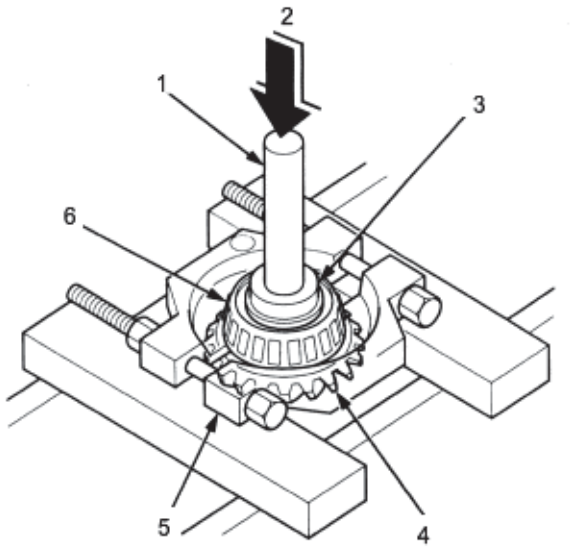
10. Remove the oil seal and the tapered roller bearing from the transfer housing.



1. OIL SEAL, Replace
2. TAPERED ROLLER BEARING
3. TRANSFER HOUSING

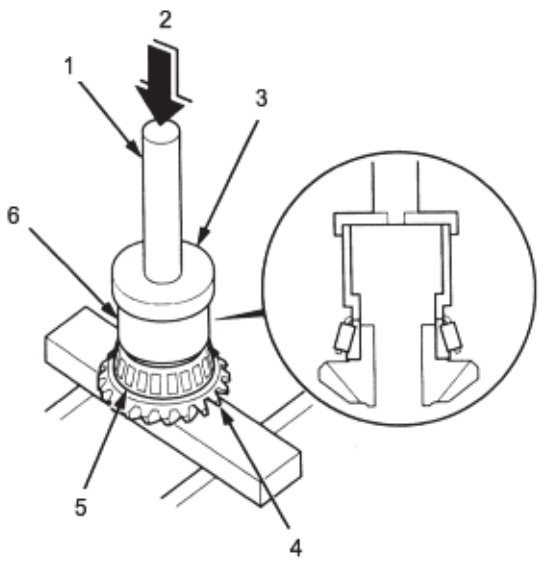
NOTE: Coat all parts with transmission fluid during reassembly.

1. Remove the tapered roller bearing from the transfer drive gear using the special tools and a press.



1. HANDLE DRIVER, 07749-0010000
2. PRESS
3. DRIVER ATTACHMENT, 37 X 40 mm, 07746-0010200
4. TRANSFER DRIVE GEAR
5. BEARING SEPARATOR, (Commercially available)
6. TAPERED ROLLER BEARING

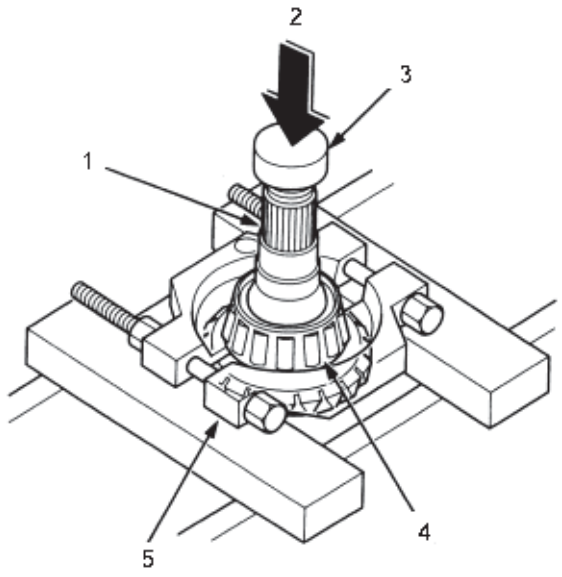
2. Install the new tapered roller bearing in the transfer drive gear using the special tools and a press.



1. HANDLE DRIVER, 07749-0010000
2. PRESS
3. DRIVER ATTACHMENT such as 07947-SD90200
4. TRANSFER DRIVE GEAR
5. TAPERED ROLLER BEARING
6. INNER RACE DRIVER, 07LAD-PW50601

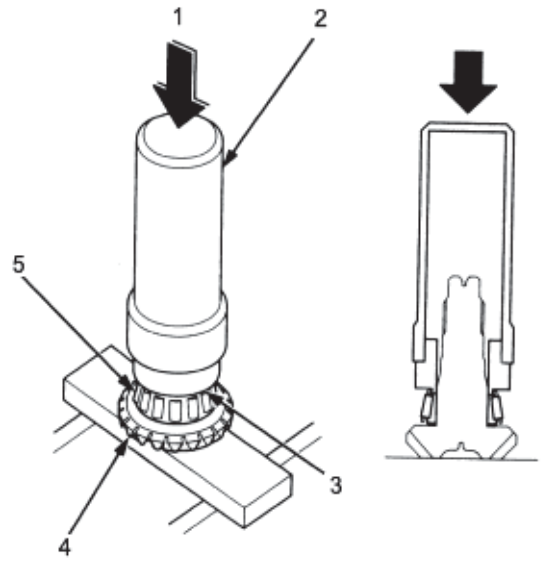
NOTE: Coat all parts with transmission fluid during reassembly.

1. Remove the tapered droller bearing from the transfer driven gear shaft using a press and a collar.



1. TRANSFER DRIVEN GEAR SHAFT
2. PRESS
3. COLLAR
4. TAPERED ROLLER BEARING
5. BEARING SEPARATOR, (Commercially available)

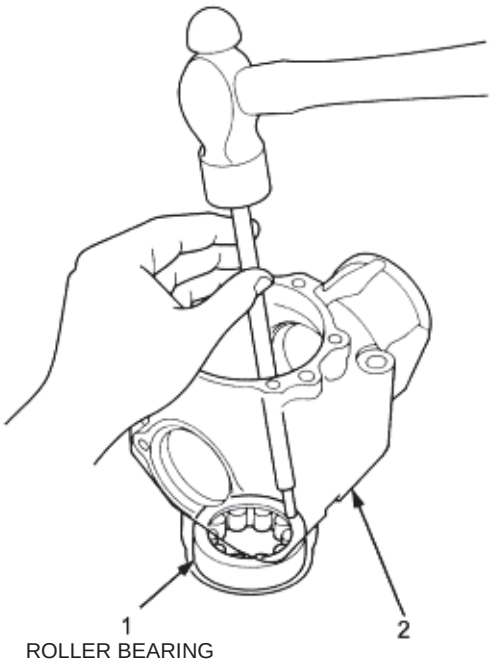
2. Install the 35 mm thrust shim on the transfer driven gear shaft.
3. Install the new tapered roller bearing on the transfer driven gear shaft using the special tools and a press.



1. PRESS
2. DRIVER 40 mm, I.D. 07746-0030100
3. DRIVER ATTACHMENT, 35 mm, I.D. 07746-0030400
4. TRANSFER DRIVEN GEAR SHAFT
5. TAPERED ROLLER BEARING

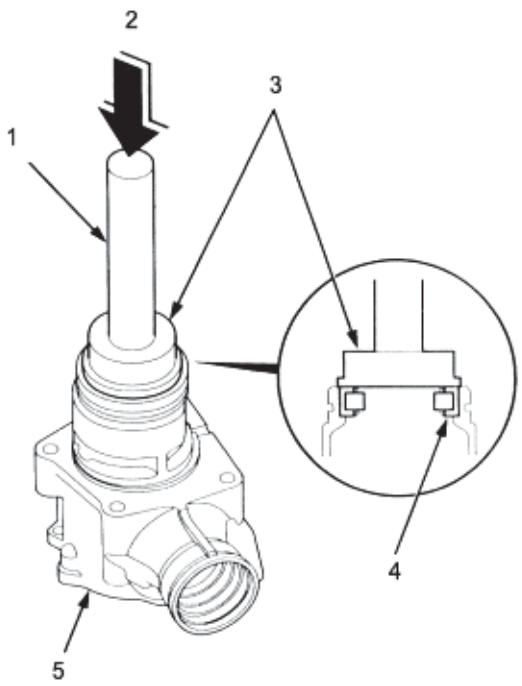
NOTE: Coat all parts with transmission fluid during reassembly.

1. Remove the roller bearing from the transfer housing.



1. ROLLER BEARING
2. TRANSFER HOUSING

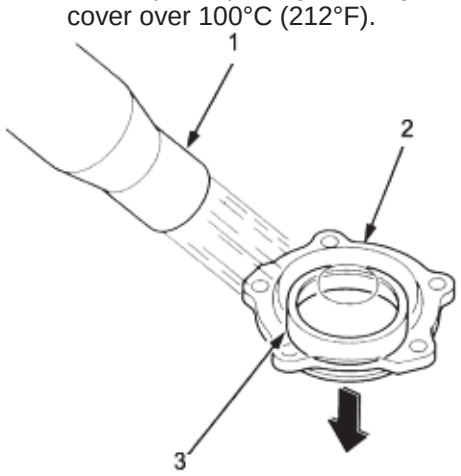
2. Install the new roller bearing using the special tools and a press.



1. HANDLE DRIVER, 07749-0010000
2. PRESS
3. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
4. ROLLER BEARING
5. TRANSFER HOUSING

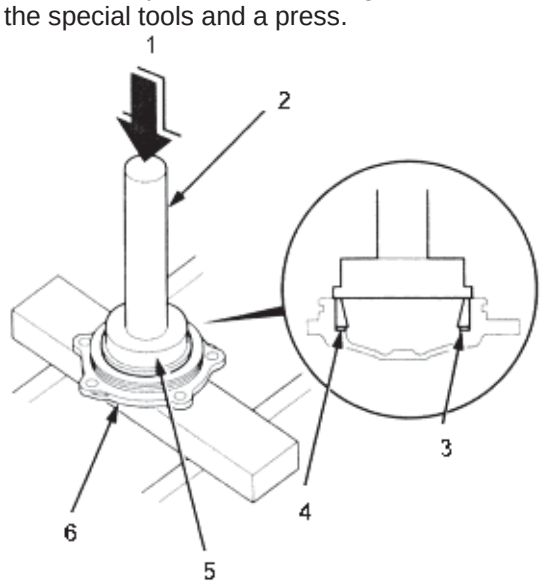
NOTE: Coat all parts with transmission fluid during reassembly.

1. Remove the tapered roller bearing outer race from transfer cover A by heating the cover to almost 100°C (212°F) using a heat gun. Do not heat the cover over 100°C (212°F).



1. HEAT GUN
2. TRANSFER COVER A
3. BEARING OUTER RACE

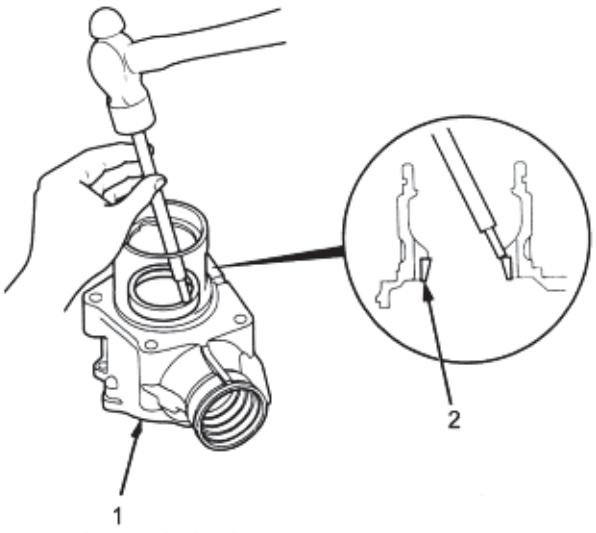
2. Install the 68 mm thrust shim in transfer cover A.
3. Install the tapered roller bearing outer race using the special tools and a press.



1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. THRUST SHIM, 68 mm
4. BEARING OUTER RACE
5. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
6. TRANSFER COVER A

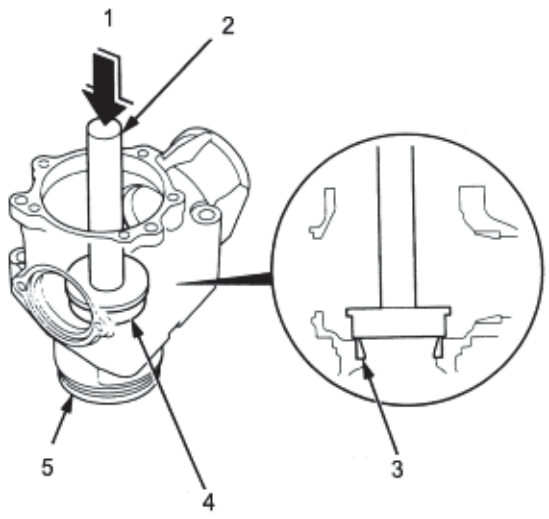
NOTE: Coat all parts with transmission fluid during reassembly.

1. Remove the tapered roller bearing outer race from the transfer housing.



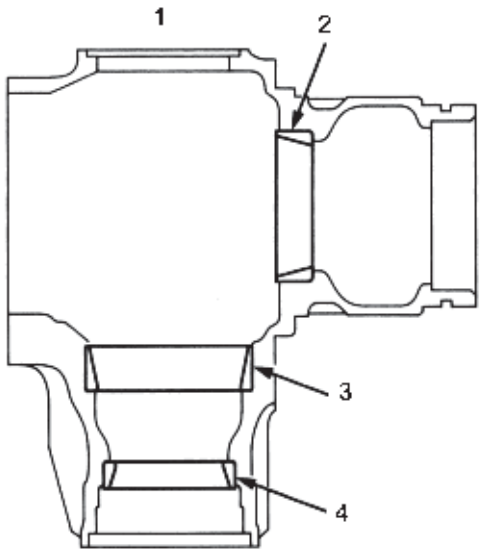
1. TRANSFER HOUSING
2. BEARING OUTER RACE

2. Install the new tapered roller bearing outer race using the special tools and a press.



1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. BEARING OUTER RACE
4. DRIVER ATTACHMENT
5. TRANSFER HOUSING

Bearing Outer Race Locations and Special Tool Applications.



1. TRANSFER HOUSING, Sectional view
2. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
3. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
4. DRIVER ATTACHMENT, 52 x 55 mm, 07746-0010400

NOTE:
- While reassembly the transfer assembly:
  - Check and adjust the transfer gear tooth contact.
  - Measure and adjust the transfer gear backlash
  - Check and adjust the tapered roller bearing starting torque.
- Coat all parts with transmission fluid during reassembly.
- Replace the tapered roller bearing and the bearing outer race a set if either part is replaced.
- Replace the transfer drive gear and the transfer driven gear shaft as a set if either part is replaced.

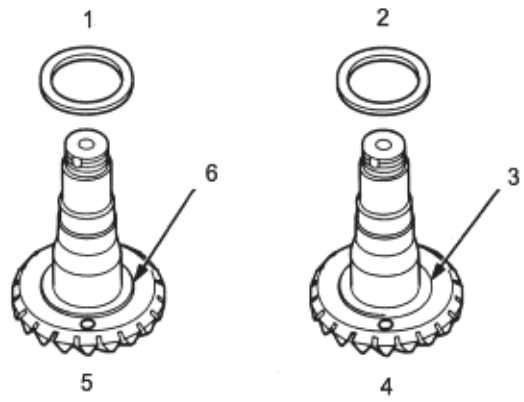
Outline of Assembly

1. **Select the 35 mm thrust shim.**
   Perform this procedure if the transfer driven gear shaft or the tapered roller bearing on the transfer driven gear shaft is replaced.
2. **Preassemble the parts to check and adjust transfer gear backlash and transfer gear tooth contact.**
3. **Disassemble the parts, then assemble the transfer driven gear shaft and its related parts.**
4. **Measure and adjust the starting torque of the transfer driven gear shaft tapered roller bearing.**
5. **Assemble the transfer shaft and its related parts.**
6. **Measure and adjust the total starting torque.**

35 mm Thrust Shim Selection.

1. Select the 35 mm thrust shim if the transfer driven gear shaft or the tapered roller bearing on the transfer driven gear shaft is replaced.
   Calculate the thickness of the 35 mm thrust shim using the formula below:
   FORMULA: $\frac{A}{100} - \frac{B}{100} + C = X$
   A: Number on the existing transfer driven gear shaft
   B: Number on the replacement transfer driven gear shaft
   C: Thickness of the existing 35 mm thrust shim
   X: Thickness needed for the replacement 35 mm thrust shim
   NOTE: The number on the transfer driven gear shaft is shown in 1/100 mm.

EXAMPLE:



1. C: EXISTING 35 mm, THRUST SHIM Thickness: C=1.05 mm
2. X: REPLACEMENT 35 mm, THRUST SHIM Thickness: X=??
3. Number: B= - 1
4. B: REPLACEMENT TRANSFER DRIVEN GEAR SHAFT
5. A: EXISTING TRANSFER DRIVEN GEAR SHAFT

$$X = \frac{A}{100} - \frac{B}{100} + C$$
$$= \frac{2}{100} - \frac{-1}{100} + 1.05$$
$$= 0.02 + 0.01 + 1.05$$
$$= 1.08 \text{ (mm)}$$

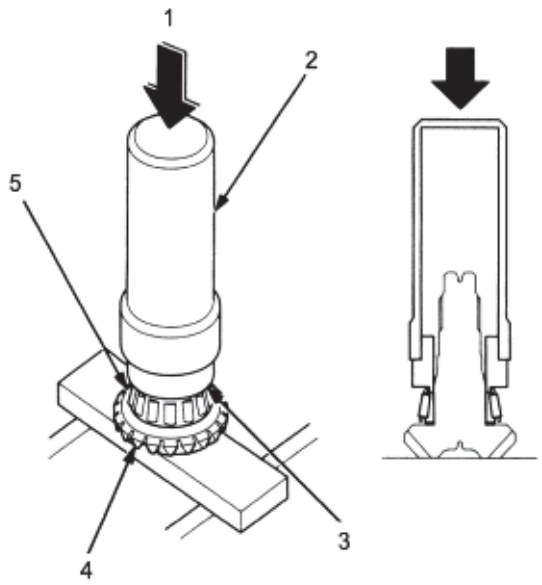
Select 35 mm thrust shim thickness of 1.08 mm (0.043 in). If the tapered roller bearing on the transfer driven gear shaft is replaced.
Measure the thickness of the replacement bearing and the existing bearing and calculate the difference of the bearing thickness. Adjust the thickness of the existing 35 mm thrust shim by the amount of difference in bearing thickness and select the replacement 35 mm thrust shim.

THRUST SHIM, 35 mm

Shim No.	Part Number	Thickness
A	41361-PS3-000	0.72 mm (0.028 in)
B	41362-PS3-000	0.75 mm (0.030 in)
C	41363-PS3-000	0.78 mm (0.031 in)
D	41364-PS3-000	0.81 mm (0.032 in)
E	41365-PS3-000	0.84 mm (0.033 in)
F	41366-PS3-000	0.87 mm (0.034 in)
G	41367-PS3-000	0.90 mm (0.035 in)
H	41368-PS3-000	0.93 mm (0.037 in)
I	41369-PS3-000	0.96 mm (0.038 in)
J	41370-PS3-000	0.99 mm (0.039 in)
K	41371-PS3-000	1.02 mm (0.040 in)
L	41372-PS3-000	1.05 mm (0.041 in)
M	41373-PS3-000	1.08 mm (0.043 in)
N	41374-PS3-000	1.11 mm (0.044 in)

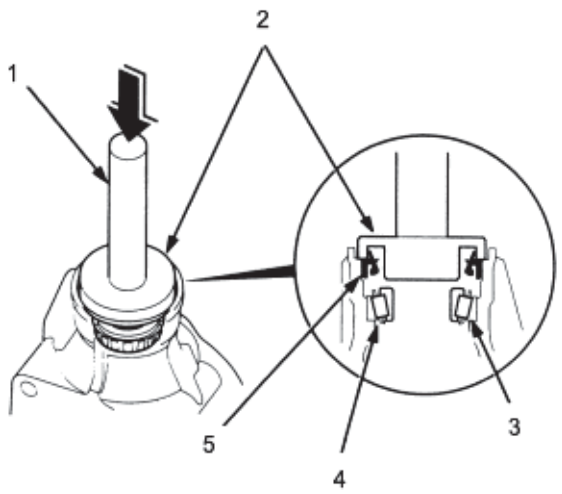
Transfer Gear Backlash Inspection and Transfer Gear Tooth Contact Inspection

2. Install the 35 mm thrust shim on the transfer driven gear shaft, then install the tapered roller bearing using the special tools and a press.



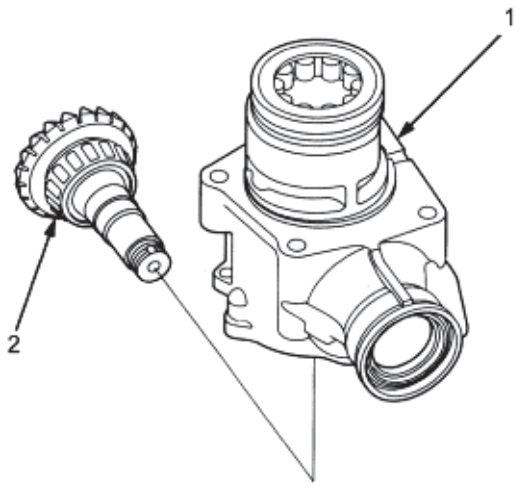
1. PRESS
2. DRIVER 40 mm, I.D. 07746-0030100
3. DRIVER ATTACHMENT, 35 mm, I.D. 07746-0030400
4. TRANSFER DRIVEN GEAR SHAFT
5. TAPERED ROLLER BEARING

3. Place the tapered roller bearing on the bearing outer race of the companion flange side of the transfer housing.
4. Install the new oil seal on the transfer housing using the special tools.



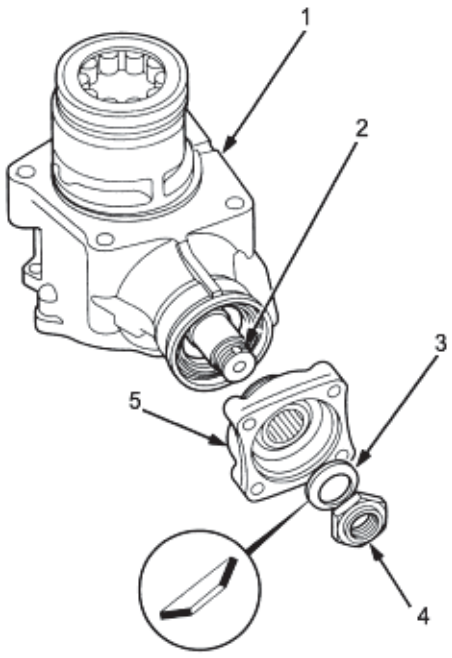
1. HANDLE DRIVER, 07749-0010000
2. DRIVER ATTACHMENT, 58 mm, 07JAD-PH80101
3. BEARING OUTER RACE
4. TAPERED ROLLER BEARING
5. OIL SEAL, Replace

5. Install the transfer driven gear shaft in the transfer housing. Do not install the transfer spacer on the transfer driven gear shaft in this step.



1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT

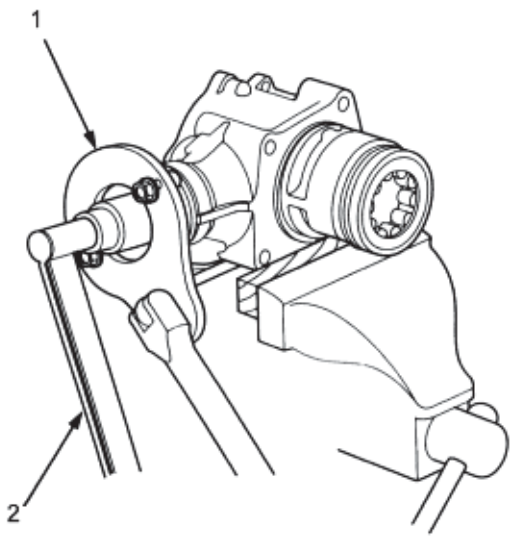
6. Install the companion flange, conical spring washer and locknut on the transfer driven gear shaft. Do not install the O-ring and the back-up ring on the transfer gear shaft in this step.



1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT
3. CONICAL SPRING WASHER, Install in this direction
4. LOCKNUT
5. COMPANION FLANGE

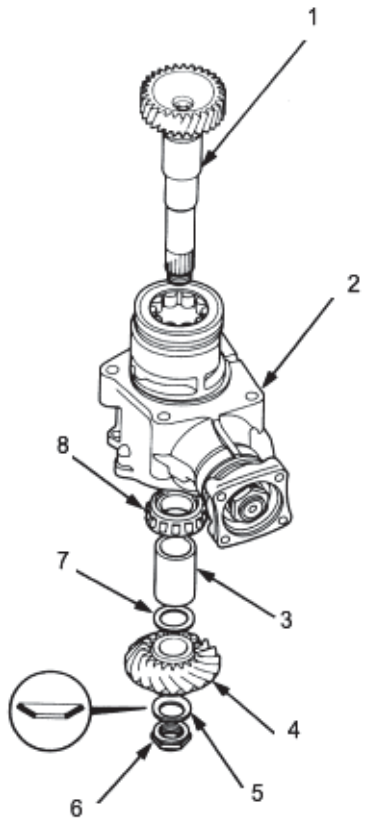
7. Secure the transfer housing in a bench vice with soft jaws, then install the special tool on the companion flange. To prevent damage to the transfer housing, always use soft jaws or equivalent materials between the transfer housing and the vice.
8. Tighten the locknut while measuring the starting torque so the start torque is within 0.98 - 1.39 Nm (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in).
   NOTE:
   - Coat the threads of the locknut and the shaft with transmission fluid before installing the locknut.
   - Do not state the locknut in this step.

   STARTING TORQUE:
   0.98 - 1.39 Nm
   (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in)



1. COMPANION FLANGE HOLDER, 07PAB-0010000
2. TORQUE WRENCH

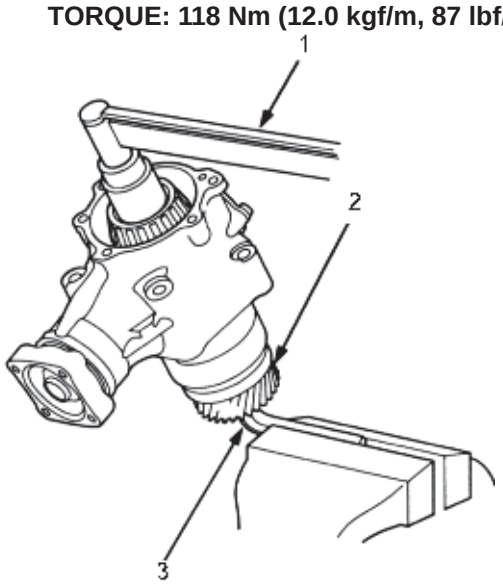
9. Install the transfer shaft in the transfer housing, then install the tapered roller bearing, transfer shaft collar, 25 mm thrust shim, transfer drive gear, conical spring washer and locknut on the transfer shaft.
   NOTE:
   - Coat the threads of the locknut and the shaft with transmission fluid before installing the locknut.
   - Do not stake the locknut in this step.



1. TRANSFER SHAFT
2. TRANSFER HOUSING
3. TRANSFER SHAFT COLLAR
4. TRANSFER DRIVE GEAR
5. CONICAL SPRING WASHER, Replace
6. LOCKNUT Replace.
7. THRUST SHIM, 25 mm, Selective part.
8. TAPERED ROLLER BEARING

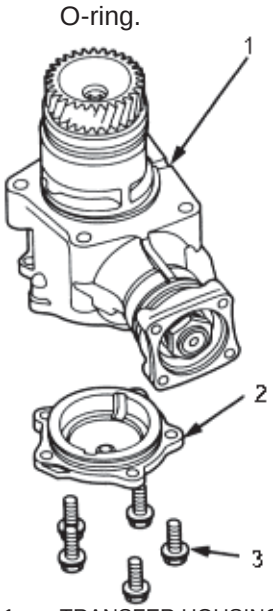
10. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice.
11. Tighten the transfer shaft locknut.
    NOTE:
    - The transfer shaft locknut has left-hand threads.
    - Do not state the locknut in this step.

    TORQUE: 118 Nm (12.0 kgf/m, 87 lbf/ft)



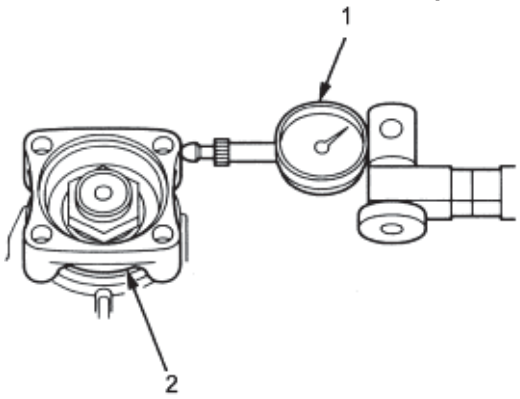
1. TORQUE WRENCH
2. TRANSFER SHAFT
3. 14 mm, ALLEN WRENCH

12. Temporarily install the transfer cover A without the O-ring.



1. TRANSFER HOUSING
2. TRANSFER COVER A
3. 8 x 1.25 mm, 24 Nm, (2.4 kgf/m, 17 lbf/ft)

13. Rotate the companion flange several times to seat the tapered roller bearing.
14. Set a dial indicator on the companion flange, then measure the transfer gear backlash.
    STANDARD: 0.06 - 0.16 mm (0.02 - 0.06 in)



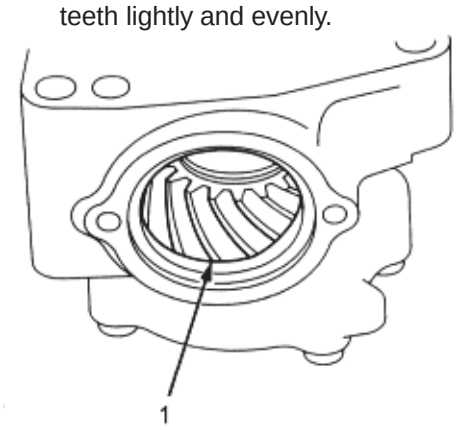
1. DIAL INDICATOR
2. COMPANION FLANGE

15. If the measurement is not within the standard, remove the transfer shaft locknut and replace the 25 mm thrust shim, then recheck the measurement. Do not use more than two 25 mm thrust shims to adjust the transfer gear backlash.

THRUST SHIM, 25 mm

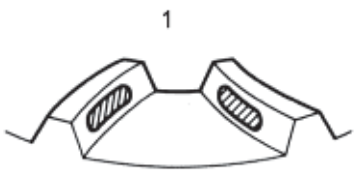
Shim No.	Part Number	Thickness
1	29411-P1C 000	1.70 mm (0.067 in)
2	29412-P1C-000	1.73 mm (0.068 in)
3	29413-P1C-000	1.76 mm (0.069 in)
4	29414-P1C-000	1.79 mm (0.070 in)
5	29415-P1C-000	1.82 mm (0.072 in)
6	29416-P1C-000	1.85 mm (0.073 in)
7	29417-P1C-000	1.88 mm (0.074 in)
8	29418-P1C-000	1.91 mm (0.075 in)
9	29419-P1C-000	1.94 mm (0.076 in)
10	29420-P1C-000	1.97 mm (0.078 in)
11	29421-P1C-000	2.00 mm (0.079 in)
12	29422-P1C-000	2.03 mm (0.080 in)
13	29423-P1C-000	2.06 mm (0.081 in)
14	29424-P1C-000	2.09 mm (0.082 in)
15	29425-P1C-000	2.12 mm (0.083 in)
16	29426-P1C-000	2.15 mm (0.085 in)
17	29427-P1C-000	2.18 mm (0.086 in)
18	29428-P1C-000	2.21 mm (0.087 in)
19	29429-P1C-000	2.24 mm (0.088 in)

16 Apply Prussian Blue to both sides of the transfer gear teeth lightly and evenly.

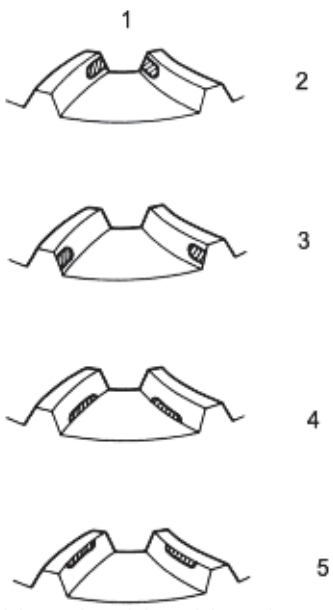


1. TRANSFER DRIVE GEAR

17. Rotate the companion flange in both directions until the transfer gear rotates one full tun in both directions.
18. Check the transfer gear tooth contact pattern.



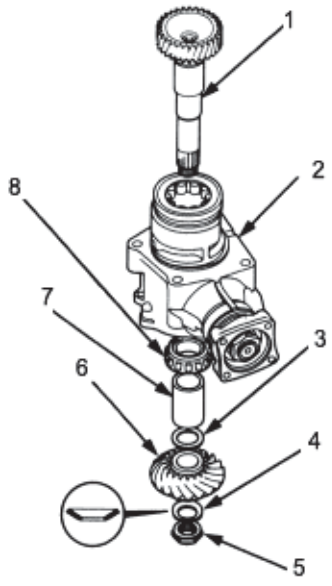
1. CORRECT TOOTH CONTACT PATTERN



1. INCORRECT TOOTH CONTACT PATTERN
2. TOE CONTACT
3. HEEL CONTACT
4. FLANK CONTACT
5. FACE CONTACT

19. If the transfer gear tooth contact is incorrect, adjust the transfer gear tooth contact with a 35 mm or 25 mm thrust shim.
NOTE:
    - To select a 35 mm thrust shim, (**See Page** 14-140).
    - Do not use more than two 35 mm shims to adjust the transfer gear tooth contact.
    - To select the 25 mm thrust shim, (**See Page** 14-143).
    - Do not use more than two 25 mm shims to adjust the transfer gear tooth contact.
    - **Toe Contact**
      Use a thicker 35 mm thrust shim to move the transfer driven gear shaft toward the transfer drive gear. Because this movement causes the transfer gear backlash to change, move the transfer drive gear away from the transfer driven gear shaft to adjust the transfer gear backlash as follows:
        - Increase the thickness of the 25 mm thrust shim.
        - Reduce the thickness of increased thickness of the 25 mm thrust shim.
    - **Heel Contact**
      Use a thinner 35 mm thrust shim to move the transfer driven gear shaft away from the transfer drive gear. Because this movement causes the transfer gear backlash to change, move the transfer drive gear toward the transfer driven gear shaft to adjust the transfer gear backlash as follows:
        - Reduce the thickness of the 25 mm thrust shim.
        - Increase the thickness of the 68 mm thrust shim by the amount of reduced thickness of the 25 mm thrust shim.
    - **Flank Contact**
      Use a thinner thrust shim to move the transfer drive gear toward the transfer driven gear shaft. Flank contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Heel Contact.
    - **Face Contact**
      Use a thicker thrust shim to move the transfer drive gear away from the transfer driven gear shaft. Face contact must be adjusted within the limits of the transfer gear backlash. If the backlash exceeds the limits, adjust as described under Toe Contact.

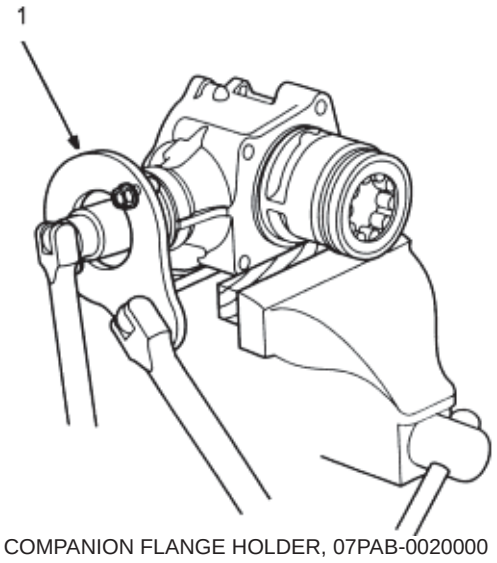
20. Remove the parts on the transfer shaft and remove the transfer shaft from the transfer housing.



1. TRANSFER SHAFT
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part.
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

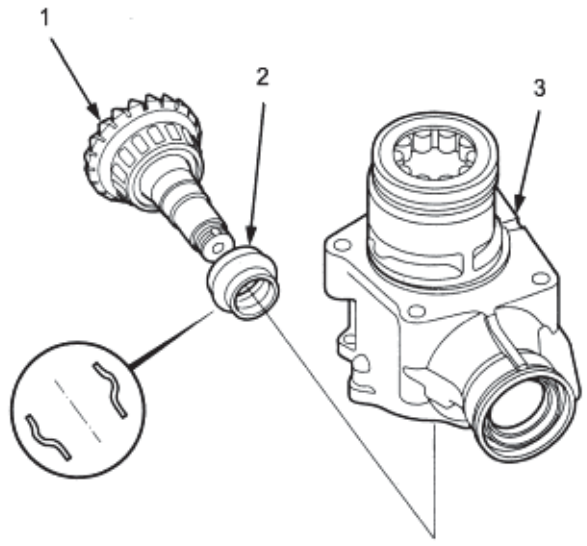
Transfer Driven Gear Shaft Starting Torque Inspection and Adjustment.

21. Secure the transfer housing in a bench vice with soft jaws. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
22. Install the special tool on the companion flange, then remove the transfer driven gear shaft locknut and the conical spring washer.



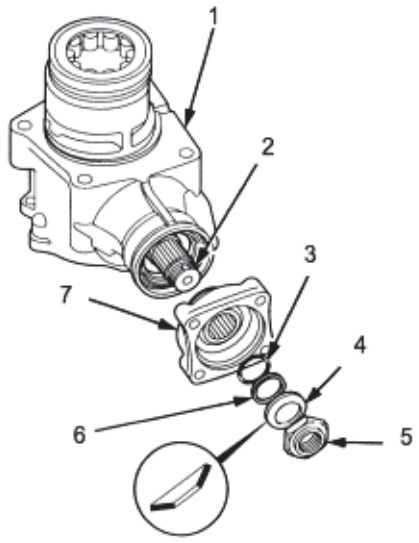
1. COMPANION FLANGE HOLDER, 07PAB-0020000

23. Remove the transfer driven gear shaft and the companion flange.
24. Install the new transfer spacer on the transfer driven gear shaft, then install them in the transfer housing.



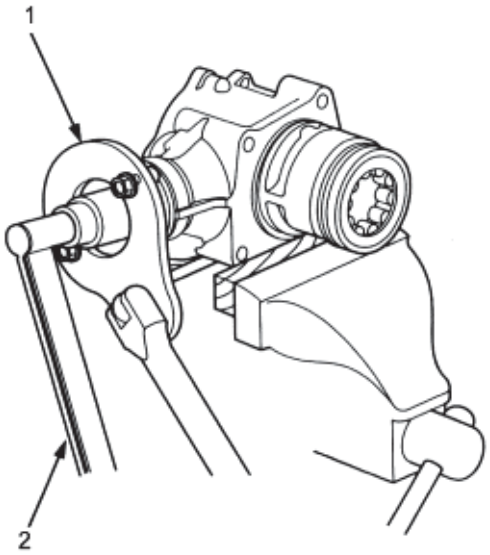
1. TRANSFER DRIVEN GEAR SHAFT
2. TRANSFER SPACER, Install in this direction.
3. TRANSFER HOUSING

25. Install the companion flange, O-ring, back-up ring, conical spring washer and locknut on the transfer driven gear shaft.
    NOTE:
    - Coat the threads of the locknut and transfer shaft with transmission fluid before installing the locknut.
    - Install the conical spring washer in the direction shown.



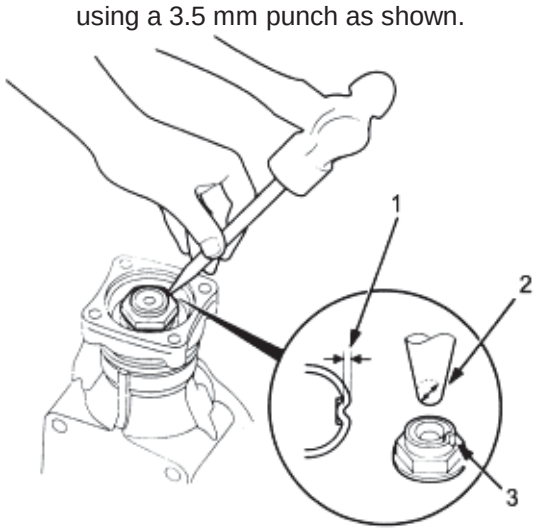
1. TRANSFER HOUSING
2. TRANSFER DRIVEN GEAR SHAFT
3. O-RING Replace.
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT Replace.
6. BACK-UP RING
7. COMPANION FLANGE

26. Secure the transfer housing in a bench vice with soft jaws. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
27. Install the special tool on the companion flange, then tighten the transfer driven gear shaft locknut while measuring the starting torque of the transfer driven gear shaft.
    STARTING TORQUE:
    0.98 - 1.39 Nm
    (10.0 - 14.2 kgf/cm, 8.68 - 12.3 lbf/in)
    TIGHTENING TORQUE:
    132 - 216 Nm
    (13.5 - 22.0 kgf/m, 98 - 159 lbf/ft)
    NOTE:
    - Rotate the companion flange several times to seat the tapered roller bearing, then measure the starting torque.
    - If the starting torque exceeds 1.39 Nm (14.2 kgf/cm, 12.3 lbf/in), replace the transfer spacer and reassemble the parts. Do not adjust the torque with the locknut loose.
    - If the tightening torque exceeds 216 Nm (22.0 kgf/m, 159 lbf/ft), replace the transfer spacer and reassemble the parts.
    - Write down the measurement of the starting torque: it is used to measure the total starting torque.



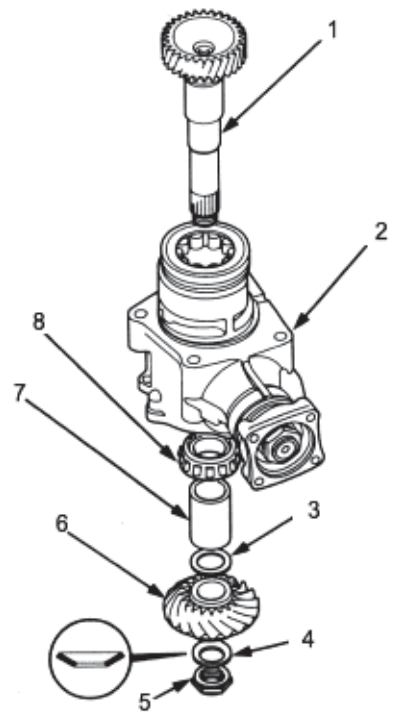
1. COMPANION FLANGE HOLDER, 07PAB-0020000
2. TORQUE WRENCH

28. Stake the locknut into the transfer driven gear shaft using a 3.5 mm punch as shown.



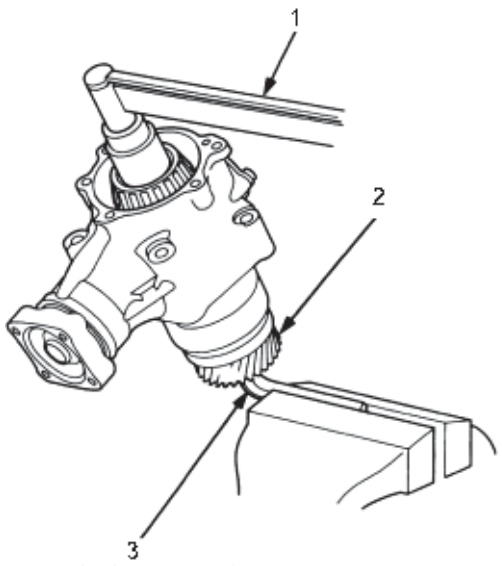
1. 0.7 - 1.2 mm, (0.03 - 0.05 in)
2. PUNCH, 3.0 - 3.5 mm, (0.12 - 0.14 in)
3. Point to be staked

29. Install the transfer shaft in the transfer housing, then install the tapered roller bearing, transfer shaft collar, 25 mm thrust shim, transfer drive gear, conical spring washer and transfer shaft locknut on the transfer.
    NOTE:
    - Coat the threads of the locknut and transfer shaft with transmission fluid before installing the locknut.
    - Install the conical spring washer in the direction shown.



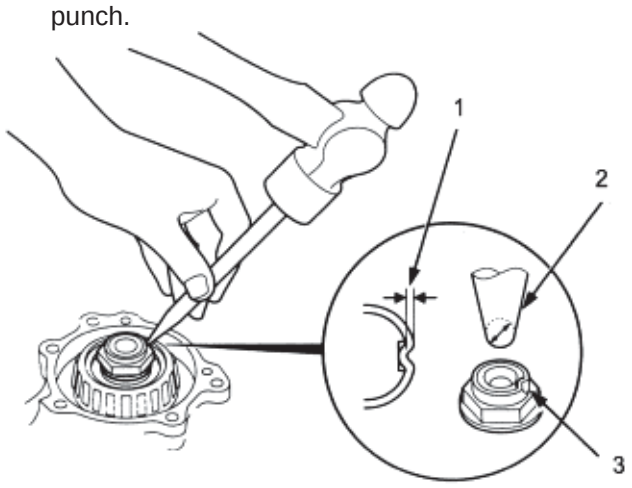
1. TRANSFER SHAFT
2. TRANSFER HOUSING
3. THRUST SHIM, 25 mm, Selective part
4. CONICAL SPRING WASHER, Replace
5. LOCKNUT, Replace
6. TRANSFER DRIVE GEAR
7. TRANSFER SHAFT COLLAR
8. TAPERED ROLLER BEARING

30. Put a 14 mm Allen wrench in the gear side of the transfer shaft, then secure the Allen wrench in a bench vice. Tighten the transfer shaft locknut. (The locknut has left-hand threads.
    TORQUE: 118 Nm (12.0 kgf/m, 87 lbf/ft)



1. TORQUE WRENCH
2. TRANSFER SHAFT
3. 14 mm, ALLEN WRENCH

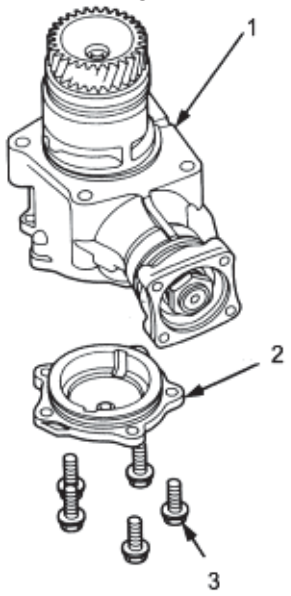
31. Stake the locknut on the transfer shaft using a 3.5 mm punch.



1. 0.7 - 1.2 mm, (0.03 - 0.05 in)
2. PUNCH, 3.0 - 3.5 mm, (0.12 - 0.14 in)
3. Point to be staked

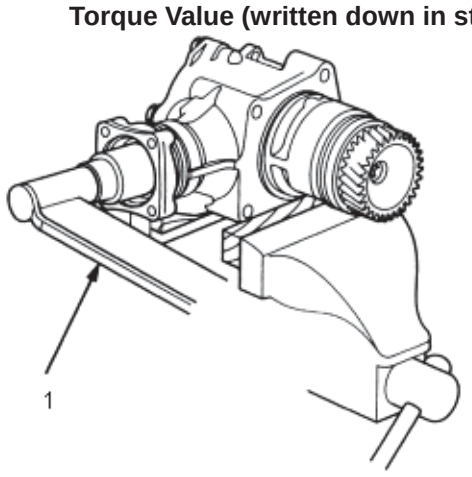
Total Starting Torque Inspection and Adjustment

32. Temporarily install transfer cover A without the O-ring.



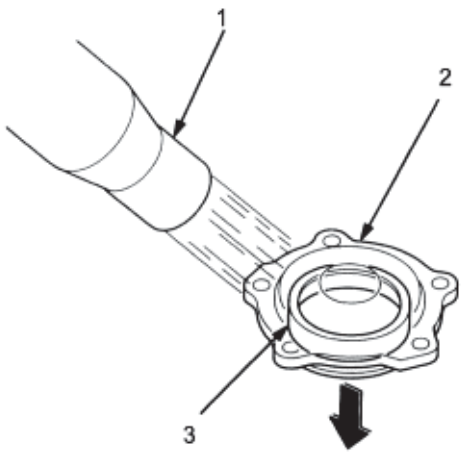
1. TRANSFER HOUSING
2. TRANSFER COVER A
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

33. Secure the transfer housing in a bench vice with soft jaws, then rotate the companion flange several times to fit the tapered roller bearing. To prevent damage, always use soft jaws or equivalent materials between the transfer housing and the vice.
34. Measure the total starting torque.
    TOTAL STARTING TORQUE:
    1.70 - 2.8 Nm (17.3 - 21.2 kgf/cm, 15.0 - 18.4 lbf/in) + Transfer Driven Gear Shaft Starting Torque Value (written down in step 27).



1. TORQUE WRENCH

35. Remove transfer cover A.
36. If the measurement is out of specification, remove the 68 mm thrust shim from transfer cover A by heating the cover to almost 100°C (212°F) using a heat gun, Do not heat the cover high than 100°C (212°F). Let the cover cool to room temperature before adjusting the starting torque.
    If the measurement is within the specification, go to step 40.

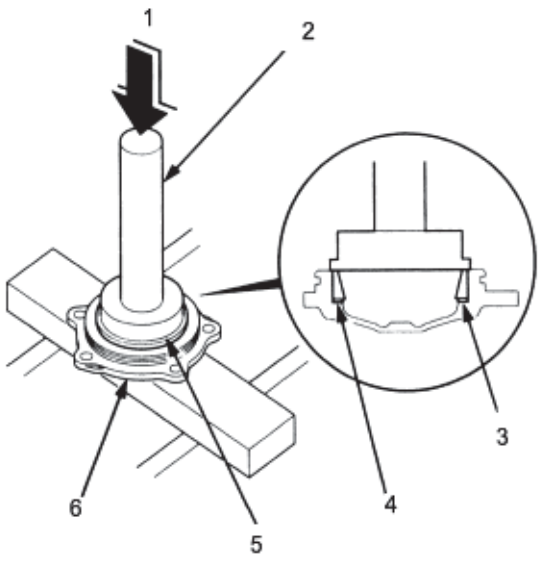


1. HEAT GUN
2. TRANSFER COVER A
3. BEARING OUTER RACE

37. Select the 68 mm thrust shim.

Shim No.	Part Number	Thickness
ZV	23974-P1C 020	1.41 mm (0.056 in)
ZW	23975-P1C-020	1.44 mm (0.057 in)
ZX	23976-P1C-020	1.47 mm (0.058 in)
ZY	23977-P1C-020	1.50 mm (0.059 in)
ZZ	23978-P1C-000	1.53 mm (0.060 in)
A	23941-PW5-000	1.56 mm (0.061 in)
B	23942-PW5-000	1.59 mm (0.063 in)
C	23943-PW5-000	1.62 mm (0.064 in)
D	23944-PW5-000	1.65 mm (0.065 in)
E	23945-PW5-000	1.68 mm (0.066 in)
F	23946-PW5-000	1.71 mm (0.067 in)
G	23947 PW5-000	1.74 mm (0.069 in)
H	23948-PW5-000	1.77 mm (0.070 in)
I	23949-PW5-000	1.80 mm (0.071 in)
J	23950-PW5-000	1.83 mm (0.072 in)
K	23951-PW5-000	1.86 mm (0.073 in)
L	23952-PW5-000	1.89 mm (0.074 in)
M	23953-PW5-000	1.92 mm (0.076 in)
N	23954-PW5-000	1.95 mm (0.077 in)
O	23955-PW5-000	1.98 mm (0.078 in)
P	23956-PW5-000	2.01 mm (0.079 in)
Q	23957-PW5-000	2.04 mm (0.080 in)
R	23958-PW5-000	2.07 mm (0.081 in)
S	23959-PW5-000	2.10 mm (0.082 in)
T	23960-PW5-000	2.13 mm (0.084 in)
U	23961-PW5-000	2.16 mm (0.085 in)
V	23962-PW5-000	2.19 mm (0.086 in)
W	23963-PW5-000	2.22 mm (0.087 in)
X	23964-PW5-000	2.25 mm (0.089 in)
Y	23965-PW5-000	2.28 mm (0.090 in)
Z	23966-PW5-000	2.31 mm (0.091 in)
AA	23967-PW5-000	2.34 mm (0.092 in)
AB	23968-PW5-000	2.37 mm (0.093 in)
AC	23969-PW5-000	2.40 mm (0.094 in)
AD	23970-PW5-000	2.43 mm (0.096 in)
AZ	23941-PW5-000	2.46 mm (0.097 in)
BZ	23942-PW5-000	2.49 mm (0.098 in)
CZ	23943-PW5-000	2.52 mm (0.099 in)
DZ	23944-PW5-000	2.55 mm (0.100 in)
EZ	23945-PW5-000	2.58 mm (0.102 in)

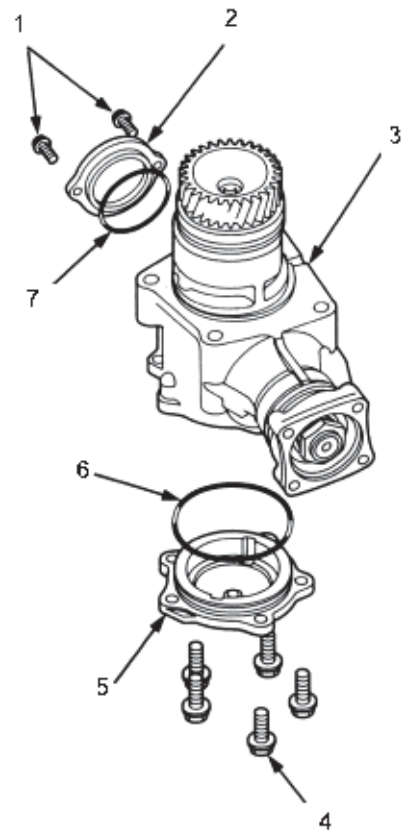
38. Install the 68 mm thrust shim using the special tools.



1. PRESS
2. HANDLE DRIVER, 07749-0010000
3. THRUST SHIM, 68 mm, Selective part
4. BEARING OUTER RACE
5. DRIVER ATTACHMENT, 62 x 68 mm, 07746-0010500
6. TRANSFER COVER A

39. After replacing the 68 mm thrust shim, recheck and make sure the total starting torque is within the specification.

40. Install the new O-rings on transfer covers A and B, then install the covers on the transfer housing.



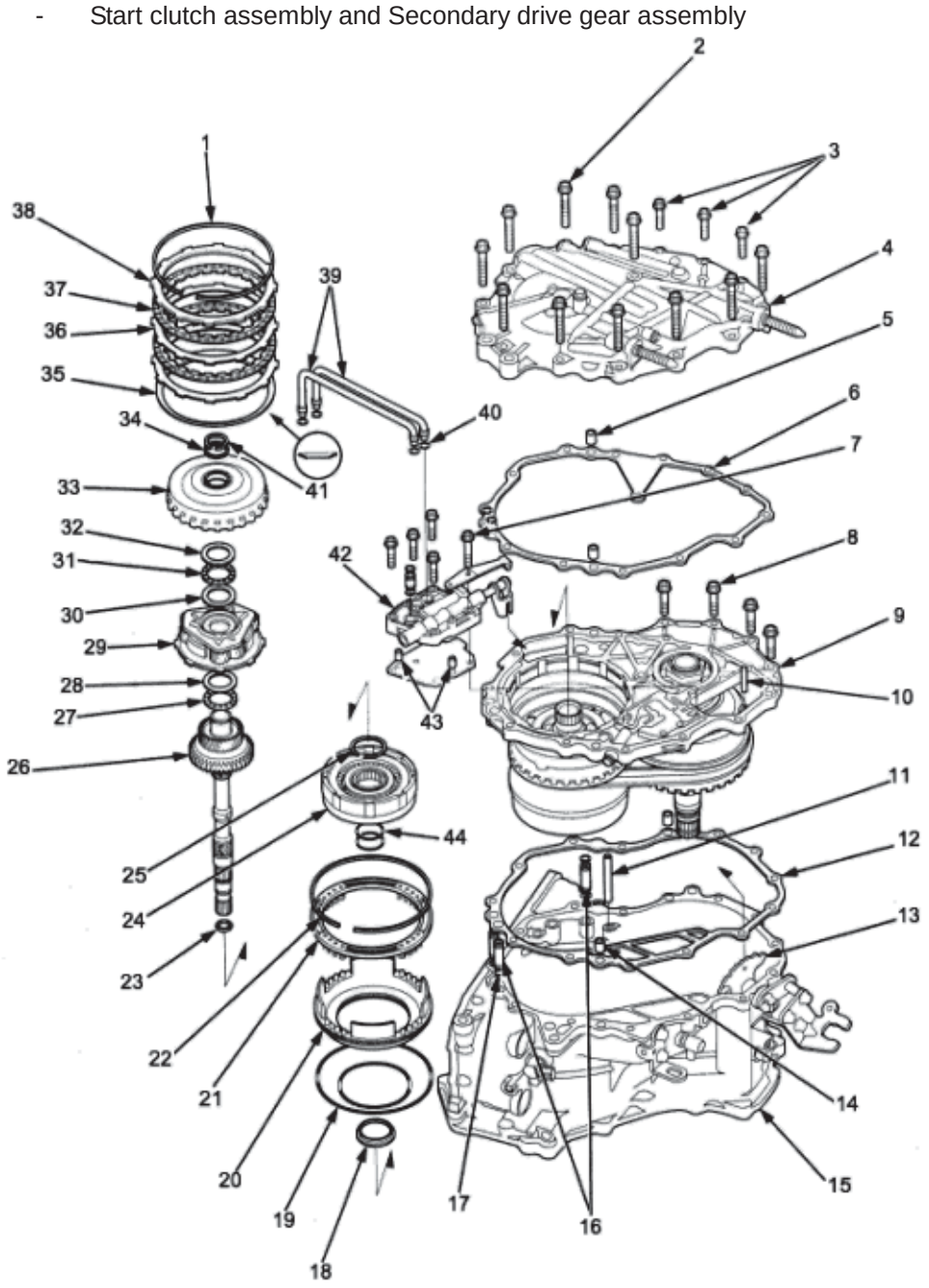
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. TRANSFER COVER B
3. TRANSFER HOUSING
4. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
5. TRANSFER COVER A
6. O-RING, Replace
7. O-RING, Replace

⚠ CAUTION

While reassembling, be sure not to allow dust and other foreign particles to enter into the transmission.

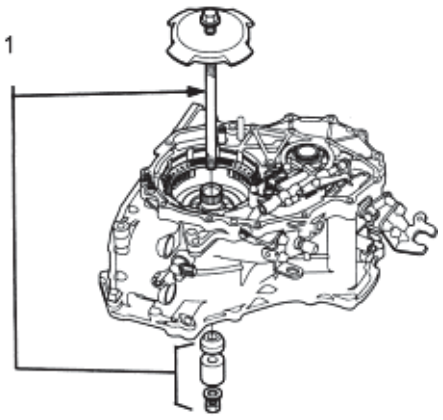
NOTE:

- Coat all parts with transmission fluid.
- Replace the following parts:
  - O-rings
  - Sealing rings
  - Sealing washers
  - Gaskets
  - Start clutch assembly and Secondary drive gear assembly



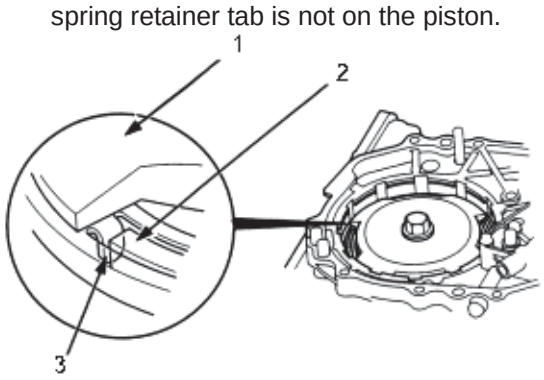
1. **SNAP RING**
2. 8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft) 11 bolts.
3. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft) 3 Bolts
4. **RIGHT SIDE COVER**
5. **DOWEL PIN**
6. **RIGHT SIDE COVER GASKET**
7. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft) 5 bolts
8. 8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft) 4 bolts
9. **INTERMEDIATE HOUSING ASSEMBLY**
10. **ROLLER**
11. **ATF FEED PIPE**
12. **TRANSMISSION HOUSING GASKET**
13. **CONTROL SHAFT ASSEMBLY**
14. **DOWEL PIN**
15. **TRANSMISSION HOUSING**
16. **ATF FEED PIPES**
17. **O-RINGS**
18. **SNAP RING RETAINER**
19. **O-RINGS**
20. **REVERSE BRAKE PISTON**
21. **SPRING RETAINER/RETURN SPRING ASSEMBLY**
22. **SNAP RING**
23. **SEALING RING (RUBBER)**
24. **FORWARD CLUTCH ASSEMBLY**
25. **SNAP RING**
26. **SUN GEAR/INPUT SHAFT ASSEMBLY**
27. **THRUST NEEDLE BEARING**
28. **THRUST WASHER**
29. **CARRIER ASSEMBLY**
30. **THRUST WASHER**
31. **THRUST NEEDLE BEARING**
32. **THRUST WASHER**
33. **RING GEAR**
34. **THRUST SHIM,** 25 x 31 mm, Selective part
35. **DISC SPRING**
36. **PLATE**
37. **DISC**
38. **REVERSE BRAKE END PLATE**
39. **MANUAL VALVE BODY LINES**
40. **O-RINGS**
41. **SNAP RING**
42. **MANUAL VALVE BODY**
43. **DOWEL PIN**
44. **O-RINGS**

1. Install the ATF feed pip in the transmission housing and install the three ATF feed pipes with new O-rings in the transmission housing.
2. Install the two dowel pins and new transmission housing gasket on the transmission housing.
3. Push the control shaft assembly toward the outside of the transmission housing, then install the intermediate housing assembly (four bolts).
4. Install the manual valve body separator plate and the two dowel pins on the intermediate housing, then install the manual valve body with the detent spring (five bolts).
5. Put the control shaft assembly back, then install the roller in the intermediate housing.
6. Install the reverse brake piston in the intermediate housing.
7. Install the spring retainer/return spring assembly on the reverse brake piston.
   NOTE: Install the return springs on the spring guides of the reverse brake piston securely.
8. Install the special tool to compress the return spring as shown.



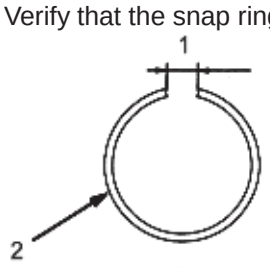
1. REVERSE BRAKE SPRING COMPRESSOR, 07TAE-P4V0110

NOTE: If the spring retainer tab is on the reverse brake piston, the spring retainer may be damaged. Be sure the spring retainer tab is not on the piston.



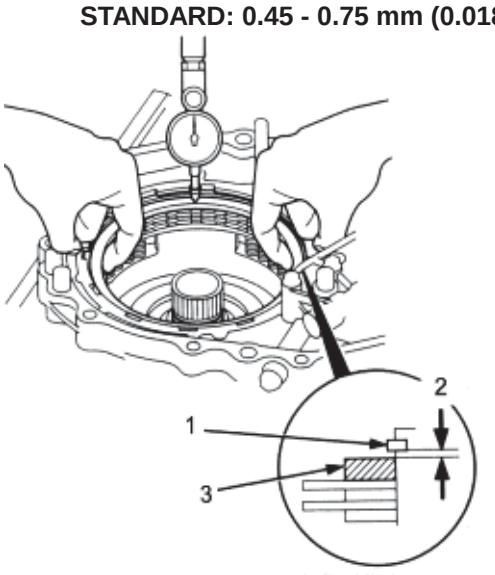
1. SPECIAL TOOL
2. REVERSE BRAKE PISTON
3. SPRING RETAINER TAB

9. Compress the return springs, then install the snap ring in the intermediate housing above the spring retainer.
10. Verify that the snap ring end gap is correct.



1. Minimum 15 mm, (0.59 in)
2. SNAP RING

11. Soak the reverse brake discs thoroughly in recommended transmission fluid (**See Page** 14-84) for minimum 30 minutes.
12. Install the disc spring on the reverse brake piston.
13. Starting with a reverse brake plate, alternately install the reverse brake plates and discs. Install the reverse brake end plate and the snap ring.
14. Measure the clearance between the reverse brake end plate and the top disc with a dial indicator. Zero the dial indicator with a reverse brake end plate lowered and lift it up to the snap ring. The distance that the reverse brake and plate moves is the clearance between the reverse end plate and the top disc.
    NOTE: Take measurements in at least three places and use the average as the actual clearance.
    STANDARD: 0.45 - 0.75 mm (0.018 - 0.030 in)



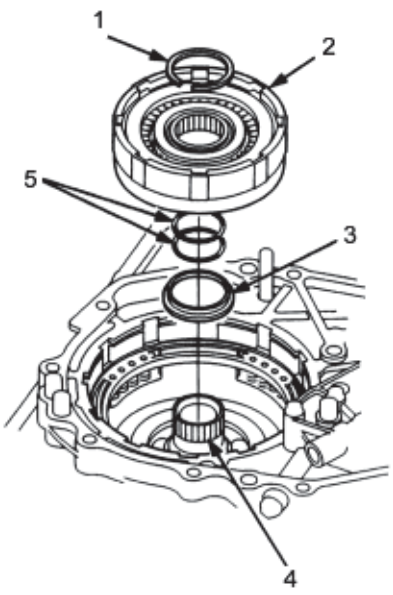
1. SNAP RING
2. Clearance
3. REVERSE BRAKE END PLATE

15. If the clearance is not within the standard, remove the reverse brake end plate and measure its thickness.
16. Select and install a new reverse brake end plate, then recheck.
    NOTE: If the thickest reverse brake end plate installed, but the clearance is still over the standard, replace the reverse brake discs and plates.

REVERSE BRAKE END PLATE

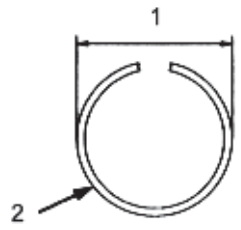
Plate No.	Part Number	Thickness
1	22551-P4V-003	3.6 mm (0.142 in)
2	22552-P4V-003	3.8 mm (0.150 in)
3	22553-P4V-003	4.0 mm (0.157 in)
4	22554-P4V-003	4.2 mm (0.165 in)
5	22555-P4V-003	4.4 mm (0.173 in)
6	22556-P4V-003	4.6 mm (0.181 in)
7	22557-P4V-003	4.8 mm (0.189 in)
8	22558-P4V-003	5.0 mm (0.197 in)

17. After replacing the reverse brake end plate, make sure that the clearance is within the standard.
18. Remove the snap ring, reverse brake end plate, discs, plates and disc spring.
19. Install the snap ring retainer on the drive pulley shaft.
20. Wrap the drive pulley shaft splines with tape to prevent damage to the O-rings, then install new O-rings.
21. Install the forward clutch assembly on the drive pulley shaft, then install the snap ring.



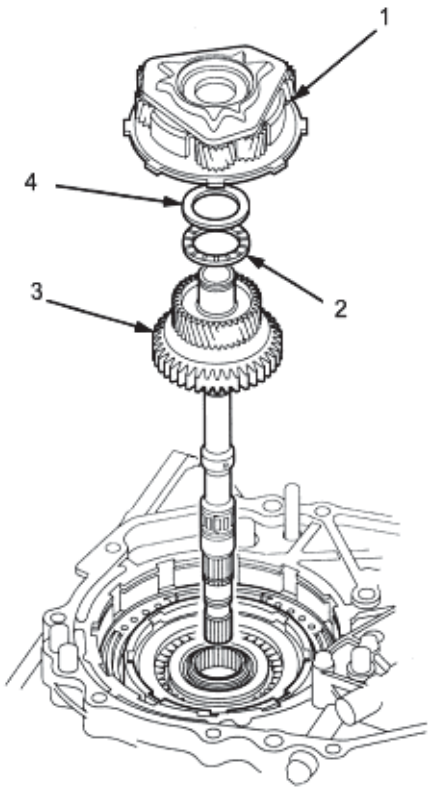
1. SNAP RING
2. FORWARD CLUTCH ASSEMBLY
3. SNAP RING RETAINER
4. DRIVE PULLEY SHAFT
5. O-RINGS

22. Verify that the outside diameter of the snap ring is correct.



1. Maximum 41.4 mm, (1.63 in)
2. SNAP RING

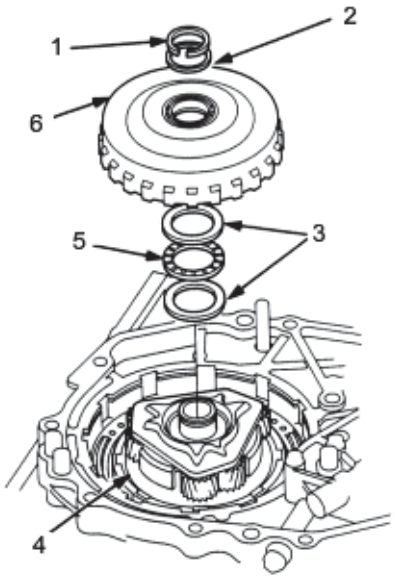
23. Install the sun gear/input shaft assembly.
24. Install the thrust needle bearing and the thrust washer on the sun gear.



1. CARRIER ASSEMBLY
2. THRUST NEEDLE BEARING
3. SUN GEAR/INPUT SHAFT ASSEMBLY
4. THRUST WASHER

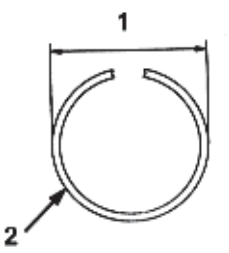
25. Install the carrier assembly on the forward clutch.

26. Install the thrust washer, the thrust needle bearing. and the thrust washer on the carrier assembly.



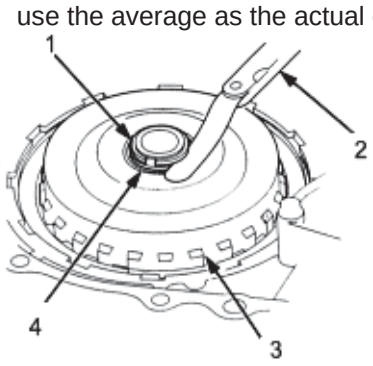
1. SNAP RING
2. THRUST SHIM, 25 x 31 mm, Selective part
3. THRUST WASHERS
4. CARRIER ASSEMBLY
5. THRUST NEEDLE BEARING
6. RING GEAR

27. Install the ring gear and the 25 x 31 mm thrust shim, then install the snap ring.
28. Verify that the outside diameter of the snap ring is correct.



1. Maximum 30.7 mm, (1.21 in)
2. SNAP RING

29. Measure the clearance between the 25 x 31 mm thrust shim and the snap ring.
STANDARD: 0.05 - 0.11 mm (0.0020 - 0.0043 in)
NOTE: Take measurements in at least three places and use the average as the actual clearance.



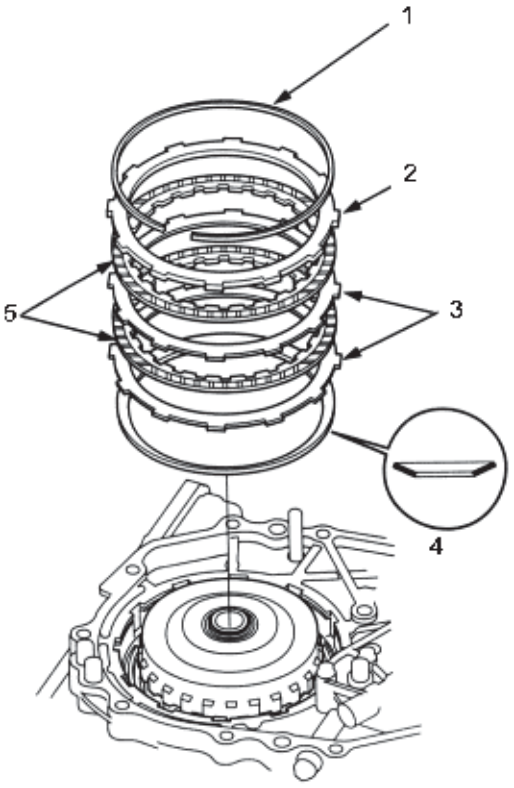
1. SNAP RING
2. FEELER GAUGE
3. RING GEAR
4. THRUST SHIM, 25 x 31 mm

30. If the clearance is out of tolerance, remove the 25 x 31 mm thrust shim and measure its thickness.
31. Select and install a new 25 x 31 mm thrust shim, then recheck.

THRUST SHIM, 25 X 31 MM

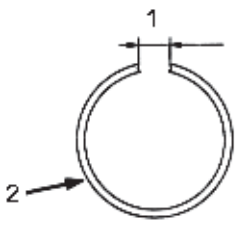
No.	Part Number	Thickness
A	90451-P4V-000	1.05 mm (0.041 in)
B	90452-P4V-000	1.12 mm (0.044 in)
C	90453-P4V-000	1.19 mm (0.047 in)
D	90454-P4V-000	1.26 mm (0.050 in)
E	90455-P4V-000	1.33 mm (0.052 in)
F	90456-P4V-000	1.40 mm (0.055 in)
G	90457-P4V-000	1.47 mm (0.058 in)
H	90458-P4V-000	1.54 mm (0.061 in)
I	90459-P4V-000	1.61 mm (0.063 in)
J	90460-P4V-000	1.68 mm (0.066 in)
K	90461-P4V-000	1.75 mm (0.069 in)
L	90462-P4V-000	1.82 mm (0.072 in)
M	23980-P4V-000	1.085 mm (0.0427 in)
N	23981-P4V-000	1.055 mm (0.0454 in)
O	23982-P4V-000	1.225 mm (0.0482 in)
P	23983-P4V-000	1.295 mm (0.0510 in)
Q	23984-P4V-000	1.265 mm (0.0537 in)
R	23985-P4V-000	1.435 mm (0.0565 in)
S	23986-P4V-000	1.505 mm (0.0593 in)
T	23987-P4V-000	1.575 mm (0.0620 in)
U	23988-P4V-000	1.645 mm (0.0648 in)
V	23989-P4V-000	1.715 mm (0.0675 in)
W	23990-P4V-000	1.785 mm (0.0703 in)

32. After replacing the 25 x 31 mm thrust shim, make sure that the clearance is within the tolerance and the snap ring outside diameter is correct as described in the step 28.
33. Install the disc spring in the direction shown.
34. Starting with a reverse brake plate, alternately install the reverse brake plates and discs. Install selected reverse brake end plate, then install the snap ring.



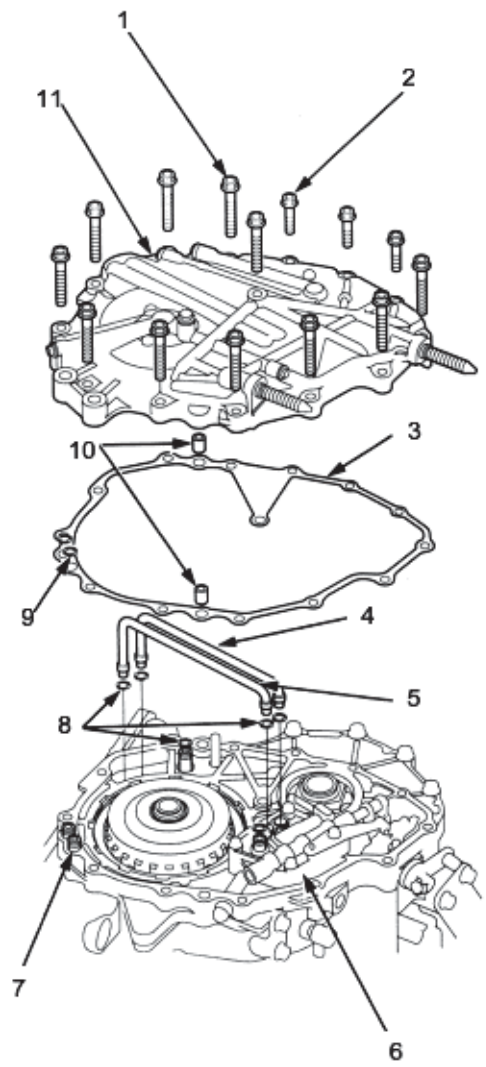
1. SNAP RING
2. REVERSE BRAKE END PLATE
3. REVERSE BRAKE PLATE
4. DISC SPRING, Install in this direction
5. REVERSE BRAKE DISC

35. Verify that the snap ring end gap is correct.



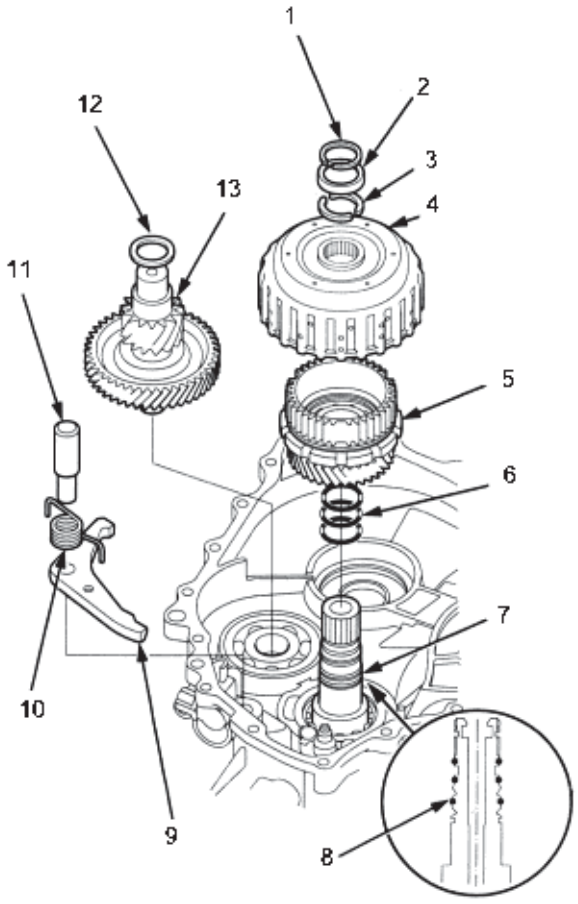
1. Minimum 18 mm, (0.71 in)
2. SNAP RING

36. Install the manual valve body lines A and B with new O-rings on the manual valve body and the intermediate housing.
37. Install the two dowel pins and new right side cover gasket on the intermediate housing, then install the new O-rings over the ATF feed pipes.
38. Install the right side cover on the intermediate housing.



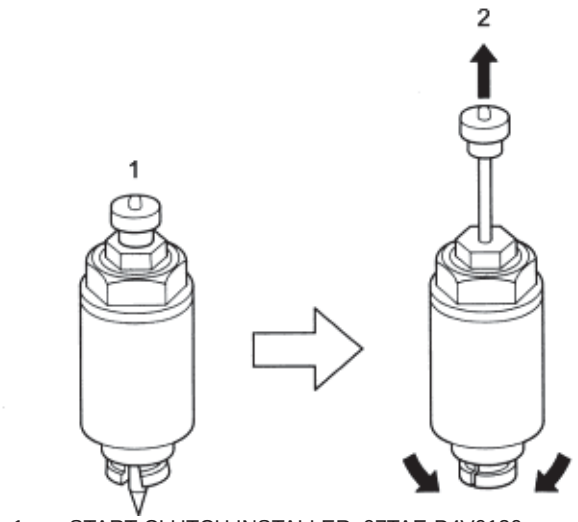
1. 8 x 1.25 mm, 37 Nm (3.8 kgf/m, 27 lbf/ft) 11 Bolts
2. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft) 3 Bolts
3. RIGHT SIDE COVER GASKET, Replace
4. MANUAL VALVE BODY LINE A
5. MANUAL VALVE BODY LINE B
6. MANUAL VALVE BODY
7. ATF FEED PIPE
8. O-RINGS, Replace
9. O-RINGS, Replace
10. DOWEL PINS
11. RIGHT SIDE COVER

39. Install the parking brake pawl, pawl spring and pawl shaft on the transmission housing, then move the control lever to any position other than P.
40. Install the secondary gear shaft with the selected 25 x 35 mm thrust shim (**See Page** 14-122).



1. SNAP RING
2. COTTER RETAINER
3. COTTERS, 25.5 mm, Selective part
4. START CLUTCH ASSEMBLY
5. SECONDARY DRIVE GEAR ASSEMBLY
6. O-RING, Replace
7. DRIVEN PULLEY SHAFT
8. O-RING, Replace
9. PARKING BRAKE PAWL
10. PARKING BRAKE PAWL SPRING
11. PARKING BRAKE PAWL SHAFT
12. THRUST SHIM, 25 X 35 mm
13. SECONDARY GEAR SHAFT

41. Wrap the driven pulley shaft splines with tape to prevent damage to the O-rings, then install the new O-rings.
42. Assemble the secondary drive gear assembly in the start clutch assembly, then install them on the driven pulley shaft.
43. Pull the handle of the special tool up, then install the tip of it into the driven pulley shaft hole and set the special tool on the start clutch.

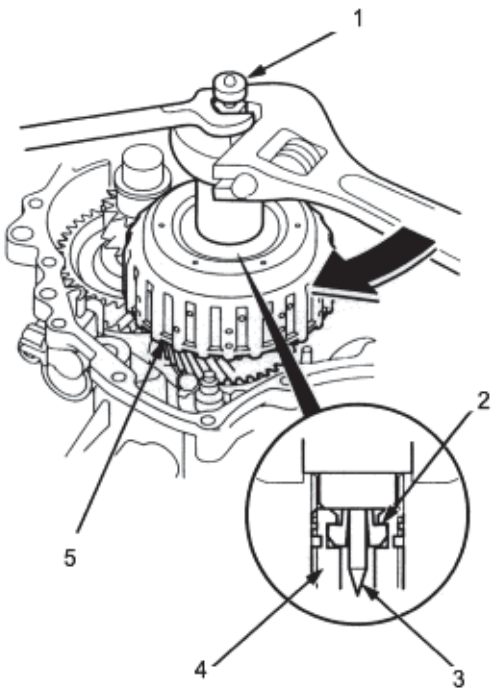


1. START CLUTCH INSTALLER, 07TAE-P4V0130
2. Pull handle.

⚠ CAUTION

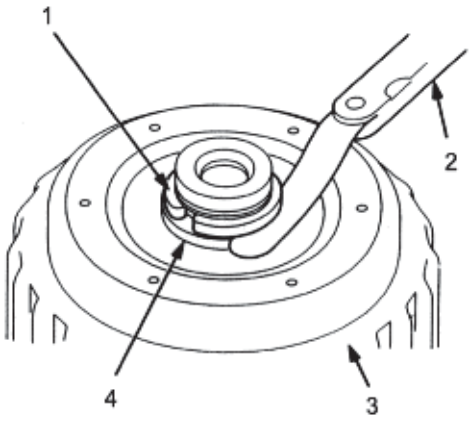
While installing the start clutch and the secondary drive gear assembly using the special tool, be sure not to allow dust and other foreign particles to enter into the transmission.

44. Push the handle of the special tool, then tighten the nut to seat the secondary drive gear assembly on the drive pulley shaft securely.



1. START CLUTCH INSTALLER, 07TAE-P4V0130
2. TIP
3. END OF HANDLE
4. DRIVEN PULLEY SHAFT
5. START CLUTCH ASSEMBLY

45. Pull the handle of the special tool up and remove the special tool.
46. Install the cotters, then measure the clearance between the cotters and the start clutch guide.
    STANDARD: 0 - 0.13 mm (0 - 0.005 in)
    NOTE: Take measurements in at least three places and use the average as the actual clearance.



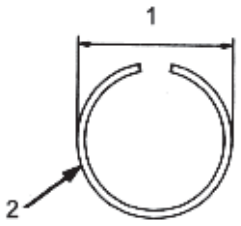
1. COTTERS, 25.5 mm
2. FEELER GAUGE
3. START CLUTCH
4. START CLUTCH GUIDE

47. If the clearance is not within the standard, remove the cotters and measure their thickness.
48. Select and install new cotters, then recheck.

COTTERS, 25.5 mm

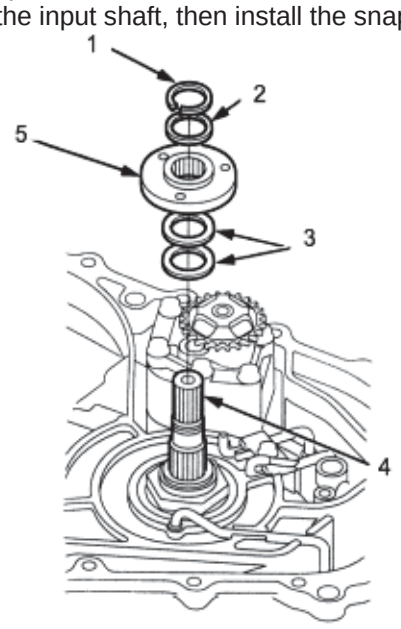
No.	Part Number	Thickness
A	90429-P4V-000	2.9 mm (0.114 in)
B	90430-P4V-000	3.0 mm (0.118 in)
C	90431-P4V-000	3.1 mm (0.122 in)
D	90432-P4V-000	3.2 mm (0.126 in)

49. After replacing the 25.5 mm cotters, make sure that the clearance is the standard.
50. Install the cotter retainer and the snap ring.
51. Verify that the outside diameter of the snap ring is correct.



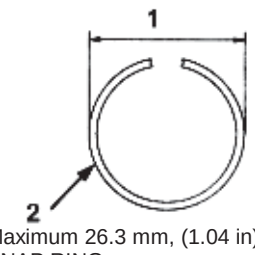
1. Minimum 33.9 mm, (1.33 in)
2. SNAP RING

52. Install the thrust washers, the ATF pump drive sprocket hub and the 22 x 28 mm thrust shim on the input shaft, then install the snap ring.



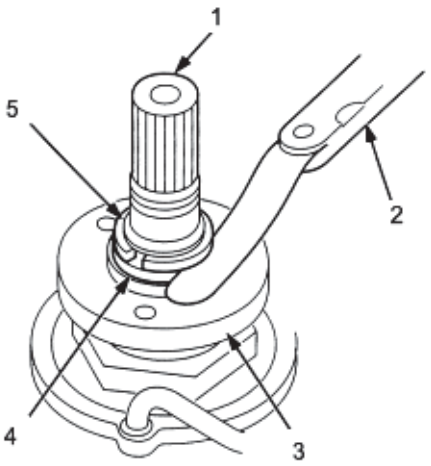
1. SNAP RING
2. THRUST SHIM, 22 x 28 mm, Selective part
3. THRUST WASHERS
4. INPUT SHAFT
5. ATF PUMP DRIVE SPROCKET HUB

53. Verify that the outside diameter of the snap ring is correct.



1. Maximum 26.3 mm, (1.04 in)
2. SNAP RING

54. Measure the clearance between the 22 x 28 mm thrust shim and the snap ring.
STANDARD: 0.37 - 0.65 mm (0.015 - 0.026 in)
NOTE: Take measurements in at least three places and use the average as the actual clearance.



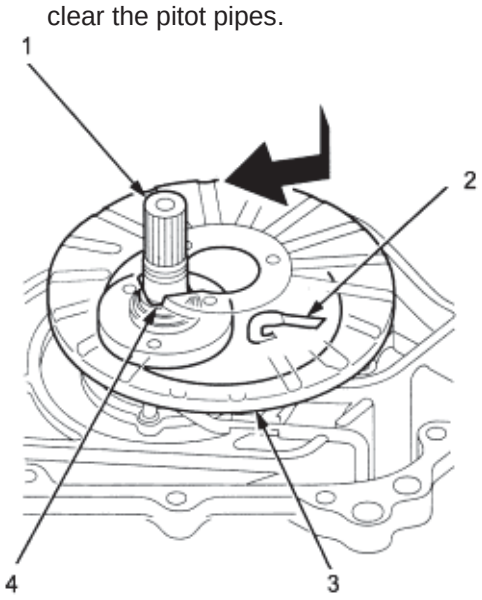
1. INPUT SHAFT
2. FEELER GAUGE
3. ATF PUMP DRIVE SPROCKET HUB
4. THRUST SHIM, 22 x 28 mm
5. SNAP RING

55. If the clearance is out of tolerance, remove the 22 x 28 mm thrust shim and measure its thickness.
56. Select and install a new 22 x 28 mm thrust shim, then recheck.

THRUST SHIM, 22 x 28 mm

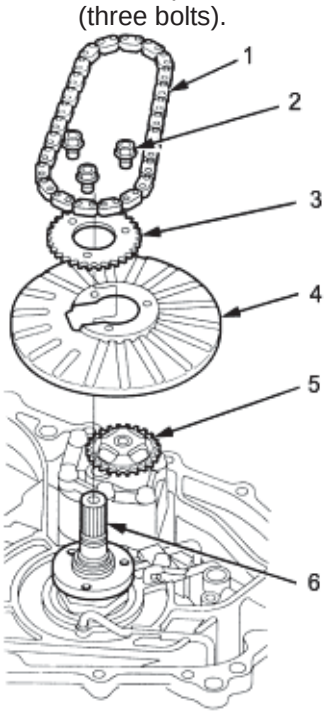
No.	Part Number	Thickness
C	90573-P4V-000	1.15 mm (0.045 in)
D	90574 P4V-000	1.40 mm (0.055 in)
E	90575-P4V-000	1.65 mm (0.065 in)
F	90576-P4V-000	1.90 mm (0.075 in)
G	90577-P4V-000	2.15 MM (0.085 in)
H	90578-P4V-000	2.40 mm (0.095 in)

57. After replacing the 22 x 28 mm thrust shim, make sure that the clearance is within tolerance and the snap ring outside diameter is correct.
58. Install the pitot flange using its cutout as shown to clear the pitot pipes.



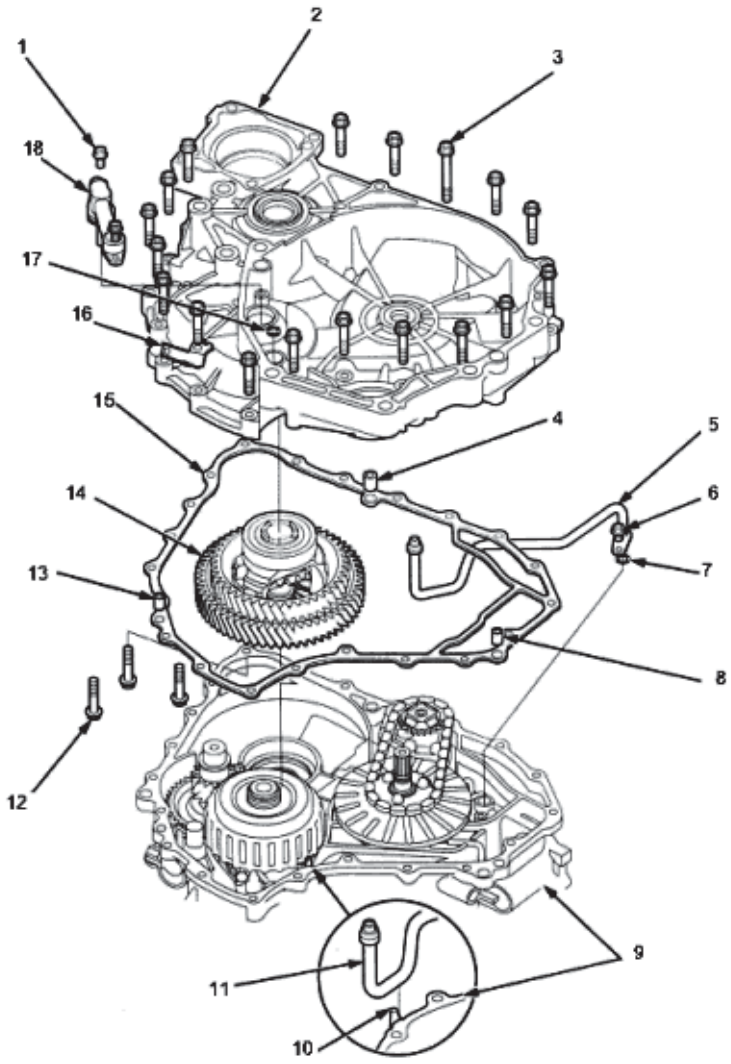
1. INPUT SHAFT
2. PITOT PIPE
3. PITOT FLANGE
4. CUT OUT

59. Install the ATF pump drive sprocket and put the ATF pump drive chain on the ATF pump drive and driven sprockets, then install and tighten the bolts (three bolts).



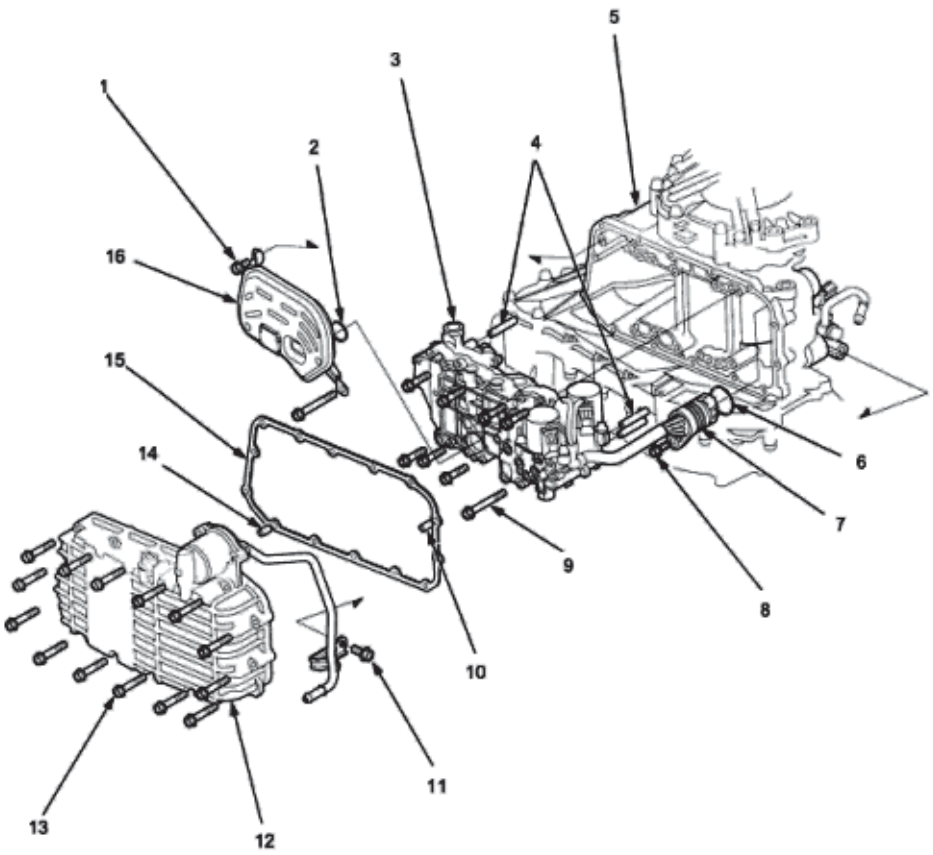
1. ATF PUMP DRIVE CHAIN
2. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
3. ATF PUMP DRIVE SPROCKET
4. PITOT FLANGE
5. ATF PUMP
6. INPUT SHAFT

60. Install the differential assembly.
61. Install the ATF passage pipe assembly with new O-rings.
62. Install the three dowel pins and new flywheel gasket on the transmission housing.
63. Install the flywheel housing on the transmission housing.
64. Install the flywheel housing mounting bolts and tighten them:
    - 18 bolts and connector bracket from the flywheel housing side
    - 3 bolts from the transmission housing side.
65. Install the ATF passage pipe holder assembly.



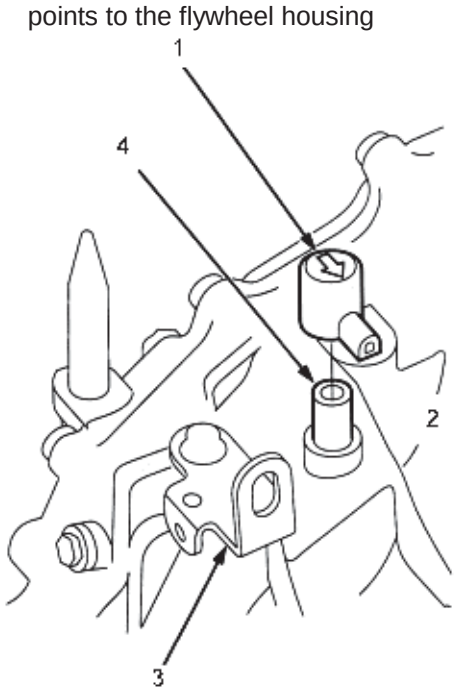
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft).
2. **FLYWHEEL HOUSING**.
3. **FLYWHEEL HOUSING MOUNTING BOLT** 8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft) 18 Bolts
4. **DOWEL PIN** 12 x 20 mm
5. **ATF PASSAGE PIPE ASSEMBLY**
6. 6 x 1.0 mm, 12 Nm (1.2 kgf/m. 8.7 lbf/ft**).**
7. **O-RING** Replace.
8. **DOWEL PIN** 10 x 16 mm.
9. **TRANSMISSION HOUSING**
10. **PASSAGE PIPE GUIDE**
11. **ATF PASSAGE PIPE ASSEMBLY**
12. **FLYWHEEL HOUSING MOUNTING BOLT** 8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft) 3 Bolts
13. **DOWEL PIN** 10 x 16 mm
14. **DIFFERENTIAL ASSEMBLY**
15. **FLYWHEEL HOUSING GASKET** Replace.
16. **CONNECTOR BRACKET**
17. **O-RING** Replace.
18. **ATF PASSAGE PIPE HOLDER ASSEMBLY**

66. Install the solenoid harness connector with new O-ring and install the lower valve body assembly with three dowel pins and eight bolts.
67. Install the ATF strainer with new O-ring and two bolts.
68. If necessary, assemble the ATF pan, ATF filter and the ATF cooler inlet line (**See Page** 14-88).
69. Install the ATF pan with two dowel pins, new gasket and 14 bolts.
70. Secure the ATF cooler inlet line with 8 mm bolt at the bracket.



1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft) 2 bolts
2. **O-RING** Replace..
3. **LOWER VALVE BODY ASSEMBLY**
4. **DOWEL PINS**
5. **TRANSMISSION HOUSING**
6. **O-RING** Replace
7. **SOLENOID HARNESS CONNECTOR**
8. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft**)**
9. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft) 8 Bolts.
10. **DOWEL PIN**
11. **ATF COOLER INLET LINE BRACKET BOLT** 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
12. **ATF PAN** .
13. 6 x 1.0 mm, 12 Nm 1.2 kgf/m, 8.7 lbf/ft) 14 Bolts
14. **DOWEL PIN**
15. **ATF PAN GASKET** Replace.
16. **ATF STRAINER**

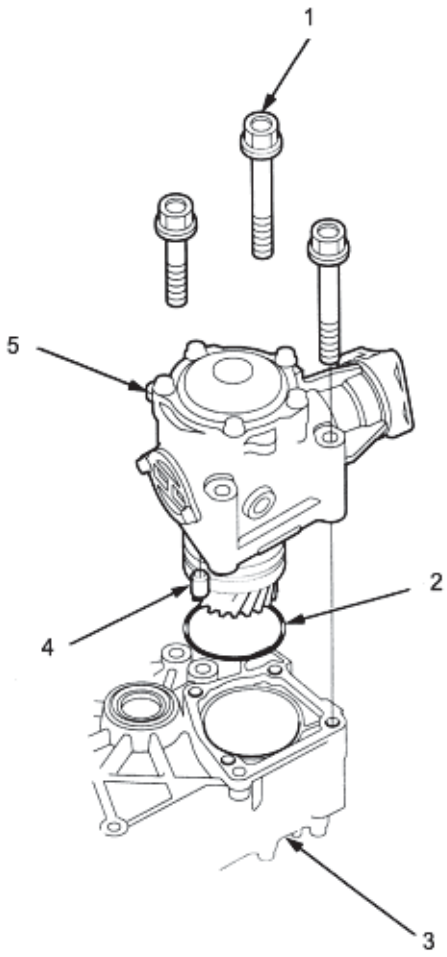
71. Install the breather cap on the breather pipe so its arrow points to the flywheel housing



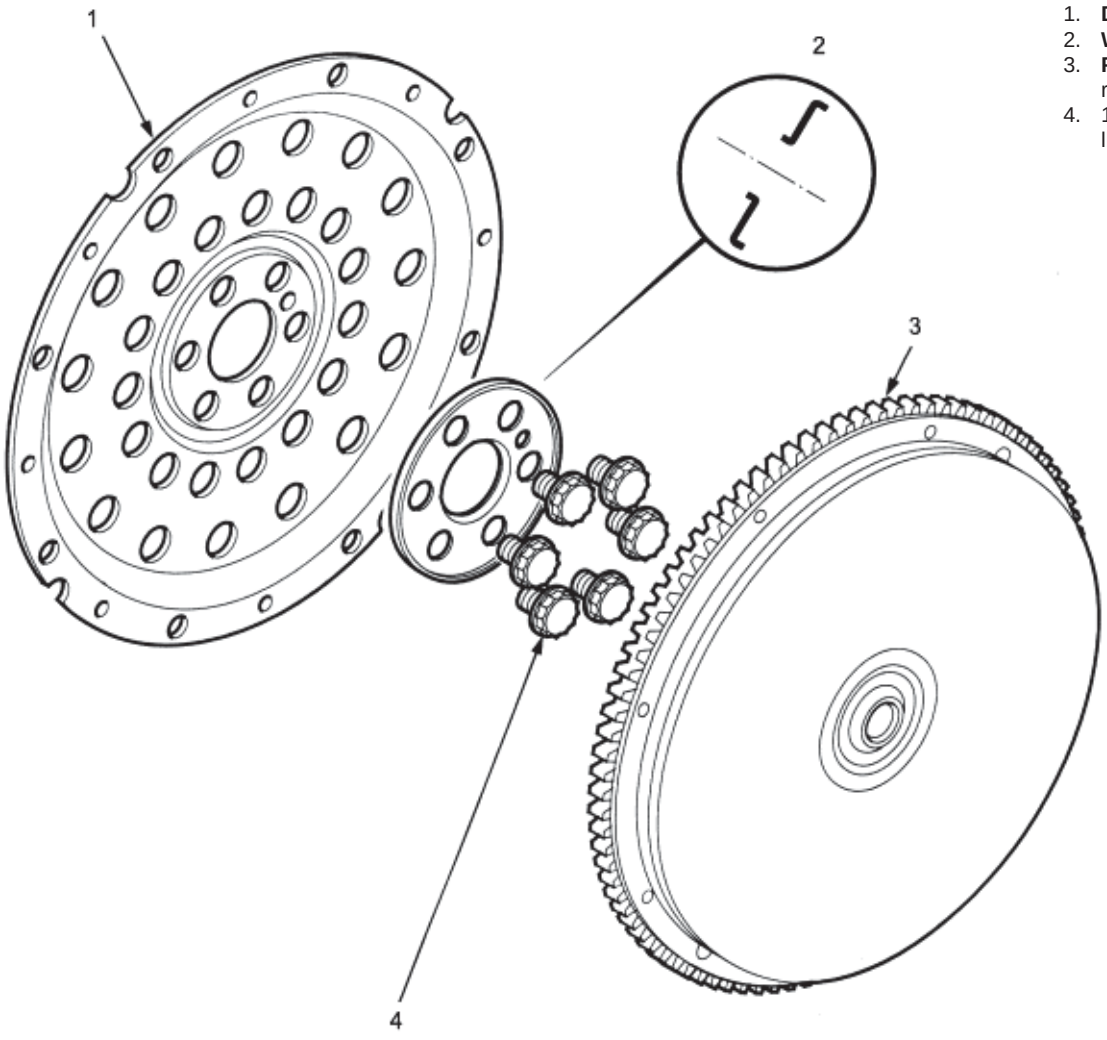
1. BREATHER CAP
2. FLYWHEEL HOUSING SIDE
3. TRANSMISSION HANGER
4. BREATHER PIPE

NOTE: Steps 72 and 73 are applied to 4WD transmission.

72. Clean the areas where the transfer assembly contacts the transmission with solvent or carburetor cleaner and dry them with compressed air, then apply to contact areas with transmission fluid.
73. Install the transfer assembly with new O-rings. Do not allow dust and other foreign particles to enter into the transmission.

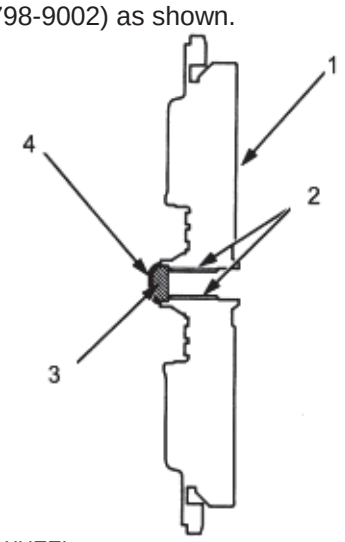


1. 10 x 1.25 m, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. O-RING Replace
3. FLYWHEEL HOUSING
4. DOWEL PIN
5. TRANSFER ASSEMBLY



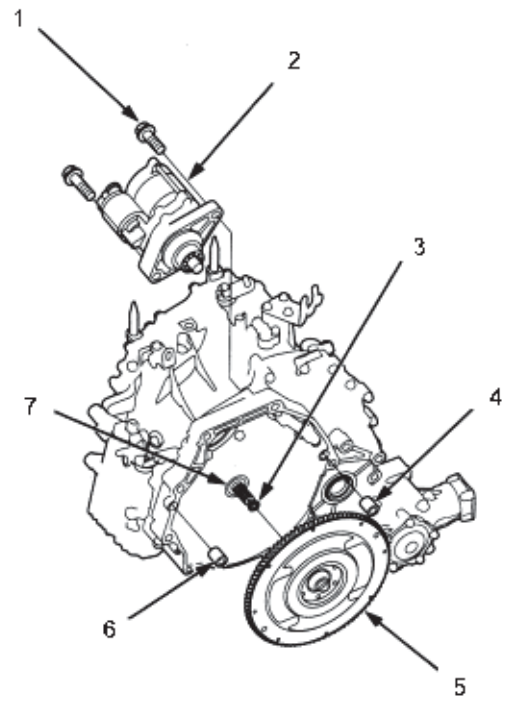
1. **DRIVE PLATE**
2. **WASHER** Install in this direction.
3. **FLYWHEEL** Inspect the teeth of the ring gear for excessive wear.
4. 12 x 1.0 mm, 74 Nm (7.5 kgf/m, 54 lbf/ft) Torque in a criss-cross pattern.

1. Remove the used grease in the flywheel hub cap and flywheel splines.
2. Fill the inside of the flywheel hub cap and coat the flywheel hub splines with Super Urea Grease (P/N 08798-9002) as shown.



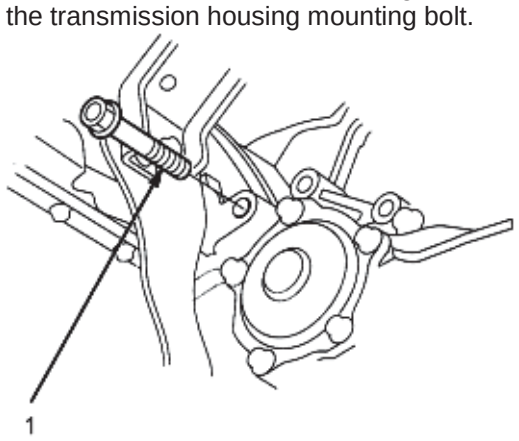
1. FLYWHEEL
2. SPLINES Apply SUPER HIGH TEMP UREA GREASE (P/N 08798-9002)
3. SUPER HIGH TEMP UREA GREASE (P/N 08798-9002) 1.5 - 2.5 g (0.05 - 0.09 oz)
4. FLYWHEEL HUB CAP

3. Install the new sealing ring (rubber) on the input shaft and install two 14 x 20 mm dowel pins in the flywheel housing.
4. Input the flywheel securely in the input shaft, then install the starter on the flywheel housing.



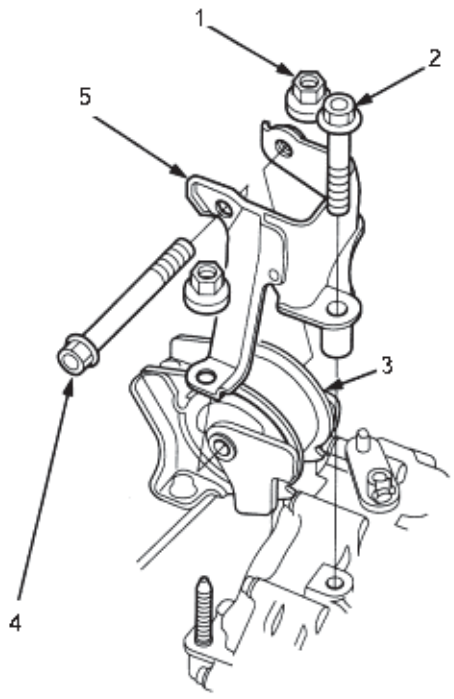
1. 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. STARTER
3. SEALING RING (RUBBER)
4. 14 x 20 mm, DOWEL PIN
5. FLYWHEEL
6. 14 x 20 mm, DOWEL PIN
7. INPUT SHAFT

5. Place the transmission on a jack and raise it to the engine assembly level.
6. Attach the transmission on the engine, then install the transmission housing mounting bolt.



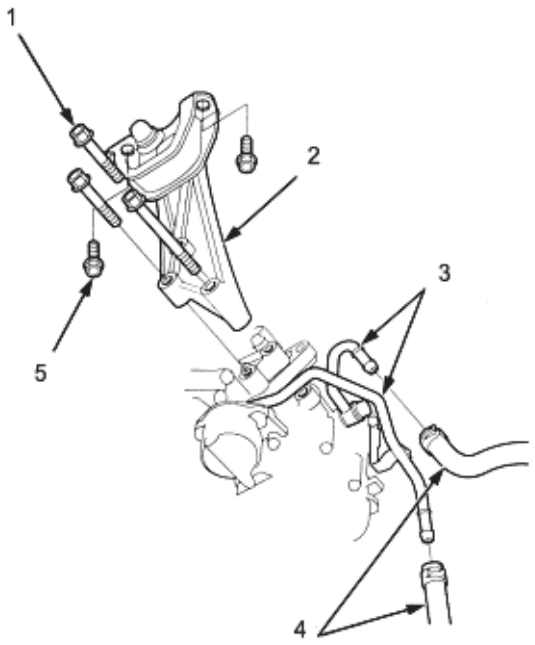
1. TRANSMISSION HOUSING MOUNTING BOLT, 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

7. Install the transmission mount bracket. Tighten the long bolt loosely and tighten the nuts and bolt on the mount bracket to the specified torque. Then tighten the long bolt to the specified torque.



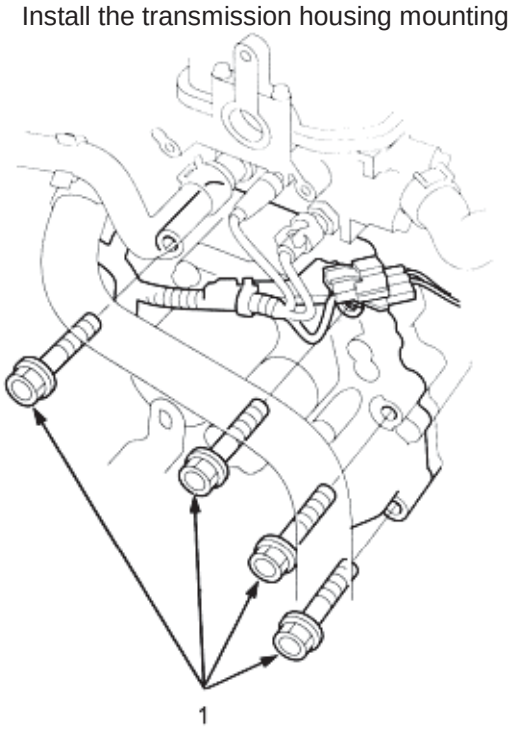
1. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. 12 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. TRANSMISSION MOUNT
4. 12 x 1.25 (Long), 74 Nm (7.5 kgf/m, 54 lbf/ft)
5. TRANSMISSION MOUNT BRACKET

8. Install the right front mount/bracket.
9. Connect the ATF cooler hoses to the ATF cooler lines (**See Page** 14-173).



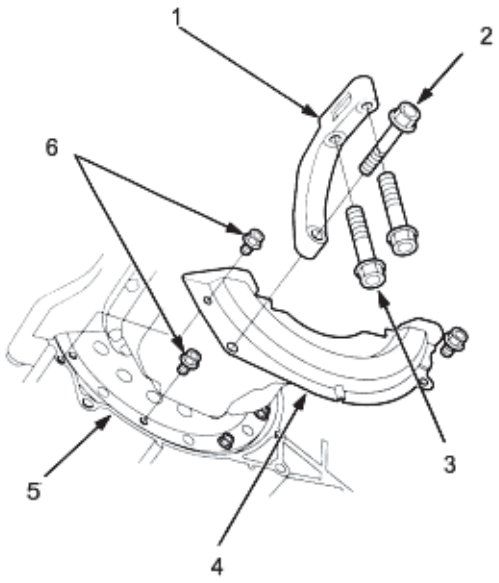
1. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)
2. RIGHT FRONT MOUNT/BRACKET
3. ATF COOLER LINES
4. ATF COOLER HOSES
5. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

10. Install the transmission housing mounting bolts.



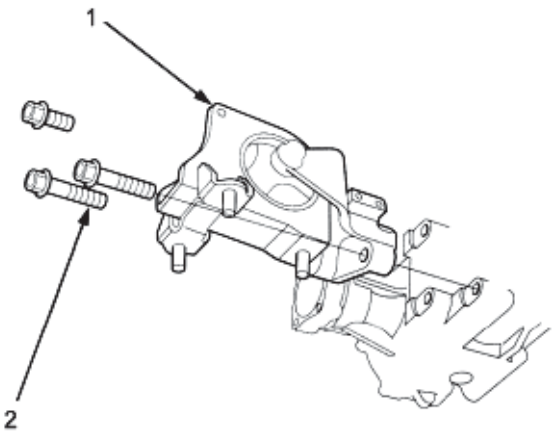
1. TRANSMISSION HOUSING MOUNTING BOLT
   12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

11. Remove the transmission jack and the hoist, then remove the hoist bracket from the engine.
12. Attach the flywheel to the drive plate with eight bolts and tighten them as follows:
    Rotate the crankshaft pulley as necessary to tighten the bolts to half of the specified torque, then to the final torque, in a criss-cross pattern. After tightening the last bolt, check that the crankshaft rotate freely.
13. Install the flywheel cover then install the front stiffener.



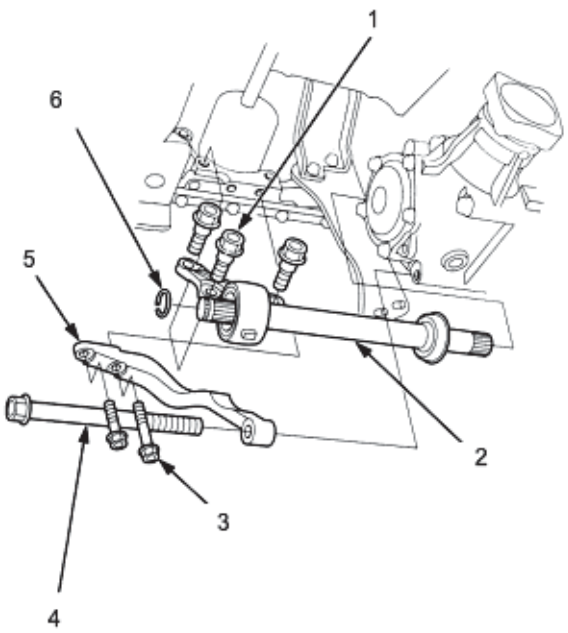
1. FRONT STIFFENER
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
4. FLYWHEEL COVER
5. DRIVE PLATE
6. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

14. Install the rear mount/bracket.



1. REAR MOUNT/BRACKET
2. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

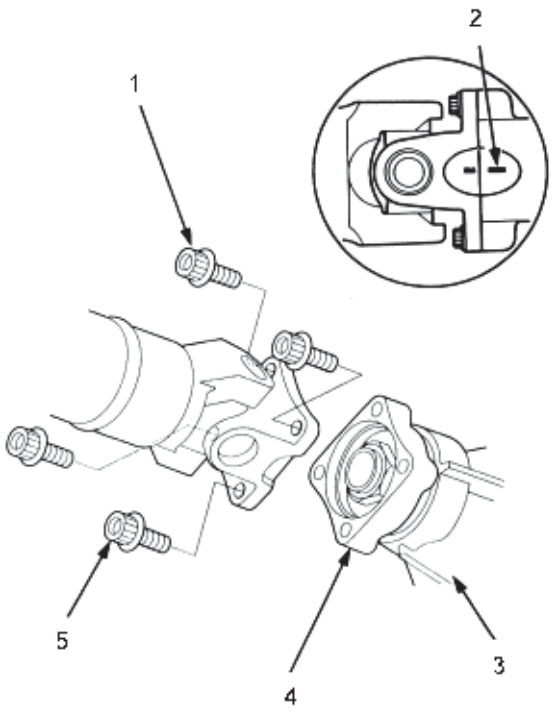
15. Install new set rings on the ends of the intermediate shaft and the right driveshaft (see section 18).
16. Install the intermediate shaft.
    NOTE:
    - While installing the intermediate shaft in the differential, be sure not to allow dust and other foreign particles to enter into the transmission.
    - Clean the areas where the intermediate shaft contacts the transmission (differential) thoroughly with solvent or carburetor cleaner and dry with compressed air.
17. Install the rear stiffener.



1. 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)
2. INTERMEDIATE SHAFT
3. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)
4. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
5. REAR STIFFENER
6. SET RING Replace

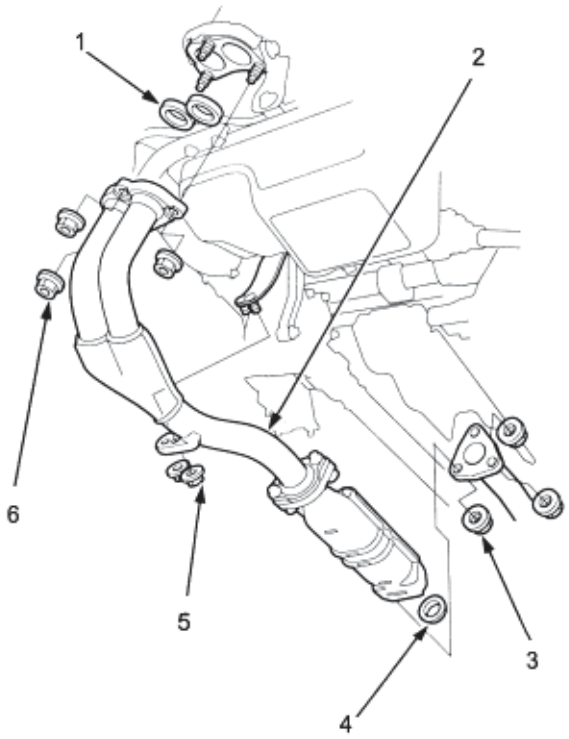
18. Install the right and left driveshafts (see section 18).
    NOTE:
    - While installing the right driveshaft in the differential, be sure not to allow dust and other foreign particles to enter into the transmission.
    - Clean the areas where the right driveshaft contacts the transmission (differential) thoroughly with solvent or carburettor cleaner and dry with compressed air.
    - Turn the right and left steering knuckle fully outward and slide the right driveshaft into the differential until you feel its spring clip engages the side gear. Slide the left driveshaft into the intermediate shaft until you feel the spring clip of the intermediate shaft engages the left driveshaft.

19. Install the propeller shaft to the transfer assembly by aligning the reference mark.



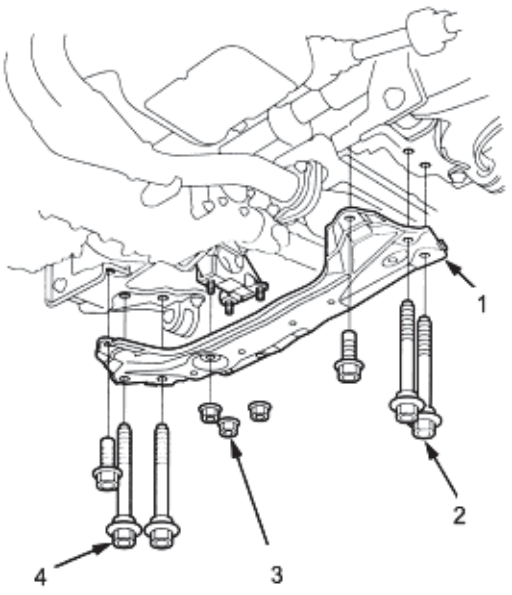
1. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft) Replace.
2. REFERENCE MARK
3. TRANSFER ASSEMBLY
4. TRANSFER FLANGE
5. PROPELLER SHAFT

20. Install the exhaust pipe A



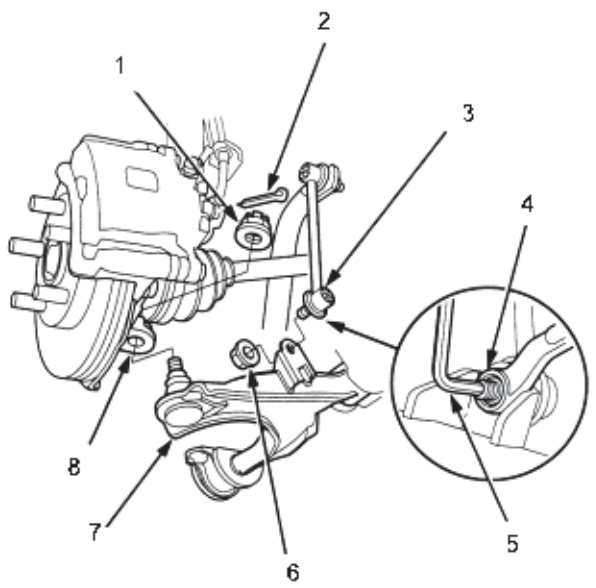
1. GASKET Replace.
2. EXHAUST PIPE A
3. 10 x 1.25 mm, 33 Nm (3.4 kgf/m, 25 lbf/ft) Replace
4. GASKET Replace
5. 8 x 1.25 m, 16 Nm (1.6 kgf/m, 12 lbf/ft) Replace.
6. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft) Replace.

21. Install the rear beam



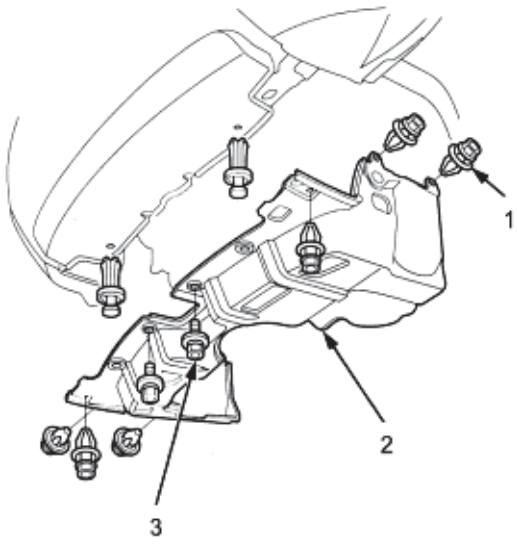
1. REAR BEAM
2. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
3. 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)
4. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

22. Install the ball joints on the lower arms to both knuckles, then install the ball joint nuts and secure them with cotter pins.
23. Install the front stabiliser links on the lower arms, then install the flange nuts.
24. Install a 5 mm Allen wrench into the tip of the ball joint pin of the front stabiliser link, then tighten the flange nuts.



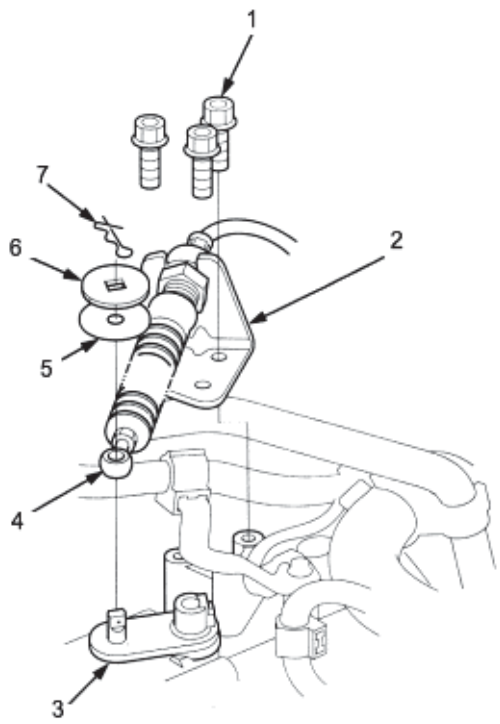
1. BALL JOINT NUT 12 x 1.25 mm, 49 - 59 Nm (5.0 - 6.0 kgf/m, 36 - 43 lbf/ft)
2. COTTER PIN, Replace
3. FRONT STABILISER LINK
4. BALL JOINT PIN
5. ALLEN WRENCH, 5 mm
6. FLANGE NUT Replace. 29 Nm (3.0 kgf/m, 22 lbf/ft)
7. LOWER ARM
8. KNUCKLE

25. Install the splash shield.



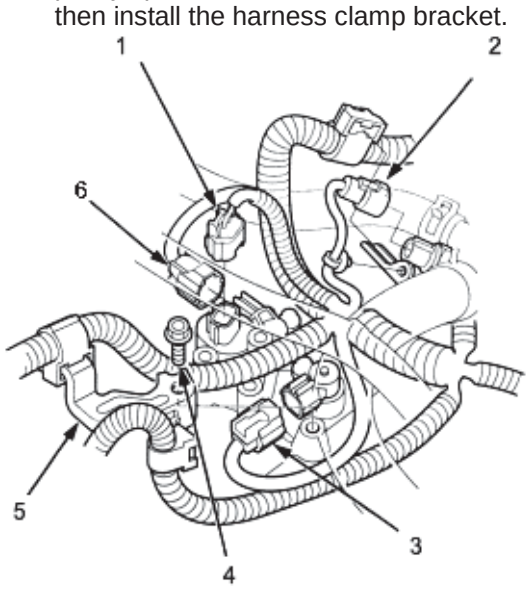
1. CLIP
2. SPLASH SHIELD
3. 6 x 10 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

26. Install the shift cable bracket on the transmission.
27. Install the shift cable end on the control lever. Do not bend the shift cable excessively.



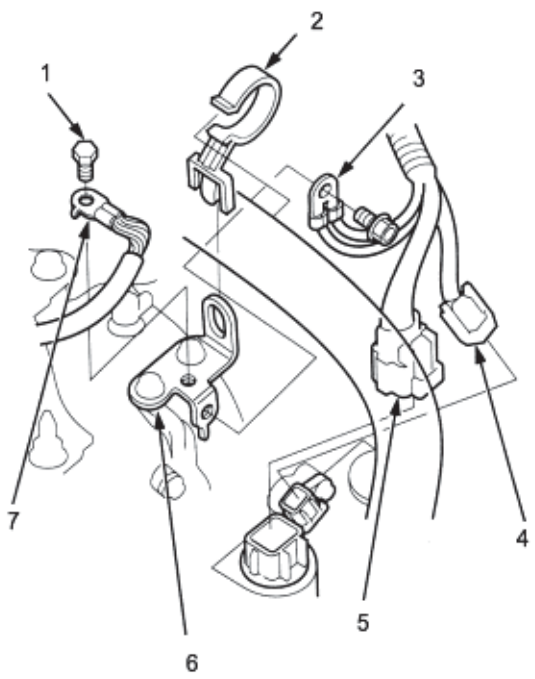
1. 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
2. SHIFT CABLE BRACKET
3. CONTROL LEVER
4. SHIFT CABLE END
5. PLASTIC WASHER
6. WASHER
7. CLIP

28. Connect the secondary gear shaft speed sensor, driven pulley speed sensor, ECT sensor and VSS connectors, then install the harness clamp bracket.



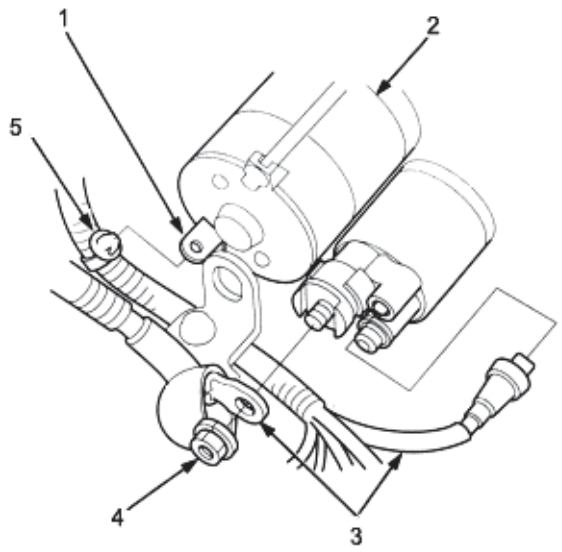
1. VSS CONNECTOR
2. ECT SENSOR CONNECTOR
3. DRIVE PULLEY SPEED SENSOR CONNECTOR
4. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
5. HARNESS CLAMP BRACKET
6. SECONDARY GEAR SHAFT SPEED SENSOR CONNECTOR

29. Connect the solenoid harness connector and the drive pulley speed sensor connector, then install the transmission ground cable terminals and the radiator hose clamp on the transmission hanger.



1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. RADIATOR HOSE CLAMP
3. TRANSMISSION GROUND CABLE TERMINAL
4. DRIVE PULLEY SPEED SENSOR CONNECTOR
5. SOLENOID HARNESS CONNECTOR
6. TRANSMISSION HANGER
7. TRANSMISSION GROUND CABLE TERMINAL

30. Connect the starter cables on the starter with ring terminal crimped side facing out.



1. CLAMP BRACKET
2. STARTER
3. STARTER CABLES
4. 9 Nm (0.9 kgf/m, 7 lbf/ft)
5. HARNESS CLAMP

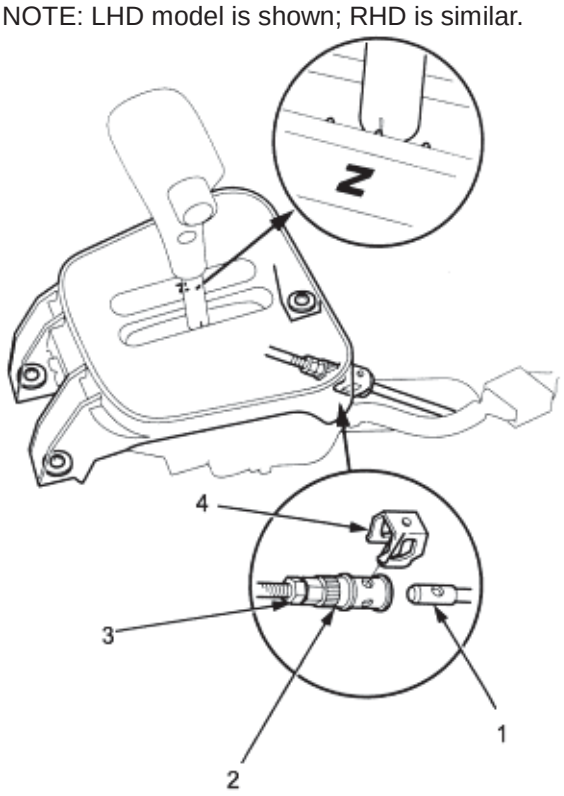
31. Install the distributor (see section 4).
32. Install the battery base and battery, then secure the battery with the battery hold-down bracket.
33. Refit the transmission with the recommended transmission fluid (**See Page** 14-84).
34. Connect the battery positive terminal and negative terminal to the battery.
35. Adjust the ignition timing (see section 4)
36. Start the engine. Set the parking brake and shift the transmission through all gears three times.
37. Check shift cable adjustment fluid (**See Page** 14-167).
38. Check that front wheel alignment (see section 18).
39. Let the engine reach normal operating temperature (the radiator fan comes on) with the transmission in P or N position, then turn it off and check the transmission fluid level fluid (**See Page** 14-83).
40. If the transmission assembly, start clutch assembly, lower valve body assembly, or engine assembly were replaced, or the engine assembly was overhauled, calibrate the feedback signal for the start clutch control in the PCM (**See Page** 14-71).
41. Perform road test (**See Page** 14-80) and (**See Page** 14-81).

⚠ WARNING

Make sure lifts, jacks and safety stands are placed properly (see section 1).

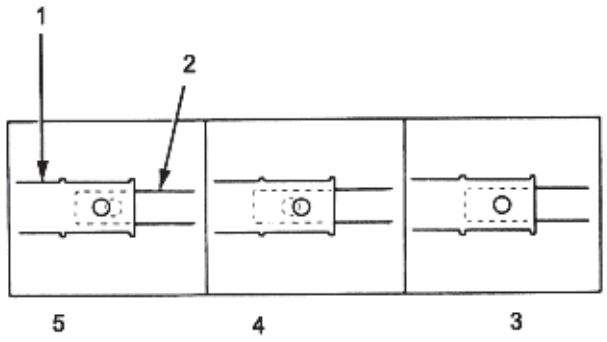
1. Remove the front console (see section 20).
2. Shift to position, then remove the lock pin from the adjuster.

NOTE: LHD model is shown; RHD is similar.



1. SHIFT CABLE
2. ADJUSTER
3. LOCKNUT, 7 Nm (0.7 lbf/m, 5 lbf/ft)
4. LOCK PIN

3. Check that the hole in the adjuster is perfectly aligned with the hole in the shift cable. There are two holes in the adjuster. They are positioned 90° apart to allow cable adjustment in 1/4 turn increments.



1. ADJUSTER
2. SHIFT CABLE
3. Exact Alignment
4. Cable Too Long
5. Cable Too Short

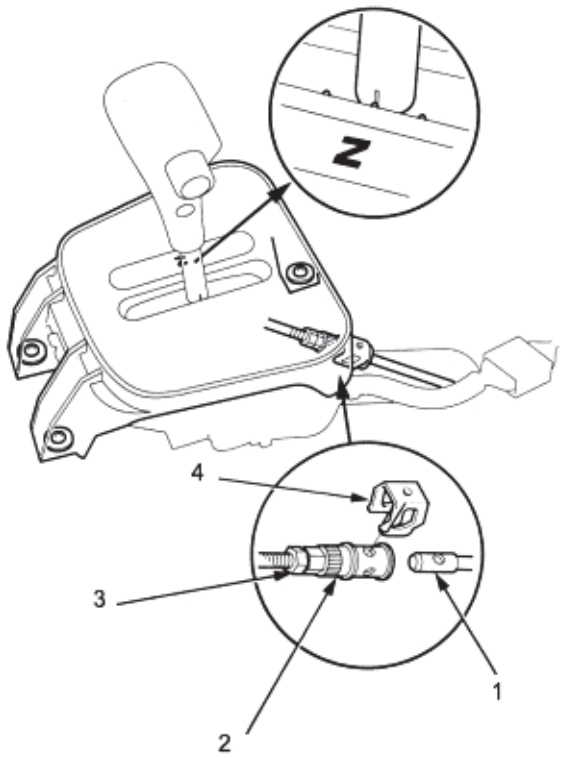
4. If the hole is not perfectly aligned, loosed the lock nut on the adjuster and adjust as required.
5. Tighten the locknut to 7 Nm (0.7 kgf/m, 5 lbf/ft).
6. Install the lock pin on the adjuster. If you feel the lock pin binding as you reinstall it, the cable is still out of adjustment and must be readjusted.
7. Make sure the lock pin is seated in the adjuster securely.
8. Move the shift lever to each position and verify that the shift position indicator follows the automatic transaxle gear position switch.
9. Start the engine and check the shift lever in all positions.
10. Insert the ignition key into the key cylinder on the A/T gear position indicator panel and verify that the shift lock lever is released for KQ and KU models.

⚠ WARNING

Make sure lifts, jacks and safety stands are placed properly (see section 1).

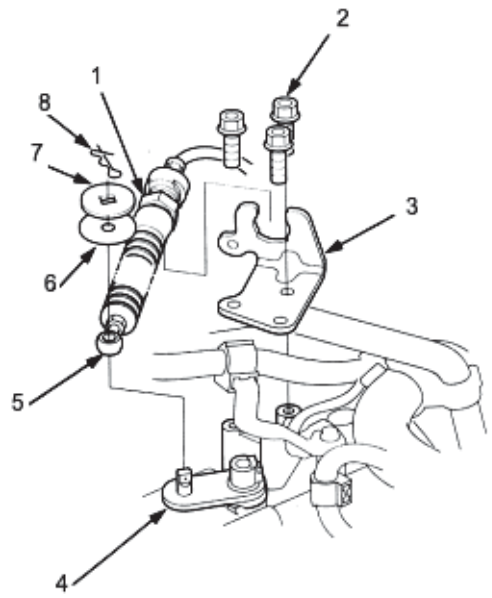
1. Remove the front console (see section 20).
2. Shift to [N] position, then remove the lock pin from the adjuster.

NOTE: LHD model is shown; RHD is similar.



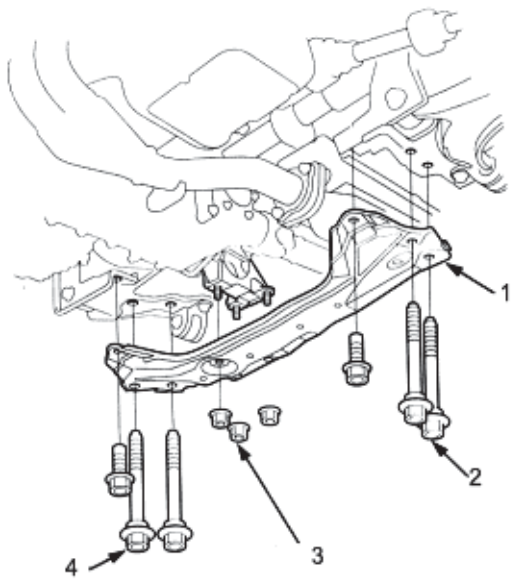
1. SHIFT CABLE
2. ADJUSTER
3. LOCKNUT, 7 Nm (0.7 kgf/m, 5 lbf/ft)
4. LOCK PIN

3. Remove the clip from the shift cable end, then separate the able end from the control lever.
4. Remove the shift cable bracket with shift cable. Do not bend the shift cable excessively.
5. Loosen the locknut, then remove the shift cable from the shift cable bracket.



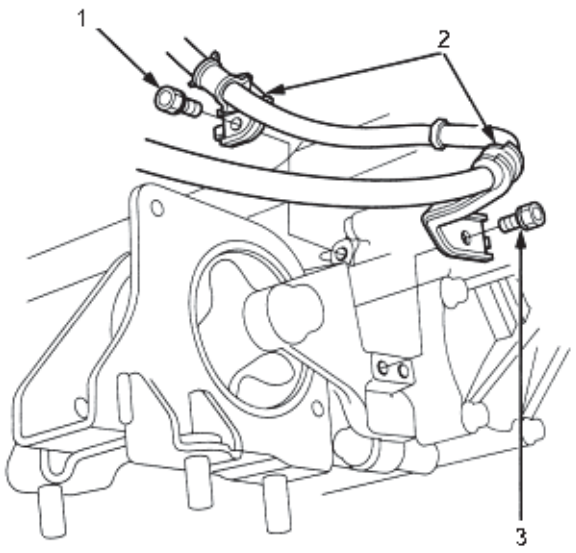
1. LOCKNUT, 29 Nm (3.0 kgf/m, 22 lbf/ft)
2. 8 x 1.25 mm, 26 Nm (2.7 kgf/m, 20 lbf/ft)
3. SHIFT CABLE BRACKET
4. CONTROL LEVER
5. SHIFT CABLE END
6. PLASTIC WASHER
7. WASHER
8. CLIP

6. Remove the rear beam.



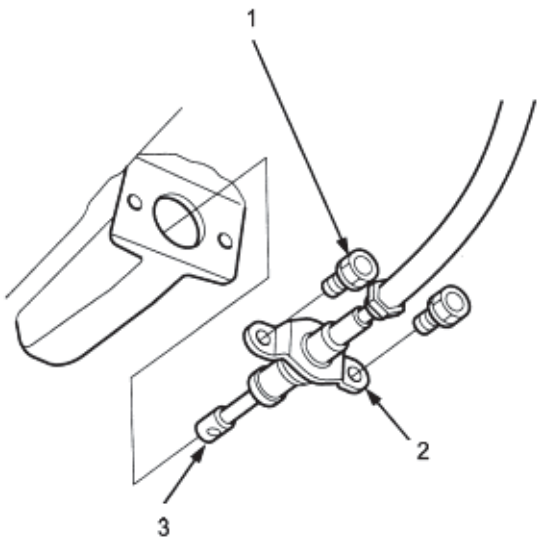
1. REAR BEAM
2. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
3. 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft)
4. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

7. Remove the bolts securing the shift cable brackets.



1. 6 x 10 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. SHIFT CABLE BRACKETS
3. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

8. Remove the shift cable bracket.



1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
2. SHIFT CABLE BRACKET
3. SHIFT CABLE

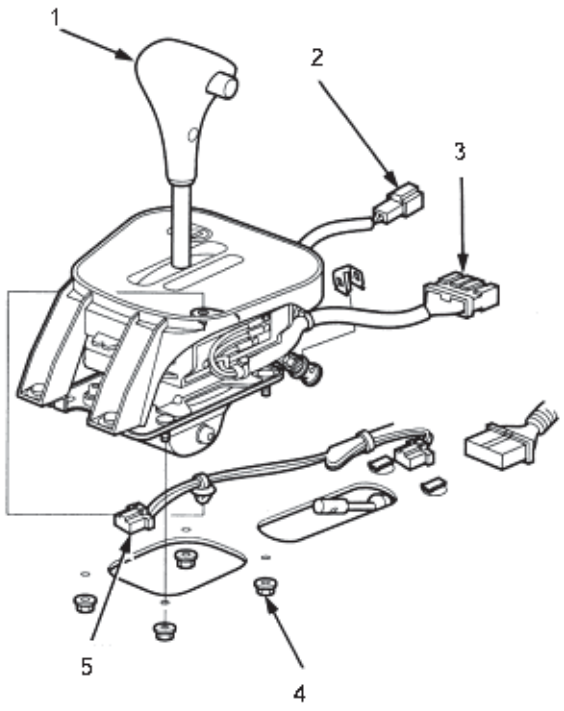
9. Replace the shift cable, then install the new cable in the reverse order of removal. Do not bend the shift cable excessively.
10. Check the shift cable adjustment (**See Page** 14-167).

⚠ WARNING

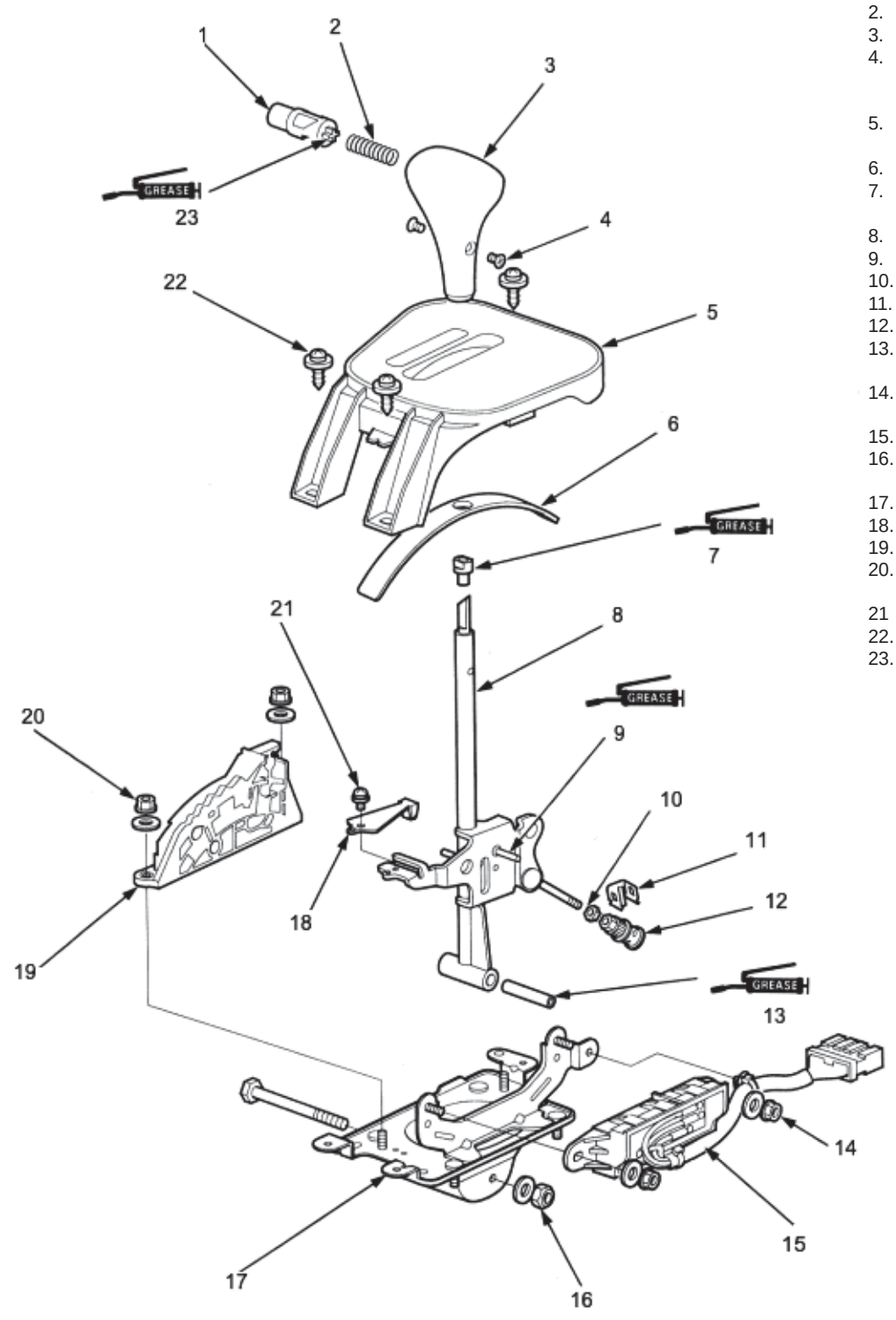
Make sure lifts, jacks and safety stands are placed properly (see section 1).

1. Raise the front of the vehicle and make sure it is securely supported.
2. Set the parking brake and block both rear wheels securely.
3. Remove the front console (see section 20).
4. Shift to [N] position, then remove the lock pin from the adjuster.
5. Disconnect the A/T gear position switch connector.
6. Disconnect the shift lock solenoid and parking pin switch connectors for KQ and KU models.
7. Remove the nuts securing the shift lever assembly from under-body.
8. Install the shift lever assembly in the reverse order of removal.
9. Check the shift cable adjustment (**See Page** 14-167).

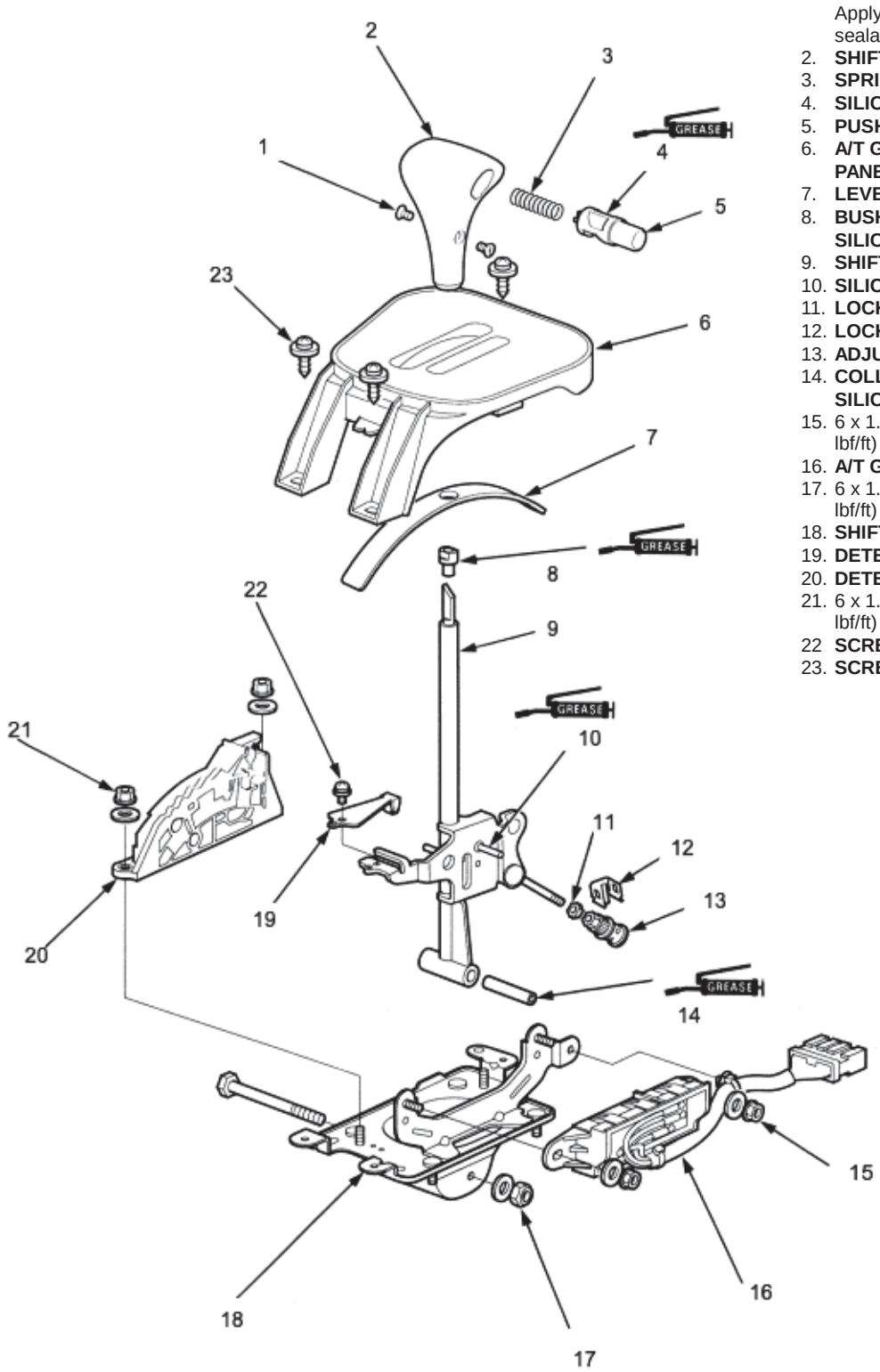
NOTE: RHD model is shown; LHD is similar



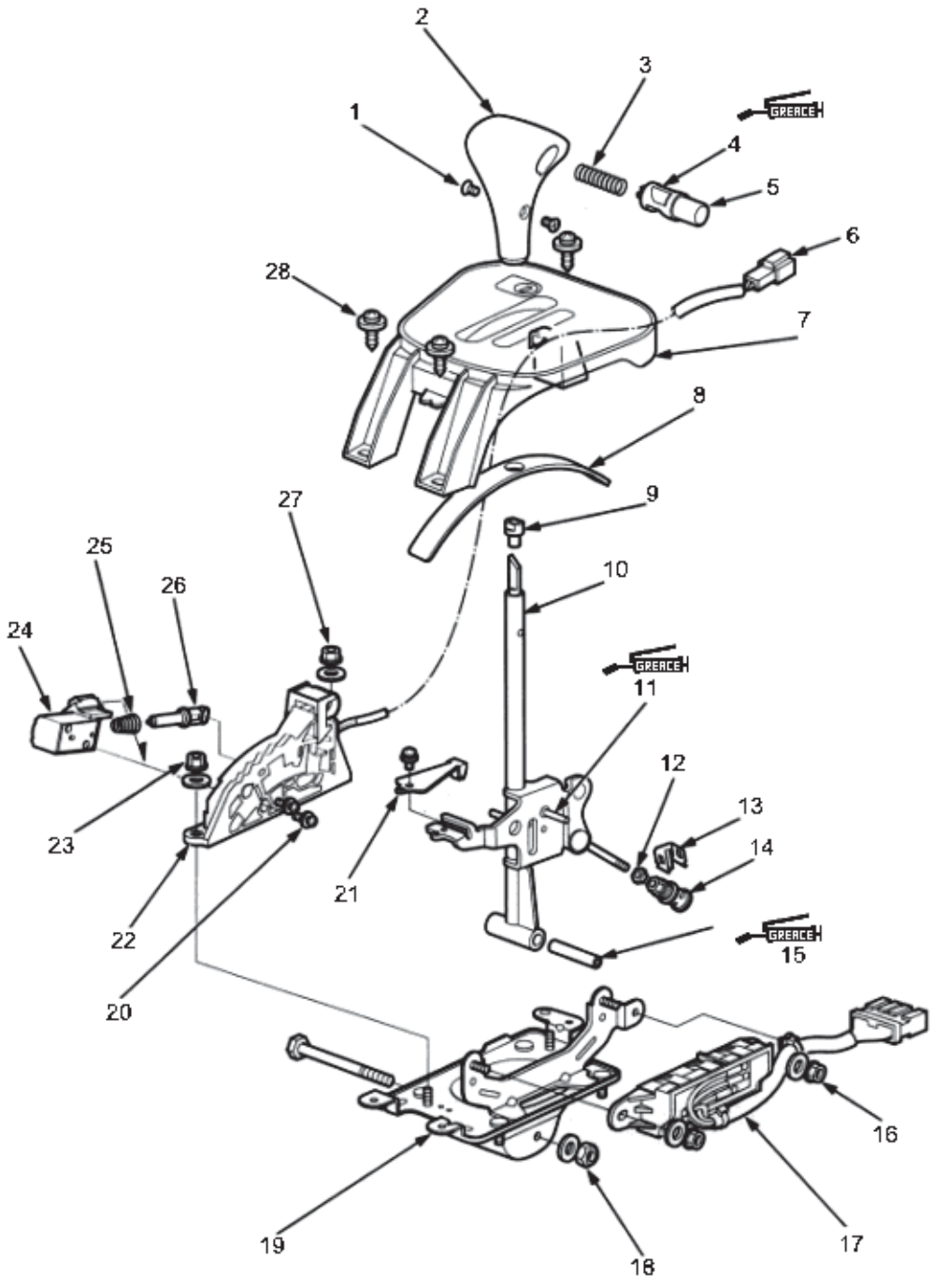
1. SHIFT LEVER ASSEMBLY
2. PARKING PIN SWITCH CONNECTOR
3. A/T GEAR POSITION SWITCH CONNECTOR
4. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
5. SHIFT LOCK SOLENOID CONNECTOR



1. **PUSH KNOB**
2. **SPRING**
3. **SHIFT LEVER KNOB**
4. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
   Apply non-hardening thread lock sealant.
5. **A/T GEAR POSITION INDICATOR PANEL**
6. **LEVER COVER**
7. **BUSHING**
   SILICONE GREASE
8. **SHIFT LEVER ASSEMBLY**
9. **SILICONE GREASE**
10. **LOCKNUT 7 Nm** (0.7. kgf/m, 5 lbf/ft)
11. **LOCK PIN**
12. **ADJUSTER**
13. **COLLAR**
    SILICONE GREASE
14. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
15. **A/T GEAR POSITION SWITCH**
16. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
17. **SHIFT LEVER BRACKET BASE**
18. **DETENT SPRING**
19. **DETENT PLATE**
20. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
21 **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
22. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
23. **SILICONE GREASE**

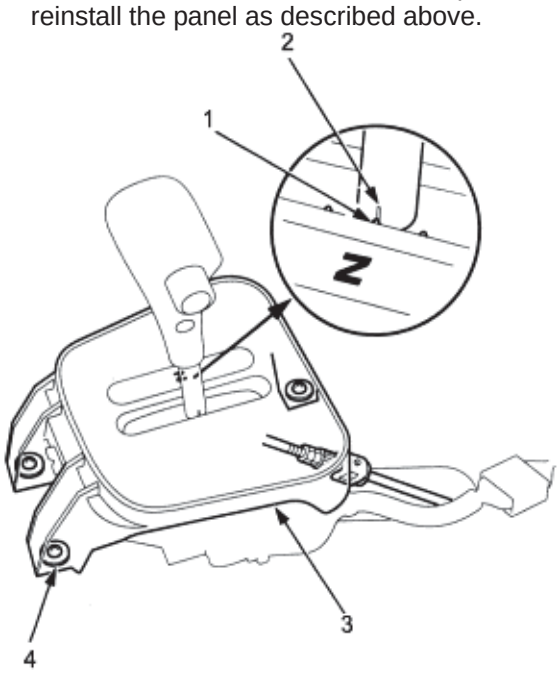


1. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft) Apply non-hardening thread lock sealant.
2. **SHIFT LEVER KNOB**
3. **SPRING**
4. **SILICONE GREASE**
5. **PUSH KNOB**
6. **A/T GEAR POSITION INDICATOR PANEL**
7. **LEVER COVER**
8. **BUSHING**
   SILICONE GREASE
9. **SHIFT LEVER ASSEMBLY**
10. **SILICONE GREASE**
11. **LOCKNUT 7 Nm** (0.7 kgf/m, 5 lbf/ft)
12. **LOCK PIN**
13. **ADJUSTER**
14. **COLLAR**
    SILICONE GREASE
15. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
16. **A/T GEAR POSITION SWITCH**
17. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
18. **SHIFT LEVER BRACKET BASE**
19. **DETENT SPRING**
20. **DETENT PLATE**
21. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
22. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
23. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)



1. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft) Apply non-hardening thread lock sealant.
2. **SHIFT LEVER KNOB**
3. **SPRING**
4. **SILICONE GREASE**
5. **PUSH KNOB**
6. **PARKING PIN SWITCH CONNECTOR**
7. **A/T GEAR POSITION INDICATOR PANEL**
8. **LEVER COVER**
9. **BUSHING**
   SILICONE GREASE
10. **SHIFT LEVER ASSEMBLY**
11. **SILICONE GREASE**
12. **LOCKNUT 7 Nm** (0.7 kgf/m, 5 lbf/ft)
13. **LOCK PIN**
14. **ADJUSTER**
15. **COLLAR**
    SILICONE GREASE
16. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
17. **A/T GEAR POSITION SWITCH**
18. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
19. **SHIFT LEVER BRACKET BASE**
20. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
21. **DETENT SPRING**
22. **DETENT PLATE**
23. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
24. **SHIFT LOCK SOLENOID**
25. **PLUNGER SPRING**
26. **SOLENOID PLUNGER**
27. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)
28. **SCREW** 3 Nm (0.3 kgf/m, 2 lbf/ft)

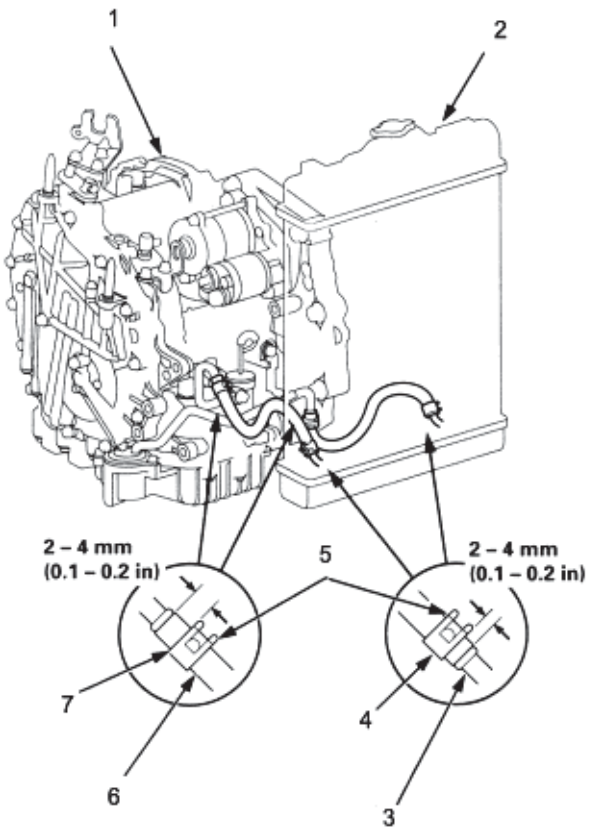
1. Check that the index mark on the shift lever aligns with the N index mark on the shift indicator panel when the transmission is in N position.
2. If the marks do not align, remove the front console (see section 20).
3. Loosen the shift indicator panel mounting screws and adjust by moving the panel.
   NOTE: Whenever the shift indicator panel is remove, reinstall the panel as described above.



1. **N** INDEX MARK
2. INDEX MARK
3. SHIFT INDICATOR PANEL
4. SCREWS 3 Nm (0.3 kgf/m, 2 lbf/ft)

NOTE: LHD model is shown; RHD is similar

1. Apply transmission fluid to the junction between the ATF cooler line and ATF cooler hose inner.
2. Connect the ATF cooler hoses to the ATF cooler lines and secure them with clips as shown.
   NOTE: Be sure to install the clip tabs out of the way of the other parts.



1. TRANSMISSION
2. RADIATOR
3. ATF COOLER LINE
4. CLIP
5. TAB
6. ATF COOLER HOSE
7. CLIP

This 4WD model does not have the feature that mechanically switches between 4WD and 2WD (front-wheel drive). Therefore, speedometer testing should be conducted using simplified free rollers under the rear wheels.

Precautions on using free rollers:

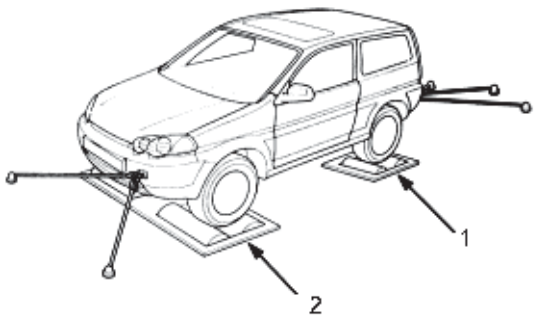
- **Inspecting and testing using a chassis dynamometer is not feasible.**
- **Do not operate the accelerator pedal, brake pedal or steering wheel abruptly. It may cause the vehicle to roll and create a hazardous condition.**
- **The maximum testing speed should be 50 km/p (31 mph).**
- **The maximum continuous operating time should be three minutes.**
- **Make sure you tie the vehicle down securely with the side anchor wires and centre tie down wire. The free rollers are to be set under the rear wheels.**

⚠ CAUTION

- Make sure to place the free rollers parallel to the roller of each speedometer tester.
- Putting the front and rear wheels on the speedometer testers and free rollers inappropriately may cause the vehicle to rill off or over the free rollers and create a hazardous condition.
- The side anchor wires and centre tie-down wire must be appropriately tensioned. If the wires have too much slack, the expected tie-down efficiency cannot be obtained.
- When attaching the side anchor wires and centre tie-down wire, make sure they are not interfering with the bumper and other parts of the vehicle body.
- Do not attach the wires to any place other than the designed areas.
- Do not operate the speedometer testers at a speed more than 50 km/h (31 mph) or for more than three minutes.

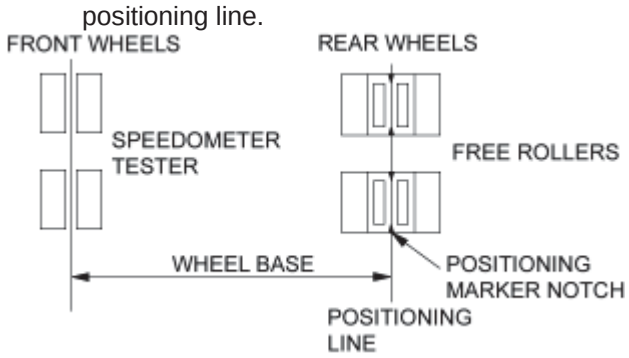
Testing Procedures

1. Set the free rollers according to the wheel base and tread of the vehicle.

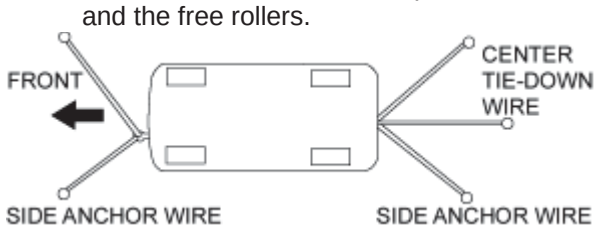


1. FREE ROLLER
2. SPEEDOMETER TESTER

NOTE: Align the position marker notch to the positioning line.

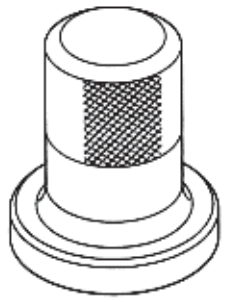


2. Move the vehicle to position the front wheels on the speedometer testers and the rear wheels on the free rollers. Make sure to align the centre of the wheels to the centre of the speedometer testers and the free rollers.

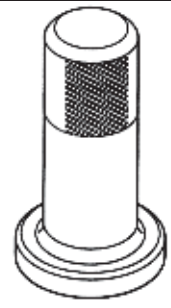


3. Tie down the vehicle securely using the towing hook and the rear tie-down hook bracket to prevent the vehicle from rolling off or over the free rollers.
4. Start the engine, shift the transmission to 3rd gear (manual transmission) or to [D] position (CVT/Honda Multi Matic), accelerate the vehicle gradually and measure the vehicle speed.
5. After measurement, use the brake pedal to gradually decelerate and stop the vehicle.

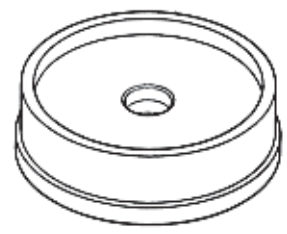
Ref No.	Tool Number	Description	Qty	Remark
1	07GAD - PH70201	Oil Seal Driver	1	
2	07JAD - PL90100	Oil Seal Driver	1	
3	07NAD - PX40100	Driver Attachment, 78 x 80 mm	1	
4	07PAB - 0020000	Companion Flange Holder	1	
5	07749 - 0010000	Handle Driver	1	



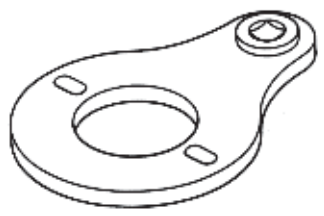
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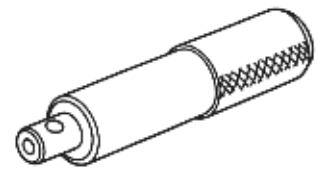
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③



④



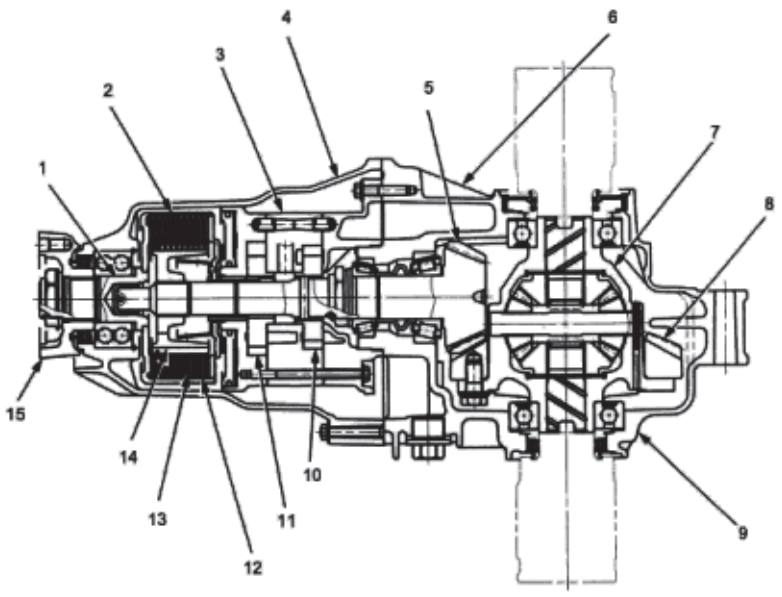
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Outline
The Real-time 4WD-Dual Pump System model has a hydraulic clutch and a differential mechanism in the rear differential assembly. Under normal conditions, the vehicle is driven by the front wheels, however, according to the driving force of the front wheels and the road conditions, the system instantly transmits appropriate driving force to the rear wheels without requiring the driver to switch between 2WD (front wheel drive) and 4WD (four wheel drive). The switching mechanism between 2WD and 4WD is integrated into the rear differential assembly to make the system light and compact.
In addition, the dual-pump system switches off the rear-wheel-drive force when braking in a forward gear. This allows the braking system to work properly on models equipped with an Anti-lock Brake System (ABS).

Construction
The rear differential assembly consists of the torque control differential case assembly and the rear differential carrier assembly. The torque control differential case assembly consists of the differential clutch assembly, the companion flange and the oil pump body assembly. The rear differential carrier assembly consists of the differential mechanism. The differential drive and driven gears are hypoid gears.
The oil pump body assembly consists of the front oil pump, the rear oil pump, the hydraulic control mechanism and the clutch piston. The clutch piston has a disc spring that constantly provides the differential clutch assembly with a preset torque to prevent abnormal sound.
The clutch guide in the differential clutch assembly is connected to the propeller shaft via the companion flange, and it receives the driving force from the transfer case. The clutch guide rotates the clutch plate and the front oil pump in the oil pump body.
The clutch hub in the differential clutch assembly has a clutch disc that is splined with the hypoid drive pinion gear. The hypoid drive gear drives the rear oil pump.
The front and rear oil pumps are trochoidal pumps. The rear oil pump capacity is 2.5 percent larger than the front oil pump, this enables it to handle the rotation difference between the front and rear wheels caused by worn front tyres and tight corner braking. The oil pumps are designed so that the fluid intake works as an fluid discharge when the oil pumps rotate in reverse. Genuine Honda ATR PREMIUM (Automatic Transmission Fluid PREMIUM) is used instead of differential fluid.

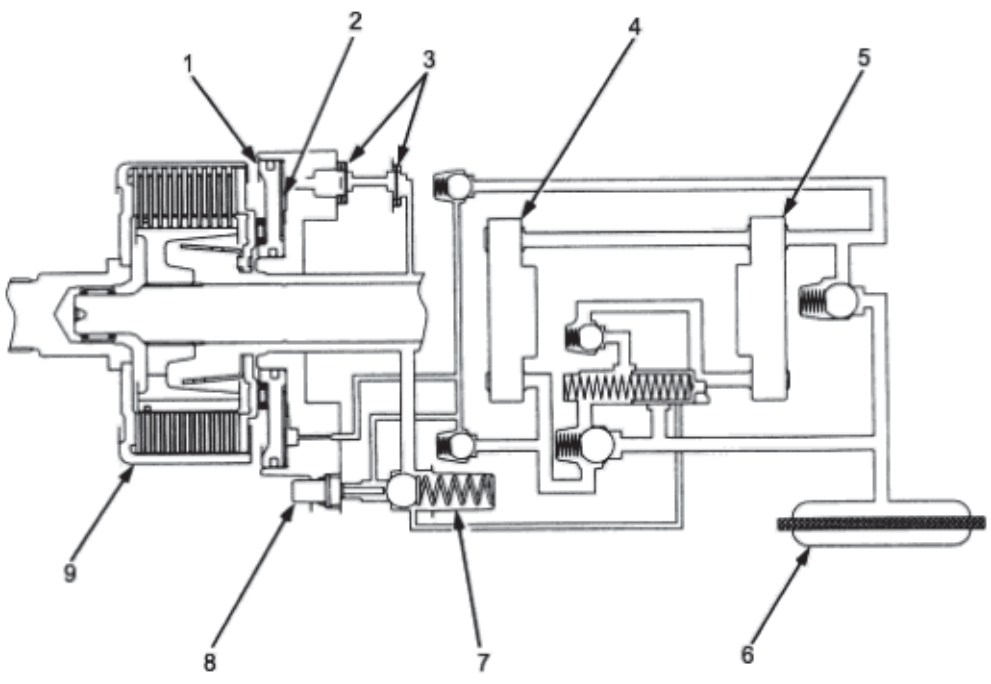
Operation
When there is a difference in rotation speed between the front wheels (clutch guide) and rear wheels (hypoid driven gear), hydraulic pressure from the front and rear oil pumps engages the differential clutch and drive force from the transfer case is applied to the rear wheels.
The hydraulic pressure control mechanism in the oil pump body selects 4WD mode when the vehicle is started abruptly, or when accelerating in a forward or reverse gear (causing rotation difference between the front and rear wheels), or when braking in reverse gear (when decelerating). It switches to 2WD mode when the vehicle is driven at constant speed in forward or reverse gear (when there is no rotation difference between the front and rear wheels), or when braking in a forward gear (when decelerating).
To protect the system, the differential clutch assembly is lubricated by hydraulic pressure generated by the oil pumps in both 4WD and 2WD modes. Also, the thermal switch relieves the hydraulic pressure on the clutch piston and cancels 4WD mode if the temperature of the differential fluid rises above normal.

REAR DIFFERENTIAL ASSEMBLY



1. **CLUTCH GUIDE**
2. **DIFFERENTIAL CLUTCH ASSEMBLY**
3. **OIL PUMP BODY**
4. **TORQUE CONTROL DIFFERENTIAL CASE**
5. **HYPOID DRIVE PINION GEAR**
6. **DIFFERENTIAL CARRIER**
7. **DIFFERENTIAL**
8. **HYPOID RING GEAR**
9. **DIFFERENTIAL HOUSING**
10. **REAR OIL PUMP**
11. **FRONT OIL PUMP**
12. **CLUTCH DISC**
13. **CLUTCH PLATE**
14. **CLUTCH HUB**
15. **COMPANION FLANGE**

HYDRAULIC CONTROL SYSTEM

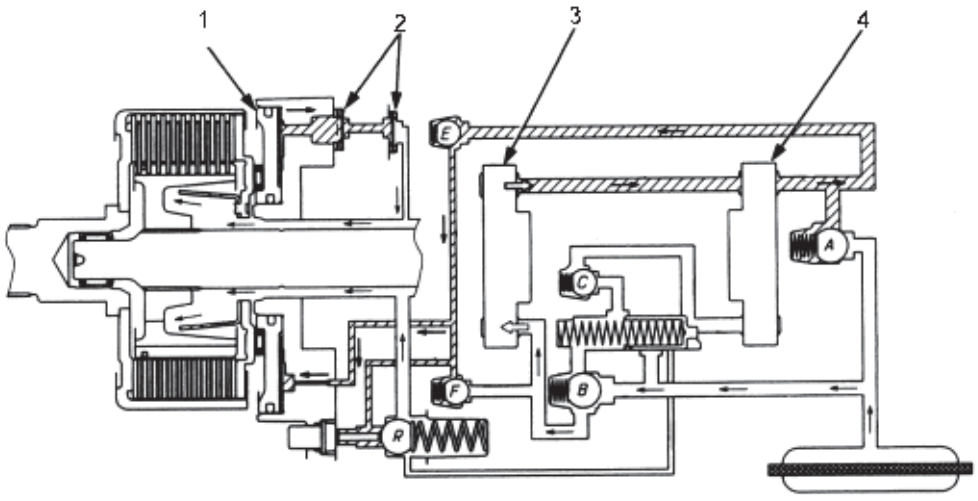


1. **CLUTCH PISTON**
2. **DISC SPRING**
3. **ORIFICES**
4. **FRONT OIL PUMP**
5. **REAR OIL PUMP**
6. **OIL STRAINER**
7. **RELIEF VALVE**
8. **THERMAL SWITCH**
9. **DIFFERENTIAL CLUTCH ASSEMBLY**

Forward Start and Acceleration (4WD)

During a forward start and forward acceleration, the dual pump system can engage four wheel drive.

If the front wheels spin faster than the rear wheels, the front oil pump spins faster than the rear oil pump. The front pump draws fluid through check valve B and discharges it. Some of the discharged fluid is drawn in by the rear oil pump. The remaining fluid will pass through check valve E into the clutch piston, there, hydraulic pressure is regulated by two orifices. The regulated hydraulic pressure at the clutch piston pushes the plates and discs of the clutch together to form a connection. The engaged clutch then passes driving force from the transfer case to the rear wheels, producing 4WD.

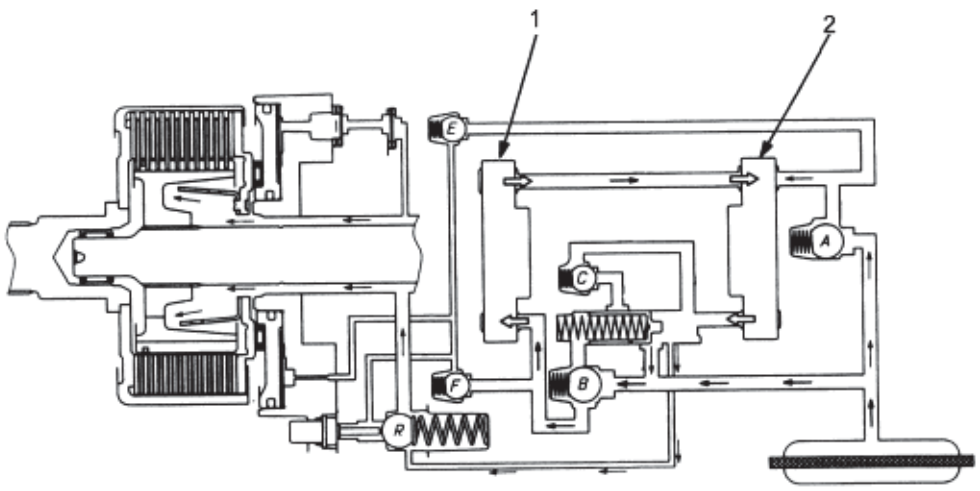


1. **CLUTCH PISTON**
2. **ORIFICES**
3. **FRONT OIL PUMP**
4. **REAR OIL PUMP**

Forward Driving at Constant Speed (2WD)

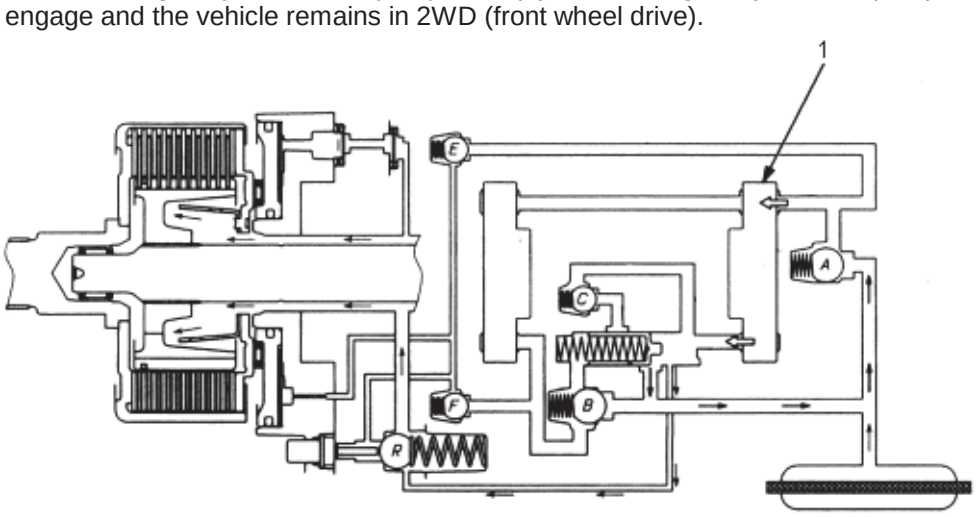
When driving forward at a constant speed (cruising), the dual pump system functions in two wheel drive mode.

The rotation speed of the front and rear wheels is the same, so the speed of the front and rear pumps is also the same. Fluid discharged by the front oil pump is drawn in by the rear oil pump and is circulated through the system. Because there is no pressure built up at the clutch piston, the clutch does not engage and the vehicle remains in 2WD (front wheel drive).



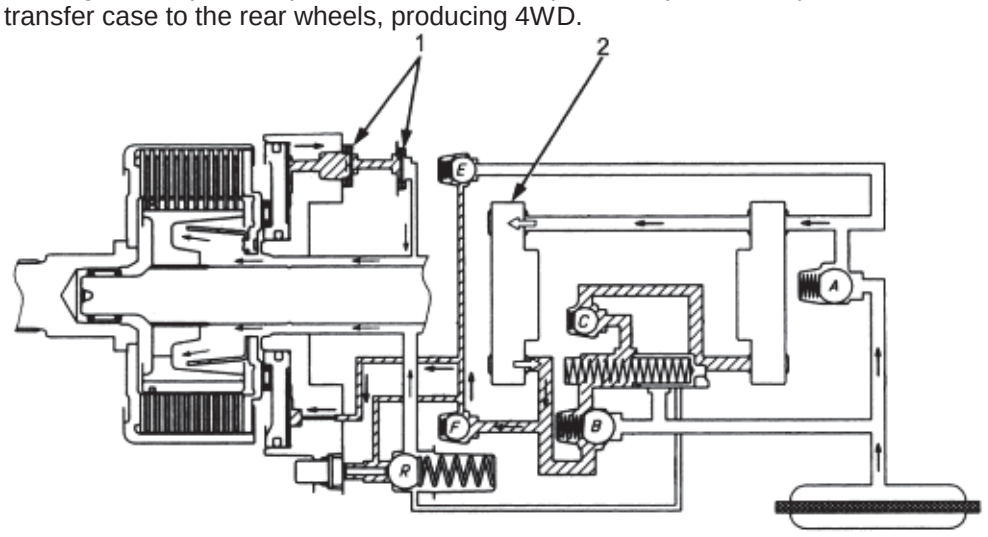
1. **FRONT OIL PUMP**
2. **REAR OIL PUMP**

Forward Deceleration (2WD)
During a forward deceleration, the dual pump system functions in two wheel drive mode.
Because of the braking characteristics, the speed of the rear wheels may exceed the speed of the front wheels during deceleration. If so , the rear oil pump spins faster than the front oil pump.
Fluid discharged by the rear oil pump is simply drawn in again by the rear pump and recirculated. Because there is no pressure built up at the clutch piston, the clutch piston does not engage and the vehicle remains in 2WD (front wheel drive).



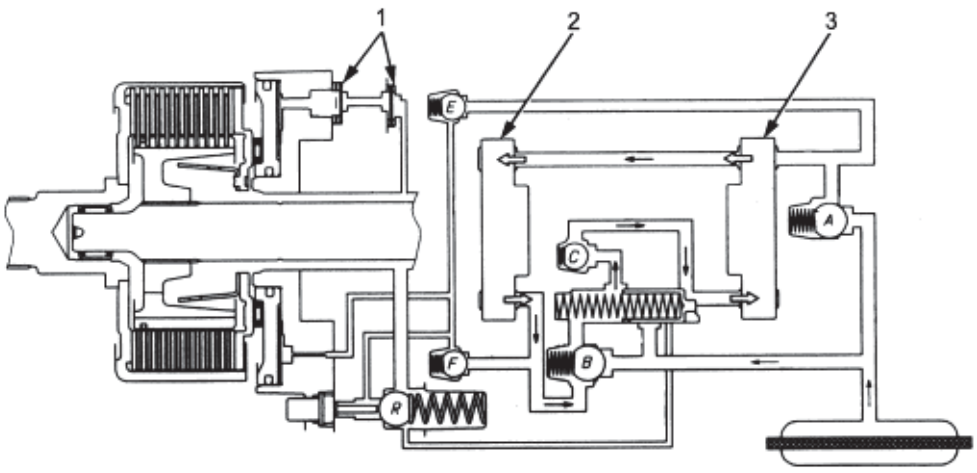
1. **REAR OIL PUMP**

Reverse Driving and Acceleration (4WD)
During reverse start and reverse acceleration, the dual pump system can engage four wheel drive.
If the front wheels spin faster than the rear wheels, the front oil pump spins faster than the rear oil pump. The front oil pump draws in fluid through check valve A and discharges it. (Note that in reverse, the direction of the pumps is the opposite of that during forward driving.)
Some of the fluid that is discharged by the front oil pump is drawn in by the rear oil pump. The remaining fluid passes through check valve F into the cylinder of the clutch piston, where it is regulated by two orifices.
The regulated hydraulic pressure at the clutch piston may force the plates and discs of the clutch together to form a connection. The engaged clutch passes driving force from the transfer case to the rear wheels, producing 4WD.



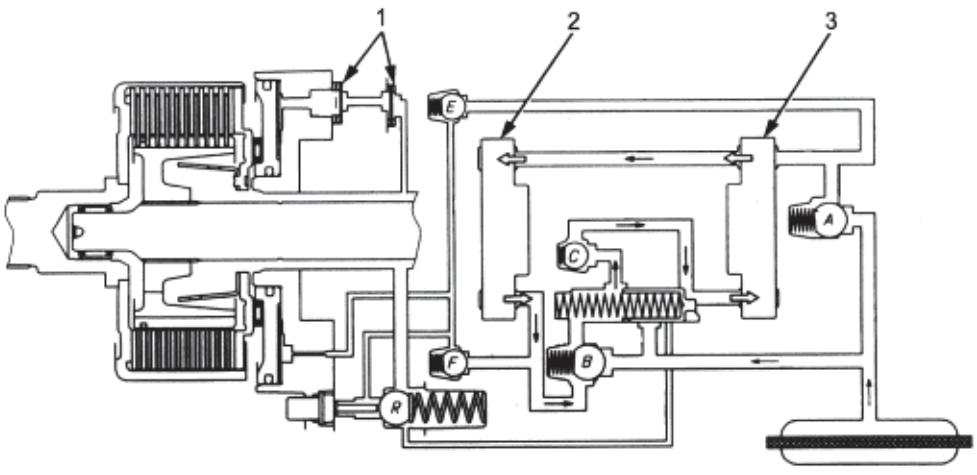
1. **ORIFICES**
2. **FRONT OIL PUMP**

Reverse Driving at Constant Speed (2WD)
When driving in reverse at a constant speed, the dual pump system functions in two wheel drive mode.
The rotation speed of the front and rear wheels is the same, so the speed of the front and rear pumps is also the same.
Fluid discharged by the front oil pump is drawn in by the rear oil pump and is circulated through the system, but, because there is a difference in the capacity between the two pumps, fluid flows through check valve E and then through orifices. This fluid lubricates and cools the clutch assembly and bearings.
In this condition, only a low pressure is built up at the clutch piston, therefore, the clutch does not engage and the vehicle remains in 2WD (front wheel drive).



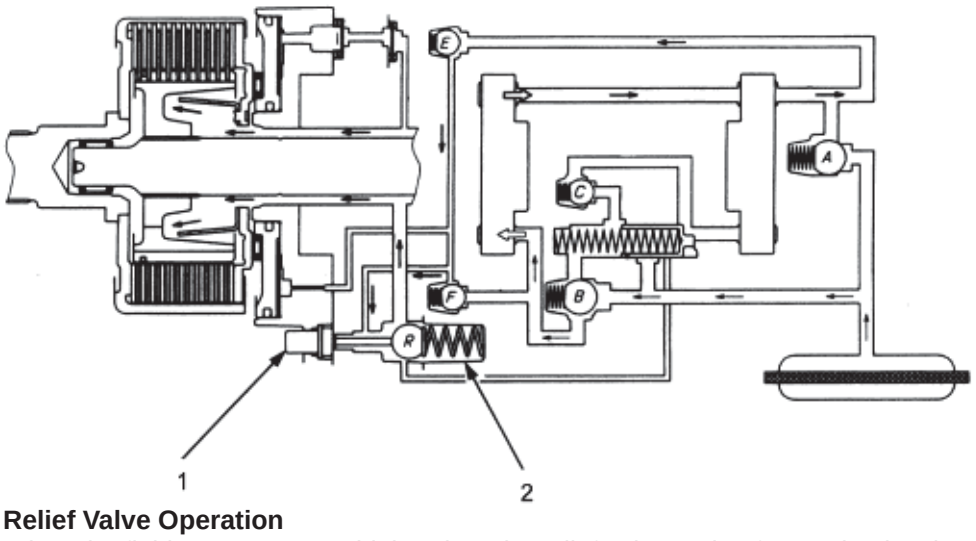
1. **ORIFICES**
2. **FRONT OIL PUMP**
3. **REAR OIL PUMP**

Reverse Deceleration (4WD)
During reverse deceleration, the dual pump system can engage four wheel drive.
When decelerating in reverse direction, the speed of the rear wheels may exceed the speed of the front wheels (due to engine braking). In this condition, the rear oil pump draws fluid through check valves B and C. Fluid discharged from the rear oil pump then flows through check valve E to the clutch piston, there, pressure is regulated by two orifices.
The regulated hydraulic pressure at the clutch piston may force the plates and discs of the clutch together to form a connection. The engaged clutch passes driving force from the transfer case to the rear wheels, producing 4WD.



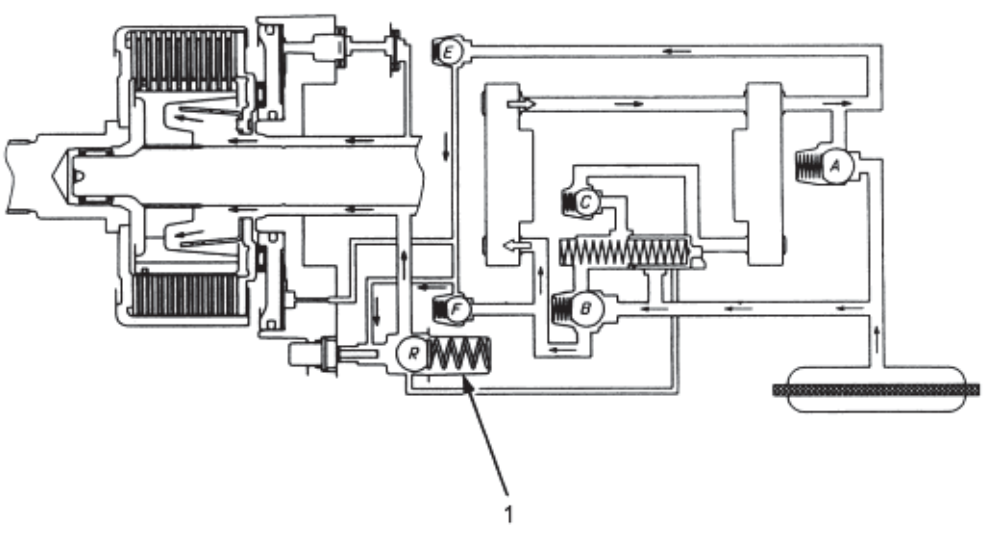
1. **ORIFICES**
2. **REAR OIL PUMP**

Thermal Switch Operation (2WD)
During 4WD operation, pressure-regulated fluid is in contact with the clutch piston and the thermal switch.
If the temperature of the fluid in the differential goes to high, the thermal switch pushes open the relief valve R. This causes the pressure in the clutch piston to drop and 4WD mode is disengaged.



1. **THERMAL SWITCH**
2. **RELIEF VALVE**

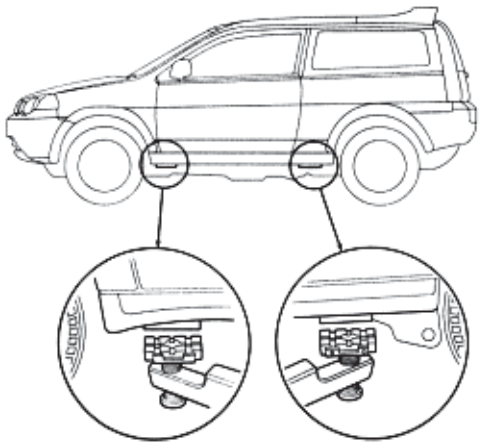
Relief Valve Operation
When the fluid pressure goes higher than the relief valve spring force, check valve r opens. Pressure applied at the clutch piston is held constant. This feature adds stability by preventing the rear wheel drive system from experiencing excessive torque.



1. **RELIEF VALVE**

When starting and accelerating in forward gears (4WD mode)
Manual Transmission:

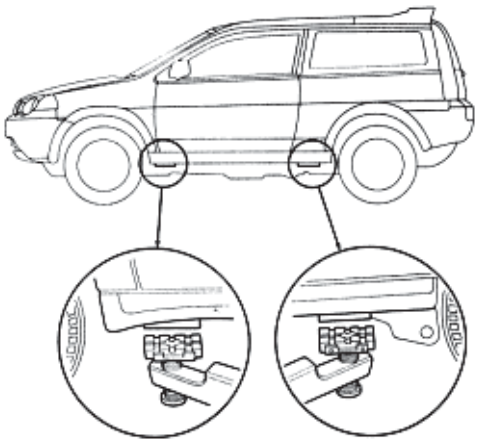
1. Lift up the vehicle so all four wheels are off the ground (see section 1).



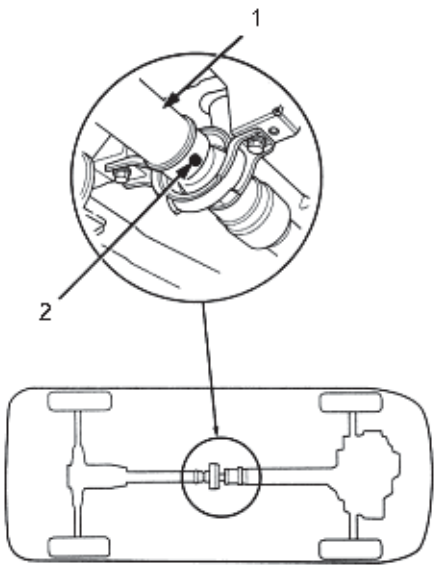
2. Start the engine and let it run until it warms up (the radiator fan comes on at least twice)
3. With the engine at idle, shift into 1st gear and release the clutch.
4. Apply the parking brake firmly.
   - If the engine stalls, the 4WD system is normal.
   - If the engine continues running, there is a problem in 4WD system. Check the differential fluid. If the differential fluid is normal, replace the torque control differential case kit.

Automatic Transmission:

1. Lift up the vehicle so all four wheels are off the ground (see section 1).



2. Make a mark on either front or rear propeller shaft.



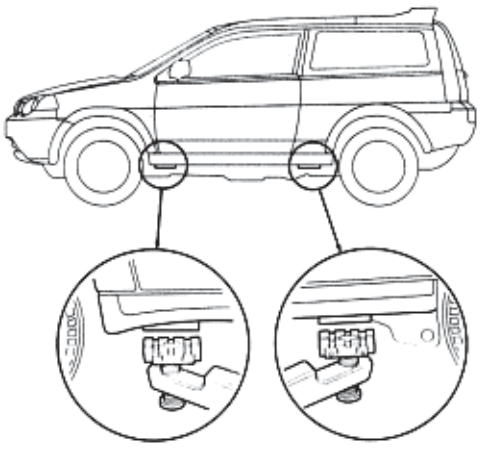
1. PROPELLER SHAFT
2. Mark

3. Start the engine and let it run until it warms up (the radiator fan comes on at least twice).
4. With the engine at idle, shift to the 1 position.
5. Apply the parking brake firmly and measure the time it takes the propeller shaft to rotate 10 times.
   - If the measured time is more than 10 seconds the 4WD system is normal.
   - If the time is less than 10 seconds, there is a problem in 4WD system. Check the differential fluid. If the differential fluid is normal, replace the torque control differential case kit.

When starting and accelerating in reverse gear (4WD mode)

Manual Transmission:

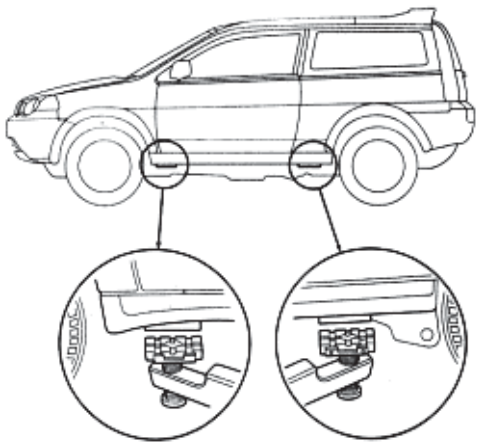
1. Lift up the vehicle so all four wheels are off the ground (see section 1).



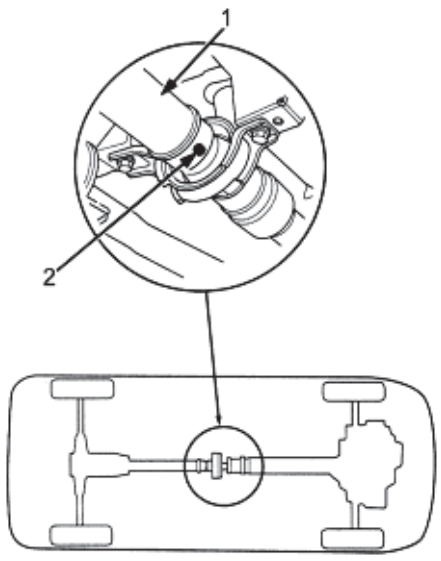
2. Start the engine and let it run until it warms up (the radiator fan comes on at least twice)
3. With the engine at idle, shift into reverse gear and release the clutch.
4. Apply the parking brake firmly.
   - If the engine stalls, the 4WD system is normal.
   - If the engine continues running, there is a problem in 4WD system. Check the differential fluid. If the differential fluid is normal, replace the torque control differential case kit.

Automatic Transmission:

1. Lift up the vehicle so all four wheels are off the ground (see section 1).



2. Make a mark on either front or rear propeller shaft.

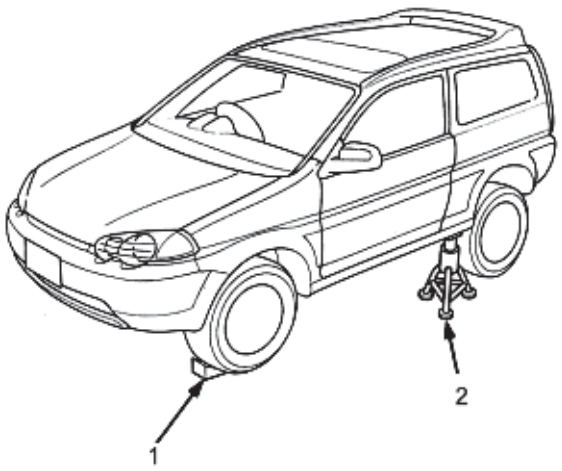


1. PROPELLER SHAFT
2. Mark

3. Start the engine and let it run until it warms up (the radiator fan comes on at least twice).
4. With the engine at idle, shift to the R position.
5. Apply the parking brake firmly and measure the time it takes the propeller shaft to rotate 10 times.
   - If the measured time is more than 10 seconds the 4WD system is normal.
   - If the time is less than 10 seconds, there is a problem in 4WD system. Check the differential fluid. If the differential fluid is normal, replace the torque control differential case kit.

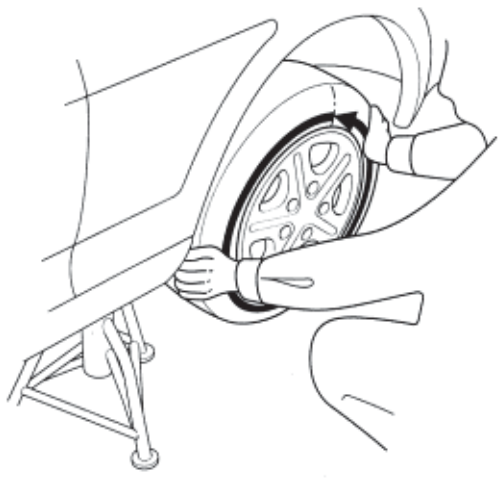
When decelerating in a forward gear (2WD mode)

1. Block the front wheels, raise the left rear wheel and support it with a safety stand as shown.



1. WHEEL CHOCKS
2. SAFETY STAND

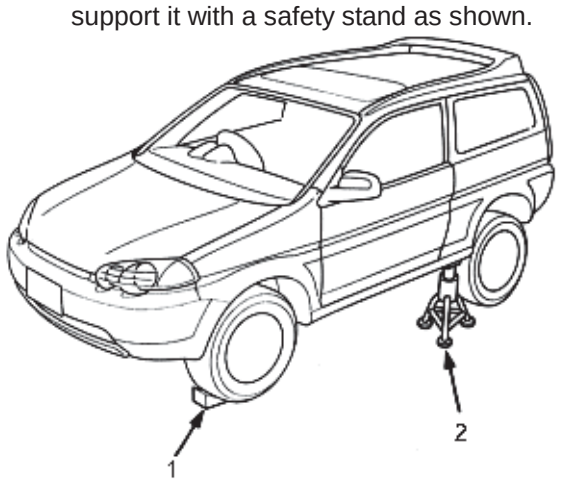
2. Hold the tyre and turn it counterclockwise continuously for more than one rotation.



- If the rotation of the wheel does not gradually feel heavy while rotating, the 2WD system when decelerating is a forward gear is normal.
- If the rotations of the wheel gradually feels heavy, there is a problem in the system. Check the differential fluid. If the fluid is normal, replace the torque control differential case kit.

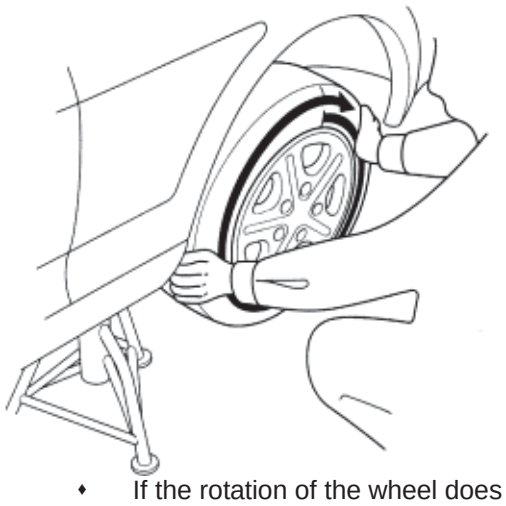
When decelerating in reverse gear (4WD mode)

1. Block the front wheels, raise the left rear wheel and support it with a safety stand as shown.



1. WHEEL CHOCKS
2. SAFETY STAND

2. Hold the tyre and turn it counterclockwise continuously for more than one rotation.



- If the rotation of the wheel does not gradually feel heavy while rotating, the 2WD system when decelerating is a forward gear is normal.
- If the rotations of the wheel gradually feels heavy, there is a problem in the system. Check the differential fluid. If the fluid is normal, replace the torque control differential case kit.

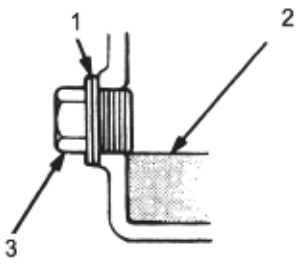
Most problems in the unit are to be diagnosed by identifying noises from the gears or bearings.
Care should be taken during diagnosis not to confuse differential noises with those from other drivetrain components.

Symptom	Probable Cause	Remedy
Will not go into 4WD mode	• Fluid level too low • Incorrect fluid type	• Add fluid • Replace
Will not return to 2WD mode	Incorrect fluid type	Drain and fill the differential
Gear or bearing noises	• Fluid level too low • Incorrect fluid type • Damaged or chipped gears	• Add fluid • Drain and fill the differential • Replace the differential carrier assembly
Overheating	• Fluid level too low • Incorrect fluid type	• Add fluid • Drain and fill the differential
Fluid leak	• Fluid level too high • Clogged breather hose • Worn or damaged oil seal • Damaged sealing washer • Loose mounting bolts or inadequate sealing	• Lower to proper level • Clean or replace • Replace • Replace • Recheck torque or apply sealant

⚠ WARNING

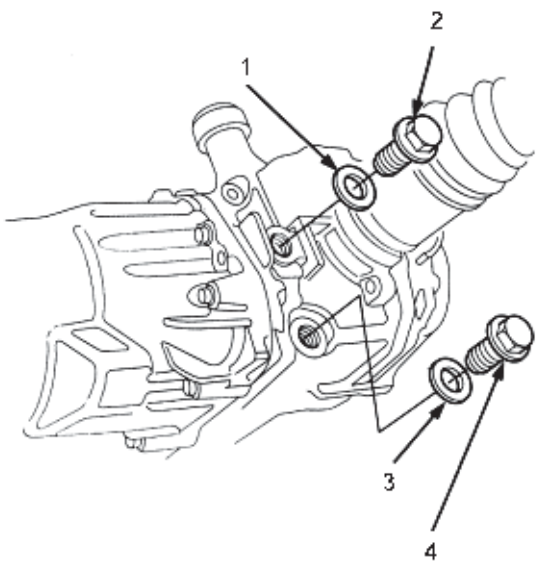
Make sure lifts are placed properly (see section1).

1. With the vehicle on level ground, inspect the differential fluid with the engine OFF.
2. Remove the oil filler plug, then check the level and condition of the fluid.



1. WASHER, Replace
2. Proper level
3. OIL FILLER PLUG, 47Nm (4.8 kgf/m, 35 lbf/ft)

3. The fluid level must be up to the fill hole. If it is below the hole, add the recommended fluid until it runs out, then reinstall the oil filler plug with a new washer.
4. If the differential fluid is dirty, remove the drain plug and drain the fluid.

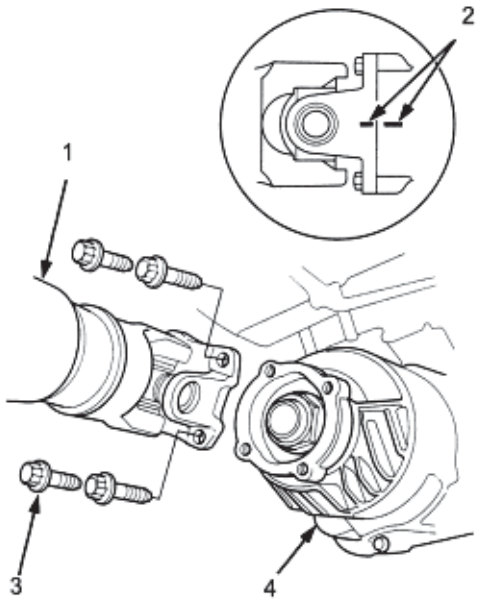


1. WASHER, Replace
2. OIL FILLER PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)
3. WASHER, Replace
4. DRAIN PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)

5. Clean the drain plug, the fit it with a new washer and refill the differential with the recommended fluid to the proper level.
   NOTE: If you disassemble the differential, check the fluid level again after the 4WD system check is finished. Add fluid if necessary.
6. Reinstall the oil filler plug with a new washer.
   Fluid Capacity
   1.0 L (1.1 US qt, 0.9 Imp qt) at fluid change
   1.2 L (1.3 US qt, 1.1 Imp qt) at overhaul
   Recommended fluid:
   Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)

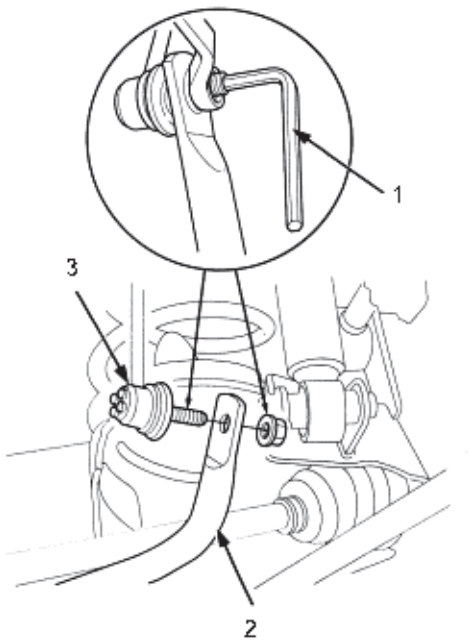
Removal

1. Raise the front of the vehicle and support it with safety stands in the proper locations (see section 1).
2. Drain the rear differential oil (**See page** 15-14).
3. Make a reference mark across the propeller shaft and the rear differential flanges.
4. Separate the propeller shaft from the rear differential.



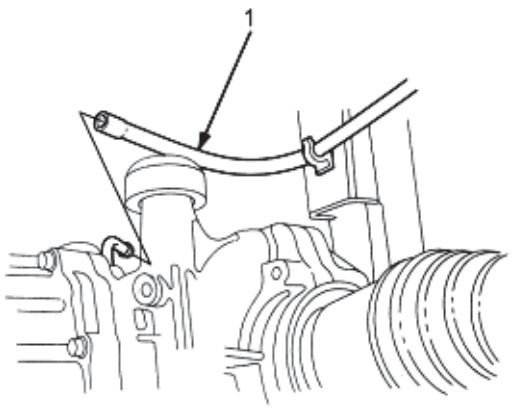
1. PROPELLER SHAFT
2. Mark
3. 12 POINT BOLT
4. REAR DIFFERENTIAL

5. Hold the stabiliser link ball joint with a hexagonal wrench and remove the flange nut, then separate the front stabiliser link and front stabiliser.



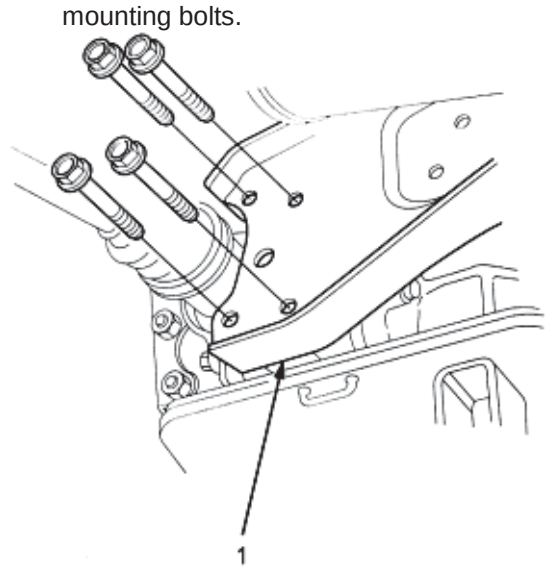
1. HEXAGONAL WRENCH
2. FRONT STABILISER
3. FRONT STABILISER LINK

6. Disconnect the breather tube from the rear differential.



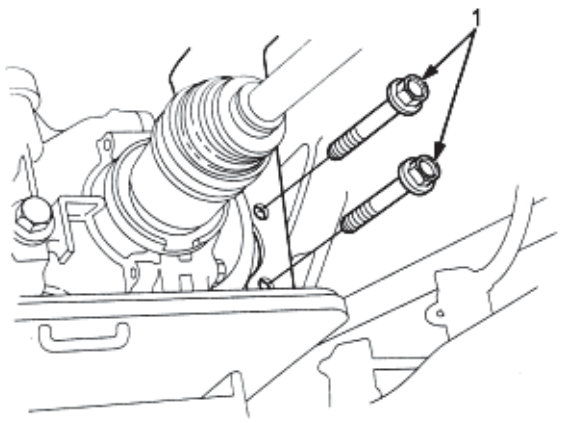
1. BREATHER TUBE

7. Remove the four rear differential mount A mounting bolts.



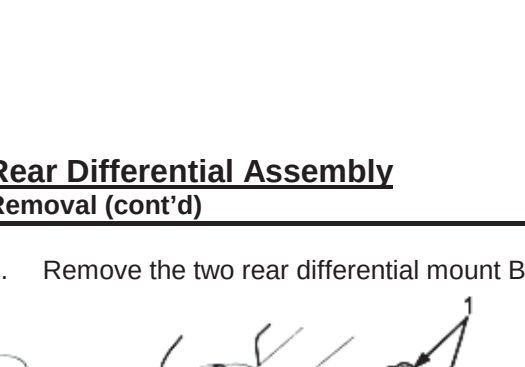
1. REAR DIFFERENTIAL MOUNT A

8. Remove the two rear differential mount B mounting bolts.



1. MOUNTING BOLTS

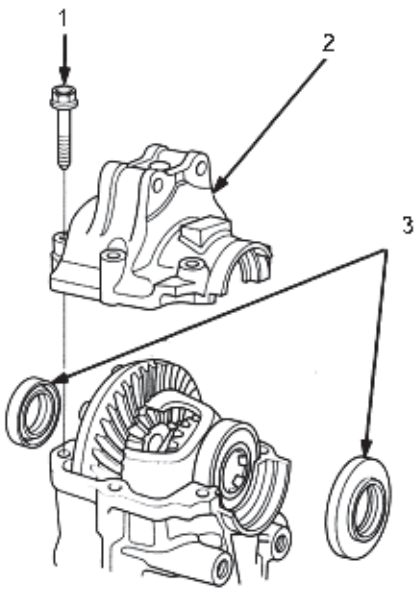
9. Pry the driveshaft assembly with a screwdriver, as shown, to force the set ring at the driveshaft end past the groove. Be careful not to damage the oil seals when prying.



1. DRIVESHAFT
2. SET RING, Replace
3. REAR DIFFERENTIAL

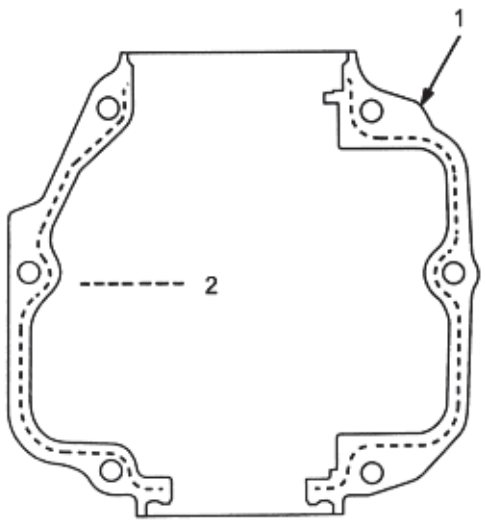
10. Lower the rear differential on the transmission jack.

1. Remove the bolts in a crisscross pattern, then remove the differential housing.



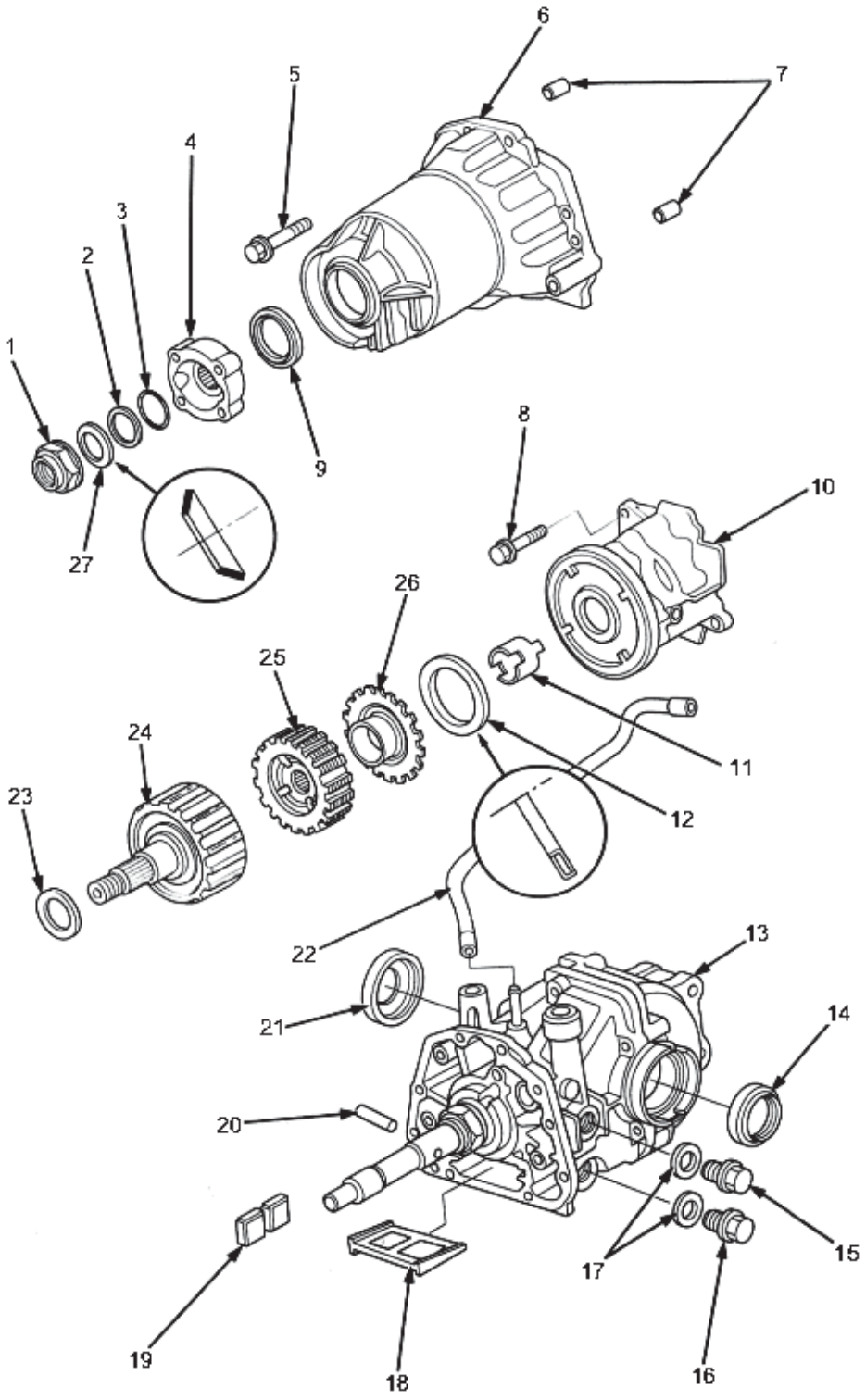
1. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
2. DIFFERENTIAL HOUSING
3. OIL SEALS, Replace

2. Apply liquid gasket to the sealing surface of the differential housing and note the following items:
   - Use liquid gasket (P/N 0Y740-99986).
   - Remove any dirt or fluid from the sealing surface.
   - If 20 minutes have passed after applying liquid gasket, reapply it before you assemble the housing. Allow it to cure at least 30 minutes after assembly before filling differential with fluid.



1. DIFFERENTIAL HOUSING
2. Apply Liquid Gasket

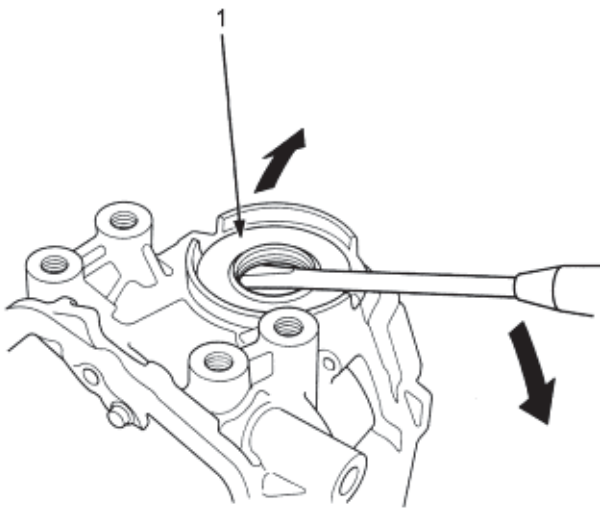
3. Install the differential housing, then torque the bolts in a crisscross pattern in several steps.
4. Install the oil seals (**See page** 15-18).



1. **LOCKNUT, 24 mm** Replace **118 Nm, (12.0 kgf/m, 87 lbf/ft)**
2. **BACK-UP RING**
3. **O-RING,** Replace
4. **COMPANION FLANGE**
5. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
6. **TORQUE CONTROL DIFFERENTIAL**
7. **DOWEL PINS**
8. **6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)**
9. **OIL SEAL**, Replace
10. **OIL PUMP BODY ASSEMBLY**
11. **OIL PUMP DRIVESHAFT**
12. **THRUST NEEDLE BEARING**
13. **DIFFERENTIAL CARRIER ASSEMBLY**
14. **OIL SEAL**, Replace
15. **OIL FILLER PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)**
16. **DRAIN PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)**
17. **WASHERS**, Replace
18. **OIL STRAINER**
19. **MAGNET**
20. **OIL PUMP PIN**
21. **OIL SEAL**, Replace
22. **BREATHER TUBE**
23. **SHIM, 30 mm**
24. **CLUTCH GUIDE**
25. **CLUTCH HUB/PLATES/DISCS**
26. **PRESSURE PLATE**
27. **DISC SPRING WASHER, 24 mm**

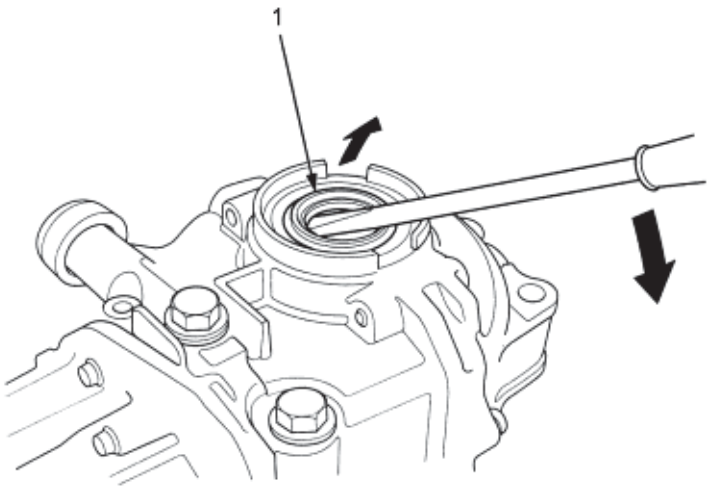
1. Remove the oil seals from the differential housing.

Right side:



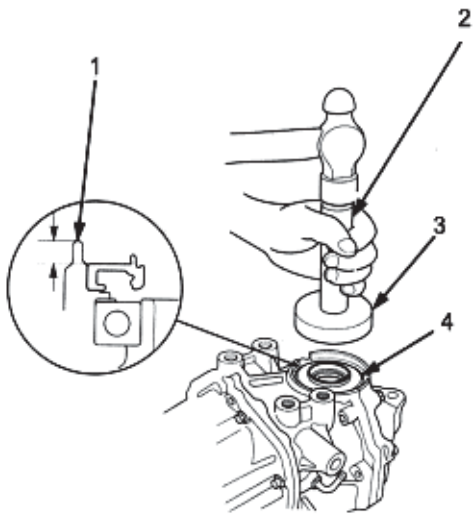
1. OIL SEAL, Replace

Left side:



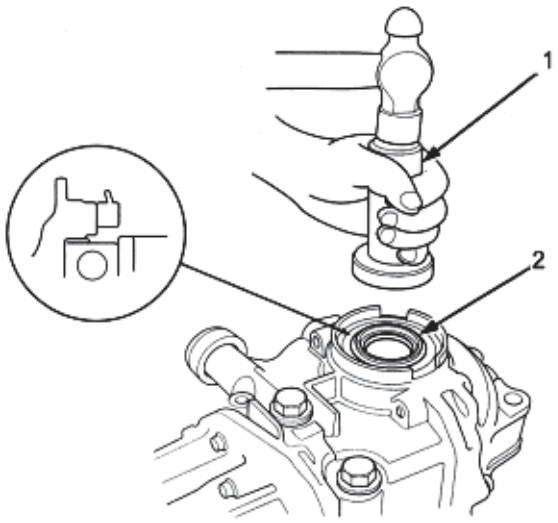
1. OIL SEAL, Replace

2. Install the oil seals squarely using the special tools. Be careful no to damage the lip of the oil seals. Right side: Installation depth of the oil seal is 9 mm (0.35 in) below the edge of the differential housing.



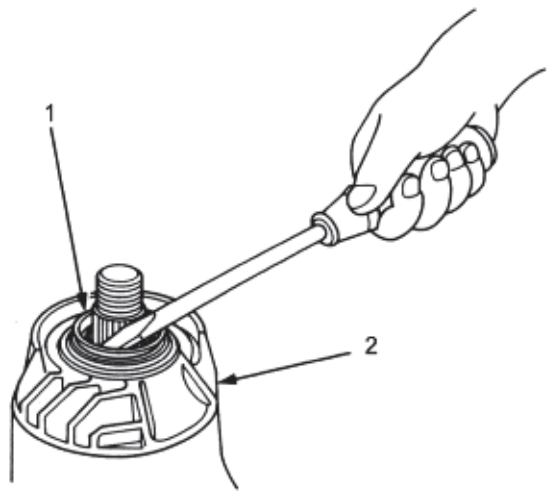
1. DIFFERENTIAL HOUSING
2. HANDLE DRIVER, 07749-0010000
3. DRIVER ATTACHMENT, 78 x 80 mm, 07NAD-PX40100
4. OIL SEAL

Left side: Install the oil seal flush with the edge of the differential carrier assembly.



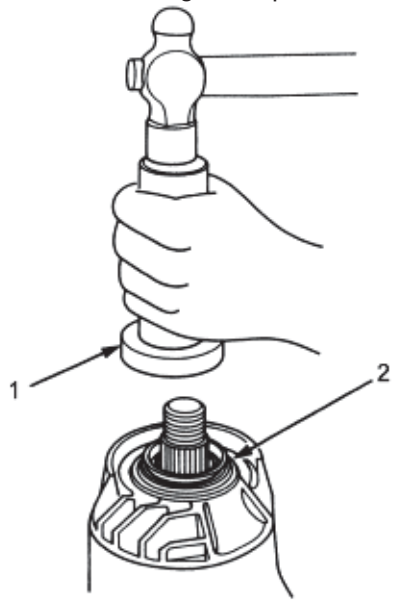
1. OIL SEAL DRIVER, 07GAD-PH70201
2. OIL SEAL

3. Remove the oil seal from the torque control differential case.



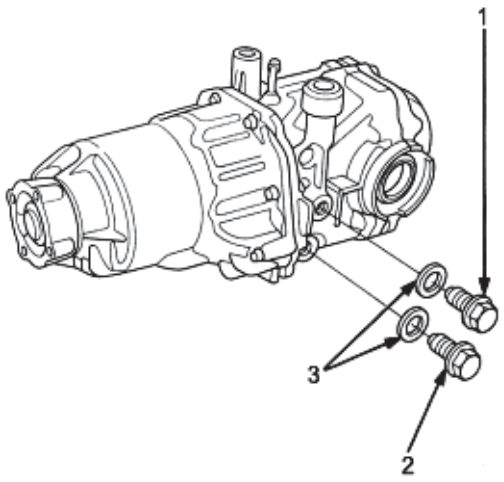
1. OIL SEAL, Replace
2. TORQUE CONTROL DIFFERENTIAL CASE

4. Install the oil seal squarely using the special tool. Be careful not to damage the lip of the oil seal.



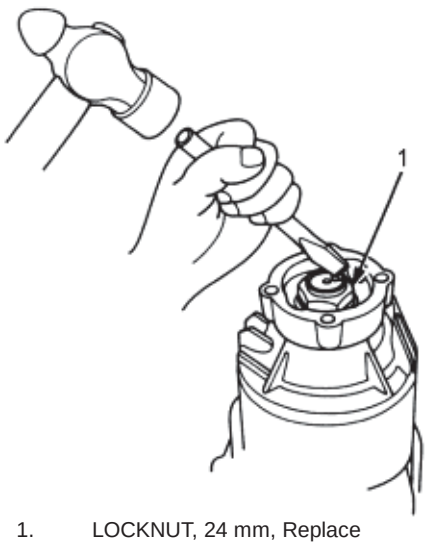
1. OIL SEAL DRIVER, 07JAD-PL90100
2. OIL SEAL, Replace

1. Remove the drain plug and the oil filler plug.



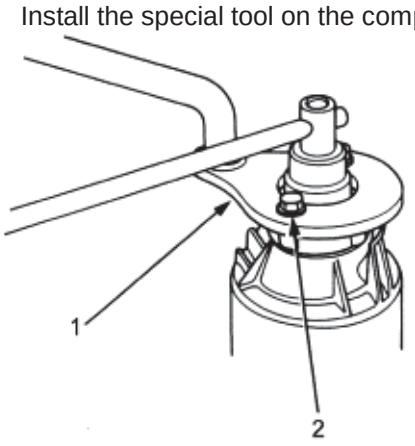
1. OIL FILLER PLUG
2. DRAIN PLUG
3. WASHERS, Replace

2. Raise the locknut from the groove of the clutch guide, making sure that the tab completely clears the groove to prevent damaging the clutch guide.



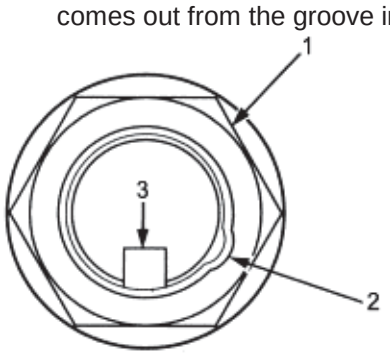
1. LOCKNUT, 24 mm, Replace

3. Install the special tool on the companion flange.



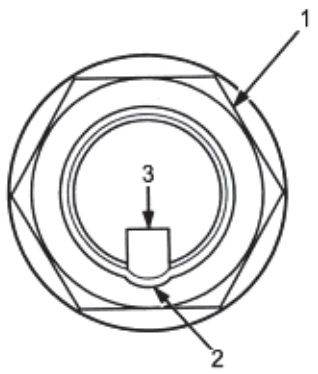
1. COMPANION FLANGE HOLDER, 07PAB-0020000
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)

4. Loosen the locknut counterclockwise so that its tab comes out from the groove in the clutch guide.



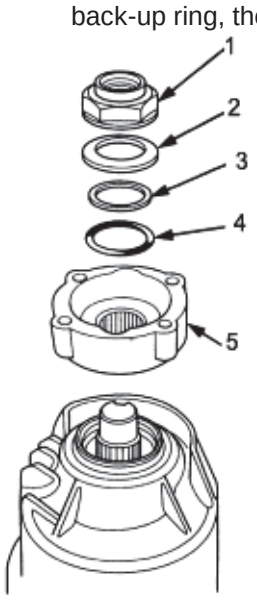
1. LOCKNUT, 24 mm
2. Tab
3. Groove

5. Tighten the locknut until its tab aligns with the groove.
6. Remove any dirt from inside of the groove in the clutch guide, then loosen the locknut.



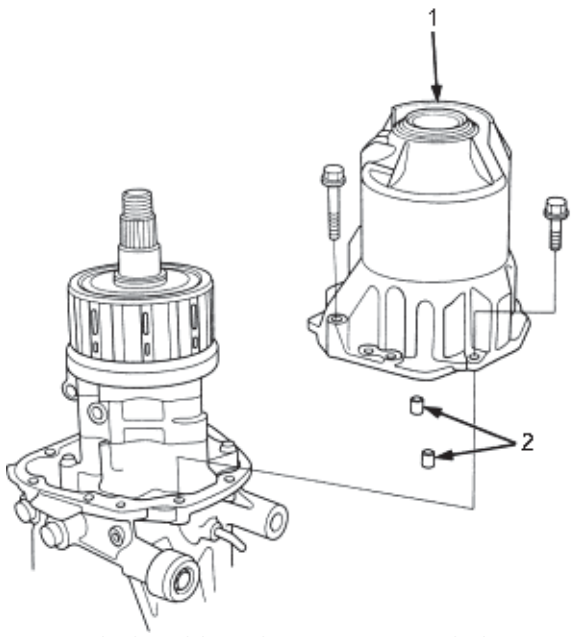
1. LOCKNUT, 24 mm
2. Tab
3. Groove

7. Remove the locknut, the disc spring washer, the back-up ring, the O-ring and the companion flange.



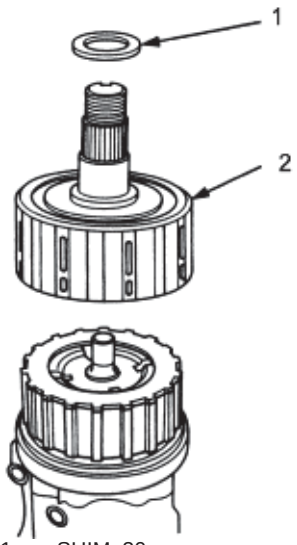
1. LOCKNUT, 24 mm, Replace
2. DISC SPRING WASHER, 24 mm
3. BACK-UP RING
4. O-RING, Replace
5. COMPANION FLANGE

8. Remove the torque control differential case and the dowel pins.



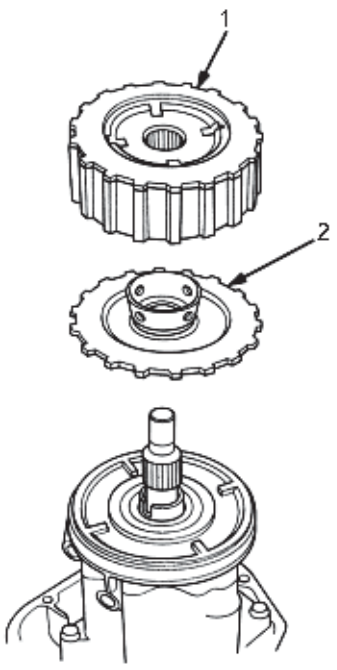
1. TORQUE CONTROL DIFFERENTIAL CASE
2. 6 x 10 mm DOWEL PINS

9. Remove the shim and the clutch guide.



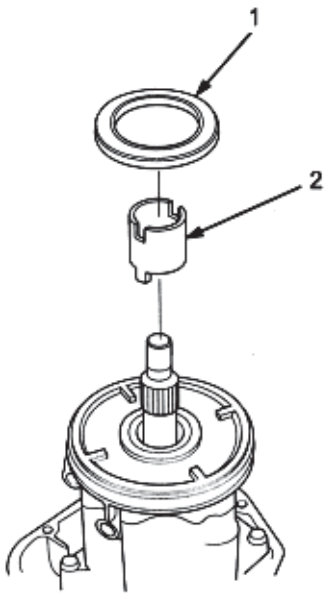
1. SHIM, 30 mm
2. CLUTCH GUIDE

10. Remove the clutch hub/plates/discs and the pressure plate.



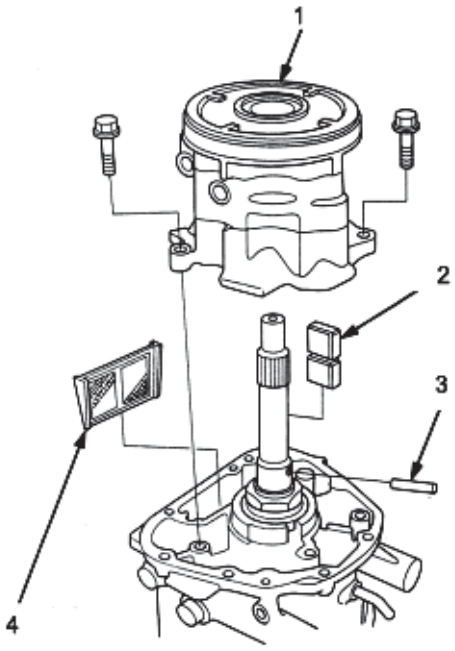
1. CLUTCH HUB/PLATES/DISCS
2. PRESSURE PLATE

11. Remove the thrust needle bearing and the oil pump driveshaft.



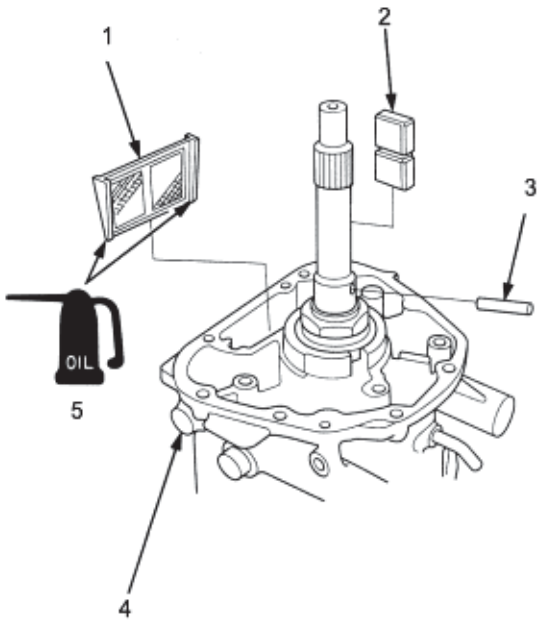
1. THRUST NEEDLE BEARING
2. OIL PUMP DRIVESHAFT

12. Remove the oil pump body assembly, the oil pump pin, the magnet and the oil strainer.



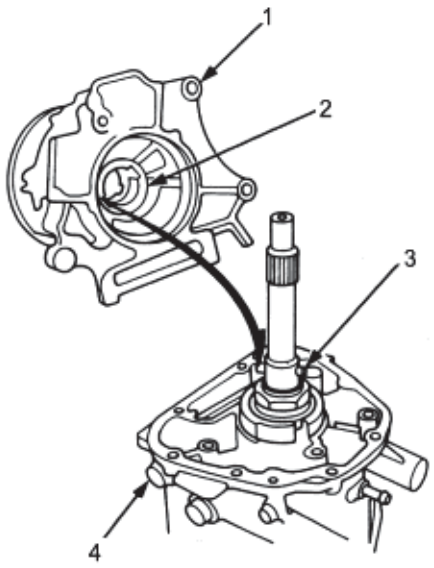
1. OIL PUMP BODY ASSEMBLY
2. MAGNET
3. OIL PUMP PIN
4. OIL STRAINER
   Inspect for damage or clogging.

1. Apply CVT fluid to the rubber of the oil strainer, then install the oil strainer, the magnet and the oil pump pin to the differential carrier.



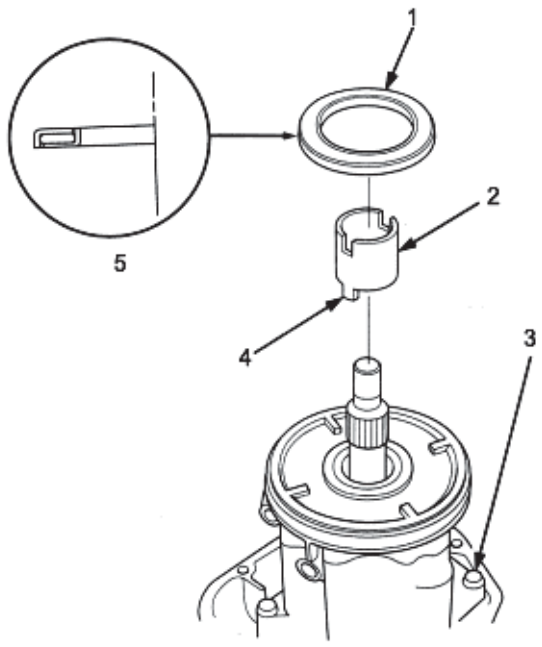
1. OIL STRAINER
2. MAGNET
3. OIL PUMP PIN
4. DIFFERENTIAL CARRIER ASSEMBLY
5. CVT Fluid

2. Align the oil pump pin with the groove of the rear oil pump in the pump body assembly, then install the oil pump body assembly to the differential carrier assembly.



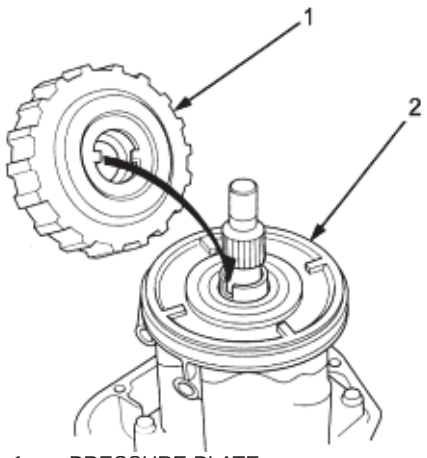
1. OIL PUMP BODY ASSEMBLY
2. REAR OIL PUMP
3. OIL PUMP PIN
4. DIFFERENTIAL CARRIER ASSEMBLY

3. Tighten the oil pump body assembly mounting bolts.
4. Install the oil pump driveshaft by aligning the projection of the oil pump driveshaft with the groove of the front oil pump in the oil pump body assembly.



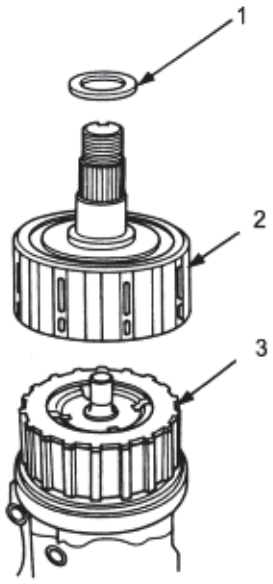
1. THRUST NEEDLE BEARING
2. OIL PUMP DRIVESHAFT
3. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7 lbf/ft)
4. Projection
5. Install in this direction

5. Install the thrust needle bearing.
6. Install the pressure plate assembly by aligning the projection of the pressure plate with the groove of the oil pump driveshaft.



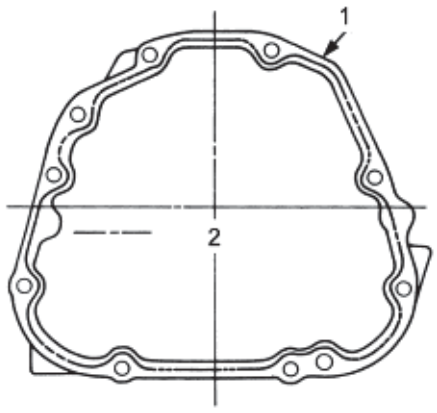
1. PRESSURE PLATE
2. OIL PUMP DRIVESHAFT

7. Install the clutch hub/plates/discs then align the projection of the plates with the discs.



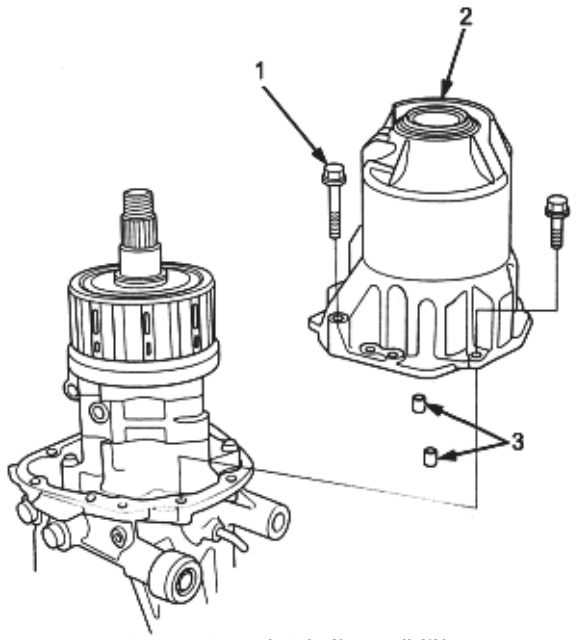
1. SHIM, 30 mm
2. CLUTCH GUIDE
3. CLUTCH HUB/PLATES/DISCS

8. Install the clutch guide and the 30 mm shim.
9. Apply liquid gasket to the sealing surface of the torque control differential case, and note the following items.
   - Use liquid gasket (P/N 0Y740-99986).
   - Remove any dirt or fluid from the sealing surface.
   - If 20 minutes have passed after applying liquid gasket, reapply it before you assemble the housing. Allow it to cure at least 30 minutes after assembly before filling differential with fluid.



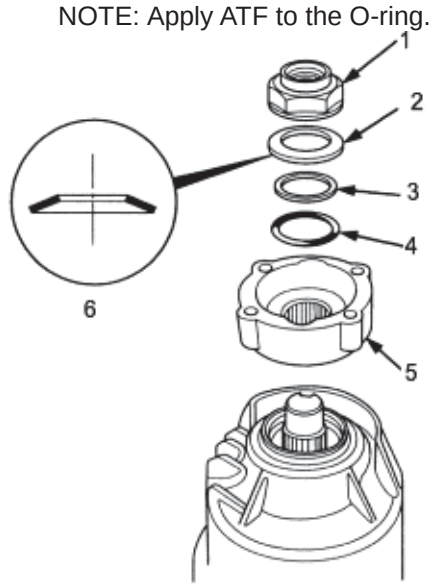
1. TORQUE CONTROL DIFFERENTIAL CASE
2. Apply liquid gasket

10. Install the dowel pins and torque control differential.



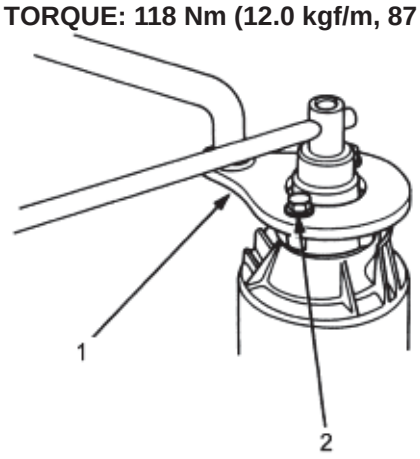
1. 6 x 1.0 mm, 12 Nm (1.2 kgf/m, 8.7lbf/ft)
2. TORQUE CONTROL DIFFERENTIAL CASE
3. DOWEL PINS

11. Install the companion flange, O-ring, back-up ring, disc spring washer and the locknut.
    NOTE: Apply ATF to the O-ring.



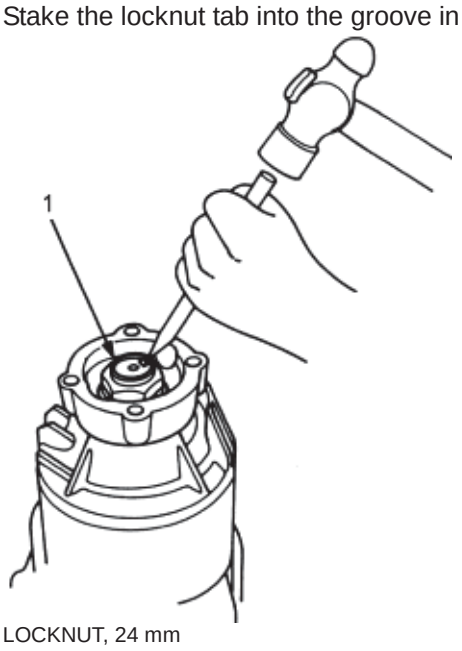
1. LOCKNUT, 24 mm, Replace
2. DISC SPRING WASHER, 24 mm
3. BACK-UP RING
4. O-RING, Replace
5. COMPANION FLANGE
6. Install in this direction

12. Install the special tool to the companion flange, then tighten the locknut to specified torque.
TORQUE: 118 Nm (12.0 kgf/m, 87 lbf/ft)



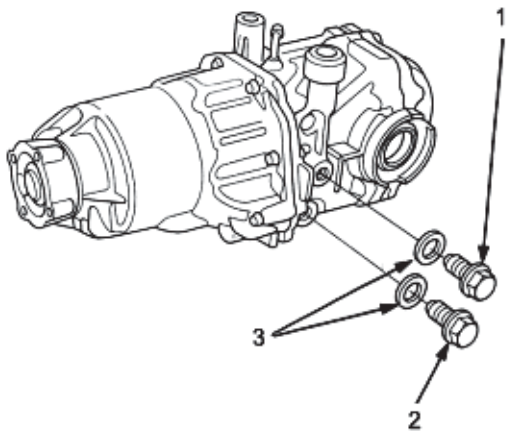
1. COMPANION FLANGE HOLDER, 07PAB-0020000
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)

13. Stake the locknut tab into the groove in the clutch guide.



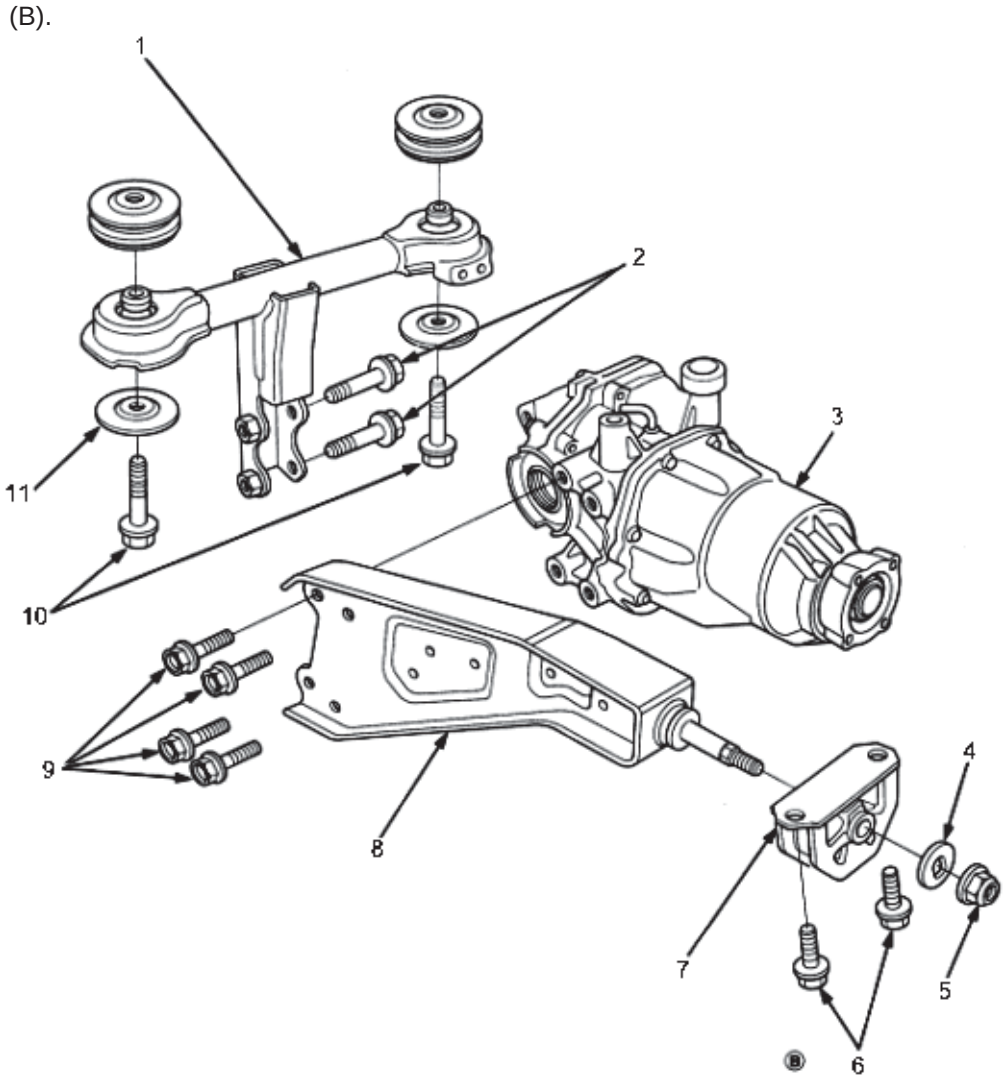
1. LOCKNUT, 24 mm

14. Install the drain plug and the oil filler plug with new washers.



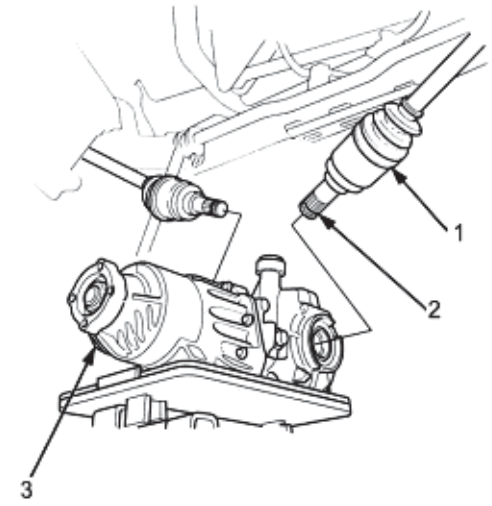
1. OIL FILLER PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)
2. DRAIN PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)
3. WASHERS, Replace

NOTE: When installing the rear differential and mount assemblies, tighten the rear differential mount B mounting bolts (A) first, then the rear differential mount rubber A mounting bolts (B).



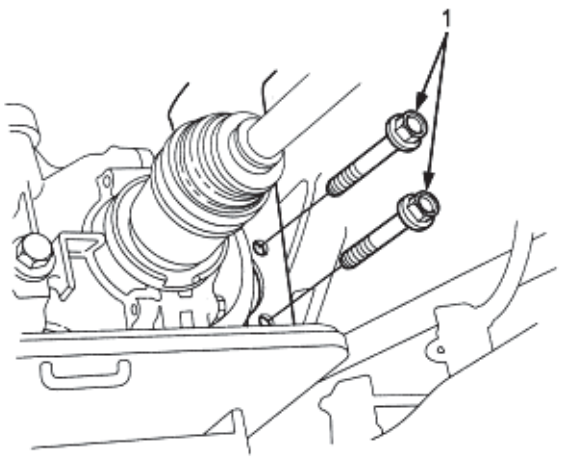
1. **REAR DIFFERENTIAL MOUNT B**
2. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**
3. **REAR DIFFERENTIAL**
4. **WASHER**
5. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**
6. **(B) 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)**
7. **REAR DIFFERENTIAL MOUNT RUBBER A**
8. **REAR DIFFERENTIAL MOUNT BRACKET A**
9. **12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)**
10. **(A) 10 x 1.25 mm, 49 Nm (5.0 kgf/m, 36 lbf/ft)**
11. **PLATE**

1. Place the rear differential on the transmission jack and raise it to the mounting level.
2. Clean the areas where the driveshaft contacts the differential thoroughly with solvent or carburettor cleaner and dry with compressed air. Insert the inboard end of the driveshaft into the differential until the set ring locks in the groove.



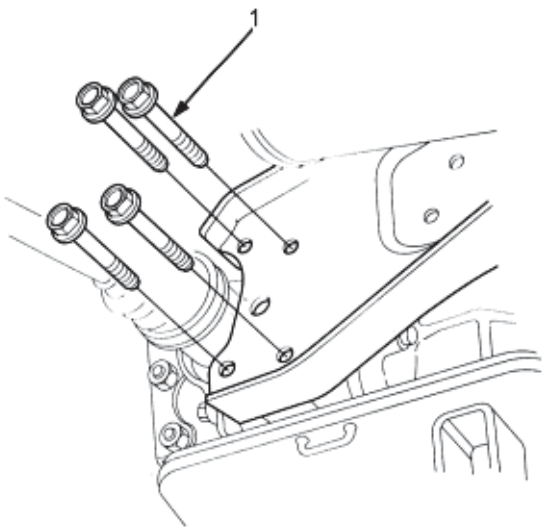
1. DRIVESHAFT
2. SET RING, Replace
3. REAR DIFFERENTIAL

3. Install the two rear differential mount B mounting bolts.



1. 12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)

4. Install the four rear differential mount A mounting bolts.



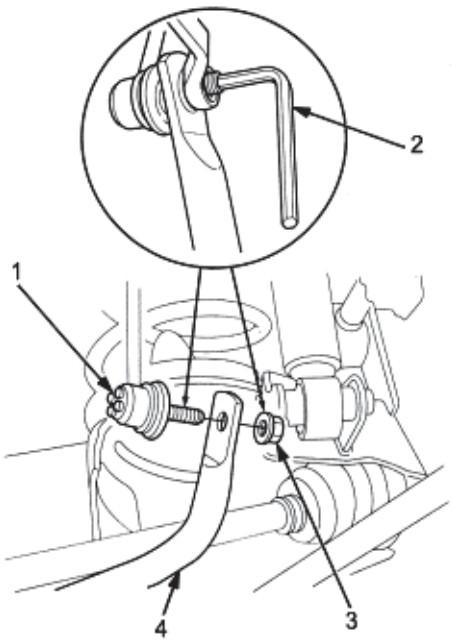
1. 12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)

5. Connect the breather tube to the rear differential.



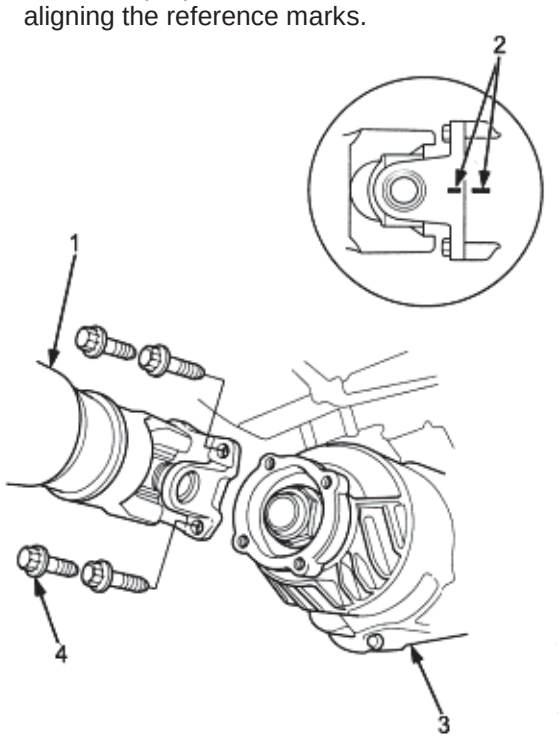
1. BREATHER TUBE

6. Hold the stabiliser link ball joint pin with a hexagonal wrench and install the flange nut.



1. STABILISER LINK
2. HEXAGONAL WRENCH
3. 10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)
4. REAR STABILISER

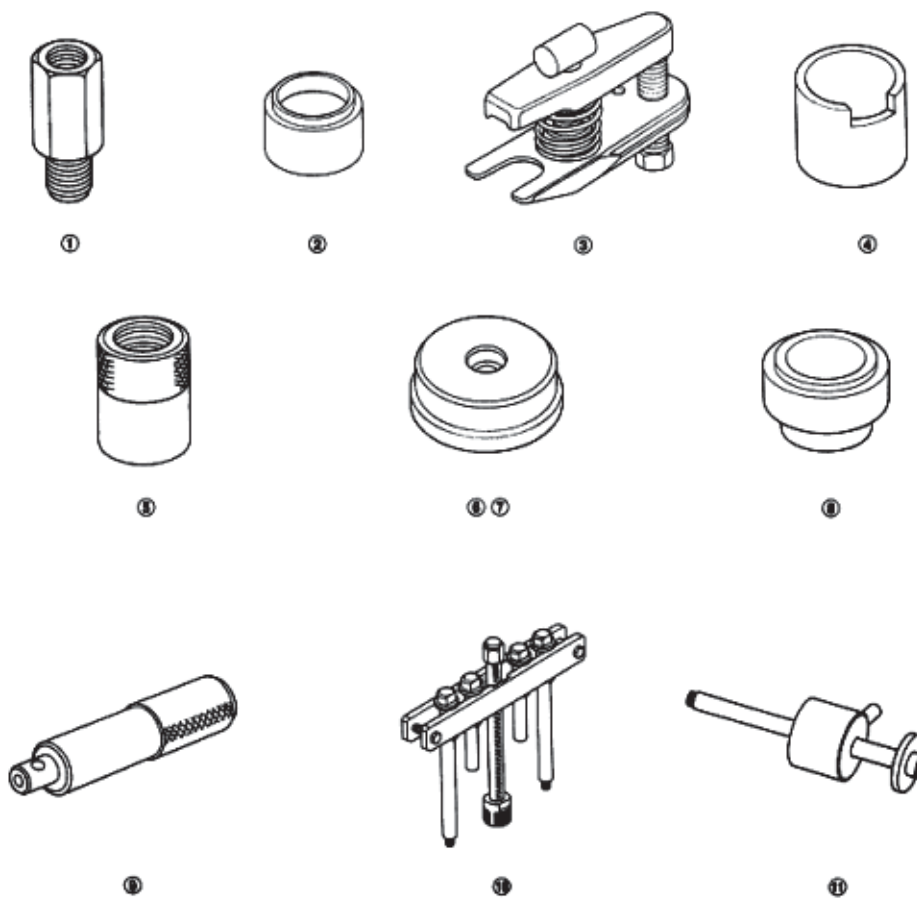
7. Install the propeller shaft to the rear differential by aligning the reference marks.



1. PROPELLER SHAFT
2. MARKS
3. REAR DIFFERENTIAL
4. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)

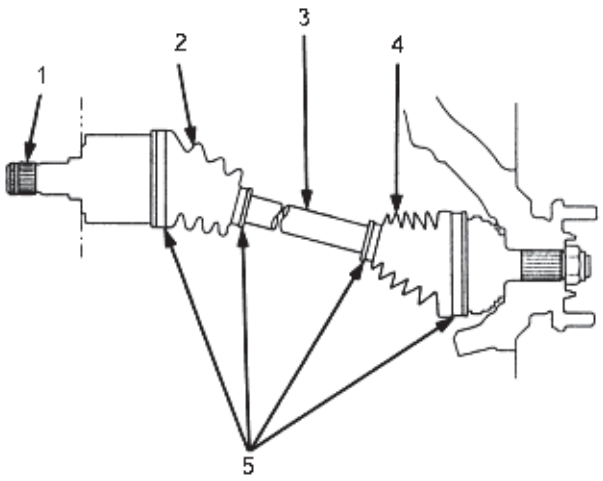
8. Refill the rear differential oil (**See page** 15-14).

Ref No.	Tool Number	Description	Qty	Remark
1	07JAC - SJ60200	Hub Puller Attachment	1	
2	07LAD - PW50601	Inner Race Driver, 40 x 45 mm	1	
3	07MAC - SL00200	Ball Joint Remover, 28 mm	1	
4	07NAF - SR30101	Half Shaft Base	1	
5	07XAC - 0010100	Threaded Adapter, 22 x 1.5 mm	1	
6	07746 - 0010300	Driver Attachment, 42 x 47 mm	1	
7	07746 - 0010400	Driver Attachment, 52 x 55 mm	1	
8	07746 - 0030400	Driver Attachment, 35 mm I.D.	1	
9	07749 - 0010000	Driver	1	
10	07935 - 6790000	Hub Puller	1	
11	07936 - 5790001	Sliding Hammer Set	1	



Inspection

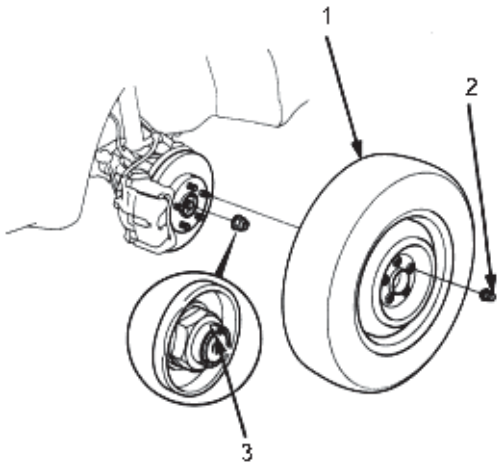
1. Check the inboard boot and outboard boot on the driveshaft for cracks, damage, leaking grease and loose boot bands. If any damage is found, replace the boot and boot bands.
2. Turn the driveshaft by hand and make sure the splines and joint are not excessively loose.
3. Make sure the driveshaft is not twisted or cracked; if it is replace it.



1. SPLINES
2. INBOARD BOOT
3. DRIVESHAFT
4. OUTBOARD BOOT
5. BOOT BANDS

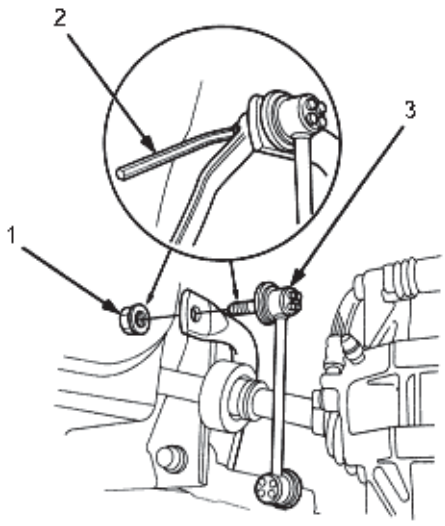
Removal

1. Loosen the wheel nuts slightly.
2. Raise the front of the vehicle and support it with safety stands in the proper location (see section 1).
3. Remove the wheel nuts and front wheels.
4. Lift up the locking tab on the spindle nut, then remove the nut.



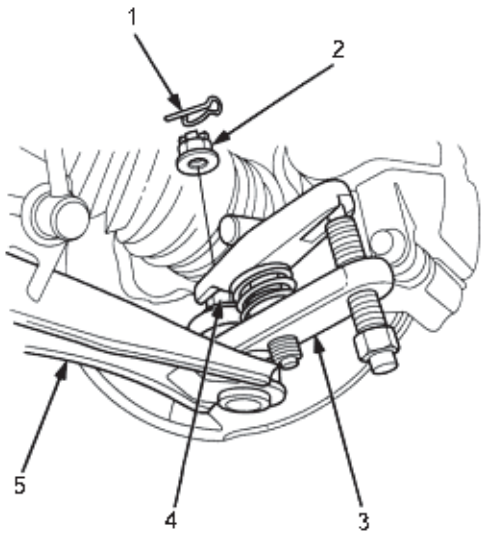
1. FRONT WHEEL
2. WHEEL NUT
3. SPINDLE NUT, 22 x 1.5 mm, Replace

5. If the right driveshaft is removed, drain the MTF (see section 13) or ATF (see section 14). It is not necessary to drain the transmission fluid when the left driveshaft is removed.
6. Hold the stabiliser link ball joint pin with a hexagonal wrench and remove the flange nut, then separate the front stabiliser link and front stabiliser.



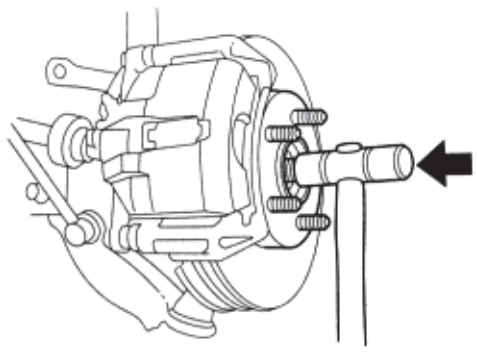
1. FLANGE NUT
2. HEXAGONAL WRENCH
3. FRONT STABILISER LINK

7. Remove the cotter pin from the lower arm ball joint castle nut and remove the nut.
8. Separate the ball joint from the lower arm with the special tool (see section 18).
9. Pry the driveshaft assembly with a screwdriver, as shown, to force the set ring at the driveshaft end past the groove.

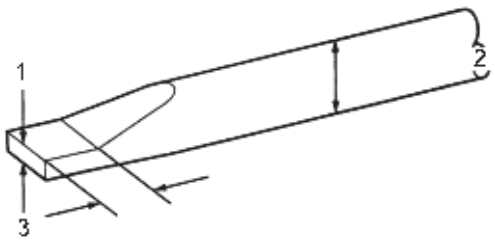


1. LOCK NUT, Replace
2. CASTLE NUT
3. BALL JOINT REMOVER, 28 mm, 07MAC-SL00200
4. HEX NUT
5. LOWER ARM

10. Pull the knuckle outward and remove the driveshaft outboard pin from the front wheel hub using a plastic hammer.

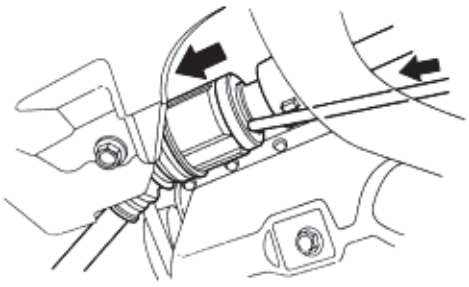


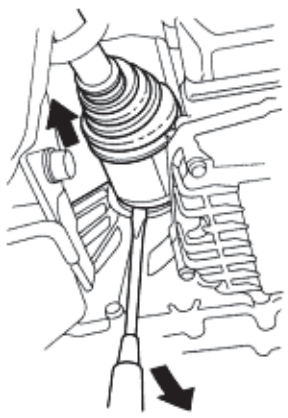
11. Prey the driveshaft assembly with a screwdriver as shown, to force the set ring at the driveshaft end past the groove. Be careful not to damage the oil seals when prying.



1. 3.5 mm (0.14 in)
2. 1.3 mm (0.5 in) I.D.
3. 7 mm (0.3 in)

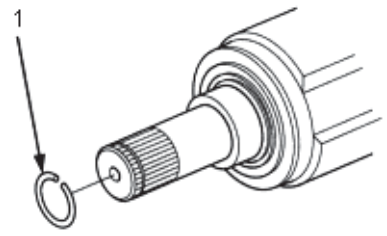
12. Pull the inboard joint and remove the driveshaft from the differential case or bearing support as an assembly. Do not pull on the driveshaft, the inboard joint may come apart. Pull the driveshaft straight out to avoid damaging the differential oil seal or the intermediate shaft outer seal.





Inboard Joint Side:

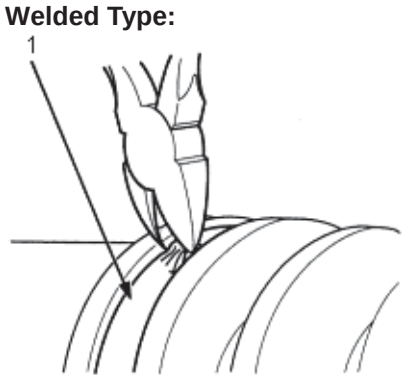
1. Remove the set ring from the inboard joint.



1. SET RING, Replace

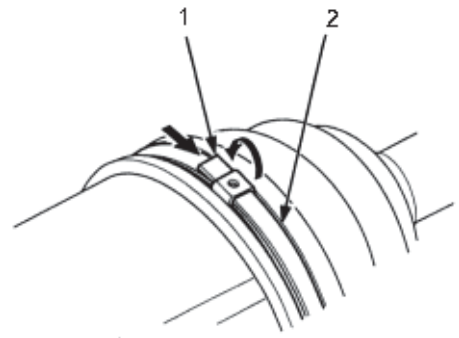
2. Remove the boot bands. Take care not to damage the boot and dynamic damper.
   - If the boot band is a welded type, cut the boot band.
   - If the boot band is a double loop type, lift up the band boot.

Welded Type:



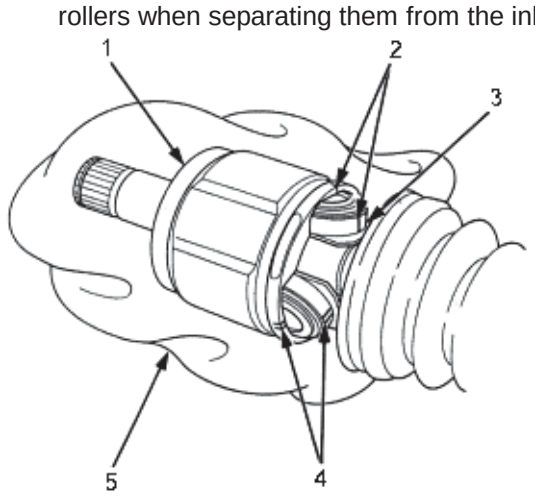
1. WELDED BAND, Replace

Double Loop Type:



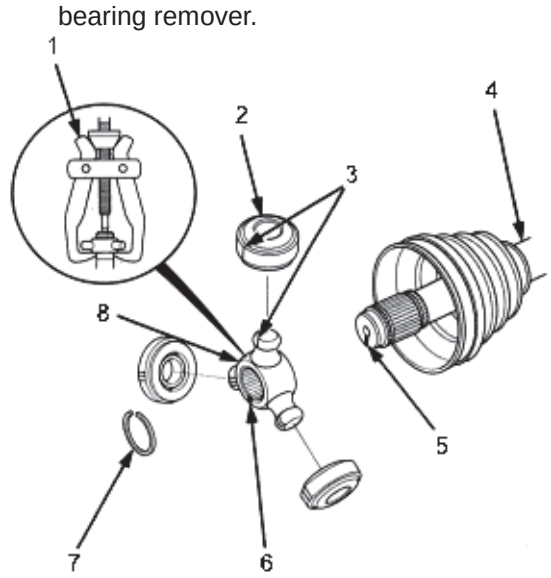
1. Band bend
2. DOUBLE LOOP BAND, Replace

3. Make a mark on each roller and inboard joint to identify the locations of rollers and grooves in the inboard joint. The remove the inboard joint and place on the shop towel. Be careful not to drop the rollers when separating them from the inboard joint.



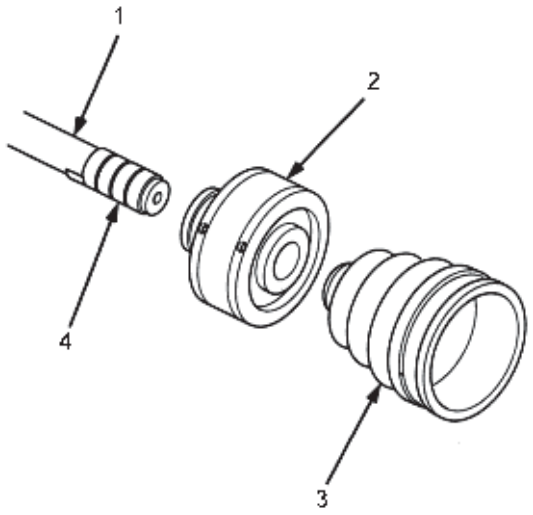
1. INBOARD JOINT
   Check splines for wear or damage.
   Check inside bore for wear.
   Inspect for cracks
2. Marks
3. ROLLER
4. Marks
5. SHOP TOWEL

4. Make a mark on the rollers and spider to identify the locations of rollers on the spider, then remove the rollers.
5. Remove the circlip.
6. Mark the spider and driveshaft to identify the position of the spider on the shaft.
7. Remove the spider using a commercially available bearing remover.



1. BEARING REMOVER
2. ROLLER
3. Marks
4. DRIVESHAFT
5. Mark
6. Mark
7. CIRCLIP
8. SPIDER

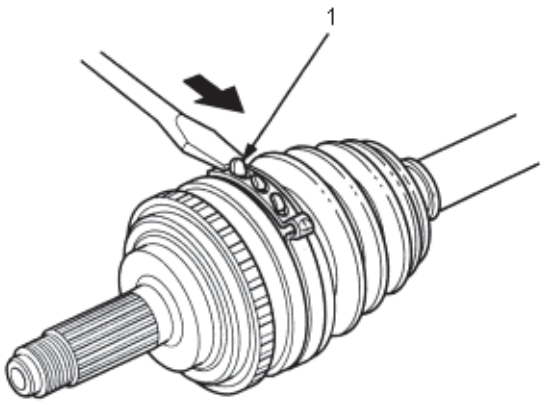
8. Wrap the splines on the driveshaft with vinyl tape to prevent damage to the inboard boot and dynamic damper.
9. Remove the inboard boot and dynamic damper. Take care not to damage the boot and dynamic damper.
10. Remove the vinyl tape.



1. DRIVESHAFT
2. DYNAMIC DAMPER, Check for damage
3. INBOARD BOOT
   Inspect for cracking, splitting and wear
4. VINYL TAPE

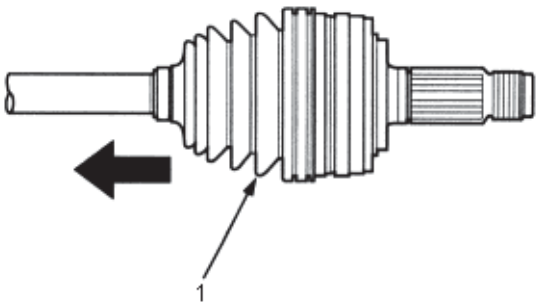
Outboard Joint Side:

1. Lift up the three tabs with a screwdriver, then remove the boot bands. Take care not to damage the boot and dynamic damper.



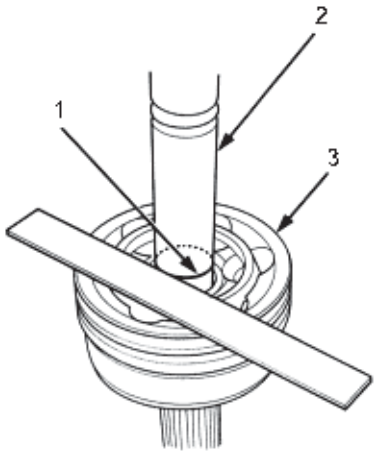
1. TAB

2. Slide the outboard boot to the inboard joint side. Take care not to damage the boot.



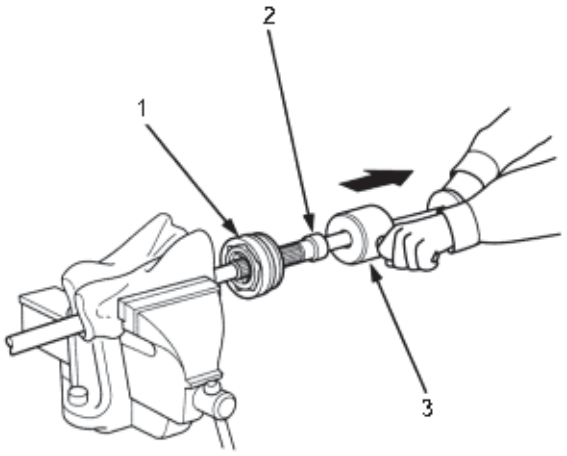
1. OUTBOARD BOOT

3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
4. Make a mark on the driveshaft at the same position of the outboard joint end with paint.



1. PAINT MARK
2. DRIVESHAFT
3. OUTBOARD JOINT END

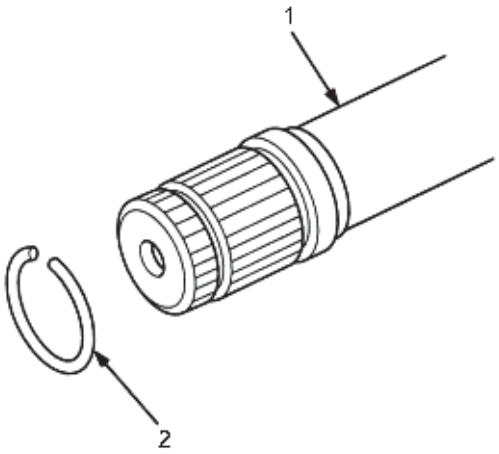
5. Carefully clamp the driveshaft in a vice.
6. Remove the outboard joint using the special tools.



1. OUTBOARD JOINT
2. THREADED ADAPTER, 22 x 1.5 mm, 07XAC-0010100
3. SLIDING HAMMER SET, 07936-5790001

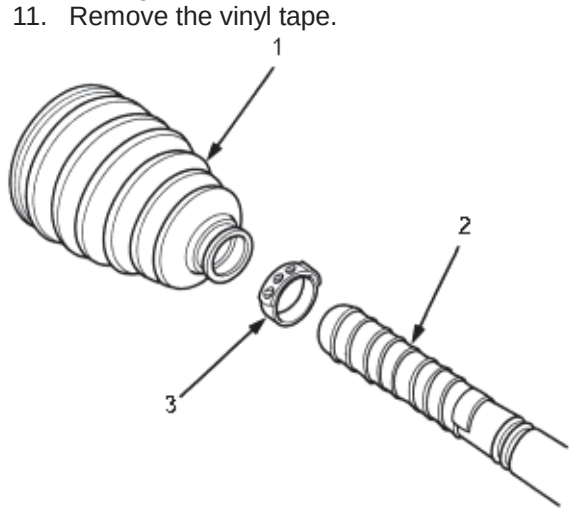
7. Remove the driveshaft from the vice.

8. Remove the stop ring from the driveshaft.



1. DRIVESHAFT
2. STOP RING, Replace

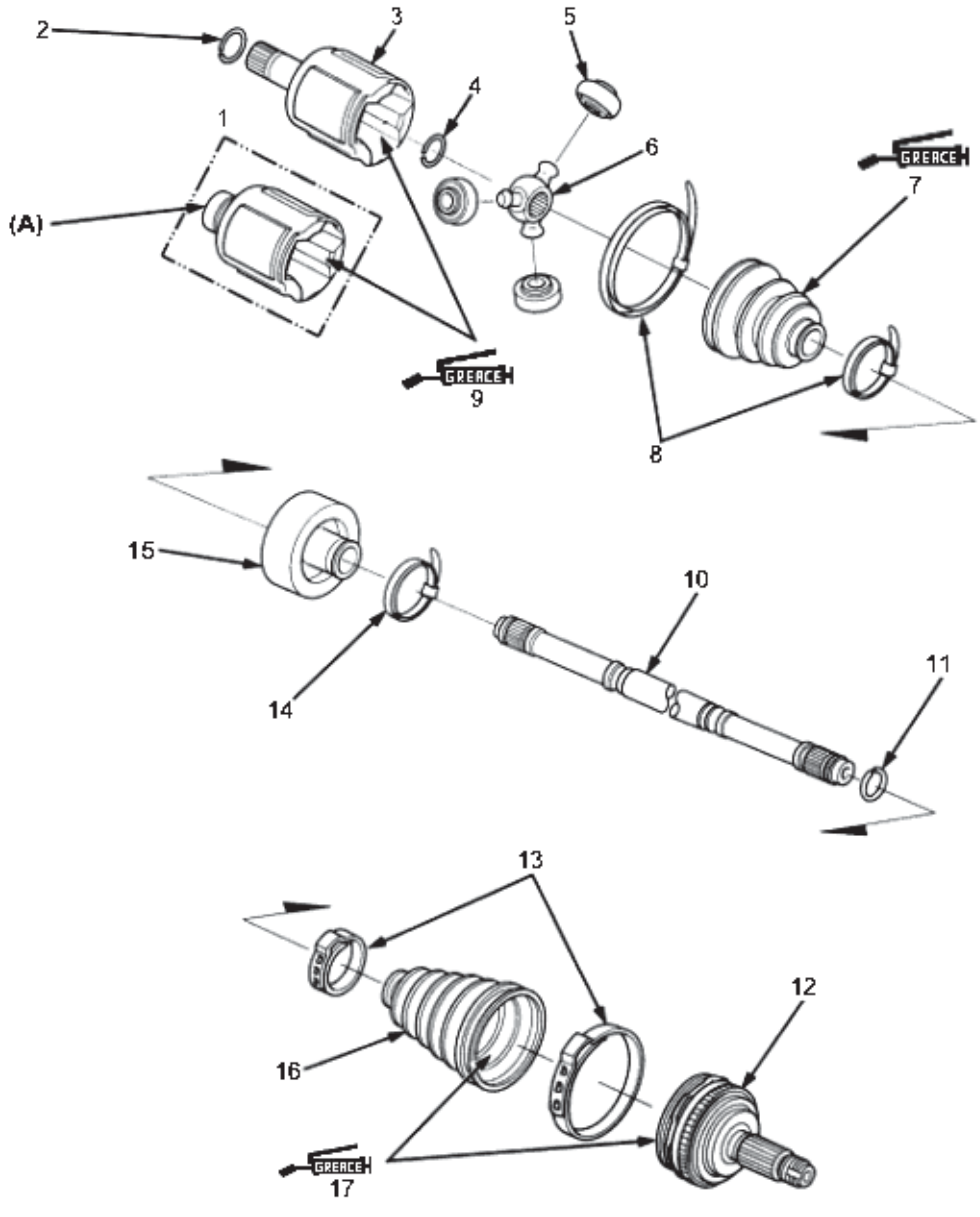
9. Wrap the splines on the driveshaft with vinyl tape to prevent damage to the outboard boot.
10. Remove the outboard boot. Take care not to damage the boot.
11. Remove the vinyl tape.



1. OUTBOARD BOOT
2. VINYL TAPE
3. BOOT BAND, Replace

NOTE:
- Clean the disassembled parts with solvent and dry them thoroughly with compressed air. Do not wash the rubber parts with solvent.
- Thoroughly pack both joints and both joint boots with the joint grease included in the new driveshaft set.
- The driveshaft uses a TPE (Thermoplastic Polyester Elastomer) outboard joint boot. Use the ear clamp type boot band in the outboard joint boot set.

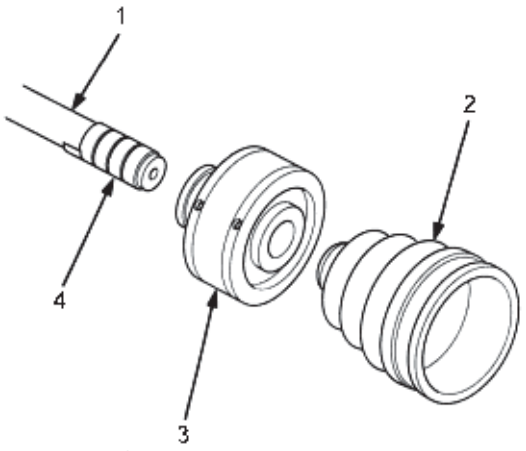
Grease quantity
Inboard joint: 130 -140 g (4.6 - 4.9 oz)
Outboard joint: 105 - 115 g (3.7 - 4.1 oz)
Inboard joint spline (A): 0.5 - 1.0 g (0.018 - 0.035 oz)



1. Left Driveshaft:
2. **SET RING**, Replace
3. **INBOARD JOINT**
4. **CIRCLIP**
5. **ROLLER**
6. **SPIDER**
7. **INBOARD BOOT**
   Pack cavity with grease
8. **BOOT BANDS**, Replace
9. Pack cavity with grease
10. **DRIVESHAFT**
11. **STOP RING**, Replace
12. **OUTBOARD JOINT**
13. **BOOT BANDS**, Replace
14. **DYNAMIC DAMPER BAND**, Replace
15. **DYNAMIC DAMPER**
16. **OUTBOARD BOOT (TPE)**
17. Pack cavity with grease

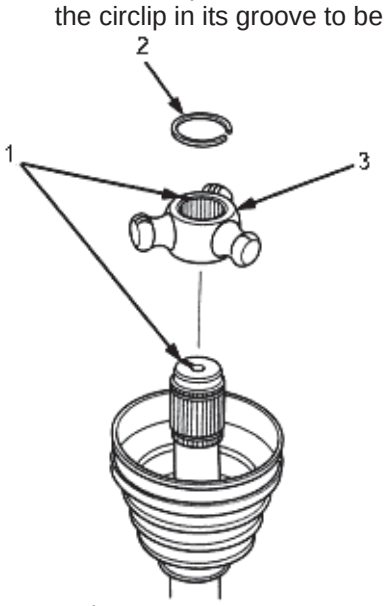
Inboard Joint Side:

1. Wrap the splines with vinyl tape to prevent damage to the inboard boot and dynamic damper.
2. Install the dynamic damper and inboard boot to the driveshaft, then remove the vinyl tape. Take care not to damage the inboard boot and dynamic damper.



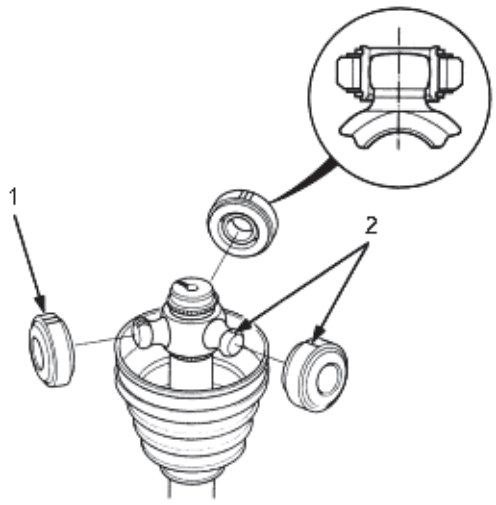
1. DRIVESHAFT
2. INBOARD BOOT
3. DYNAMIC DAMPER
4. VINYL TAPE

3. Install the spider onto the driveshaft by aligning the marks on the spider and end of the driveshaft.
4. Fit the circlip into the driveshaft groove. Always rotate the circlip in its groove to be sure it is fully seated.



1. Marks
2. CIRCLIP
3. SPIDER

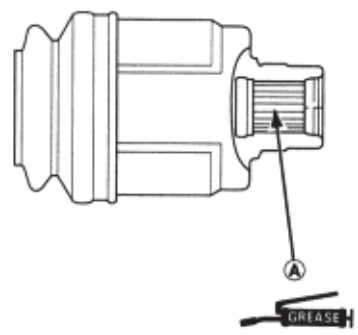
5. Fit the rollers to the spider with their high shoulders facing outward and note the following items:
   - Reinstall the rollers in their original positions on the spider by aligning the marks.
   - Hold the driveshaft pointed up to prevent the rollers from falling off.



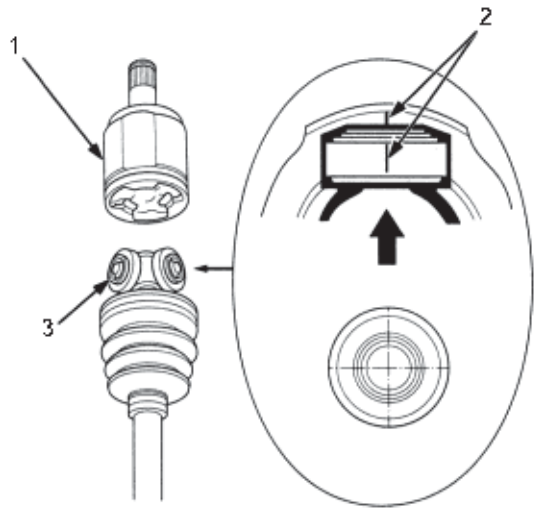
1. ROLLER
2. Marks

6. Pack the inboard joint with the joint grease included in the new driveshaft set.
   Grease quantity
   Inboard joint: 130 - 140 g (4.6 - 4.9 oz)
   Inboard joint spline: 0.5 - 1.0 g (0.02 - 0.04 oz)



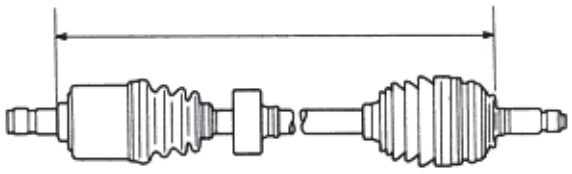


7. Fit the inboard joint onto the driveshaft and note the following items:
   - Reinstall the inboard joint onto the driveshaft by aligning the marks on the inboard joint and the rollers.
   - Hold the driveshaft so the inboard joint points up to prevent it from falling off.

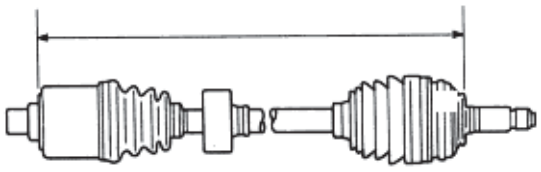


1. INBOARD JOINT
2. Marks
3. ROLLER

8. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full extension. Make sure the ends of the boots seat in the grooves of the driveshaft and joint.
   Standard:
   Left driveshaft: 487 - 492 mm (19.2 - 19.4 in)
   Right driveshaft: 506 - 511 mm (19.9 - 20.1 in)
   Right driveshaft:



   Left driveshaft:

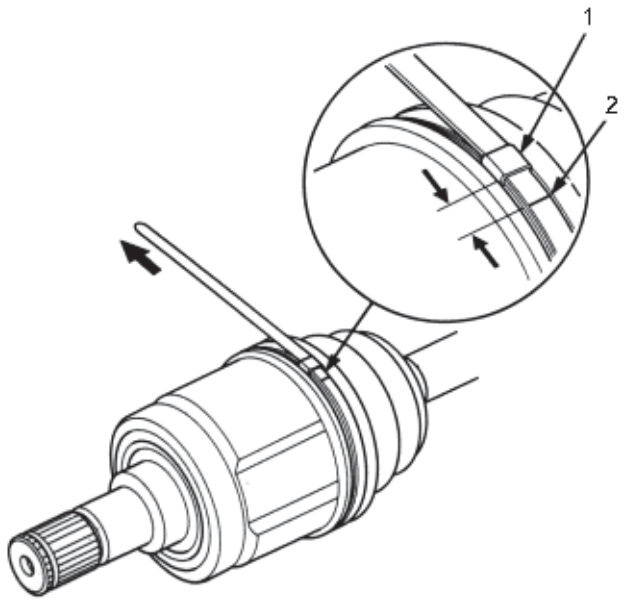


9. Position the dynamic damper as shown below.
   Standard:
   Left driveshaft: 251 - 255 mm (9.9 - 10.0 in)
   Right driveshaft: 242 - 246 mm (9.5 - 9.7 in)

10. Fit the boot ends onto the driveshaft and the inboard joint, then install the boot bands with the band end towards the front of the vehicle.

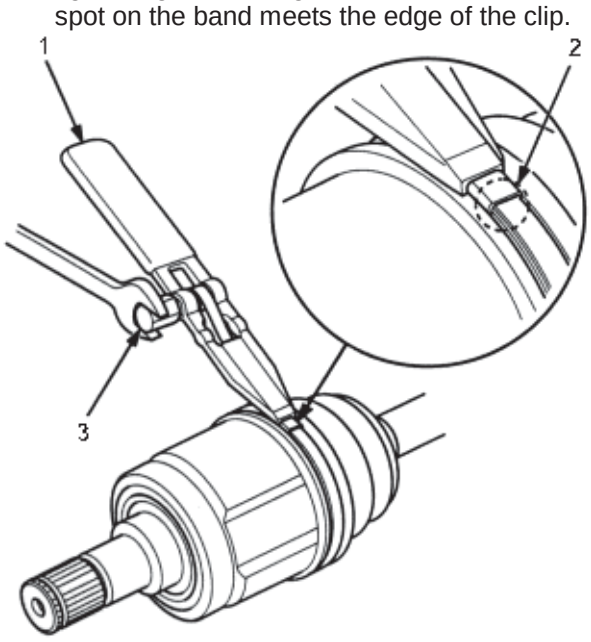
1. DOUBLE LOOP BAND, Replace
2. BOOT

11. Pull up the slack in the band by hand.
12. Mark a position on the band 10 -14 mm (0.4 - 0.6 in) from the clip.



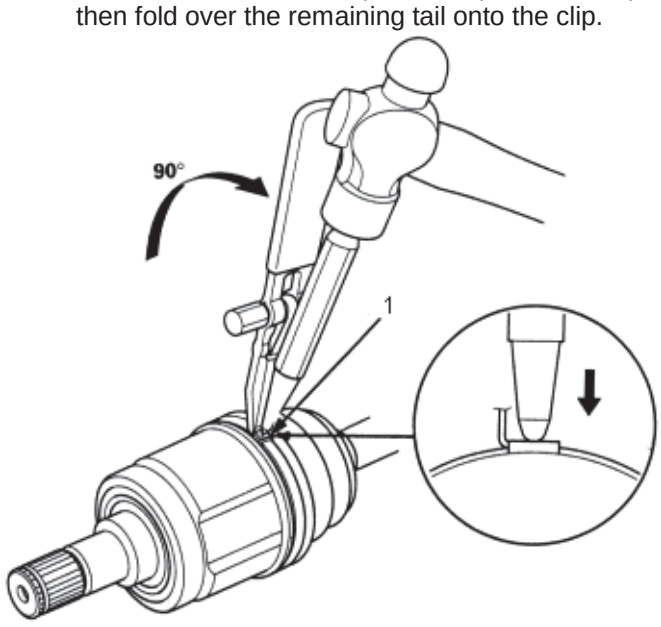
1. CLIP
2. Mark

13. Thread the free end of the band through the nose section of the commercially available boot band tool KD-3191 or equivalent and into the slot on the winding mandrel.
14. Place a wrench on the winding mandrel of the band tightening tool and tighten the band until the marked spot on the band meets the edge of the clip.



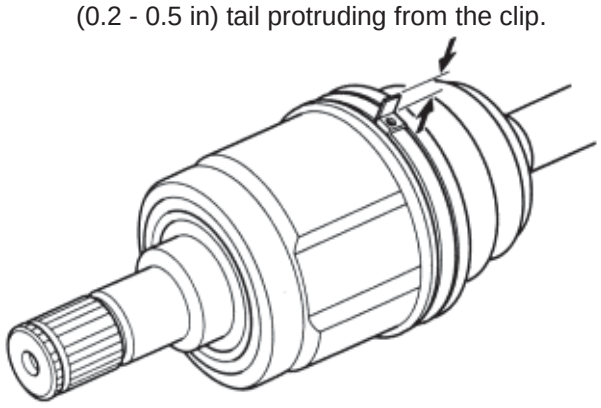
1. BAND TIGHTENING TOOL (Commercially available)
2. Mark spot
3. WINDING MANDREL

15. Lift up the band tightening tool to bend the free end of the band 90° to the clip. Centre punch the clip, then fold over the remaining tail onto the clip.

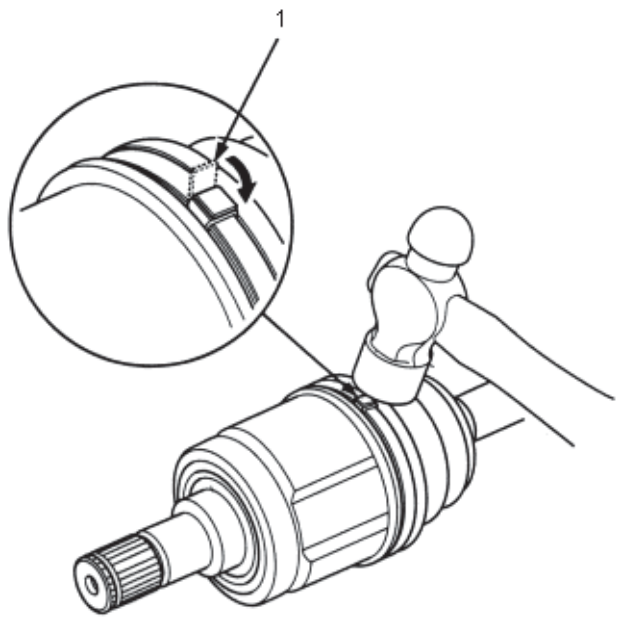


1. CLIP

16. Unwind the band tightening tool and cut off the excess free end of the band to leave a 5 - 10 mm (0.2 - 0.5 in) tail protruding from the clip.

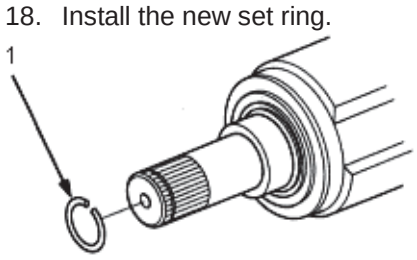


17. Bend the band end by tapping it down with a hammer.
    NOTE:
    - Make sure the band and clip do not interfere with anything and the band does not move.
    - Remove any grease remaining on the surrounding surfaces.



1. Band end

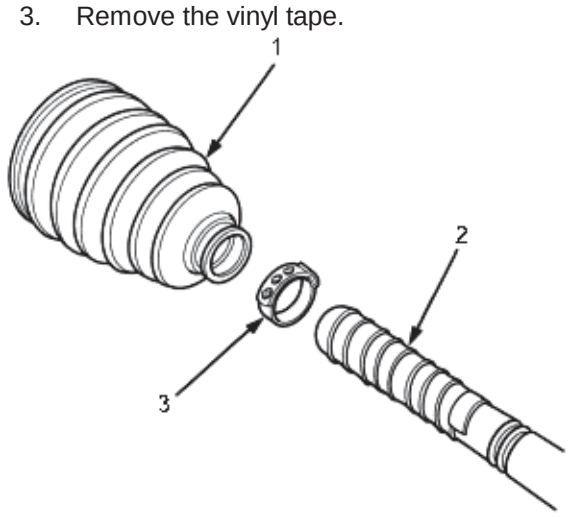
18. Install the new set ring.



1. SET RING, Replace

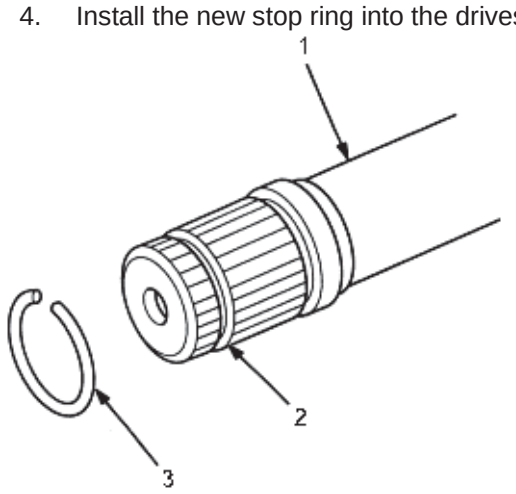
Outboard Joint Side:

1. Wrap the splines with vinyl tape to prevent damage to the outboard boot.
2. Install the outboard boot. Take care not to damage the outboard boot.
3. Remove the vinyl tape.



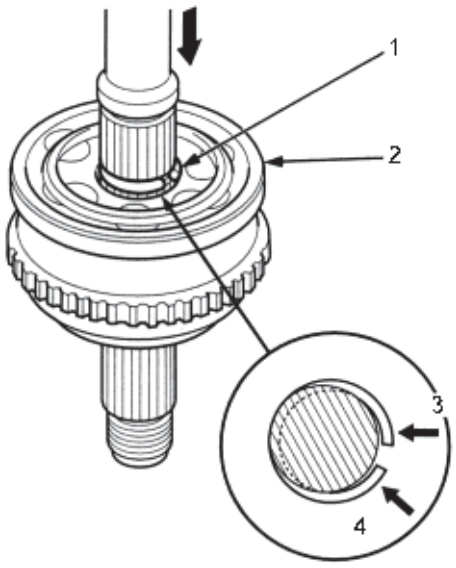
1. OUTBOARD BOOT
2. VINYL TAPE
3. BOOT BAND, Replace

4. Install the new stop ring into the driveshaft groove.



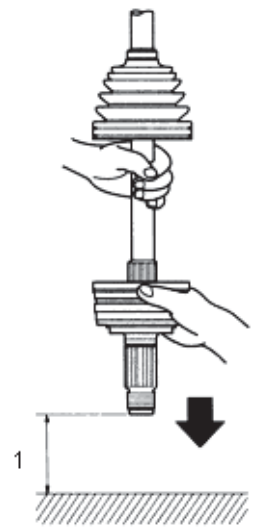
1. DRIVESHAFT
2. GROOVE
3. STOP RING, Replace

5. Insert the driveshaft into the outboard joint until the stop ring is close to the joint.



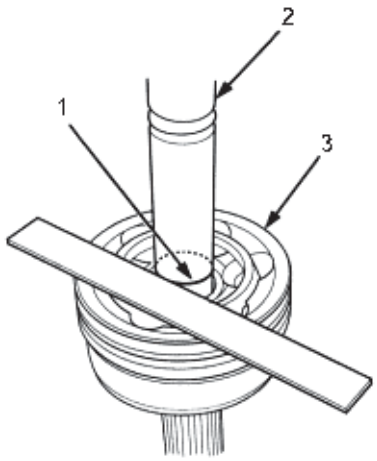
1. STOP RING, Replace
2. OUTBOARD JOINT
3. Push.
4. Push.

6. To completely seat the outboard joint, pick up the driveshaft and joint and drop them from about 10 cm (4 in) onto a hard surface. Do not use a hammer as excessive force may damage the driveshaft.



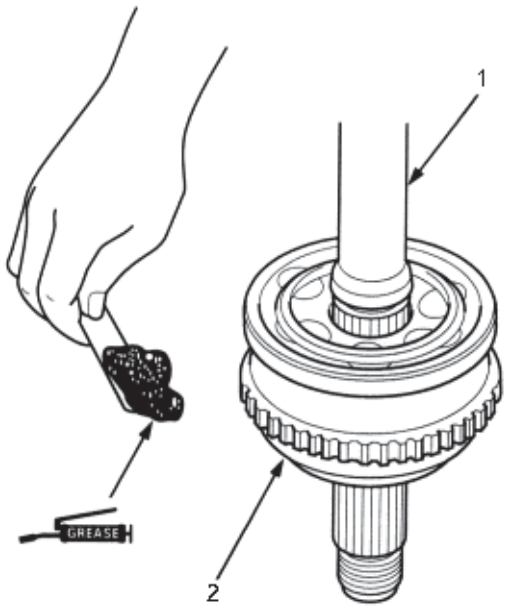
1. 10 cm (4 to 5 inches)

7. Check the alignment of the paint mark with the outboard joint end.



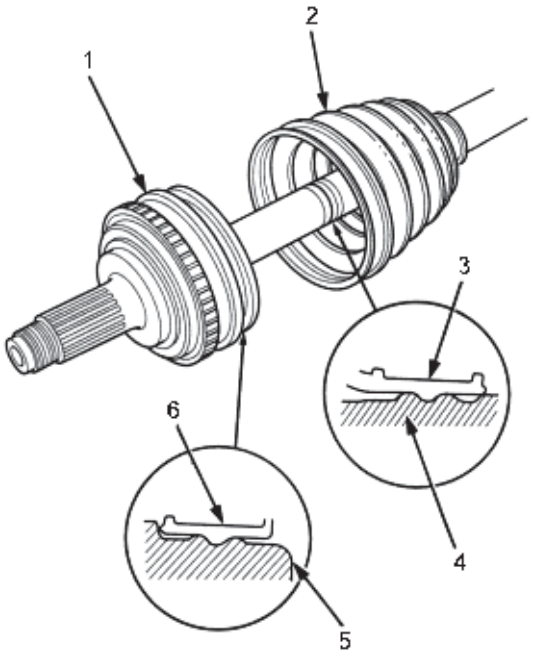
1. PAINT MARK
2. DRIVESHAFT
3. OUTBOARD JOINT END

8. Pack the outboard joint with the joint grease included in the new joint boot set.
Grease quantity
Outboard joint: 105 - 115 g (3.7 - 4.1 oz)



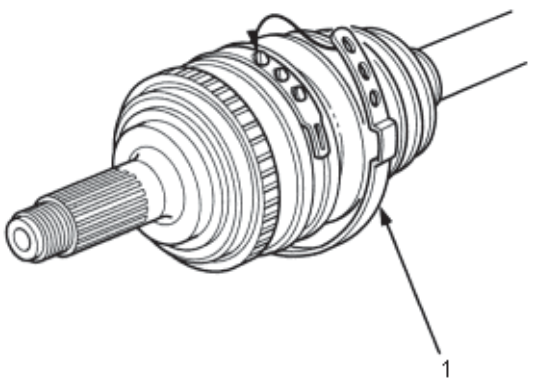
1. DRIVESHAFT
2. OUTBOARD JOINT

9. Fit the boot ends onto the driveshaft and outboard joint.



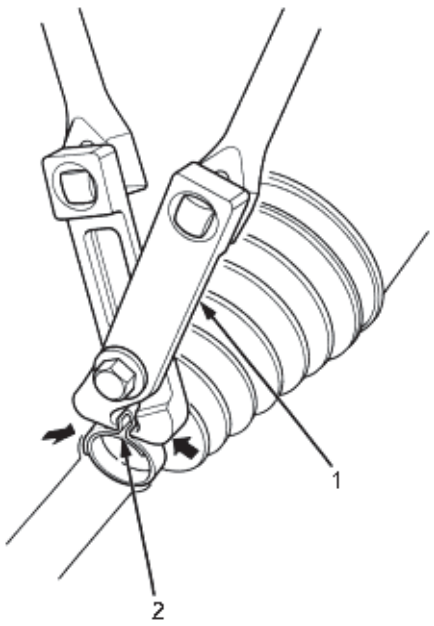
1. OUTBOARD JOINT
2. OUTBOARD BOOT
3. OUTBOARD BOOT
4. DRIVESHAFT
5. OUTBOARD JOINT
6. OUTBOARD BOOT

10. Set the new ear clamp by putting the tab into the holes of the band.



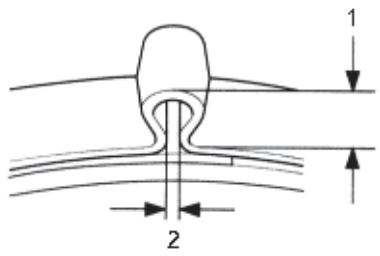
1. EAR CLAMP BAND, Replace

11. Close the ear portion of the band with (commercially available) boot band pincers.



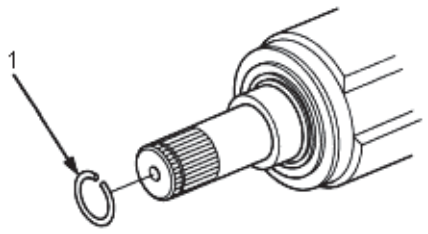
1. BOOT BAND PINCERS
   (Commercially available) KENT-MOORE J-35910 or equivalent
2. EAR PORTION

12. 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 further.



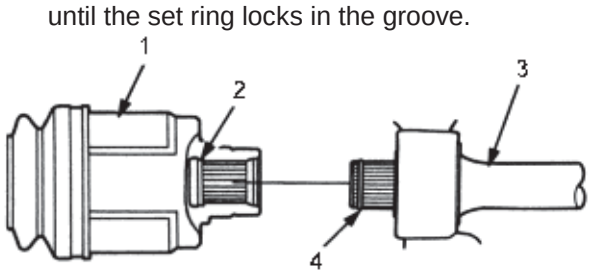
1. 6.00 mm (0.24 in) MAX
2. 3.0 mm (0.12 in) MAX

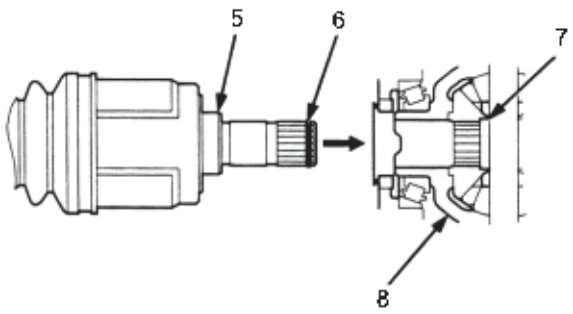
1. Install a new set ring onto the set ring groove of the driveshaft.



1. SET RING, Replace

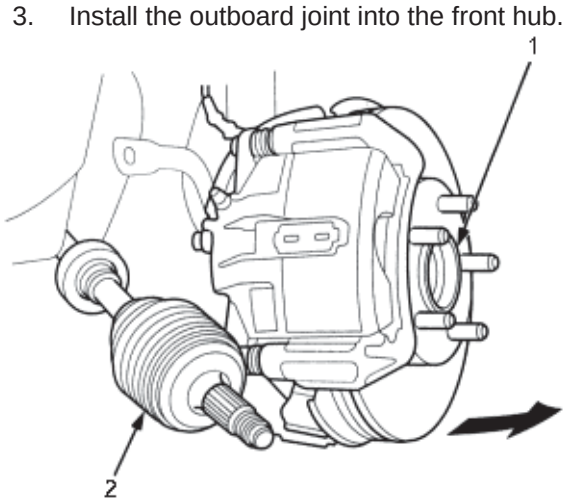
2. Clean the areas where the driveshaft contacts the differential thoroughly with solvent or carburettor cleaner and dry with compressed air. Insert the inboard end of the driveshaft into the differential or intermediate shaft until the set ring locks in the groove.





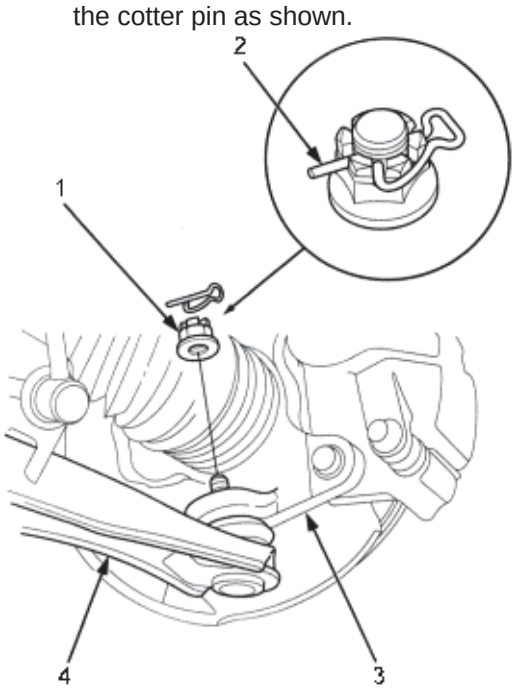
1. INBOARD JOINT
2. GROOVE
3. INTERMEDIATE SHAFT
4. SET RING
5. INBOARD END
6. SET RING
7. Groove
8. DIFFERENTIAL

3. Install the outboard joint into the front hub.



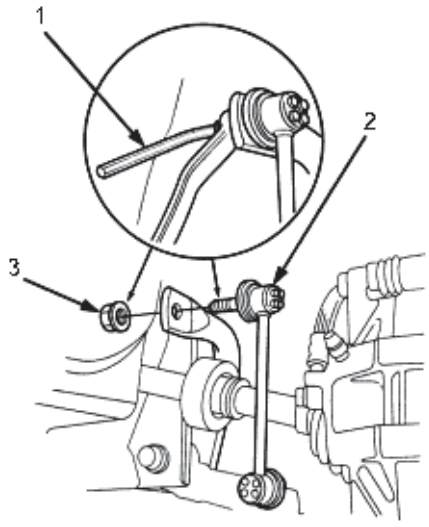
1. FRONT HUB
2. OUTBOARD JOINT

4. Install the knuckle onto the lower arm. Be careful not to damage the ball joint boot. Wipe off the grease before tightening the nut on the ball joint. Torque the castle nut to the lower torque specification, then tighten it only far enough to align the slot with the pin hole. Do not align the nut by loosening.
5. Install the new cotter pin into the pin hole and bend the cotter pin as shown.



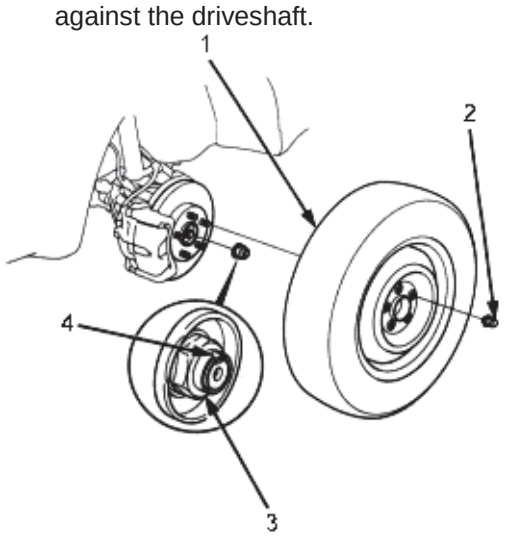
1. CASTLE NUT, 12 x 1.25 mm, 49 - 59 Nm (5.0 - 6.0 kgf/m, 36 - 43 lbf/ft)
2. LOCK PIN, Replace
3. KNUCKLE
4. LOWER ARM

6. Connect the front stabiliser link and front stabiliser, then hold the stabiliser link ball joint pin with a hexagonal wrench and tighten the flange nut.



1. HEXAGONAL WRENCH
2. FRONT STABILISER LINK
3. FLANGE NUT, Replace
   10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)

7. Install a new spindle nut, then tighten the nut. After tightening, use a drift to stake the spindle nut shoulder against the driveshaft.

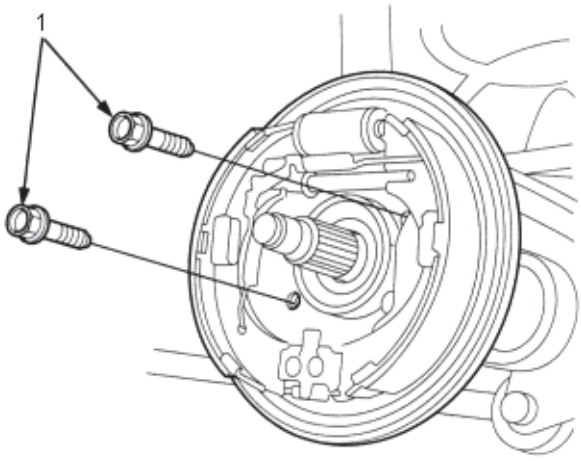


1. FRONT WHEEL
2. WHEEL NUT, 12 x 1.5 mm, 108 Nm (11.0 kgf/m, 79.6 lbf/ft)
3. SPINDLE NUT, 22 x 1.5 mm, Replace
   181 Nm (18.5 kgf/m, 134 lbf/ft)
4. Staked

8. Clean the mating surfaces of the brake disc and the front wheel, then install the front wheel with the wheel nuts.
9. Tighten the flange bolts and self-locking nut with the vehicle's weight on the damper.
10. Refill the transmission with recommended MD (see section 13) or ATF (see section 14).
11. Check the front wheel alignment and adjust if necessary (see section 18).

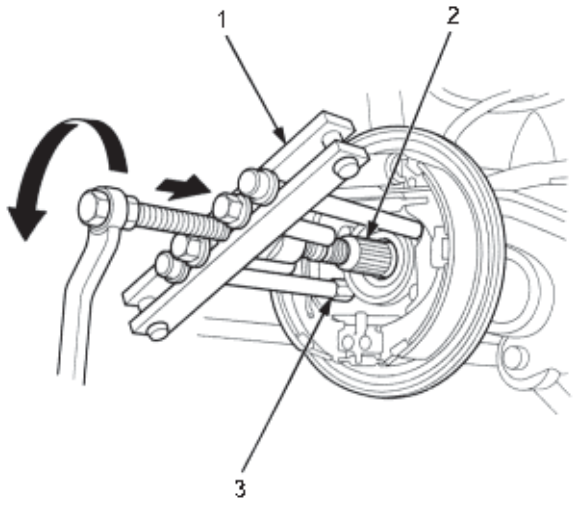
Removal

1. Loosen the wheel nuts slightly.
2. Raise the rear of the vehicle and support it with safety stands in the proper location (see section 1).
3. Remove the wheel nuts and rear wheels.
4. Drain the rear differential oil (see section 15).
5. Remove the rear differential (see section 15).
6. Remove the rear hub bearing unit (see section 18).
7. Remove the two backing plate mounting bolts.



1. BACK PLATE MOUNTING BOLTS

8. Remove the rear driveshaft using the special tool as shown.

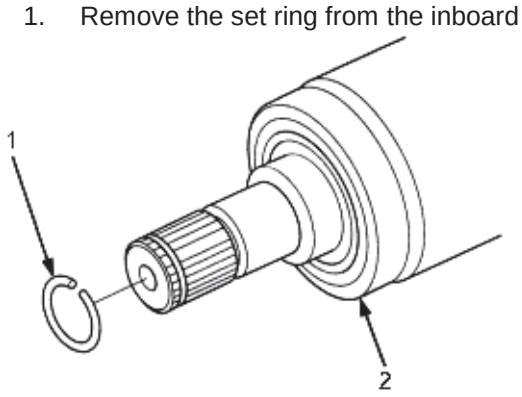


1. HUB PULLER, 07935-6790000
2. DRIVESHAFT
3. HUB PULLER ATTACHMENT, 07JAC-SJ60200

Disassembly

Inboard Joint Side:

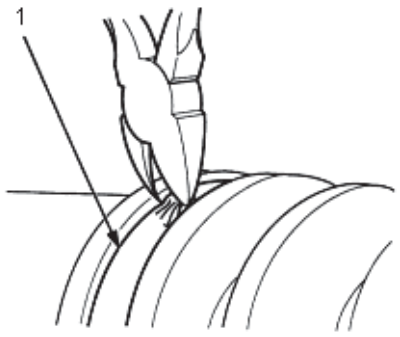
1. Remove the set ring from the inboard joint.



1. SET RING, Replace
2. INBOARD JOINT

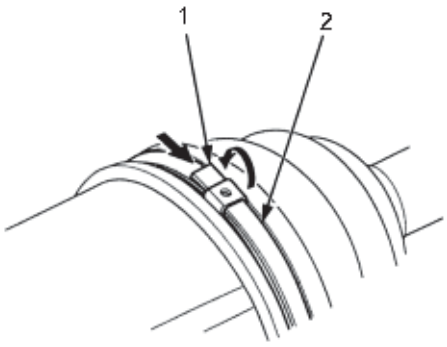
2. Remove the boot bands. Take care not to damage the boot and dynamic damper.
   - If the boot band is a welded type, cut the boot band.
   - If the boot band is a double loop type, lift up the boot band.

Welded Type:



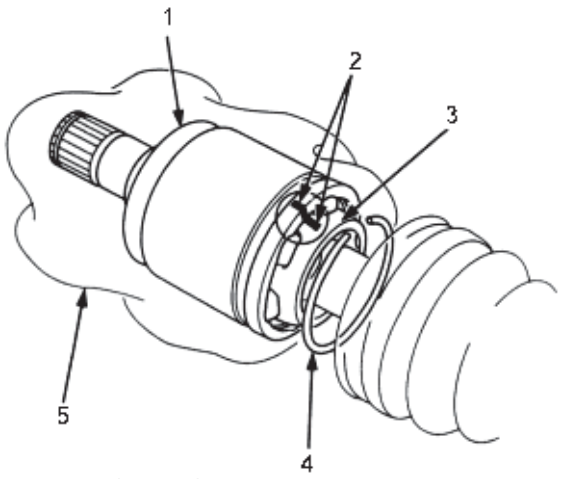
1. WELDED BAND, Replace

Double Loop Type:



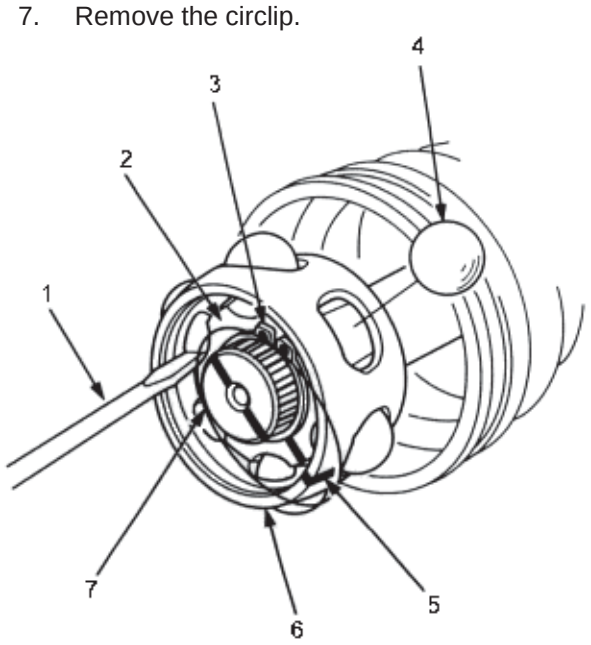
1. Band bend
2. DOUBLE LOOP BAND, Replace

3. Remove the snap ring from the inboard joint.
4. Place reference marks on the inboard joint and the bearing retainer as shown. Wrap the inboard joint with shop towel taking care not to drop the steel balls from the bearing retainer, then separate the inboard joint from the driveshaft.



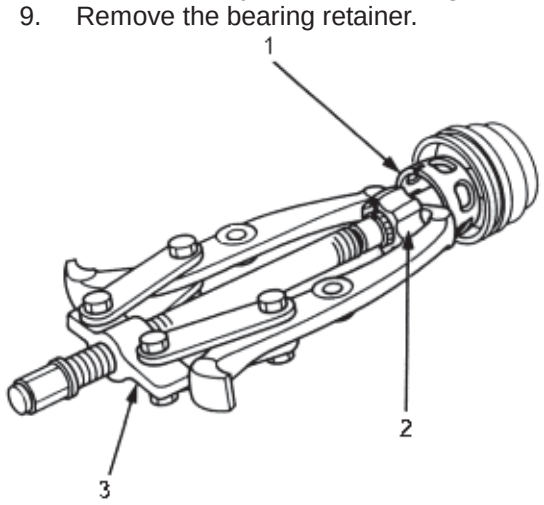
1. INBOARD JOINT
   Check splines for wear or damage
   Check inside bore for wear
   Inspect for cracks
2. Marks
3. BEARING RETAINER
4. SNAP RING
5. SHOP TOWEL

5. Place reference marks on the driveshaft, bearing race and the bearing retainer as shown.
6. Remove the steel ball from the bearing retainer. Take care not to damage the steel ball.
7. Remove the circlip.



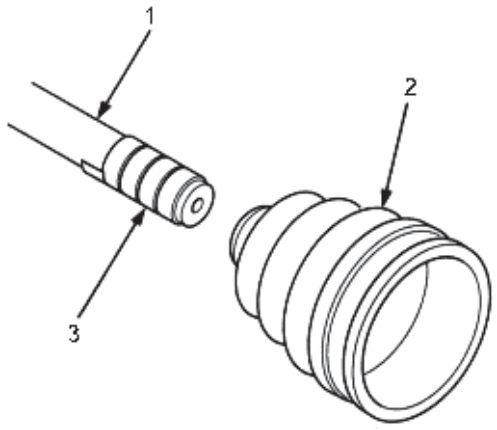
1. SCREWDRIVER
2. BEARING RACE
3. CIRCLIP
4. STEEL BALL
   Check for wear or damage
5. Mark
6. BEARING RETAINER
7. DRIVESHAFT

8. Remove the bearing race from the driveshaft using a commercially available bearing remover.
9. Remove the bearing retainer.



1. BEARING RETAINER
   Check for wear or damage
2. BEARING RACE
   Check for wear or damage
3. BEARING REMOVER
   (Commercially available)

10. Wrap the splines on the driveshaft with vinyl tape to prevent damage to the inboard boot.
11. Remove the inboard boot. Take care not to damage the boot.
12. Remove the vinyl tape.

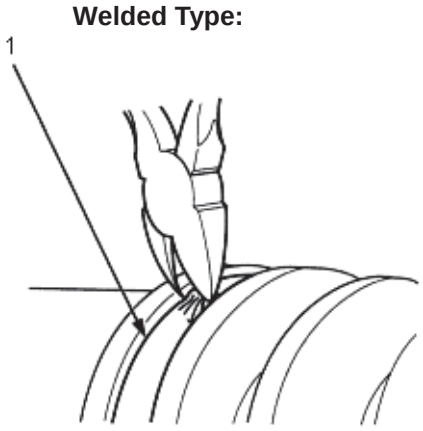


1. DRIVESHAFT
2. INBOARD BOOT
3. VINYL TAPE

Outboard Joint Side:

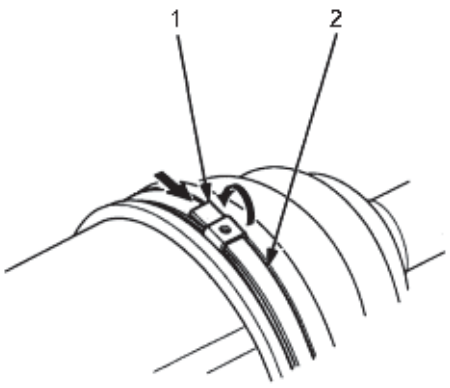
1. Remove the boot bands. Take care not to damage the boot and dynamic damper.
   - If the boot band is welded type, cut the boot band.
   - If the boot band is a double loop type, lift up the boot band.

Welded Type:



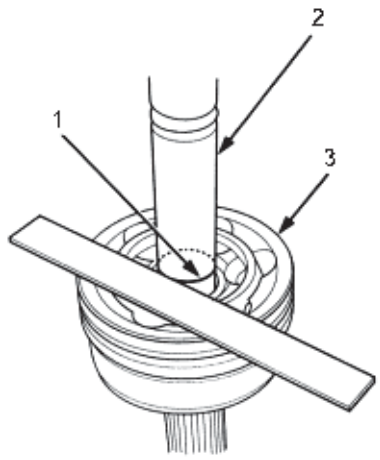
1. WELDED BAND, Replace

Double Loop Type:



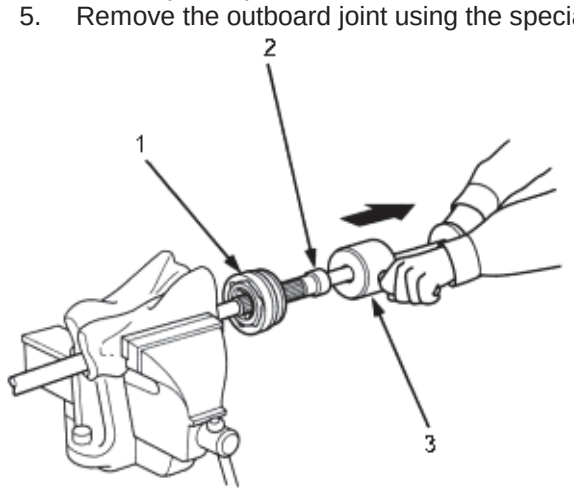
1. Band bend
2. DOUBLE LOOP BAND, Replace

2. Wipe off the grease to expose the driveshaft and the outboard joint inner race.
3. Make a mark on the driveshaft at the same position of the outboard joint end with paint.



1. PAINT MARK
2. DRIVESHAFT
3. OUTBOARD JOINT END

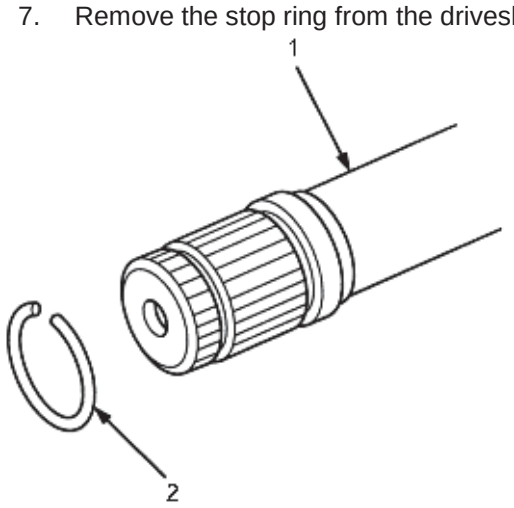
4. Carefully clamp the driveshaft in a vice.
5. Remove the outboard joint using the special tools.



1. OUTBOARD JOINT
2. THREADED ADAPTER, 22 x 1.5 mm, 07XAC-0010100
3. SLIDING HAMMER SET, 07936-5790001

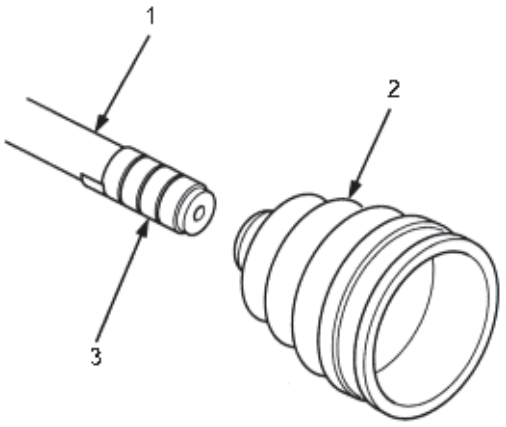
6. Remove the driveshaft from the vice.

7. Remove the stop ring from the driveshaft.



1. DRIVESHAFT
2. STOP RING, Replace

8. Wrap the splines on the driveshaft with vinyl tape to prevent damage to the outboard boot and dynamic damper.
9. Remove the outboard boot. Take care not to damage the boot.
10. Remove the vinyl tape.

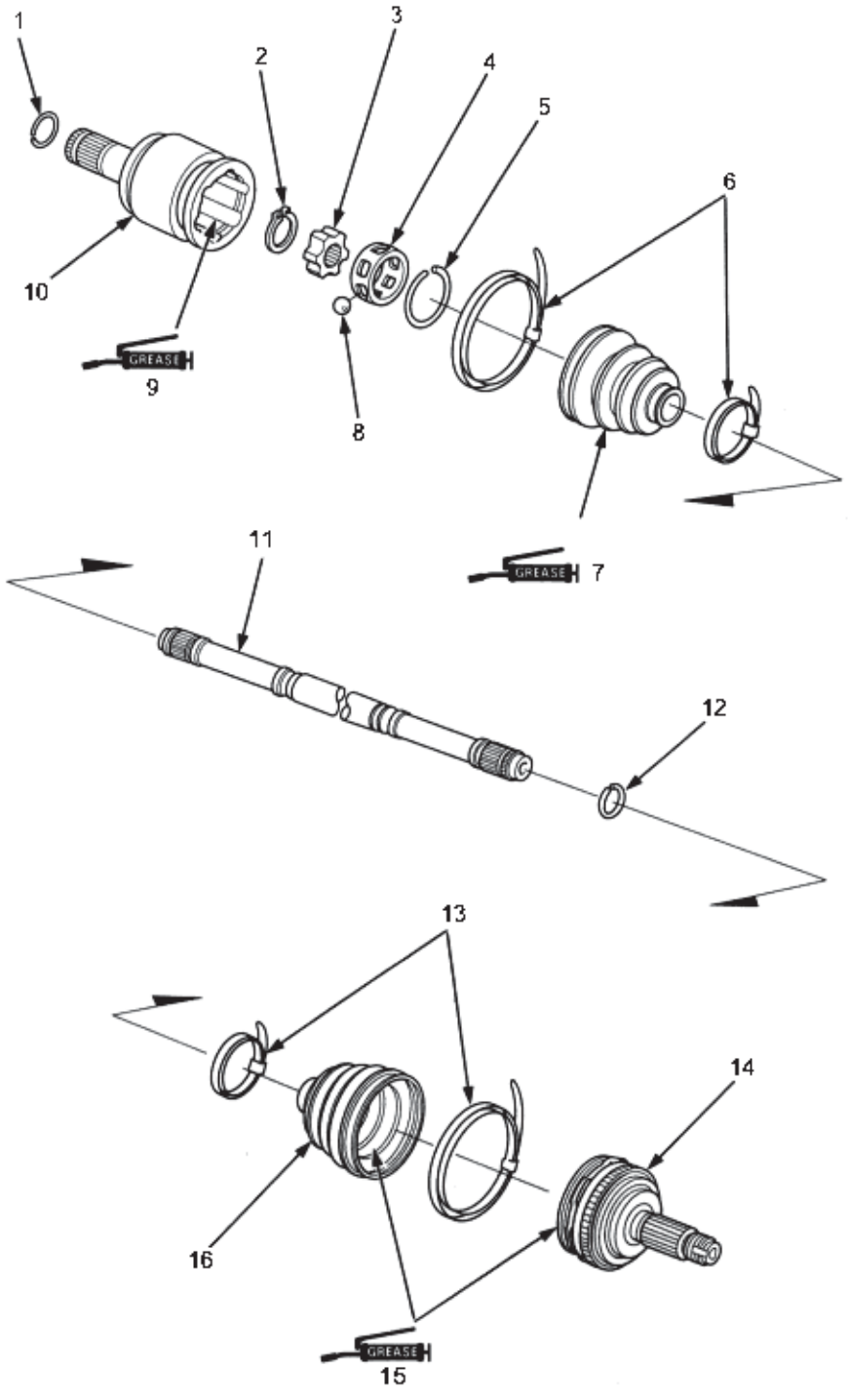


1. DRIVESHAFT
2. OUTBOARD BOOT
3. VINYL TAPE

Note the following items during reassembly:

- Clean the disassembled parts with solvent and dry them thoroughly with compressed air. Do not wash the rubber parts with solvent.
- Thoroughly pack both joints and both joint boots with the joint grease included in the new driveshaft set.

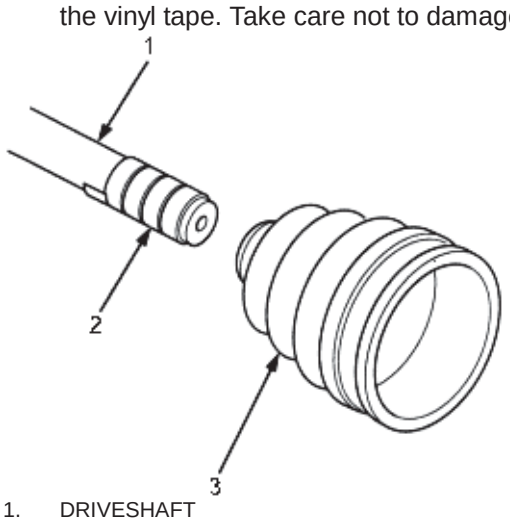
Grease quantity
Inboard joint: 45 - 65 g (1.6 - 2.3 oz)
Outboard joint: 30 -40 g (1.1 - 1.4 oz)



1. **SET RING**, Replace
2. **CIRCLIP**
3. **BEARING RACE**
4. **BEARING RETAINER**
5. **SNAP RING**
6. **BOOT BANDS**, Replace
7. **INBOARD BOOT**
   Pack cavity with grease
8. **STEEL BALL**
9. Pack cavity with grease
10. **INBOARD JOINT**
11. **DRIVESHAFT**
12. **STOP RING**, Replace
13. **BOOT BANDS**, Replace
14. **OUTBOARD JOINT**
15. Pack cavity with grease
16. **OUTBOARD BOOT**

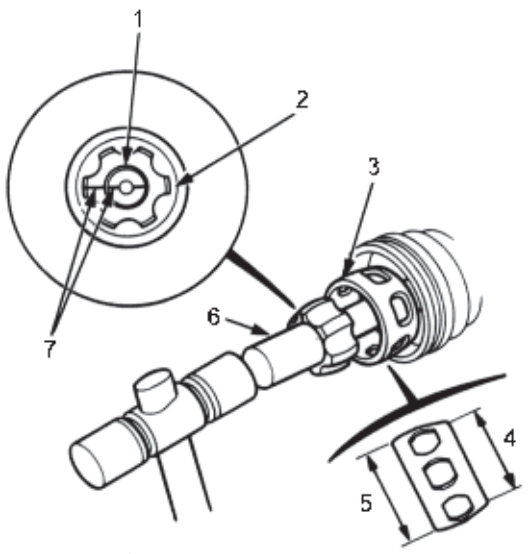
Inboard Joint Side:

1. Wrap the splines with vinyl tape to prevent damage to the inboard boot.
2. Install the inboard boot to the driveshaft, then remove the vinyl tape. Take care not to damage the inboard boot.



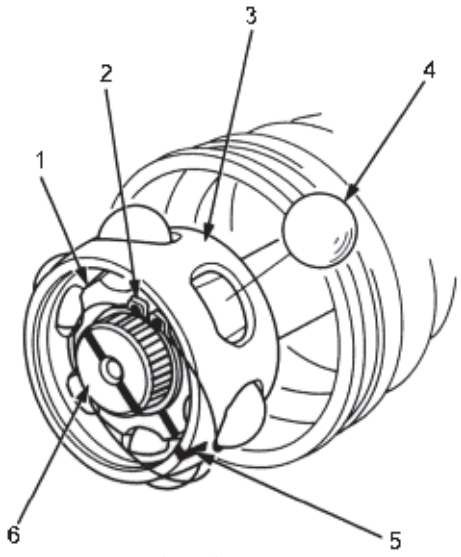
1. DRIVESHAFT
2. VINYL TAPE
3. INBOARD BOOT

3. Set the bearing retainer with its large bore side facing the end of the driveshaft, then install the bearing race on the driveshaft.
4. Align the reference mark on the bearing race with the mark on the drive shaft, then install the bearing race on the driveshaft.



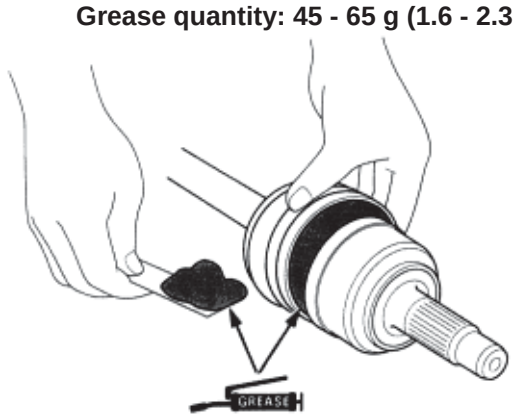
1. DRIVESHAFT
2. BEARING RACE
3. BEARING RETAINER
4. Small bore
5. Large bore
6. SOCKET
7. Marks

5. Fit the circlip into the driveshaft groove. Always rotate the circlip in its groove to be sure it is fully seated.
6. Position the bearing retainer on the bearing race with aligning the reference marks.
7. Install the steel balls into the bearing retainer holes.

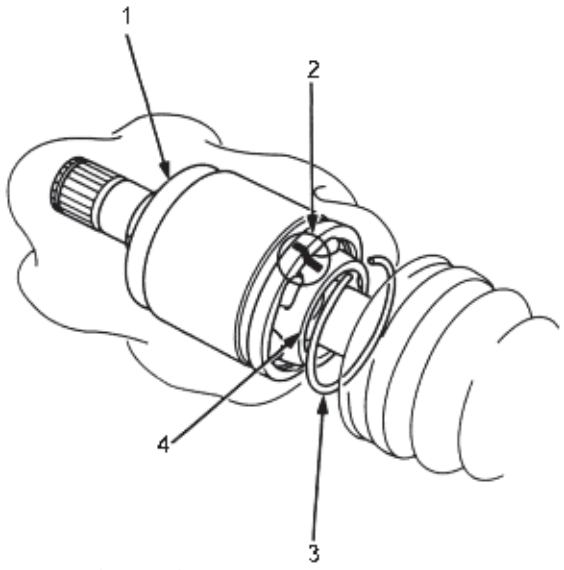


1. BEARING RACE
2. CIRCLIP
3. BEARING RETAINER
4. STEEL BALL
5. Mark
6. DRIVESHAFT

8. Pack the inboard joint with the joint grease included in the new driveshaft set.
Grease quantity: 45 - 65 g (1.6 - 2.3 oz)

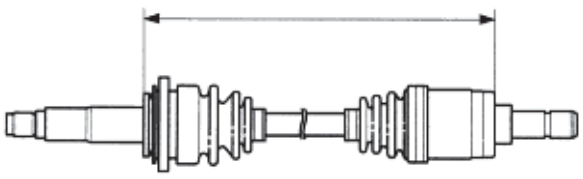


9. Install the inboard joint onto the driveshaft by aligning the marks on the inboard joint with the marks on the bearing retainer.
10. Install the snap ring into the inboard joint groove.

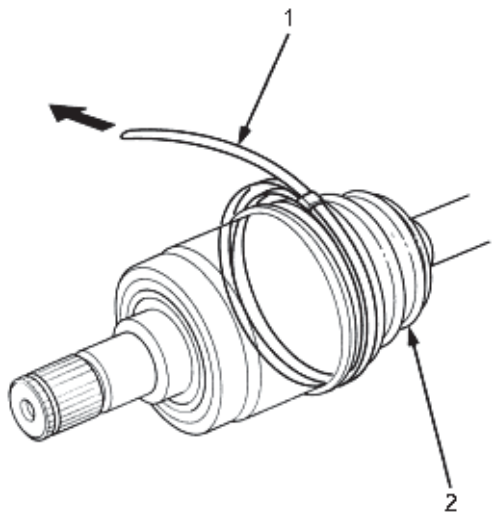


1. INBOARD JOINT
2. Mark
3. SNAP RING
4. BEARING RETAINER

11. Adjust the length of the driveshafts to the figure below, then adjust the boots to halfway between full compression and full extension. Make sure the ends of the boots seat in the grooves of the driveshaft and joint.
Standard:
Left driveshaft: 558.3 mm (22.0 in)
Right driveshaft: 623.2 mm (24.5 in)

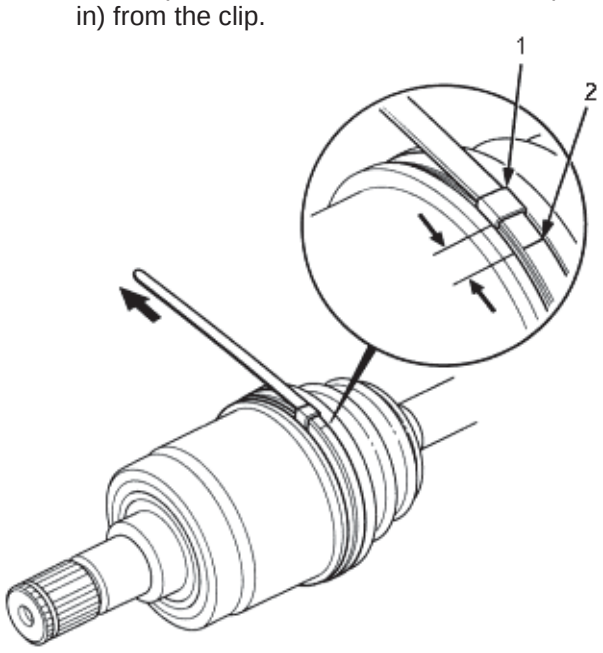


12. Fit the boot ends onto the driveshaft and the inboard joint, then install the boot bands with the band end towards the front of the vehicle.



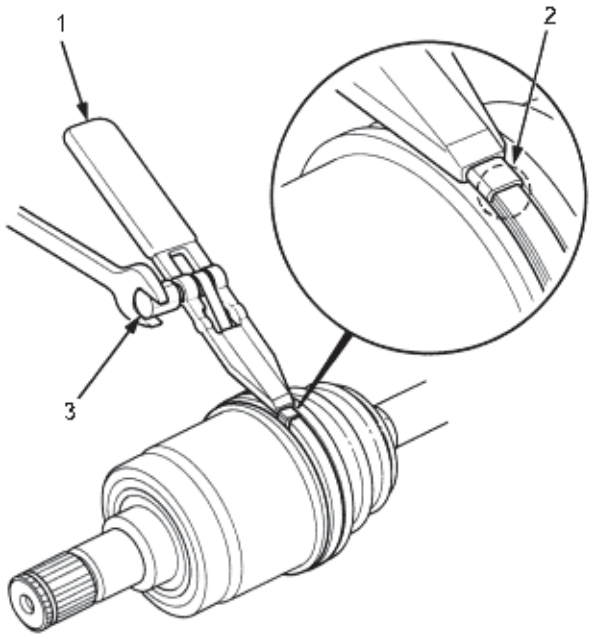
1. DOUBLE LOOP BAND, Replace
2. BOOT

13. Pull up the slack in the band by hand.
14. Mark a position on the band 10 -14 mm (0.4 - 0.6 in) from the clip.



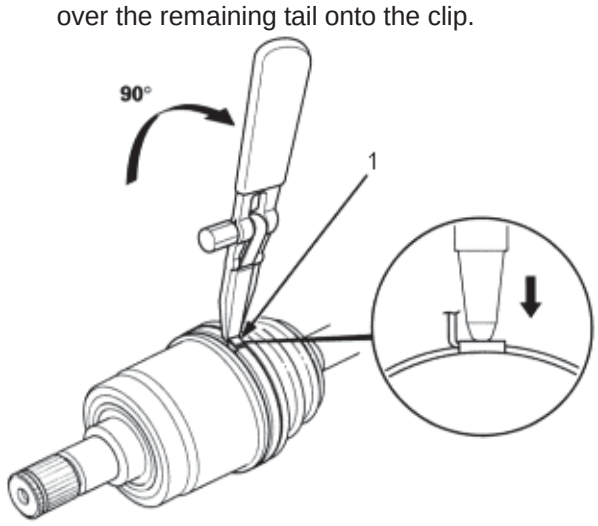
1. CLIP
2. Mark

15. Thread the free end of the band through the nose section of the commercially available boot band tool KD-3191 or equivalent and into the slot on the winding mandrel.
16. Place a wrench on the winding mandrel of the band tightening tool and tighten the band until the marked spot on the band meets the edge of the clip.



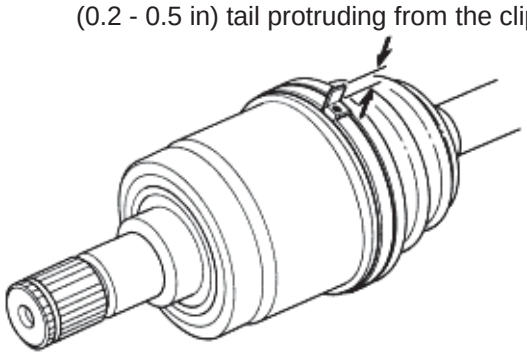
1. BAND TIGHTENING TOOL (Commercially available)
2. Mark spot
3. WINDING MANDREL

17. Lift up the band tightening tool to bend the free end of the band 90° to the clip. Centre punch the clip then fold over the remaining tail onto the clip.

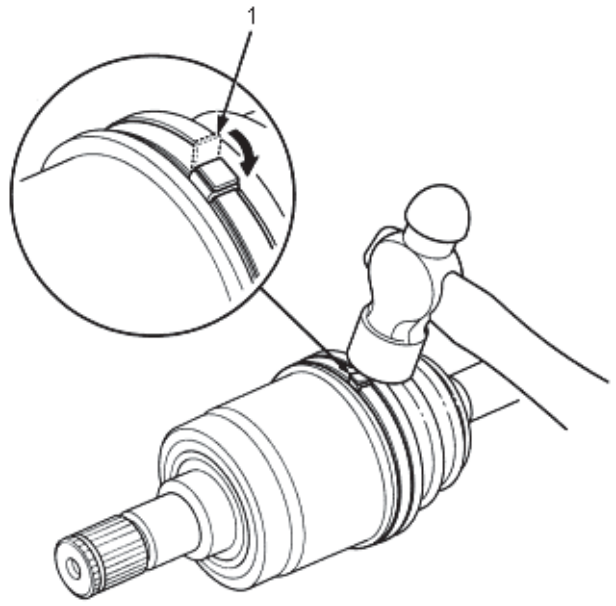


1. CLIP

18. Unwind the band tightening tool and cut off the excess free end of the band to leave a 5 - 10 mm (0.2 - 0.5 in) tail protruding from the clip.

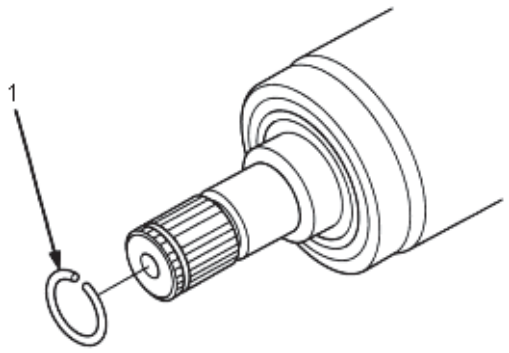


19. Bend the band end by tapping it down with a hammer.
    NOTE:
    - Make sure the band and clip do not interfere with anything and the band does not move.
    - Remove any grease remaining on the surrounding surfaces.



1. Band end

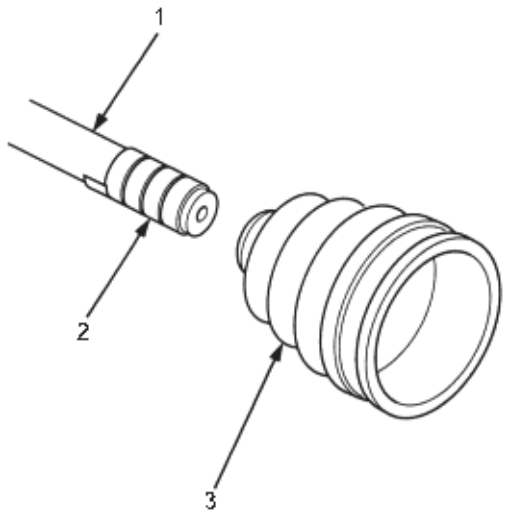
20. Install the new set ring.



1. SET RING, Replace

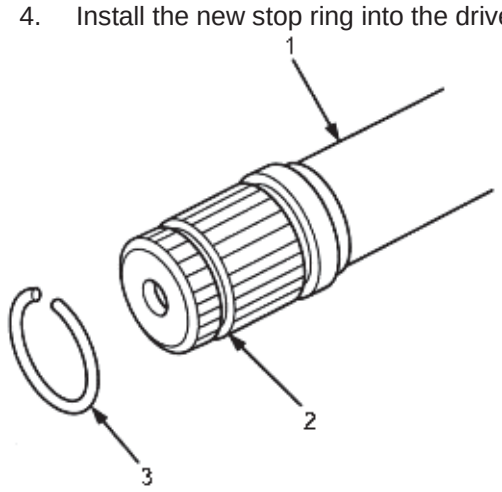
Outboard Joint Side:

1. Wrap the splines with vinyl tape to prevent damage to the outboard boot.
2. Install the outboard boot. Take care not to damage the outboard boot.
3. Remove the vinyl tape.



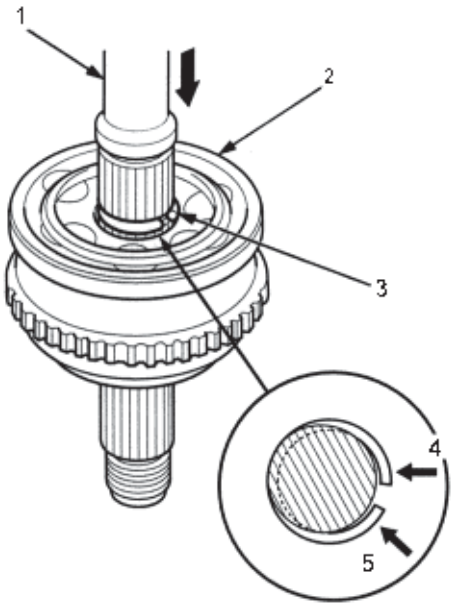
1. DRIVESHAFT
2. VINYL TAPE
3. OUTBOARD BOOT

4. Install the new stop ring into the driveshaft groove.



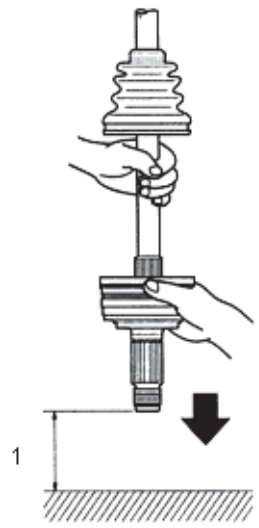
1. DRIVESHAFT
2. GROOVE
3. STOP RING, Replace

5. Insert the driveshaft into the outboard joint until the stop ring is close to the joint.



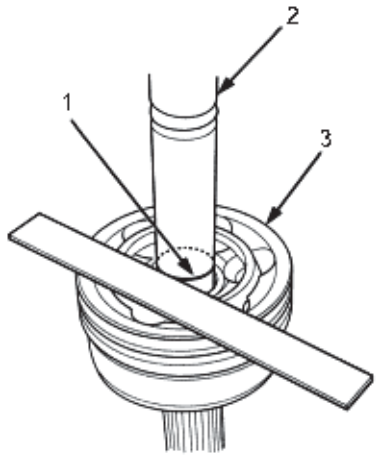
1. DRIVESHAFT
2. OUTBOARD JOINT
3. STOP RING
4. Push.
5. Push.

6. To completely seat the outboard joint, pick up the driveshaft and joint and drop them from about 10 cm (4 in) onto a hard surface. Do not use a hammer, as excessive force may damage the driveshaft.



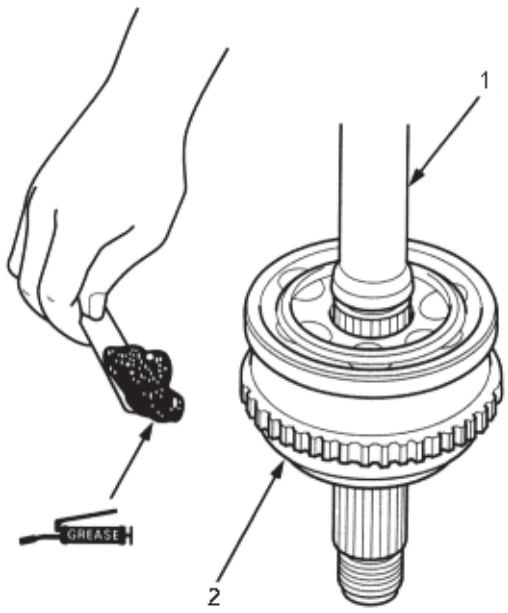
1. 10 cm 4 to 5 inches

7. Check the alignment of the paint mark with the outboard joint end.



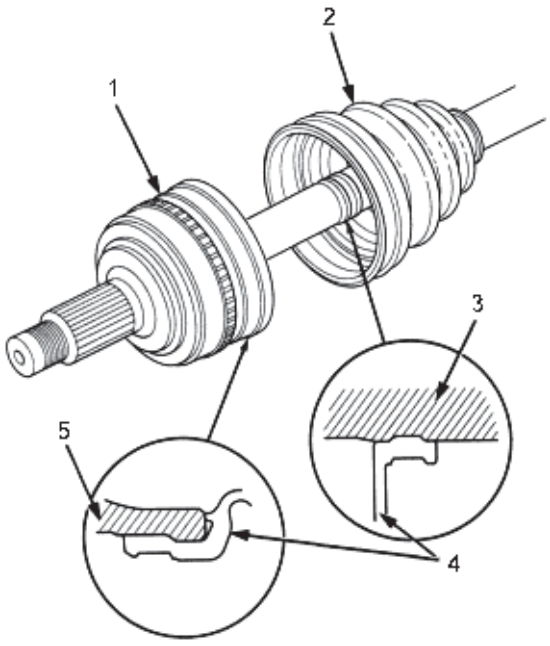
1. PAINT MARK
2. DRIVESHAFT
3. OUTBOARD JOINT END

8. Pack the outboard joint with the joint grease included in the new joint boot set.
Grease quantity
Outboard joint: 30 - 40 g (1.1 - 1.4 oz)



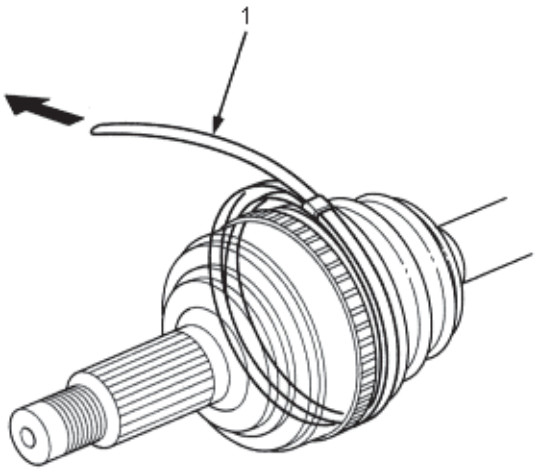
1. DRIVESHAFT
2. OUTBOARD JOINT

9. Fit the boot ends onto the driveshaft and outboard joint.



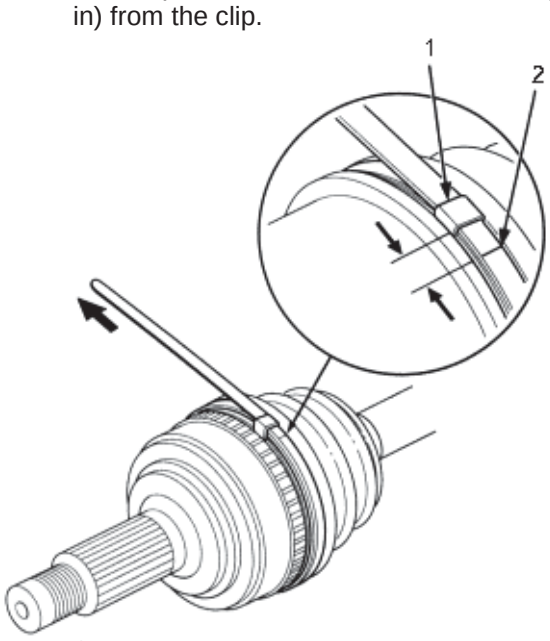
1. OUTBOARD JOINT
2. OUTBOARD BOOT
3. DRIVESHAFT
4. OUTBOARD BOOT
5. OUTBOARD JOINT

10. Set the boot bands with the band end towards the front of the vehicle.



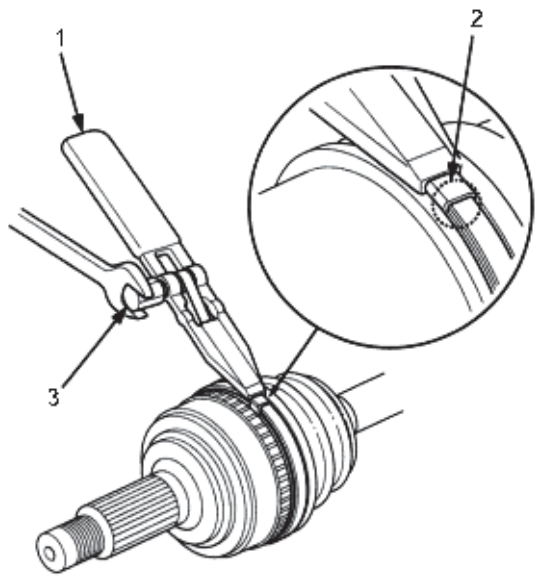
1. DOUBLE LOOP BAND, Replace

11. Pull up the slack in the band by hand.
12. Mark a position on the band 10 -14 mm (0.4 - 0.6 in) from the clip.



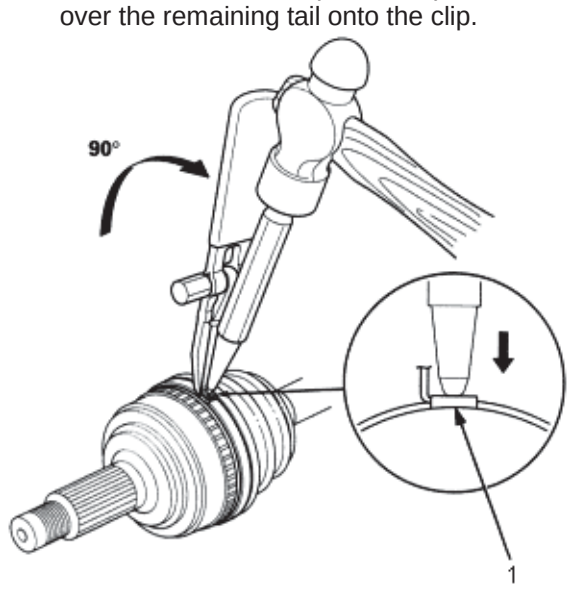
1. CLIP
2. Mark

13. Thread the free end of the band through the nose section of the commercially available boot band tool KD-3191 or equivalent and into the slot on the winding mandrel.
14. Place a wrench on the winding mandrel of the band tightening tool and tighten the band until the marked spot on the band meets the edge of the clip.



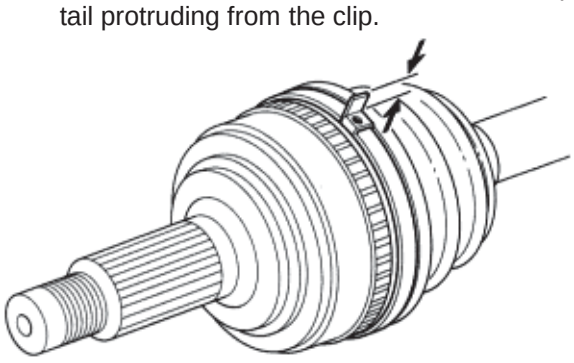
1. BAND TIGHTENING TOOL (Commercially available)
2. Mark spot
3. WINDING MANDREL

15. Lift up the band tightening tool to bend the free end of the band 90° to the clip. Centre punch the clip then fold over the remaining tail onto the clip.

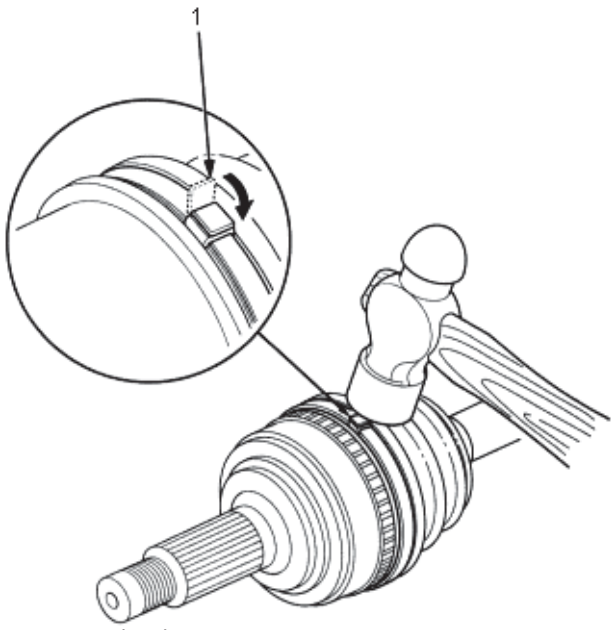


1. CLIP

16. Unwind the band tightening tool and cut off the excess free end of the band to leave a 5 - 10 mm (0.2 - 0.5 in) tail protruding from the clip.

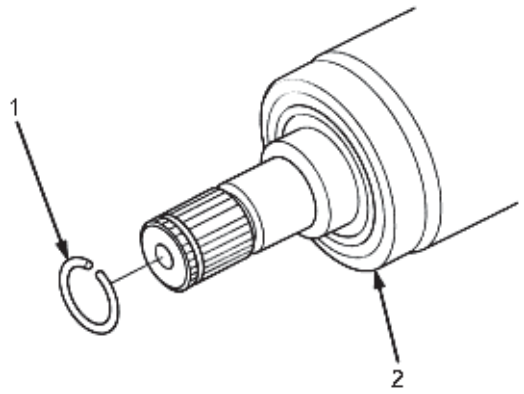


17. Bend the band end by tapping it down with a hammer.
    NOTE:
    - Make sure the band and clip do not interfere with anything and the band does not move.
    - Remove any grease remaining on the surrounding surfaces.



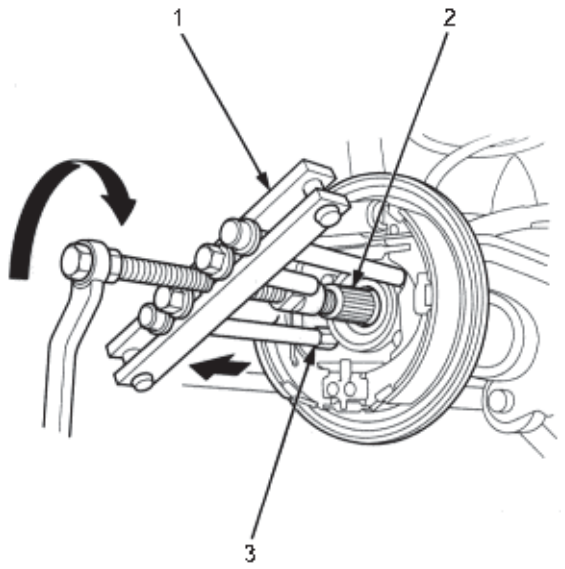
1. Band end

1. Install the set ring on the outboard joint.



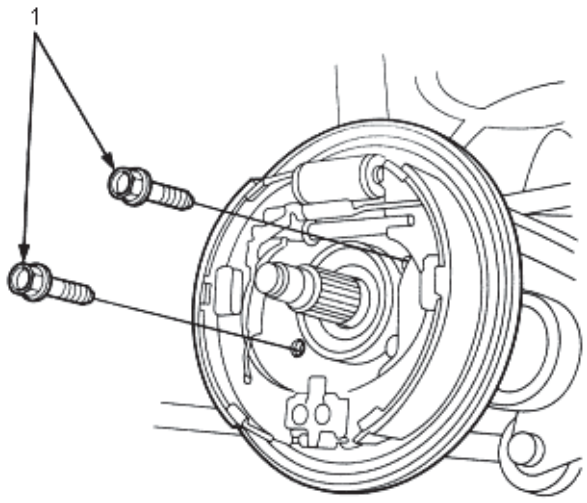
1. SET RING, Replace
2. INBOARD JOINT

2. Install the rear driveshaft using the special tool as shown.



1. HUB PULLER, 07935-679000
2. DRIVESHAFT
3. HUB PULLER ATTACHMENT, 07JAC-SJ60200

3. Install the two backing plate mounting bolts.

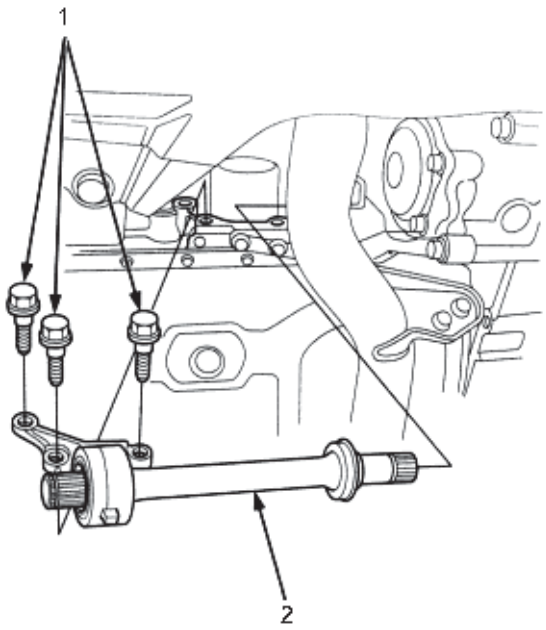


1. 10 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

4. Install the rear hub bearing unit (see section 18).
5. Install the rear differential (see section 15).
6. Refill the rear differential oil (see section 15).
7. Install the wheel nuts and rear wheels.

Removal

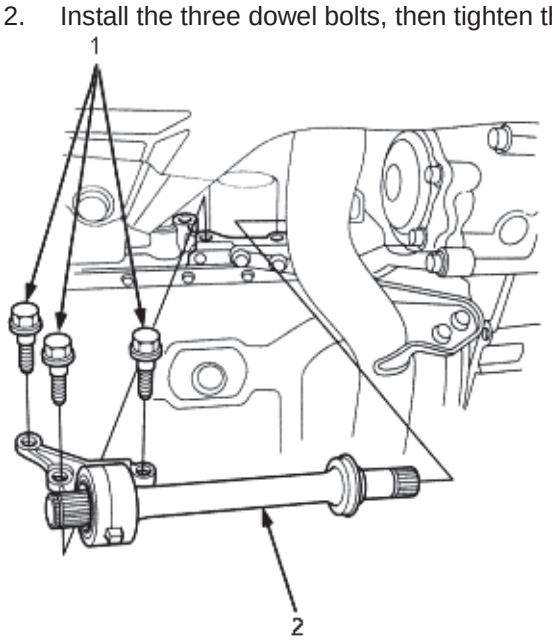
1. Drain the MTF (see section 13) or ATF (see section 14).
2. Remove the left driveshaft (**See page** 16-3).
3. Remove the three dowel bolts.
4. Remove the intermediate shaft from the differential. Hold the intermediate shaft horizontal until it is clear of the differential to prevent damage to the differential oil seal.



1. DOWEL BOLTS, 10 x 1.25 mm
2. INTERMEDIATE SHAFT

Installation

1. Clean the areas where the intermediate shaft contacts the transmission (differential) thoroughly with solvent or carburettor cleaner and dry with compressed air. Insert the intermediate shaft assembly into the differential. Hold the intermediate shaft horizontal to prevent damage to the differential oil seal.
2. Install the three dowel bolts, then tighten them.

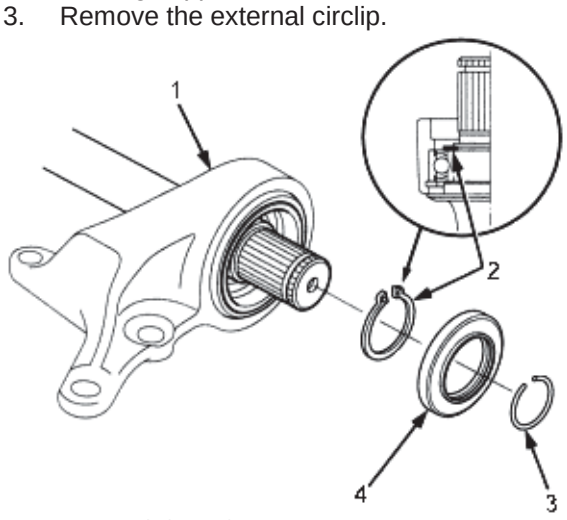


1. DOWEL BOLTS, 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)
2. INTERMEDIATE SHAFT

3. Refill the transmission with recommended MTF (see section 13) or ATF (see section 14).

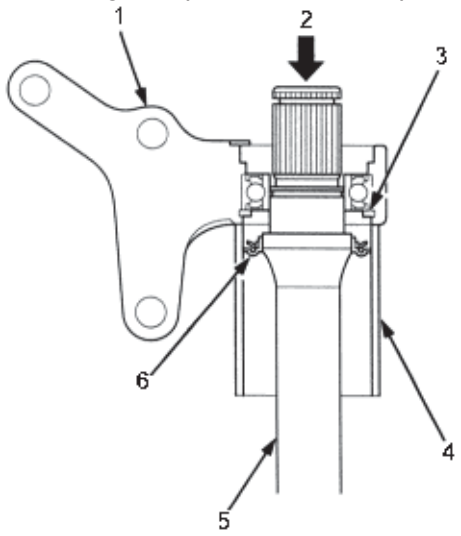
NOTE: Be careful not to damage the metal rings on the intermediate shaft during disassembly.

1. Remove the set ring.
2. Remove the intermediate shaft outer seal from the bearing support.
3. Remove the external circlip.



1. BEARING SUPPORT
2. EXTERNAL CIRCLIP
3. SET RING, Replace
4. OUTER SEAL, Replace

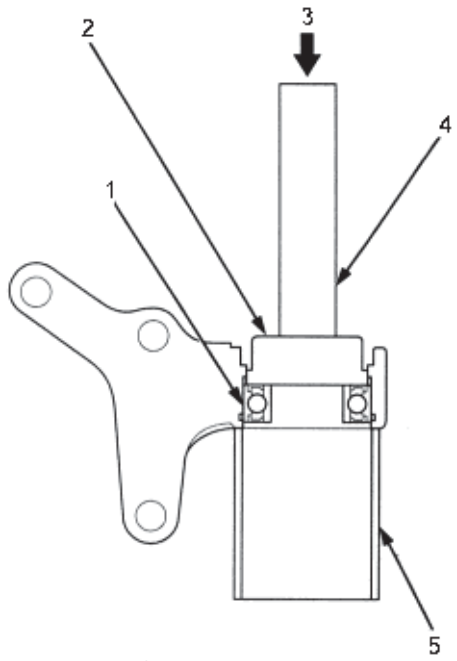
4. Press the intermediate shaft out of the shaft bearing using the special tools and a press as shown.



1. BEARING SUPPORT
   Check for damage
2. Press
3. INTERNAL CLIP
4. HALF SHAFT BASE, 07NAF-SR30101
5. INTERMEDIATE SHAFT
   Check for damage
6. BEARING SUPPORT RING
   Check for damage or distortion

5. Remove the internal circlip.

6. Press the intermediate shaft bearing out of the bearing support using the special tools and a press as shown.

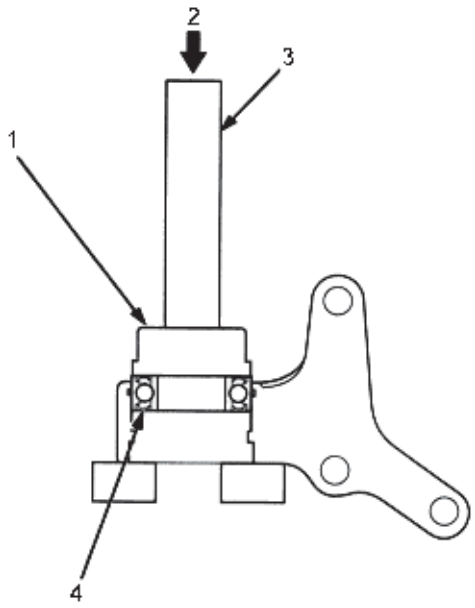


1. BEARING
2. DRIVER ATTACHMENT, 42 x 47 mm, 07746-0010300
3. Press
4. DRIVER, 07749-0010000
5. HALF SHAFT BASE, 07NAF-SR30101

NOTE:
- Clean the disassembled parts with solvent and dry them thoroughly with compressed air. Do not wash the rubber parts with solvent.
- Be careful not to damage the metal rings on the intermediate shaft during reassembly.

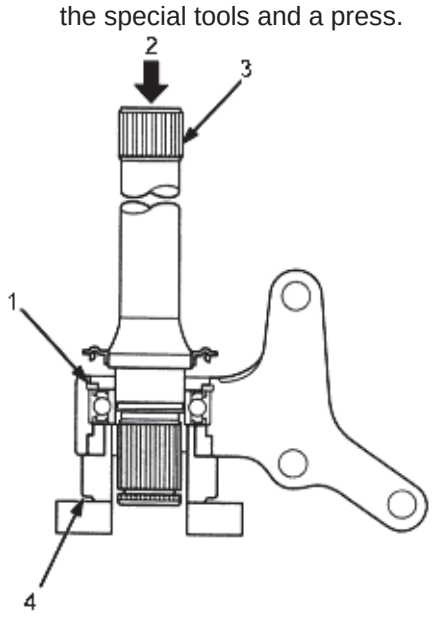
1. **INTERMEDIATE SHAFT**
2. **BEARING SUPPORT RING**
3. **EXTERNAL CIRCLIP**
4. **DOWEL BOLTS, 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)**
5. **SET RING**, Replace
6. **OUTER SEAL**, Replace
   Pack the interior of the outer seal
7. **BEARING SUPPORT**
8. **INTERMEDIATE SHAFT BEARING**, Replace
9. **INTERNAL CIRCLIP**
10. **INTERMEDIATE SHAFT RING**

1. Press the intermediate shaft bearing into the bearing support using the special tools and a press as shown.



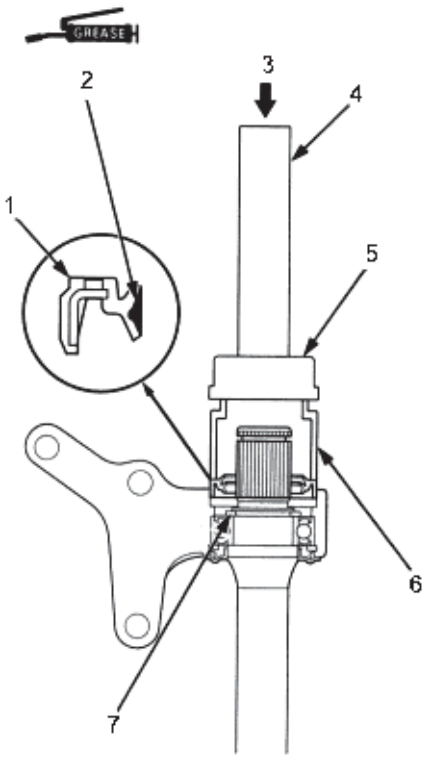
1. DRIVER ATTACHMENT, 52 x 55 mm, 07746-0010400
2. Press
3. DRIVER, 07749-0010000
4. BEARING

2. Seat the internal circlip in the groove of the bearing support.
3. Press the intermediate shaft into the shaft bearing using the special tools and a press.



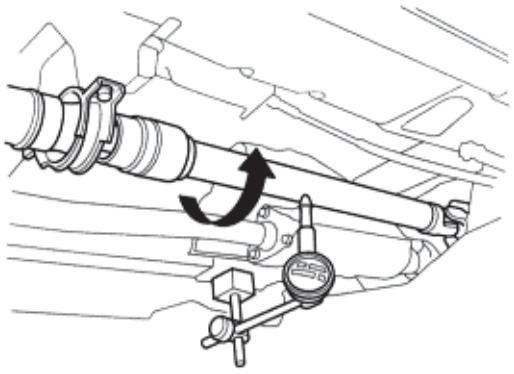
1. INTERNAL CIRCLIP
2. Press
3. INTERMEDIATE SHAFT
4. DRIVER ATTACHMENT, 35 mm I.D., 07746-0030400

4. Seat the external circlip in the groove of the intermediate shaft.
5. Install the outer seal into the bearing support using the special tools as shown.
   NOTE: Install the seal flush with the bearing support.

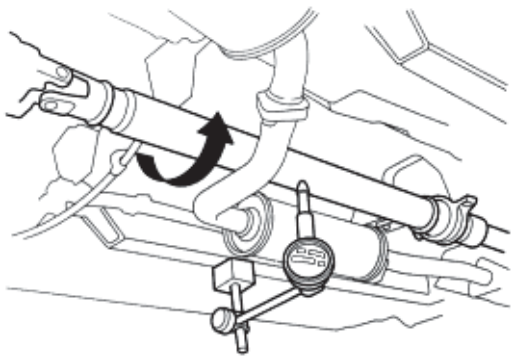


1. OUTER SEAL, Replace
2. Pack the interior of the outer seal
3. Press
4. DRIVER, 07749-0010000
5. DRIVER ATTACHMENT, 52 x 55 mm, 07746-0010400
6. INNER RACE DRIVER, 07LAD-PW50601
7. EXTERNAL CIRCLIP

1. Shift into the neutral position (M/T or N position (A/T).
2. Raise the vehicle off the ground and support it with safety sands in the proper locations (see section 1).
3. Check the centre support bearing for excessive play or rattle. If the centre support has excessive play or rattle, replace the propeller shaft assembly.
4. Check the universal joint boots for damage and deterioration. If the boots are damaged or deteriorated, replace the propeller shaft assembly.
5. Check the universal joints for excessive play or rattle. If the universal joints have excessive play or rattle, replace the propeller shaft assembly.
6. Install a dial indicator with its needle on the centre of the front or rear propeller shaft.
7. Turn the other propeller shaft slowly and check the runout. Repeat this procedure for the other propeller shaft.
   Runout:
   Service Limit: 1.5 mm (0.06 in)
   Front Propeller Shaft:

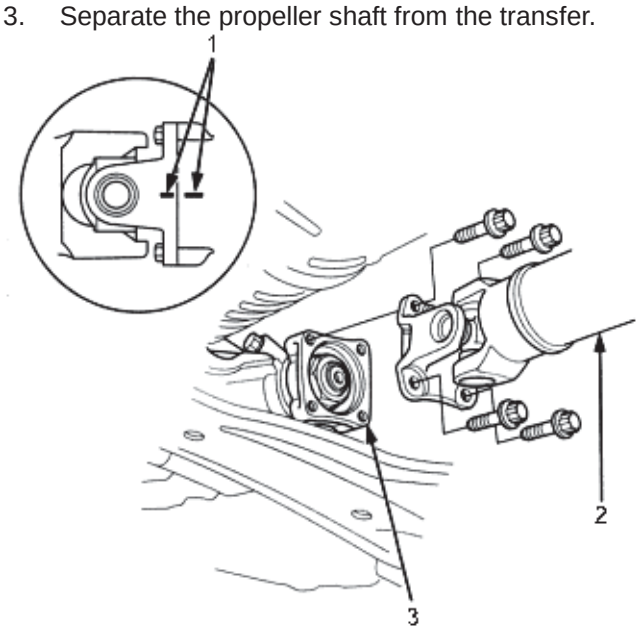


Rear Propeller Shaft:



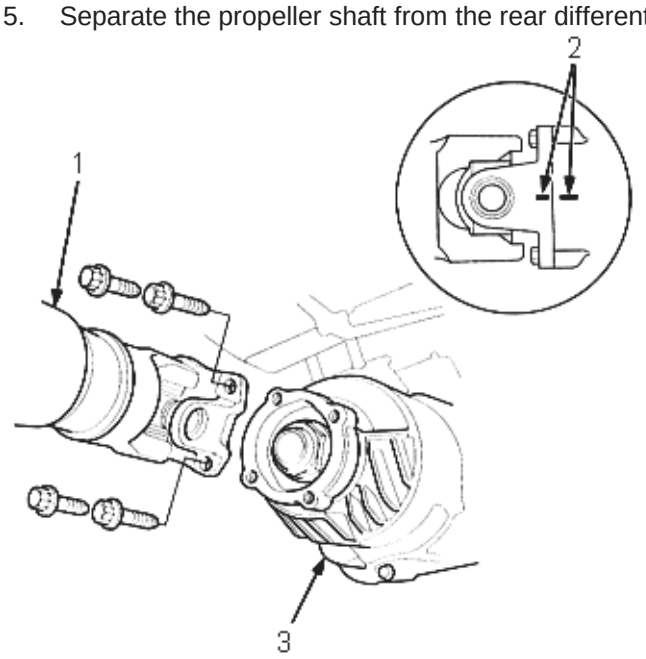
8. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

1. Raise the vehicle off the ground and support it with safety stand in the proper locations (see section 1).
2. Make a reference mark across the propeller shaft and the transfer flanges.
3. Separate the propeller shaft from the transfer.



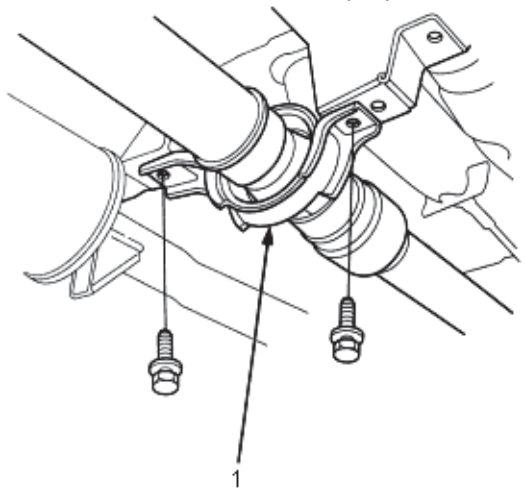
1. Marks
2. PROPELLER SHAFT
3. TRANSFER

4. Make a reference mark across the propeller shaft and the rear differential flanges.
5. Separate the propeller shaft from the rear differential.



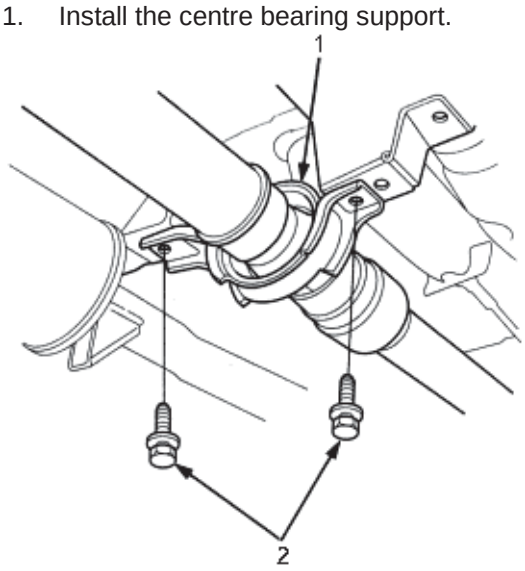
1. PROPELLER SHAFT
2. Marks
3. REAR DIFFERENTIAL

6. Remove the two centre bearing support mounting bolts, then remove the propeller shaft.



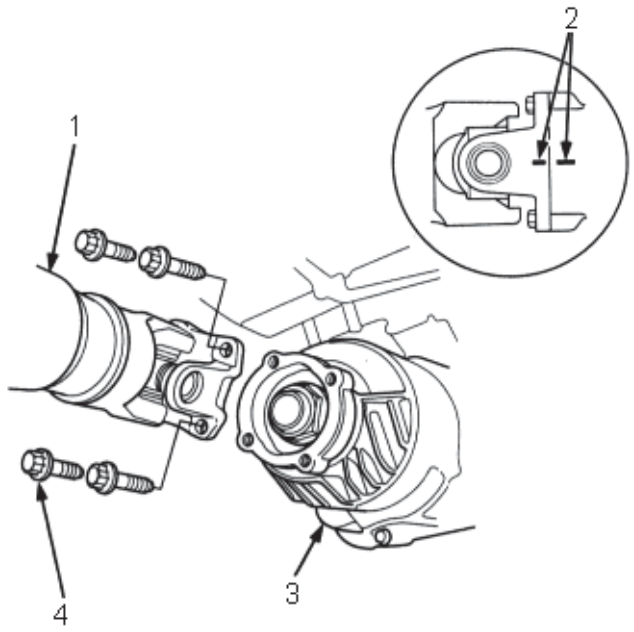
1. CENTRE BEARING SUPPORT

1. Install the centre bearing support.



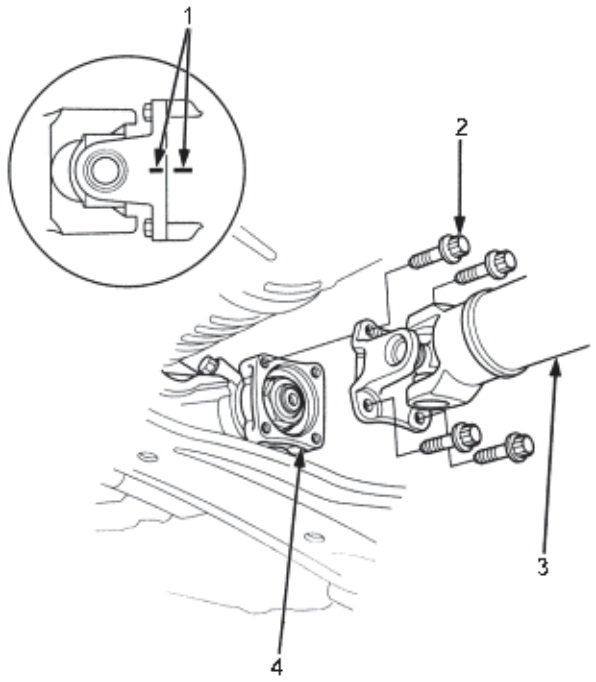
1. CENTRE BEARING SUPPORT
2. 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)

2. Install the propeller shaft to the rear differential by aligning the reference marks.



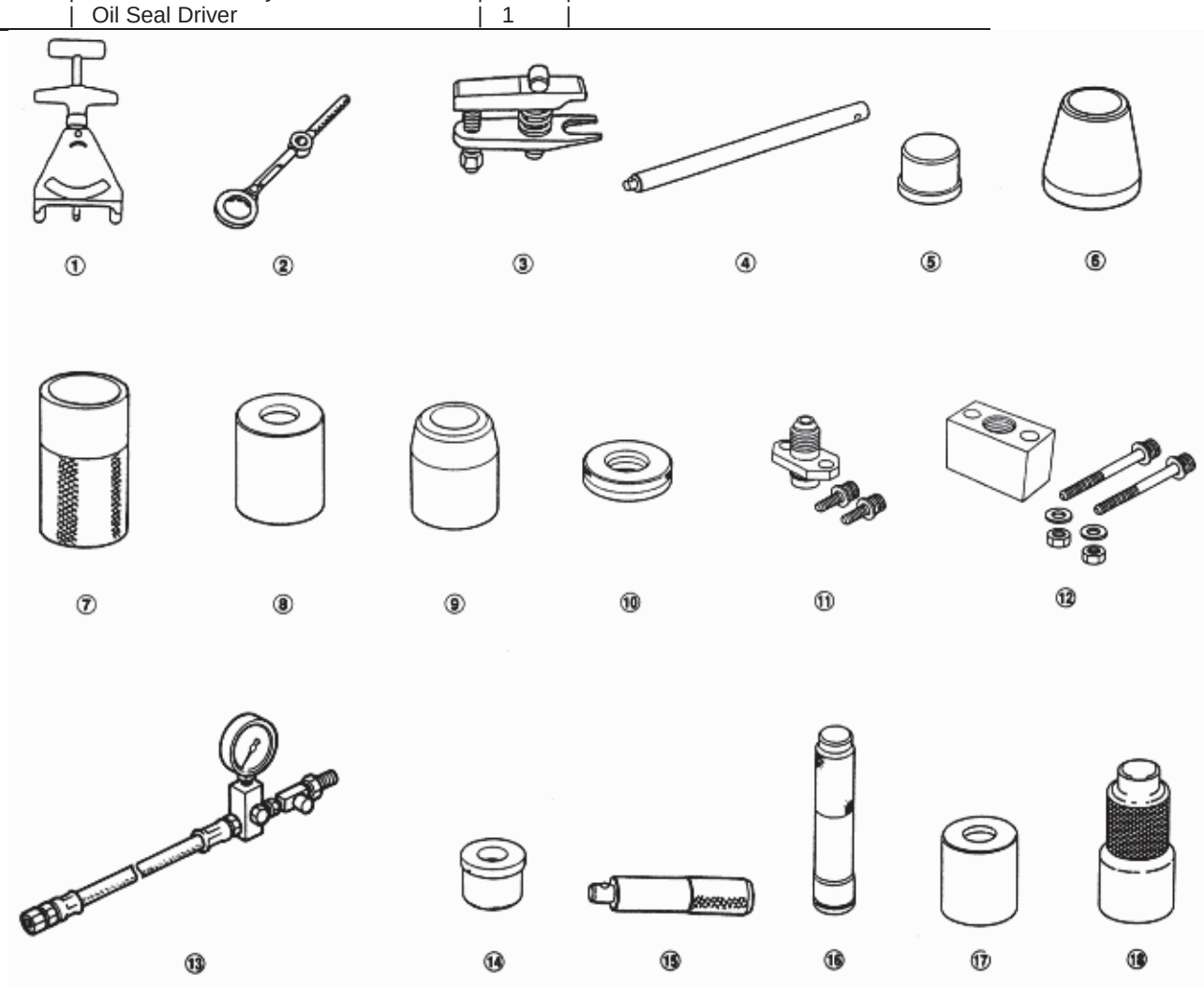
1. PROPELLER SHAFT
2. Marks
3. REAR DIFFERENTIAL
4. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)

3. Install the propeller shaft to the transfer by aligning the reference marks.



1. Marks
2. 8 x 1.25 mm, 32 Nm (3.3 kgf/m, 24 lbf/ft)
3. PROPELLER SHAFT
4. TRANSFER

Ref No.	Tool Number	Description	Qty	Remark
1	07JGG - 0010100	Belt Tension Gauge	1	
2	07MAA - SL00100	Locknut wrench, 40 mm	1	
3	07MAC - SL00200	Ball Joint Remove, 28 mm	1	
4	07NAD - SR30101	Driver Handle	1	
5	07NAD - SR30200	End Packing Remover	1	
6	07NAG - SR30400	Piston Seal Ring Guide	1	
7	07NAG - SR30500	Piston Seal Ring Sizing Tool	1	
8	07NAG - SR30600	Sleeve Seal Ring Sizing Tool	1	
9	07NAG - SR30700	Sleeve Seal Guide	1	
10	07NAG - SR30900	Valve Seal Ring Sizing Tool	1	
11	07RAK - S040110	P/S Joint Adaptor (Pump)	1	
12	07RAK - S040120	P/S Joint Adaptor (Hose)	1	
13	07406 - 010200	P/S Pressure Gauge	1	
14	07746 - 0010100	Attachment, 32 x 35 mm	1	
15	07749 - 0010000	Driver	1	
16	07946 - MB00000	Driver, 30 mm I.D.	1	
17	07965 - SA50500	Hub Dis/Assembly Tool Attachment	1	
18	07974 - 6790000	Oil Seal Driver	1	

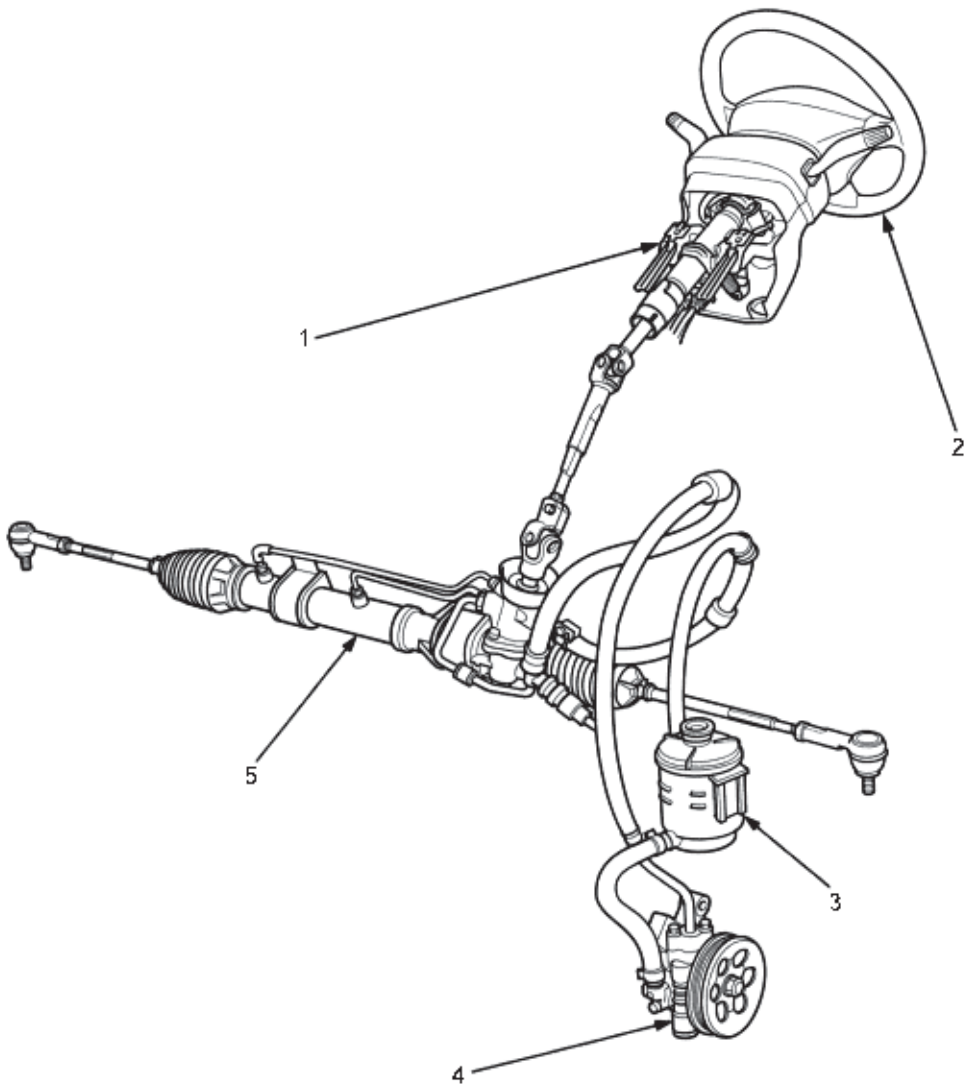


Note these items during disassembly:

- If an intact airbag assembly has been removed from a scrapped car or has been found defective or damaged during transit, storage or service, it should be deployed (see section 24).
- Before removing the gearbox, remove the driver's airbag assembly and steering wheel.
- After installing the gearbox, check the wheel alignment and adjust if necessary.

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS (section 24) before performing repairs or service.

LHD:



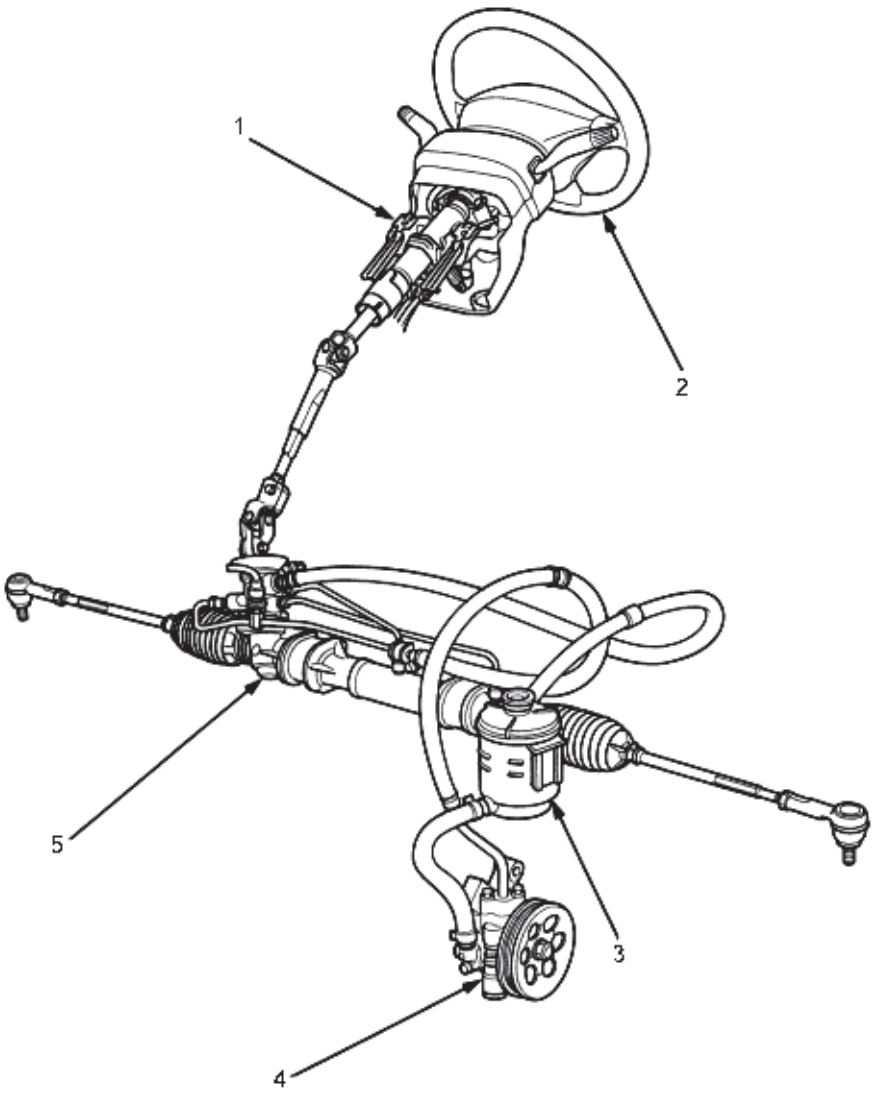
1. **STEERING COLUMN**
   Removal/Installation, (**See page** 17-23)
   Inspection, (**See Page** 17-25)
   CABLE REEL
   Removal/Installation, see section 24
   IGNITION SWITCH see section 23
2. **STEERING WHEEL**
   Removal, (**See page** 17-20)
   Disassembly/Reassembly, (**See page** 17-21)
   Installation, (**See page** 17-22)
   DRIVER'S AIRBAG ASSEMBLY
   Removal/Installation, see section 24
3. **RESERVOIR**
   Fluid Level Inspection, (**See page** 17-18)
   Fluid Leakage Inspection, (**See page** 17-27)
   POWER STEERING HOSES AND LINES
   Fluid Leakage Inspection, (**See page** 17-27)
   Replacement, (**See page** 17-28)
4. **POWER STEERING PUMP**
   Pump Belt Inspection, (**See page** 17-16)
   Pump Belt Adjustment, (**See page** 17-16
   Pump Pressure Check, (**See page** 17-19)
   Replacement, (**See page** 17-29)
   Disassembly, (**See page** 17-30)
   Inspection, (**See page** 17-31)
   Reassembly, (**See page** 17-33)
5. **POWER STEERING GEARBOX**
   Removal, (**See page** 17-36)
   Disassembly, (**See page** 17-36)
   Reassembly, (**See page** 17-45)
   Installation, (**See page** 17-54)

Note these items during disassembly:

- If an intact airbag assembly has been removed from a scrapped car or has been found defective or damaged during transit, storage or service, it should be deployed (see section 24).
- Before removing the gearbox, remove the driver's airbag assembly and steering wheel.
- After installing the gearbox, check the wheel alignment and adjust if necessary.

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS (section 24) before performing repairs or service.

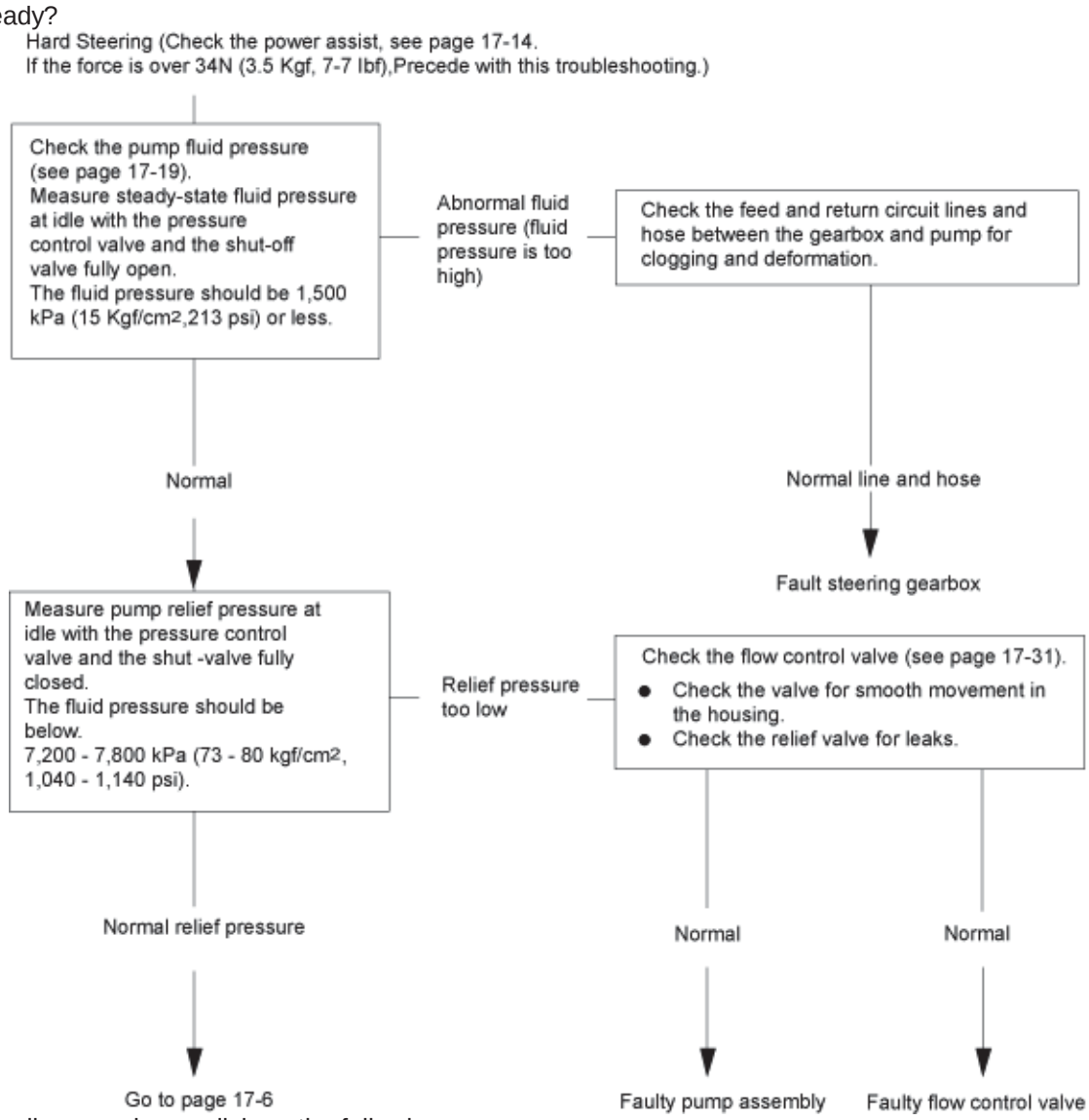
RHD:



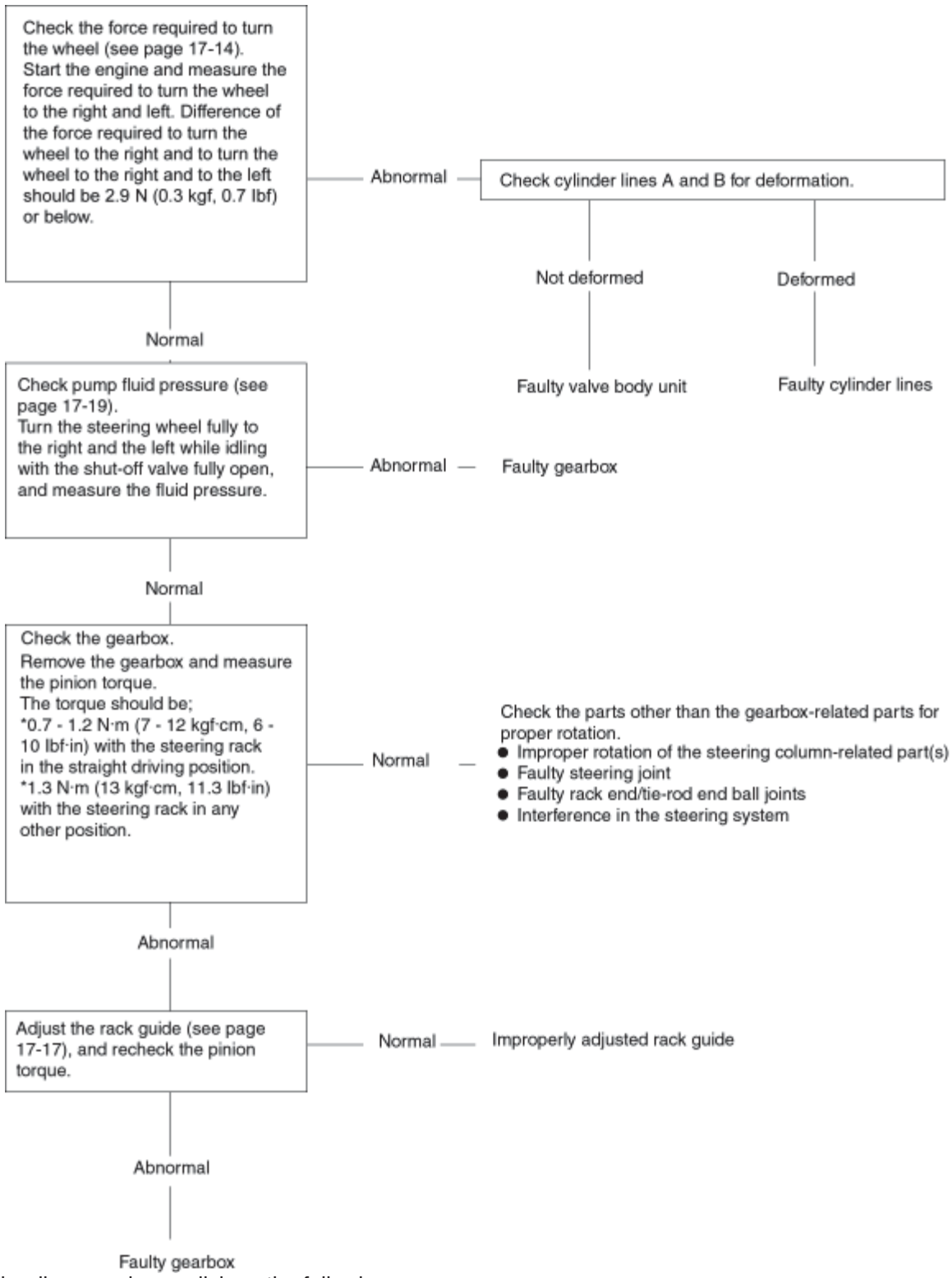
1. **STEERING COLUMN**
   Removal/Installation, (**See Page** 17-23)
   Inspection, (**See Page** 17-25)
   CABLE REEL
   Removal/Installation, see section 24
   IGNITION SWITCH see section 23
2. **STEERING WHEEL**
   Removal, (**See Page** 17-20)
   Disassembly/Reassembly, (**See Page** 17-21)
   Installation, (**See Page** 17-22)
   DRIVER'S AIRBAG ASSEMBLY
   Removal/Installation, see section 24
3. **RESERVOIR**
   Fluid Level Inspection, (**See Page** 17-18)
   Fluid Leakage Inspection, (**See Page** 17-27)
   POWER STEERING HOSES AND LINES
   Fluid Leakage Inspection, (**See Page** 17-27)
   Replacement, (**See Page** 17-28)
4. **POWER STEERING PUMP**
   Pump Belt Inspection, (**See Page** 17-16)
   Pump Belt Adjustment, (**See Page** 17-16)
   Pump Pressure Check, (**See Page** 17-19)
   Replacement,. .(**See Page** 17-29)
   Disassembly, (**See Page** 17-30)
   Inspection, (**See Page** 17-31)
   Reassembly, (**See Page** 17-33)
5. **POWER STEERING GEARBOX**
   Removal, (**See Page** 17-36)
   Disassembly, (**See Page** 17-39)
   Reassembly, (**See Page** 17-45)
   Installation, (**See Page** 17-54)

Check the following before you begin:

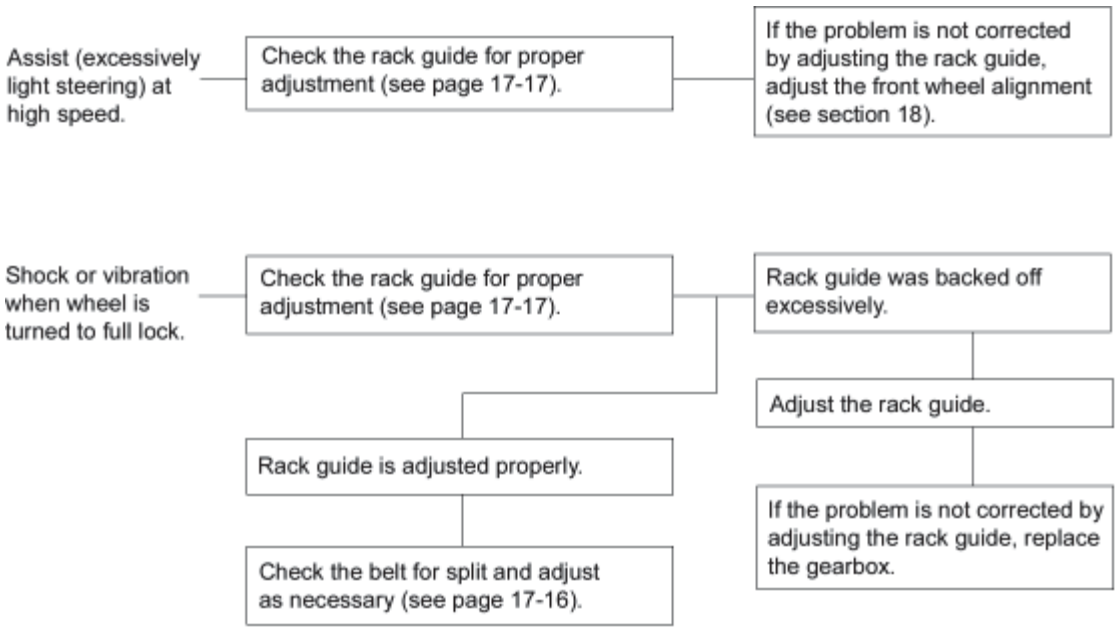
- Has the suspension been modified in a way that would affect steering?
- Are tyre sizes, tyre variety and air pressure correct?
- Is the steering wheel original equipment?
- Is the power steering pump belt properly adjusted?
- Is steering fluid reservoir filled to proper level?
- Is the engine idle speed correct and steady?



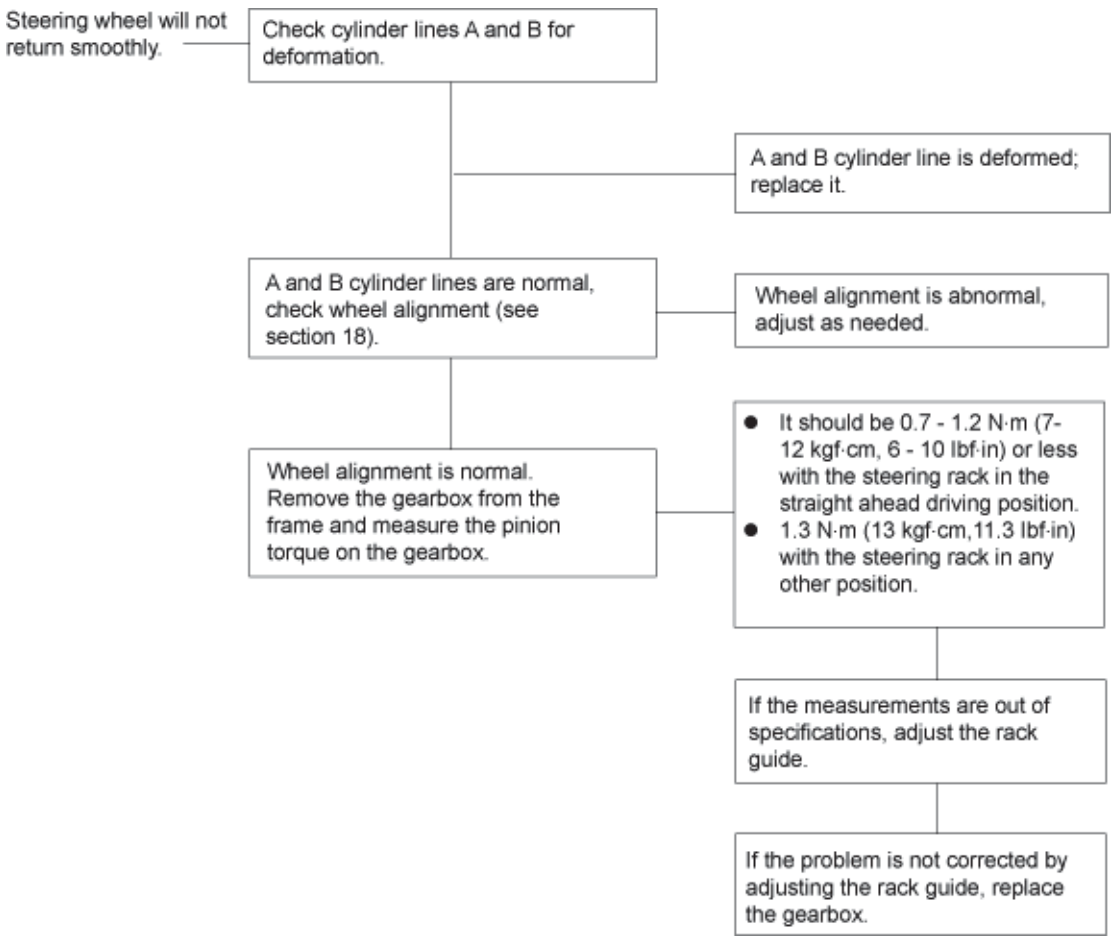
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 17-14)
(**See Page** 17-19)
(**See Page** 17-31)

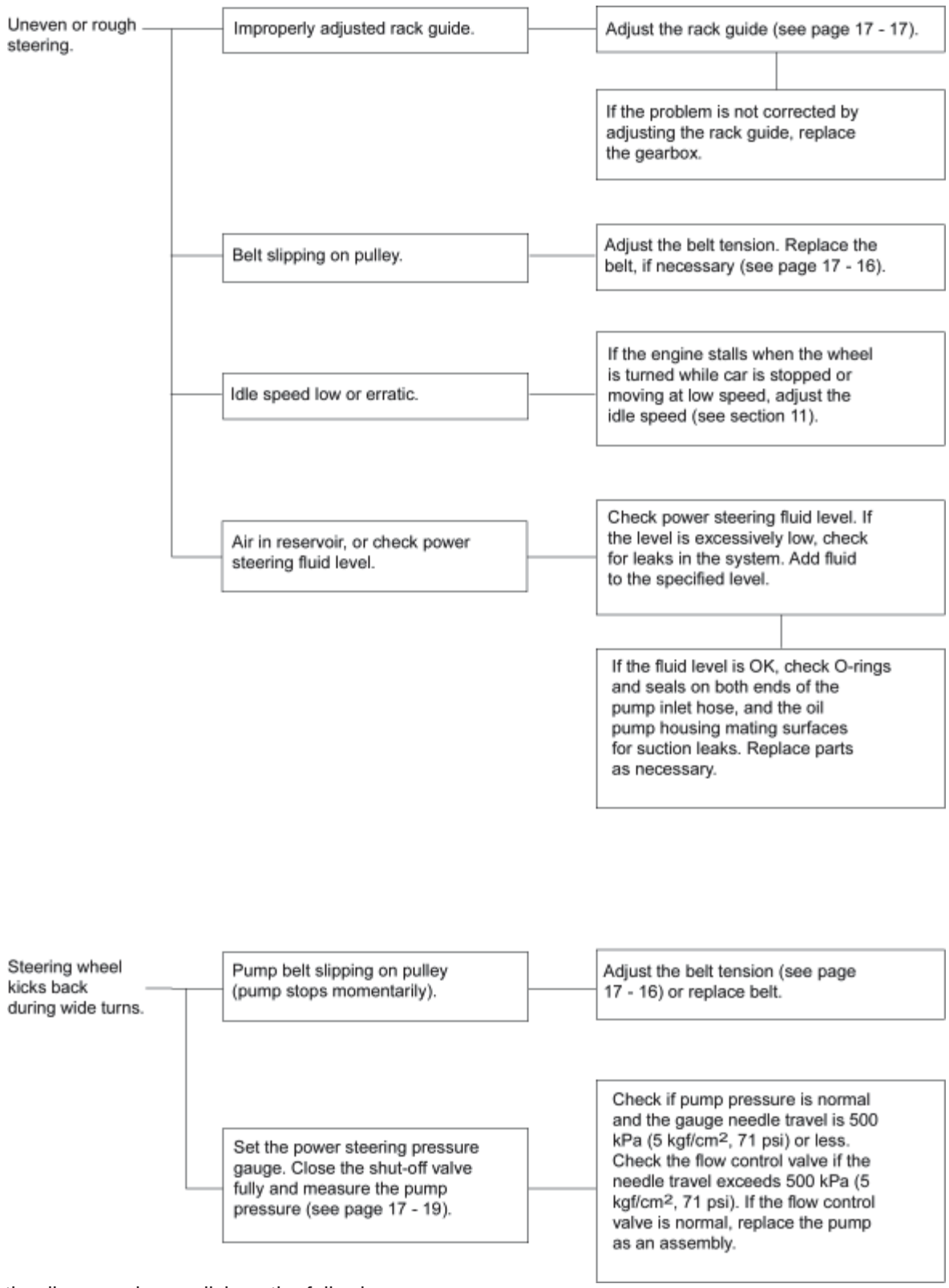


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 17-14)
(**See Page** 17-17)
(**See Page** 17-19)



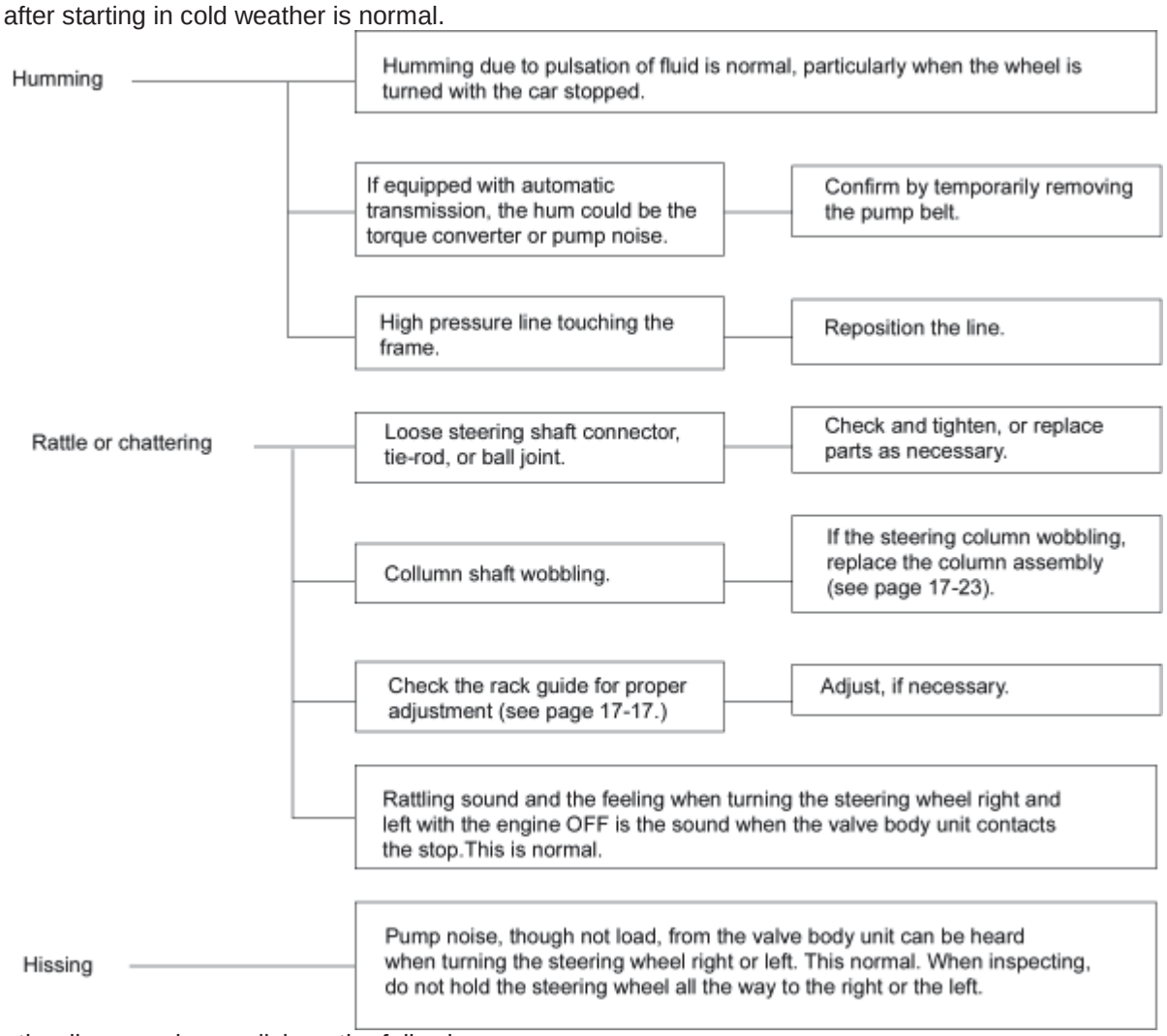
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 17-16)
(**See Page** 17-17)


Steering wheel will not return smoothly.
Check cylinder lines A and B for deformation.
A and B cylinder line is deformed; replace it.
A and B cylinder lines are normal, check wheel alignment (see section 18).
Wheel alignment is abnormal, adjust as needed.
Wheel alignment is normal. Remove the gearbox from the frame and measure the pinion torque on the gearbox.
It should be 0.7 - 1.2 N·m (7-12 kgf·cm, 6 - 10 lbf·in) or less with the steering rack in the straight ahead driving position.
1.3 N·m (13 kgf·cm,11.3 lbf·in) with the steering rack in any other position.
If the measurements are out of specifications, adjust the rack guide.
If the problem is not corrected by adjusting the rack guide, replace the gearbox.

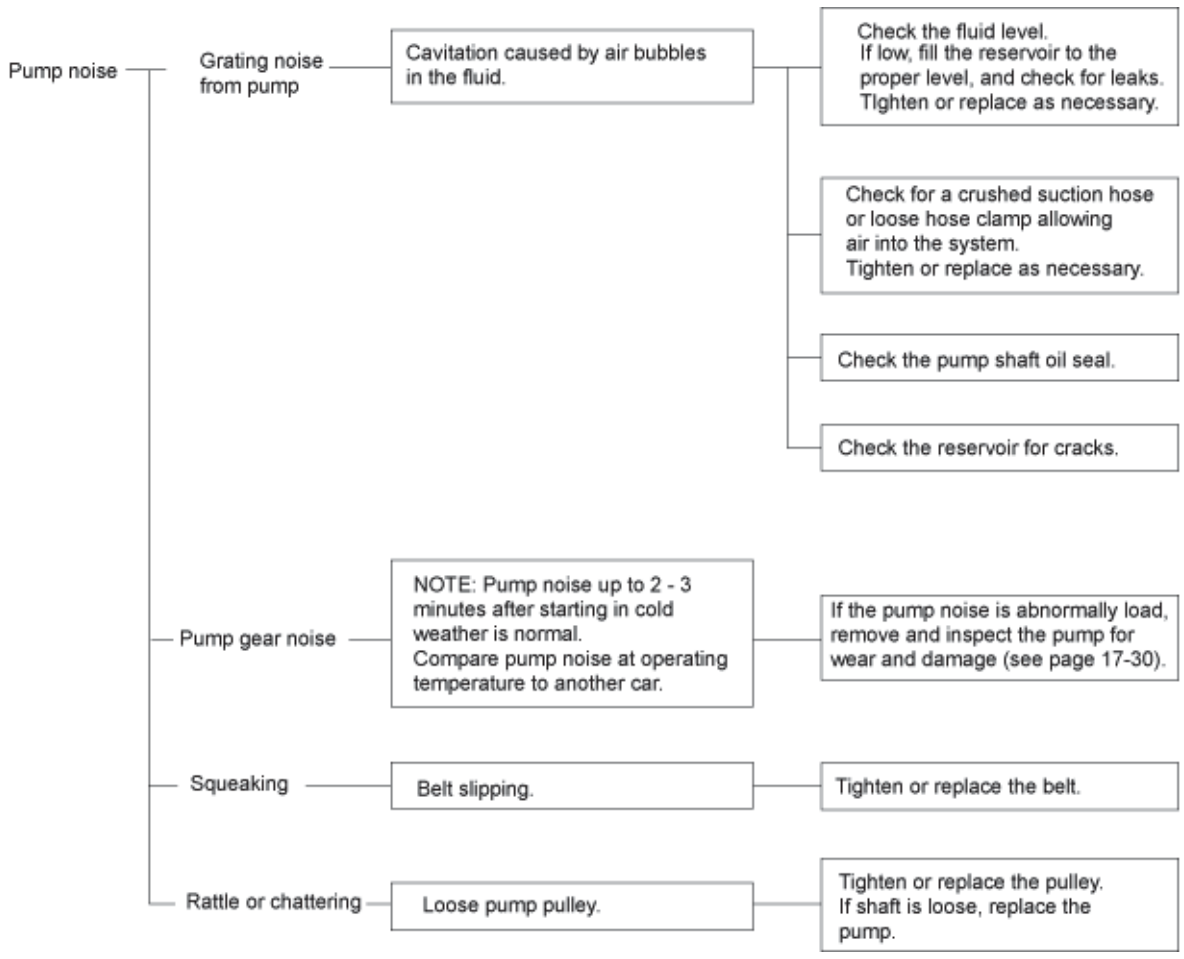


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 17-16)
(**See Page** 17-17)
(**See Page** 17-19)

NOTE: Pump noise in first 2 - 3 minutes after starting in cold weather is normal.



To go to the pages referenced on the diagram above, click on the following:
(**See page** 17-17)


Pump noise
Grating noise from pump
Cavitation caused by air bubbles in the fluid.
Check the fluid level. If low, fill the reservoir to the proper level, and check for leaks. TIghten or replace as necessary.
Check for a crushed suction hose or loose hose clamp allowing air into the system. Tighten or replace as necessary.
Check the pump shaft oil seal.
Check the reservoir for cracks.
Pump gear noise
NOTE: Pump noise up to 2 - 3 minutes after starting in cold weather is normal. Compare pump noise at operating temperature to another car.
If the pump noise is abnormally load, remove and inspect the pump for wear and damage (see page 17-30).
Squeaking
Belt slipping.
Tighten or replace the belt.
Rattle or chattering
Loose pump pulley.
Tighten or replace the pulley. If shaft is loose, replace the pump.

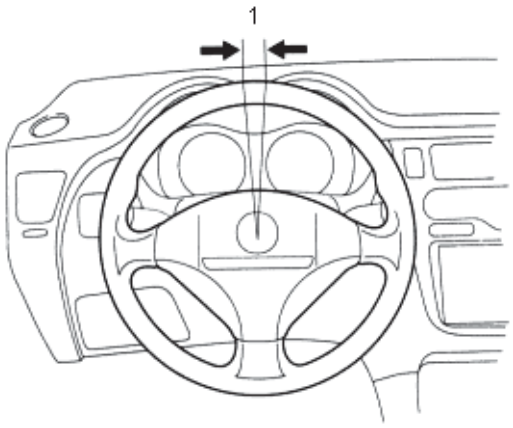
- Check the gearbox assembly for oil leaks carefully. Oil can leak out of various points, depending on location of the faulty oil seals/seal rings. Check the following before removing the gearbox from the frame.

Steering gearbox	Leaking from the oil seal on the top of the valve housing.	Replace the valve oil seal from the valve housing.
	Leaking from cylinder end into left tie-rod boot (RED: right tie-rod boot).	Replace the valve oil seal from the pinion shaft.
		Replace the cylinder end seal of the gear housing side.
	Leaking from cylinder end into right tie-rod boot (RED: left tie-rod boot).	Replace the cylinder end seal of the cylinder end side.
	Leaking from the shaft upper end section or pin engagement section of the pinion shaft.	Replace the valve body unit.

Pipes	Leaking from cylinder line A and B connections (at flare nut).	Tighten the connector. If it's still leaking, replace the line, cylinder or valve housing unit.
	Leaking caused by a damaged cylinder line A and B.	Replace cylinder line A and B.
	Leaking from feed line and return line joint fitting on the valve body unit (at flare nut).	Tighten the connector. If still it's still leaking, replace the line, cylinder or valve housing unit.

Pump	Front seal leaking.	Replace front seal.
	Pump housing leaks at either end.	Replace the housing O-rings. If the housing still leaks,replace the pump.
Reservoir	Leaking from around cap.	Reservoir is overfilled. Pull off the hose and drain the reservoir to the proper level.
		Air leak suction side of the system (reservoir, inlet hose, front pump seal).
Pump outlet line (high pressure)	Leaking at the threaded fitting.	Tighten the fitting.If it's still leaking, replace the O-ring or feed line.
	Leaking at the swaged joint.	Replace the feed line.
Low pressure hoses	Leaking because of damage, deterioration, or improper assembly.	Replace or repair as necessary.

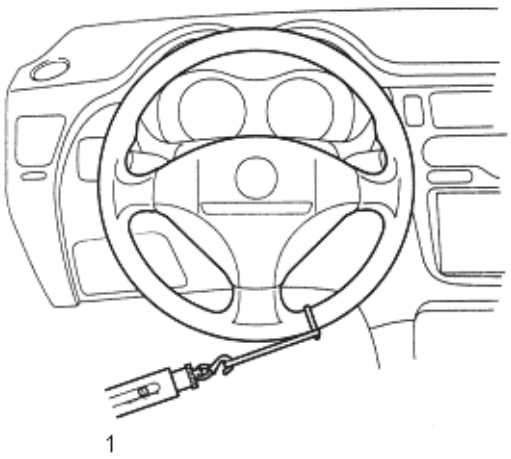
Place the front wheels in the straight ahead position and measure the distance the steering wheel can be turned without moving the front wheels.
ROTATIONAL PLAY: 0-10 mm (0-0.4 in.)
If the play exceeds the service limit, inspect the steering linkage and gearbox as described on the next page.



1. ROTATIONAL PLAY

Power Assist Check with Vehicle Parked

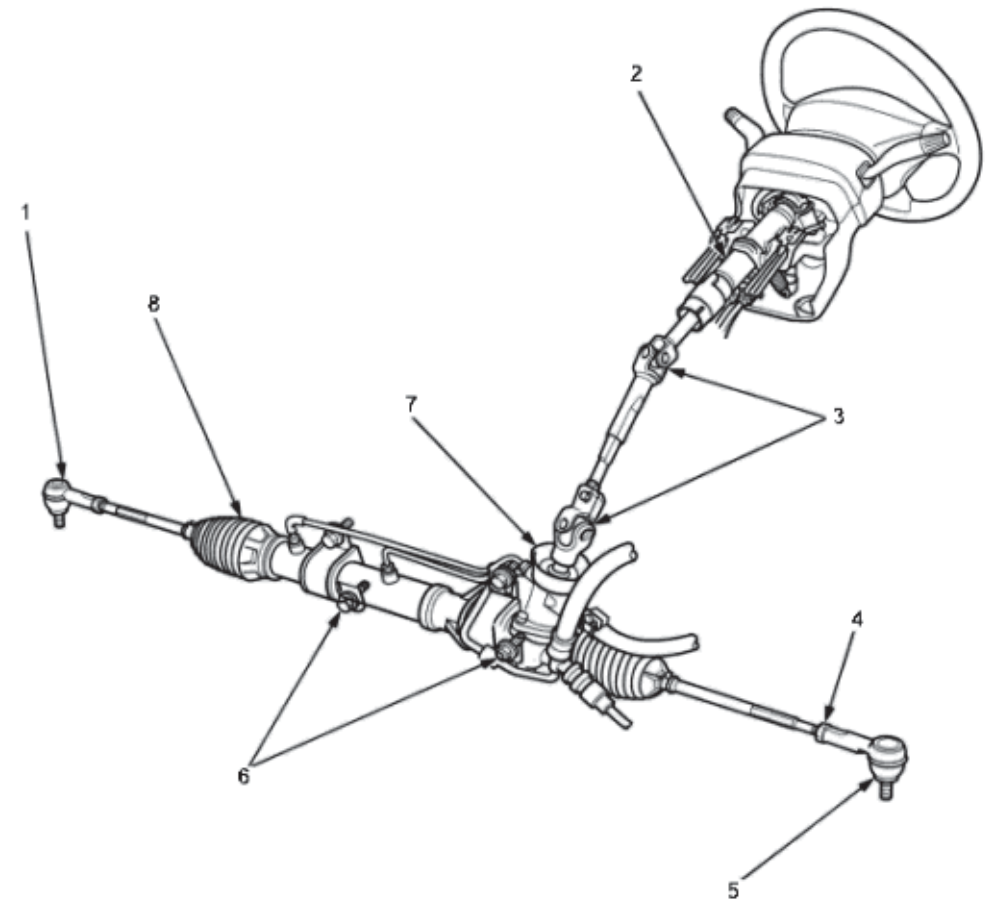
1. Check the power steering fluid level (**See page** 17-18) and pump belt tension (**See page** 17-16).
2. Start the engine, allow it to idle, and turn the steering wheel from lock-to-lock several times to warm up the fluid.
3. Attach a spring scale to the steering wheel. With the engine idling and the car on a clean, dry floor, pull the scale as shown and read it as soon as the tyres begin to turn.



1. SPRING SCALE, (Commercially available)

4. The scale should read no more than 34 N (3.5 kgf, 7.7 lbf). If it reads more check the gearbox and pump.

NOTE: LHD type is shown, RHD type is symmetrical.



1. **TIE-ROD END BALL JOINT**
   Inspect for faulty movement and damage.
2. **STEERING COLUMN**
   Inspect for loose column mounting bolts and nuts.
3. **STEERING JOINTS**
   Check for loose joint bolts.
4. **TIE-ROD LOCKNUT**
   Check for loose locknut.
5. **BALL JOINT BOOT**
   Inspect for damage and deterioration.
6. **STEERING GEARBOX**
   Inspect for loose mounting bolts.
   GEARBOX MOUNTING CUSHIONS
   Inspect for deterioration.
7. **PINION SHAFT GROMMET**
   Inspect for damage and deterioration.
8. **BOOT**
   Inspect for damage and deterioration.

When using a new belt, first adjust the deflection or tensions to the values for the new belt, then readjust the deflection or tension to the values for the used belt after running engine for five minutes.

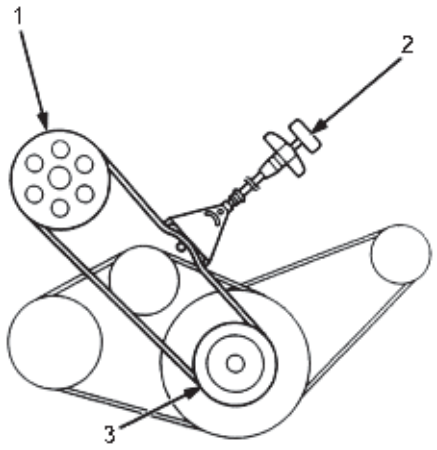
Inspection

Note these items during inspection:

- If there are cracks or any damage evident on the belt, replace it with a new one.
- Follow the manufacturer's instructions for the tension gauge.

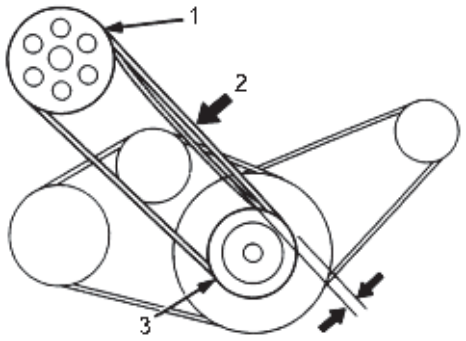
1. Attach the belt tension gauge to the belt and measure the tension of the belt.
2. Remove the belt tension gauge carefully to avoid hitting the gauge reset lever.

Tension:
Used Belt: 340-490 N (35-50 kgf, 80-110/lbf)
New Belt: 640-785 N (65-80 kgf, 140-180/lbf)



1. POWER STEERING PULLEY
2. BELT TENSION GAUGE 07JGG-0010100
3. CRANKSHAFT PULLEY

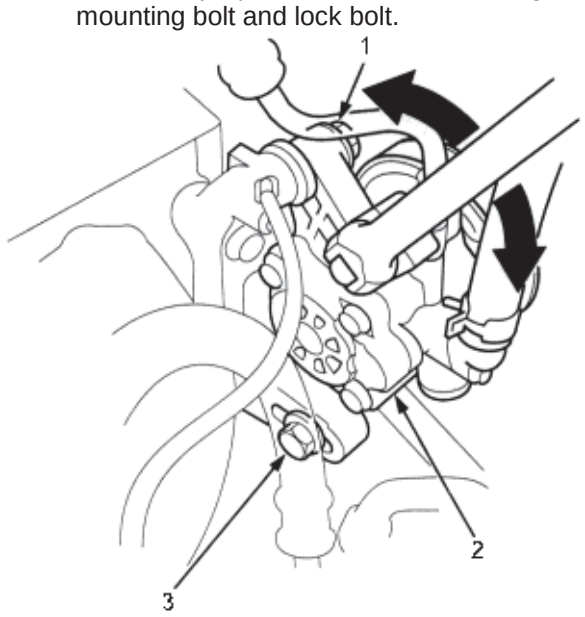
Measurement without Belt Tension Gauge:
Apply a force of 98 N (10 kgf, 22 lbf) and measure the deflection between the power steering pump and the crankshaft pulleys.
Deflection:
Used Belt: 10.5-14.0 mm (0.41-0.55 in.)
New Belt: 7.5-10.0 mm (0.30-1.39 in.)



1. POWER STEERING PULLEY
2. Measure here.
3. CRANKSHAFT PULLEY

Adjustment

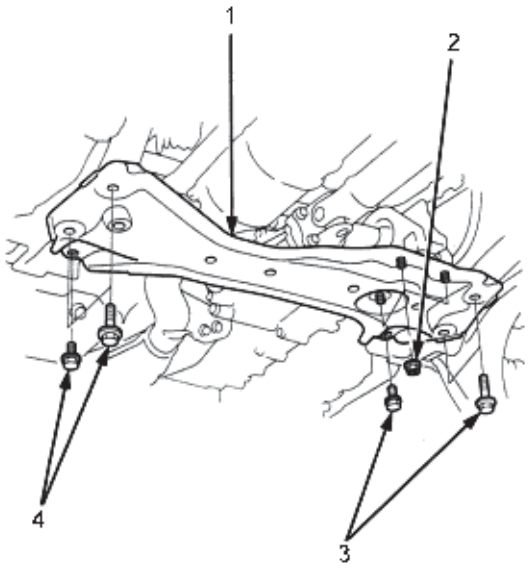
1. Loosen the power steering pump mounting bolt and pump lock bolt.
2. Adjust the belt tension by moving the power steering pump with a 1/2" drive breaker bar to obtain the proper belt tension, then retighten the mounting bolt and lock bolt.



1. PUMP MOUNTING BOLT, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. POWER STEERING PUMP
3. PUMP LOCK BOLT, 24 Nm (2.4 kgf/m, 17 lbf/ft)

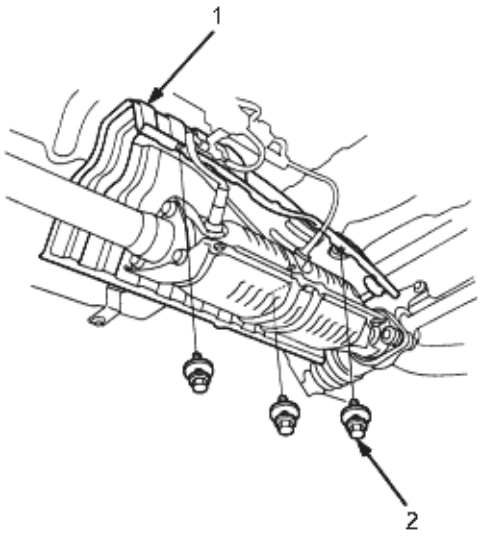
3. Start the engine and turn the steering wheel from lock-to-lock several times, then stop the engine and recheck the deflection of the belt.

1. Remove the rear beam.



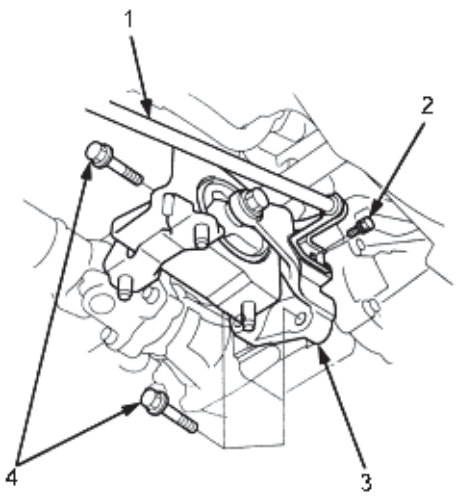
1. REAR BEAM
2. 39 Nm (4.0 kgf/m, 29 lbf/ft)
3. 64 Nm (6.5 kgf/m, 47 lbf/ft)
4. 64 Nm (6.5 kgf/m, 47 lbf/ft)

2. For vehicles with LHD; remove the floor heat baffle plate.



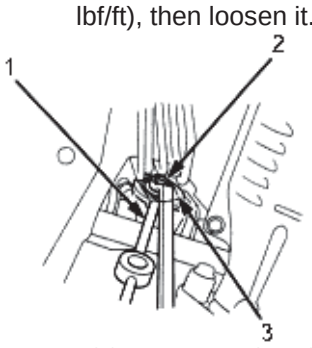
1. FLOOR HEAT BAFFLE PLATE
2. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

3. For vehicles with RHD; remove the shift cable clamp (CVT only). Remove the rear mounting bracket from the transmission housing.



1. SHIFT CABLE (CVT)
2. 9.8 Nm (1.0 kgf/m 7.2 lbf/ft)
3. REAR MOUNTING BRACKET
4. 44 Nm (4.5 kgf/m, 33 lbf/ft)

4. Set the wheels in the straight ahead position.
5. Loosen the rack guide screw locknut with the special tool
6. Loosen the rack guide screw.
7. Tighten the rack guide screw to 5 Nm (0.5 kgf/m, 4 lbf/ft), then loosen it. Repeat twice.



1. LOCKNUT WRENCH, 40 mm 07MAA-SL00100
2. RACK GUIDE SCREW
3. LOCKNUT, 67 Nm (6.8 kgf/m, 49 lbf/ft)

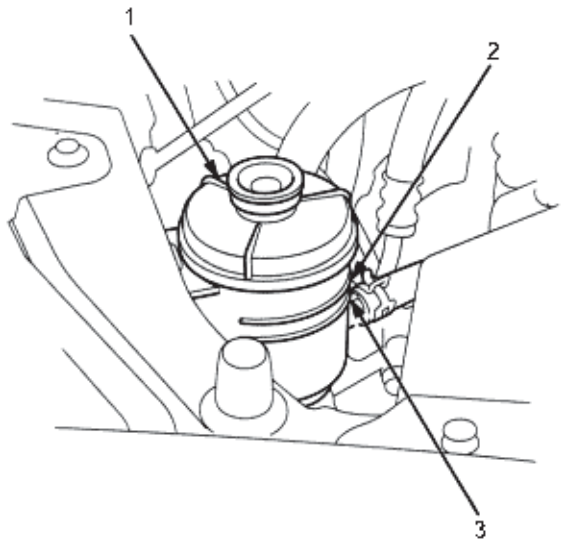
8. Retighten the rack guide screw to 5 Nm (0.5 kgf/m, 4 lbf/ft), then back it off to specified angle.
   Specified Angle: 10-15°
9. Tighten the locknut while holding the rack guide screw.
10. Check for tight or loose steering through the complete turning travel.
11. Installation of the removed parts are the reverse of the removal procedure.
12. Perform following inspections:
    - Steering operation (**See page** 17-14).
    - Power assist with vehicle parked (**See Page** 17-14).

Check the reservoir at regular intervals, and add fluid as necessary.

⚠ CAUTION

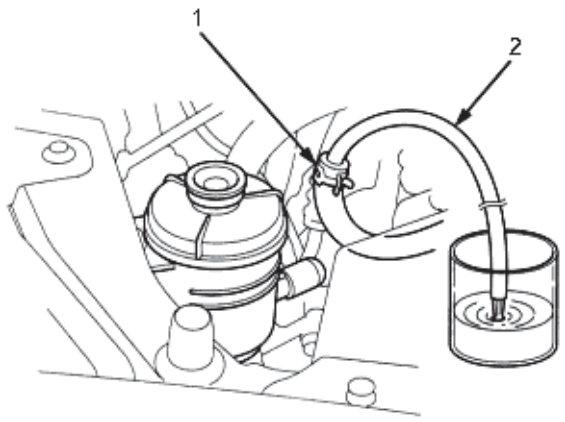
Use only Genuine Honda Power Steering Fluid (V, II or S). Using other fluids such as ATF or other manufacturer's power steering fluid will damage the system.

SYSTEM CAPACITY:
LHD: 0.61 litre (0.64 US. qt. 0.54 lmp.qt) at disassembly
RHD: 0.65 litre (0.70 US. qt, 0.57 lmp.qt) at disassembly



1. RESERVOIR
2. UPPER LEVEL LINE
3. LOWER LEVEL LINE

1. Raise the reservoir and disconnect the return hose to drain the reservoir. Take care not to spill the fluid on the body and parts. Wipe off spilled fluid at once.

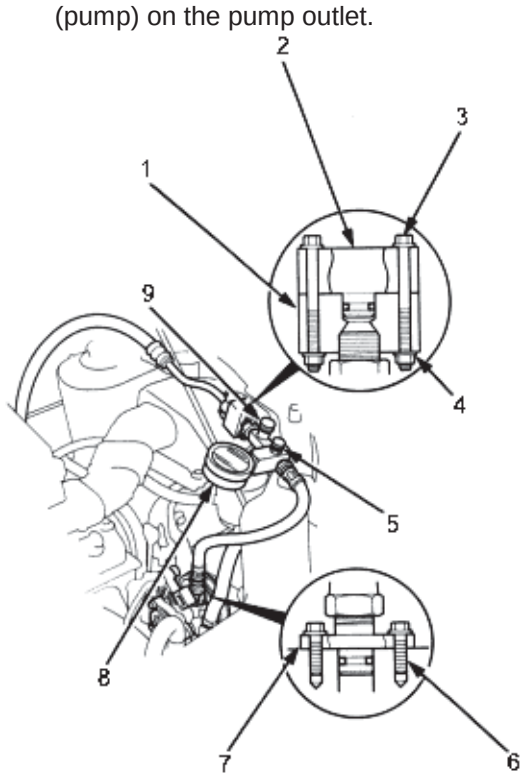


1. RETURN HOSE
2. HOSE

2. Connect a hose of suitable diameter to the disconnected return hose, and put the hose end in a suitable container.
3. Start the engine, let it run at idle, and turn the steering wheel from lock-to-lock several times. When fluid stops running out of the hose, shut off the engine. Discard the fluid.
4. Refit the return hose on the reservoir.
5. Fill the reservoir to the upper level line.
6. Start the engine and run it at fast idle, then turn the steering from lock-to-lock several times to bleed air from the system
7. Recheck the fluid level and add some if necessary. Do not fill the reservoir beyond the upper level line.

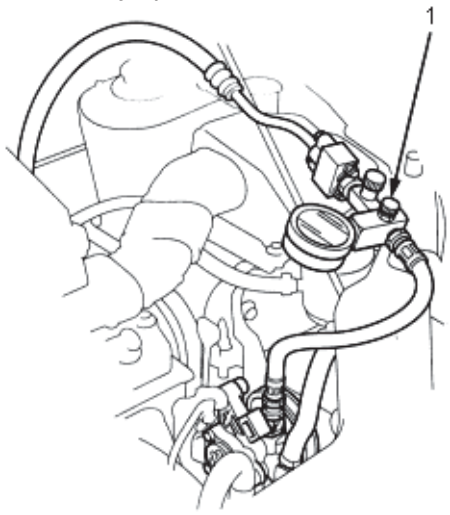
Check the fluid pressure as follows to determine whether the trouble is in the pump or gearbox.

1. Check the power steering fluid level (**See Page** 17-18) and pump belt tension (**See Page** 17-16).
2. Disconnect the supply line from the pump outlet with care so as not to spill the power steering fluid on the frame and other parts, then install the P/S joint adapter (pump) on the pump outlet.



1. P/S JOINT ADAPTER (HOSE), 07RAK-S040120
2. SUPPLY LINE FITTING
3. 6 x 1.0 mm BOLT (Part of Tool)
4. 6 mm NUT (Part of tool), 11 Nm (1.1 kgf/m, 8 lbf/ft)
5. SHUT-OFF VALVE
6. 6 x 1.0 mm BOLT (Part of tool), 11 Nm (1.1 kgf/m, 8 lbf/ft)
7. P/S JOINT ADAPTER (PUMP), 07RAK-S040110
8. P/S PRESSURE GAUGE, 07406-0010200
9. PRESSURE CONTROL VALVE

3. Connect the P/S joint adapter (hose) to the P/S pressure gauge, then connect the supply line to the P/S joint adapter (hose).
4. Install the P/S pressure gauge to the P/S joint adapter (pump).
5. Fully open the shut-off valve.



1. SHUT-OFF VALVE

6. Fully open the pressure control valve.
7. Start the engine and let it idle.
8. Turn the steering wheel from lock-to-lock several times to warm the fluid to operating temperature.
9. Measure steady-state fluid pressure while the engine is idling. If the pump is in good condition, the gauge should read less than 1,500 kPa (15 kgf/cm2, 213 psi).
   If it reads high, check the outlet hose or valve body unit (see General Troubleshooting).
10. Close the pressure control valve, then close the shut-off valve gradually until the pressure gauge needle is stable. Read the pressure.

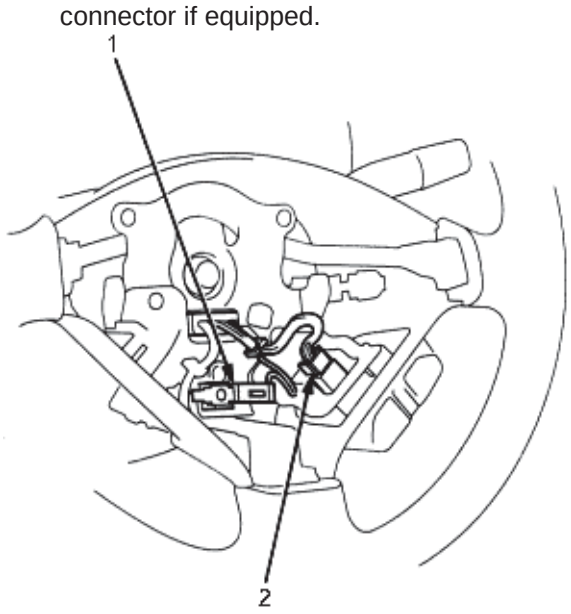
⚠ CAUTION

Do not keep the pressure control valve closed more than 5 seconds or the pump could be damaged by overheating.

11. Immediately open the pressure control valve fully.
    If the pump is in good condition, the gauge should read at least 7,200-7,800 kPa (73-80 kgf/cm2, 1,040-1,140 psi).
    A low reading means pump output is too low for full assist. Repair or replace the pump.

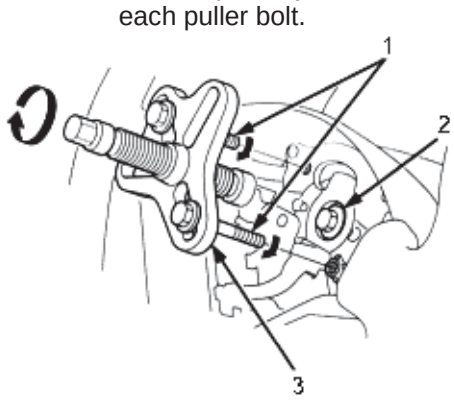
SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS section (24) before performing repairs or service.

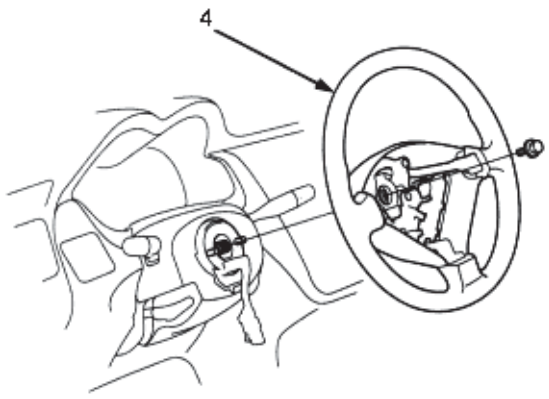
1. Align the front wheels straight ahead, then remove the driver's airbag assembly from the steering wheel (see section 24).
2. Disconnect the horn connector and mode select switch connector if equipped.



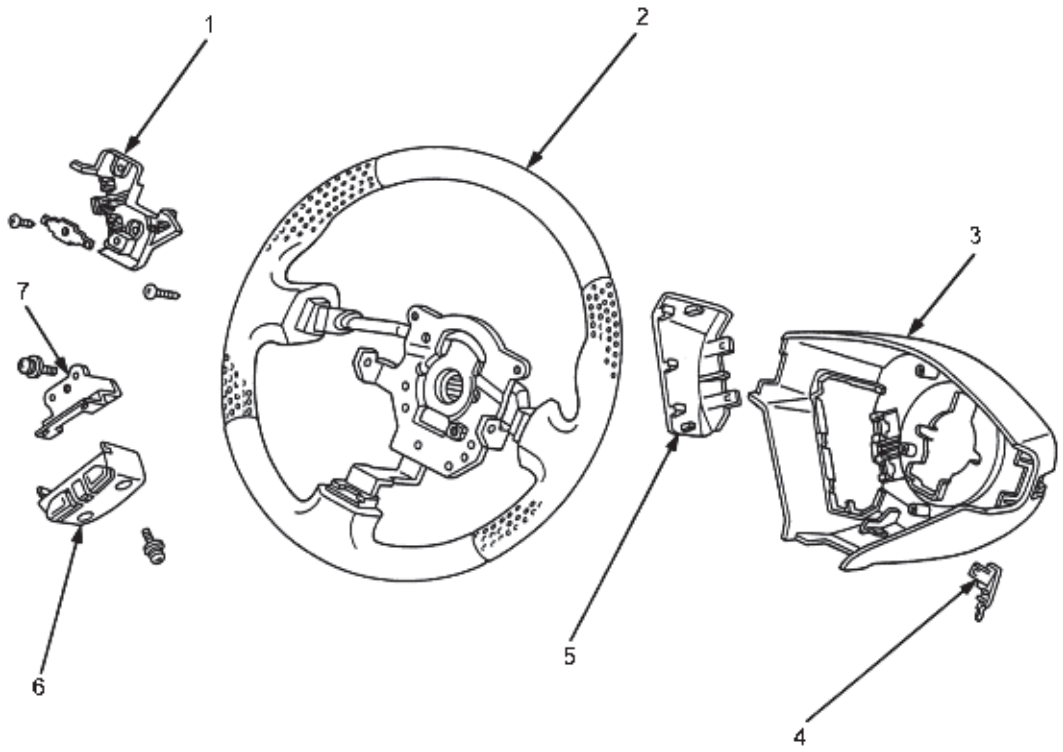
1. HORN CONNECTOR
2. MODE SELECT SWITCH CONNECTOR

3. Loosen the steering wheel bolt, then install a steering wheel puller on the steering wheel and remove it.
   Note these items when removing the steering wheel:
   - Do not tap on the steering wheel or the steering column shaft when remove the steering wheel.
   - If you thread the puller bolts 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.



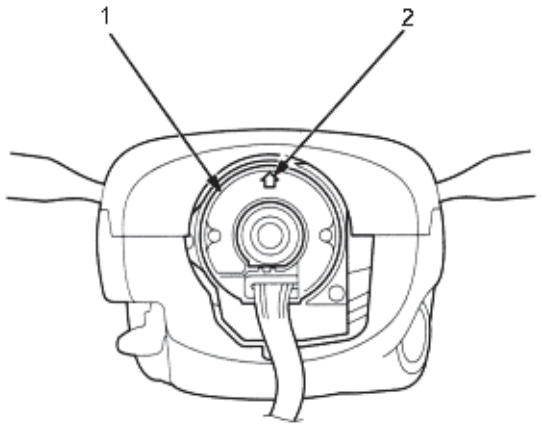


1. PULLER BOLTS
2. STEERING WHEEL BOLT
3. STEERING WHEEL PULLER
4. STEERING WHEEL



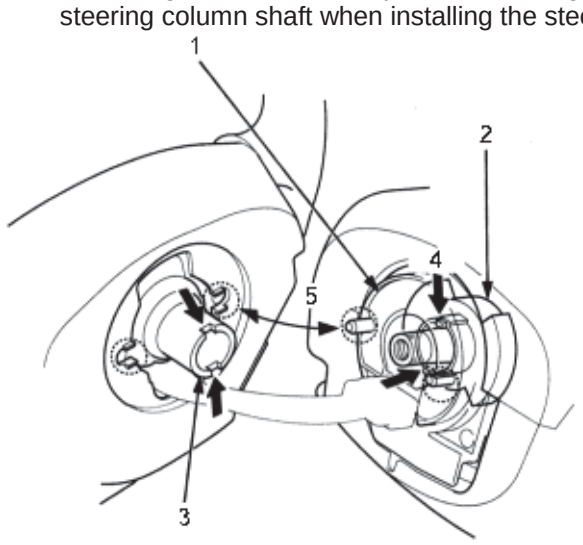
1. **BOSS COVER PLATE**
2. **STEERING WHEEL**
3. **WHEEL LOWER COVER**
4. **BODY COVER CAP**
5. **ACCESS PANEL**
6. **MODE SELECT SWITCH (CVT only)**
7. **SWITCH PLATE**

1. Before installing the steering wheel, make sure the front wheels are aligned straight ahead, then centre the cable reel. Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise approximately two and half turns. The arrow mark on the cable reel label point should point straight up.



1. CABLE REEL
2. ARROW MARK

2. Position the two tabs of the turn signal cancelling sleeve as shown, and install the steering wheel on to the steering column shaft, making sure the steering wheel shaft engages the pins of the cable reel and tabs of the cancelling sleeve. Do not tap on the steering wheel or steering column shaft when installing the steering wheel.

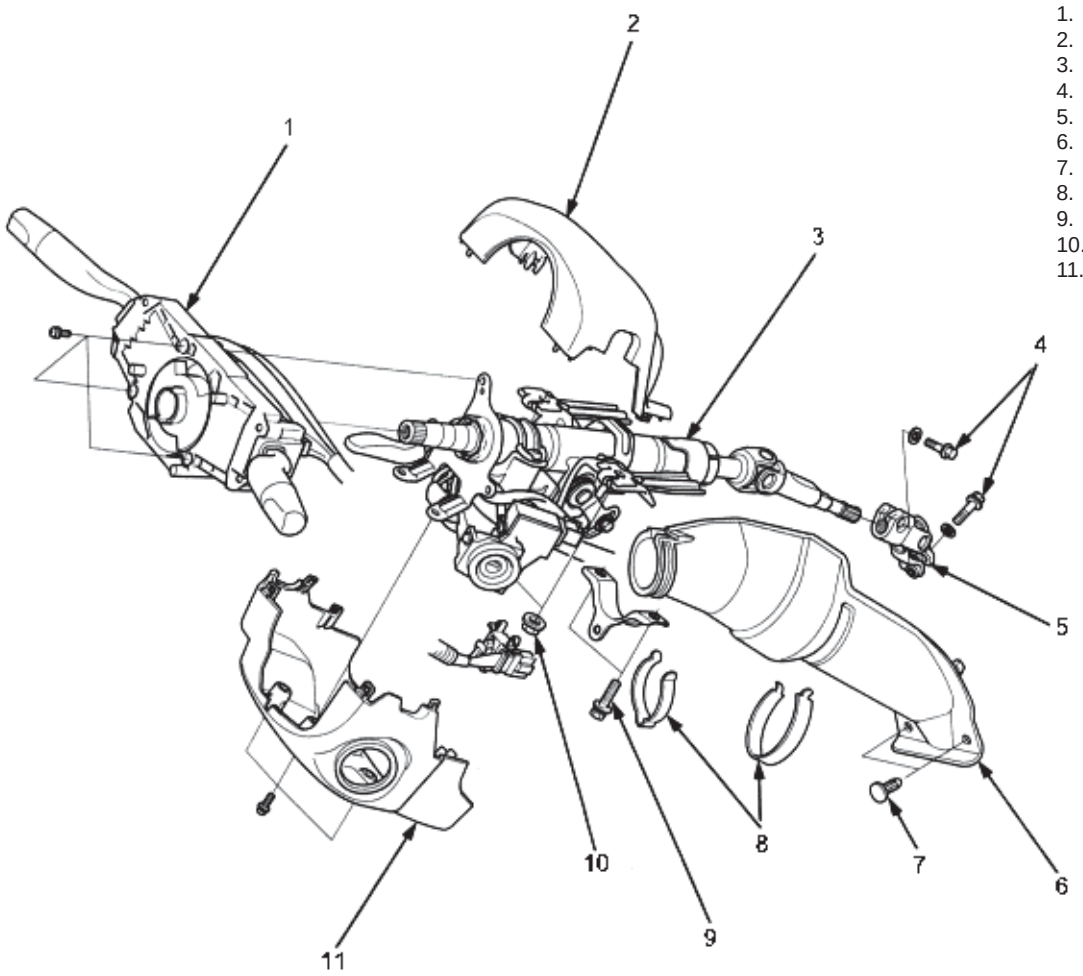


1. CABLE REEL
2. TURN SIGNAL CANCELLING SLEEVE
3. STEERING WHEEL SHAFT
4. TAB
5. PIN

3. Install the steering wheel nut and tighten it to 49 Nm (5.0 kgf/m, 36 lbf/ft).
4. Connect the horn connector and mode select switch connector.
5. Install the driver's airbag assembly, and confirm that the system is operating properly (see section 24).
6. Check the horn, mode select switch and turn signal cancelling for proper operation.

SRS components are located in this area. Review the SRS component locations, precautions, and procedures in the SRS section (24) before performing repairs or service.

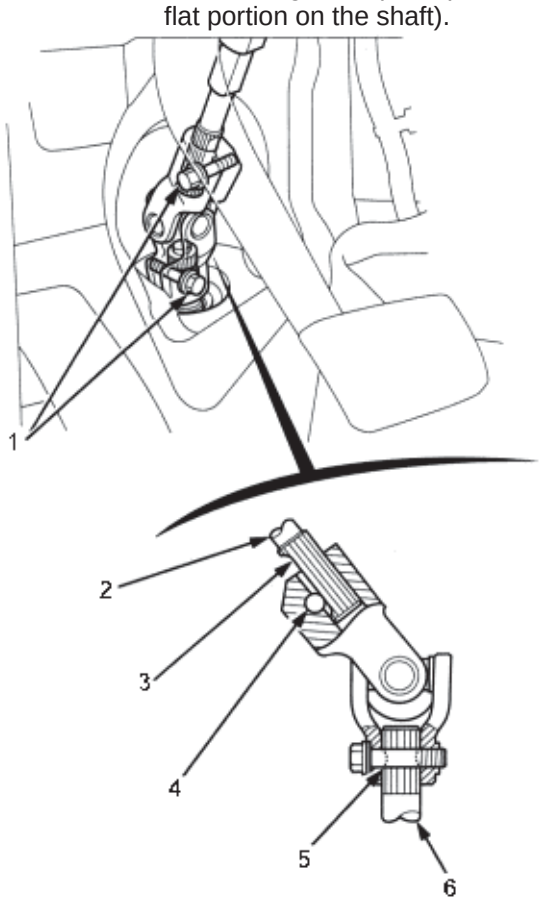
1. Remove the driver's airbag assembly and cable reel (see section 24).
2. Remove the steering wheel (**See page** 17-20).
3. Remove the driver's dashboard lower cover (see section 20).
4. Remove the column covers.



1. **COMBINATION SWITCH**
2. **UPPER COLUMN COVER**
3. **STEERING COLUMN**
4. **22 Nm (2.2 kgf/m, 16 lbf/ft)**
5. **STEERING JOINT**
6. **STEERING JOINT COVER**
7. **CLIPS**
8. **CLAMPS**
9. **22 Nm (2.2 kgf/m, 16 lbf/ft)**
10. **13 Nm (1.3 kgf/m, 9.4 lbf/ft)**
11. **LOWER COLUMN COVER**

5. Remove the combination switch assembly from the steering column shaft by disconnecting the connectors.
6. Disconnect the ignition switch connectors.
7. Remove the steering joint cover.
8. Disconnect the steering joint, and remove it from the column shaft.
9. Remove the steering column by removing the attaching nuts and bolts.

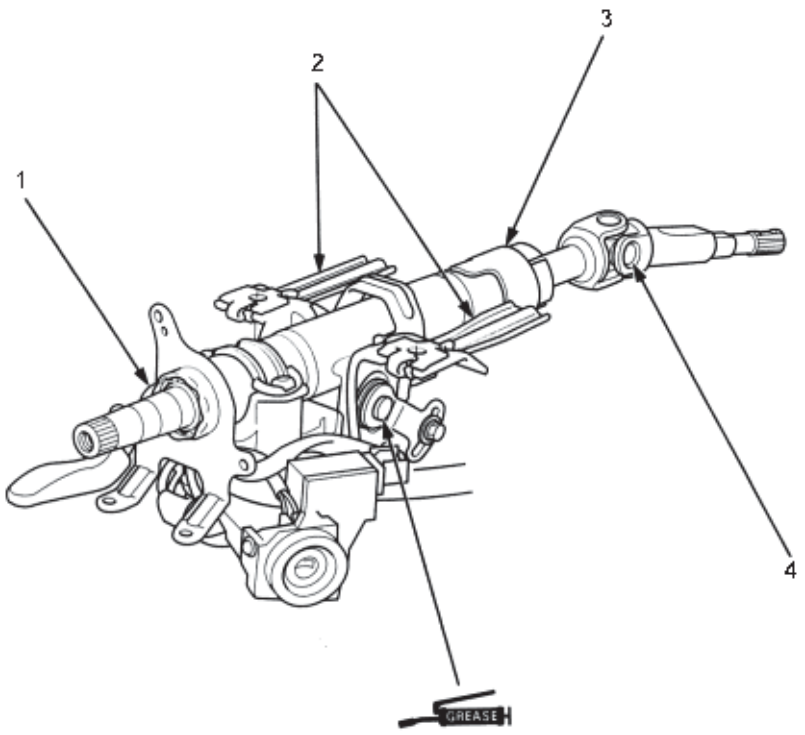
10. Install the steering column in the reverse of removal, and note these items:
    - Be sure the wires are not caught or pinched by any parts when installing the column.
    - Make sure the wire harness is routed and fastened properly.
    - Make sure the connectors are properly connected.
    - Make sure the steering joint is connected as follows:
      - Insert the upper end of the steering joint onto the steering shaft (line up the bolt hole with the flat portion on the shaft).



1. 22 N (2.2 kgf/m, 16 lbf/ft)
2. STEERING SHAFT
3. Flat portion
4. Bolt hole
5. Groove
6. PINION SHAFT

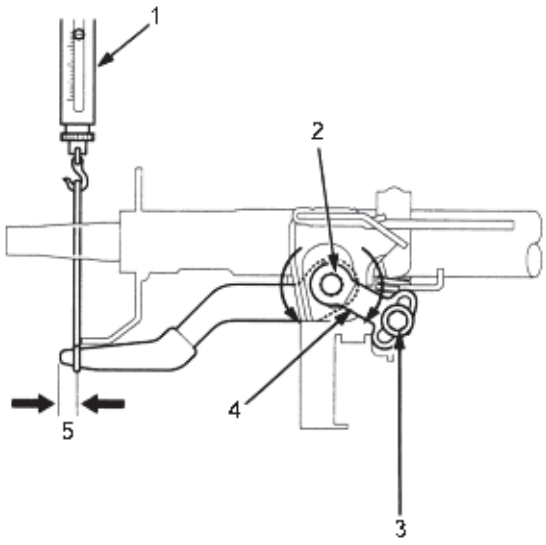
      - Slip the lower end of the steering joint onto the pinion shaft (line up the bolt hole with the groove around the shaft), and install the lower joint bolt and tighten it. Be sure that the lower joint bolt is securely in the groove in the pinion shaft.
      - Put on the steering joint to make sure that the steering joint is fully seated. Then install the upper joint bolt and tighten it.

- Check the steering column ball bearing and the steering joint bearings for play and proper movement. If there is noise or if there is excessive play, replace the steering column as an assembly.
- Check the retaining collar for damage, if it is damaged, replace the steering column as an assembly.
- Check the absorbing plates for distortion breakage. If there is distortion breakage, replace the steering column as an assembly



1. **COLUMN BALL BEARING**
2. **ABSORBING PLATES**
3. **RETAINING COLLAR**
4. **STEERING JOINT BEARINGS**

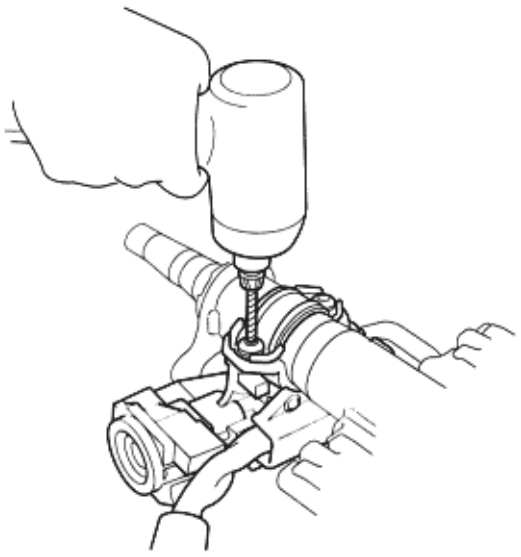
1. Move the tilt lever from the loose position to the lock position 3 to 5 times; then measure the tilt lever preload 10 mm (0.4 in) from the end of the tilt lever.
   Preload: 70-90 N (7-9 kgf, 15-20 lbf)



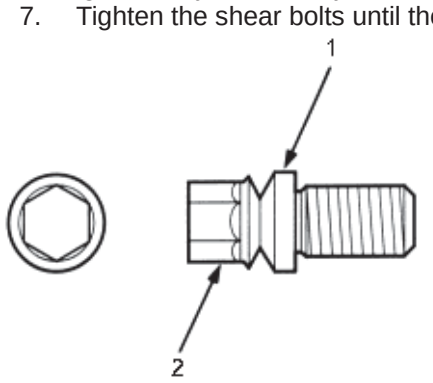
1. SPRING SCALE, (Commercially available)
2. TILT LOCK BOLT
   Tighten the lock bolt with the tilt lever raised.
3. 6 mm LOCK BOLT, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4. STOP
5. 10 mm (0.4 in)

2. If the measurement is out of the specification, adjust the preload using the following procedures:
   - Loosen the tilt lever, and set the steering column in the neutral position.
   - Remove the 6 mm lock bolt, and remove the stop. Be careful not to loosen the tilt lever when installing the stop or tightening the 6 mm lock bolt.
   - Adjust the preload by turning he tilt lock bolt left or right.
   - Pull up the tilt lever to the uppermost position, and install the stop. Check the preload again. If the measurement is still out of specification, repeat the above procedures to adjust.

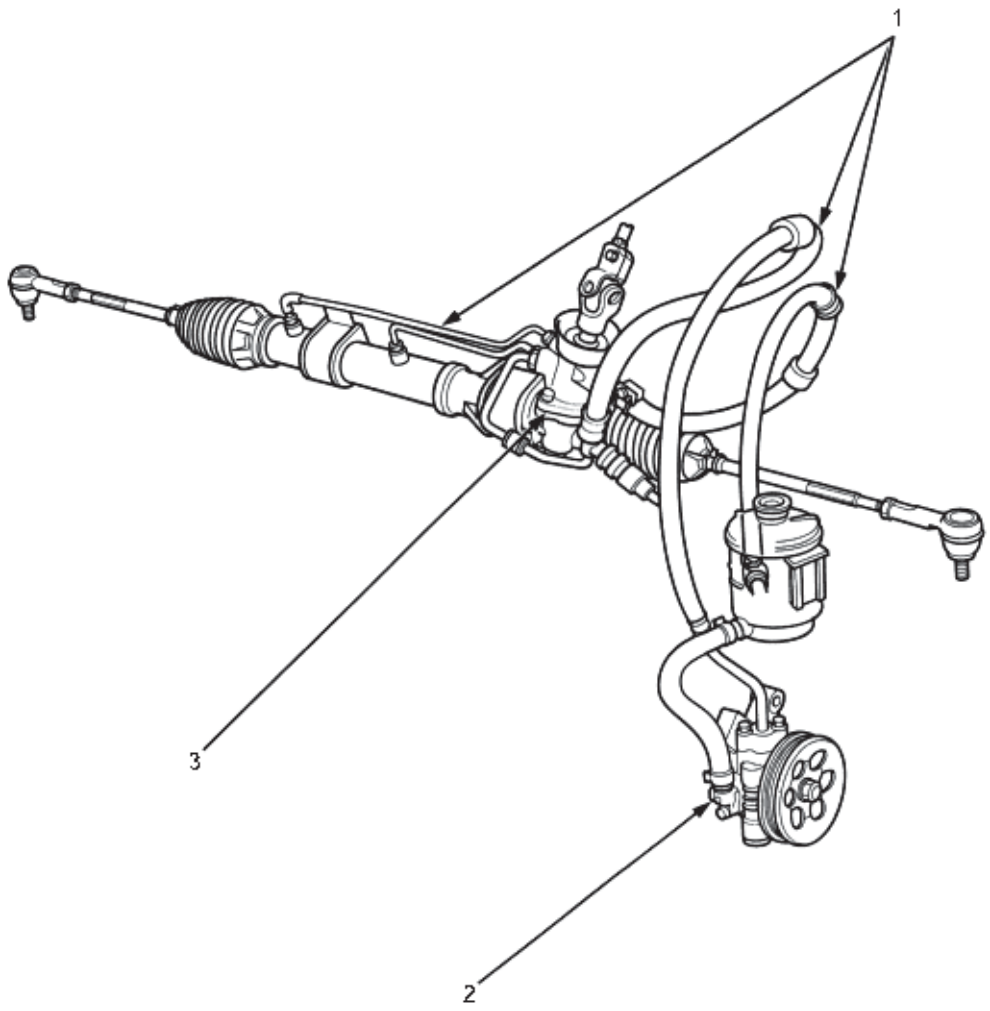
1. Remove the steering column (**See page** 17-23).
2. Centre punch each of the two shear bolts, and drill their heads off with a 5 mm (3/16 in.) drill bit. Be careful not to damage the switch body when removing the shear bolts.



3. Remove the shear bolts from the switch body.
4. Install the switch body without the key inserted.
5. Loosely tighten the new shear bolts.
6. Insert the ignition key, and check for proper operation of the steering wheel lock and that the ignition key turns freely.
7. Tighten the shear bolts until the hex heads twist off.



1. SHEAR BOLT
2. TWIST-OFF PORTION



1. **HOSES and LINES**
   Inspect hoses for damage, leaks, interference and twisting.
   Inspect fluid lines for damage, rusting and leakage.
   Check for leaks at hose and line joints and connections.
2. **PUMP ASSEMBLY**
   Check for leaks at the pump seal, inlet and outlet fittings.
3. **GEARBOX and VALVE BODY UNIT**
   Check for leaks at the mating surface and flare nut connections.

Note these times during installation:

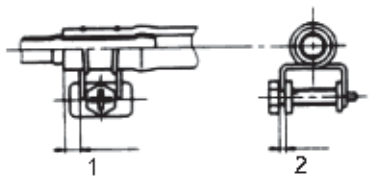
- Connect each hose to the corresponding line securely until it contacts the stop on the line,. Install the clamp or adjustable clamp at the specified distance from the hose end as shown.
- Check all clamps for deterioration or deformation; replace with new clamps if necessary.
- Add the recommended power steering fluid to the specified level on the reservoir and check for leaks.

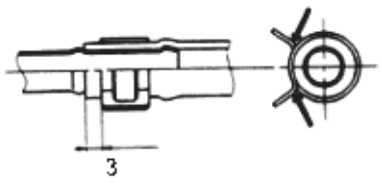
ADJUSTABLE HOSE CLAMP: (A)

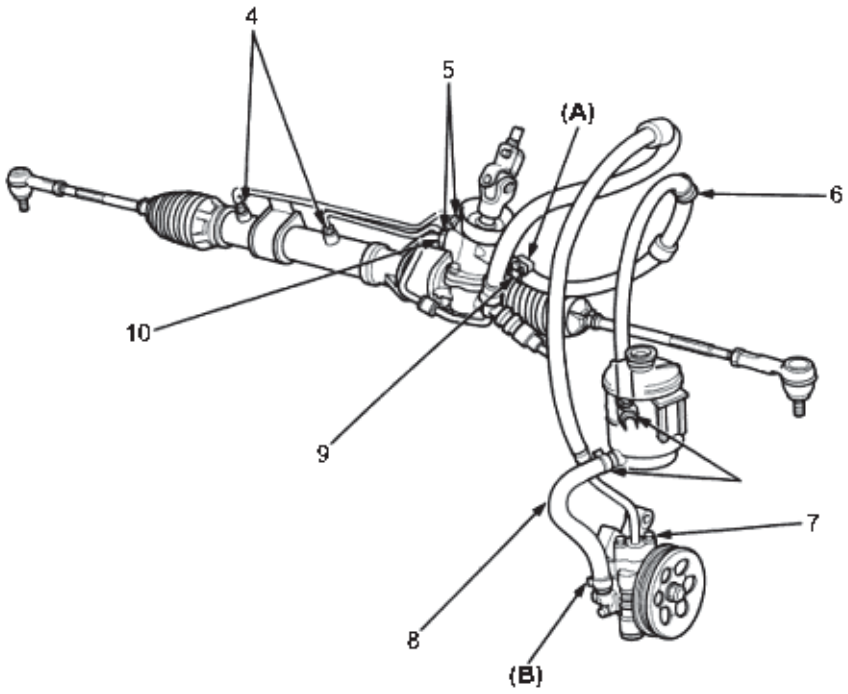
- Position the adjustable hose clamps at the three points indicated.
- Slide the hose over the line until it contacts the stop.

HOSE CLAMP; (B)

- Position the hose clamps at the four point indicated.
- Slide the hose over the line until it contacts the stop.

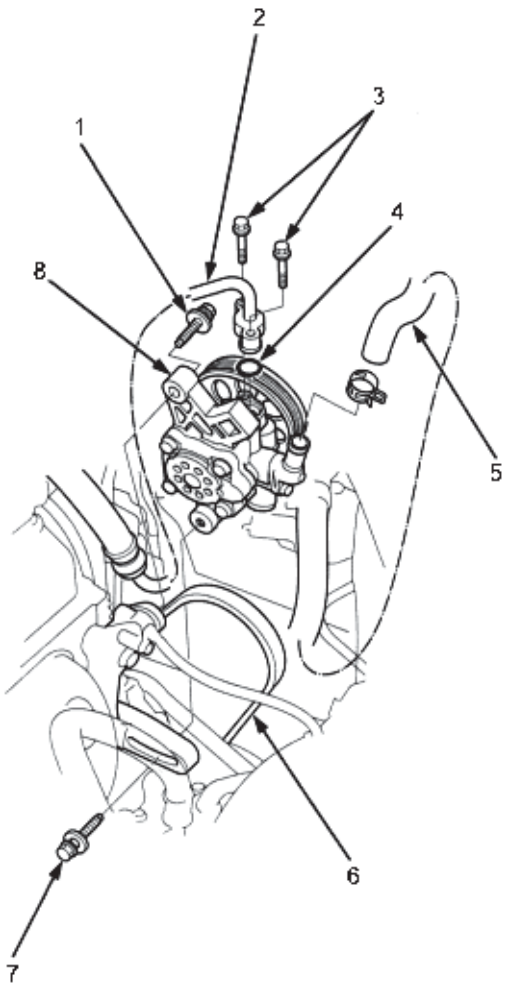






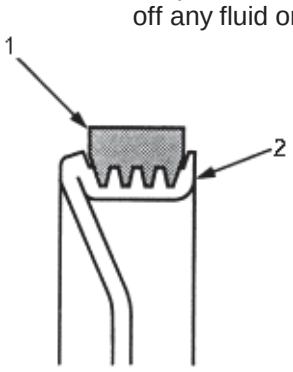
1. **2.5-5.5 mm (0.1-0.2 in.)**
2. **2.0-4.0 mm (0.08-0.16 in.)**
3. **2.5-5.5 mm (0.1-0.2 in.)**
4. **CYLINDER LINE-to-CYLINDER**
   24 Nm (2.4 KGF/M, 17 LBF/FT)
5. **cylinder line -to-VALVE BODY UNIT**
   20 Nm (2.0 kgf/m, 14 lbf/ft)
6. **RETURN HOSE**
7. **SUPPLY LINE to PUMP 6 x 1.0 mm**
   11 Nm (1.1 kgf/m, 8 lbf/ft)
8. **INLET HOSE**
9. **RETURN LINE JOINT**
   16 x 1.5 mm
   28 Nm (2.9 kgf/m, 21 lbf/ft)
10. **SUPPLY LINE 14 x 1.5 mm**
    37 Nm (3.8 kgf/m. 27 lbf/ft)

1. Place a suitable container under the vehicle.
2. Drain the power steering fluid from the reservoir.
3. Remove the belt by loosening the pump mounting bolt and lock bolt.
4. Cover the A/C compressor with several shop towels to protect it from spilled power steering fluid. Disconnect the pump inlet hose and supply line from the pump, and plug them. Take care not to spill the fluid on the body or parts. Wipe off any spilled fluid at one.



1. PUMP MOUNTING BOLT, 24 Nm (2.4 kgf/m, 17 lbf/ft)
2. SUPPLY LINE
3. 11 Nm (1.1 kgf/m, 8 lbf/ft)
4. O-RING, Replace
5. PUMP INLET HOSE
6. PUMP BELT
7. PUMP LOCK BOLT, 24 Nm (2.4 kgf/m, 17 lbf/ft)
8. PUMP

5. Remove the pump mounting bolts and lock bolt, then remove the pump. Do not turn the steering wheel with the pump removed.
6. Cover the opening of the pump with a piece of tape to prevent foreign material from entering the pump.
7. Connect the pump inlet hose and supply line. Tighten the pump fittings securely.
8. Loosely install the pump in the pump bracket with mounting bolt and lock bolt.
9. Install the pump belt.
   Note these items during belt installation:
   - Make sure that the power steering belt is positioned properly on the pulleys.
   - Do not get power steering fluid or grease in the power steering belt or pulley faces. Clean off any fluid or grease before installation.

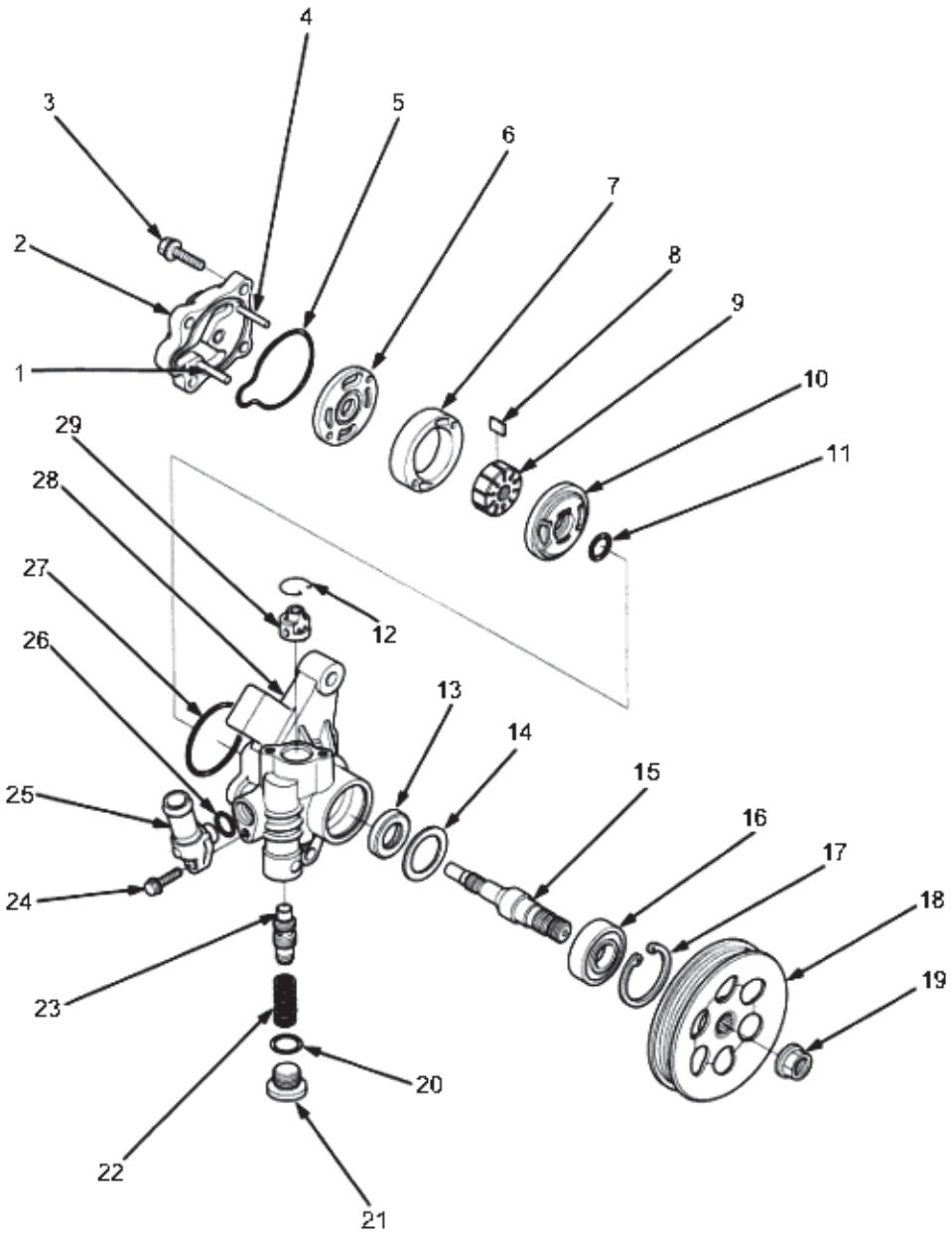


1. POWER STEERING BELT
2. PULLEY

10. Adjust the pump belt (**See Page** 17-16).
11. Fill the reservoir to the upper level line (**See Page** 17-18).

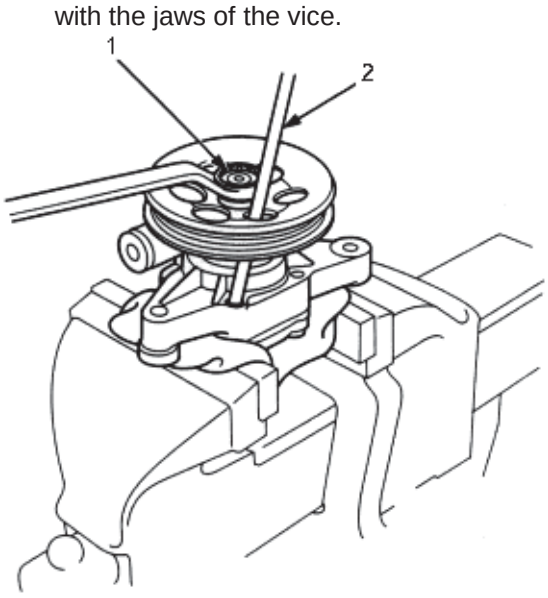
Note these items during disassembly:

- The power steering components are made of aluminium. Avoid damaging the components during assembly.
- Clean the disassembled parts with a solvent, and dry them with compressed air. Do not dip the rubber parts in a solvent.
- Always replace the O-rings and rubber seals with new ones before assembly.
- Apply recommended power steering fluid to the parts indicated in the assembly procedures.
- Do not allow dust, dirt, or other foreign materials to enter the power steering system.
- Replace the pump as an assembly if the parts indicated with asterisk (*) are worn or damage.



1. **5 mm ROLLER**
2. ***PUMP COVER**
3. **FLANGE BOLTS**
   20 Nm (2.0 kgf/m, 14 lbf/ft)
4. **4.5 mm ROLLER**
5. **PUMP COVER SEAL**
   Replace
6. ***OUTER SIDE PLATE**
7. ***PUMP CAM RING**
8. ***PUMP VANES**
   (10 Plates**)**
9. ***PUMP ROTOR**
10. ***SIDE PLATE**
11. **13 x 1.9 mm O-RING**
    Replace
12. ***SNAP RING**
13. **PUMP SEAL**
    Replace
14. **PUMP SEAL SPACER**
15. **PUMP DRIVE SHAFT**
16. **BALL BEARING**
17. **40 mm CIRCLIP**
18. **PULLEY**
19. **PULLEY NUT**
    64 Nm (6.5 kgf/m, 47 lbf/ft)
20. **16.7 x 1.8 mm O-RING**
    Replace
21. ***FLOW CONTROL VALVE CAP**
    49 Nm (5.0 kgf/m, 36 lbf/ft)
22. ***SPRING**
23. ***FLOW CONTROL VALVE**
    Inspection (**See Page** 17-31)
24. **FLANGE BOLTS**
    11 Nm (1.1kgf/m,. 8 lbf/ft)
25. **INLET JOINT**
26. **15.2 x 2.4 mm O-RING**
27. **51 x 2.4 mm O-RING**
28. ***PUMP HOUSING**
29. ***SUB-VALVE**

1. Drain the fluid from the pump.
2. Hold the steering pump in a vice with soft jaws, hold the pulley with the extension bar, and remove the pulley nut and pulley. Be careful not to damage the pump housing with the jaws of the vice.

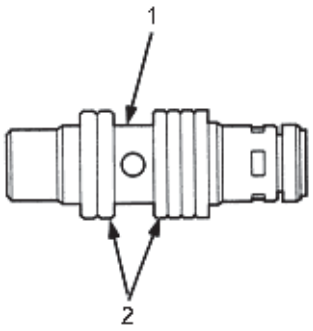


1. PULLEY NUT
2. EXTENSION BAR: (Commercial available)

3. Loosen the flow control valve cap with a hex wrench and remove it.
4. Remove the O-ring, flow control valve and spring.
5. Remove the inlet joint and O-ring.
6. Remove the pump cover and pump cover seal.
7. Remove the pump cover and pump cover seal.
8. Remove the out side plate, pump cam ring, pump rotor, pump vanes, side plate and O-rings.
9. Remove the circlip, then remove the pump drive shaft by tapping the shaft end with the plastic hammer.
10. Remove the pump seal spacer and pump seal.

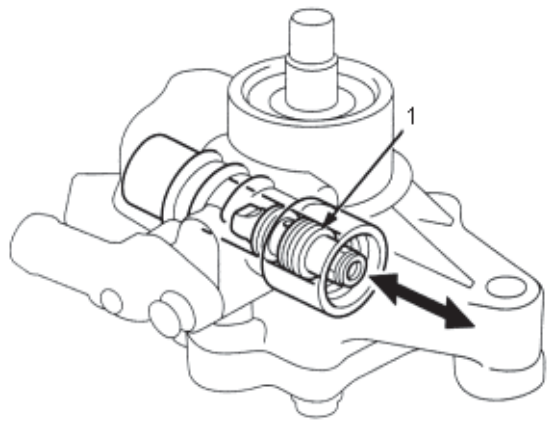
Flow Control Valve

1. Check the flow control valve for wear, burrs, and other damage to the edges of the grooves in the valve



1. FLOW CONTROL VALVE
2. Check for damage to edges

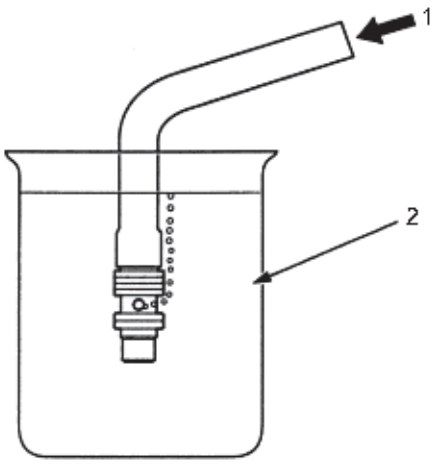
2. Inspect the bore of the flow control valve for scratches or wear.
3. Slip the valve back in the pump, and check that it moves in and out smoothly.



1. FLOW CONTROL VALVE

If OK, go to step 4, if not, replace the pump as an assembly. The flow control valve is not available separately.

4. Attach a hose to the end of the valve. Submerge the valve in a container of power steering fluid or solvent, and blow in the hose. If air bubbles leak through the valve at less than 98 kPa (1.0 kgf/cm2, 14.2 psi), replace the pump as an assembly.

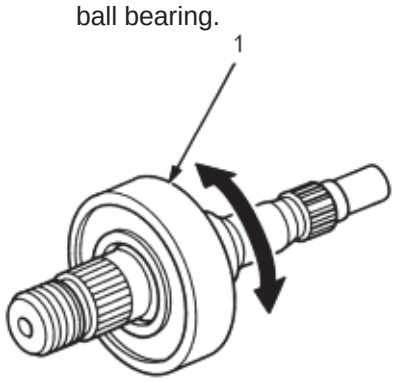


1. AIR PRESSURE
2. POWER STEERING FLUID or SOLVENT

If the flow control valve tests OK, reinstall it in the pump. If the flow control valve still leaks air, replace the pump as an assembly. The flow control valve is not available separately.

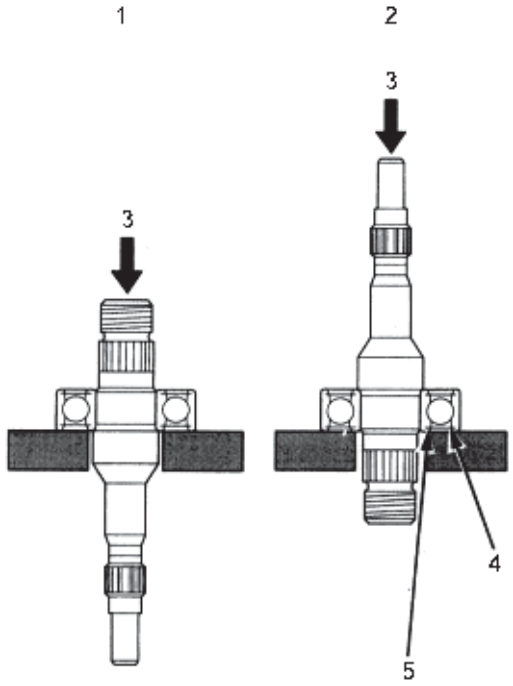
Ball Bearing

1. Inspect the ball bearing by rotating the out race slowly, if any play or roughness is felt, replace the ball bearing.



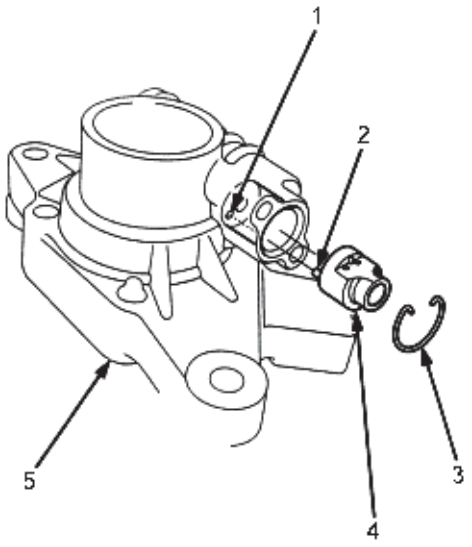
1. BALL BEARING

2. Replace the ball bearing using a press



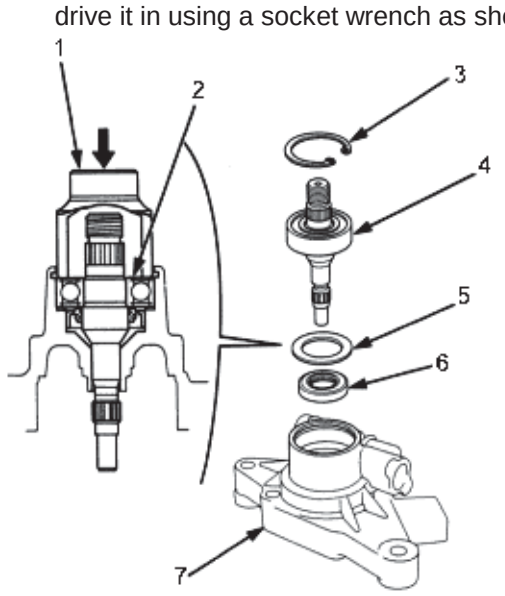
1. REMOVAL
2. INSTALL
3. PRESS
4. INSTALL WITH THE RED SHIELDED SIDE FACING DOWN.
5. NOTE: SUPPORT THE INNER RACE WITH THE TOOL SECURELY.

1. Align the pin of the sub-valve with the oil passage in pump housing, and push down the sub-valve. Install the snap ring properly.



1. OIL PASSAGE, Align the pin of sub-valve with the oil passage.
2. PIN
3. SNAP RING
4. SUB-VALVE
5. PUMP HOUSING

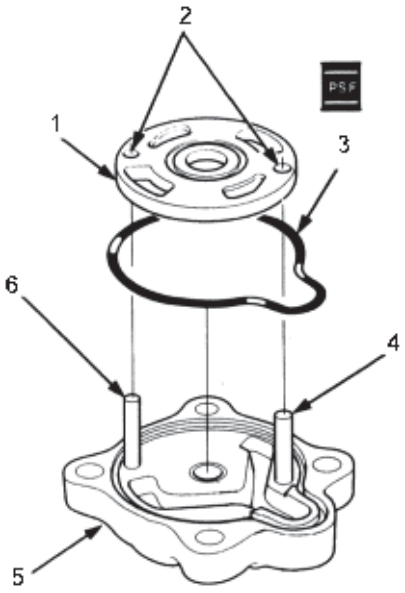
2. Install the new pump seal with its grooved side facing in into the pump housing by hand, then install the pump seal spacer.
3. Position the pump drive shaft in the pump housing, then drive it in using a socket wrench as shown.



1. SOCKET WRENCH
2. BALL BEARING
3. 40 mm CIRCLIP
4. PUMP DRIVE SHAFT
5. PUMP SEAL SPACER
6. PUMP SEAL, Replace
7. PUMP HOUSING

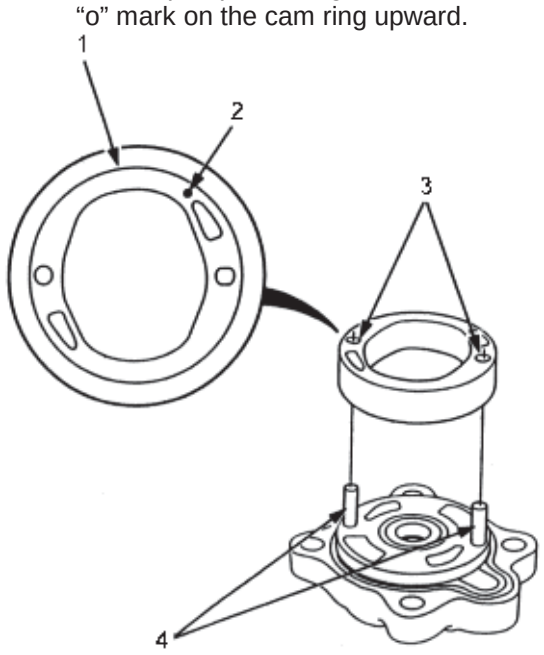
4. Install the 40 mm circlip with its radiused side facing out.

5. Coat the pump cover seal with power steering fluid, and install it into the groove in the pump cover.



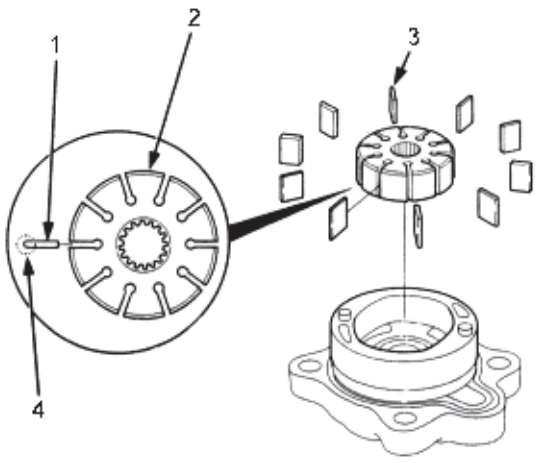
1. OUTER SIDE PLATE
2. ROLLER SET HOLES
3. PUMP COVER SEAL, Replace
4. 5 mm ROLLER
5. PUMP COVER
6. 4.5 mm ROLLER

6. Install the out side plate over the two rollers.
7. Set the pump cam ring over the two rollers with the “o” mark on the cam ring upward.



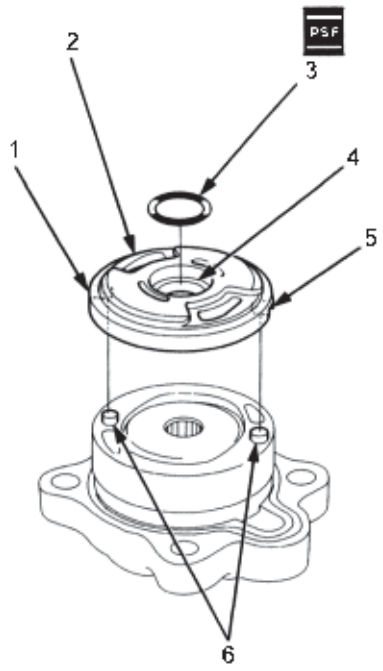
1. PUMP CAM RING
2. MARK
3. ROLLER SET HOLES
4. ROLLERS

8. Assemble pump rotor to the pump cover.
9. Set the 10 vanes in the grooves in the rotor. Make sure that the round ends of the vanes are in contact with the sliding surface of the cam ring



1. VANE
2. PUMP ROTOR
3. PUMP VANES, (10 plates)
4. ROUND END

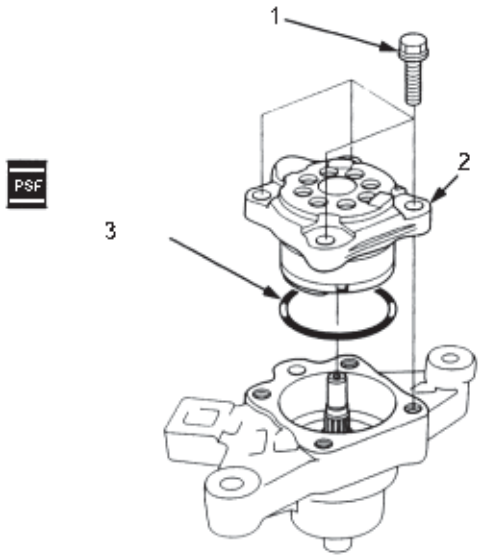
10 Coat the O-ring with power steering fluid, and install it into the grooves in the side plate.



1. ROLLER SET HOLE
2. SIDE PLATE
3. 15.2 x 2.4 mm O-RING, Replace
4. Grooves
5. ROLLER SET HOLE
6. ROLLERS

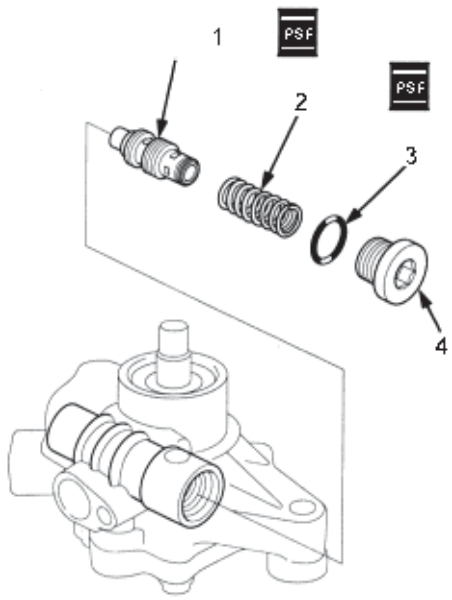
11. Install the side plate on the cam ring by aligning the roller set holes in the side plate with the rollers.

12. Coat the O-ring with power steering fluid, and position it into the pump housing.
13. Install the pump cover assembly in the pump housing.



1. FLANGE BOLTS, 20 Nm (2.0 kgf/m, 14 lbf/ft)
2. PUMP COVER ASSEMBLY
3. 51 x 2.4 mm O-RING, Replace

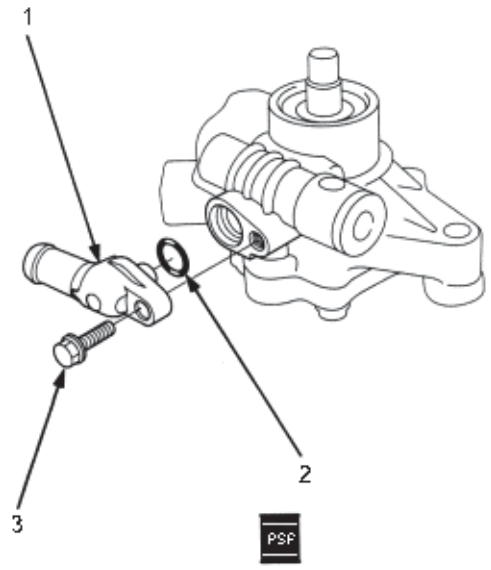
14. Coat the flow control valve with power steering fluid.
15. Install the flow control valve and spring in the pump housing.



1. FLOW CONTROL VALVE
2. SPRING
3 16.7 x 1.8 mm O-RING, Replace
4. FLOW CONTROL VALVE CAP, 49 Nm (5.0 kgf/m, 36 lbf/ft)

16. Coat the O-ring with power steering fluid, and install it on the flow control valve cap.
17. Install the flow control valve cap on the pump housing, and tighten it.

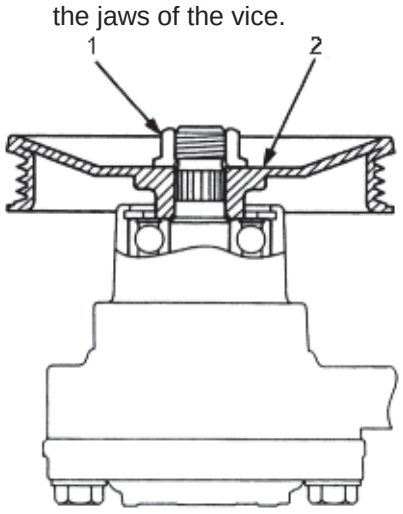
18. Coat the O-ring with power steering fluid, and install it into the grooves in the inlet joint.



1. INLET JOINT
2. 15.2 x 2.4 mm O-RING ,Replace
3. FLANGE BOLTS, 11 Nm (1.1 kgf/m, 8 lbf/ft)

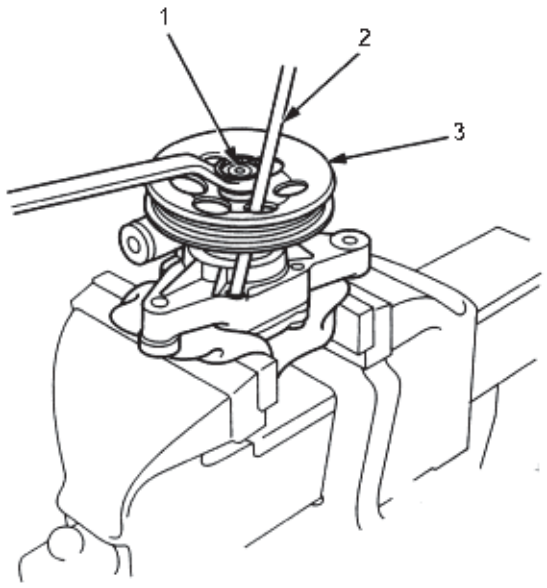
19 Install the inlet joint on the pump housing.

20. Install the pulley as shown below, then loosely install the pulley nut. Hold the steering pump in a vice with soft jaws. Be careful not to damage the pump housing with the jaws of the vice.



1. PULLEY NUT
2. PULLEY

21. Hold the pulley with the extension bar, and tighten the pulley nut.

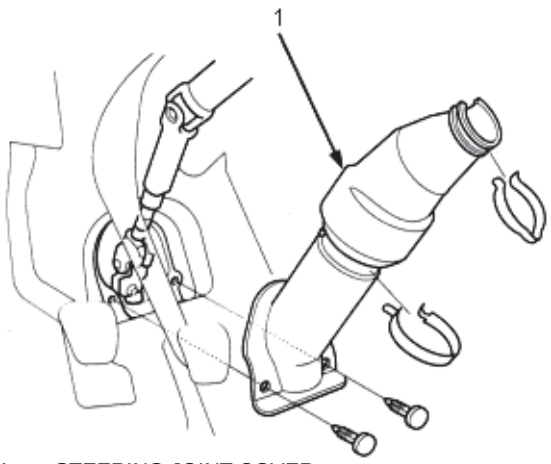


1. PULLEY NUT, 64 Nm (6.5 kgf/m, 47 lbf/ft)
2. EXTENSION BAR: (Commercially available)
3. PULLEY

22. Check that the pump turns smoothly by turning the pulley.

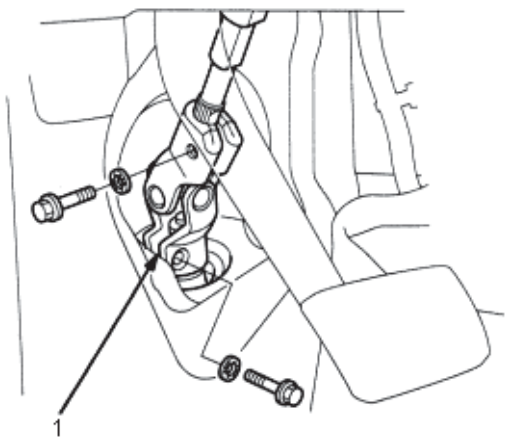
Note these items during removal:
- Using solvent and a brush, wash any oil and dirt off of the valve body unit its lines, and the end if the gearbox. Blow dry with compressed air.
- Be sure to remove the steering wheel before disconnecting the steering joint. Damage to the cable reel can occur.

1. Drain the power steering fluid as described (**See Page** 17-18).
2. Raise the front of vehicle, and make sure it is securely supported.
3. Remove the front wheels.
4. Remove the driver's airbag assembly (see section 24).
5. Remove the steering wheel (**See Page** 17-20).
6. Remove the steering joint cover.



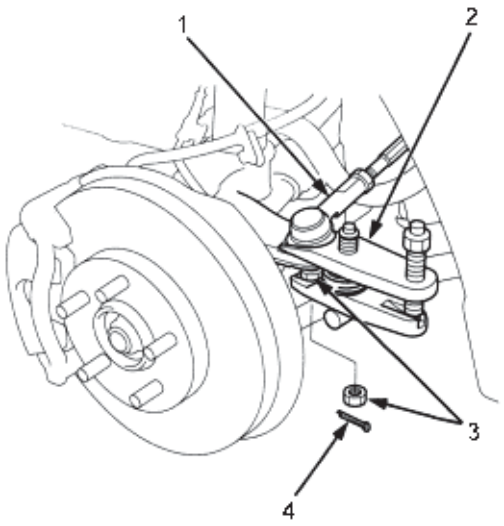
1. STEERING JOINT COVER

7. Remove the steering joint bolts, and disconnect the steering joint by moving the steering joint toward the column.



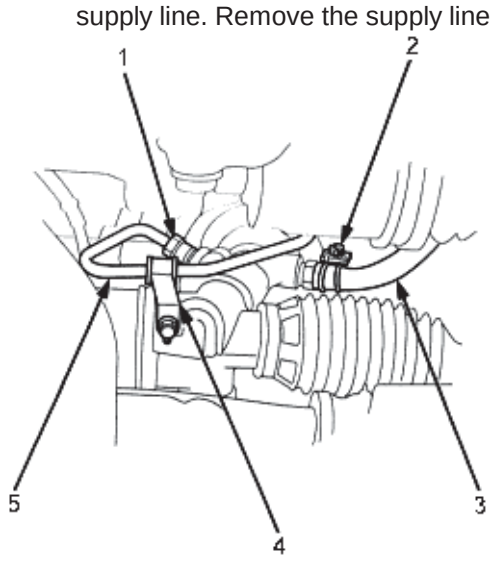
1. STEERING JOINT

8. Remove the cotter pin from the 12 mm nut and loosen the nut.



1. TIE-ROD END
2. BALL JOINT REMOVER, 28 mm, 07MAC-SL00200
3. 12 mm NUT
4. COTTER PIN, Replace

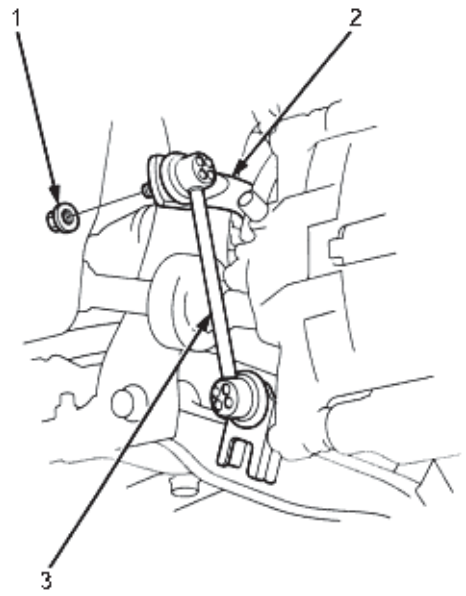
9. Separate the tie-rod ball joint and knuckle using the special tool (see section 18 for tool instructions).
10. Loosen the 14 mm flare nut, and disconnect the supply line. Remove the supply line clamp.



1. 14 mm FLARE NUT
2. ADJUSTABLE HOSE CLAMP
3. RETURN HOSE
4. SUPPLY LINE CLAMP
5. SUPPLY LINE

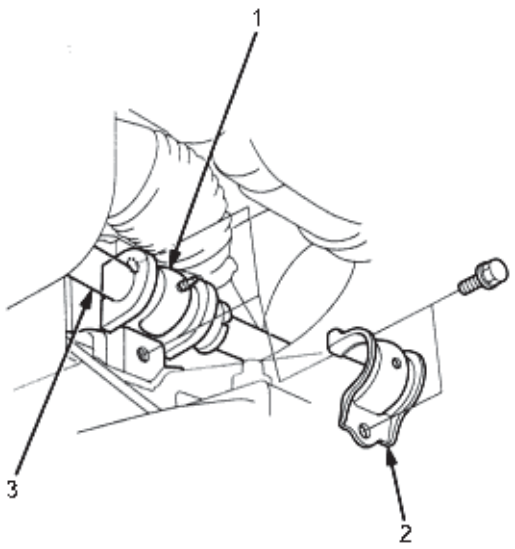
11. Loosen the adjustable hose clamp and disconnect the return hose.
12. After disconnecting the hoses and lines, plug or seal them with a piece of tape or equivalent to prevent foreign materials from entering the valve body unit.
    NOTE: Do not loosen the cylinder lines between the valve body unit and cylinder.

13. Disconnect the right and left stabiliser spring to the stabiliser link



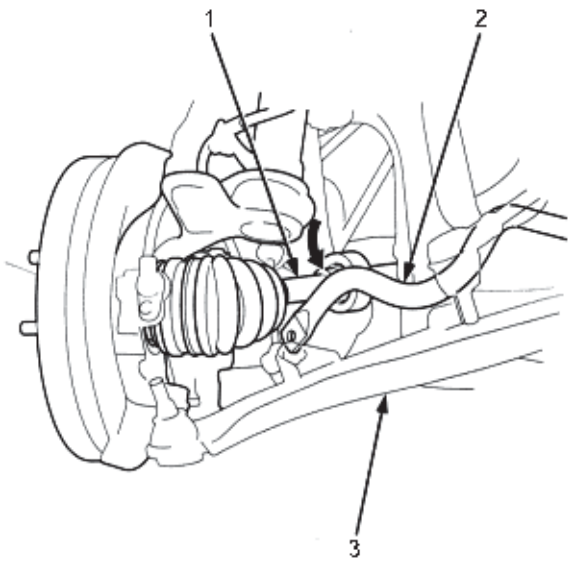
1. 10 mm SELF-LOCK NUT, Replace
2. STABILISER SPRING
3. STABILISER LINK

14. Disconnect the right and left lower arms to the knuckle (see section 18).
15. Remove the stabiliser holders and mounting bushings.



1. STABILISER BUSHING
2. STABILISER HOLDER
3. STABILISER SPRING

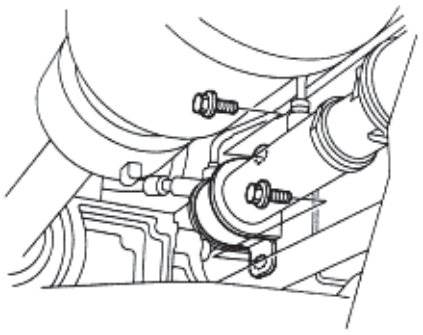
16. Swing the knuckle forward. Turn the stabilizer spring to bring the stabilizer end to underside of the drive shaft.
Bring the stabilizer spring of the opposite side to the underside of the driveshaft, too.
Lower the lower arm and bring the stabilizer end to the underside of the lower arm.



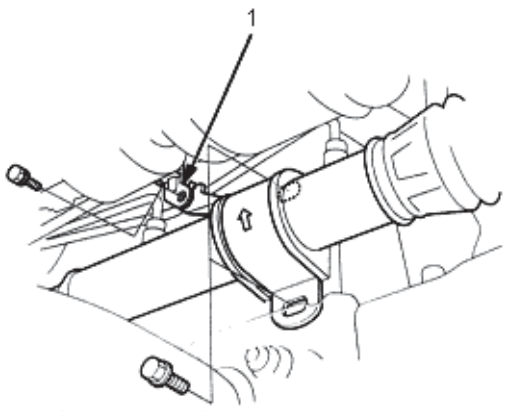
1. DRIVESHAFT
2. STABILISER SPRING
3. LOWER ARM

17. Tilt the stabiliser spring aslant. Remove the stabiliser spring by pulling it to the passenger's side while turning the spring.
NOTE: The stabiliser spring is different for installation on the right/left sides. Mark the spring not to interchange it during installation.
18. Grasp the assistant's side tie-rod, and pull the rack all the way to the passenger's side.

19. Remove the 10 mm attaching bolts of the steering gearbox mounting bracket B. Do not remove the bracket. For vehicle's with RHD only; remove the supply line clamp from the bracket B.
LHD:

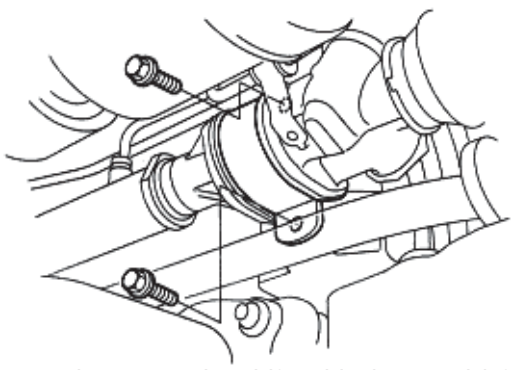


RHD:



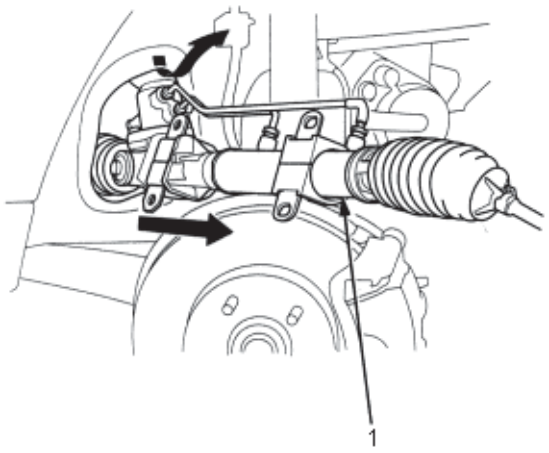
1. SUPPLY LINE CLAMP

20. Remove the 10 mm attaching bolts of the steering gearbox mounting bracket A. Do not remove the bracket.



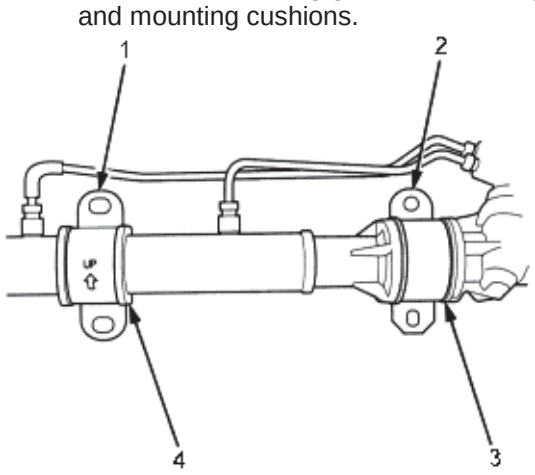
21 Disconnect the shift cable (CVT only) from transmission (see section 14).

22. Move the steering gearbox toward the passenger's side frame hole and pulling it.



1. STEERING GEARBOX

23. Remove the steering gearbox by pulling it to the passenger's side while tilting the gearbox.
24. Remove the steering gearbox mounting brackets and mounting cushions.



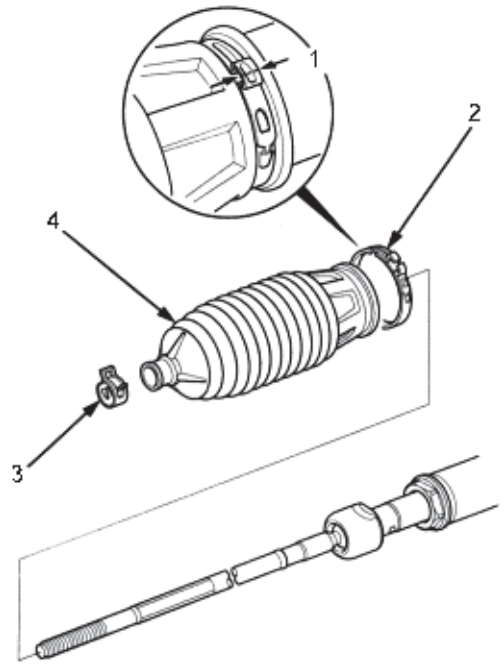
1. MOUNTING BRACKET B
2. MOUNTING BRACKET A
3. MOUNTING CUSHION A
4. MOUNTING CUSHION B

Steering Rack Disassembly

Note these items during disassembly:

- Before disassemble of the gearbox, wash it off with solvent and a brush.
- Do not dip seals and O-rings in solvent.

1. Remove the steering gearbox (**See Page** 17-36).
2. Remove the tie-rod end and locknut.
3. Remove the boot bands and the tie-rod clips. Pull the boots away from the ends of the gearbox.

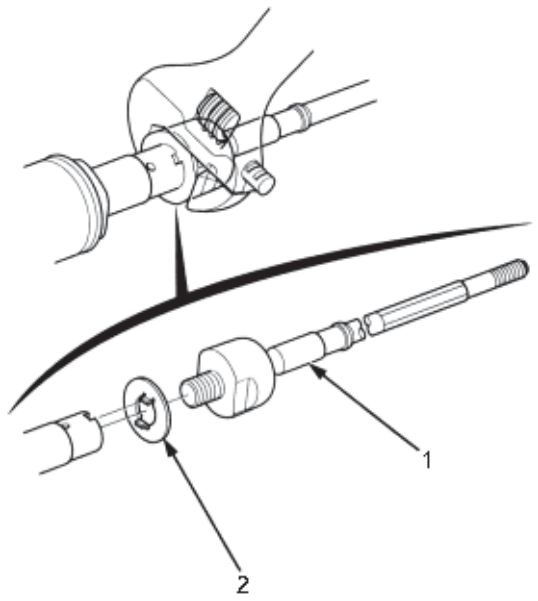


1. CUT
2. BOOT BAND, Replace
3. TIE-ROD CLIP
4. BOOT

4. Unbend the lock washer

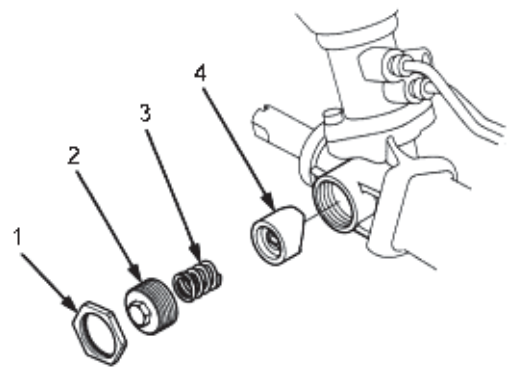


5. Unscrew both rack ends with a wrench. Be careful not to damage the rack surface with the wrench. Remove the lock washer.



1. RACK END
2. LOCK WASHER, Replace

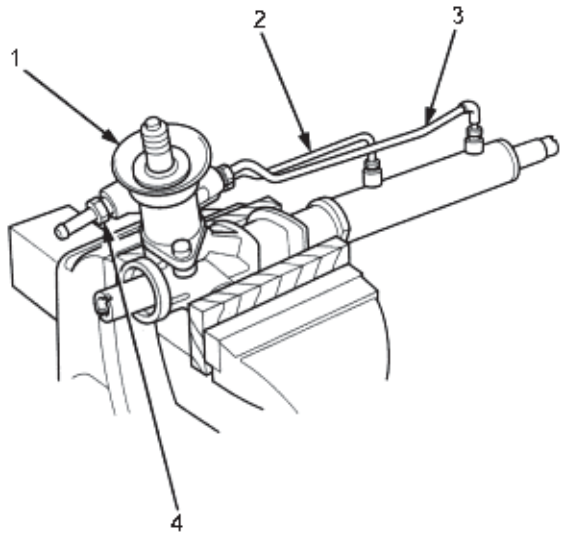
6. Loosen the locknut, then remove the rack guide screw.



1. LOCK NUT
2. RACK GUIDE SCREW
3. SPRING
4. RACK GUIDE

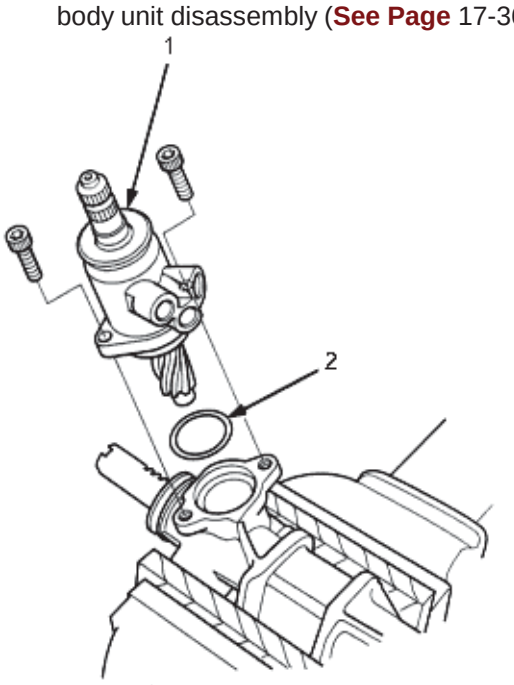
7. Remove the spring and the rack guide from the gearbox.

8. Hold the steering gearbox in a vice with soft jaws. Be careful not to damage the housing with the jaws of the vice.
9. Remove the pinion shaft grommet, return hose joint, cylinder lines A and B from the gearbox.
10. Drain the fluid from the cylinder fittings by slowly moving the steering rack back and forth.



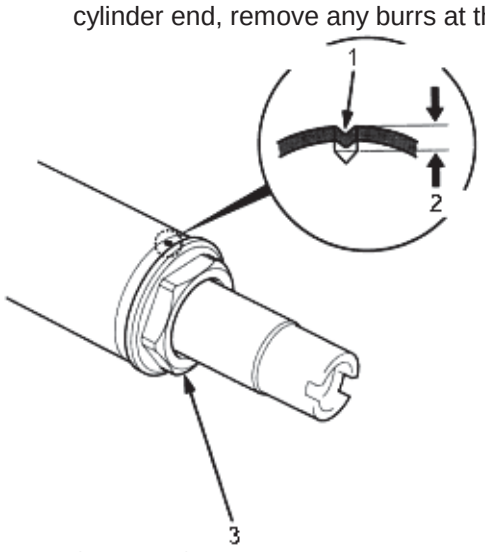
1. PINION SHAFT GROMMET
2. CYLINDER LINE A
3. CYLINDER LINE B
4. RETURN HOSE JOINT

11. Remove the valve body unit from the gearbox. For valve body unit disassembly (**See Page** 17-36 .)



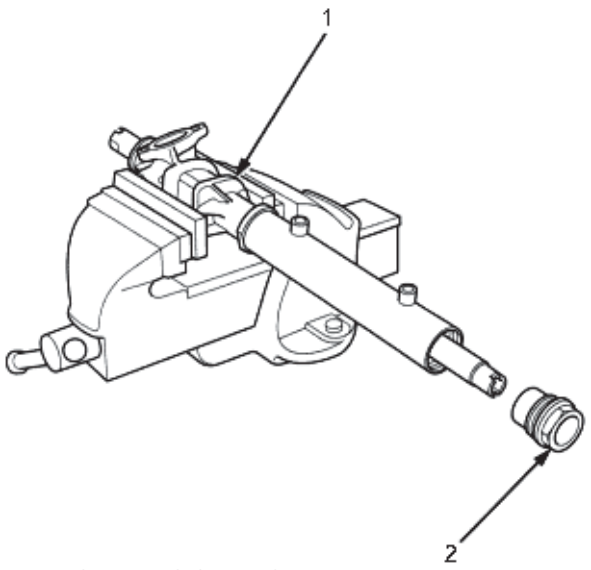
1. VALVE BODY UNIT
2. SHIMS

12. Drill a 3 mm (0.12 in) diameter hole approximately 2.5 - 3.0 mm (0.10-0.12 in) in depth in the staked point on the cylinder. Do not allow metal shavings to enter the cylinder housing. After removing the cylinder end, remove any burrs at the stake point.



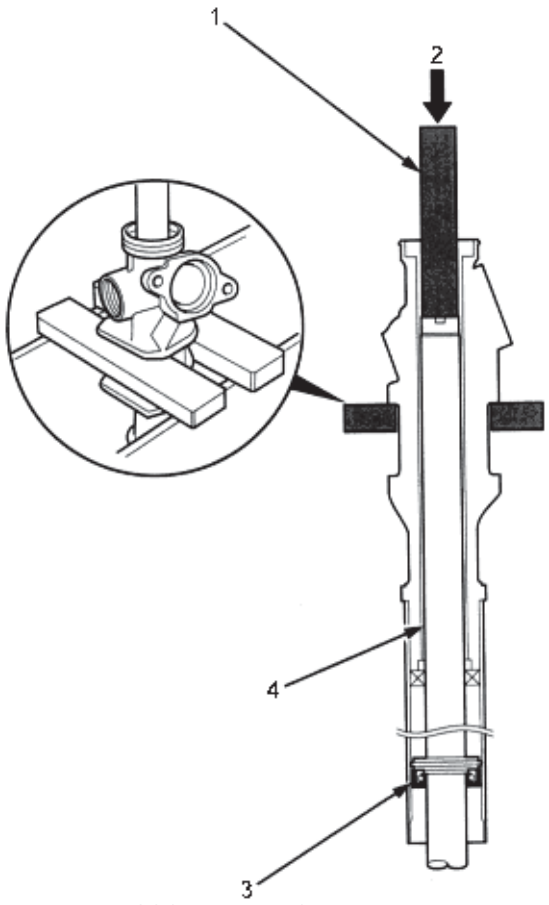
1. STAKED POINT
2. Depth 2.5-3.0 mm (0.10-0.12 in)
3. CYLINDER END

13. Loosen and remove the cylinder end.



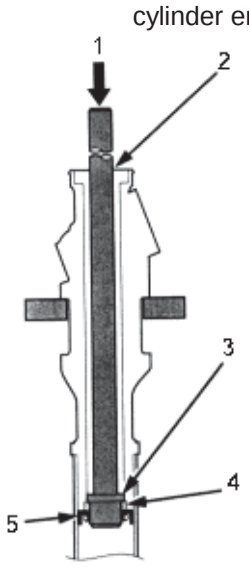
1. STEERING GEARBOX
2. CYLINDER END, Replace

14. Place a depth socket wrench on the steering rack.



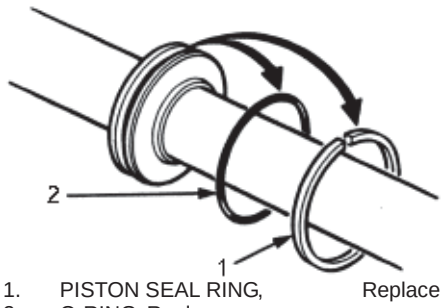
1. DEPTH SOCKET WRENCH
2. PRESS
3. CYLINDER END SEAL, Replace
4. STEERING RACK

15. Set the steering gearbox in a press so the driver's side points upward, then press the cylinder end seal and steering rack out of the gearbox. Hold the steering rack to keep it from falling when pressed clear. Be careful not to damage the inner surface of the cylinder housing with the tool.
16. Remove the cylinder end seal from the steering rack.
17. Insert the special tools into the cylinder. Make sure that the special tool is securely positioned on the backup ring edges. Be careful not to damage the inner surface of the cylinder with the special tool.
18. Set the gearbox in a press, then press out the cylinder and seal and backup ring from the gearbox.
    Note these items when pressing the cylinder end seal:
    - Keep the tool straight to avoid damaging the cylinder wall. Check the tool angel, and correct it if necessary, when removing the cylinder end seal.
    - Use a press to remove the cylinder end seal. Do not try to remove the seal by striking the tool. It will break the backup ring, and the cylinder end seal will remain in the gearbox.



1. Press
2. DRIVER HANDLE, 07NAD-SR30101
3. END PACKING REMOVER, 07NAD-SR30200
4. BACKUP RING, Replace
5. CYLINDER END SEAL, Replace

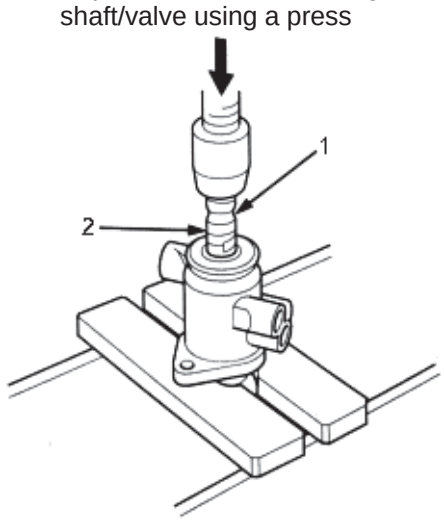
19. Carefully pry the piston seal ring and O-ring off the piston rack. Be careful not to damage the inside of seal ring groove and piston edges when removing the seal ring.



1. PISTON SEAL RING, Replace
2. O-RING, Replace

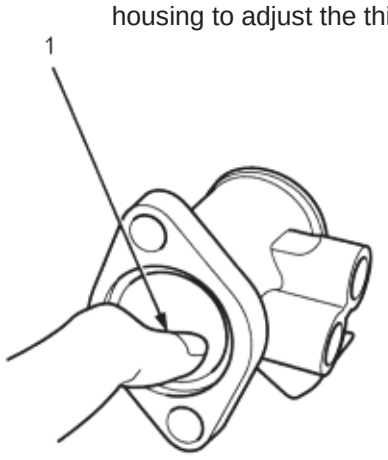
Valve Body Unit Disassembly

20. Before removing the valve housing, apply vinyl tape to splines of the pinion shaft.
21. Separate the valve housing from the pinion shaft/valve using a press



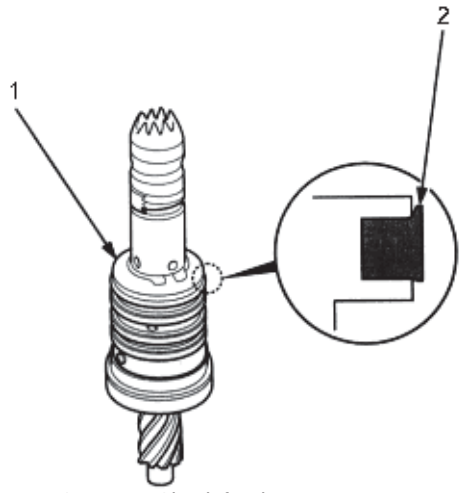
1. Vinyl tape
2. PINION SHAFT

22. Check the inner wall of the valve housing where the seal ring slides with your finger. If there is a step in the wall, the valve housing is worn. Replace the valve housing.
    NOTE:
    - There may be the sliding marks from the seal ring on the wall of the valve housing. Replace the vale housing only if the wall is stepped.
    - When the valve housing is replaced, install new shim(s) on the bearing surface of the housing to adjust the thickness



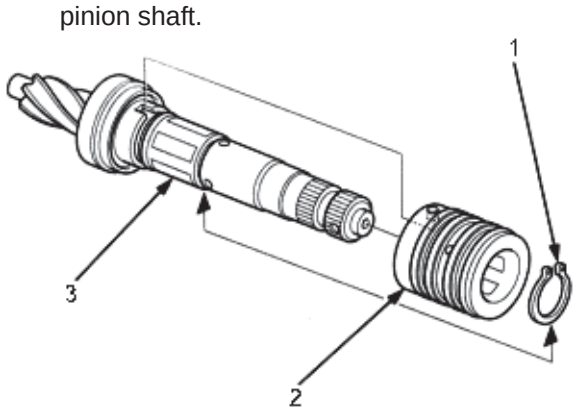
1. Check the inside of valve housing whether the wall is stepped.

23. Check for wear, burrs and other damage to the edges of the grooves in the sleeve.
NOTE: the pinion shaft and sleeve are a precision matched set. If either pinion shaft or sleeve must be replaced, Replace both parts as a set.



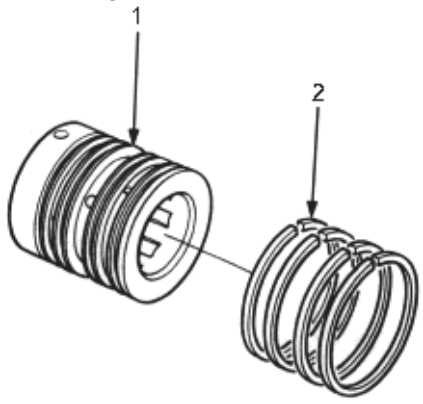
1. SLEEVE, Check for damage
2. SLEEVE SEAL RINGS, Check for peel off or damage

24. Remove the circlip and pinion shaft sleeve from the pinion shaft.



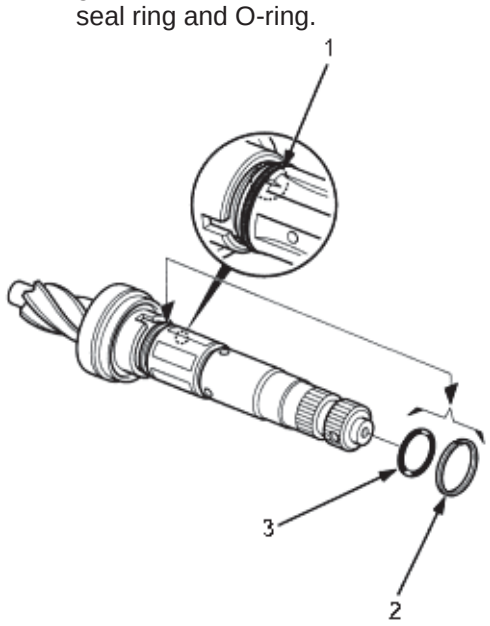
1. CIRCLIP, Replace
2. SLEEVE
3. PINION SHAFT

25. Using a cutter or an equivalent tool, cut and remove the four seal rings from the sleeve. Be careful not to damage the edges of the sleeve grooves and outer surface when removing the seal rings.



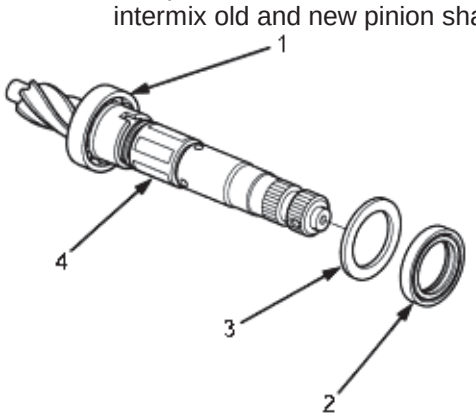
1. SLEEVE
2. SLEEVE SEAL RINGS, Replace

26. Using a cutter or an equivalent tool, cut the valve seal ring and O-ring at the groove on the pinion shaft. Remove the valve seal ring and O-ring. Be careful not to damage the edges of the pinion shaft groove and outer surface when removing the valve seal ring and O-ring.



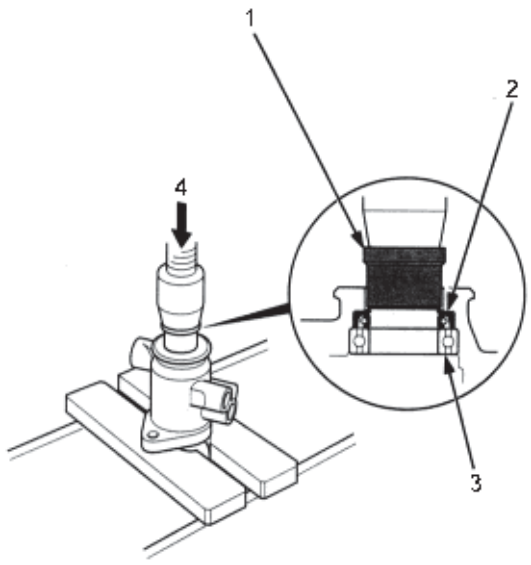
1. Cutting slot position
2. VALVE SEAL RING, Replace
3. O-RING, Replace

27. Remove the valve oil seal and backup ring from the pinion shaft.
    Note these items during disassembly:
    - Inspect the ball bearing by rotating the outer race slowly. If there is any excessive play, replace the pinion shaft and sleeve as an assembly.
    - The pinion shaft and sleeve are a precise fit; do not intermix old and new pinion shafts and sleeves.



1. CIRCLIP, Replace
2. BALL BEARING
3. PINION SHAFT
4. BACK-UP RING
5. VALVE OIL SEAL, Replace
6. Press

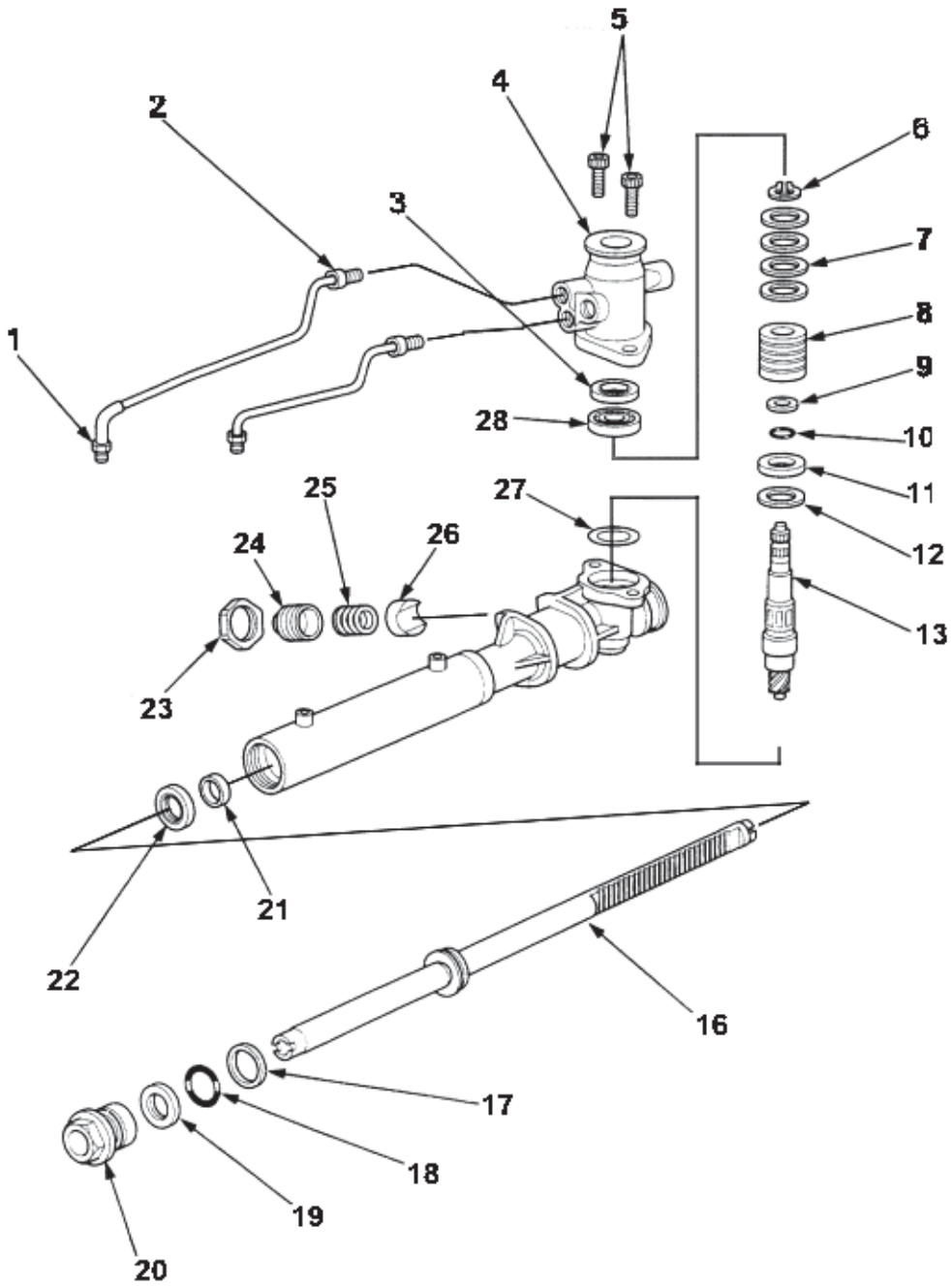
28. Press the valve oil seal and ball bearing out of the valve housing using a hydraulic press and special tool shown below.



1. END PACKING REMOVER, 07NAD-SR30200
2. VALVE OIL SEAL, Replace
3. BALL BEARING, Replace
4. Press

Note these items during reassembly:

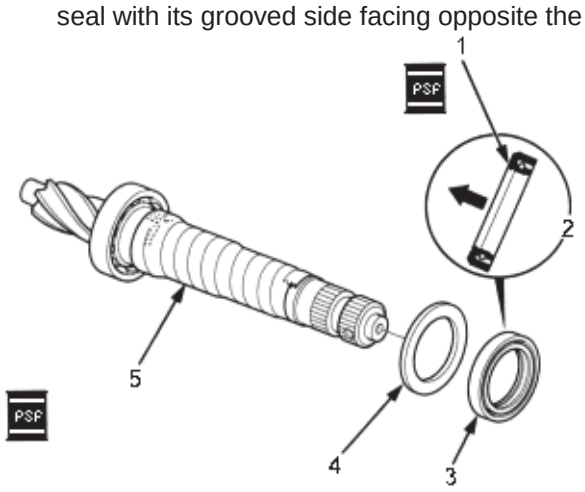
- Clean the disassembled parts with a solvent, and dry them with compressed air. Do not dip the rubber parts in a solvent.
- Always replace the O-rings and rubber seals with new ones before assembly.
- Apply power steering fluid or steering grease (HONDA P/N: 08733-B070E) to the parts indicated in the assembly procedures.
- Do not allow dust, dirt or other foreign materials to enter the power steering system.
- Use the appropriate special tools where necessary.



1. **24 Nm (2.4 kgf/m, 17 lbf/ft)**
2. **20 Nm (2.0 kgf/m, 14 lbf/ft)**
3. **VALVE OIL SEAL,** Replace
4. **VALVE HOUSING**
5. **25 Nm (2.5 kgf/m, 18 lbf/ft)**
6. **CIRCLIP,** Replace
7. **SLEEVE SEAL RINGS,** Replace
8. **SLEEVE**
9. **VALVE SEAL RING,** Replace
10. **O-RING,** Replace
11. **VALVE OIL SEAL,** Replace
12. **BACKUP RING**
13. **PINION SHAFT**
14. **BALL BEARING**
15. **CIRCLIP**, Replace
16. **STEERING RACK** ♦
17. **PISTON SEAL RING,** Replace
18. **O-RING,** Replace
19. **CYLINDER END SEAL,** Replace
20. **CYLINDER END, 69 Nm (7.0 kgf/m, 51 lbf/ft),** Replace
21. **BACKUP RING,** Replace
22. **CYLINDER END SEAL,** Replace
23. **LOCKNUT**
24. **RACK GUIDE SCREW**
25. **SPRING**
26. **RACK GUIDE**
27. **SHIMS**
28. **BALL BEARING**

Valve Body Unit Reassembly

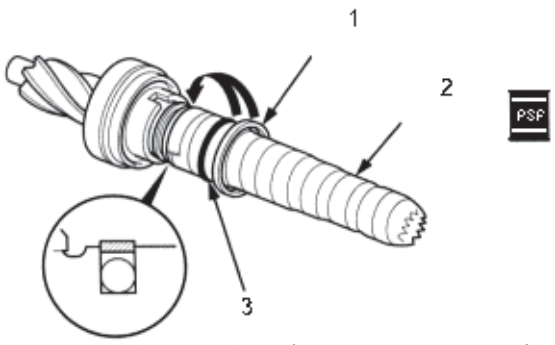
1. Apply grease to the ball bearing and install it on the pinion shaft using a hydraulic press. Then install the new circlip securely in the pinion shaft groove.
2. Apply vinyl tape to the stepped portion of the pinion shaft, and coat the surface of the vinyl tape with the power steering fluid. Install the backup ring.
3. Coat the inside surface of the new valve oil seal with power steering fluid.
4. Slide the valve oil seal over the pinion shaft, being careful not to damage the sealing lip. Install the valve oil seal with its grooved side facing opposite the bearing.



1. CIRCLIP, Replace
2. PINION SHAFT, Vinyl tape (Stepped portion)
3. Sealing lip
4. Groove side
5. VALVE OIL SEAL, Replace
6. BACKUP RING
7. NOTE: Support the inner race with the tool securely.
8. Press
9. BALL BEARING

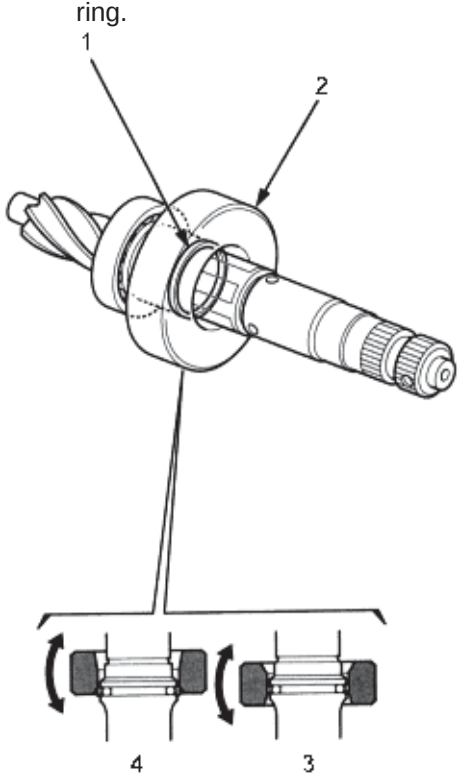
5. Apply vinyl tape to the splines and stepped portion of the shaft, and coat the surface of the vinyl tape with the power steering fluid.
6. Fit the new O-ring in the groove of the pinion shaft. Then slide the new valve seal ring over the shaft and the groove in on the pinion shaft.
7. Remove the vinyl tape from the pinion shaft.

PSF



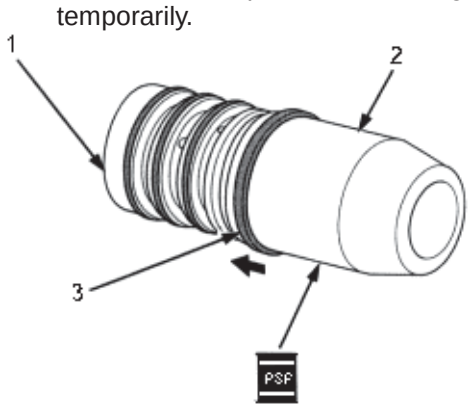
1. VALVE SEAL RING, Replace. Do not over expand.
2. Vinyl tape
3. O-RING, Replace. Do not twist.

8. Apply power steering fluid to the surface of the valve seal ring that was installed on the pinion shaft.
9. Apply power steering fluid to the inside of the special tool. Set the larger diameter end of the special tool over the valve seal ring.
10. Move the special tool up and down several times to make the valve seal ring fit in the pinion shaft.
11. Remove the special tool.
12. Turn the special tool over, and set the smaller diameter end of the special tool over the valve seal ring.



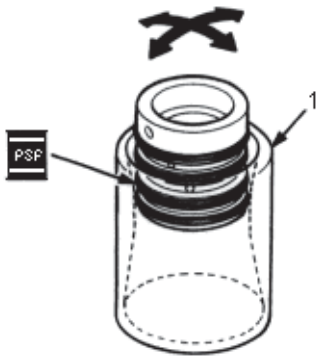
1. VALVE SEAL RING
2. VALVE SEAL RING SIZING TOOL, 07NAG-SR30900
3. Make the valve seal ring fit snugly in the pinion shaft using the other end (smaller diameter end) of the special tool.
4. Use the larger diameter end of the special tool first to make the valve seal ring fit in the pinion shaft.

13. Apply power steering fluid to the surface of the special tool. Set the new seal rings over the special tool from the smaller diameter end of the tool, and expand the seal rings.
    Note these items when installing seal ring:
    - Do not over-expand the seal ring. Install the resin seal rings with care so as not to damage them. After installation, be sure to contract the seal rings using the special tool (sizing tool).
    - There are two types of sleeve seal rings: black and brown. Do not mix the different types of sleeve seal rings as they are not compatible.
14. Align the special tool with each groove in the sleeve, and slide a sleeve seal ring in each groove securely. After installation, compress the seal rings with your fingers temporarily.



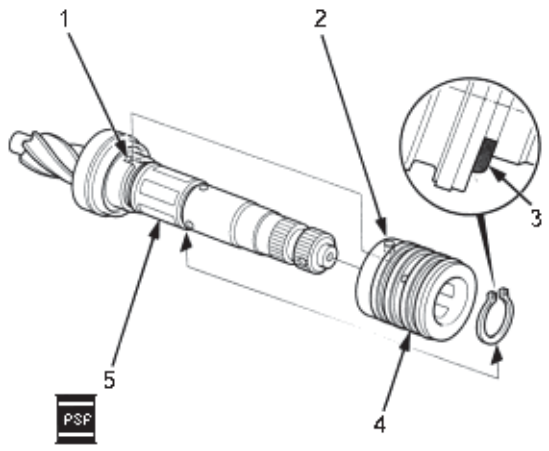
1. SLEEVE
2. SLEEVE SEAL GUIDE, 07NAG-SR30700
3. SLEEVE SEAL RING, Replace

15. Apply power steering fluid to the seal rings on the sleeve, and to the entire inside surface of the special tool.
16. Insert the sleeve into the special tool slowly.
17. Move the sleeve each direction several times to make the seal rings snugly fit in the sleeve.
    NOTE: Be sure that the seal rings are not turned up.



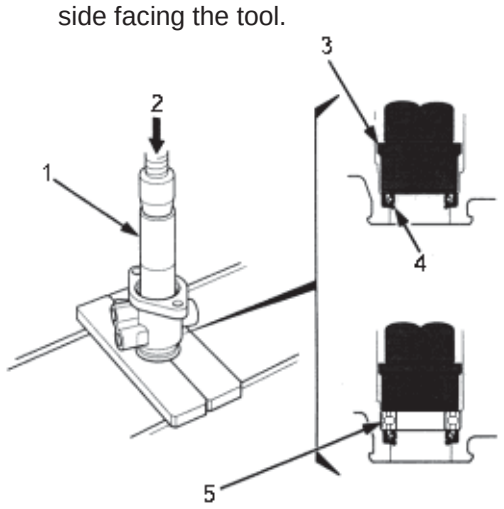
1. SLEEVE SEAL RING SIZING TOOL, 07NAG-SR30600

18. Apply power steering fluid to the surface of the pinion shaft. Assembly the sleeve over the pinion shaft by aligning the locating pin on the inside of the sleeve with the cutout in the shaft. Then install the new circlip securely in the pinion shaft groove. Be careful not to damage the valve seal ring when inserting the sleeve.



1. Cutout
2. LOCATING PIN
3 CIRCLIP
4. SLEEVE
5. PINION SHAFT

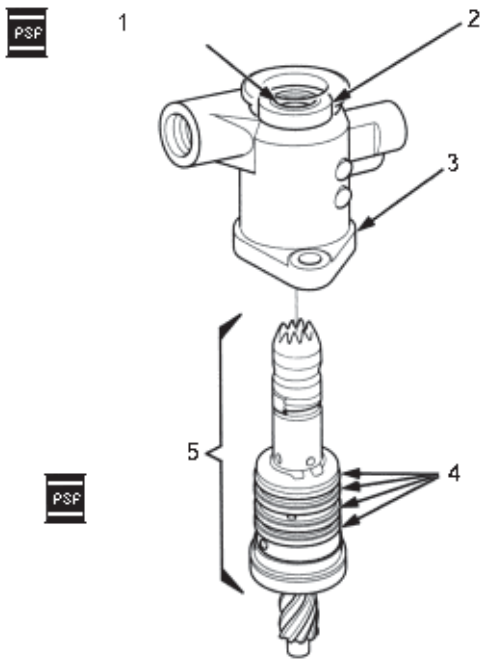
19. Apply power steering fluid to the seal ring lip of the valve oil seal, then install the seal in the valve housing using a hydraulic press and special tools as shown. Install the valve oil seal with its grooved side facing the tool.



1. DRIVER, 07749-0010000,
2. Press
3. ATTACHMENT, 32 x 35 mm, 07746-0010100
4. VALVE OIL SEAL, Replace
5. BALL BEARING

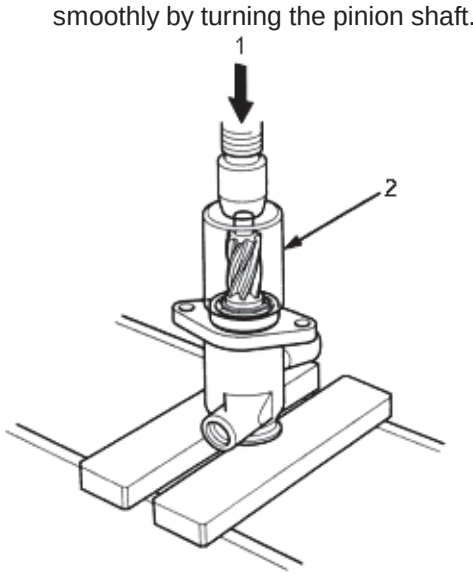
20. Press the new bearing into the valve housing using a hydraulic press and special tool as shown.

21. Apply vinyl tape to the pinion shaft, then coat the vinyl tape with power steering fluid.
22. Insert the pinion shaft into the valve housing. Be careful not to damage the valve seal rings.
23. Remove the vinyl tape from the pinion shaft, then remove any residue from the tape adhesive.



1. Sealing lip face.
2. VALVE OIL SEAL
3. VALVE HOUSING
4. SLEEVE SEAL RINGS
   Replace. Be sure that the seal rings are not turned up, then install.
5. PINION SHAFT

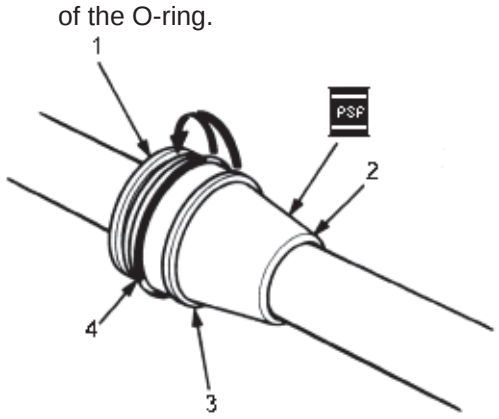
24. Press the pinion shaft/sleeve using a hydraulic press and special tool. Check that the pinion shaft/sleeve turns smoothly by turning the pinion shaft.



1. Press
2. HUB DIS/ASSEMBLY TOOL ATTACHMENT, 07965-SA50500

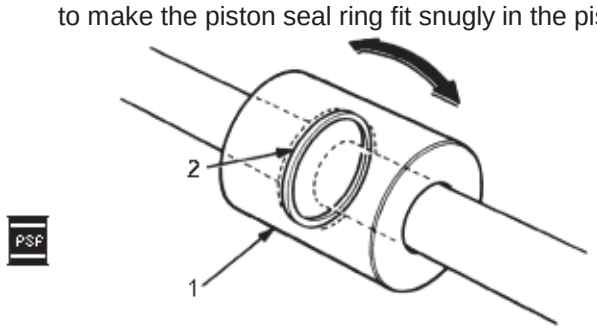
Steering Rack Reassembly

25. Coat the piston seal ring guide with power steering fluid, then slide it onto the rack, big end first.
26. Position the new O-ring and new piston seal ring on the special tool, then slide them down toward the big end of the tool.
    Note these items during reassembly:
    - Do not over expand the resin seal rings. Install the resin seal rings with care so as not to damage them. After installation, be sure to contract the seal ring using the special tool (sizing tool).
    - Replace the piston's O-ring and seal ring as a set.
27. Pull the O-ring off into the piston groove, then pull the piston seal ring off into the piston groove on top of the O-ring.



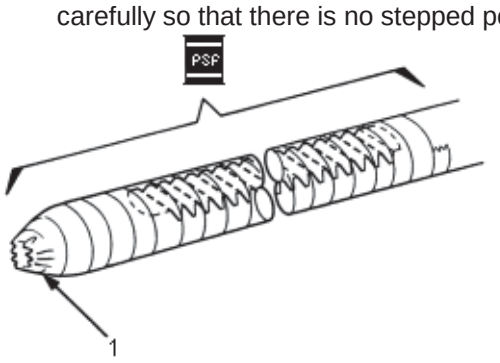
1. PISTON
2. PISTON SEAL RING GUIDE, 07NAG-SR30400
3. PISTON SEAL RING, Replace
4. O-RING, Replace

28. Coat the piston seal ring and the inside of the special tool with power steering fluid.
29. Carefully slide the tool onto the rack and over the piston seal ring.
30. Move the special tool back and forth several times to make the piston seal ring fit snugly in the piston.



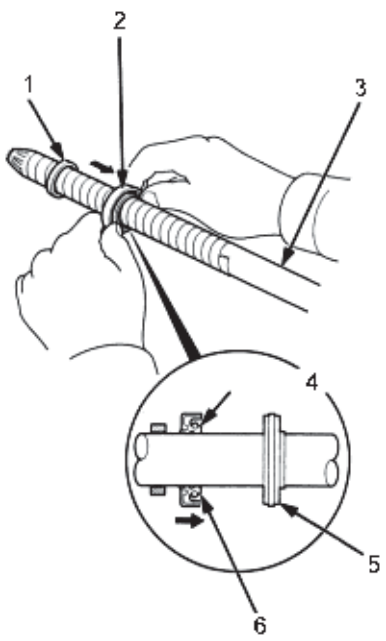
1. PISTON SEAL RING SIZING TOOL, 07NAG-SR30500
2. PISTON SEAL RING, Replace

31. Wrap vinyl tape around the rack teeth and rack end edges, and coat the surface of the tape with the power steering fluid.
    NOTE: Make sure that the vinyl tape is wrapped carefully so that there is no stepped portion.



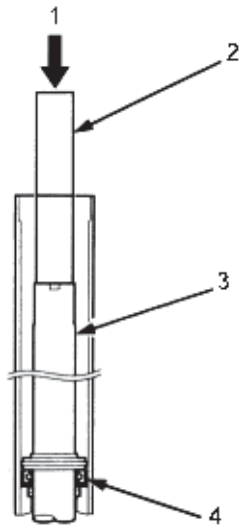
1. VINYL TAPE

32. Coat the inside surface of the new cylinder end seal with power steering fluid.
33. Install the cylinder end seal onto the steering rack with its grooved side toward the piston. When installing the cylinder end seal, be careful not to damage the sealing lip face of the seal with the edges or teeth of the steering rack.



1. BACKUP RING, Replace.
2. CYLINDER END SEAL Replace.
3. STEERING RACK
4. Grooved side
5. PISTON
6. Make sure the spring is in the cylinder end seal.

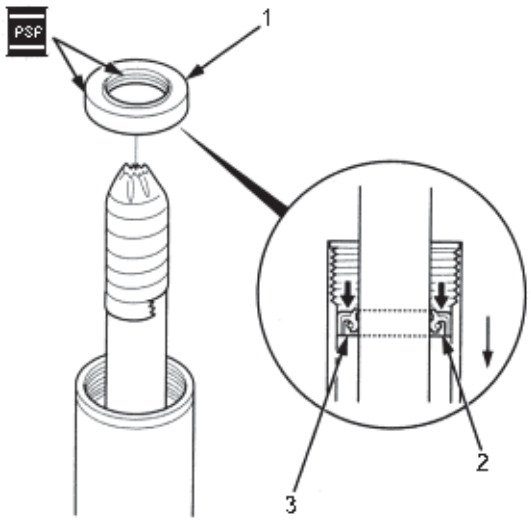
34. Remove the vinyl tape from the steering rack, then remove nay residue of tape adhesive.
35. Install the new backup ring on the steering rack, then place the cylinder end seal to piston.
36. Grease the steering rack teeth, then insert the steering rack into the gearbox housing . Be careful not to damage the inner surface of the cylinder wall with the rack edges.
37. Insert an appropriate size depth socket wrench onto the steering rack as shown.



1. Press
2. SOCKET WRENCH
3. STEERING RACK
4. CYLINDER END SEAL, Replace

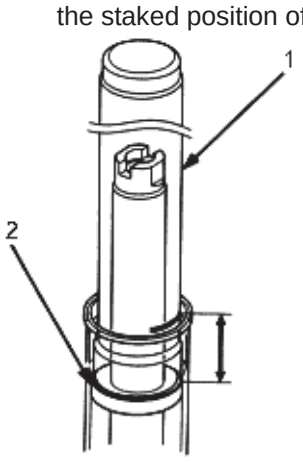
38. Install the cylinder end seal into the bottom of the cylinder by pressing on the tool with a press. Do not push on the tool with excessive force as it may damage the cylinder end seal.
39. Remove the depth socket wrench and centre the steering rack.

40. Wrap vinyl tape around the rack end edges, and coat the surface of the tape with the power steering fluid. Make sure that the vinyl tape is wrapped carefully so that there is no stepped portion.
41. Coat the inside surface of the new cylinder end seal with power steering fluid.



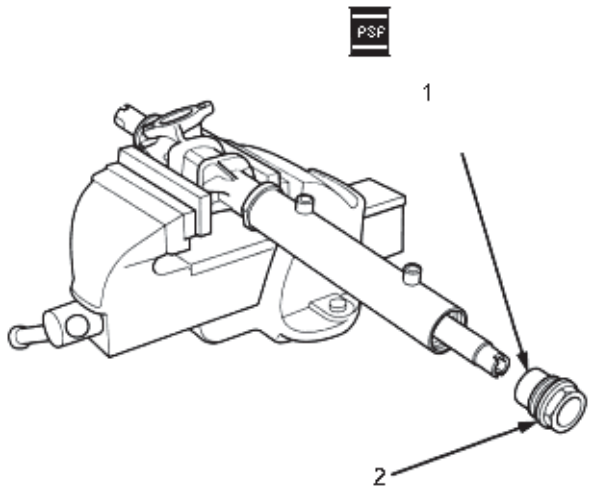
1. CYLINDER END SEAL, Replace
2. Grooved side.
3. Make sure the spring is in the cylinder end seal.

42. Install the cylinder end seal onto the steering rack with its grooved side toward the piston.
43. Push in the cylinder end seal with special tool. When installing the cylinder end seal, be careful not to damage the sealing face of the seal with the threads and burrs at the staked position of the cylinder housing.



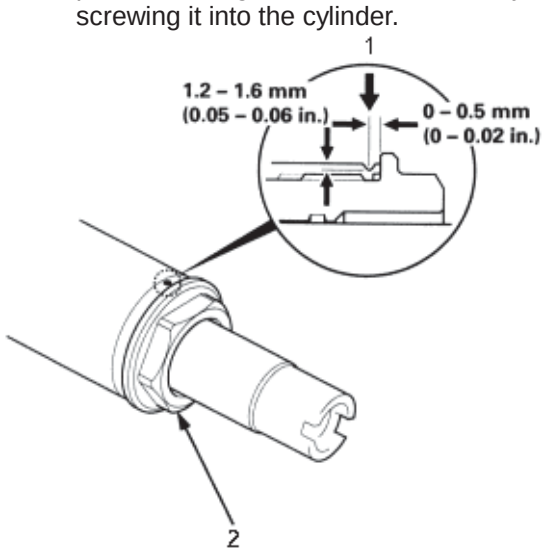
1. DRIVER, 30 mm I.D., 07946-MB00000
2. CYLINDER END SEAL
3. 60 mm (2.36 in.)

44. Remove the vinyl tape from the steering rack, then remove any residue from the tape adhesive.
45. Install the steering gearbox in a vise with soft jaws as shown. Do not clamp the cylinder in the vise.



1. BUSHING
   Be careful not to damage the bushing when inserting the cylinder end.
2. CYLINDER END, 69 Nm (7.0 kgf/m, 51 lbf/ft)

46. Coat the inside surface of the cylinder end with power steering fluid, then install the cylinder end by screwing it into the cylinder.



1. STAKED POINT
2. CYLINDER END

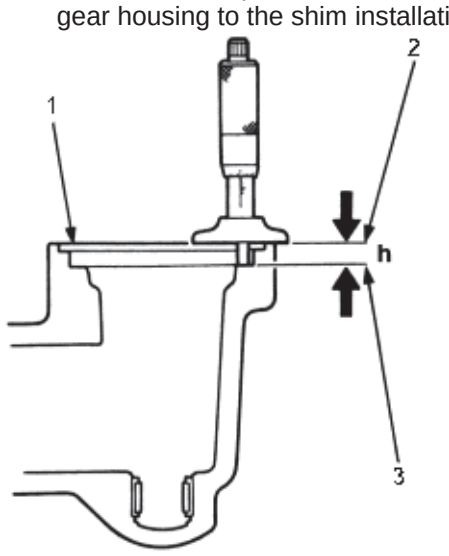
47. Remove the steering gearbox.
48. After tightening the cylinder end, stake the point of the cylinder shown. Stake the cylinder in the position opposite from where the stake was removed during disassembly.

49. Select the shim(s). Only reinstall the original shim(s) when the steering gearbox is reassembled without replacing the pinion shaft, valve housing, and gearbox housing with new ones.

Shim selection:

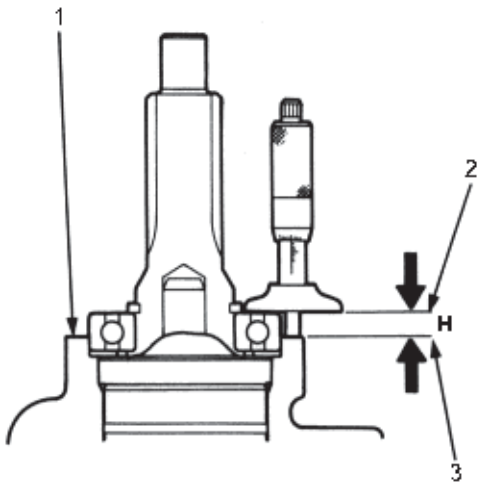
NOTE: Select number of the shims (7 shims, thickness: 0.05 mm/0.002 in.) before installing the valve body unit on the gear housing.

A. Measure the depth "h" form the mating surface of the gear housing to the shim installation surface.



1. GEAR HOUSING
2. MATING FACE WITH VALVE BODY UNIT
3. SHIM INSTALLATION SURFACE

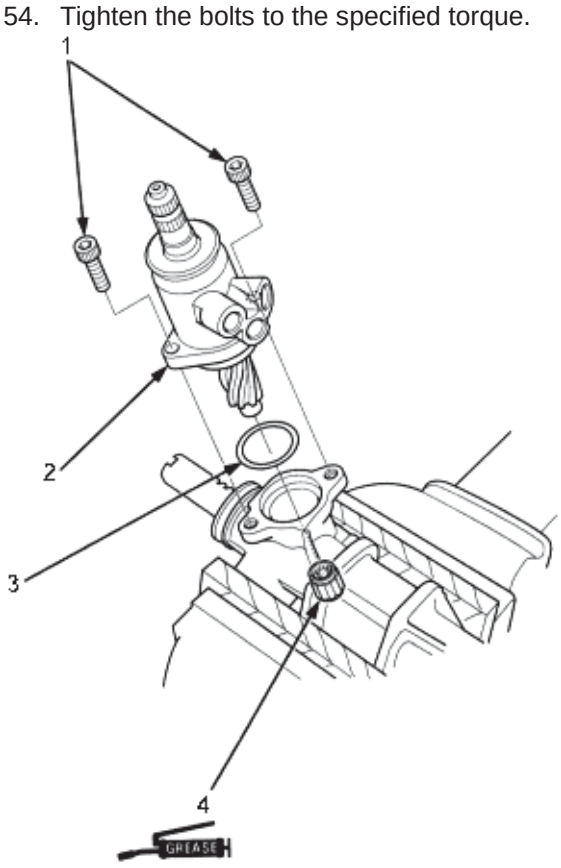
B. Measure the height "h" from the mating surface of the valve body unit to the bearing end.



1. VALVE BODY UNIT
2. BEARING END
3. MATING FACE WITH GEAR HOUSING

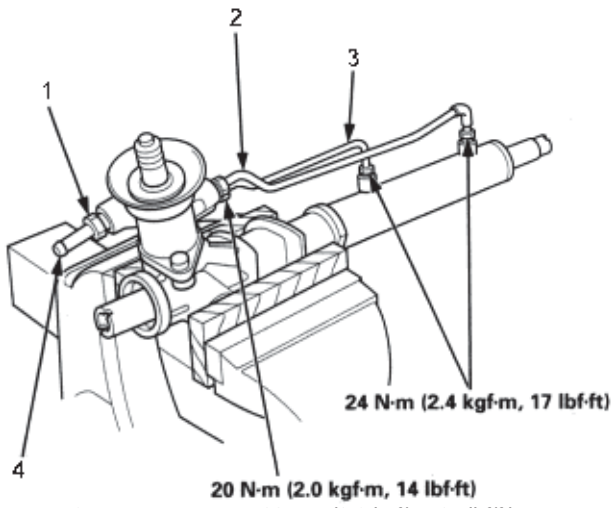
C. Select number of the shims so that the difference between the measurements "h" and "H" is 0.05 mm (0.002 in.) or below.

50. Set the selected shims on the bearing surface of the gearbox housing.
51. Apply grease to the needle bearing in the gearbox housing.
52. Be sure to apply the liquid gasket to the mating face evenly not to let it to drop inside the housing.
53. Install the valve body unit on the gearbox housing by engaging the gears. Note the valve body unit installation position (direction of line connection).
54. Tighten the bolts to the specified torque.



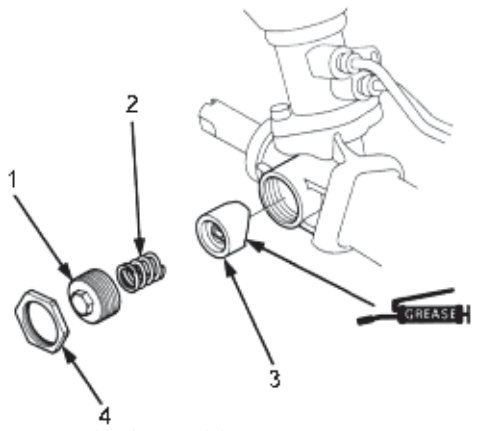
1. 25 Nm (2.5 kgf/m, 18 lbft)
2. VALVE BODY UNIT
3. SHIMS (Selected number of shims)
4. NEEDLE BEARING

55. Install the return hose joint, cylinder lines A and B. Note these items during reassembly:
    - Clean the joints thoroughly. The joints must be free of foreign material.
    - Install the cylinder lines A and B by tightening the flare nuts by hand first, then tighten the flare nuts to the specified torque.



1. 16 mm FLARE NUT, 28 Nm (2.9 kgf/m, 21 lbf/ft)
2. CYLINDER LINE B
3. CYLINDER LINE A
4. RETURN HOSE JOINT

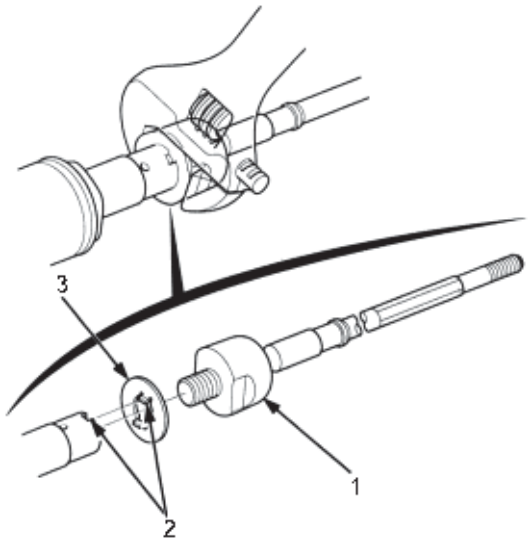
56. Install the pinion shaft grommet
57. Grease the sliding surface of the rack guide, and install it onto the gearbox housing.



1. RACK GUIDE SCREW
2. SPRING
3. RACK GUIDE
4. LOCKNUT

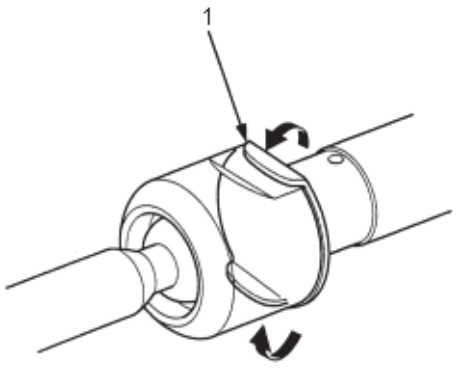
58. Apply new sealant to all around threads on the rack guide screw.
59. Install the spring, rack guide screw and locknut on the gearbox.
60. Adjust the rack guide screw (**See Page** 17-17). After adjusting, check that the rack moves smoothly by sliding the rack right and left.

61. Install the lock washer, and screw each rack end into the rack while holding the lock washer so its tabs are in the slots in the end of the rack.



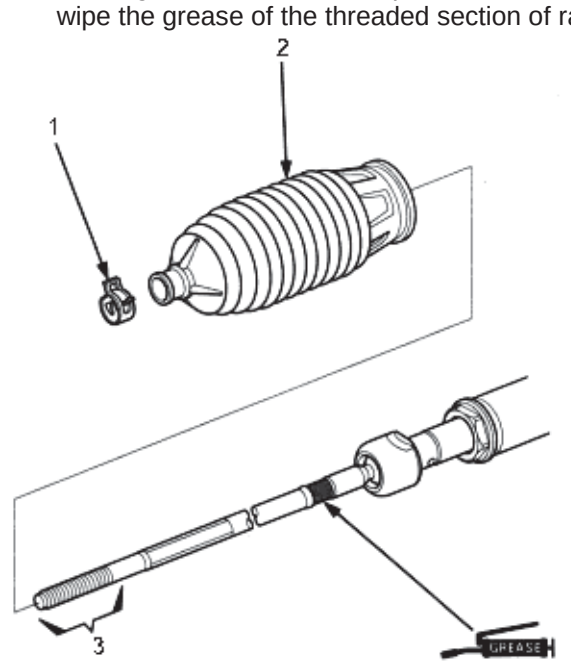
1. STEERING RACK END, 78 Nm (8.0 kgf/m, 58 lbf/ft)
2. Align
3. LOCK WASHER, Replace

62. Tighten the both rack ends. Be careful not to damage the rack surface with the wrench.
63. Bend the lock washer back against the flat spots on the rack end joint housing.



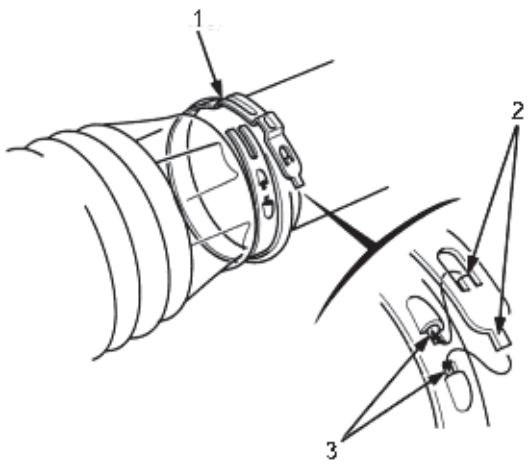
1. LOCK WASHER

64. Apply a light coat of silicone grease to the contact portions of the rack grooves and boot.
65. Centre the steering rack within its stroke. Apply weatherstrip adhesive to the in side of the boot and the boot fitting around of the cylinder housing. Install the boot in the rack end, and fit the boot over the cylinder housing. Install the tie-rod clip. After installing the boots, wipe the grease of the threaded section of rack end.



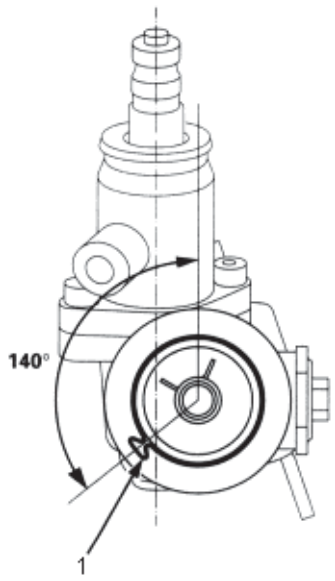
1. TIE-ROD CLIP
2. BOOT
3. NOTE: Wipe grease off the thread section

66. Install the new boot band by aligning the tabs with the holes of the band.



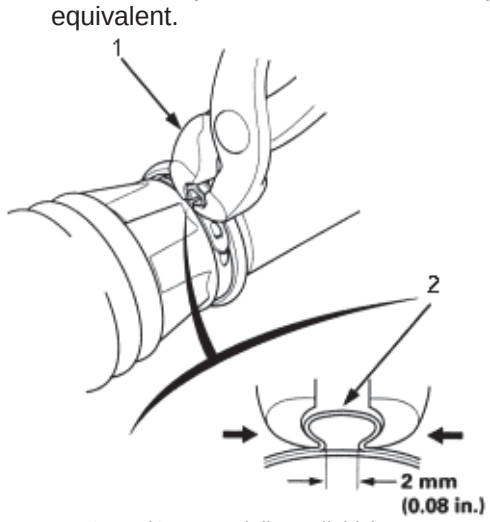
1. BOOT BAND, Replace
2. TABS
3. HOLES

NOTE: The ear portions of the band (close point) should be the specified angle shown below



1. EAR PORTION, (Close point)

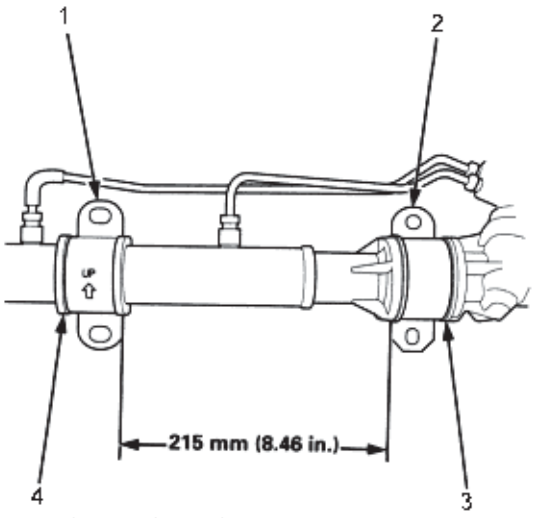
67. Close the ear portion of the band with a commercially available Oetiker 1098 pincer or equivalent.



1. PINCER, (Commercially available)
2. EAR PORTION

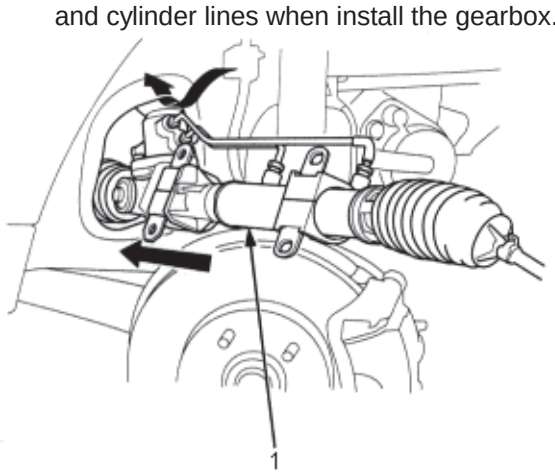
68. Slide the rack right and left to be certain that the boots are not deformed or twisted.
69. Install the steering gearbox (**See Page** 17-54).

1. Install the steering gearbox mounting cushions and brackets on the steering gearbox as shown. Position the mounting cushion B so that the dimension between the mounting bracket A and B.



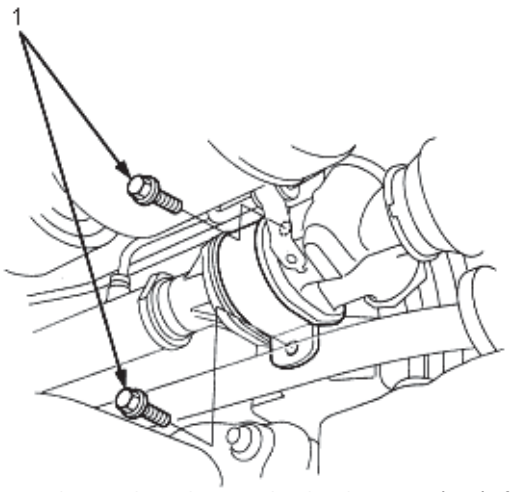
1. MOUNTING BRACKET B
2. MOUNTING BRACKET A
3. MOUNTING CUSHION A
4. MOUNTING CUSHION B

2. Before installing the gearbox, slide the rack all the way to the passenger's side.
3. Install the pinion shaft grommet
4. Insert the steering gearbox into the engine compartment through the hole in the frame of the passenger's side. Put on the gearbox installation position at the bulkhead. Be care not to bend or damage the power steering lines and cylinder lines when install the gearbox.



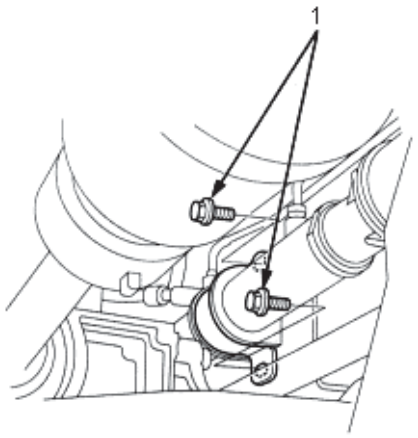
1. STEERING GEARBOX

5. Install the 10 mm gearbox mounting bolts on the gearbox driver's side. The mounting bolts are loosely firs, then tighten them securely.



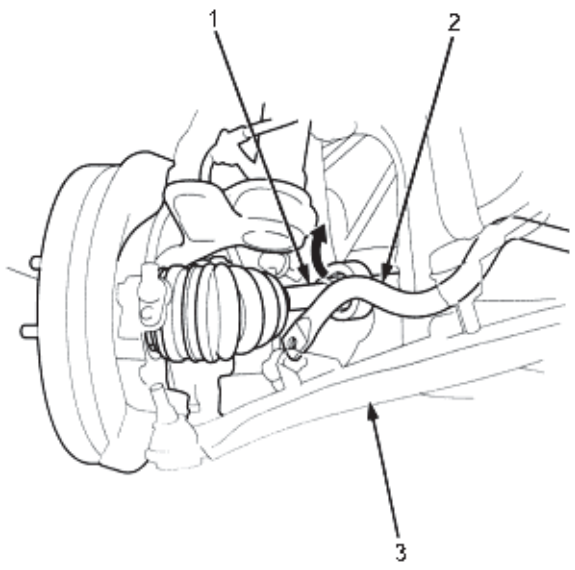
1. GEARBOX MOUNTING BOLTS, 44 Nm (4.5 kgf/m, 33 lbf/ft)

6. Install the 10 mm gearbox mounting bolts on the gearbox passenger's side. The mounting bolts are loosely first, then tighten them securely.



1. GEARBOX MOUNTING BOLTS, 44 Nm (4.5 kgf/m, 33 lbf/ft)

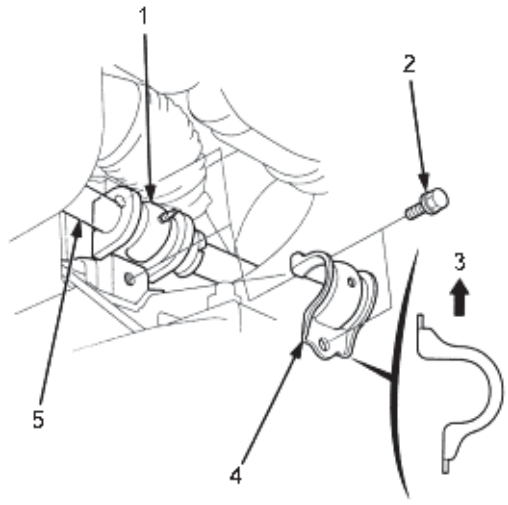
7. Insert the stabiliser spring into the engine compartment through the hole in the frame of the passenger's side.
   NOTE: Do not interchange the stabiliser spring installation direction.
8. Tilt the stabiliser spring aslant that you inserted in the previous step, and turn it to pass the stabiliser end of the driver's side through the hole in the frame of the driver's side.
9. Lower the lower arm to bring the both stabiliser ends above the lower arms.



1. DRIVESHAFT
2. STABILISER SPRING
3. LOWER ARM

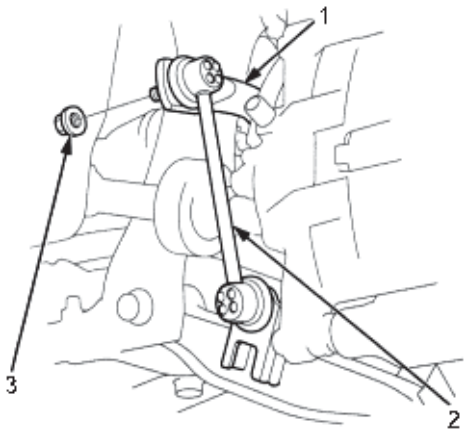
10. Swing the knuckle forward. Turn the stabiliser spring to bring the stabiliser and above the drive shaft.
    Bring the stabiliser spring of the opposite side above the driveshaft, too.

11. Install the right and left stabilizer holders on the respective bushings and loosely tighten the mounting bolts.
    NOTE: After installing the gearbox, tighten the bolts to the specified torque while applying the vehicle weight to the stabilizer.



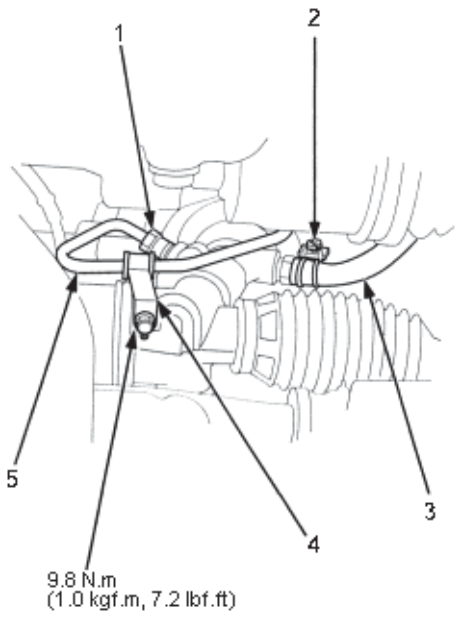
1. STABILIZER BUSHING
2. MOUNTING BOLTS, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. Upper side
4. STABILIZER HOLDER
5. STABILIZER SPRING

12. Connect the right and left lower arms to the knuckles. (see section 18).
13. Connect the right and left stabilizer spring to the stabilizer link.
    NOTE: After installing the gearbox, perform the following operation while applying the vehicle weight to the stabilizer spring.
    - Set the ball joint pin of the stabilizer link in the center of the movable range of the joint, and reconnect it to the stabilizer spring.
    - Tighten the bolts to the specified torque while holding the ball joint pin with a hex wrench.



1. STABILISER SPRING
2. STABILISER LINK
3. 10 mm SELF-LOCK NUT, Replace, 38 Nm (3.9 kgf/m, 28 lbf/ft)

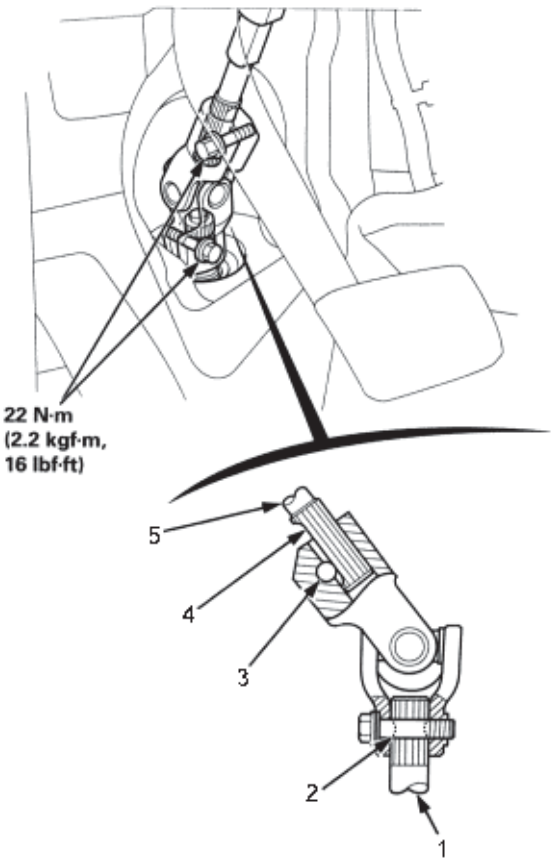
14. Connect the return hose securely, and tighten the adjustable hose clamp.



1. 14 mm FLARE NUT, 37 Nm (3.8 kgf/m, 27 lbf/ft)
2. ADJUSTABLE HOSE CLAMP
   NOTE: For the hose clamps installation refer to(**See Page** 17-28).
3. RETURN HOSE
4. SUPPLY LINE CLAMP
5. SUPPLY LINE

15. Connect the supply line and tighten the 14 mm flare nut. Install the supply line clamp on the gearbox. For vehicles with RHD; install the supply line clamp on the mounting bracket.
    NOTE: Make sure that there is no interference between the fluid lines and any other parts.
16. Connect the shift cable (CVT only) to the transmission.
17. Centre the steering rack within its stroke.

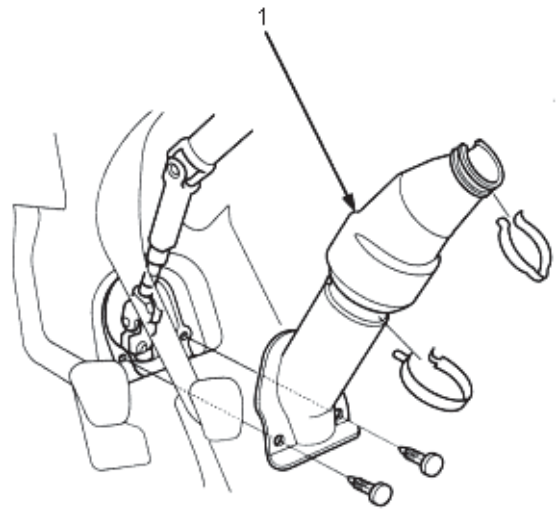
18. Install the steering joint, and reconnect the steering shaft and pinion shaft.
    - ♦ Make sure the steering joint is connected as follows:
    - Insert the upper end of the steering joint onto the steering shaft (line up the bolt hole with the flat portion on the shaft).
    - Slip the lower end of the steering joint onto the pinion shaft (line up the bolt hole with the groove around the shaft), and tighten the lower bolt. Be sure that the lower steering joint bolt is securely in the groove in the pinion shaft.
    - Pull on the steering joint to make sure that the steering joint is fully seated. Then install the upper joint bolt and tighten it.



1. PINION SHAFT
2. Groove
3. Bolt hole
4. Flat portion
5. STEERING SHAFT

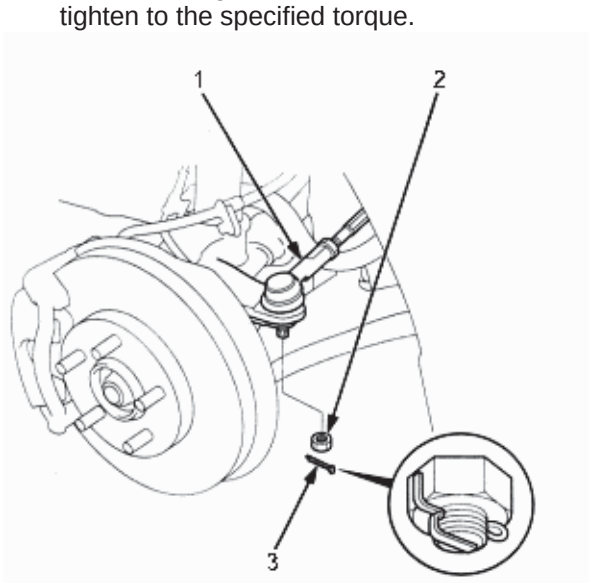
19. Centre the cable reel by first rotating it clockwise until it stops. Then rotate it counterclockwise (approximately two and half turns) until the arrow mark on the label points straight up.
    Reinstall the steering wheel (**See Page** 17-22).

20. Install the steering joint cover.



1. STEERING JOINT COVER

21. Wipe off any grease contamination from the ball joint tapered section and threads. Reconnect the tie-rod ends to the steering knuckles. Install the 12 mm nut and tighten to the specified torque.

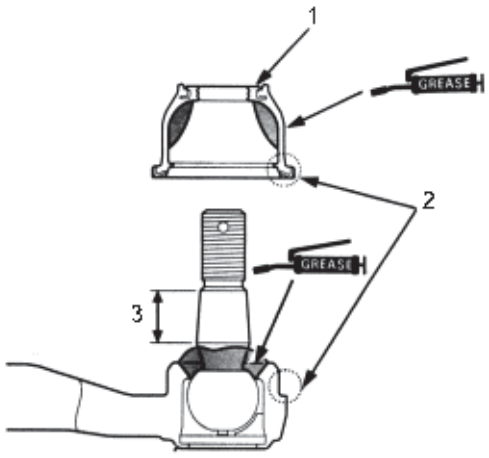


1. TIE-ROD END
2. 12 mm NUT
   43 Nm (4.4 kgf/m, 3.2 lbf/ft)
3. COTTER PIN, Replace
   On reassembly, bend the cotter pin as shown

22. Install the front wheels.
23. Fill the system with power steering fluid, and bleed air from the system (**See Page** 17-18).
24. After installation, perform the following checks.
    - Start the engine, allow it to idle, and turn the steering wheel from lock -to-lock several times to warm up the fluid. Check the gearbox for leaks (**See Page** 17-27).
    - Adjust the front toe (see section 18).
    - Check the steering wheel spoke angle. Adjust by turning the right and left tie-rods, if necessary.

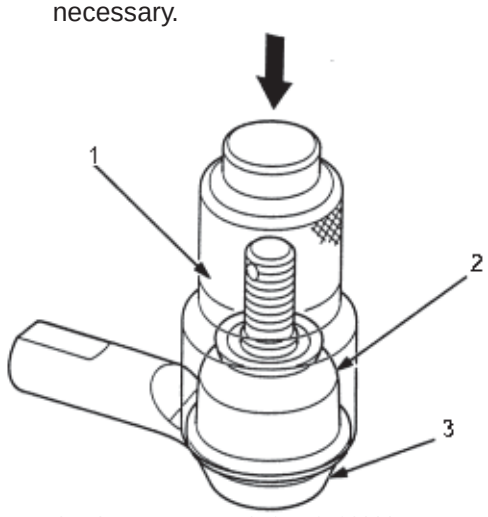
    NOTE: Turn the right and left tie-rods equally.

1. Remove the boot from the tie-rod end, and wipe the old grease off the ball pin.
2. Pack the lower area of the ball pin with fresh grease.



1. LIP
2. BOOT INSTALLATION SECTION, Wipe off the grease.
3. BALL PIN TAPERED SECTION, Wipe off the grease.

3. Pack the interior of the new boot and lip with fresh grease.
   Note these items when installing new grease:
   - Keep grease off the boot installation section and the tapered section of the ball pin'
   - Do not allow dust, dirt, or other foreign materials to enter the boot.
4. Install the new boot using the special tool. The boot must not have a gap at the boot installation sections. After installing the boot, check the ball pin tapered section for grease contamination, and wipe it if necessary.



1. OIL SEAL DRIVER, 07974-6790000
2. BOOT
3. TIE-ROD END

Ref No.	Tool Number	Description	Qty	Remark
1	07MAC - SL00200	Ball Joint Remover, 28 mm	1	
2	07MGK - 0010100	Wheel Alignment Gauge Attachment	1	
3	07746 - 0010200	Driver Attachment, 37 x 40 mm	1	
4	077-46 - 0010300	Driver Attachment, 42 x 47 mm	1	
5	07749 - 0010000	Driver	1	
6	07947 - 6340201	Driver Attachment B	1	
7	07965 - SA50500	Hub Dis/Assembly Tool ATT, 45 x 36 x 57	1	
8	07965 - SD90100	Support Base	1	



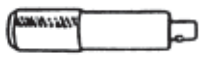
①



②



③④⑥



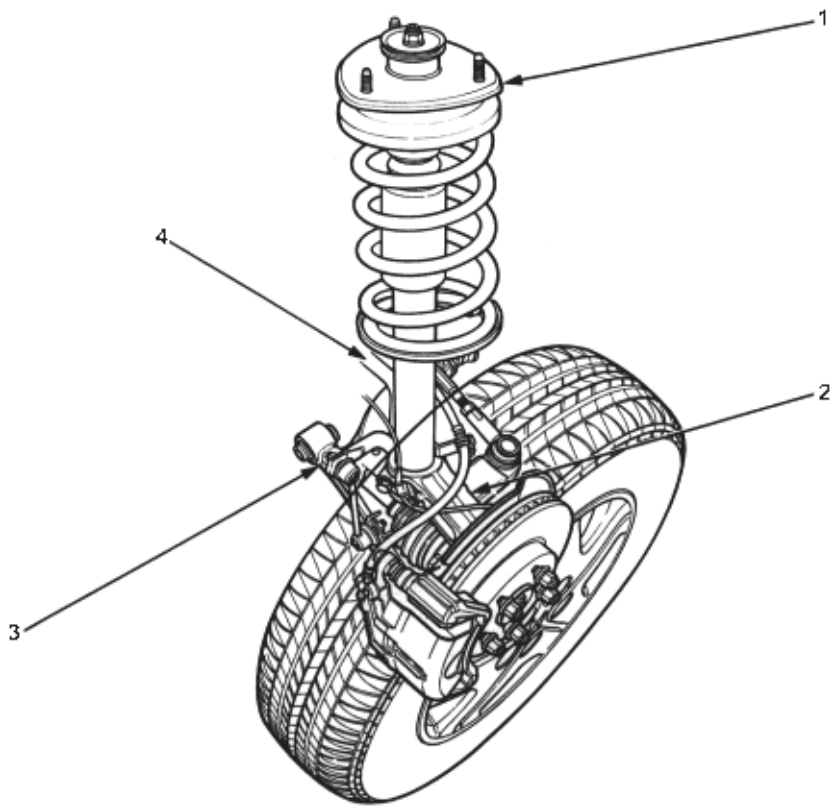
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⑦

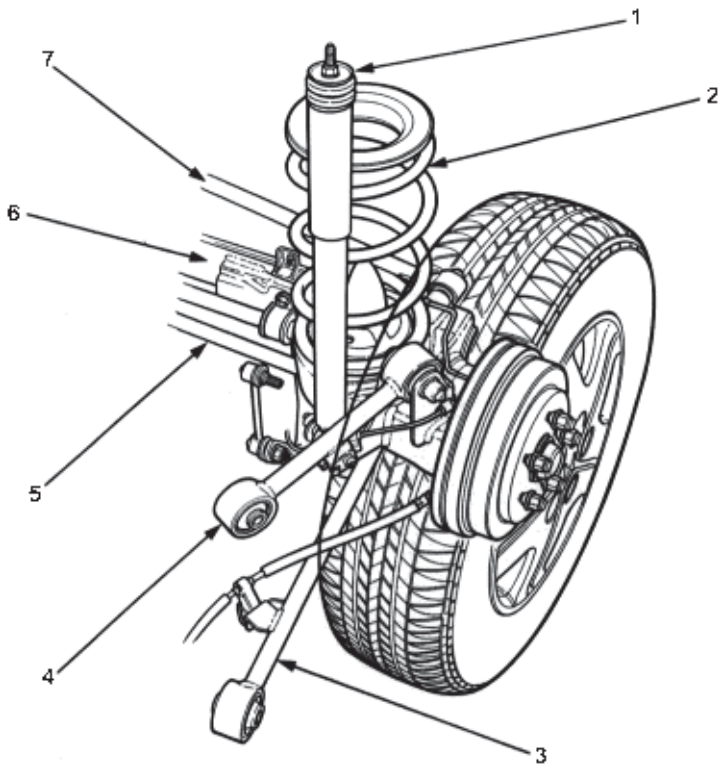


⑧



Front Suspension:

1. **FRONT DAMPER**
2. **KNUCKLE**
3. **LOWER ARM**
4. **FRONT STABILISER BAR**

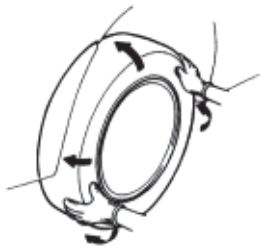


Rear Suspension:

1. **REAR DAMPER**
2. **SPRING**
3. **LOWER LINK**
4. **UPPER LINK**
5. **REAR STABILISER BAR**
6. **AXLE BEAM**
7. **PANHARD ROD**

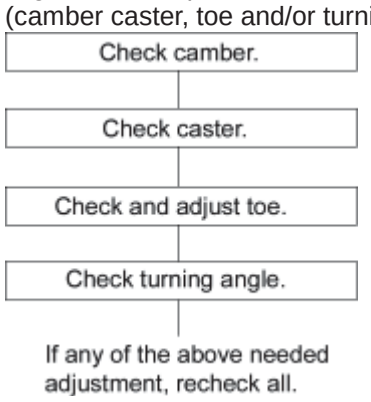
NOTE: For proper inspection/adjustment of the wheel alignment, check and adjust the following before checking the alignment.

- Check that the suspension is not modified.
- Check the tyre size and pressure.
- Check the runout of the wheels and tyres.
- Check the suspension ball joints. (Hold the wheel with your hands, then move it up and down and right and left to check for wobbling.)



Wheel alignment adjustment procedure

Each of the wheel alignment elements relates to the other. Therefore, the total adjustment of the front/rear wheel alignment is required whenever either one of the elements (camber caster, toe and/or turning angle) is adjusted.

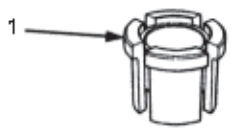


Special Tool Information

Wheel alignment gauge attachment:

NOTE:

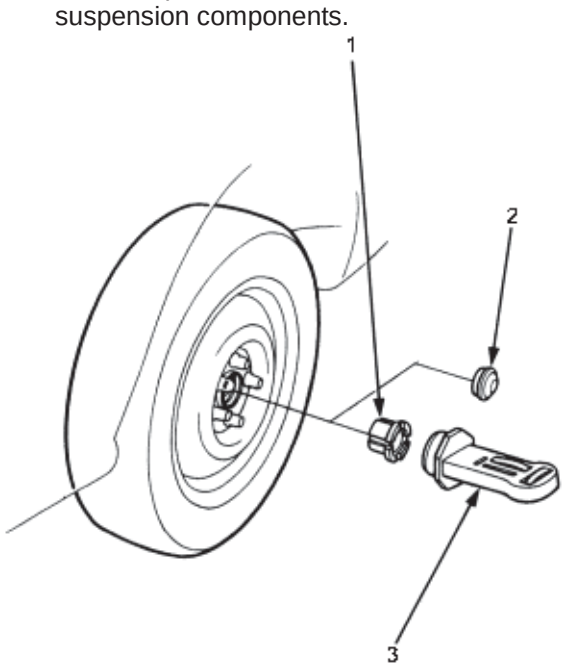
- As the wheel alignment gauge attachment can be installed by the magnetic force of the camber/caster gauge, make sure the wheel hubs are clean and rust free before installing the wheel alignment gauge attachment.
- When installing the special tool, align the special tool groove and mating surface groove of the camber/caster gauge, to make the most of the magnetic force of the camber/caster gauge.
- For accurate readings, measure the wheel alignment the car must be level.



1. WHEEL ALIGNMENT GAUGE ATTACHMENT, 07MGK-0010100

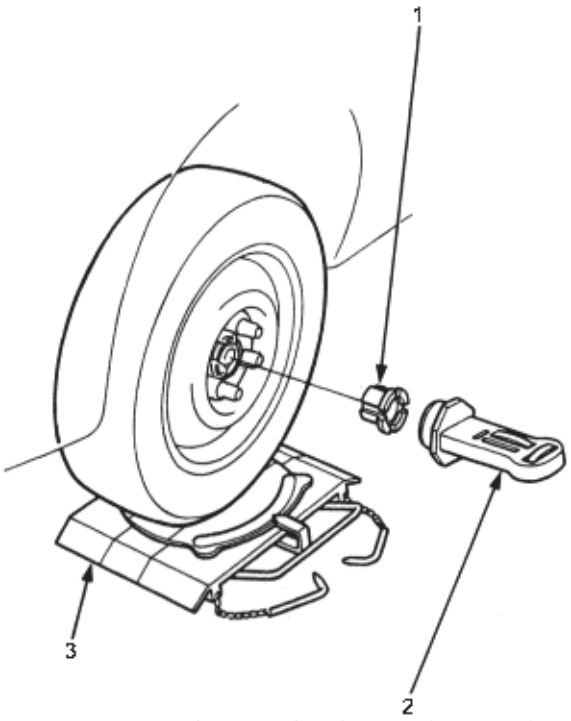
Inspection

1. Remove the wheel cap.
2. Remove the hub cap from the rear wheel hub (**see page** 18-19).
3. Install the wheel alignment gauge attachment and the camber/caster gauge on the wheel hub.
4. Turn the front wheels to the straight ahead position.
5. Rear the camber on the gauge with the bubble at the centre of the gauge.
   Camber angle:
   Front: 0°00' ± 1°
   Rear: -0°30' ± 1°
6. If out of specification, check for bent or damage suspension components.



1. WHEEL ALIGNMENT GAUGE ATTACHMENT, 07MGK-0010100
2. HUB CAP, Replace.
3. CAMBER/CASTER GAUGE EQUIVALENT, COMMERCIALLY AVAILABLE

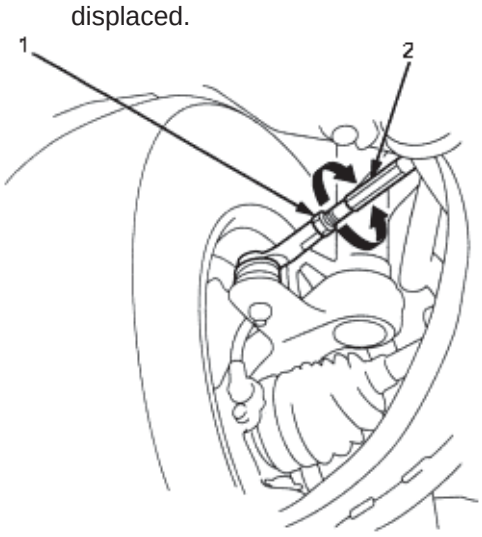
Inspection
1. Remove the wheel cap.
2. Raise the car and set the turning radius gauges beneath the front wheels and place boards under the rear wheels the same thickness as one of the turning radius gauges, then lower the car.
   NOTE: Be sure that the car is parallel to the ground with the wheels on the turning radius gauges and boards.
3. Install the wheel alignment gauge attachment and camber/caster gauge on the wheel hub and apply the front brakes.
4. Turn the front wheel 20° outward, then turn the adjust screw so that the bubble in the camber/caster gauge is at 0°.
5. Turn the wheel 20° inward and read the caster on the gauge with the bubble at the centre of the gauge.
   Caster angle: 2°15' ± 1°
6. If out of specification, check for bent or damaged suspension components.



1. WHEEL ALIGNMENT GAUGE ATTACHMENT, 07MGK-0010100
2. CAMBER/CASTER GAUGE EQUIVALENT, COMMERCIALLY AVAILABLE
3. TURNING RADIUS GAUGE

Inspection
1. Centre steering wheel spokes.
   NOTE: Measure difference in toe measurements with the wheels pointed straight ahead.
2. Check the front toe.
   Front toe: 0 ± 3 mm (0 ± 0.12 in)
   - If adjustment is required, go to step 3.
     If no adjustment is required, remove alignment equipment.

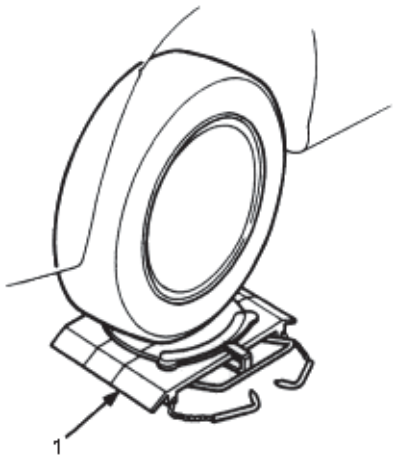
Adjustment
3. Loosen the tie-rod locknuts and turn both tie-rods in the same direction until the front wheels are in the straight ahead position.
4. Turn both tie-rods equally until the toe reading on the turning radius gauge is correct.
5. After adjustment, tighten the tie-rod locknuts.
   NOTE: Reposition the tie-rod boot if it is twisted or displaced.



1. TIE-ROD LOCKNUT, 12 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. TIE-ROD

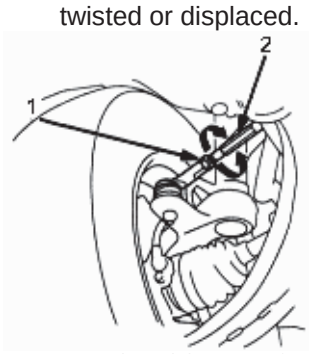
Rear Toe
1. Release the parking brake to avoid an incorrect measurement.
2. Check the toe.
   Rear toe: IN 2 ± 5 mm (IN 0.08 ± 0.2 in)
3. If out of specification, check for bent or damaged suspension components.

1. Jack up the front of the vehicle. Set the turning radius gauges beneath the front wheels, then lower the vehicle.
2. Jack up the rear of the vehicle. Place boards that are the same thickness as the turning radius gauges under the rear wheels, then lower the vehicle.
   NOTE: For accurate readings the vehicle must be level.
3. Turn the wheel right and left while applying the brake and measure the turning angle of both wheels.
   Turning angle:
   Inward wheel: 38°00' ± 2°
   Outward wheel: 30°00' (reference)



1. TURNING RADIUS GAUGE

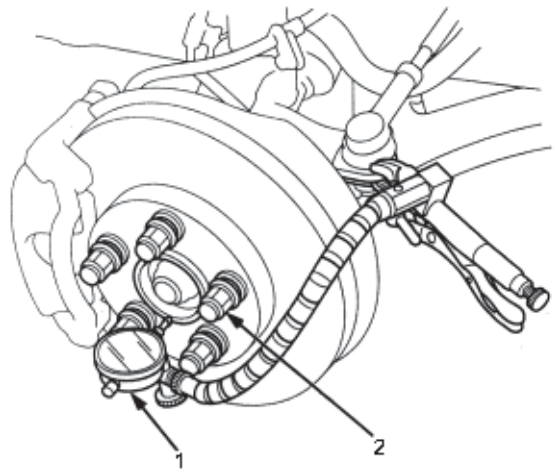
4. If the measurements are not within the specification, adjust as required by turning the tie-rods.
   NOTE: After adjustment, recheck the front wheel toe and readjust if necessary. Reposition the tie-rod boot if twisted or displaced.



1. TIE ROD LOCKNUT, 12 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. TIE-ROD

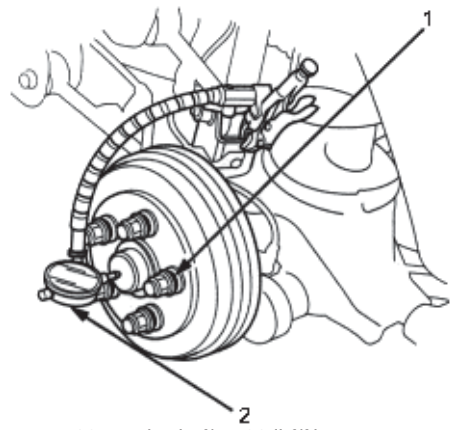
1. Raise the vehicle off the ground and support it with safety stands in the proper locations (see section 1).
2. Remove the wheels then reinstall the wheel nuts.
3. Attach the dial gauge as shown.
4. Measure the bearing end play by moving the disc in or outward.
   Front/Rear:
   Standard: 0 - 0.05 mm (0 - 0.002 in)

Front



1. Measure end play at the hub flange
2. 108 Nm (11 kgf/m, 80 lbf/ft)

Rear



1. 108 Nm (11 kgf/m, 80 lbf/ft)
2. Measure end play at the hub flange

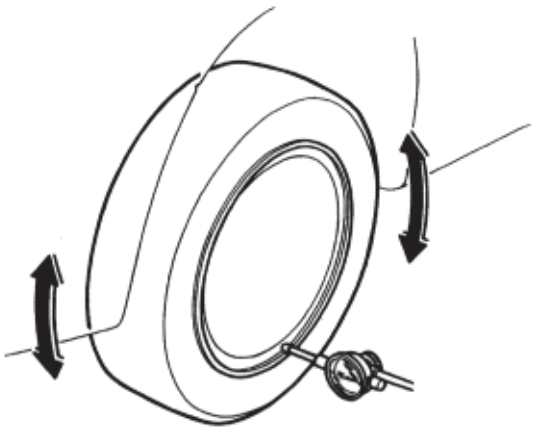
5. If the bearing end play measurement is more than the standard, replace the wheel bearing.

1. Raise the vehicle off the ground and support it with safety stands in the proper locations (see section 1).
2. Check for bent or deformed wheels.
3. Attach the dial gauge as shown.
4. Measure the wheel runout by turning the wheel.

Front and Rear Wheel Axial Runout:

Standard:

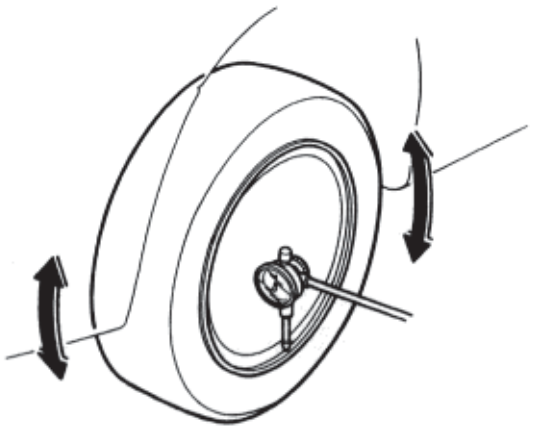
Steel Wheel:	**0 - 1.0 mm (0 - 0.04 in)**
Aluminium Wheel:	**0 - 0.7 mm (0 - 0.03 in)**
Service Limit:	**2.0 mm (0.08 in)**



Front and Rear Wheel Radial Runout:

Standard:

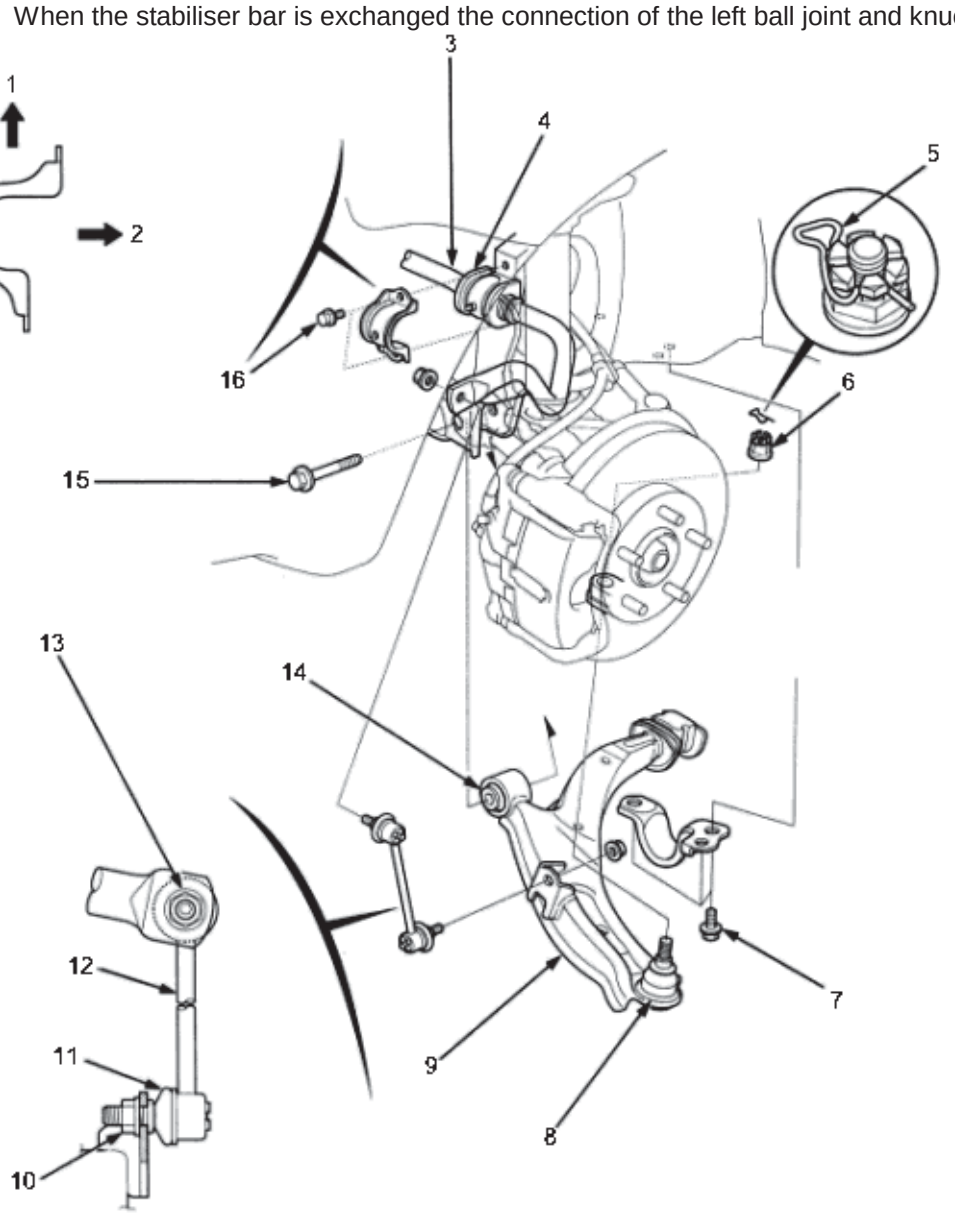
Steel Wheel:	**0 - 1.0 mm (0 - 0.04 in)**
Aluminium Wheel:	**0 - 0.7 mm (0 - 0.03 in)**
Service Limit:	**1.5 mm (0.06 in)**



5. If the wheel runout is more than the service limit, replace the wheel.

Note the following items during replacement:

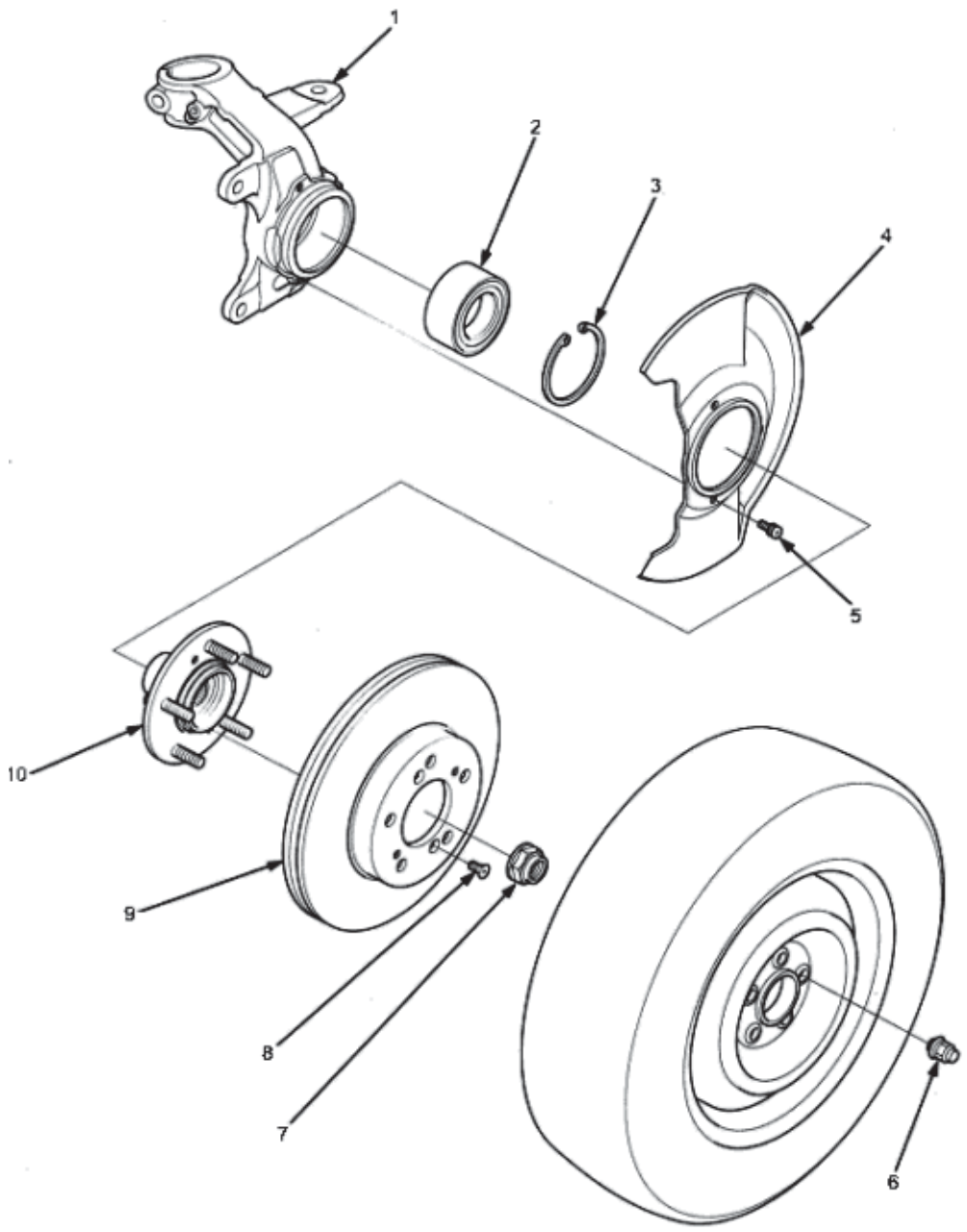
- Replace the self-locking nuts after removal.
- The vehicle should be on the ground before any bolts or nuts connected to rubber mounts or bushings are tightened.
- Before tightening the upper and lower mounting nuts on the stabiliser link, adjust the location of the link with the suspension under vehicle load.
- After installing the suspension arm, check the front wheel alignment and adjust if necessary (**See Page** 18-5).
- When the stabiliser bar is exchanged the connection of the left ball joint and knuckle is removed.



1. **UP**
2. **BODY**
3. **STABILISER BAR,** Check for bending and damage.
4. **STABILISER BUSHING**, Check for bending and damage.
5. **CLIP.** Replace. Make sure the clip is seated securely in the nut as shown.
6. **CASTLE NUT, 12 x 1.25 mm, 49 - 59 Nm (5.0 - 6.0 kgf/m, 36 -43 lbf/ft)**
7. **FLANGE BOLT, 12 x 1.25 mm, 88 Nm (9.0 kgf/m, 65 lbf/ft)**
8. **BALL JOINT BOOT.** Check for deterioration and damage
   Boot replacement, (**See Page** 18-14).
9. **LOWER ARM.** Check for damage.
10. **SELF-LOCKING NUT, 10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft).** Hold the ball joint pin using a hex wrench and tighten the self-locking nut.
11. **BOOT**. Check for deterioration and damage.
12. **STABILISER LINK.** Check for bending and damage.
13. **SELF-LOCKING NUT, 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft).** Hold the ball joint pin using a hex wrench and tighten the self-locking nut.
14. **LOWER ARM RUBBER BUSHING.** Check for deterioration and damage.
15. **FLANGE BOLT, 14 x 1.5 mm, 103 Nm (10.5 kgf/m, 76 lbf/ft)**
16. **FLANGE BOLT, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)**

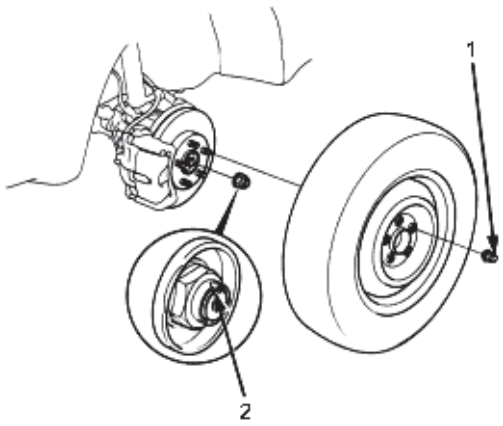
Note the following items during replacement:

- Use only genuine Honda wheel weights for aluminium wheels. Non-genuine wheel weights may corrode and damage the aluminium wheels
- On the aluminium wheels remove the centre cap from the inside of the wheel after removing the wheel.
- before installing the brake disc, clean the mating surfaces of the front hub and brake disc.
- before installing the wheel, clean the mating surfaces of the brake disc and wheel.



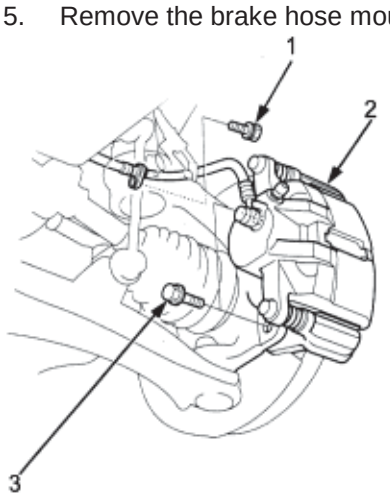
1. **KNUCKLE**
2. **WHEEL BEARING.** Replace.
3. **CIRCLIP**
4. **SPLASH GUARD**
5. **SCREW, 5 x 0.8 mm, 5.9 Nm (0.6 kgf/m, 4.3 lbf/ft)**
6. **WHEEL NUT, 12 x 1.5 mm, 108 Nm (11.0 kgf/m, 80 lbf/ft)**
7. **SPINDLE NUT, 22 x 1.5 mm, 181 Nm (18.5 kgf/m, 134 lbf/ft).** Replace.
   - Before installing the spindle nut, apply engine oil to the seating surface of the nut.
   - After tightening use a drift to stake the spindle nut shoulder against the spindle.
8. **6 mm BRAKE DISC RETAINING SCREW, 9.8 Nm (1.0 kgf/m, 7 lbf/ft)**
9. **BRAKE DISC.** Check for wear and rust. Inspection see section 19.
10. **FRONT HUB.** Check for damage and cracks.

1. Loosen the wheel nuts slightly.
2. Raise the front of the vehicle and support it with safety stands in the proper locations (see section 1).
3. Remove the wheel nits and wheel.
4. Raise the locking tab on the spindle nut, then remove the nut.



1. WHEEL NUT, 108 Nm (11 kgf/m, 80 lbf/ft)
2. SPINDLE NUT, 22 x 1.5 mm, 181 Nm (18.5 kgf/m, 134 lbf/ft). Replace. NOTE: After tightening use a drift to stake the spindle nut shoulder against the spindle.

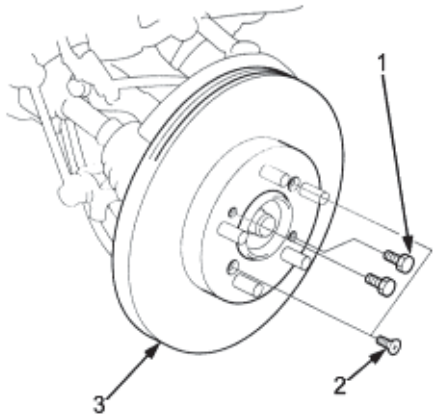
5. Remove the brake hose mounting bolts.



1. BRAKE HOSE MOUNTING BOLT, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
2. CALIPER
3. CALIPER MOUNTING BOLTS, 12 x 1.25 mm, 108 Nm (11.0 kgf/m, 80 lbf/ft)

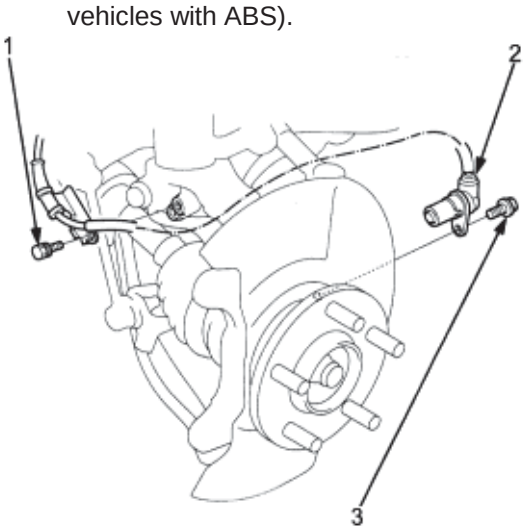
6. Remove the caliper mounting bolts and hang the caliper assembly to one side. To prevent accidental damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.

7. Remove the 6 mm brake disc retaining screws.



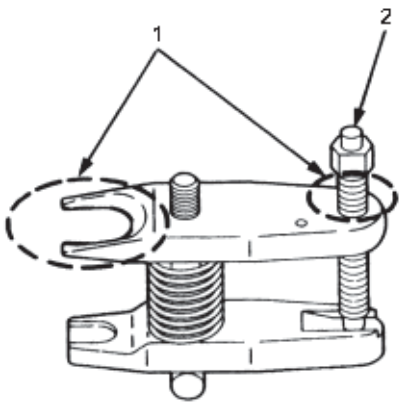
1. 8 x 1.25 mm Bolts
2. 6 mm BRAKE DISC RETAINING SCREWS, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. BRAKE DISC

8. Screw two 8 x 1.25 mm bolts into the disc to push it away from the hub. Turn each bolt two turns at a time to prevent cocking the disc excessively.
9. Remove the brake disc from the knuckle.
10. Check the front hub for damage and cracks.
11. Remove the wheel sensor from the knuckle. Do not disconnect the wheel sensor connector (for vehicles with ABS).



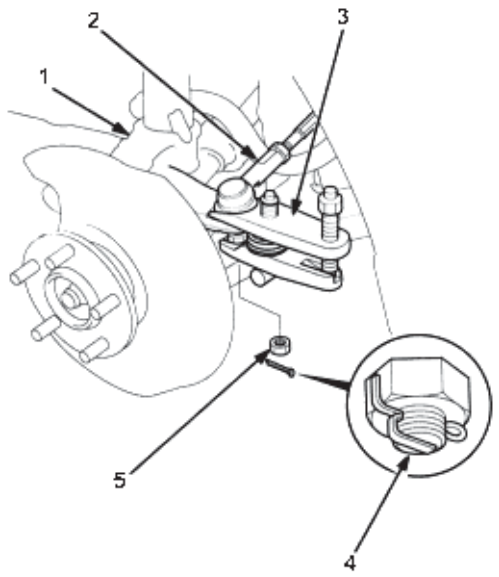
1. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. WHEEL SENSOR
3. SENSOR MOUNTING BOLT, 21 Nm (2.2 kgf/m, 16 lbf/ft)

12. Clean any dirt or grease off the ball joint.
13. Remove the cotter pin from the steering arm and remove the nut.
14. Apply grease to the special tool on the areas shown. This will ease installation of the tool and prevent damage to the pressure bolt threads.



1. Apply grease here.
2. PRESSURE BOLT

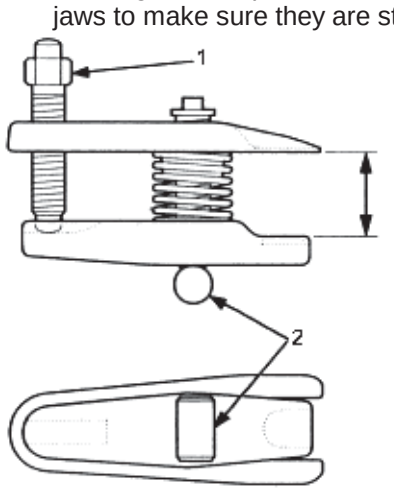
15. Loosen the 12 mm nut on the tie-rod end ball joint. Be sure that the nut is flush with the ball joint pin end to prevent damage to the threaded end of the ball joint.



1. KNUCKLE
2. TIE-ROD
3. BALL JOINT REMOVER, 28 mm, 07MAC - SL00200
4. COTTER-PIN. Replace. On reassembly bend the cotter pin as shown.
5. NUT, 12 x 1.25 mm, 43 Nm (4.4 kgf/m, 32 lbf/ft)

16. Install the special tool as shown. Insert the jaws carefully making sure you do not damage the ball joint boot. Adjust the jaw spacing by turning the pressure bolt. If necessary, apply penetrating type lubricant to loosen the ball joint.

17. Once the special tool is in place turn the adjusting bolt as necessary to make the jaws parallel. Then hand-tighten the pressure bolt and recheck the jaws to make sure they are still parallel.



1. PRESSURE BOLT
2. ADJUSTING BOLT

After making the adjustment to the adjusting bolt, be sure the head of the adjusting bolt is in this position to allow the jaw to pivot.

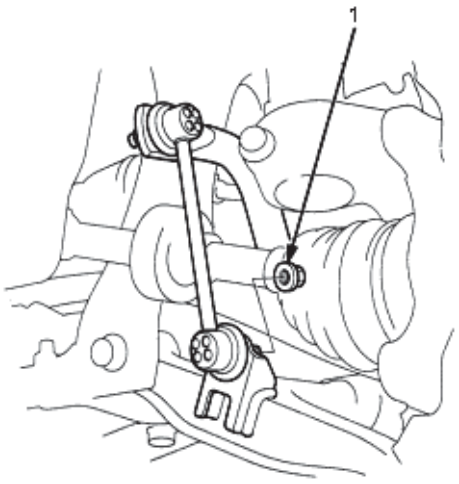
18. With a wrench tighten the pressure bolt until the ball joint shaft pops loose from the steering bolt.

⚠ WARNING

Wear eye protection. The ball joint can break loose suddenly and scatter dirt or other debris in your eyes.

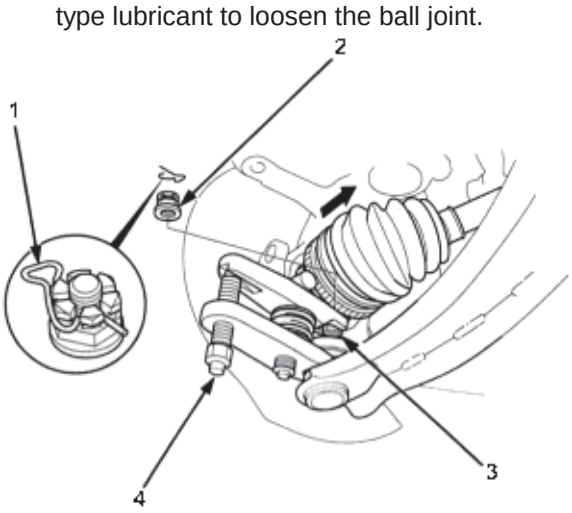
19. Remove the tool then remove the nut from the end of the ball joint and pull the ball joint out of the steering/suspension arm. Inspect the ball joint boot and replace it if damaged.

20. Remove the 8 mm self-locking nut and separate the stabiliser link from the lower arm.



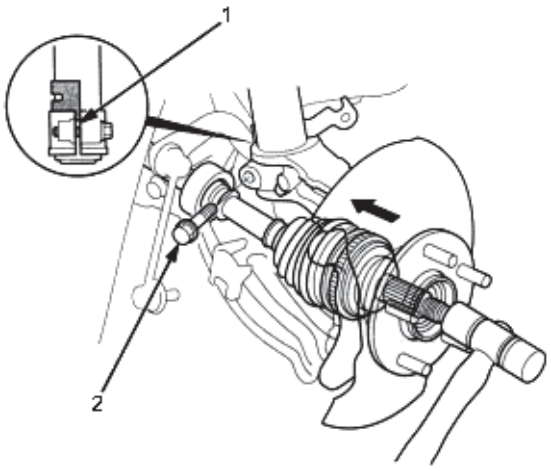
1. SELF-LOCKING NUT, 10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft). Replace.

21. Remove the clip from the lower arm ball joint castle nut and remove the nut.
22. Install a 12 mm hex nut on the ball joint. Be sure that the hex nut is flush with the ball joint pin end, or the threaded section of the ball joint pin might be damaged by the ball joint remover.
23. Use the special tool (**See Page** 18-12) to separate the ball joint and knuckle. If necessary, apply penetrating type lubricant to loosen the ball joint.



1. CLIP. Replace. Make sure the clip is seated securely in the nut when installing the clip.
2. CASTLE NUT, 12 x 1.25 mm, 49 - 59 Nm (5.0 - 6.0 kgf/m, 36 - 43 lbf/ft)
3. 12 mm HEX NUT
4. BALL JOINT REMOVER, 28 mm, 07MAC - SL00200

24. Remove the damper pinch bolt and pull out the knuckle from the damper end.
25. Pull the knuckle outward and remove the driveshaft outboard joint from the knuckle by tapping the driveshaft end with a plastic hammer then remove the knuckle.

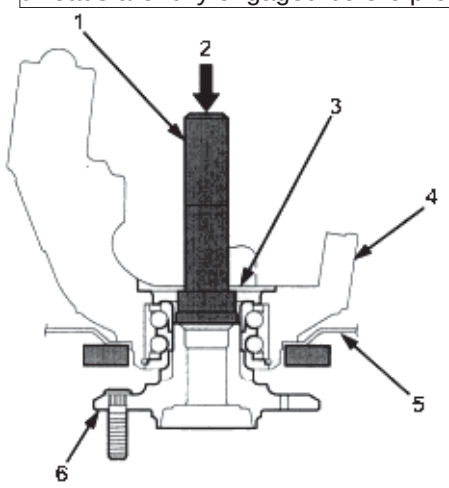


1. ALIGNING TAB
   NOTE: On reassembly align the slot on the knuckle and aligning tab on the damper.
2. DAMPER PINCH BOLT, 74 Nm (7.5 kgf/m, 54 lbf/ft)

26. Separate the hub from the knuckle using the bearing separator and a hydraulic press.

⚠ CAUTION

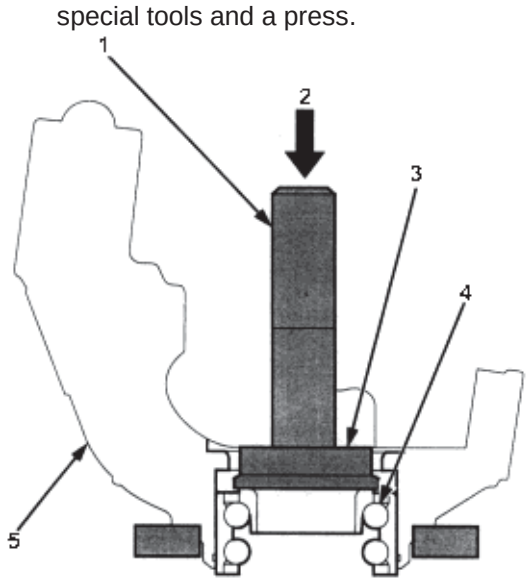
- Take care not to distort the splash guard.
- Hold onto the hub to keep it from falling when pressed clear.
- To prevent damage to the tool, make sure the threads are fully engaged before pressing.



1. DRIVER, 07749 - 0010000
2. Press
3. DRIVER ATTACHMENT, 42 x 47 mm, 07746 - 0010300
4. KNUCKLE
5. SPLASH GUARD
6. FRONT HUB

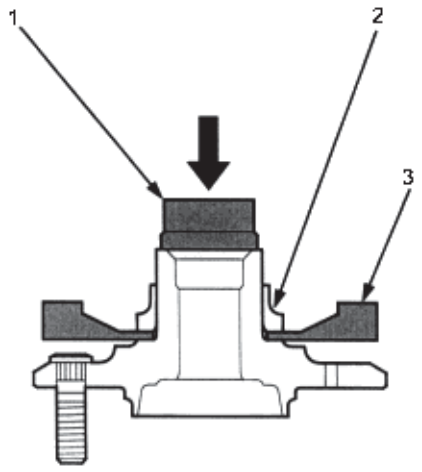
27. Remove the circlip and the splash guard from the knuckle.

28. Press the wheel bearing out of the knuckle using the special tools and a press.



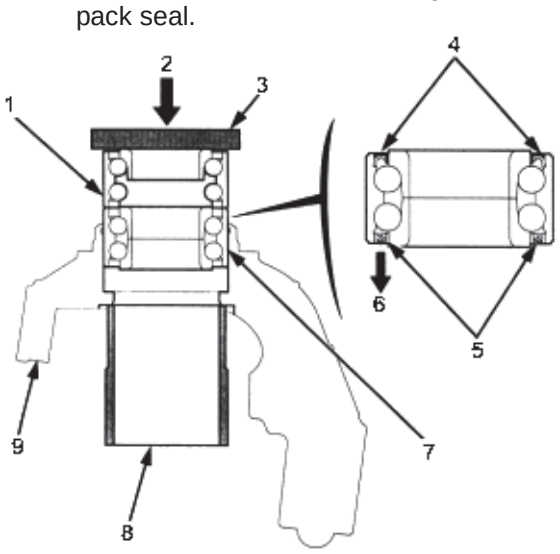
1. DRIVER, 07749 - 0010000
2. Press
3. DRIVER ATTACHMENT B, 07947 - 6340201
4. WHEEL BEARING. Replace.
5. KNUCKLE

29. Press the wheel bearing inner race from the hub using a socket of suitable diameter and a bearing separator.



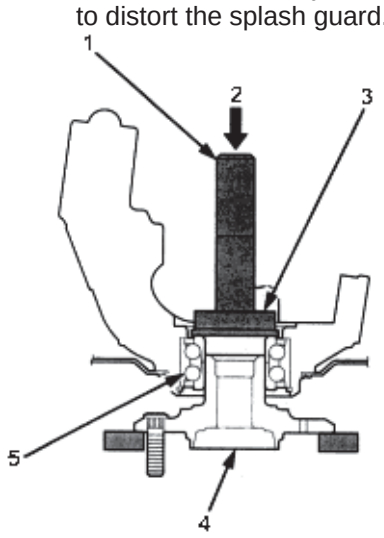
1. SOCKET, Socket End Dia. 45 mm
2. WHEEL BEARING INNER RACE
3. BEARING SEPARATOR, (Commercially available)

30. Wash the knuckle and hub thoroughly in high flash point solvent before reassembly.
31. Press a new wheel bearing into the knuckle using the old bearing, a plate, the special tool and a press. Place the wheel bearing on the knuckle with the pack seal facing (metal colour) towards the inside. Be careful not to damage the sleeve of the pack seal.



1. OLD BEARING
2. Press
3. PLATE
4. DOUBLE LIP SEAL (BLACK COLOUR)
5. PACK SEAL (METAL COLOUR)
6. INSIDE
7. NEW WHEEL BEARING
8. SUPPORT BASE. 07965 - SD90100
9. KNUCKLE

32. Install the circlip securely in the knuckle groove.
33. Install the splash guard and tighten the screws.
34. Install the hub on the knuckle using the special tools shown and a hydraulic press. Be careful not to distort the splash guard.



1. DRIVER, 07749 - 0010000
2. Press
3. DRIVER ATTACHMENT B, 07947 - 6340201
4. FRONT HUB
5. WHEEL BEARING

35. Install the knuckle in the reverse order of removal and pay particular attention to the following items:
    - Be careful not to damage the ball joint boots when installing the knuckle.
    - Torque all mounting hardware to the specified torque values.
    - Torque the castle nuts to the lower torque specifications, then tighten them only far enough to align the slot with the pin hole. Do not align the castle nut by loosening.
    - Install new cotter pins on the castle nuts after torquing.
    - Avoid twisting the sensor wires when installing the wheel sensor.
    - Before installing the brake disc clean the mating surfaces of the front hub and the inside of the brake disc.
    - Before installing the spindle nut, apply a small amount of motor oil to the seating surface of the nut. After tightening use a drift to stake the spindle nut shoulder against the drive shaft.
    - Before installing the wheel, clean the mating surface of the brake disc and the inside of the wheel.
    - Check the front wheel alignment and adjust it if necessary (**See Page** 18-4).

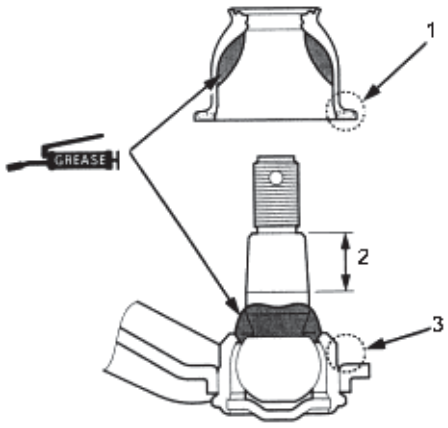
⚠ CAUTION

Do not contaminate the boot installation section with grease.

1. Remove the boot from the lower arm and wipe the old grease off the ball pin.
2. Pack the lower area of the ball pin with fresh grease.
3. Pack the interior of the new boot and lip with fresh grease.

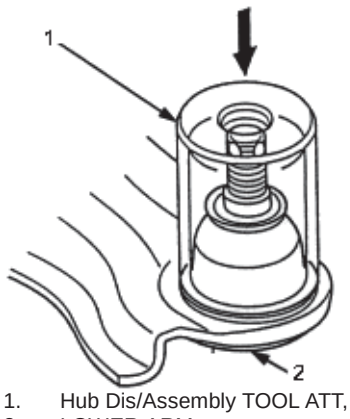
⚠ CAUTION

- Keep grease off the boot installation section and the tapered section of the ball pin.
- Do not allow dust, dirt, or other foreign materials to enter the boot.



1. BOOT INSTALLATION SECTION. Wipe off the grease.
2. BALL PIN TAPERED SECTION. Wipe of the grease.
3. BOOT INSTALLATION SECTION. Wipe off the grease.

4. Drive the new boot using the special tool as shown below.
   NOTE: There must not be a gap between the boot installation sections.



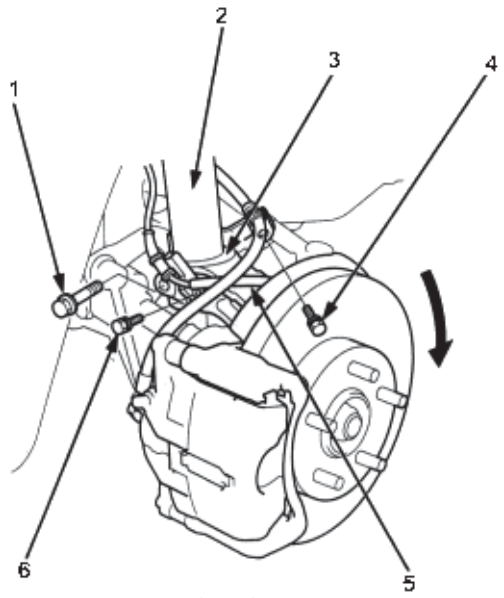
1. Hub Dis/Assembly TOOL ATT, 45 x 36 x 57
2. LOWER ARM

5. After installation, perform the following checks:
   - Check the boot for damage, and boot installation section for distortion.
   - Check that there is no gap between the boot and joint housing.

⚠ CAUTION

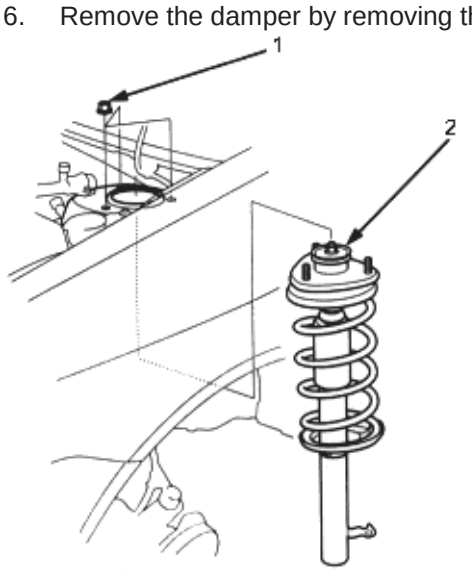
After installing the boot, check the ball pin tapered section for grease contamination and wipe it if necessary.

1. Remove the front wheels.
2. Remove the wheel sensor wire from the knuckle and damper. Do not disconnect the wheel sensor connector.
3. Separate the stabiliser bar from the lower arm (step 20 on (**See Page** 18-120).
4. Remove the brake hose bracket from the damper.
5. Remove the damper pinch bolt and pull out the knuckle from the damper end.



1. DAMPER PINCH BOLT
2. DAMPER
3. KNUCKLE
4. FLANGE BOLT, 8 x 1.25 mm
5. WHEEL SENSOR WIRE
6. 6 mm FLANGE BOLT

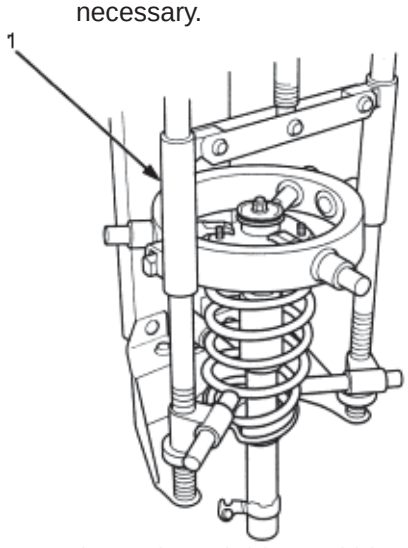
6. Remove the damper by removing the three flange nuts.



1. FLANGE NUT, 10 x 1.25 mm
2. DAMPER ASSEMBLY

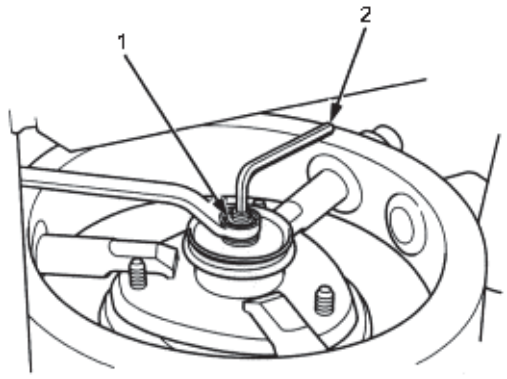
Disassembly

1. Compress the damper spring with the spring compressor according to the manufacturer's instructions. Do not compress the spring more than necessary.



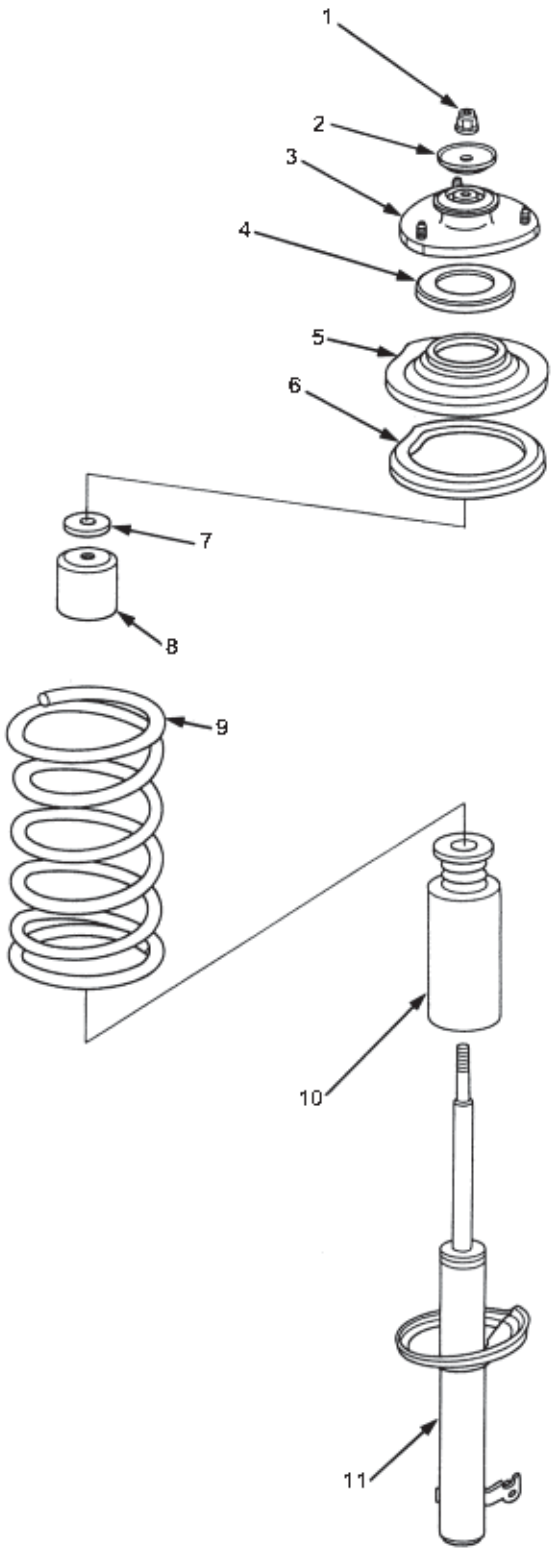
1. STRUT SPRING COMPRESSOR: (Commercially available) BRANICK© T/N MST-580A or Model 7200 or equivalent

2. Hold the damper rod using the hex wrench and remove the 12 mm self-locking nut.



1. 12 mm SELF-LOCKING NUT. Replace.
2. HEX WRENCH

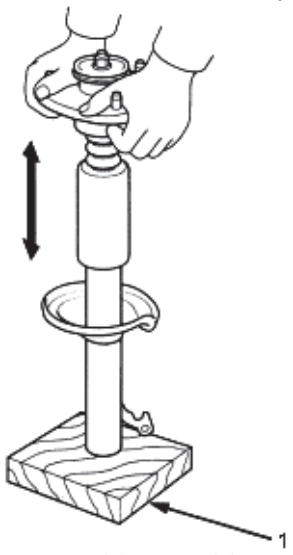
3. Release the pressure from the spring compressor then disassemble the damper as shown on the next page.



1. SELF-LOCKING NUT, 12 x 1.25 mm. Replace. 44 Nm (4.5 kgf/m, 33 lbf/ft)
2. DAMPER MOUNTING WASHER
3. DAMPER MOUNTING BASE
4. DAMPER MOUNTING BEARING. Check for any play or roughness.
5. SPRING UPPER SEAT
6. SPRING MOUNTING RUBBER. Check for deterioration and damage.
7. DUST COVER PLATE
8. DUST COVER. Check for bending and damage.
9. DAMPER SPRING. Check for weakened compression and damage.
10. BUMP STOP. Check for weakness and damage.
11. DAMPER UNIT

Inspection

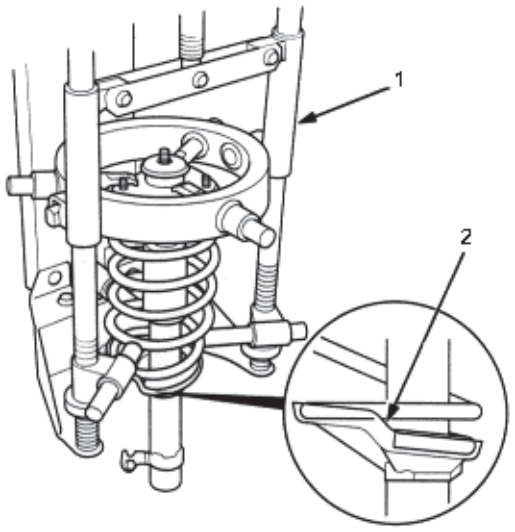
1. Reassemble all parts, except the spring.
2. Push on the damper assembly as shown.



1. WOODEN BLOCK

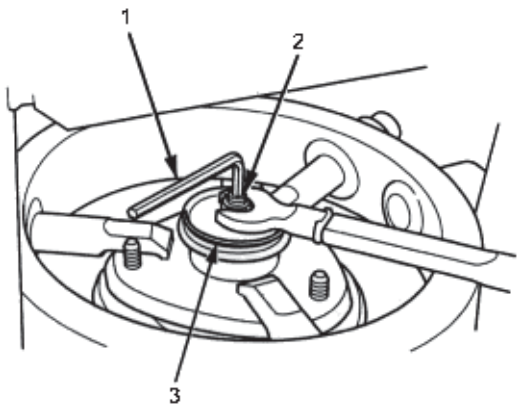
3. Check for smooth operation through a full stroke, both compression and extension. The damper should move smoothly. If it does not (no compression or extension) the gas is leaking and the damper should be replaced.
4. Check for oil leaks, abnormal noises or binding during these tests.

1. Install the damper unit on a spring compressor.
2. Assemble the damper in reverse order of removal except the damper mounting washer and self-locking nut. Align the bottom of the damper spring and spring lower seat as shown.



1. STRUT SPRING COMPRESSOR: (Commercially available) BRANICK© T/N MST-580A or Model 7200 or equivalent
2. SPRING LOWER SEAT

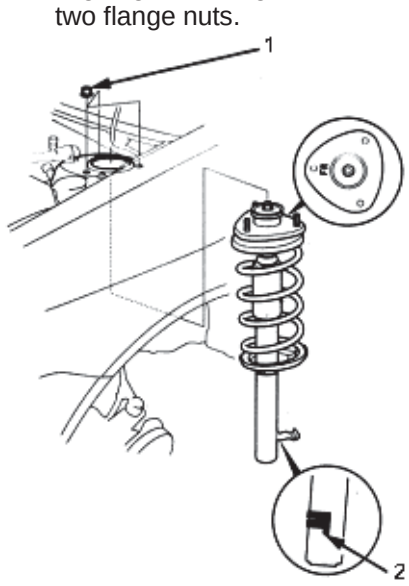
3. Compress the damper spring.
4. Install the damper mounting washer and a new 122 mm self-locking nut.



1. HEX WRENCH
2. SELF-LOCKING NUT, 12 x 1.25 mm. Replace. 44 Nm (4.5 kgf/m, 33 lbf/ft)
3. DAMPER MOUNTING WASHER

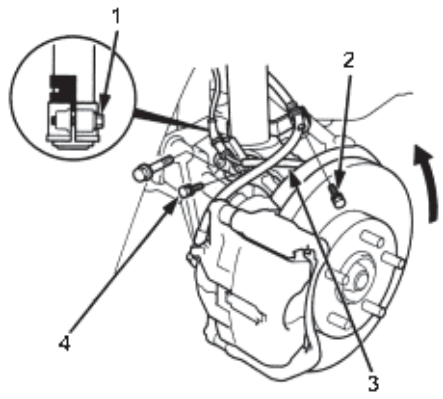
5. Hold the damper rod using a hex wrench and tighten the 12 mm self-locking nut.

1. Loosely install the damper on the frame with the aligning tab facing inside, then loosely install the two flange nuts.



1. FLANGE NUT, 10 x 1.25 mm, 69 Nm (7.0 kgf/m, 51 lbf/ft)
2. ALIGNING TAB

2. Insert the damper in the knuckle so that the aligning tab is aligned with the slot in the knuckle.
3. Loosely install the damper pinch bolt on the top of the knuckle.
4. Install the brake hose bracket on the damper.



1. DAMPER PINCH BOLT, 74 Nm (7.5 kgf/m, 54 lbf/ft)
2. FLANGE BOLT, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. WHEEL SENSOR WIRE
4. 6 mm FLANGE BOLT, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

5. Loosely install the stabiliser bar on the lower arm (see step 20 on **Page** 18-12).
6. Install the wheel sensor wire on the knuckle and damper.
7. Raise the knuckle with a floor jack until the vehicle just lifts off the safety stand.

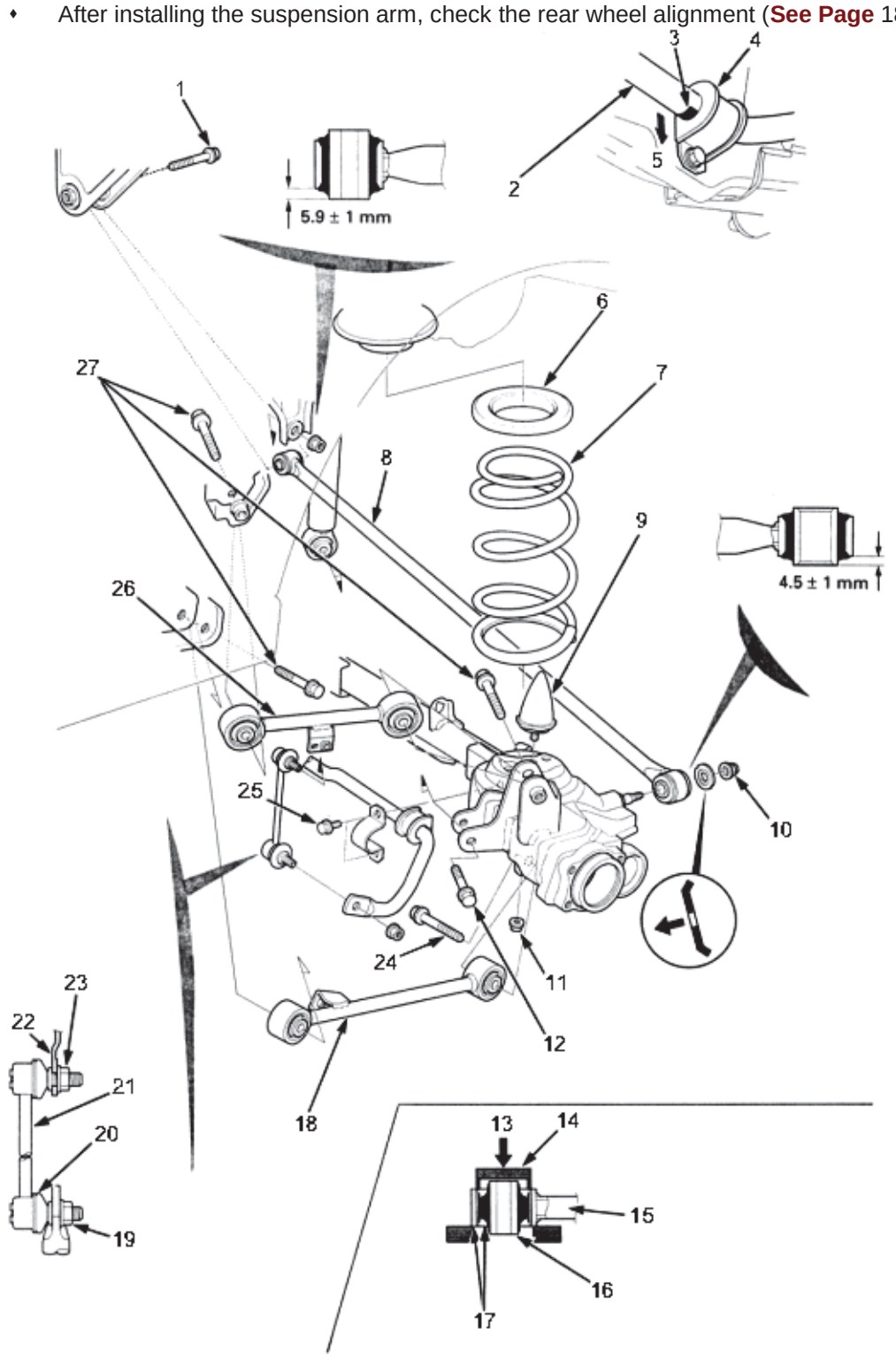
⚠ WARNING

The floor jack must be securely positioned or personal injury may result.

8. Tighten the damper pinch bolt.
9. Tighten the flange nuts on the top of the damper.
10. Tighten the 8 mm self-locking nut on the stabiliser bar.
11. Install the front wheel.
12. Check the front wheel alignment and adjust if necessary (**See Page** 18-4).

Note these items during replacement:

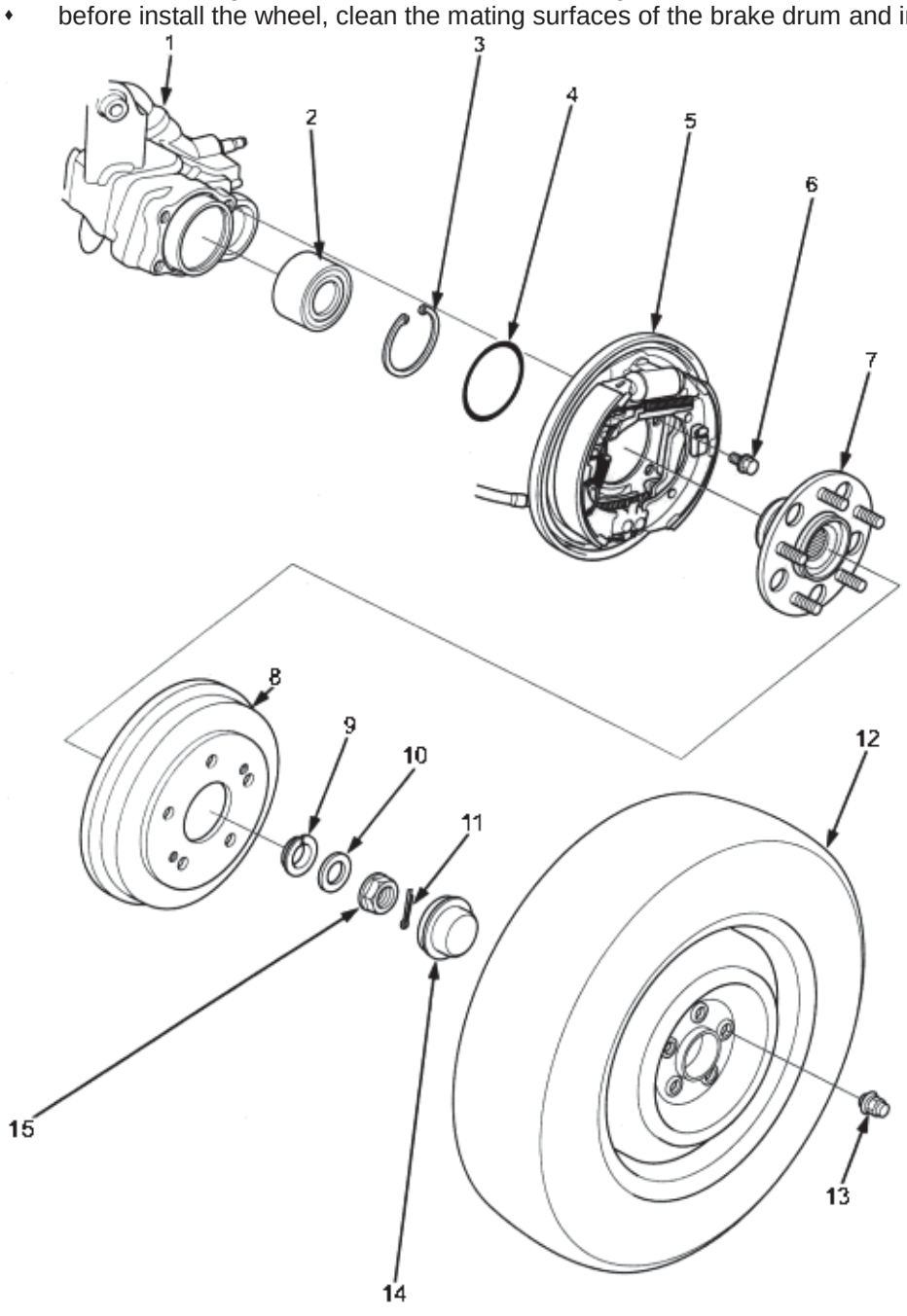
- Replace the self-locking nuts after removal.
- Any bolts or nuts connected to rubber mounts or bushings should be tightened with the vehicle on the ground.
- After installing the suspension arm, check the rear wheel alignment (**See Page** 18-4).



1. **FLANGE BOLT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**
2. **STABILISER BAR.** Align the stabiliser mark with end of stabiliser bushing.
3. **DOWN**
4. **STABILISER BUSHING**
5. **MARK**
6. **SPRING UPPER SEAT.** Check for deterioration and damage.
7. **SPRING.** Check for weakened compression and damage.
8. **PANHARD ROD.** Check for bending and damage.
9. **BUMP STOP.** Check for weakness and damage.
10. **12 x 1.25 mm, 74 Nm (7.5 kgf/m, 47 lbf/ft)**
11. **10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)**
12. **FLANGE NUT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)**
13. **Press**
14. **DRIVER ATTACHMENT, 30.8 x 45 mm, 07947-6890300**
15. **UPPER/LOWER LINK**
16. **FRONT/REAR BUSHING.** Check for deterioration and damage.
17. Machined surface.
18. **LOWER LINK.**
    - Check for bending and damage.
    - Check bushings for deterioration and damage.
19. **SELF-LOCKING NUT, 10 x 1.25 mm, 38 Nm (3.9 kgf/m, 28 lbf/ft).** Replace. hold the ball joint pin using a hex wrench, and tighten the self-locking nut.
20. **BOOT** Check for deterioration and damage.
21. **STABILISER LINK.** Inspect for faulty movement and wear.
22. **BODY**
23. **FLANGE NUT, 10 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft).** Before tightening the flange nut, position the ball joint pin in the middle of its range of travel, with the suspension under vehicle load.
24. **FLANGE BOLT, 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)**
25. **8 mm BOLT, 22 Nm (2.2 kgf/m, 16 lbf/ft)**
26. **UPPER LINK**
    - Check for bending and damage.
    - Check the bushings for deterioration and damage.
27. **FLANGE BOLT, 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)**

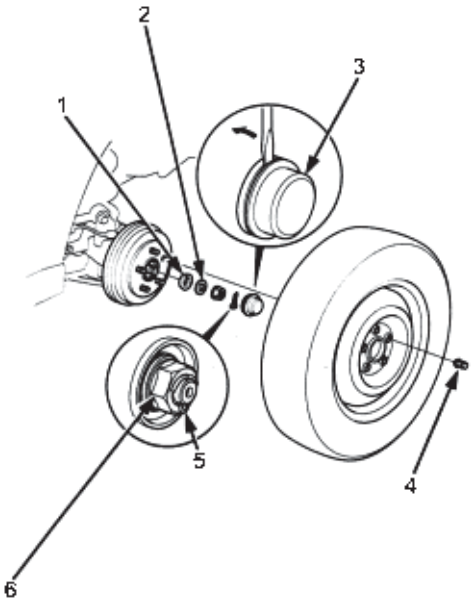
NOTE:

- Use only genuine Honda wheel weights for aluminium wheels. No-genuine wheel weights may corrode and damage aluminium wheels.
- Before installing the brake drum, clean the mating surfaces of the rear hub and the brake drum.
- before install the wheel, clean the mating surfaces of the brake drum and inside the wheel.



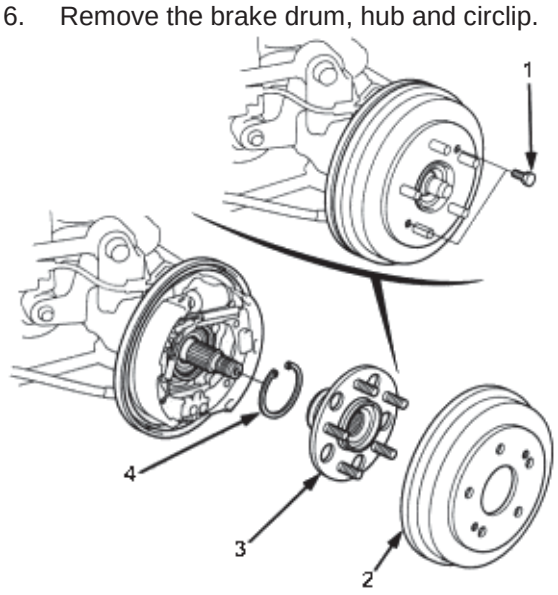
1. **REAR AXLE BEAM**
2. **REAR WHEEL BEARING.** Replace.
3. **CIRCLIP**
4. **O-RING.** Replace.
5. **REAR BRAKE ASSEMBLY**
6. **10 x 1.25 mm, 64 Nm (6.5 kgf/m, 64 lbf/ft)**
7. **REAR HUB.** Check for damage and cracks.
8. **REAR WHEEL**
9. **WHEEL NUT, 12 x 1.5 mm, 108 Nm (11.0 kgf/m, 80 lbf/ft)**
10. **HUB CAP.** Replace
11. **SPINDLE NUT, 22 x 1.5 mm, 196 Nm (20 kgf/m, 145 lbf/ft).**
    NOTE:
    - Before installing the spindle nut, apply engine oil to the seating surface
12. **BRAKE DRUM.** Check for wear and damage.
13. **REAR BRAKE DRUM WASHER**
14. .**REAR HUB WASHER**
15. **COTTER PIN.** Replace. of the nut.

1. Loosen the wheel nuts slightly.
2. Raise the rear of the vehicle and support it with safety stands in the proper locations (see section 1).
3. Remove the wheel nuts and rear wheel.



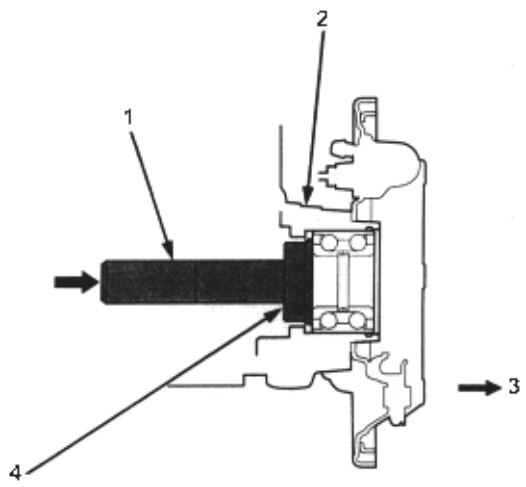
1. REAR BRAKE DRUM WASHER
2. REAR HUB WASHER
3. HUB CAP, Replace.
   NOTE: take care not to damage the hub unit on disassembly.
4. WHEEL NUT, 108 Nm (11 kgf/m, 80 lbf/ft)
5. COTTER PIN, Replace, On reassembly, bend the cotter pin as shown.
6. SPINDLE NUT, 22 x 1.5 mm, 196 Nm (20 kgf/m, 145 lbf/ft)
   NOTE: Before installing the spindle nut, apply engine oil to the seating surface of the nut.

4. Release the parking brake lever.
5. Screw two 8 x 1.25 mm bolts into the brake drum to push it away from the hub carrier.
   NOTE: Turn each bolt two turns at a time to prevent cocking the brake drum excessively.
6. Remove the brake drum, hub and circlip.



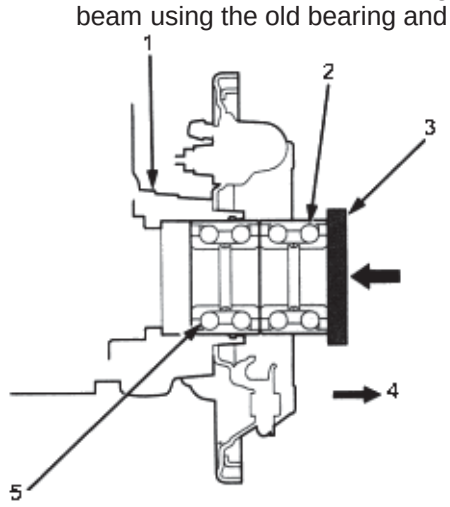
1. 8 x 1.25 mm
2. BRAKE DRUM
3. REAR HUB
4. CIRCLIP

7. Remove the rear driveshaft from the rear axle beam (see section 16).
8. Remove the rear wheel bearing from the axle beam.



1. DRIVER, 07749 - 0010000
2. REAR AXLE BEAM
3. OUTSIDE
4. DRIVER ATTACHMENT, 42 x 47 mm, 07746 - 0010300

9. Install a new rear wheel bearing into the rear axle beam using the old bearing and a metal plate.

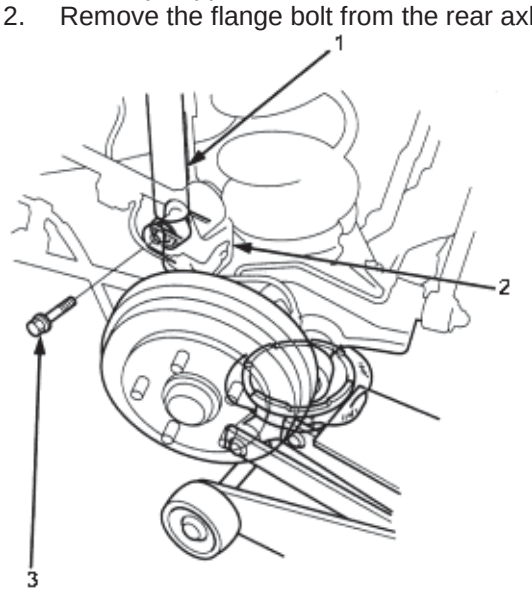


1. REAR AXLE BEAM
2. OLD BEARING
3. METAL PLATE
4. OUTSIDE
5. NEW WHEEL BEARING

10. Install in the reverse order of removal.
11. Check the rear wheel alignment (**See Page** 10-4).

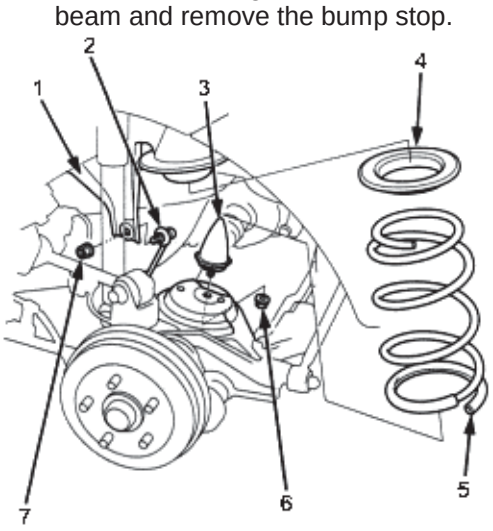
Removal

1. Raise the rear of the vehicle and make sure it is securely supported. Remove the rear wheel.
2. Remove the flange bolt from the rear axle beam.



1. REAR DAMPER
2. REAR AXLE BEAM
3. FLANGE BOLT, 10 x 1.25 mm

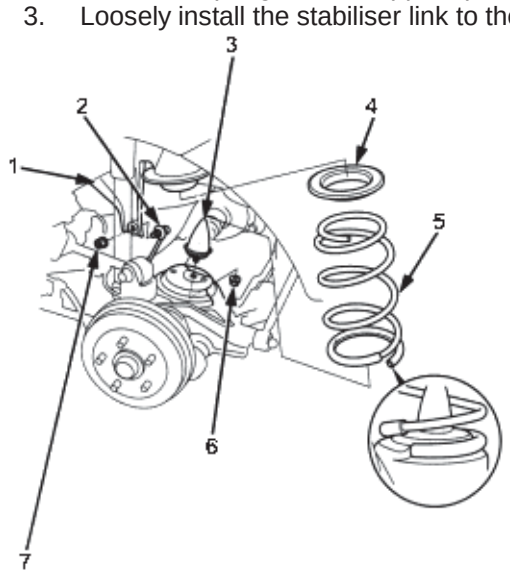
3. Remove the 10 mm self-locking nut and separate the stabiliser link from the body.
4. Lower the floor jack gradually.
5. Remove the spring and upper spring seat.
6. Remove the flange nut that connects to the rear axle beam and remove the bump stop.



1. BODY
2. STABILISER LINK
3. BUMP STOP
4. UPPER SPRING SEAT
5. SPRING
6. FLANGE NUT, 10 x 1.25 mm
7. SELF-LOCKING NUT, 10 x 1.25 mm. Replace.

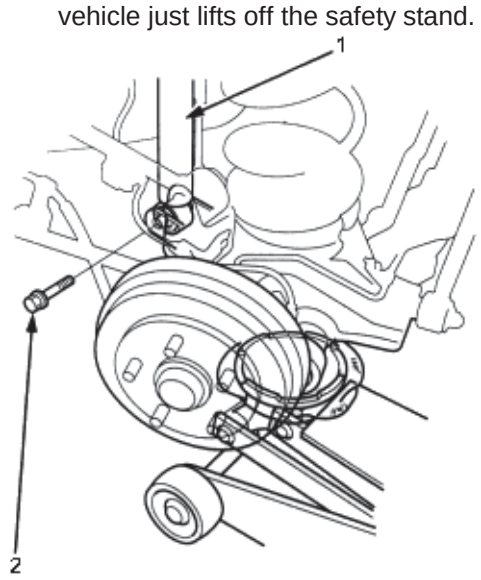
Installation

1. Install the bump stop.
2. Install the spring and the upper spring seat.
3. Loosely install the stabiliser link to the body.



1. BODY
2. STABILISER LINK
3. BUMP STOP
4. UPPER SPRING SEAT
5. SPRING
6. FLANGE NUT, 10 x 1.25 mm, 39 Nm (4.0 kgf/m, 29 lbf/ft)
7. SELF-LOCKING NUT, 10 x 1.25 mm, Replace, 29 Nm (3.0 kgf/m, 22 lbf/ft)

4. Loosely install the flange bolt to the rear axle beam.
5. Raise the rear axle beam with a floor jack until the vehicle just lifts off the safety stand.

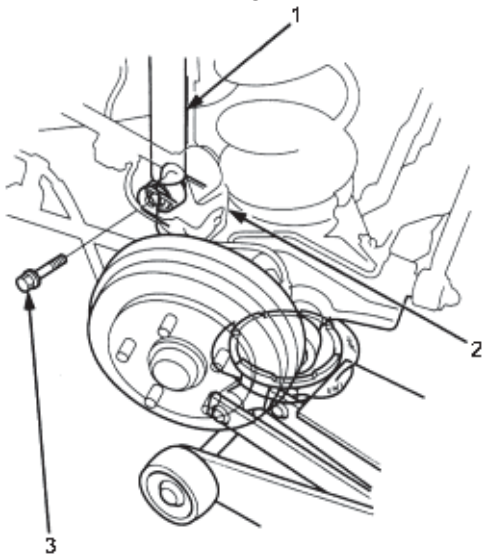


1. REAR DAMPER
2. FLANGE BOLT, 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)

6. Tighten the self-locking nut.
7. Tighten the flange bolt
8. Install the rear wheel.

Removal

1. Raise the rear of the vehicle and make sure it is securely supported. remove the rear wheel.
2. Remove the flange bolt from the rear axle beam.



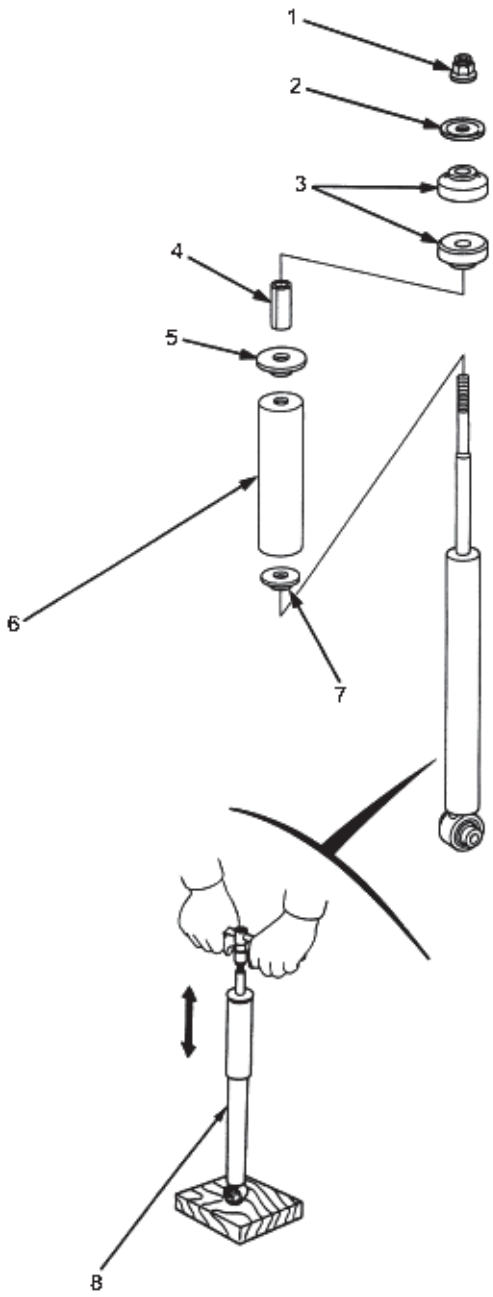
1. REAR DAMPER
2. REAR AXLE BEAM
3. FLANGE BOLT, 10 x 1.25 mm

3. Remove the damper access panel.
4. Remove the self-locking nut.

1. WASHER
2. SELF-LOCKING NUT, 10 x 1.25 mm, Replace.
3. DAMPER ACCESS PANEL
4. DAMPER MOUNTING RUBBER
5. DAMPER ROD

5. Remove the damper from the vehicle.

Inspection

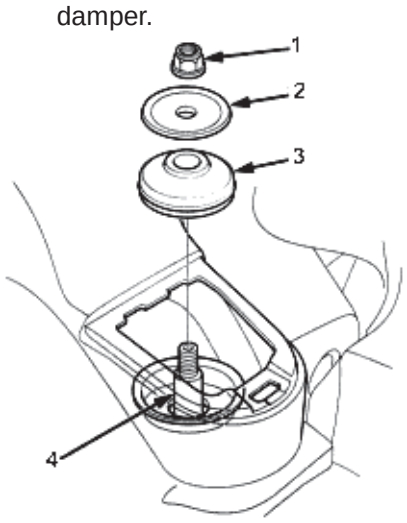


1. SELF-LOCKING NUT, 10 x 1.25 mm, 29 Nm (3.o kgf/m, 22 lbf/ft), Replace.
2. DAMPER MOUNTING WASHER. Check for weakness.
3. DAMPER MOUNTING RUBBER
4. DAMPER MOUNTING COLLAR
5. DUST COVER PLATE
6. DUST COVER. Check for bending and damage.
7. DUST COVER PLATE
8. DAMPER UNIT

- Check for smooth operation through a full stroke, both compression and extension. The damper should move smoothly. If it does not (no compression or extension), the gas is leaking, and the damper should be replaced.
- Check for oil leaks, abnormal noise or binding during these tests.

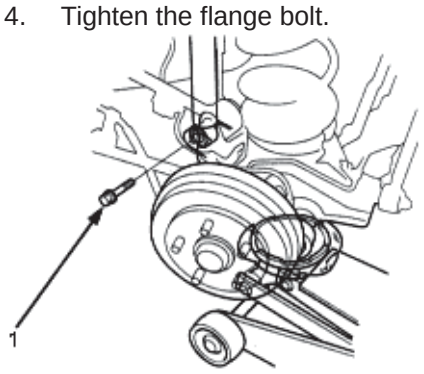
Installation

1. Loosely install the self-locking nut on the top of the damper.



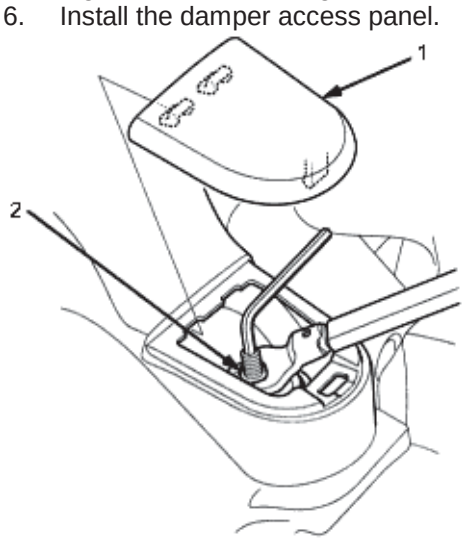
1. SELF-LOCKING NUT
2. DAMPER MOUNTING WASHER
3. DAMPER MOUNTING RUBBER
4. DAMPER ROD

2. Loosely install the flange bolt to the rear axle beam.
3. Raise the rear axle beam with a floor jack until the vehicle just lifts on the safety stand.
4. Tighten the flange bolt.



1. FLANGE BOLT. 10 x 1.25 mm, 54 Nm (5.5 kgf/m, 40 lbf/ft)

5. Tighten the self-locking nut.
6. Install the damper access panel.



1. SELF-LOCKING NUT, 10 x 1.25 mm, Replace. 29 Nm (3.0 kgf/m, 22 lbf/ft)
2. DAMPER ACCESS PANEL

7. Install the rear wheel.

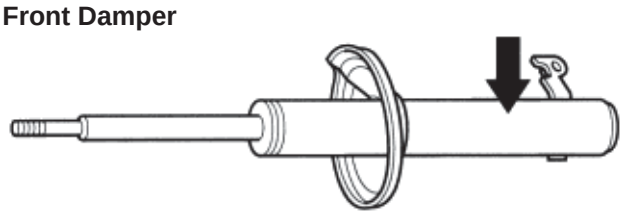
Damper Disposal

⚠ WARNING

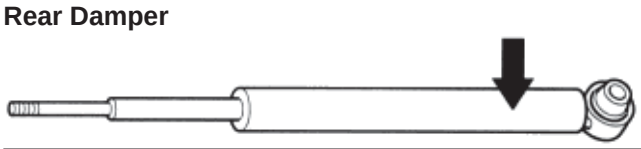
The dampers contain nitrogen gas and oil under pressure.
The pressure must be relieved before disposal to prevent explosion and possible injury when scrapping.

Place the damper on a level surface with its rod end extended and drill a hole 2 - 3 mm (0.078 - 0.118 in) diameter in the body to release the gas.

Front Damper



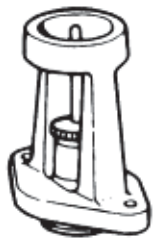
Rear Damper



⚠ WARNING

Always wear eye protection to avoid getting metal shavings in your eyes when the damper pressure is relieved.

Ref No.	Tool Number	Description	Qty	Remark
1	07JAG - SD40100	Pushrod Adjustment Gauge	1	
2	07404 - 5790301	Vacuum Gauge	1	
3	07406 - 5790201	Pressure Gauge	2	
4	07410 - 5790101	Pressure Gauge Attachment C	2	
5	07410 - 5790501	Tube Joint Adapter	1	
6	07510 - 6340101	Pressure Gauge Joint Pipe	2	



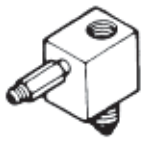
①



②



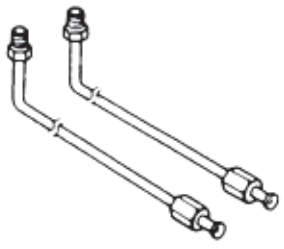
③



④

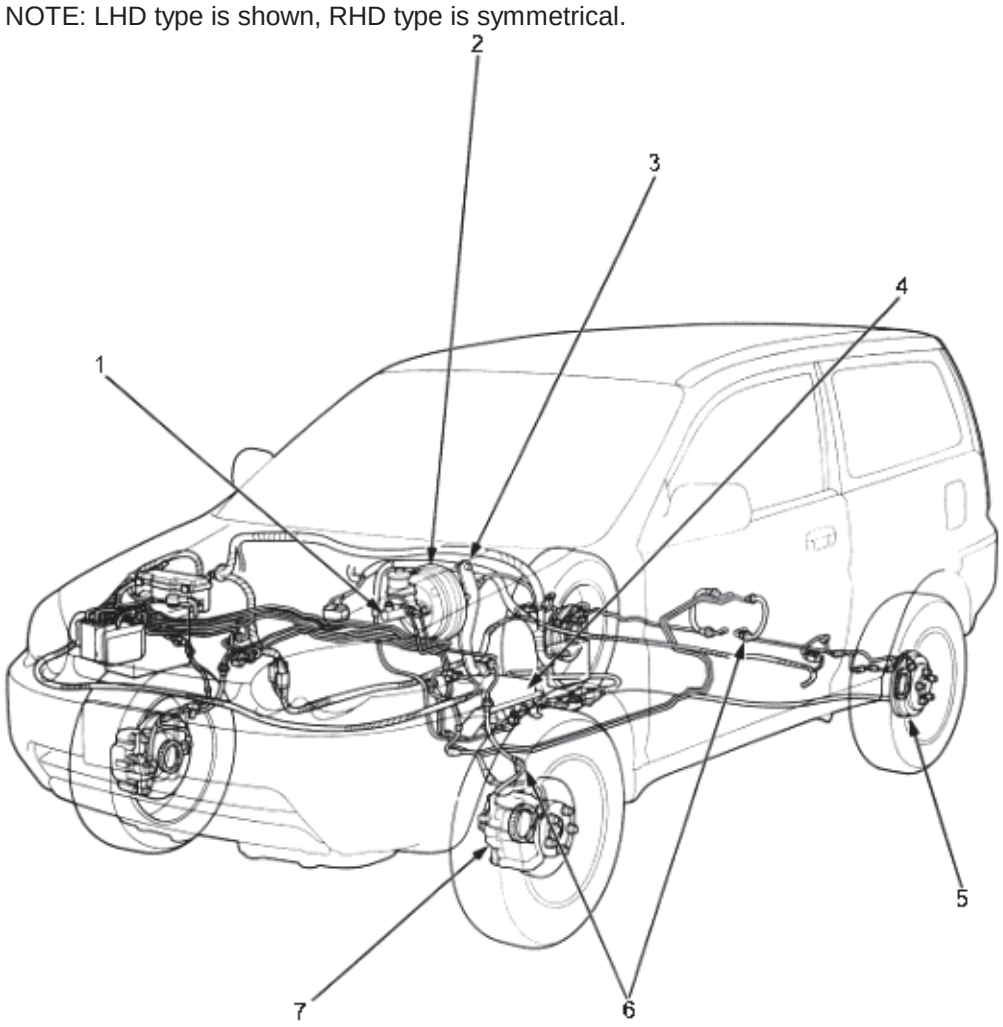


⑤



⑥

NOTE: LHD type is shown, RHD type is symmetrical.



1. **MASTER CYLINDER**
   Removal/Installation, (**See Page** 19-A-13)
   Master Cylinder Disassembly, (**See Page** 19-A-14)
   Master Cylinder Reassembly, (**See Page** 19-A-15)
   Bleeding, (**See Page** 19-A-7)
   Brake Fluid Level Switch Test, (**See Page** 19-A-8)
   Pushrod Clearance Adjustment, (**See Page** 19-A-17)
   INDICATOR
   Brake System Indicator Circuit Diagram, (**See Page** 19-A-8)
2. **BRAKE BOOSTER**
   Removal/Installation, (**See Page** 19-A-13)
   Brake Booster Inspection, (**See Page** 19-A-18)
3. **BRAKE PEDAL**
   Inspection and Adjustment, (**See Page** 19-A-5)
4. **PARKING BRAKE LEVER**
   Inspection and Adjustment, (**See Page** 19-A-6)
   Parking Brake Switch Test, (**See Page** 19-A-8)
   PARKING BRAKE CABLE
   Inspection/Replacement, (**See Page** 19-A-27)
5. **REAR DRUM BRAKES**
   Index/Inspection, (**See Page** 19-A-20)
   Brake Shoes Replacement, (**See Page** 19-A-22)
   Wheel Cylinder Disassembly/Inspection, (**See Page** 19-A-24)
6. **BRAKE HOSES/LINES**
   Inspection/Torque Specification, (**See Page** 19-A-25)
   Hose Replacement, (**See Page** 19-A-26)
7. **FRONT BRAKES**
   Front Brake Pads, (**See Page** 19-A-9)
   Front Brake Disc, (**See Page** 19-A-13)
   Front Brake Caliper, (**See Page** 19-A-11)

Brake Booster (A)

Check brake operation by applying the brakes. If the brakes do not work properly, check the brake booster. Replace the brake booster as an assembly if it does not work properly or if there are signs of leakage.

Piston Cup and Pressure Cup Inspection (B)

- Check brake operation by applying the brakes. Visually check for damage or signs of fluid leakage. Replace the master cylinder as an assembly if the pedal does not work properly or if there is damage or signs of fluid leakage.
- Check for a difference in brake pedal stroke between quick and slow brake applications. Replace the master cylinder if there is a difference in pedal stroke.

Brake Hoses (C)

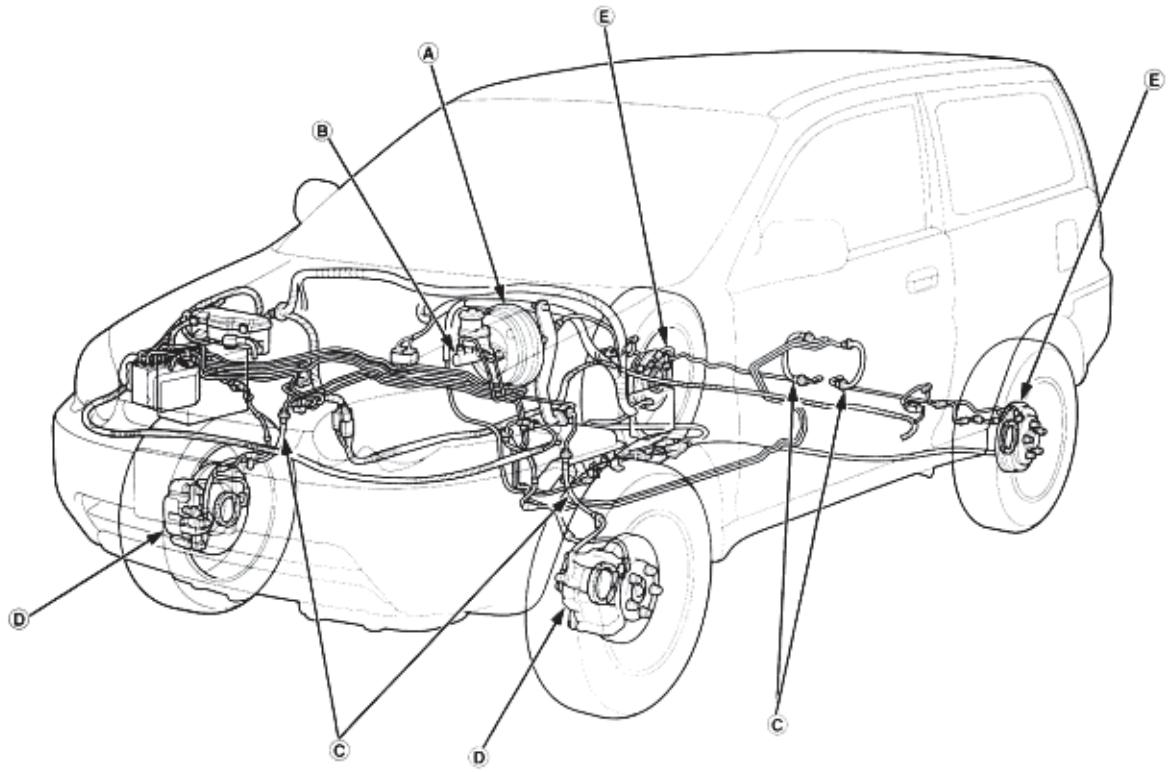
Visually check for damage or signs of fluid leakage. Replace the brake hose with a new one if it is damaged or leaking.

Caliper Piston Seal and Piston Boots (D)

Check brake operation by applying the brakes. Visually check for damage or signs of fluid leakage. If the pedal does not operate properly, the brakes drag, or there is damage or signs of fluid leakage, disassemble and inspect the brake caliper. Replace the boots and seals with new ones whenever the brake caliper is disassembled.

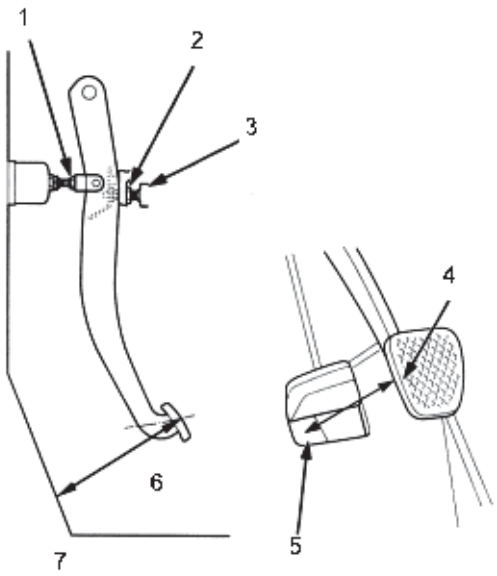
Wheel Cylinder Piston Cup and Dust Cover (E)

Check brake operation by applying the brakes. Visually check for damage or signs of fluid leakage. If the pedal does not operate properly, the brakes drag, or there is damage or signs of fluid leakage, disassemble and inspect the wheel cylinder. Replace the piston cups and dust covers with new ones whenever the wheel cylinder is disassembled.



Pedal Height

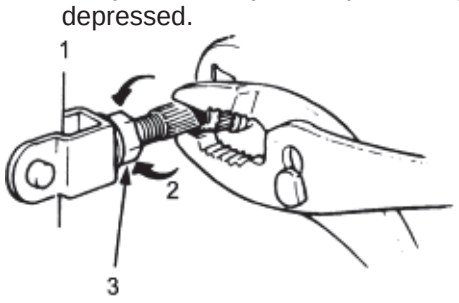
1. Disconnect the brake switch connector, loosen the brake switch locknut and back off the brake switch until it is no longer touching the brake pedal.
2. Pull back the carpet and measure the pedal height from the left side centre of the pedal pad.



1. PUSHROD LOCKNUT
2. BRAKE SWITCH LOCKNUT
3. BRAKE SWITCH
4. Centre
5. MEASURING POINT (Cutout)
6. PEDAL HEIGHT
7. FLOOR PANEL

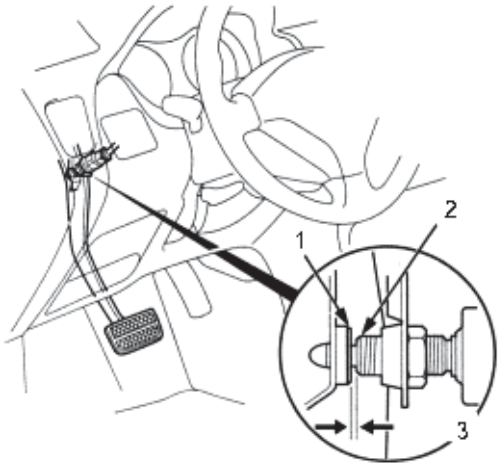
Standard Pedal Height (with floor mat removed):
M/T: 192 mm (7.56 in)
A/T: 197 mm (7.76 in)

3. Loosen the pushrod locknut and screw the pushrod 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 depressed.



1. Lower the pedal
2. Raise the pedal
3. PUSHROD LOCKNUT, 15 Nm (1.5 kgf/m, 11 lbf/ft)

4. Screw in the brake switch until its plunger is fully depressed (threaded end touching the pad on the pedal arm). Then back off the switch 1/4 turn to make 0.3 mm (0.01 in) of clearance between the threaded end and pad. Tighten the locknut firmly. Connect the brake switch connector. Make sure that the brake lights go off when the pedal is released.

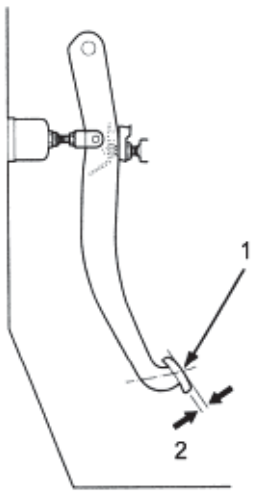


1. PAD
2. Threaded end
3. 0.3 mm (0.01 in)

5. Check the brake pedal free play as described below.

Pedal Free Play

1. Stop the engine and inspect the pedal free play on the pedal pad by pushing the pedal by hand.
   Free Play: 1- 5 mm (0.04 - 0.20 in)
2. If the pedal free play is out of specification, adjust the brake switch. If the pedal free play is insufficient, it may result in brake drag.

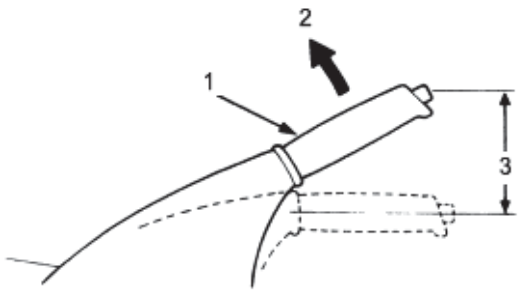


1. BRAKE PEDAL PIN
2. PEDAL FREE PLAY

Inspection

1. Pull the parking brake lever with 196 N (20 kgf, 44 lbf) force to fully apply the parking brake. The parking brake lever should be located within the specified notches.

Lever Locked Notches: 7 - 10



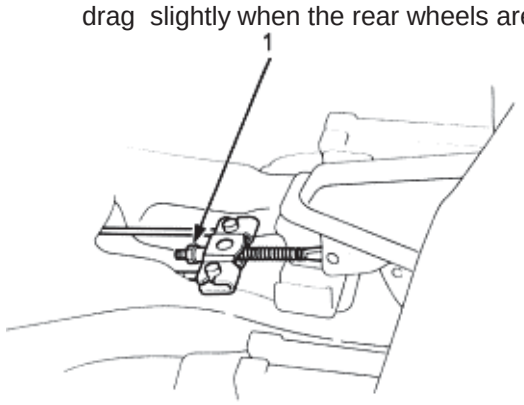
1. PARKING BRAKE LEVER
2. Pulled up with 196 N (20 kgf, 44 lbf)
3. LEVER LOCKED NOTCHES

2. Adjust the parking brake if the lever notches are out of specification.

Adjustment

NOTE: After rear brake shoes servicing, loosen the parking brake adjusting nut, start the engine and depress the brake pedal several times to set the self-adjusting brake before adjusting the parking brake.

1. Raise the rear wheels off the ground and support on safety stands. Block the front wheels before jacking up the rear of the vehicle.
2. Remove the rear console (see section 20).
3. Pull the parking brake lever up on notch.
4. Tighten the adjusting nut until the parking brakes drag slightly when the rear wheels are turned.

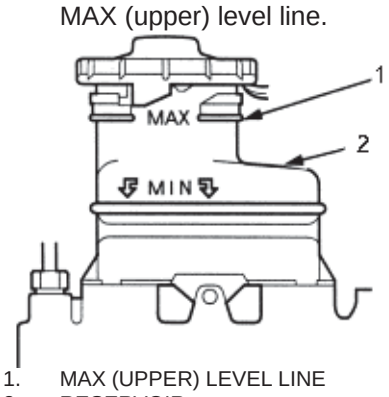


1. ADJUSTING NUT

5. Release the parking brake lever fully and check that the parking brakes do not drag when the rear wheels are turned. readjust as necessary.
6. Make sure the parking brakes are fully applied when the parking brake lever is pulled up fully.
7. Reinstall the rear console.

NOTE:
- Do not reuse the drained fluid.
- Use only clean Genuine Honda brake fluid or an equivalent DOT3 or DOT4 brake fluid.
- 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; f brake fluid does contact the paint, wash it off immediately with water.
- The reservoir on the master cylinder must be at the MAX (upper) level at the start of bleeding procedure and checked after bleeding each brake caliper. Add fluid as required.

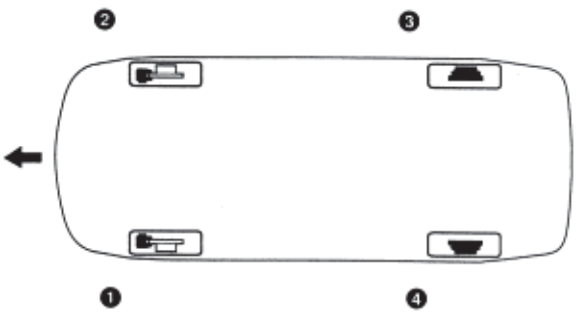
1. Make sure the brake fluid level in the reservoir is at the MAX (upper) level line.



1. MAX (UPPER) LEVEL LINE
2. RESERVOIR

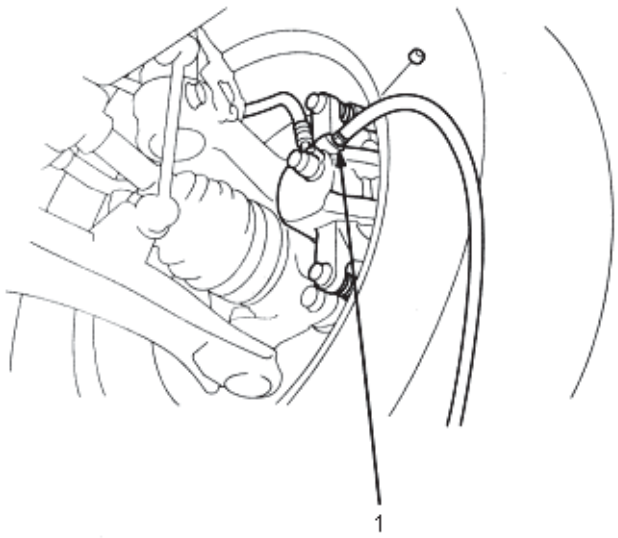
2. Have someone slowly pump the brake pedal several times, then apply steady pressure.
3. Loosen the brake bleed screw to allow air to escape from the system. Then tighten the bleed screw securely.
4. Repeat the procedure for each wheel in the sequence shown below, until air bubbles no longer appear in the fluid.
   NOTE: LHD type is shown, RHD type is symmetrical.
5. Refill the reservoir of master cylinder to the MAX (upper) level line.

BLEEDING SEQUENCE:



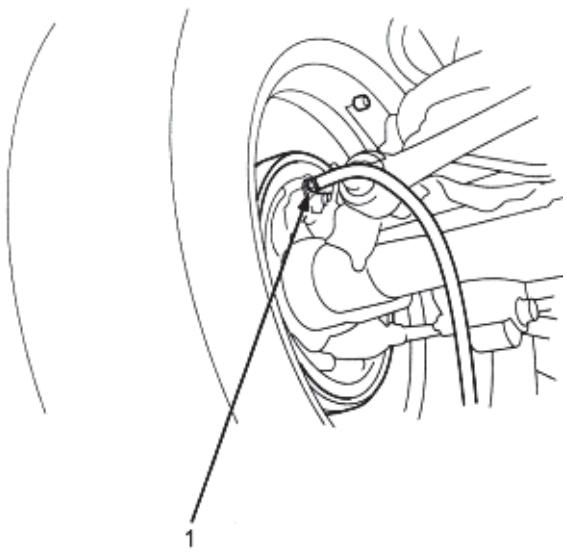
1. Front Left
2. Front Right
3. Rear Right
4. Rear Left

FRONT

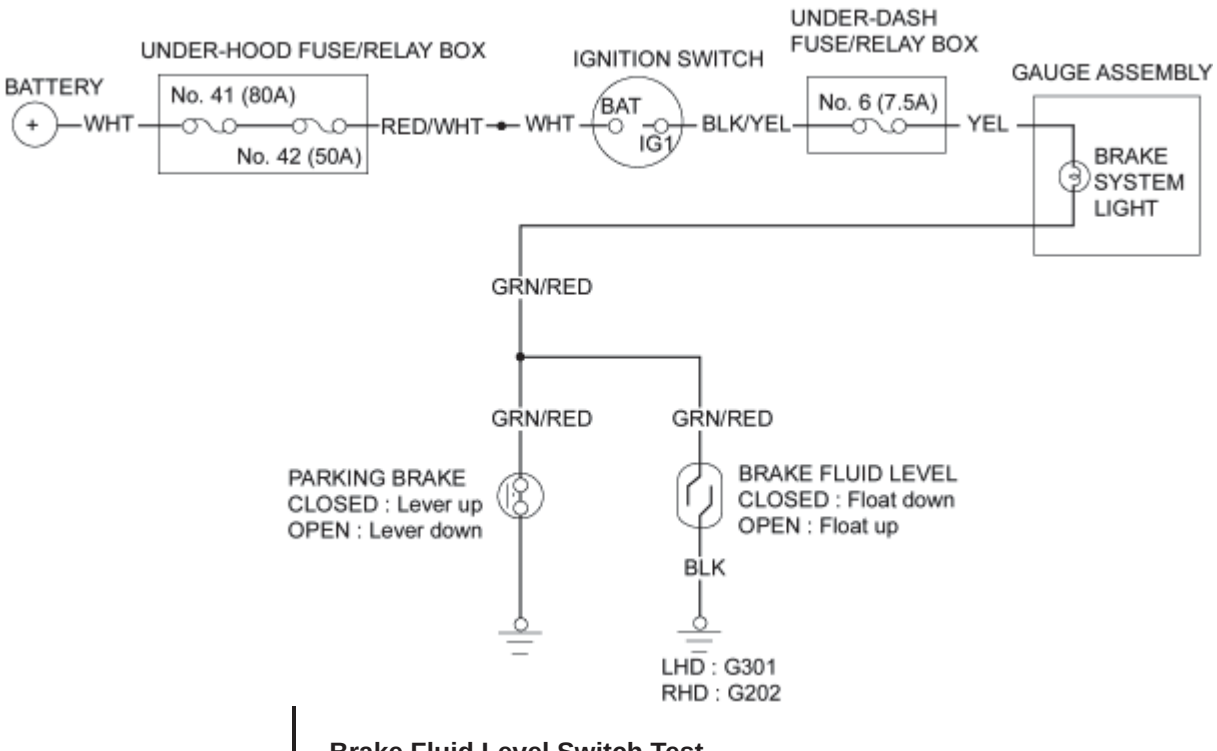


1. BLEED SCREW, 9 Nm (0.9 kgf/m, 7 lbf/ft)

REAR

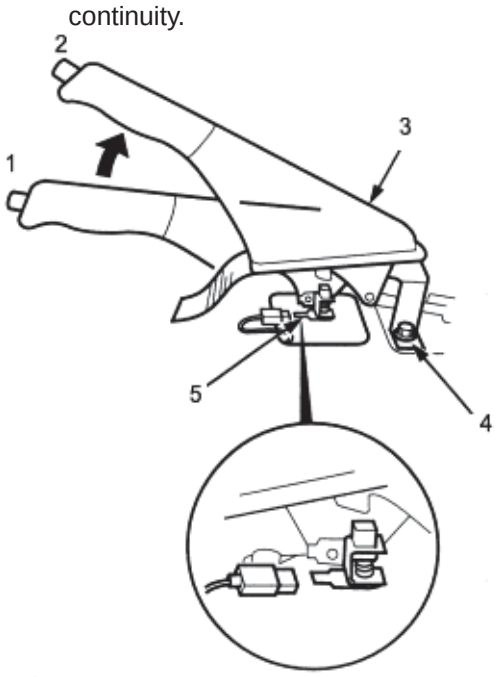


1. BLEED SCREW, 7 Nm (0.7 kgf/m, 5 lbf/ft)



Parking Brake Switch Test

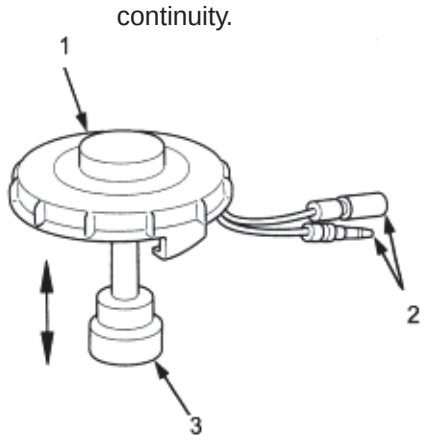
1. Remove the rear console and disconnect the connector from the switch.
2. Check for continuity between the positive terminal and body ground:
   - With the brake lever up, there should be continuity.
   - With the brake lever down, there should be no continuity.



1. DOWN
2. UP
3. BRAKE LEVER
4. BODY GROUND
5. POSITIVE TERMINAL

Brake Fluid Level Switch Test

1. Remove the reservoir cap. Check that the float moves up and down freely; if it doesn't, replace the reservoir cap assembly.
2. Check for continuity between the terminals with the float in the down position and the up position:
   - With the float up, there should be continuity.
   - With the float down, there should be no continuity.



1. RESERVOIR CAP
2. TERMINALS
3. FLOAT

⚠ CAUTION

Frequent inhalation of brake pad dust, regardless of material composition, could be hazardous to your health.

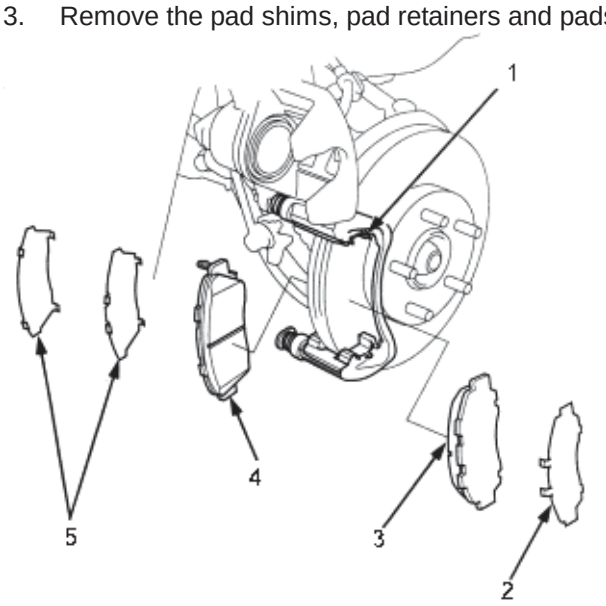
- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use a vacuum cleaner.

1. Loosen the front wheel nuts slightly, then raise the vehicle and support on safety stands. Remove the front wheels.
2. Remove the caliper bolt, and pivot the caliper up out of the way. Check the hoses and pin boots for damage or deterioration.



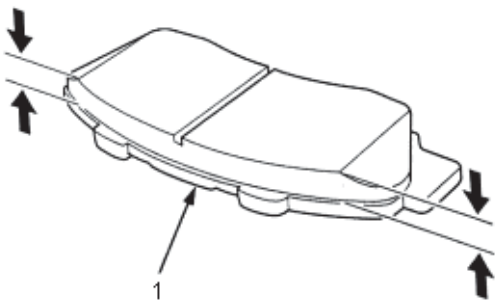
1. CALIPER BOLT
2. CALIPER BODY

3. Remove the pad shims, pad retainers and pads.



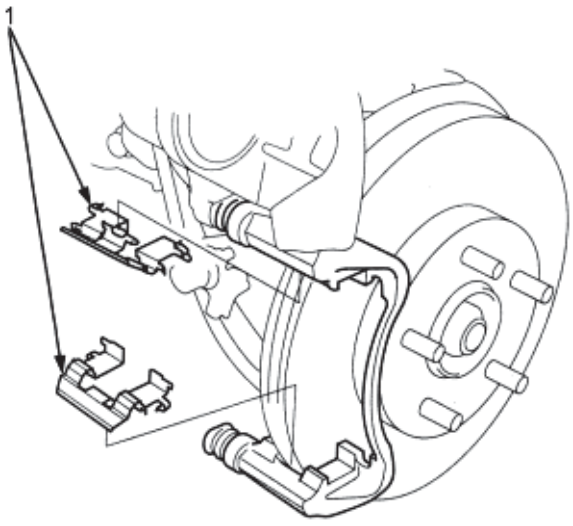
1. PAD RETAINERS
2. OUTER PAD SHIM, Check for weakness
3. OUTER PAD, Check for wear
4. INNER PAD, Check for wear
5. INNER PAD SHIMS, Check for weakness

4. Using vernier calipers, measure the thickness of each brake pad lining. The measurement does not include the pad backing plate thickness.
   Brake Pad Thickness:
   Standard: 10.5 - 11.5 mm (0.41 - 0.45 in)
   Service Limit: 1.6 mm (0.06 in)



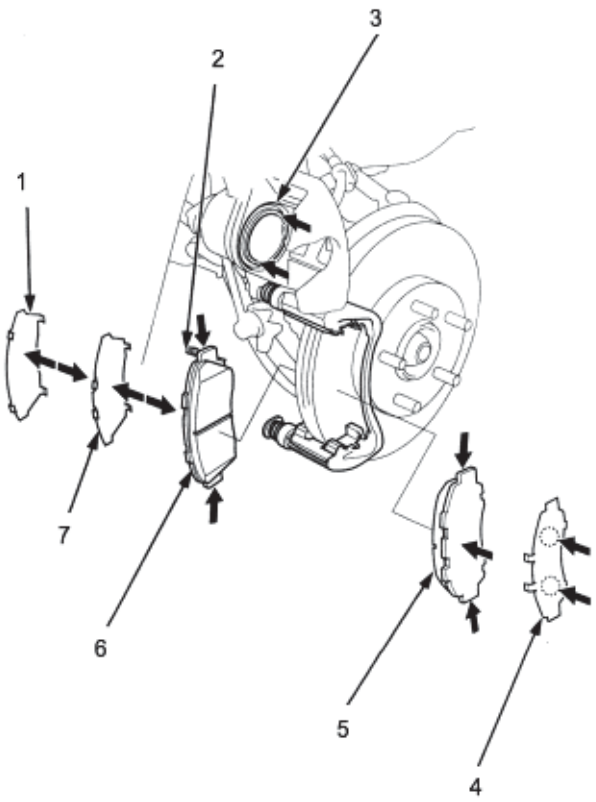
1. BACKING PLATE

5. If the brake pad thickness is less than service limit, replace the front pads and shims together as a set.
6. Clean the caliper thoroughly; remove any rust and check for grooves or cracks.
7. Check the brake disc for damage and cracks.
8. Install the pad retainers.



1. PAD RETAINERS

9. Apply Molykote M77 grease or Daikalub 528D grease to the pad side of the shims and back of the pads. Wipe excess grease off the shims.



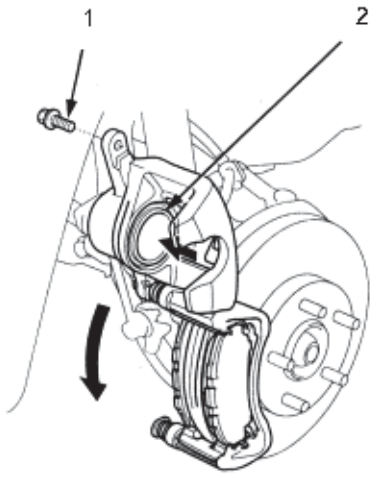
1. INNER SHIM B
2. WEAR INDICATOR
3. PISTON
4. OUTER PAD SHIM
5. OUTER PAD
6. INNER PAD
7. INNER SHIM A

10. Install the brake pads and pad shims correctly. Install the pad with the wear indicator on the inside.

⚠ WARNING

- When reusing the pads, always reinstall the brake pads in their original positions to prevent loss of braking efficiency.
- Contaminated brake discs or pads reduce stopping ability. Keep grease off the discs and pads..

11. Push in the piston so that the caliper will fit over the pads. Make sure that the piston boot is in position to prevent damaging it when pivoting the caliper down.
12. Pivot the caliper down into position, being careful not to damage the pin boot. Install the caliper bolt and tighten it.



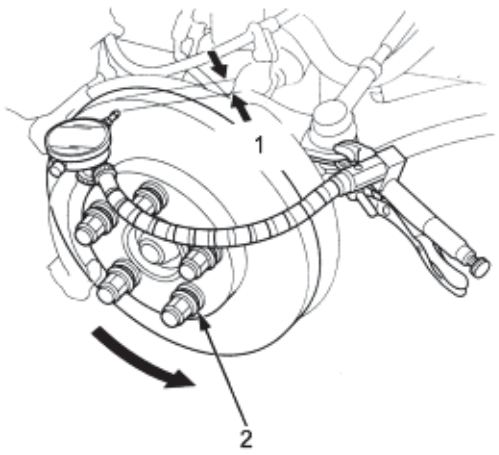
1. CALIPER BOLT, 49 Nm (5.0 kgf/m, 36 lbf/ft)
2. PISTON

13. Depress the brake pedal several times to make sure the brakes work, then road-test.
    NOTE: Engagement of the brake 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.
14. After installation, check for leaks at hose and line joints or connections and retighten if necessary.

Front Brake Disc

Disc Runout Inspection

1. Loosen the front wheel nuts slightly, then raise the vehicle and support on safety stands. Remove the front wheels.
2. Remove the brake pads (**See Page** 19-A-9).
3. Inspect the disc surface for damage or cracks. Clean the disc thoroughly and remove all rust.
4. Use wheel nuts and suitable plain washers to hold the disc securely against the hub, then mount a dial indicator as shown and measure the runout at 10 mm (0.4 in) from the edge of the disc.
   Brake Disc Runout:
   Service Limit: 0.10 mm (0.004 in)
5. If the disc is beyond the service limit, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way manufacturing Co. and the “Front Brake Disc Lathe” offered by Snap on Tools Co. are approved for this operation.
   Max Refinish Limit: 21.0 mm (0.83 in)



1. 10 mm (0.4 in)
2. WHEEL NUT AND PLAIN WASHER, 108 Nm (11 kgf/m, 79.6 lbf/ft)

NOTE: A new disc should be refinished if its runout is greater than 0.10 mm (0.004 in).

Disc Thickness and Parallelism Inspection

1. Loosen the front wheel nuts slightly, then raise the vehicle and support on safety stands. Remove the front wheels.
2. Remove the brake pads (**See Page** 19-A-9).
3. Using a micrometer, measure disc thickness at eight points, approximately 45° apart and 10 mm (0.4 in) in from the outer edge of the disc. Replace the brake disc if the smallest measurement is less than the max. refinishing limit.



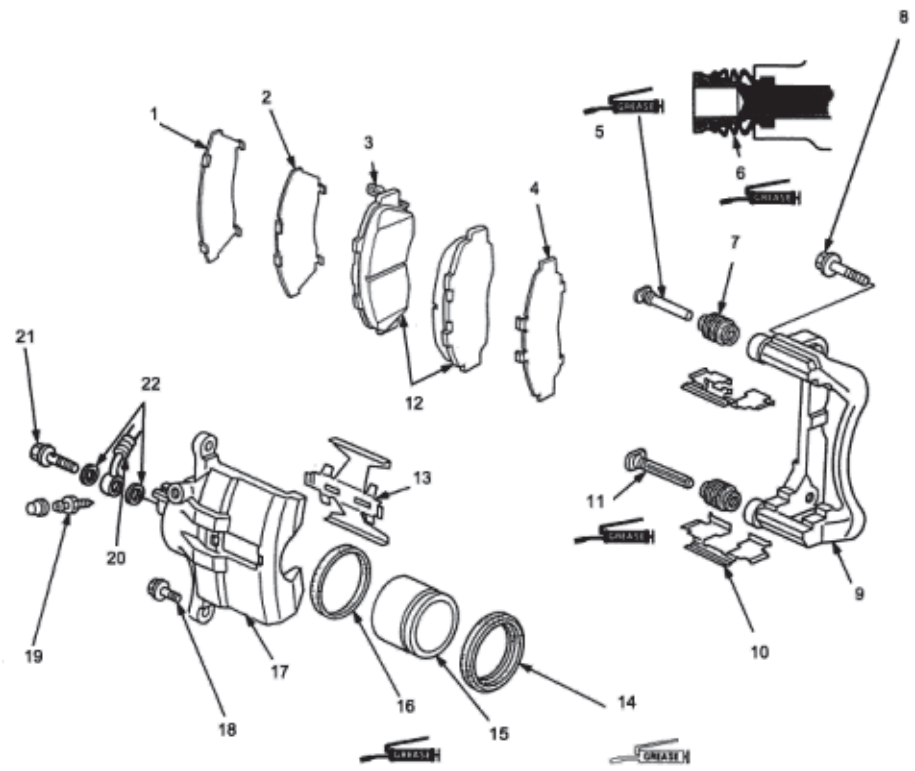
1. 10 mm (0.4 in)

   Brake Disc Thickness:
   Standard:
   22.9 - 23.1 mm (0.90 - 0.91 in)
   Max Refinishing Limit: 21.0 mm (0.83 in)
   Brake Disc Parallelism: 0.015 mm (0.0006 in) max
4. If the disc is beyond the service limit for parallelism, refinish the brake disc with an on-car brake lathe. The Kwik-Lathe produced by Kwik-way manufacturing Co. and the “Front Brake Disc Lathe” offered by Snap on Tools Co. are approved for this operation.
   NOTE: See section 18 for brake disc 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 a vacuum cleaner.

NOTE:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- To prevent spills, cover the hose joints with 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 dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Contaminated brake discs or pads reduce stopping ability.
- When reusing the pads, always reinstall the brake pads in their original positions to prevent loss of braking efficiency.
- Do not reuse the drained fluid.
- Use only clean Genuine Honda brake fluid or an equivalent DOR3 or DOT4 brake fluid.
- Coat the piston and caliper bore with clean brake fluid.
- Replace all rubber parts with new ones whenever disassembled.
- After installing the front brake caliper:
  - Check for leaks at hose and line joints and connections, and retighten if necessary.
  - Check the brake hoses for interference and twisting.



GREASE Use recommended rubber grease in the caliper seal set.

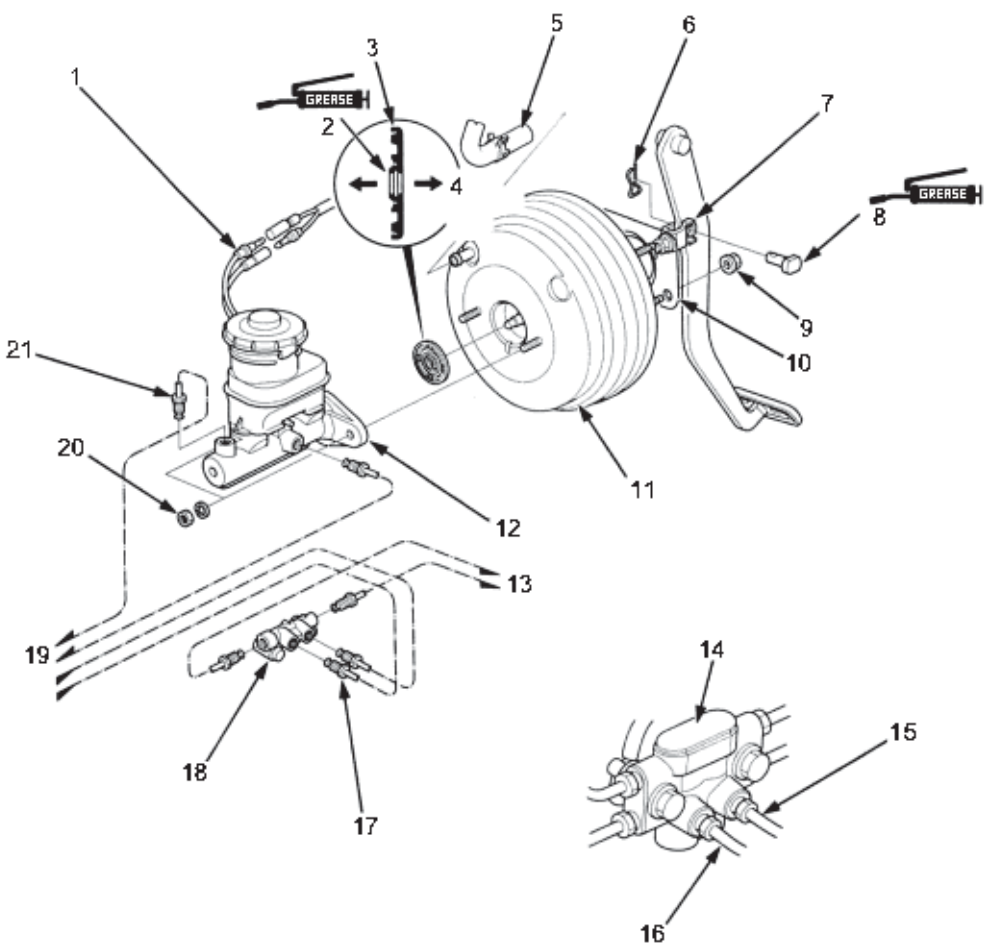
GREASE Use recommended seal grease in the caliper seal set.

1. **INNER SHIM B**
2. **INNER SHIM A**
3. **WEAR INDICATOR**
   Install inner pad with its wear indicator upward
4. **OUTER PAD SHIM**
5. **PIN B**
6. **PIN BOOT**
7. **PIN BOOTS**, Replace
8. **12 mm FLANGE BOLTS, 113 Nm (11.5 kgf/m, 83 lbf/ft)**
9. **CALIPER BRACKET**
10. **PAD RETAINERS**
11. **PIN A**
12. **BRAKE PADS**
13. **PAD SPRING**
14. **PISTON BOOT**, Replace
15. **PISTON**
16. **PISTON SEAL**, Replace
17. **CALIPER BODY**
18. **CALIPER BOLTS, 49 Nm (5.0 kgf/m, 36 lbf/ft)**
19. **BLEED SCREW, 9 Nm (0.9 kgf/m, 7 lbf/ft)**
20. **BRAKE HOSE**
21. **BANJO BOLT, 34 Nm (3.5 kgf/m, 25 lbf/ft)**
22. **SEALING WASHERS**, Replace

⚠ CAUTION

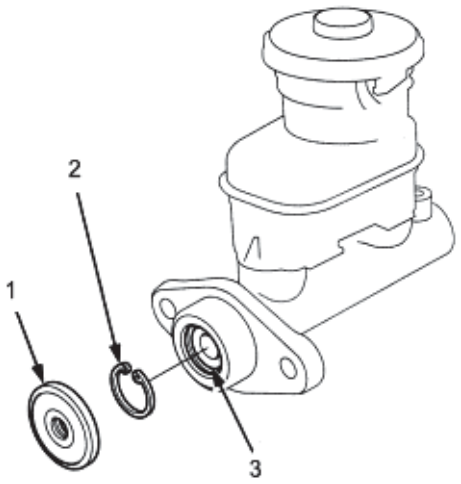
Do not spill brake fluid on the vehicle, it may damage the paint. If brake fluid does contact the paint, wash it off immediately with water.

1. Disconnect the brake fluid level switch connectors.
2. Remove the reservoir cap from the master cylinder.
3. Remove the brake fluid from the master cylinder reservoir with a syringe.
4. Disconnect the brake lines from the master cylinder.
5. Remove the master cylinder mounting nuts and washers.
6. Remove the master cylinder from the brake booster. Be careful not to bend or damage the brake lines when removing the master cylinder.
7. Remove the rod seal from the brake booster.
8. Remove the four booster mounting nuts.
9. Pull the brake booster forward until the clevis is clear of the bulkhead.
10. Remove the brake booster from the engine compartment.
11. Install the brake booster and master cylinder in the reverse order of removal and note the following items:
    - Replace all rubber parts with new ones whenever, removed.
    - Coat the lip of the new rod seal with recommended seal grease in the master cylinder set.
    - Install the rod seal onto the brake booster with its grooved side toward the master cylinder.
    - If replacing the master cylinder or brake booster, check and adjust the pushrod clearance before installing the master cylinder (**See Page** 19-A-17).
12. Fill the master cylinder reservoir and bleed the brake system (**See Page** 19-A-7).
13. After installation, check the brake pedal height and brake pedal free play (**See Page** 19-A-5) and adjust if necessary.



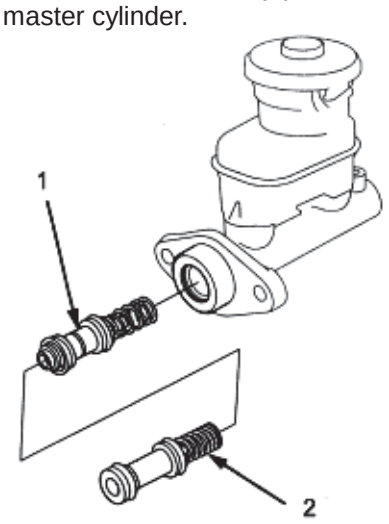
1. **BRAKE FLUID LEVEL SWITCH CONNECTORS**
2. Master cylinder side
3. **ROD SEAL**, Replace
4. Brake booster side
5. **VACUUM HOSE**
6. **LOCK PIN**, Replace
7. **CLEVIS**
8. **CLEVIS PIN**
9. **13 Nm (1.3 kgf/m, 9 lbf/ft)**
10. **GASKET**, Replace
11. **BRAKE BOOSTER**
12. **MASTER CYLINDER**
13. To rear wheel cylinders
14. **PROPORTIONING CONTROL VALVE** (Without ABS)
15. RHD/LHD: To master cylinder secondary port
16. RHD/LHD: To master cylinder primary port
17. **15 Nm (1.5 kgf/m, 11 lbf/ft)**
18. **4-WAY JOINT** (With ABS)
19. To modulator unit
20. **15 Nm (1.5 kgf/m, 11 lbf/ft)**
21. **15 Nm (1.5 kgf/m, 11 lbf/ft)**

1. Remove the master cylinder (**See Page** 19-A-13).
2. Remove the rod seal from the brake booster side.
3. Remove the circlip while pushing in the secondary piston.



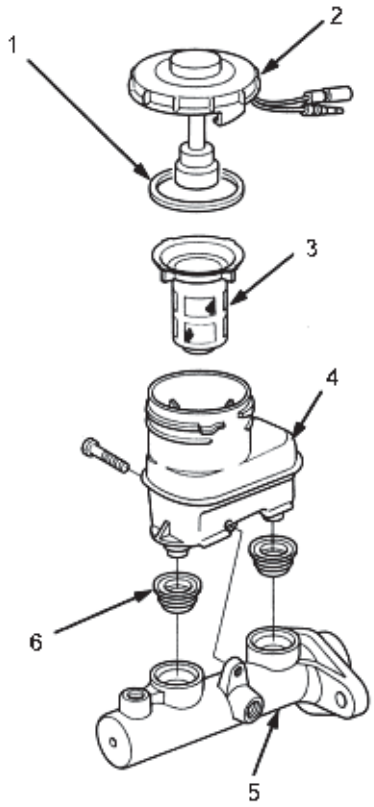
1. ROD SEAL, Replace
2. CIRCLIP, Replace
3. SECONDARY PISTON

4. Remove the secondary piston and primary piston from master cylinder.



1. PRIMARY PISTON, Replace
2. SECONDARY PISTON, Replace

5. Remove the reservoir cap and strainer from the reservoir.
6. Remove the reservoir seal from the reservoir cap.

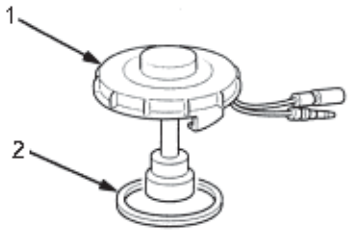


1. RESERVOIR SEAL, Check for damage and deterioration
2. RESERVOIR CAP, Check for blockages of vent holes
3. STRAINER, Remove accumulated sediment
4. RESERVOIR, Check for damage
5. MASTER CYLINDER, Check bore for wear, rust and damage
6. GROMMETS, Replace

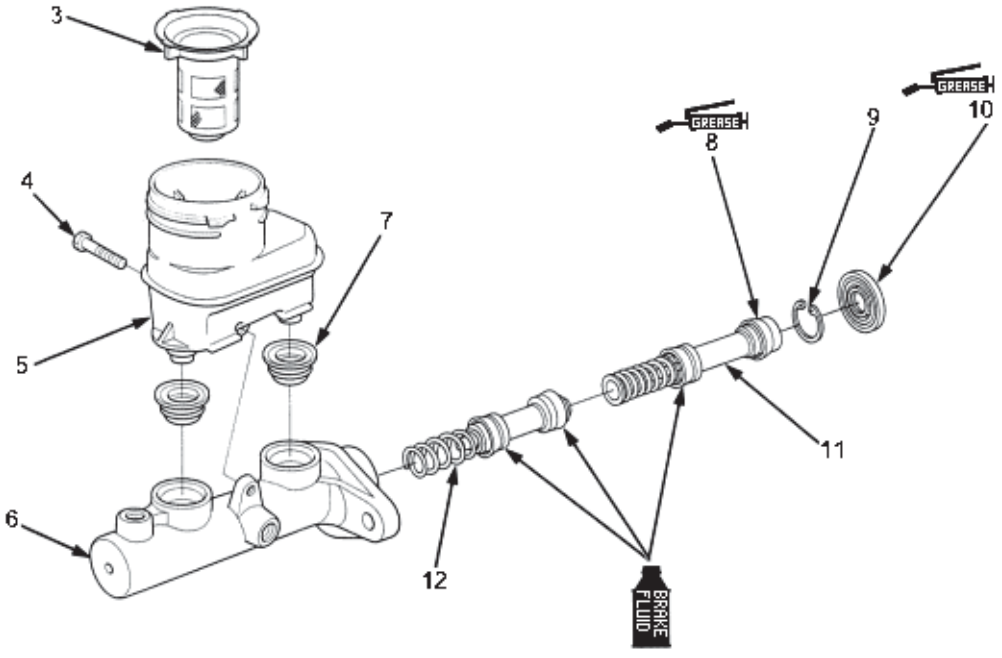
7. Remove the reservoir and grommets.
   NOTE: When the reservoir and master cylinder body are separated, replace the grommets with new ones.

NOTE:
- If replacing the primary piston, secondary piston or master cylinder body. Check and adjust the pushrod clearance before installing the master cylinder (**See Page** 19-A-17).
- 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 dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Do not mix different brands of brake fluid as they may not be compatible.
- Do not reuse the drained fluid. Use only clean Genuine Honda brake fluid or an equivalent DOT3 or DOT4 brake fluid.
- Replace the master cylinder if the bore is damaged or worn. Do not hone or attempt to refinish the bore.
- Coat the piston cups, pressure cup and master cylinder bore with clean brake fluid.
- Use recommended greases in the master cylinder seal set.

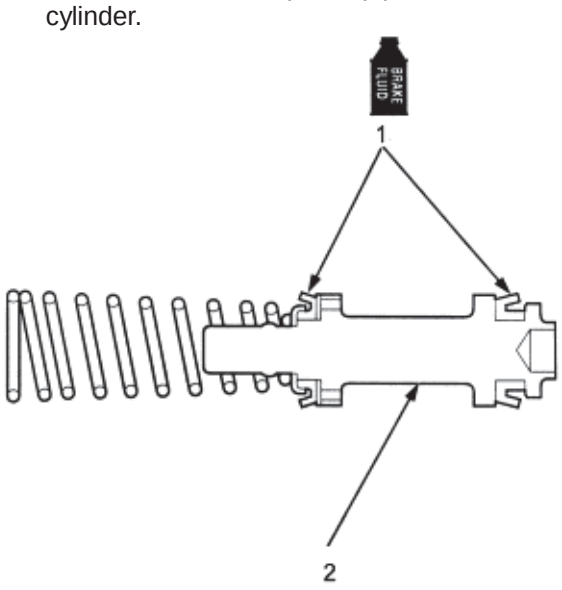
1. Install the reservoir seal in the groove of the reservoir cap.
2. Install the new grommets, strainer and reservoir cap on the reservoir.
3. Install the reservoir on the master cylinder.



1. **RESERVOIR CAP**
2. **RESERVOIR SEAL**
3. **STRAINER**
4. **3 Nm (0.3 kgf/m, 2 lbf/ft)**
5. **RESERVOIR**
6. **MASTER CYLINDER**
7. **GROMMETS**, Replace
8. **SECONDARY CUP**
9. **CIRCLIP**, Replace
10. **ROD SEAL**, Replace
11. **SECONDARY PISTON**, Replace
12. **PRIMARY PISTON**, Replace

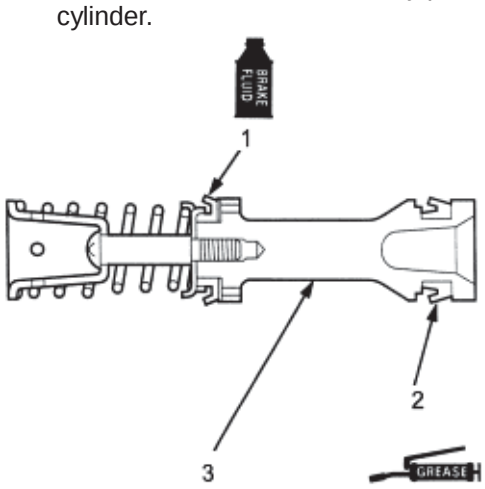


4. Coat the cups of a new primary piston with clean brake fluid, then install the primary piston into the master cylinder.



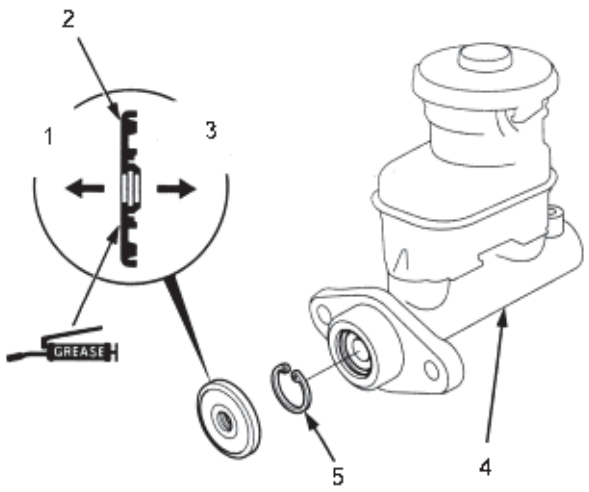
1. CUPS
2. PRIMARY PISTON, Replace

5. Apply the recommended rubber grease in the master cylinder seal set to the piston cup of a new secondary piston.
6. Coat the cup of a new secondary piston with clean brake fluid, then install the secondary piston into the master cylinder.



1. CUP
2. SECONDARY CUP
3. SECONDARY PISTON, Replace

7. Install a new circlip while pushing in the secondary piston.
8. Apply the recommended seal grease in the master cylinder seal set to a new rod seal and install it onto the mating face of the brake booster.

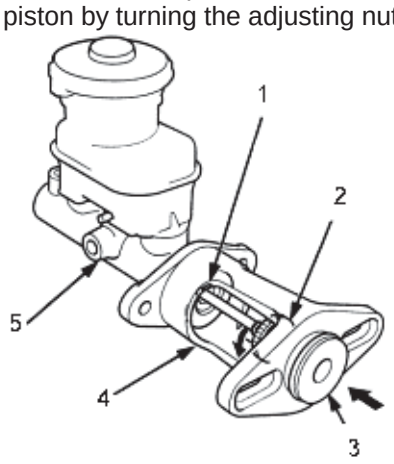


1. Brake booster side
2. ROD SEAL, Replace
3. Master cylinder side
4. MASTER CYLINDER
5. CIRCLIP, Replace

9. Adjust the pushrod clearance (**See Page** 19-A-17).
10. Install the master cylinder (**See Page** 19-A-13).

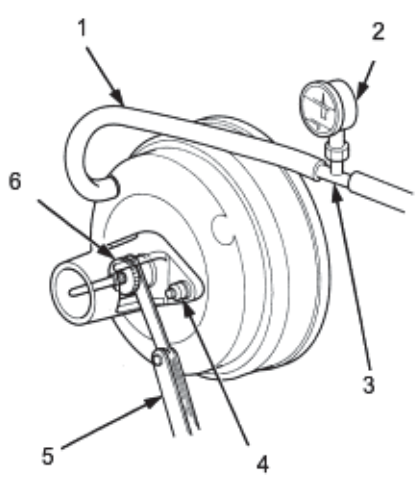
NOTE: Master cylinder pushrod-to piston clearance must be checked and adjustments made, if necessary, before installing master cylinder.

1. Set the special tool on the master cylinder body; push in the centre shaft until the top of it contacts the end of the secondary piston by turning the adjusting nut.



1. SECONDARY PISTON
2. ADJUSTING NUT
3. CENTRE SHAFT
4. PUSHROD ADJUSTMENT GAUGE, 07JAG-SD40100
5. MASTER CYLINDER

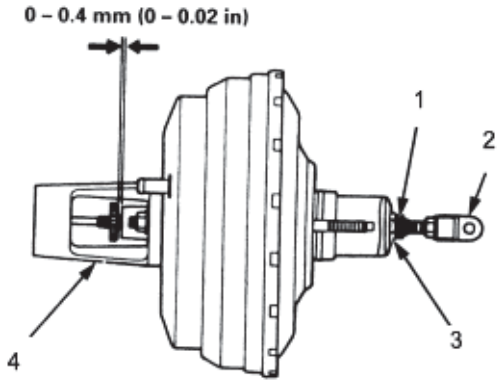
2. Without disturbing the centre shaft's position, install the special tool upside down on the booster.
3. Install the master cylinder nuts and tighten to the specified torque.
4. Connect the booster in-line with a vacuum gauge 0 - 101 kPa (0 - 760 mmHg, 30 in.Hg) to the booster's engine vacuum supply, and maintain an engine speed that will deliver 66 kPa (500 mmHg, 20 in.Hg) vacuum.
5. With a feeler gauge, measure the clearance between the gauge body and the adjusting nut as shown.
   Clearance: 0 - 0.4 mm (0 - 0.02 in)



1. HOSE, Connect a hose of suitable diameter
2. VACUUM GAUGE, 07404-5790301, 0 - 101 kPa (0 - 760 mmHg, 30 in.Hg)
3. TUBE JOINT ADAPTOR, 07410-5790501
4. MASTER CYLINDER NUT, 15 Nm (1.5 kgf/m, 11 lbf/ft)
5. FEELER GAUGE
6. ADJUSTING NUT

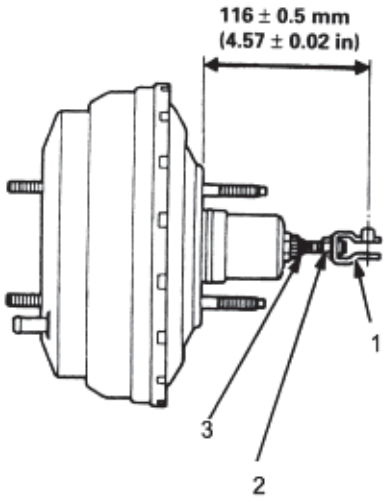
NOTE: If the clearance between the gauge body and adjusting nut is 0.4 mm (0.02 in), the pushrod-to-piston clearance is 0 mm. However, if the clearance between the gauge body and adjusting nut is 0 mm, the pushrod-to-piston clearance is 0.4 mm (0.02 in) or more. Therefore it must be adjusted and rechecked.

6. If the clearance is incorrect, loosen the star locknut and turn the adjuster in or out to adjust.
   NOTE:
   - Adjust the clearance while the specified vacuum is applied to the booster.
   - Hold the clevis while adjusting.
7. Tighten the star locknut securely.
8. Remove the special tool.



1. STAR LOCKNUT, 22 Nm (2.2 kgf/m, 16 lbf/ft)
2. CLEVIS
3. ADJUSTER
4. PUSHROD ADJUSTMENT GAUGE, 07JAG-SD40100

9. Adjust the pushrod length as shown if the booster is removed.

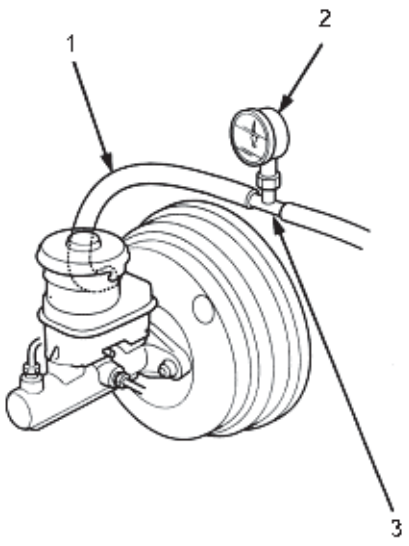


1. CLEVIS
2. PUSHROD LOCKNUT, 15 Nm (1.5 kgf/m, 11 lbf/ft)
3. PUSHROD

10. Install the master cylinder (**See Page** 19-A-13).

Leak Test

1. Install the vacuum gauge between the brake booster and check valve.



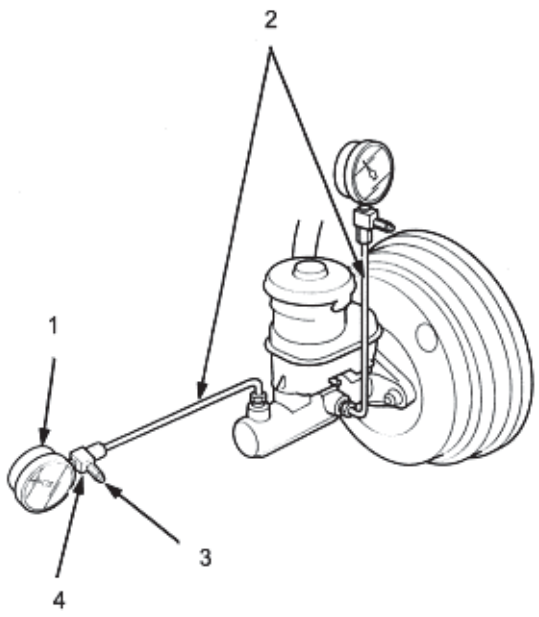
1. HOSE, Connect a hose of suitable diameter
2. VACUUM GAUGE, 07404-5790301
3. TUBE JOINT ADAPTOR, 07410-5790501

2. Start the engine, adjust the engine speed with the accelerator pedal so that the vacuum gauge readings show 40.0 - 66.7 kPa (300 - 500 mmHg, 11.8 - 19.7 in.Hg), then stop the engine.
3. Read the vacuum gauge.
   If the vacuum gauge reading decreases 2.7 kPa (20 mmHg, 0.8 in.Hg) or more after 30 seconds, check the following parts for leaks:
   - Check valve
   - Vacuum hose, pipe
   - Seals
   - Brake booster
   - Master cylinder

   NOTE: Do not try to disassemble the brake booster. Replace the brake booster as an assembly with a new one.

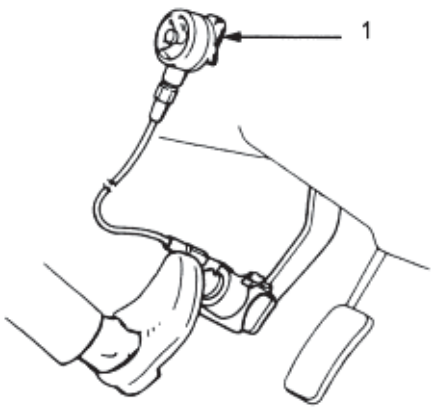
Function Test

1. Install the vacuum gauge the same way as in the leak test.
2. Connect the oil pressure gauges to the master cylinder using the attachments (special tools) as shown.
3. Bleed air through the valves.



1. PRESSURE GAUGES, 07406-5790201
2. PRESSURE GAUGE JOINT PIPES, 07510-6340101
3. BLEED VALVES
4. PRESSURE GAUGE ATTACHMENT C, 07410-5790101

4. Start the engine and let it idle.
5. Have an assistant depress the brake pedal with a 98 N (10 kgf, 22 lbf) and 196 N (20 kgf, 44 lbf) pressure.



1. PRESSURE GAUGE, (Commercially available)

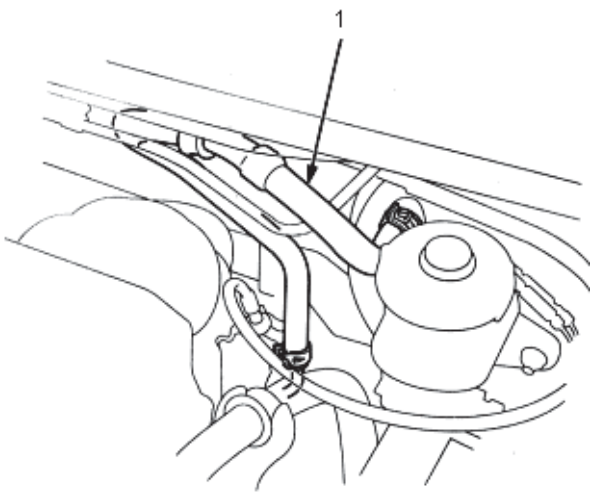
6. The following pressures should be observed at the pressure gauges in each vacuum.

Vacuum kPa (mmHg, in.Hg)	N (kgf, lbf)	kPa (kgf/cm2, psi)
0 (0, 0)	98 (10, 22)	0 (0, 0)
	294 (30, 66)	1,400 (14, 199)
66.7 (500, 19.7)	98 (10, 22)	3,600 (37, 526)
	294 (30, 66)	9,000 (292, 1,308)

7. Inspect the master cylinder for leaks if the readings do not fall within the limits shown above.

Check Valve Test

1. Disconnect the brake booster vacuum hose at the booster.
2. Start the engine and let it idle. There should be vacuum available. If no vacuum is available, the check valve is not working correctly. Replace the check valve and retest.



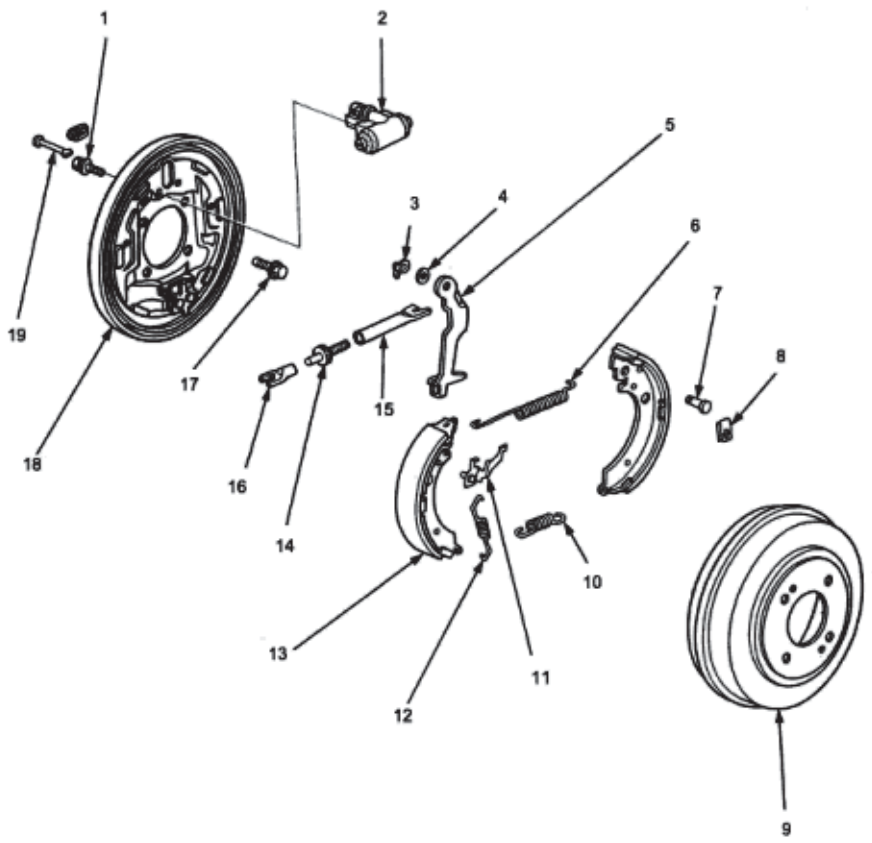
1. BRAKE BOOSTER VACUUM HOSE, (Check valve built-in)

⚠ 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 a vacuum cleaner.

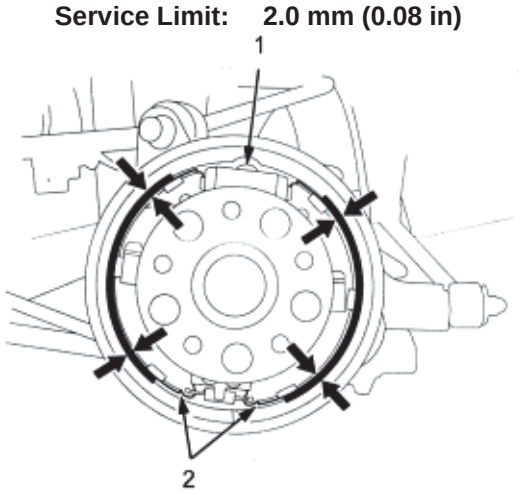
NOTE:
- Contaminated brake linings or drums reduce stopping ability.
- Block the front wheels before jacking up the rear of the vehicle.

1. Raise the rear of the vehicle, and make sure it is securely supported.
2. Release the parking brake and remove the rear brake drum (see section 18).



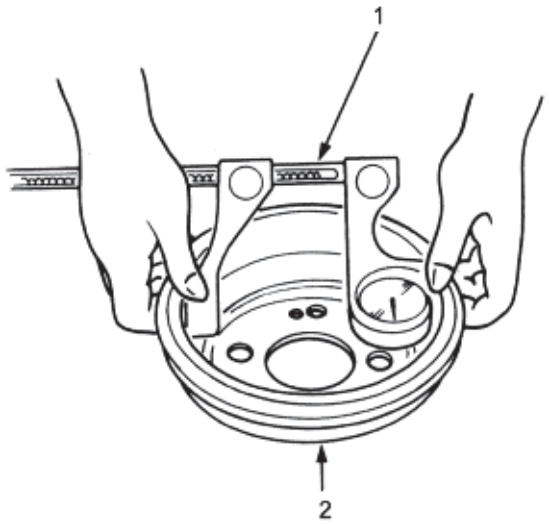
1. **9 Nm (0.9 kgf/m, 7 lbf/ft)**
2. **WHEEL CYLINDER**
   Inspect for leakage.
   Disassembly/Inspection, (**See Page** 19-A-24)
3. **U-CLIP**, Replace
4. **WAVY WASHER**
5. **PARKING BRAKE LEVER**
   Marked left and right
6. **UPPER RETURN SPRING**
   Check for weakness and damage
7. **PIVOT PIN**
8. **RETAINER SPRING**
   Install securely on tension pin
9. **BRAKE DRUM**
   Inspection, (**See Page** 19-A-21)
10. **LOWER RETURN SPRING**
    Check for weakness and damage
11. **SELF-ADJUSTER LEVER**
12. **SELF-ADJUSTER SPRING**
    Check for weakness and damage
13. **BRAKE SHOE**
    Inspection, (**See Page** 19-A-21)
    If brake shoes are to be reused, mark and reassemble in same position
14. **ADJUSTER BOLT**
    Check ratchet teeth for wear and damage
15. **CLEVIS A**
16. **CLEVIS B**
17. **10 mm BOLT, 64 Nm (6.5 kgf/m, 47 lbf/ft)**
18. **BACKING PLATE**
    Marked left and right
19. **TENSION PIN**

1. Check the wheel cylinder for leakage.
2. Check the brake linings for cracking, glazing, wear or contamination.
3. Measure the brake lining thickness.
   Brake Lining Thickness:
   Standard: 4.0 mm (0.157 in)
   Service Limit: 2.0 mm (0.08 in)



1. WHEEL CYLINDER
2. LININGS

   NOTE: Measurement does not include brake shoe thickness.
4. If the brake lining thickness is less than service limit, replace the brake linings as a set.
5. Check the bearings in the hub unit for smooth operation. If defective refer to section 18.
6. Measure the inside diameter of the brake drum using the inside vernier calipers.
   Drum Inside Diameter:
   Standard:
   199.9 - 200.0 mm (7.870 - 7.874 in)
   Service Limit:
   201.0 mm (7.913 in)

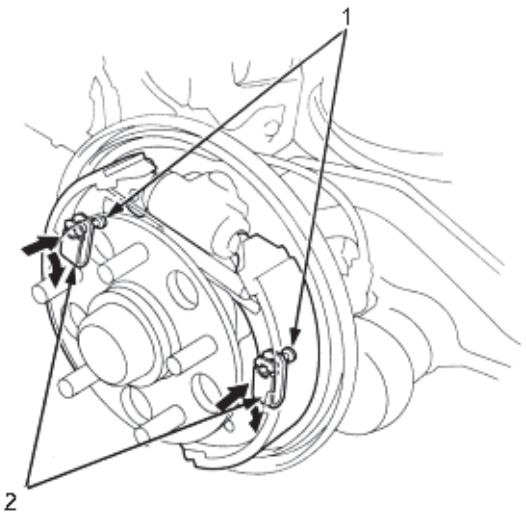


1. INSIDE VERNIER CALIPERS
2. BRAKE DRUM

7. If the inside diameter of the brake drum is more than the service limit, replace the brake drum.
8. Check the brake drum for scoring, grooves and cracks.

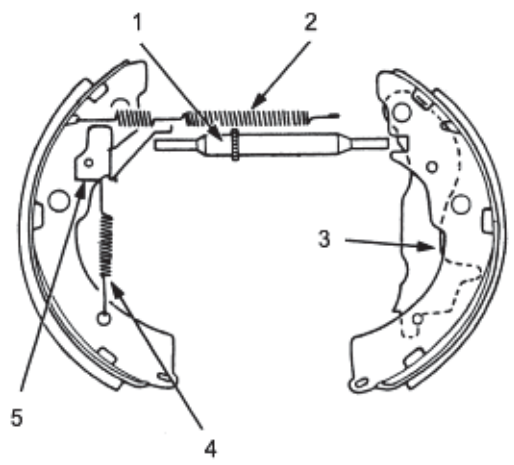
Disassembly

1. Remove the tension pins by pushing the retainer springs and turning them.



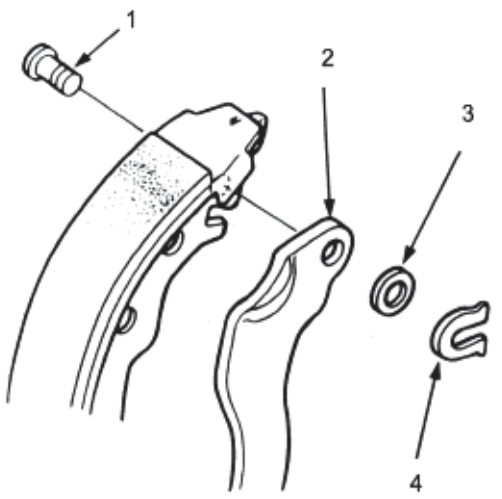
1. TENSIONER PINS
2. RETAINER SPRINGS

2. Lower the brake shoe assembly and remove the lower return spring.
   NOTE: Be careful not to damage the dust cover on the wheel cylinder.
3. Remove the brake shoe assembly.
4. Disconnect the parking brake cable from the parking brake lever.
5. Remove the upper return spring, self-adjusting lever and self-adjusting spring and separate the brake shoes.



1. ADJUSTER BOLT, Check ratchet teeth for wear and damage
2. UPPER RETURN SPRING, Check for weakness and damage
3. PARKING BRAKE LEVER
4. SELF-ADJUSTER SPRING
5. SELF-ADJUSTER LEVER

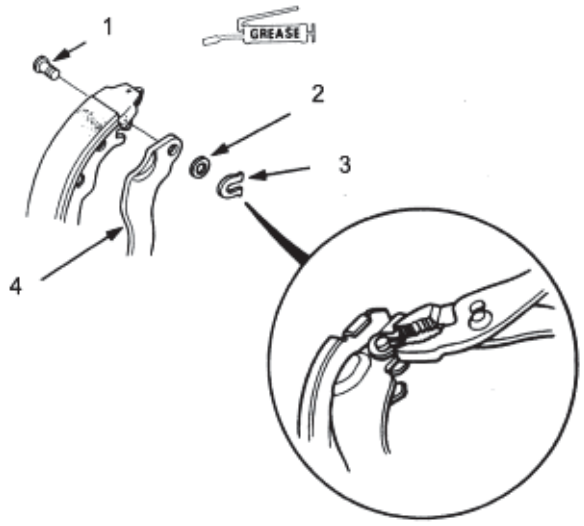
6. Remove the wavy washer, parking brake lever and pivot pin from the brake shoe by removing the U-clip.



1. PIVOT PIN
2. PARKING BRAKE LEVER
3. WAVE WASHER
4. U-CLIP, Replace

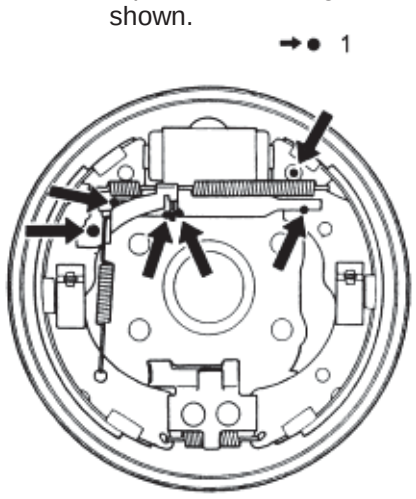
Reassembly

1. Apply brake cylinder grease (P/N: 08733-B020R) or equivalent rubber grease to the sliding surface of the pivot pin and insert the pin into the brake shoe.
2. Install the parking brake lever and wavy washer on the pivot pin and secure with U-clip.
   NOTE: Pinch the U-clip securely to prevent the pivot pin from coming out of the brake shoe.



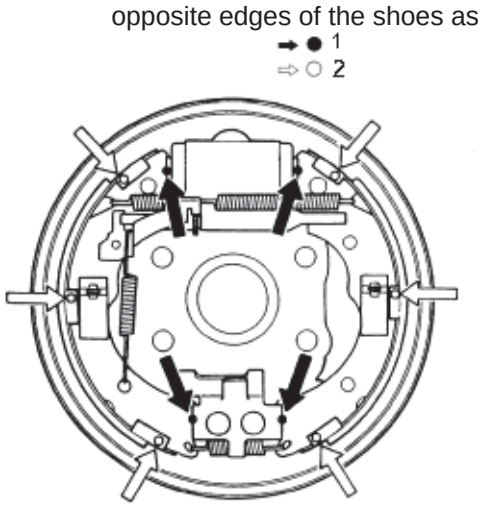
1. PIVOT PIN
2. WAVE WASHER
3. U-CLIP, Replace
4. PARKING BRAKE LEVER

3. Connect the parking brake cable to the parking brake lever.
4. Apply grease on each sliding surface.
   - Apply brake cylinder grease (P/N: 08733-B020E) or equivalent rubber grease to the sliding surfaces as shown.



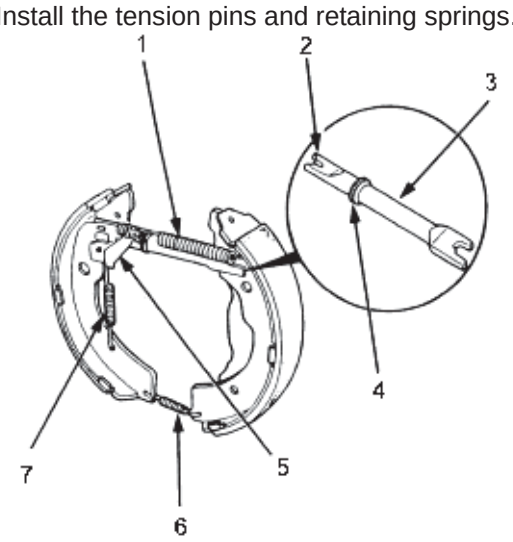
1. Sliding surface

   - Apply Molykote 44MA to the brake shoe ends and opposite edges of the shoes as shown.



1. Brake shoe ends
2. Opposite edge of the shoe

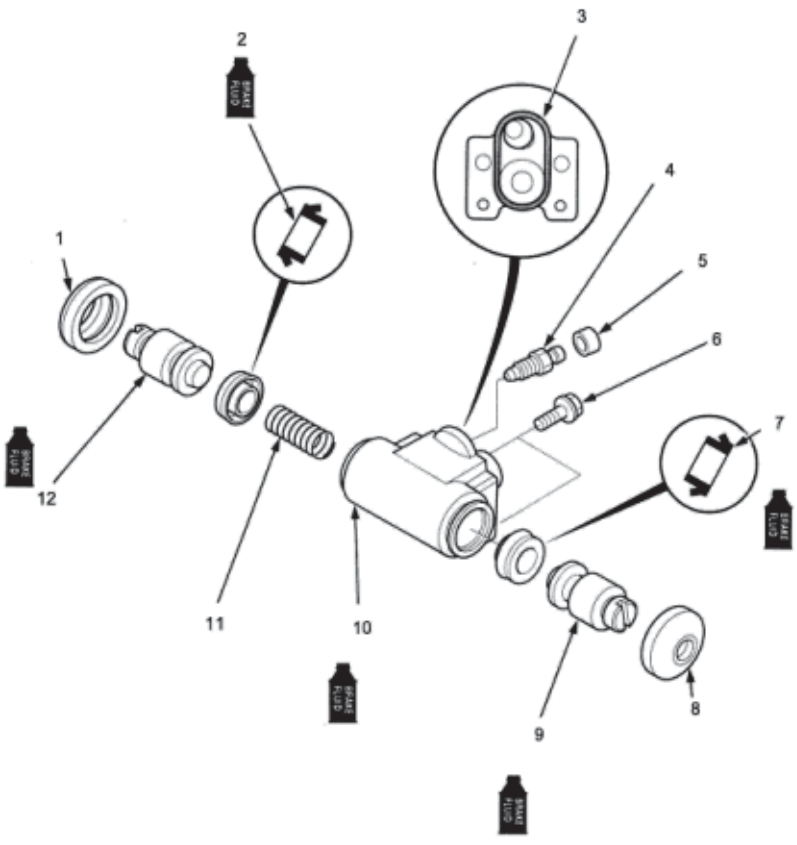
5. Clean the threaded portions of clevis A and B. Coat the threads of the clevis with grease. To shorten the clevis, turn the adjuster bolt.
6. Hook the self-adjuster spring to the self -adjuster lever first, then to the brake shoe.
7. Install the clevis A and B and upper return spring noting the installation direction. Be careful no to damage the wheel cylinder dust covers.
8. Install the lower return spring.
9. Install the tension pins and retaining springs.



1. UPPER RETURN SPRING
2. CLEVIS B
3. CLEVIS A
4. ADJUSTER BOLT
5. SELF-ADJUSTER LEVER
6. LOWER RETURN SPRING
7. SELF-ADJUSTER SPRING

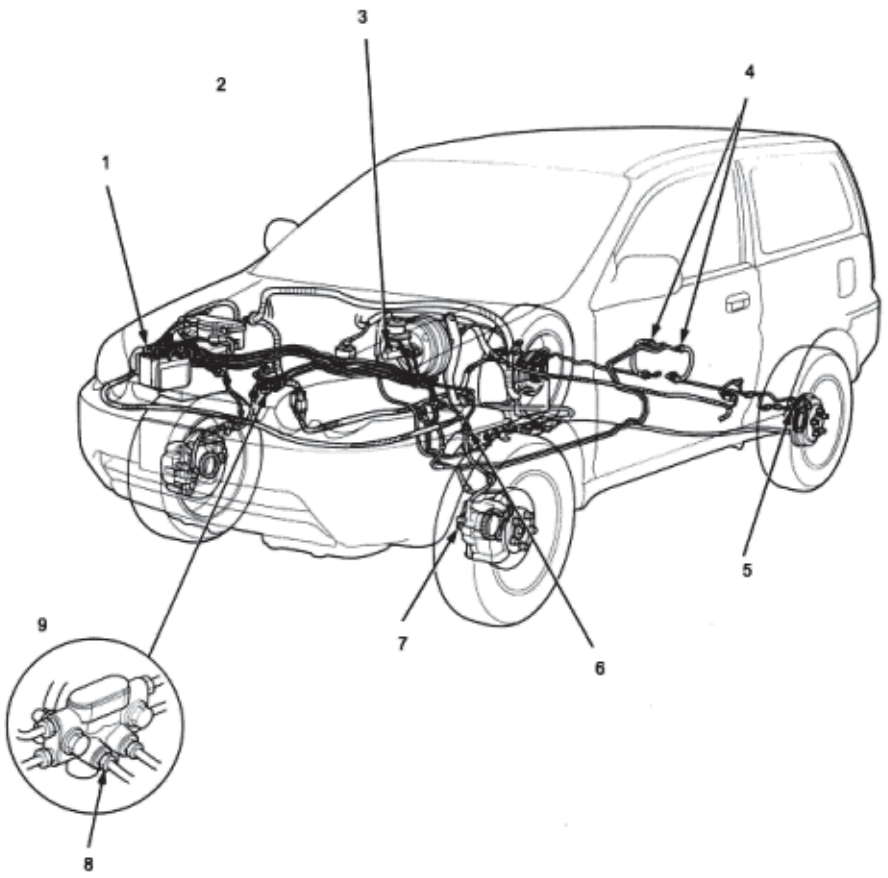
10. Install the brake drum.
11. If the wheel cylinder has been removed, bleed the brake system (**See Page** 19-A-7), and check for leaks at brake line connections, and retighten if necessary.
12. Depress the brake pedal several times to set the self-adjusting brake.
13. Adjust the parking brake (**See Page** 19-A-6).

NOTE:
- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- 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 dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Make sure no dirt or other foreign matter is allowed to contaminate the brake fluid.
- Do not reuse the drained fluid.
- Use only clean Genuine Honda brake fluid or an equivalent DOT3 or DOT4 brake fluid.
- Lubricate all parts with clean brake fluid during reassembly.
- Replace all rubber parts with new ones whenever disassembled.



1. **DUST COVER**, Replace
2. **PISTON CUP**, Replace
   NOTE: Install with the lip facing in.
3. Apply sealant to this area when installing the wheel cylinder onto backing plate.
   NOTE: Do not apply sealant to the threads.
4. **BLEED SCREW**, 7 Nm (0.7 kgf/m, 5 lbf/ft)
5. **BLEED SCREW CAP**
6. **6 mm BOLT, 9 Nm (0.9 kgf/m. 7 lbf/ft)**
7. **PISTON CUP**, Replace
   NOTE: Install with the lip facing in.
8. **DUST COVER**, Replace
9. **PISTON**
   Inspect for scoring and grooving
10. **WHEEL CYLINDER**
    Check the bore for scratches and scoring
11. **WHEEL CYLINDER SPRING**
    Check for weakness and damage
12. **PISTON**
    Inspect for scoring and grooving

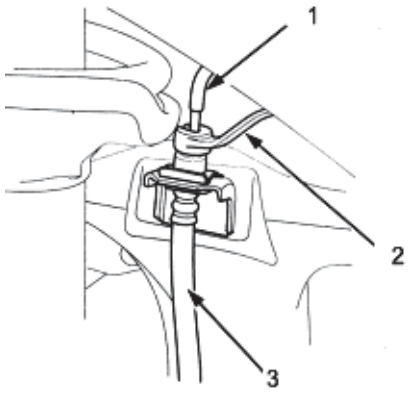
1. Inspect the brake hoses for damage, deterioration, leaks, interference and twisting.
2. Check the brake lines for damage, rusting and leakage. Also check for bent brake lines.
3. Check for leaks at hose and line joints or connections and retighten if necessary.
4. Check the master cylinder, proportioning control valve and ABS modulator unit for damage and leakage.
   NOTE:
   - Replace the brake hose clip whenever the brake hose is serviced.
   - LHD type is shown, RHD type is symmetrical.



1. **ABS MODULATOR UNIT to BRAKE LINE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
2. **4-WAY JOINT to BRAKE LINE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
3. **MASTER CYLINDER to BRAKE LINE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
4. **BRAKE LINE to BRAKE HOSE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
5. **BRAKE LINE to WHEEL CYLINDER, 15 Nm (1.5 kgf/m, 11 lbf/ft), BLEED SCREW, 7 Nm (0.7 kgf/m, 5 lbf/ft)**
6. **BRAKE LINE to BRAKE HOSE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
7. **BRAKE HOSE to FRONT BRAKE CALIPER (BANJO BOLT), 34 Nm (3.5 kgf/m, 25 lbf/ft), BLEED SCREW, 9 Nm (0.9 kgf/m, 7 lbf/ft)**
8. **PROPORTIONING CONTROL VALVE to BRAKE LINE, 15 Nm (1.5 kgf/m, 11 lbf/ft)**
9. **Without ABS:**

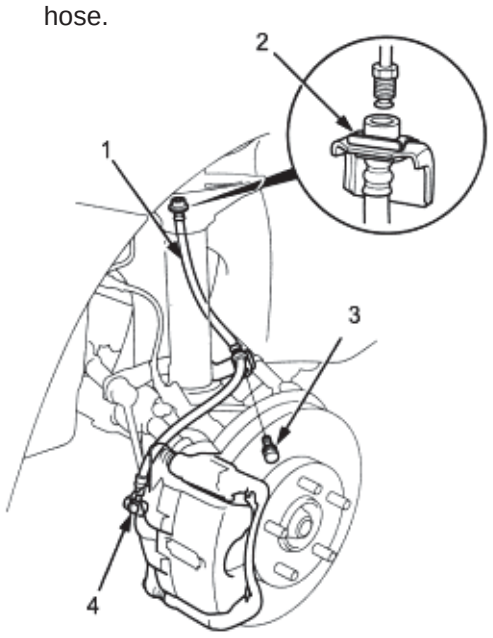
NOTE:
- Before reassembling check that all parts are free of dust and other foreign particles.
- Replace parts with new ones whenever specified to do so.
- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.

1. Replace the brake hoses if the hose is twisted, cracked or if it leaks.
2. Disconnect the brake hose from the brake line using a 10 mm flare nut wrench.



1. BRAKE LINE
2. FLARE NUT WRENCH
3. BRAKE HOSE

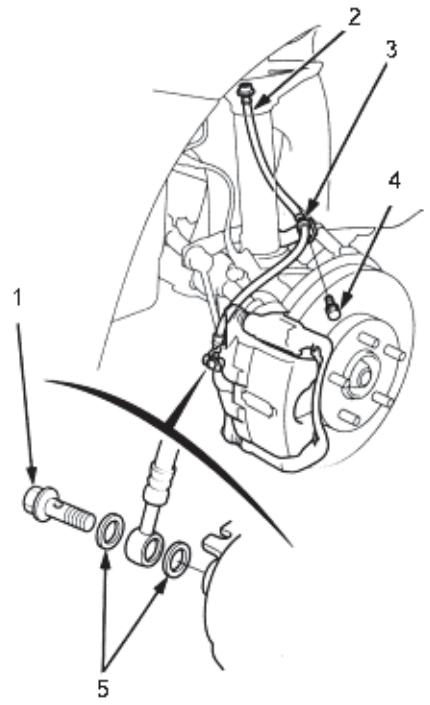
3. Remove and discard the brake hose clip from the brake hose.



1. BRAKE HOSE
2. BRAKE HOSE CLIP, Replace
3. 6 mm HOSE BRACKET BOLTS
4. BANJO BOLT

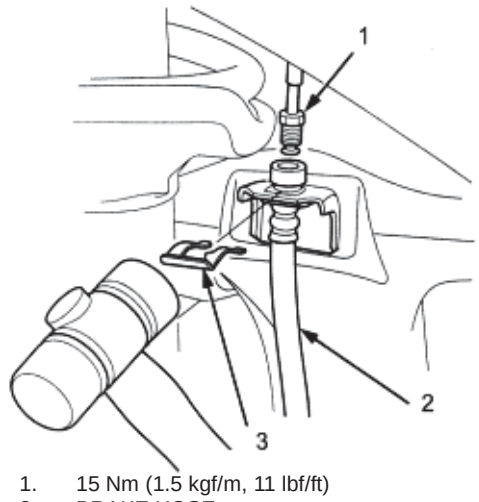
4. Remove the banjo bolt and disconnect the brake hose from the caliper.
5. Remove the brake hose from the knuckle and always replace the bracket and hose with new ones.

6. Install the brake hose bracket and brake hose on the knuckle first, then connect the brake hose tot he caliper with the banjo bolt and new sealing washers.



1. BANJO BOLT, 34 Nm (3.5 kgf/m, 25 lbf/ft)
2. BRAKE HOSE
3. BRAKE HOSE BRACKET
4. 6 mm HOSE BRACKET BOLTS, 9.8 Nm (1.0 kgf/m, 7 lbf/ft)
5. SEALING WASHERS, Replace

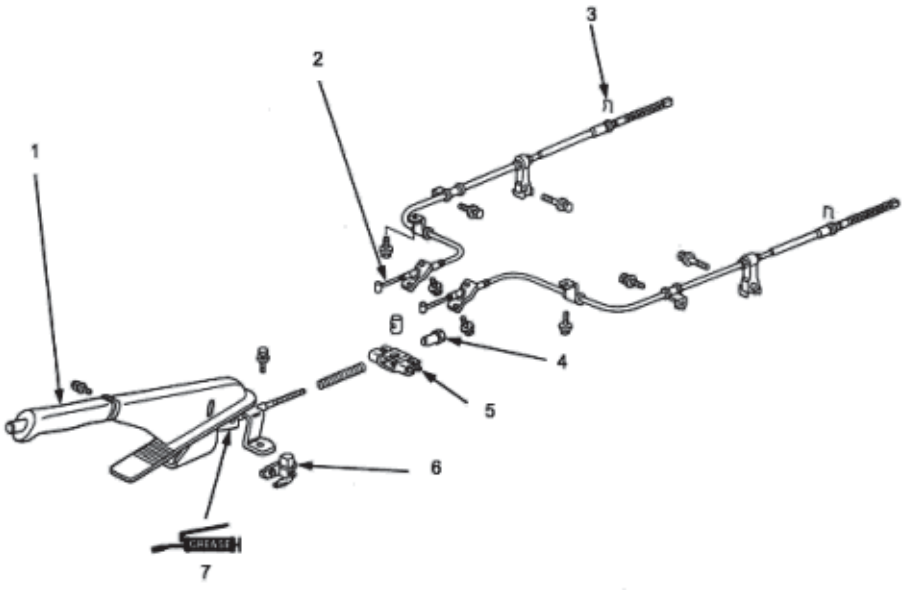
7. Install the brake hose on the brake hose bracket with a new brake hose clip.



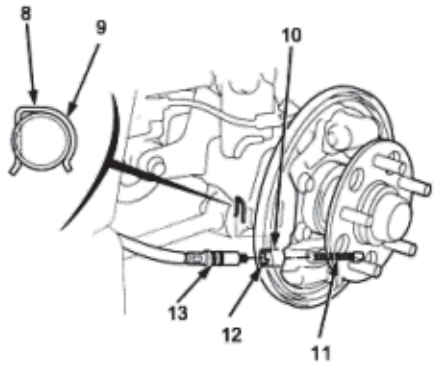
1. 15 Nm (1.5 kgf/m, 11 lbf/ft)
2. BRAKE HOSE
3. BRAKE HOSE CLIP, Replace

8. Connect the brake line to the brake hose.
9. After installing the brake hose, bleed the brake system (**See Page** 19-A-7).
10. Perform the following checks:
    - Check the brake hose and line joint for leaks and tighten if necessary.
    - Check the brake hoses for interference or twisting.

NOTE: The parking brake cables must not be bent or distorted. This will lead to stiff operation and premature cable failure.

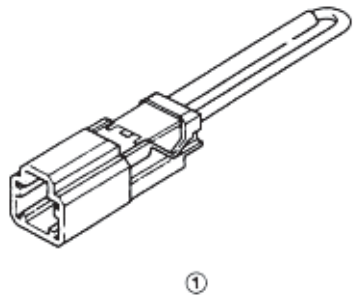


1. **PARKING BRAKE LEVER**
   Check for smooth operation
2. **PARKING BRAKE CABLE**
   Check for faulty movement
3. **CLIP**
4. **ADJUSTING NUT**
5. **EQUALISER**
6. **PARKING BRAKE SWITCH**
7. (Sliding surface)
8. **CLIP**
9. Round side
10. **CABLE HOLDER**
11. **PARKING BRAKE CABLE**
12. **CUTOUT**
13. **TAB**

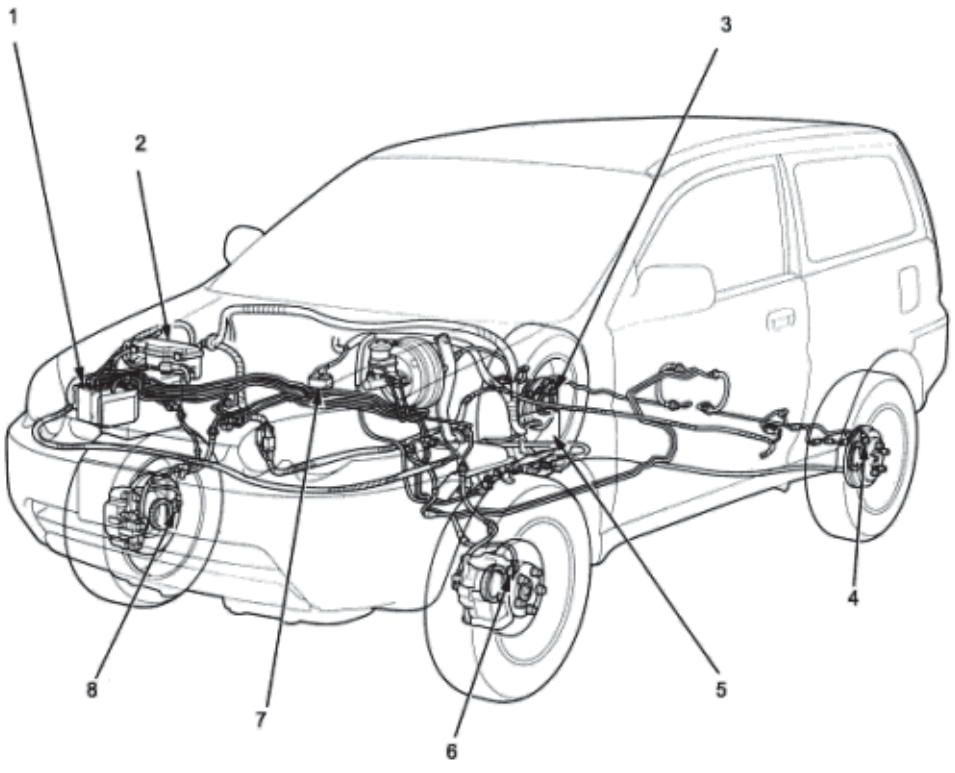


1. Remove the brake shoes (**See Page** 19-A-22), and disconnect the parking brake cable from the parking brake lever.
2. Remove the clip from the cable holder on the backing plate.
3. Remove the parking brake cable end from the backing plate.
4. Insert the parking brake into the cable holder and connect the cable end on the parking brake lever.
5. Align the cutout in the cable holder with the tab on the cable. Install the clip in the cable holder groove. Make sure that the round side of the clip is to the outside (backing plate side).

Ref No.	Tool Number	Description	Qty	Remark
1	07PAZ -0010100	SCS Short Connector	1	

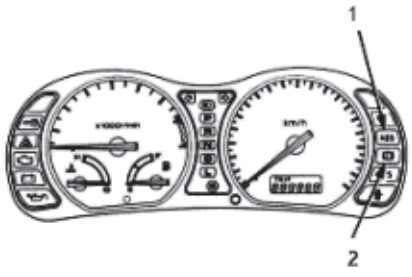


①

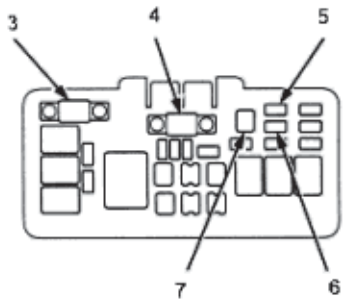


1. **MODULATOR ASSEMBLY (ABS CONTROL UNIT/MODULATOR UNIT)**
2. **UNDER-HOOD FUSE/RELAY BOX**
3. **RIGHT-REAR WHEEL SENSOR**
4. **LEFT-REAR WHEEL SENSOR**
5. **UNDER-DASH FUSE/RELAY BOX**
6. **LEFT-FRONT WHEEL SENSOR**
7. **SERVICE CHECK CONNECTOR (2P)**
8. **RIGHT-FRONT WHEEL SENSOR**

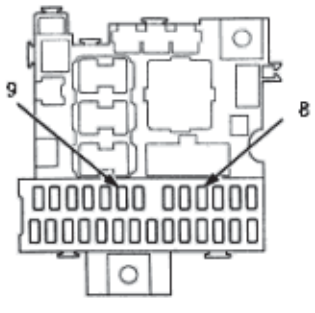
GAUGE ASSEMBLY



UNDER-HOOD FUSE/RELAY BOX

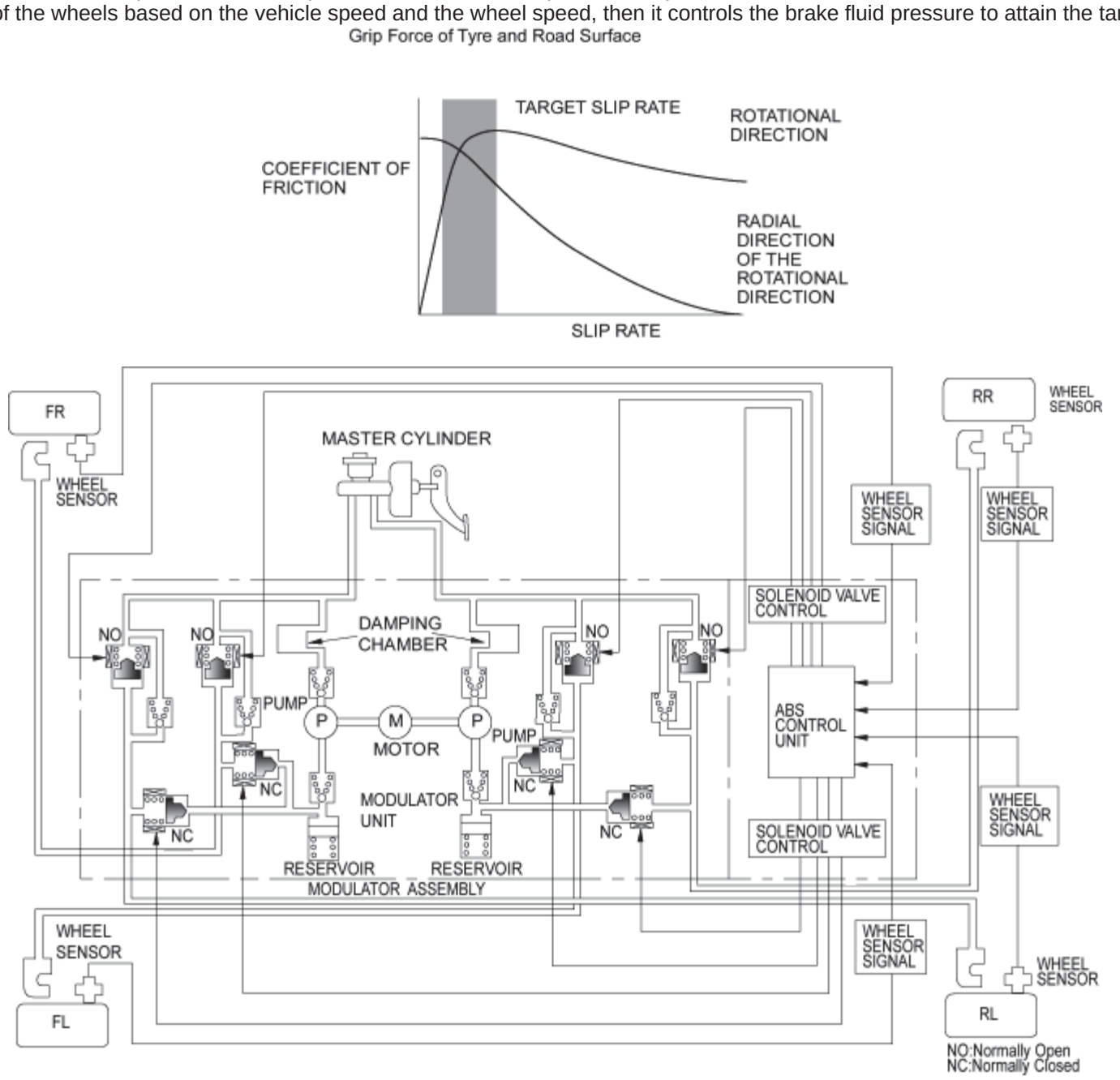


1. **ABS INDICATOR**
2. **BRAKE SYSTEM INDICATOR**
3. **IG MAIN (50A) FUSE**
4. **BATTERY (80A) FUSE**
5. **ABS +B (20 A) FUSE**
6. **STOP (15 A) FUSE**
7. **ABS MOTOR (40 A) FUSE**
8. **R/C MIRROR (7.5 A) FUSE**
9. **INSTRUMENT LIGHT (7.5 A)**



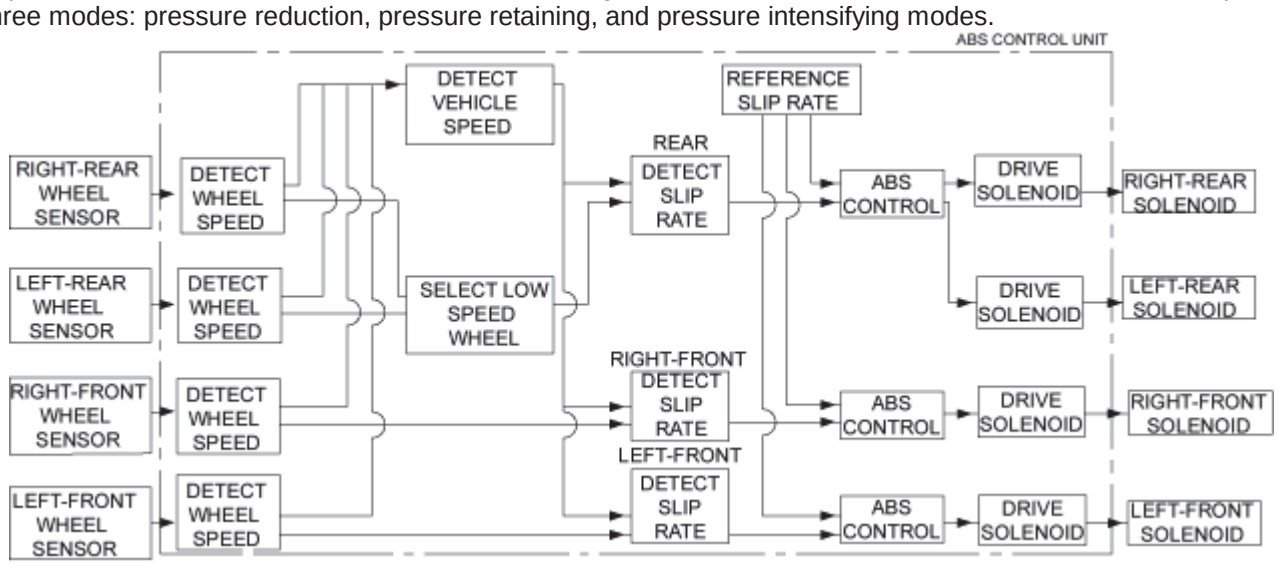
UNDER-DASH FUSE/RELAY BOX

When the brake pedal is depressed during driving, the wheels can lock before the vehicle comes to a stop. In such an event, the manoeuvrability 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. The ABS precisely controls the slip rate of the wheels to ensure maximum grip force from the tyres, and it thereby ensures manoeuvrability and stability of the vehicle.
The ABS calculates the slip rate of the wheels based on the vehicle speed and the wheel speed, then it controls the brake fluid pressure to attain the target slip rate.



ABS Control

The ABS control unit detects the wheel speed based on the wheel sensor signal it received, then it calculates the vehicle speed based on the detected wheel speed. The control unit detects the vehicle speed during deceleration based on the rate of deceleration.
The ABS control unit calculates the slip rate of each wheel, and it transmits the control signal to the modulator unit solenoid valve when the slip rate is high.
The pressure reduction control has three modes: pressure reduction, pressure retaining, and pressure intensifying modes.



Self-diagnosis Function

The ABS control unit is equipped with a main CPU and a sub CPU, that check each other for problems.
The CPUs checks the circuit of the system.
The ABS control unit turns the ABS and/or brake system indicator when the unit detects a problem, and the unit stops the system.
The self-diagnosis can be classified into these four categories:

1. Initial diagnosis
2. Except ABS control
3. During ABS control
4. During warning.

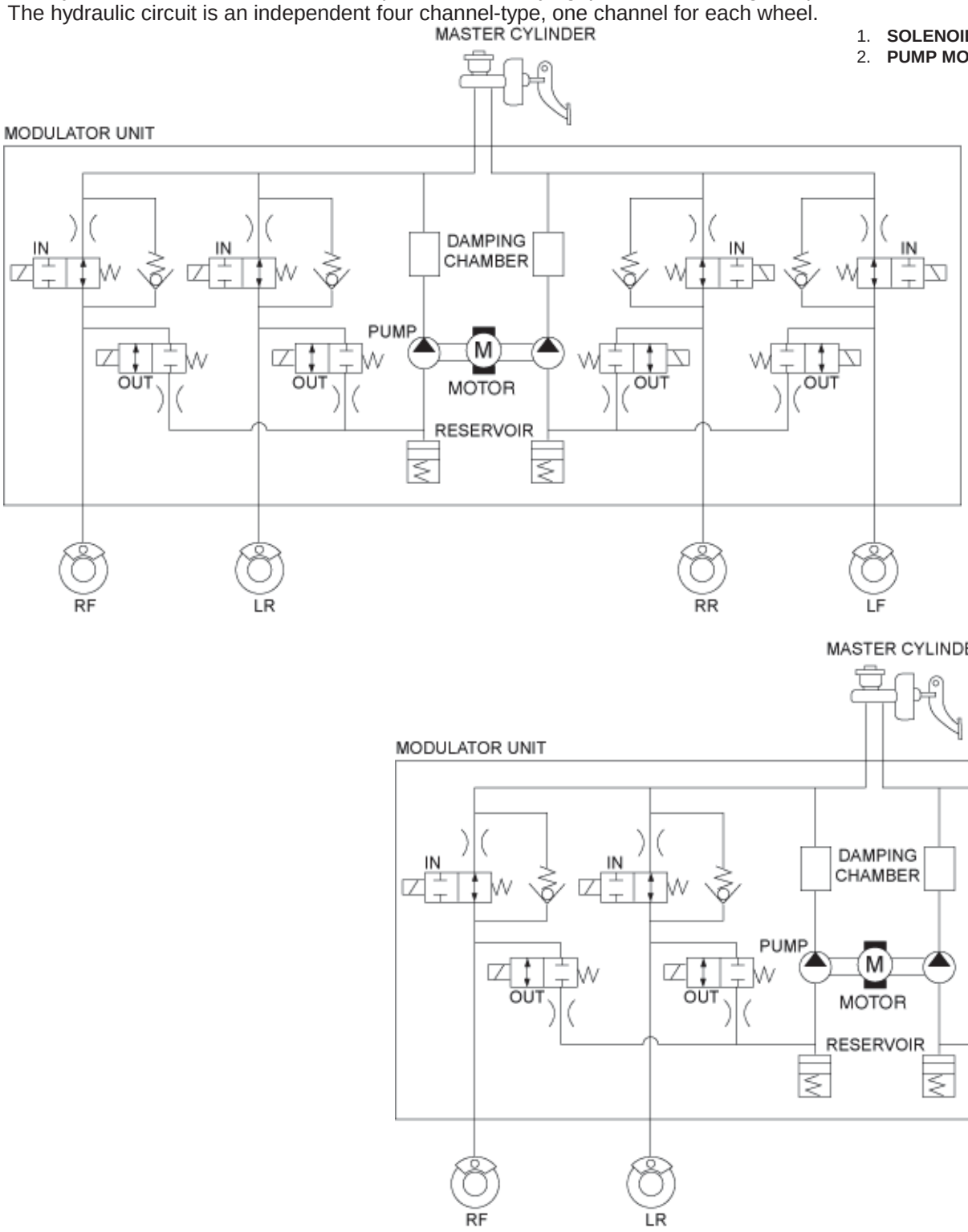
On-board Diagnosis Function

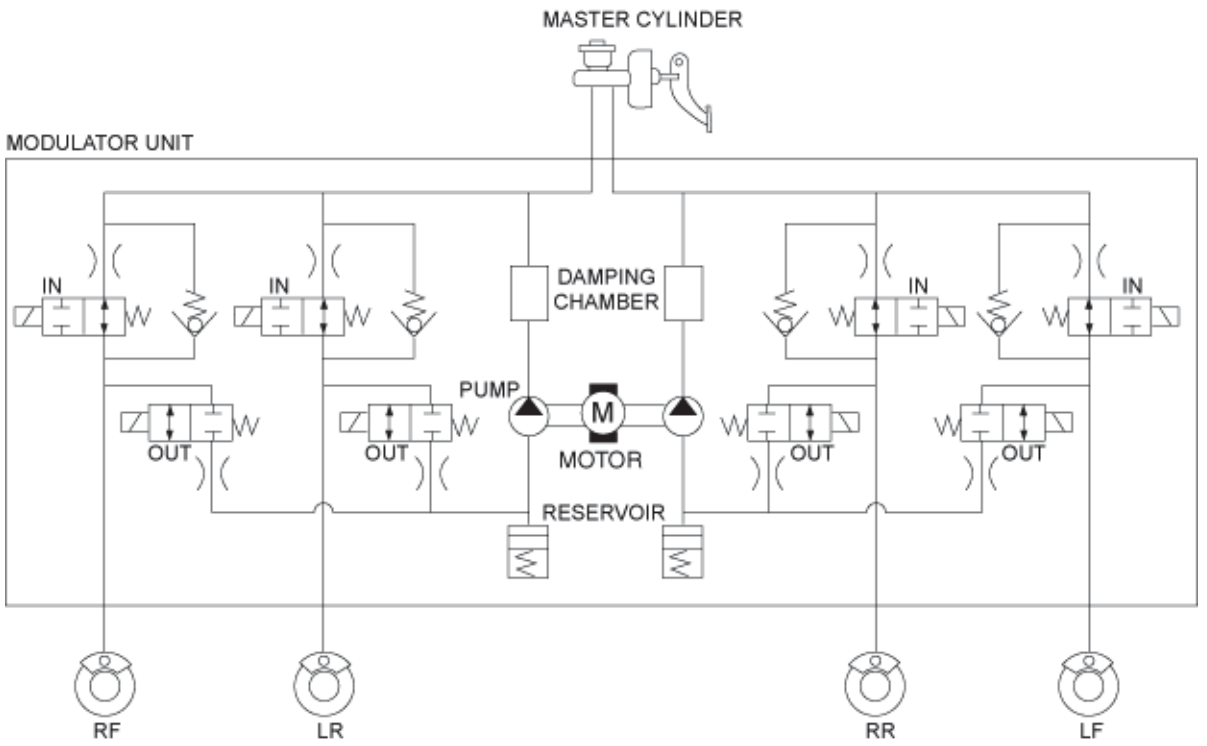
The ABS system can be diagnosed with the Honda PGM Tester.
The ALB Checker cannot be used with this system. For air bleeding, and checking wheel sensor signals, use the Honda PGM Tester. See the Honda PGM Tester user's manuals for specific operating instructions.

ABS Modulator

The ABS modulator consists of the inlet solenoid valve, outlet solenoid valve, reservoir, pump, pump motor and the damping chamber.
The modulator reduces the caliper fluid pressure directly. It is a circulating-type modulator because the brake fluid circulates through the caliper, reservoir and the master cylinder.
The hydraulic control has three modes: pressure intensifying, pressure retaining and pressure reducing modes.
The hydraulic circuit is an independent four channel-type, one channel for each wheel.

1. **SOLENOID VALVE**
2. **PUMP MOTOR**





Pressure intensifying mode: Inlet valve open, outlet valve closed
Master cylinder fluid is pumped out to the CALIPER.

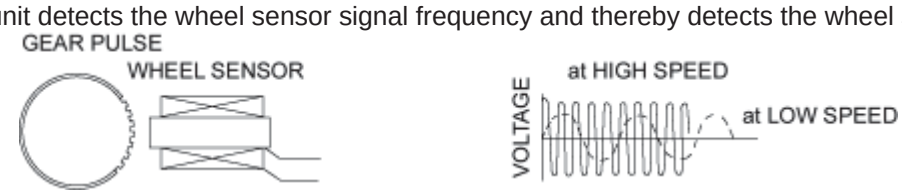
Pressure retaining mode: Inlet valve closed, outlet valve closed
caliper fluid is retained by the inlet valve and outlet valve.

Pressure reducing mode: Inlet valve closed, outlet valve open
caliper fluid flows through the outlet valve to the reservoir.

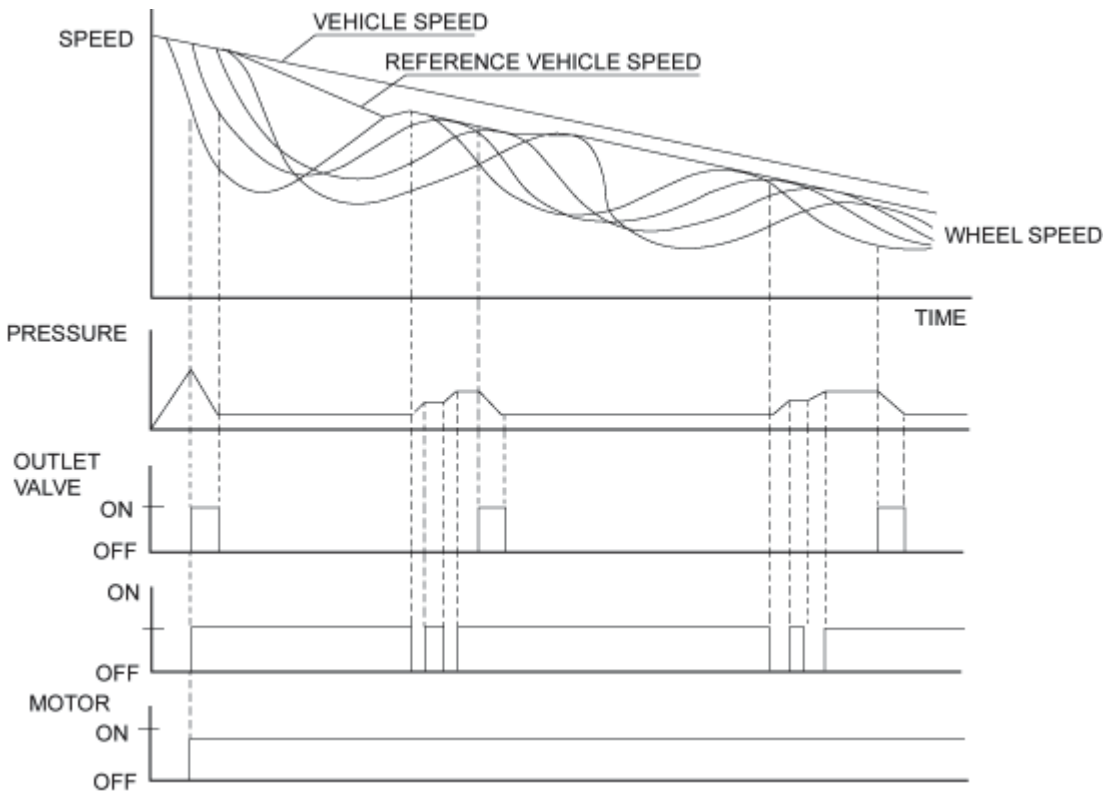
Motor operation mode: When starting the pressure reducing mode, the pump motor is ON.
When stopping ABS operation, the pump motor is OFF.
The reservoir fluid is pumped out by the pump, through the damping chamber, to the master cylinder.

Wheel Sensor

The wheel sensors are the magnetic contactless type. As the gear pulsar teeth rotate past the wheel sensor's magnetic coil, AC current is generated. The AC frequency changes in accordance with the wheel speed. The ABS control unit detects the wheel sensor signal frequency and thereby detects the wheel speed.



Wheel Speed and Modulator Control

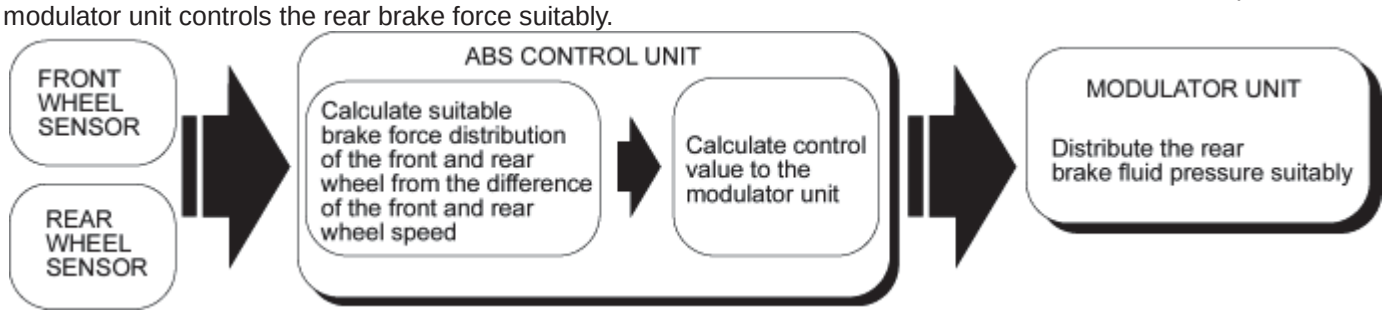


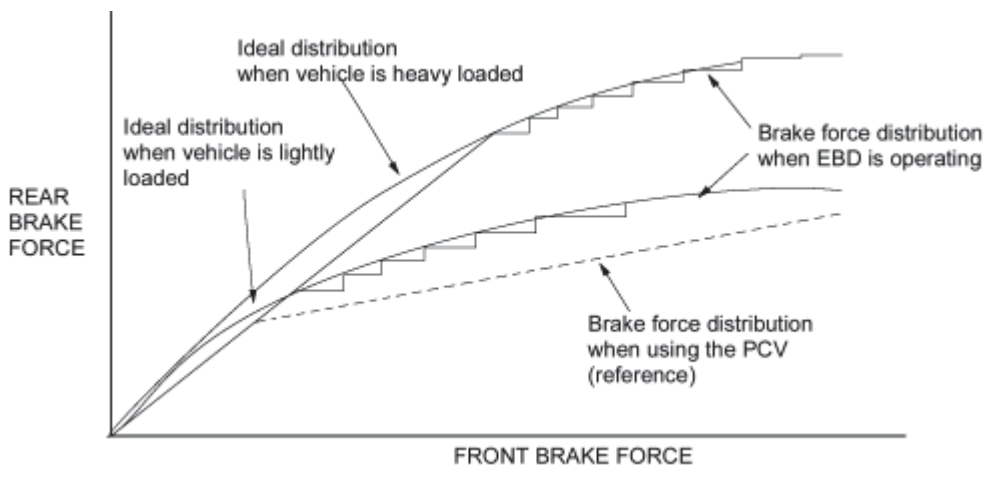
When the wheel speed drops sharply below the vehicle speed, the outlet valve opens momentarily to reduce the caliper fluid pressure. The pump motor starts at this time. As the wheel speed is restored, the inlet valve opens momentarily to increase the caliper fluid pressure.

Electronic Brake Distribution (EBD)

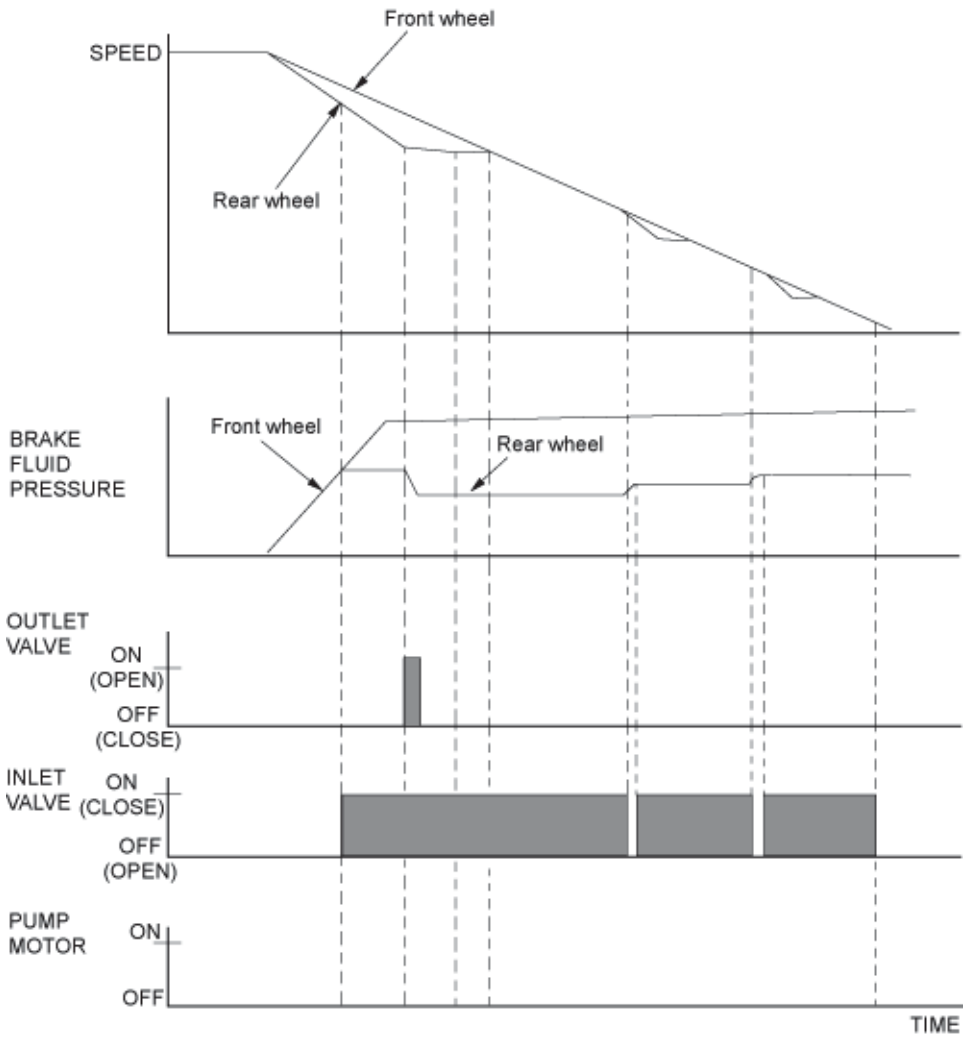
The ABS control unit controls the front and rear brake force distribution suitably according to load movement by changing of carrying condition or deceleration to use the brake force when braking.

The ABS control unit calculates suitable brake force distribution of the font and rear wheel from the difference of the front and rear wheel speed, and the unit transmits the control signal to the modulator unit. The modulator unit controls the rear brake force suitably.

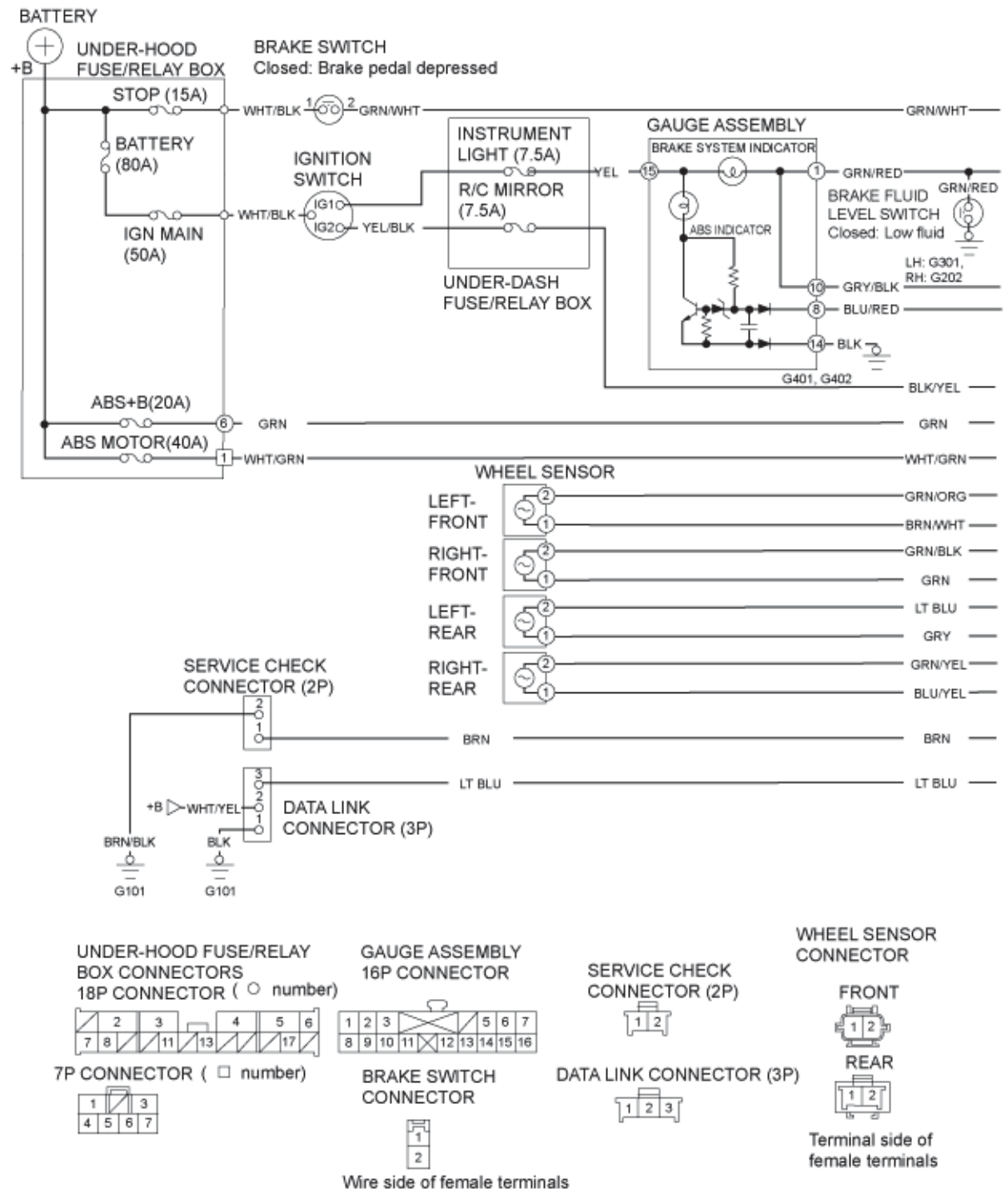




EBD Control



If braking with deceleration more than a certain value, the inlet valve closes to retaining the brake fluid pressure when the rear wheel speed drops below the front wheel speed. When the rear wheel speed drops further, the outlet valve opens momentarily to reduce the brake fluid pressure. As the wheel speed is restored, the inlet valve opens momentarily to increase the brake fluid pressure.
The pump motor does not operate during these operations.



UNDER-HOOD FUSE/RELAY BOX CONNECTORS
18P CONNECTOR (○ number)

7P CONNECTOR (□ number)

GAUGE ASSEMBLY 16P CONNECTOR

BRAKE SWITCH CONNECTOR

Wire side of female terminals

SERVICE CHECK CONNECTOR (2P)

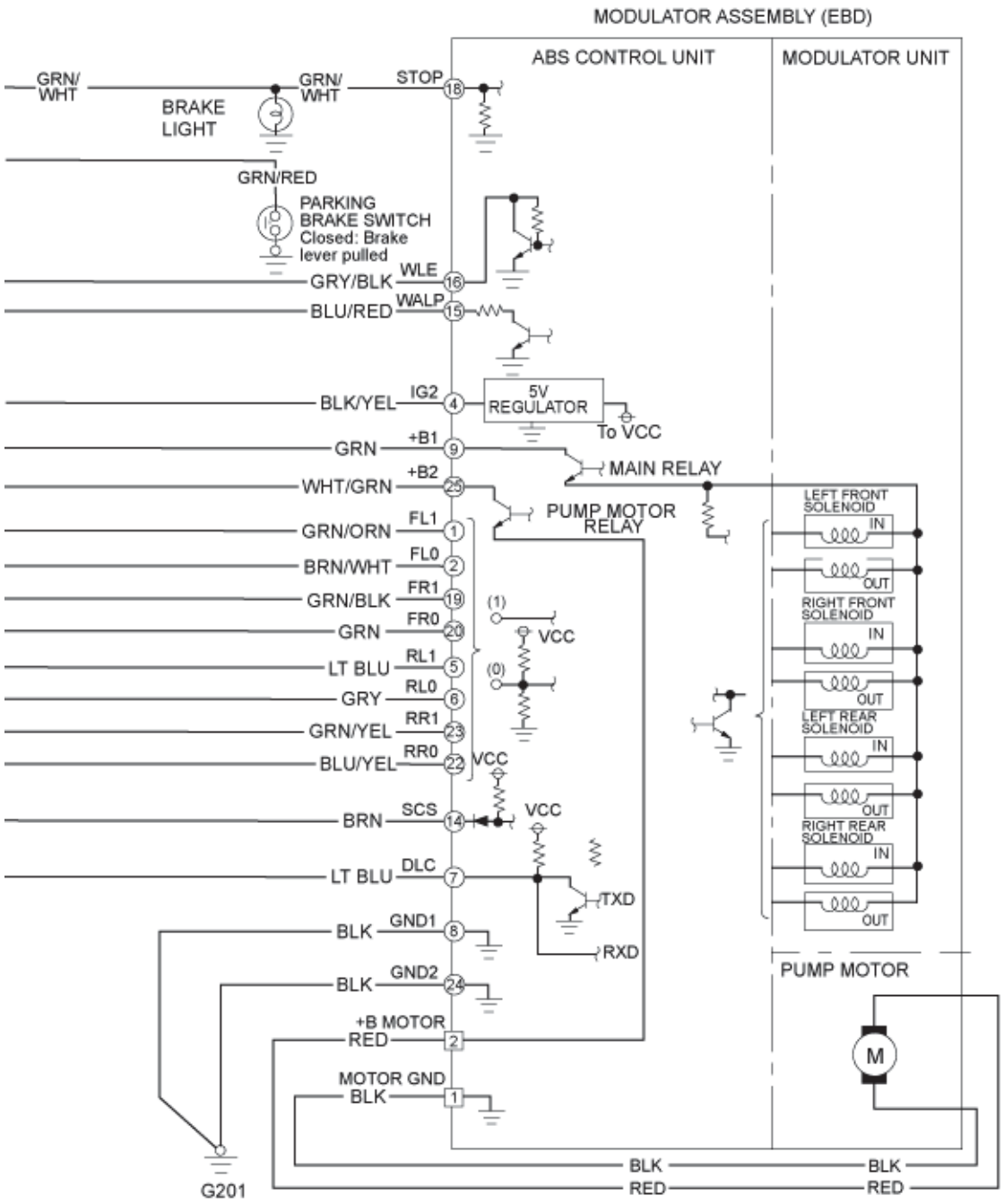
DATA LINK CONNECTOR (3P)

WHEEL SENSOR CONNECTOR

FRONT

REAR

Terminal side of female terminals



ABS CONTROL UNIT CONNECTOR
(◯ number)

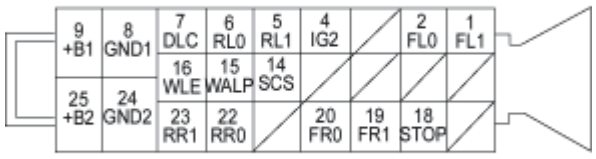
9	8	7	6	5	4		2	1
		16	15	14				
25	24	23	22		20	19	18	

Terminal side of female terminals

PUMP MOTOR CONNECTOR
(□ number)

2	1

ABS CONTROL UNIT CONNECTOR



Wire side of female terminals

Terminal No.	Wire colour	Terminal sign (Terminal name)	Description	Measurement Terminal	Conditions (Ignition switch ON (II))		Voltage
1	GRN/ORN	FL1 (Front-left 1)	Detects left-front wheel sensor signal	1-2	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
2	BRN/WHT	FL0 (Front-left 0))	Detects left-front wheel sensor signal	1-2	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
4	BLK/YEL	IG2 (Ignition 2)	Power source for activating the system	4-GND			Battery Voltage
5	LT BLU	RL1 (Rear-left 1)	Detects left-rear wheel sensor signal	5-6	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
6	GRY	RL0 (Rear-left 0)	Detects left-rear wheel sensor signal	5-6	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
7	LT BLU	DLC (Data link connector)	Communicates with the Honda PGM Tester	-	-		-
8	BLK	GND1 (Ground 1)	Ground	-	-		-
9	GRN	+B1 (Battery 1)	Power source for the solenoid valve	9-GND	Every time		Battery Voltage
14	BRN	SCS (Service check signal)	Detects service check connector signal (DTC indication or DTC clearing)	-	-		-
15	BLU/RED	WALP (Warning lamp)	Drives ABS indicator (Turns the indicator drive transistor to ON, then turns off the indication).	15-GND	ABS indicator	ON	4-6 V
15	BLU/RED	WALP (Warning lamp)	Drives ABS indicator (Turns the indicator drive transistor to ON, then turns off the indication).	15-GND	ABS indicator	OFF	Below 0.3 V*1
16	GRY/BLK	WLE (Warning lamp EBD)	Drives brake system indicator (Turns the indicator drive transistor to OFF, then turns off the indicator	16-GND	Brake system indicator	ON	Below 0.3 V
16	GRY/BLK	WLE (Warning lamp EBD	Drives brake system indicator (Turns the indicator drive transistor to OFF, then turns off the indicator	16-GND	Brake system indicator	OFF	Battery voltage

*1: When measured the voltage with the ABS control unit connector terminal No. 15 is connected to body ground using a jumper wire.

Terminal No.	Wire colour	Terminal sign (Terminal name)	Description	Measurement Terminal	Conditions (Ignition switch ON (II))		Voltage
18	GRN/WHT	STOP	Detects brake switch signal	18-GND	Brake pedal	Depressed	Battery Voltage
18	GRN/WHT	STOP	Detects brake switch signal	18-GND	Brake pedal	Released	Below 0.3 V
19	GRN/BLK	FR1 (Front-right 1)	Detects right-front wheel sensor signal	19-20	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
20	GRN	FR0 (Front-right 0)	Detects right-front wheel sensor signal	19-20	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
22	BLU/YEL	RR0 (Rear-right 0)	Detects right-rear wheel sensor signal	22-23	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
23	GRN/YEL	RR1 (Rear-right 1)	Detects right-rear wheel sensor signal	22-23	Wheel	Turn wheel at 1 turn/second	AC: 0.053V or above (Reference) Oscilloscope: 0.15 Vp-p or above
24	BLK	GND2 (Ground 2)	Ground	-	-		-
25	WHT/GRN	+B2 (Battery 2)	Power source for the pump motor	25-GND	Every time		Battery Voltage

ABS Indicator

1. If the system is OK, the ABS indicator goes off two seconds after turning the ignition switch ON (II) without starting the engine, and then comes on again and goes off after two seconds. This occurs because the ABS control unit is turned on by the IG2 power source.
2. The ABS indicator comes on when the ABS control unit detects a problem in the system. However, even thought the system is operating properly, the ABS indicator will come on too, under the following conditions.
   - Signal disturbance
   - Wheel spin
   - Only drive wheels rotate
   - Battery voltage fluctuates

   To determine the actual cause of the problem, question the customer about the problem, taking these conditions into consideration.
3. When a problem is detected and the ABS indicator comes on, there are cases when the indicator light stays on until the ignition switch is turned OFF, and cases when the indicator light goes off automatically when the system returns to normal. For DTC 61, the indicator goes off automatically when the system returns to normal. For all other codes, the indicator stays on until the ignition switch is turned OFF.
4. The ABS indicator stays on when the system is reactivated without erasing the DTC, but it goes off after starting the vehicle.
   When the wheel sensor system is faulty and the ABS indicator comes on, the algorithm of the system automatically turns off the ABS indicator after the wheel speed signal returns to the normal speed. Also, when the DTC is erased, the CPU is reset and the ABS indicator goes off when the system checked out normal by the initial diagnosis.
   Therefore, test-drive the vehicle after servicing the wheel sensor system, and be sure that the ABS indicator does not come on.
5. When the ABS control unit outputs battery voltage to gauge assembly, the ABS indicator goes off.

Diagnostic Trouble Code (DTC)

1. The diagnostic trouble code (DTC is memorised when a problem is detected and the ABS indicator does not go off, or when the ABS indicator comes on.
   The DTC is not memorised when the ABS indicator comes on unless the CPU is activated.
2. The memory can hold any number of DTC. However, when the same DTC is detected twice or more, the later one is written over the old one.
   Therefore, when the same problem is detected repeatedly, it is recorded as one DTC.
3. The DTCs are indicated in the order of ascending number, not in the order they occur.
4. The DTCs are memorised in the EEPROM (non-volatile memory).
   Therefore, the memorised DTCs cannot be cancelled by disconnecting the battery. Perform the specified procedures to clear the DTCs.

Self-diagnosis

1. Self-diagnosis can be classified into these four categories:
   - Initial diagnosis: Performed right after the engine starts and until the ABS indicator goes off.
   - Except ABS control: Performed when the ABS is not functioning.
   - During ABS control: Performed when the ABS is functioning.
   - During warning: Performed when the ABS indicator is ON.
2. The system performs the following controls when a problem is detected by the self-diagnosis.
   - ABS indicator ON
   - Memory of DTC
   - Stops ABS control

Kickback

1. The motor operates when the ABS is functioning, and the fluid in the reservoir is forced out to the master cylinder, causing kickback at the brake pedal.
2. The ABS control unit operates the solenoid valve when the brake pedal is released after the initial diagnosis. You may hear the solenoid valve operate at this time, but it is normal.

Pump Motor

1. The pump motor operates when the ABS is functioning
2. The ABS control unit checks the pump motor operation once or twice in every ignition switch ON (II) operation while vehicle acceleration. You may hear the motor operate at this time, but it is normal.

Brake Fluid Replacement/Air Bleeding

1. Brake fluid replacement and air bleeding procedures are the same as vehicles without ABS. To ease bleeding, start with the front wheels.

Troubleshooting

1. The troubleshooting flowcharts procedures assume that the cause of the problem is still present and the ABS indicator is still on. Following the flowchart when the ABS indicator dose not come on can result in incorrect diagnosis.
2. Question the customer about the conditions when the problem occurred, and try to reproduce the same conditions for troubleshooting.
   Self-diagnosis is made at various times such as the initial diagnosis, except ABS control, during ABS control, during acceleration, during the specified vehicle speed, etc.
   Therefore, the symptom, cannot be checked unless the check conditions match with the problem conditions.
3. When the ABS indicator does not come on during the test-drive, but troubleshooting is performed based on the DTC, check the loose connectors, poor contact of the terminals, etc., before you start troubleshooting.
4. After troubleshooting, clear the DTC and test-drive the vehicle. Be sure the ABS indictor does not come on.
5. The connector illustrations show the female terminals with a single outline and the male terminals with a double outline.

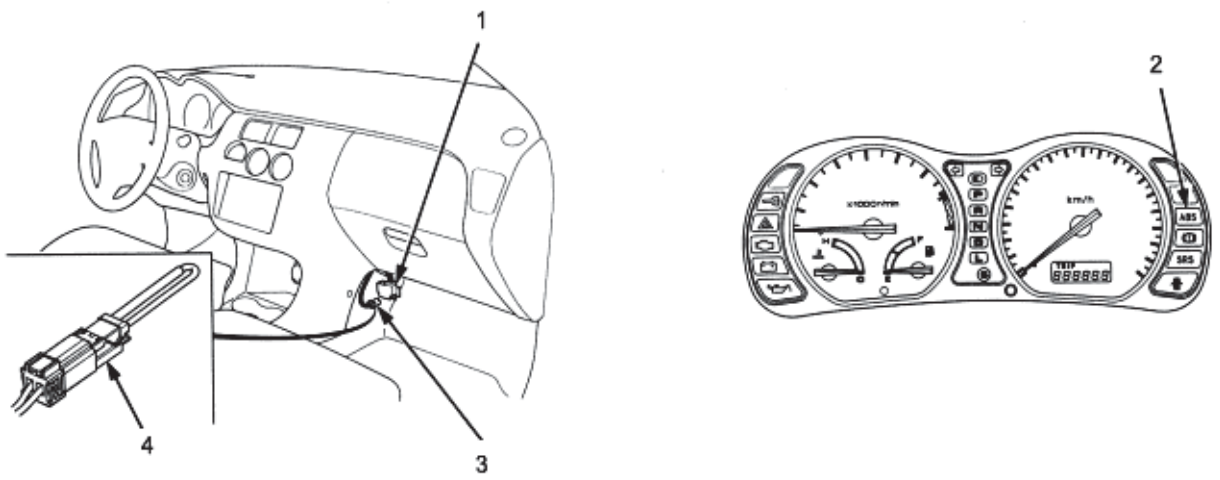
ABS Function Test

To simulate ABS operation and activate the solenoid valves and pump, use the Honda PGM Tester.
Connect the PGM Tester to the 3P Data Link Connector (DLC). When the System Select menu is displayed, select the ABS Test Mode menu and follow the tester's prompts.

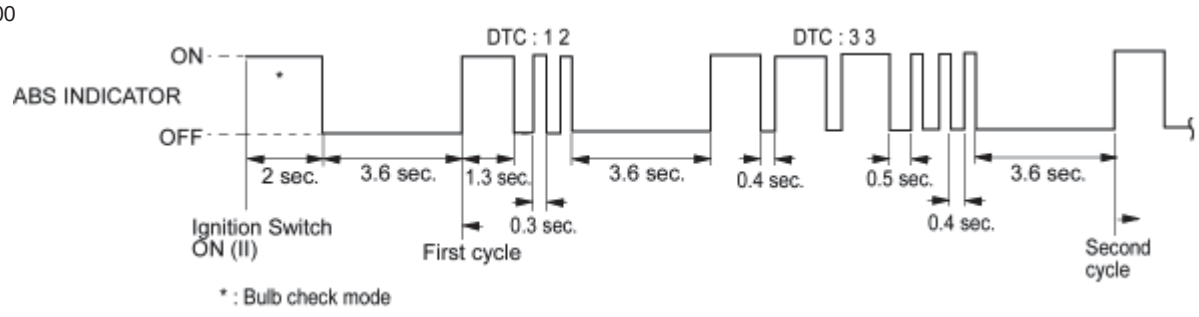
NOTE: This operation can also be done with the Honda PGM Tester.
1. Connect the SCS short connector to the service check connector (2P) located passenger's side of centre console.
2. Turn the ignition switch ON (II).
   NOTE: Do not depress the brake pedal when turning the ignition switch.
3. Record the blinking frequency of the ABS indicator. The blinking frequency indicates the DTC.
4. Turn the ignition switch OFF, and remove the SCS short connector.
   NOTE: The Malfunction Indicator Lamp (MIL) will stay on after the engine is started if the SCS short connector is connected.
5. Clear the DTC.

Conditions for DTC indication
- The vehicle is stopped.
- The SCS short connector is connected before the ignition switch is turned ON (II).
- The brake pedal is released.
- The SCS short connector remains connected during this procedure.

The DTC indication stops and the ABS control unit executes the software function if at least one of the following conditions is satisfied:
- The vehicle is not stopped.
- The ABS control unit receives the normal signal (which is for the ABS control unit) from a Honda PGM Tester.
- The SCS short connector is disconnected during this procedure.



1. DATA LINK CONNECTOR (3P)
2. ABS INDICATOR
3. SERVICE CHECK CONNECTOR (2P)
4. SCS SHORT CONNECTOR, 07PAZ-0010100

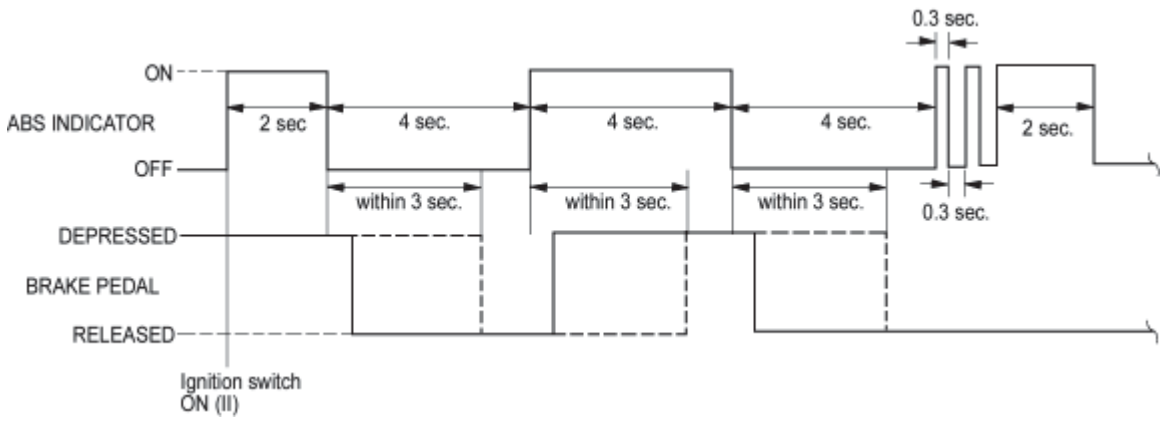


NOTE: This operation can also be done with the Honda PGM Tester.
1. Connect the SCS short connector to the service check connector (2P) located passenger's side of centre console.
2. Depress the brake pedal.
3. Turn the ignition switch ON (II) while keeping the brake pedal depressed. The ABS indicator goes off after two seconds.
4. After the indicator goes off, release the brake pedal. The indicator comes on after four seconds.
5. After the indicator comes on, depress the brake pedal again. (The indicator goes off again after four seconds. The brake pedal is still depressed.)
6. After the indicator goes off, release the brake pedal again.
7. After four seconds, the indicator blinks twice for 0.3 seconds and the DTC is cleared.
8. Confirm the DTC indication, and check that the DTC was cleared.

NOTE: Always maintain these steps. If you disconnect the SCS short connector and/or fail to operate the brake pedal according to the indicator indication, the DTC will not be erased.

Conditions for DTC clearing
- The vehicle is stopped.
- The SCS short connector is connected before the ignition switch is turned ON (II).
- The brake pedal is depressed before the ignition switch is turned ON (II).
- The SCS short connector remains connected during this procedure.

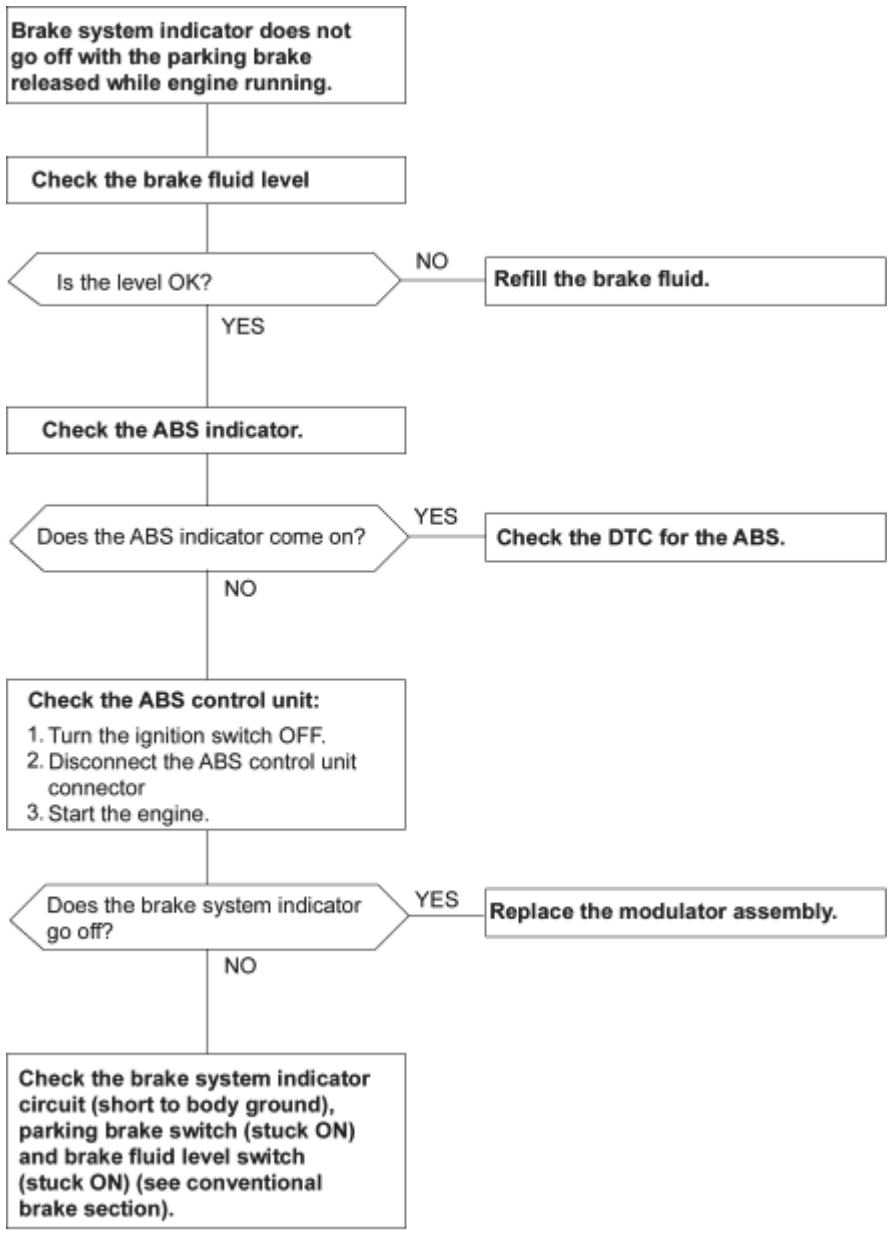
The DTC clearing stops and ABS control unit executes the software function if at least one of the following conditions is satisfied.
- The vehicle is not stopped.
- The SCS short connector is disconnected during this service.
- The ABS control unit receives the normal signal (which is for the ABS control unit) from a Honda PGM Tester.
- The brake pedal is not operated according to the indicator indication.
- The DTC clearing is finished.



NOTE: This operation can also be done with the Honda PGM Tester.

				Detection Timing					
DTC	**ABS Indicator**	**Brake System Indicator**	**Diagnosis/Symptom**	**Initial Diagnosis**	**Except ABS Control**	**During ABS Control**	**During Warning**	**Problem Location**	**Refer to Page**
No DTC	-	ON	Brake system indicator does not go off	-	-	-	-		(**See Page** 19-B-19)
No DTC	OFF	-	ABS indicator does not come on	-	-	-	-		(**See Page** 19-B-20)
No DTC	ON	-	ABS indicator does not go off. (No DTC)	-	-	-	-		(**See Page** 19-B-22)
11	ON*1	ON*3	Wheel sensor (open/short to body ground/short to power)	O	O	O	O	FR	(**See Page** 19-B-24)
13	ON*1	ON*3	Wheel sensor (open/short to body ground/short to power)	O	O	O	O	FL	(**See Page** 19-B-24)
15	ON*1	ON*3	Wheel sensor (open/short to body ground/short to power)	O	O	O	O	RR	(**See Page** 19-B-24)
17	ON*1	ON*3	Wheel sensor (open/short to body ground/short to power)	O	O	O	O	RL	(**See Page** 19-B-24)
12	ON*1	ON*3	Wheel sensor/Pulser (chipped pulser gear/electrical noise)		O	O	O	FR	(**See Page** 19-B-25)
14	ON*1	ON*3	Wheel sensor/Pulser (chipped pulser gear/electrical noise)		O	O	O	FL	(**See Page** 19-B-25)
16	ON*1	ON*3	Wheel sensor/Pulser (chipped pulser gear/electrical noise)		O	O	O	RR	(**See Page** 19-B-25)
18	ON*1	ON*3	Wheel sensor/Pulser (chipped pulser gear/electrical noise)		O	O	O	RL	(**See Page** 19-B-25)
31	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		FR-IN	(**See Page** 19-B-26)
32	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		FR-OUT	(**See Page** 19-B-26)
33	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		FL-IN	(**See Page** 19-B-26)
34	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		FL-OUT	(**See Page** 19-B-26)
35	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		RR-IN	(**See Page** 19-B-26)
36	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		RR-OUT	(**See Page** 19-B-26)
37	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		RL-IN	(**See Page** 19-B-26)
38	ON	ON	Solenoid (open/short to body ground/short to power/stuck)	O	O	O		RL-OUT	(**See Page** 19-B-26)
51	ON	OFF	Motor		O	O			(**See Page** 19-B-27)
52	ON	OFF	Motor stuck OFF		O	O			(**See Page** 19-B-27)
53	ON	OFF	Motor stuck ON		O				(**See Page** 19-B-27)
54*4	ON	ON	Main relay stuck OFF	O	O	O			(**See Page** 19-B-28)
61	ON*2	ON	Ignition voltage (low voltage/high voltage)	O	O	O	O		(**See Page** 19-B-29)
81	ON	ON	Hardware failure	O	O	O	O		(**See Page** 19-B-30)
81*5	ON	ON	Disturbance detection		O	O	O		(**See Page** 19-B-30)

*1: If DTCs 11-18 (wheel sensor codes) were detected the last time the vehicle was driven, the ABS indicator will stay on until the ignition switch is turned ON (II), and the control unit confirms that the wheel sensors are OK.
*2: The ABS indicator goes off if the ignition voltage returns to normal.
*3: The brake system indicator comes on when the ABS control unit detects more than one wheel problem.
*4: This code is indicated only when the Honda PGM Tester is used.
*5: Failure code of communication mode for the Honda PGM Tester is 82.


Brake system indicator does not go off with the parking brake released while engine running.
Check the brake fluid level
Is the level OK?
NO
Refill the brake fluid.
YES
Check the ABS indicator.
Does the ABS indicator come on?
YES
Check the DTC for the ABS.
NO
Check the ABS control unit:
1. Turn the ignition switch OFF.
2. Disconnect the ABS control unit connector
3. Start the engine.
Does the brake system indicator go off?
YES
Replace the modulator assembly.
NO
Check the brake system indicator circuit (short to body ground), parking brake switch (stuck ON) and brake fluid level switch (stuck ON) (see conventional brake section).

ABS indicator does not come on when the ignition switch is turned ON (II).

Check the indicator power source circuit:
Turn the ignition switch ON (II)

Does the brake system indicator come on?
NO → **Blown INSTRUMENT LIGHT (7.5 A) fuse.**
Repair open in the wire between the INSTRUMENT LIGHT (7.5 A) fuse and the gauge assembly.
Replace the driver's under-dash fuse/relay box. (Open circuit inside the box.

YES

Check the ABS control unit:
1. Turn the ignition switch OFF.
2. Disconnect the ABS control unit connector.
3. Turn the ignition switch ON (II)

Does the ABS indicator come on?
YES → **Check for loose ABS control unit connectors. If necessary, substitute a known-good modulator assembly and recheck.**

NO

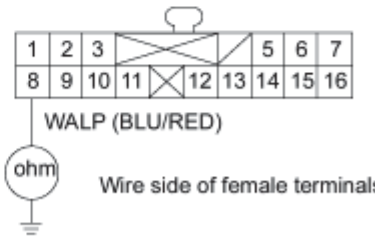
Check the ABS indicator bulb in the gauge assembly.

Is the bulb OK?
NO → **Replace the ABS indicator bulb.**

YES

Check for a short to body ground in the WALP circuit:
1. Disconnect the gauge assembly 16P connector.
2. Check for continuity between terminal No. 8 and body ground.

GAUGE ASSEMBLY 16P CONNECTOR



Is there continuity?
YES → **Repair short to body ground in the wire between the gauge assembly and the ABS control unit.**

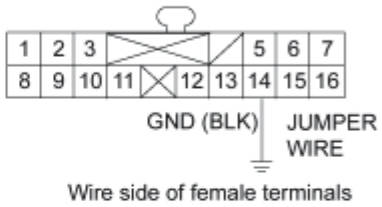
NO

(To page 19-B-21)

(From page 19 -B-20)

Check for an open in the indicator GND circuit:
1. Turn the ignition switch OFF.
2. Connect the gauge assembly 16P connector.
3. Connect the gauge assembly 16P connector terminal No. 14 to body ground with a jumper wire.
4. Turn the ingnition switch ON (II).

GAUGE ASSEMBLY 16P CONNECTOR



Does the ABS indicator come on?

YES

- **Repair open in the wire between the gauge assembly and body ground.**
- **Repair poor ground (G401, G402).**

Replace the printed circuit board in the gauge assembly.

— With engine running, the ABS indicator is ON.
— With the SCS short connector connected (see page 19-B-16), no DTC is indicated.

Check the R/C MIRROR (7.5 A) fuse in the under-dash fuse/relay box, and reinstall the fuse if it is OK.

Is the fuse OK?

NO → Replace the fuse and recheck.

YES

Check the ABS +B (20 A) fuse in the under-hood fuse/relay box, and reinstall the fuse if it is OK?

Is the fuse OK?

NO → Replace the fuse and recheck.

YES

Check for an open in the IG2 circuit:
1. Disconnect the ABS control unit connector.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the ABS control unit connector terminal No. 4 and body ground.

ABS CONTROL UNIT CONNECTOR
IG2 (BLK/YEL)

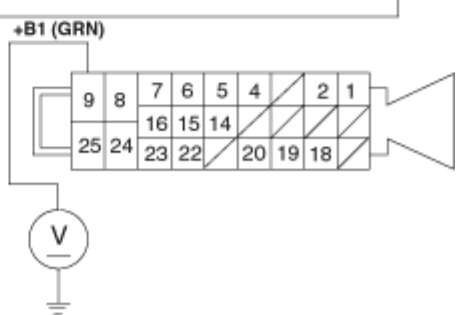
Wire side of female terminals

Is there battery voltage?

NO → Repair open in the wire between the ABS (7.5 A) fuse and the ABS control unit.

YES

+B1 (GRN)



Check for an open in the +B circuit:

Measure the voltage between body ground and terminal No. 9.

Is there battery voltage?

NO → Repair open in the wire between the ABS +B (20 A) fuse and the ABS control unit.

(To page 19-B-23)

(From page 19-B-22)

Check for an open in the GND circuit:
1. Turn the ignition switch OFF.
2. Connect the ABS control unit connector terminals No. 8 and No. 15 with a jumper wire.
3. Turn the ignition switch ON (II).

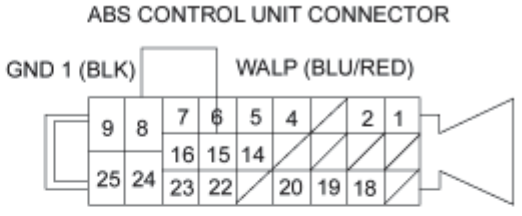
Does the ABS indicator go off?

NO → **Repair open in the wire between the modulator assembly and body ground**
Repair poor ground (G201).

YES

Check for loose modulator assembly connector. If necessary, substitute a known-good modulator assembly and recheck.

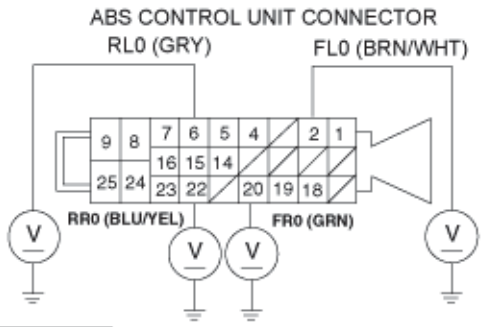
ABS CONTROL UNIT CONNECTOR



Wire side of female terminals

With the ignition switch ON (II), the ABS indicator does not go off.
With the SCS short connector connected (see page 19-B-16), DTCs 11, 13, 15, 17 are indicated.

Check for a short to power in the wheel sensor circuit:
1. Disconnect the ABS control unit connector.
2. Start the engine.
3. Measure the voltage between the ABS control unit connector appropriate wheel sensor (0) circuit terminal and body ground (see table).



Wire side of female terminals

DTC	Appropriate Terminal	
	(0) Side	(1) Side
11 (Right-front)	No. 20: FR0	No. 19: FR1
13 (Left-front)	No. 2: FL0	No. 1: FL1
15 (Right-rear)	No. 22:RR0	No. 23: RR1
17 (Left-rear)	No. 6: PL0	No. 5: RL1

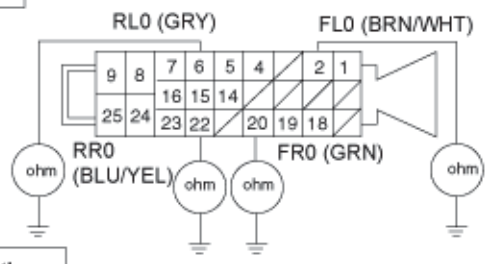
Is there 4 V or more?

YES → **Repair short to power in the (0) or (1) circuit wire between the ABS control unit and appropriate wheel sensor.**

NO

NOTE: Judgement value for short to power is 4 V.

Check for a short to body ground in the wheel sensor circuit:
1. Stop the engine.
2. Measure the resistance between the approriate wheel sensor (0) circuit terminal and body ground (see table).

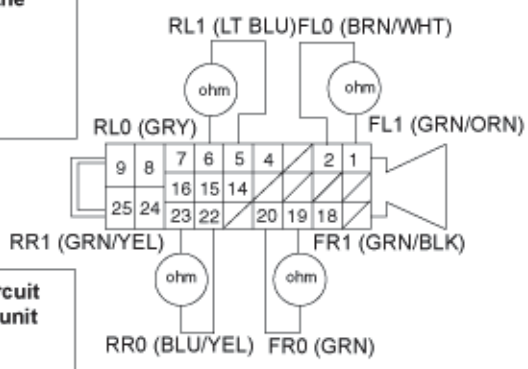


Is the resistance below 2,000 ohms?

YES → **Repair short to body ground in the (0) or (1) circuit wire between the ABS control unit and the appropriate wheel sensor.**
Replace the appropriate wheel sensor.

NO

Check for an open in the wheel sensor circuit:
Measure the resistance between the ABS control unit connector appropriate wheel sensor (0) and (1) circuit terminals (see table).



Is the resistance between 450 - 2,000 ohms?

NO → **Repair open in the (0) or (1) circuit wire between the ABS control unit and appropriate wheel sensor.**
Replace the appropriate wheel sensor.

YES

Check for loose ABS control unit coonnector. If necessary, substitute a known-good modulator assembly and recheck.

With the ignition switch ON (II), the ABS indicator does not go off.
With the SCS short connector connected (see page 19-B-16), DTCs 12, 14, 16 and 18 are indicated.

Problem verification:
1. Clear the DTC.
2. Test-drive the vehicle.

Are the DTCs 12, 14, 16 and 18 indicated?

NO → **The system is OK at this time.**

YES

DTC	Appropriate Wheel Sensor
12	Right - front
14	Left - front
16	Right - rear
18	Left - rear

Visually check for approriate wheel sensor and pulser installation (see table).

Are they installed correctly?

NO → **Reinstall or replace the appropriate wheel sensor or pulser.**

YES

Check for a short to wire in the one wheel sensor circuit:
1. Disconnect the ABS control unit connector.
2. Measure the resistance between the appropriate wheel sensor (0) and (1) circuit terminals (see table).

DTC	Appropriate Terminal	
	(0) Side	(1) Side
11 (Right-front)	No. 20: FR0	No. 19: FR1
13 (Left-front)	No. 2: FL0	No. 1: FL1
15 (Right-rear)	No. 22:RR0	No. 23: RR1
17 (Left-rear)	No. 6: PL0	No. 5: RL1

Is the resistance below 450 ohm?

YES → **Repair short to wire between the appropriate wheel sensor (0) and (1) circuits.**

NO

Check for a short to wire in the wheel sensor circuits:
Check for continuity between the appropriate wheel sensor (0) circuit terminal and other wheel sensor (1) circuit terminals (see table).

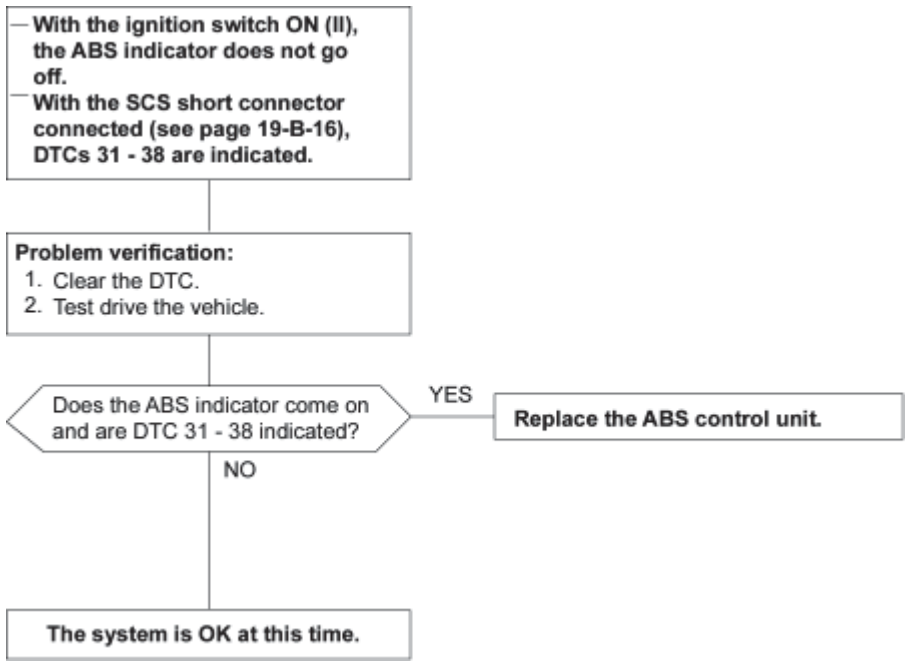
DTC	Appropriate Terminal	Other Terminal		
12 (Right-front)	No. 20: FR0	No. 2: FR0	No. 22: RR0	No. 6: RL0
14 (Left-front)	No. 2: FL0	No. 20: FR0	No. 22: RR0	No. 6: RL0
16 (Right-rear)	No. 22:RR0	No. 20: FR0	No. 2:FL0	No. 6: RL0
18 (Left-rear)	No. 6: PL0	No. 20: FR0	No. 2: FL0	No. 22: RR0

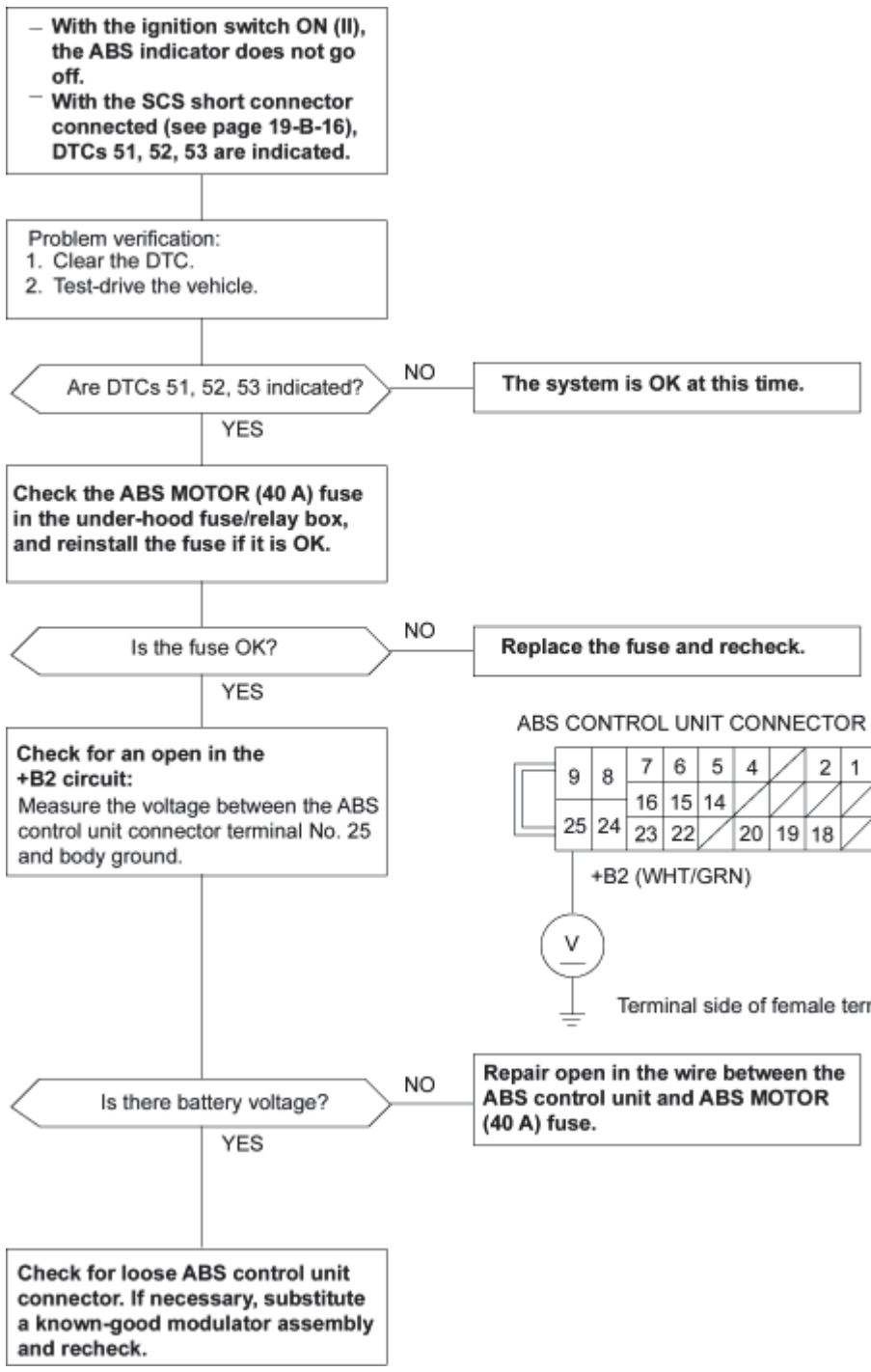
Is there continuity?

YES → **Repair short to wire between the appropriate wheel sensor and the other wheel sensor.**

NO

Clear DTC and test-drive the vehicle. If the ABS indicator comes on and the same DTC is indicated, replace the modulator assembly.


With the ignition switch ON (II), the ABS indicator does not go off.
With the SCS short connector connected (see page 19-B-16), DTCs 31 - 38 are indicated.
Problem verification:
1. Clear the DTC.
2. Test drive the vehicle.
Does the ABS indicator come on and are DTC 31 - 38 indicated?
YES
Replace the ABS control unit.
NO
The system is OK at this time.


– With the ignition switch ON (II), the ABS indicator does not go off.
– With the SCS short connector connected (see page 19-B-16), DTCs 51, 52, 53 are indicated.
Problem verification:
1. Clear the DTC.
2. Test-drive the vehicle.
Are DTCs 51, 52, 53 indicated?
NO
The system is OK at this time.
YES
Check the ABS MOTOR (40 A) fuse in the under-hood fuse/relay box, and reinstall the fuse if it is OK.
Is the fuse OK?
NO
Replace the fuse and recheck.
YES
Check for an open in the +B2 circuit:
Measure the voltage between the ABS control unit connector terminal No. 25 and body ground.
ABS CONTROL UNIT CONNECTOR
9 8 7 6 5 4 2 1
16 15 14
25 24 23 22 20 19 18
+B2 (WHT/GRN)
V
Terminal side of female terminals
Is there battery voltage?
NO
Repair open in the wire between the ABS control unit and ABS MOTOR (40 A) fuse.
YES
Check for loose ABS control unit connector. If necessary, substitute a known-good modulator assembly and recheck.

- **With the ignition switch ON (II), the ABS indicator does not go off.**
- **With the SCS short connector connected (see page 19-B-16), DTC 54 isindicated.**

Problem verification:
1. Clear the DTC.
2. Test-drive the vehicle.

Is DTC54 indicated? NO → **The system is OK at this time.**

YES

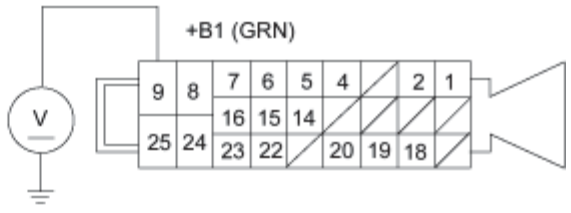
Check the ABS +B (20 A) fuse in the under-hood fuse/relay box, and reinstall the fuse if it is OK.

Is the fuse OK? NO → **Replace the fuse and recheck.**

YES

Check for an open in the +B1 circuit:
Measure the voltage between the ABS control unit connector terminal No. 9 and body ground.

ABS CONTROL UNIT CONNECTOR



Terminal side of female terminals

Is there battery voltage? NO → **Repair open in the wire between the ABS control unit and ABS +B (20 A) fuse.**

YES

Check for loose ABS control unit connector. If necessary, substitute a known-good modulator assembly and recheck.

- **With the ignition switch ON (II), the ABS indicator does not go off.**
- **With the SCS short connector connected (see page 19-B-16), DTC 61 isindicated.**

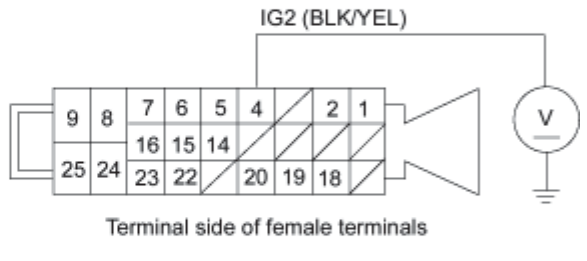
Problem verification:
1. Clear the DTC.
2. Test-drive the vehicle.

Does the ABS indicator come on and is DTC 61 indicated?

NO → **The system is OK at this time.**

YES

ABS CONTROL UNIT CONNECTOR



Terminal side of female terminals

Check the IG2 circuit:
Measure the voltage between the ABS control unit connector terminal No. 4 and body ground.

Is there 18 V or above?

YES → **Check the charging system.**

NO

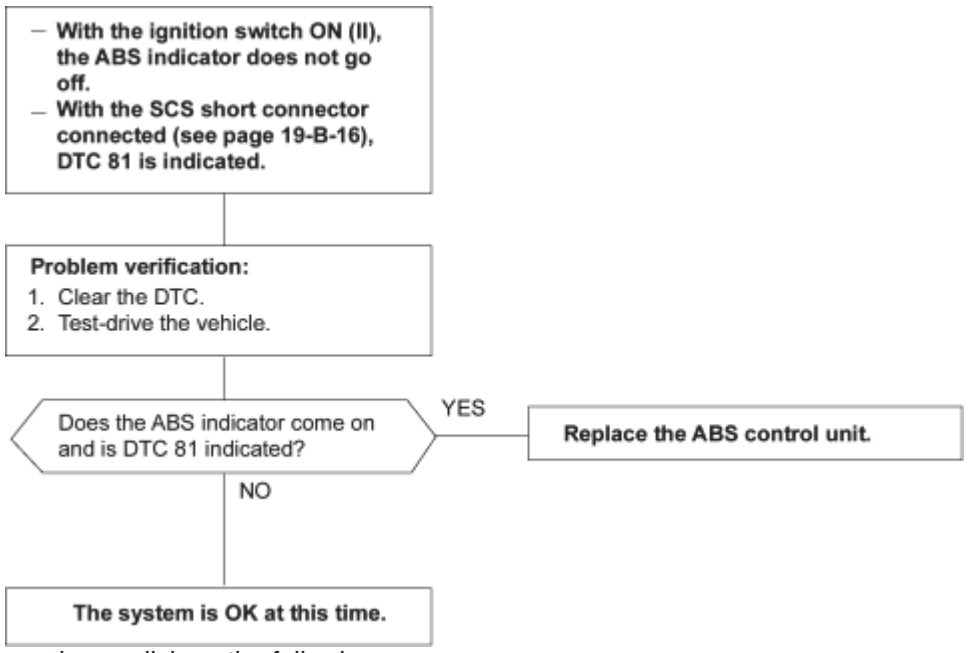
Check the IG2 circuit:
Measure the voltage between the ABS control unit connector terminal No. 4 and body ground.

Is there less then 8 V?

YES → **Replace the modulator assembly.**

NO

Check the charging system. If the voltage is 0 V, check for an open in the IG2 circuit.



To go to the pages referenced on the diagram above, click on the following:
(**See Page** 19-B-16)

Note:

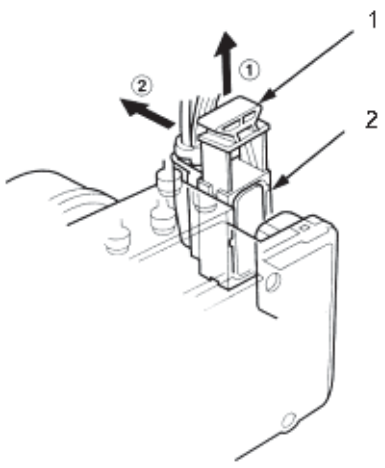
- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.
- Take care not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent material.

Removal

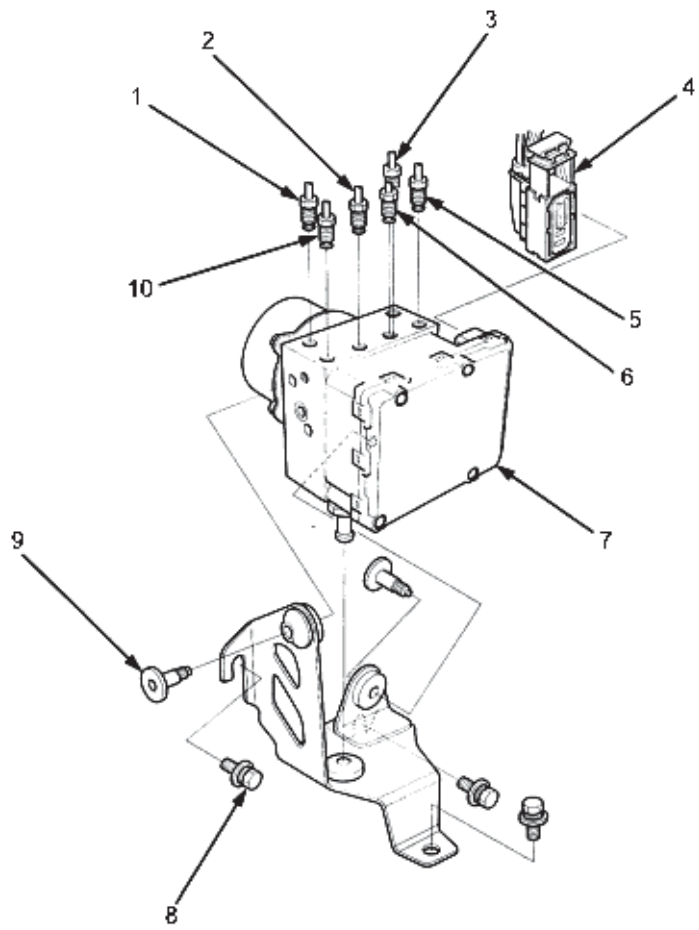
1. Disconnect the ABS control unit connector as described below.
   1. Pull the connector lock.
   2. Disconnect the connector.
2. Disconnect the brake pipes, then remove the modulator assembly.

Installation

1. Install the modulator assembly, then connect the brake pipes.
2. Connect the ABS control unit connector in the reverse order of disconnection.
3. Bleed the brake system, starting with the front wheels.
4. Start the engine, and check that the ABS indicator goes off.
5. Test-drive the vehicle, and check that the ABS indicator does not come on.

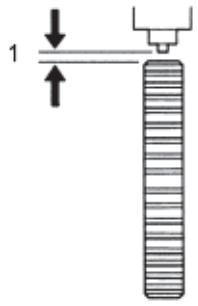


1. **CONNECTOR LOCK**
2. **ABS CONTROL UNIT CONNECTOR**



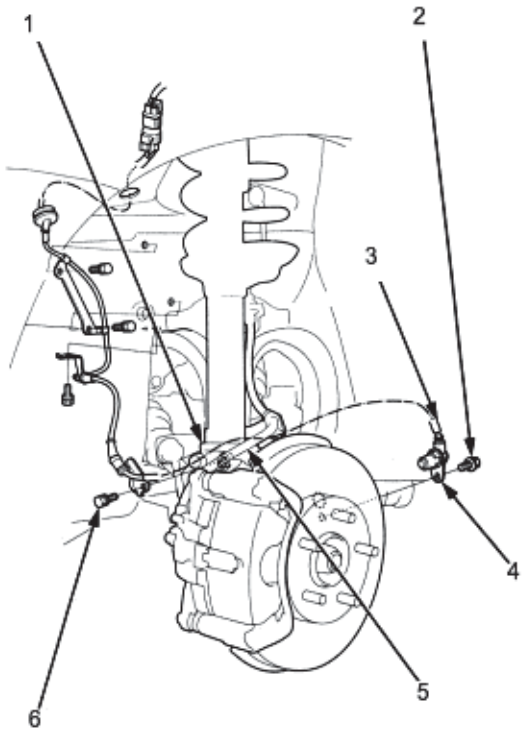
1. To master cylinder secondary side
2. To right-rear wheel cylinder
3. To master cylinder primary side
4. **ABS CONTROL UNIT CONNECTOR**
5. To right-front caliper
6. To left-rear wheel cylinder
7. **MODULATOR ASSEMBLY (ABS CONTROL UNIT/MODULATOR UNIT)**
8. **8 mm BOLT**
   22 Nm (2.2 kgf/m, 16 lbf/ft)
9. **TORX BOLT**
   9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
10. To left-front caliper

1. Check the front and rear pulser for chipped or damaged teeth.
2. Measure the air gap between the wheel sensor and pulser all the way around while rotating the pulser. If the air gap exceeds 1.0 mm (0.04 in), check for a bent suspension arm.
   Standard:
   Front/Rear: 0.4-1.2 mm (0.02-0.05 in)
   Front/Rear
   Remove the rear brake drum to inspect the rear wheel sensor air gap.



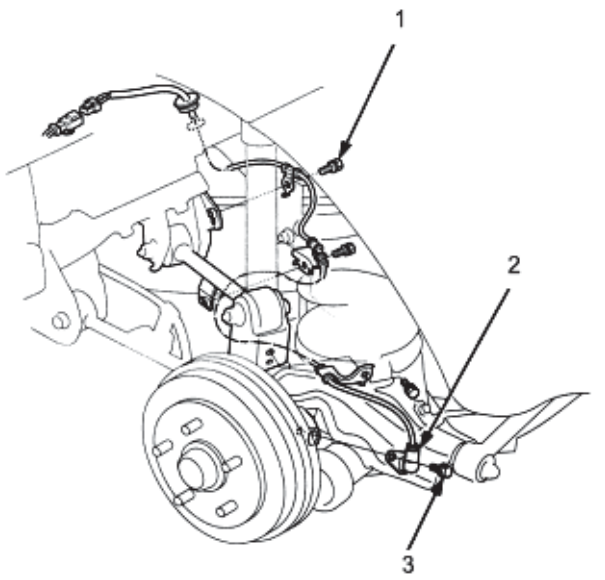
1. 0.4-1.2 mm (0.02-0.05 in)

Install the sensors carefully to avoid twisting the wires.
Front
When installing the front wheel sensor, pass the sensor through between the knuckle and the brake hose.

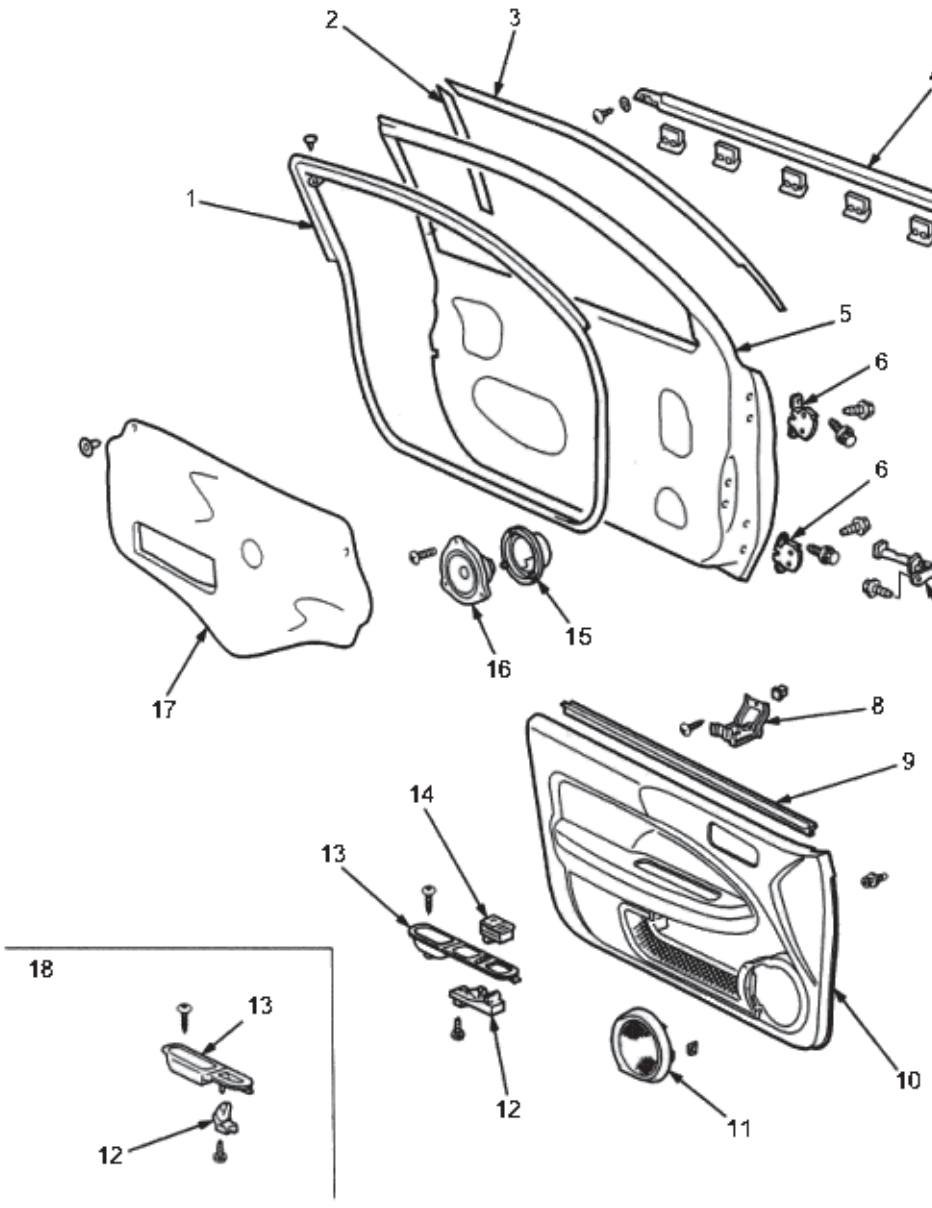


1. KNUCKLE
2. 8 mm BOLT, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. SENSOR WIRE
4. WHEEL SENSOR
5. BRAKE HOSE
6. 6 mm BOLT, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

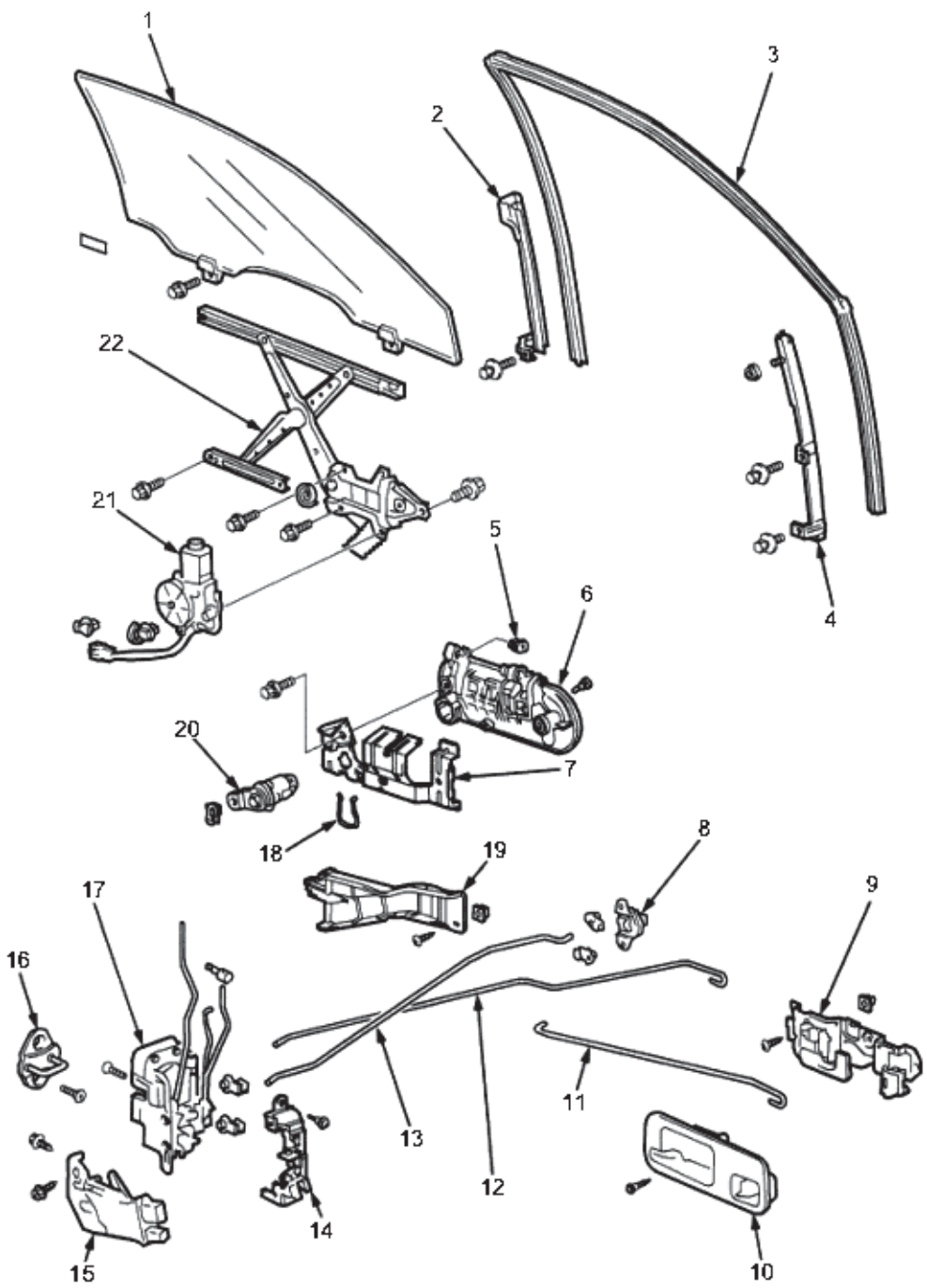
Rear



1. 6 mm BOLT, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. WHEEL SENSOR
3. 8 mm BOLT, 22 Nm (2.2 kgf/m, 16 lbf/ft)



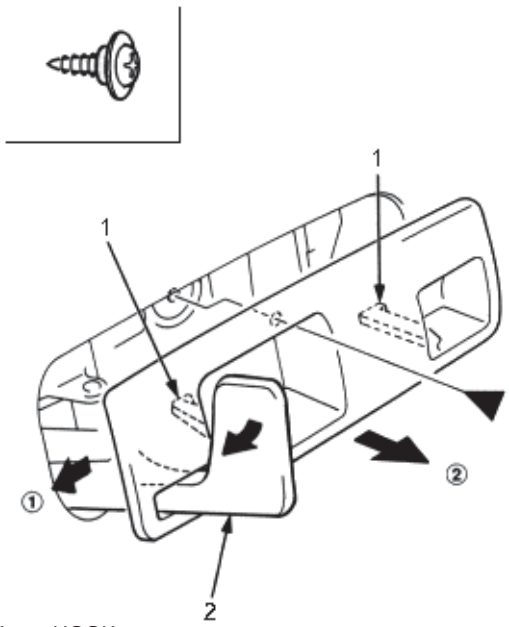
1. **DOOR WEATHERSTRIP**
2. **CENTRE CHANNEL TAPE,** Replacement, (**See Page** 20-11)
3. **UPPER CHANNEL TAPE,** Replacement, (**See Page** 20-11)
4. **DOOR MOLDING**
5. **DOOR,** Replacement,. (**See Page** 20-13)
6. **HINGE**
7. **DETENT ROD**
8. **PULL POCKET BRACKET**
9. **INNER WEATHERSTRIP**
10. **DOOR PANEL,** Removal and Installation, (**See Page** 20-4)
11. **SPEAKER COVER**
12. **POWER WINDOW SWITCH**
13. **PULL POCKET PANEL**
14. **POWER MIRROR SWITCH**
15. **ADAPTER**
16. **SPEAKER**
17. **PLASTIC COVER**
18. **Passenger's:**



1. **GLASS,** Replacement, (**See Page** 20-9)
2. **CENTRE LOWER CHANNEL**
3. **GLASS RUN CHANNEL**
4. **FRONT LOWER CHANNEL**
5. **BUSH**
6. **OUTER HANDLE,** Replacement, (**See Page** 20-5)
7. **OUTER HANDLE PROTECTOR**
8. **ROD CRANK**
9. **INNER HANDLE**
10. **INNER HANDLE CASE**
11. **FRONT LOCK ROD**
12. **INNER HANDLE ROD**
13. **REAR LOCK ROD**
14. **LATCH PROTECTOR**
15. **POWER DOOR LOCK ACTUATOR**
16. **STRIKER**
17. **LATCH,** Replacement, (**See Page** 20-7)
18. **RETAINER CLIP**
19. **ROD PROTECTOR**
20. **LOCK CYLINDER**
21. **POWER WINDOW MOTOR**
22. **REGULATOR,** Replacement, (**See Page** 20-9)

1. Remove the inner handle case. Take care not to scratch the door panel.

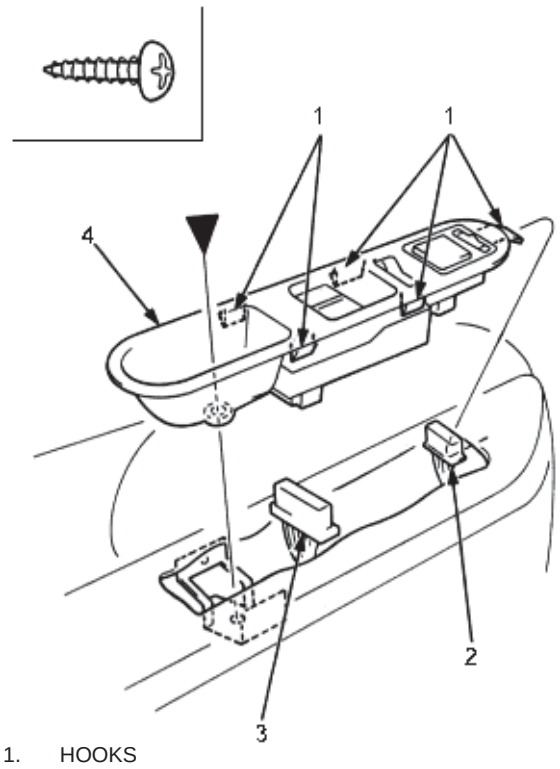
▶ : Screw location, 1



1. HOOK
2. INNER HANDLE

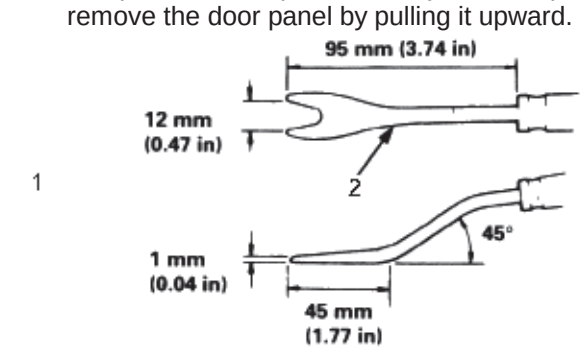
2. Remove the pull pocket panel, then disconnect the power window switch connector and power mirror switch connector.

▶ : Screw location, 1

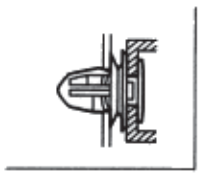


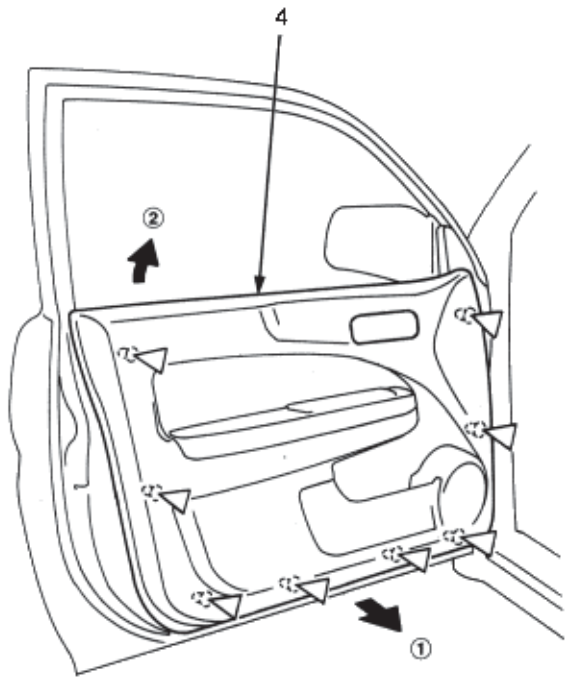
1. HOOKS
2. POWER MIRROR SWITCH CONNECTOR (For some models)
3. POWER WINDOW SWITCH CONNECTOR
4. PULL POCKET PANEL

3. Release the clips that hold the door panel with a trim pad remover (commercially available), then remove the door panel by pulling it upward.



3





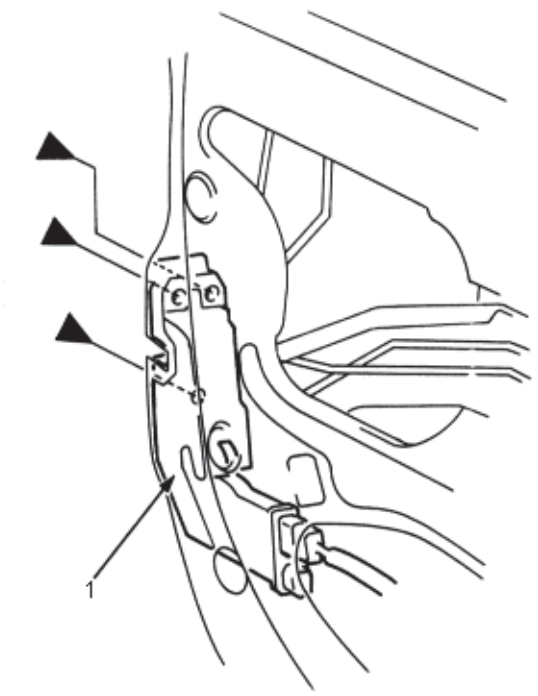
1. Snap on #A177, or equivalent
2. TRIM PAD REMOVER
3. ▷ : Clip locations, 8
4. DOOR PANEL

4. Install in the reverse order of removal; make sure the connectors and the courtesy light bulb socket are plugged in properly and the rod is connected properly.

NOTE: Wear gloves to protect your hands when removing and installing the outer handle.
1. Raise the glass fully.
2. Remove
   - Door panel (**See Page** 20-4).
   - Plastic cover (as necessary (**See Page** 20-2).
3. Remove the screws from the latch.

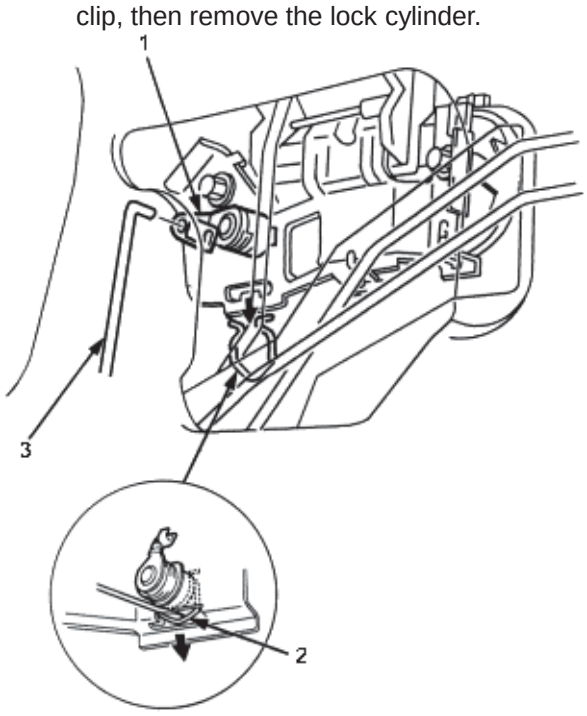
▶ : Screw locations, 3

6 x 1.0 mm
6 N·m (0.6 kgf·m, 4 lbf·ft)



1. LATCH

4. Disconnect the cylinder rod. Release the retainer clip, then remove the lock cylinder.



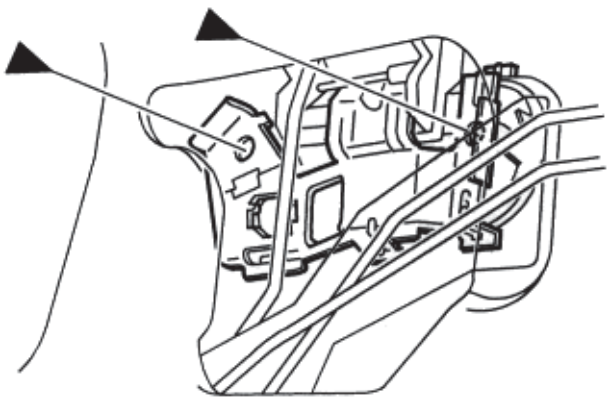
1. LOCK CYLINDER
2. RETAINER CLIP
3. CYLINDER ROD

5. Remove the bolts.

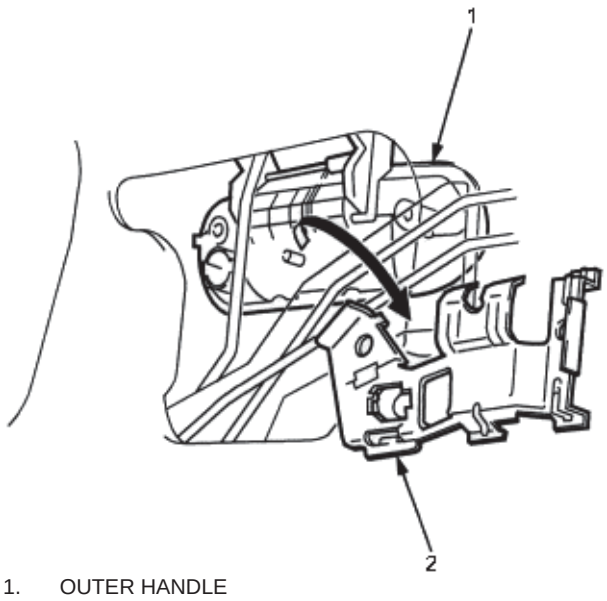
▶ : Bolt locations, 2



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

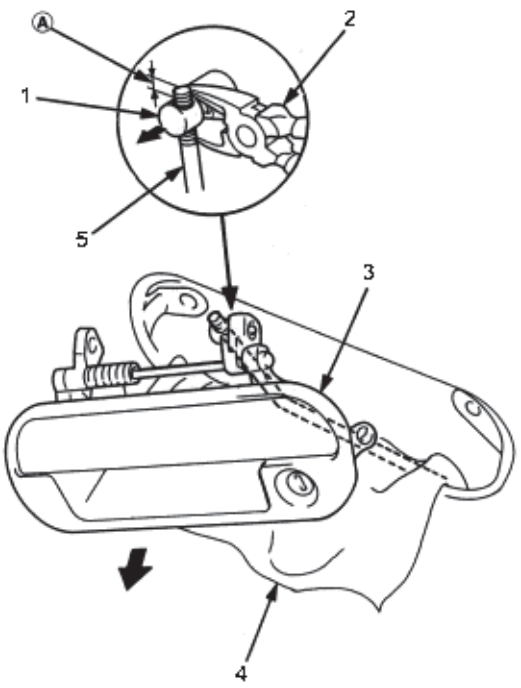


6. Remove the outer handle protector from the outer handles



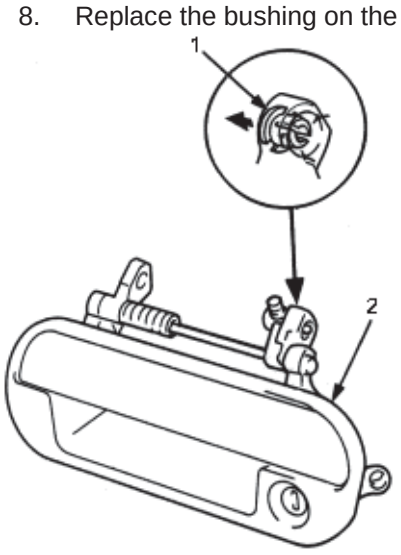
1. OUTER HANDLE
2. OUTER HANDLE PROTECTOR

7. Pull out the outer handle. Pry the outer handle rod out of its joint using diagonal cutter.
   NOTE:
   - To ease reassembly, note distance (**A)** of the outer handle rod on the joint, before disconnect it.
   - Take care not to bend the outer handle rod.
   - Use a shop towel to protect the opening in the door.



1. JOINT
2. DIAGONAL CUTTERS
3. OUTER HANDLE
4. SHOP TOWEL
5. OUTER HANDLE ROD

8. Replace the bushing on the outer handle.



1. BUSHING
2. OUTER HANDLE

9. Install in the reverse order of removal, and note the following items:
   - Make sure the connector is plugged in properly and each rod is connected securely.
   - Make sure the door locks and opens properly.
   - When installing the lock cylinder, leave the outer handle bolts loose so the inner protector does not interfere with the lock cylinder.
   - Install the lock cylinder retaining clip on the handle, then install the lock cylinder. Make sure the clip is fully seated in the slot on the lock cylinder.

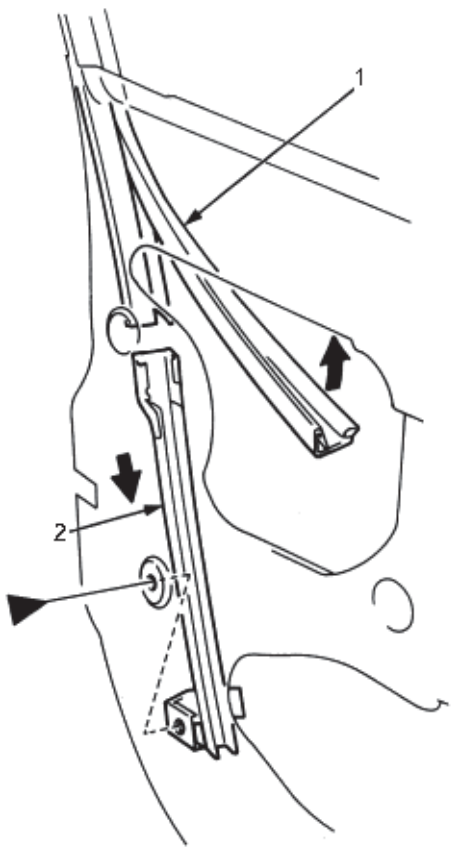
NOTE: Wear gloves to protect your hands when replacing the door latch.

1. Raise the glass fully.
2. Remove the outer handle (**See Page** 20-5).
3. Remove the glass run channel as needed from the centre lower channel. Remove the bolt, then remove the centre lower channel by pulling it downward.

▶ : Bolt location, 1



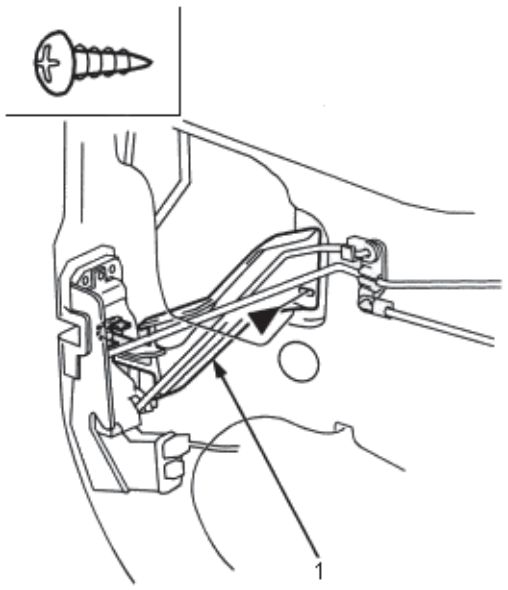
6 x 1.0 mm
8 N m (0.8 kgf m, 6 lbf ft)



1. GLASS RUN CHANNEL
2. CENTRE LOWER CHANNEL

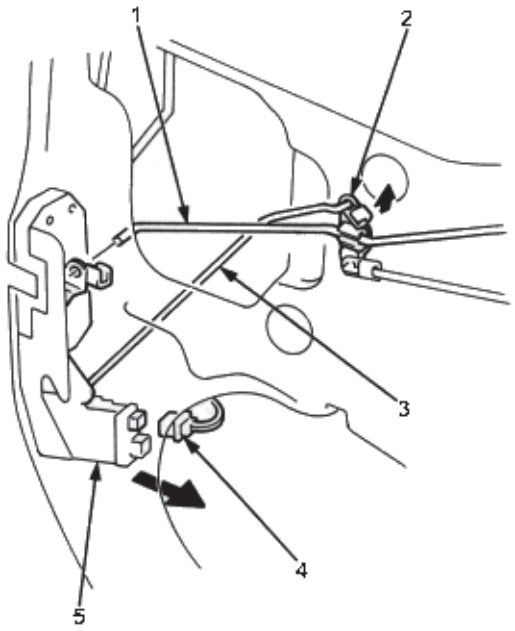
4. Remove the bolt, then remove the rod protector.

▶ : Bolt location, 1



1. ROD PROTECTOR

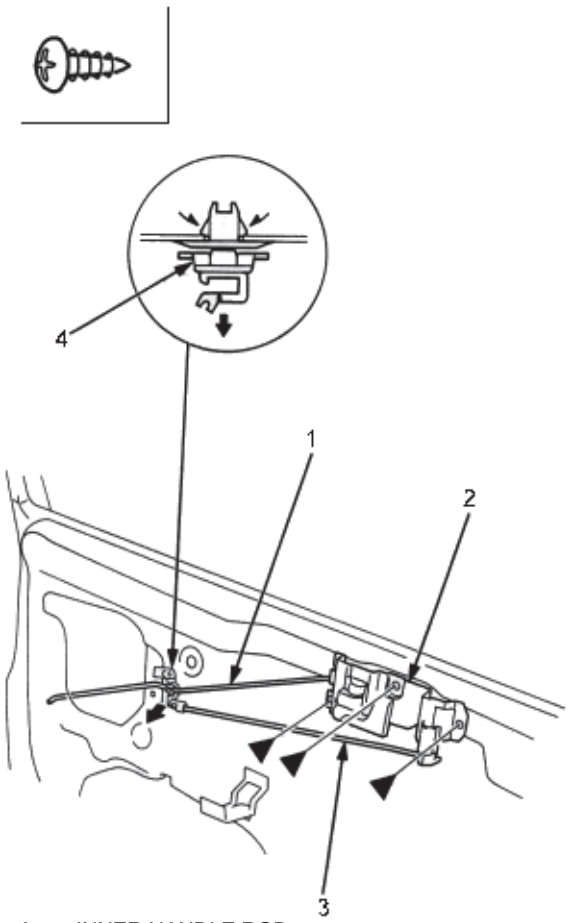
5. Detach the rear lock rod from the rod crank. Remove the inner handle rod, then disconnect the power door lock actuator connector.



1. INNER HANDLE ROD
2. ROD CRANK
3. REAR LOCK ROD
4. CONNECTOR
5. LATCH

6. Remove the screws, then remove the inner handle and rod crank.

▶ : Screw locations, 3

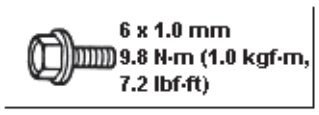


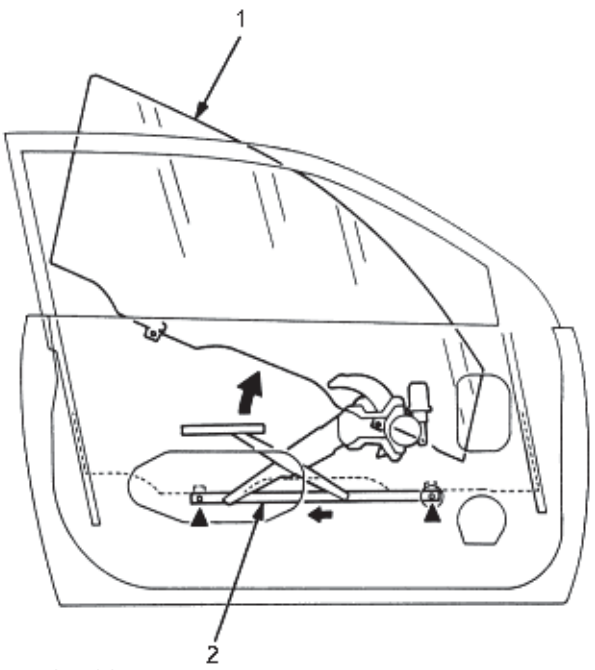
1. INNER HANDLE ROD
2. INNER HANDLE
3. FRONT LOCK ROD
4. ROD CRANK

7. Install in the reverse order of removal and note the following items.
   - Make sure the actuator connectors are plugged in properly and each rod is connected securely.
   - make sure the door locks and opens properly.

NOTE: Wear gloves to protect your hands when removing and installing the glass and regulator.

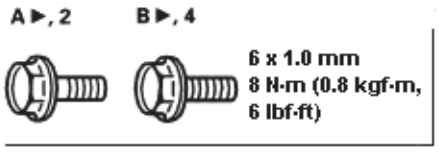
1. Remove:
   - Door panel (**See Page** 20-4).
   - Plastic cover (**See Page** 20-2).
2. Carefully move the glass until you can see the bolts, then loosen them. Slide the guide to the rear, then remove the glass from the guide and carefully lower the glass. Take care not to drop the glass inside the door.
   ▶ : Bolt locations, 2

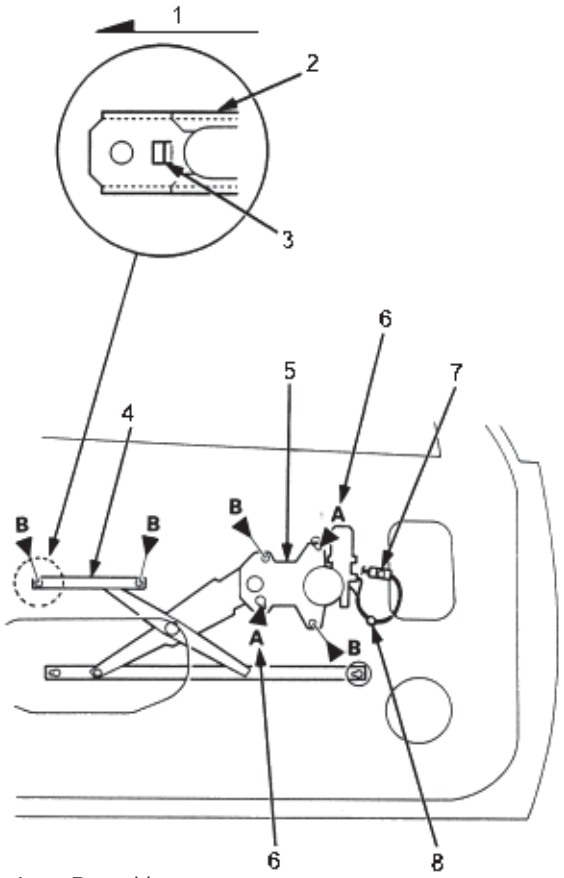




1. GLASS
2. GUIDE

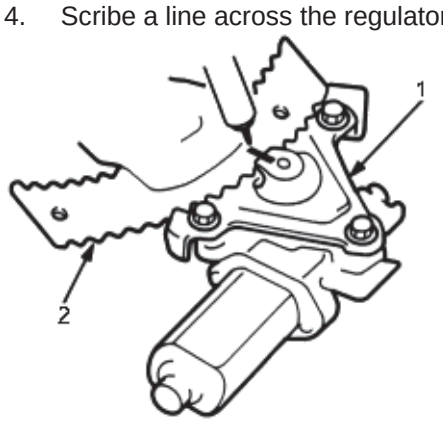
3. Disconnect and detach the connector and harness clip from the door. Scribe a line around the roller guide bolt to show the original adjustment. Remove the bolts and loosen the bolts, then remove the regulator through the hole in the door.
   ▶ : Bolt locations





1. Rear side
2. ROLLER GUIDE
3. HOLE
4. ROLLER GUIDE
5. REGULATOR
6. Loosen.
7. CONNECTOR
8. HARNESS CLIP

4. Scribe a line across the regulator and sector gear.



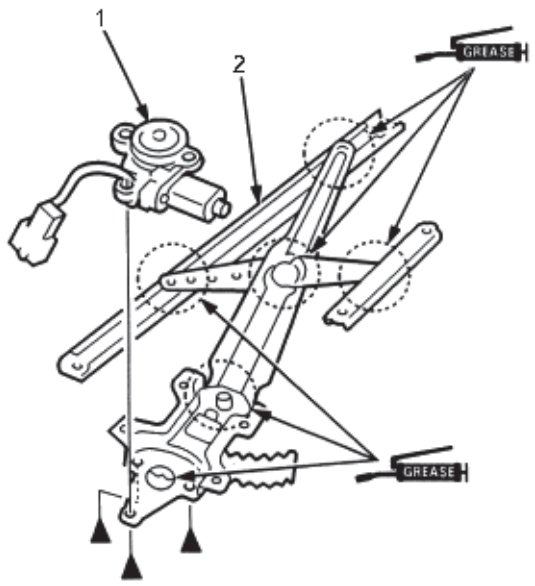
1. REGULATOR
2. SECTOR GEAR

5. Remove the bolts, then separate the power window motor and regulator. Grease the moving portions of the regulator indicated by the arrows.

▶ : Bolt locations, 3



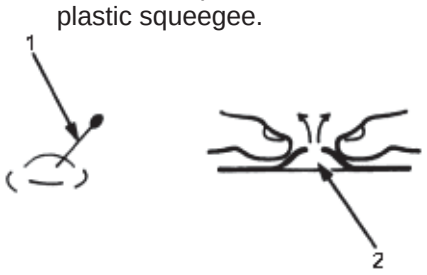
6 x 1.0 mm
8 N·m (0.8 kgf·m, 6 lbf·ft)



1. POWER WINDOW MOTOR
2. REGULATOR

6. Install in the reverse order of removal and note the following items:
   - Roll the glass up and down to see if it moves freely without binding.
   - Make sure that there is no clearance between the glass and glass run channel when the glass is closed.

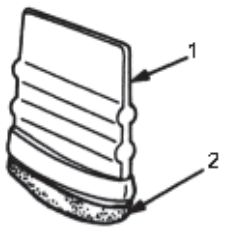
NOTE
- Keep dust away from the working area.
- When working at lower temperatures, heat the door channel and door channel tape with a hair dryer.
  Door channel: about 15°C (59°F).
  Door channel tape: about 30°C (86°F).
- When heating the door channel tape, heat it evenly and gradually to prevent deformation.
- 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, prick them with a pin, then release the air with your finger or a plastic squeegee.



1. PIN
2. TRAPPED AIR

- If the air bubble is more than 10 mm (0.4 in) in diameter, peel up the door channel tape, then reapply it.

1. The following tools are required to replace the door channel type.
   - Plastic squeegee
   - Alcohol
   - Sponge or shop towel
   - Hair dryer
   - Pin

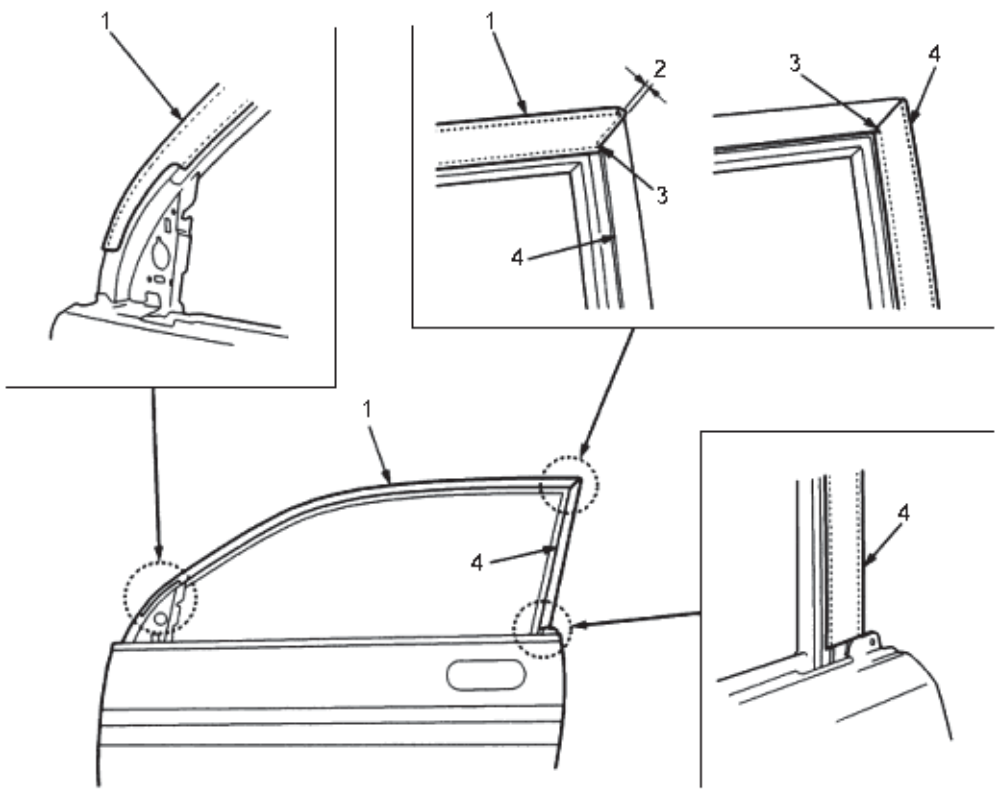


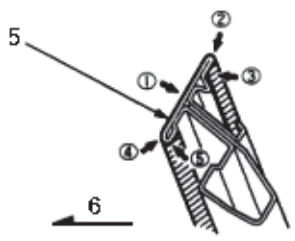
1. PLASTIC SQUEEGEE
2. FELT

2. Remove the following parts.
   Upper channel tape replacement
   - Power mirror (**See Page** 20-15).
   - Door weatherstrip (**See Page** 20-2).
   - Glass run channel (**See Page** 20-3).

   Centre channel tape replacement
   - Power mirror (**See Page** 20-15).
   - Door weatherstrip (**See Page** 20-2).
   - Glass run channel(**See Page** 20-3).
   - Door Molding(**See Page** 20-2).
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 alcohol.
   NOTE: 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 colour on the door channel is covered by the door channel tape.
9. Check for water leaks. Do not squeeze the tip of the hose.

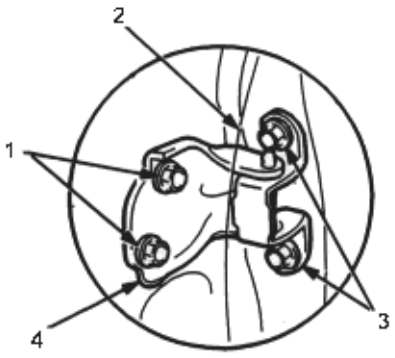


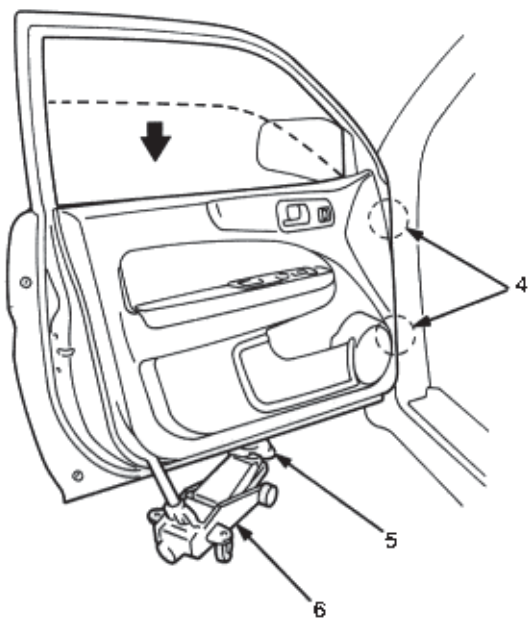


1. **UPPER CHANNEL TAPE**
2. 2 mm (0.08 in)
3. Align
4. **CENTRE CHANNEL TAPE**
5. **CENTRE/UPPER CHANNEL TAPE**
6. Outside

NOTE: After installing the door, 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. Before adjusting, replace the mounting bolts.

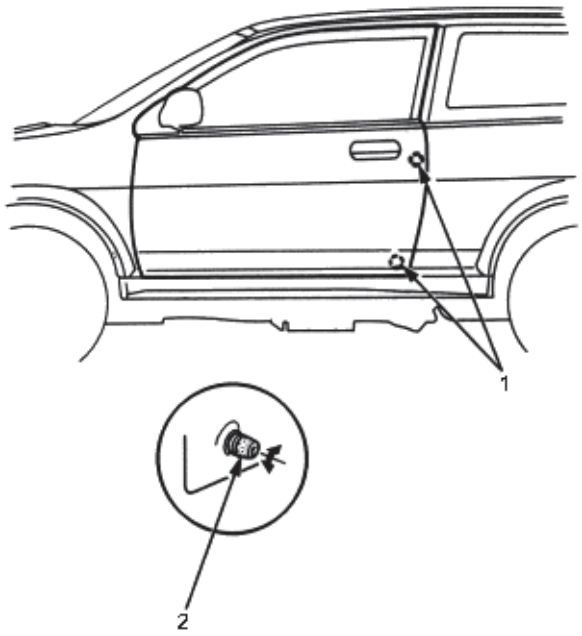
1. Place the vehicle on a firm, level surface when adjusting the door.
2. Adjust at the hinges.
   - Loosen the door mounting bolts slightly and move the door IN or OUT until it is flush with the body.
   - Remove the inner fender (**See Page** 20-83). loosen the hinge mounting bolts slightly and move the door BACKWARD or FORWARD, UP or DOWN as necessary to equalise the gaps.
   - Place a shop towel on the jack to prevent damage to the door when adjusting the door.





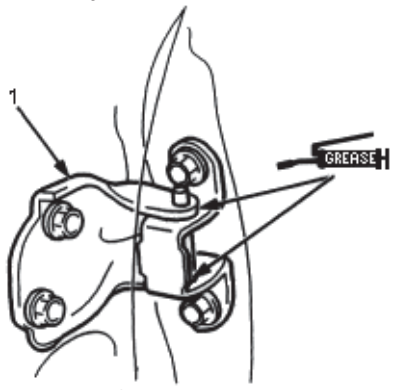
1. HINGE MOUNTING BOLTS 8 x 1.25 mm, 29 Nm (3.0 kgf/m, 22 lbf/ft)
2. DOOR
3. DOOR MOUNTING BOLTS 8 x 1.25, 29 Nm (3.0 kgf/m, 22 lbf/ft)
4. HINGE
5. SHOP TOWEL
6. JACK

3. Check that the door and body edges are parallel, if necessary, adjust the door cushions.



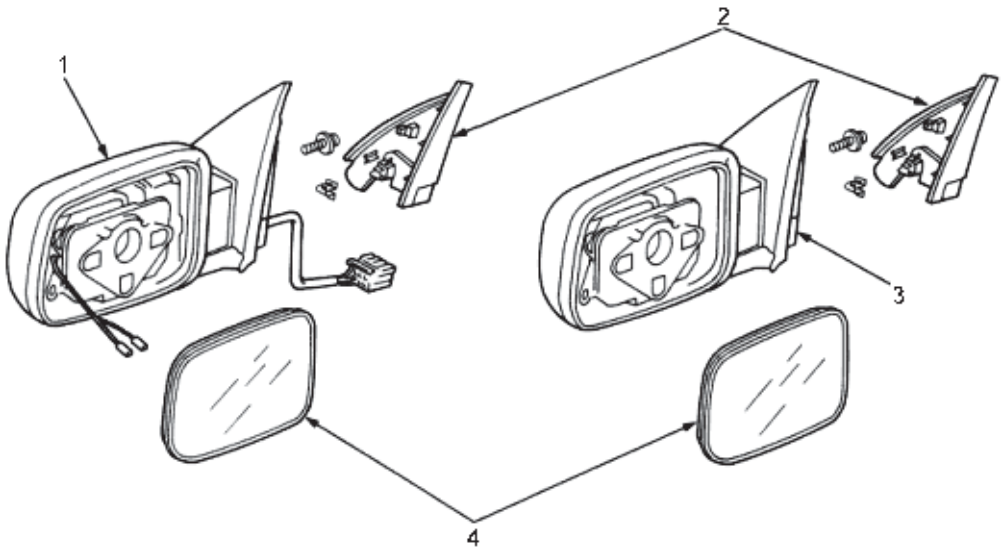
1. DOOR CUSHIONS
2. DOOR CUSHION

4. Grease the pivot portions of the hinges indicated by the arrows.



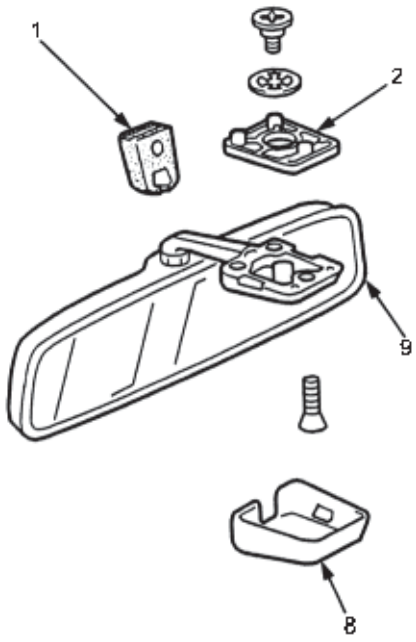
1. HINGE

5. Check for water leaks. Do not squeeze the tip of the hose.

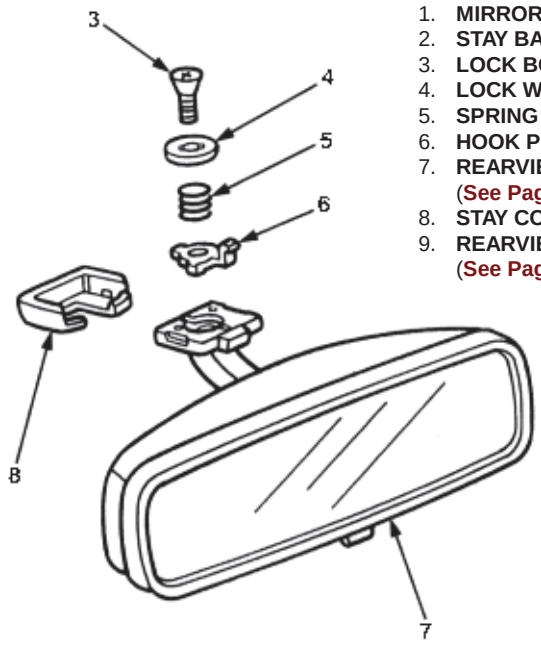


1. **POWER MIRROR,** Replacement (**See Page** 20-15).
2. **MIRROR MOUNT COVER**
3. **MIRROR**
4. **MIRROR HOLDER,** Replacement, (**See Page** 20-16).

Without roof spoiler



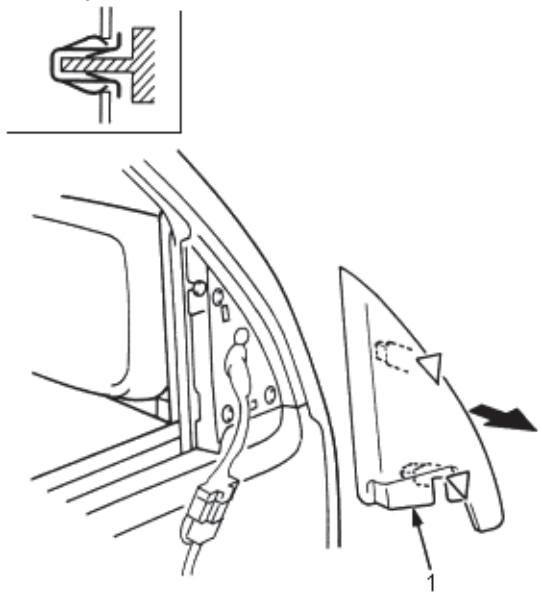
With roof spoiler



1. **MIRROR HOLDER**
2. **STAY BASE**
3. **LOCK BOLT**
4. **LOCK WASHER**
5. **SPRING**
6. **HOOK PLATE**
7. **REARVIEW MIRROR,** Replacement (**See Page** 20-16).
8. **STAY COVER**
9. **REARVIEW MIRROR,** Replacement (**See Page** 20-16).

1. Lower the glass fully.
2. Remove
   - Door Panel (**See Page** 20-4).
   - Plastic cover (**See Page** 20-2).
3. Carefully pry out the mirror mount cover by hand.

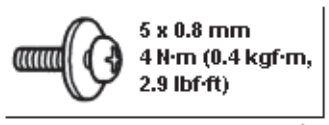
▷ : Clip locations, 2

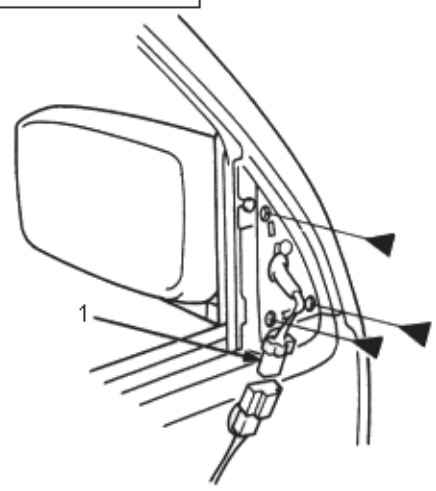


1. MIRROR MOUNT COVER

   Manual mirror: Remove the cap, screw and knob, then remove the mirror mount cover.
4. Disconnect the connector and detach the harness clip, then remove the bolts securing the power mirror.

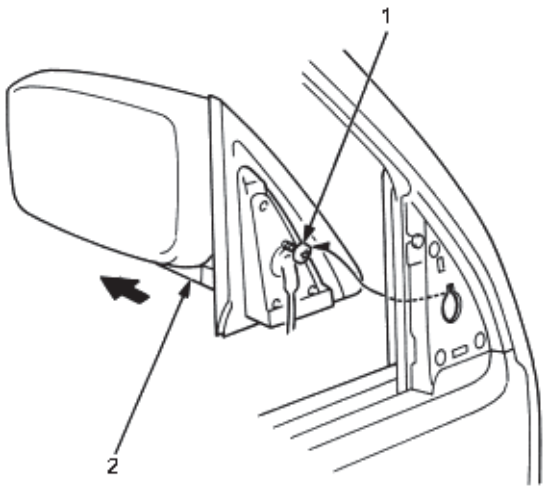
▶ Screw locations, 3





1. CONNECTOR

5. Loosen the screw, then remove the mirror.

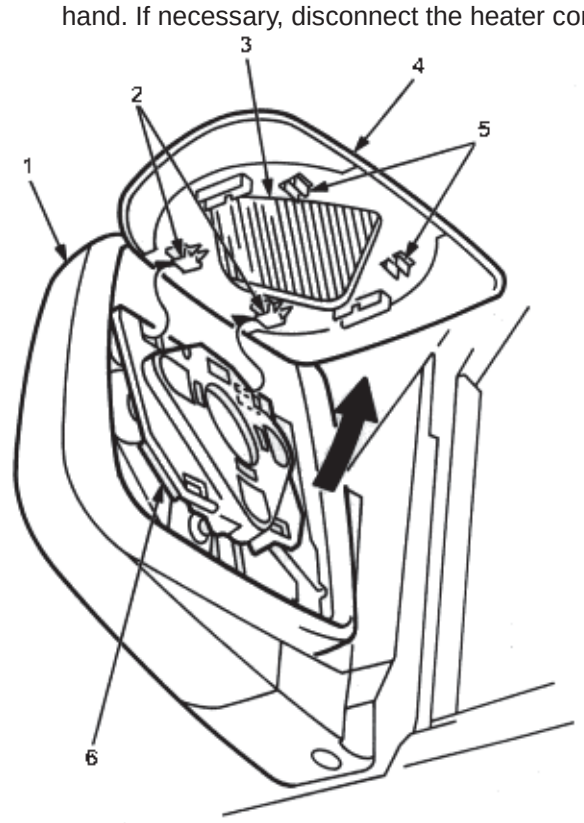


1. SCREW
2. MIRROR

6. Install in the reverse order of removal and note the following items:
   - Make sure the connector is plugged in properly.
   - Attach the harness clip.

NOTE:
- Take care not to scratch the mirror.
- Wear gloves to remove and install the mirror holder.

1. Carefully pull out the bottom edge of the mirror holder by hand. If necessary, disconnect the heater connector.

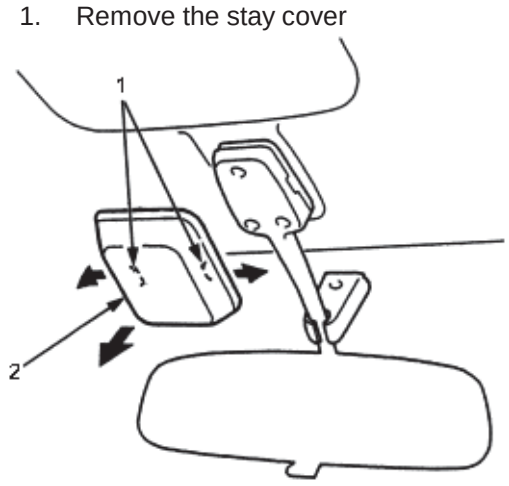


1. MIRROR
2. HOOKS
3. ADHESIVE
4. MIRROR HOLDER
5. CLIPS
6. ACTUATOR

2. Separate the mirror holder from the actuator by slowly pulling them apart.
3. Reattach the hooks of the mirror holder to the actuator, then position the mirror holder on the actuator. Carefully push the clip portions of the mirror holder until the mirror holder locks into place.
4. Check the actuator operation.

Without roof spoiler

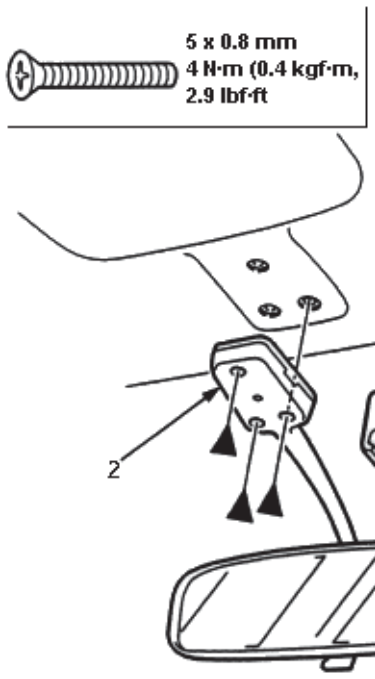
1. Remove the stay cover



1. HOOKS
2. STAY COVER

2. Remove the mirror holder.
3. Remove the screws, then remove the rearview mirror.

▶ Screw locations, 3

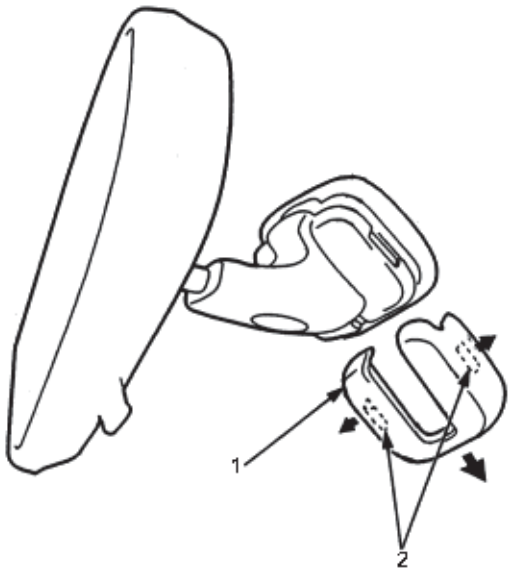


3. MIRROR HOLDER
4. REARVIEW MIRROR

4. Install in the reverse order of removal.

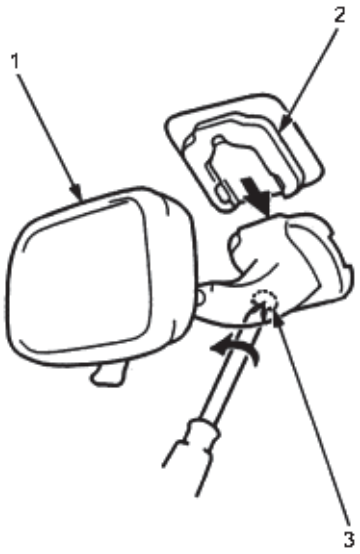
With roof spoiler

1. Remove the stay cover.



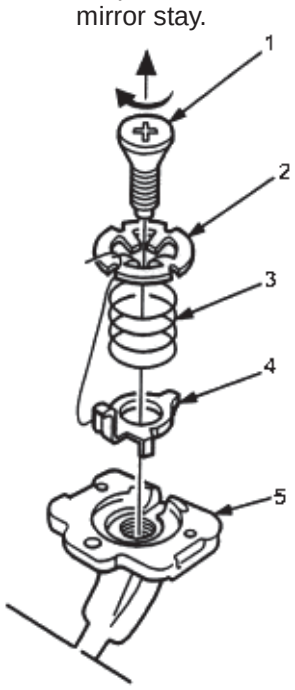
1. STAY COVER
2. HOOKS

2. Loosen the screw, then slide the rearview mirror down toward the bottom of the windshield.



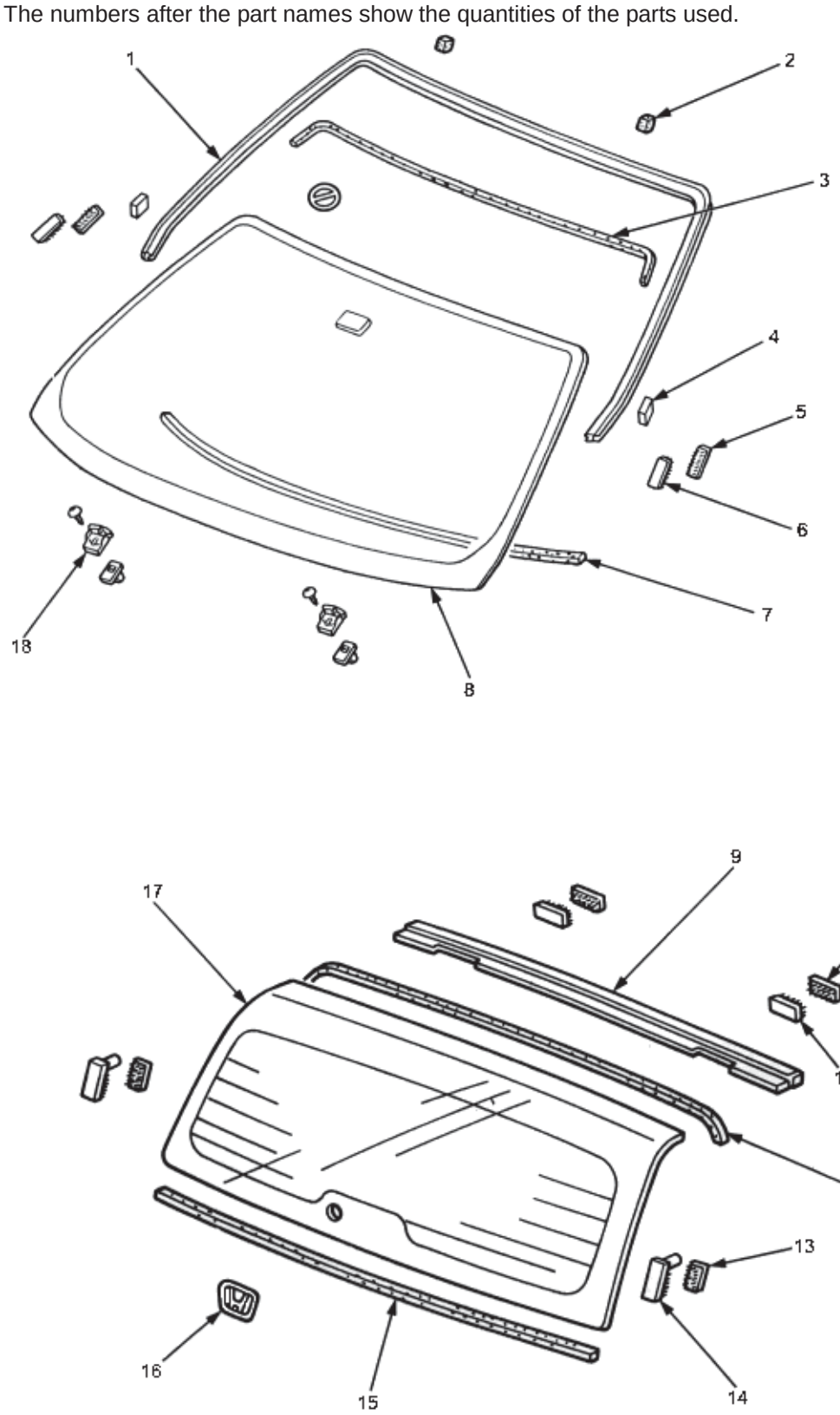
1. REARVIEW MIRROR
2. LUG
3. SCREW

3. If necessary, remove the lock bolt (left-handed bolt). Remove the lock washer and spring from the mirror stay.

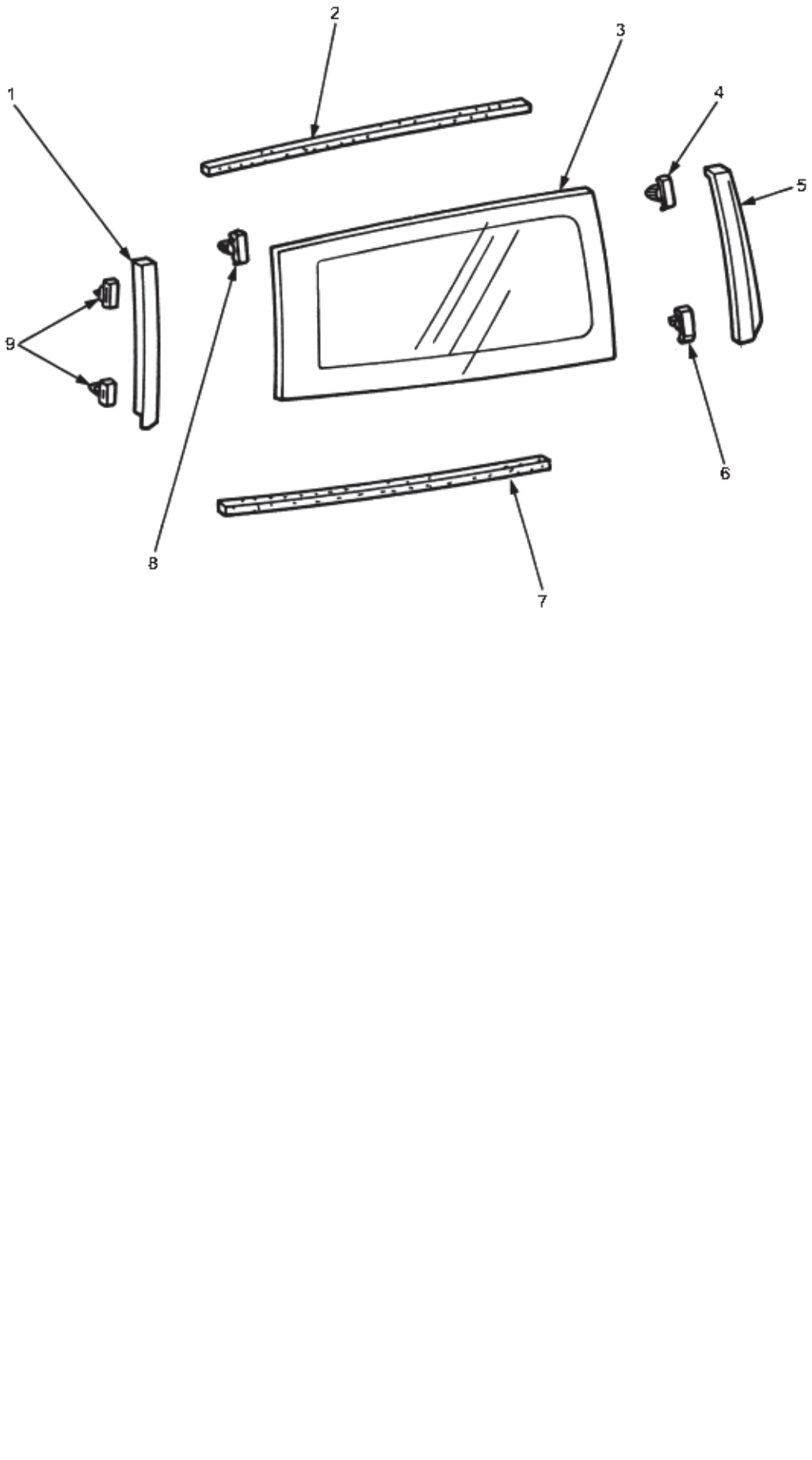


1. LOCK BOLT (LEFT-HANDED BOLT)
2. LOCK WASHER
3. SPRING
4. HOOK PLATE
5. MIRROR STAY

The numbers after the part names show the quantities of the parts used.



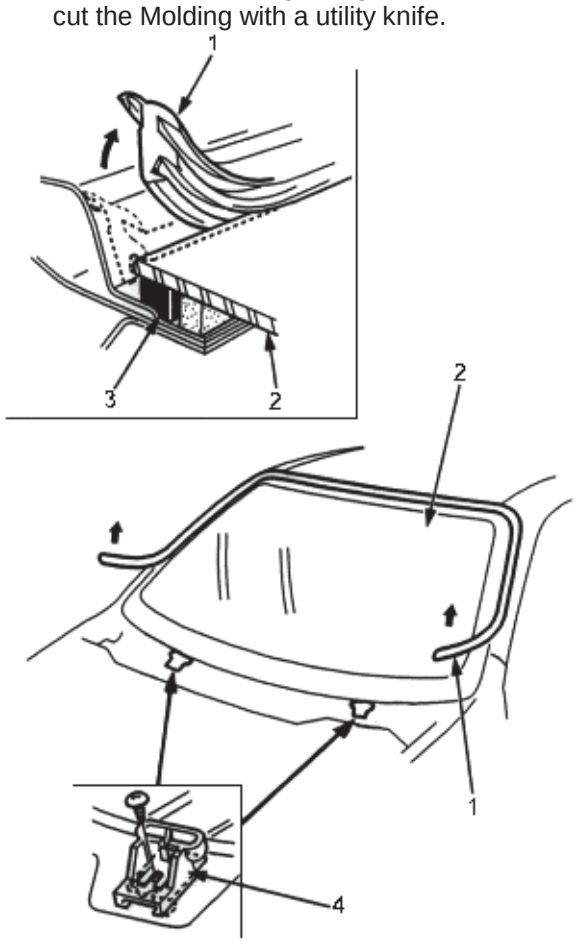
1. **WINDSHIELD MOLDING**
2. **MOLDING UPPER SEAL, 2**
3. **UPPER RUBBER DAM**
4. **MOLDING SIDE SEAL, 2**
5. **FASTENER, 2**
   (Self-adhesive-type, body side)
6. **FASTENER, 2**
   (Self-adhesive-type, glass side)
7. **LOWER RUBBER DAM**
8. **WINDSHIELD,** Replacement, (**See Page** 20-20).
9. **REAR WINDOW MOLDING,** Replacement, (**See Page** 20-29).
10. **UPPER FASTENER, 2**
    (Self-adhesive-type, body side)
11. **UPPER FASTENER, 2**
    (Self-adhesive-type, glass side)
12. **UPPER RUBBER DAM**
13. **LOWER FASTENER, 2**
    (Self-adhesive-type, tailgate side)
14. **LOWER FASTENER, 2**
    (Self-adhesive-type, glass side)
15. **LOWER RUBBER DAM**
16. **REAR CENTRE STICKER** (**See Page** 20-94).
17. **REAR WINDOW,** Replacement, (**See Page** 20-26).
18. **GLASS HOLDER (2)**



1. **QUARTER GLASS REAR TRIM**
2. **UPPER RUBBER DAM**
3. **QUARTER GLASS,** Replacement, (**See Page** 20-30).
4. **UPPER CLIP** (Self-adhesive-type)
5. **QUARTER GLASS FRONT TRIM**
6. **LOWER CLIP** (Self-adhesive-type)
7. **LOWER RUBBER DAM**
8. **REAR CLIP**
9. **TRIM CLIP**

NOTE:
- Wear gloves to remove and install the windshield.
- Use seat covers to avoid damaging any surfaces.
- Use glass adhesive set, P/N, 08C73-X0230N.

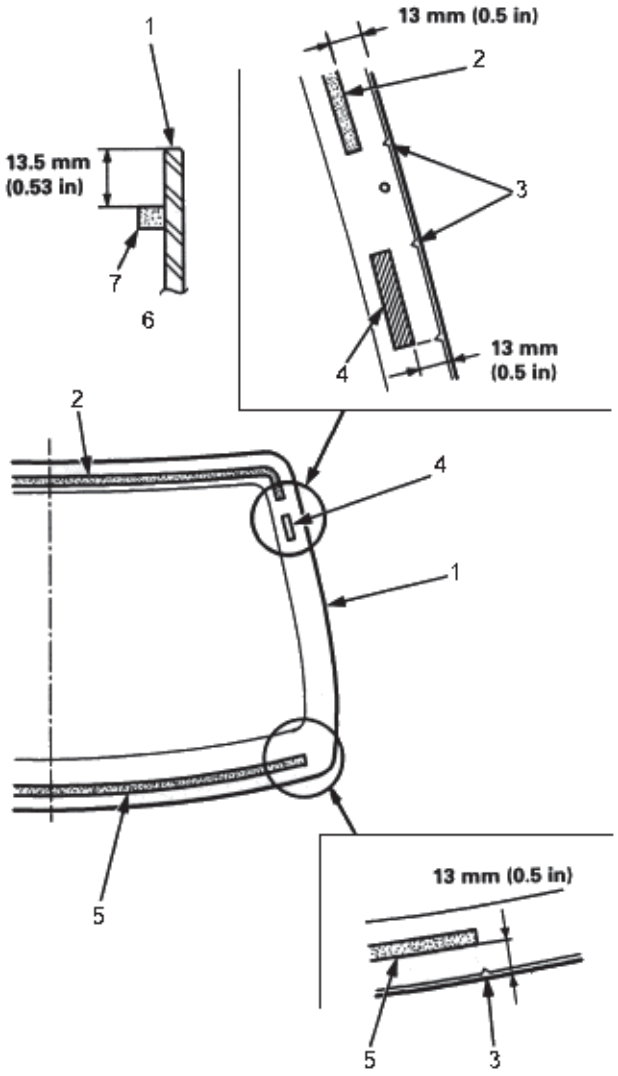
1. Remove:
   - Rearview mirror (with roof spoiler, (**See Page** 20-16).
   - Grab handles (both sides as necessary, (**See Page** 20-44).
   - Door trim (both sides as necessary, (**See Page** 20-41).
   - Front pillar trim (both sides, (**See Page** 20-41).
   - Windshield wiper arms and cowl cover (see section 23)
2. Remove the Molding and glass bracket. If necessary, cut the Molding with a utility knife.



1. MOLDING
2. WINDSHIELD
3. ADHESIVE
4. GLASS BRACKET, 2

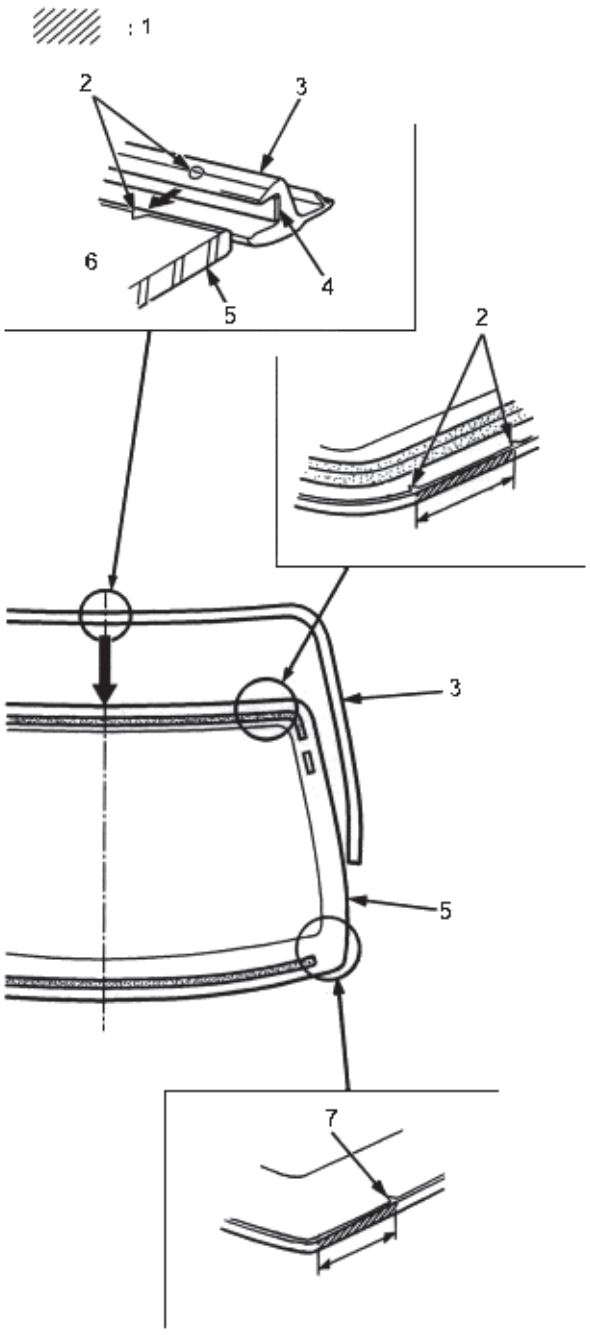
3. Pull down the front portion of the headliner (**See Page** 20-44). Take care not to bend the headliner excessively, or you may crease or break it.
4. Apply protective tape. Using an awl, make a hole through the rubber dam adhesive and dashboard seal from inside the vehicle. Push piano wire through the hole and wrap each end around a piece of wood.
5. With a helper on the outside, pull the piano wire back and forth in a sawing motion. Hold the piano wire as close to the windshield as possible to prevent damage to the body and dashboard. Carefully cut through the rubber dam and adhesive around the entire windshield.
6. Carefully remove the windshield.
7. With a knife, scrape the old adhesive smooth to 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 dam and fasteners from the body.
   - Mask off surrounding surfaces before painting.
8. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
9. If the old windshield is to be reinstalled, use a putty knife to scrape off all traces of old adhesive from the windshield, the rubber dam and the dash board seal, then clean the windshield surface and edge with alcohol where new adhesive is to be applied. Make sure the bonding surface is kept free of water, oil and grease.

10. Glue the upper rubber dam, lower rubber dam and fasteners to the inside face of the windshield as shown:
    - Be sure the rubber dam, fasteners and dashboard seal line up with the alignment marks.
    - Be careful not to touch the windshield where adhesive will be applied.



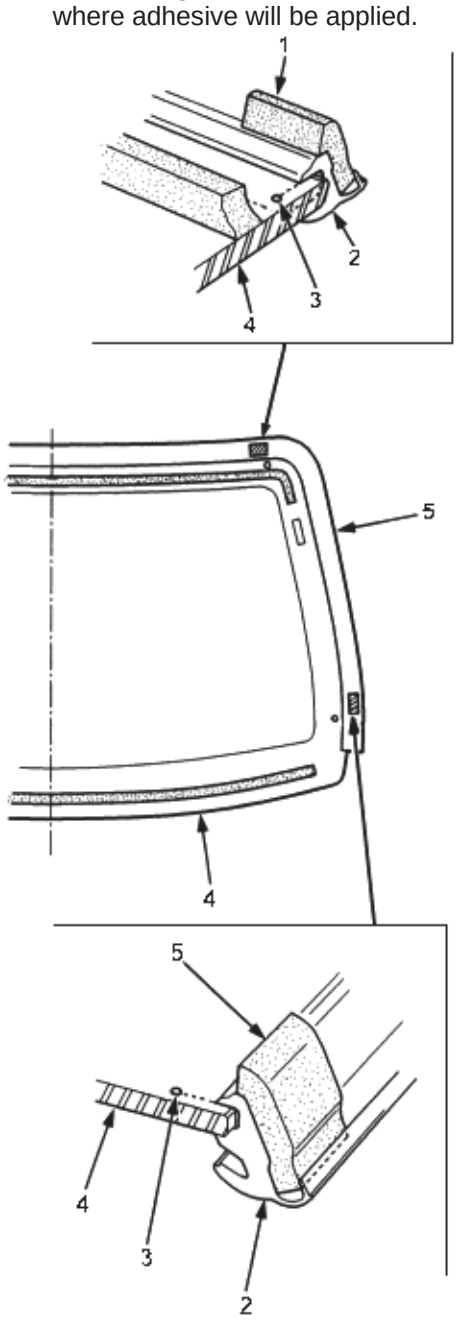
1. WINDSHIELD
2. UPPER RUBBER DAM
3. ALIGNMENT MARK
4. FASTENER
5. LOWER RUBBER DAM
6. Inside
7. RUBBER DAM

11. Apply primer (3M N-200, or equivalent) to the areas between the alignment marks of the windshield. Glue the Molding with adhesive tape to the edge of the windshield:
    - Be sure the alignment mark of the Molding line up with the alignment mark of the windshield.
    - Be careful not to touch the windshield where adhesive will be applied.



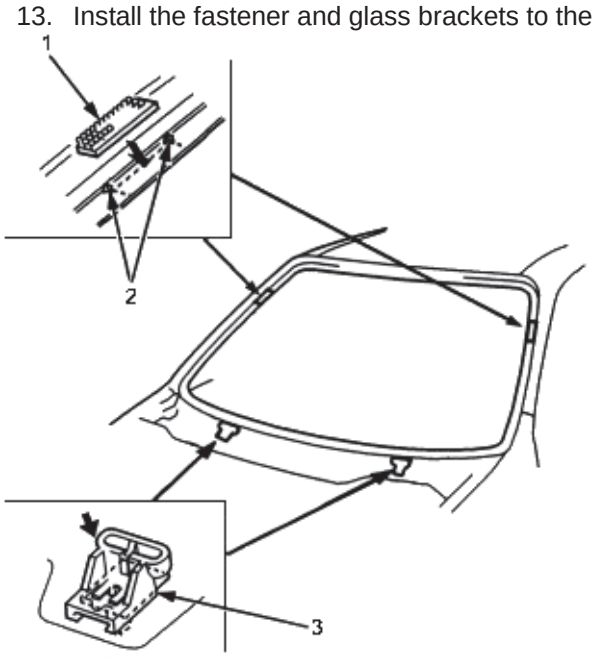
1. Apply primer here.
2. ALIGNMENT MARKS
3. MOLDING
4. ADHESIVE TAPE
5. WINDSHIELD
6. Inside
7. ALIGNMENT MARK

12. Glue the molding upper seal and molding side seal to the molding. Be careful not to touch the windshield where adhesive will be applied.



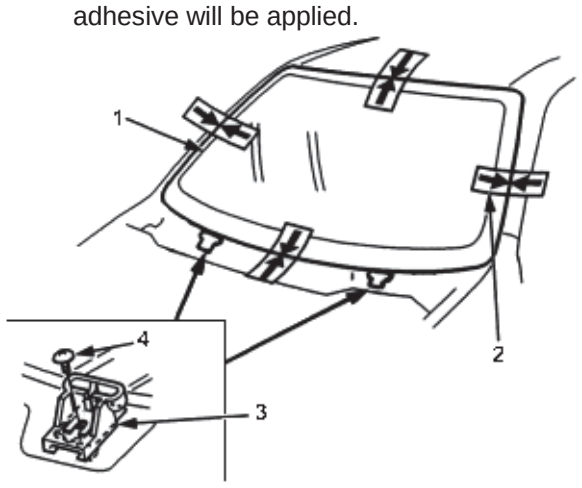
1. MOLDING UPPER SEAL
2. MOLDING
3. ALIGNMENT MARK
4. WINDSHIELD
5. MOLDING SIDE SEAL

13. Install the fastener and glass brackets to the body.



1. FASTENER
2. ALIGNMENT MARK
3. GLASS BRACKET

14. Set the windshield in the opening and centre it. Make alignment marks across the windshield and body with a grease pencil at the four points shown. Be careful not to touch the windshield where adhesive will be applied.

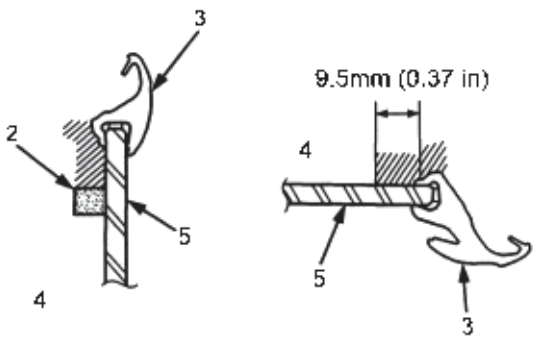


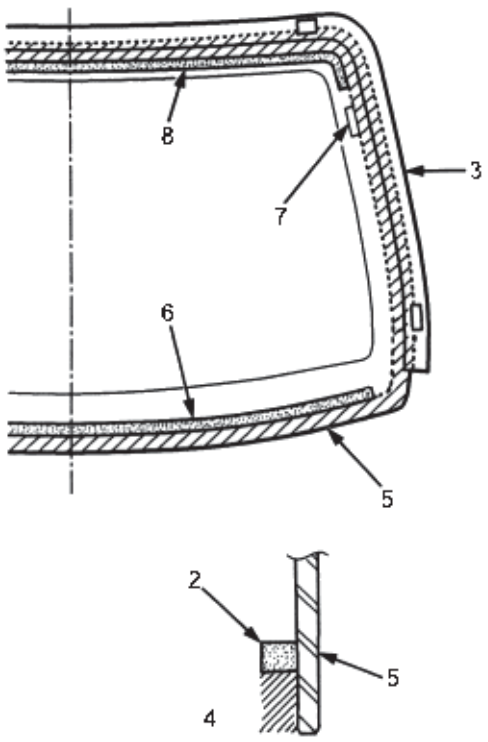
1. WINDSHIELD
2. ALIGNMENT MARK
3. GLASS BRACKET
   NOTE: Adjust the glass bracket to centre the windshield in the opening, then tighten the screws.
4. SCREW

15. Remove the windshield.

16. With a sponge, apply a light coat of glass primer around the edge of the windshield between the rubber dam and molding as shown, then lightly wipe if off with gauze or cheesecloth:
    - Apply glass primer to the molding.
    - Do not apply body primer to the windshield and do not get body and glass primer sponges mixed up.
    - 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.

: 1

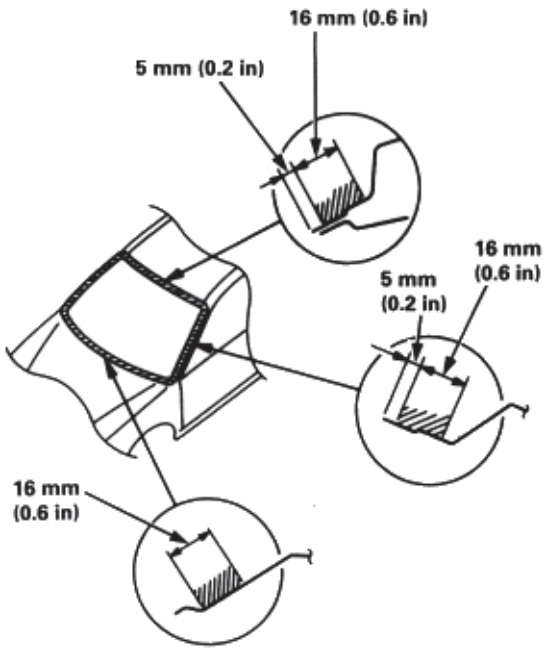




1. Apply glass primer here.
2. RUBBER DAM
3. MOLDING
4. Inside
5. WINDSHIELD
6. LOWER RUBBER DAM
7. FASTENER
8. UPPER RUBBER DAM

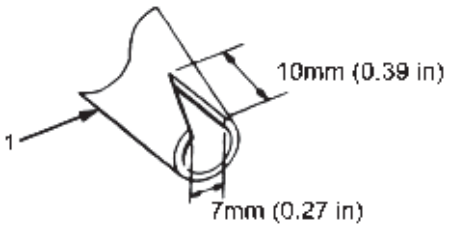
17. With a sponge, apply a light coat of body primer to the original adhesive remaining around the windshield opening flange. Let the body primer dry for at least 10 minutes:
    - Do not apply glass primmer to the body and be careful not to mix up glass and body primer sponges.
    - Never touch the primed surfaces with your hands.
    - Mask off the dashboard before painting the flange.

: 1



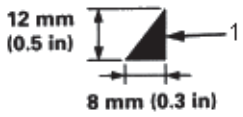
1. Apply glass primer here.

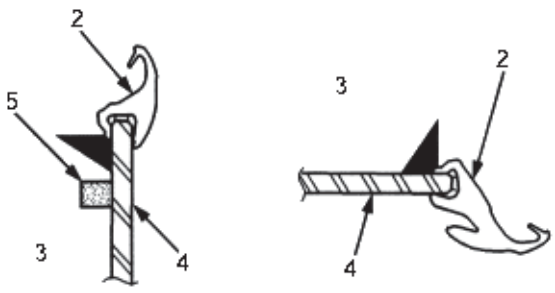
18. Before filling a cartridge, cut a "V" in the end of the nozzle as shown.

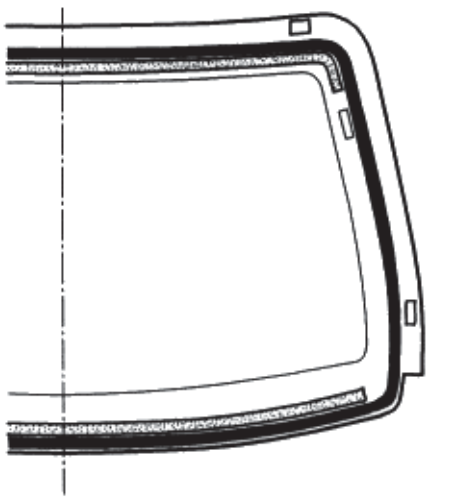


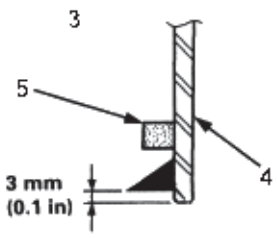
1. NOZZLE

18. 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 around the edge of the windshield between the rubber dam and molding as shown. Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.







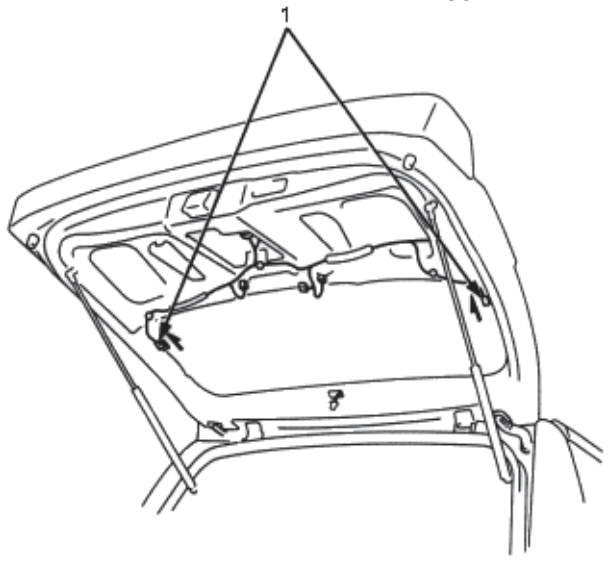


1. ADHESIVE
2. MOLDING
3. Inside
4. WINDSHIELD
5. RUBBER DAM

19. Use suction cups to hold the windshield 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. Do not open or close the doors until adhesive is dry.
20. Scrape or wipe the excess adhesive off with a putty knife or towel. To remove adhesive from a painted surface or the windshield, wipe with a soft shop towel dampened with alcohol.
21. Let the adhesive dry for at least one hour, then spray water over the windshield and check for leaks. Mar leaking areas and let the windshield dry, then seal with sealant:
    - Let the vehicle stand for at least four hours after windshield installation. If the vehicle has to be used within the first four hours, it must be driven slowly.
    - Keep the windshield dry for the first hour after installation.
22. Reinstall all remaining removed parts. Install the rearview mirror after the adhesive has dried thoroughly. Advise the customer not to do the following things for two to three 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).

NOTE:
- Wear gloves to remove and install the rear window.
- Use seat covers to avoid damaging any surfaces.
- Do not damage the rear window defogger grid lines and terminals.
- Use glass adhesive set P/N, 08C73-X0230N.

1. Remove:
   - High mount brake light (see section 23).
   - Tailgate trim panel (**See Page** 20-42).
   - Rear window wiper arm (**See Page** 20-23).
2. Disconnect the rear window defogger connectors.

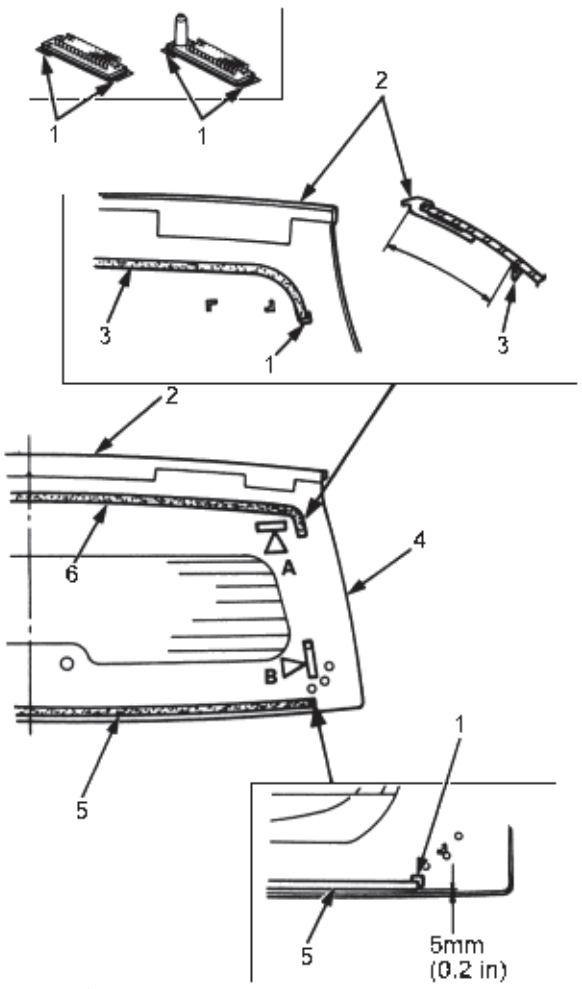


1. REAR WINDOW DEFOGGER CONNECTOR

3. Apply protective tape. Using an awl, make a hole through the adhesive from inside the vehicle. Push 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 back and forth in a sawing motion. Hold the piano wire as close to the rear window as possible to prevent damage to the tailgate. Carefully cut through the rubber dam and adhesive around the entire rear window.
5. Carefully remove the rear window.
6. With a putty knife, scrape the old adhesive smooth to a thickness of about 2 mm (0.08 in) on the bonding surface around the entire rear window opening flange.
   - Do not scrape down to the painted surface of the tailgate; damaged paint will interfere with proper bonding.
   - Mask off surrounding surfaces before painting.
   - Remove the rubber dams and fasteners from the tailgate.
7. Clean the tailgate bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
8. If the old rear window is to be reinstalled, use a putty knife to scrape off all traces of old adhesive on the rubber dams and the fasteners from the rear window, then clean the rear window surface and edge with alcohol where new adhesive is to be applied. Make sure the bonding surface is kept free of water, oil and grease.

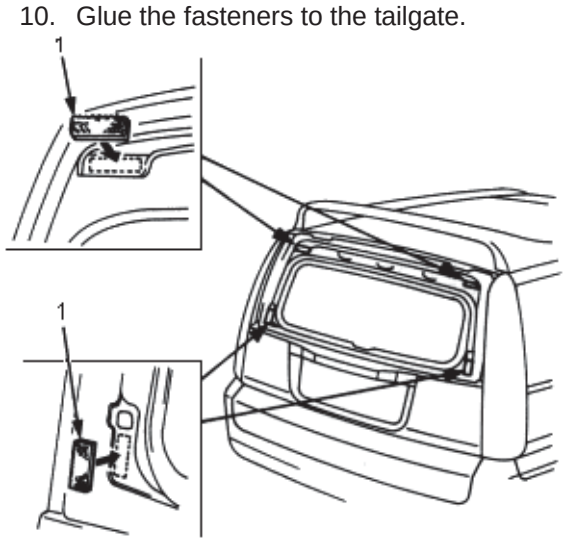
9. Glue the fasteners and rubber dams to the inside face of the rear window as shown:
   - Be sure the fasteners and rubber dams line up with the alignment marks.
   - Be careful not to touch the rear window where adhesive will be applied.

▷ : Fastener locations
A ▷, 2 B ▷, 2



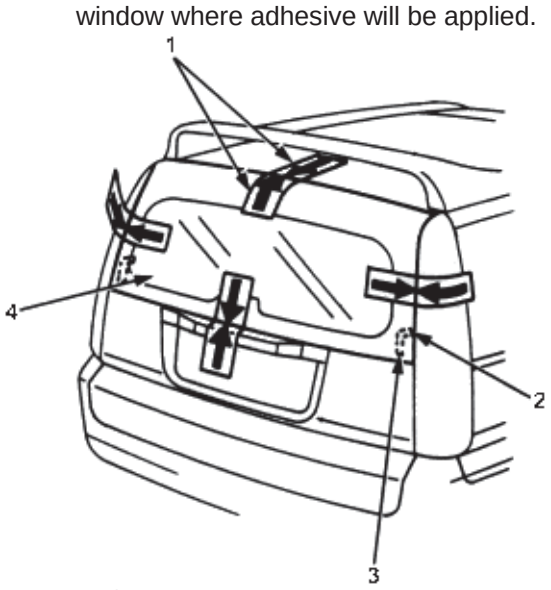
1, ALIGNMENT MARK
2. REAR WINDOW MOLDING
3. RUBBER DAM
4. REAR WINDOW
5. LOWER RUBBER DAM
6. UPPER RUBBER DAM

10. Glue the fasteners to the tailgate.



1. FASTENER

11. Set the rear window in the opening and centre it. Make alignment marks across the rear window, tailgate and body with a grease pencil at the four points shown. Be careful not to touch the rear window where adhesive will be applied.

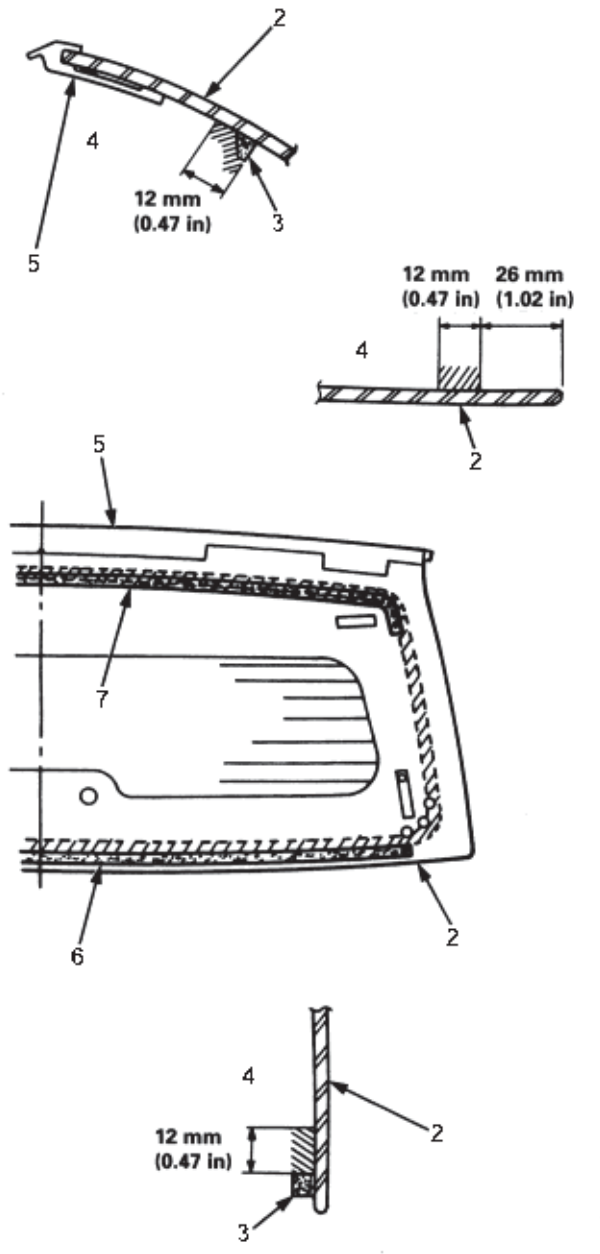


1. ALIGNMENT MARK
2. PIN
3. LOWER FASTENER
4. REAR WINDOW

12. Remove the rear window

12. With a sponge, apply a light coat of glass primer around the edge of the rear window as shown, then lightly wipe it off with gauze or cheesecloth:
    - Do not apply body primer to the rear window and not do get tailgate and glass primer sponges mixed up.
    - Never touch the primed surfaces with your hands. If you do, the adhesive may not bond to the rear window properly, causing a leak after the rear window is installed.
    - Keep water, dust and abrasive materials away from the primed surface.

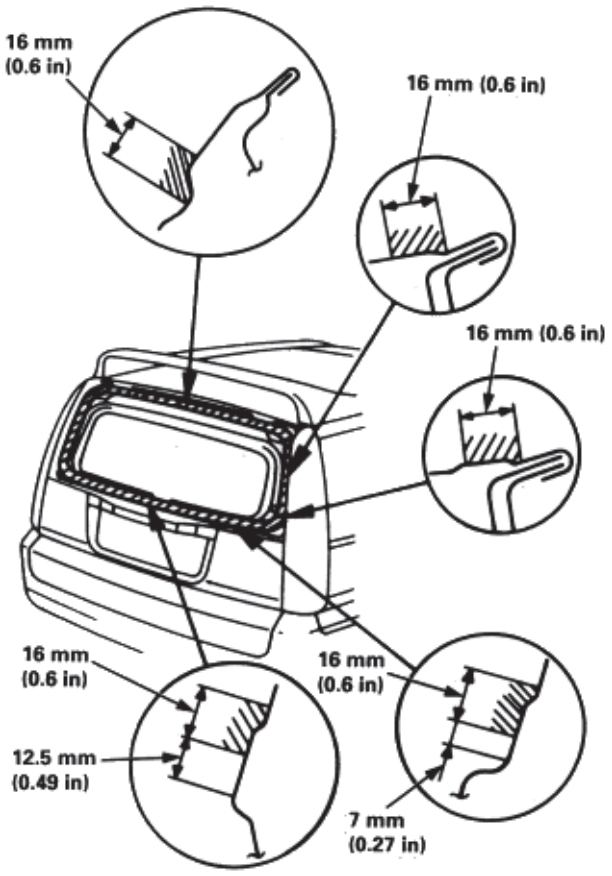
    : 1



1. Apply glass primer here.
2. REAR WINDOW
3. RUBBER DAM
4. Inside.
5. REAR WINDOW MOLDING
6. LOWER RUBBER DAM
7. UPPER RUBBER DAM

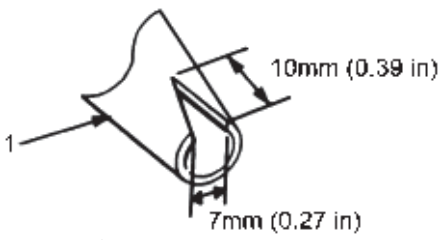
13. With a sponge, apply a light coat of body primer to the original adhesive remaining around the rear window opening flange. Let the body primer dry for at least 10 minutes:
    - Do not apply glass primer to the body and be careful not to mix up glass and body primer sponges.
    - Never touch the primed surfaces with your hands.

    : 1



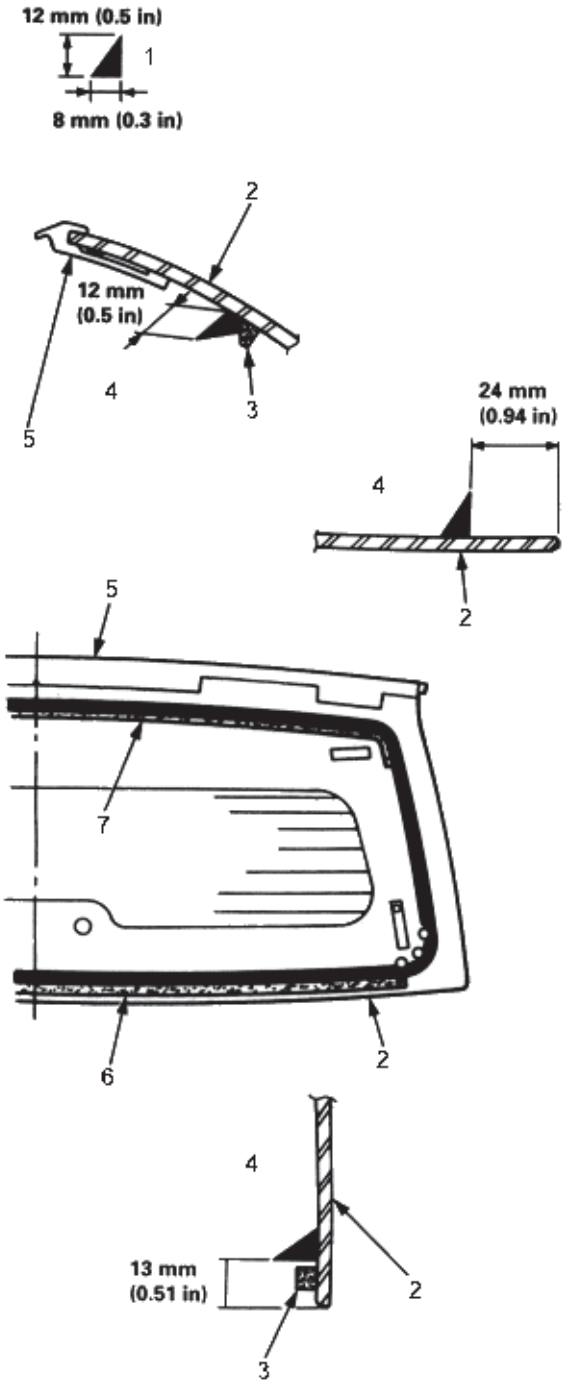
1. Apply body primer here.

14. Before filling a cartridge, cut a “V” in the end of the nozzle as shown.



1. NOZZLE

14. 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 around the edge of the rear window as shown. With the printed dots on the rear window as guide, apply the adhesive to both side portions of the rear window. Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.

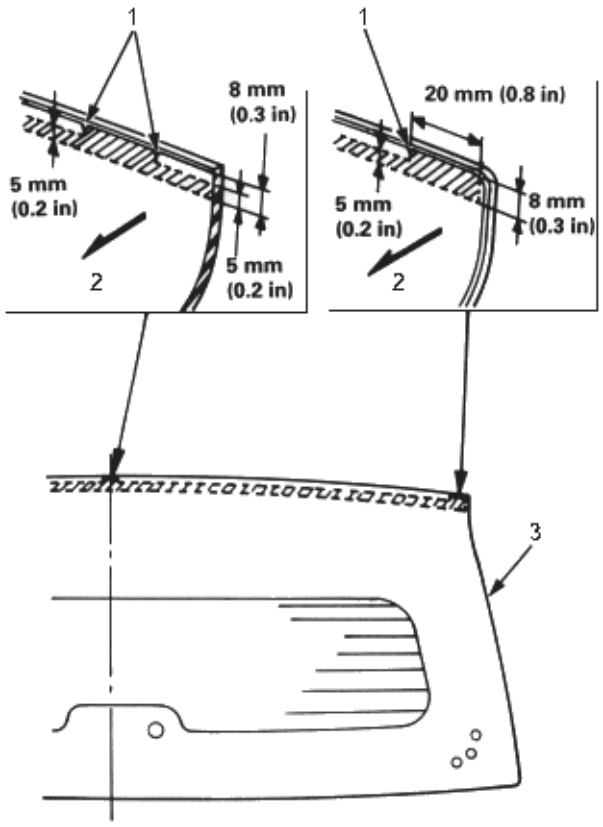


1. ADHESIVE
2. REAR WINDOW
3. RUBBER DAM
4. Inside
5. REAR WINDOW MOLDING
6. LOWER RUBBER DAM
7. UPPER RUBBER DAM

15. Use suction cups to hold the rear window over the opening, align it with the alignment marks you made in step 11, and set it down on the adhesive. Lightly push on the rear window until its edges are fully seated on the adhesive all the way around. Do not open or close the doors until the adhesive is dry.
16. Scrape or wipe the excess adhesive off with a putty knife or towel. To remove adhesive from a painted surface or the rear window, use a soft shop towel dampened with alcohol.
17. Let the adhesive dry for at least one hour, then spray water over the rear window and check for leaks. Mark the leaking areas, let the rear window dry, then seal with sealant.
    - Let the vehicle stand for at least four hours after rear window installation. If the vehicle has to be used within the first four hours, it must be driven slowly.
    - Keep the rear window dry for the first hour after installation.
18. Reinstall all remaining removed parts. Advise the customer not to do the following things for two to three 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).

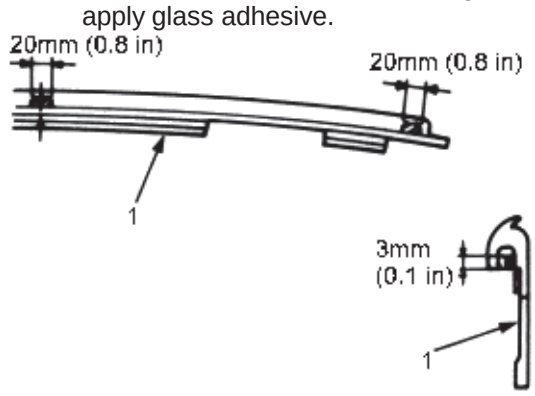
NOTE:
- Wear gloves to remove and install the rear window.
- Do not damage the rear window defogger grid lines, window antenna grid lines and terminals

1. Remove the rear window (**See Page** 20-25).
2. Remove the rear window molding.
3. Use a putty knife to scrape off of old adhesive and adhesive tape from the rear window, then clean the rear window surface and edge with alcohol. Make sure the bonding surface is kept free of water, oil and grease.
4. Apply primer (3M N-200, or equivalent) to the areas between the rear window as shown.



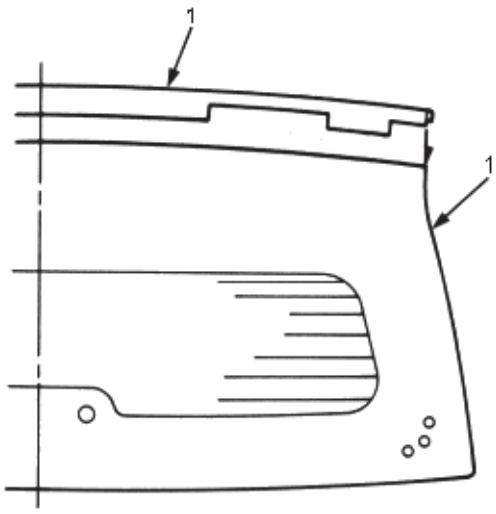
1. ALIGNMENT MARK
2. Inside
3. REAR WINDOW

5. Clean the rear window molding.
6. Apply primer (3M C-100 or equivalent) to the areas between the rear window Molding as shown, then apply glass adhesive.



1. REAR WINDOW MOLDING

7. Glue the rear window molding with adhesive tape to the rear window.

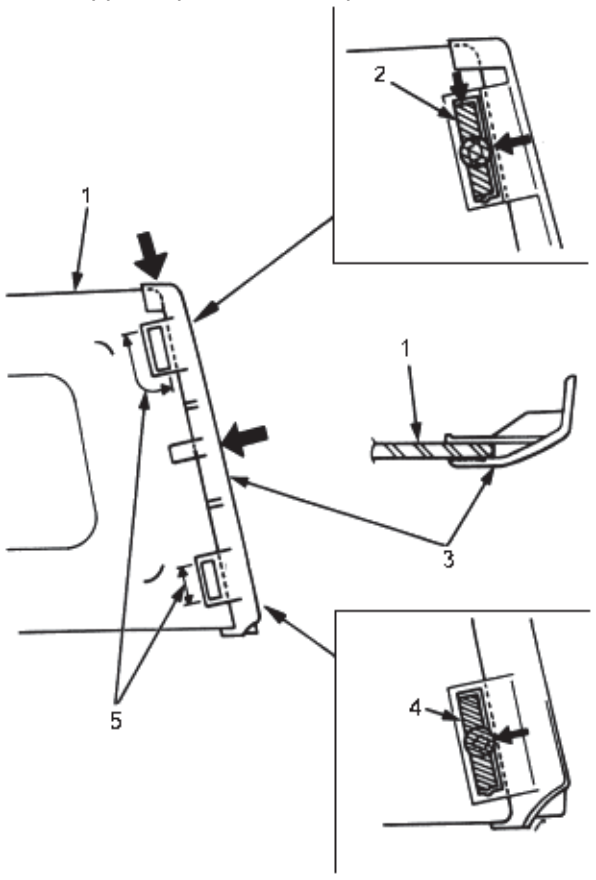


1. REAR WINDOW MOLDING

8. Scrape or wipe the excess adhesive off with putty knife or towel.
9. Install the rear window.

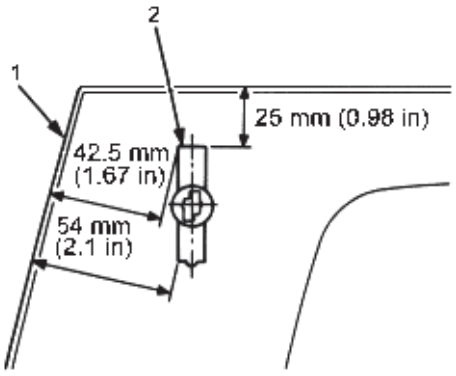
NOTE:
- Wear gloves to remove and install the quarter glass.
- Use seat covers to avoid damaging any surface.
- Use glass adhesive set P/N, 08C73-X0230N.

1. Remove:
   - Rear side shelf (**See Page** 20-41).
   - Upper portion of rear side trim (**See Page** 20-41).
   - Centre pillar trim (**See Page** 20-41).
   - Rear pillar trim (**See Page** 20-41).
   - Taillight (see section 23)
2. Pull down the rear side portion of the headliner (**See Page** 20-41). Take care not to bend the headliner excessively, or you may crease or break it.
3. Remove the quarter glass front trim and quarter glass rear trim.
   NOTE: Replace the quarter glass front trim and quarter glass rear trim.
4. From inside or outside the vehicle, with a knife to cut through the quarter glass adhesive all the way around.
   NOTE: Apply protective tape along the edge of the entire quarter glass opening flange.
5. Carefully remove the quarter glass.
6. With a knife, scrape the old adhesive smooth to a thickness of about 2 mm (0.8 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.
   - If any of the clips are broken, remove them from the body.
   - Mask off surrounding surfaces before applying primer.
7. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the glass surface.
8. If the old quarter glass is to be reinstalled, use a putty knife to scrape off all traces of old adhesive from the quarter glass. Scrape the old adhesive from the molding with a knife, then clean the quarter glass and molding surfaces with alcohol where adhesive is to be applied. Make sure the bonding surface is kept free of water, oil and grease.
9. Set the quarter glass front trim, then install the upper clip and lower clip.



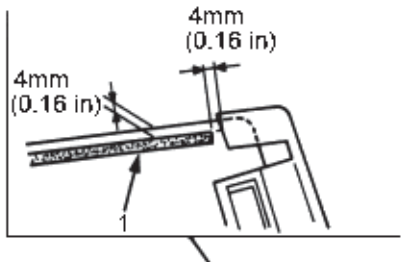
1. QUARTER GLASS
2. UPPER CLIP
3. QUARTER GLASS FRONT TRIM
4. LOWER CLIP
5. No clearance area to the clip and trim.

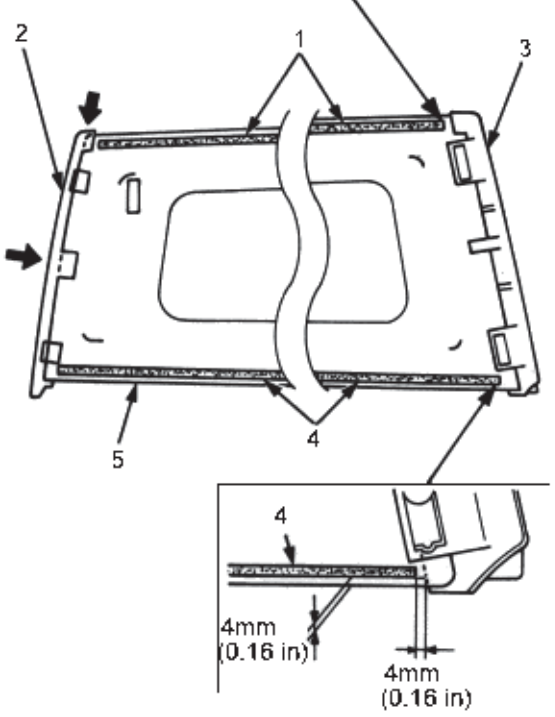
10. Install the rear clip as shown.



1. QUARTER GLASS
2. REAR CLIP

11. Set the quarter glass rear trim, then glue the upper rubber dam and lower rubber dam as shown.

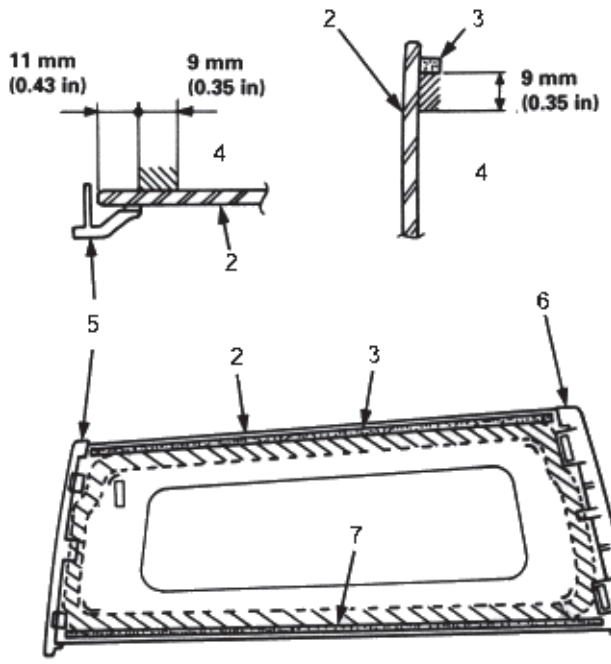


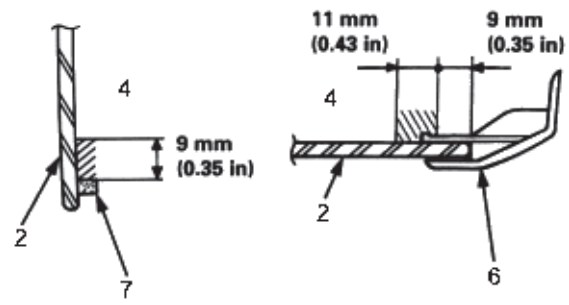


1. UPPER RUBBER DAM
2. QUARTER GLASS REAR TRIM
3. QUARTER GLASS FRONT TRIM
4. LOWER RUBBER DAM
5. QUARTER GLASS

12. With a sponge, apply a light coat of glass primer to the inside face of the quarter glass as shown, then lightly wipe it of with gauze or cheesecloth.
    - Do not apply body primer to the quarter glass and do not get body and glass primer sponges mixed up.
    - 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 surface.

: 1



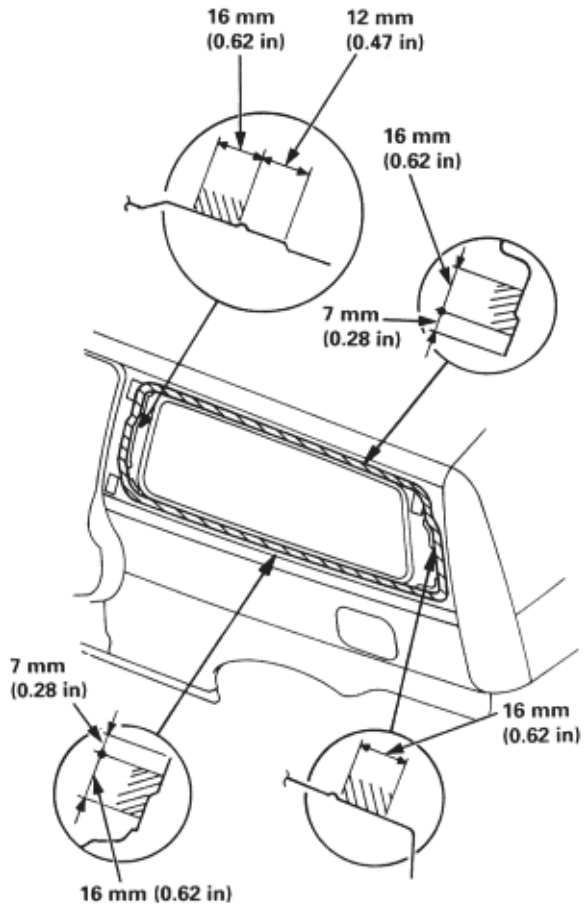


1. Apply glass primer here.
2. QUARTER GLASS
3. UPPER RUBBER DAM
4. Inside
5. QUARTER GLASS REAR TRIM
6. QUARTER GLASS FRONT TRIM
7. LOWER RUBBER DAM

13. With a sponge, apply a light coat of body primer to the original adhesive remaining around the quarter glass opening flange. Let the body primer dry for at least 10 minutes.
    - Do not apply glass primer to the body and be careful not to mix up glass and body primer sponges.
    - Never touch the primed surfaces with your hands.
    - Mask off the dashboard before painting the flange.

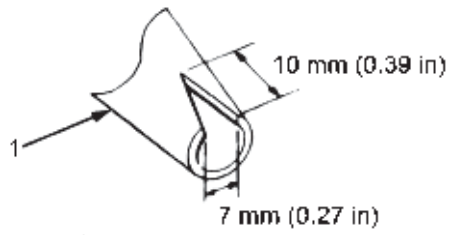
Crosshatching on drawing denotes: Apply body primer here.

: 1



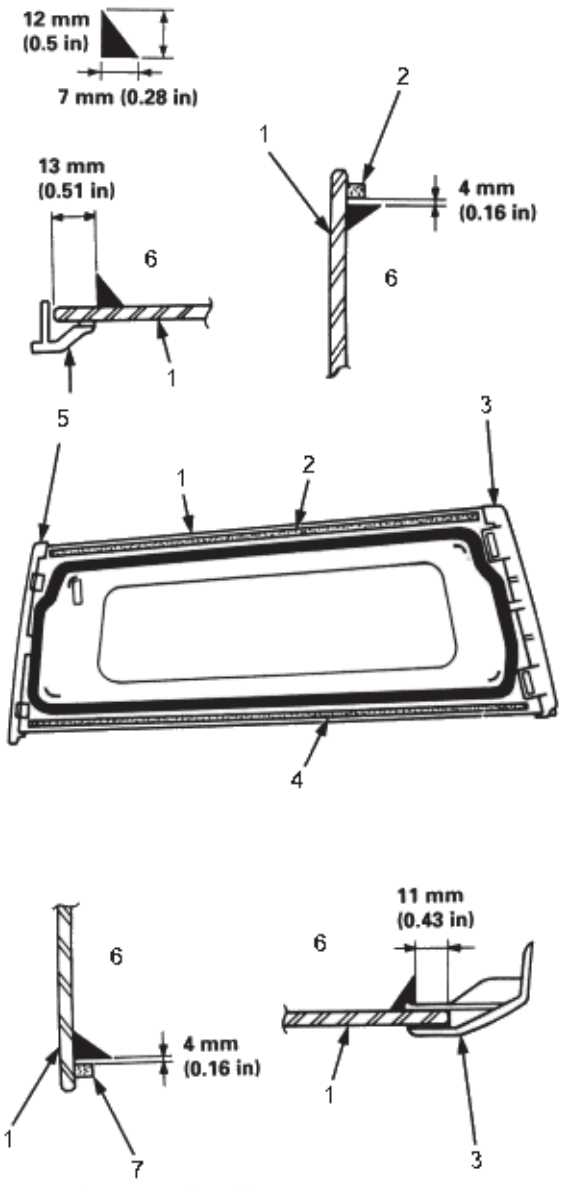
1. Apply body primer here

14. Before filling a cartridge, cut a "V" in the end of the nozzle as shown.



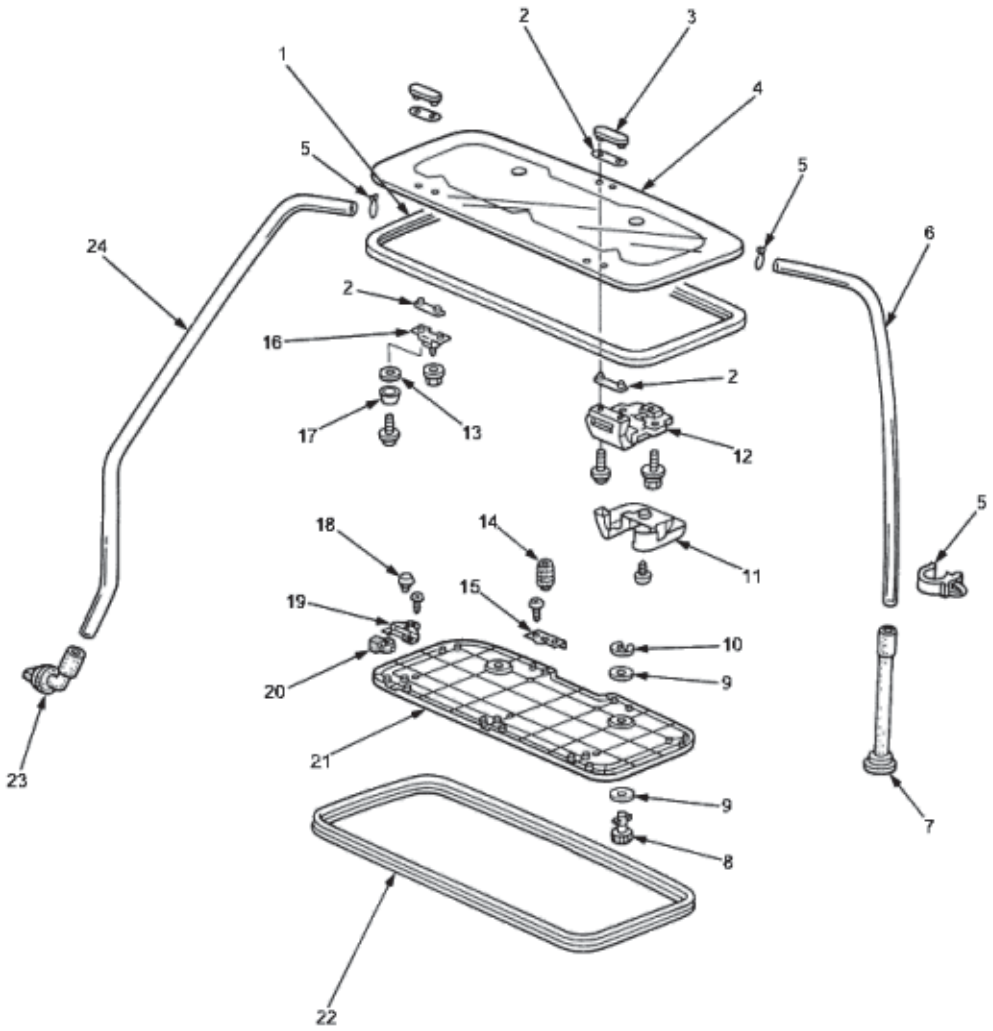
1. NOZZLE

15. 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 around the edge of the quarter glass as shown:
    - After applying the adhesive, peel the separator off the butyl tape.
    - Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.



1. QUARTER GLASS
2. UPPER RUBBER DAM
3. Inside
4. QUARTER GLASS FRONT TRIM
5. QUARTER GLASS REAR TRIM
6. LOWER RUBBER DAM

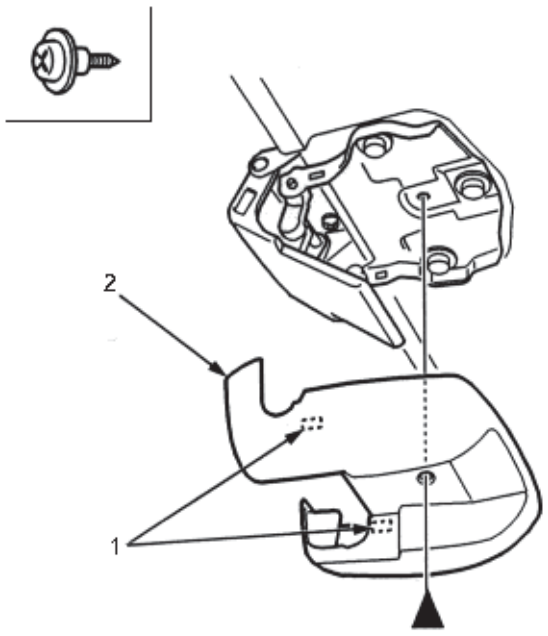
16. Use suction cups to hold the quarter glass over the opening and set it down on the adhesive. Lightly push on the quarter glass until its edges are fully seated on the adhesive all the way around. Do not open or close the doors until the adhesive is dry.
17. Scrape or wipe the excess adhesive off with a putty knife or towel. To remove adhesive from a painted surface or the quarter glass, wipe with a soft shop towel dampened with alcohol.
18. Let the adhesive dry for at least one hour, 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 four hours after quarter glass installation. If the vehicle has to be used within the first four hours, it must be driven slowly.
19. Reinstall all remaining removed parts. Advise the customer not to do the following things for two to three 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).



1. **GLASS SEAL,** Installation, (**See Page** 20-36)
2. **RUBBER**
3. **GLASS HOLDER**
4. **GLASS,** Replacement, (**See Page** 20-35).
5. **CLIP**
6. **REAR DRAIN TUBE,** Replacement (**See Page** 20-39)
7. **REAR DRAIN VALVE**
8. **SUNSHADE LOCK**
9. **WASHER**
10. **E-CLIP**
11. **LOCK COVER**
12. **LOCK ASSY,** Replacement (**See Page** 20-37)
13. **HINGE SEAT**
14. **STOP**
15. **STOP BRACKET**
16. **HINGE,** Replacement (**See Page** 20-37)
17. **HINGE COLLAR**
18. **STOP RUBBER**
19. **BRACKET**
20. **SUNSHADE GUIDE CUSHION**
21. **SUNSHADE**
22. **MAIN SEAL,** Replacement (**See Page** 20-38)
23. **FRONT DRAIN VALVE**
24. **FRONT DRAIN TUBE,** Replacement (**See Page** 20-39)

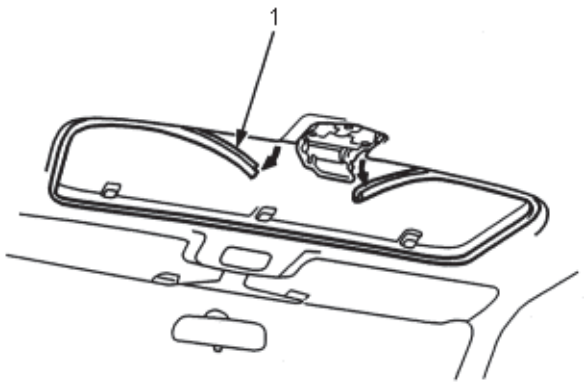
1. Remove the sunshade.
2. Remove the screw, then remove the lock cover.

▶ : Screw location, 1



1. HOOKS
2. LOCK COVER

3. Remove the roof trim.

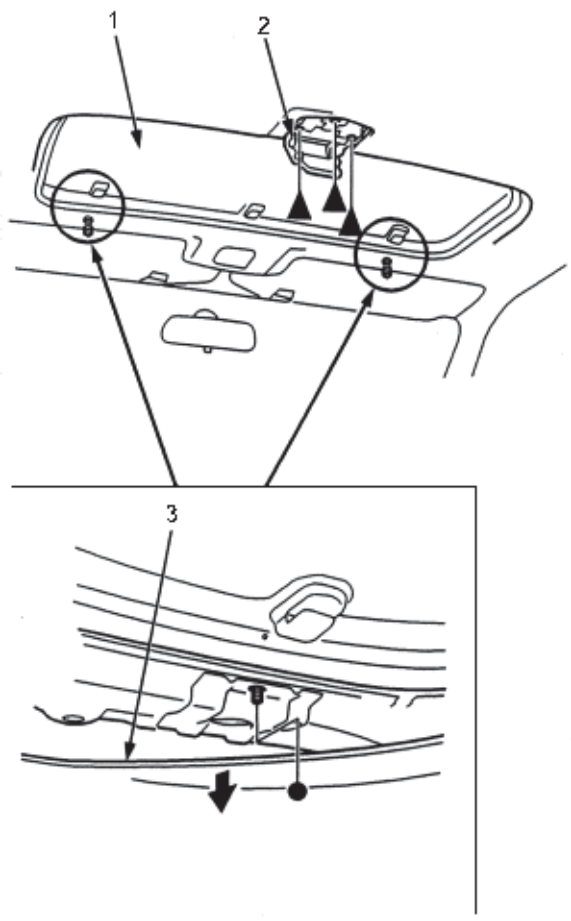


1. ROOF TRIM

4. Remove the bolts from the lock assy, then remove the nuts.

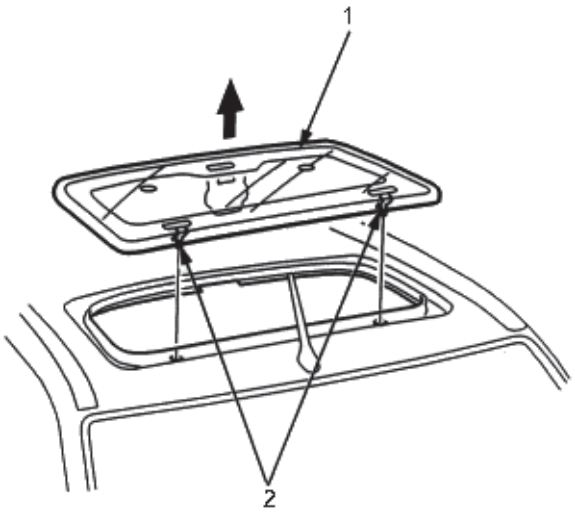
▶ : Bolt locations, 3 ● : Nut locations, 2





1. GLASS
2. LOCK ASSY.
3. HEADLINER

5. The glass is removed in the push up.

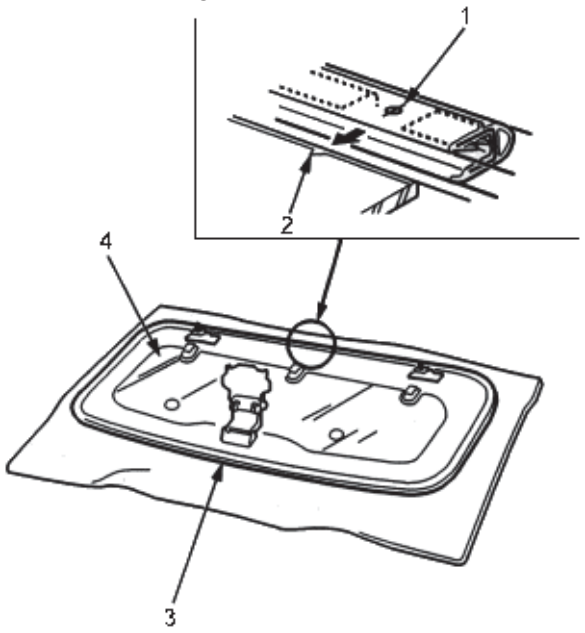


1. GLASS
2. HINGES

6. Install in the reverse order of removal.
7. Check for water leaks. Do not use high-pressure water.

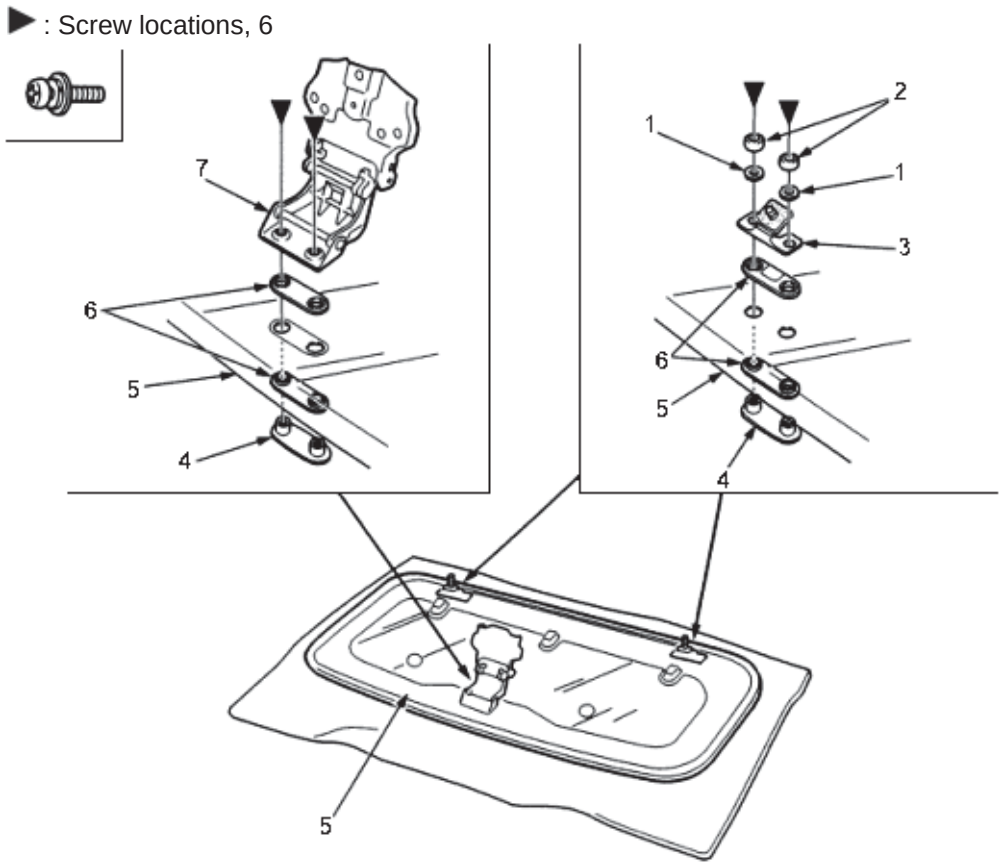
Glass Seal Installation

1. Install the glass seal as shown.



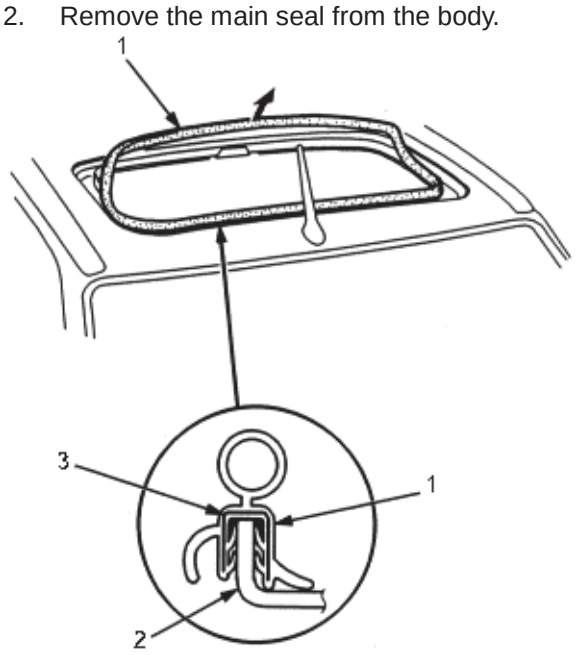
1. CENTRE MARK
2. ALIGNMENT MARK
3. GLASS SEAL
4. GLASS

▶ : Screw locations, 6



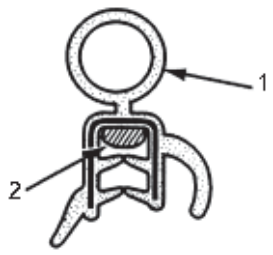
1. **HINGE SEAT**
2. **HINGE COLLAR**
3. **HINGE**
4. **GLASS HOLDER**
5. **GLASS**
6. **RUBBER**
7. **LOCK ASSY.**

1. Remove the glass (**See Page** 20-35).
2. Remove the main seal from the body.



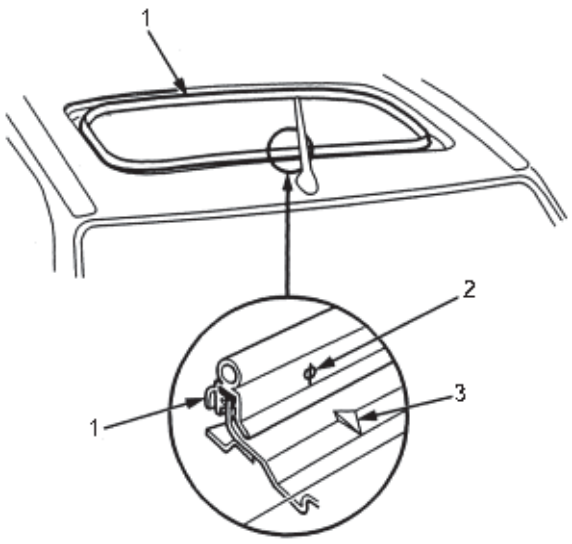
1. MAIN SEAL
2. BODY
3. STEEL CORE

3. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning keep oil, grease and water from getting on the body surface.
4. Apply sealer (CEMEDINE CS33061D or equivalent) to main seal.



1. MAIN SEAL
2. SEALER

5. Install the main seal as shown.



1. MAIN SEAL
2. CENTRE MARK
3. ALIGNMENT MARK

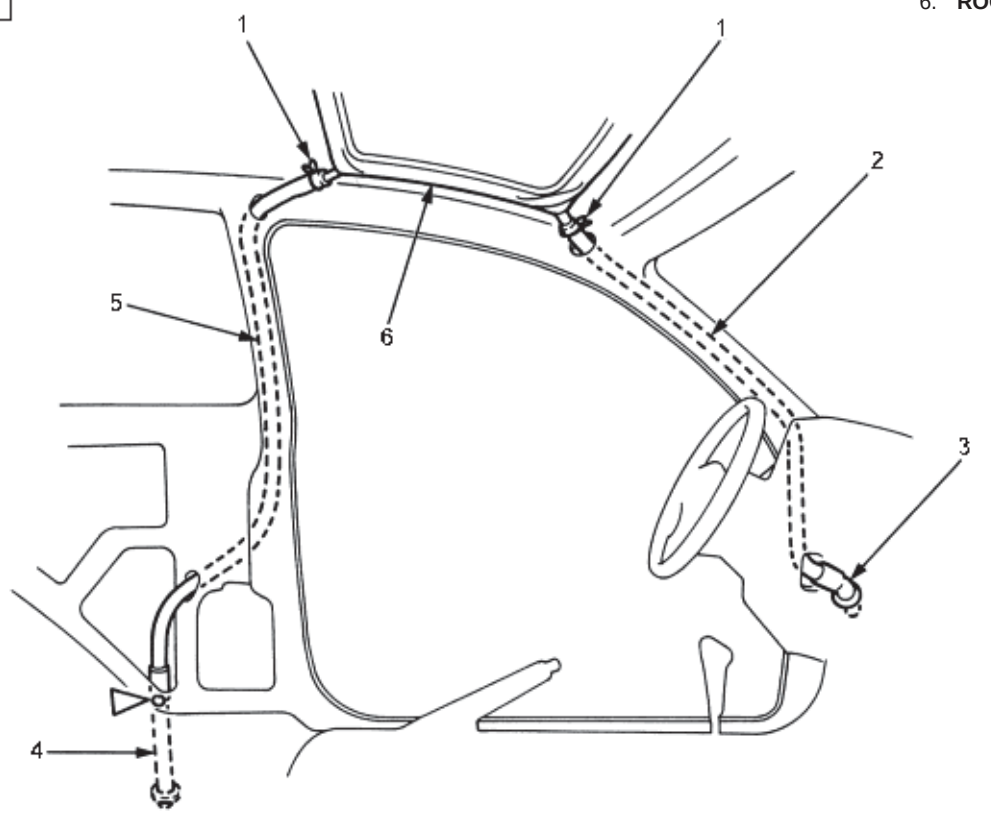
6. Scrape or wipe the excess adhesive off with putty knife or towel.
7. Leave for three hours.
8. Install the glass.
9. Check for water leaks. Do not use high-pressure water.

1. Remove:
   - Headliner (**See Page** 20-44).
   - Rear side trim (**See Page** 20-41).
   - Kick panel (**See Page** 20-41).
   - Fuse box (driver's side as necessary)
   - ECM/PCM (front passenger's side as necessary)

   NOTE: Before pulling out the drain tube, tie a string to the end of it so it can be reinstalled.

▷ : Clip location, 1

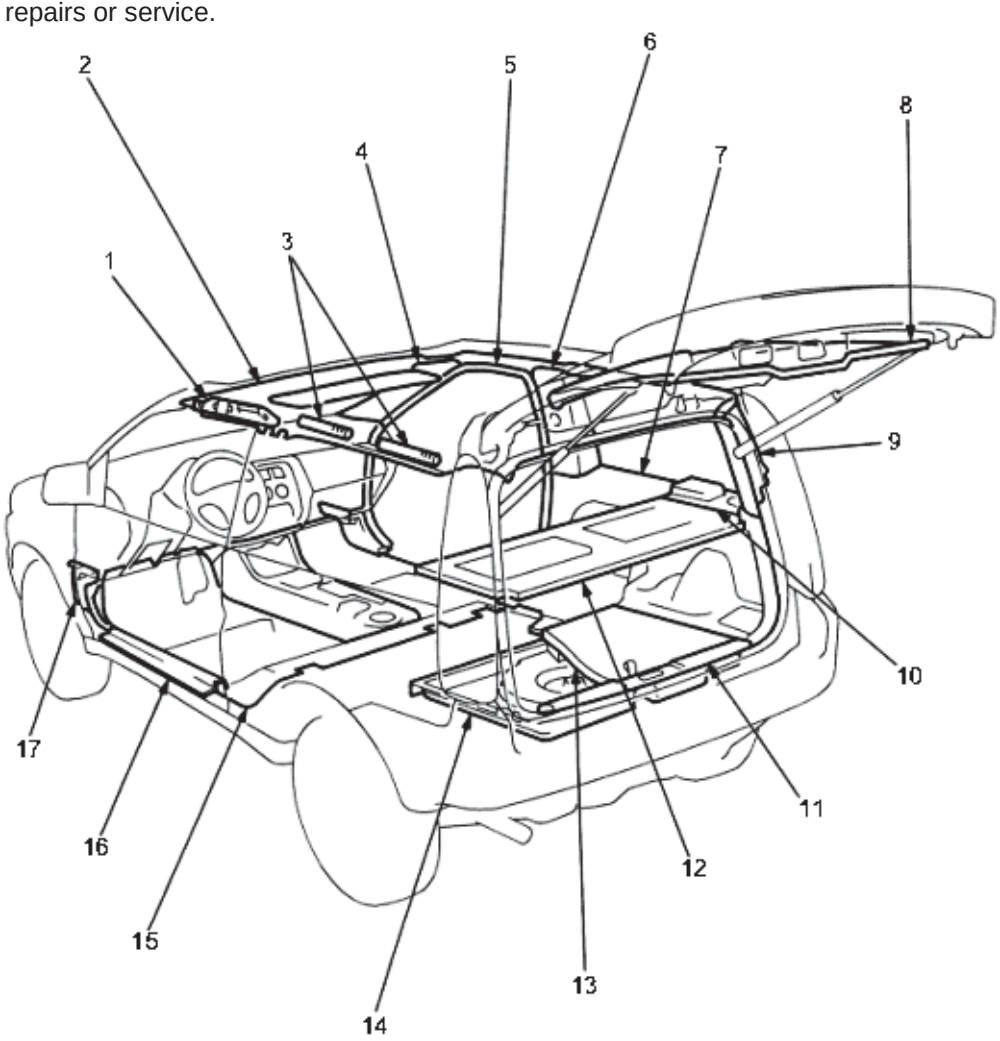




1. **CLIP**
2. **FRONT DRAIN TUBE**
3. **FRONT DRAIN VALVE**
4. **REAR DRAIN VALVE**
5. **REAR DRAIN TUBE**
6. **ROOF PANEL STIFFENER.**

2. Install in the reverse order of removal.
3. Check for water leaks. Do not use high-pressure water.

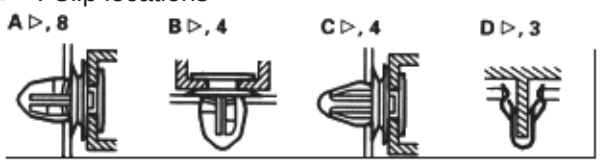
SRS components are located in the areas marked with an asterisk (*). Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.

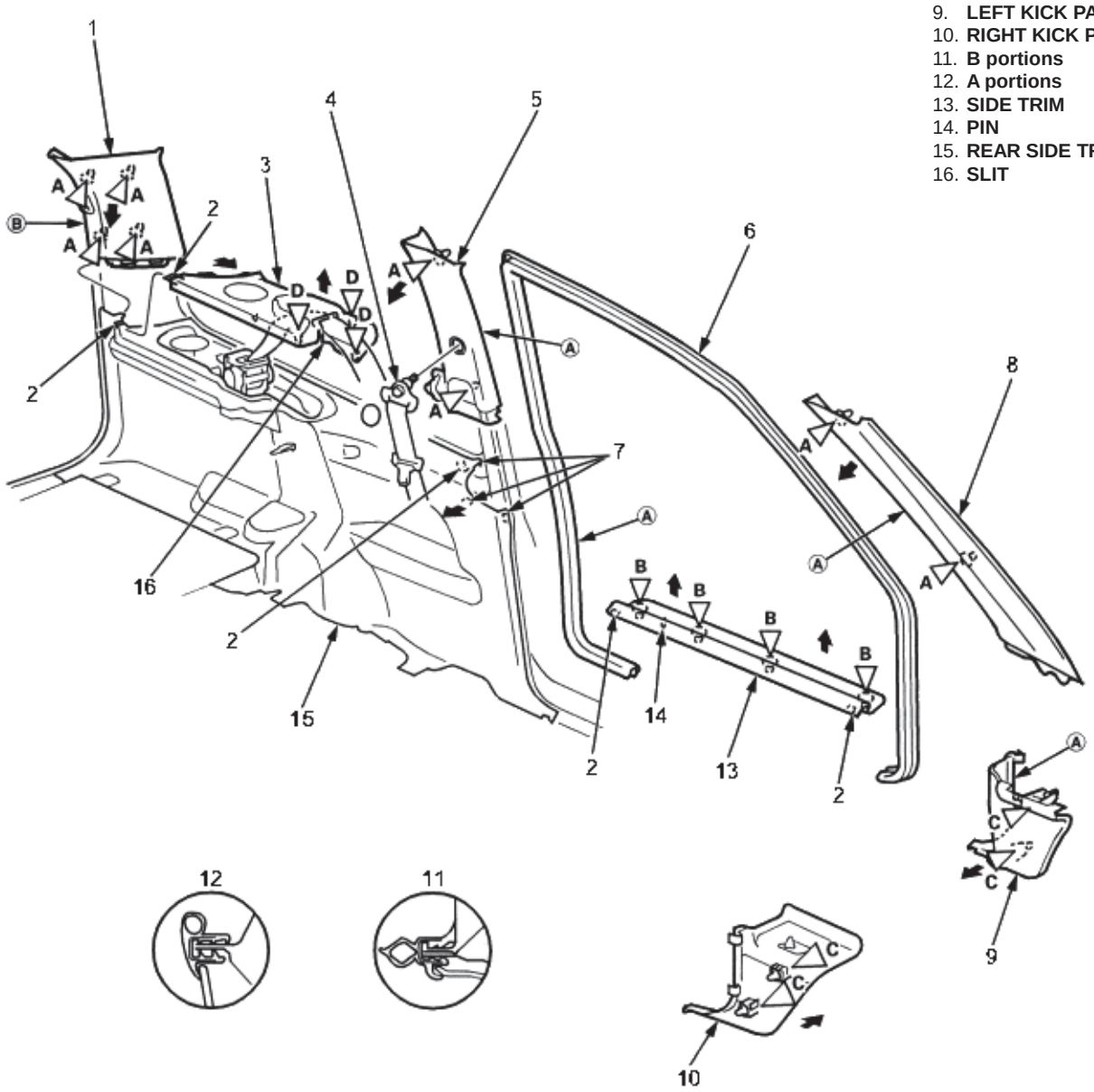


1. **ROOF SIDE PAD** (**See Page** 20-44).
2. **HEADLINER,** Removal and Installation, (**See Page** 20-44).
3. **ROOF SIDE ABSORBER** (**See Page** 20-44).
4. **FRONT PILLAR TRIM** (**See Page** 20-41)
5. **DOOR TRIM** (**See Page** 20-41).
6. **CENTRE PILLAR TRIM** (**See Page** 20-41).
7. **REAR SIDE TRIM PANEL** (**See Page** 20-41).
8. **TAILGATE TRIM** (**See Page** 20-41).
9. **REAR PILLAR TRIM** (**See Page** 20-41).
10. **REAR SIDE SHELF** (**See Page** 20-41).
11. **REAR TRIM PANEL** (**See Page** 20-41).
12. **REAR CENTRE SHELF** (**See Page** 20-41).
13. **SPARE TYRE LID** (**See Page** 20-41).
14. **REAR FLOOR BUCKET** (**See Page** 20-41).
15. ***CARPET,** Replacement, (**See Page** 20-41).
16. **SIDE TRIM** (**See Page** 20-41).
17. **KICK PANEL** (**See Page** 20-41).

NOTE:
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to bend or scratch the trim and panels.
- Wear gloves to protect your hands.

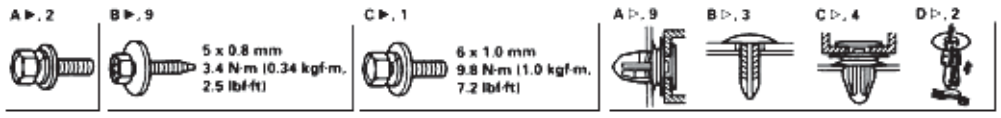
▷ : Clip locations

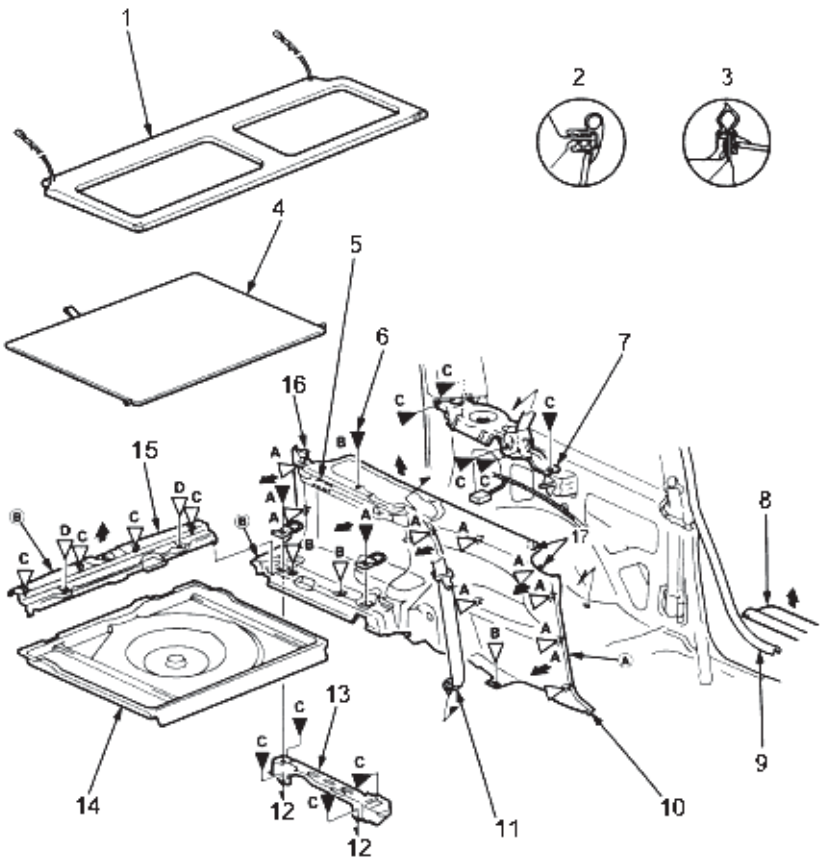




1. **REAR PILLAR TRIM**
2. **HOOK**
3. **REAR SIDE SHELF**
4. **FRONT SEAT BELT UPPER ANCHOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)**
5. **CENTRE PILLAR TRIM**
6. **DOOR TRIM**
7. **HOOKS**
8. **FRONT PILLAR TRIM**
9. **LEFT KICK PANEL**
10. **RIGHT KICK PANEL**
11. **B portions**
12. **A portions**
13. **SIDE TRIM**
14. **PIN**
15. **REAR SIDE TRIM PANEL**
16. **SLIT**

▶ : Bolt, screw locations ▷ : Clip locations



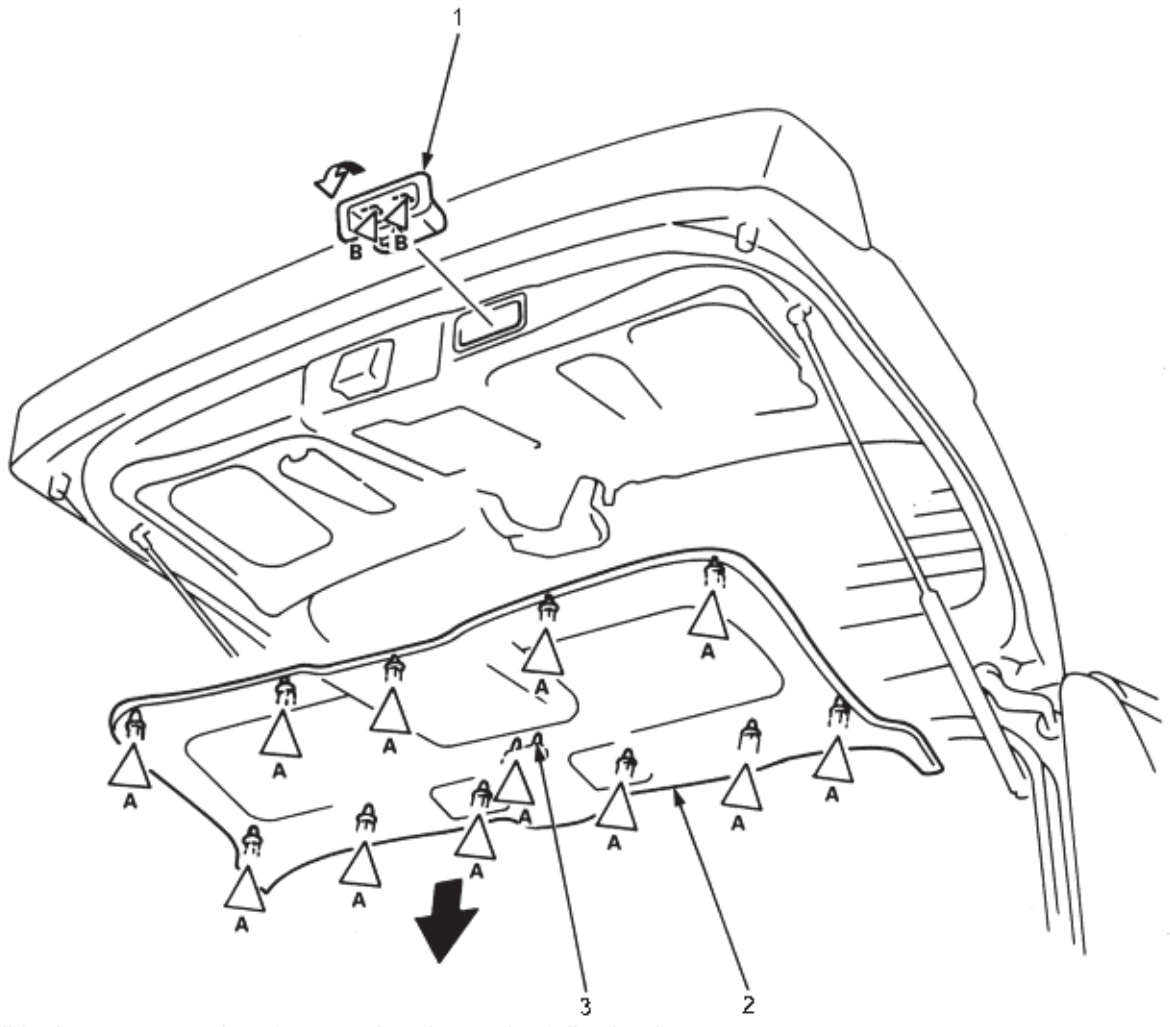


1. **REAR CENTRE SHELF**
2. A portion
3. B portion
4. **SPARE TYRE LID**
5. **CARGO AREA LIGHT**
   Remove the rear pillar trim. (**See Page** 20-41).
6. **ET SCREW**
7. **REAR SHELF SUPPORT**
8. **SIDE TRIM** (**See Page** 20-41).
9. **DOOR TRIM**
10. **REAR SIDE TRIM PANEL**
    Remove the rear seat cushion, rear seat-back and rear side shelf.
11. **REAR SEAT BELT LOWER ANCHOR BOLT 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)**
12. To body
13. **CARGO FRAME**
14. **REAR FLOOR BUCKET**
15. **REAR TRIM PANEL**
16. **HOOK**
17. **HOOKS**

▷ : Clip locations
A ▷, 12 B ▷, 2



1. **PULL POCKET**
2. **TAILGATE TRIM**
3. **PIN**



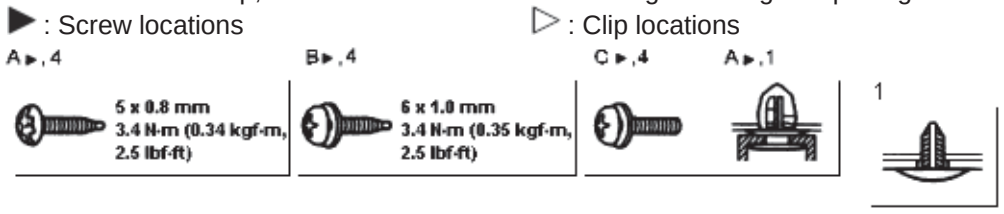
Install in the reverse order of removal and note the following items:

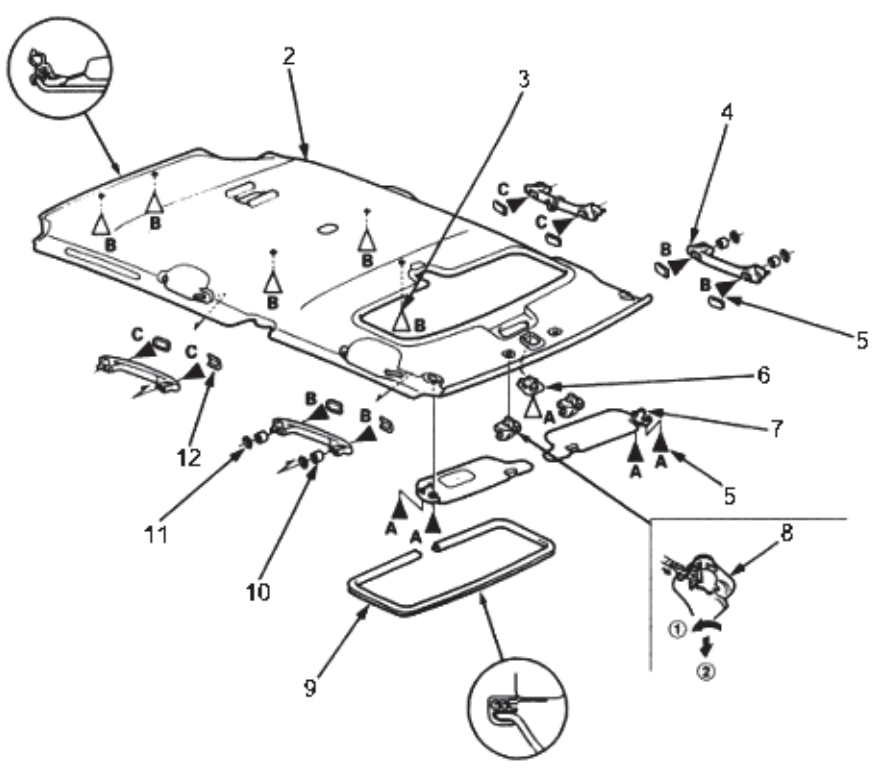
- Replace any damaged clips.
- Before installing the anchor bolts, make sure there are no twists or kinks in the seat belts.

NOTE:
- When prying with a flat tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to bend and scratch the headliner.
- Be careful not to damage the dashboard and other interior trim.

1. Remove:
   - Interior light (see section 23)
   - Rearview mirror (without roof garnish spoiler, (**See Page** 20-16).
   - Front pillar trim (both sides, (**See Page** 20-41).
   - Centre pillar trim (both sides, (**See Page** 20-41).
   - Rear pillar trim (both sides, (**See Page** 20-41).
   - Lock cover (with sunroof, (**See Page** 20-35).
2. Remove the sun visor and holder from each side.
3. Remove the caps and the screw, then remove the grab handle.
4. Remove the roof trim (with sunroof).
5. Remove the clip, then remove the headliner through the tailgate opening.

▶ : Screw locations ▷ : Clip locations

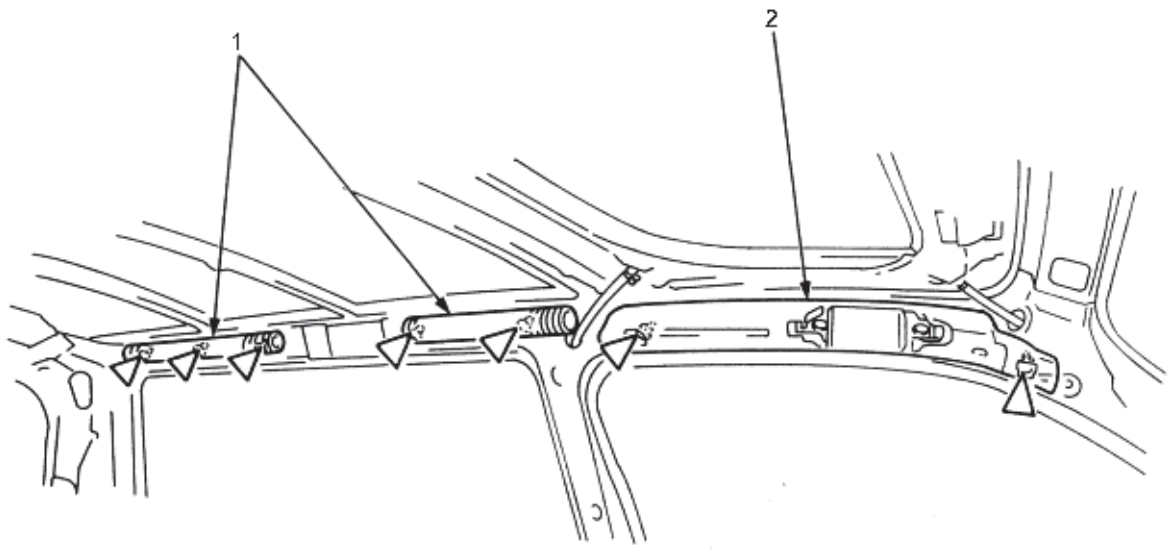




1. 4 (with sunroof), 5 (without sunroof)
2. **HEADLINER**
3. Without sunroof.
4. **GRAB HANDLE**
5. **ET SCREW**
6. **ROOF MAINTENANCE CAP**
7. **SUN VISOR**
8. **HOLDER**
9. **ROOF TRIM**
10. **COLLAR**
11. **LOCK WASHER**
12. **CAP**

6. Remove the roof side pad and roof side absorber.
▷ : Clip locations, 7





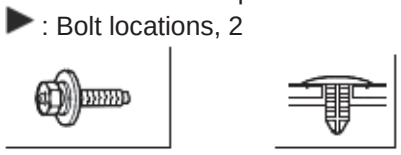
1. **ROOF SIDE ABSORBER**
2. **ROOF SIDE PAD**

7. Install in the reverse order of removal.

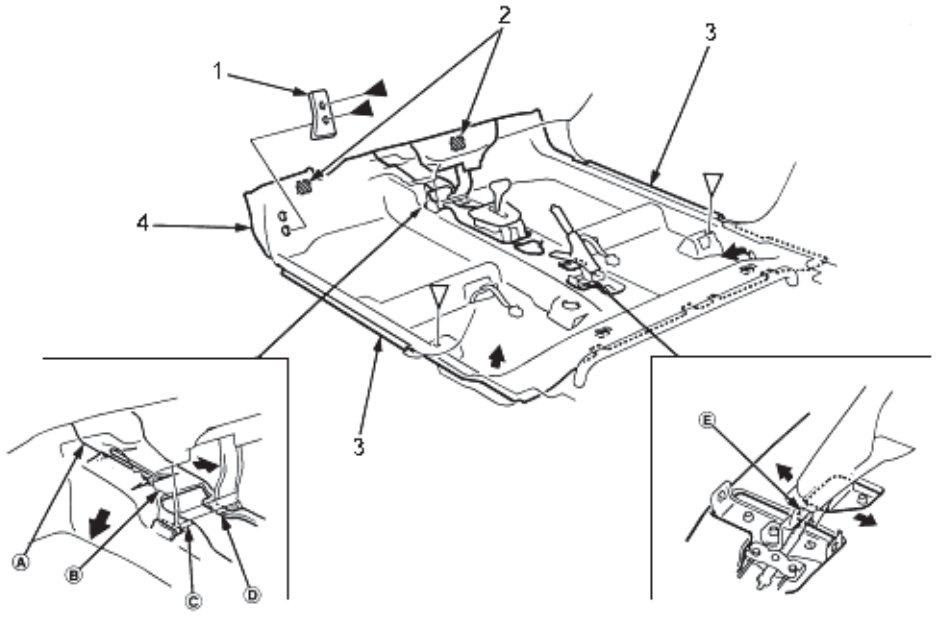
SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE:
- Wear gloves to protect your hands.
- Take care not to damage, wrinkle or twist the carpet.
- Be careful not to damage the dashboard or other interior trim pieces.

1. Remove:
   - Front seat (both sides, (**See Page** 20-54).
   - Rear seat cushion (**See Page** 20-59).
   - Front and rear console
   - Kick panel (both sides, (**See Page** 20-41).
   - Side trim (both sides, (**See Page** 20-41).
   - Front seat belt lower anchor (both sides, (**See Page** 20-3).
2. Remove the footrest.
3. Cut areas (**A)**, (**B**), (**C**), (**D**) and (**E**) in the carpet, then pull it back.
4. Remove the clips and release the retainers and fasteners, then remove the carpet.

▶ : Bolt locations, 2 ▷ : Clip locations, 2



1. **FOOTREST**
2. **FASTENERS**
3. **RETAINER**
4. **CARPET**

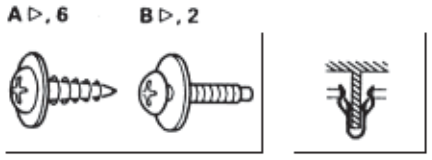


5. Install in the reverse order of removal and note these items:
   - Take care not to damage, wrinkle or twist the carpet.
   - Reattach the cut areas (**A)**, (**B**), (**C**), (**D**) and (**E**) in the carpet with a wire tie.

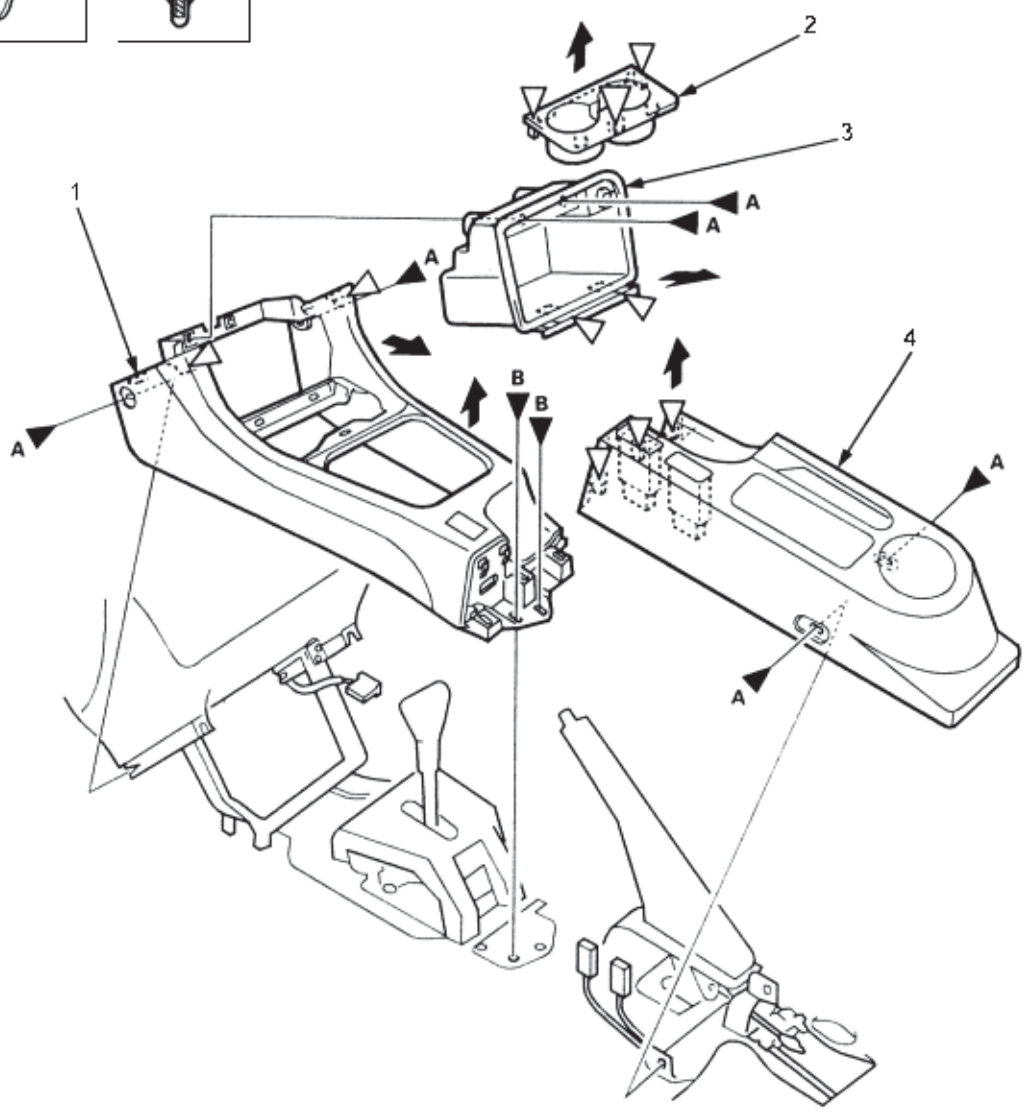
NOTE:
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to scratch the front seat, dashboard and related parts.
- Take care not to bend the parking brake cables.

▶ : Screw locations ▷ : Clip locations, 10

A ▷, 6 B ▷, 2



1. **FRONT CONSOLE**
2. **CUP HOLDER**
3. **CONSOLE POCKET**
4. **REAR CONSOLE**

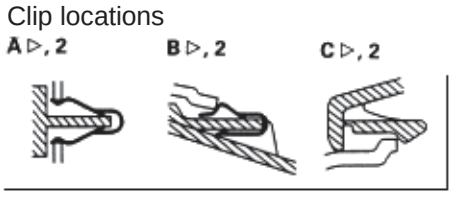


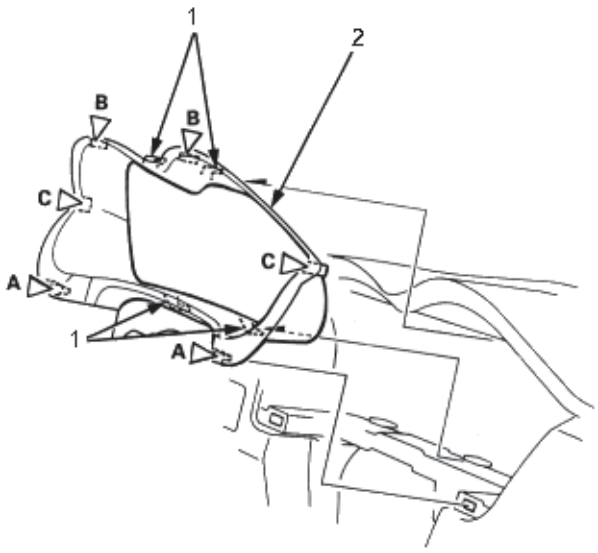
Install in the reverse order of removal and note the following items:
- Replace any damaged clips.
- Make sure the connectors are plugged in properly.

NOTE:
- When prying with a flat-tip screwdriver, wrap it with protective tape and apply protective tape around the related parts, to prevent damage.
- Take care not to scratch the dashboard and related parts.

1. Tilt the steering column down.
2. Detach the clips, then carefully remove the instrument panel.

▷ : Clip locations





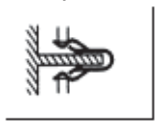
1. HOOKS
2. INSTRUMENT PANEL

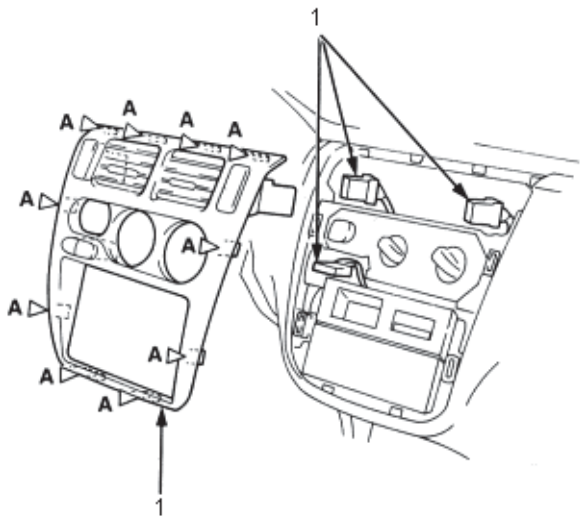
3. Install in the reverse order of removal.

NOTE:
- When prying with a flat-tip screwdriver, wrap it with protective tape and apply protective tape around the related parts, to prevent damage.
- Take care not to scratch the dashboard and related parts.

1. Detach the clips to remove the centre panel by disconnecting the connectors.

▷ : Clip locations, 10





1. CONNECTORS
2. CENTRE PANEL

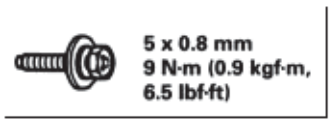
2. Install in the reverse order of removal.

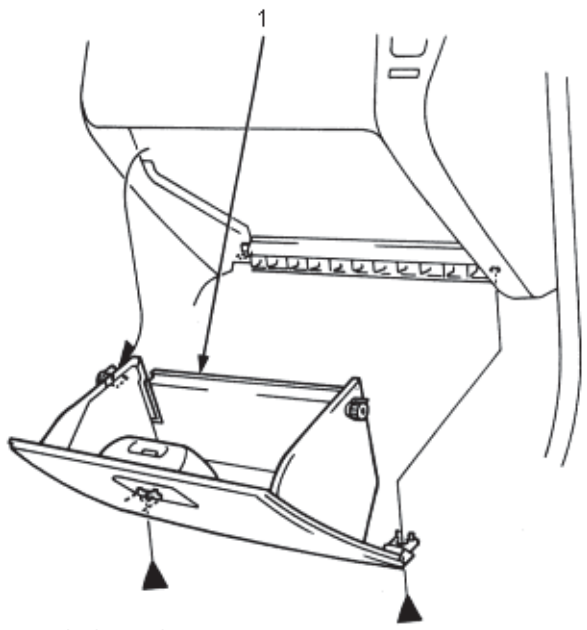
Glove Box Removal and Installation

NOTE: Take care not to scratch the dashboard and related parts.

1. Remove the bolts, then remove the glove box.

▶ : Bolt locations, 2





1. GLOVE BOX

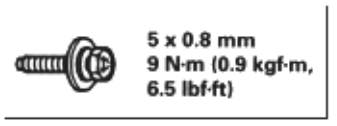
2. Install in the reverse order of removal.

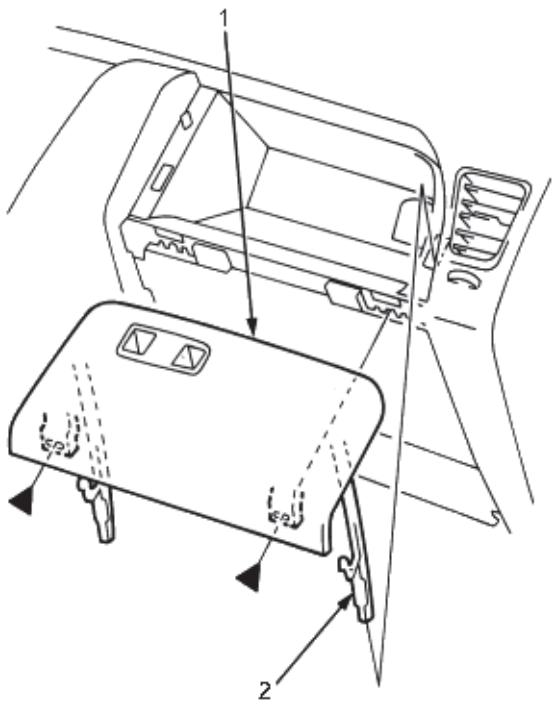
Upper Box Lid Removal and Installation

NOTE: Take care not to scratch the dashboard and related parts.

1. Remove the bolts, then remove the upper box lid.

▶ : Bolt locations, 2





1. UPPER BOX RID
2. ARM

2. Install in the reverse order of removal.

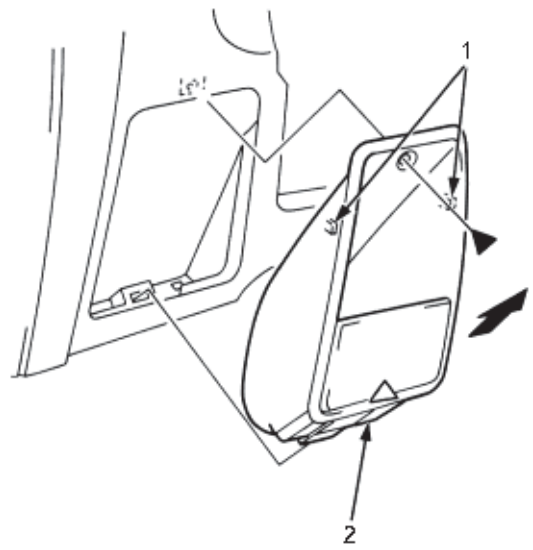
Driver Pocket Removal and Installation

NOTE: Take care not to scratch the dashboard and related parts.

1. Remove the screw.
2. Detach the clip and hooks, then remove the driver pocket.

▶ : Screw location, 1 ▷ : Clip location, 1





1. HOOKS
2. DRIVER POCKET

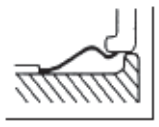
3. Install in the reverse order of removal.

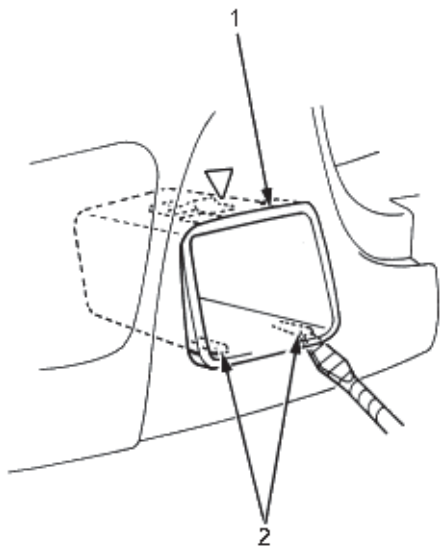
Driver Upper Pocket Removal and Installation

NOTE: Take care not to scratch the dashboard and related parts.

1. Detach the hooks.
2. Detach the clips, then remove the driver upper pocket

▷ : Clip location, 1





1. DRIVER UPPER POCKET
2. HOOKS

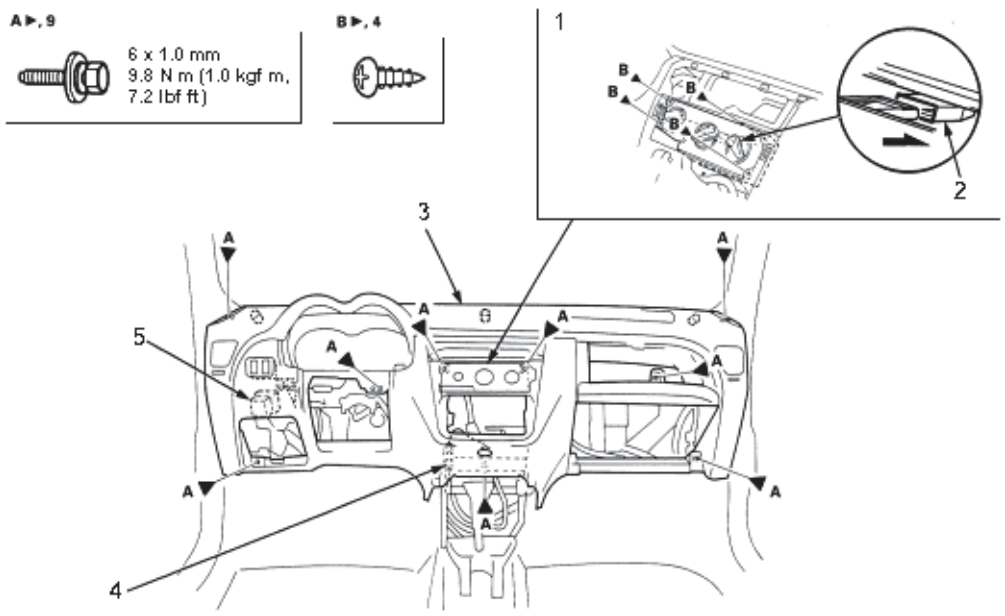
3. Install in the reverse order of removal.

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE:

- When prying with a flat-tip screwdriver, wrap it with protective tape and apply protective tape around the related parts, to prevent damage.
- An assistant is helpful when removing and installing the dashboard.
- Take care not to scratch the dashboard, body and other related parts.
- Wear gloves to protect your hands.
- LHD is shown, RHD is symmetrical.

1. Remove:
   - Front/rear console (**See Page** 20-47).
   - Centre panel (**See Page** 20-48).
   - Glove box (**See Page** 20-49).
   - Driver pocket (**See Page** 20-50).
   - Front pillar trim (**See Page** 20-41).
   - Steering column (see section 17)
   - Front passenger's airbag (see section 24)
2. Remove the screw, then set the heater control unit to the heater unit hole.
3. Disconnect the gauge sub harness connector and beverage holder light connector.
4. Remove the bolts, then carefully remove the dashboard through the door opening.

▶ : Bolt, screw location



1. **HEATER CONTROL UNIT**
2. **HEATER UNIT**
3. **DASHBOARD**
4. **BEVERAGE HOLDER LIGHT CONNECTOR**
5. **GAUGE SUB HARNESS**

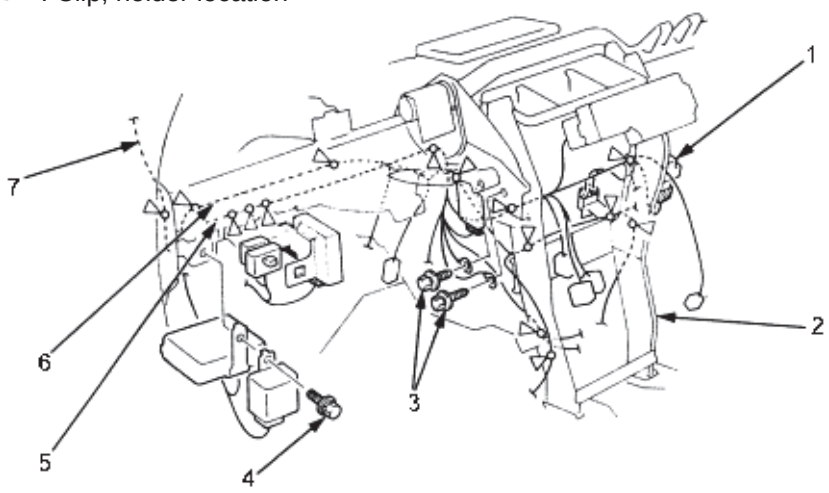
5. Install in the reverse order of removal and notes the following items:
   - Make sure the dashboard fits onto the guide pins correctly.
   - Before tightening the bolts, make sure the dashboard wire harnesses are not pinched.
   - Make sure the connectors are plugged in properly and the antenna lead is connected properly.

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE:

- When prying with a flat-tip screwdriver, wrap it with protective tape and apply protective tape around the related parts, to prevent damage.
- An assistant is helpful when removing and installing the steering hanger beam.
- Take care not to scratch the dashboard, body and other related parts.
- Wear gloves to protect your hands.
- LHD is shown, RHD is symmetrical.

1. Remove the dashboard (**See Page** 20-51).
2. Remove the main wire harness, SRS wire harness and interior wire harness from the steering hanger beam.

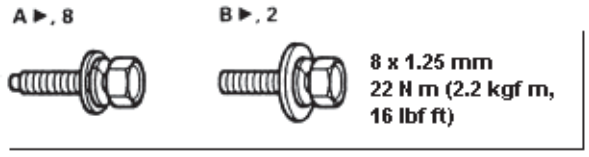
▷ : Clip, holder location

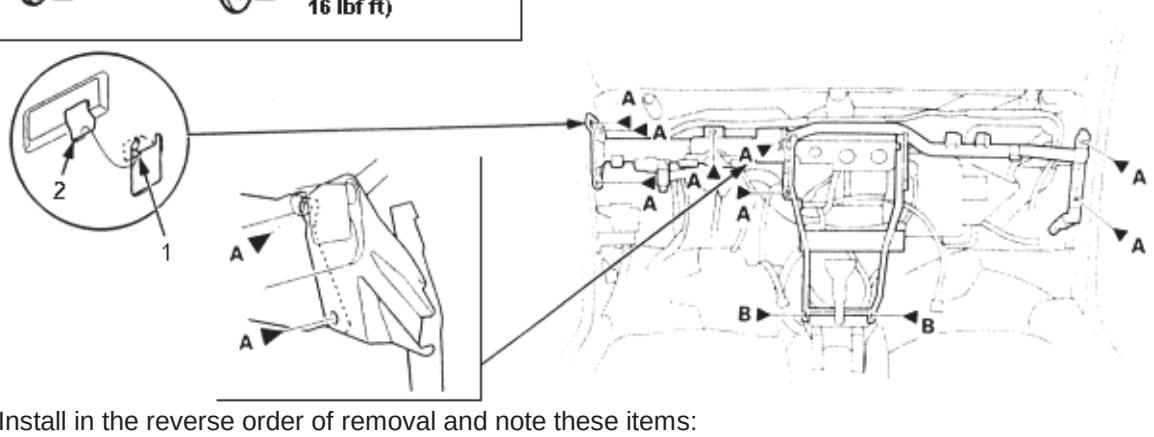


1. **INERTIA SWITCH**
2. **STEERING HANGER BEAM**
3. **GROUND BOLT, 6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
4. **6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
5. **MAIN WIRE HARNESS**
6. **SRS WIRE HARNESS**
7. **INTERIOR WIRE HARNESS**

3. Remove the bolts, then remove the steering hanger beam

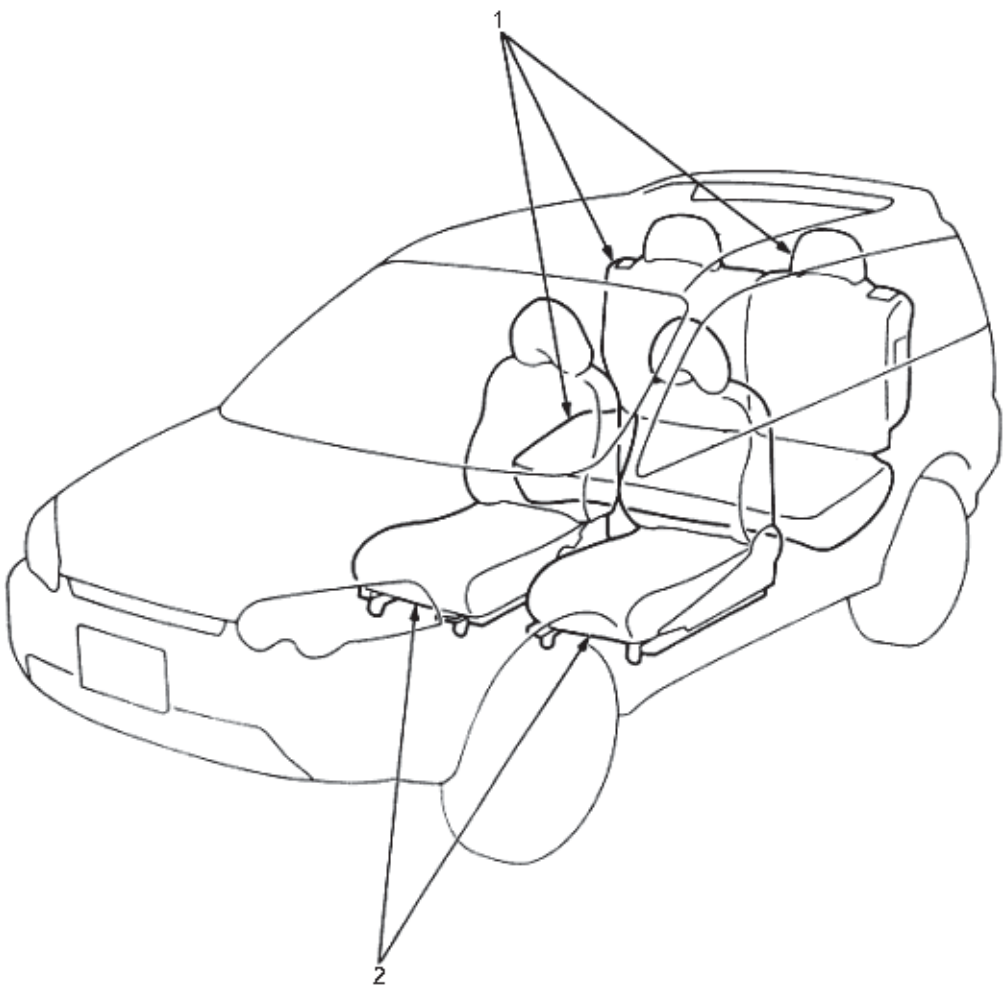
▶ : Bolt locations





1. **HOOK**
2. **HOLE**

4. Install in the reverse order of removal and note these items:
   - Make sure the dashboard wire harness and steering hanger beam wire harness are not pinched.
   - Make sure the connectors are plugged in properly.



1. **REAR SEAT**
   Removal and Installation, (**See Page** 20-59).
   Seat-back Latch Removal and Installation, (**See Page** 20-60).
   Seat-back Cover Replacement, (**See Page** 20-61).
   Seat Cushion Cover Replacement, (**See Page** 20-61).
2. **FRONT SEATS**
   Removal and Installation, (**See Page** 20-54).
   Disassembly and Reassembly, (**See Page** 20-55).
   Seat Harness and Recline Cable Wiring Locations (**See Page** 20-55).
   Seat Cover Replacement, (**See Page** 20-57).

1. Remove the seat track end covers and remove the bolts securing the front seat. When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage. Take care not to scratch the body or tear the seat covers.

▶ : Bolt locations

A ▶, 3

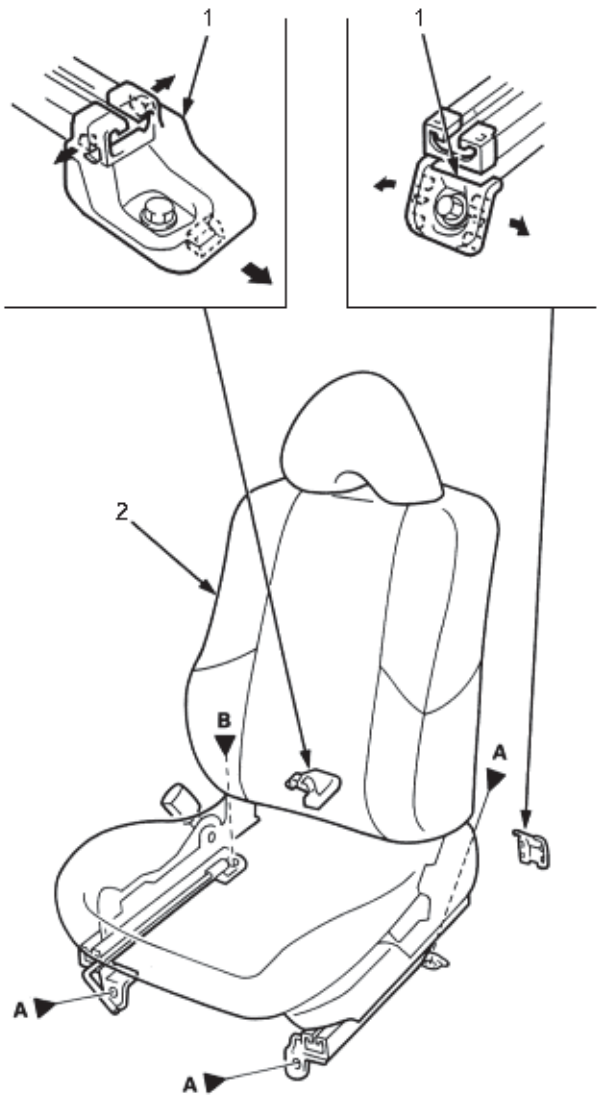


8 x 1.25 mm
22 N·m (2.2 kgf·m, 16 lbf·ft)

B ▶, 1

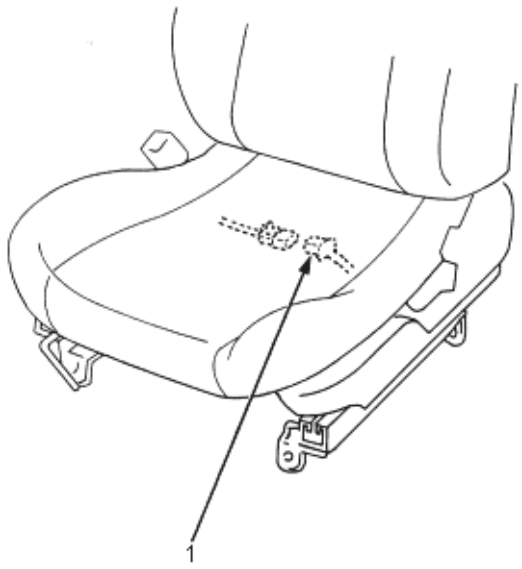


10 x 1.25 mm
34 N·m (3.5 kgf·m, 25 lbf·ft)



1. SEAT TRACK END COVER
2. FRONT SEAT

2. Lift up the front seat, then disconnect the seat belt switch or seat heater connector.

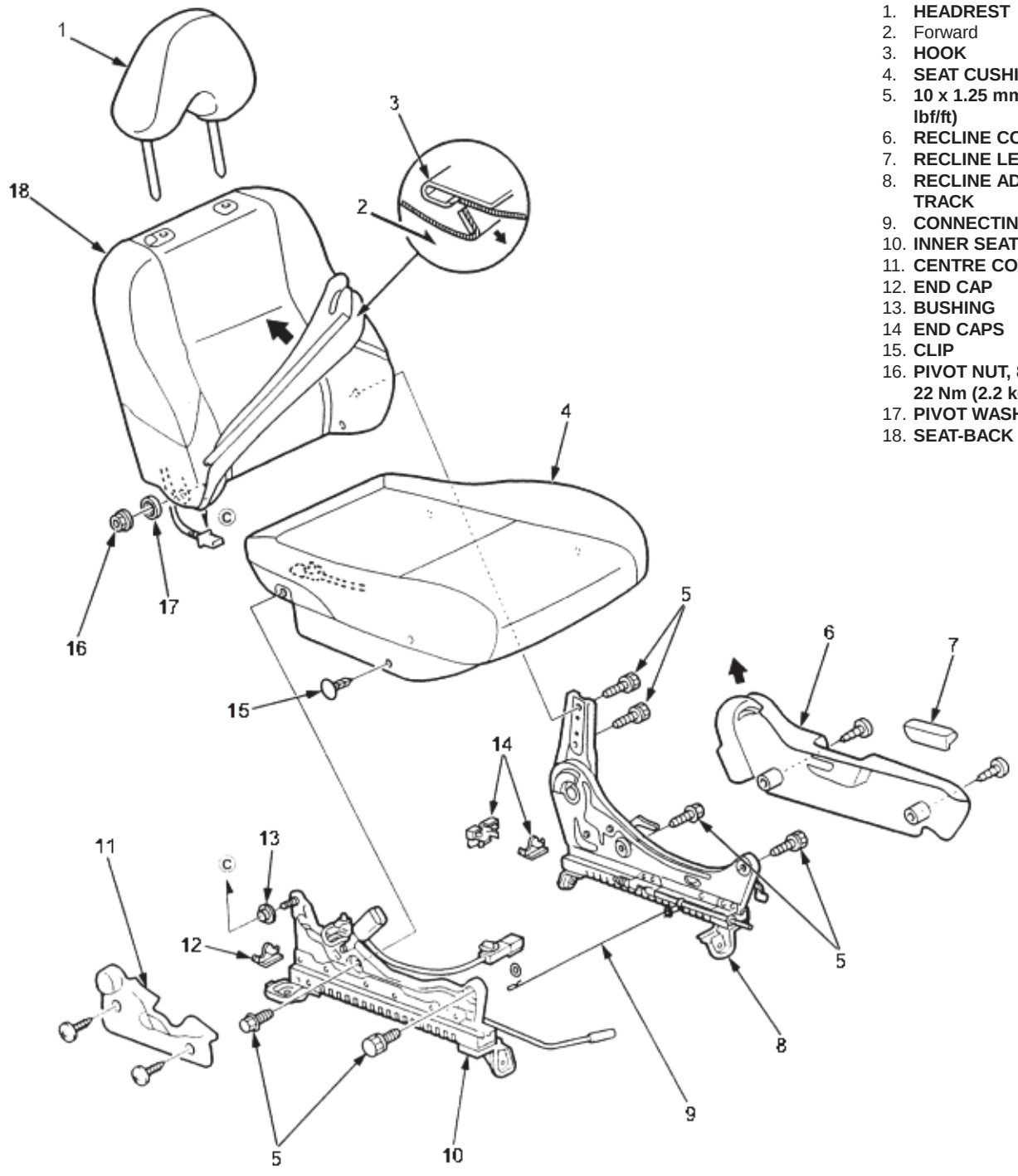


1. SEAT BELT SWITCH or SEAT HEATER CONNECTOR

3. With the help of an assistant, carefully remove the front seat through the door opening.
4. Install in the reverse order of removal and make sure the seat belt switch or seat heater connector is plugged in properly.

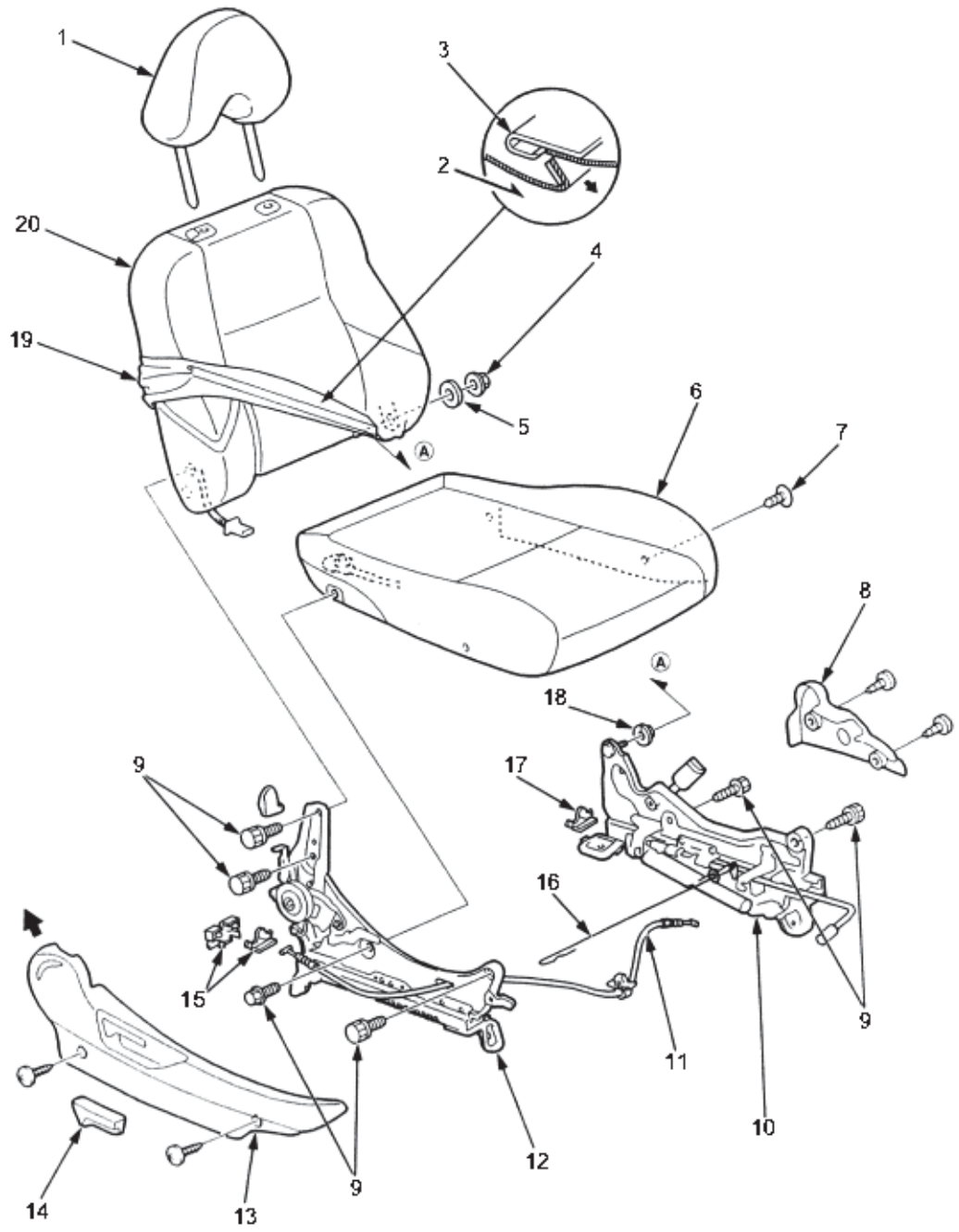
NOTE:
- Take care not to scratch the body or tear the seat covers.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

Driver's:



1. **HEADREST**
2. Forward
3. **HOOK**
4. **SEAT CUSHION**
5. **10 x 1.25 mm 47 Nm (4.8 kgf/m, 35 lbf/ft)**
6. **RECLINE COVER**
7. **RECLINE LEVER**
8. **RECLINE ADJUSTER/OUTER SEAT TRACK**
9. **CONNECTING WIRE**
10. **INNER SEAT TRACK**
11. **CENTRE COVER**
12. **END CAP**
13. **BUSHING**
14 **END CAPS**
15. **CLIP**
16. **PIVOT NUT, 8 x 1.25 mm 22 Nm (2.2 kgf/m, 16 lbf/ft)**
17. **PIVOT WASHER**
18. **SEAT-BACK**

Passenger's:



1. **HEADREST**
2. Forward
3. **HOOK**
4. **PIVOT NUT, 8 x 1.25 mm. (22 Nm 2.2 kgf/m, 16 lbf/ft)**
5. **PIVOT WASHER**
6. **SEAT CUSHION**
7. **CLIP**
8. **CENTRE COVER**
9. **10 x 1.25 mm 47 Nm (4.8 kgf/m, 35 lbf/ft)**
10. **INNER SEAT TRACK**
11. **RECLINE CABLE**
12. **RECLINE ADJUSTER/OUTER SEAT TRACK**
13. **RECLINE COVER**
14. **RECLINE LEVER**
15. **END CAPS**
16. **CONNECTING WIRE**
17. **END CAP**
18. **BUSHING**
19. **SEAT COVER**
20. **SEAT-BACK**

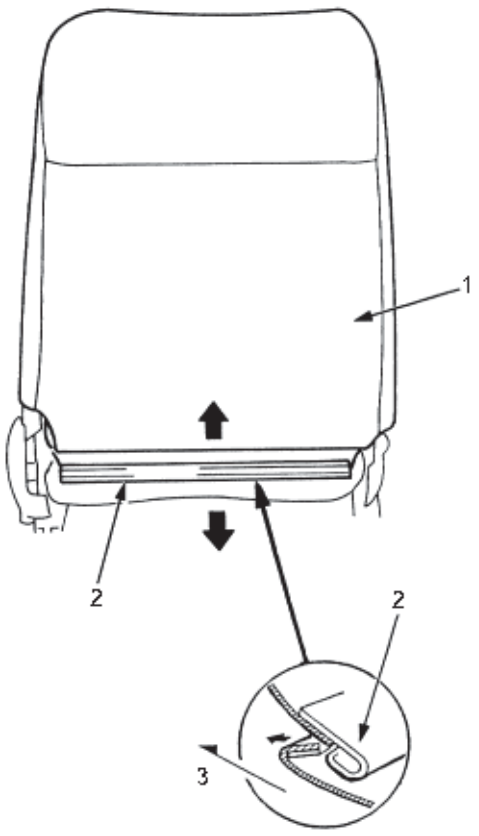
Reassembly in the reverse order of disassembly and note the following items:

- Make sure the bushing and pivot washer are installed properly.
- To connect the connecting wire, twist it 90°.
- Replace the back cover clips with new ones.
- To prevent wrinkles when installing the seat-back cover, make sure the material is stretched evenly over the pad.
- Apply multipurpose grease to the moving portion of the seat track.

NOTE:
- Take care not to tear the seams or damage the seat covers.
- Wear glovers to protect your hands.

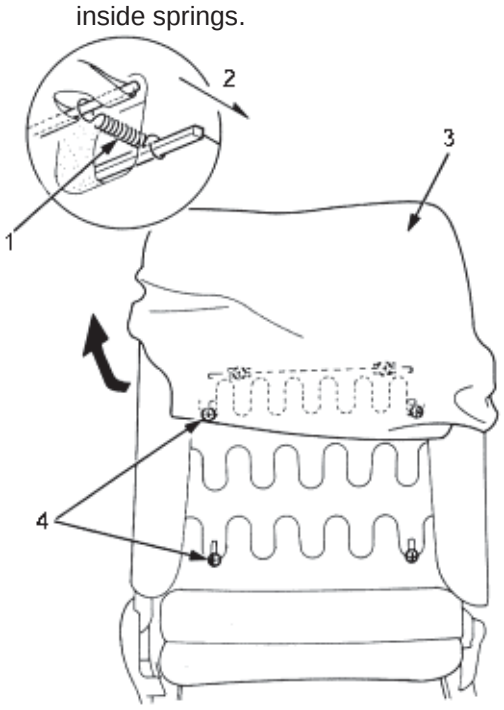
Seat Back cover:

1. Fold the seat-back forward.
2. Release the hook.



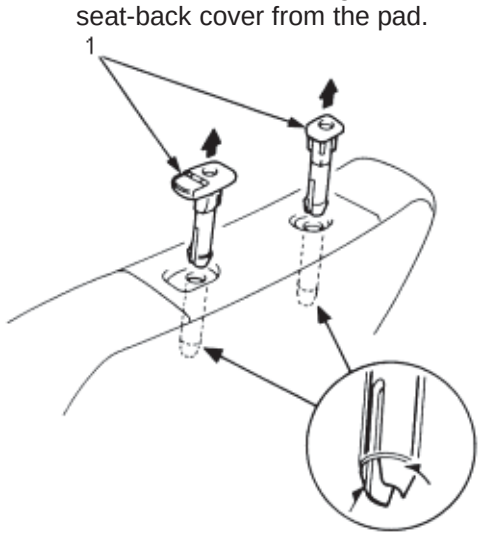
1. SEAT-BACK COVER
2. HOOK
3. Forward

3. Fold back the seat-back cover, then release all inside springs.



1. INSIDE SPRING
2. Forward
3. SEAT-BACK COVER
4. INSIDE SPRINGS

4. Remove the headrest guide, then remove the seat-back cover from the pad.

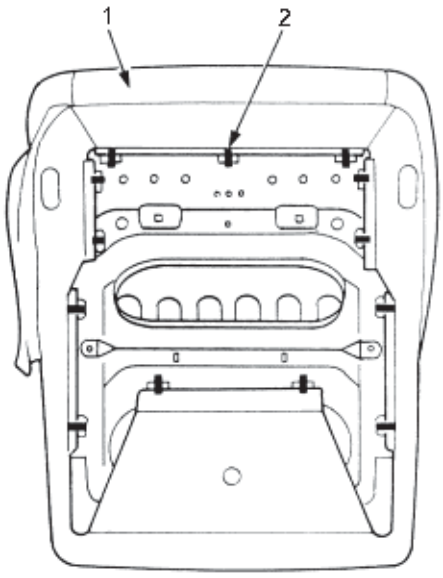


1. HEADREST GUIDE

5. Install in the reverse order of removal and note the following items:
   - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the hooks and inside springs.
   - Make sure the seat heater connector is plugged in properly and the seat heater harness is routed properly (with seat heater).

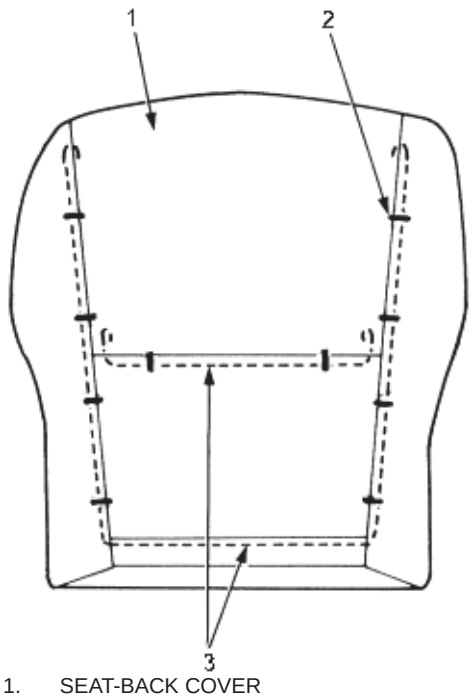
Seat cushion cover:

1. Remove the front seat (**See Page** 20-54).
2. Remove the seat cushion (**See Page** 20-55).
3. Release the clips from under the seat cushion, then loosen the seat cushion cover.



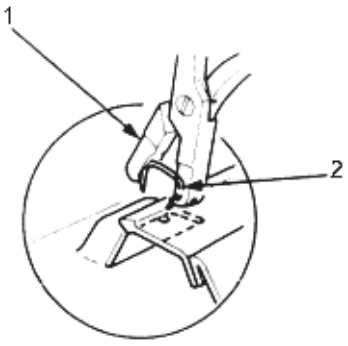
1. SEAT CUSHION COVER
2. CLIP

4. Pull back the edge of the seat cushion cover all the way around and release the clips, then remove the seat cushion cover.



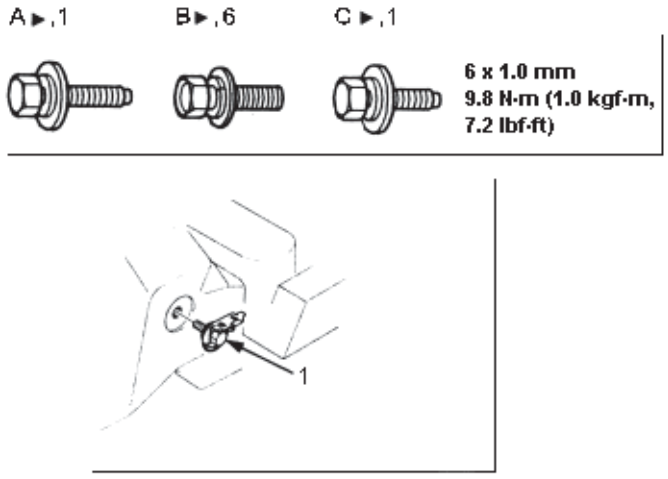
1. SEAT-BACK COVER
2. CLIP
3. WIRE (PAD SIDE)

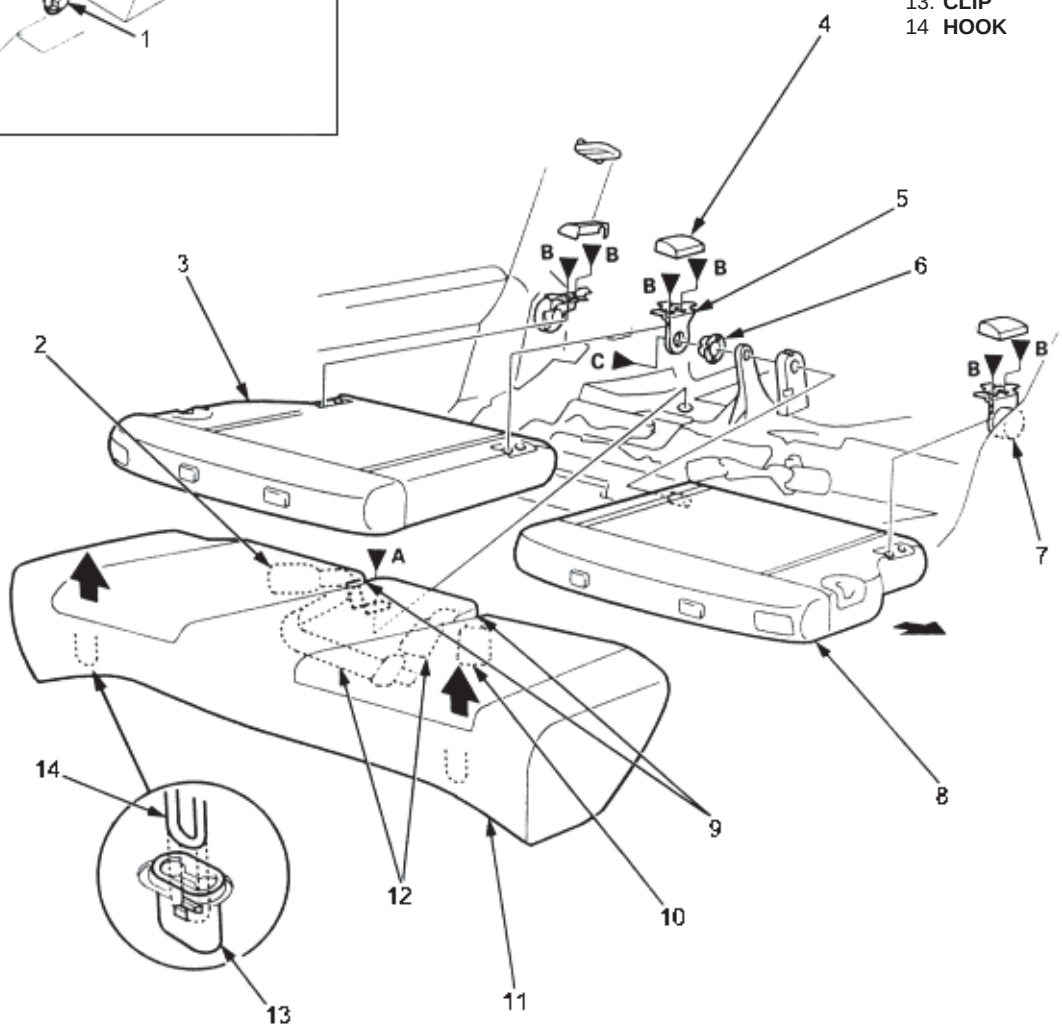
5. Install in the reverse order of removal and note the following items:
   - To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips, hooks and inside springs.
   - Replace the released clips with new ones using commercially available upholstery ring pliers.



1. UPHOLSTERY RING PLIERS
2. NEW CLIP

NOTE: Take care not to scratch the body or tear the seat covers.
▶ : Bolt locations





1. **PIVOT BRACKET, 6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
2. **SEAT BELT BUCKLE**
3. **RIGHT SEAT-BACK**
4. **PIVOT BRACKET COVER**
5. **CENTRE PIVOT BRACKET**
6. **COLLAR**
7. **PIVOT BRACKET**
8. **LEFT SEAT-BACK**
9. **SLITS**
10. **SEAT BELT BUCKLE**
11. **SEAT CUSHION**
12. **CENTRE BELT/CENTRE BELT BUCKLE**
13. **CLIP**
14. **HOOK**

Install in the reverse order of removal and note the following items:

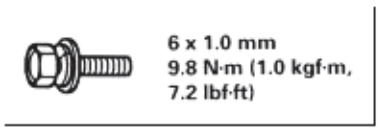
- Before attaching the rear seat-back and seat cushion, make sure there are no twists or kinks in the rear seat belts and centre belt.
- When installing the seat cushion, slip the seat belt buckles through the slits in the seat cushion.
- Make sure the seat-backs lock securely.

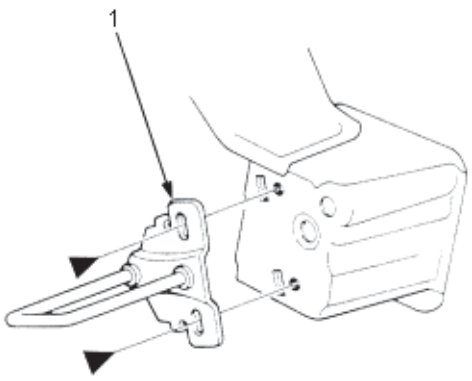
Rear Seat-back Striker Replacement

NOTE: Take care not to scratch the interior trim and related parts.

1. Remove the rear side trim panel seat (**See Page** 20-41).
2. Remove the bolts, then remove the striker

▶ : Bolt locations, 2





1. STRIKER

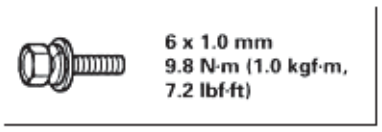
3. Install in the reverse order of removal and make sure the seat-back open and close properly.

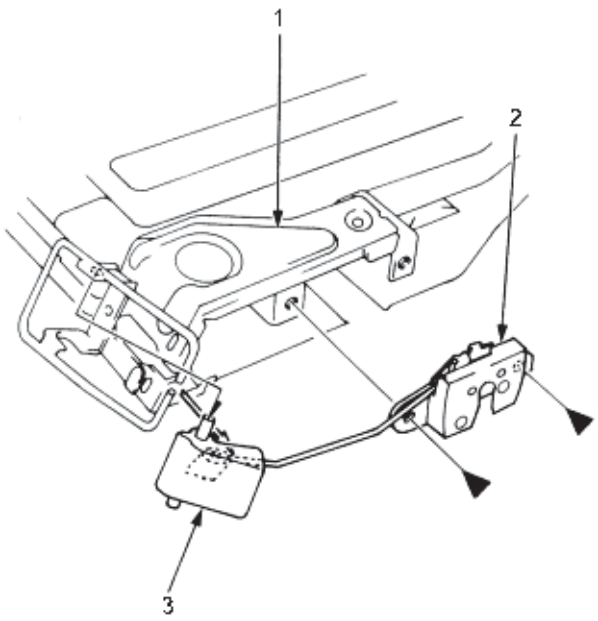
Rear Seat-back Latch Replacement

NOTE: Take care not to scratch the seat cover.

1. Remove the seat-back (**See Page** 20-59).
2. Remove the seat-back frame from the seat-back (**See Page** 20-41).
3. Remove the bolts, then remove the seat-back latch.

▶ : Bolt locations, 2





1. SEAT-BACK FRAME
2. SEAT-BACK LATCH
3. LATCH LEVER

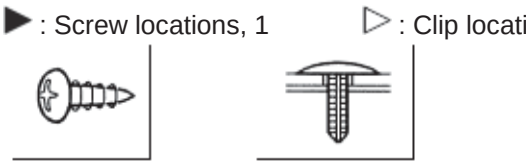
4. Install in the reverse order of removal and make sure the seat-back open and close properly.

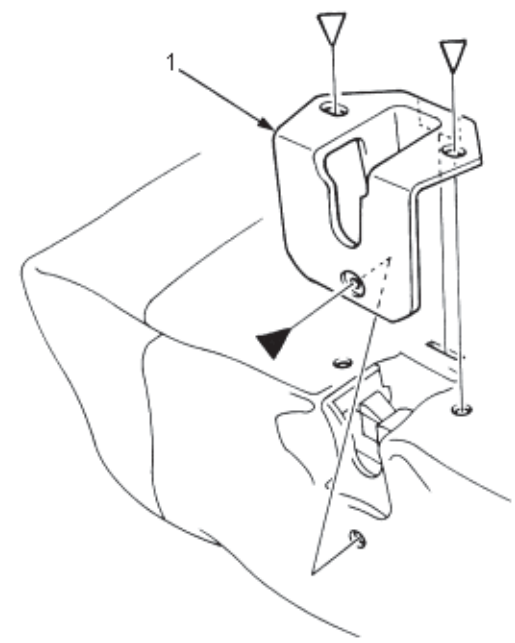
NOTE:
- Take care not tear the seams or damage the seat covers.
- Wear gloves to protect your hands.

Seat-back cover:

1. Remove the seat-backs seat (**See Page** 20-59).
2. If equipped with headrests, remove.
3. Remove the screws and clip, then remove the seat-back latch cover.

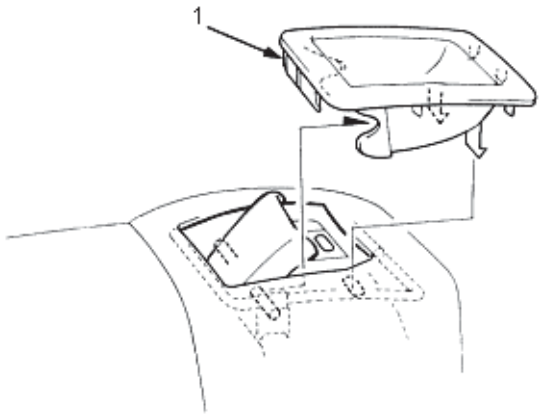
▶ : Screw locations, 1 ▷ : Clip locations, 2





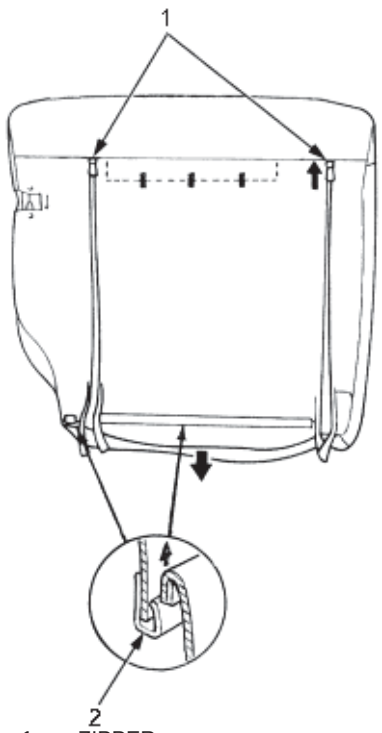
1. SEAT-BACK LATCH COVER

4. Remove the latch lever cover.



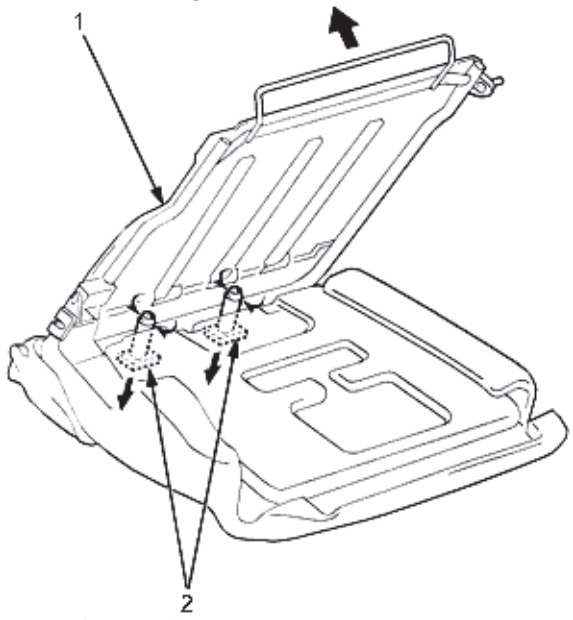
1. LATCH LEVER COVER

5. Release the hooks and unzip the cover, then fold back the seat cover.



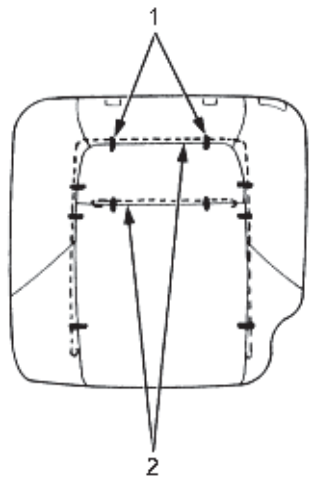
1. ZIPPER
2. HOOK

6. Remove the seat-back frame, then remove the headrest guides.



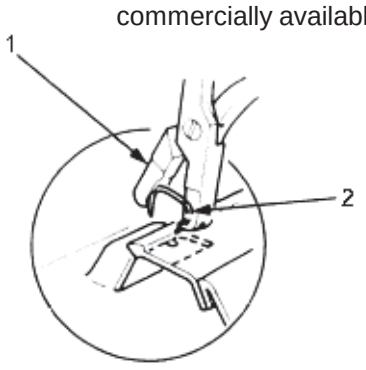
1. SEAT-BACK FRAME
2. HEADREST GUIDES

7. Pull back the edge of the seat-back cover all the way around and release the clips, then remove the seat-back cover.



1. CLIP
2. WIRE (PAD SIDE)

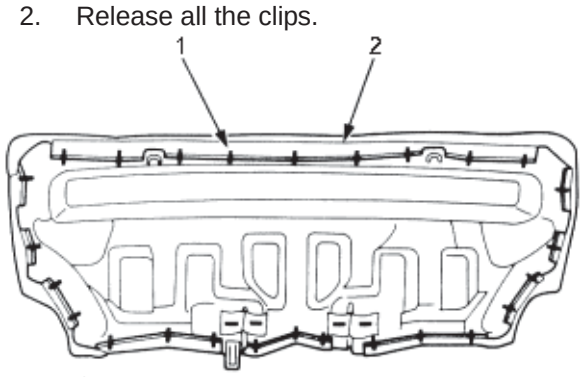
8. Install in the reverse order of removal and note the following items:
   - To prevent wrinkles when installing a seat-back cover, make sure the material is stretched evenly over the pad before securing the clips, hooks and inside springs.
   - Replace the released clips with new ones, using commercially available upholstery ring pliers.



1. UPHOLSTERY RING PLIERS
2. NEW CLIP

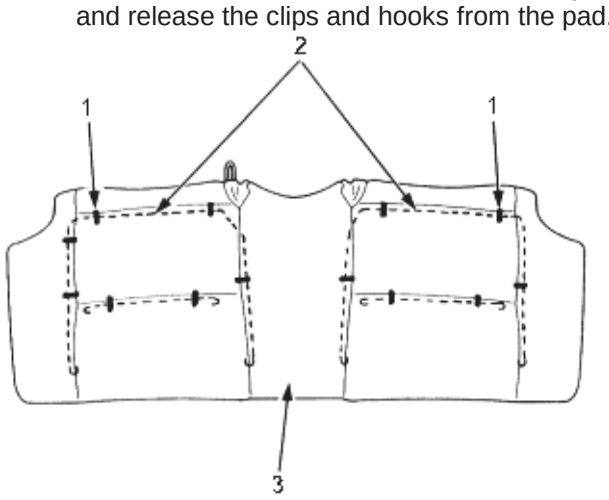
Seat cushion cover:

1. Remove the seat cushion (**See Page** 20-59).
2. Release all the clips.



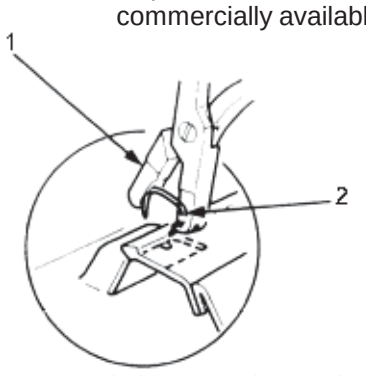
1. CLIP
2. SEAT CUSHION COVER

3. Pull back of the seat-back cover all the way around and release the clips and hooks from the pad.



1. CLIP
2. WIRE(PAD SIDE)
3. SEAT CUSHION COVER

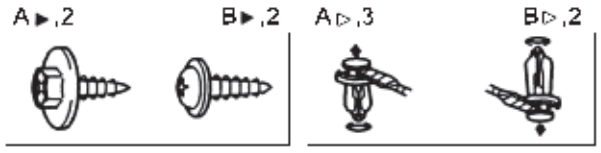
4. Install in the reverse order of removal and note these items:
   - To prevent wrinkles when installing a seat cushion cover, make sure the material is stretched evenly over the pad before securing the clips, hooks and inside springs
   - Replace the release clips with new ones using commercially available upholstery ring pliers.



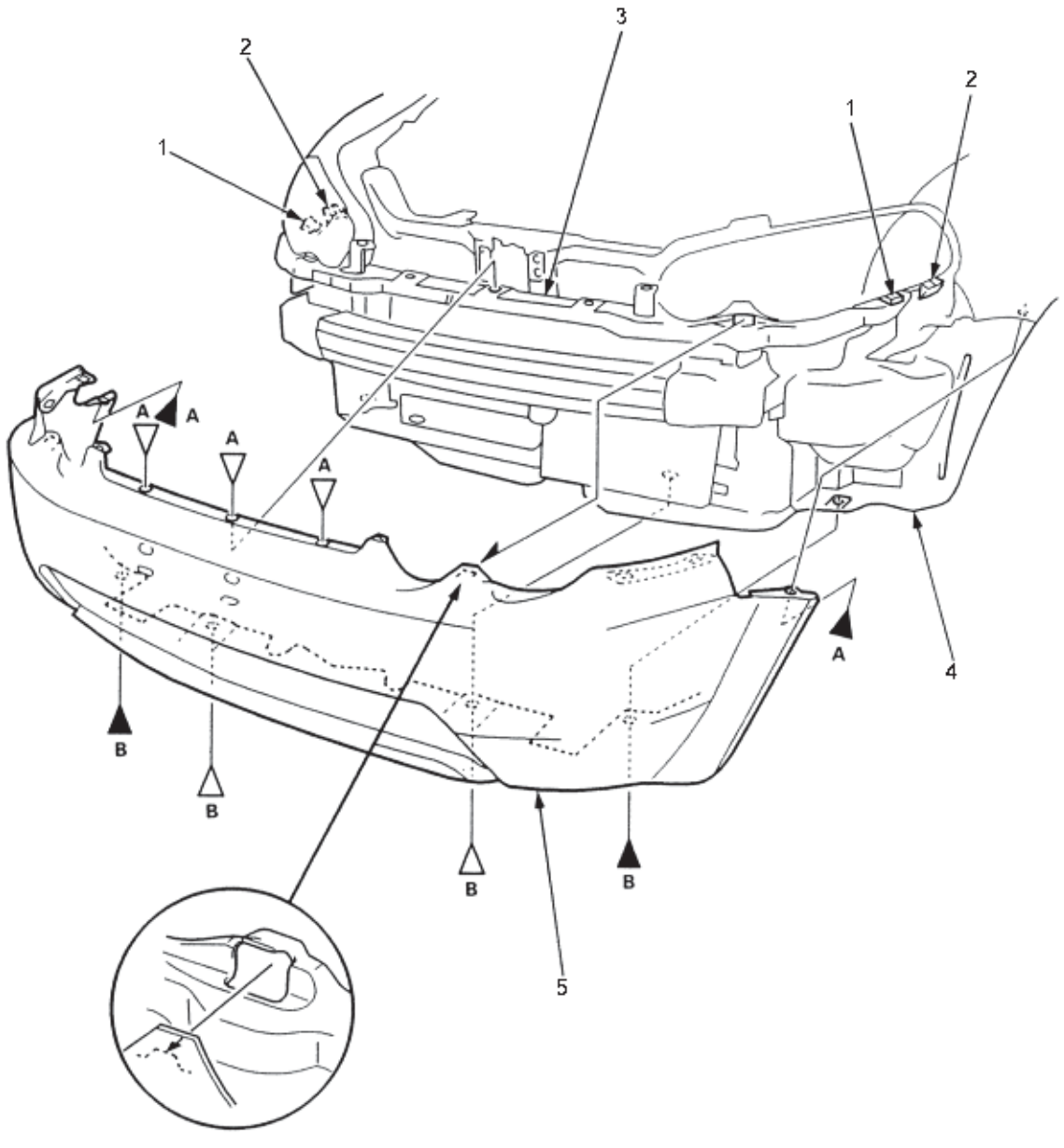
1. UPHOLSTERY RING PLIERS
2. NEW CLIP

NOTE:
- An assistant is helpful when removing the front bumper.
- Take care not to scratch the front grille, front bumper and body.
- Wear gloves to protect your hands.

▶ : Screw locations ▷ : Clip locations

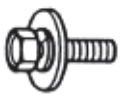


1. **HOOK**
2. **SIDE CLIP**
3. **FRONT BUMPER UPPER BEAM**
4. **INNER FENDER**
5. **FRONT BUMPER**



▶ : Bolt locations

A ▶ ,4



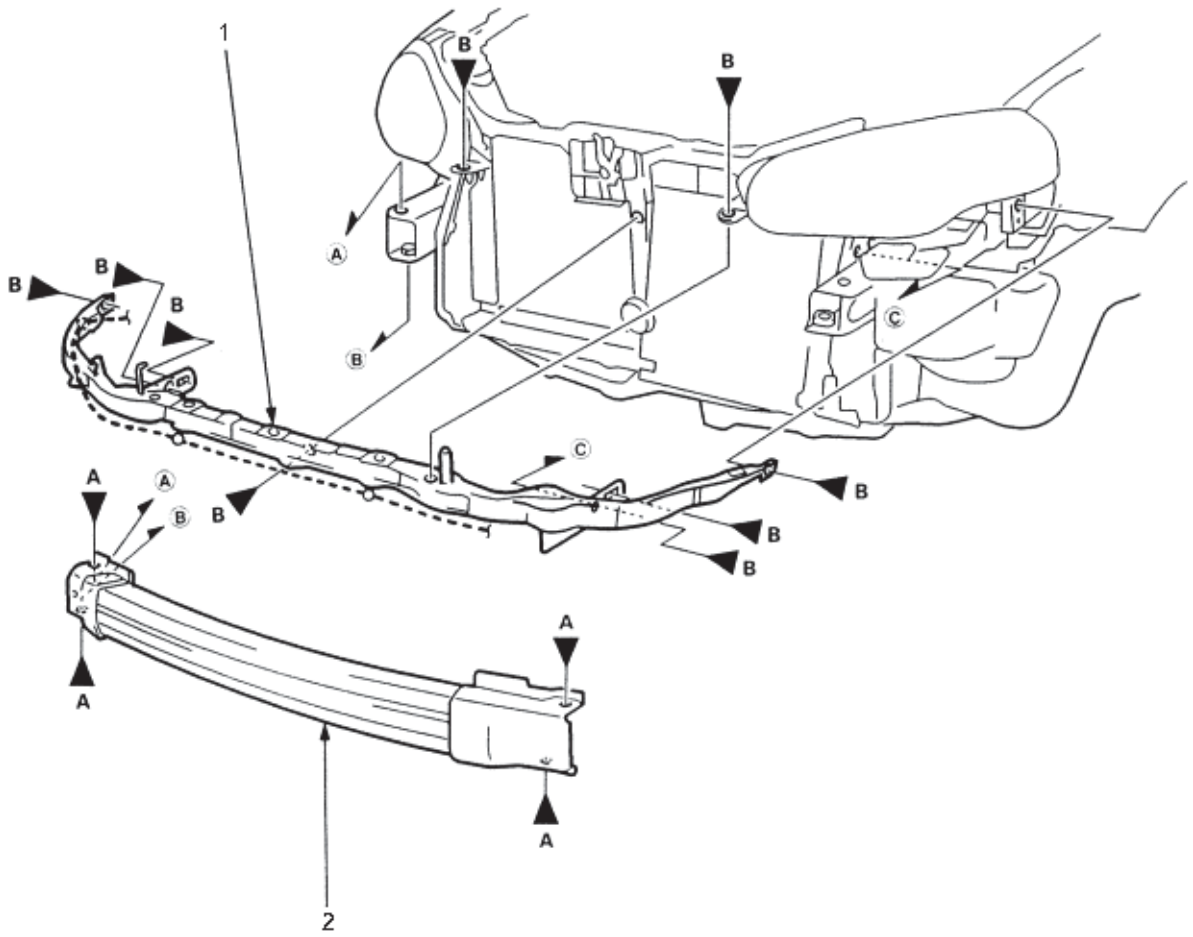
10 x 1,25 mm
38 N·m (3.9 kgf·m, 28 lbf·ft)

B ▶ ,9



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

1. **FRONT BUMPER UPPER BEAM**
2. **FRONT BUMPER BEAM**



Install in the reverse order of removal and note the following items:

- After reinstalling the upper beam, adjust the aim of the headlights (see section 23).
- Make sure the front bumper engages the clips and hooks of the upper beam.
- Replace any damaged clips.

NOTE:
- An assistant is helpful when removing the rear bumper.
- Take care not to scratch the rear bumper and body.
- Wear gloves to protect your hands.

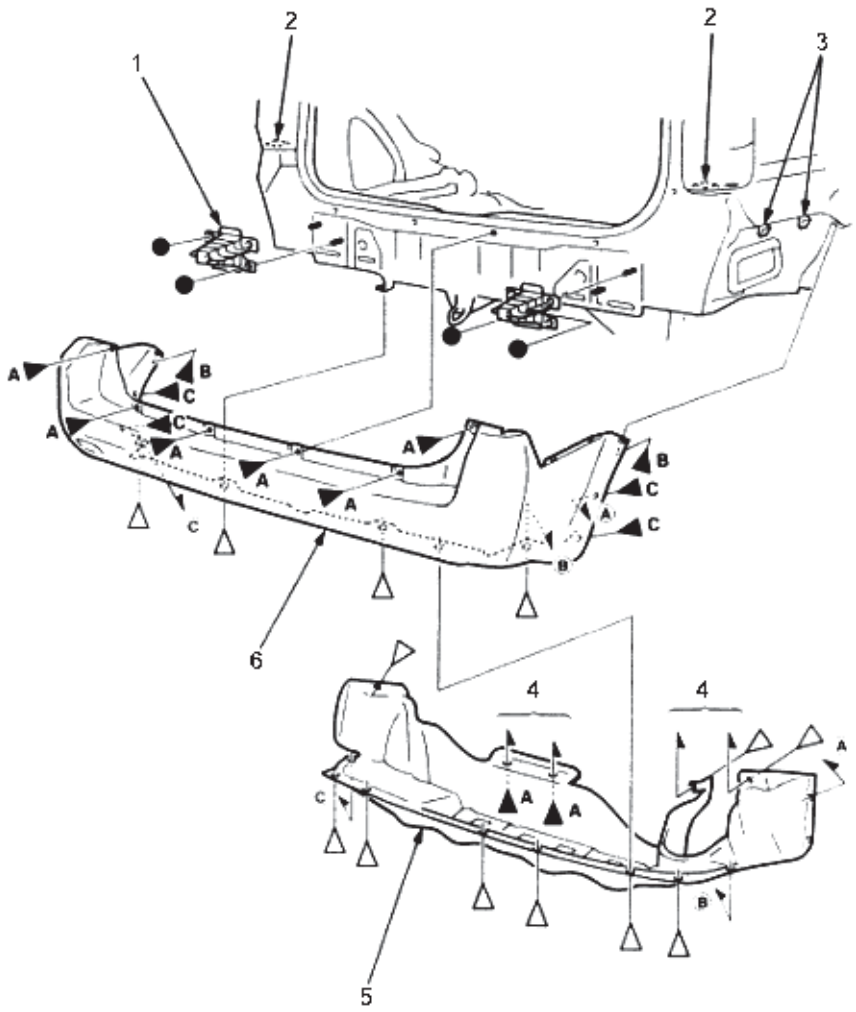
▶ : Bolt locations ● : Nut locations, 4 ▷ : Clip locations, 13

A ▶ ,8 B ▶ ,2 C ▶ ,4

6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

8 x 1.25 mm
22 N·m (2.2 kgf·m, 16 lbf·ft)

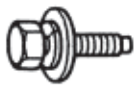
1. **REAR BUMPER EXTENSION**
2. **HOOK**
3. **SIDE SPACERS**
4. To body
5. **REAR UNDER COVER**
6. **REAR BUMPER**



Install in the reverse order of removal and note the following items:
- Make sure the front bumper engages the side spacers and the hooks on each side securely.
- Replace any damaged clips.

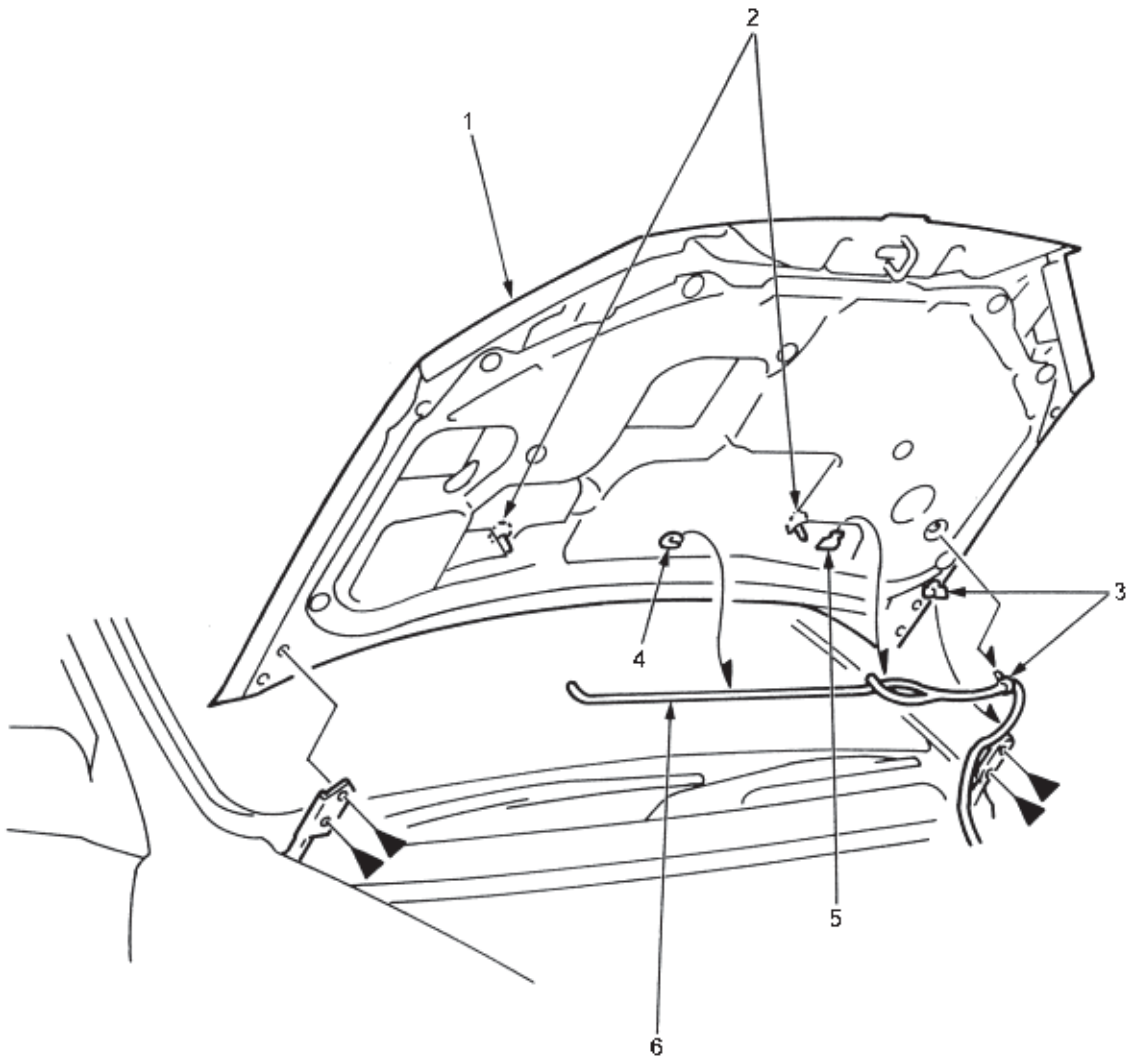
NOTE:
- An assistant is helpful when removing and installing the hood.
- Take care not to damage the hood and body.

▶ : Bolt locations, 4



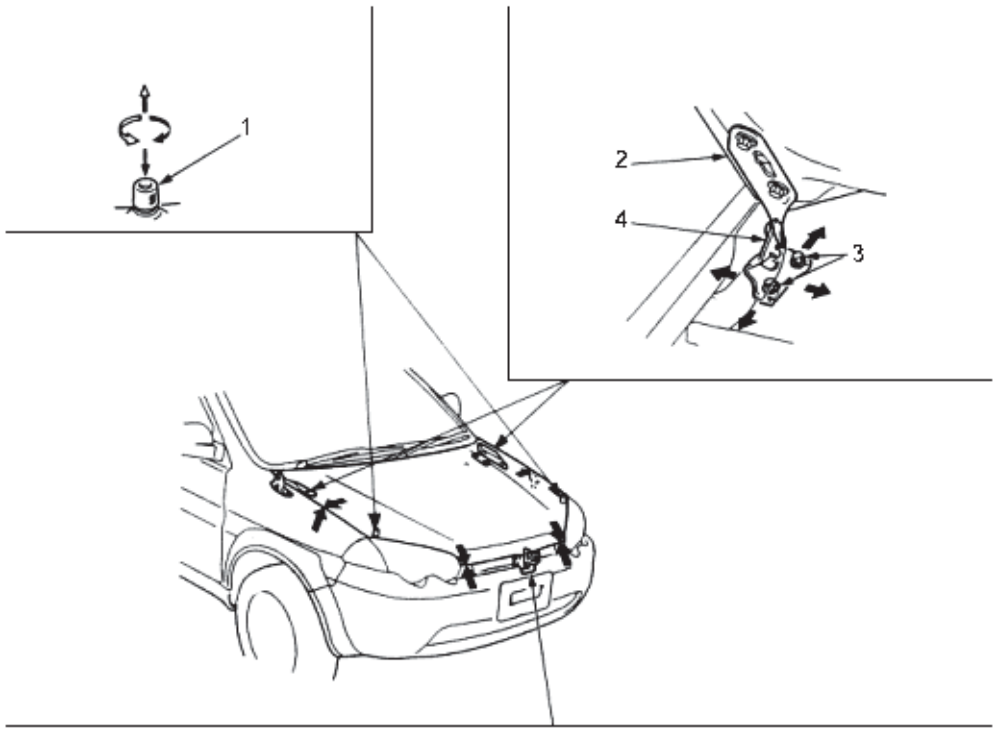
6 x 1.0 mm
9.8 N m (1.0 kgf m, 7.2 lbf ft)

1. **HOOD**
2. **WINDSHIELD WASHER NOZZLES**
3. **CLIPS**
4. **CLIP**
5. **HOOK**
6. **WINDSHIELD WASHER TUBE**

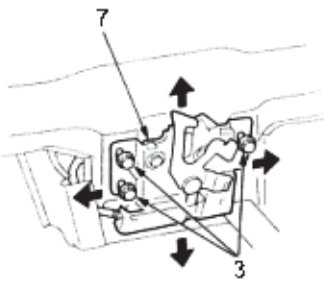


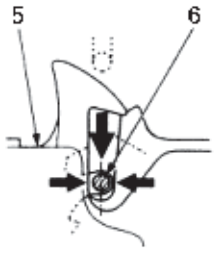
Install in the reverse order of removal and note the following items:
- Make sure the hood opens properly and locks securely.
- Make sure the windshield washer tubes are connected properly.
- Adjust the hood alignment.

1. Remove the front grille seat (**See Page** 20-76).
2. Slightly loosen each hood hinge bolt.
3. Adjust the hood alignment in this sequence.
   - Adjust the hood right and left, as well as fore and aft, by using the elongated holes on the hood hinge.
   - Turn the hood edge cushions, as necessary, to make the hood fit flush with the body at front and side edges.
   - Adjust the hood latch to obtain the proper height at the forward edge and move the hood latch right or left until the striker is centred in the hood latch.

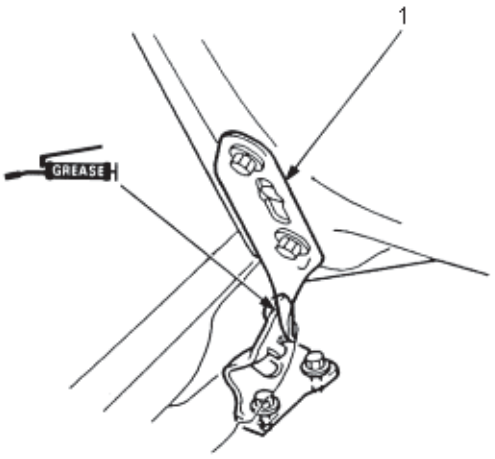


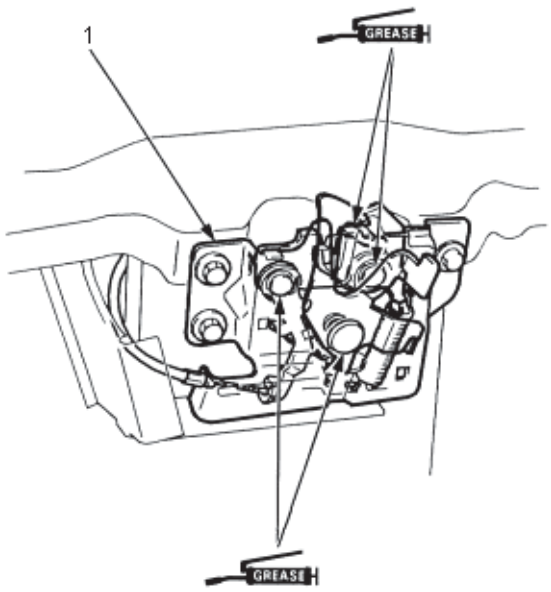
1. **HOOD EDGE CUSHION**
2. **HOOD**
3. **6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
4. **HOOD HINGE**
5. **HOOD LATCH**
6. **STRIKER**
7. **HOOD LATCH**





4. Tighten each bolt securely.
5. Check that the hood opens properly and locks securely.
6. Grease each location of the hood latch and hood hinge as indicated by the arrows.



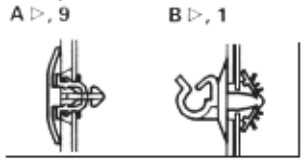


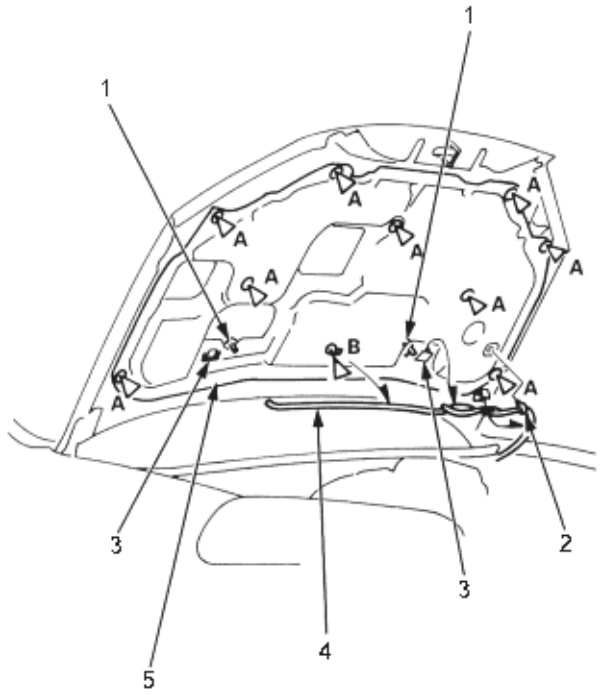
1. HOOD HINGE
2. HOOD LATCH

NOTE: Take care not to scratch the hood.

1. Remove the hood insulator.
   - -1 Disconnect the windshield washer tubes from the windshield washer nozzles.
   - -2 Release the windshield washer tube from the clips.
   - -3 Using a clip remover, detach the clips, release the hooks and remove the hood insulator.

▷ : Clip locations



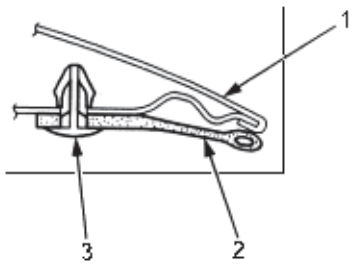


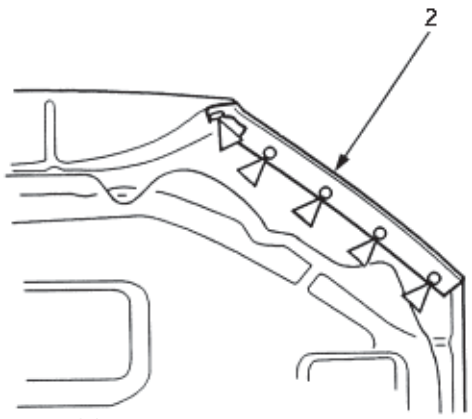
1. WINDSHIELD WASHER NOZZLE
2. CLIP
3. HOOK
4. WINDSHIELD WASHER TUBES
5. HOOD INSULATOR

2. Install in the reverse order of removal and note the following items:
   - Replace any damaged clips.
   - Make sure the washer tubes are connected properly.

1. Using a clip remover, detach the clips, then remove the hood seal rubbers. If equipped, remove the hood front seal rubber. Take care not to scratch the hood.

▷ : Clip locations, 5



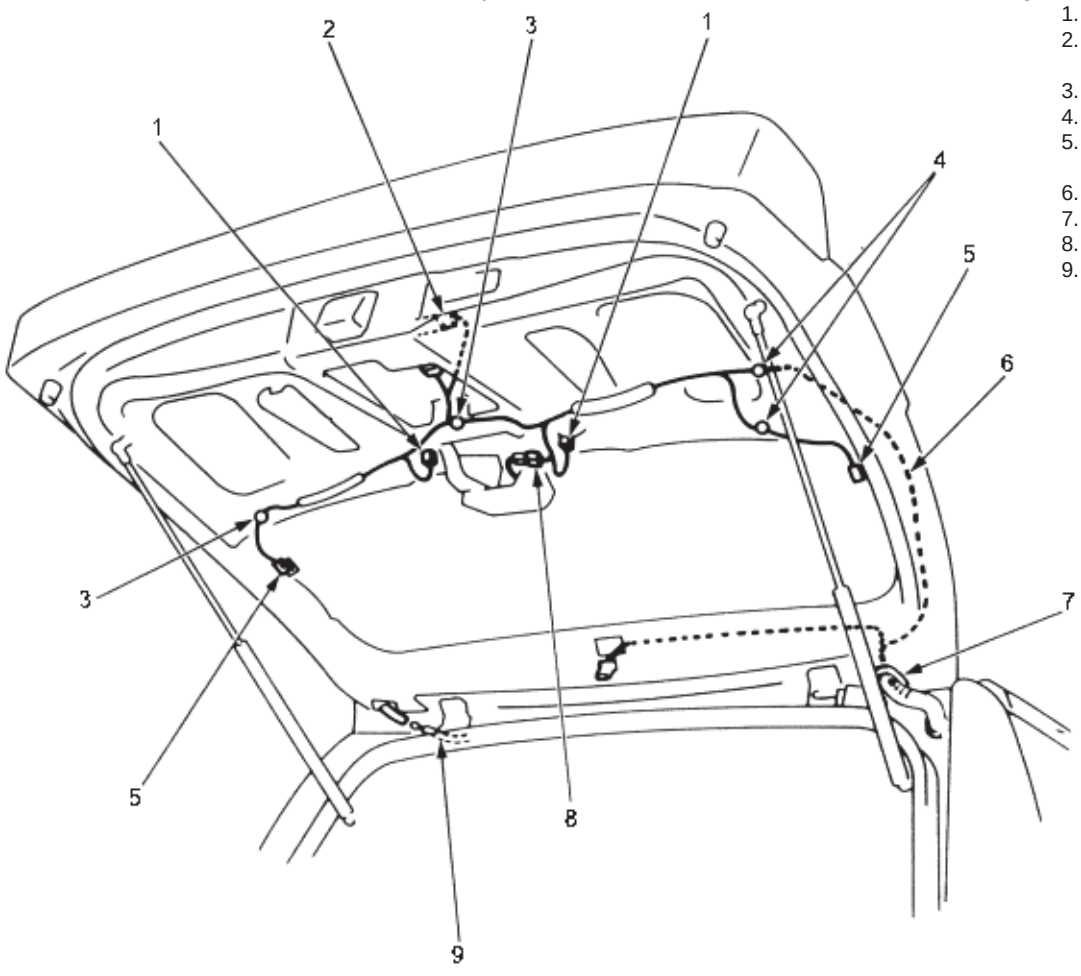


1. HOOD
2. HOOD SEAL RUBBER
3. CLIP

2. Install in the reverse order of removal; replace any damaged clips.

NOTE:
- An assistant is helpful when removing the tailgate.
- Take care not to scratch the tailgate.
- Wear gloves to protect your hands.

1. Remove the tailgate trim.
2. Disconnect the rear wiper motor connector, rear window defogger connector, rear license light connector, tailgate latch switch connector, tailgate latch actuator connector and rear washer tube. Detach the harness clips, then remove the wire harness from the tailgate.



1. **REAR LICENSE LIGHT CONNECTOR**
2. **TAILGATE LATCH ACTUATOR CONNECTOR**
3. **HARNESS CLIP**
4. **HARNESS CLIPS**
5. **REAR WINDOW DEFOGGER CONNECTOR**
6. **WIRE HARNESS**
7. **GROMMET**
8. **REAR WIPER MOTOR CONNECTOR**
9. **REAR WASHER TUBE**

3. Remove the open stay from the open stay bracket. Remove the bolts, then remove the tailgate.

▶ : Bolt locations, 4 ● : Nut locations, 2

8 x 1.25 mm **22 N·m (2.2 kgf·m, 16 lbf·ft)**	**6 x 1.0 mm** **9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)**

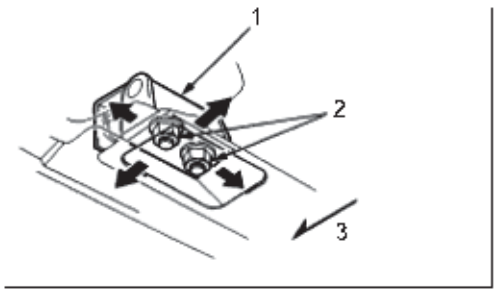
1. **TAILGATE**
2. **OPEN STAY**
3. **OPEN STAY BRACKET**

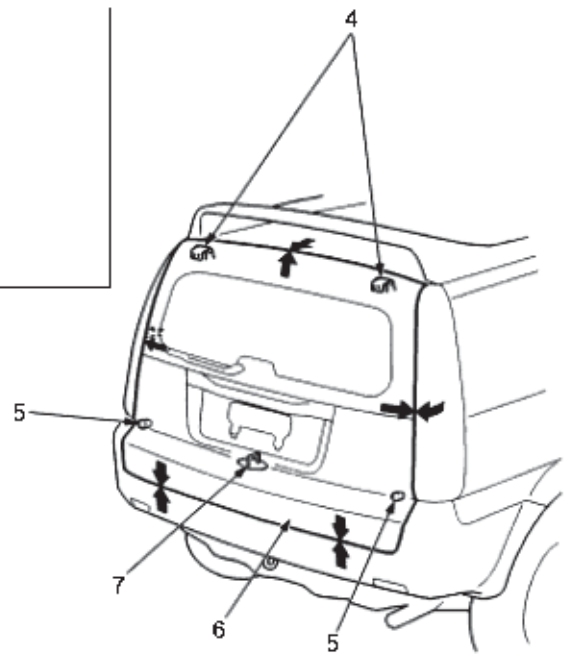


4. Remove the open stay from the tailgate.
5. Install in the reverse order of removal and note the following items:
   - Make sure the connectors and wire harness are routed properly.
   - Make sure the tailgate open properly and locks securely.
   - Adjust the tailgate alignment seat (**See Page** 20-73).

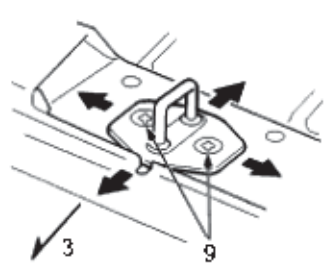
NOTE:
- Before adjusting the tailgate, loosen each bolt and nut slightly.
- The support struts should be removed.

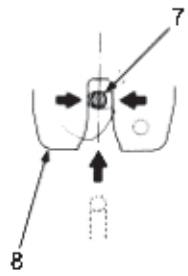
1. Adjust the tailgate hinges right and left, as well as fore and aft, by using the elongated holes.
2. Turn the tailgate edge cushions, as necessary, to make the tailgate fit flush with the body at each side.
3. Adjust the tailgate fit to the tailgate opening by moving the striker.
4. After adjustment, tighten each bolt and nut securely.





1. **TAILGATE HINGE**
2. **NUTS, 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)**
3. Forward
4. **TAILGATE HINGES**
5. **TAILGATE EDGE CUSHION**
6. **TAILGATE**
7. **TAILGATE STRIKER**
8. **TAILGATE LATCH**
9. **8 x 1.25 mm 22 Nm (2.2 kgf/m, 16 lbf/ft)**



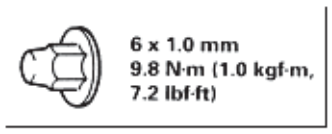


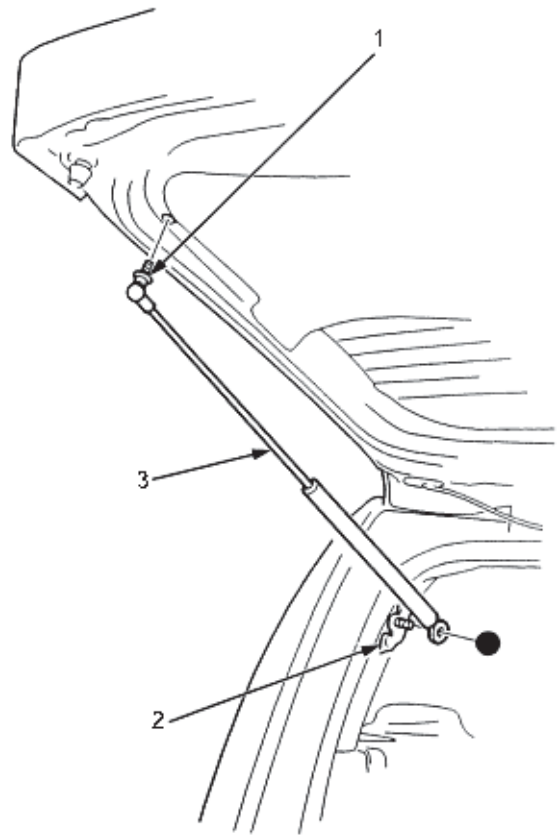


NOTE:
- An assistant is helpful when removing the tailgate.
- Take care not to scratch the tailgate and interior trim.

1. Remove the nut, then remove the open stay from the open stay bracket.
2. Remove the open stay from the tailgate.

●: Nut locations, 1

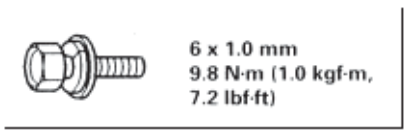


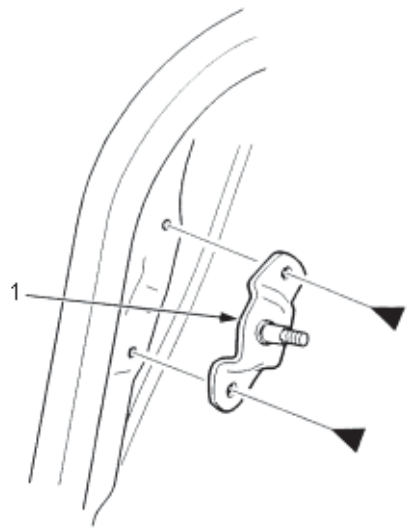


1. 8 x 1.25 mm 22 Nm (2.2 kgf/m, 16 lbf/ft)
2. OPEN STAY BRACKET
3. OPEN STAY

3. Remove the rear pillar trim (**See Page** 20-41).
4. Remove the bolts, then remove the open stay bracket.

▶: Bolt locations, 2

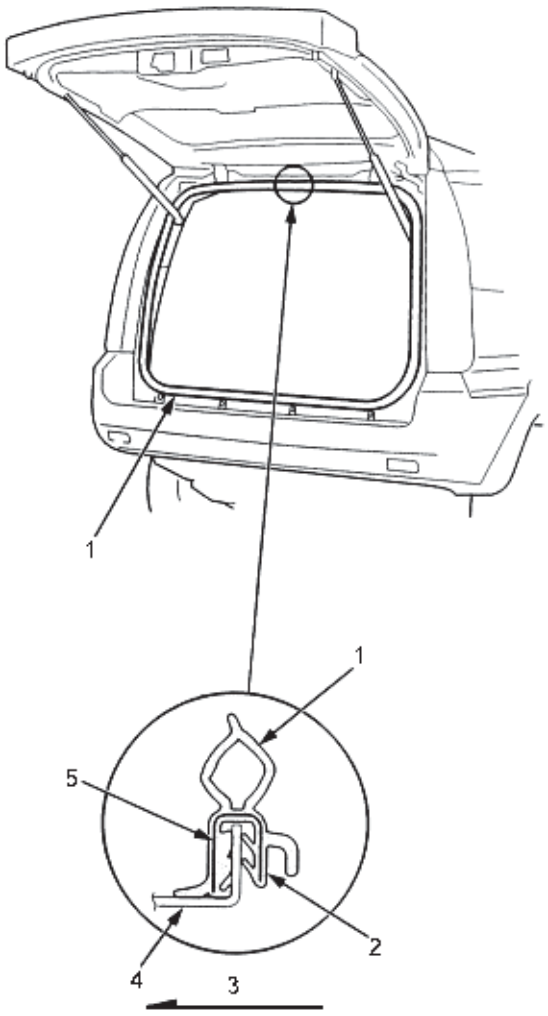




1. OPEN STAY BRACKET

5. Install in the reverse order of removal, first install the tailgate side.

1. Locate the painted alignment mark on the tailgate weatherstrip. Align the painted mark to the centre of tailgate.
   Make sure there are no wrinkles in the weatherstrip.



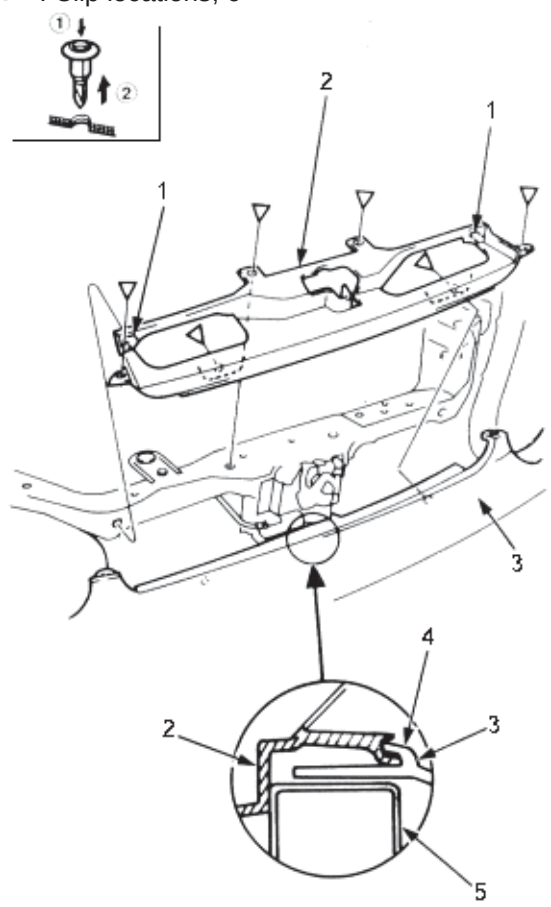
1. TAILGATE WEATHERSTRIP
2. ALIGNMENT MARK
3. Inside
4. BODY
5. STEEL CORE

2. Check for water leaks. Do not use high-pressure water.

NOTE: Take care not to scratch the front bumper and related parts.

1. Remove the clips and release the hook from the front bumper, then remove the front grille.

▷ : Clip locations, 6



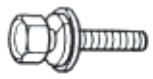
1. PIN
2. FRONT GRILLE
3. FRONT BUMPER
4. Hook portion
5. FRONT BUMPER UPPER BEAM

2. Install in the reverse order of removal and replace any damaged clips.

NOTE: Take care not to scratch the front bumper and related parts.

1. Remove the tailgate trim seat (**See Page** 20-41).
2. Remove the nuts and bolt and release the clips, then remove the rear license trim.

▶ : Bolt locations, 1

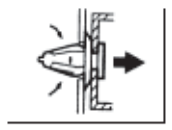


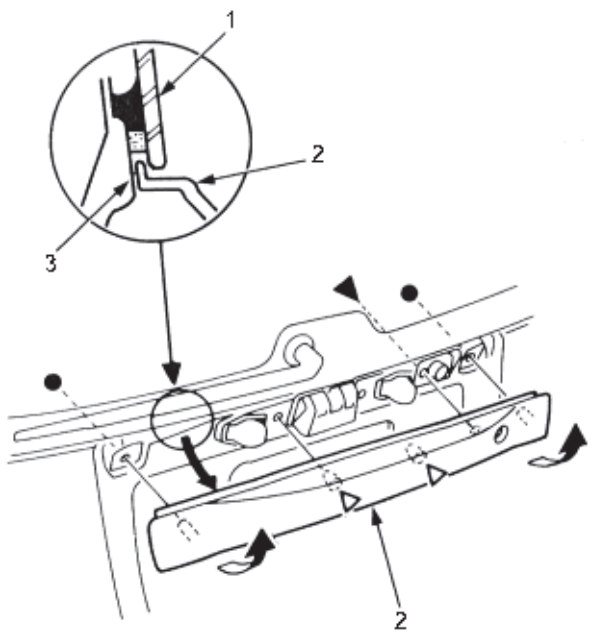
6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

● : Nut locations, 2 ▷ : Clip locations, 2



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)



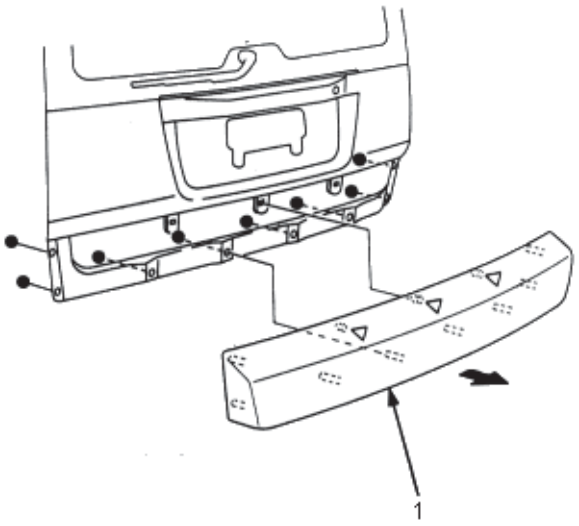


1. REAR WINDOW
2. REAR LICENSE TRIM
3. TAILGATE

3. Install in the reverse order of removal and replace any damaged clips.

NOTE: Take care not to scratch the tailgate and related parts.
1. Remove the tailgate trim seat (**See Page** 20-41).
2. Remove the nuts and clips, then remove the tailgate lower trim.

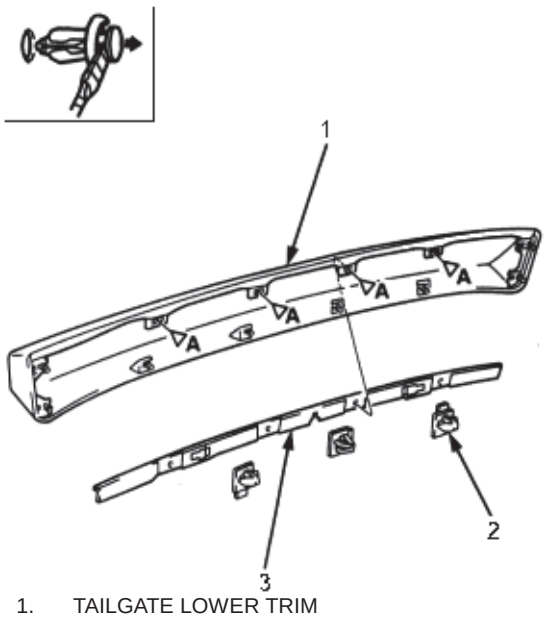
●: Nut locations, 8 ▷: Clip locations, 3



1. TAILGATE LOWER TRIM

3. Install in the reverse order of removal and replace any damaged clips.

NOTE: Take care not to scratch the tailgate lower trim.
▷: Clip locations, 4



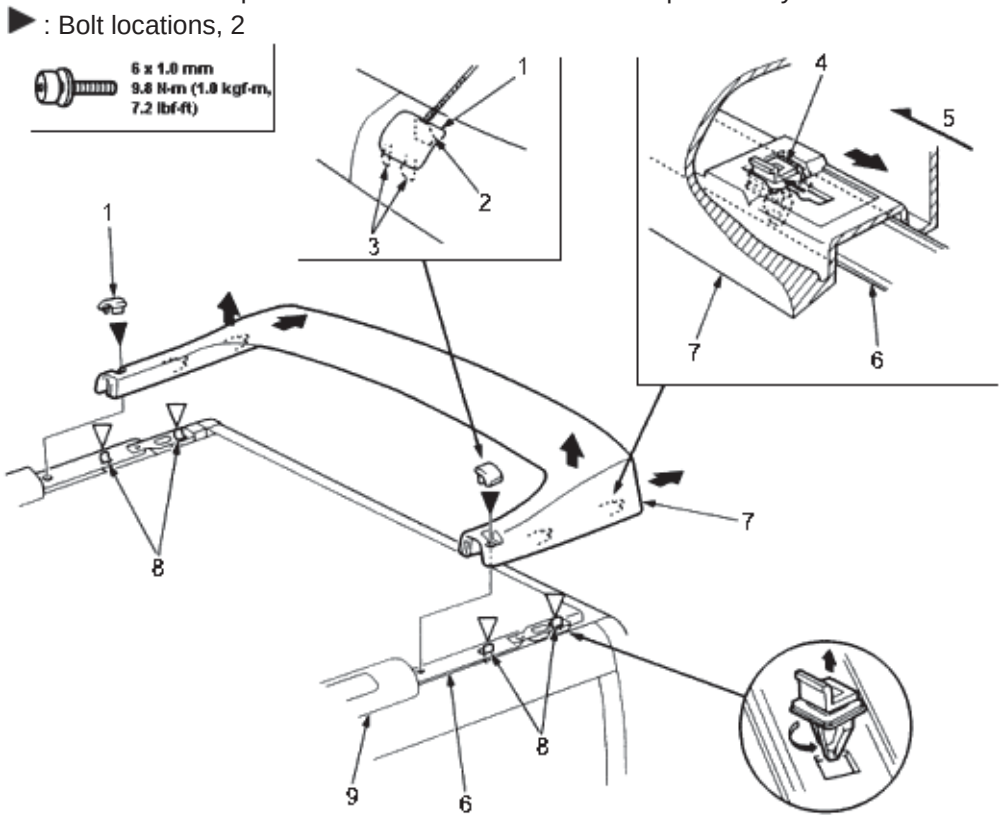
1. TAILGATE LOWER TRIM
2. CLIP
3. TAILGATE LOWER BEAM

Install in the reverse order of removal and replace any damaged clips.

NOTE:
- Take care not to scratch the body and related parts.
- Using a flat-tip screwdriver wrapped with protective tape.

1. Remove the caps from the roof spoiler, then remove the bolts (use Torx T-30 bit).
2. Slide the roof spoiler behind and remove it. Slide clips will stay on the roof side trim bracket.

▶ : Bolt locations, 2

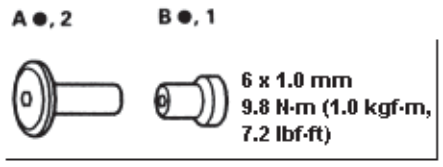


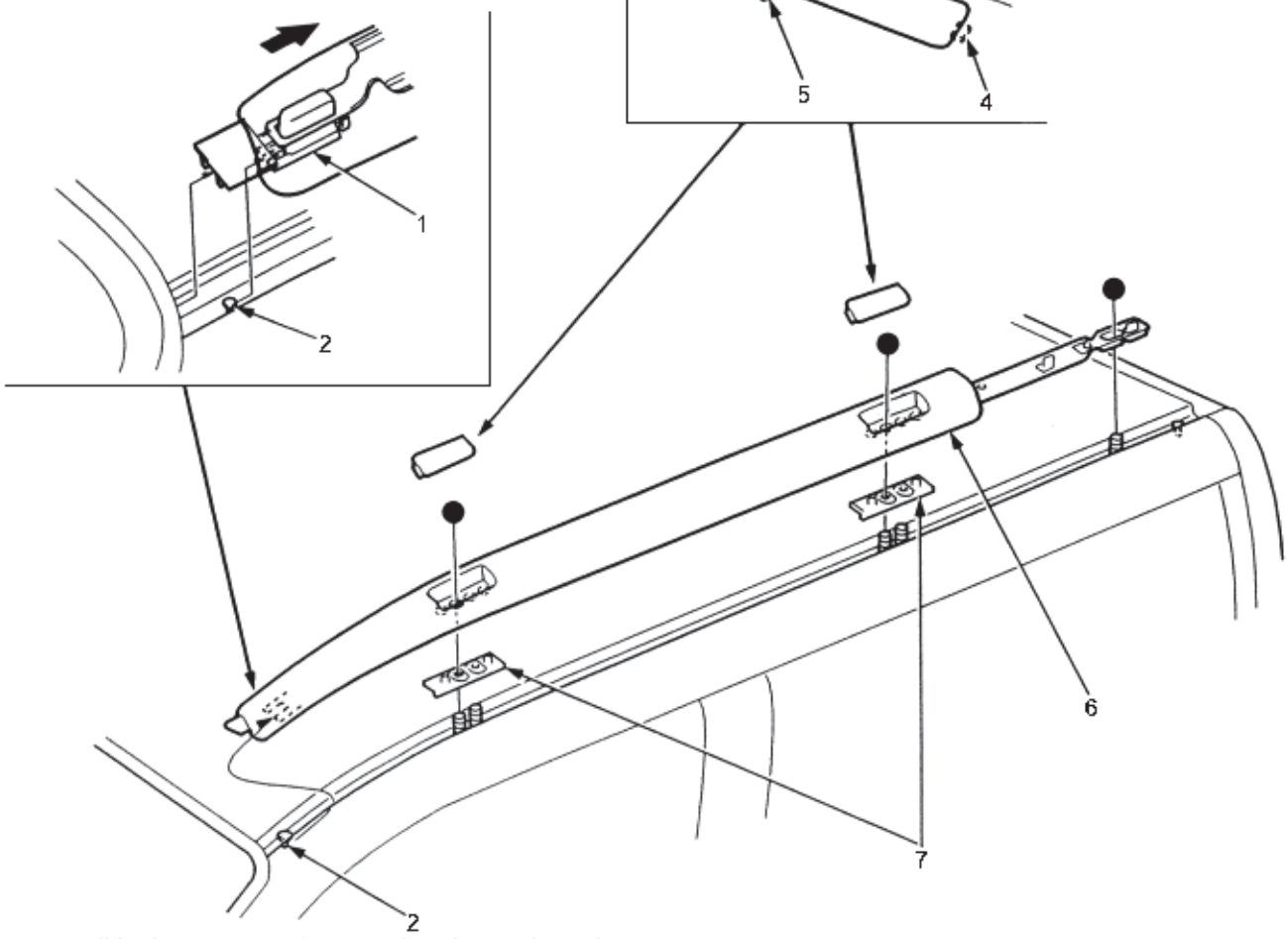
1. **CAP**
2. **CLIP**
3. **CLIPS**
4. **SLIDE CLIP, 4**
5. Forward
6. **ROOF SIDE TRIM BRACKET**
7. **ROOF SPOILER**
8. **SLIDE CLIPS**
9. **ROOF SIDE TRIM**

3. Remove the slide clips from the roof side trim bracket, then install the slide clips to the roof spoiler. Replace any damaged clips.

4. Remove the caps from the roof side trim, then remove the nuts.
5. Lift and slide the roof side trim behind and remove it.

●: Nut locations





1. **ROOF SIDE CLIP**
2. **PIN**
3. **CAP**
4. **HOOK**
5. **CLIP**
6. **ROOF SIDE TRIM**
7. **BRACKETS**

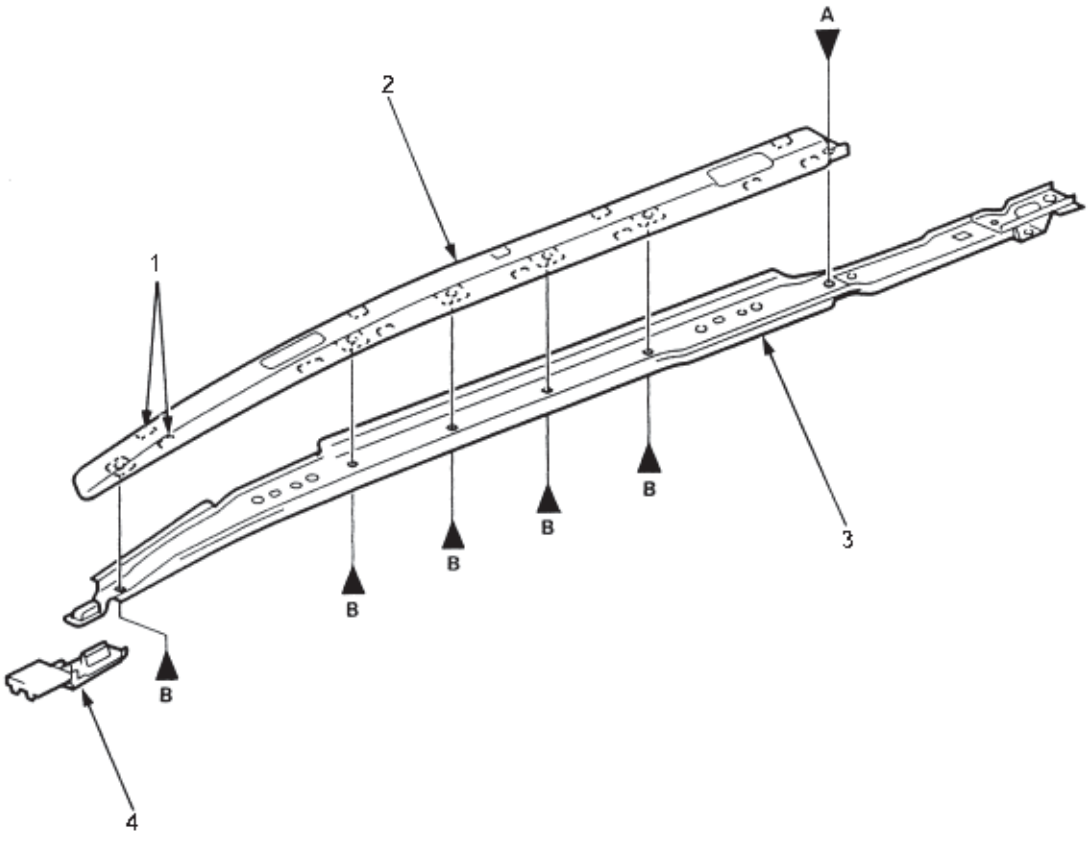
6. Install in the reverse of removal and note these items:
   - Replace any damaged clip.
   - Install the roof spoiler, fit all the slide clips into the holes in the roof side trim, then push on the roof spoiler until the clips snap into place.

NOTE: Take care not to scratch the roof side trim.

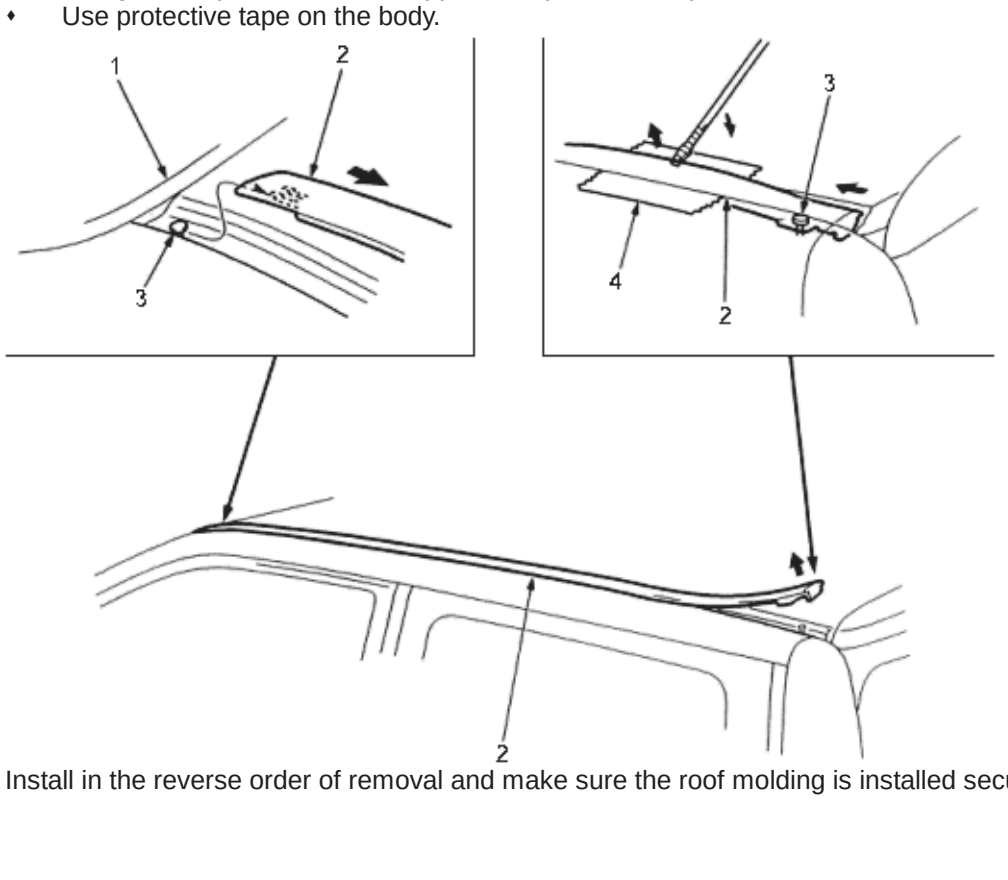
▶ : Bolt, screw locations

A▶, 1	B▶, 5
6 x 1.0 mm **9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)**	

1. **HOOKS**
2. **ROOF SIDE TRIM**
3. **ROOF SIDE TRIM BRACKET**
4. **ROOF SIDE CLIP**



NOTE:
- Take care not to scratch the body.
- Using a flat-tip screwdriver wrapped with protective tape.
- Use protective tape on the body.

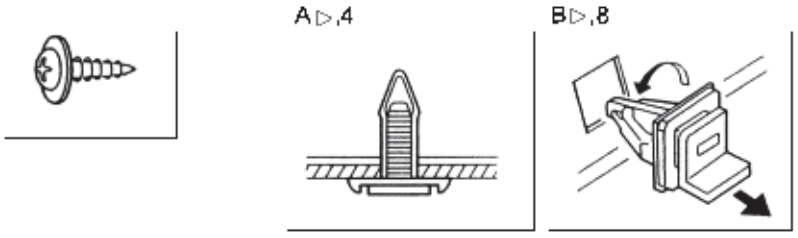


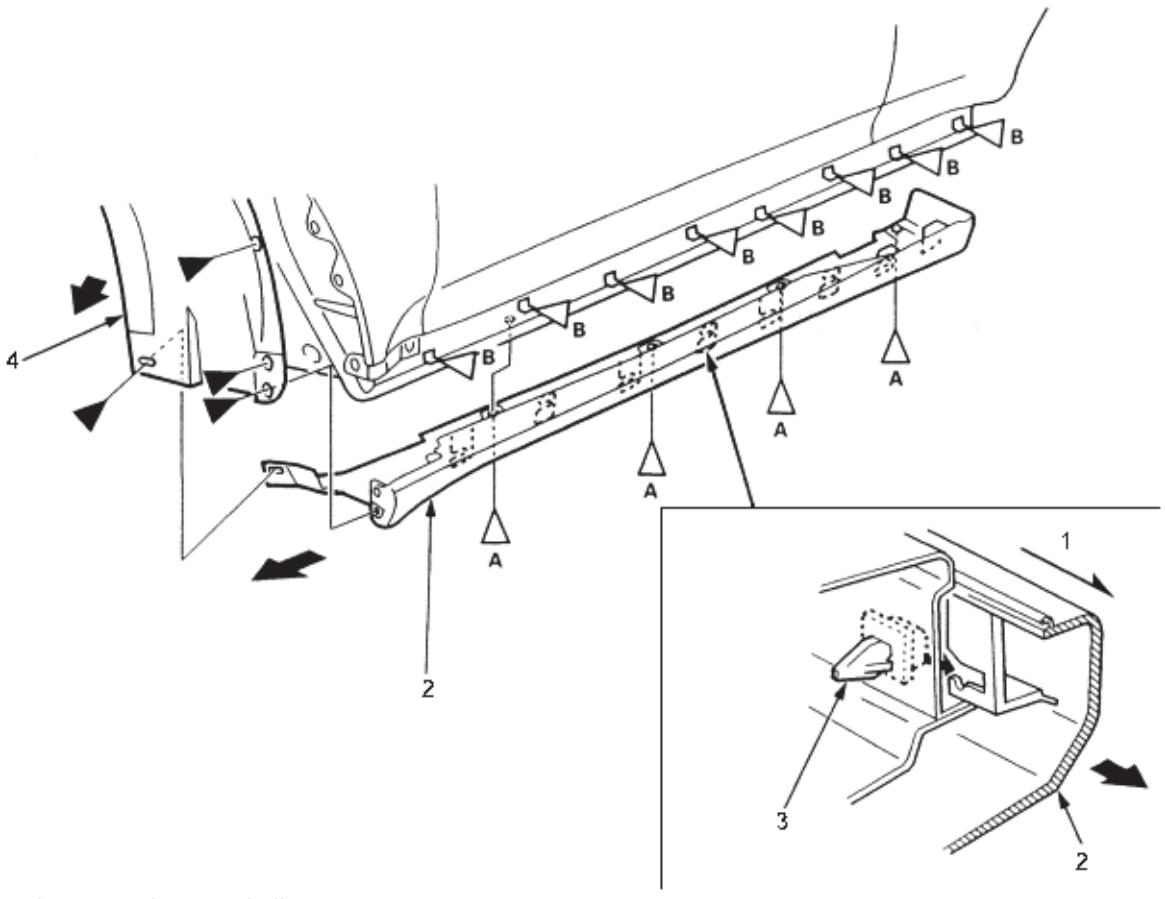
1. **WINDSHIELD MOLDING**
2. **ROOF MOLDING**
3. **PIN**
4. **PROTECTIVE TAPE**

Install in the reverse order of removal and make sure the roof molding is installed securely.

1. Remove the side sill panel.
   -1 Pull the inner fender back as necessary and remove the expansion clips.
   -2 Slide the side sill panel forward and remove it. Side clips will stay in the body.
   -3 Remove the side clips from the body.

▶ : Screw locations, 4 ▷ : Clip locations





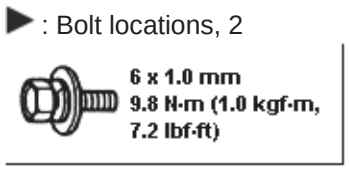
1. **Forward**
2. **SIDE SILL PANEL**
3. **EXPANSION CLIP**
4. **INNER FENDER**

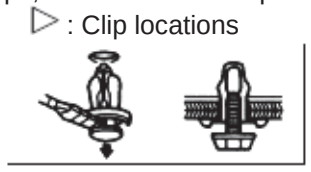
2. Replace any damaged clips.
3. Install the side clips on the side sill panel.
4. Hold the panel up and fit all the side clips into the holes in the body, then push on the panel until the clips snap into place.
5. Install all the expansion clips.
6. Install the inner fender.

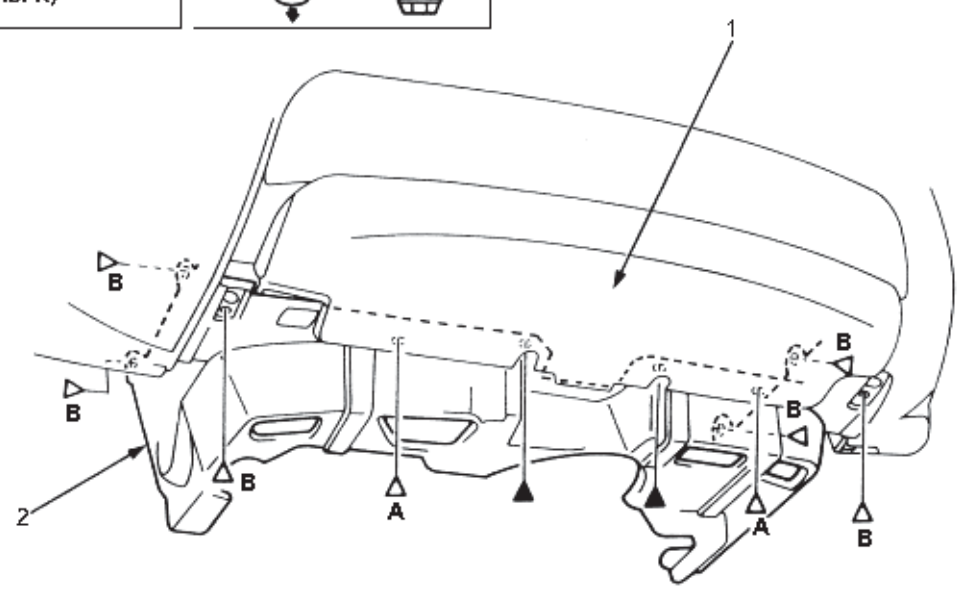
NOTE: Take care not to scratch the body and related parts.

1. Remove the bolts and clips, then remove the splash shield

▶ : Bolt locations, 2 ▷ : Clip locations





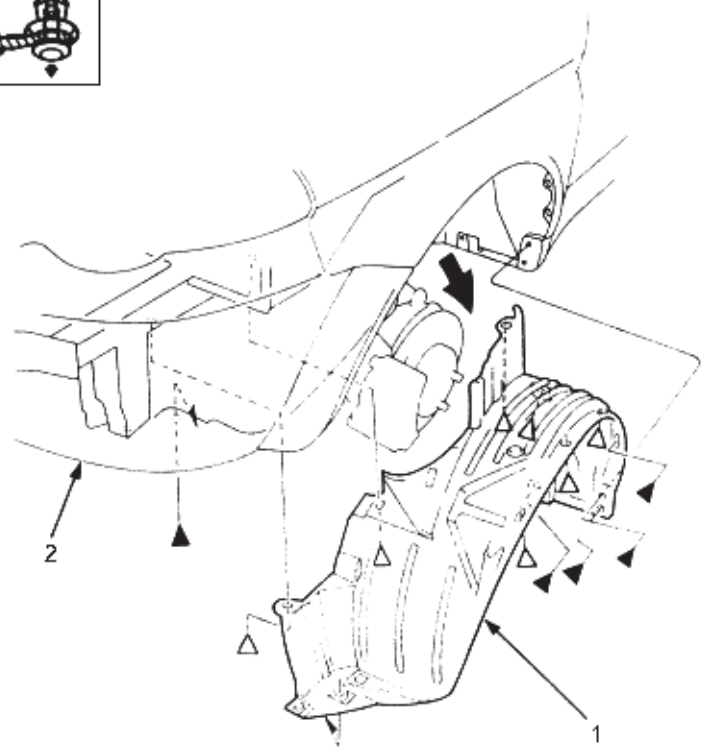


1. **FRONT BUMPER**
2. **SPLASH SHIELD**

2. Remove the screws and clips, then remove the inner fender.

▶ : Screw locations, 5 ▷ : Clip locations, 7



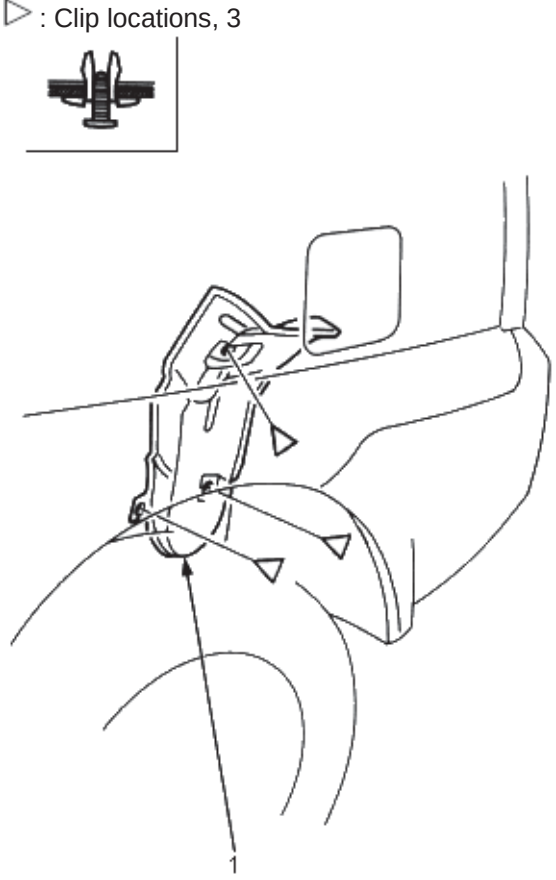


1. **INNER FENDER**
2. **FRONT BUMPER**

NOTE: Take care not to scratch the body.

1. Remove the clips, then remove the fuel pipe protector.

▷ : Clip locations, 3



1. FUEL PIPE PROTECTOR

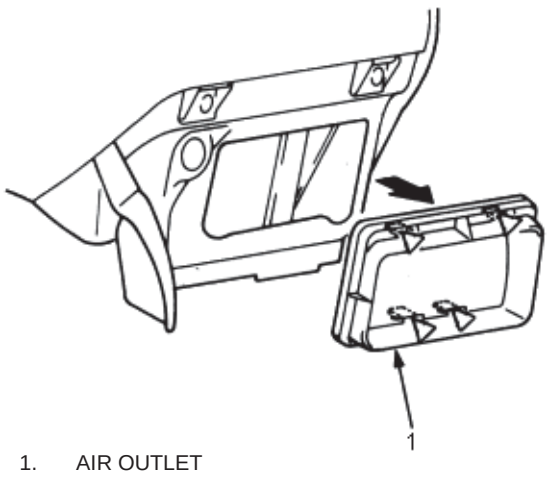
2. Install in the reverse order of removal and replace any damaged clips.

NOTE: Take care not to scratch the body and related parts.

1. Remove:
   - Rear bumper (**See Page** 20-11).
   - Rear side trim (**See Page** 20-41).

▷ : Clip locations, 4



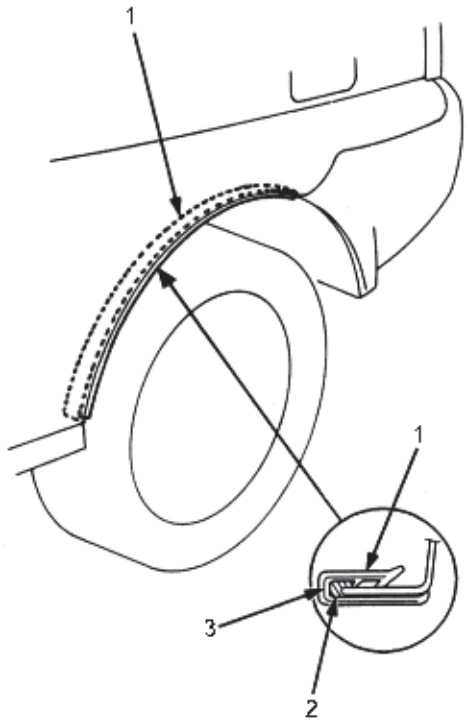


1. AIR OUTLET

2. Install in the reverse order of removal.

NOTE: The steel core in the fenderwell trim cannot be restored to its original shape once it has been bent. Replace the fenderwell trim when the steel core is bent.

1. Remove the fenderwell trim by pulling it out.
2. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
3. Apply clear sealant into the channel of the fenderwell trim from end to end.
4. Install the fenderwell trim
   Sealant: Cemedines P/N 08712-0004, or equivalent



1. FENDERWELL TRIM
2. ADHESIVE
3. STEEL CORE

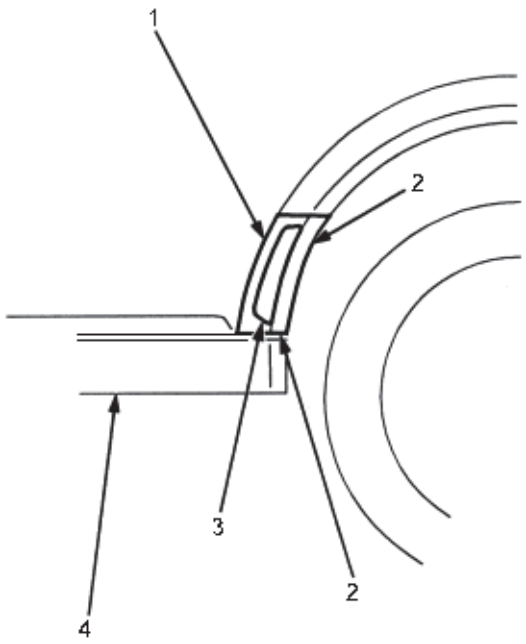
5. Scrape or wipe the excess sealant off with a towel. To remove sealant from a painted surface, wipe with a soft shop towel dampened in alcohol.

Align the application tape with the front portion of rear fender edge, as shown, then press the protection tape into place. Remove the application tape.

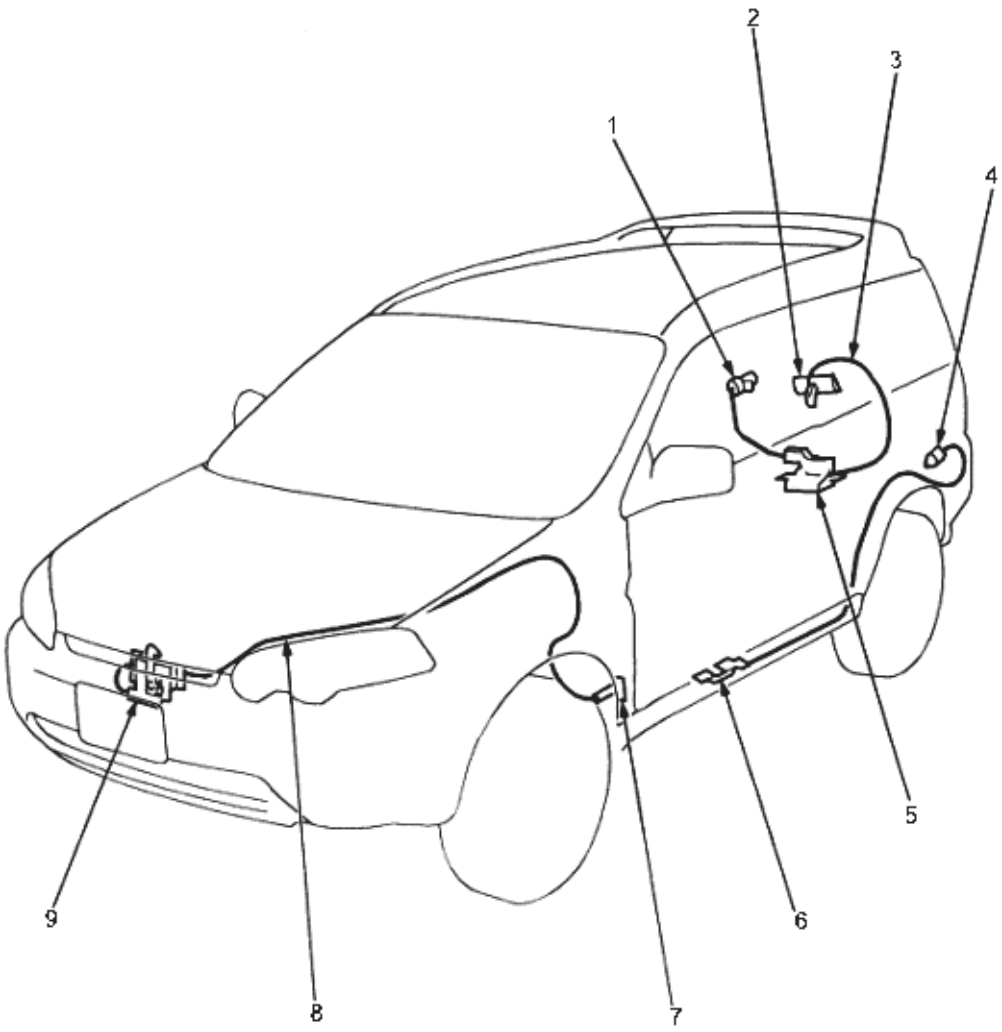
NOTE:

- Before applying, clean the rear fender surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease and water from getting on the surface.
- When applying, make sure there are no wrinkles in the protection tape.

Attachment Point:



1. APPLICATION TAPE
2. Align.
3. PROTECTION TAPE
4. SIDE SILL PANEL



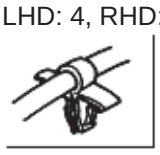
1. **TAILGATE LOCK CYLINDER,** Replacement, (**See Page** 20-93).
2. **TAILGATE HANDLE,** Replacement, (**See Page** 20-92).
3. **TAILGATE OPENER CABLE,**
4. **FUEL LID LATCH,** Replacement, (**See Page** 20-91).
5. **TAILGATE LATCH,** Replacement, (**See Page** 20-92).
6. **FUEL LID OPENER,** Replacement, (**See Page** 20-90).
7. **HOOD OPENER,** Replacement, (**See Page** 20-89).
8. **HOOD OPENER CABLE**
9. **HOOD LATCH,** Replacement, (**See Page** 20-89).

NOTE: Take care not to scratch the body and related parts.

1. Remove:
   - Front Grille (**See Page** 20-76).
   - Inner fender (**See Page** 20-83).
   - Kick panel (**See Page** 20-41).
2. Disconnect the hood opener cable from the hood latch (**See Page** 20-89).
3. Using a clip remover, detach the clips from the body, then remove the hood opener cable from the vehicle.

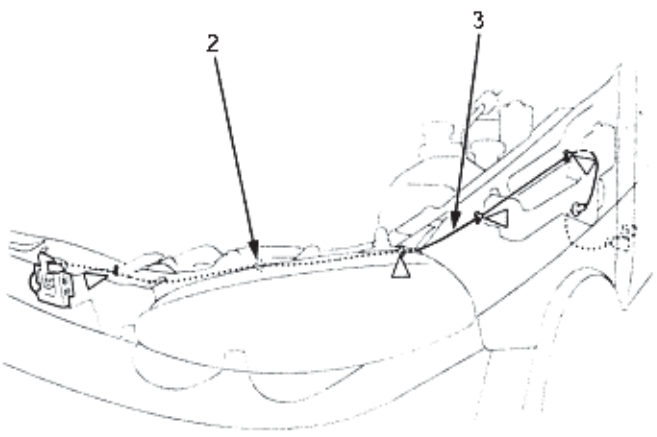
▷ : Clip locations

LHD: 4, RHD: 5

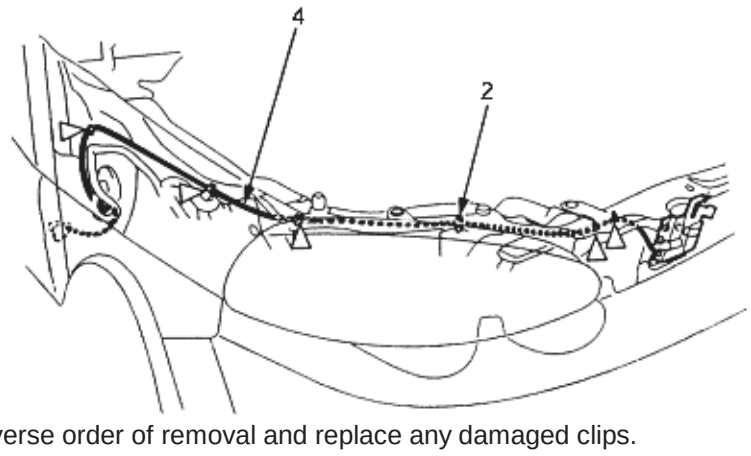


1. **LHD:**
2. Route the opener cable through the hole in the body.
3. **HOOD OPENER CABLE**
4. **HOOD OPENER CABLE**
5. **RHD:**

1



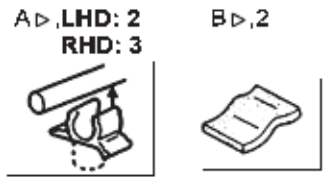
5

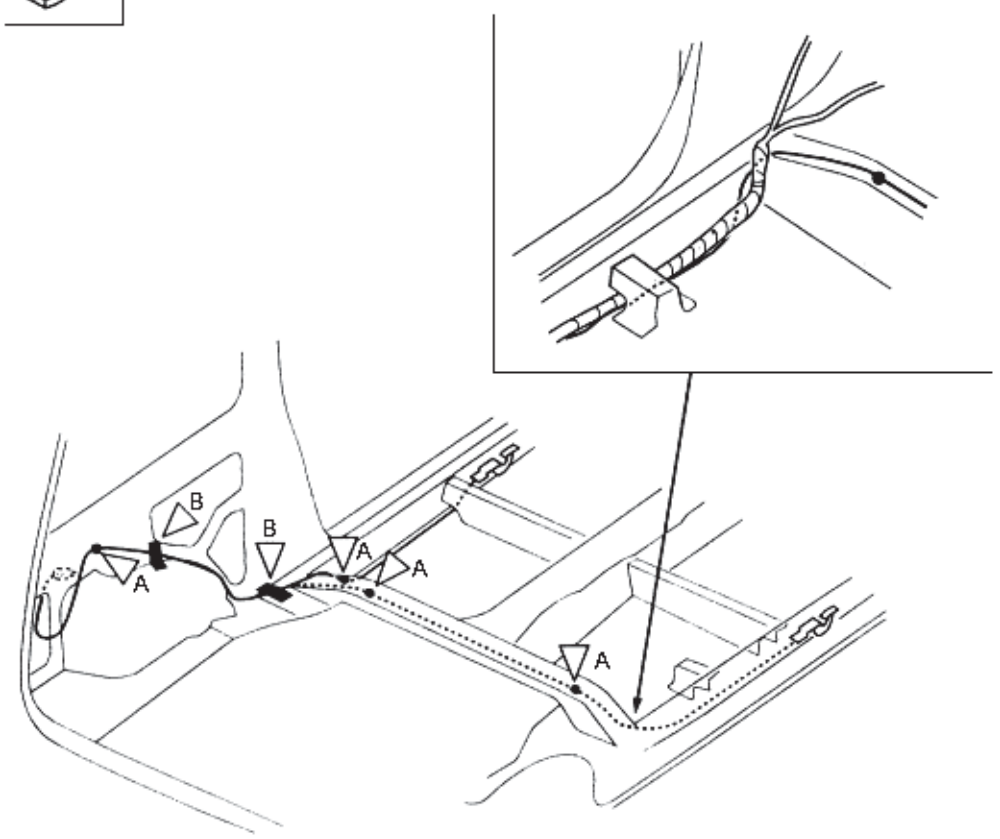


4. Install in the reverse order of removal and replace any damaged clips.

NOTE: Take care not to scratch the body and related parts.

1. Remove:
   - Side trim (**See Page** 20-41).
   - Rear seat-back (**See Page** 20-59).
   - Rear seat cushion (**See Page** 20-59).
   - Rear side (**See Page** 20-41).
   - Carpet as necessary, (**See Page** 20-46).
2. Disconnect the fuel lid opener cable form the fuel lid opener (**See Page** 20-90).
3. Release the fuel lid opener cable from the clips and remove the cable cushion, then remove the fuel lid opener cable.
   ▷ : Clip, cable cushion locations





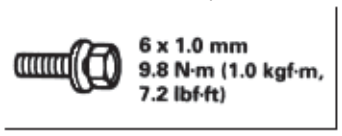
4. Install in the reverse order of removal and replace any damaged clips and cable cushions.

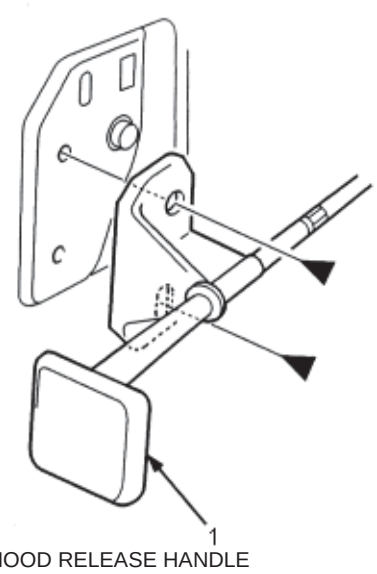
Hood Release Handle Replacement

NOTE: Take care not to scratch the body and related parts.

1. Remove the kick panel (**See Page** 20-41).
2. Remove the bolts, then remove the hood release handle.

▶ : Bolt locations, 2





1. HOOD RELEASE HANDLE

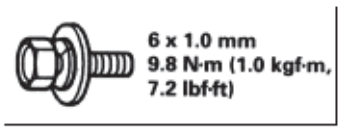
3. Install in the reverse order of removal and make sure the hood opens properly.

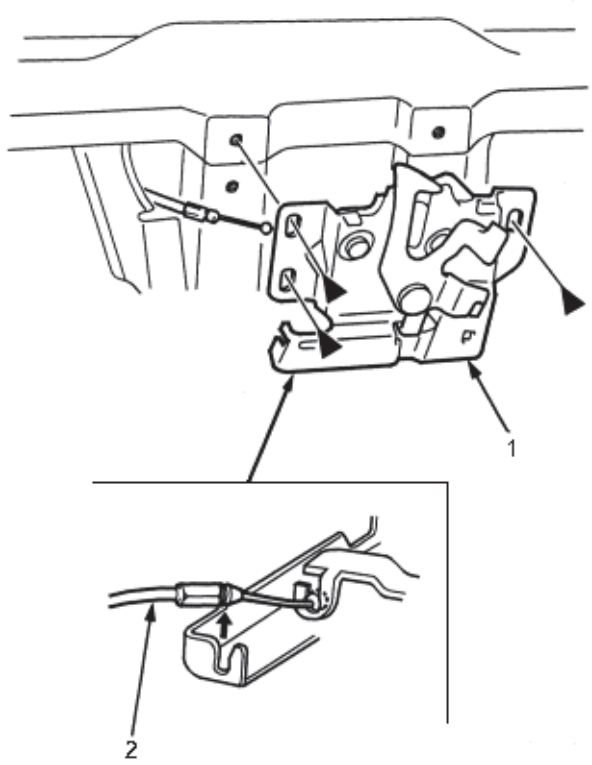
Hood Latch Replacement

NOTE: Take care not to scratch the body and related parts.

1. Remove the front bumper (**See Page** 20-64).
2. Remove the bolts, then remove the hood latch. Disconnect the hood opener cable form the hood latch.

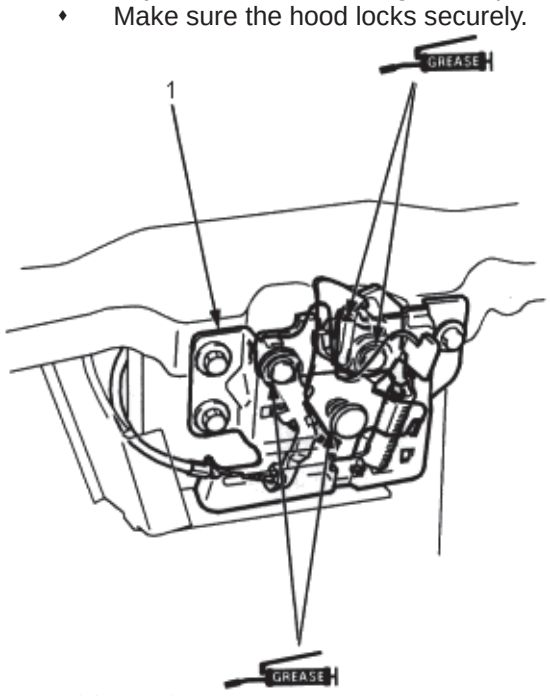
▶ : Bolt locations, 3





1. HOOD LATCH
2. HOOD OPENER CABLE

3. Install in the reverse order of removal and note these items:
   - Grease each location of the hood latch indicated by the arrows.
   - Make sure the hood opener cable is connected properly.
   - Adjust the hood latch alignment (**See Page** 20-68).
   - Make sure the hood locks securely.

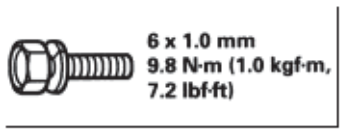


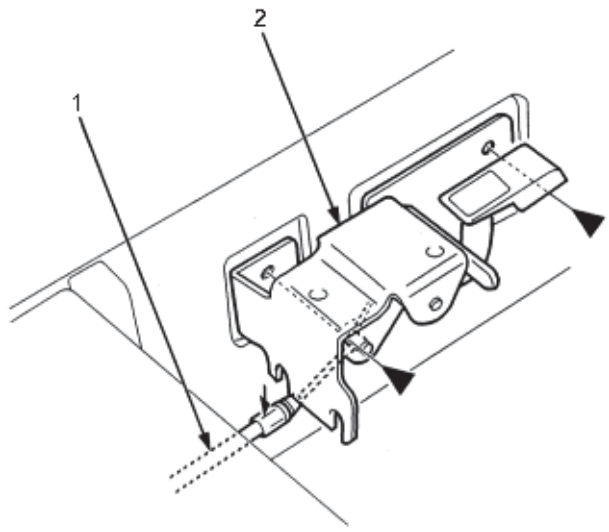
1. HOOD LATCH

NOTE: Take care not to scratch the related parts.

1. Remove:
   - Side trim (**See Page** 20-41).
   - Carpet (as necessary, (**See Page** 20-46).
2. Remove the bolts, then remove the fuel lid opener. Disconnect the fuel lid opener cable from the fuel lid opener.

▶ : Bolt locations, 2

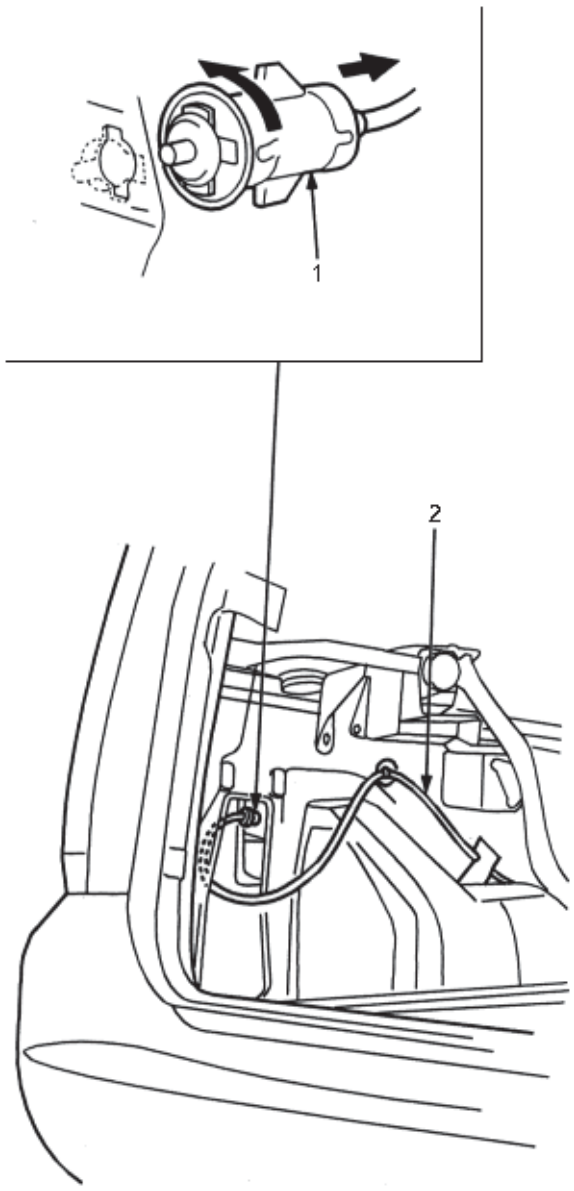




1. FUEL LID OPENER CABLE
2. FUEL LID OPENER

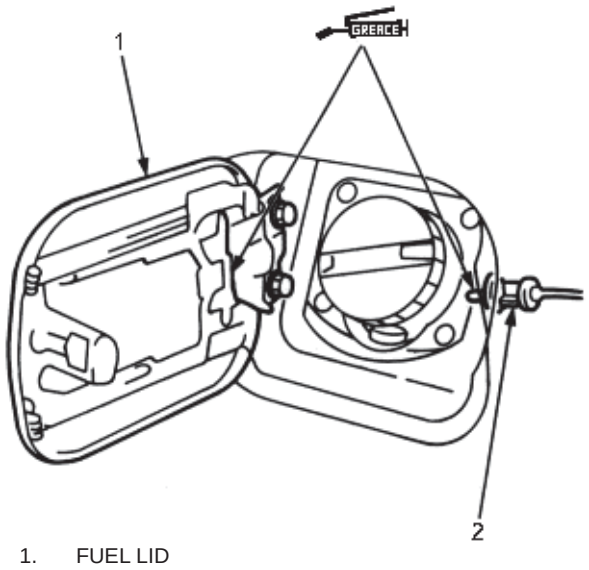
3. Install in the reverse order of removal and make sure the fuel lid opener cable is connected properly.

NOTE: Take care not to scratch the related parts.
1. Remove the left side trim (**See Page** 20-41).
2. Turn the fuel lid latch 90° and remove it.



1. FUEL LID LATCH
2. FUEL LID OPENER CABLE

3. Install in the reverse order of removal and note these items:
   - Grease each location indicted by the arrows.
   - Make sure the fuel lid opens properly and locks securely.



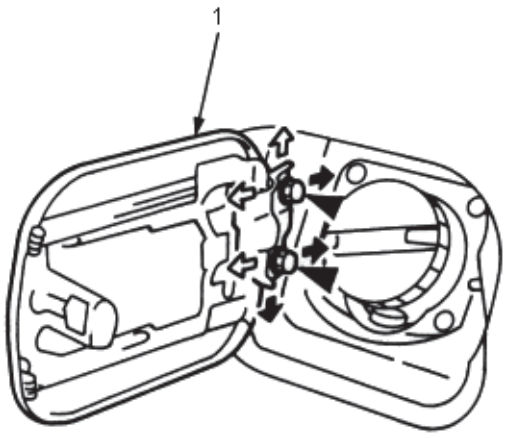
1. FUEL LID
2. FUEL LID LATCH

4. Check that the fuel lid fits flush against the body. If necessary, adjust it.

▶ : Bolt locations, 2



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)



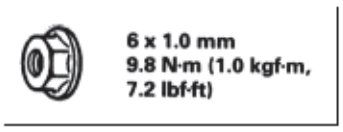
1. FUEL LID

Tailgate Handle Replacement (cont'd)

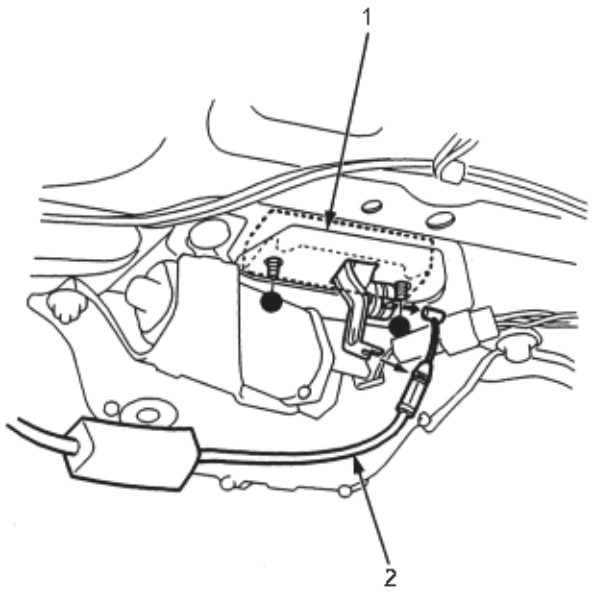
NOTE: Take care not to scratch the related parts.

1. Remove the rear license trim (**See Page** 20-76).
2. Remove the tailgate opener cable from the tailgate handle.
3. Remove the nuts, then remove the tailgate handle.

●: Nut locations, 2



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)



1. TAILGATE HANDLE
2. TAILGATE OPENER CABLE

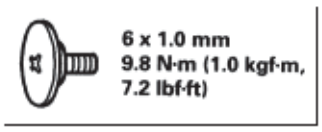
4. Install in the reverse order of removal, make sure the tailgate opener cable is connected properly.

Tailgate Latch Replacement

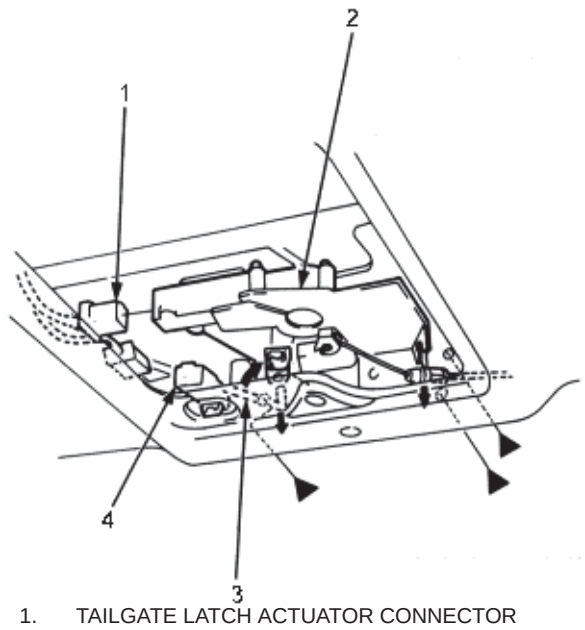
NOTE: Take care not to scratch the related parts.

1. Remove the tailgate trim **See Page** 20-77).
2. Remove the tailgate latch switch connector and tailgate latch actuator connector, then detach the cylinder rod.
3. Remove the bolts, then pull the tailgate latch.
4. Disconnect the tailgate opener cable, then remove the tailgate latch.

▶ : Bolt locations, 3



6 x 1.0 mm
9.8 N·m (1.0 kgf·m, 7.2 lbf·ft)

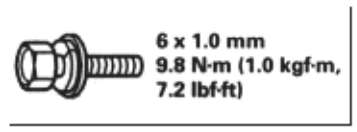


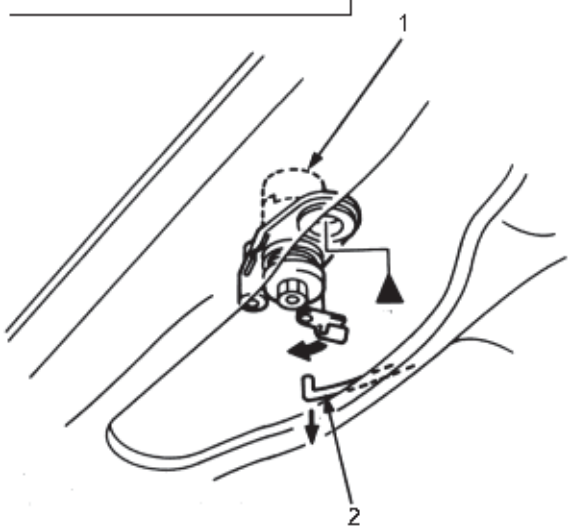
1. TAILGATE LATCH ACTUATOR CONNECTOR
2. TAILGATE LATCH
3. CYLINDER ROD
4. TAILGATE LATCH SWITCH CONNECTOR

NOTE: Take care not to scratch the related parts.

1. Remove the tailgate trim (**See Page** 20-77).
2. Disconnect the cylinder rod, then remove the bolt.

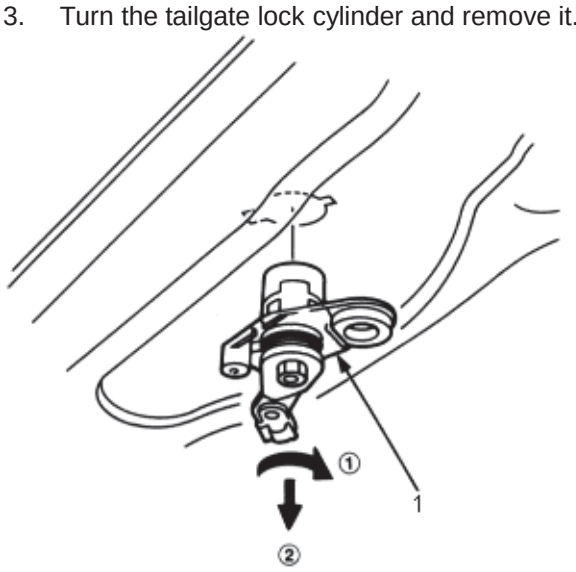
▶ : Bolt location, 1





1. TAILGATE LOCK CYLINDER
2. CYLINDER ROD

3. Turn the tailgate lock cylinder and remove it.

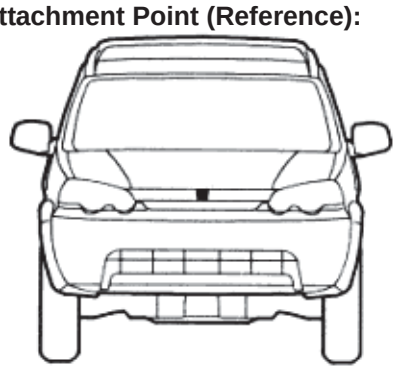


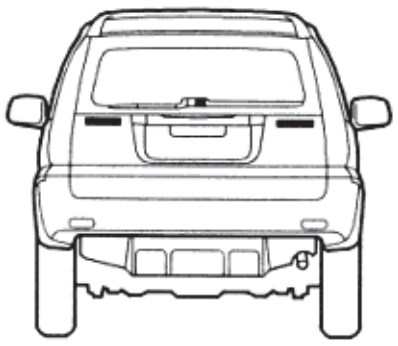
1 TAILGATE LOCK CYLINDER

4. Install in the reverse order of removal, make sure the cylinder cord is connected properly.

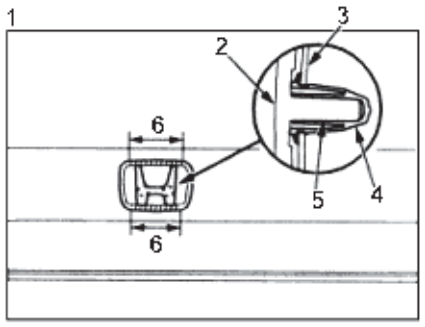
Apply the emblem where shown.
NOTE:
- Before applying, clean the tailgate surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease and water from getting on the surface.

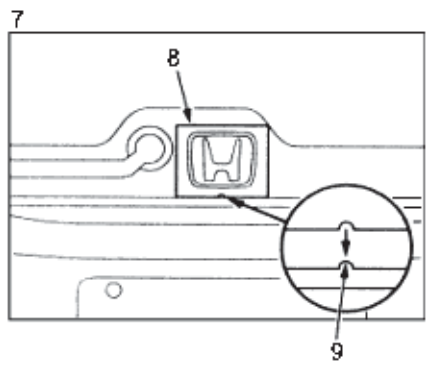
Attachment Point (Reference):

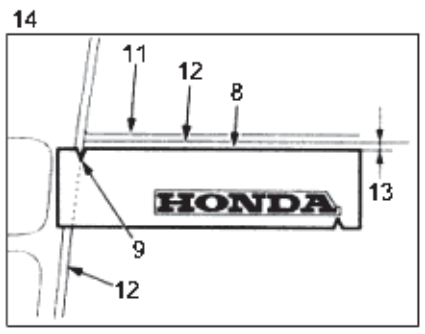


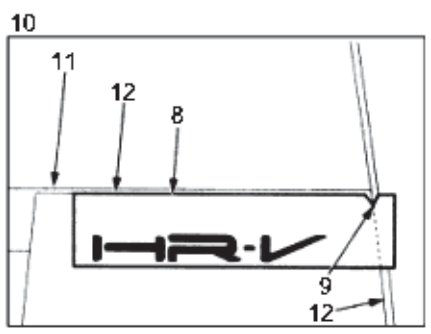


1. **FRONT H EMBLEM**
2. **EMBLEM**
3. **HOOD**
4. **CLIP**
5. **PIN**
6. **ADHESIVE TAPE**
7. **REAR H STICKER**
8. **APPLICATION TAPE**
9. **ALIGNMENT MARK**
10. **HR-V STICKER**
11. **Edge of the rear window.**
12. **Edge of the tailgate.**
13. **3 mm (0.12 in).**
14. **HONDA STICKER**



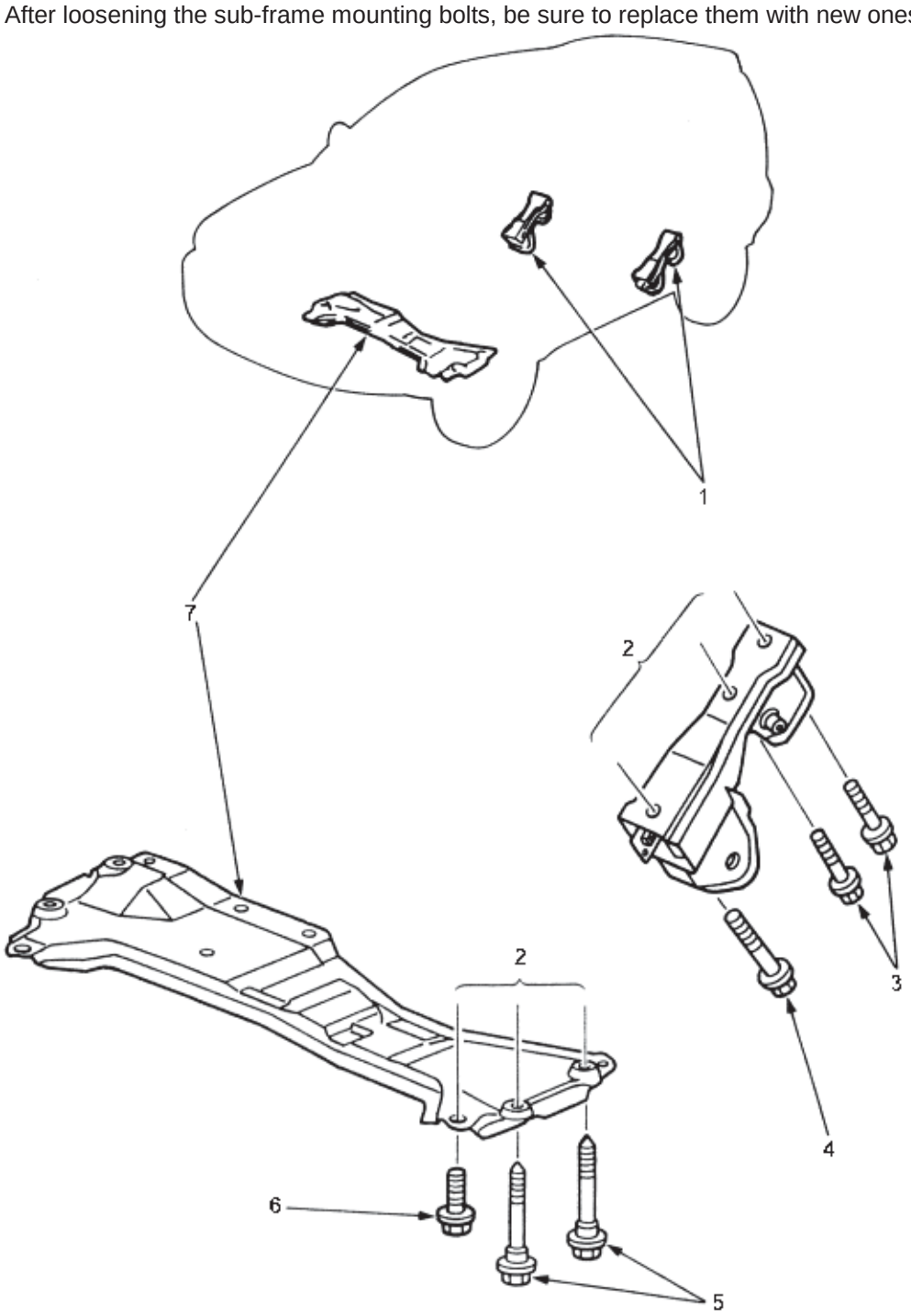






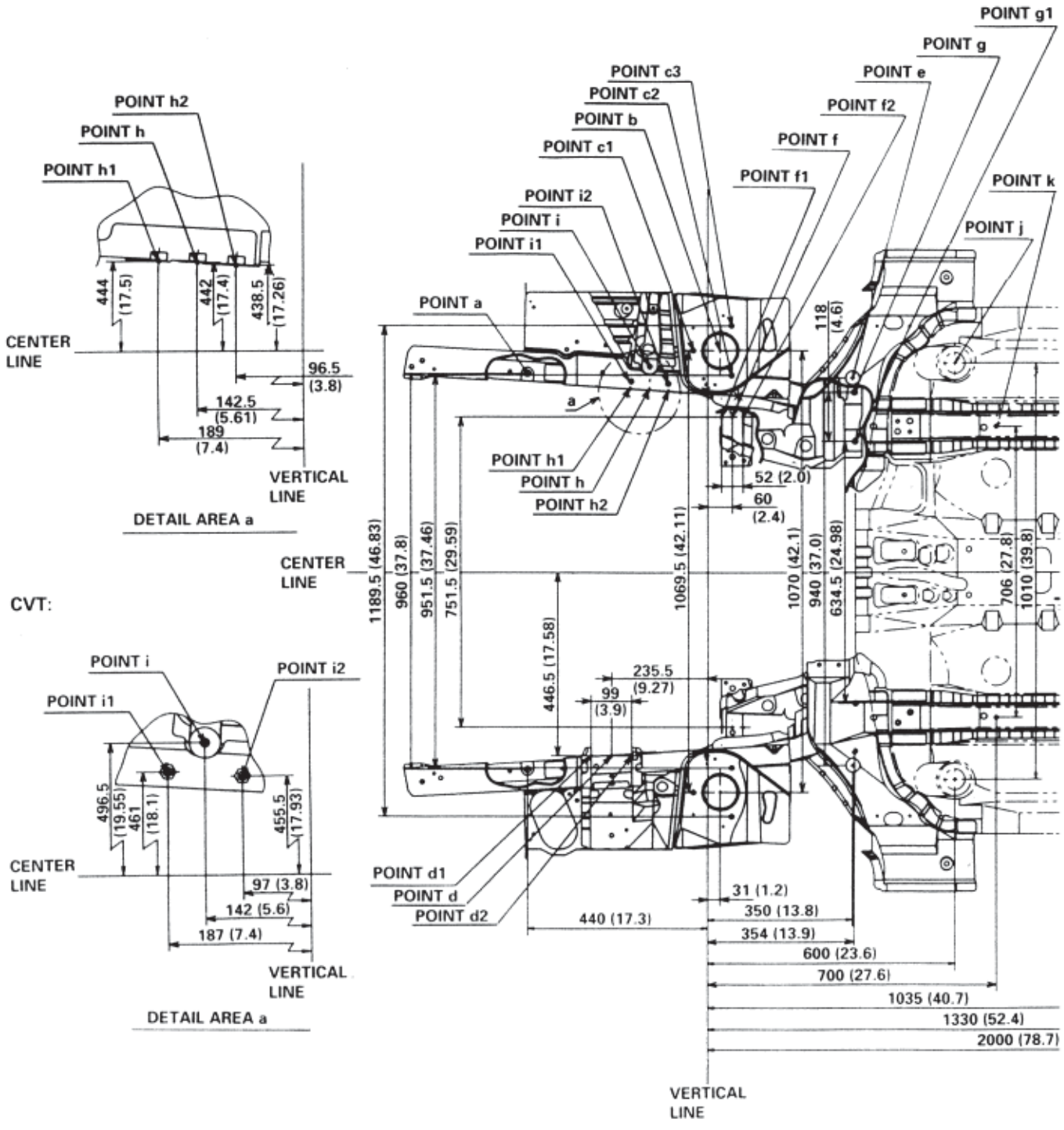
Sub-frame Torque

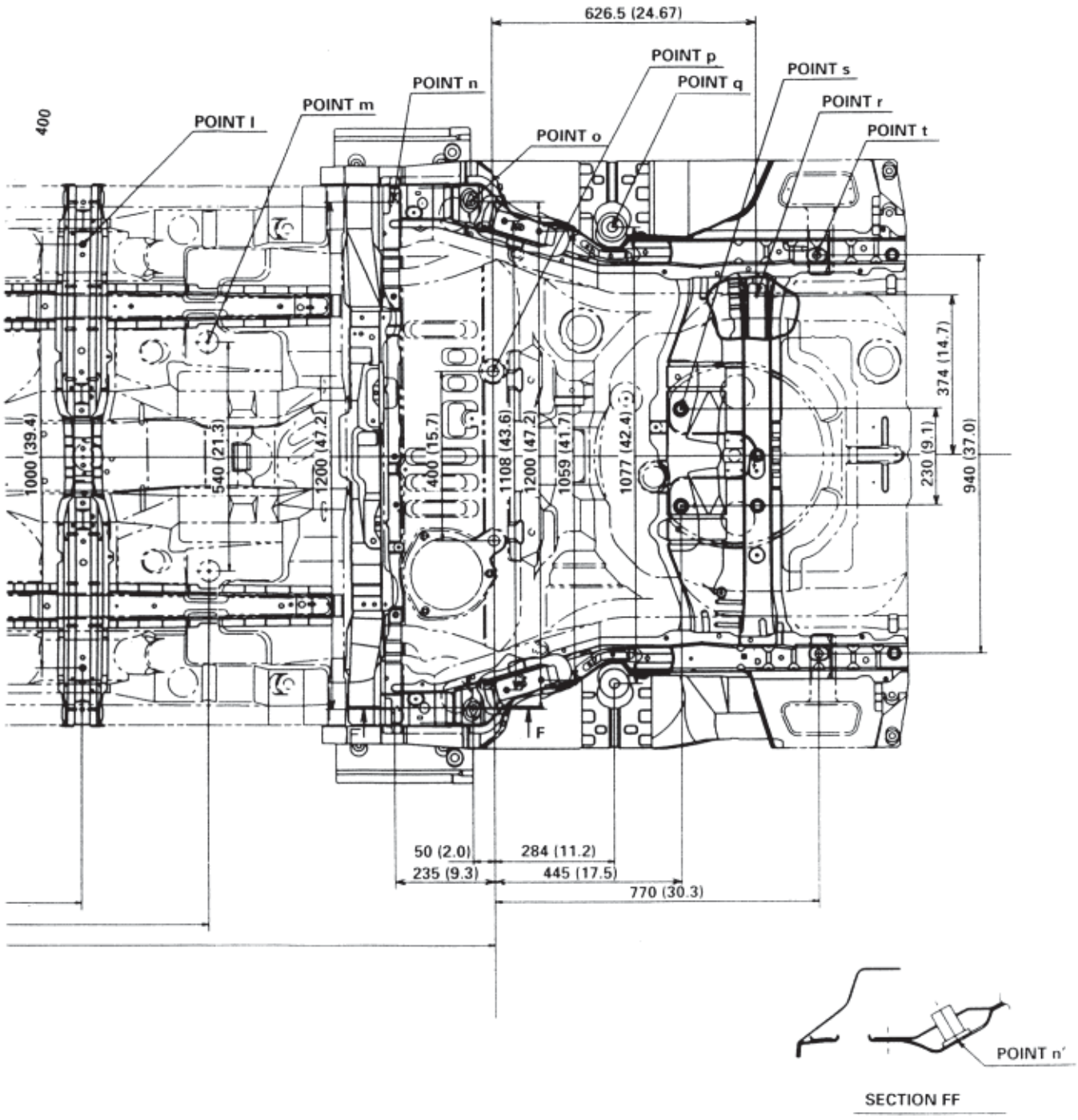
After loosening the sub-frame mounting bolts, be sure to replace them with new ones.



1. **LINK BRACKET**
2. To body
3. **SPECIAL BOLT, 12 x 1.5 mm**
   54 Nm (5.5 kgf/m, 40 lbf/ft)
4. **SPECIAL BOLT, 14 x 1.5 mm**
   74 Nm (7.5 kgf/m, 54 lbf/ft), Replace.
5. **SPECIAL BOLT, 12 x 1.25 mm**
   64 Nm (6.5 kgf/m, 47 lbf/ft)
6. **12 x 1.25 mm 64 Nm (6.5 kgf/m, 47 lbf/ft)**
7. **REAR BEAM**

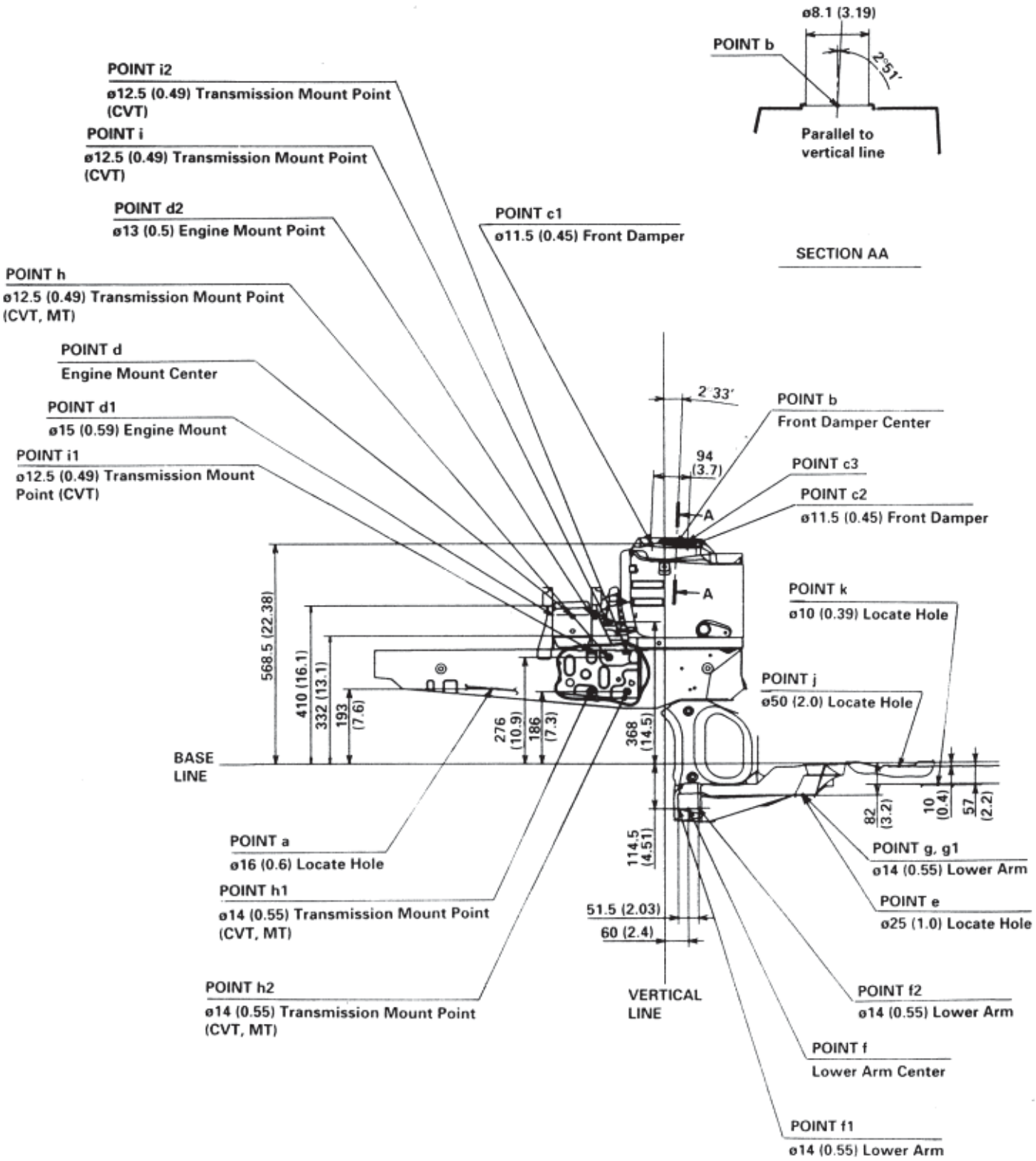
Top view:
Unit: mm (in)
Ø: Inner diameter
MT




626.5 (24.67)
POINT p
POINT q
POINT s
POINT r
POINT t
POINT n
POINT m
POINT l
POINT o
400
1000 (39.4)
540 (21.3)
1200 (47.2)
400 (15.7)
1108 (43.6)
1200 (47.2)
1059 (41.7)
1077 (42.4)
374 (14.7)
230 (9.1)
940 (37.0)
F
F
50 (2.0)
284 (11.2)
235 (9.3)
445 (17.5)
770 (30.3)
POINT n'

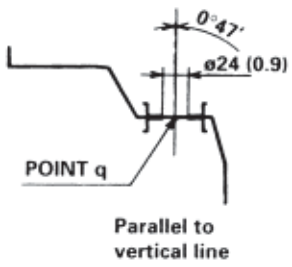
SECTION FF

Side view:
Unit: mm (in)
Ø: Inner diameter

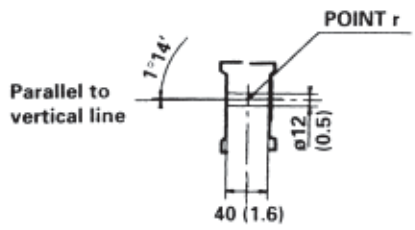




SECTION HH



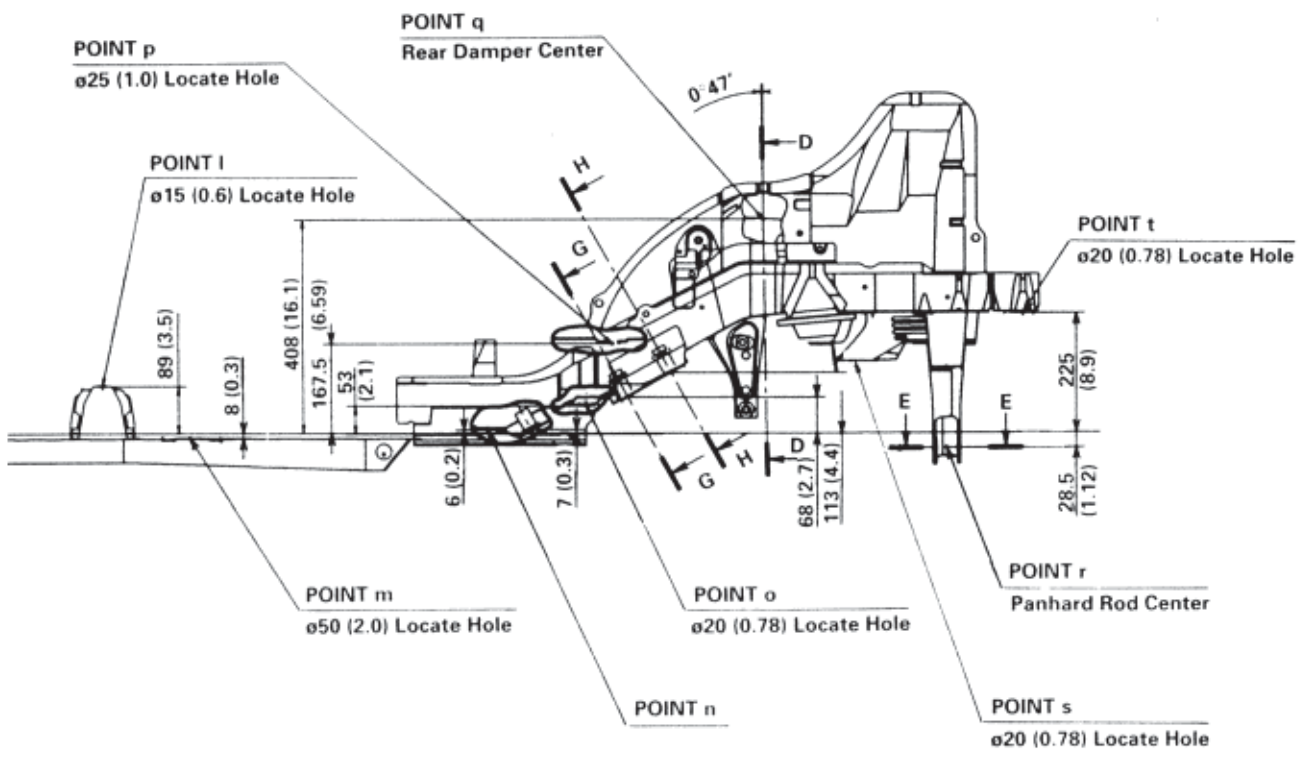
SECTION DD



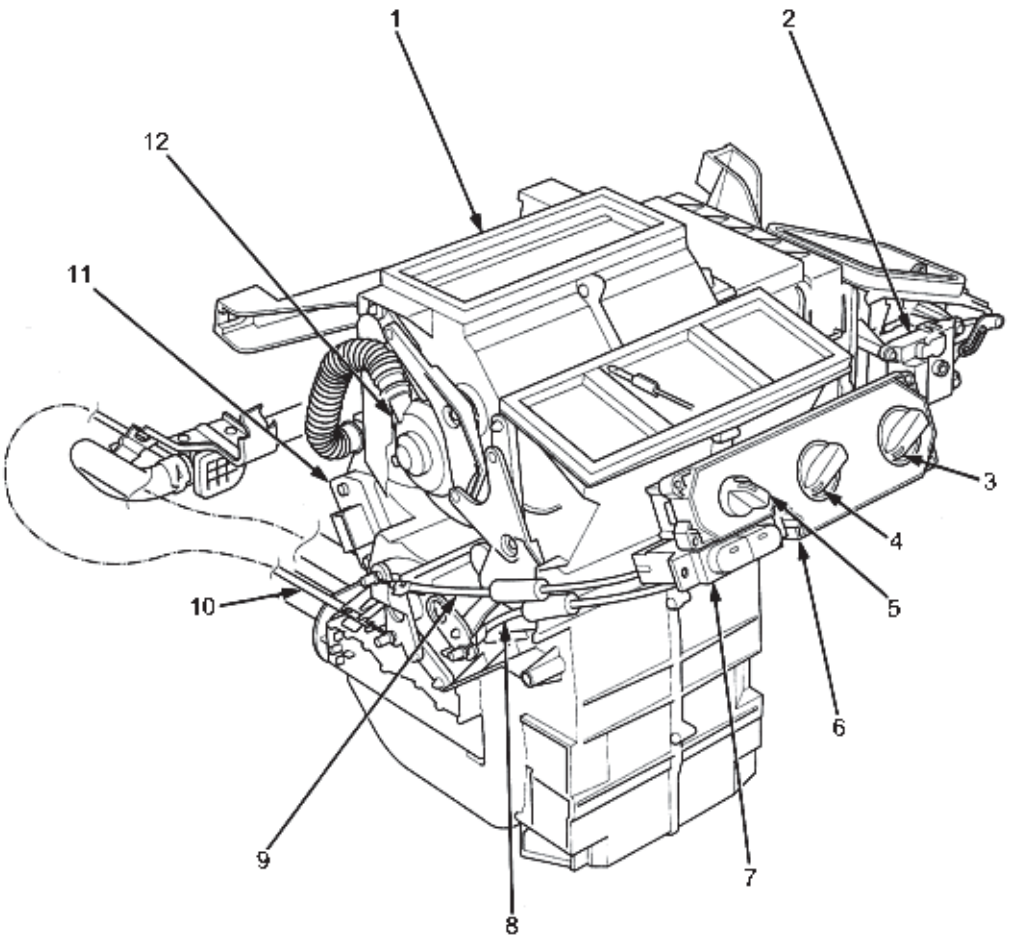
SECTION EE



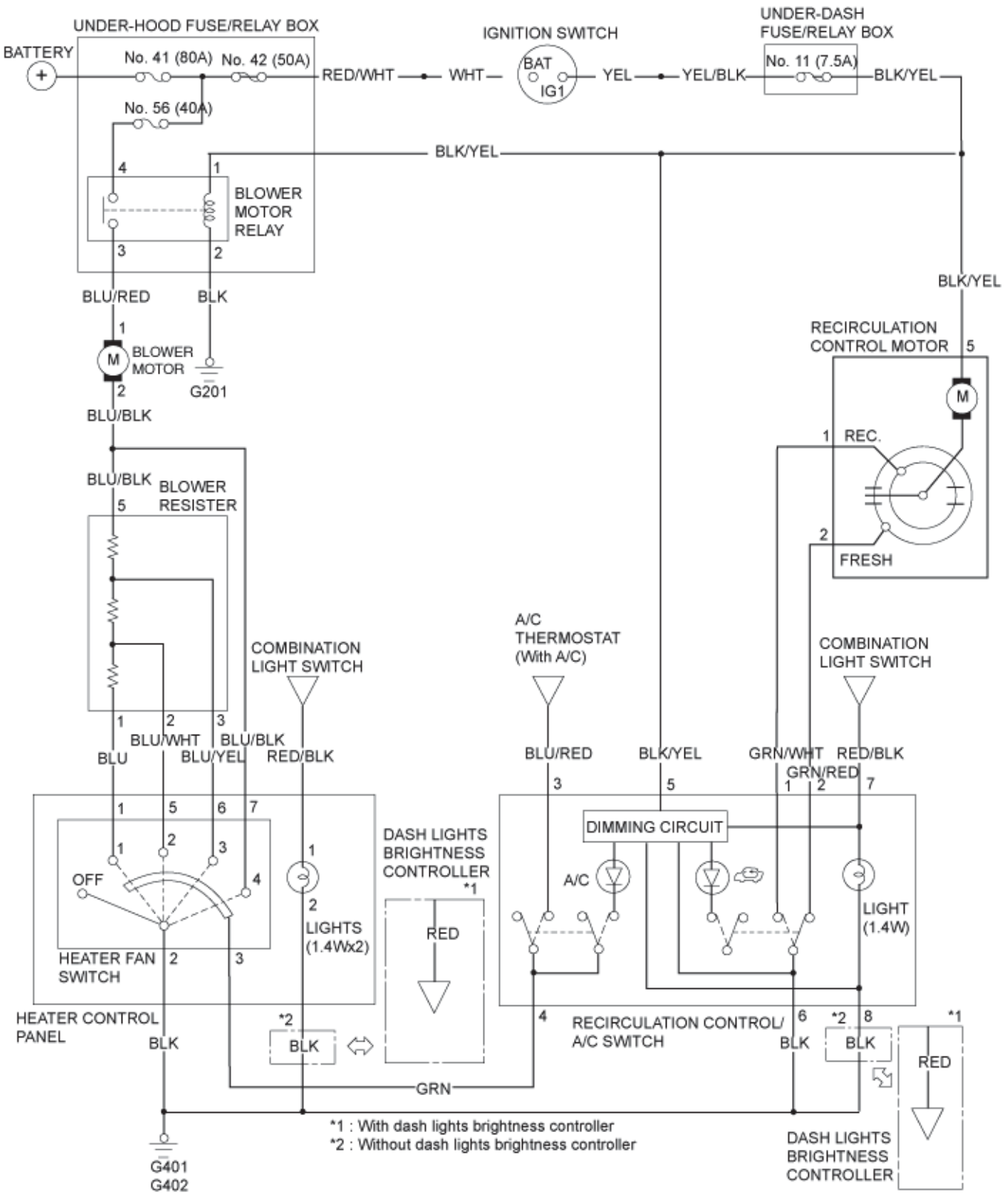
SECTION GG



SRS Components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE: LHD type is shown, RHD type is symmetrical.



1. **HEATER UNIT**
   Replacement, (**See Page** 21-16)
   HEATER CORE
   Replacement, (**See Page** 21-18)
2. **RECIRCULATION CONTROL MOTOR**
   Test, (**See Page** 21-13)
   Replacement, (**See Page** 21-13)
3. **MODE CONTROL DIAL**
4. **TEMPERATURE CONTROL DIAL**
5. **HEATER FAN SWITCH**
   Test, (**See Page** 21-11)
6. **HEATER CONTROL PANEL**
   Replacement, (**See Page** 21-14)
   Overhaul, (**See Page** 21-15)
7. **RECIRCULATION CONTROL/A/C SWITCH (With A/C)**
   Replacement, (**See Page** 21-12)
   Test, (**See Page** 21-12)
8. **MODE CONTROL CABLE**
   Adjustment, (**See Page** 21-19)
   Replacement, (**See Page** 21-15)
9. **AIR MIX CONTROL CABLE**
   Adjustment, (**See Page** 21-20)
   Replacement, (**See Page** 21-15)
10. **HEATER VALVE CABLE**
    Adjustment, (**See Page** 21-20)
11. **BLOWER RESISTOR**
    Test, (**See Page** 21-5)
12. **BLOWER MOTOR**
    Test, (**See Page** 21-6)
    Replacement, (**See Page** 21-19)


UNDER-HOOD FUSE/RELAY BOX
BATTERY
No. 41 (80A)
No. 42 (50A)
No. 56 (40A)
IGNITION SWITCH
BAT
IG1
UNDER-DASH FUSE/RELAY BOX
No. 11 (7.5A)
RED/WHT
WHT
YEL
YEL/BLK
BLK/YEL
BLOWER MOTOR RELAY
BLU/RED
BLK
BLOWER MOTOR
G201
BLU/BLK
BLOWER RESISTER
RECIRCULATION CONTROL MOTOR
REC.
FRESH
A/C THERMOSTAT (With A/C)
COMBINATION LIGHT SWITCH
BLU
BLU/WHT
BLU/YEL
BLU/BLK
RED/BLK
GRN/WHT
GRN/RED
OFF
HEATER FAN SWITCH
LIGHTS (1.4Wx2)
DASH LIGHTS BRIGHTNESS CONTROLLER *1
RED
DIMMING CIRCUIT
A/C
LIGHT (1.4W)
HEATER CONTROL PANEL
RECIRCULATION CONTROL/ A/C SWITCH
GRN
*1 : With dash lights brightness controller
*2 : Without dash lights brightness controller
G401
G402

Note the following items before troubleshooting a symptom:

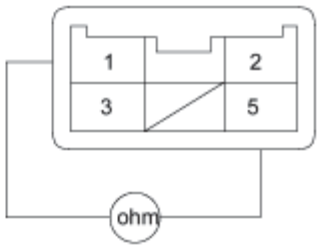
- Check the engine coolant level, and allow the engine to warm up before troubleshooting.
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, use a digital circuit tester when testing.
- Before performing any troubleshooting procedures check:
  - Fuse No. 56 (40 A) in the under-hood fuse/relay box, and No. 11 (7.5 A) in the under-dash fuse/relay box
  - Grounds No. G201, G401, G402
  - Cleanliness and tightness of all connectors

Symptom		Remedy
Hot air flow is low	Blower motor runs, but one or more speeds are inoperative Blower runs properly	Perform the procedures in the flowchart (**See Page** 21-5). Check for the following: • Clogged heater duct • Clogged heater outlet • Incorrect door position
No hot air flow	Blower motor does not run at all Blower motor runs	Perform the procedures in the flowchart (**See Page** 21-6) Check for the following: • Clogged heater duct • Clogged heater outlet • Clogged heater valve • Faulty air mix door • Heater valve cable adjustment (**See Page** 21-20) • Air mix control cable adjustment (**See Page** 21-20) • Faulty cooling system thermostat (see section 10) • Clogged evaporator (with air conditioning) • Frozen evaporator (with air conditioning)
Recirculation control doors do not change between fresh and recirculate		Perform the procedures in the flowchart (**See Page** 21-9)

Blower motor runs, but one or more speeds are inoperative.

Check the blower resistor:
1. Disconnect the blower resistor 5P connector.
2. Measure the resistance between the No. 1 and No. 5 terminals of the blower resistor.

BLOWER RESISTOR



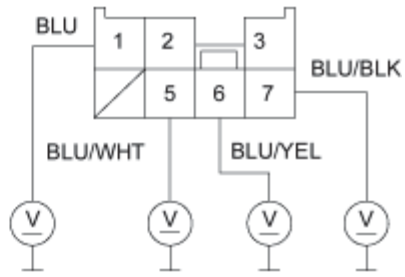
Is there approx. 3 - 3.5 ohms?

NO → **Replace the blower resistor.**

YES

Check for an open in the wires:
1. Reconnect the blower resistor 5P connector.
2. Disconnect the heater fan switch 7P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 1, 5, 6 and 7 terminals of the heater fan switch 7P connector and body ground individually.

HEATER FAN SWITCH 7P CONNECTOR



Wire side of female terminals

Is there battery voltage?

NO → **Repair open in the wire(s) between the blower resistor and the heater fan switch.**

YES

Replace the heater fan switch.

Blower motor does not run at all.

Check the No. 56 (40 A) fuse in the under-hood fuse/relay box, and the No.11 (7.5 A) fuse in the under-dash fuse/relay box.

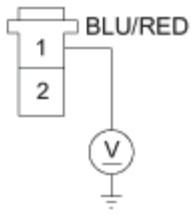
Are the fuses OK?

NO → **Replace the fuse(s), and recheck.**

YES

Check the blower motor power supply circuit:
1. Disconnect the blower motor 2P connector.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 1 terminal of the blower motor 2P connector and body ground.

BLOWER MOTOR 2P CONNECTOR



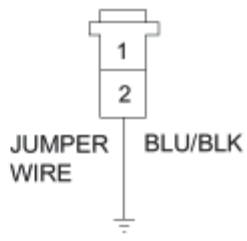
Wire side of female terminals

Is there battery voltage?

NO → To page 21-7

YES

Check the blower motor:
1. Turn the ignition switch OFF.
2. Reconnect the blower motor 2P connector.
3. Connect the No. 2 terminal of the blower motor 2P connector to body ground with a jumper wire
4. Turn the ignition switch ON (II).



Does the blower motor run?

NO → **Replace the blower motor.**

YES

To page 21-8

From page 21-6

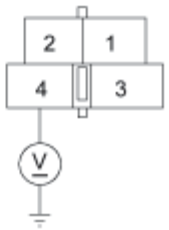
Check the blower motor relay:
1. Turn the ignition switch OFF.
2. Remove the blower motor relay from the under-hood fuse/relay box, and test it (see page 21-11).

Is the relay OK?

NO → **Replace the blower motor relay.**

YES

BLOWER MOTOR RELAY 4P SOCKET



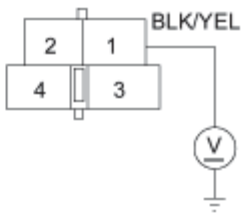
Check the under-hood fuse/relay box:
Measure the voltage between the No. 4 terminal of the blower motor relay 4P socket and body ground.

Is there battery voltage?

NO → **Replace the under-hood fuse/ relay box.**

YES

Check for an open in the wire:
1. Turn the ignition switch ON (II).
2. Measure the voltage between the No. 1 terminal of the blower motor relay 4P socket and body ground.

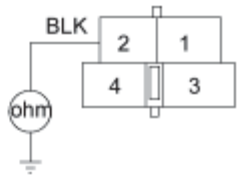


Is there battery voltage?

NO → **Repair open in the wire between the No. 11 fuse in the under-dash fuse/relay box and the blower motor relay.**

YES

Check for an open in the wire:
1. Turn the ignition switch OFF.
2. Check for continuity between the No. 2 terminal of the blower motor relay 4P socket and body ground.



Is there continuity?

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 G201.**

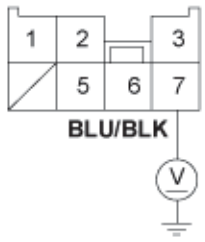
YES

Repair open in the BLU/RED wire between the blower motor relay and the blower motor.

From page 21-6

Check for an open in the wire:
1. Turn the ignition switch OFF, and disconnect the jumper wire.
2. Disconnect the heater fan switch 7P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 7 terminal of the heater fan switch 7P connector and body ground.

HEATER FAN SWITCH 7P CONNECTOR



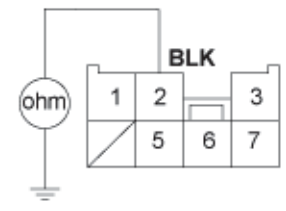
Wire side of female terminals

Is there battery voltage?

NO → **Repair open in the wire between the blower motor and the heater fan switch.**

YES

Check for an open in the wire:
1. Turn the ignition switch OFF.
2. Check for continuity between the No. 2 terminal of the heater fan switch 7P connector and body ground.

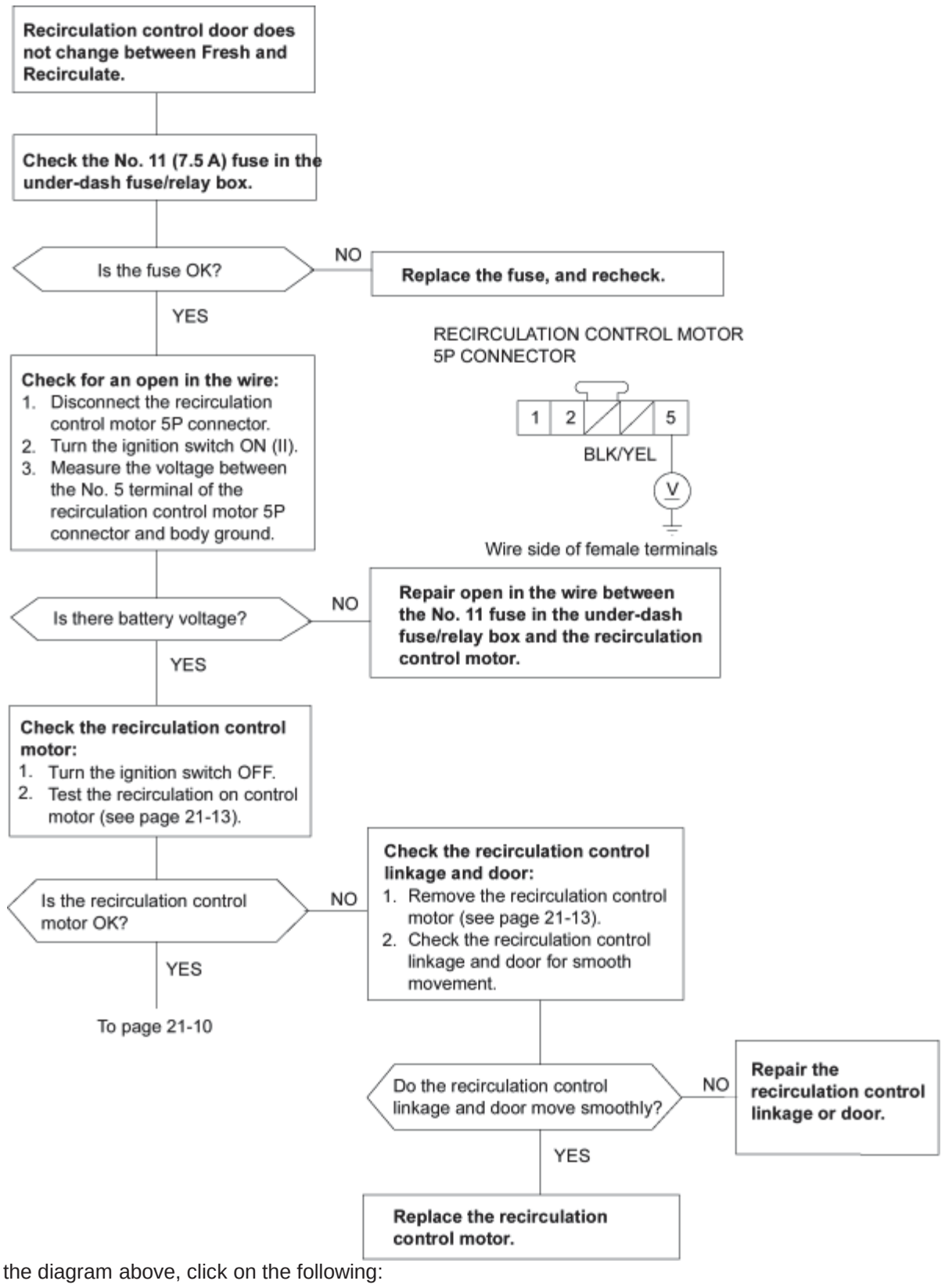


Is there continuity?

NO → **Check for an open in the wire between the heater fan switch and body ground. If the wire is OK, check for poor ground at G401 and G402.**

YES

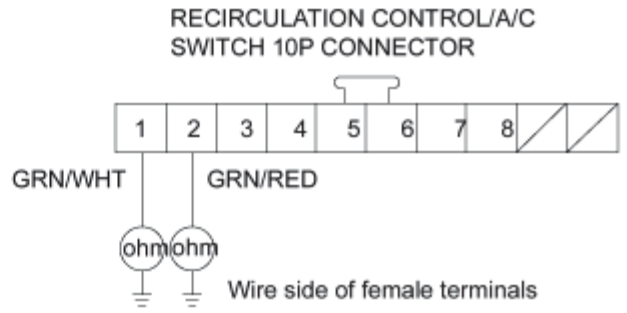
Replace the heater fan switch.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 21-13)

From page 21-9

Check for a short in the wires:
1. Disconnect the recirculation control/A/C switch 10P connector.
2. Check for continuity between the No. 1 and No. 2 terminals of the recirculation control/A/C switch 10P connector and body ground individually.



Is there continuity?

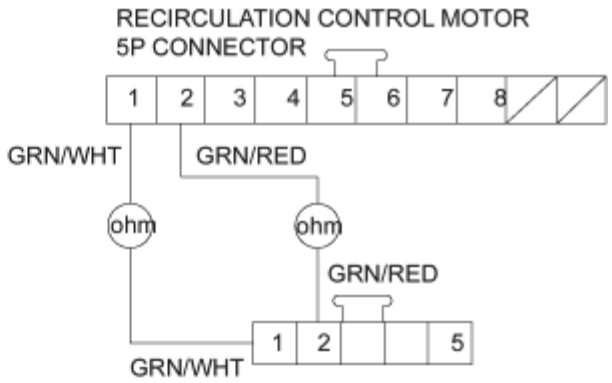
YES

Repair short in the wire(s) between the recirculation control/A/C switch and the recirculation control motor.

NO

Check for an open in the wires:
Check for continuity between the following terminals of the recirculation control/A/C switch 10P connector and the recirculation control motor 5P connector.

10P:	5P:
No. 1 -	No. 1
No. 2 -	No. 2



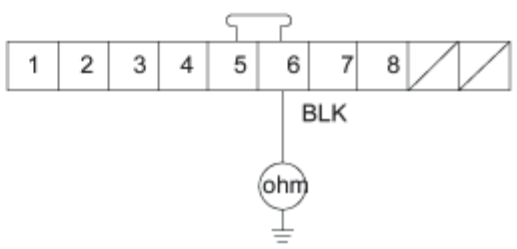
Is there continuity?

NO

Repair open in the wire(s) between the recirculation control/A/C switch and the recirculation control motor.

YES

Check for an open in the wire:
Check for continuity between the No. 6 terminal of the recirculation control/A/C switch 10P connector and body ground.



Is there continuity?

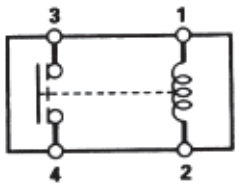
NO

Check for an open in the wire between the recirculation control/A/C switch and body ground. If the wire is OK, check for poor ground at G401 and G402.

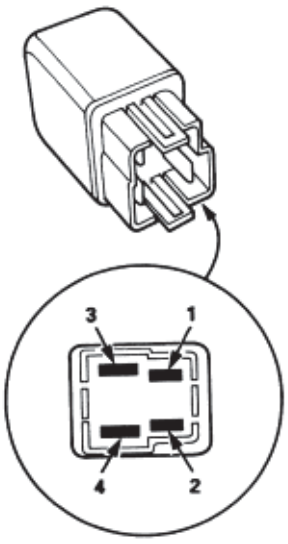
YES

Replace the recirculation control/A/C switch.

There should be continuity between the No. 3 and No. 4 terminals when power and ground are connected to the No.1 and No. 2 terminals, and there should be no continuity when power is disconnected.

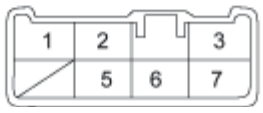


- Blower motor relay



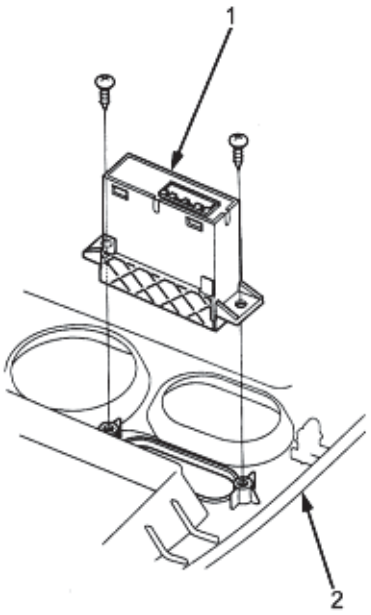
Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1	2	3		5	6	7
OFF							
1	○	○	○				
2		○	○		○		
3		○	○			○	
4		○	○				○



NOTE: LHD type is shown, RHD type is symmetrical.

1. Remove the centre panel (see section 20)
2. Remove the self-tapping screws and the recirculation control/A/C switch from the centre panel.

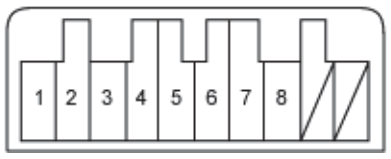


1. RECIRCULATION CONTROL/A/C SWITCH
2. CENTRE PANEL

3. Install in the reverse order of removal. After installation, operate the recirculation control/A/C switch to see whether it works properly.

Check for continuity between the terminals in each switch position according to the table.

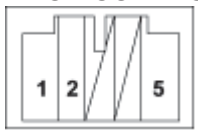
Position		Terminal 1	2	3	4	6	7		8
	Recirculate	○				○			
	Fresh		○			○			
A/C	ON			○	○		○	ⓘ	○
	OFF								



Test

1. Disconnect the 5P connector from the recirculation control motor.
2. Connect battery power to the No. 5 terminal and ground the No. 1 and No. 2 terminals; the recirculation control motor should run smoothly. To avoid damaging the recirculation control motor, do not reverse power and ground.

RECIRCULATION CONTROL MOTOR

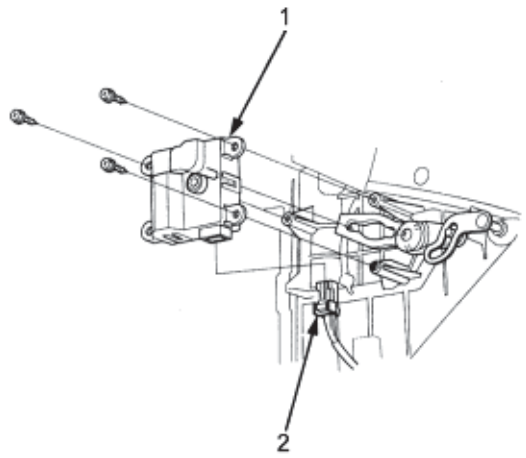


3. Disconnect the No. 1 or No. 2 terminals from ground; the recirculation control motor should stop at Fresh or Recirculate. Don't cycle the recirculation control motor for along time.
4. If the recirculation control motor does not run in step 2, remove it, then check the recirculation control linkage and door for smooth movement. If they move smoothly, replace the recirculation control motor.

Replacement

NOTE: LHD type is shown, RHD is symmetrical.

1. Disconnect the 5P connector from the recirculation control motor. Remove the self-tapping screws and the recirculation control motor.

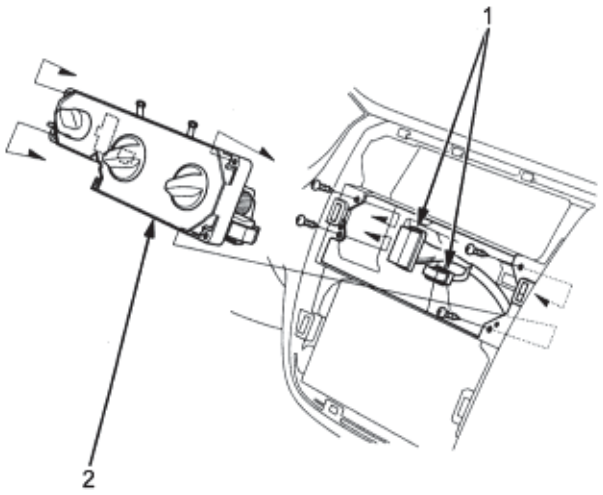


1. RECIRCULATION CONTROL MOTOR
2. 5P CONNECTOR

2. Install in the reverse order of removal. After installation, make sure the recirculation control motor runs smoothly.

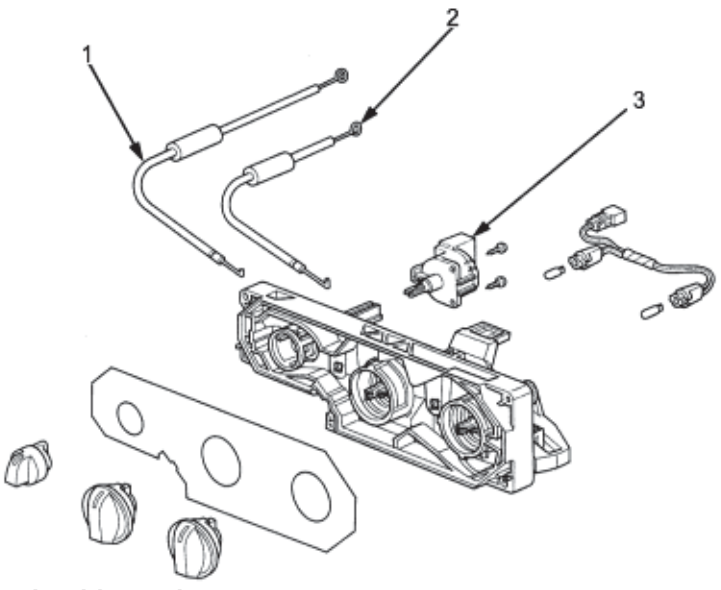
NOTE: LHD type is shown, RHD type is symmetrical.

1. Disconnect the air mix control cable and the mode control cable from the heater unit (**See Page** 21-20).
2. Remove the centre panel (see section 20)
3. Remove the self-tapping screws, then disconnect the connectors, and remove the heater control panel.



1. CONNECTORS
2. HEATER CONTROL PANEL

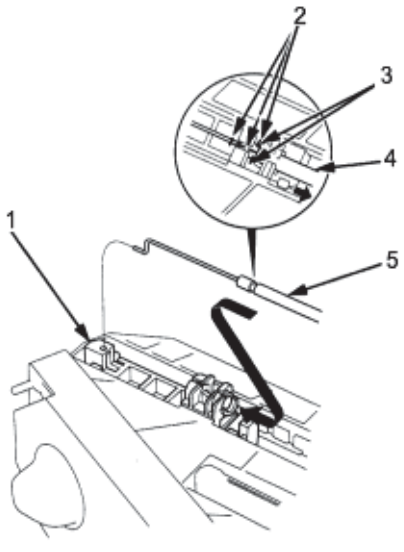
4. Install in the reverse order of removal, and note these items:
   - Adjust the mode control (**See Page** 21-19) and the air mix control cable (**See Page** 21-20). If necessary, adjust the heater valve cable (**See Page** 21-20).
   - After installation, operate the heater control panel to see whether it works properly.



1. **AIR MIX CONTROL CABLE**
2. **MODE CONTROL CABLE**
3. **HEATER FAN SWITCH**
   Test, (**See Page** 21-11)

Control Cable Replacement

1. Cut the inner cable on the slider side of the cable holder, then remove both pieces of the inner cable.

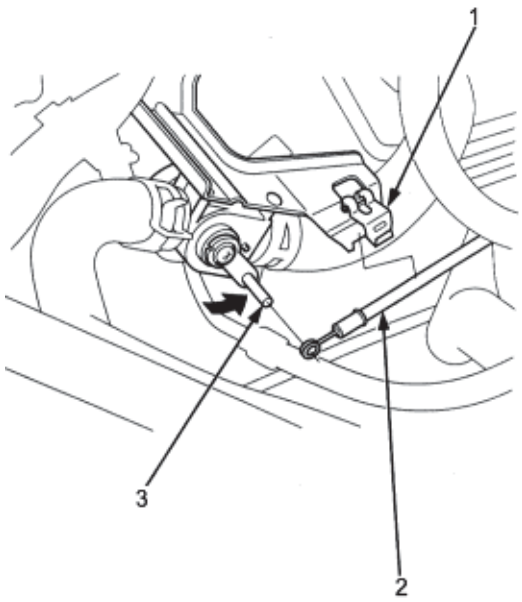


1. **SLIDER**
2. **CUT**
3. **STOPS**
4. **CABLE HOUSING**
5. **CONTROL CABLE**

2. Using a sharp knife, cut completely through the end of the cable housing at the two locations.
3. Slide the large section of the cable housing out of the cable holder, being careful not to damage the cable stops.
4. Carefully remove the cut pieces of cable housing with a small flat tip screwdriver.
5. Hook the tip of the new control cable to the slider, then push the cable housing into the cable holder until it locks into place.
   NOTE: After assembly, check that the control dial turns smoothly through the full stroke from right to left.

SRS components are located in this area. review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE: LHD type is shown, RHD type is symmetrical.

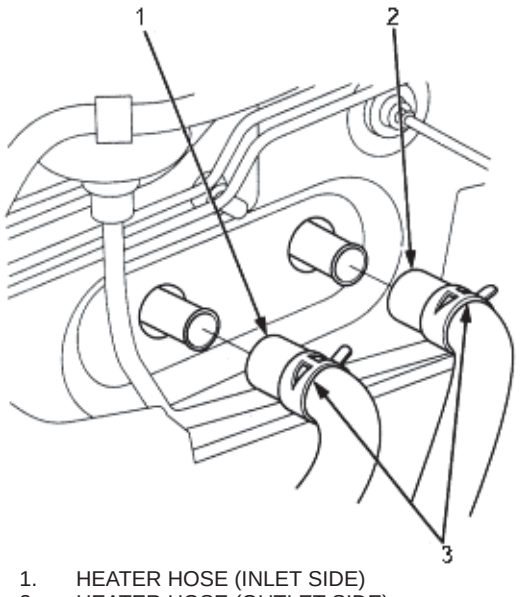
1. Disconnect the negative cable from the battery.
2. From under the hood, open the cable clamp, then disconnect the heater valve cable from the heater valve arm. Turn the heater valve arm to the fully opened positioned as shown.



1. CLAMP
2. HEATER VALVE CABLE
3. HEATER VALVE ARM

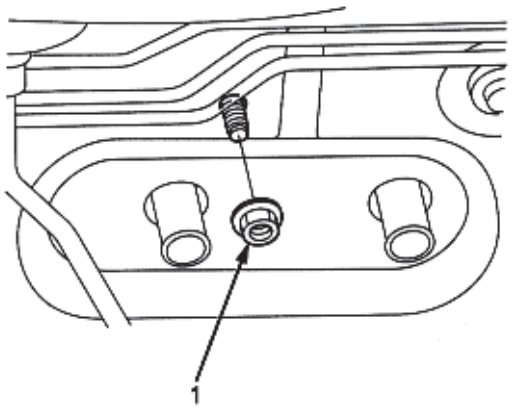
3. When the engine is cool, drain the engine coolant from the radiator (see section 10).

4. Slide the clamps back, then disconnect the inlet and outlet heater hoses from the heater unit. 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.



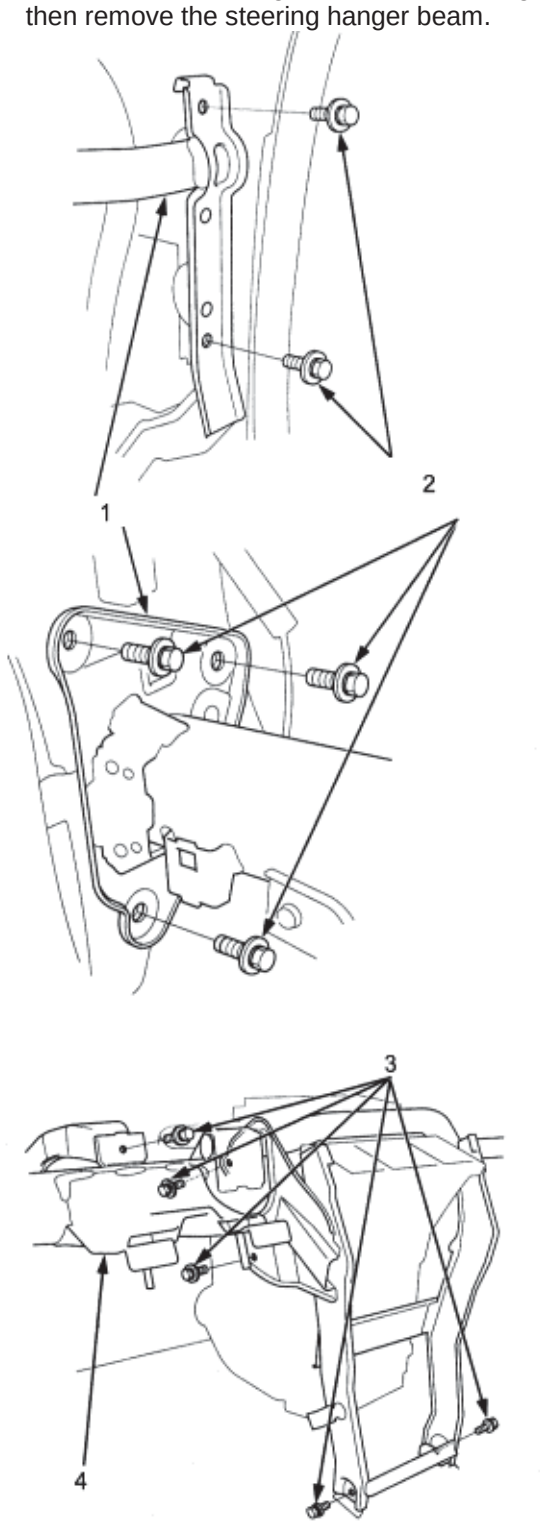
1. HEATER HOSE (INLET SIDE)
2. HEATER HOSE (OUTLET SIDE)
3. CLAMPS

5. Remove the mounting nut from the heater unit. Take care not to damage or bend the fuel and brake lines, etc.



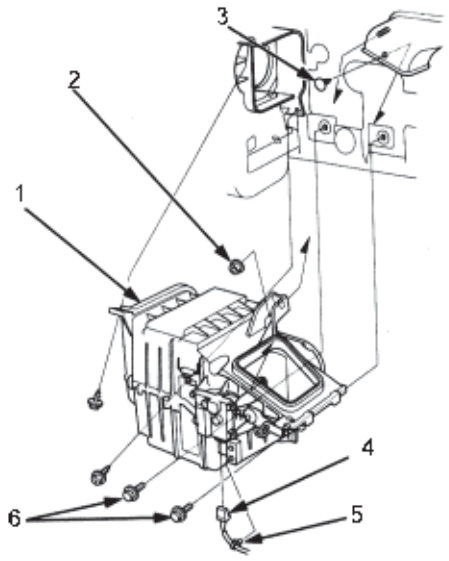
1. 8 x 1.25 mm, 22 Nm (22. kgf/m, 16 lbf/ft)

6. Remove the dashboard (see section 20).
7. Remove the mounting bolts in the following sequence, then remove the steering hanger beam.



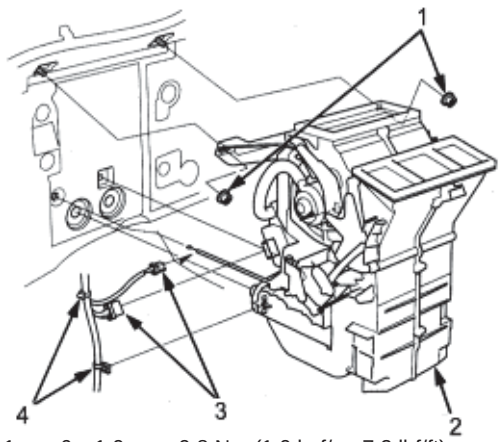
1. STEERING HANGER BEAM
2. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
4. STEERING HANGER BEAM

8. With air conditioning; remove the evaporator (**See Page** 22-26).
9. Without air conditioning; disconnect the connector from the recirculation control motor, then remove the clip, the wire harness clip, the self-tapping screws, the mounting bolts, the mounting nut and the heater duct.



1. HEATER DUCT
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. CLIP
4. CONNECTOR
5. CLIP
6. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

10. Disconnect the connectors from the blower motor and the blower resistor, then remove the wire harness clips, the mounting nuts and the heater unit.

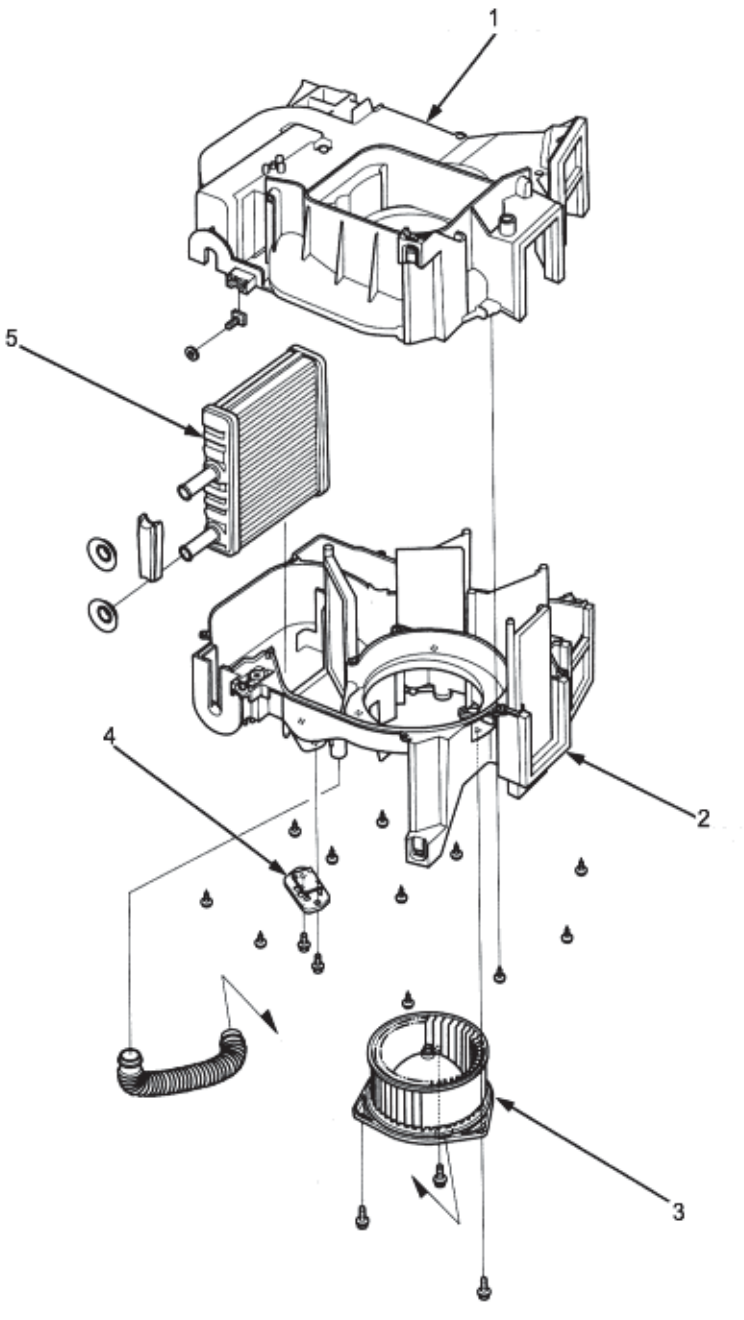


1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. HEATER UNIT
3. CONNECTORS
4. CLIPS

11. Install 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 section 10).
    - Adjust the mode control cable (**See Page** 21-19), and adjust the air mix control cable and the heater valve cable (**See Page** 21-20).
    - Make sure that there are is no air leakage.

NOTE:
- LHD type is shown, RHD type is symmetrical.
- The heater core can be replaced without removing the blower motor and the blower resistor.

1. Remove the heater unit (see previous page).
2. Remove the self-tapping screws, then carefully separate the housing B from the housing A. Be careful no to bend the inlet and outlet pipes, and remove the heater core.

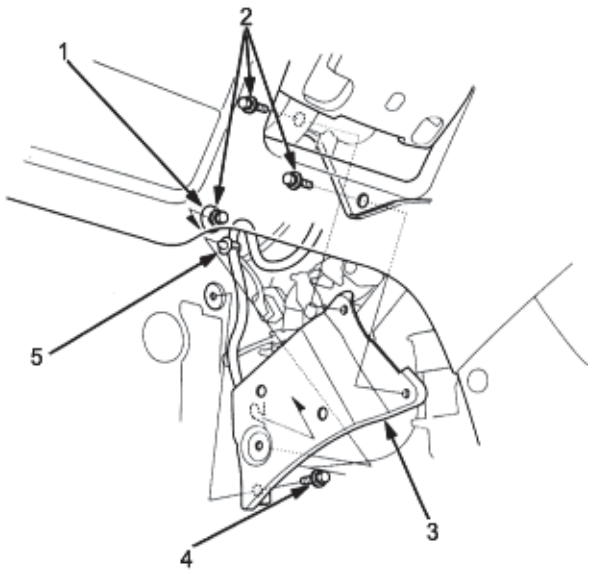


3. Reassemble in the reverse order of disassembly and note these items:
   - Make sure that there are is no air leakage.
   - After reassembly, make sure that the mode control linkage and doors and the air mix control linkage and the door moves smoothly.

1. **HOUSING B**
2. **HOUSING A**
3. **BLOWER MOTOR**
   Test, (**See Page** 21-7)
4. **BLOWER RESISTOR**
   Test, (**See Page** 21-6)
5. **HEATER CORE**

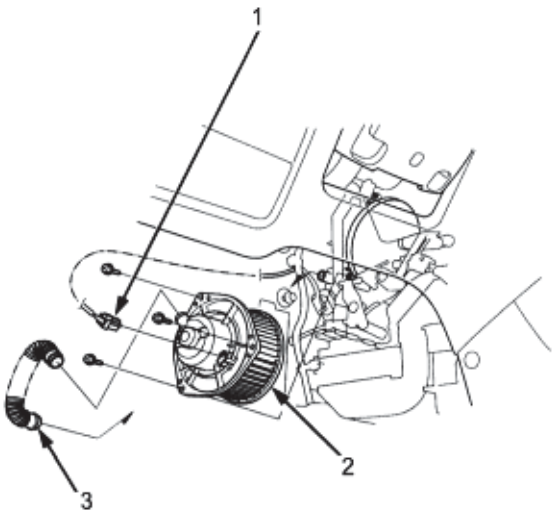
NOTE: LHD type is shown, RHD type is symmetrical.

1. Loosen the one mounting bolt as shown, and remove the wire harness clip, the mounting bolts and the steering hanger beam.



1. Loosen
2. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
3. STEERING HANGER BEAM PLATE
4. 8 x 1.25 mm, 22 Nm (2.2 kgf/m, 16 lbf/ft)
5. CLIP

2. Disconnect the connector from the blower motor, then remove the air hose, the self-tapping screws and the blower motor.

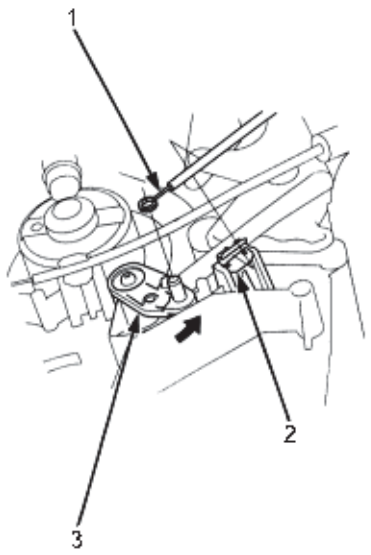


1. CONNECTOR
2. BLOWER MOTOR
3. AIR HOSE

3. Install in the reverse order of removal. make sure that there is no air leakage.

NOTE: LHD type is shown, RHD type is symmetrical.

1. From under the dash, disconnect the mode control cable housing from the clamp, and disconnect the mode control cable from the mode control linkage.



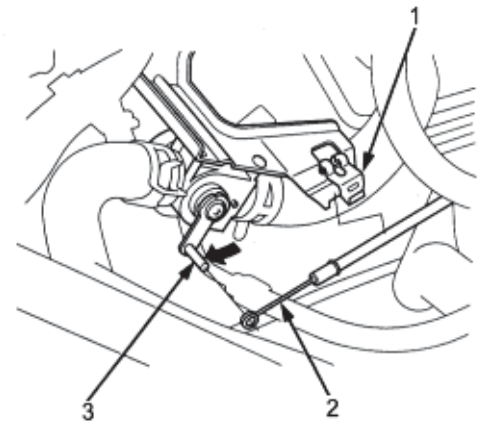
1. MODE CONTROL CABLE
2. CLAMP
3. MODE CONTROL LINKAGE

2. Set the mode control dial to VENT.
3. Turn the mode control linkage fully counter-clockwise as shown above and hold it. Attach the mode control cable to the mode control linkage, then snap the mode control cable housing into the clamp.

Air Mix Control Cable

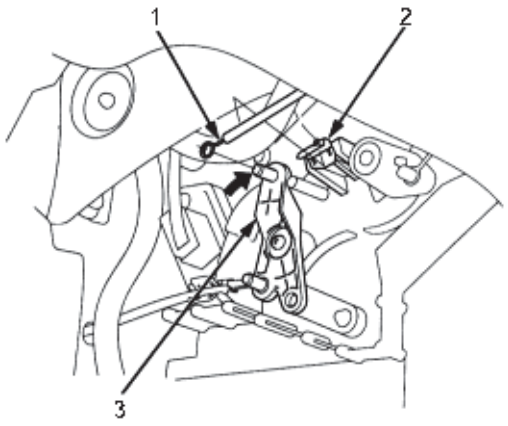
NOTE: LHD type is shown, RHD type is symmetrical.

1. From under the hood, open the clamp, then disconnect the heater valve cable from the heater arm.



1. CLAMP
2. HEATER VALVE CABLE
3. HEATER VALVE ARM

2. From under the dash, disconnect the air mix control cable housing from the clamp, and disconnect the air mix control cable from the air mix control linkage.



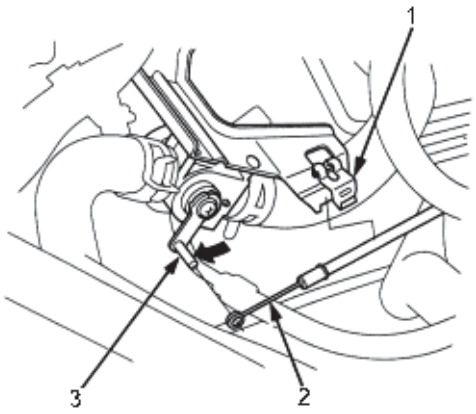
1. AIR MIX CONTROL CABLE
2. CLAMP
3. AIR MIX CONTROL LINKAGE

3. Set the temperature control dial to MAX COOL.
4. Turn the air mix control linkage fully clockwise as shown above, and hold it. Attach the air mix control cable to the air mix control linkage, then snap the air mix cable housing into the clamp.
5. From under the hood, turn the heater valve arm to the fully closed position as shown above and hold it. Attach the heater valve cable to the heater valve arm, and gently pull on the heater valve cable housing to take up any slack, then install the heater valve cable housing into the clamp.

Heater Valve Cable

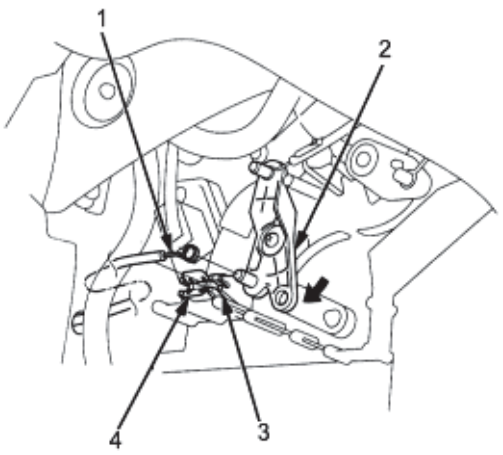
NOTE: LHD type is shown, RHD type is symmetrical.

1. From under the hood, open the clamp, then disconnect the heater valve cable from the heater valve arm.



1. CLAMP
2. HEATER VALVE CABLE
3. HEATER VALVE ARM

2. From under the dash, disconnect the heater valve cable housing from the clamp, and disconnect the heater valve cable from the air mix control linkage.



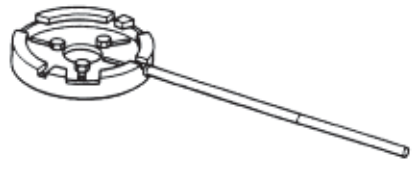
1. HEATER VALVE CABLE
2. AIR MIX CONTROL LINKAGE
3. STOP
4. CLAMP

3. Set the temperature control dial to MAX COOL.
4. Turn the air mix control linkage fully clockwise as shown above, and hold it. Attach the heater valve cable to the air mix control linkage. Hold the end of the heater valve cable housing against the stop, then snap the heater valve cable housing into the clamp.
5. From under the hood, turn the heater valve arm to the fully closed position as shown above, and hold it. Attach the heater valve cable to the heater valve arm, and gently pull on the heater valve cable housing to take up an slack, then install the heater valve cable housing into the clamp.

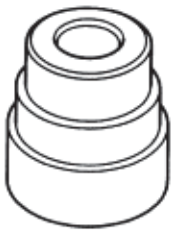
Ref No.	Tool Number	Description	Qty	Remark
1	07JGG - 0010100	Belt Tension Gauge	1	
2	07NAB - HAC0101	A/C Clutch Holder	1	
3	07947 - 6340300	Drive Attachment	1	
4	07965 - 6920500	Hub Assembly Guide Attachment	1	



①



②

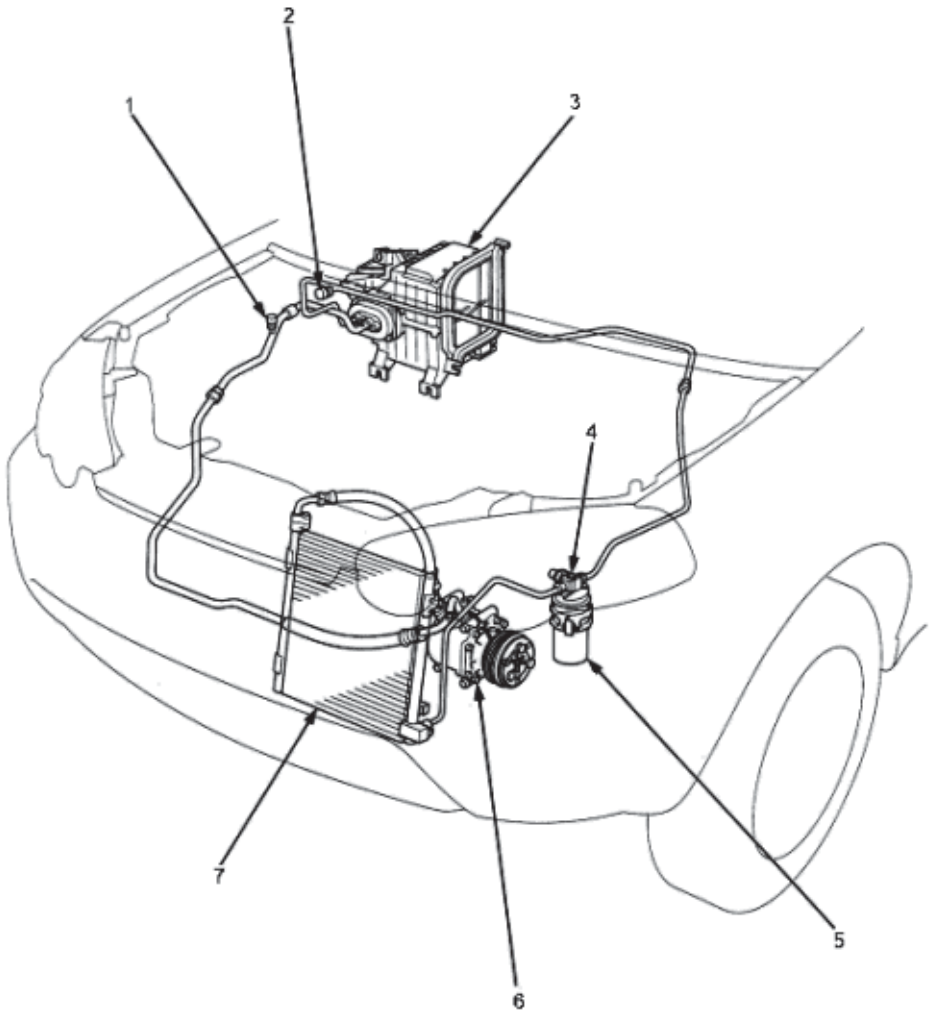


③



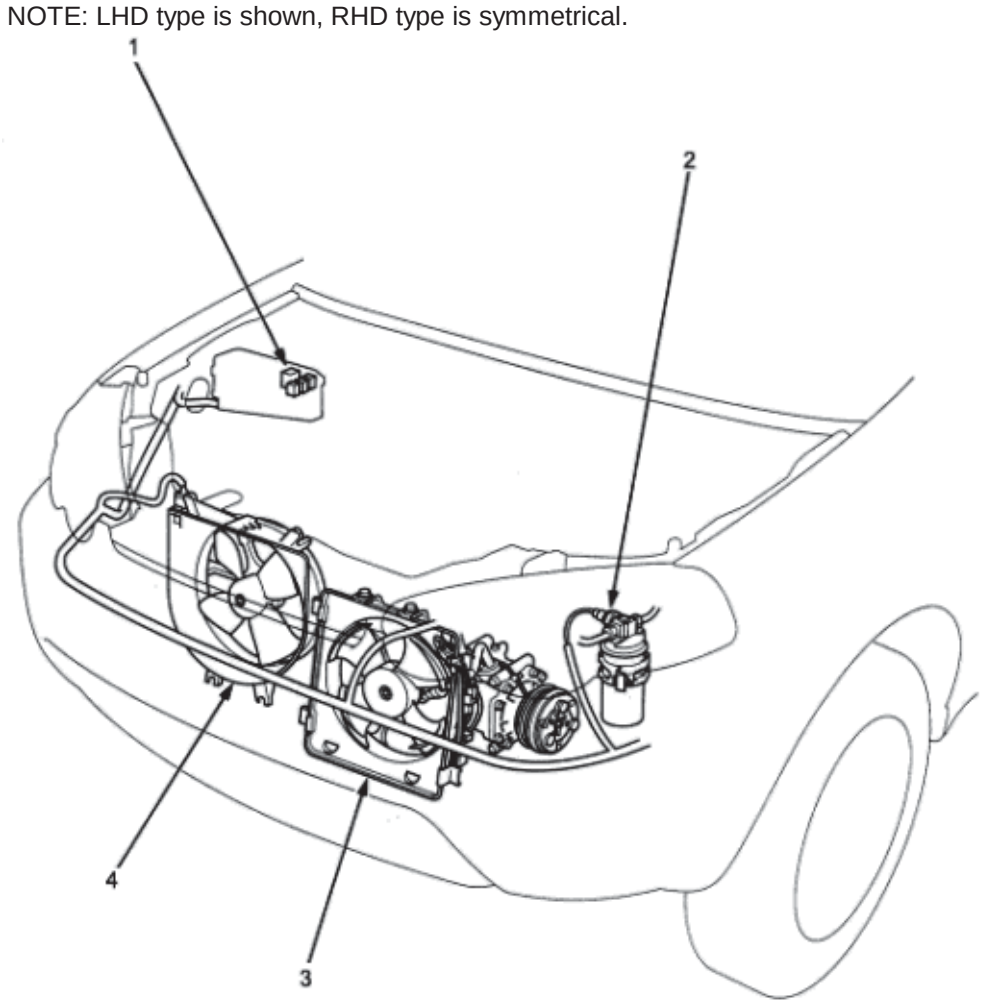
④

NOTE: LHD type is shown, RHD type is symmetrical.



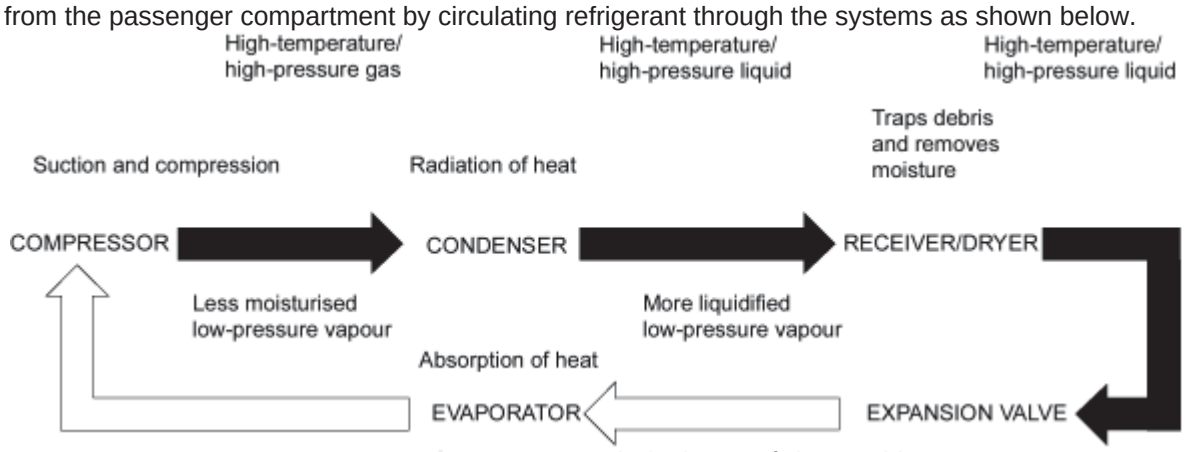
1. **SERVICE VALVE (LOW PRESSURE SIDE)**
2. **SERVICE VALVE (HIGH PRESSURE SIDE)**
3. **EVAPORATOR** , Replacement, (**See Page** 22-26)
   Overhaul, (**See Page** 22-27)
   A/C FILTER, Replacement, (**See Page** 22-37)
   A/C THERMOSTAT , Test, (**See Page** 22-23)
4. **SIGHT GLASS**
5. **RECEIVER/DRYER**
6. **COMPRESSOR**, Replacement, (**See Page** 22-28)
   Clutch Inspection, (**See Page** 22-31)
   Clutch Overhaul, (**See Page** 22-32)
   Thermal Protector Replacement, (**See Page** 22-34)
   Relief Valve Replacement, (**See Page** 22-34)
7. **CONDENSER**, Replacement, (**See Page** 22-36)

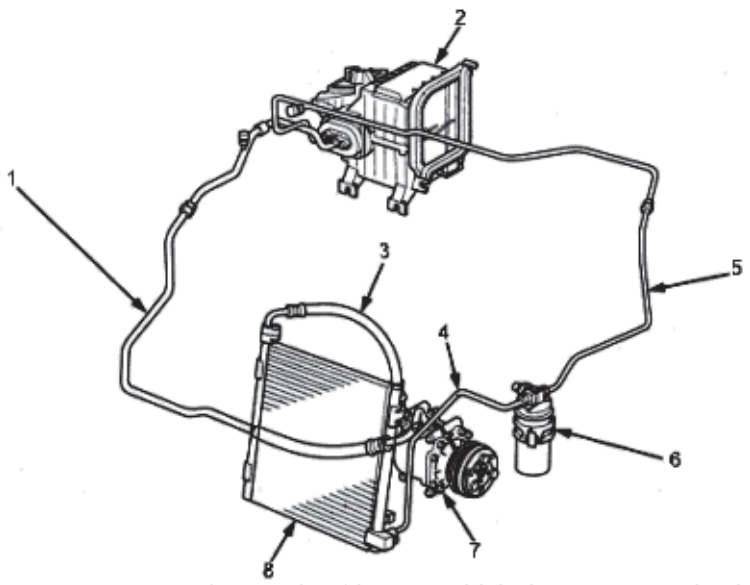
NOTE: LHD type is shown, RHD type is symmetrical.



1. **BLOWER MOTOR RELAY**, Test, (**See Page** 21-11)
   RADIATOR FAN RELAY,
   CONDENSER FAN RELAY,
   COMPRESSOR CLUTCH RELAY
   (Located in the under-hood fuse/relay box)
   Test, (**See Page** 22-23)
2. **A/C PRESSURE SWITCH**
   When the refrigerant pressure is below 200 kPa (2.0 kgf/cm2, 28 psi) or above 3,200 kPa (32 kgf/cm2, 455 psi), the A/C pressure switch opens the circuit to the A/C switch and stops the air conditioning to protect the compressor.
3. **CONDENSER FAN**
4. **RADIATOR FAN**

The air conditioner system removes heat from the passenger compartment by circulating refrigerant through the systems as shown below.

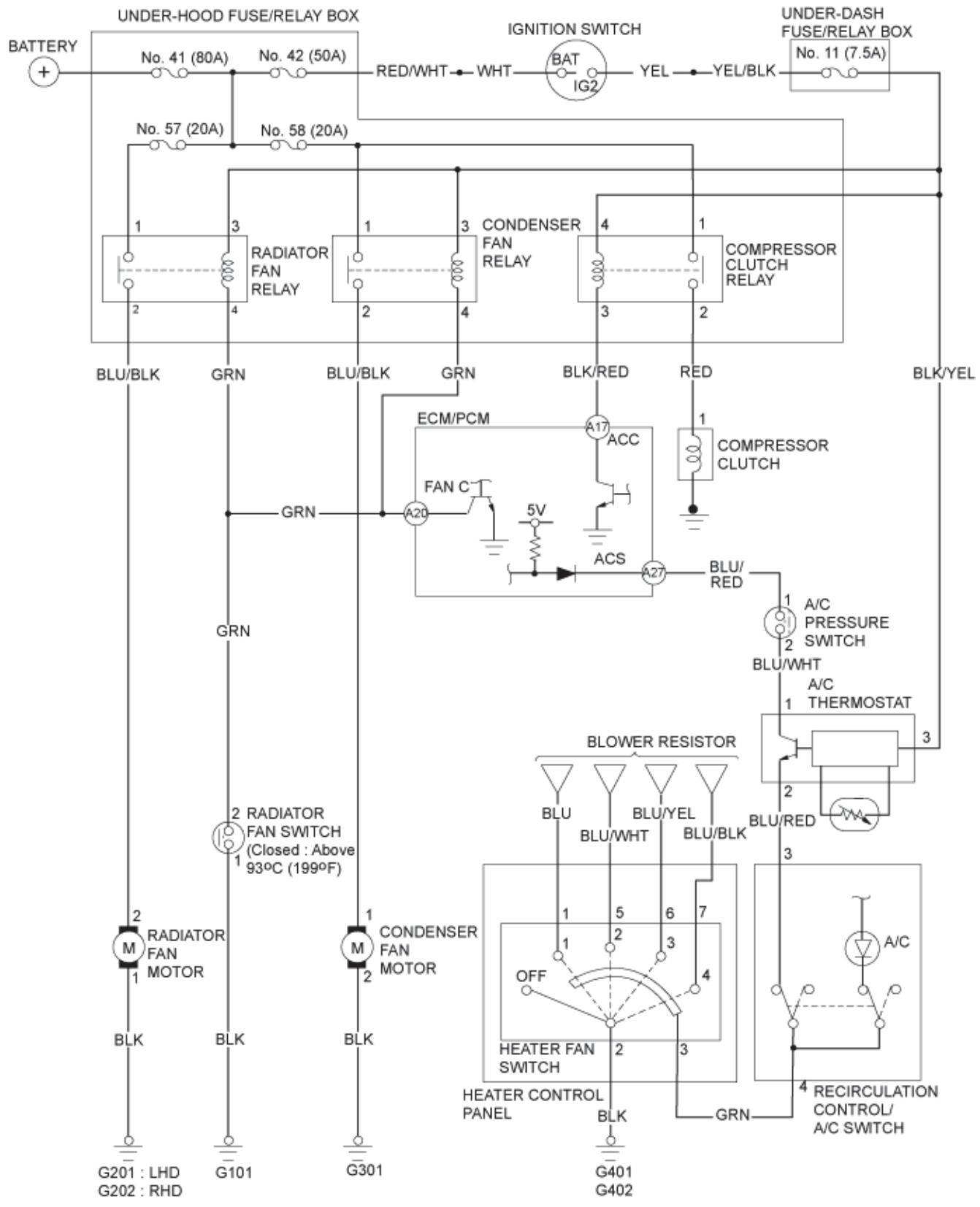




1. **SUCTION LINE (LOW-PRESSURE SIDE)**
2. **EVAPORATOR**
3. **DISCHARGE LINE (HIGH-PRESSURE SIDE)**
4. **CONDENSER LINE**
5. **LIQUID LINE**
6. **RECEIVER/DRYER**
7. **COMPRESSOR**
8. **CONDENSER**

This vehicle uses HFC-134a (R-134a) refrigerant which does not contain chlorofluorocarbons. Pay attention to the following service items:

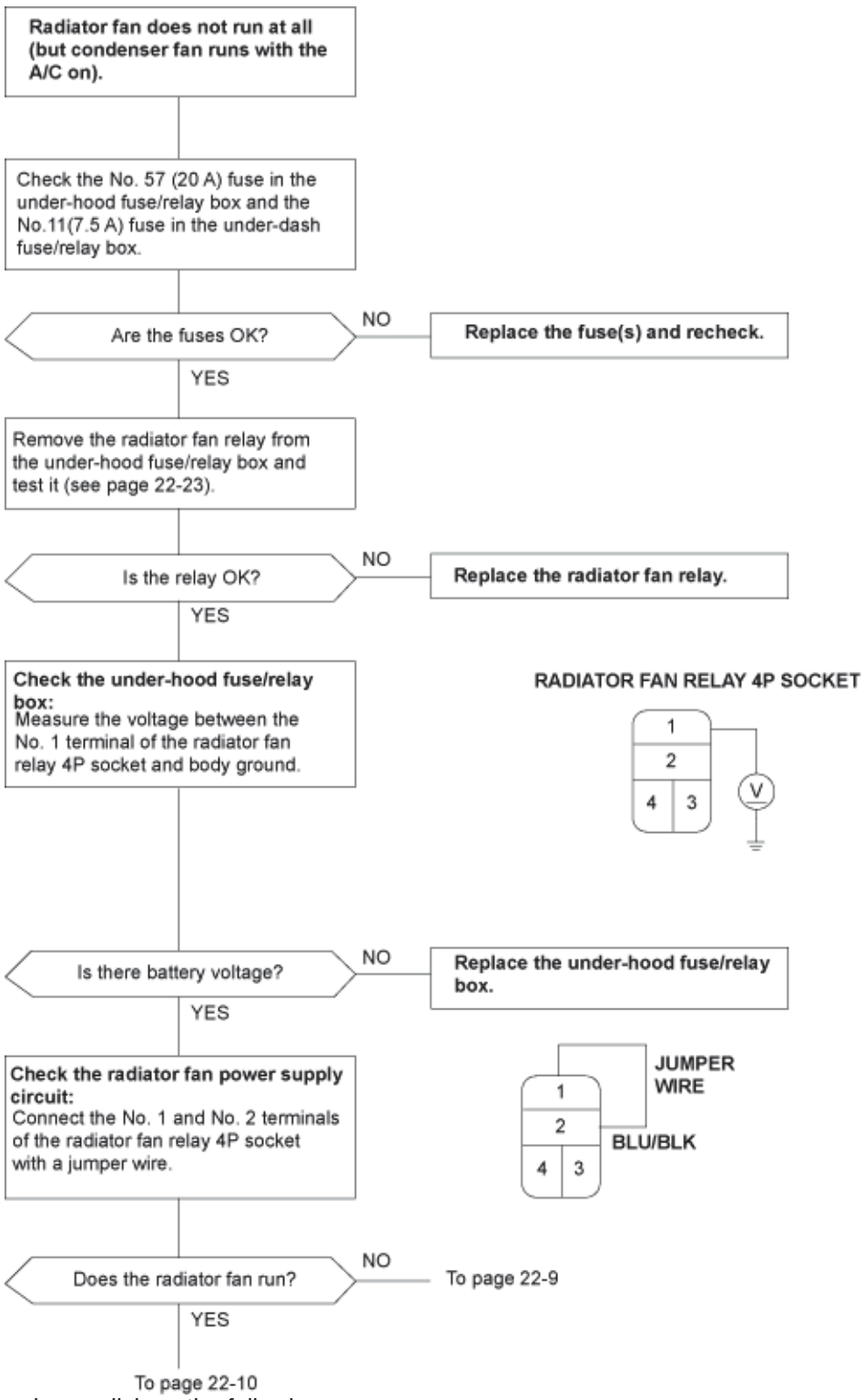
- Do not mix refrigerants CFC-12 (R-12) and HFC-134a (R-134a). They are not compatible.
- Use only the recommended polyalkyleneglycol (PAG) refrigerant oil (KEIHIN, SP1-) designed for the R-134a compressor. Intermixing the recommended (PAG) refrigerant oil with any other refrigerant oil will result in compressor failure.
- All A/C system parts (compressor, discharge line, suction line, evaporator, condenser, receiver/dryer, expansion valve, O-rings for joints) have to be proper for refrigerant R-134a. Do not confuse with R-12 parts.
- Use a halogen gas leak detector designed for refrigerant R-134a.
- Use a vacuum pump adapter which is equipped with a check valve to prevent backflow of the vacuum pump oil.
- Separate the manifold gauge sets (pressure gauges, hoses, joints) for refrigerants R-12 and R-134a. Do not confuse them.


UNDER-HOOD FUSE/RELAY BOX
BATTERY
No. 41 (80A)
No. 42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No. 11 (7.5A)
No. 57 (20A)
No. 58 (20A)
RADIATOR FAN RELAY
CONDENSER FAN RELAY
COMPRESSOR CLUTCH RELAY
BLU/BLK
GRN
BLU/BLK
GRN
BLK/RED
RED
BLK/YEL
ECM/PCM
A17
ACC
COMPRESSOR CLUTCH
FAN C
A20
5V
ACS
A27
BLU/RED
GRN
GRN
A/C PRESSURE SWITCH
BLU/WHT
A/C THERMOSTAT
BLOWER RESISTOR
BLU
BLU/WHT
BLU/YEL
BLU/BLK
BLU/RED
2 RADIATOR FAN SWITCH (Closed : Above 93°C (199°F)
RADIATOR FAN MOTOR
CONDENSER FAN MOTOR
OFF
HEATER FAN SWITCH
A/C
HEATER CONTROL PANEL
BLK
GRN
RECIRCULATION CONTROL/ A/C SWITCH
BLK
BLK
BLK
G201 : LHD
G202 : RHD
G101
G301
G401
G402

Note the following items before troubleshooting a symptom:

- Check the engine coolant level and allow the engine to warm up before troubleshooting.
- Any abnormality must be corrected before continuing the test.
- Because of the precise measurements needed, us a digital circuit tester when testing.
- Before performing any troubleshooting procedures check:
  - Fuses No. 57 (20 A), No. 58 (20 A) in the under-hood fuse/relay box, No. 11 (7.5 A) in the under-dash fuse/relay box.
  - Grounds No. G101, G201 (LHD), G202 (RHD), G301, G401, G402.
  - Cleanliness and tightness of all connectors.

Symptom	See page
Radiator fan does not run at all (but condenser fan runs with A/C on).	(**See Page** 22-8)
Condenser fan does not run at all (but radiator fan runs with A/C on).	(**See Page** 22-11)
Both fans do not run with the A/C on.	(**See Page** 22-14)
Both fans (radiator and condenser) do not run for engine cooling, but they both run with the A/C on.	(**See Page** 22-15)
Compressor clutch does not engage.	(**See Page** 22-16)
A/C system does not come on (both fans and compressor).	(**See Page** 22-19)



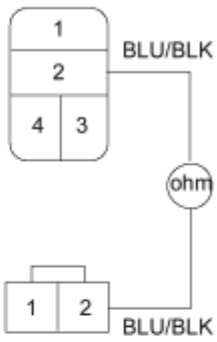
To go to the page referenced on the diagram above, click on the following:
(**See Page** 22-23)

From page 22-8

Check for an open in the wire:

1. Disconnect the jumper wire.
2. Disconnect the radiator fan 2P connector.
3. Check for continuity between the No. 2 terminal of the radiator fan relay 4P socket and the No. 2 terminal of the radiator fan 2P connector.

RADIATOR FAN RELAY 4P SOCKET



RADIATOR FAN 2P CONNECTOR
Wire side of female terminals.

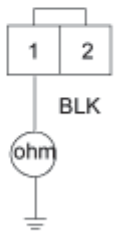
Is there continuity?

NO

Repair open in the wire between the radiator fan relay and the radiator fan.

YES

Check for an open in the wire:
Check for continuity between the No. 1 terminal of the radiator fan 2P connector and body ground.



Is there continuity?

NO

Check for an open in the wire between the radiator fan and body ground. If the wire is OK, check for poor ground at G201 (LHD) or at G202 (RHD).

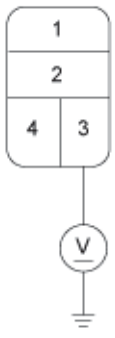
YES

Replace the radiator fan motor.

From page 22-8

Check for an open in the wire:
1. Disconnect the jumper wire.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 3 terminal of the radiator fan relay 4P socket and body ground.

RADIATOR FAN RELAY 4P SOCKET

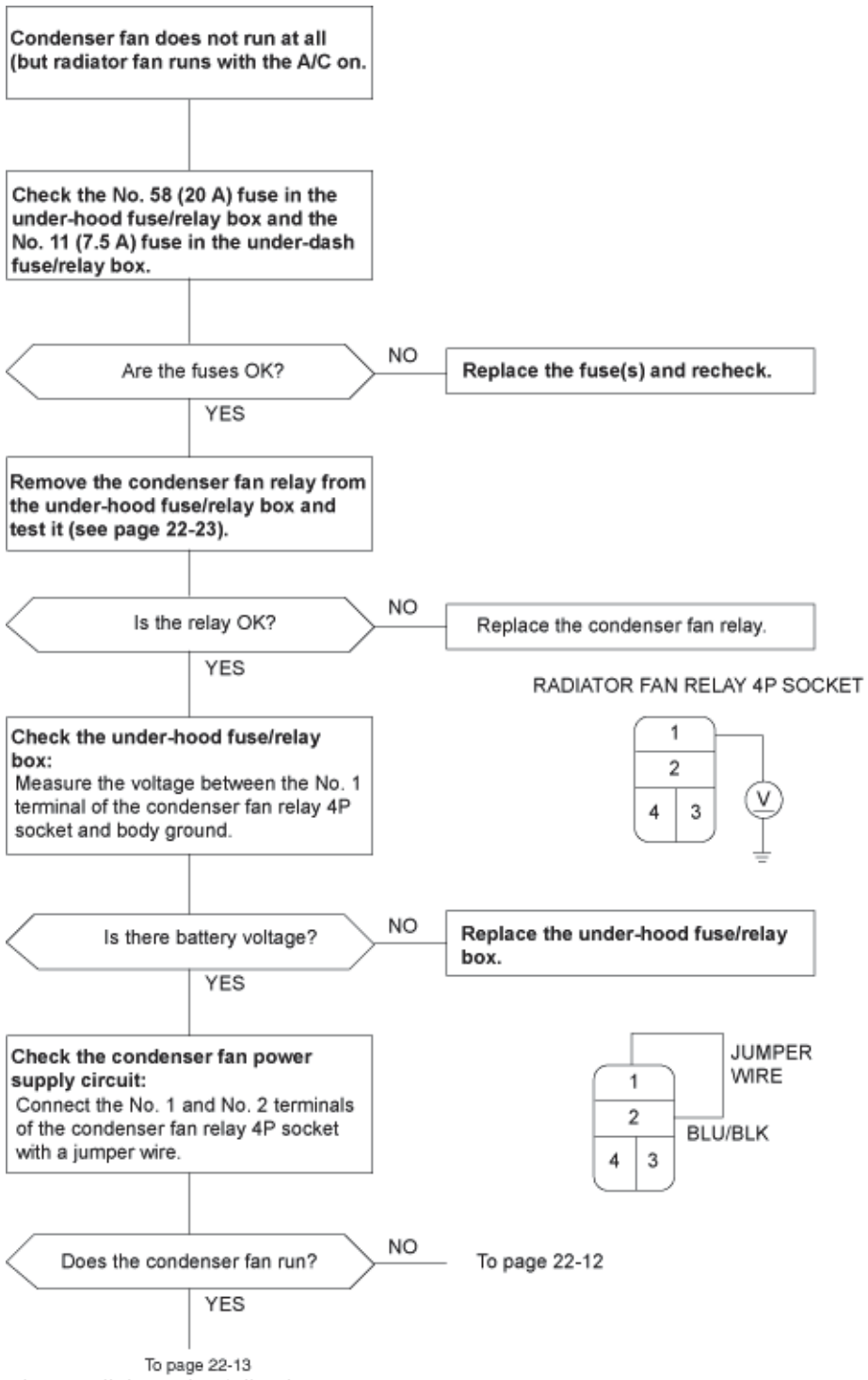


Is there battery voltage?

NO → **Replace the under-hood fuse/relay box.**

YES

Repair open in the GRN wire between the radiator fan relay and the ECM/PCM



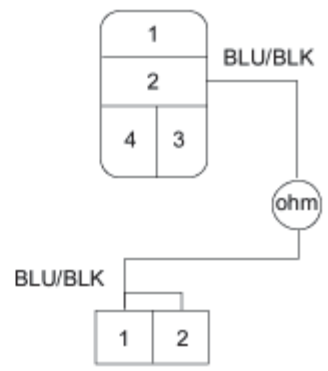
To go to the page referenced on the diagram above, click on the following:
(**See Page** 22-23)

From page 22-11

Check for an open in the wire:

1. Disconnect the jumper wire.
2. Disconnect the condenser fan 2P connector.
3. Check for continuity between the No. 2 terminal of the condenser fan relay 4P socket and the No. 1 terminal of the condenser fan 2P connector.

RADIATOR FAN RELAY 4P SOCKET



RADIATOR FAN 2P CONNECTOR
Wire side of female terminals.

Is there continuity?

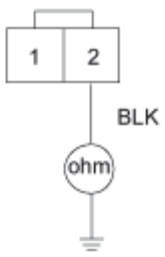
NO

Repair open in the wire between the condenser fan relay and the condenser fan.

YES

Check for open in the wire:

Check for continuity between the No. 2 terminal of the condenser fan 2P connector and body ground.



Is there continuity?

NO

Check for an open in the wire between the condenser fan and body ground. If the wire is OK, check for poor ground at G301.

YES

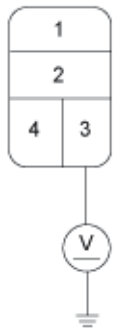
Replace the condenser fan motor.

From page 22-11

Check for an open in the wire:

1. Disconnect the jumper wire.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 3 terminal of the condenser fan relay 4P socket and body ground.

RADIATOR FAN RELAY 4P SOCKET



Is there battery voltage?

NO → **Replace the under-hood fuse/relay box.**

YES

Repair open in the GRN wire between the condenser fan relay and the ECM/PCM

Both fans do not run with the A/C on.

Check the No. 11 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

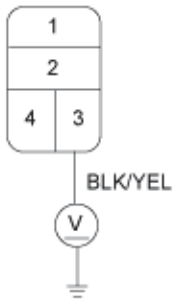
NO → **Replace the fuse and recheck.**

YES

Check for an open in the wire:

1. Remove the radiator fan relay from the under-hood fuse/relay box.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 3 terminal of the radiator fan relay 4P socket and body ground.

RADIATOR FAN RELAY 4P SOCKET



Is there battery voltage?

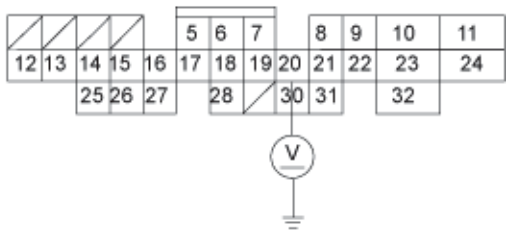
NO → **Repair open in the wire between the No. 11 fuse in the under-dash fuse/relay box and the radiator fan relay, the condenser fan relay.**

YES

Check for an open in the wire:

1. Turn the ignition switch OFF, then reinstall the radiator fan relay.
2. Make sure that the A/C switch is OFF, then turn the ignition switch ON (II).
3. Measure the voltage between the No. 20 terminal of the ECM/PCM connector A (32P) and body ground with the ECM/PCM connectors connected.

ECM/PCM CONNECTOR A (32P)



Wire side of female terminals

Is there battery voltage?

NO → **Repair open in the wire between the radiator fan relay, the condenser fan relay and the ECM/PCM.**

YES

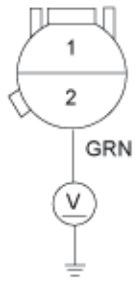
Check for loose wires or poor connections at the ECM/PCM connector. If the connections are good, substitute a known-good ECM/PCM, and recheck. If the symptom/indication goes away, replace the original ECM/PCM.

Both fans (radiator and condenser) do not run for engine cooling, but they both run with the A/C on.

Check for an open in the wire:

1. Disconnect the radiator fan switch 2P connector.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 2 terminal of the radiator fan switch 2P connector and body ground.

RADIATOR FAN SWITCH 2P CONNECTOR



Wire side of female terminals.

Is there battery voltage?

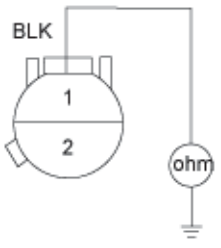
NO

Repair open in the wire between the radiator fan relay, the condenser fan relay and the radiator fan switch.

YES

Check for an open in the wire:

1. Turn the ignition switch OFF.
2. Check for continuity between the No. 1 terminal of the radiator fan switch 2P connector and body ground.



Is there continuity?

NO

Check for an open in the wire between the radiator fan switch and body ground. If the wire is OK, check for poor ground at G101.

YES

Check the cooling system

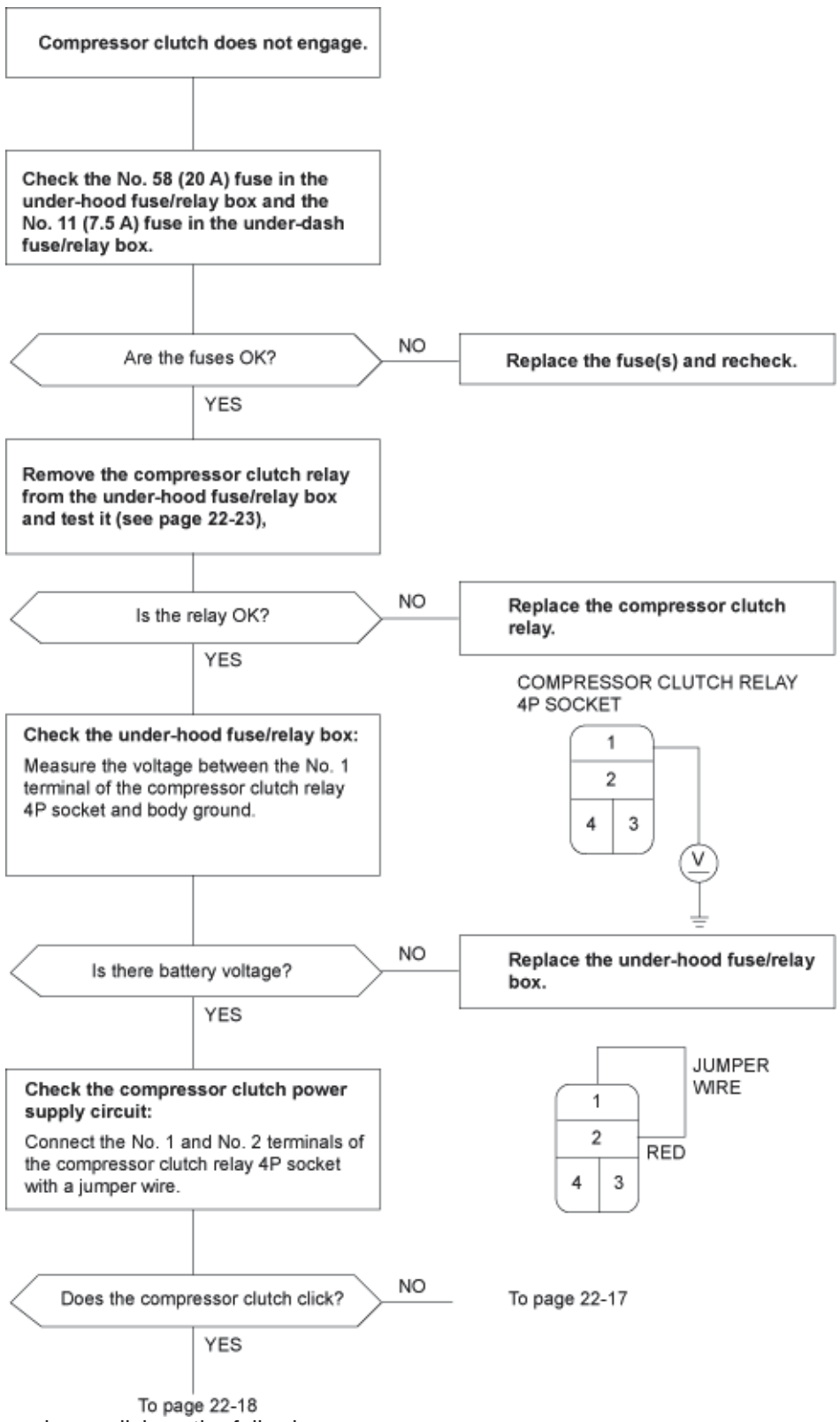
Is the cooling system OK?

NO

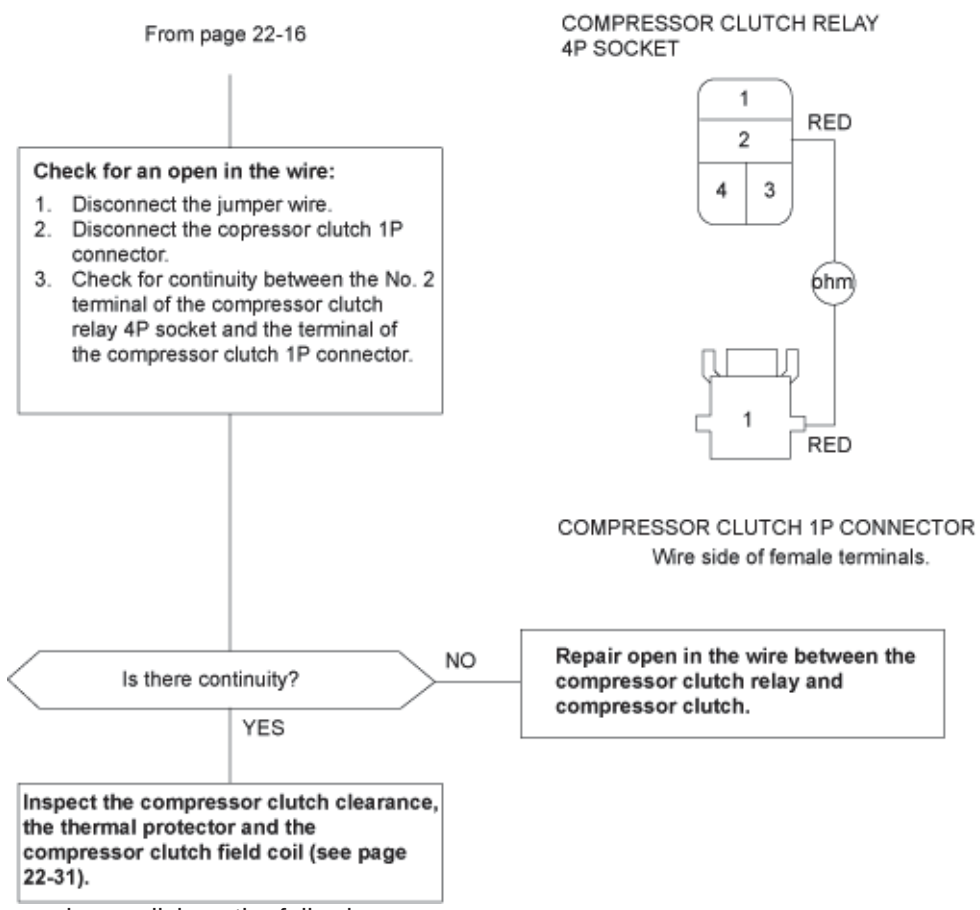
Repair the cooling system.

YES

Repalce the radiator fan switch.



To go to the pages referenced on the diagram above, click on the following:
(**See Page** 22-23)



To go to the pages referenced on the diagram above, click on the following:
(**See Page** 22-31)

From page 22-16

Check for an open in the wire:
1. Disconnect the jumper wire.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 4 terminal of the compressor clutch relay 4P socket and body ground.

Is there battery voltage?

NO → **Repair open in the wire between the No. 11 fuse in the under-dash fuse/relay box and the compressor clutch relay.**

YES

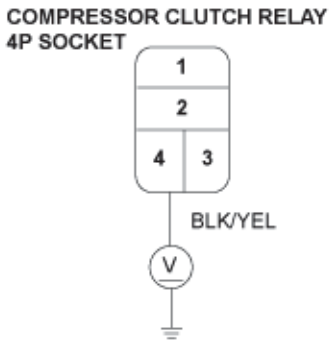
Check for an open in the wire:
1. Turn the ignition switch OFF, then reinstall the compressor clutch relay.
2. Make sure that the A/C switch is OFF, then turn the ignition switch ON (II).
3. Measure the voltage between the No. 17 terminal of the ECM/PCM connector A (32P) and body ground with the ECM/PCM connectors connected.

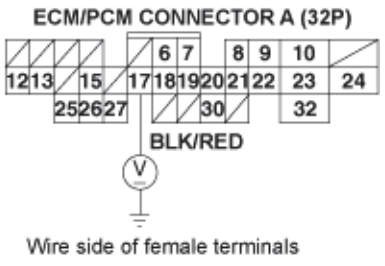
Is there battery voltage?

NO → **Repair open in the wire between the compressor clutch relay and the ECM/PCM.**

YES

Check for loose wires or poor connections at the ECM/PCM connectors A (32P). If the connections are good, substitute a known-good ECM/PCM and recheck. If the symptom/indication goes away, replace the original ECM/PCM





Wire side of female terminals

A/C system does not comes on (both fans and compressor).

Check the No. 11 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

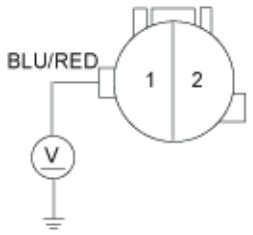
NO → **Replace the fuse and recheck.**

YES

Check for an open in the wire:

1. Disconnect the A/C pressure switch 2P connector.
2. Turn the ignition switch ON (II).
3. Measure the voltage between the No. 1 terminal of the A/C pressure switch 2P connector and body ground.

A/C PRESSURE SWITCH 2P CONNECTOR



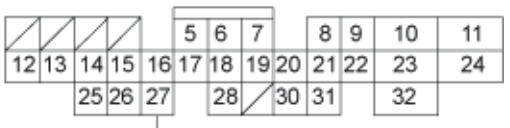
Wire side of female terminals

Is there approx. 5 volts?

YES → To page 22-20

NO

ECM/PCM CONNECTOR A (32P)





Wire side of female terminals

Check the ECM/PCM:

Measure the voltage between the No. 27 terminal of the ECM/PCM connector A (32P) and body ground with the ECM/PCM connectors connected.

Is there approx. 5 volts?

NO → **Check for loose wires or poor connections at the ECM/PCM connector. If the connections are good, substitute a know-good ECM/PCM and recheck. If the symptom/indication goes away, replace the original ECM/PCM.**

YES

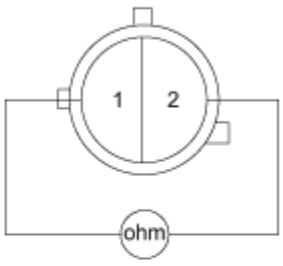
Repair open in the wire between the ECM/PCM and the A/C pressure switch.

From page 22-19

Check the A/C pressure switch:

1. Turn the ignition switch OFF.
2. Check for continuity between the No. 1 and No. 2 terminals of the A/C pressure switch.

A/C PRESSURE SWITCH



Is there continuity?

YES → To page 22-21

NO

Check for A/C system pressure.

Is the pressure within specification? (see page 22-4)

NO → **Repair the A/C pressure problem.**

YES

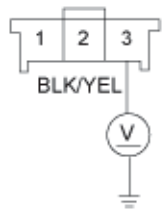
Replace the A/C pressure switch.

From page 22-20

Check for an open in the wire:

1. Reconnect the A/C pressure switch 2P connector.
2. Disconnect the A/C thermostat 3P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the No. 3 terminal of the A/C thermostat 3P connector and body ground.

A/C THERMOSTAT 3P CONNECTOR



Wire side of female terminals.

Is there battery voltage?

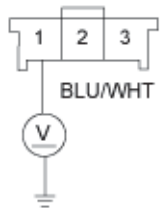
NO

Repair open in the wire between the No. 11 fuse in the under-dash fuse/relay box and the A/C thermostat.

YES

Check for anopen in the wire:

Measure the voltage between the No. 1 terminal of the A/C thermostat 3P connector and body ground.



Is there approx. 5 volts?

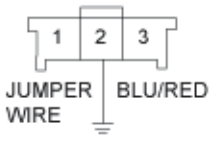
NO

Repair open in the wire between the A/C pressure switch and the A/C thermostat.

YES

Check the A/C thermostat:

1. Turn the ignition switch OFF.
2. Reconnect the A/C thermostat 3P connector.
3. Connect the No. 2 terminal of the A/C thermostat 3P connector to body ground with a jumper wire.
4. Start the engine.



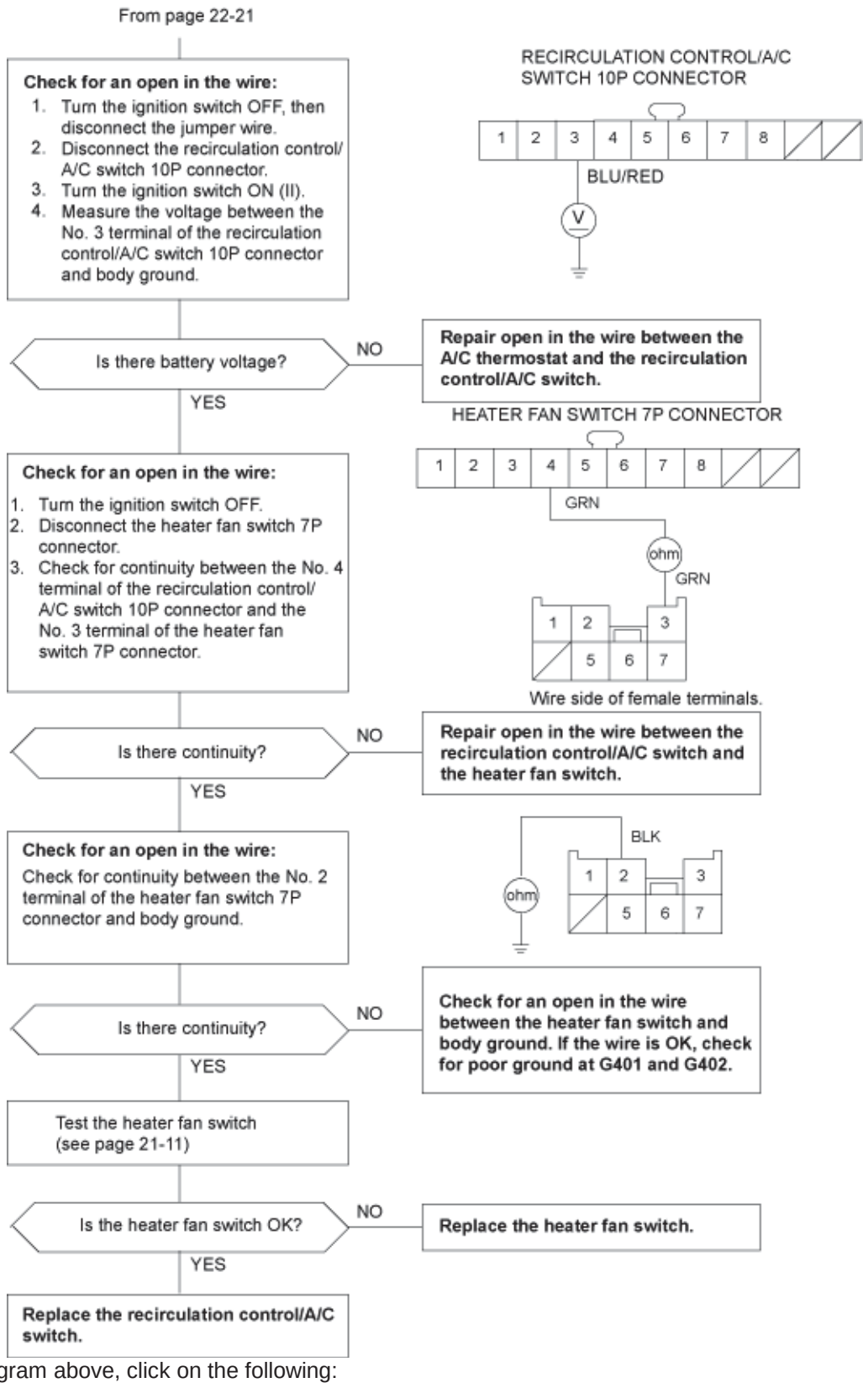
Do the radiator and condenser fans run and the compressor clutch engage?

NO

Replace the A/C thermostat.

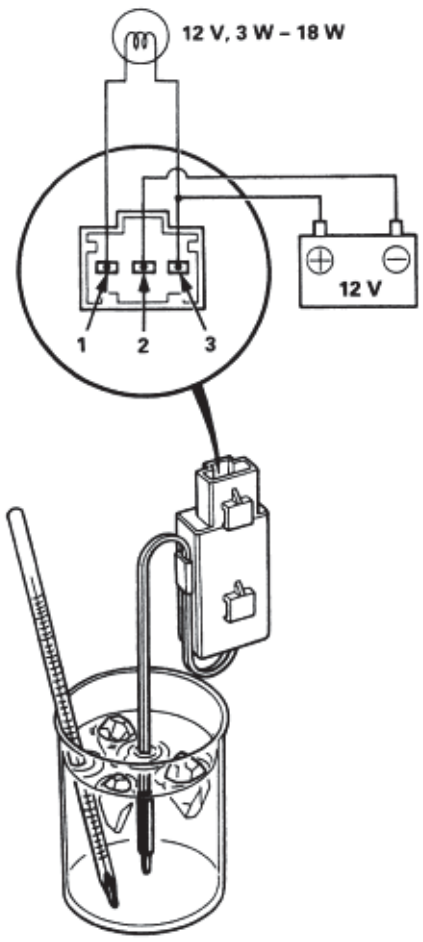
YES

To page 22-22

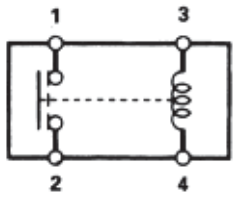


To go to the page referenced on the diagram above, click on the following:
(**See Page** 22-11)

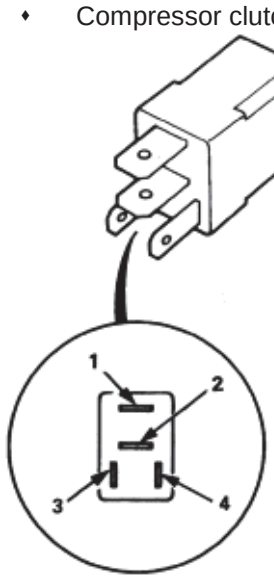
Connect battery power to the No. 3 terminal, ground the No. 2 terminal and connect a test light between the No. 1 and No. 3 terminals.
NOTE: Use a 12V, 3 W - 18 W test lights.
Dip the A/C thermostat into a cup filled with ice water and check the test light.
The light should go off at 4 - 6°C (39 - 43°F) or less and should come on at 5 - 7°C (41 - 45°F) or more.
If the light doesn't come on and go off as specified, replace the thermostat.



There should be continuity between the No. 1 and No. 2 terminals when power and ground are connected t the No. 3 and No. 4 terminals and there should be no continuity when power is disconnected.



- Radiator fan relay
- Condenser fan relay
- Compressor clutch relay



The air conditioning system uses HFC-134a (R-134a) refrigerant and polyalkyleneglycol (PAG) refrigerant oil*, which are not compatible with CFC-12 (R-12) refrigerant and mineral oil. Do not use R-12 refrigerant or mineral oil in this system and do not attempt to use R-12 servicing equipment; damage to the air conditioning system or your servicing equipment will result.

* KEIHIN, SP-10:

- P/N 38897-P13-003: 120 ml (4 fl. oz), 4.2 Imp. oz)
- P/N 38898-P13-003: 250 ml (8 1/3 fl. oz, 8.8 Imp. oz)
- P/N 38899-P13-A01: 40 ml (1 1/3 fl. oz), 1.4 Imp. oz)

Separate the manifold gauge sets (pressure gauges, joints, Hoses) for refrigerants R-12 and R-134a. Do not confuse them.

⚠ CAUTION

- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose or throat.
- Be careful when connecting service equipment
- Do not breathe refrigerant or vapour.

If accidental system discharge occurs, ventilate 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.

⚠ WARNING

- Compressed air mixed with R-134a forms a combustible vapour.
- The vapour can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

Additional health and safety information may be obtained from the refrigerant and lubrication manufacturers.

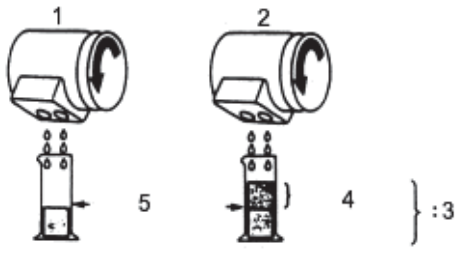
1. Always disconnect the negative cable from the battery whenever replacing air conditioning parts.
2. Keep moisture and dust out of the system. When disconnecting any lines, plug or cap the fittings immediately; don't remove the caps or plugs until just before you reconnect each line.
3. Before connecting any hose or line, apply a few drops of refrigerant oil to the O-ring.
4. When tightening or loosening a fitting, use a second wrench to support the matching fitting.
5. When discharging the system, don't let refrigeration escape too fast; it will draw the compressor oil out of the system.
6. Add refrigerant oil after replacing the following parts:

   Note the following items when handling refrigerant oil:

   - 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, replace 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.

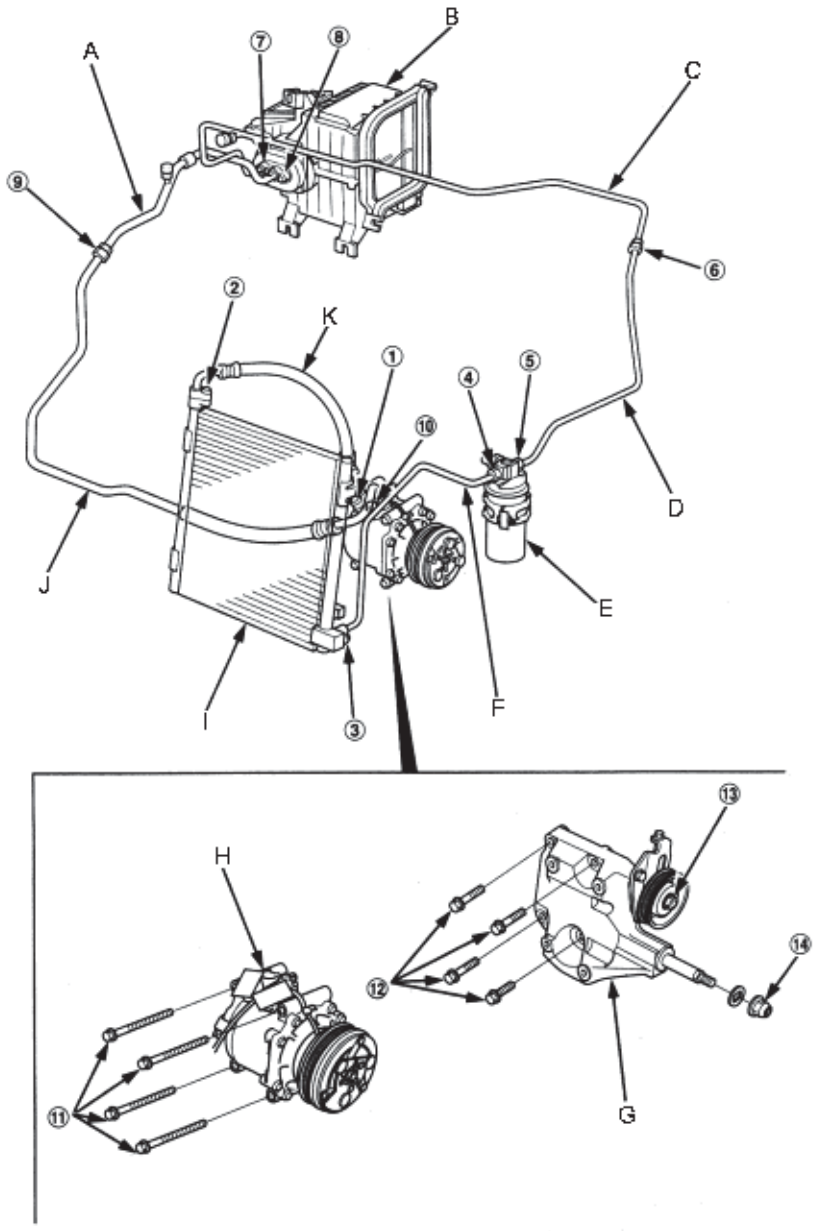
Condenser	**15 m/ (1/2 fl. oz, 0.5 Imp. oz)**
Evaporator	**35 m/ (1 1/6 fl. oz, 1.2 Imp. oz)**
Line or hose	**10 m/ (1/3 fl. oz, 0.4 Imp. oz)**
Receiver/Dryer	**10 m/ (1/3 fl. oz, 0.4 Imp. oz)**
Leakage repair	**25 m/ (5/6 fl. oz, 0.9 Imp. oz)**
Compressor	**For compressor replacement, subtract the volume of oil drained from the removed compressor from 130 ml (4 1/3 fl. oz, 4.6 Imp. oz) and drain the calculated volume of oil from the new compressor: 130 ml (4 1/3 fl. oz, 4.6 Imp. oz) - Volume of removed compressor = Volume to drain from new compressor.**

NOTE: Even if no oil is drained from the removed compressor, don't drain more than 50 ml (1 2/3 fl. oz, 1.8 Imp. oz) from the new compressor.



1. REMOVED COMPRESSOR
2. NEW COMPRESSOR
3. 130 ml (4 1/3 fl. oz, 4.6 Imp oz)
4. DRAINING VOLUME
5. SAME LEVEL

NOTE: LHD type is shown, RHD type is symmetrical.

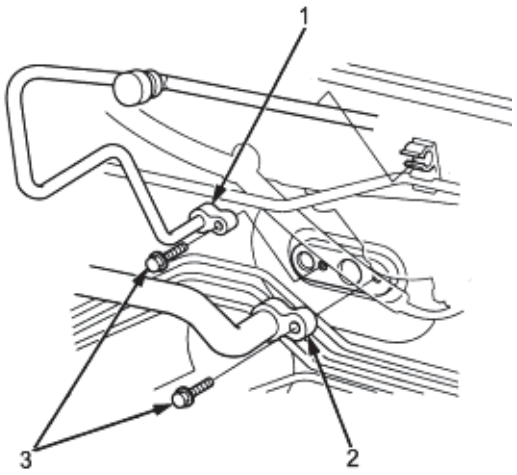


A. **SUCTION LINE**
B. **EVAPORATOR**
C. **RECEIVER LINE B**
D. **RECEIVER LINE A**
E. **RECEIVER/DRYER**
F. **CONDENSER LINE**
G. **COMPRESSOR BRACKET**
H. **CONDENSER**
I. **CONDENSER**
J. **SUCTION HOSE**
K. **DISCHARGE HOSE**

1	Discharge hose to the compressor (6 x 1.0 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2	Discharge hose to the condenser (6 x 1.0 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3	Condenser line to the condenser (6 x 10 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
4	Condenser line to the receiver/dryer	13 Nm (1.3 kgf/m, 9.4 lbf/ft)
5	Receiver line A to the receiver/dryer	13 Nm (1.3 kgf/m, 9.4 lbf/ft)
6	Receiver line A to the receiver/ line B	13 Nm (1.3 kgf/m, 9.4 lbf/ft)
7	Receiver line B to the evaporator (6 x 1.0 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
8	Suction line to the evaporator (6 x 1.0 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
9	Suction hose to the suction line	31 Nm (3.2 kgf/m, 23 lbf/ft)
10	Suction hose to the compressor (6 x 1.0 mm)	9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
11	Compressor to compressor bracket (8 x 1.25 mm)	24 Nm (2.4 kgf/m, 17 lbf/ft)
12	Compressor bracket to the cylinder block (10 x 1.25 mm)	44 Nm (4.5 kgf/m, 33 lbf/ft)
13	Idler pulley to the idler pulley bracket (10 x 1.25 mm)	44 Nm (4.5 kgf/m, 33 lbf/ft)
14	Left front mount to the compressor bracket (12 x 1.25 mm)	59 Nm (6.0 kgf/m, 43 lbf/ft)

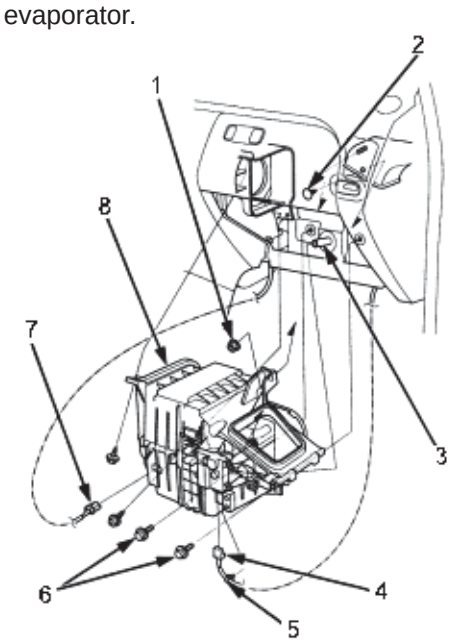
NOTE: LHD type is shown, RHD type is symmetrical.

1. Discharge the refrigerant (**See Page** 22-38).
2. Remove the bolts, then disconnect the suction and receiver lines from the evaporator. Plug or cap the lines immediately after discharging them to avoid moisture and dust contamination.



1. RECEIVER LINE
2. SUCTION LINE
3. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2lbf/ft)

3. Remove the glove box (see section 20).
4. Disconnect the connectors from the A/C thermostat and the recirculation control motor and the drain hose. Then remove the clip, wire harness clip, the self tapping screws, the mounting bolts, the mounting nut and the evaporator.

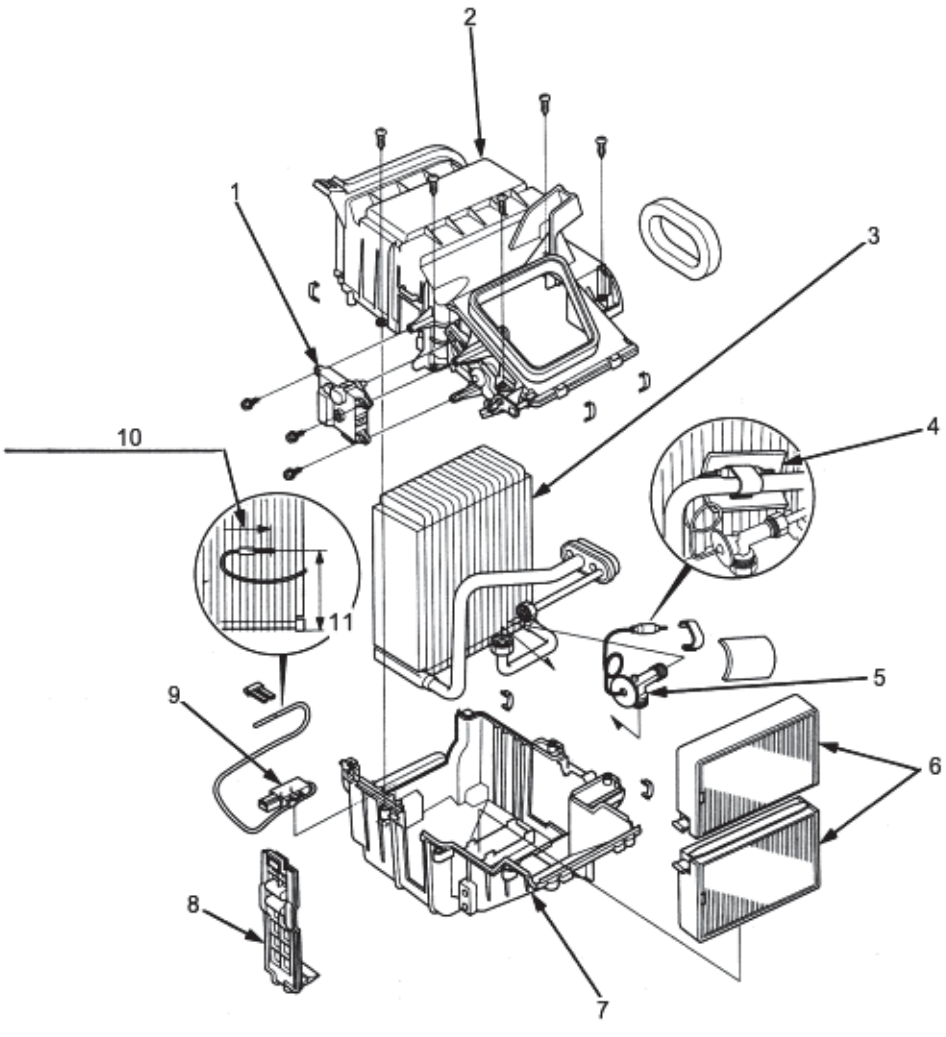


1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. CLIP
3. DRAIN HOSE
4. CONNECTOR
5. CLIP
6. 6 x 1.0 mm, 9.8 (1.0 kgf/m, 7.2 lbf/ft)
7. CONNECTOR
8. EVAPORATOR

5. Install in the reverse order of removal and note the following items:
   - If you are installing a new evaporator, add refrigerant oil (KEIHIN Sp-10) (**See Page** 22-24).
   - 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 right O-rings for HFC-134a (R-134a) to avoid leakage.
   - Immediately after using the oil, replace 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, wash it off immediately.
   - Make sure that there is no air leakage.
   - Charge the system (**See Page** 22-40) and test its performance (**See Page** 22-42).

NOTE: LHD type is shown, RHD type is symmetrical.

1. Remove the filter lid, then pull out the A/C filters.
2. Remove the self-tapping screws and the recirculation control motor.
3. Pull out the A/C thermostat sensor away from the evaporator fins.
4. Remove the self-tapping screws and the clamps, carefully separate the upper housing from the lower housing, then remove the evaporator core.
5. If necessary remove the expansion valve. Use a second wrench to hold the other fitting on the valve so the evaporator line won't twist. Leave the first fitting loosely connected so you can use it to hold the valve while you loosen the second fitting.

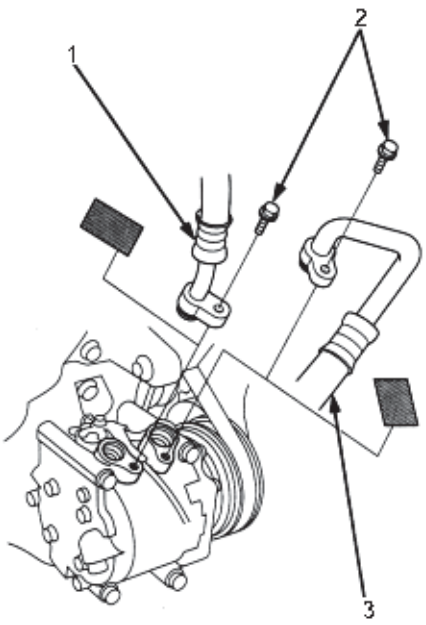


6. Reassemble in the reverse order of disassembly and note the following items:
   - Replace the O-rings with new ones at each fitting and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Install the expansion valve capillary tube directly against the outlet line and wrap it with electrical tape.
   - Reinstall the A/C thermostat sensor in its original location.
   - After reassembly, make sure that the recirculation control linkage and door move smoothly before installing the recirculation control motor.
   - After reassembly, make sure the recirculation control motor runs smoothly (**See Page** 21-13).
   - Make sure that there is no air leakage.

1. **RECIRCULATION CONTROL MOTOR**, Test (**See Page** 21-20)
2. **UPPER HOUSING**
3. **EVAPORATOR**, Blow dirt out of fins with compressed air
4. **ELECTRICAL TAPE**, Replace Make sure there is no foreign matter stuck between the capillary tube and outlet line
5. **EXPANSION VALVE**
6. **A/C FILTERS**
7. **LOWER HOUSING**
8. **FILTER LID**
9. **A/C THERMOSTAT**, Test (**See Page** 22-18)
10. 11th fin from inlet side
11. **125 mm (4.92 in)**

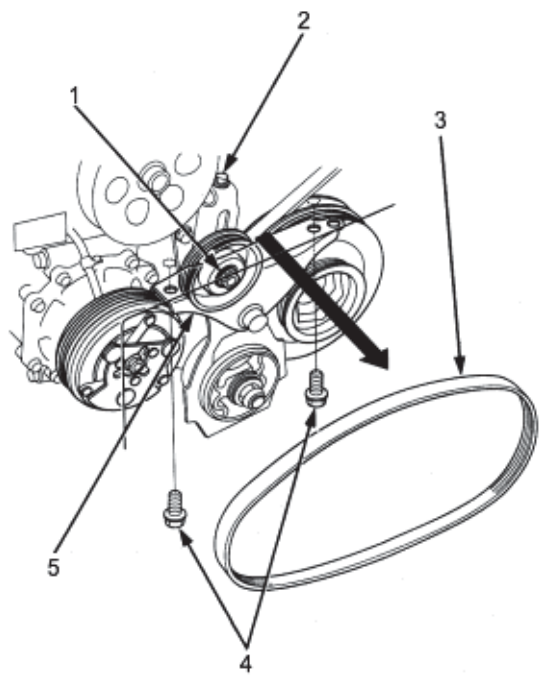
NOTE: LHD type is shown, RHD type is similar.

1. If the 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. Disconnect the negative cable from the battery.
3. Discharge the refrigerant (**See Page** 22-38).
4. Remove the bolts, then disconnect the suction and discharge lines from the compressor. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



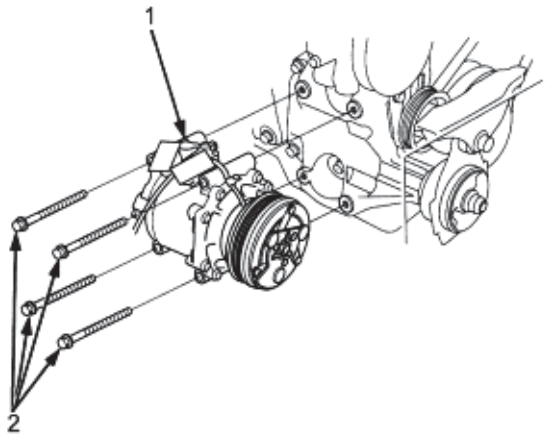
1. DISCHARGE LINE
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. SUCTION LINE

5. Loosen the centre nut of the idler pulley and the adjusting bolt, then remove the A/C compressor belt from the pulleys. If necessary, remove the power steering pump belt (see section 17) and the mounting bolts from the left front mount, then remove the A/C compressor belt through the gap between the body and the left front mount.



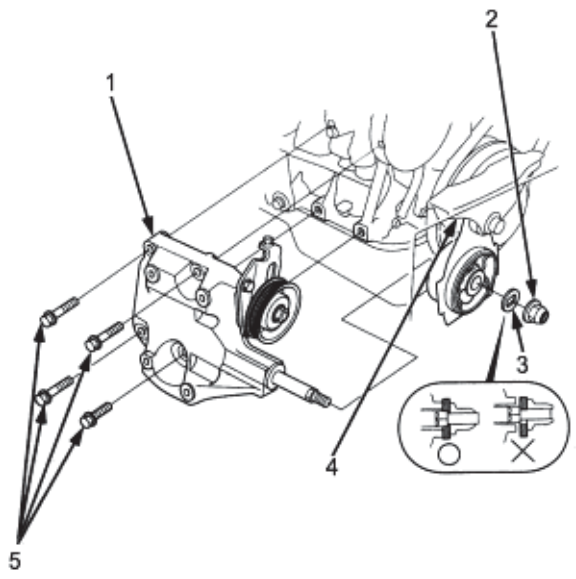
1. CENTRE NUT
2. ADJUSTING BOLT
3. A/C COMPRESSOR BELT
4. 10 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)
5. LEFT FRONT MOUNT

6. Disconnect the compressor clutch connector, then remove the mounting bolts and the compressor.



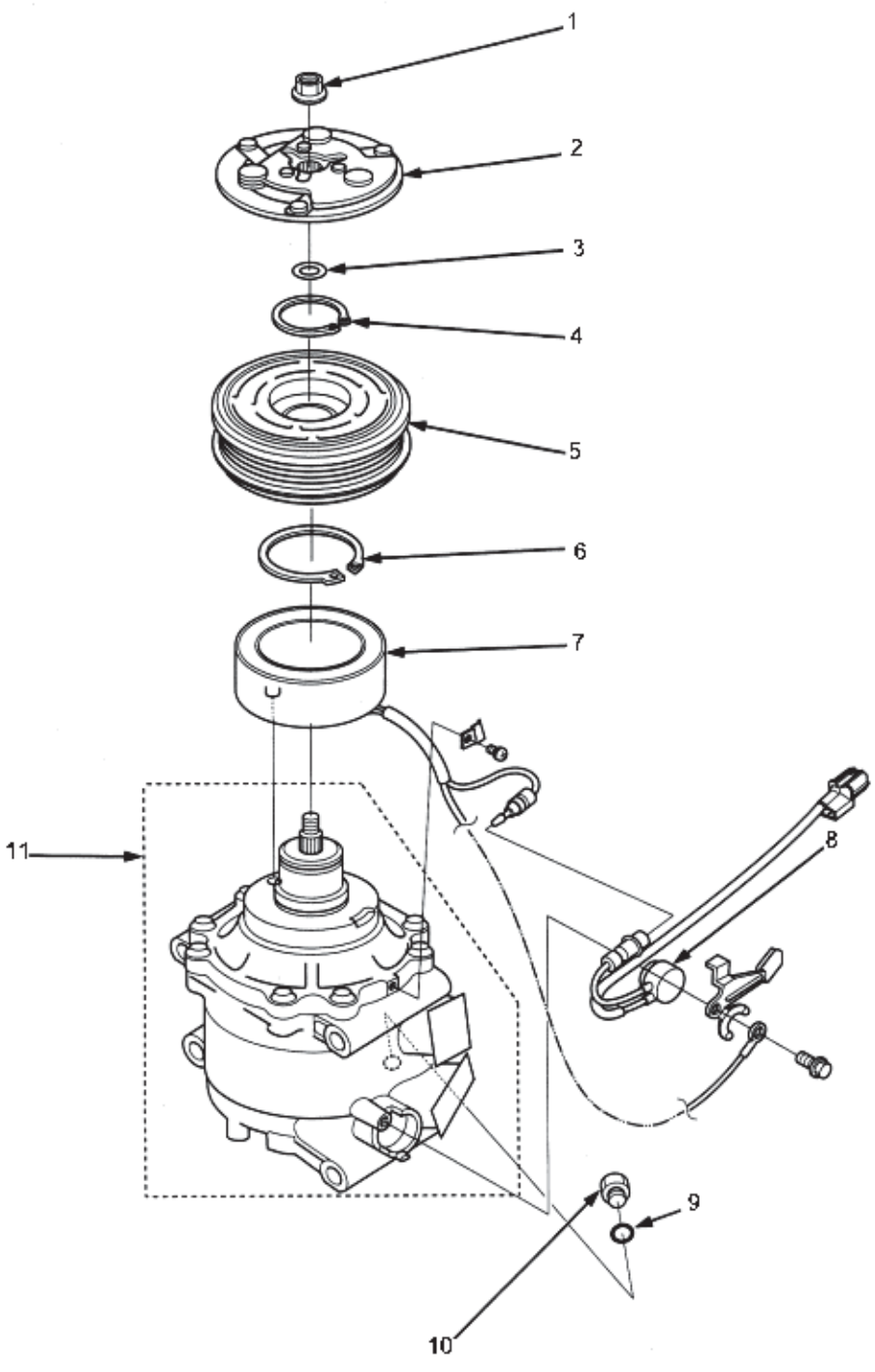
1. COMPRESSOR
2. 8 x 1.25 mm, 24 Nm (2.4 kgf/m, 17 lbf/ft)

7. If necessary remove the compressor bracket as follows:
   - Remove the nut and washer from the left front mount. When tightening the nut to the left front mount, make sure the washer is set properly on the left front mount as shown.
   - Remove the mounting bolts and the compressor bracket.



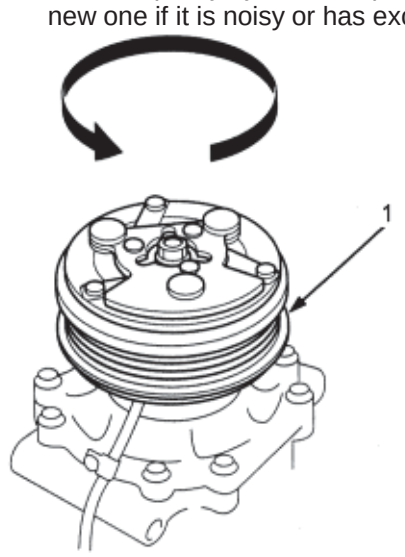
1. COMPRESSOR BRACKET
2. 12 x 1.25 mm, 59 Nm (6.0 kgf/m, 43 lbf/ft)
3. WASHER
4. LEFT FRONT MOUNT
5. 1.0 x 1.25 mm, 44 Nm (4.5 kgf/m, 33 lbf/ft)

8. Install in the reverse order of removal and note the following items:
   - If you are installing a new compressor, drain all the refrigerant oil form the removed compressor and measure its volume. Subtract the volume of drained oil from 130 ml (4 1/3 fl. oz, 4.6 Imp. oz): the result is the amount of oil you should drain from the new compressor (through the suction fitting).
   - 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 (-134a) to avoid leakage.
   - Use refrigerant oil (KEIHIN, SP-10) for HFC-134a KEIHIN spiral type compressors only.
   - To avoid contamination, do not put the oil back in the container once dispensed and never mix it with other refrigerant oils.
   - Immediately after using the oil, replace 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.
   - Adjust the A/C compressor belt (**See Page** 22-35) and the power steering pump belt (see section 17).
   - Charge the system (**See Page** 22-40) and test its performance (**See Page** 22-42).



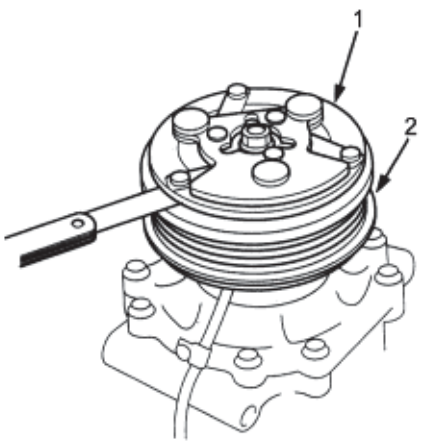
1. **CENTRE NUT**, Replace
2. **ARMATURE PLATE** , Inspection (**See Page** 22-31)
3. **SHIM(S)**, Replace
4. **SNAP RING B**, Replace
5. **ROTOR PULLEY**, Inspection (**See Page** 22-31)
6. **SNAP RING A**, Replace
7. **FIELD COIL**, Inspection (**See Page** 22-31)
8. **THERMAL PROTECTOR**, Replace
   Inspection (**See Page** 22-31)
   Replacement (**See Page** 22-34)
9. **O-RING**, Replace
10. **RELIEF VALVE** , Replacement(**See Page** 22-34)
11. **COMPRESSOR**
    (Do not disassemble)

- Check the plated parts of the armature plate for colour changes, peeling or other damage. If there is damage, replace the clutch set.
- 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.



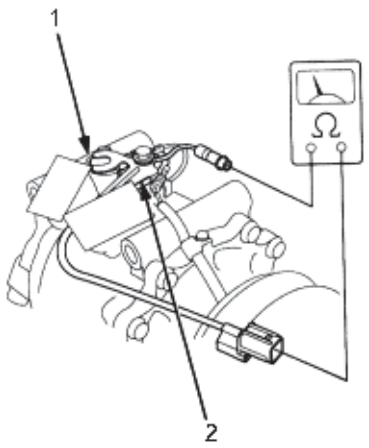
1. ROTOR PULLEY

- Measure the clearance between the rotor pulley and the armature plate all the way around. If the clearance is not within specified limits, the armature plate must be removed and shim(s) added or removed as required, for the procedure (**See Page** 22-32).
  Clearance: 0.5 ±0.15 mm (0.020 ±0.006 in)
  NOTE: The shims are available in four thicknesses: 0.1 mm, 0.2 mm, 0.4 mm and 0.5 mm.



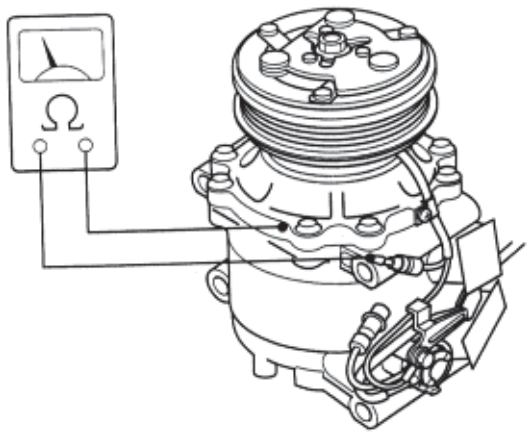
1. ARMATURE PLATE
2. ROTOR PULLEY

- Release the field coil connector from the holder, then disconnect it. Check the thermal protector for continuity. If there is no continuity, replace the thermal protector.

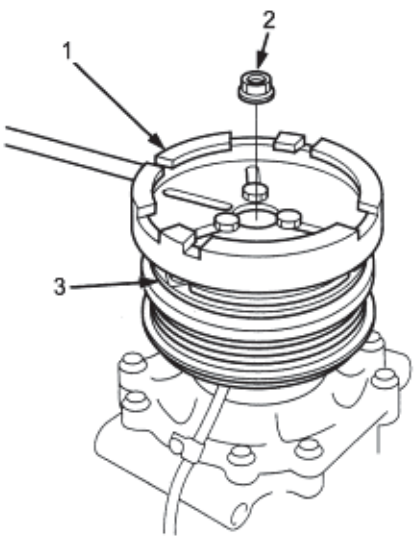


1. THERMAL PROTECTOR
2. HOLDER

- Check resistance of the field coil. If resistance is not within specifications, replace the field coil.
  Field Coil Resistance: 3.2 ±0.15 ohms at 20°C (68°F)

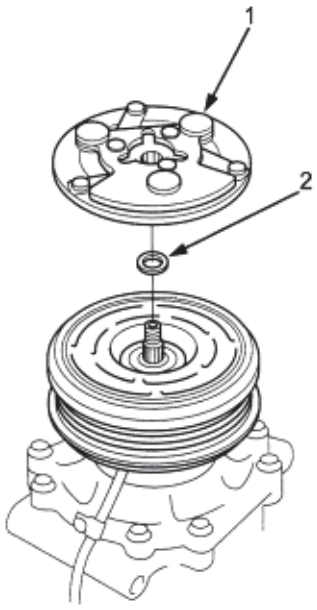


1. Remove the centre nut while holding the armature plate with the special tool.



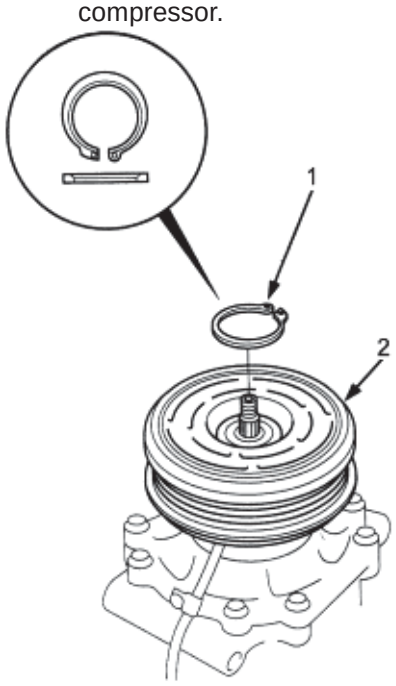
1. A/C CLUTCH HOLDER, 07NAB-HAC0100
2. CENTRE NUT, 17.6 Nm (1.8 kgf/m, 13 lbf/ft), Replace
3. ARMATURE PLATE

2. Remove the armature plate by pulling it up by hand.



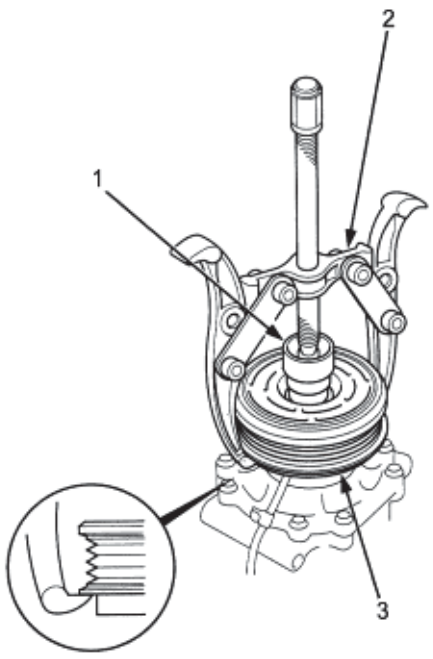
1. ARMATURE PLATE
2. SHIM(S), Replace

3. Remove the snap ring B with snap ring pliers. Be careful not to damage the rotor pulley and compressor.



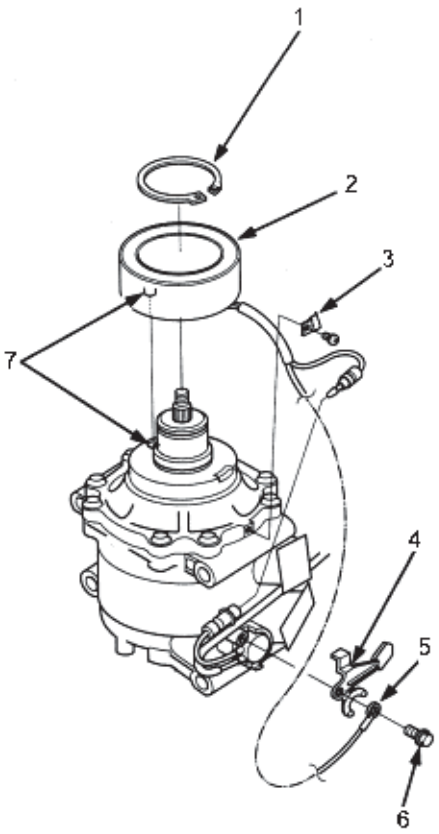
1. SNAP RING B, Replace
2. ROTOR PULLEY

4. Remove the rotor pulley from the shaft with the tools. Be sure the claws of the puller are on the back of the rotor pulley, not on the belt area; otherwise the rotor pulley can be damaged.



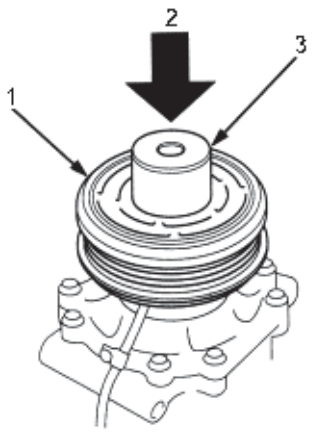
1. DRIVER ATTACHMENT, 07947-6340300
2. PULLER (Commercially available)
3. ROTOR PULLEY

5. Remove the bolt, holder, screw and clamp, then disconnect the field coil connector. Remove the snap ring A with snap ring pliers, then remove the field coil. Be careful not to damage the field coil and compressor.



1. SNAP RING A, Replace
2. FIELD COIL
3. CLAMP
4. HOLDER
5. GROUND TERMINAL
6. 7.4 Nm (0.75 kgf/m, 5 lbf/ft)
7. Align

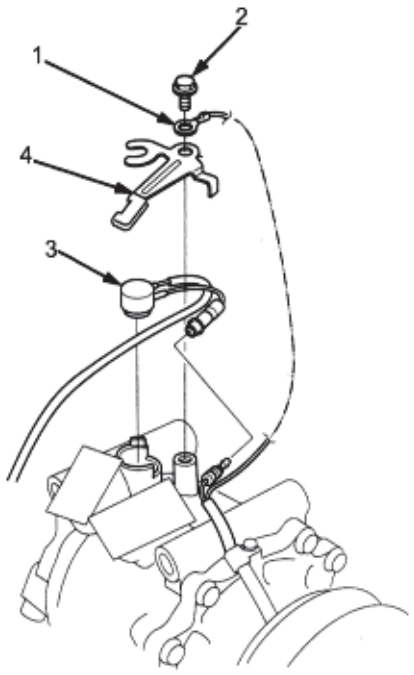
6. Position the rotor pulley squarely over the field coil. Press the rotor pulley onto the compressor boss with the special tool. If the rotor pulley does not press on straight, remove it and check the rotor pulley and compressor boss for burrs or damage. **Maximum press load: 32,200 kPa (400 kgf/cm^2, 5,690 psi)**



1. ROTOR PULLEY
2. Press
3. HUB ASSEMBLY GUIDE ATTACHMENT, 07965-6920500

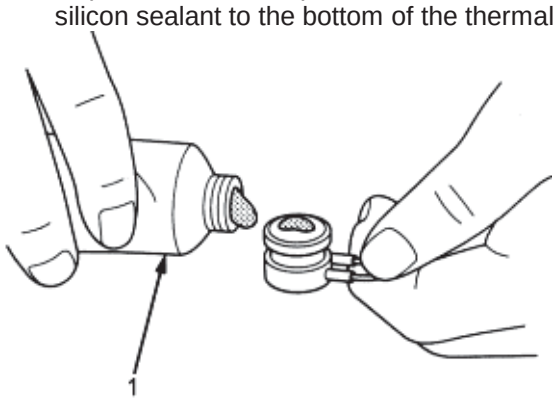
7. Reassemble the compressor clutch in the reverse order of disassembly and note the following items.
   - Install the filed coil with the wire side facing down and align the boss on the field coil with the hole in the compressor.
   - Clean the rotor pulley and compressor sliding surfaces with non-petroleum solvent.
   - Install new snap rings and make sure they are fully seated in the groove.
   - Make sure that the rotor pulley turns smoothly after its reassembled.
   - Route and clamp the wires properly or they can be damaged by the rotor pulley.

1. Remove the bolt, the ground terminal and the holder. Disconnect the field coil connector, then remove the thermal protector.



1. GROUND TERMINAL
2. 7.4 Nm (0.75 kgf/m, 5 lbf/ft)
3. THERMAL PROTECTOR
4. HOLDER

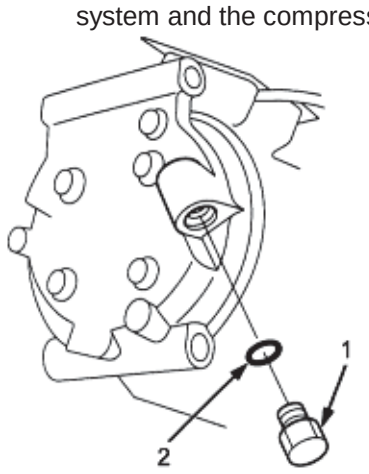
2. Replace the thermal protector with a new one and apply silicon sealant to the bottom of the thermal protector.



1. SILICONE SEALANT

3. Install in the reverse order of removal.

1. Discharge the refrigerant (**See Page** 22-38).
2. Remove the relief valve and the O-ring. Plug the opening to keep foreign matter from entering the system and the compressor oil from running out.

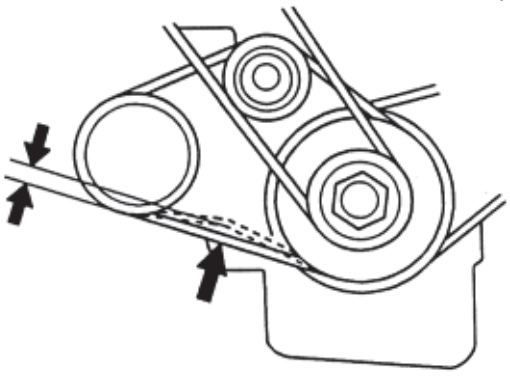


1. RELIEF VALVE, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. O-RING, Replace

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 the relief valve.
6. Charge the system (**See Page** 22-40) and test its performance (**See Page** 22-42).

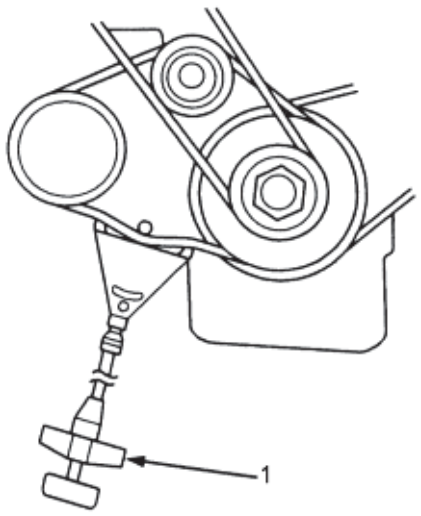
Deflection Method

1. Apply a force of 98 N (10 kgf, 22 lbf) and measure the deflection between the A/C compressor and the crankshaft pulley.
   A/C Compressor Belt
   Used Belt: 8.0 - 10.5 mm (0.31 - 0.41 in)
   New Belt: 5.0 - 7.0 mm (0.20 - 0.28 in)
   Note the following items when adjusting the belt tension:
   - If there are cracks or any damage evident on the belt replace it with a new one.
   - “Used belt” means a belt which has been used for five minutes or more.
   - “New belt” means a belt which has been used for less than five minutes.
2. Loosen the centre nut of the idler pulley.
3. Turn the adjusting bolt to get proper belt tension.
4. Retighten the centre nut of the idler pulley.
5. Recheck the deflection of the A/C compressor belt.



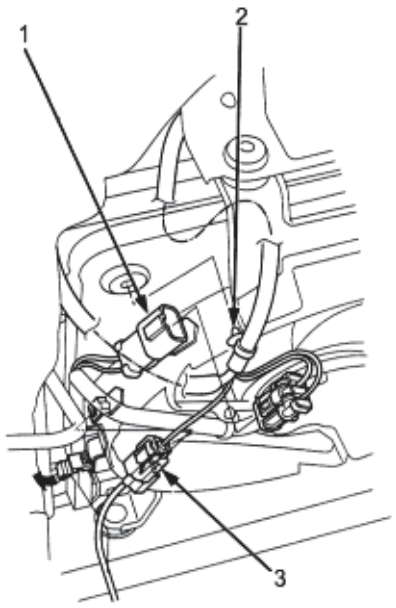
Tension Gauge Method

1. Attach the special tool to the A/C compressor belt as shown below and measure the tension of the belt.
   A/C Compressor Belt
   Used Belt: 340 - 490 N (35-50 kgf, 77-110 lbf)
   New Belt: 690 - 830 N (70-85 kgf, 150-190 lbf)
   Note the following items when adjusting the belt tension:
   - Follow the manufacturer’s instructions for the belt tension gauge.
   - If there are cracks or any damage evident on the belt replace it with a new one.
   - “Used belt” means a belt which has been used for five minutes or more.
   - “New belt” means a belt which has been used for less than five minutes.
2. Loosen the centre nut of the idler pulley.
3. Turn the adjusting bolt to get proper belt tension.
4. Retighten the centre nut of the idler pulley.
5. Recheck the deflection of the A/C compressor belt.



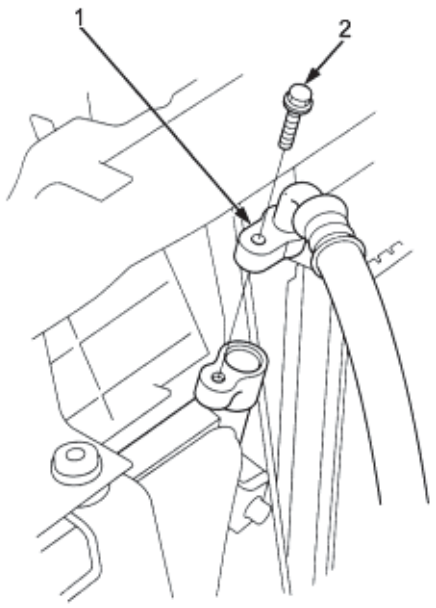
1. BELT TENSION GAUGE, 07JGG-0010101

NOTE: LHD type is shown, RHD type is similar.
1. Discharge the refrigerant (**See Page** 22-38).
2. Disconnect the condenser fan connector and remove the wire harness clips and the compressor clutch connector from the condenser fan shroud.



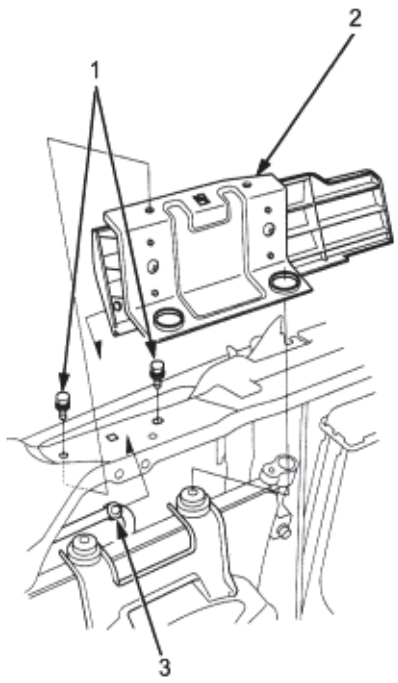
1. CONDENSER FAN CONNECTOR
2. CLIP
3. COMPRESSOR CLUTCH CONNECTOR

3. Remove the bolt, then disconnect the discharge line from the condenser. Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



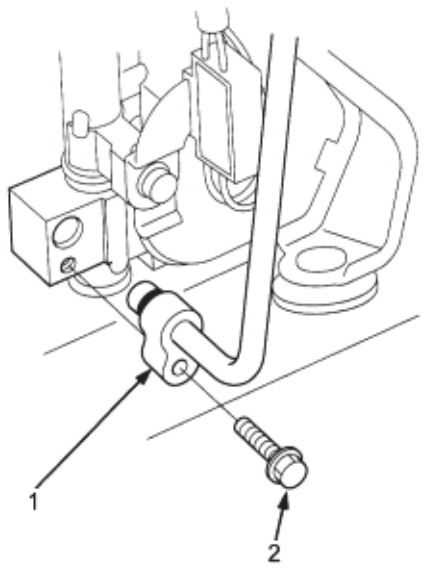
1. DISCHARGE LINE
2. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

4. Remove the wire harness clip, bolts and upper mount bracket.



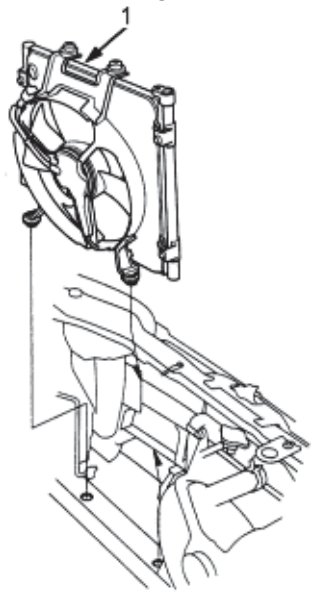
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. UPPER MOUNT BRACKET
3. CLIP

5. Remove the bolt then disconnect the condenser line from the condenser. Plug or cap the lines to immediately after disconnecting them to avoid moisture and dust contamination.



1. CONDENSER LINE
2. 6 x 1.00 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

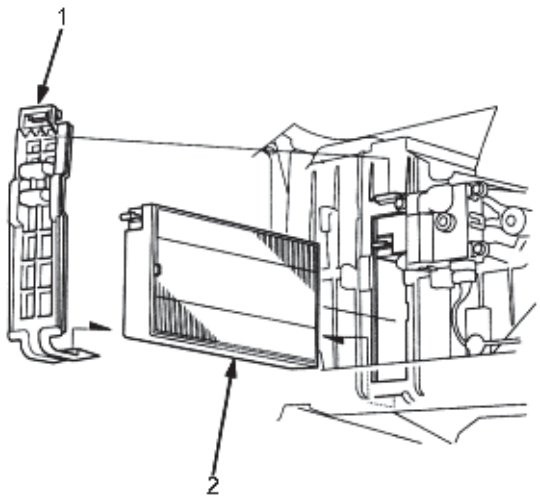
6. Remove the condenser assembly by lifting it up. Be careful not to damage the condenser fins when removing the condenser assembly.



1. CONDENSER ASSEMBLY

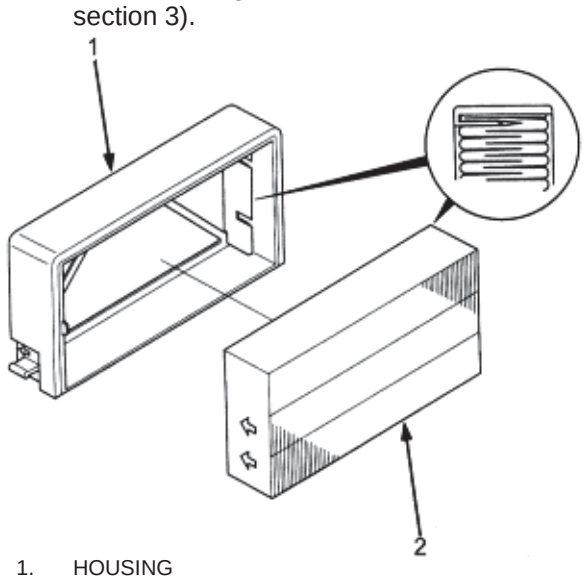
7. Install in the reverse order of removal and note the following items:
   - If you are installing a new condenser, add refrigerant oil (KEIHIN SP-10) (**See Page** 22-24).
   - Replace the O- rings with new ones at each fitting and apply a thin coat of refrigerant oil before installing them. Be sure to use the correct O-rings for HFC-134a (R-134a) to avoid leakage.
   - Be careful not to damage the condenser fins when installing the condenser assembly.
   - Charge the system (**See Page** 22-40) and test its performance (**See Page** 22-42).

NOTE: LHD type is shown, RHD type is symmetrical.
1. Remove the glove box (see section20).
2. Remove the filter lid from the evaporator, then pull out the lower A/C filter and the upper A/C filter.



1. FILTER LID
2. LOWER A/C FILTER

3. Remove the filter from the housing. Replace the filter according to the maintenance schedule (see section 3).



1. HOUSING
2. FILTER

4. Install in the reverse order of removal. Make sure that there is no air leakage.

⚠ CAUTION

- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose and throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapour.

If accidental system discharge occurs, ventilate 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.

⚠ WARNING

- Compressed air mixed with R-134a forms a combustible vapour.
- The vapour can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

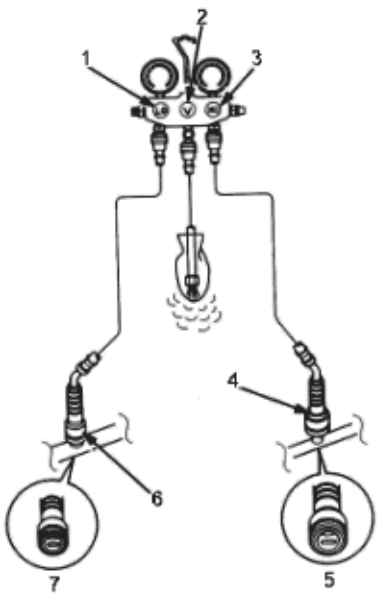
Additional health and safety information may be obtained from the refrigerant and lubrication manufacturers.

NOTE: Use only a gauge set for refrigerant HFC-134a (R-134a).

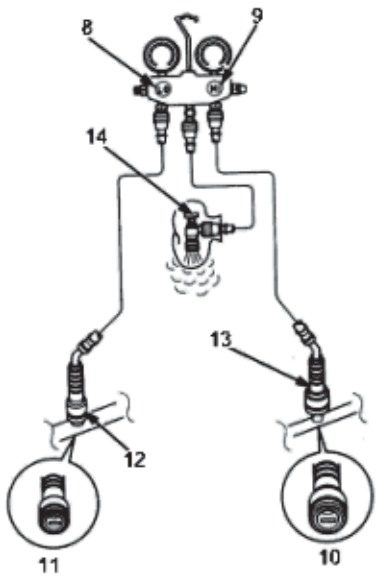
1. Connect the R-134a gauge set as shown.
2. Disconnect the centre hose of the gauge set and place the free end in a shop towel.
3. Open the evacuation valve (two valve gauge evacuation stop valve).
4. Slowly open the high pressure valve slightly to let refrigerant flow from the centre hose only. Do not open the valve too wide. Check the shop towel to make sure no oil is being discharged with the refrigerant.

   NOTICE **If refrigerant is allowed to escape too fast, compressor oil will be drawn out of the system.**
5. After the high pressure gauge reading has dropped below 980 kPa (10 kgf/cm2, 140 psi), open the low side valve to discharge both high and low sides of the system.
6. Note the gauge reading and as system pressure drops, gradually open both high and low side valves fully until both gauges indicate 0 kPa (0 kgf/cm2, 0 psi).

THREE VALVE GAUGE



TWO VALVE GAUGE



1. **LOW PRESSURE VALVE**
2. **EVACUATION VALVE**
3. **HIGH PRESSURE VALVE**
4. **HIGH PRESSURE QUICK JOINT**
5. **16 mm**
6. **LOW PRESSURE QUICK JOINT**
7. **13 mm**
8. **LOW PRESSURE VALVE**
9. **HIGH PRESSURE VALVE**
10. **16 mm**
11. **13 mm**
12. **LOW PRESSURE JOINT**
13. **HIGH PRESSURE QUICK JOINT**

NOTE:
- Use only a gauge set for refrigerant HFC-134a (R-134a).
- Us a vacuum pump adapter which is equipped with a check valve to prevent backflow of the vacuum pump oil.

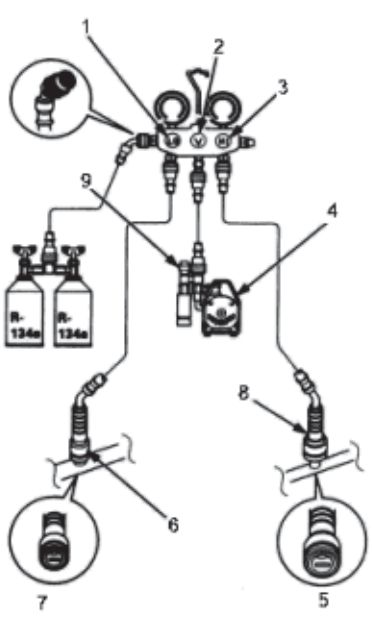
⚠ CAUTION

- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose and throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapour.

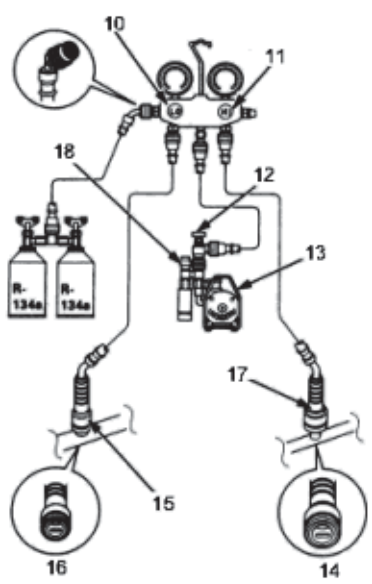
If accidental system discharge occurs, ventilate work area before resuming service. Additional health and safety information may be obtained from the refrigerant and lubricant manufacturer.

1. When an A/C System has been opened to the atmosphere, such as during installation or repair, it must be evacuated using a R-134a refrigerant vacuum pump. (If the system has been open for several days the receiver/dryer should be replaced.)
2. Connect the R-134a gauge set, pump and refrigerant containers (cans of R-134a) as shown.
3. Start the pump, then open both pressure valves and the evacuation valve (two valve gauge; evacuation stop valve). Run the pump for about 15 minutes.
4. Close both pressure valves and the evacuating valve (two valve gauge; evacuation stop valve) and stop the pump. The low pressure gauge should indicate above 93.3 kPa (700 mmHg, 27.6 in/Hg) and remain steady with the valves closed.
   NOTE: If the low pressure does not reach more than 93.3 kPa (700 mmHg, 27.6 in/Hg) in 15 minutes, there is probably a leak in the system. Check for leaks and repair (see Leak Test).
5. If there are no leaks, open the valves and continue pumping for at least another 15 minutes. The close both valves and stop the pump.

THREE VALVE GAUGE



TWO VALVE GAUGE



1. **LOW PRESSURE VALVE**
2. **EVACUATION VALVE**
3. **HIGH PRESSURE VALVE**
4. **VACUUM PUMP**
5. **16 mm**
6. **LOW PRESSURE QUICK JOINT**
7. **13 mm**
8. **HIGH PRESSURE QUICK JOINT**
9. **CHECK VALVE**
10. **LOW PRESSURE VALVE**
11. **HIGH PRESSURE VALVE**
12. **EVACUATION STOP VALVE**
13. **VACUUM PUMP**
14. **16 mm**
15. **LOW PRESSURE QUICK JOINT**
16. **13 mm**
17. **HIGH PRESSURE QUICK JOINT**
18. **CHECK VALVE**

NOTE:
- Use only a gauge set for refrigerant HFC-134a (R-134a).
- Use a vacuum pump adapter which is equipped with a check valve to prevent backflow of the vacuum pump oil.

⚠ CAUTION

- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose and throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapour.

If accidental system discharge occurs, ventilate 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.

⚠ WARNING

- Compressed air mixed with R-134a forms a combustible vapour.
- The vapour can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

Additional health and safety information may be obtained from the refrigerant and lubrication manufacturers.

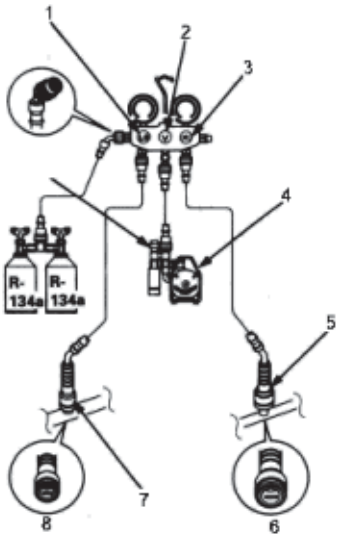
1. After the leak test, check that the high pressure valve is closed and start the engine.
2. Open the front door.
   Turn the A/C switch ON.
   Set the temperature control dial to MAX COOL.
   Set the mode control dial to VENT.
   Turn the fan switch to MAX.
3. Open the low pressure valve and charge with R-134a refrigerant.

⚠ WARNING

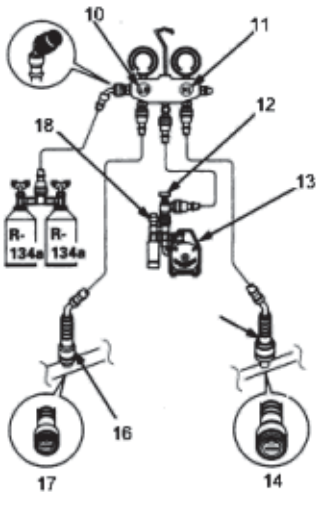
- Do not open the high-pressure valve.
- Do not turn the cans upside down.

4. Charge the system with refrigerant capacity. Do not overcharge the system; the compressor will be damaged.
   Refrigerant capacity:
   KY model, 650 +0, - 50g (22.9 +0, -1.8 oz)
   Except KY model, 600 +0, - 50g (21.2 +0, -1.8 oz)
5. When fully charged, close the low pressure valve and the refrigerant cans. Check the system.
6. Stop the engine and disconnect he charge hose quickly.
7. Check the system for leaks using a leak detector for refrigerant R-134a.
   NOTE: Particularly check for leaks around the compressor, condenser and receiver/dryer.

THREE VALVE GAUGE



TWO VALVE GAUGE



1. **LOW PRESSURE VALVE**
2. **EVACUATION VALVE**
3. **HIGH PRESSURE VALVE**
4. **VACUUM PUMP**
5. **HIGH PRESSURE QUICK JOINT**
6. **16 mm**
7. **LOW PRESSURE QUICK JOINT**
8. **13 mm**
9. **CHECK VALVE**
10. **LOW PRESSURE VALVE**
11. **HIGH PRESSURE VALVE**
12. **EVACUATION STOP VALVE**
13. **VACUUM PUMP**
14. **16 mm**
15. **HIGH PRESSURE QUICK JOINT**
16. **LOW PRESSURE QUICK JOINT**
17. **13 mm**
18. **CHECK VALVE**

⚠ CAUTION

- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose and throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapour.

If accidental system discharge occurs, ventilate 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.

⚠ WARNING

- Compressed air mixed with R-134a forms a combustible vapour.
- The vapour can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

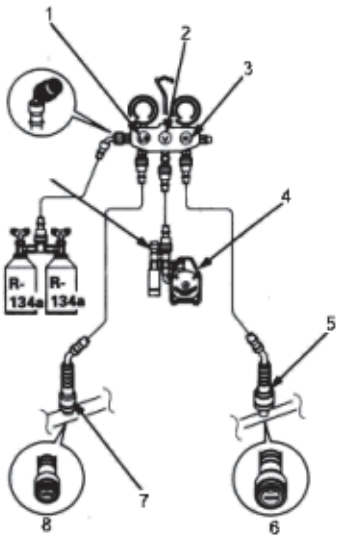
Additional health and safety information may be obtained from the refrigerant and lubrication manufacturers.

NOTE: Use only a gauge set for refrigerant HFC-134a (R-134a).

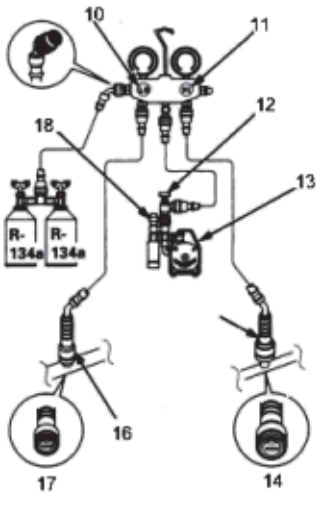
- Use only a gauge set for refrigerant HFC-134a (R-134a).
- Us a vacuum pump adapter which is equipped with a check valve to prevent backflow of the vacuum pump oil.

1. Close the evacuation valve (two valve gauge; evacuation stop valve).
2. Open the cans.
3. Open the high pressure valve to charge the system to about 98 kPa (1.0 kgf/cm2, 14 psi), then close it.
   NOTE: Close the low pressure valve.
4. Check the system for leaks using a leak detector for refrigerant R-134a.
   NOTE: Particularly check for leaks around the compressor, condenser and receiver/dryer.
5. If you find any leaks, tighten the joint nuts and bolts to the specified torque.
6. Recheck the system for leaks using the leak detector.
7. If you find leaks that require the system to be opened (to repair or replace hoses, fittings etc), release any charge in the system.
8. After checking and repairing leaks, the system must be evacuated (System Evacuation (**See Page 22-39**).

THREE VALVE GAUGE



TWO VALVE GAUGE



1. **LOW PRESSURE VALVE**
2. **EVACUATION VALVE**
3. **HIGH PRESSURE VALVE**
4. **VACUUM PUMP**
5. **16 mm**
6. **HIGH PRESSURE QUICK JOINT**
7. **LOW PRESSURE QUICK JOINT**
8. **13 mm**
9. **CHECK VALVE**
10. **LOW PRESSURE VALVE**
11. **HIGH PRESSURE VALVE**
12. **EVACUATION STOP VALVE**
13. **VACUUM PUMP**
14. **16 mm**
15. **HIGH PRESSURE QUICK JOINT**
16. **LOW PRESSURE QUICK JOINT**
17. **13 mm**
18. **CHECK VALVE**

The performance test will help determine if the air conditioning system is operating within specifications.
NOTE:
- Use only a gauge se for refrigerant HFC-134a (R-134a).
- Use a vacuum pump adapter which is equipped with a check valve to prevent backflow of the vacuum pump oil.

⚠ CAUTION

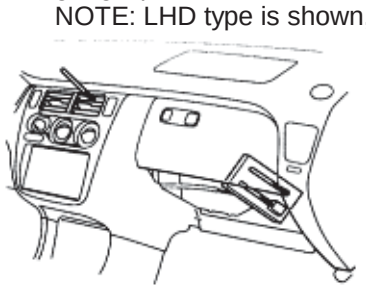
- Air conditioning refrigerant or lubricant vapour can irritate your eyes, nose and throat.
- Be careful when connecting service equipment.
- Do not breathe refrigerant or vapour.

If accidental system discharge occurs, ventilate 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.

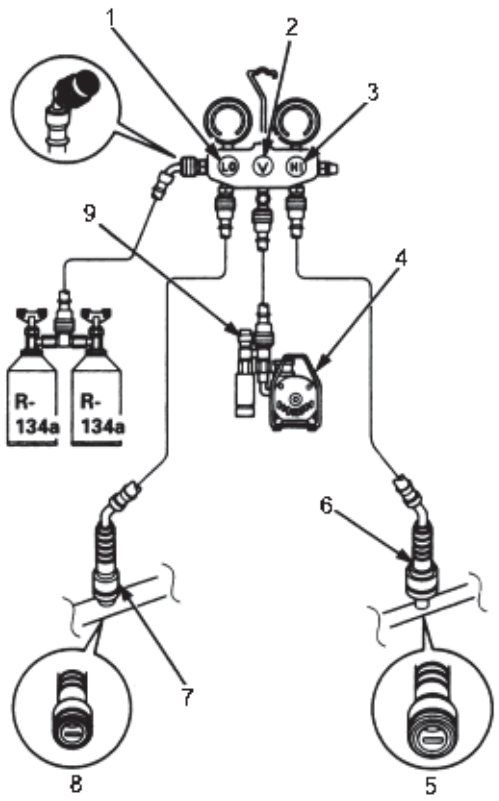
⚠ WARNING

- Compressed air mixed with R-134a forms a combustible vapour.
- The vapour can burn or explode causing serious injury.
- Never use compressed air to pressure test R-134a service equipment or vehicle air conditioning systems.

Additional health and safety information may be obtained from the refrigerant and lubrication manufacturers.
1. Connect the R-134a gauge set as shown.
2. Insert a thermometer in the centre air vent. Determine the relative humidity and air temperature.
3. Test conditions:
   - Avoid direct sunlight
   - Open hood
   - Open front doors
   - Set the temperature control dial to MAX COOL, the mode control dial to VENT and the recirculation control switch to RECIRCULATE.
   - Turn the A/C switch on and the fan switch to MAX.
   - Run the engine at 1,500 rpm (min -1)
   - No driver or passengers in vehicle
4. After running the air conditioning for ten minutes under the above conditions, read the delivery temperature from the thermometer in the centre air vent (the intake temperature near the blower unit behind the glove box and the high and low system pressure form the A/C gauges).
   NOTE: LHD type is shown, RHD type is symmetrical.

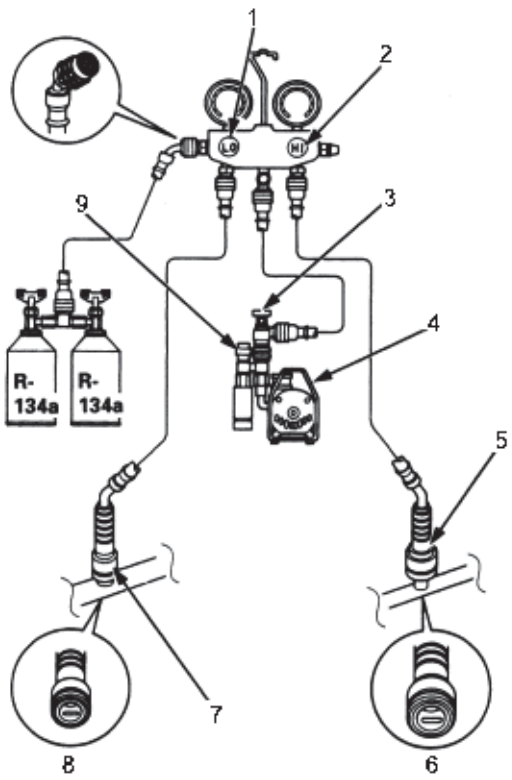


THREE VALVE GAUGE



1. LOW PRESSURE VALVE
2. EVACUATION VALVE
3. HIGH PRESSURE VALVE
4. VACUUM PUMP
5. 16 mm
6. HIGH PRESSURE QUICK JOINT
7. LOW PRESSURE JOINT
8. 13 mm
9. CHECK VALVE

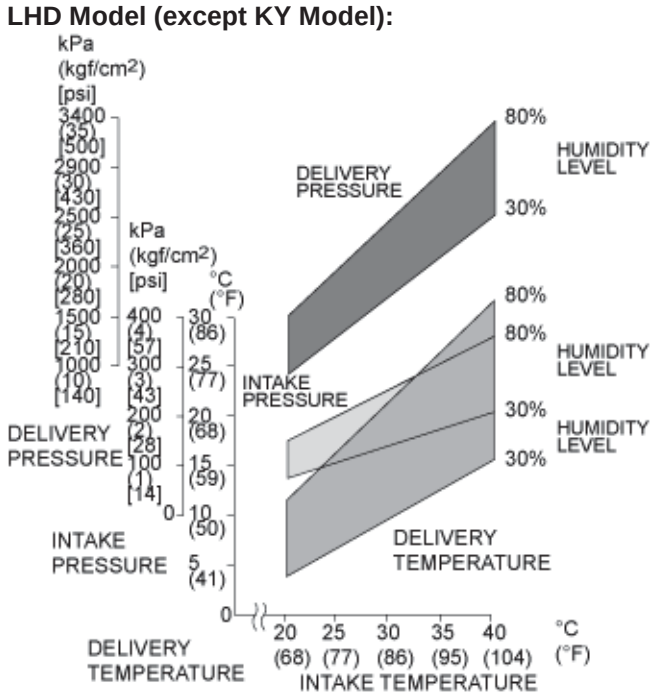
TWO VALVE GAUGE



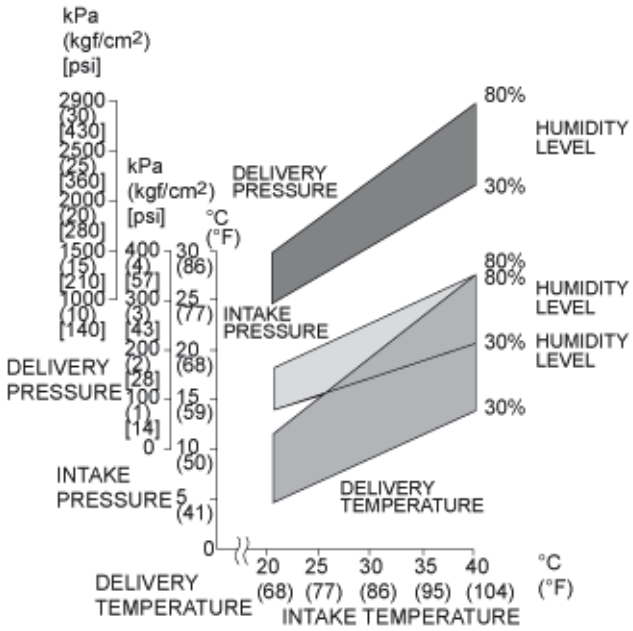
1. LOW PRESSURE VALVE
2. HIGH PRESSURE VALVE
3. EVACUATION STOP VALVE
4. VACUUM PUMP
5. HIGH PRESSURE QUICK JOINT
6. 16 mm
7. LOW PRESSURE QUICK JOINT
8. 13 mm
9. CHECK VALVE

5. To complete the charts:
   - Mark the delivery temperature along the vertical line.
   - Mark the intake temperature (ambient air temperature) along the bottom line.
   - Draw a line straight up from the air temperature to the humidity.
   - Mark a point 10% above and 10% below the humidity level.
   - From each point, draw a horizontal line across the delivery temperature.
   - The delivery temperature should fall between the two lines.
   - Complete the low side pressure test and high side pressure test in the same way.
   - Any measurements outside the line may indicate the need for further inspection

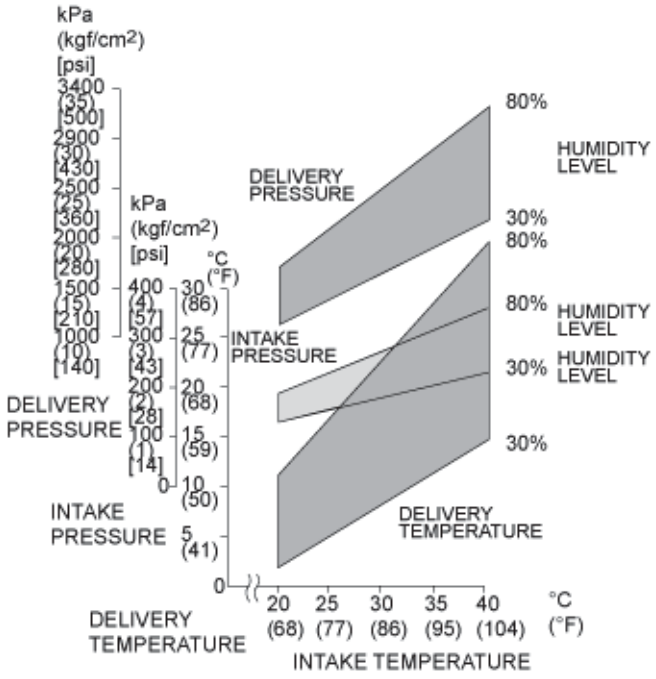
LHD Model (except KY Model):



KY Model:



RHD Model:



NOTE: For performance test (**See Page** 22-42)

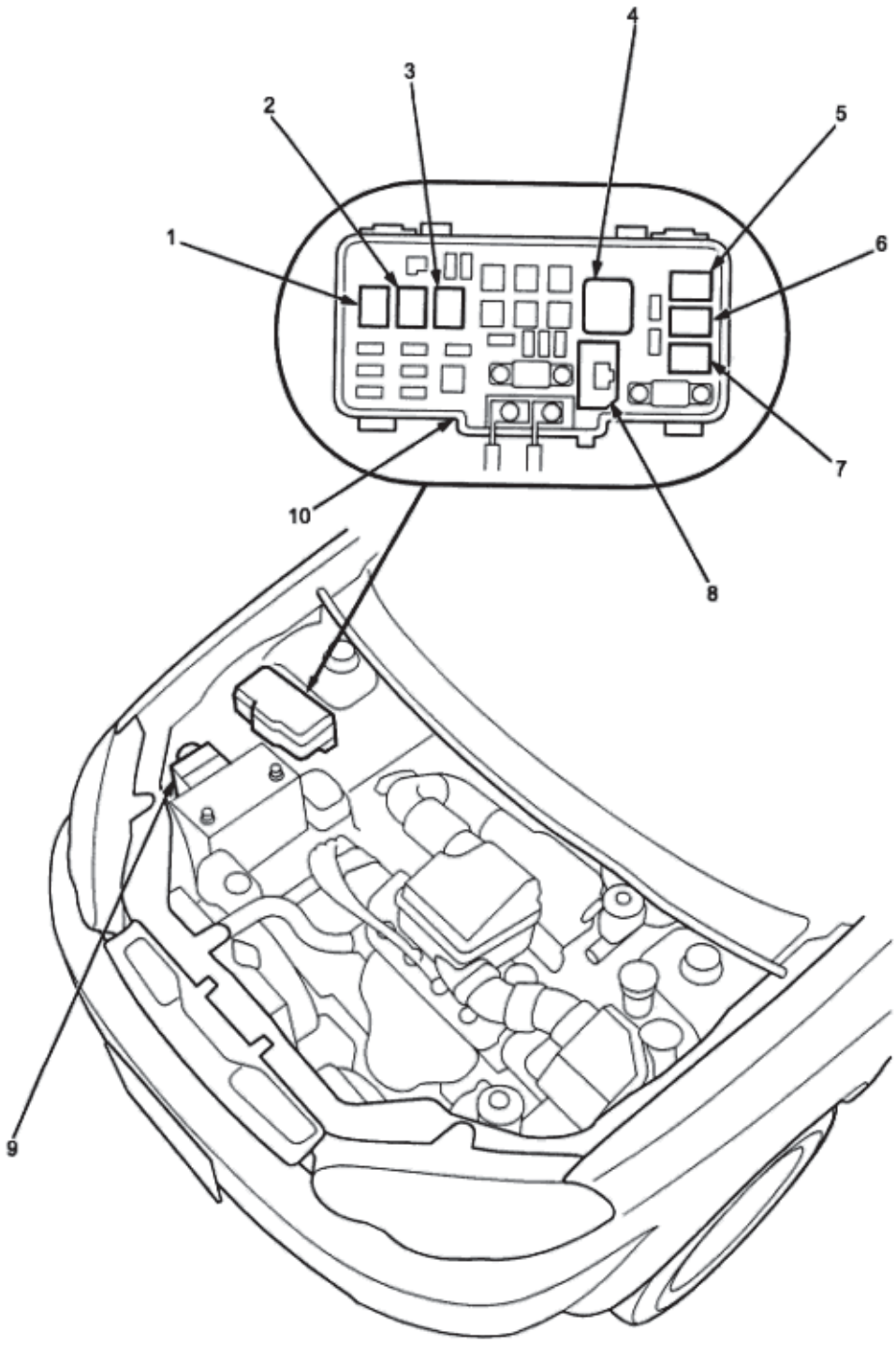
Test results	Related symptoms	Probable cause	Remedy
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 200 kPa (2.0 kgf/cm2, 28 psi) quickly, and then falls gradually	Air in system	Discharge, evacuate, and recharge with specified amount. Evacuation: (**See Page** 22-39) Charging: (**See Page** 22-40)
Discharge (high) pressure abnormally high	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate and recharge with specified amount.
Discharge (high) pressure abnormally high	Reduced or no air flow through condenser.	• Clogged condenser or radiator fins. • Condenser or radiator fan not working properly.	• Clean • Check voltage and fan rpm • Check fan direction
Discharge (high) pressure abnormally high	Line to condenser is excessively hot.	Restricted flow of refrigerant in system.	Restricted lines.
Discharge pressure abnormally low.	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system.	• Check for leak. • Charge system.
Discharge pressure abnormally low.	High or low pressures are balanced soon after stopping compressor. Low side is higher than normal.	• Faulty compressor discharge valve. • Faulty compressor seal.	Replace the compressor.
Discharge pressure abnormally low.	Outlet of expansion valve is not frosted, and low pressure line is not cold. Low pressure gauge indicates vacuum.	• Faulty expansion valve. • Moisture in system.	• Replace. • Discharge, evacuate and recharge with specified amount.
Suction (low) pressure abnormally low.	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system.	• Repair the leaks. • Discharge, evacuate and recharge with specified amount. • Charge as required.
Suction (low) pressure abnormally low.	Expansion valve is not frosted, and low pressure line is not cold. Low pressure gauge indicates vacuum.	• Frozen expansion valve (moisture in system) • Faulty expansion valve	• Discharge, evacuate and recharge with specified amount. • Replace the expansion valve.
Suction (low) pressure abnormally low.	Discharge temperature is low and the air flow from vents is restricted.	Frozen evaporator	Run the fan with compressor off, then check evaporator temperature sensor.
Suction (low) pressure abnormally low.	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
Suction (low) pressure abnormally low.	Receiver/dryer outlet is cool, and inlet is warm (should be warm during operation).	Clogged receiver/dryer	Replace
Suction pressure abnormally high.	Low pressure hose and check joint are cooler than the temperature around evaporator	• Expansion valve open too long. • Loose expansion capillary tube.	Repair or replace.
Suction pressure abnormally high.	Suction pressure is lowered when condenser is cooled by water.	Excessive refrigerant in system.	Discharge, evacuate and recharge with specified amount.
Suction pressure abnormally high.	High and low pressure are equalised as soon as the compressor is stopped, and both gauges fluctuate while running.	• Faulty gasket. • Faulty high pressure valve. • Foreign particle stuck in high pressure valve.	Replace the compressor.
Suction and discharge pressures abnormally high	Reduced air flow through condenser	• Clogged condenser or radiator fins. • Condenser or radiator fan not working properly.	• Clean • Check voltage and fan rpm • Check fan direction
Suction and discharge pressures abnormally high	No bubbles in sight glass when condenser is cooled by water	Excessive refrigerant in system	Discharge, evacuate and recharge with specified amount
Suction and discharge pressures abnormally low	Low pressure hose and metal end areas are cooler than evaporator	Clogged or kinked low pressure hose parts	Repair or replace
Suction and discharge pressures abnormally low	Temperature around expansion valve is too low compared with that around receiver/dryer	Clogged high pressure line	Repair or replace
Refrigerant leaks	Compressor clutch is dirty	Compressor high pressure line	Replace the compressor
Refrigerant leaks	Compressor bolt(s) dirty	Leaking around bolt(s)	Tighten bolt(s) or replace compressor
Refrigerant leaks	Compressor gasket is wet with oil	Gasket leaking	Replace the compressor

Relay and Control Unit Locations

Engine Compartment

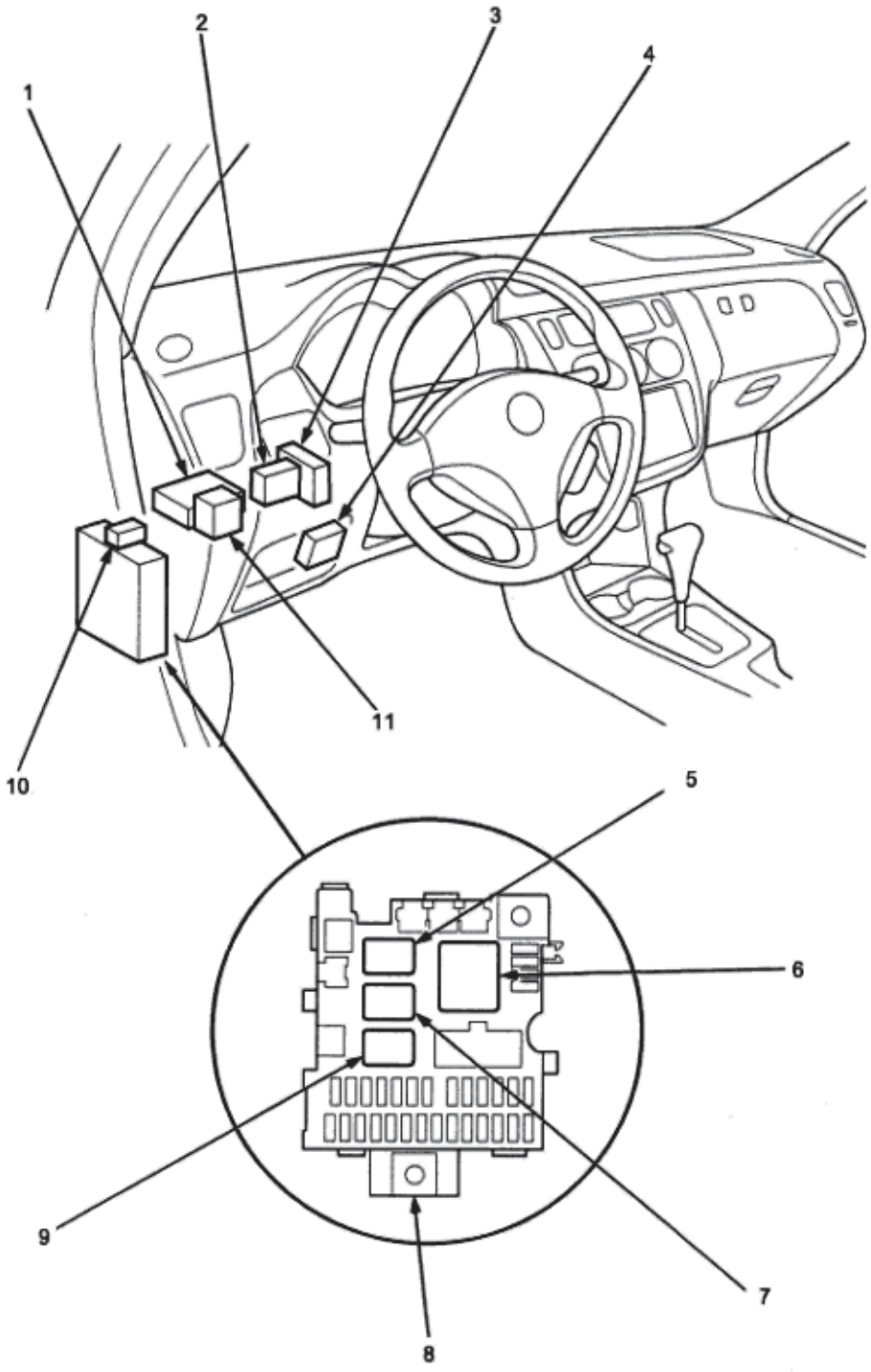
23-A-2

NOTE: LHD type is shown, RHD type is similar.



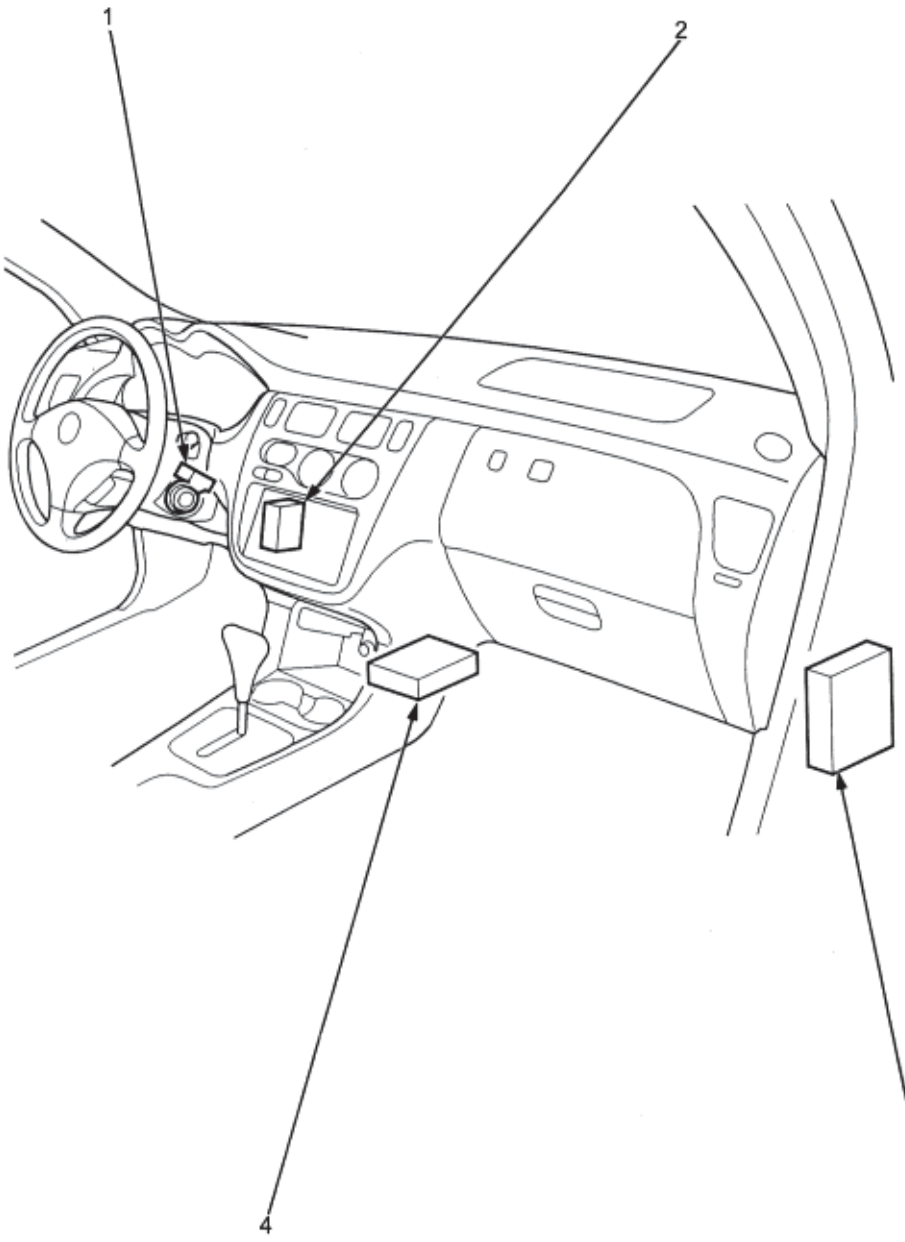
1. **HEADLIGHT RELAY 1**
2. **HEADLIGHT RELAY 2**
3. **HORN RELAY**
4. **BLOWER MOTOR RELAY**
5. **CONDENSER FAN RELAY**
6. **RADIATOR FAN RELAY**
7. **A/C COMPRESSOR CLUTCH RELAY**
8. **ELD UNIT (CVT)**
9. **ABS MODULATOR ASSEMBLY**
   (Has built-in control unit)
10. **UNDER-HOOD FUSE/RELAY BOX**

NOTE: LHD type is shown, RHD type is similar.



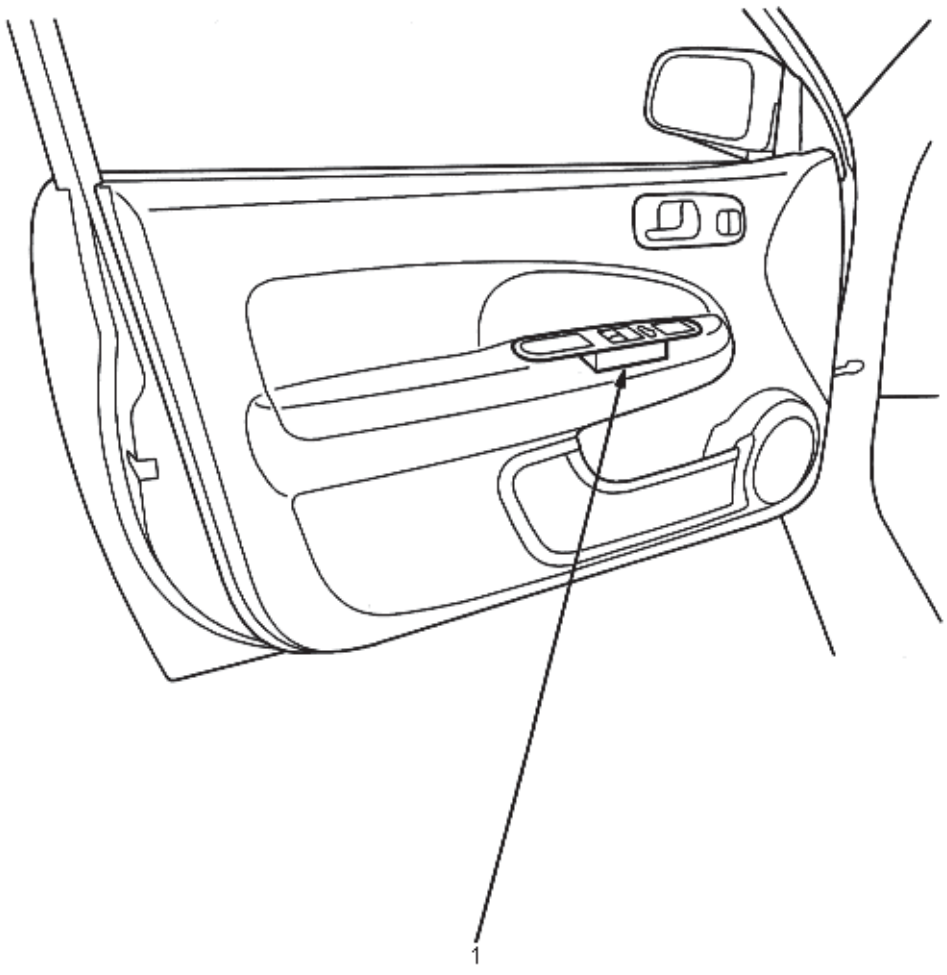
1. **INTEGRATED CONTROL UNIT**
2. **KEYLESS/POWER DOOR LOCK CONTROL UNIT**
3. **REAR WINDOW INTERMITTENT WIPER CONTROL UNIT (KG, KE models)**
4. **VEHICLE SPEED ALARM UNIT (KY model)**
5. **POWER WINDOW RELAY**
   (Wire colours: YEL/BLK, BLK, BLK/WHT and GRN/BLK)
6. **TURN SIGNAL/HAZARD RELAY**
   (Wire colours GRN/ORN, BLK and GRN/WHT)
7. **TAILLIGHT RELAY**
   (Wire colours: RED/YEL, YEL, RED/BLK and RED/YEL)
8. **UNDER-DASH FUSE/RELAY BOX**
9. **SEAT HEATER MAIN RELAY (KG model)**
   (Wire colours: BLK, BLK/YEL, BLK/ORN and WHT/GRN)
   SHIFT LOCK RELAY (KQ, KU models: CVT)
   (Wire colours: BLK/BLU, YEL, GRN/WHT and YEL/BLK)
10. **STARTER CUT RELAY (LHD type: CVT)**
    (Wire colours: BLK/WHT, WHT/RED, BLK/RED and BLK/WHT)
11. **PGM-FI MAIN RELAY**

NOTE: LHD type is shown, RHD type is similar.



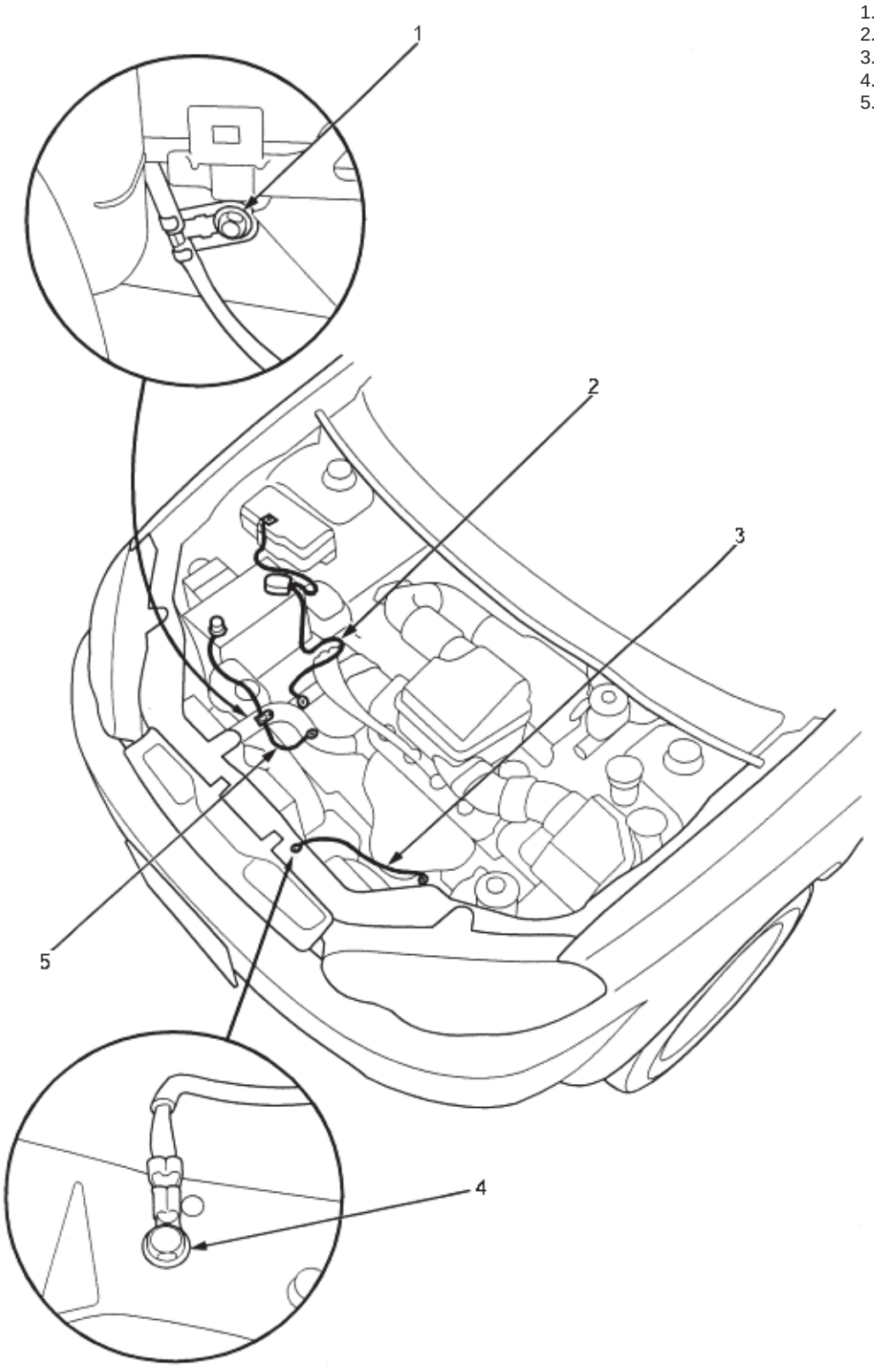
1. **IMMOBILISER UNIT (KG, KE, KN, KQ and KU models)**
2. **REAR FOG LIGHT CONTROL UNIT (KG and KE models)**
   SEAT BELT ALARM UNIT (KY and KQ models)
3. **ECM/PCM**
4. **SRS UNIT**

NOTE: LHD type is shown, RHD type is symmetrical



1. **POWER WINDOW MASTER SWITCH**
   (Has built-in control unit)

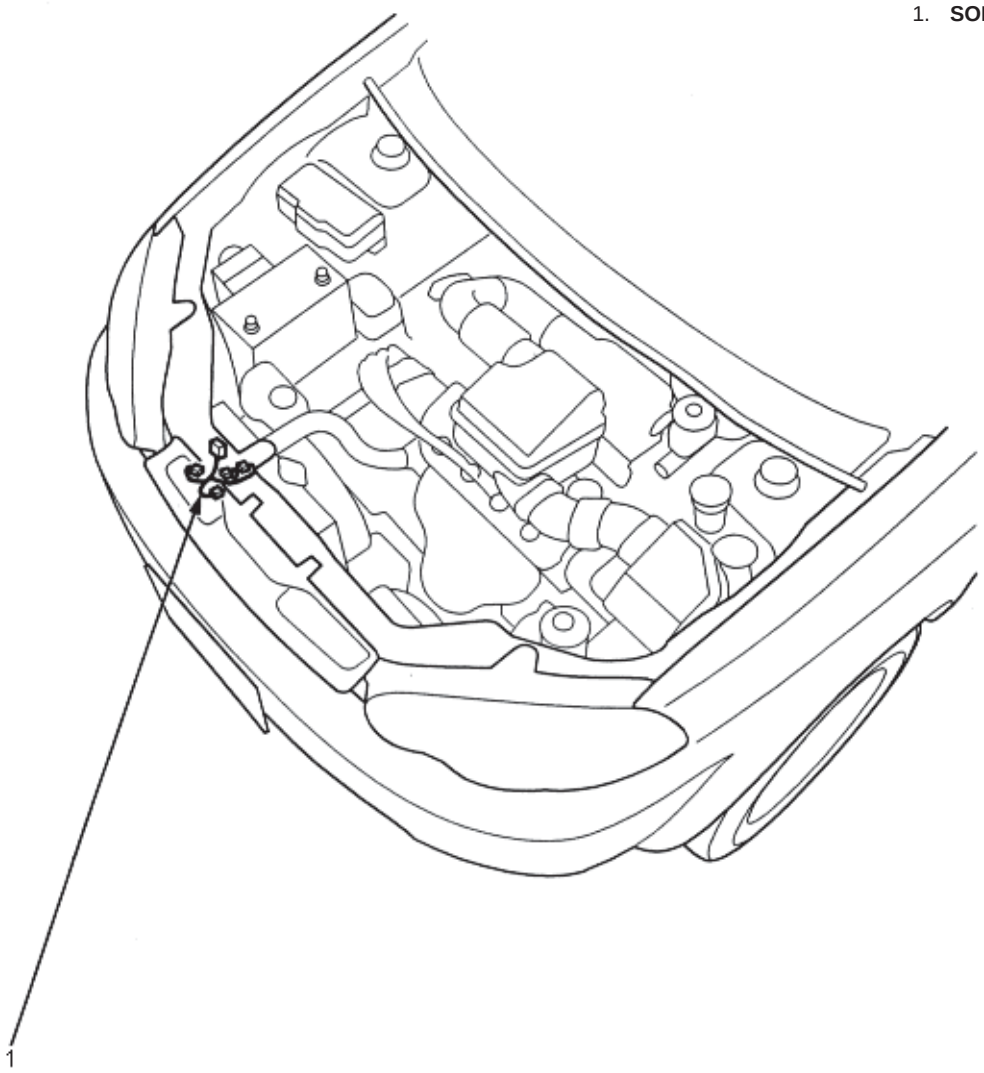
NOTE: LHD type is shown, RHD type is similar.



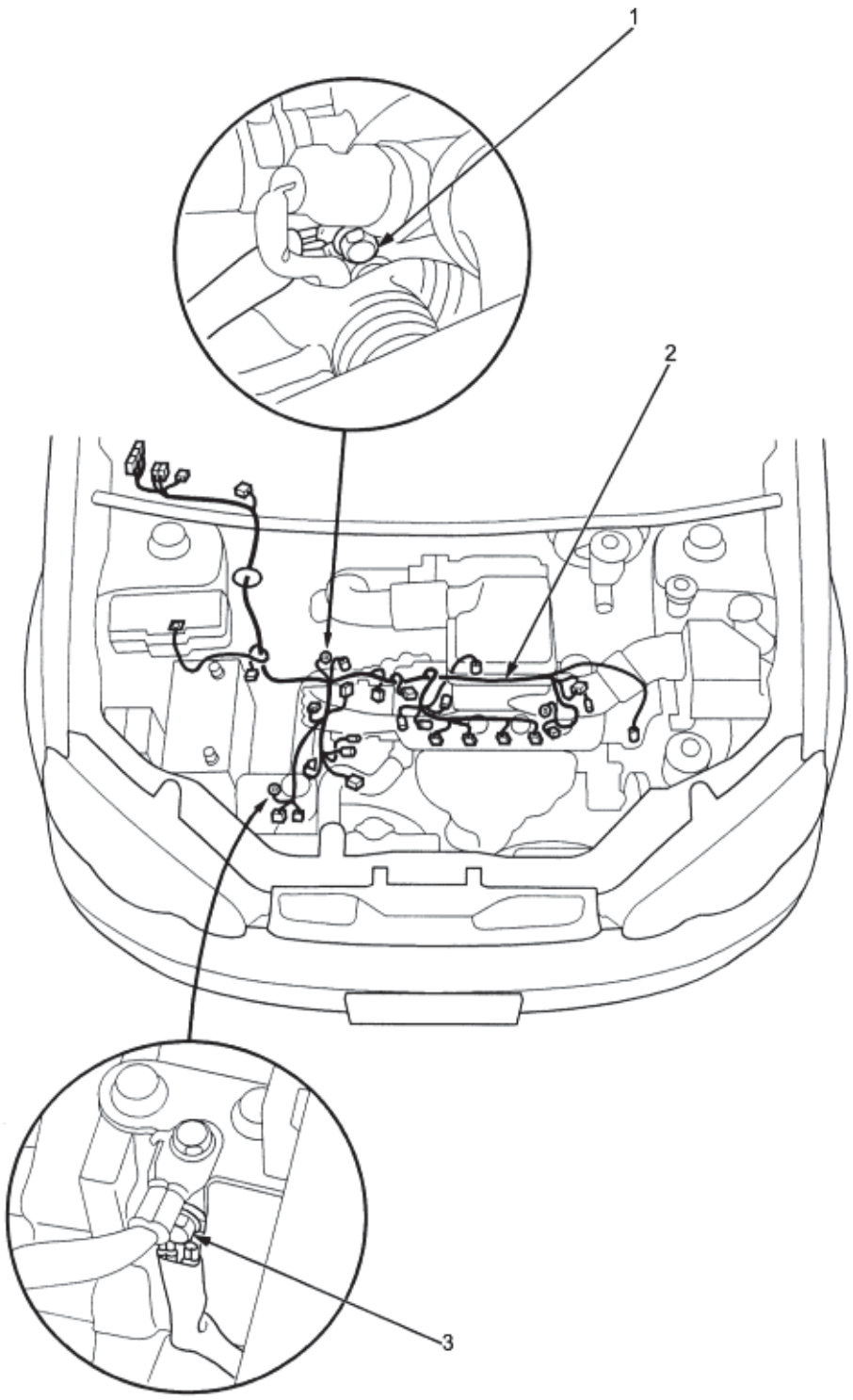
1. **G1**
2. **STARTER CABLES**
3. **ENGINE GROUND CABLE**
4. **G2**
5. **BATTERY GROUND CABLE**

NOTE: LHD type is shown, RHD type is similar.

1. **SOLENOID WIRE HARNESS (CVT)**

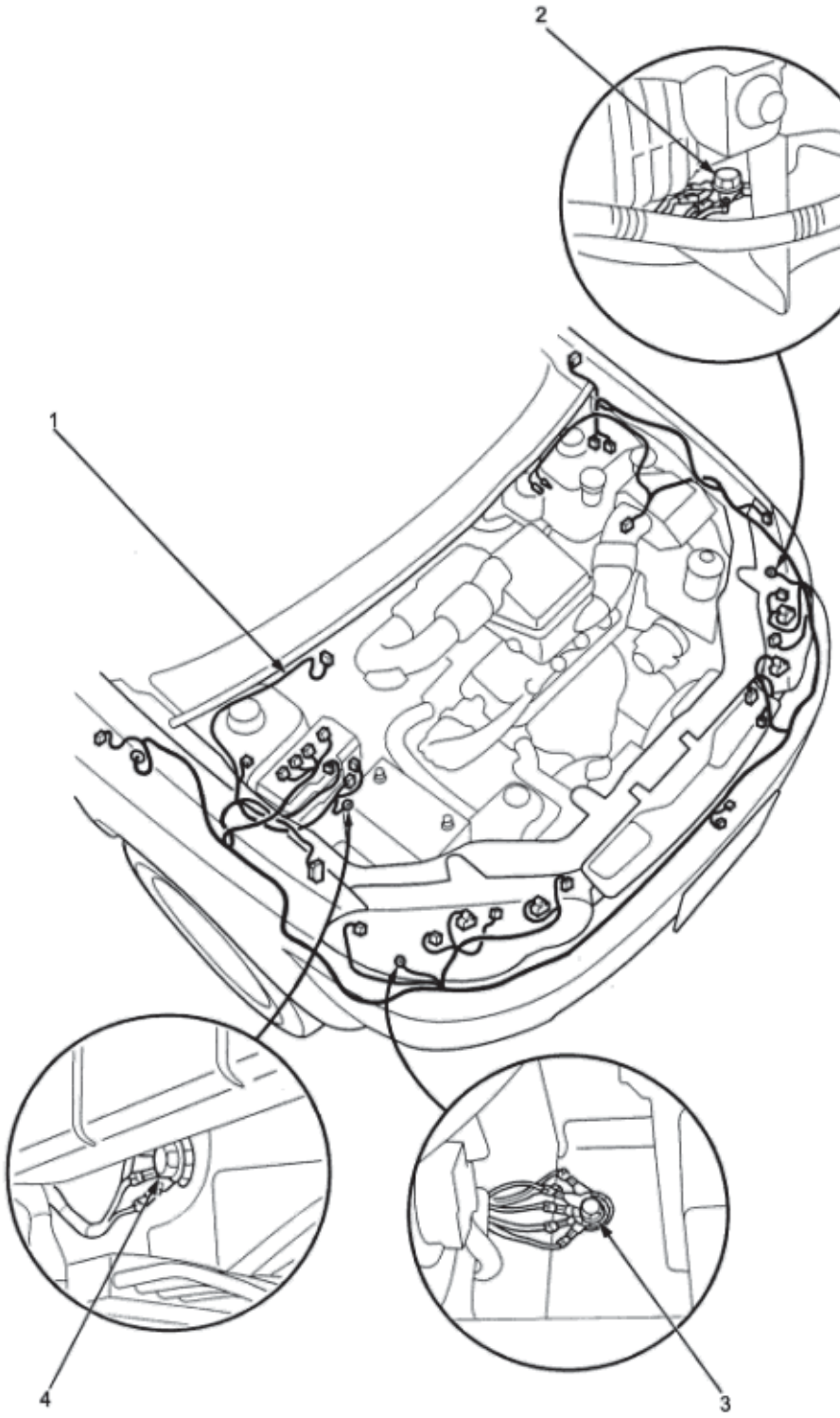


NOTE: LHD type is shown, RHD type is similar.



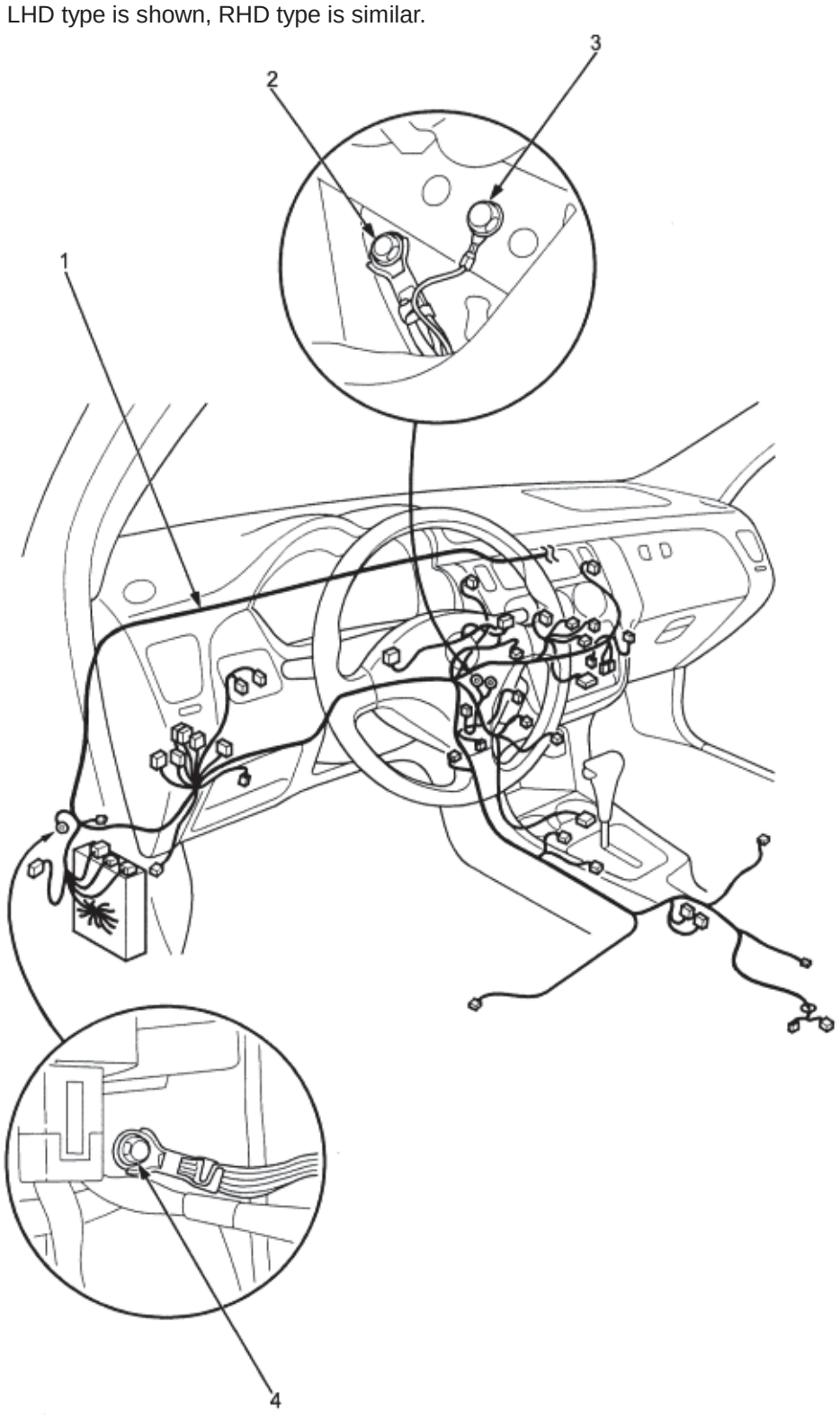
1. **G101 (M/T)**
2. **ENGINE WIRE HARNESS**
3. **G101 (CVT)**

NOTE: LHD type is shown, RHD type is similar.



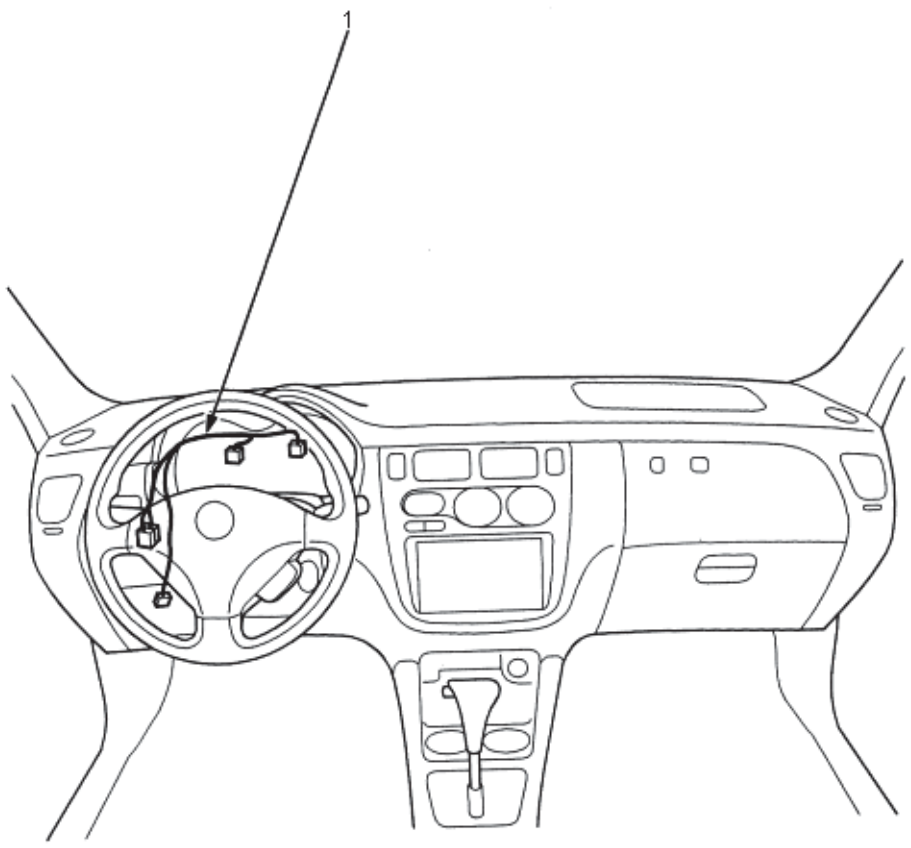
1. **MAIN WIRE HARNESS**
2. **G301**
3. **G201**
4. **G202**

NOTE: LHD type is shown, RHD type is similar.



1. **MAIN WIRE HARNESS**
2. **G402**
3. **G403**
4. **G401**

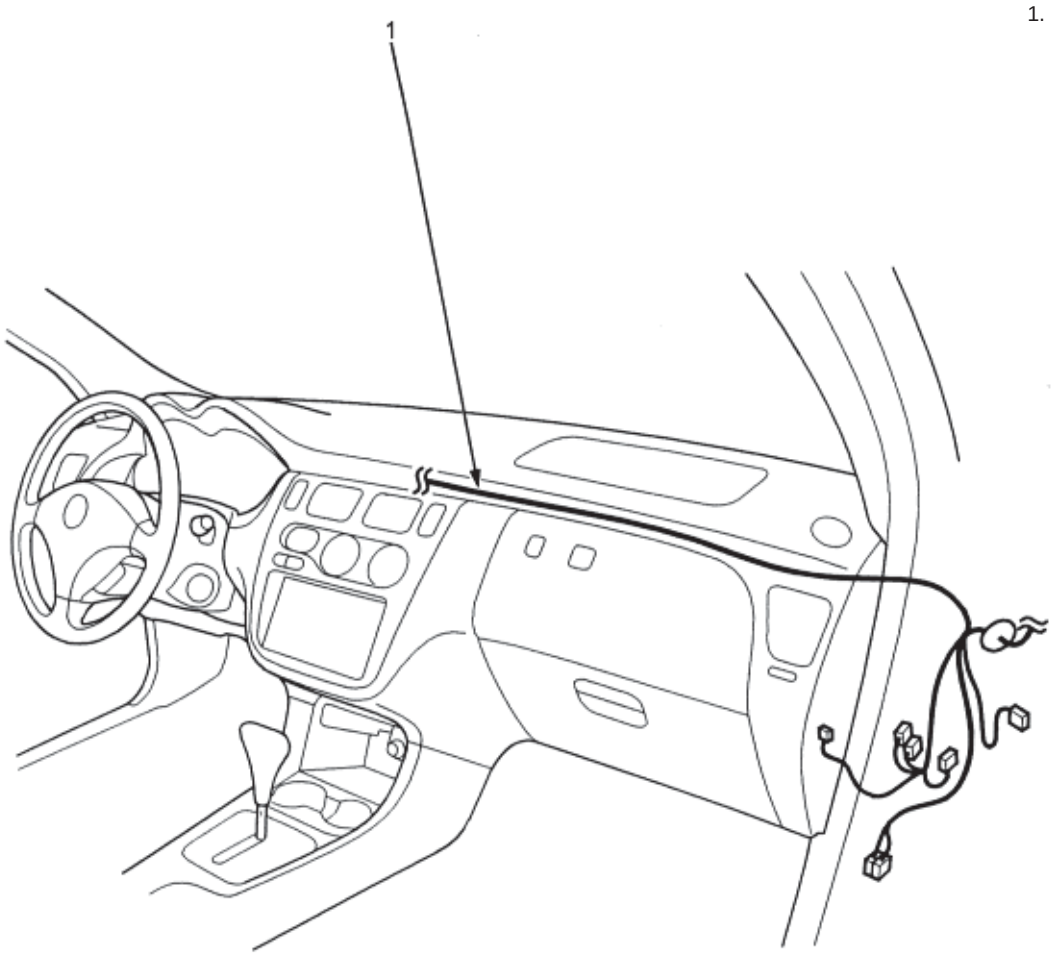
NOTE: LHD type is shown, RHD type is similar.



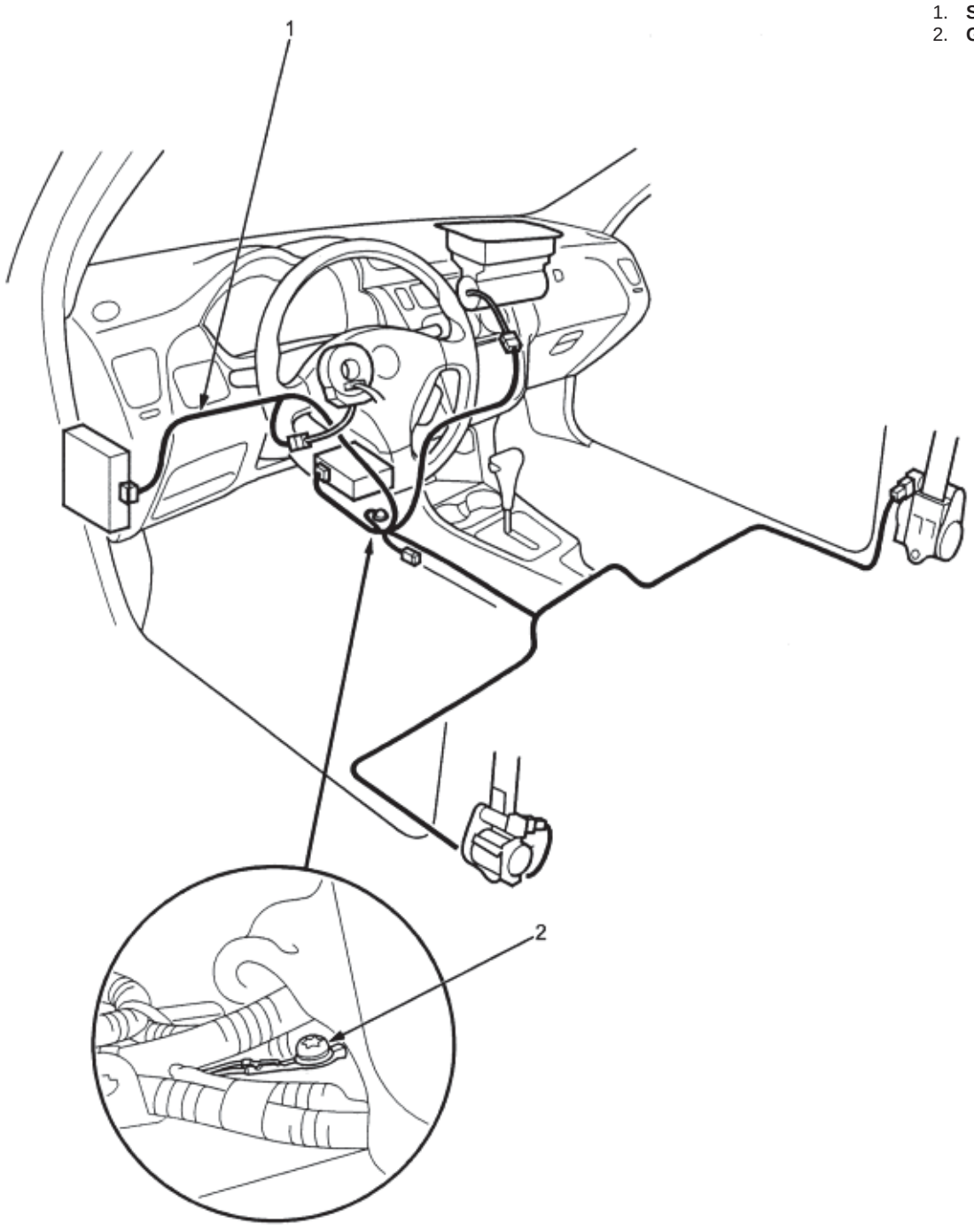
1. **GAUGE ASSEMBLY SUB-HARNESS**

NOTE: LHD type is shown, RHD type is similar.

1. **MAIN WIRE HARNESS**

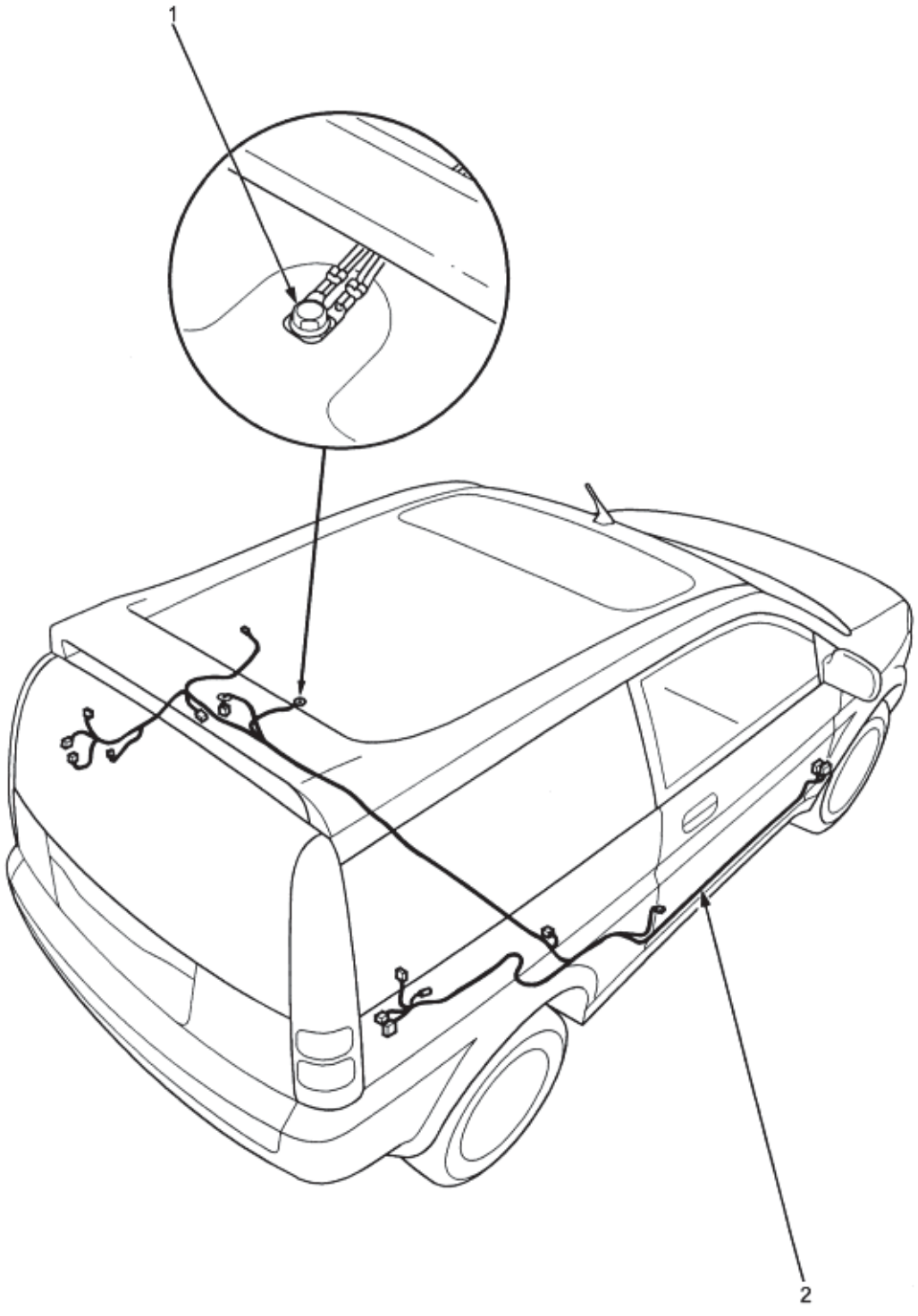


NOTE: LHD type is shown, RHD type is similar.



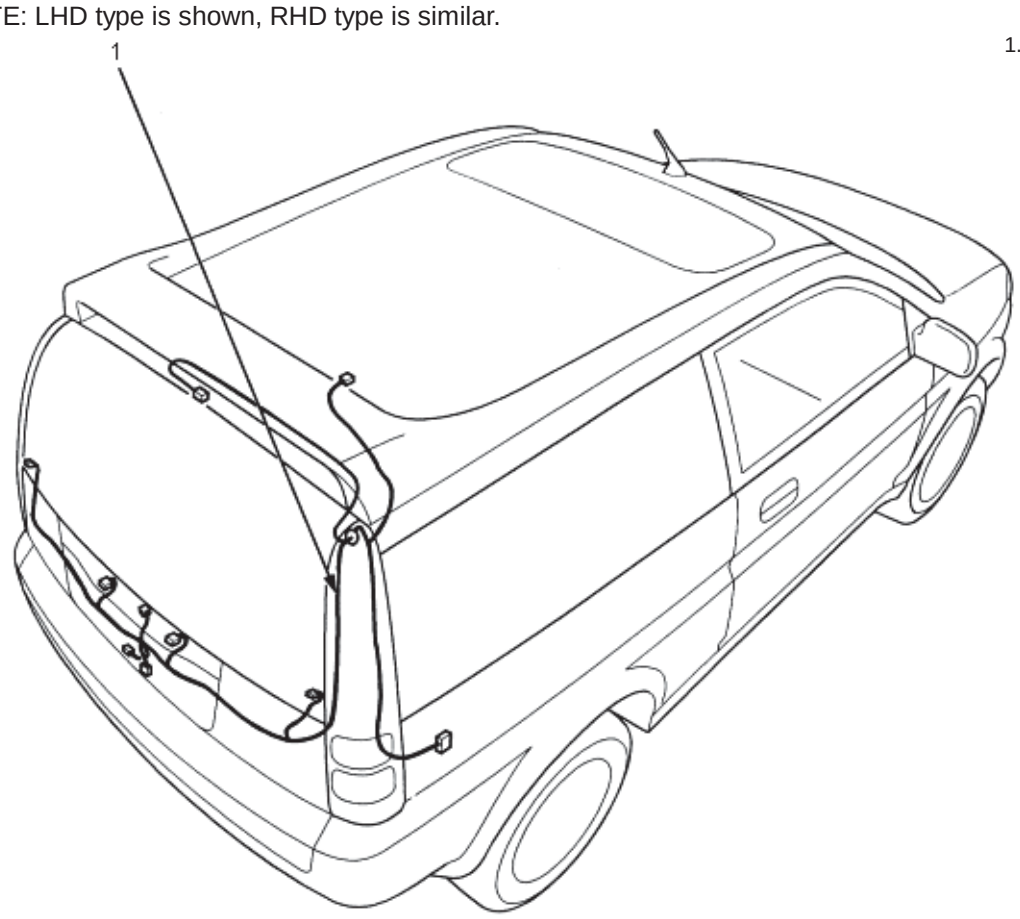
1. **SRS MAIN HARNESS**
2. **G801**

NOTE: LHD type is shown, RHD type is similar.

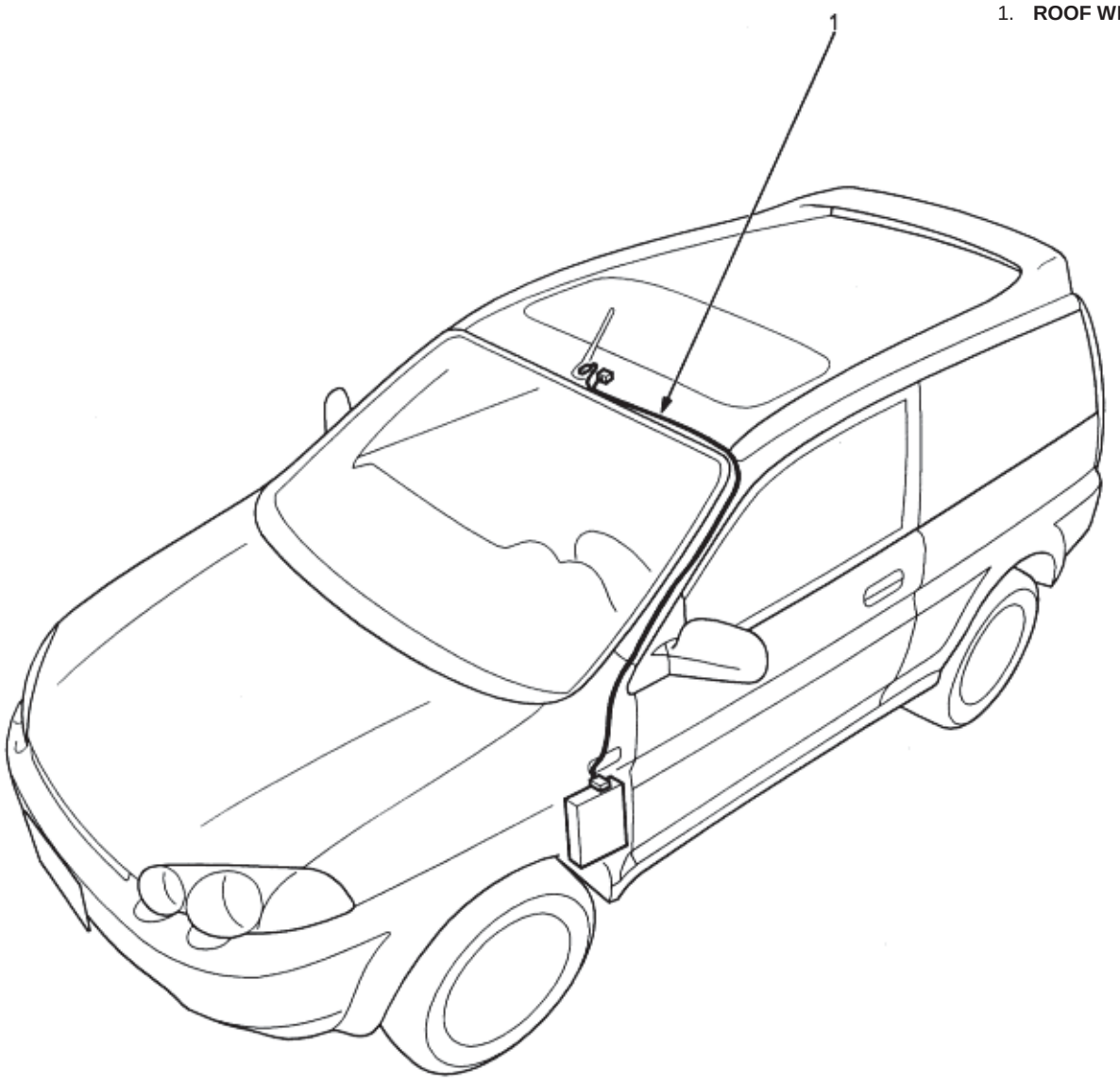


1. **G501**
2. **REAR WIRE HARNESS**

NOTE: LHD type is shown, RHD type is similar.

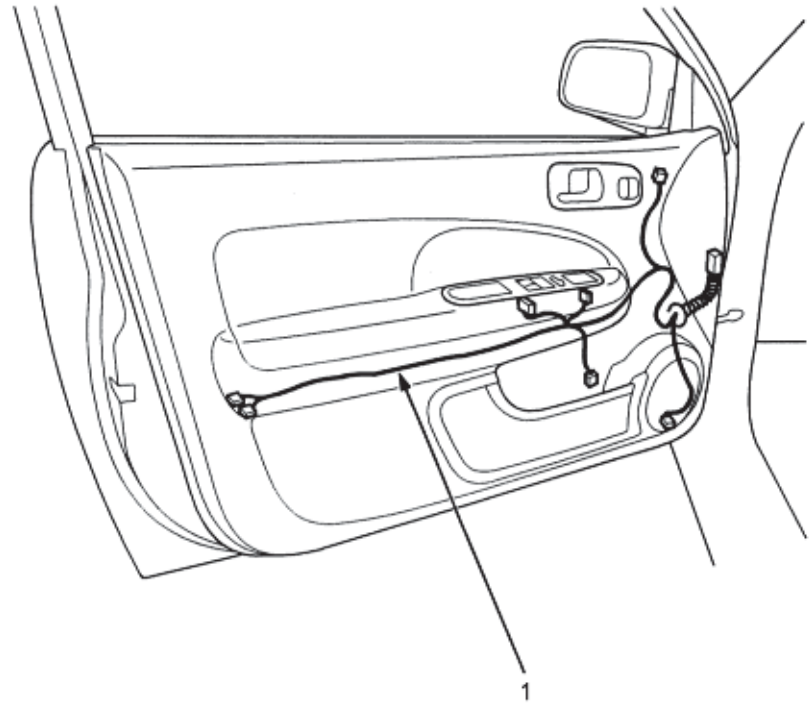


1. **TAILGATE WIRE HARNESS**

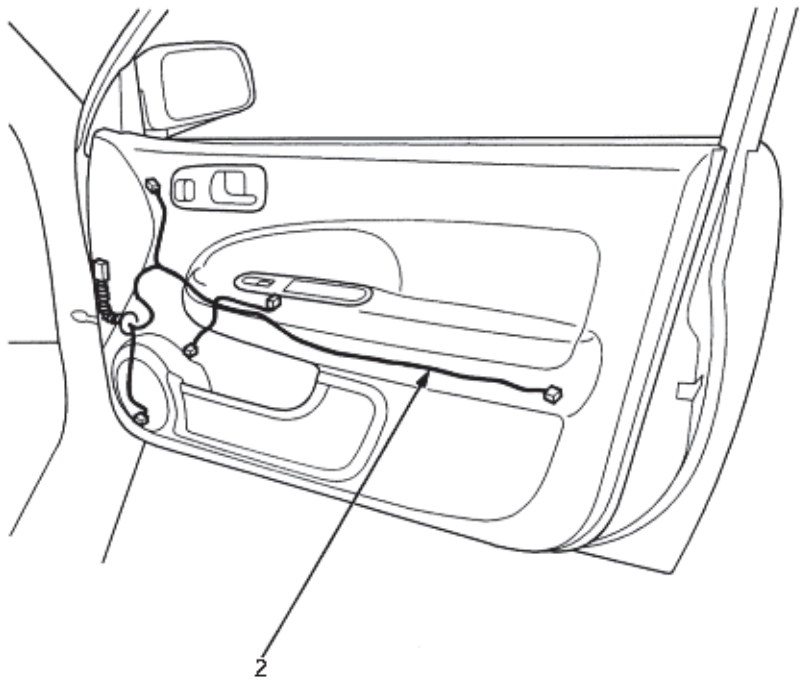


1. **ROOF WIRE HARNESS**

NOTE: LHD type is shown, RHD type is similar.



1. **DRIVER'S DOOR WIRE HARNESS**
2. **PASSENGER'S DOOR WIRE HARNESS**



Battery Test

⚠ WARNING

- Battery fluid (electrolyte) contains sulfuric acid. It may cause severe burns if it gets on your skin or in your eyes. Wear protective clothing and a face shield.

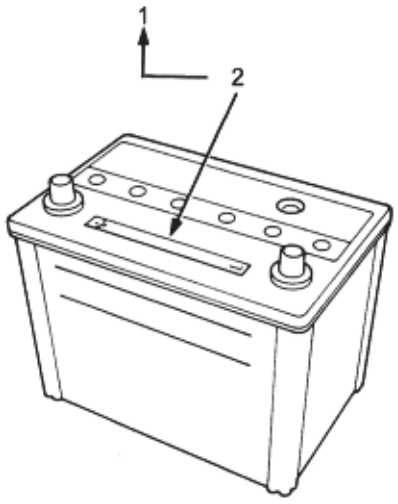
  - If electrolyte gets on your skin or clothes, rinse it off with water immediately.
  - If electrolyte gets in your eyes, flush it out by splashing water in your eyes for at least 15 minutes; call a physician immediately.
- A battery gives off hydrogen gas. If ignited, the hydrogen will explode and could crack the battery case and splatter acid on you. Keep sparks, flames and cigarettes away from the battery.
- Overcharging will raise the temperature of the electrolyte. This may force electrolyte to spray out of the battery vents. Follow the charger manufacturer's instructions and charge the battery.

NOTE:

- To get accurate results, the temperature of the electrolyte must be between 21 and 38 degrees centigrade (70 and 100 degrees F) before testing.
- The ECM memory must be reset after reconnecting the battery (see section 11).

Test Equipment Required:

- Battery Tester with:
  Voltmeter with 0 - 18V scale, ammeter with 0 - 100A and 0 - 500A scales and a carbon pile with 0 - 300W.
- 12V Battery Charger:
  Fast charge capability of 50A and slow charge capability of 5A.



1. 55 B24L (S) - MF
2. BATTERY CODE

Test procedure:

1. Check for damage. If the case is cracked or the terminals are loose, replace the battery.
2. Check indicator (for basic charge conditions): Blue or green is OK. If the indicator is red, peel the tape off, remove the caps and add distilled water; then reinstall the caps and tape. If the indicator is clear, go to step 3.
3. Test battery load capacity by connecting a battery tester and applying a load of three times the battery ampere hour rating.
   When the load has been applied for exactly 15 seconds, the battery voltage reading should stay above 9.6V.
   - If the reading stays above 9.6V, the battery is OK, clean its terminals and case and reinstall it.
   - If the reading is between 6.5 and 9.6V, connect a battery charger and charge the battery for three minutes at an initial rate of 40 amps.

⚠ CAUTION

Amperage will drop as voltage increases; do not increase the amperage to compensate or you may damage the battery.

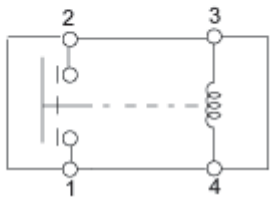
- Watch the battery voltage during the entire three minutes; the highest reading should stay below 15.5V.
  - If the reading stays below 15.5V, the battery is OK; clean its terminals and case and reinstall it.
  - If the reading exceeds 15.5V any time during the three minutes of fast charge, the battery is not good, replace it.
- If the reading drops below 6.5V, slow-charge the battery by connecting a battery and charge at 5 amps for no more than 24 hours (or until the indicator shows full charge, or the specific gravity of the electrolyte is at least 1.270). Then test load capacity again.
  - If the voltage stays above 9.6V, the battery is OK; clean its terminals and case and reinstall it.
  - If the voltage still drops below 6.5V, the battery is not good; replace it.

NOTE: For turn signal/hazard relay input test (**See Page** 23-D-22).

Normally open type A:

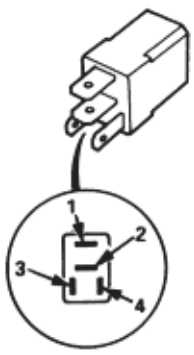
1. Check for continuity between the terminals.
   - There should be continuity between No. 1 and No. 2 terminals when power and ground are connected to the No. 3 and No. 4 terminals.
   - There should be no continuity between the No. 1 and No. 2 terminals when power is disconnected.

Terminal / Power (No. 3-No.4)	1	2
Disconnected		
Connected	○	○

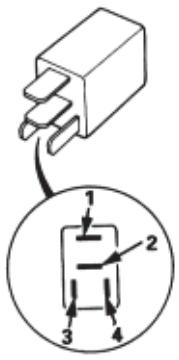


- Headlight relay 1
- Headlight relay 2
- Radiator fan relay
- Condenser fan relay
- A/C compressor clutch relay
- Horn relay
- Power window relay
- Taillight relay
- Seat heater main relay (KG model)
- Starter cut relay (LHD type: CVT)
- Shift lock relay (KQ, KU models: CVT)

Type 1:



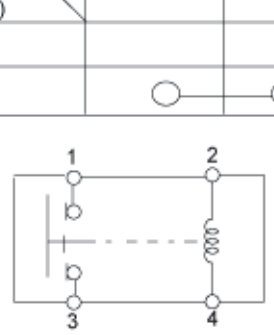
Type 2:



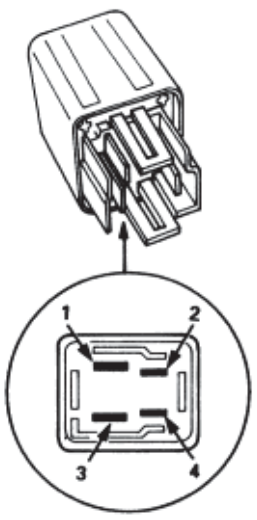
Normally open type B:

1. Check for continuity between the terminals.
   - There should be continuity between No. 1 and No. 3 terminals when power and ground are connected to the No. 2 and No. 4 terminals.
   - There should be no continuity between the No. 1 and No. 3 terminals when power is disconnected.

Terminal / Power (No. 2 - No.4)	1	3
Disconnected		
Connected	○	○

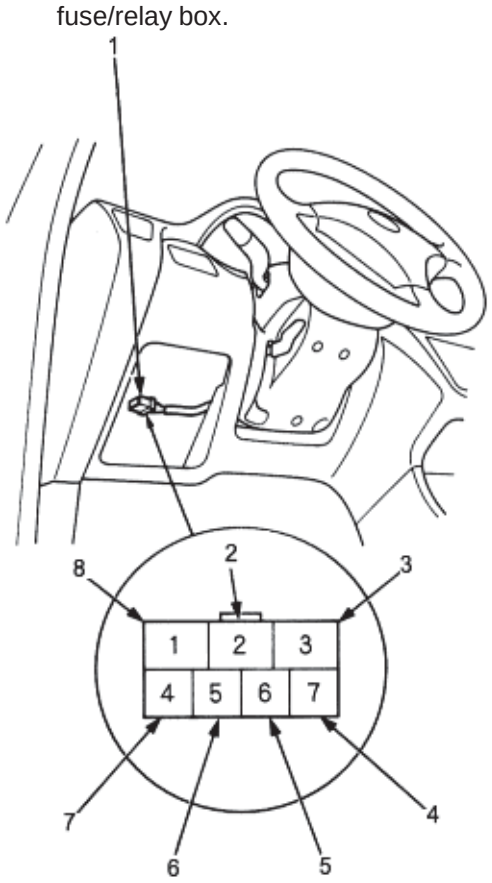


- Blower motor relay



SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.

1. Disconnect both the negative cable and positive cable from the battery.
2. Remove the driver's lower pocket (see section 20).
3. Disconnect the 7P connector from the under-dash fuse/relay box.



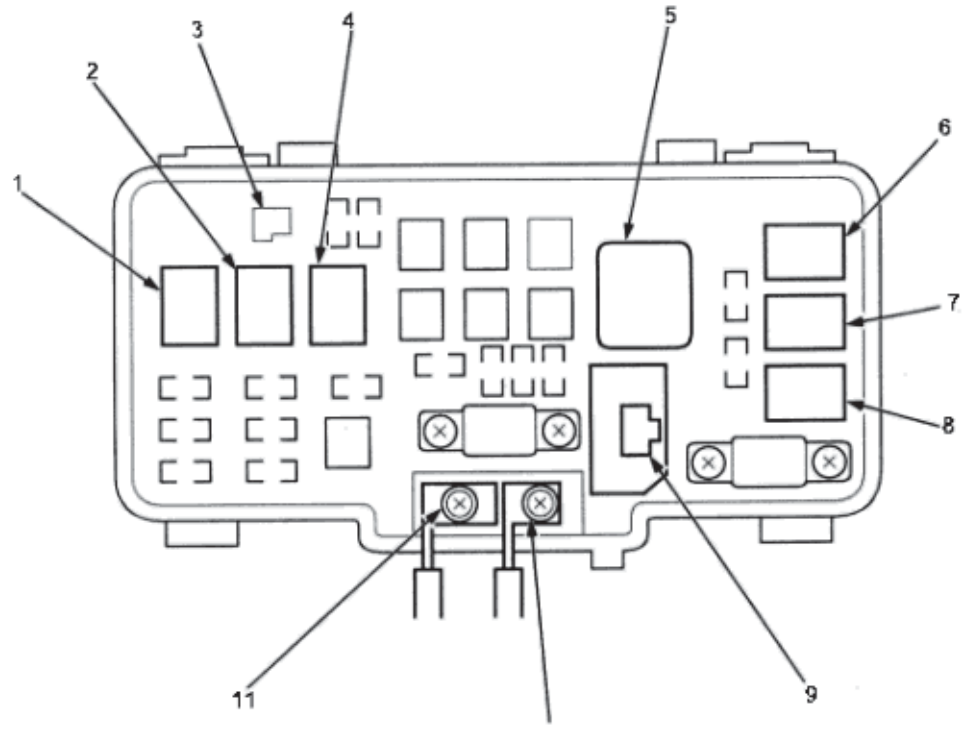
Wire side of female terminals

1. 7P CONNECTOR
2. BLU/WHT
3. WHT
4. BLU/WHT
5. WHT/BLK
6. YEL
7. BLK/YEL
8. BLK/WHT

4. Check for continuity between the terminals in each switch position according to the table.

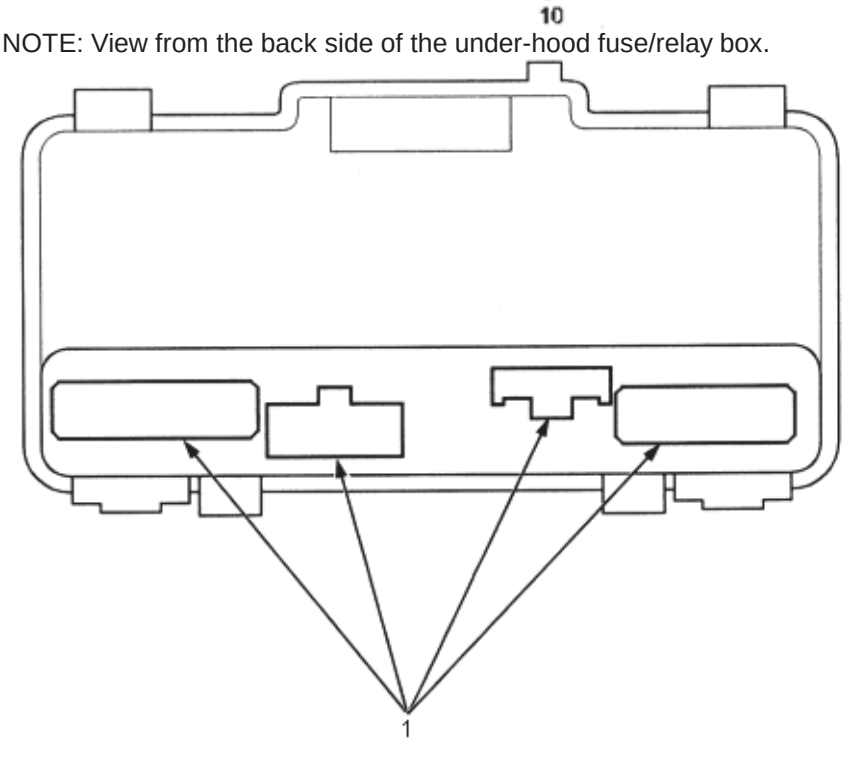
Terminal / Position	WHT/ BLK (ACC)	WHT (BAT)	BLK/ YEL (IG1)	YEL (IG2)	BLK/ WHT (ST)
O (LOCK)					
I (ACC)	○—○				
II (ON)	○—○	○—○	○—○		
III (START)		○—○	○—○	○—○	

5. If continuity checks do not agree with the table, replace the steering lock assembly.



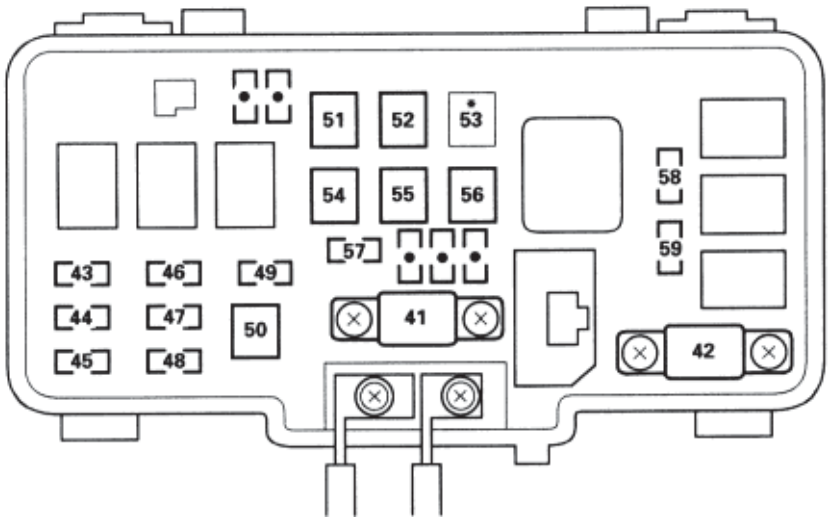
1. **To headlight relay 1**
2. **To headlight relay 2**
3. **Not used**
4. **To horn relay**
5. **To blower motor relay**
6. **To condenser fan relay**
7. **To radiator fan relay**
8. **To A/C compressor clutch relay**
9. **To ELD unit (CVT)**
10. **To engine wire harness**
11. **To starter cables**

NOTE: View from the back side of the under-hood fuse/relay box.



1. **To main wire harness**

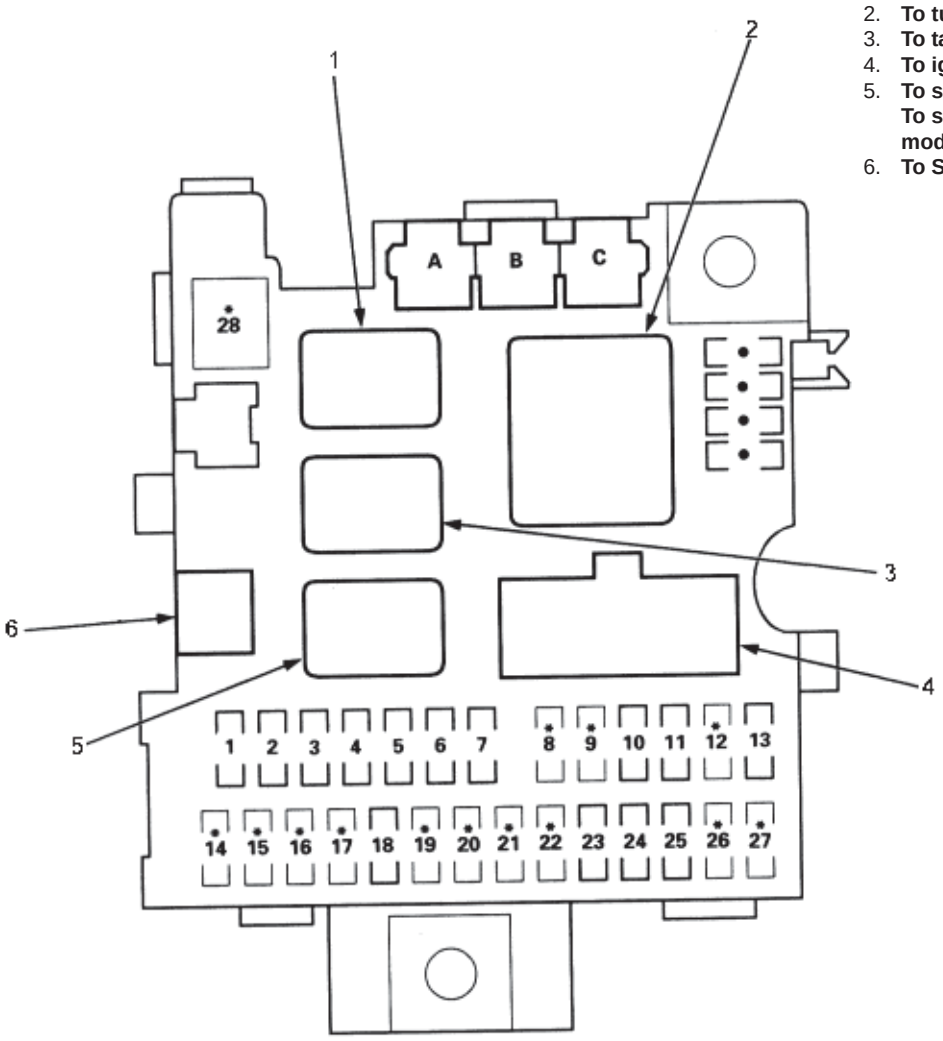
*: Not used
●: Spare fuse



Fuse No.	Amps	Wire colour	Component(s) or Circuit(s) Protected
41	80A	-	Battery, power distribution
42	50A	RED/WHT	Ignition switch (BAT)
43	20A	RED/GRN	Right headlight, High beam indicator light
44	7.5A	RED/BLU	Rear fog light control unit (KG, KE models)
45	20A	RED/BLU	Left headlight
46	10A *1 7.5A *2	RED/YEL	Taillight relay, clock, switch lights, taillights, licence plate lights, integrated control unit, gauge lights, audio unit light, beverage holder light, heater control panel light, front parking lights, dashlights brightness controller (KQ model), option connector C
47	15A *1 10A *2	WHT/BLK	Brake lights, key interlock solenoid (KQ, KU models), ABS modulator assembly, ECM/PCM
48	20A	GRN	ABS modulator assembly
49	15A *1 10A *2	WHT/RED	Turn signal/hazard lights, hazard warning light (KG and KE models)
50	40A	WHT/GRN	ABS modulator assembly
51	20A	BLK/WHT	Power window relay, passenger's window motor
52	20A	BLU/BLK	Power window master switch, driver's window motor
53	-	-	Not used
54	30A	BLU/BLK	No 23, 24 and 25 fuses (in under-dash fuse/relay box), option connector B
55	20A	WHT/GRN	Seat heaters (KG model)
56	40A	BLU/RED	Blower motor
57	20A	BLU/BLK	Radiator fan motor
58	20A	BLU/BLK RED	Condenser fan motor A/C compressor clutch
59	15A	WHT/YEL	PGM-FI main relay, data link connector

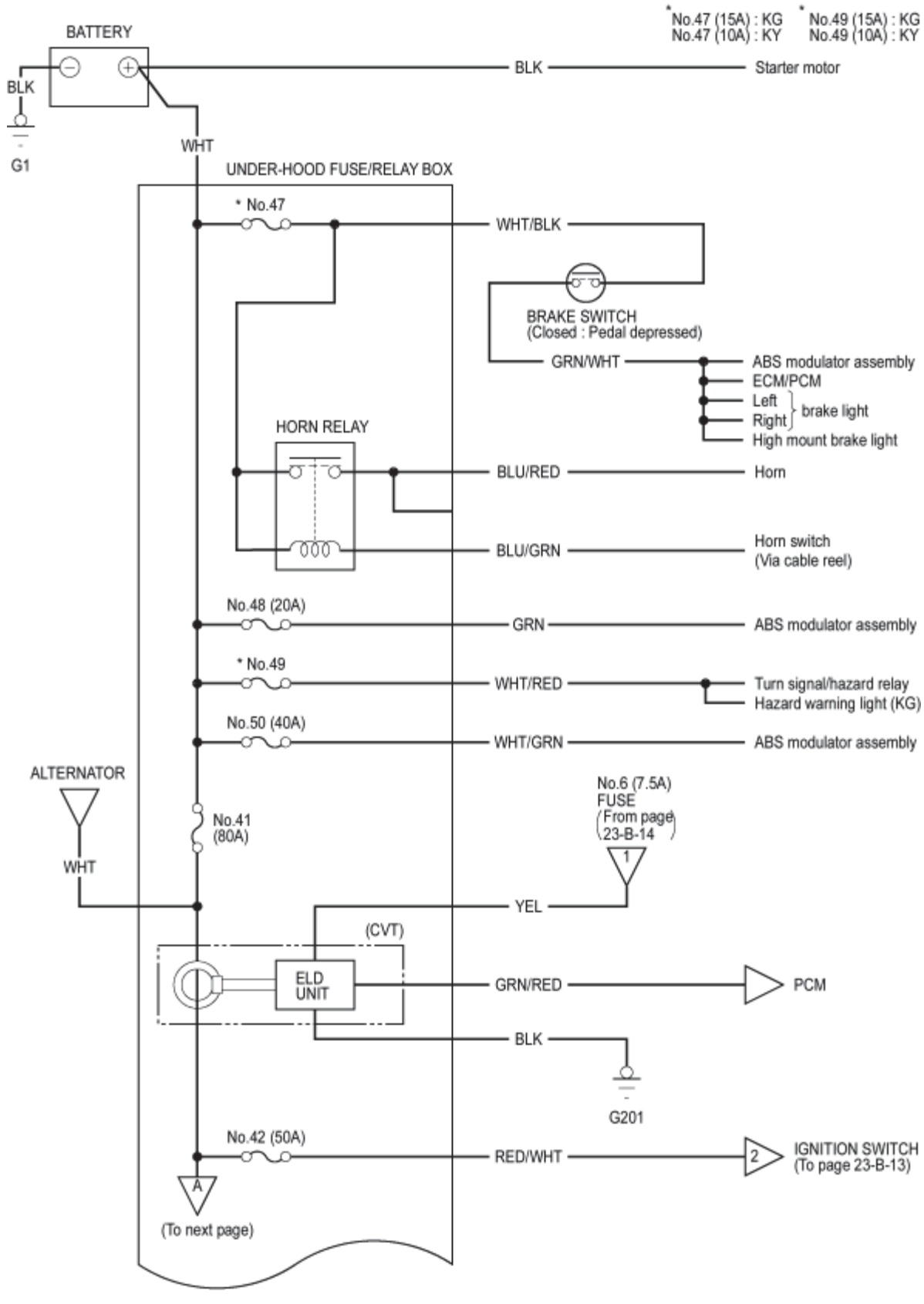
*1: KG and KE models
*2: Except KG and KE models

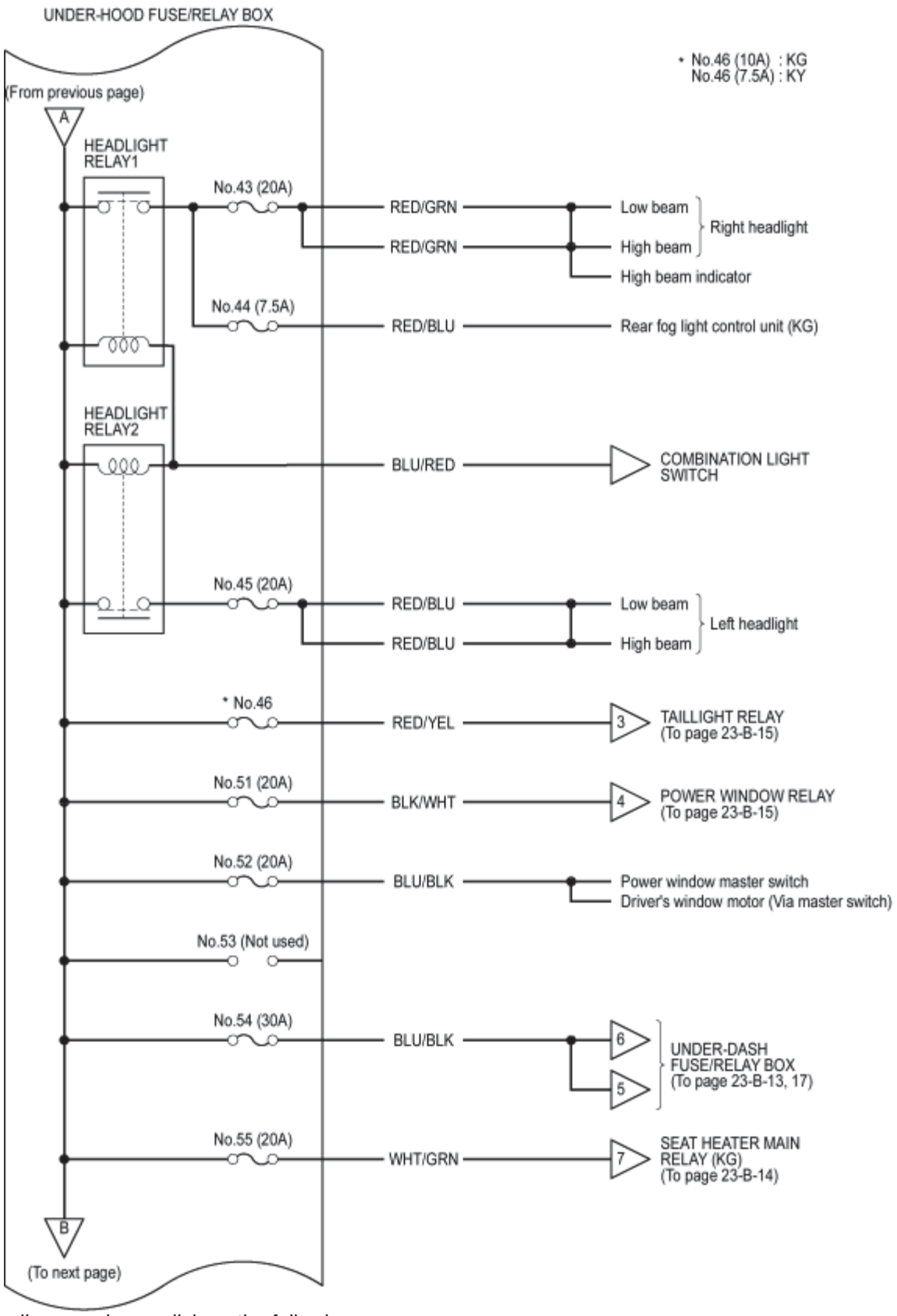
*: Not used
●: Spare fuse
A - C: Option connector



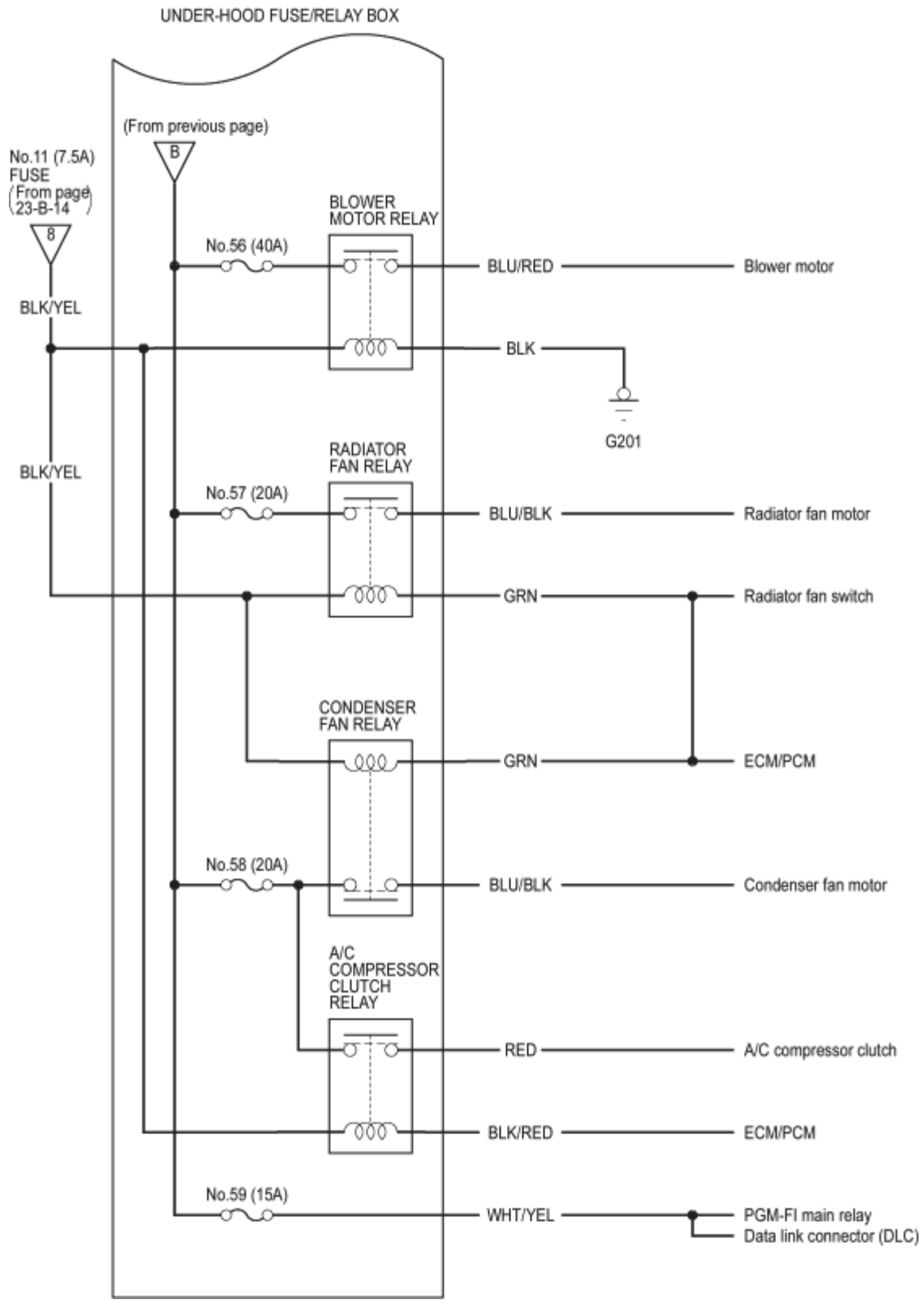
1. **To power window relay**
2. **To turn signal/hazard relay**
3. **To taillight relay**
4. **To ignition switch**
5. **To seat heater main relay (KG model)**
   To shift lock relay (KQ and KU models: CVT)
6. **To SRS main harness**

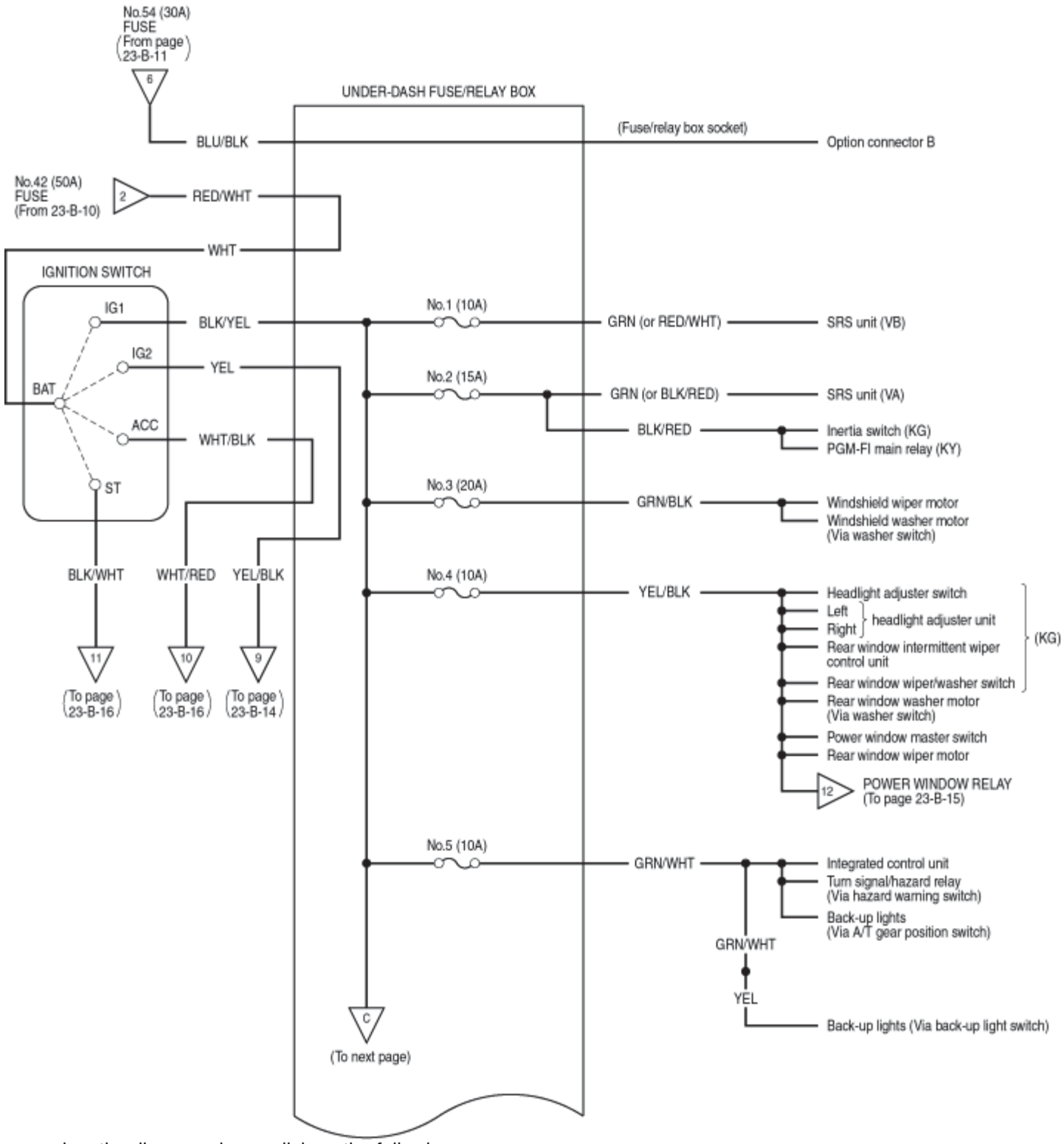
Fuse No.	Amps	Wire colour	Component(s) or Circuit(s) Protected
1	10A	GRN or (RED/WHT)	SRS unit (V**A**)
2	15A	GRN or (BLK/RED) BLK/RED	SRS unit (VA) Inertia switch (KG and KE models), PGM-FI main relay (Except KG and KE models)
3	20A	GRN/BLK	Windshield wiper motor, windshield washer motor
4	10A	YEL/BLK	Headlight adjuster switch (KG and KE models), headlight adjuster unit (KG and KE models), rear window intermittent wiper control unit (KG and KE models), rear window washer motor, rear window wiper motor, power window master switch, power window relay
5	10A	GRN/WHT	Integrated control unit, turn signal/hazard relay, back-up lights
6	7.5A	YEL	Gauge Assembly, Clock, vehicle speed alarm unit (KY model), seat belt alarm unit (KY and KQ models), keyless door lock control unit, secondary HO2S (KG, KE, KN and KQ models), ELD unit (CVT), alternator, VSS, primary HO2S (KG, KE and KU models), PCM, EVAP purge control solenoid valve (KG, KY, KE and KU models)
7	15A	BLK/YEL	Distributor
8	-	-	Not used
9	-	-	Not used
10	15A	BLU	Rear window defogger
11	7.5A	BLK/YEL	Blower motor relay, radiator fan relay, condenser fan relay, A/C switch, A/C compressor clutch relay, recirculation control motor, A/C thermostat, ABS modulator assembly, power mirror actuator, power mirror defogger (KG model), power mirror retract actuator (with keyless entry system), seat heater main relay (KG model)
12	-	-	Not used
13	7.5A	BLU/WHT	ECM/PCM, PGM-FI main relay
14	-	-	Not used
15	-	-	Not used
16	-	-	Not used
17	-	-	Not used
18	15A	YEL/RED	Audio unit, cigarette lighter
19	-	-	Not used
20	-	-	Not used
21	-	-	Not used
22	-	-	Not used
23	7.5A	WHT/BLU	Clock, seat belt alarm unit (KY and KQ models), intregated control unit, ceiling lights, immobiliser indicator light (KG, KE, KQ and KU models), cargo area light, ECM/PCM
24	15A	WHT	Audio unit
25	15A	WHT/GRN	Keyless /power door lock control unit
26	-	-	Not used
27	-	-	Not used
28	-	-	Not used


* No.47 (15A) : KG
No.47 (10A) : KY
* No.49 (15A) : KG
No.49 (10A) : KY
BATTERY
BLK
G1
BLK
Starter motor
WHT
UNDER-HOOD FUSE/RELAY BOX
* No.47
WHT/BLK
BRAKE SWITCH
(Closed : Pedal depressed)
GRN/WHT
ABS modulator assembly
ECM/PCM
Left
Right
brake light
High mount brake light
HORN RELAY
BLU/RED
Horn
BLU/GRN
Horn switch
(Via cable reel)
No.48 (20A)
GRN
ABS modulator assembly
* No.49
WHT/RED
Turn signal/hazard relay
Hazard warning light (KG)
No.50 (40A)
WHT/GRN
ABS modulator assembly
ALTERNATOR
WHT
No.41
(80A)
No.6 (7.5A)
FUSE
(From page 23-B-14)
1
YEL
(CVT)
ELD
UNIT
GRN/RED
PCM
BLK
G201
No.42 (50A)
RED/WHT
2
IGNITION SWITCH
(To page 23-B-13)
A
(To next page)

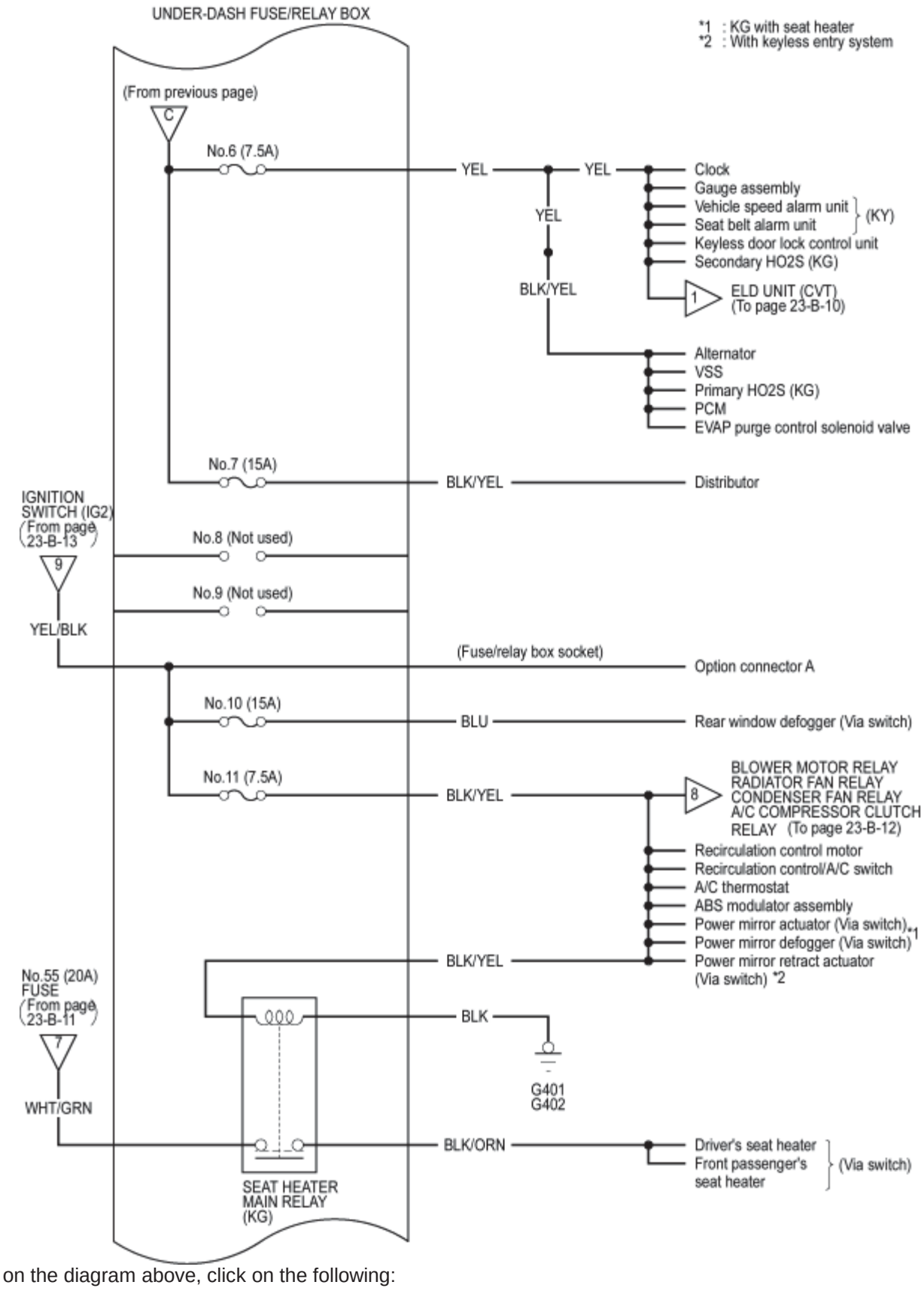


To go to the page referenced on the diagram above, click on the following:
(**See Page** 23-B-13)
(**See Page** 23-B-14)
(**See Page** 23-B-15)

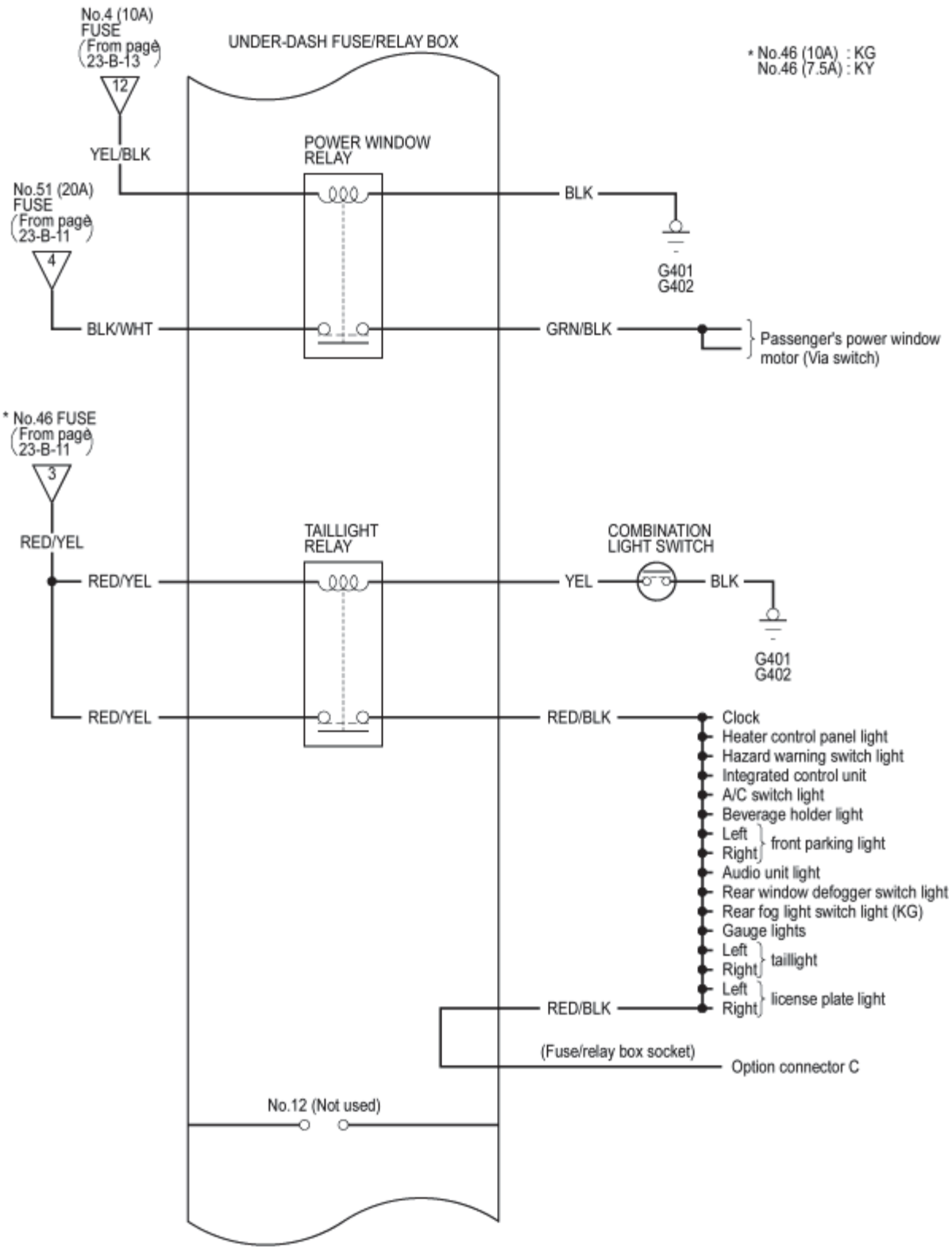

UNDER-HOOD FUSE/RELAY BOX
(From previous page)
B
No.11 (7.5A) FUSE
(From page 23-B-14)
8
BLK/YEL
BLOWER MOTOR RELAY
No.56 (40A)
BLU/RED
Blower motor
BLK
G201
BLK/YEL
RADIATOR FAN RELAY
No.57 (20A)
BLU/BLK
Radiator fan motor
GRN
Radiator fan switch
CONDENSER FAN RELAY
GRN
ECM/PCM
No.58 (20A)
BLU/BLK
Condenser fan motor
A/C COMPRESSOR CLUTCH RELAY
RED
A/C compressor clutch
BLK/RED
ECM/PCM
No.59 (15A)
WHT/YEL
PGM-FI main relay
Data link connector (DLC)

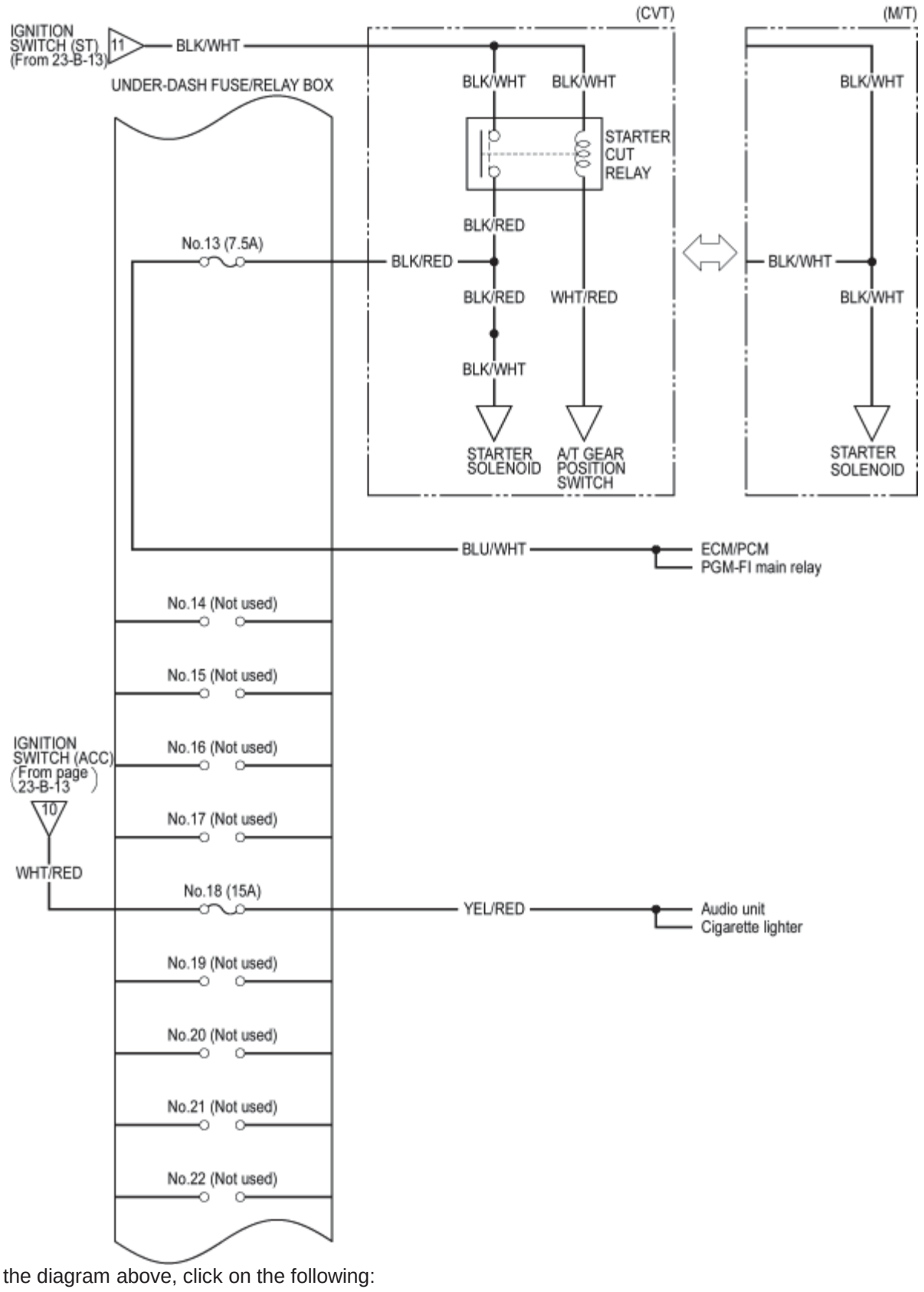


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-11)
(**See Page** 23-B-16)
(**See Page** 23-B-14)

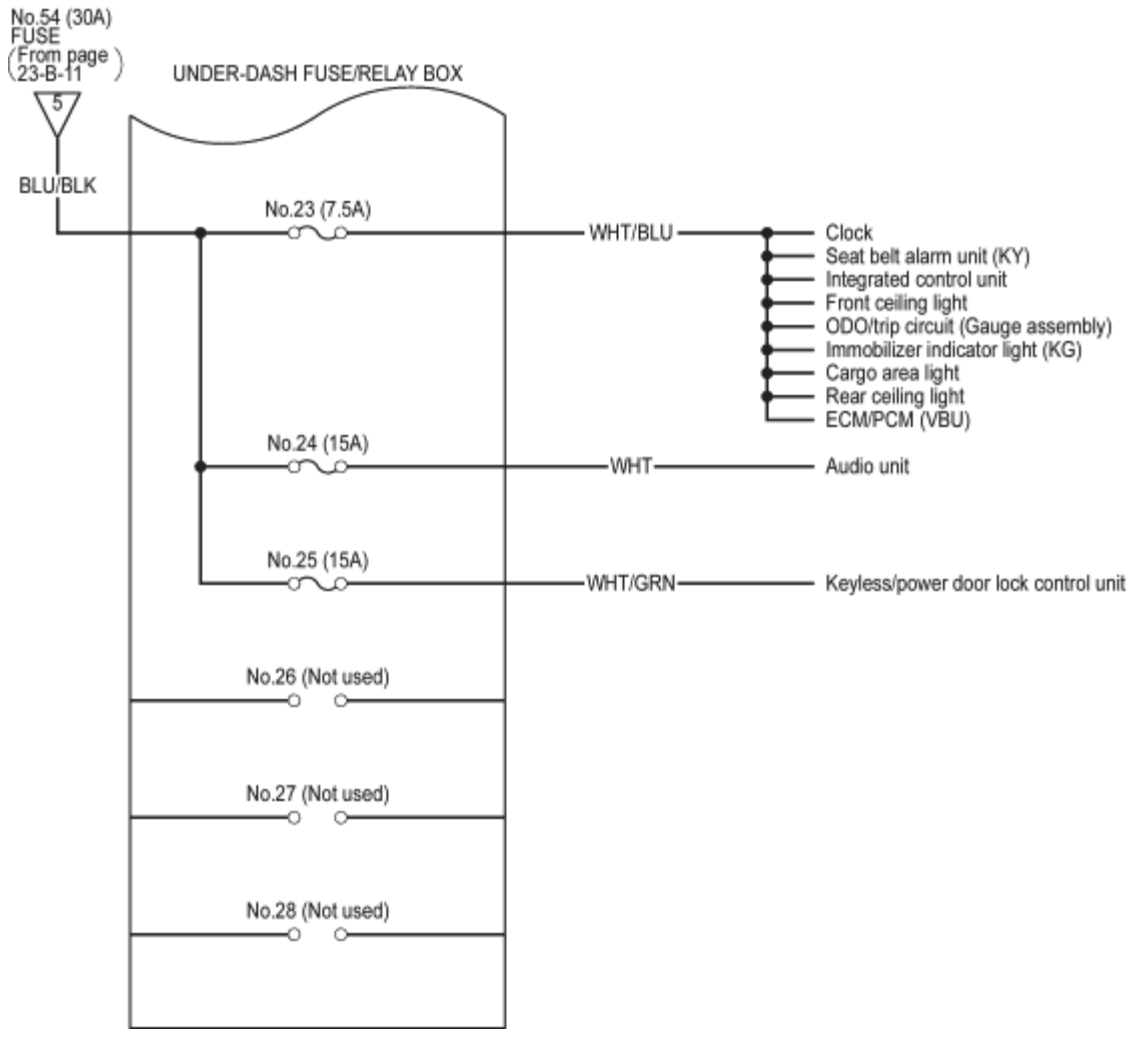


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-13)
(**See Page** 23-B-10)
(**See Page** 23-B-12)

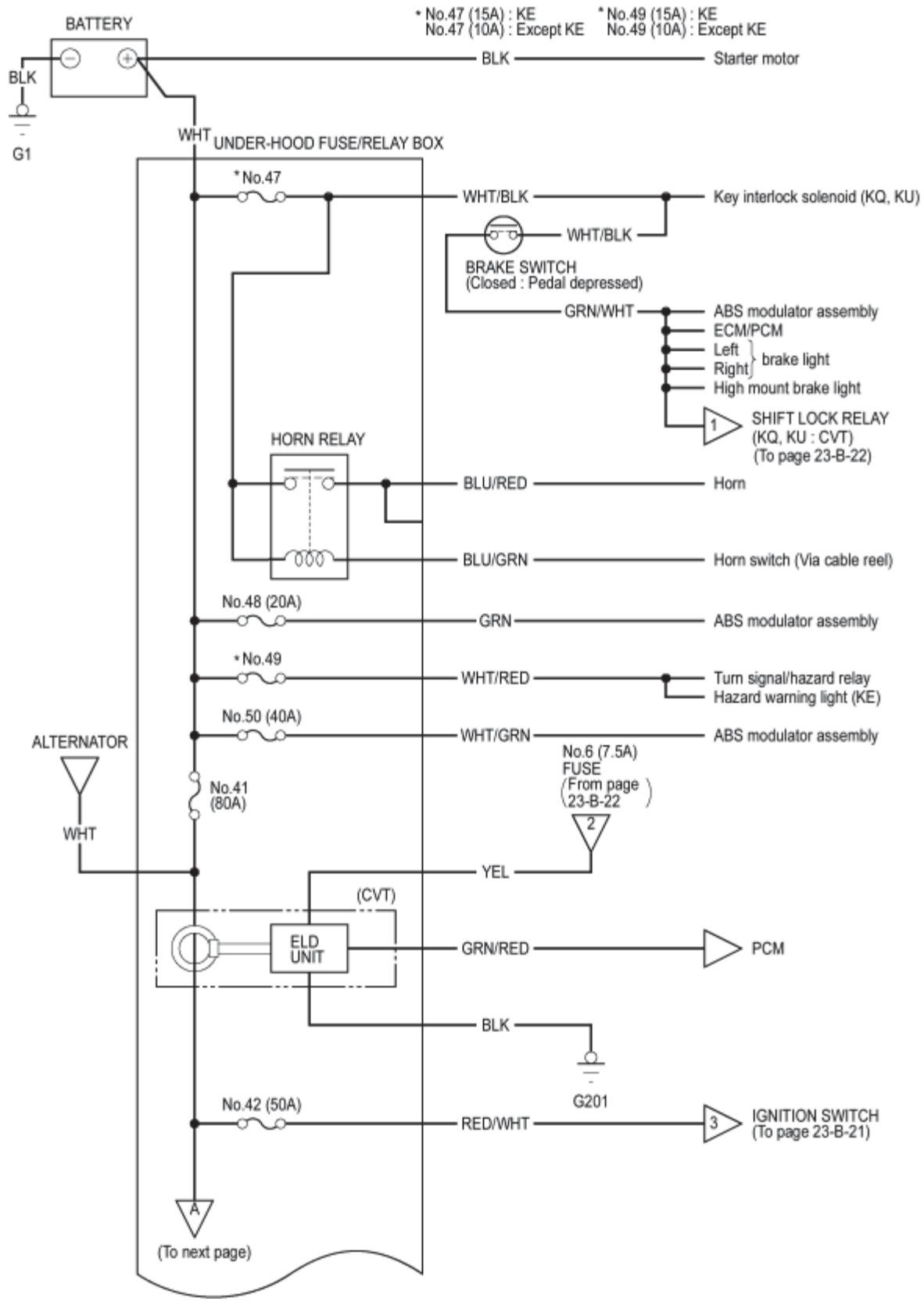

No.4 (10A) FUSE (From page 23-B-13)
12
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
* No.46 (10A) : KG
No.46 (7.5A) : KY
POWER WINDOW RELAY
No.51 (20A) FUSE (From page 23-B-11)
4
BLK
G401
G402
BLK/WHT
GRN/BLK
Passenger's power window motor (Via switch)
* No.46 FUSE (From page 23-B-11)
3
RED/YEL
TAILLIGHT RELAY
COMBINATION LIGHT SWITCH
RED/YEL
YEL
BLK
G401
G402
RED/YEL
RED/BLK
Clock
Heater control panel light
Hazard warning switch light
Integrated control unit
A/C switch light
Beverage holder light
Left
Right
front parking light
Audio unit light
Rear window defogger switch light
Rear fog light switch light (KG)
Gauge lights
Left
Right
taillight
Left
Right
license plate light
RED/BLK
(Fuse/relay box socket)
Option connector C
No.12 (Not used)



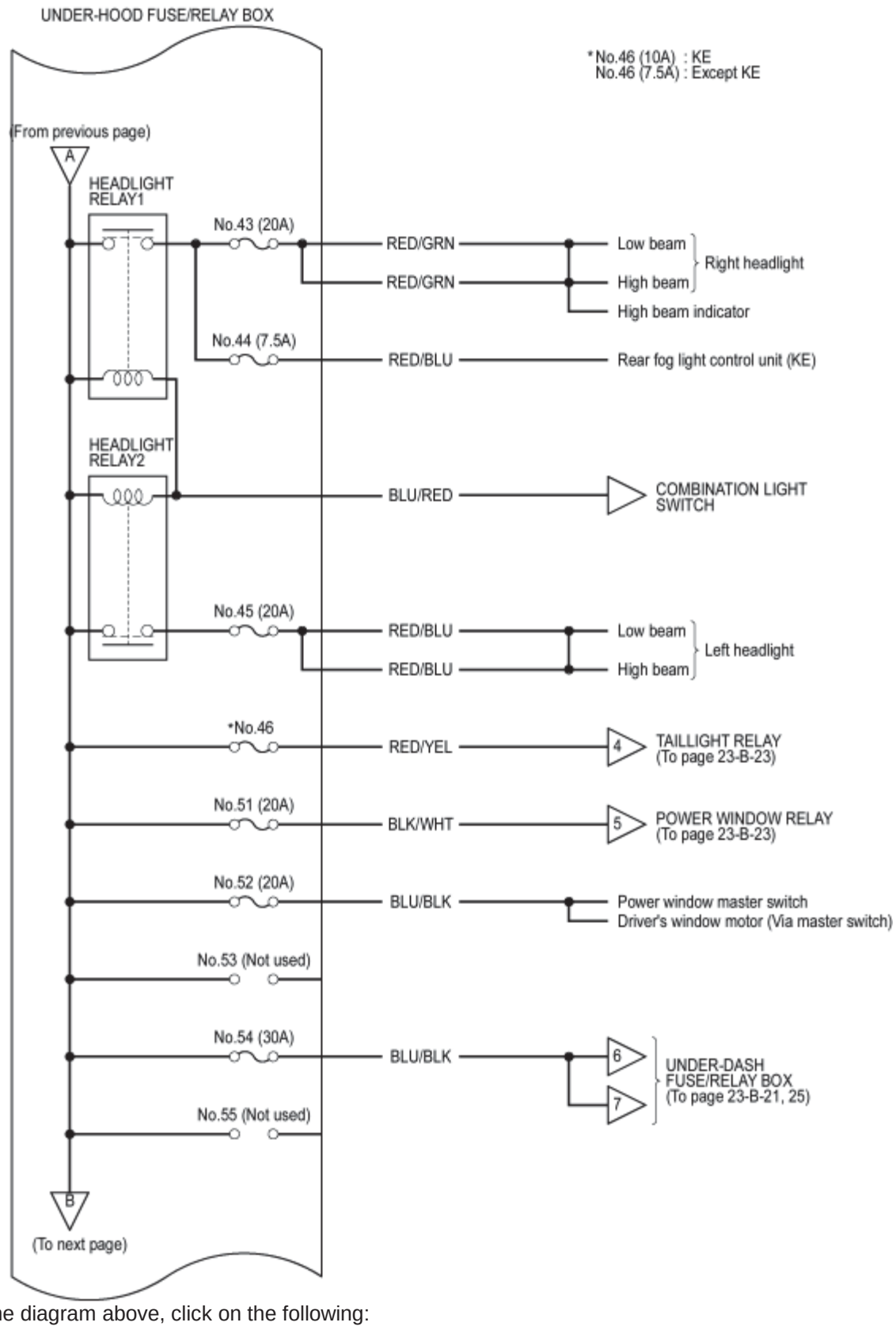
To go to the page referenced on the diagram above, click on the following:
(**See Page** 23-B-13)



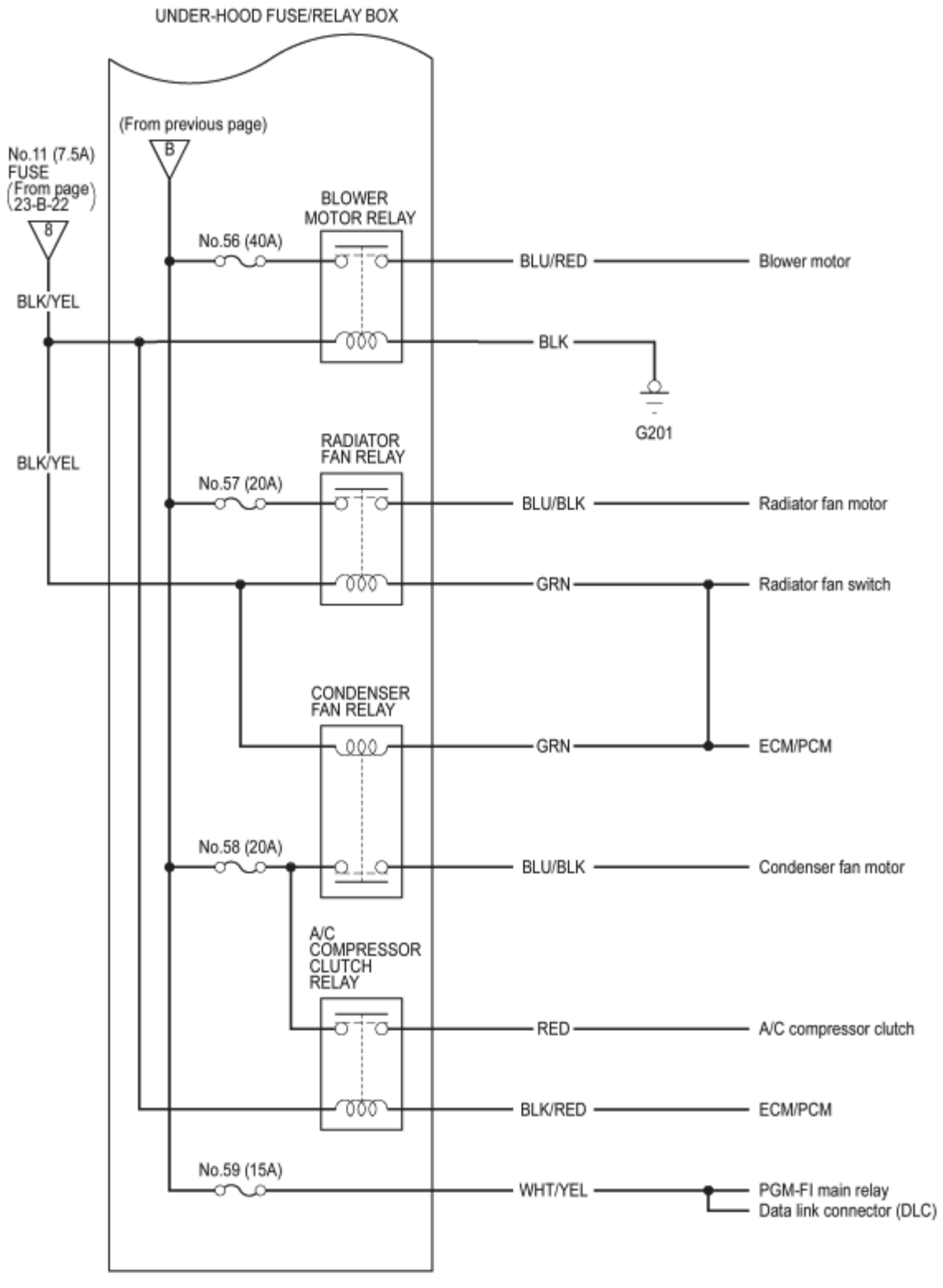
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(**See Page** 23-B-11)

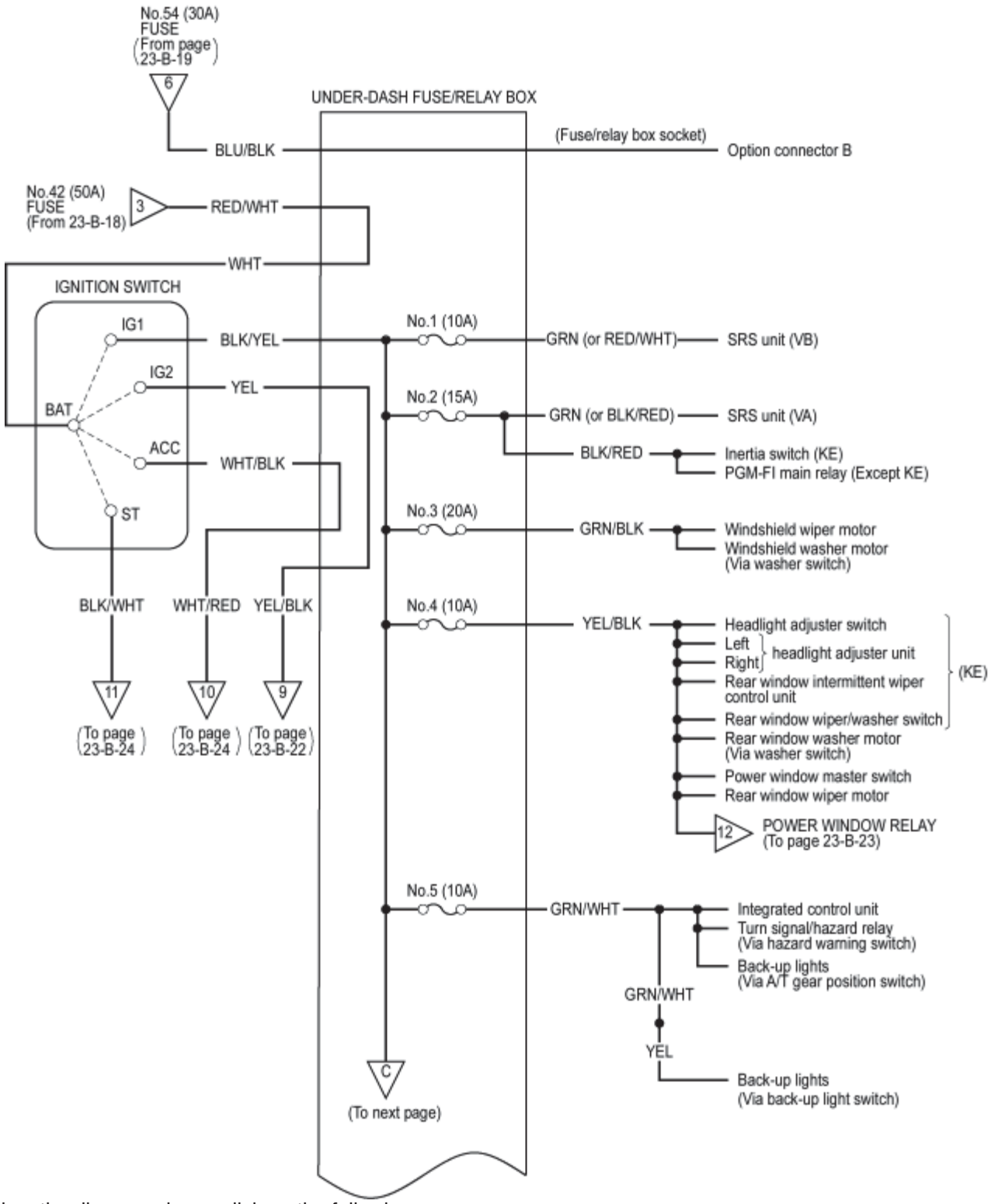


To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-22)
(**See Page** 23-B-21)

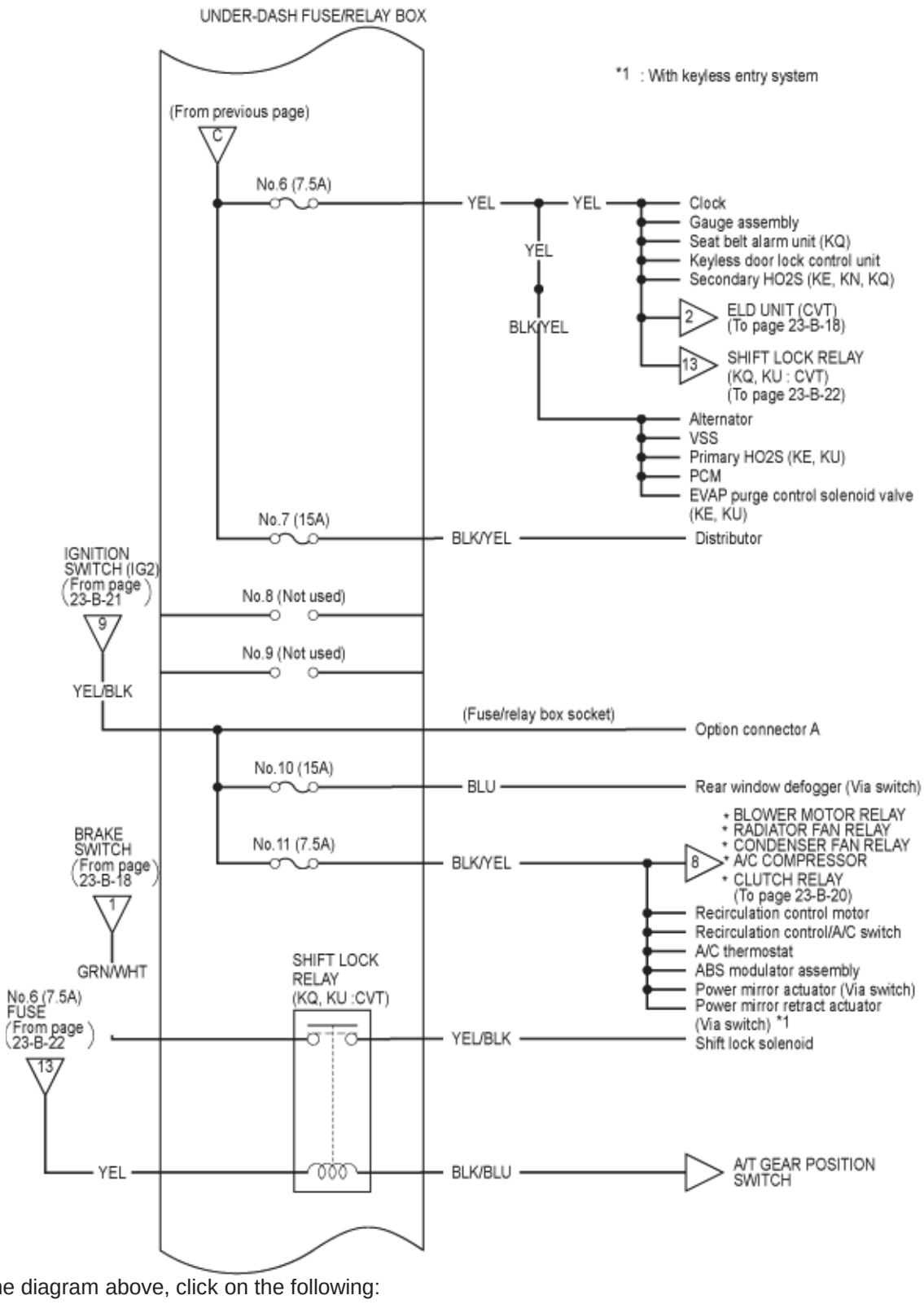


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(**See Page** 23-B-23)
(**See Page** 23-B-21)
(**See Page** 23-B-25)

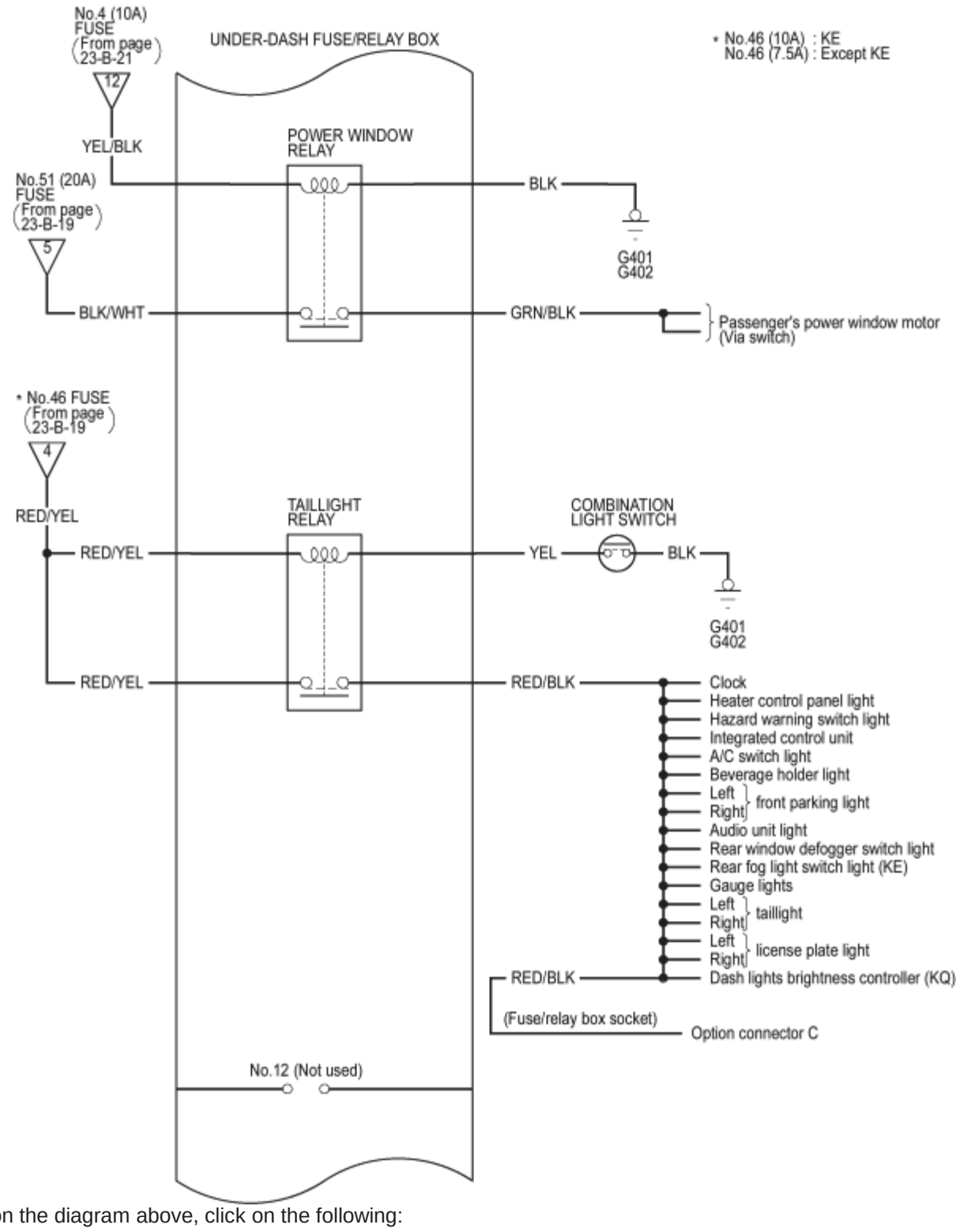

UNDER-HOOD FUSE/RELAY BOX
(From previous page)
B
No.11 (7.5A) FUSE
(From page 23-B-22)
8
BLK/YEL
BLOWER MOTOR RELAY
No.56 (40A)
BLU/RED
Blower motor
BLK
G201
BLK/YEL
RADIATOR FAN RELAY
No.57 (20A)
BLU/BLK
Radiator fan motor
GRN
Radiator fan switch
CONDENSER FAN RELAY
GRN
ECM/PCM
No.58 (20A)
BLU/BLK
Condenser fan motor
A/C COMPRESSOR CLUTCH RELAY
RED
A/C compressor clutch
BLK/RED
ECM/PCM
No.59 (15A)
WHT/YEL
PGM-FI main relay
Data link connector (DLC)



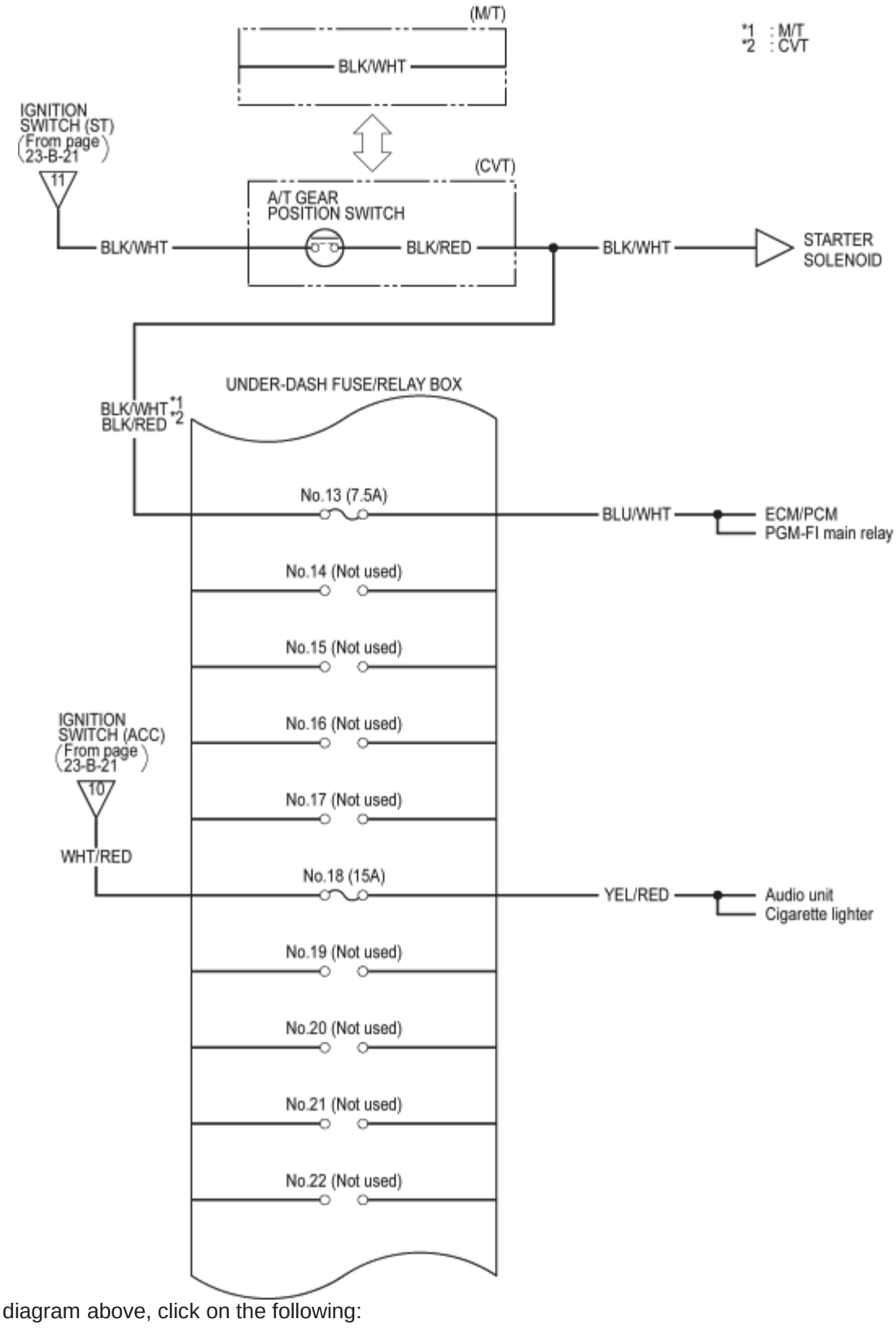
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-19)
(**See Page** 23-B-18)
(**See Page** 23-B-24)
(**See Page** 23-B-22)
(**See Page** 23-B-23)



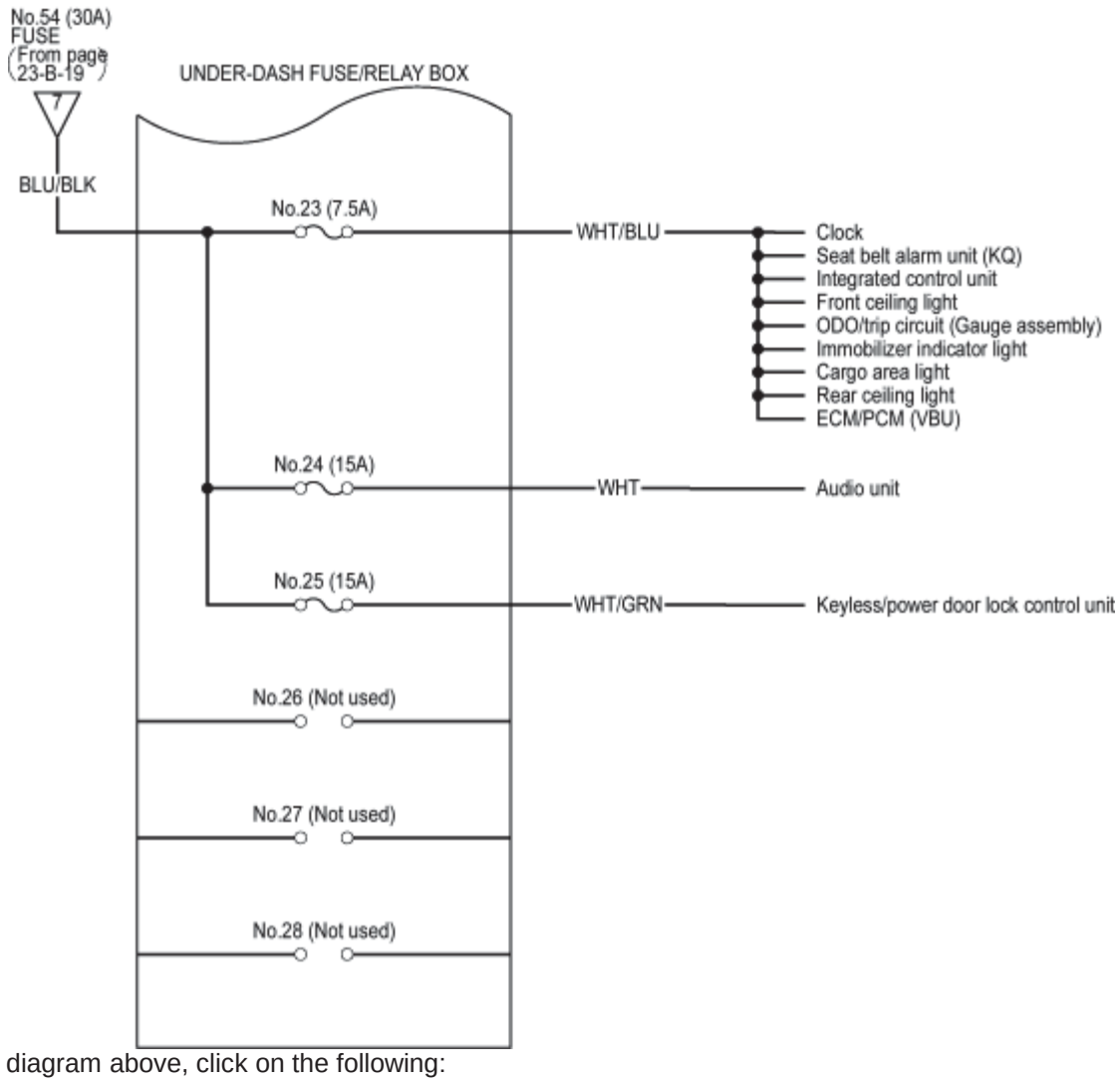
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(**See Page** 23-B-21)
(**See Page** 23-B-18)
(**See Page** 23-B-20)
(**See Page** 23-B-22)



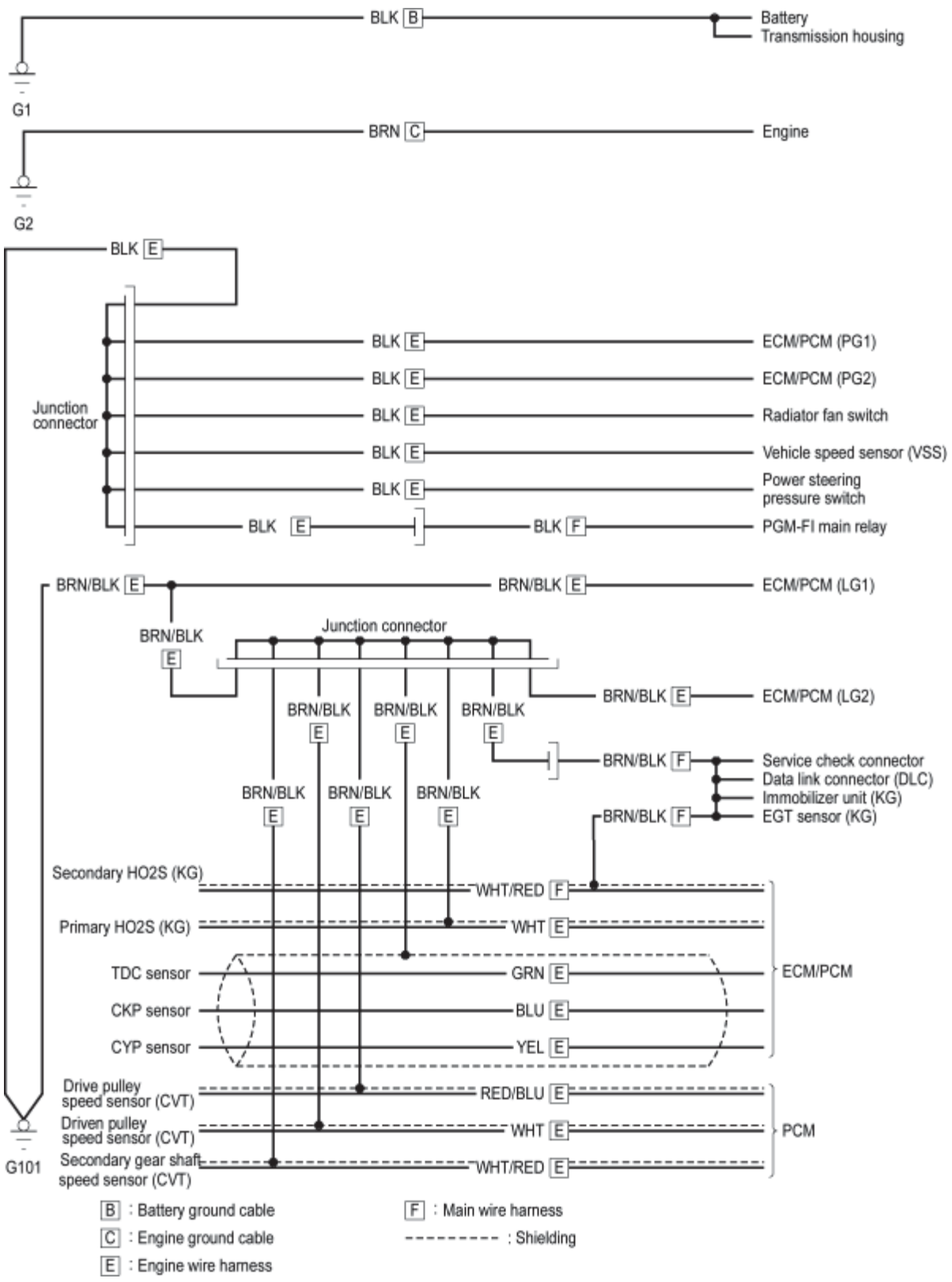
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(**See Page** 23-B-21)
(**See Page** 23-B-19)

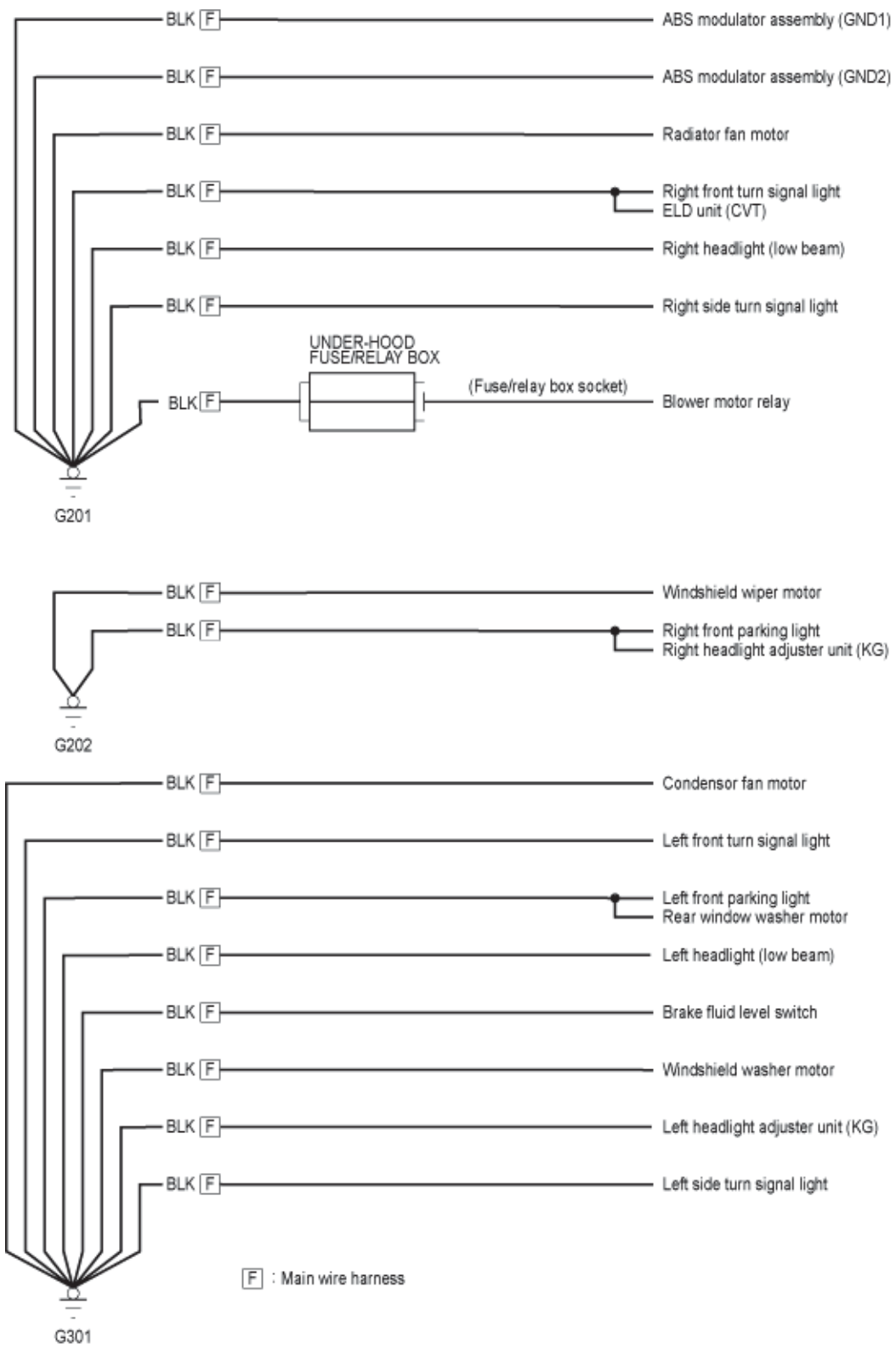


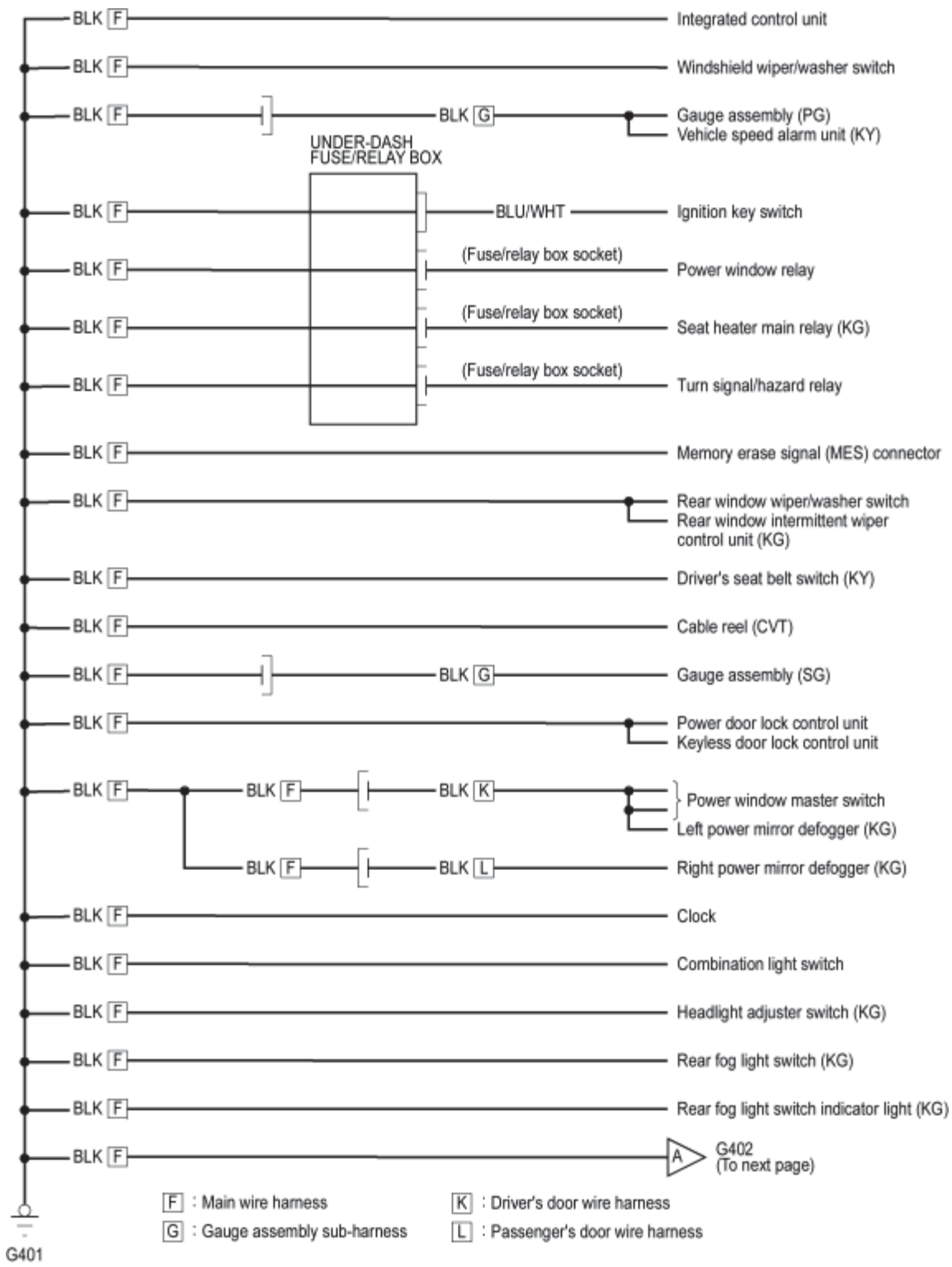
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(**See Page** 23-B-21)

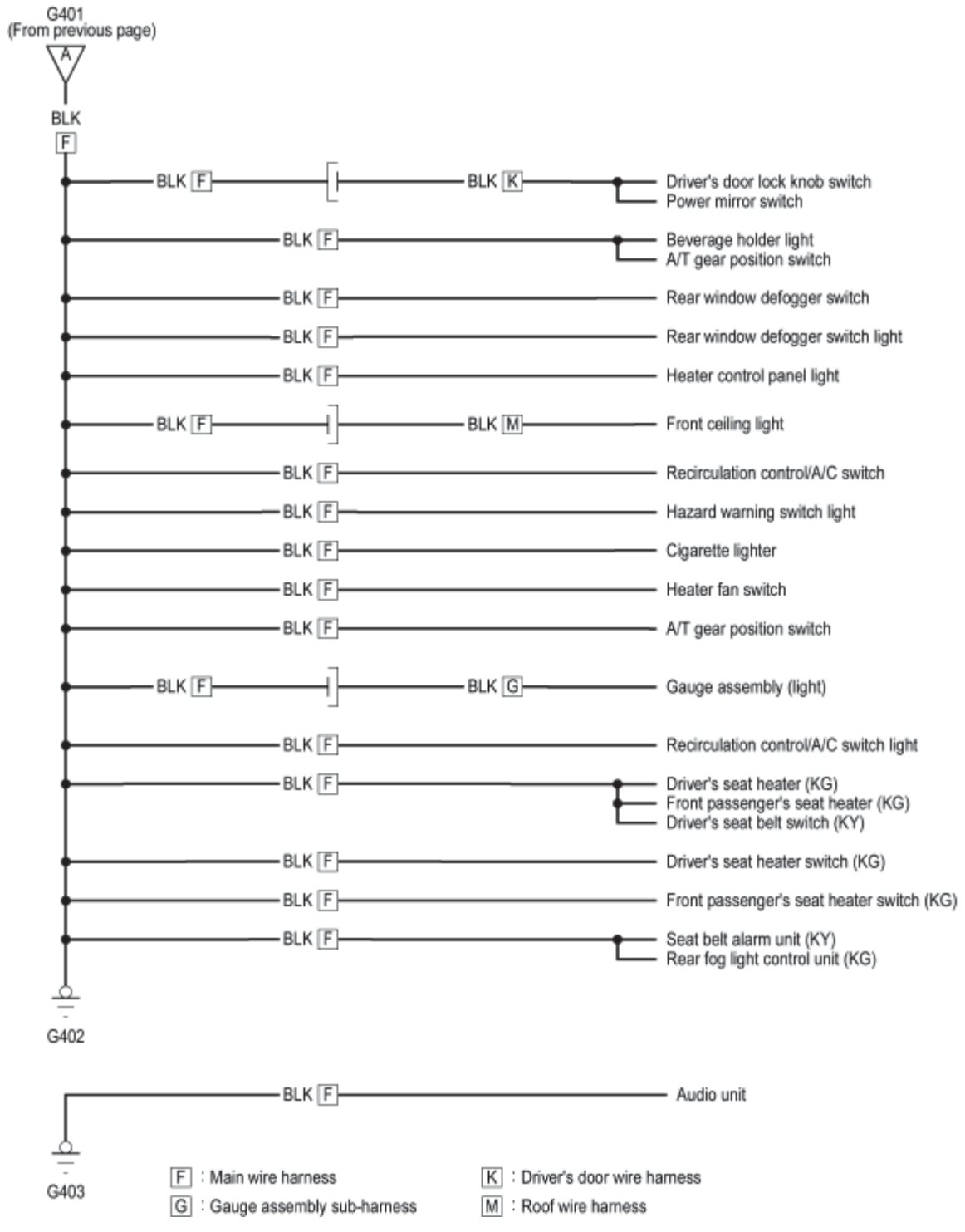


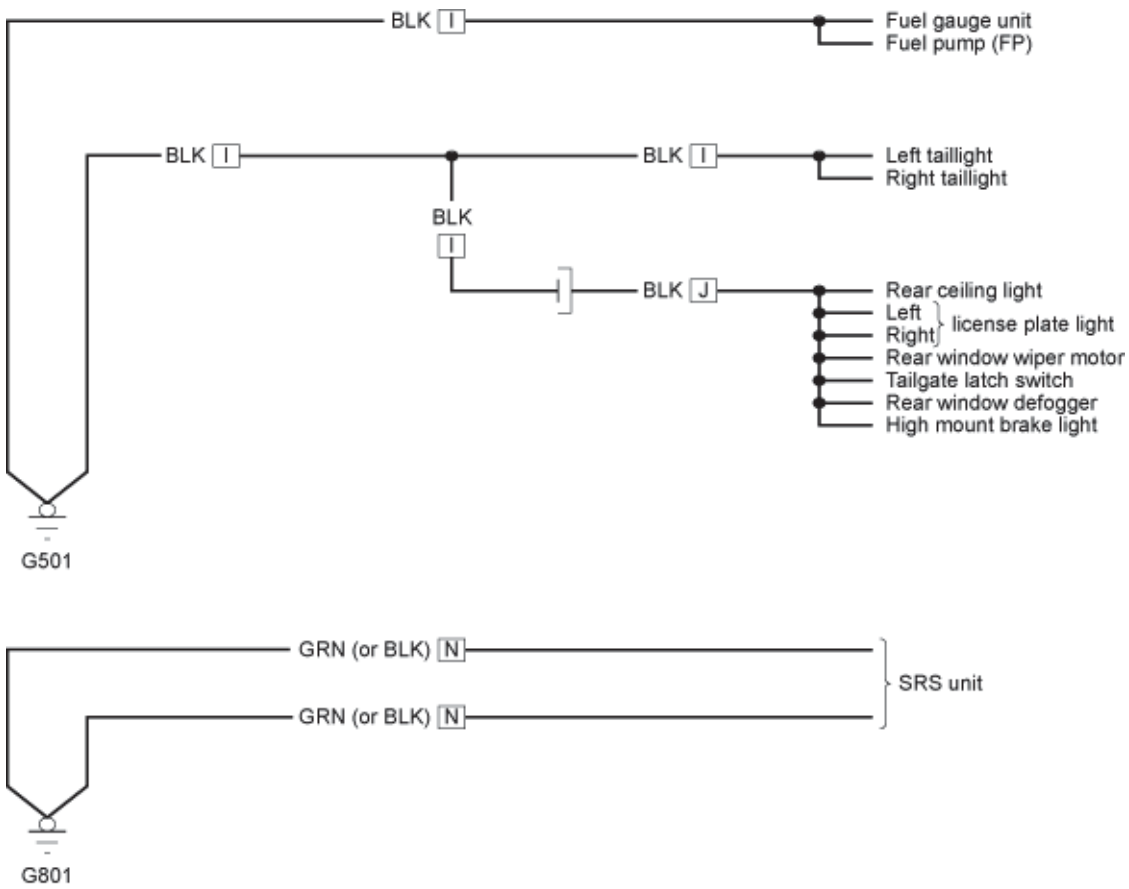
To go to the page referenced on the diagram above, click on the following:
(**See Page** 23-B-19)


BLK B
Battery
Transmission housing
G1
BRN C
Engine
G2
BLK E
Junction connector
BLK E
ECM/PCM (PG1)
BLK E
ECM/PCM (PG2)
BLK E
Radiator fan switch
BLK E
Vehicle speed sensor (VSS)
BLK E
Power steering pressure switch
BLK E
BLK F
PGM-FI main relay
BRN/BLK E
BRN/BLK E
ECM/PCM (LG1)
BRN/BLK E
Junction connector
BRN/BLK E
ECM/PCM (LG2)
BRN/BLK E
BRN/BLK E
BRN/BLK E
BRN/BLK F
Service check connector
Data link connector (DLC)
Immobilizer unit (KG)
BRN/BLK F
EGT sensor (KG)
BRN/BLK E
BRN/BLK E
BRN/BLK E
Secondary HO2S (KG)
WHT/RED F
Primary HO2S (KG)
WHT E
TDC sensor
GRN E
CKP sensor
BLU E
CYP sensor
YEL E
ECM/PCM
Drive pulley speed sensor (CVT)
RED/BLU E
Driven pulley speed sensor (CVT)
WHT E
Secondary gear shaft speed sensor (CVT)
WHT/RED E
PCM
G101
B : Battery ground cable
C : Engine ground cable
E : Engine wire harness
F : Main wire harness
: Shielding

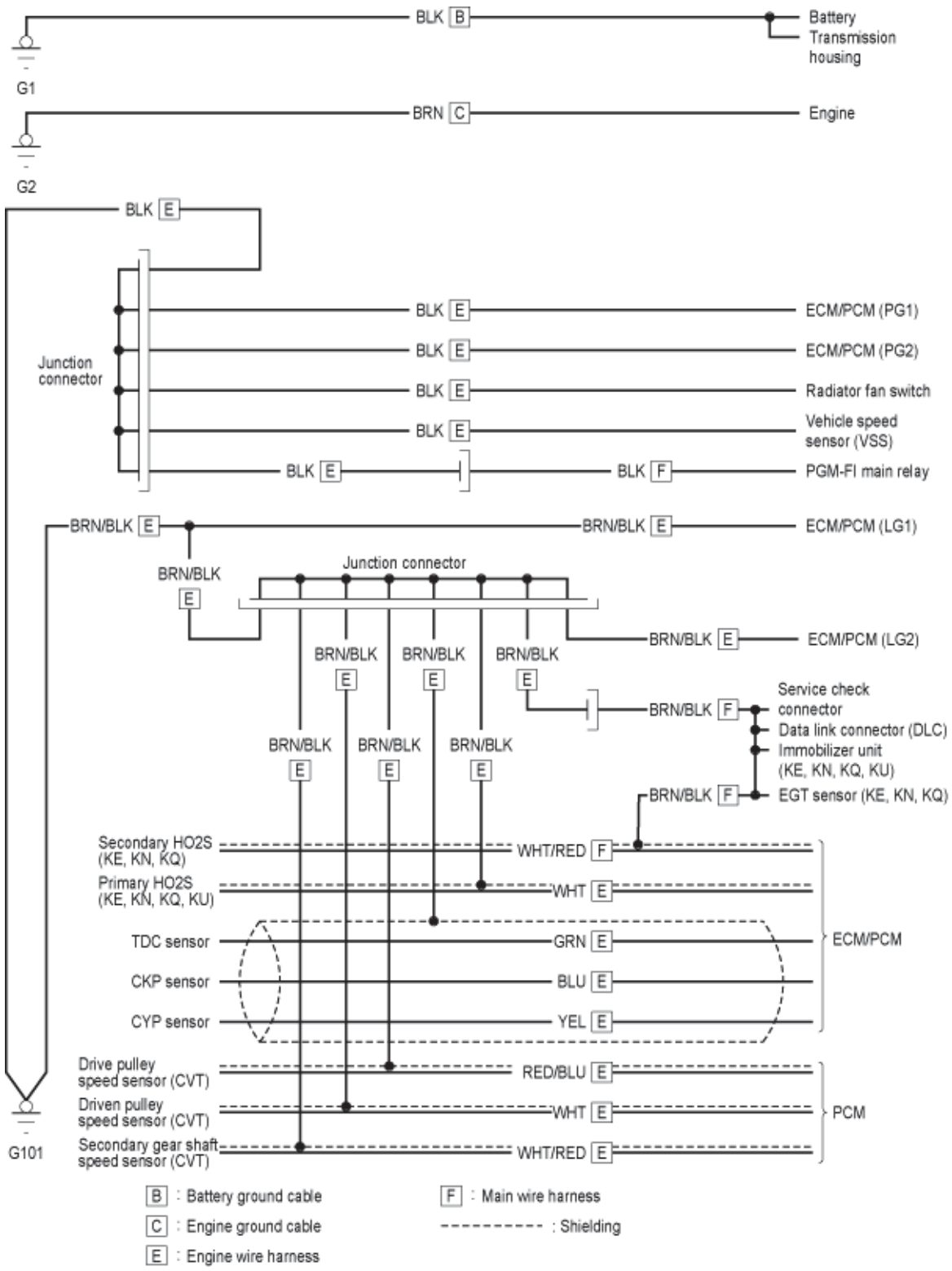

BLK F
ABS modulator assembly (GND1)
BLK F
ABS modulator assembly (GND2)
BLK F
Radiator fan motor
BLK F
Right front turn signal light
ELD unit (CVT)
BLK F
Right headlight (low beam)
BLK F
Right side turn signal light
UNDER-HOOD
FUSE/RELAY BOX
BLK F
(Fuse/relay box socket)
Blower motor relay
G201
BLK F
Windshield wiper motor
BLK F
Right front parking light
Right headlight adjuster unit (KG)
G202
BLK F
Condensor fan motor
BLK F
Left front turn signal light
BLK F
Left front parking light
Rear window washer motor
BLK F
Left headlight (low beam)
BLK F
Brake fluid level switch
BLK F
Windshield washer motor
BLK F
Left headlight adjuster unit (KG)
BLK F
Left side turn signal light
F : Main wire harness
G301

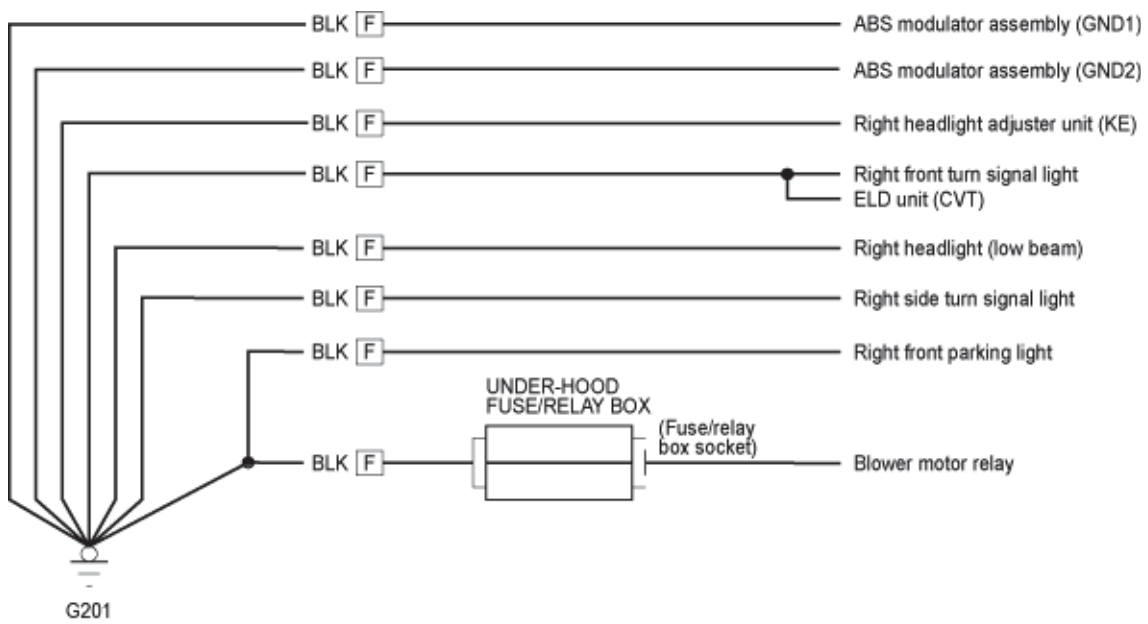

BLK F
Integrated control unit
BLK F
Windshield wiper/washer switch
BLK F
BLK G
Gauge assembly (PG)
Vehicle speed alarm unit (KY)
UNDER-DASH FUSE/RELAY BOX
BLK F
BLU/WHT
Ignition key switch
BLK F
(Fuse/relay box socket)
Power window relay
BLK F
(Fuse/relay box socket)
Seat heater main relay (KG)
BLK F
(Fuse/relay box socket)
Turn signal/hazard relay
BLK F
Memory erase signal (MES) connector
BLK F
Rear window wiper/washer switch
Rear window intermittent wiper control unit (KG)
BLK F
Driver's seat belt switch (KY)
BLK F
Cable reel (CVT)
BLK F
BLK G
Gauge assembly (SG)
BLK F
Power door lock control unit
Keyless door lock control unit
BLK F
BLK F
BLK K
Power window master switch
Left power mirror defogger (KG)
BLK F
BLK L
Right power mirror defogger (KG)
BLK F
Clock
BLK F
Combination light switch
BLK F
Headlight adjuster switch (KG)
BLK F
Rear fog light switch (KG)
BLK F
Rear fog light switch indicator light (KG)
BLK F
A
G402
(To next page)
G401
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness
L : Passenger's door wire harness

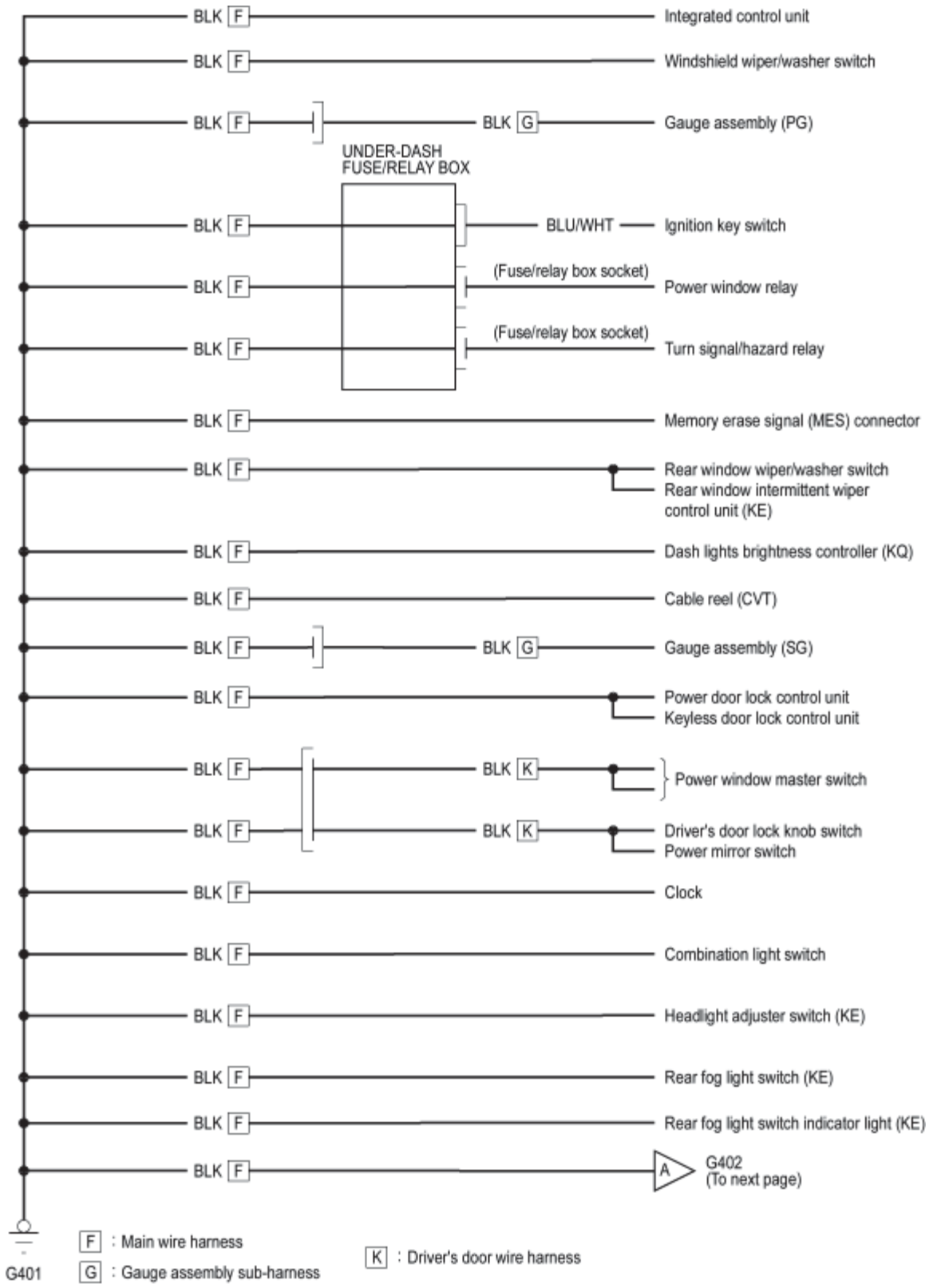

G401
(From previous page)
A
BLK
F
BLK F
BLK K
Driver's door lock knob switch
Power mirror switch
BLK F
Beverage holder light
A/T gear position switch
BLK F
Rear window defogger switch
BLK F
Rear window defogger switch light
BLK F
Heater control panel light
BLK F
BLK M
Front ceiling light
BLK F
Recirculation control/A/C switch
BLK F
Hazard warning switch light
BLK F
Cigarette lighter
BLK F
Heater fan switch
BLK F
A/T gear position switch
BLK F
BLK G
Gauge assembly (light)
BLK F
Recirculation control/A/C switch light
BLK F
Driver's seat heater (KG)
Front passenger's seat heater (KG)
Driver's seat belt switch (KY)
BLK F
Driver's seat heater switch (KG)
BLK F
Front passenger's seat heater switch (KG)
BLK F
Seat belt alarm unit (KY)
Rear fog light control unit (KG)
G402
BLK F
Audio unit
G403
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness
M : Roof wire harness

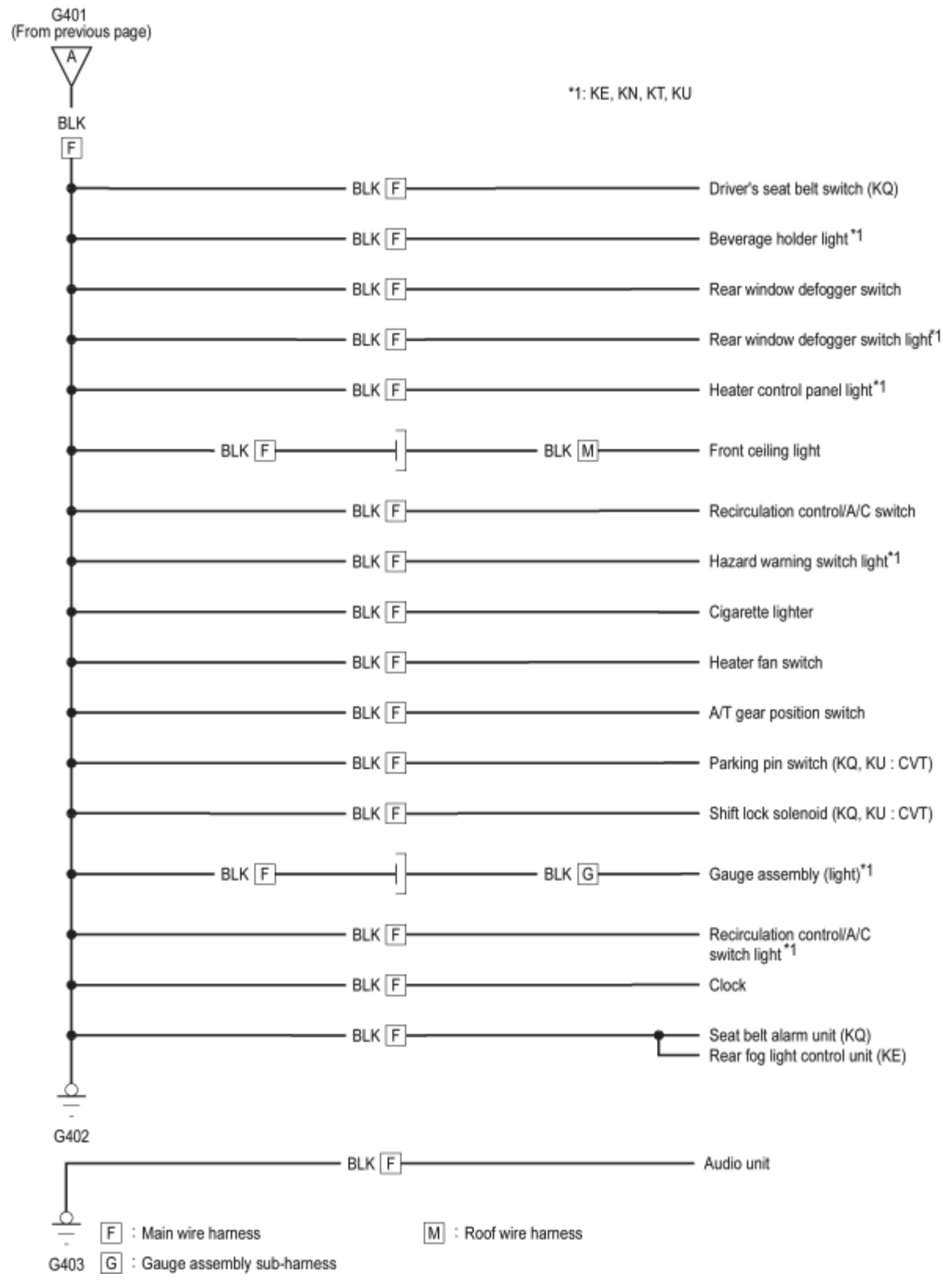


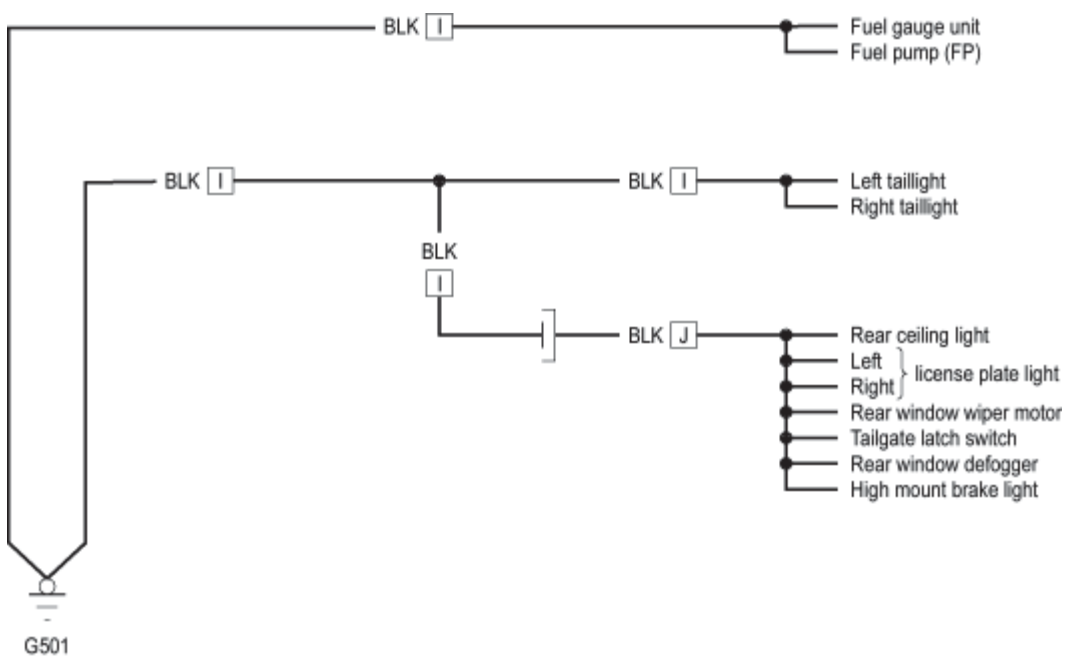
I : Rear wire harness
J : Tailgate wire harness
N : SRS main harness


BLK B
Battery
Transmission housing
G1
BRN C
Engine
G2
BLK E
Junction connector
BLK E
ECM/PCM (PG1)
BLK E
ECM/PCM (PG2)
BLK E
Radiator fan switch
BLK E
Vehicle speed sensor (VSS)
BLK E
BLK F
PGM-FI main relay
BRN/BLK E
BRN/BLK E
ECM/PCM (LG1)
BRN/BLK E
Junction connector
BRN/BLK E
ECM/PCM (LG2)
BRN/BLK E
BRN/BLK E
BRN/BLK E
BRN/BLK F
Service check connector
Data link connector (DLC)
Immobilizer unit (KE, KN, KQ, KU)
BRN/BLK E
BRN/BLK E
BRN/BLK E
BRN/BLK F
EGT sensor (KE, KN, KQ)
Secondary HO2S (KE, KN, KQ)
WHT/RED F
Primary HO2S (KE, KN, KQ, KU)
WHT E
TDC sensor
GRN E
CKP sensor
BLU E
CYP sensor
YEL E
ECM/PCM
Drive pulley speed sensor (CVT)
RED/BLU E
Driven pulley speed sensor (CVT)
WHT E
Secondary gear shaft speed sensor (CVT)
WHT/RED E
PCM
G101
B : Battery ground cable
C : Engine ground cable
E : Engine wire harness
F : Main wire harness
: Shielding


BLK F
ABS modulator assembly (GND1)
ABS modulator assembly (GND2)
Right headlight adjuster unit (KE)
Right front turn signal light
ELD unit (CVT)
Right headlight (low beam)
Right side turn signal light
Right front parking light
UNDER-HOOD FUSE/RELAY BOX
(Fuse/relay box socket)
Blower motor relay
G201
Windshield wiper motor
Brake fluid level switch
Power steering pressure switch
Radiator fan motor
G202
Condensor fan motor
Left front turn signal light
Left front parking light
Rear window washer motor
Left headlight (low beam)
Windshield washer motor
Left headlight adjuster unit (KE)
Left side turn signal light
G301
F : Main wire harness

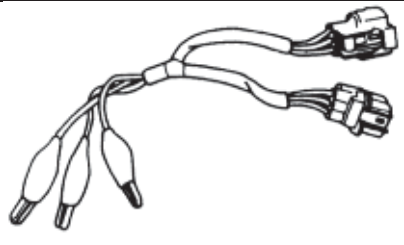

BLK F
Integrated control unit
BLK F
Windshield wiper/washer switch
BLK F
BLK G
Gauge assembly (PG)
UNDER-DASH FUSE/RELAY BOX
BLK F
BLU/WHT
Ignition key switch
BLK F
(Fuse/relay box socket)
Power window relay
BLK F
(Fuse/relay box socket)
Turn signal/hazard relay
BLK F
Memory erase signal (MES) connector
BLK F
Rear window wiper/washer switch
Rear window intermittent wiper control unit (KE)
BLK F
Dash lights brightness controller (KQ)
BLK F
Cable reel (CVT)
BLK F
BLK G
Gauge assembly (SG)
BLK F
Power door lock control unit
Keyless door lock control unit
BLK F
BLK K
Power window master switch
BLK F
BLK K
Driver's door lock knob switch
Power mirror switch
BLK F
Clock
BLK F
Combination light switch
BLK F
Headlight adjuster switch (KE)
BLK F
Rear fog light switch (KE)
BLK F
Rear fog light switch indicator light (KE)
BLK F
A
G402
(To next page)
G401
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness


G401
(From previous page)
A
BLK
F
*1: KE, KN, KT, KU
BLK F — Driver's seat belt switch (KQ)
BLK F — Beverage holder light *1
BLK F — Rear window defogger switch
BLK F — Rear window defogger switch light *1
BLK F — Heater control panel light *1
BLK F — BLK M — Front ceiling light
BLK F — Recirculation control/A/C switch
BLK F — Hazard warning switch light *1
BLK F — Cigarette lighter
BLK F — Heater fan switch
BLK F — A/T gear position switch
BLK F — Parking pin switch (KQ, KU : CVT)
BLK F — Shift lock solenoid (KQ, KU : CVT)
BLK F — BLK G — Gauge assembly (light) *1
BLK F — Recirculation control/A/C switch light *1
BLK F — Clock
BLK F — Seat belt alarm unit (KQ)
Rear fog light control unit (KE)
G402
BLK F — Audio unit
G403
F : Main wire harness
M : Roof wire harness
G : Gauge assembly sub-harness



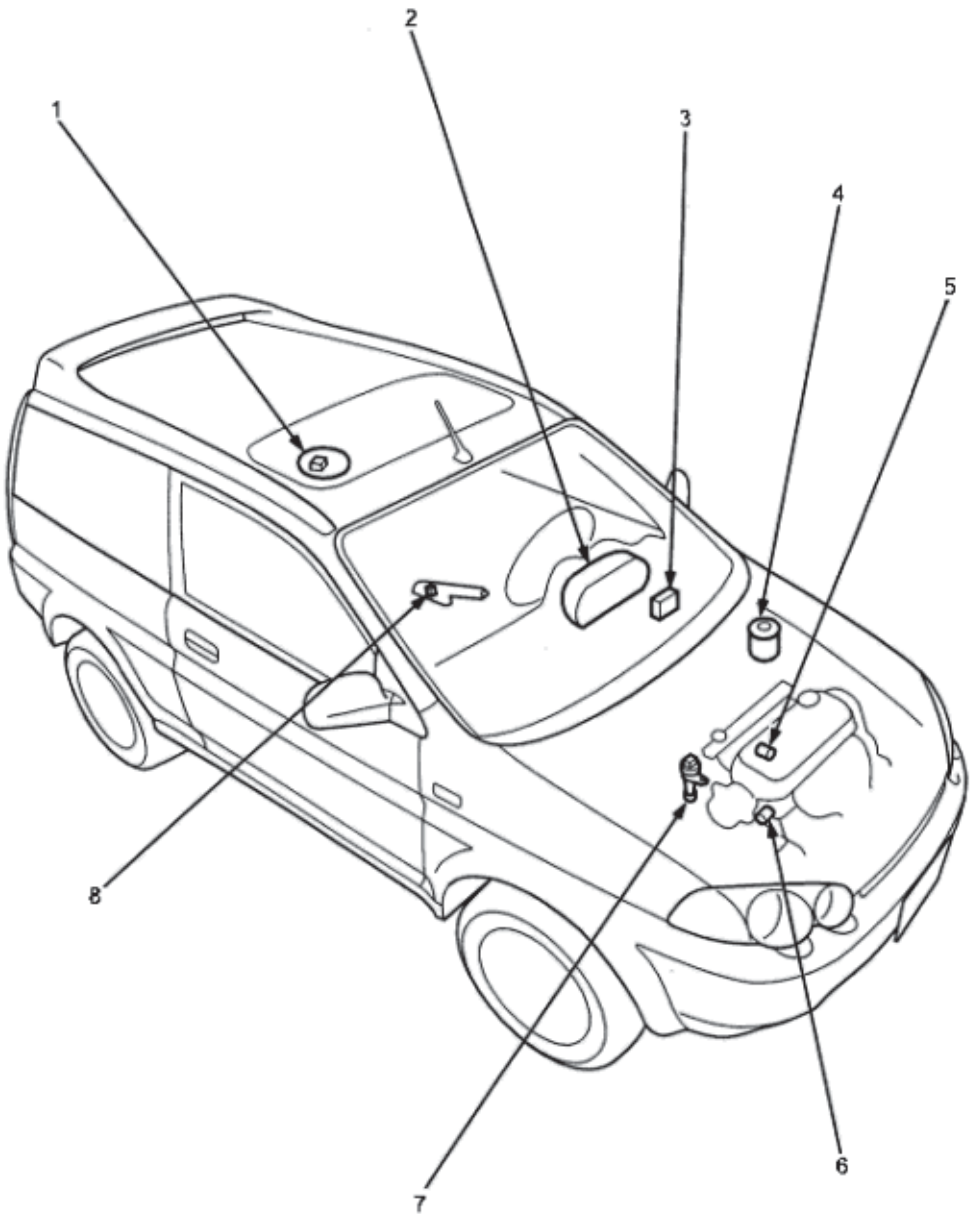
I : Rear wire harness
J : Tailgate wire harness
N : SRS main harness

Ref No.	Tool Number	Description	Qty	Remark
1	07LAJ - PT30200	Test Harness	1	

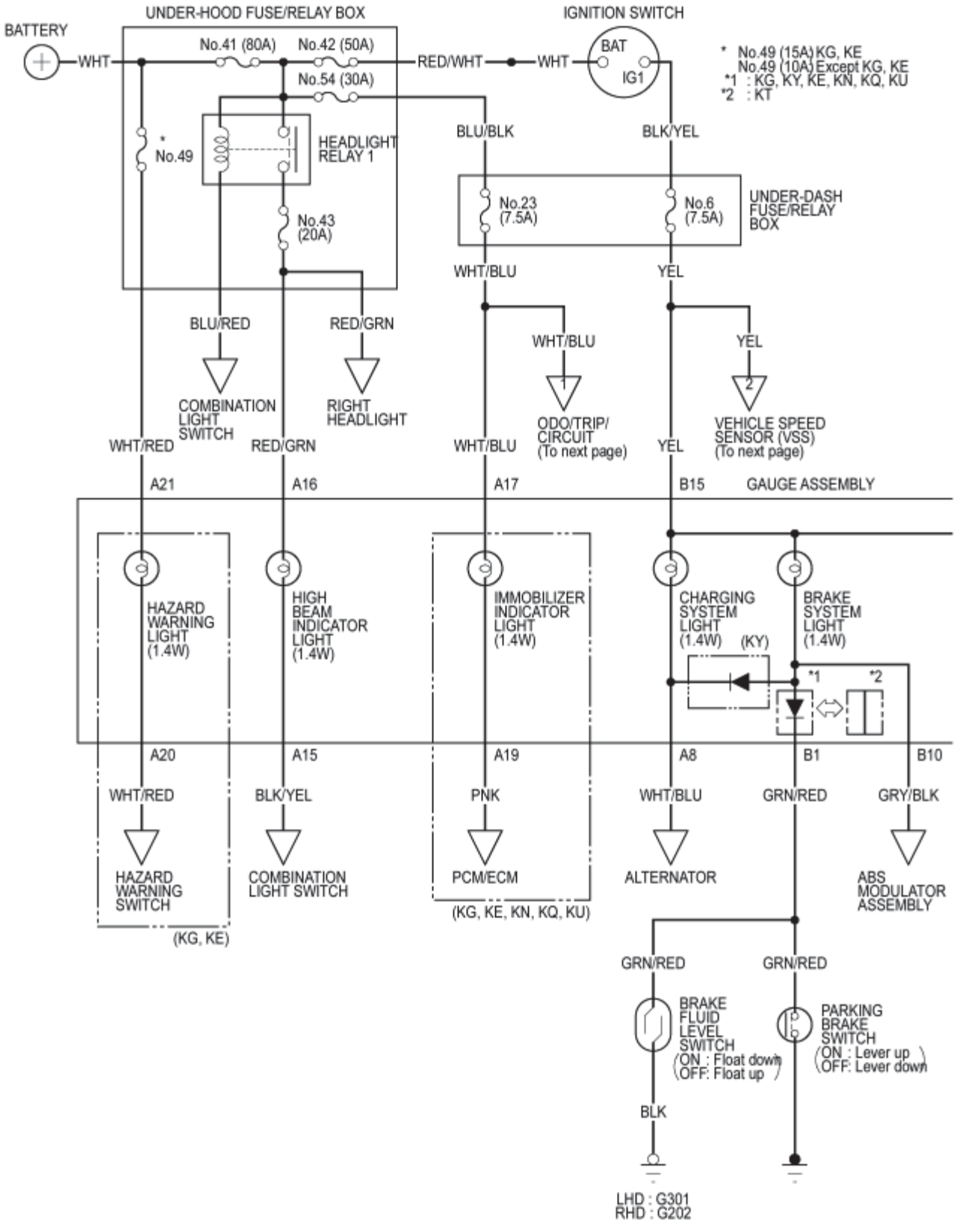


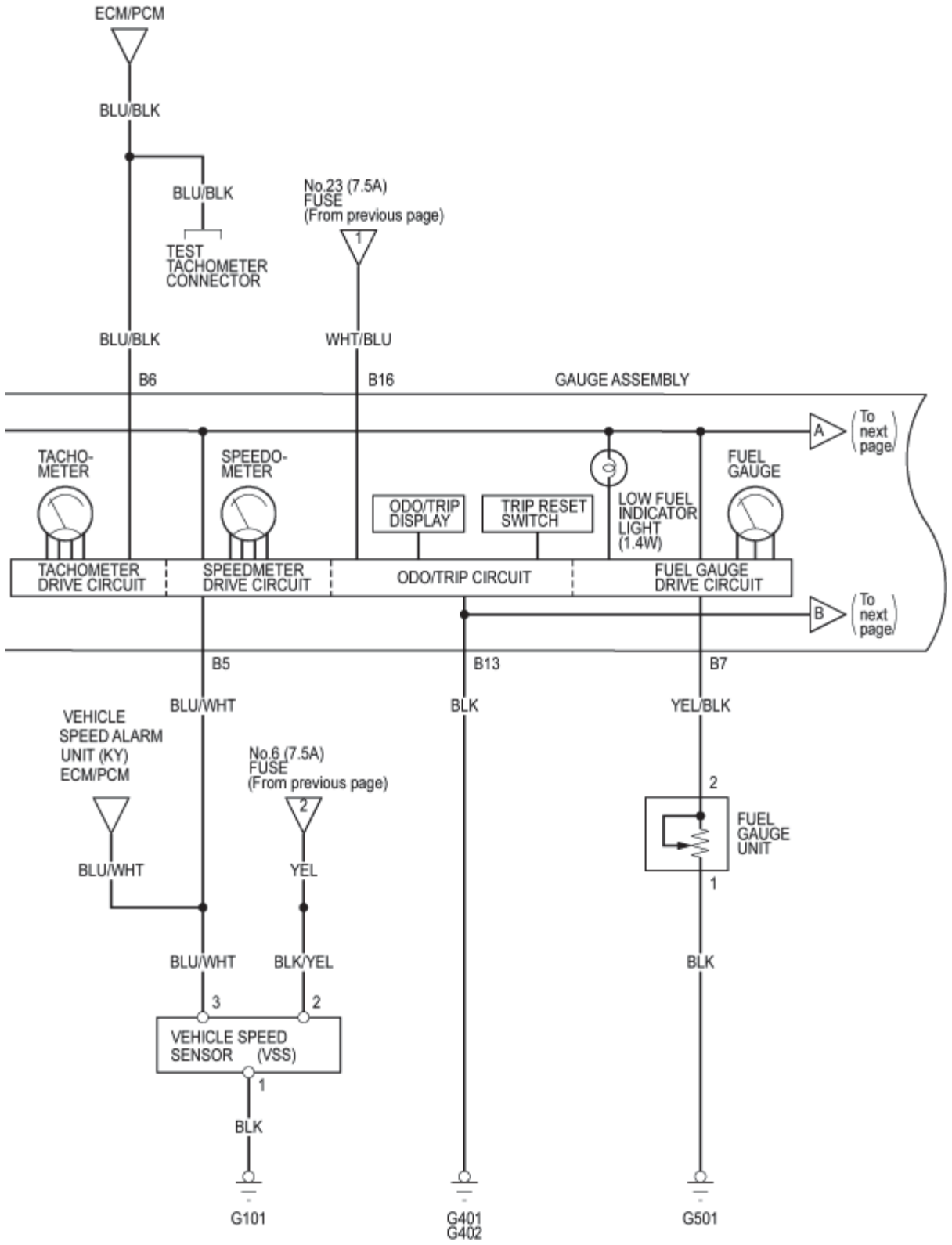
①

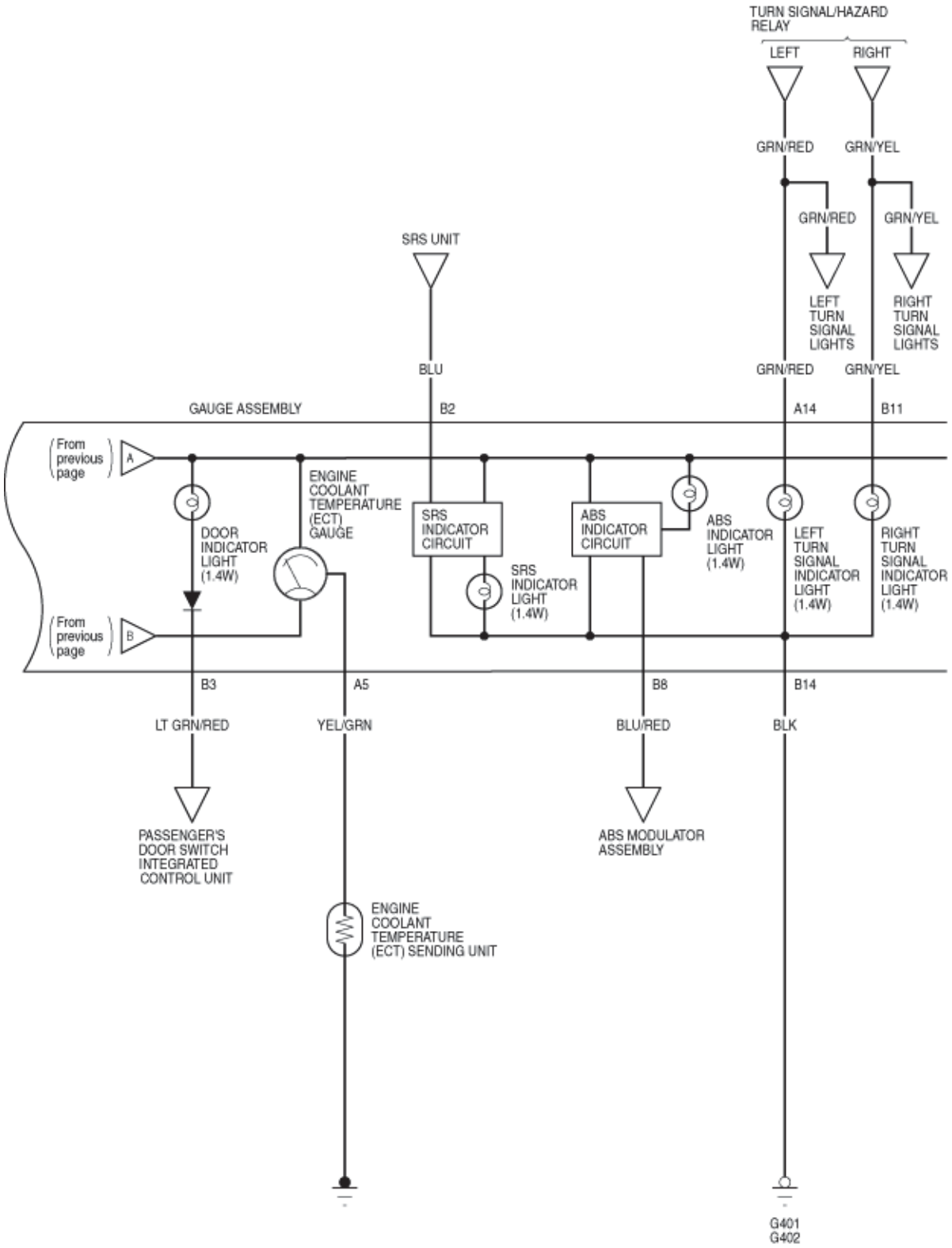
NOTE: LHD type is shown, RHD type is similar.

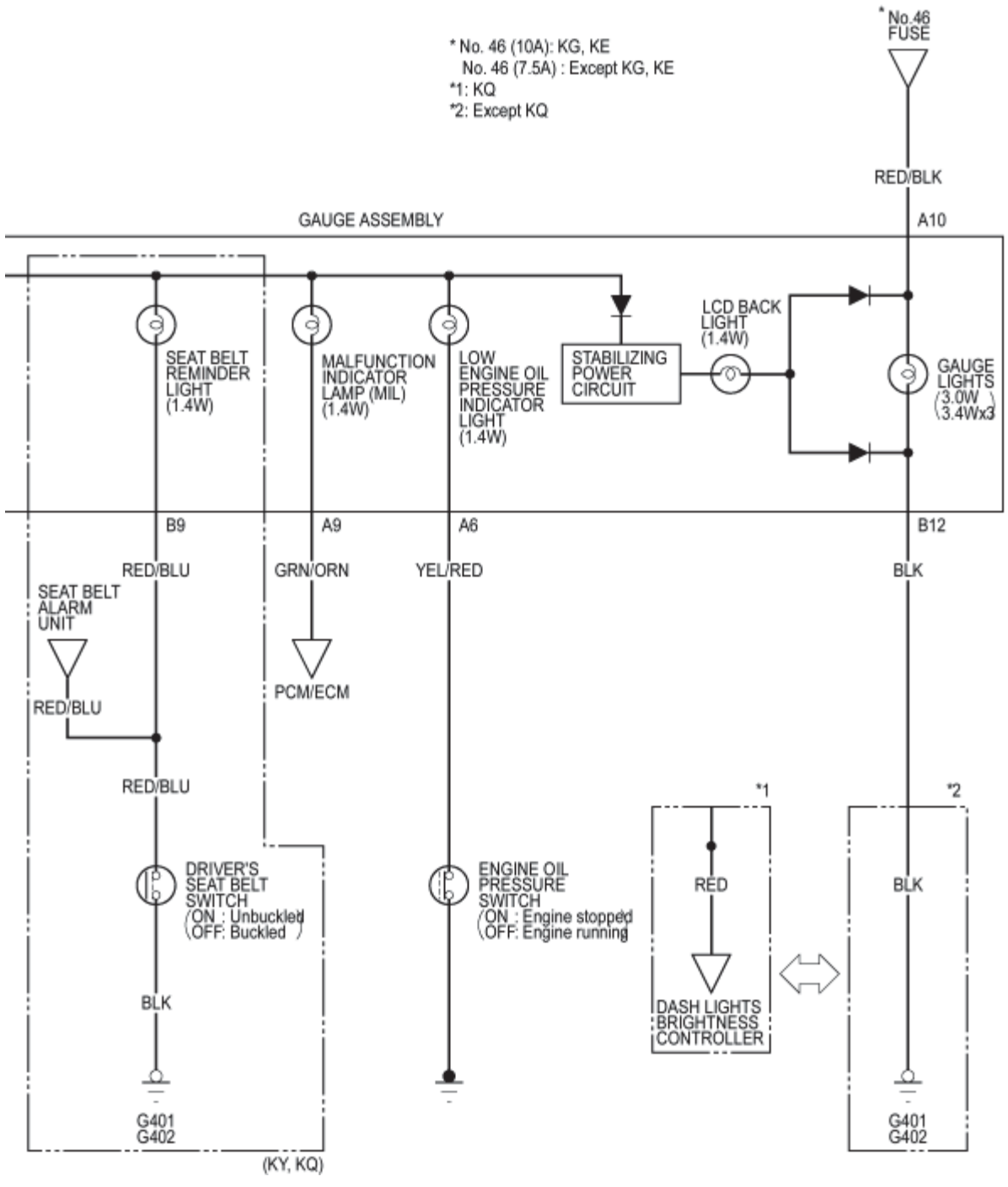


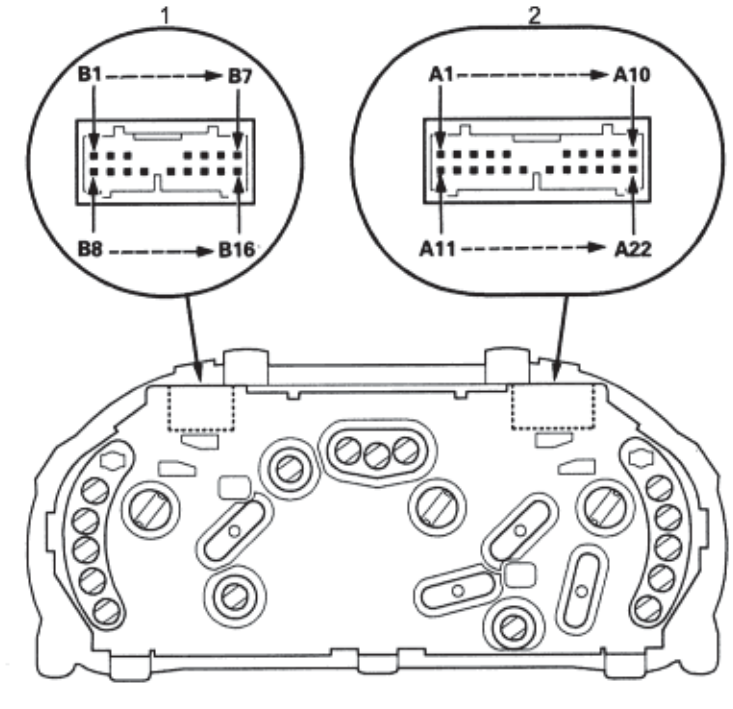
1. **FUEL GAUGE SENDING UNIT**, (See section 11)
2. **GAUGE ASSEMBLY**
   Gauge/Terminal Locations Index (**See Page** 23-C-8)
   Replacement (**See Page** 23-C-10)
   Bulb Locations (**See Page** 23-C-9)
3. **VEHICLE SPEED ALARM UNIT (KY model)**
   Test (**See Page** 23-C-14)
4. **BRAKE FLUID LEVEL SWITCH (See section 19)**
5. **ENGINE OIL PRESSURE SWITCH (See section 8)**
6. **COOLANT TEMPERATURE GAUGE SENDING UNIT (See section10)**
7. **VEHICLE SPEED SENSOR (VSS)**
   Troubleshooting (**See Page** 23-C-11)
   Replacement (**See Page** 23-C-10)
8. **PARKING BRAKE SWITCH (See section 19)**


UNDER-HOOD FUSE/RELAY BOX
BATTERY
WHT
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
IGNITION SWITCH
BAT
IG1
WHT
* No.49 (15A) KG, KE
No.49 (10A) Except KG, KE
*1 : KG, KY, KE, KN, KQ, KU
*2 : KT
* No.49
HEADLIGHT RELAY 1
No.43 (20A)
BLU/BLK
BLK/YEL
No.23 (7.5A)
No.6 (7.5A)
UNDER-DASH FUSE/RELAY BOX
WHT/BLU
YEL
BLU/RED
RED/GRN
COMBINATION LIGHT SWITCH
RIGHT HEADLIGHT
WHT/BLU
YEL
1
2
ODO/TRIP/ CIRCUIT (To next page)
VEHICLE SPEED SENSOR (VSS) (To next page)
WHT/RED
RED/GRN
WHT/BLU
YEL
A21
A16
A17
B15
GAUGE ASSEMBLY
HAZARD WARNING LIGHT (1.4W)
HIGH BEAM INDICATOR LIGHT (1.4W)
IMMOBILIZER INDICATOR LIGHT (1.4W)
CHARGING SYSTEM LIGHT (1.4W)
(KY)
BRAKE SYSTEM LIGHT (1.4W)
*1
*2
A20
A15
A19
A8
B1
B10
WHT/RED
BLK/YEL
PNK
WHT/BLU
GRN/RED
GRY/BLK
HAZARD WARNING SWITCH
(KG, KE)
COMBINATION LIGHT SWITCH
PCM/ECM
(KG, KE, KN, KQ, KU)
ALTERNATOR
ABS MODULATOR ASSEMBLY
GRN/RED
GRN/RED
BRAKE FLUID LEVEL SWITCH
(ON : Float down
OFF: Float up)
PARKING BRAKE SWITCH
(ON : Lever up
OFF: Lever down)
BLK
LHD : G301
RHD : G202

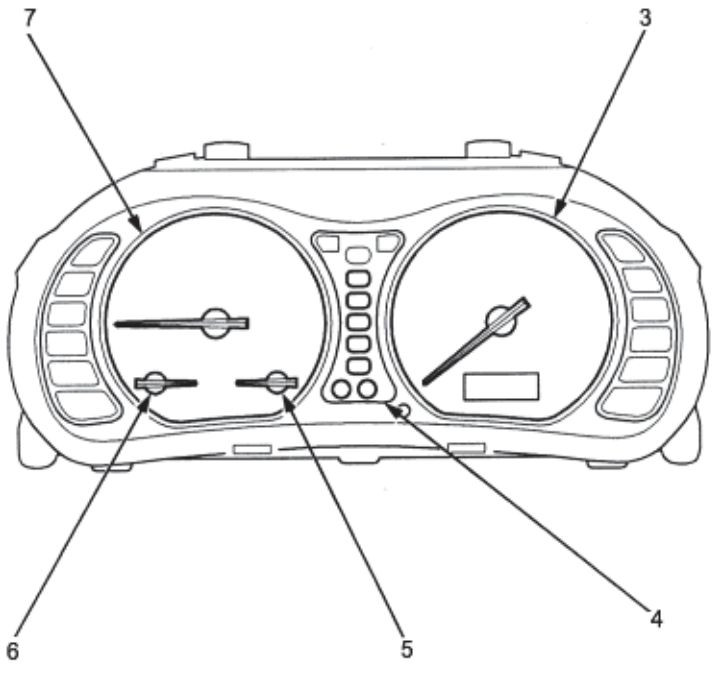

ECM/PCM
BLU/BLK
BLU/BLK
TEST TACHOMETER CONNECTOR
No.23 (7.5A) FUSE (From previous page)
1
BLU/BLK
WHT/BLU
B6
B16
GAUGE ASSEMBLY
A
To next page
TACHO-METER
SPEEDO-METER
ODO/TRIP DISPLAY
TRIP RESET SWITCH
LOW FUEL INDICATOR LIGHT (1.4W)
FUEL GAUGE
TACHOMETER DRIVE CIRCUIT
SPEEDMETER DRIVE CIRCUIT
ODO/TRIP CIRCUIT
FUEL GAUGE DRIVE CIRCUIT
B
To next page
B5
B13
B7
BLU/WHT
BLK
YEL/BLK
VEHICLE SPEED ALARM UNIT (KY) ECM/PCM
No.6 (7.5A) FUSE (From previous page)
2
2
FUEL GAUGE UNIT
BLU/WHT
YEL
1
BLU/WHT
BLK/YEL
BLK
3
2
VEHICLE SPEED SENSOR (VSS)
1
BLK
G101
G401
G402
G501

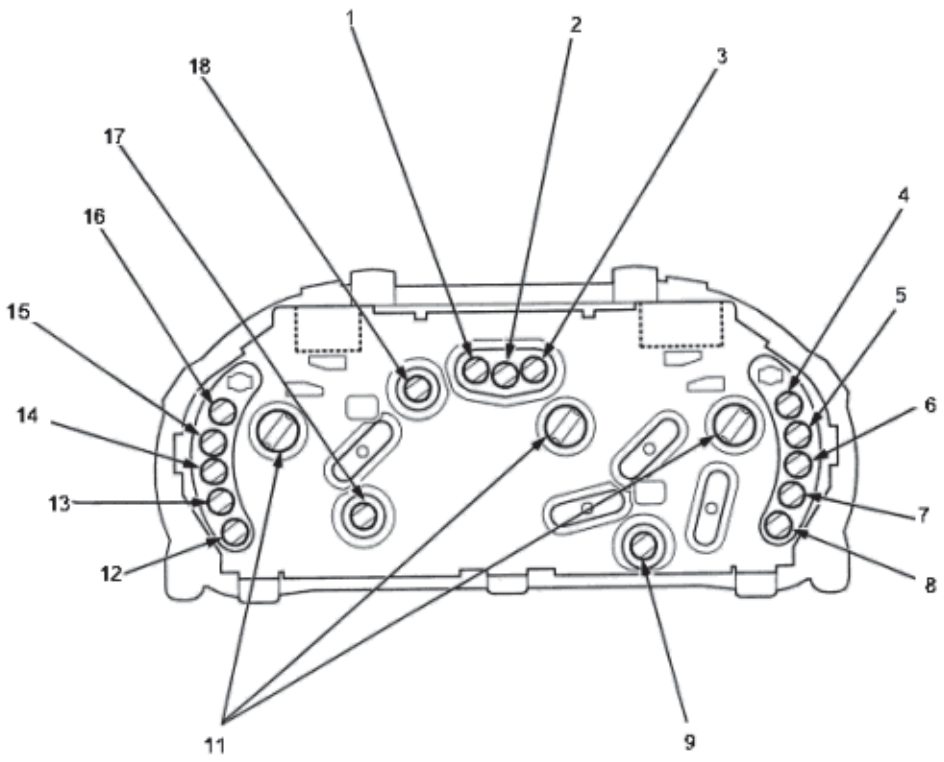

TURN SIGNAL/HAZARD RELAY
LEFT
RIGHT
GRN/RED
GRN/YEL
GRN/RED
GRN/YEL
LEFT TURN SIGNAL LIGHTS
RIGHT TURN SIGNAL LIGHTS
SRS UNIT
BLU
GRN/RED
GRN/YEL
GAUGE ASSEMBLY
B2
A14
B11
From previous page
A
From previous page
B
DOOR INDICATOR LIGHT (1.4W)
ENGINE COOLANT TEMPERATURE (ECT) GAUGE
SRS INDICATOR CIRCUIT
SRS INDICATOR LIGHT (1.4W)
ABS INDICATOR CIRCUIT
ABS INDICATOR LIGHT (1.4W)
LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)
B3
A5
B8
B14
LT GRN/RED
YEL/GRN
BLU/RED
BLK
PASSENGER'S DOOR SWITCH INTEGRATED CONTROL UNIT
ENGINE COOLANT TEMPERATURE (ECT) SENDING UNIT
ABS MODULATOR ASSEMBLY
G401
G402

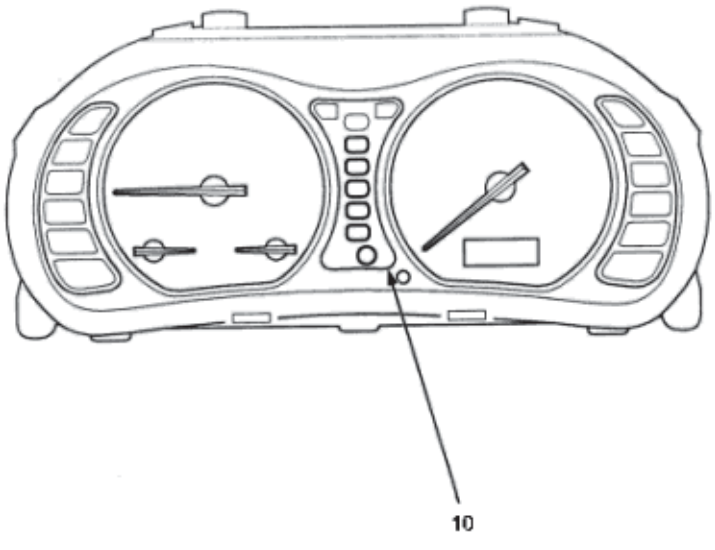

* No. 46 (10A): KG, KE
No. 46 (7.5A) : Except KG, KE
*1: KQ
*2: Except KQ
*No.46 FUSE
RED/BLK
GAUGE ASSEMBLY
A10
SEAT BELT REMINDER LIGHT (1.4W)
MALFUNCTION INDICATOR LAMP (MIL) (1.4W)
LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)
STABILIZING POWER CIRCUIT
LCD BACK LIGHT (1.4W)
GAUGE LIGHTS (3.0W 3.4Wx3)
B9
A9
A6
B12
RED/BLU
GRN/ORN
YEL/RED
BLK
SEAT BELT ALARM UNIT
RED/BLU
PCM/ECM
RED/BLU
DRIVER'S SEAT BELT SWITCH (ON : Unbuckled OFF: Buckled)
BLK
G401 G402
(KY, KQ)
ENGINE OIL PRESSURE SWITCH (ON : Engine stopped OFF: Engine running
*1
RED
DASH LIGHTS BRIGHTNESS CONTROLLER
*2
BLK
G401 G402



1. **CONNECTOR 'B'**
2. **CONNECTOR 'A'**
3. **SPEEDOMETER:** Indicates 60 km/h [60 mph] at 637 [1,026] rpm (min -1) of the vehicle speed sensor (VSS)
4. **A/T GEAR POSITION INDICATOR (See section 14)**
5. **FUEL GAUGE (See section 11)**
6. **ENGINE COOLANT TEMPERATURE (ECT) GAUGE (See section 10)**
7. **TACHOMETER:** Indicates 100 rpm (min -1) at 200 pulses per minute of the ignition control module (ICM)





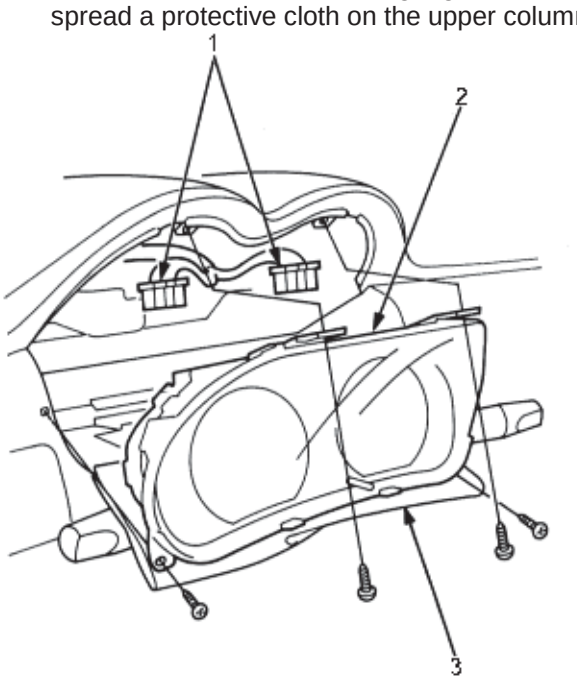


1. **RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)**
2. **HIGH BEAM INDICATOR LIGHT (1.4W)**
3. **LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)**
4. **IMMOBILISER INDICATOR LIGHT (1.4W)**
5. **HAZARD WARNING LIGHT (1.4W)**
6. **MALFUNCTION INDICATOR LAMP (MIL) (1.4W)**
7. **CHARGING SYSTEM LIGHT (1.4W)**
8. **LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)**
9. **LOW FUEL INDICATOR LIGHT (1.4W)**
10. **A/T GEAR POSITION INDICATOR (1.12W x 6)**
11. **GAUGE LIGHT (3.4W)**
12. **DOOR INDICATOR LIGHT (1.4W)**
13. **SRS INDICATOR LIGHT (1.4W)**
14. **BRAKE SYSTEM LIGHT (1.4W)**
15. **ABS INDICATOR LIGHT (1.4W)**
16. **SEAT BELT REMINDER LIGHT (1.4W)**
17. **LCD BACK LIGHT (1.4W)**
18. **GAUGE LIGHT (3.0W)**

⚠ CAUTION

To prevent damage to the gauge assembly, do not lay it with any dials facing down.

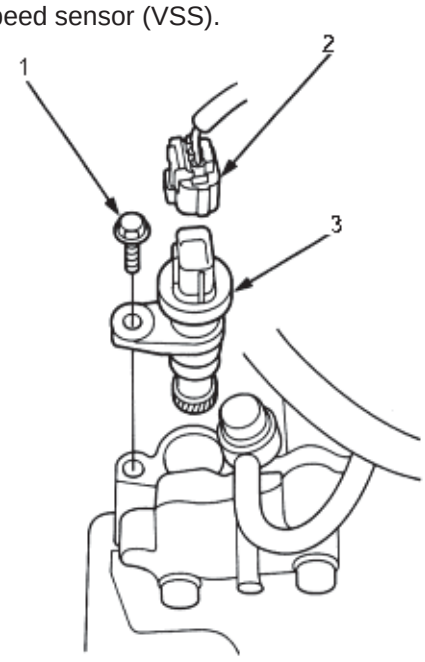
1. Remove the instrument panel (see section 20).
2. Remove the screws from the gauge assembly and spread a protective cloth on the upper column cover.



1. CONNECTORS
2. GAUGE ASSEMBLY
3. CLOTH

3. Disconnect the connectors and remove the gauge assembly.
4. Install in reverse order of removal.

1. Disconnect the 3P connector from the vehicle speed sensor (VSS).

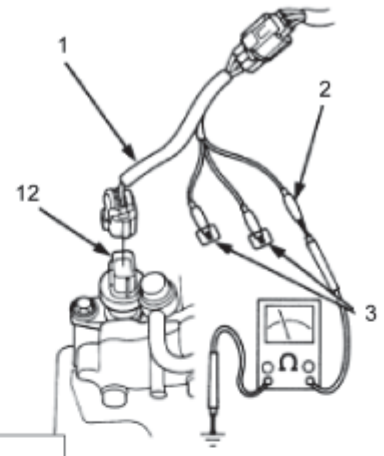


1. MOUNTING BOLT
2. 3P CONNECTOR
3. VEHICLE SPEED SENSOR (VSS)

2. Remove the mounting bolt and then remove the VSS.
3. Install in the reverse order of removal.

Before testing, inspect the No. 6 (7.5A) fuse in the under-dash fuse/relay box.

Test the BLK wire:
1. Disconnect the 3P connector from the vehicle speed sensor (VSS).
2. Connect the test harness (07LAJ-PT30200) only to the engine wire harness.
3. Connect the RED test harness clip to the positive probe of an ohmmeter.
4. Check the continuity between the RED test harness clip and body ground.

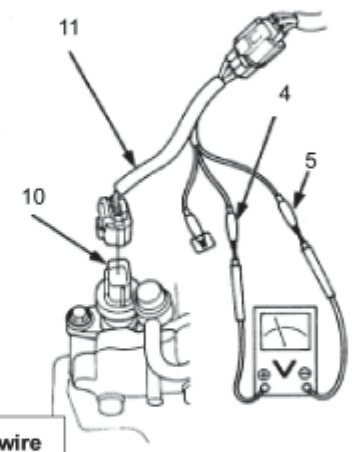


Is there continuity?

NO → **Repair open in the BLK wire between the VSS and G101.**

YES

Test the BLK/YEL wire:
1. Connect the WHT test harness clip to the positive probe of a voltmeter, and connect the RED test harness clip to the negative probe.
2. Turn the ignition switch ON (II).

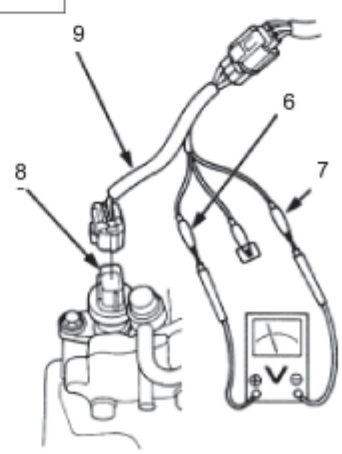


Is there battery voltage?

NO → **Repair open in the BLK/YEL wire between the VSS and the under-dash fuse/relay box.**

YES

Test the BLU/WHT wire:
Connect the GRN test harness clip to the positive probe of a voltmeter, and connect the RED test harness clip to the negative probe.



Is there about 5V or more?

NO → **Repair open in the BLU/WHT wire between the VSS and ECM/PCM.**

YES

A

(To next page)

1. TEST HARNESS, 07LAJ-PT30200
2. RED TEST HARNESS CLIP
3. PROTECTIVE TAPES
4. RED TEST HARNESS CLIP
5. WHT TEST HARNESS CLIP
6. RED TEST HARNESS
7. GRN TEST HARNESS CLIP
8. VSS
9. TEST HARNESS, 07LAJ-PT30200
10. VSS
11. TEST HARNESS, 07LAJ-PT30200
12. VSS

(From previous page)

A

Test the VSS:

1. Turn the ignition switch OFF.
2. Connect the other test harness connector to the VSS.
3. Raise the front of the car, and support it with safety stands.
4. Put the car in neutral with the ignition switch ON (II).
5. Slowly rotate one wheel with the other wheel blocked.

Does voltage pulse from 0 to approx. 5 V or more?

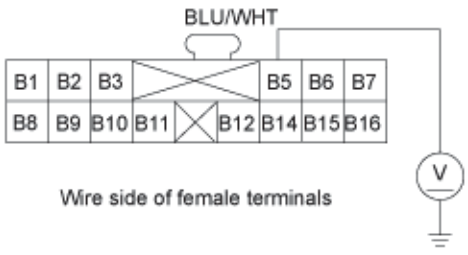
NO → **Replace the VSS.**

YES

Speedometer Test:

1. Disconnect the 16P connector "B" from the gauge assembly.
2. Touch a probe to the BLU/WHT wire, and connect it to body ground through a voltmeter.
3. Slowly rotate one wheel with the other wheel blocked.

GAUGE ASSEMBLY
16P CONNECTOR "B"



Wire side of female terminals

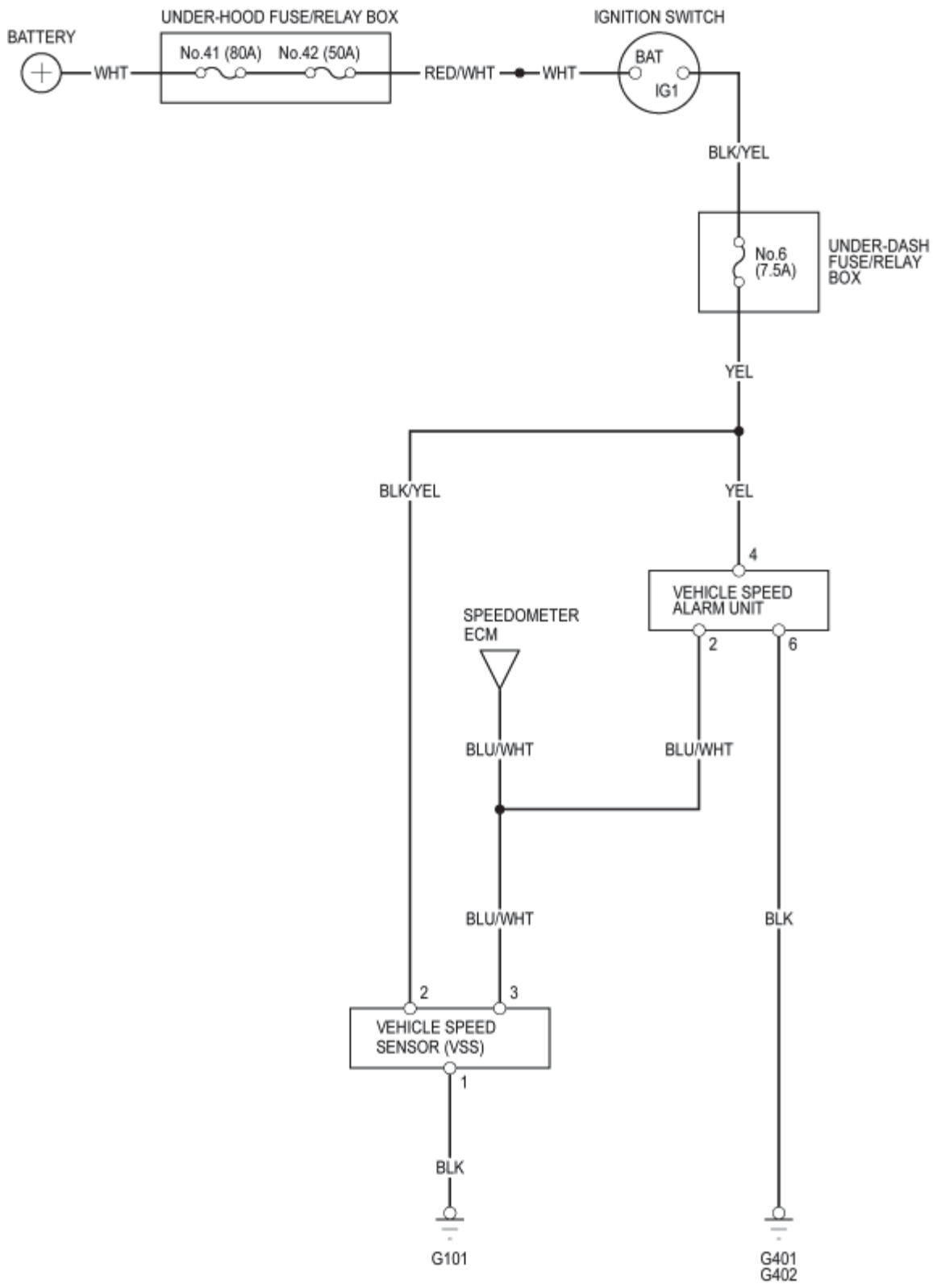
Does the meter indicate pulsing voltage?

NO → **Repair open in the BLU/WHT wire between the VSS and the speedometer.**

YES

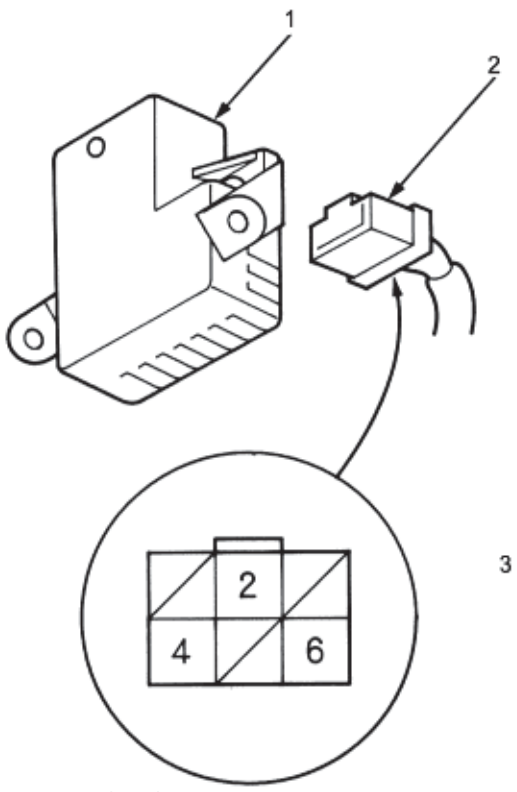
Replace the speedometer.

Circuit Diagram



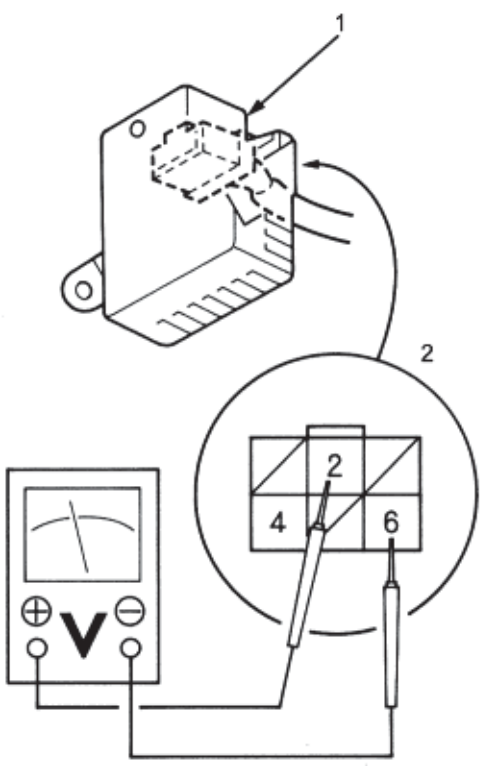
NOTE: Before testing, check the No. 6 (7.5A) fuse in the under-dash fuse/relay box.

1. Carefully remove the dashboard lower cover.



1. VEHICLE SPEED ALARM UNIT
2. 6P CONNECTOR
3. Wire side of female terminals

2. Check for continuity between the No. 6 terminal and the body ground.
   There should be continuity.
   - If there is no continuity, check for:
     - An open in the BLK wire
     - Poor ground (G401, G402).
   - If there is continuity, go to step 3.
3. Check for voltage between the No. 4 terminal and the body ground with the ignition switch ON (II).
   There should be battery voltage.
   - If there is no voltage, check for an open in the YEL wire.
   - If there is battery voltage, go to step 4.
4. Ignition switch OFF, reconnect the 6P connector to the speed alarm unit and connect the voltmeter to the No. 2 wire terminal.



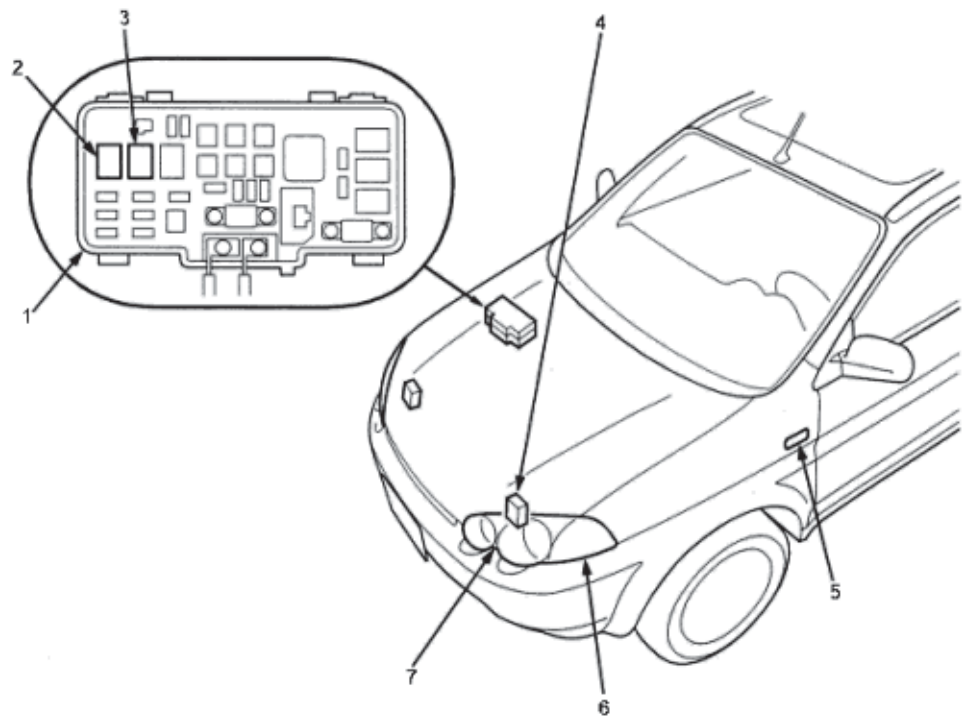
1. VEHICLE SPEED ALARM UNIT
2. Wire side of female terminals

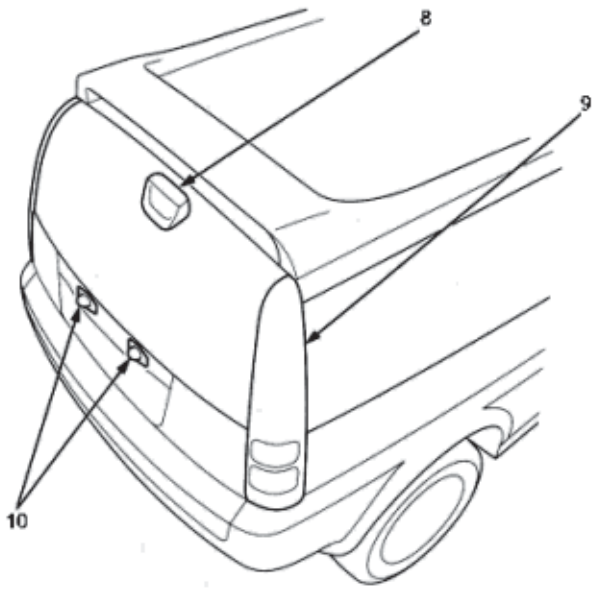
5. Raise the car and place safety stands in the proper locations (see section 1).
6. Turn the ignition switch ON (II) again and rotate the front wheel slowly, then check to see the voltmeter moves from 0V to about 5V or more and then from about 5V or more to 0V alternatively.
   - If there is no voltage, check for:
     - Vehicle speed sensor (VSS) (**See Page** 23-C-11).
     - An open in the BLU/WHT wire.
7. Replace the speed alarm unit if the vehicle speed sensor (VSS) circuit is normal.

NOTE: LHD type is shown, RHD type is similar.

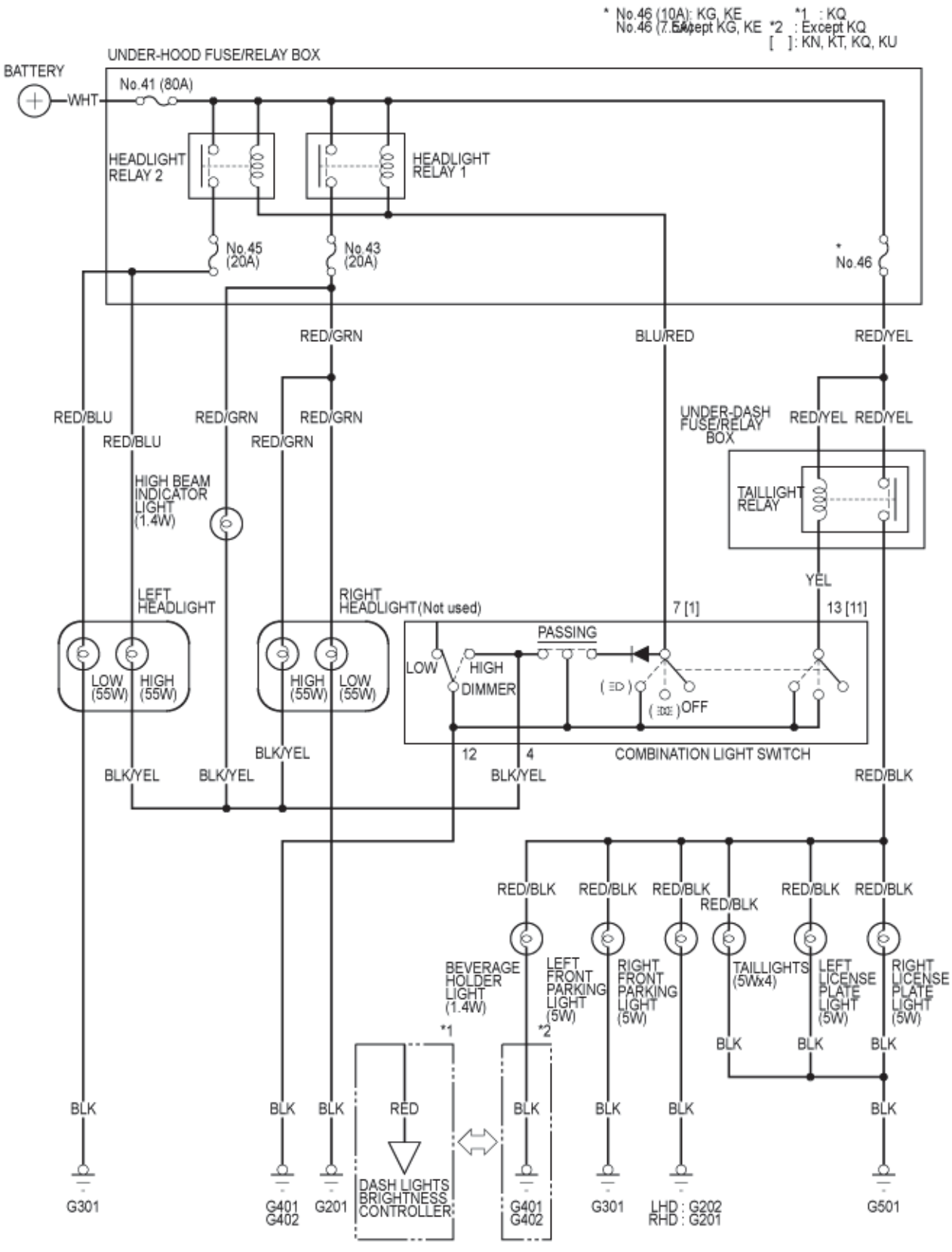
1. **COMBINATION LIGHT SWITCH**
   Test (**See Page** 23-D-5)
   Replacement Test (**See Page** 23-D-5)
2. **HIGH BEAM INDICATOR LIGHT**
3. **REAR FOG LIGHT CONTROL UNIT (KG and KE models)**
   Input Test (**See Page** 23-D-10)
4. **REAR FOG LIGHT SWITCH (KG and KE models)**
   Test (**See Page** 23-D-11)
5. **HEADLIGHT ADJUSTER SWITCH (KG and KE models)**
   Test (**See Page** 23-D-5)
6. **DASH LIGHTS BRIGHTNESS CONTROLLER (KQ model)**
   Controller Input Test (**See Page** 23-D-16)
7. **UNDER-DASH FUSE/RELAY BOX**
8. **TAILLIGHT RELAY**
   Test (**See Page** 23-B-3)

NOTE: LHD type is shown, RHD type is similar.

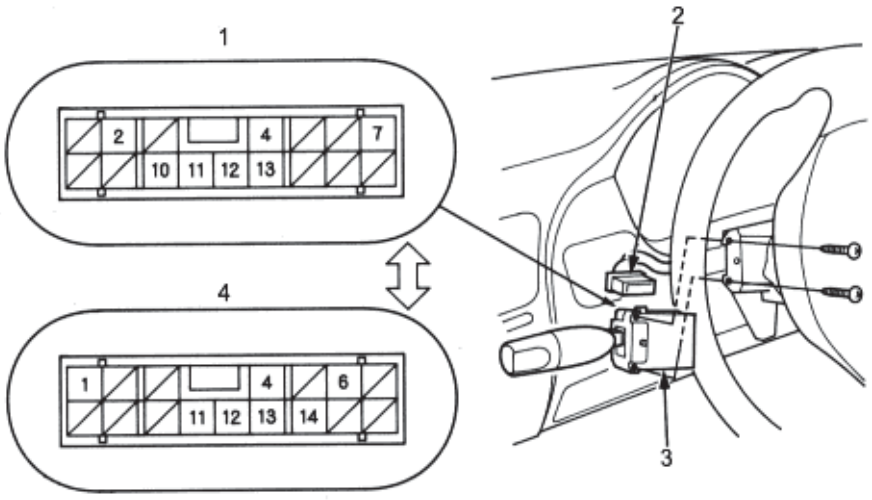




1. **UNDER-HOOD FUSE/RELAY BOX**
2. **HEADLIGHT RELAY 1**
   Test (**See Page** 23-B-3)
3. **HEADLIGHT RELAY 2**
   Test (**See Page** 23-B-3)
4. **HEADLIGHT ADJUSTER UNIT**
   Input Test (**See Page** 23-D-14)
5. **SIDE TURN SIGNAL LIGHT**
   Replacement (**See Page** 23-D-7)
6. **FRONT TURN SIGNAL LIGHT**
   Replacement (**See Page** 23-D-6)
7. **HEADLIGHT**
   Replacement (**See Page** 23-D-6)
   Adjustment (**See Page** 23-D-7)
   FRONT PARKING LIGHT
   Replacement (**See Page** 23-D-6)
8. **HIGH MOUNT BRAKE LIGHT**
   Replacement (**See Page** 23-D-19)
9. **TAILLIGHT ASSEMBLY**
   Replacement (**See Page** 23-D-8)
10. **LICENSE PLATE LIGHT**
    Replacement (**See Page** 23-D-8)


* No.46 (10A): KG, KE
No.46 (7.5A): Except KG, KE
*1 : KQ
*2 : Except KQ
[ ]: KN, KT, KQ, KU
UNDER-HOOD FUSE/RELAY BOX
BATTERY
WHT
No.41 (80A)
HEADLIGHT RELAY 2
HEADLIGHT RELAY 1
No.45 (20A)
No.43 (20A)
*
No.46
RED/GRN
BLU/RED
RED/YEL
RED/BLU
RED/BLU
RED/GRN
RED/GRN
RED/GRN
UNDER-DASH FUSE/RELAY BOX
RED/YEL RED/YEL
TAILLIGHT RELAY
HIGH BEAM INDICATOR LIGHT (1.4W)
YEL
LEFT HEADLIGHT
RIGHT HEADLIGHT(Not used)
7 [1]
13 [11]
PASSING
LOW
HIGH
DIMMER
OFF
LOW (55W)
HIGH (55W)
HIGH (55W)
LOW (55W)
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
12
4
COMBINATION LIGHT SWITCH
RED/BLK
RED/BLK
RED/BLK
RED/BLK
RED/BLK
RED/BLK
RED/BLK
BEVERAGE HOLDER LIGHT (1.4W)
LEFT FRONT PARKING LIGHT (5W)
RIGHT FRONT PARKING LIGHT (5W)
TAILLIGHTS (5Wx4)
LEFT LICENSE PLATE LIGHT (5W)
RIGHT LICENSE PLATE LIGHT (5W)
*1
*2
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLK
RED
DASH LIGHTS BRIGHTNESS CONTROLLER
G301
G401
G402
G201
G401
G402
G301
LHD : G202
RHD : G201
G501

1. Remove the steering column covers (see section 17).
2. Disconnect the 16P connector from the combination light switch.
3. Remove the two screws, then pull out the combination light switch.
4. Inspect the connector 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, check for continuity between them in each switch position according to the table. If there is no continuity between any of them, check for continuity in the switch harness.
     - If there is continuity in the switch harness, replace the combination light switch.
     - If there is no continuity in the switch harness, repair the harness or replace the combination light switch.



1. **KG, KY and KE models**
2. **16P CONNECTOR**
3. **COMBINATION LIGHT SWITCH**
4. **KN, KT, KQ and KU models**

Lighting switch:

Position			7 [1]		*6 [*2]	4	12	13 [11]
Headlight switch	OFF							
	≡D		○				○	○
	≡D	LOW	○		○		○	○
	≡D	HIGH	○			○	○	○
Passing switch	OFF							
	ON		○	▶		○	○	

* : Not used
[ ] : KN, KT, KQ, KU models

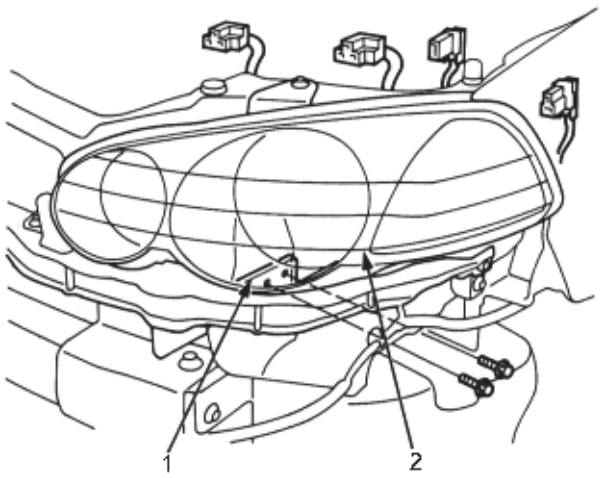
Turn signal switch:

Position	2 [13]	11 [6]	10 [14]
LEFT	○		○
NEUTRAL			
RIGHT		○	○

⚠ CAUTION

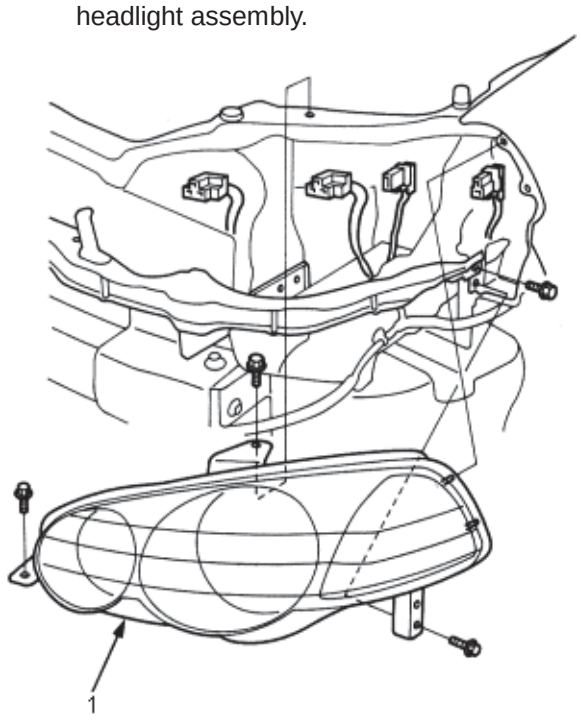
- Halogen headlights can become very hot in use; do not touch them or attaching hardware immediately after they have been turned off.
- Do not try to replace or clean the headlights with the lights on.

1. Remove the front bumper (see section 20).
2. Disconnect the connectors from the headlights.
3. Remove the two mounting bolts from the corner upper beam.



1. CORNER UPPER BEAM
2. HEADLIGHT ASSEMBLY

4. Remove the four mounting bolts, then remove the headlight assembly.



1. HEADLIGHT ASSEMBLY

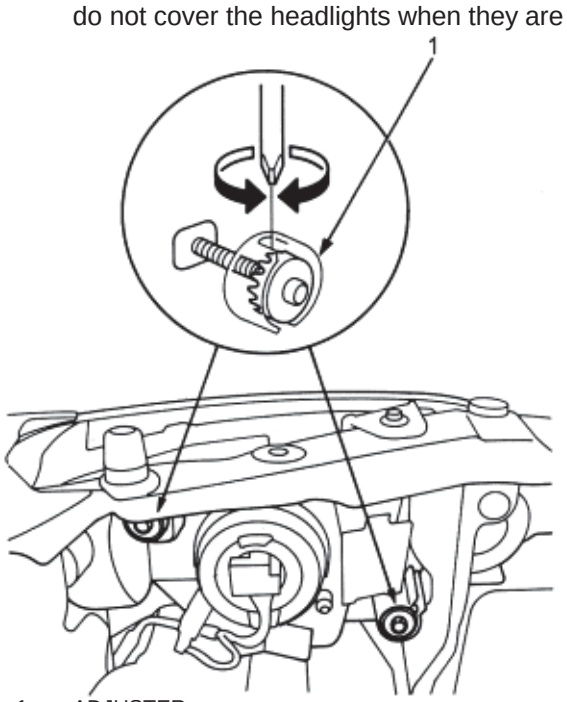
HEADLIGHT (LOW BEAM): 55W
HEADLIGHT (HIGH BEAM): 55W
FRONT PARKING LIGHT: 5W
FRONT TURN SIGNAL LIGHT: 21W

5. After replacement, adjust the headlight to local requirements.

Before adjusting the headlights:

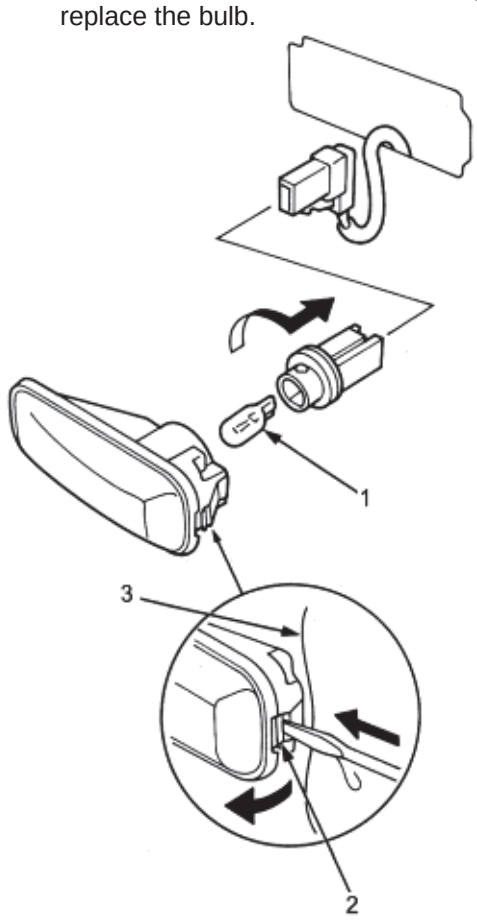
- Park the vehicle on level ground.
- Make sure the fuel tank is full.
- The driver or someone who weighs about the same should sit in the driver's seat.
- Load the trunk with the items normally carried.
- Push down on the front and rear bumpers several times to make sure the vehicle is sitting normally.

1. Open the hood.
2. Adjust the headlights to local requirements by turning the adjusters.
   NOTE: As the outer lenses are made of a resin material, do not cover the headlights when they are turned on.



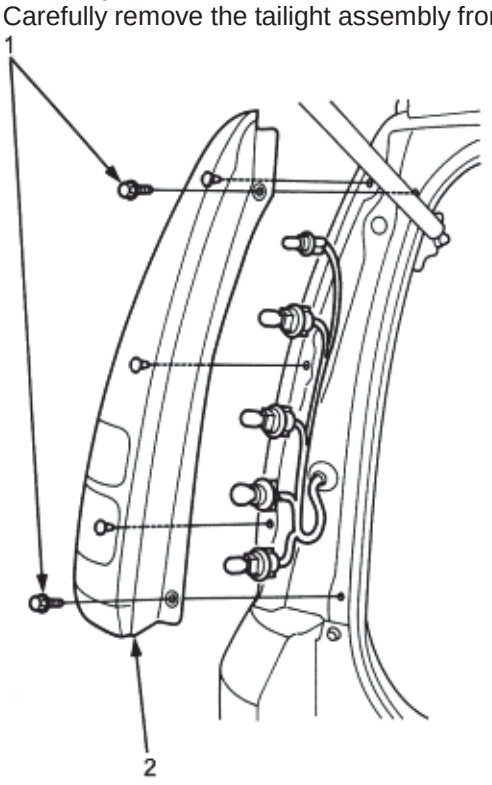
1. ADJUSTER

1. Push the retaining spring and remove the side turn signal light.
2. Remove the bulb socket from the light housing and replace the bulb.



1. BULB (5W)
2. RETAINING SPRING
3. PROTECTIVE CLOTH

1. Open the tailgate.
2. Remove the two mounting bolts from the taillight assembly.
3. Carefully remove the tailight assembly from the body.

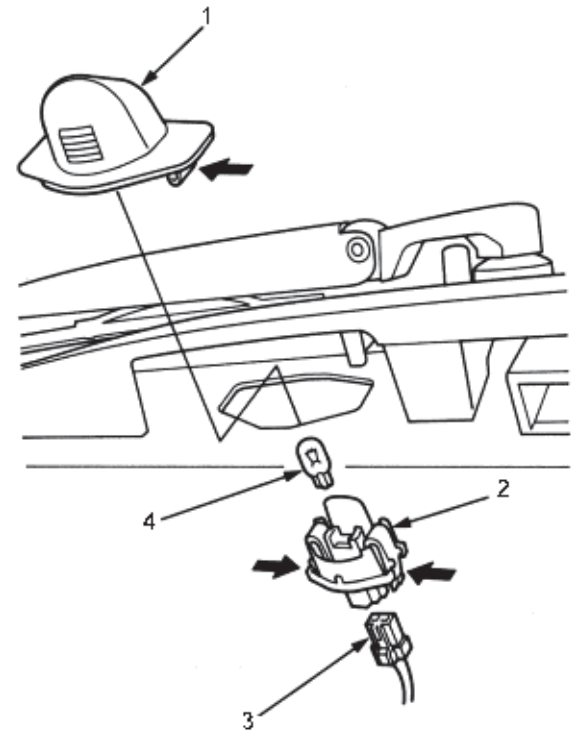


1. MOUNTING BOLTS
2. TAILLIGHT ASSEMBLY

REAR FOG LIGHT: 21W
TURN SIGNAL LIGHT: 21W
BACK-UP LIGHT: 21W
BRAKE LIGHT/TAILLIGHT:21/5W
TAILLIGHT: 5W

NOTE: After installing them, run water over the lights to make sure they do not leak.

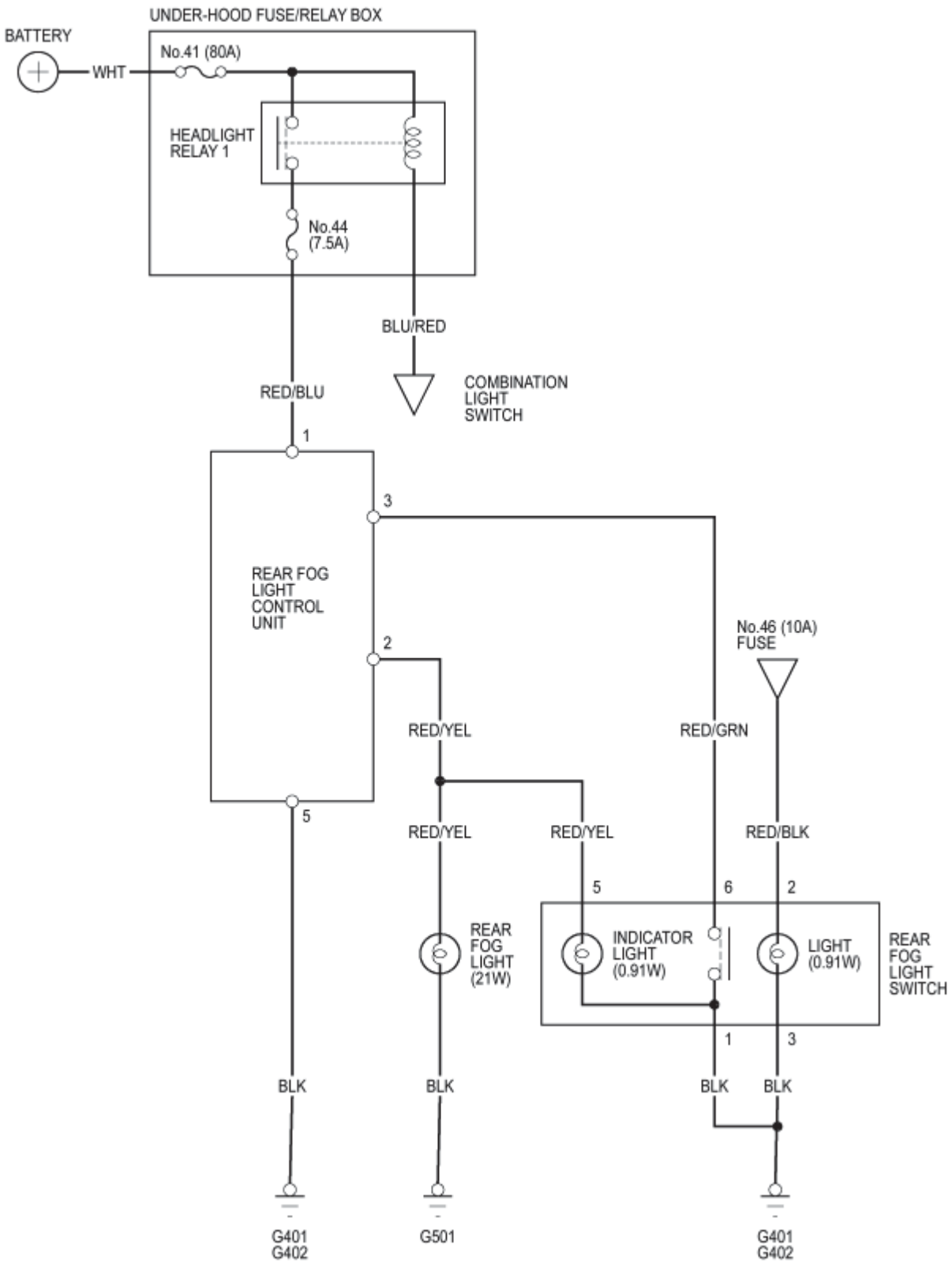
1. Remove the tailgate trim panel (see section 20).
2. Remove the bulb socket.



1. LENS
2. BULB SOCKET
3. 2P CONNECTOR
4. BULB (5W)

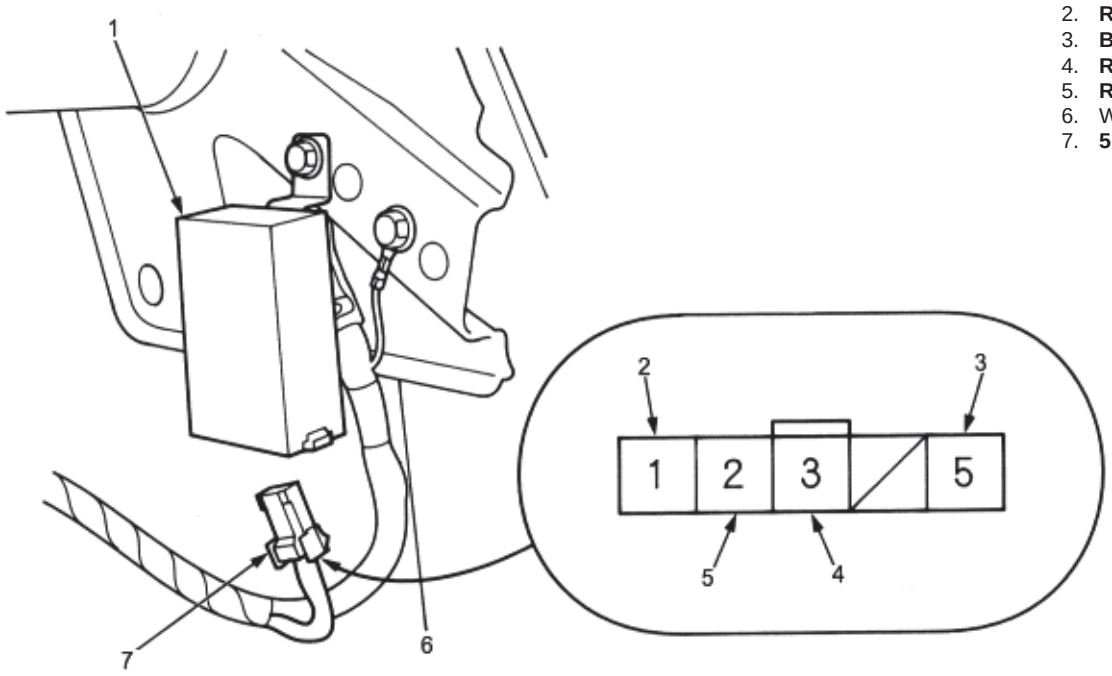
3. Disconnect the 2P connector from the bulb socket.
4. Push the lens out from the body.

Circuit Diagram



Control Unit Input Test

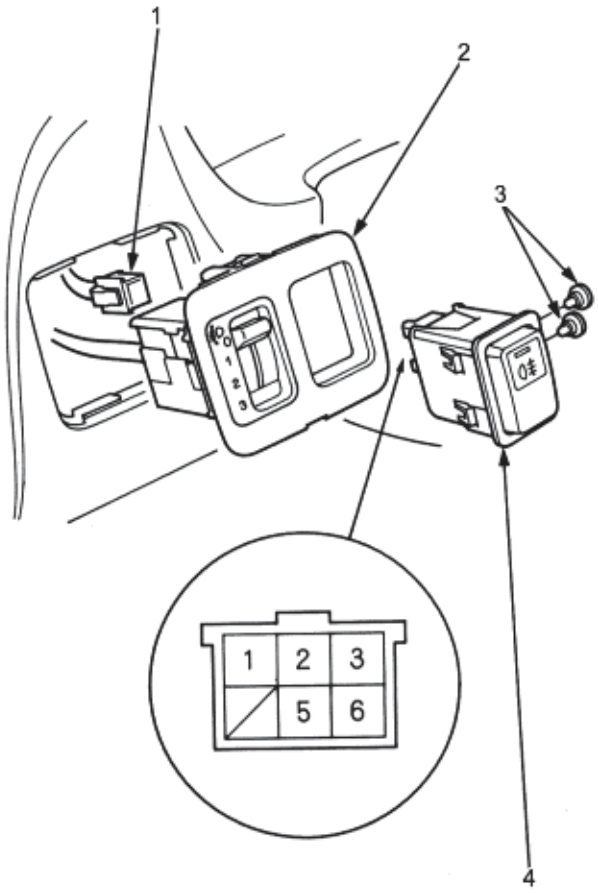
1. Disconnect the 5P connector from the rear fog light control unit.
2. Inspect the connector and socket terminals to make sure they are all making good contact.
   - ♦ If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - ♦ If the terminals look OK, make the following 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, the control unit must be faulty, replace it.



1. **REAR FOG LIGHT CONTROL UNIT**
2. **RED/BLU**
3. **BLK**
4. **RED/GRN**
5. **RED/YEL**
6. Wire side of female terminals
7. **5P CONNECTOR**

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	RED/BLU	Combination light switch ON	Check for voltage to ground There should be battery voltage	♦ Blown No. 44 (7.5A) fuse in the under-dash fuse/relay box. ♦ Faulty combination light switch ♦ Faulty headlight relay 1 ♦ An open in the wire
2	RED/YEL	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402, G501) ♦ Faulty rear fog light ♦ Faulty rear fog light switch indicator light ♦ An open in the wire
3	RED/GRN	Rear fog light switch ON	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ Faulty rear fog light switch ♦ An open in the wire
5	BLK	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, 402) ♦ An open in the wire

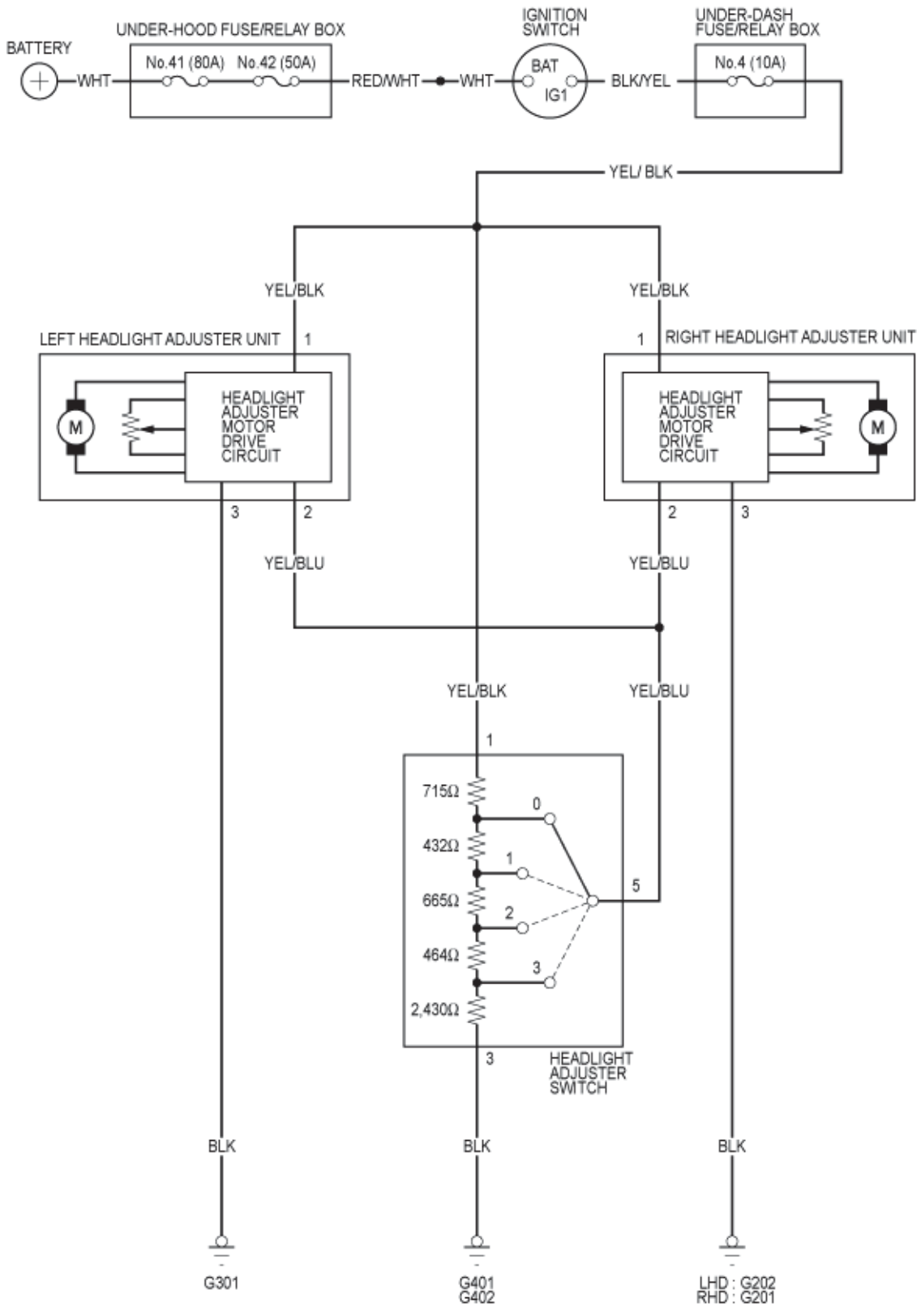
1. Remove the switch panel from the dashboard.
2. Disconnect the 6P connector from the rear fog light switch.
3. Push the switch out from behind the switch panel.



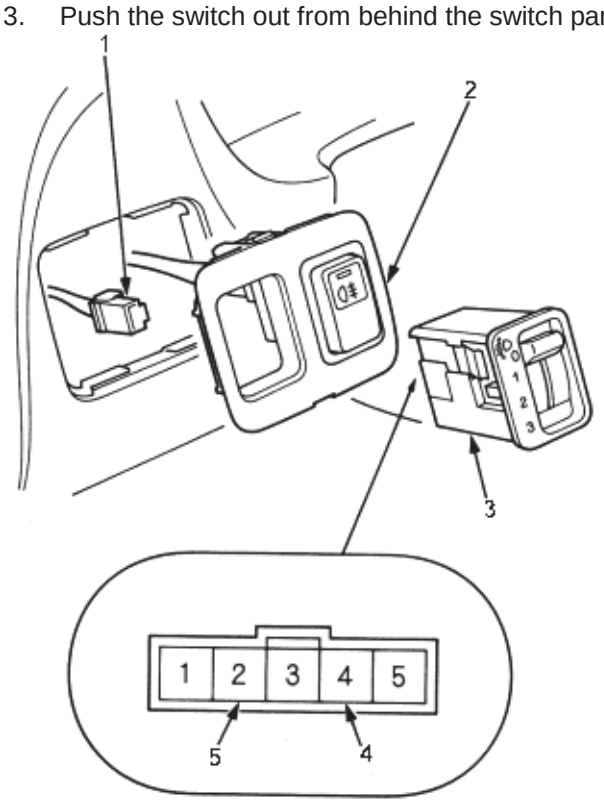
1. 6P CONNECTOR
2. SWITCH PANEL
3. BULBS (0.91W)
4. REAR FOG LIGHT SWITCH

4. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1		5	6	2		3
OFF	○	⌀	○		○	⌀	○
ON	○	⌀	○	○	○	⌀	○


BATTERY
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
WHT
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.4 (10A)
YEL/ BLK
YEL/BLK
YEL/BLK
LEFT HEADLIGHT ADJUSTER UNIT
RIGHT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTER MOTOR DRIVE CIRCUIT
M
YEL/BLU
YEL/BLU
YEL/BLK
YEL/BLU
715Ω
432Ω
665Ω
464Ω
2,430Ω
0
1
2
3
5
HEADLIGHT ADJUSTER SWITCH
BLK
BLK
BLK
G301
G401
G402
LHD : G202
RHD : G201

1. Remove the switch panel from the dashboard.
2. Disconnect the 5P connector from the switch.
3. Push the switch out from behind the switch panel.



1. 5P CONNECTION
2. SWITCH PANEL
3. HEADLIGHT ADJUSTER SWITCH
4. Not used
5. Not used

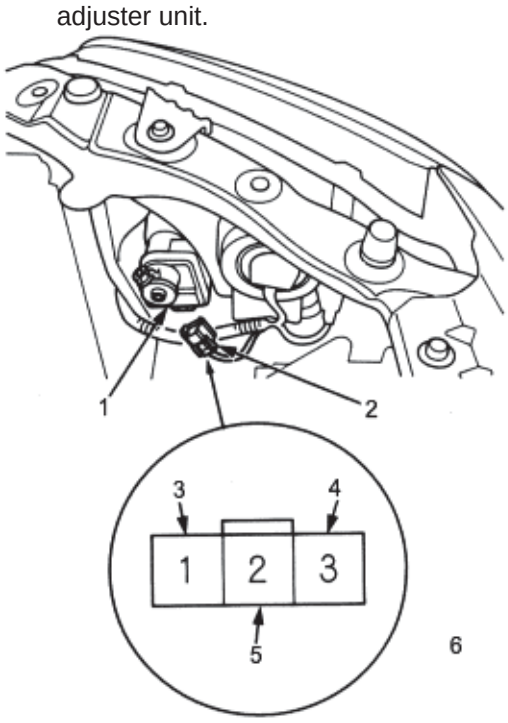
4. Measure the resistance between the No. 1 and No. 3 terminals and then measure the resistance between the No. 3 and No. 5 terminals at positions 0, 1, 2 and 3 by moving the knob.
   Between No. 1 and No. 3 terminals: Approx. 4.7 k ohms
   Between No. 3 and No. 5 terminals:

Knob position	0	1	2	3
Resistance (Approx. k ohms)	3.9	3.5	2.8	2.4

5. Replace the switch if the resistance is not within specifications.

NOTE: Before testing check for:
- Blown No. 4 (10A) fuse in the under-dash fuse/relay box.
- Bent, loose or corroded terminals.

1. Disconnect the 3P connectors from each headlight adjuster unit.

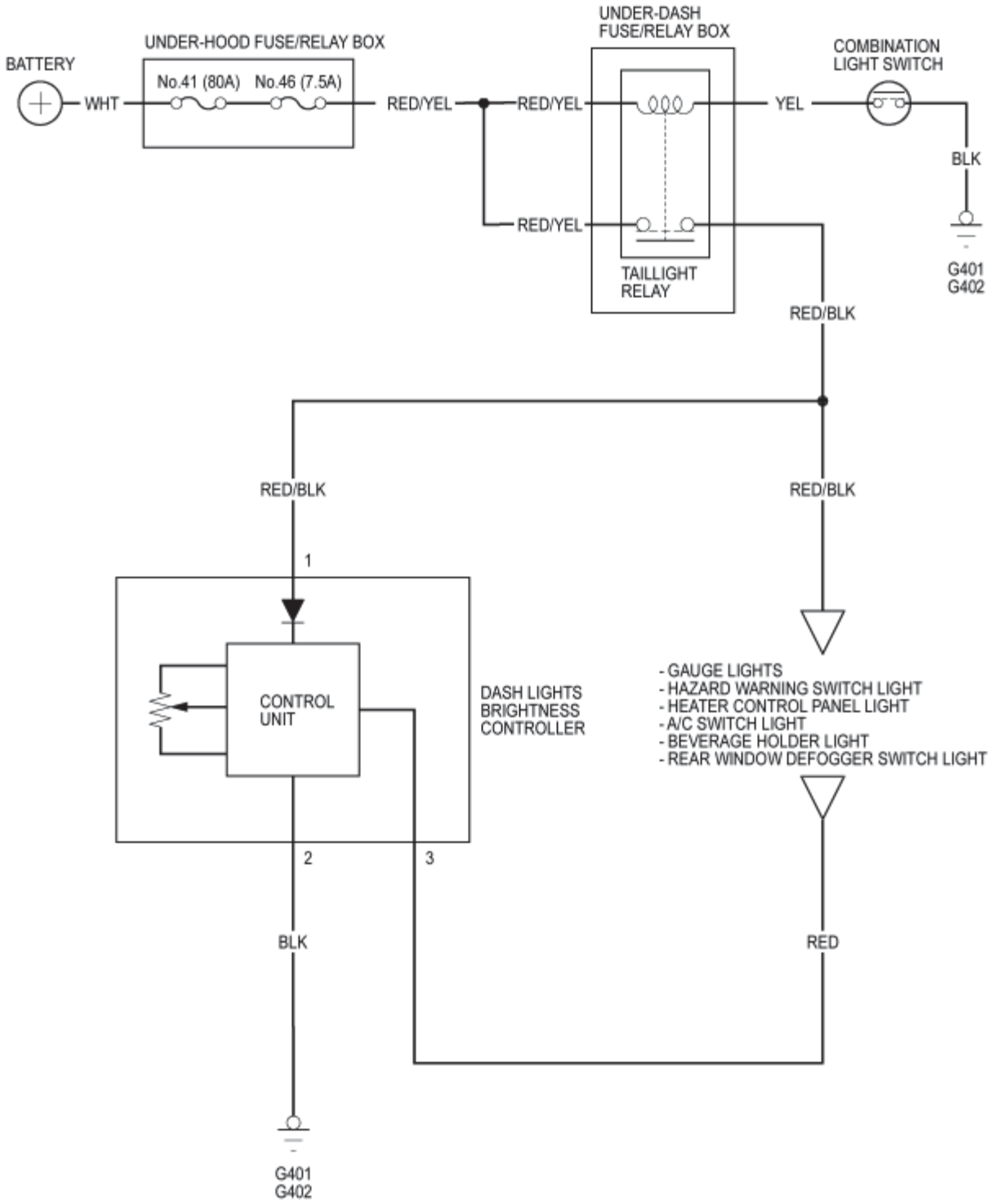


1. HEADLIGHT ADJUSTER UNIT
2. 3P CONNECTOR
3. YEL/BLK
4. BLK
5. YEL/BLU
6. Wire side of female terminals

2. Check for continuity between the No. 3 (BLK) terminal and body ground.
   There should be continuity.
   - If there is no continuity, check for:
     - An open in the BLK wire
     - Poor ground (G201, G202, G301).
   - If there is continuity, go to step 3.
3. Check for voltage between the No. 1 (YEL/BLK) terminal and body ground with the ignition switch ON (II).
   There should be battery voltage.
   - If there is no battery voltage, check for an open in the YEL/BLK wire.
   - If there is battery voltage, go to step 4.
4. Check for continuity between the No. 2 (YEL/BLU) terminal and body ground in any switch position.
   There should be continuity.
   - If there is no continuity, check for:
     - An open in the YEL/BLU wire
     - Faulty headlight adjuster switch.
   - If there is continuity, go to step 5.
5. If all input tests prove OK, but the headlight adjuster does not work, check for frozen, stuck or improperly installed headlight adjuster unit.
   If the mechanical check is OK, replace the headlight adjuster unit.
6. After installing, recheck the system.

Dash Lights Brightness Controller (KQ model)

Circuit Diagram



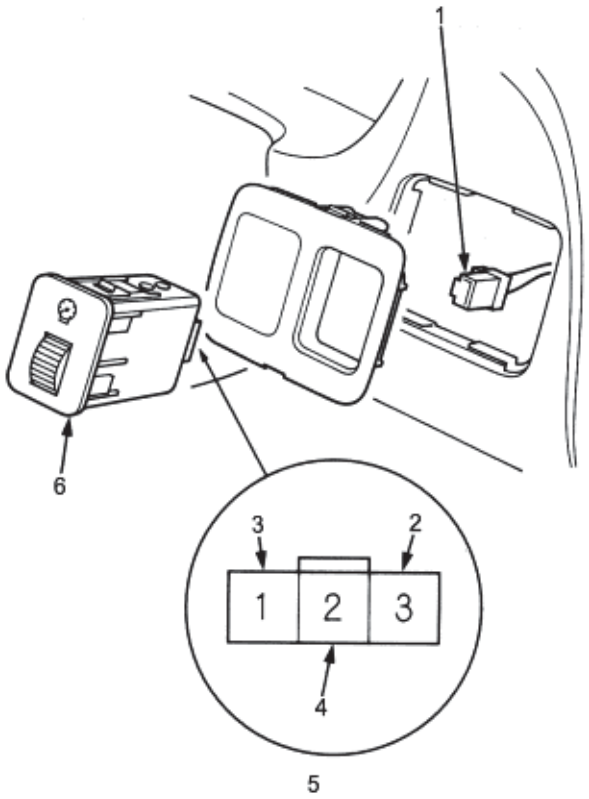
Dash Lights Brightness Controller (KQ model)

Controller Input Test

NOTE: The control unit is built into the dash lights brightness controller.

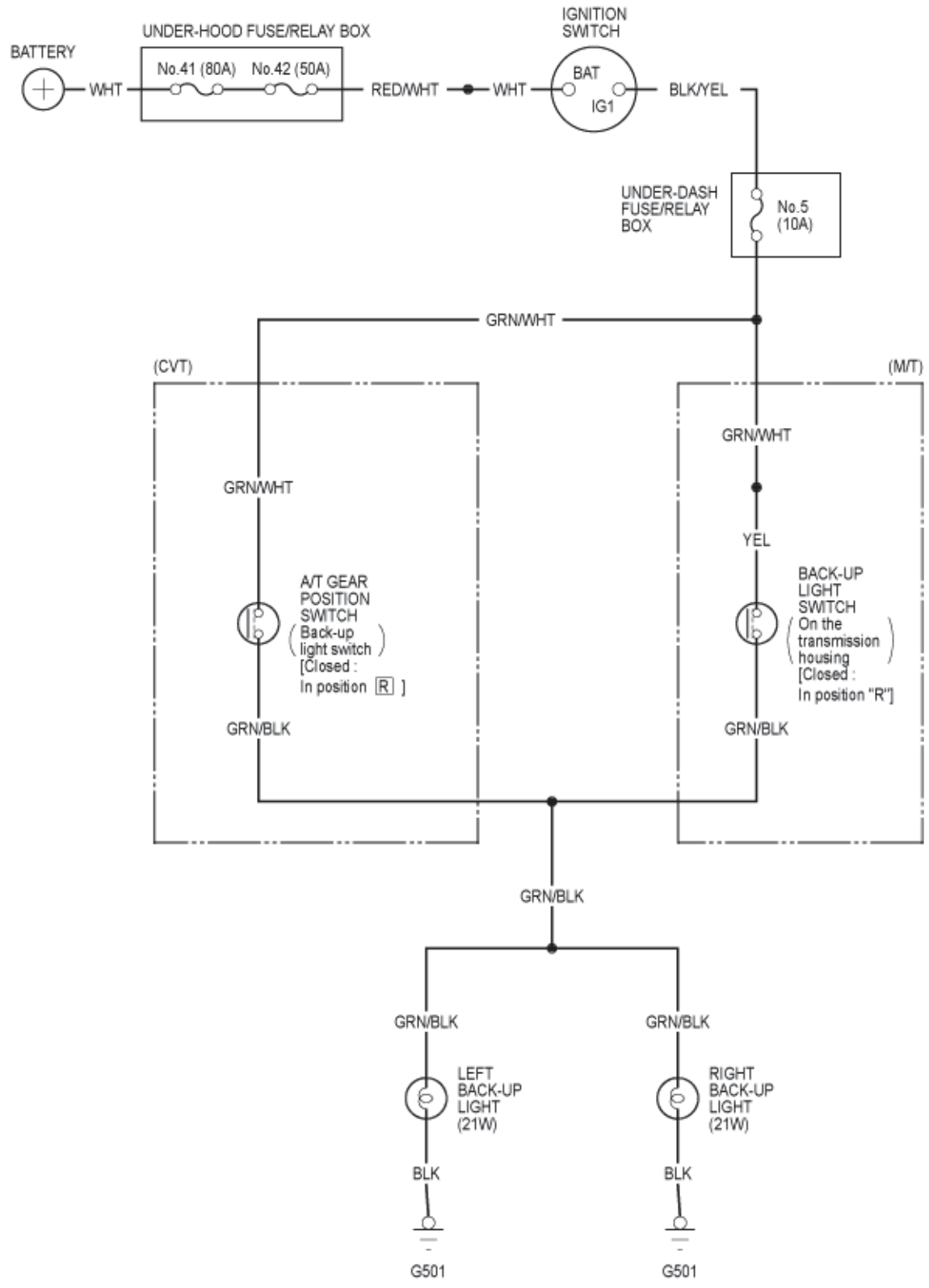
1. Remove the switch panel from the dashboard.
2. Disconnect the 3P connector from the controller.
3. Push the controller out from behind the switch panel.
4. Inspect the connector terminals to make sure they are all making good contact.
   - ♦ If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - ♦ If the terminals look OK, make the following input tests at the connector.
     - If any test indicates a problem, find and correct the cause, then recheck the system.

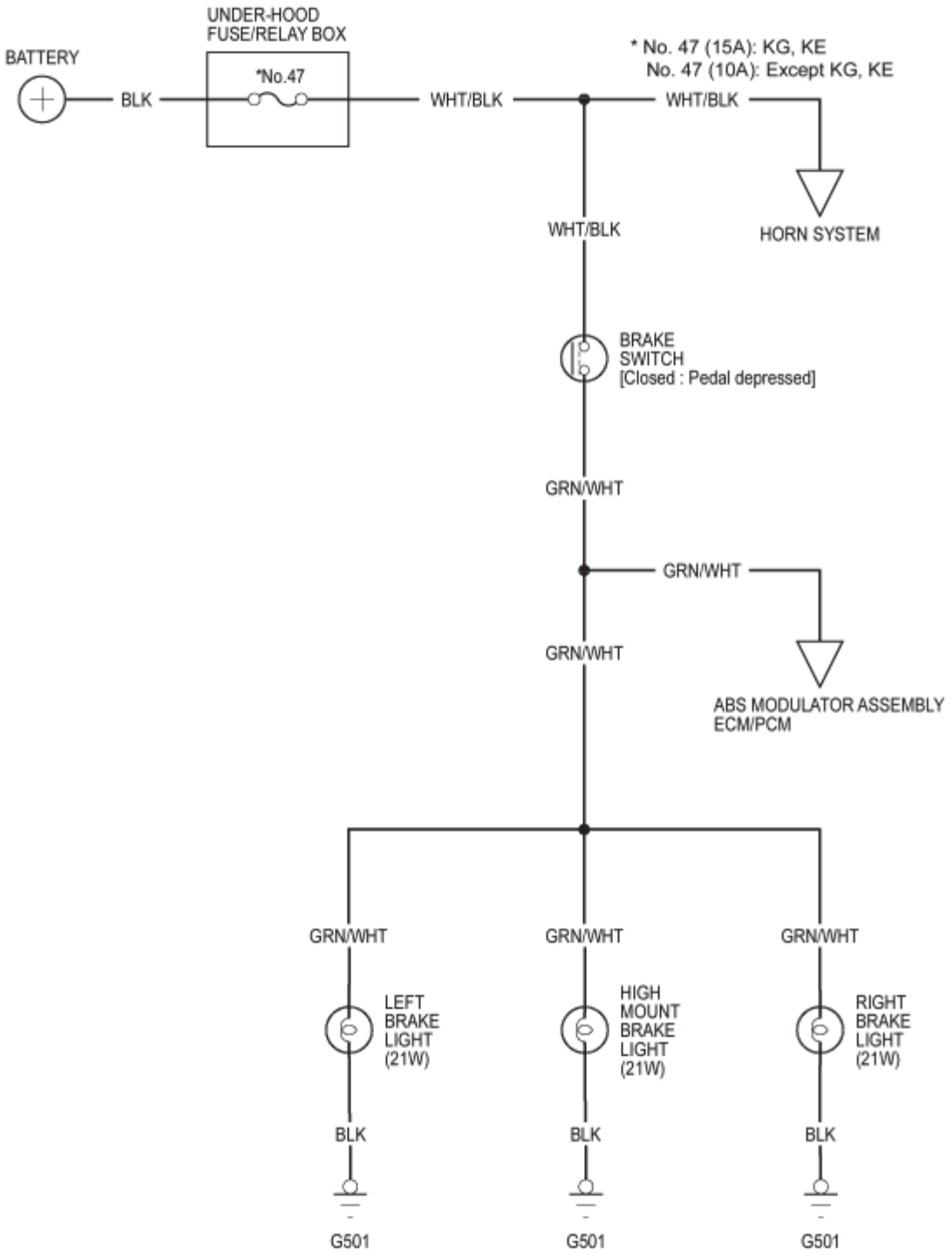
- If all the input tests prove OK, the controller must be faulty, replace it.



1. 3P CONNECTOR
2. RED
3. RED/BLK
4. BLK
5. Wire side of female terminals
6. DASH LIGHTS BRIGHTNESS CONTROLLER

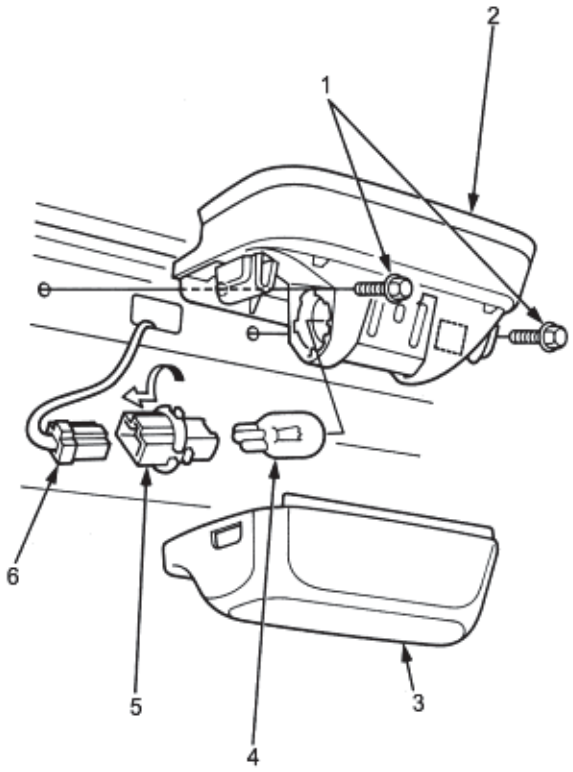
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	RED/BLK	Combination light switch ON	Check for voltage to ground There should be battery voltage	♦ Blown No. 46 (7.5A) fuse in the under-dash fuse/relay box. ♦ Faulty combination light switch ♦ Faulty taillight relay ♦ An open in the wire
2	BLK	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ An open in the wire
3	RED	Combination light switch ON	Connect to ground: Dash lights should come on full brightness	♦ An open in the wire


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.5 (10A)
GRN/WHT
(CVT)
(M/T)
GRN/WHT
GRN/WHT
YEL
A/T GEAR POSITION SWITCH (Back-up light switch [Closed : In position R])
BACK-UP LIGHT SWITCH (On the transmission housing [Closed : In position "R"])
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
LEFT BACK-UP LIGHT (21W)
RIGHT BACK-UP LIGHT (21W)
BLK
BLK
G501
G501


UNDER-HOOD
FUSE/RELAY BOX
BATTERY
*No.47
BLK
WHT/BLK
* No. 47 (15A): KG, KE
No. 47 (10A): Except KG, KE
WHT/BLK
HORN SYSTEM
WHT/BLK
BRAKE
SWITCH
[Closed : Pedal depressed]
GRN/WHT
GRN/WHT
GRN/WHT
ABS MODULATOR ASSEMBLY
ECM/PCM
GRN/WHT
GRN/WHT
GRN/WHT
LEFT
BRAKE
LIGHT
(21W)
HIGH
MOUNT
BRAKE
LIGHT
(21W)
RIGHT
BRAKE
LIGHT
(21W)
BLK
BLK
BLK
G501
G501
G501

High Mount Brake Light
Replacement

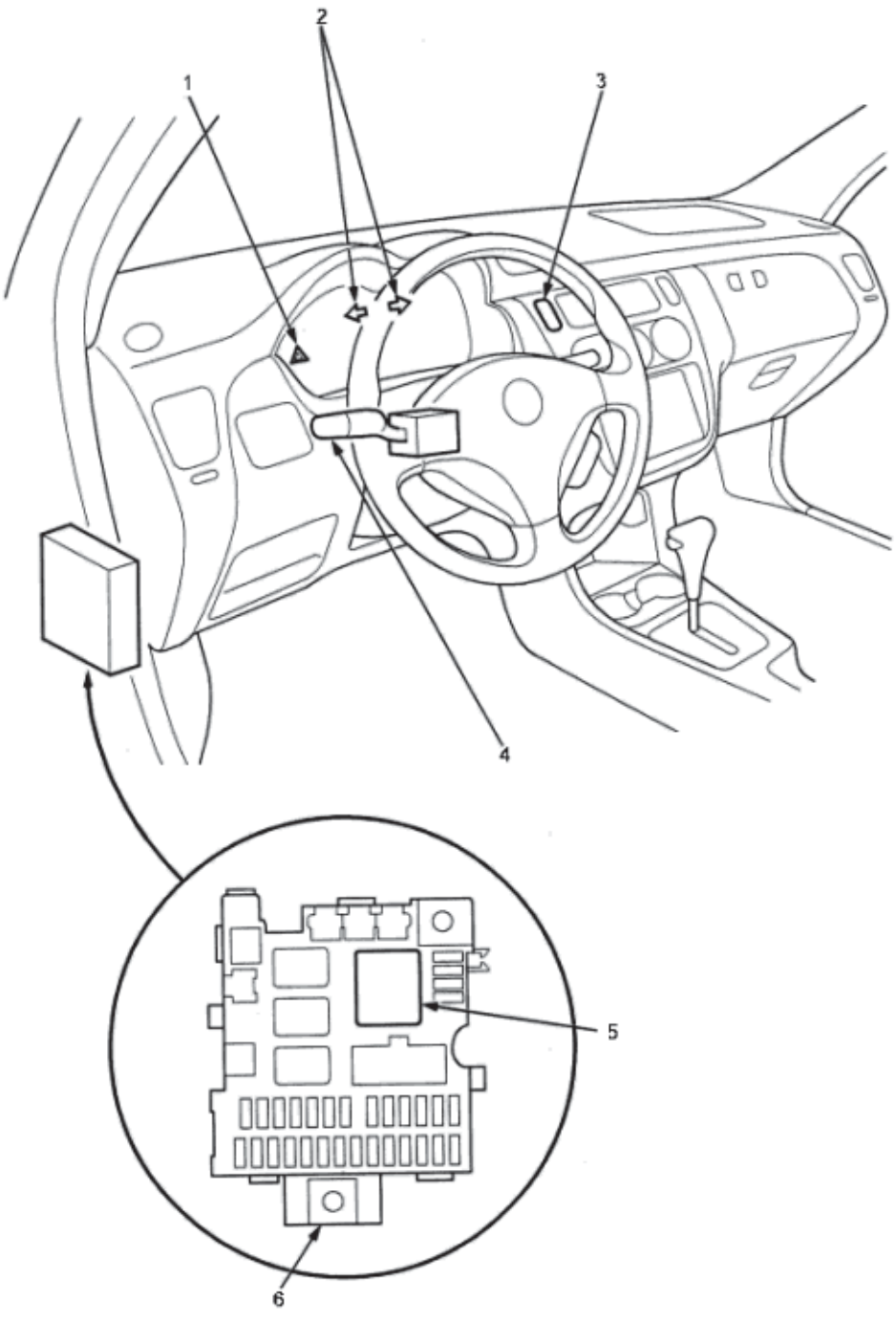
1. Remove the cover from the light.
2. Remove the two ET screws, then remove the light from the body.
3. Disconnect the 2P connector from the bulb socket.



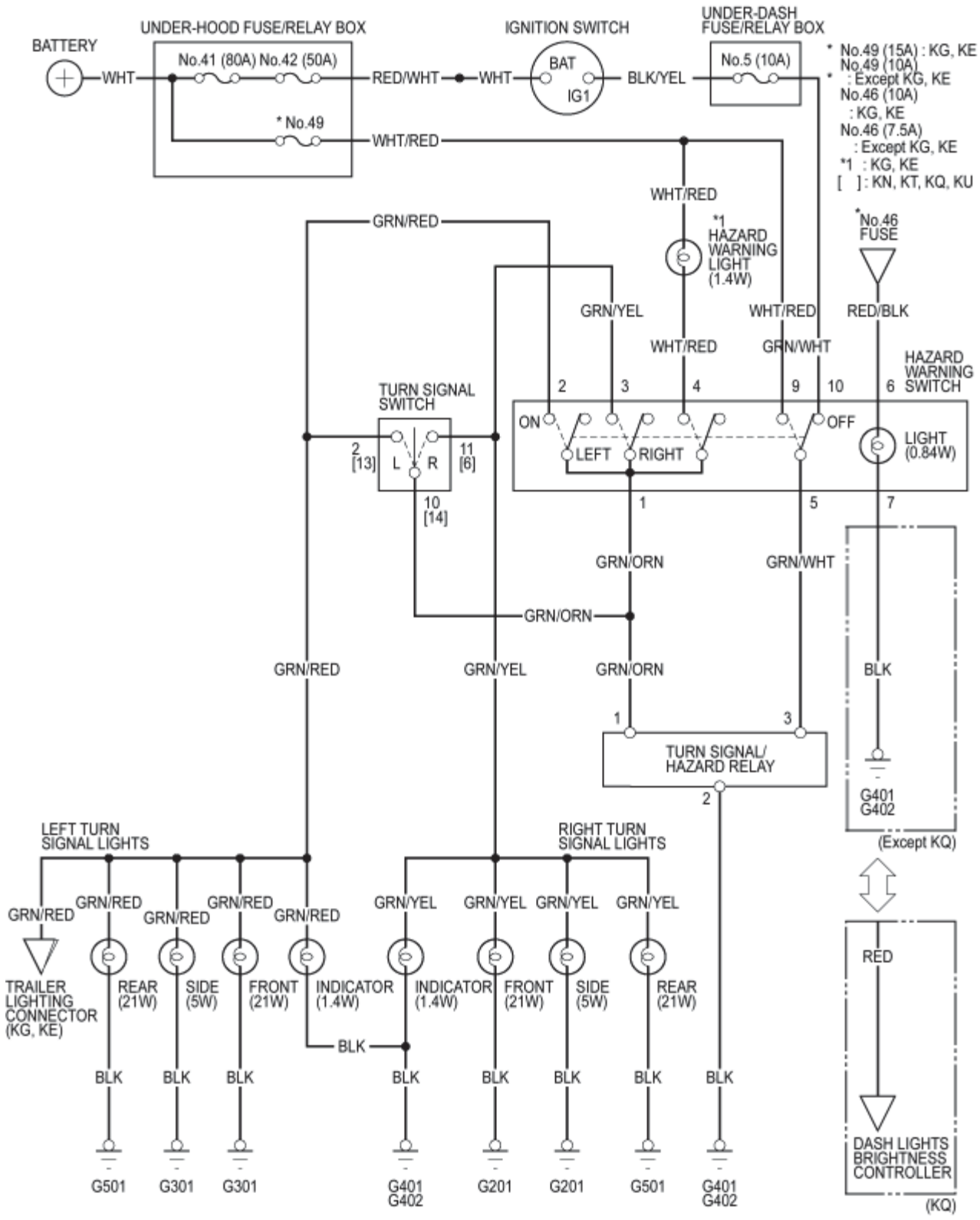
1. ET SCREW
2. HIGH MOUNT BRAKE LIGHT
3. COVER
4. BULB (21W)
5. BULB SOCKET
6. 2P CONNECTOR

4. Install in the reverse order of removal.

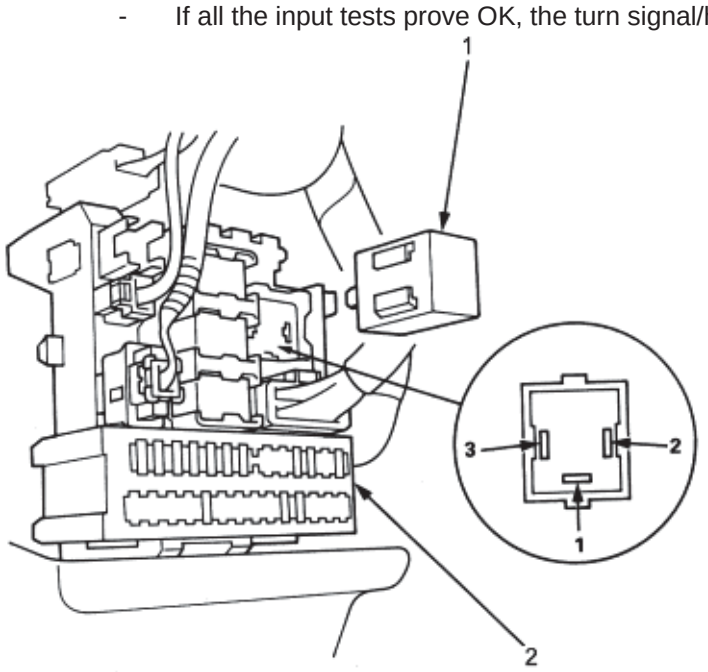
NOTE: LHD type is shown, RHD type is similar.



1. **HAZARD WARNING LIGHT (In the gauge assembly)**
   Bulb Locations (**See Page** 23-C-9)
2. **TURN SIGNAL INDICATOR LIGHTS (In the gauge assembly)**
   Bulb Locations (**See Page** 23-C-9)
3. **HAZARD WARNING SWITCH**
   Test (**See Page** 23-D-23)
4. **COMBINATION LIGHT/TURN SIGNAL SWITCH**
   Test (**See Page** 23-D-5)
5. **TURN SIGNAL/HAZARD RELAY**
   Input Test (**See Page** 23-D-22)
6. **UNDER-DASH FUSE/RELAY BOX**


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.42 (50A)
* No.49
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.5 (10A)
* No.49 (15A) : KG, KE
No.49 (10A)
* : Except KG, KE
No.46 (10A)
: KG, KE
No.46 (7.5A)
: Except KG, KE
*1 : KG, KE
[ ] : KN, KT, KQ, KU
WHT/RED
WHT/RED
GRN/RED
*1
HAZARD WARNING LIGHT (1.4W)
*No.46 FUSE
GRN/YEL
WHT/RED
WHT/RED
GRN/WHT
RED/BLK
HAZARD WARNING SWITCH
TURN SIGNAL SWITCH
2 [13]
L
R
11 [6]
10 [14]
2
3
4
9
10
6
ON
OFF
LEFT
RIGHT
LIGHT (0.84W)
1
5
7
GRN/ORN
GRN/WHT
GRN/ORN
GRN/RED
GRN/YEL
GRN/ORN
BLK
1
3
TURN SIGNAL/ HAZARD RELAY
2
G401
G402
(Except KQ)
LEFT TURN SIGNAL LIGHTS
RIGHT TURN SIGNAL LIGHTS
GRN/RED
GRN/RED
GRN/RED
GRN/RED
GRN/RED
GRN/YEL
GRN/YEL
GRN/YEL
GRN/YEL
TRAILER LIGHTING CONNECTOR (KG, KE)
REAR (21W)
SIDE (5W)
FRONT (21W)
INDICATOR (1.4W)
INDICATOR (1.4W)
FRONT (21W)
SIDE (5W)
REAR (21W)
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLK
BLK
G501
G301
G301
G401
G402
G201
G201
G501
G401
G402
RED
DASH LIGHTS BRIGHTNESS CONTROLLER
(KQ)

1. Remove the turn signal/hazard relay from the under-dash fuse/relay box.
2. Inspect the relay and fuse/relay box 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, make the following input tests at the fuse/relay box socket.
     - If any test indicates a problem, find and correct the cause, then recheck the system.
     - If all the input tests prove OK, the turn signal/hazard relay must be faulty, replace it.

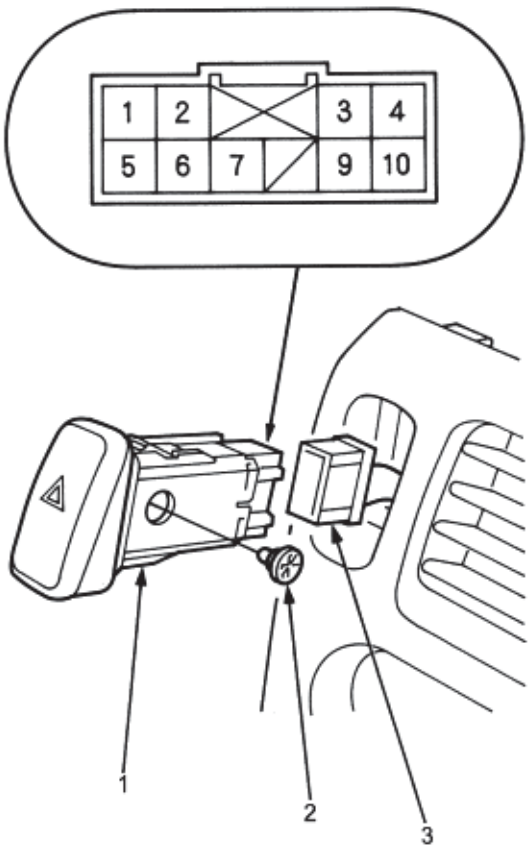


1. **TURN SIGNAL/HAZARD RELAY**
2. **UNDER-DASH FUSE/RELAY BOX**

Cavity	Test condition	Test: Desired result	Possible cause if result is not obtained
2	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ An open in the wire
3	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	♦ Blown No 5 (10A) fuse in the under-dash fuse/relay box. ♦ An open in the wire ♦ Faulty hazard warning switch
	Hazard warning switch ON	Check for voltage to ground: There should be battery voltage	♦ Blown No 49 (*A) fuse in the under-hood fuse/relay box ♦ An open in the wire ♦ Faulty hazard warning switch
1	Hazard warning switch ON; connect the No 2 terminal to the No 3 terminal.	Hazard lights should come on	♦ Poor ground (G201, G301, G401, G402, G501) ♦ Faulty hazard warning switch ♦ An open in the wire
	Ignition switch ON (II) and turn signal switch in Right or Left; connect the No 2 terminal to the No 3 terminal	Right or left turn signal lights should come on	♦ Faulty turn signal switch

*15A: KG, KE models
10A: Except KG,KE models

1. Remove the centre panel from the dashboard (see section 20).
2. Disconnect the 10P connector from the switch.
3. Push the switch out from behind the centre panel.

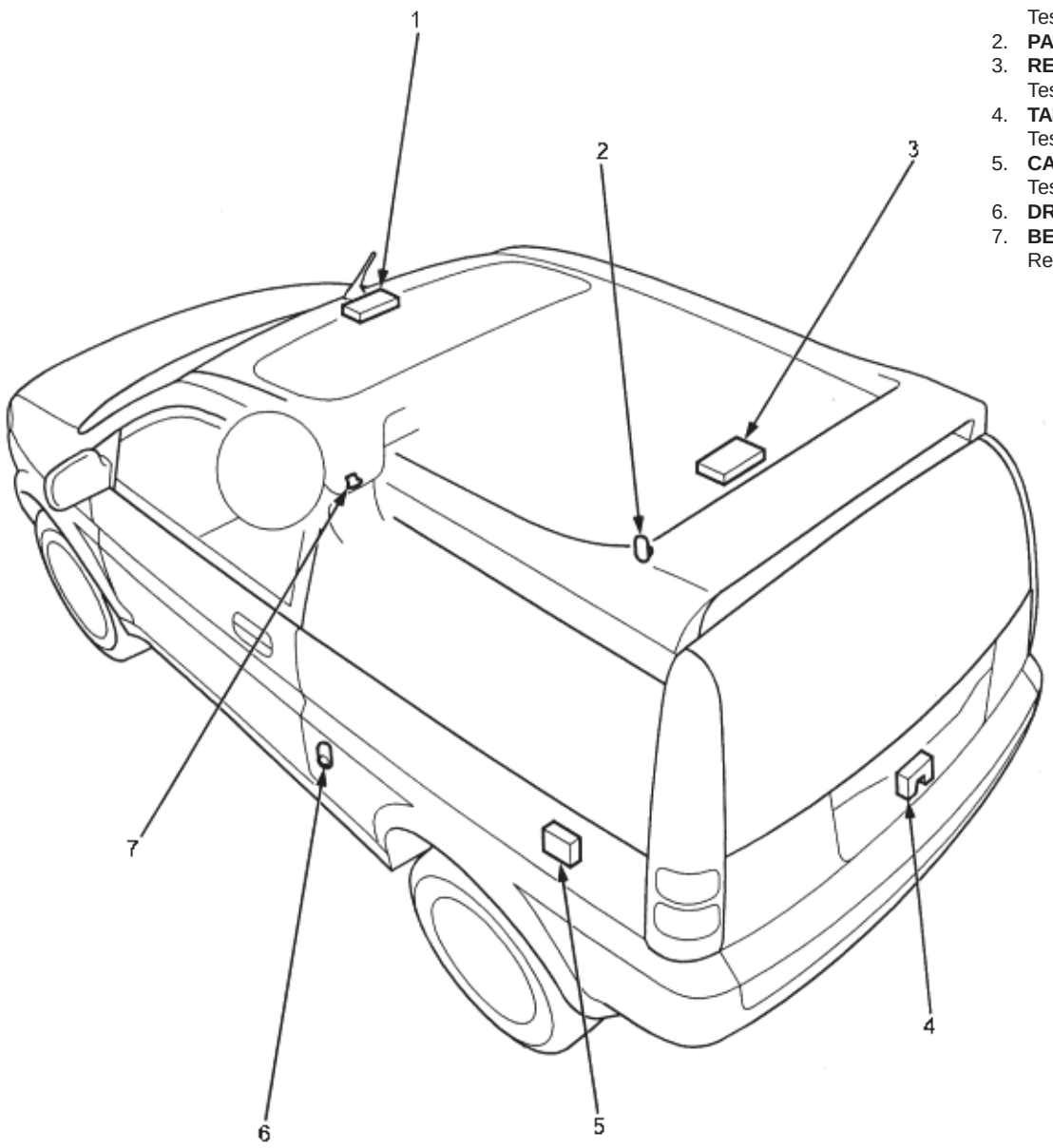


1. HAZARD WARNING SWITCH
2. BULB (0.84W)
3. 10P CONNECTOR

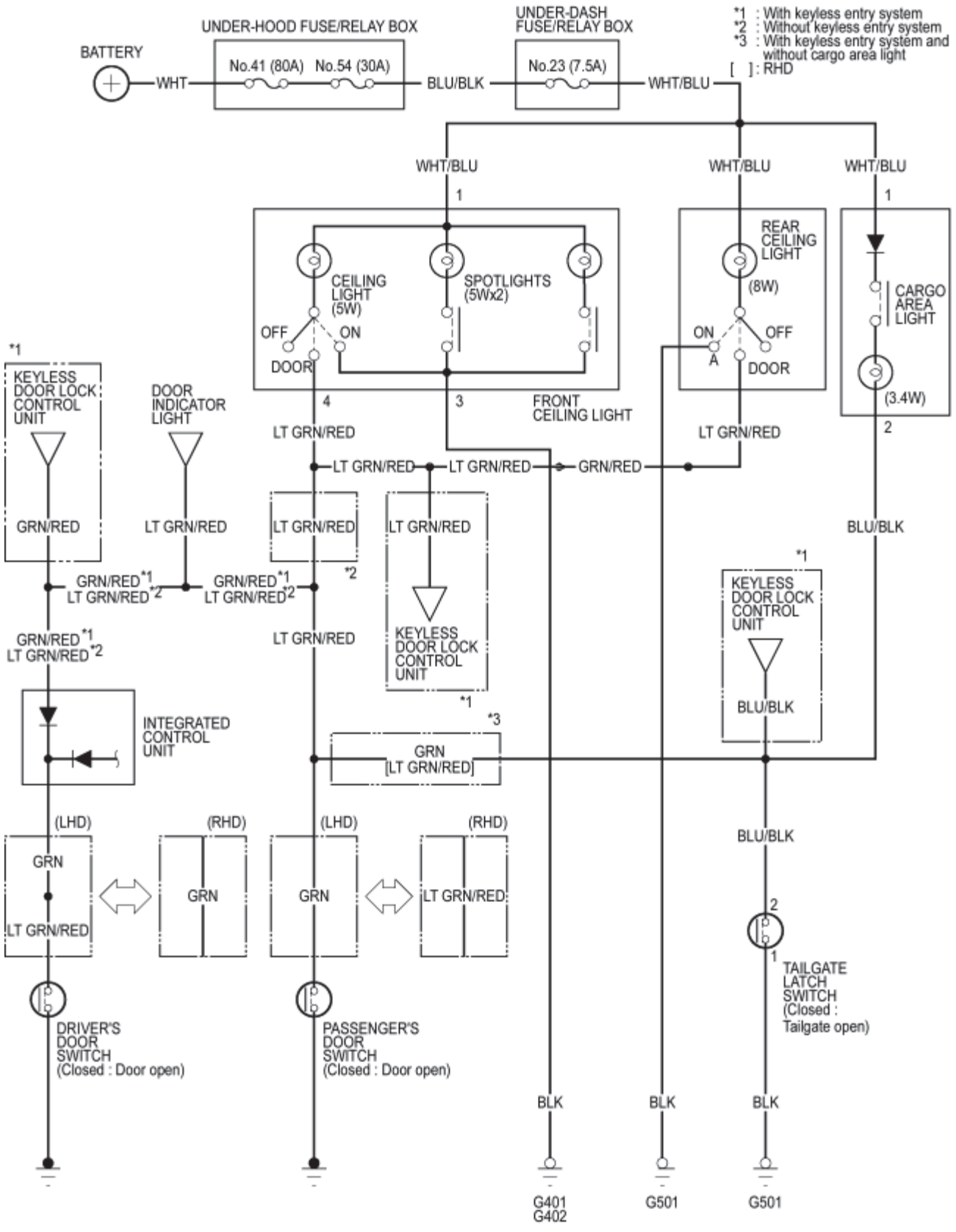
4. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	1	2	3	4	5	9	10	6		7
OFF					○	○	○	○	⊖	○
ON	○	○	○	○	○	○		○	⊖	○

NOTE: LHD type is shown, RHD type is symmetrical.

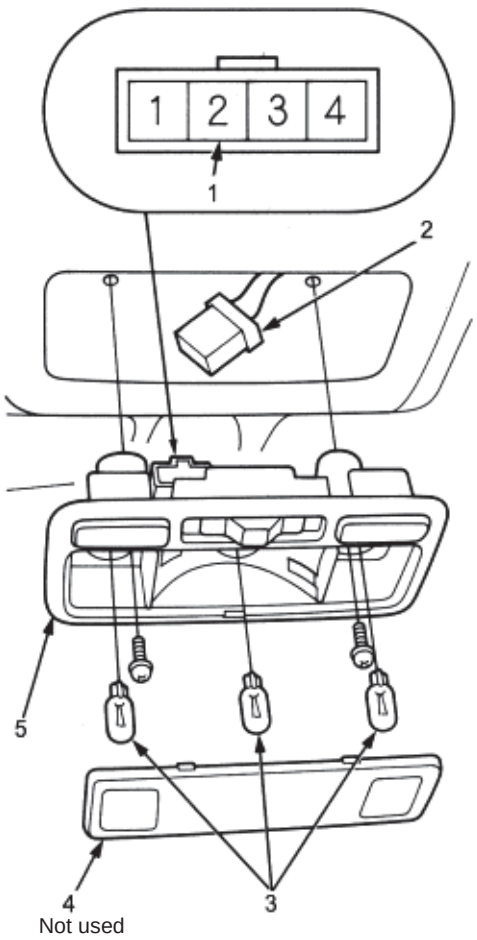


1. **FRONT CEILING LIGHT**
   Test (**See Page** 23-D-26)
2. **PASSENGER'S DOOR SWITCH**
3. **REAR CEILING LIGHT**
   Test (**See Page** 23-D-26)
4. **TAILGATE LATCH SWITCH**
   Test (**See Page** 23-D-28)
5. **CARGO AREA LIGHT**
   Test (**See Page** 23-D-27)
6. **DRIVER'S DOOR SWITCH**
7. **BEVERAGE HOLDER LIGHT**
   Replacement (**See Page** 23-D-28)


*1 : With keyless entry system
*2 : Without keyless entry system
*3 : With keyless entry system and without cargo area light
[ ] : RHD
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.54 (30A)
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.23 (7.5A)
WHT/BLU
WHT/BLU
WHT/BLU
WHT/BLU
1
1
CEILING LIGHT (5W)
SPOTLIGHTS (5Wx2)
OFF
ON
DOOR
4
3
FRONT CEILING LIGHT
REAR CEILING LIGHT
(8W)
ON
OFF
A
DOOR
CARGO AREA LIGHT
(3.4W)
2
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
BLU/BLK
*1
KEYLESS DOOR LOCK CONTROL UNIT
GRN/RED
LT GRN/RED
DOOR INDICATOR LIGHT
LT GRN/RED
LT GRN/RED
LT GRN/RED
*2
GRN/RED *1 LT GRN/RED *2
GRN/RED *1 LT GRN/RED *2
KEYLESS DOOR LOCK CONTROL UNIT
*1
*1
KEYLESS DOOR LOCK CONTROL UNIT
BLU/BLK
GRN/RED *1 LT GRN/RED *2
LT GRN/RED
INTEGRATED CONTROL UNIT
*3
GRN [LT GRN/RED]
(LHD)
(RHD)
(LHD)
(RHD)
GRN
LT GRN/RED
GRN
GRN
LT GRN/RED
BLU/BLK
2
1
TAILGATE LATCH SWITCH (Closed : Tailgate open)
DRIVER'S DOOR SWITCH (Closed : Door open)
PASSENGER'S DOOR SWITCH (Closed : Door open)
BLK
BLK
BLK
G401
G402
G501
G501

Front Ceiling Light Test

1. Turn the ceiling light switch off.
2. Pry off the lens.
3. Remove the two mounting screws from the housing.
4. Disconnect the 4P connector and remove the housing.



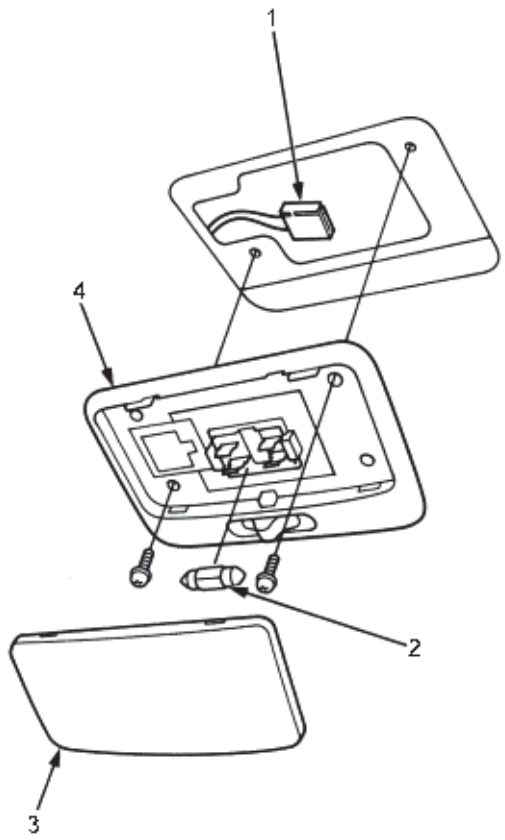
1. Not used
2. 4P CONNECTOR
3. BULB (5W)
4. LENS
5. HOUSING

5. Check for continuity between the terminals in each switch position according to the table.

Position			Terminal 1		3	4
CEILING LIGHTS	ON		○	○	○	
	DOOR		○	○		○
SPOT-LIGHTS	SW1	ON	○	○	○	
		OFF				
	SW2	ON	○	○	○	
		OFF				

Rear Ceiling Light Test

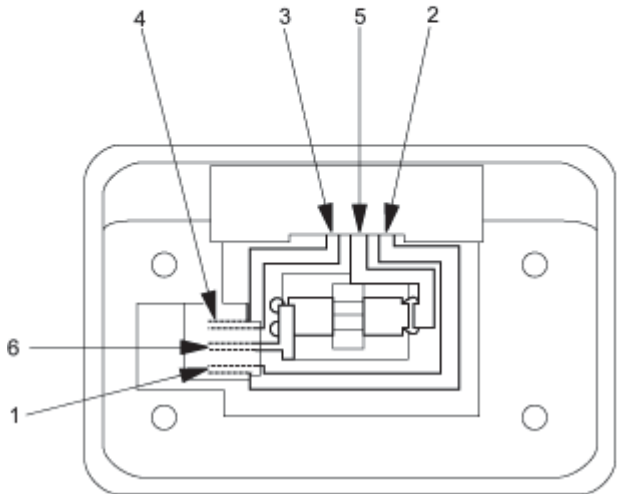
1. Turn the light switch OFF.
2. Pry off the lens.
3. Remove the two screws and the housing.
4. Disconnect the 3P connector from the housing.



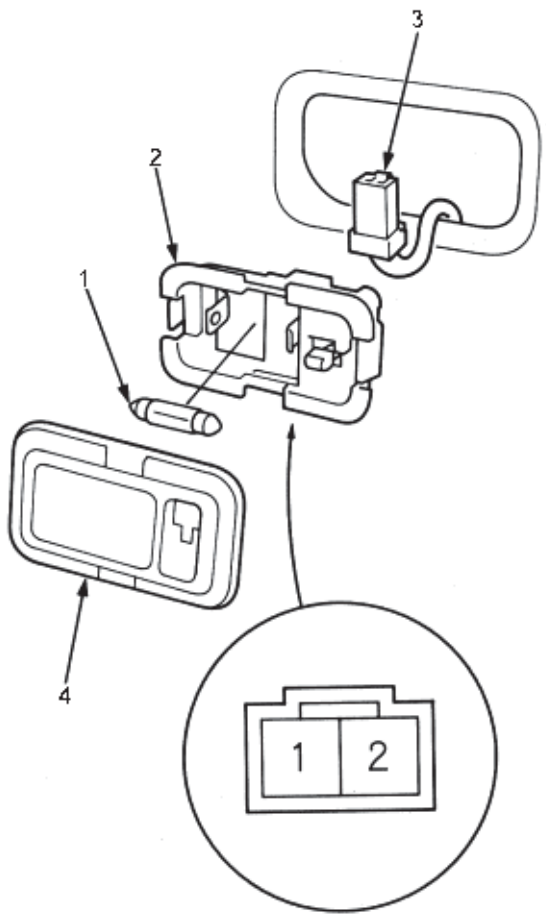
1. 3P CONNECTOR
2. BULB (8W)
3. LENS
4. HOUSING

5. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	1 or 2	3 or 4	5		6
OFF			○	⊖	○
DOOR		○	○	⊖	○
ON	○		○	⊖	○



1. Turn the light switch OFF.
2. Pry off the lens.
3. Pry out the housing, then disconnect the 2P connector from the housing.

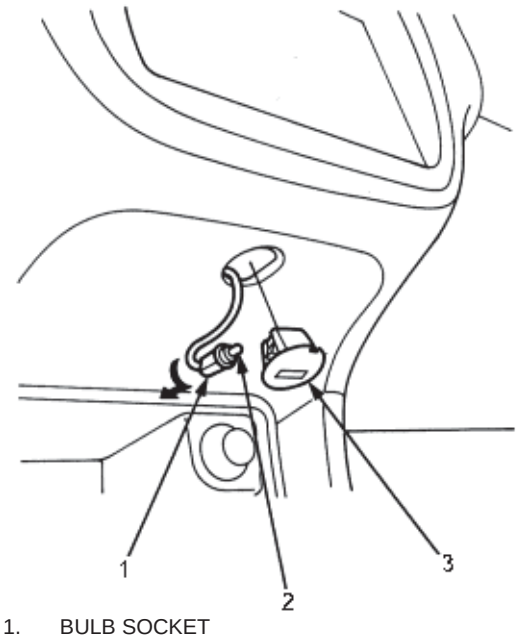


1. BULB (3.4W)
2. HOUSING
3. 2P CONNECTOR
4. LENS

4. Check for continuity between the terminals in each switch position according to the table.

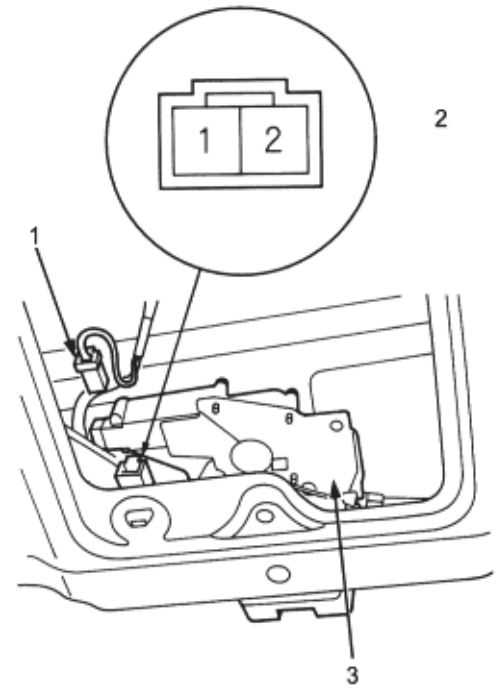
Position \ Terminal	1			2
OFF				
ON	○	▶|	⊖	○

1. Remove the centre panel from the dashboard (see section 20).
2. Remove the radio panel (see section20).
3. Remove the housing from the front console.



1. BULB SOCKET
2. BULB (1.4W)
3. HOUSING

1. Open the tailgate.
2. Remove the tailgate trim panel (see section 20).
3. Disconnect the 2P connector from the tailgate latch switch.

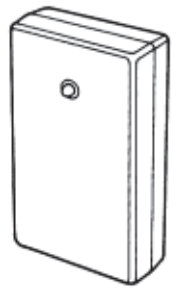


1. 2P CONNECTOR
2. Terminal side of male terminals
3. TAILGATE LATCH SWITCH

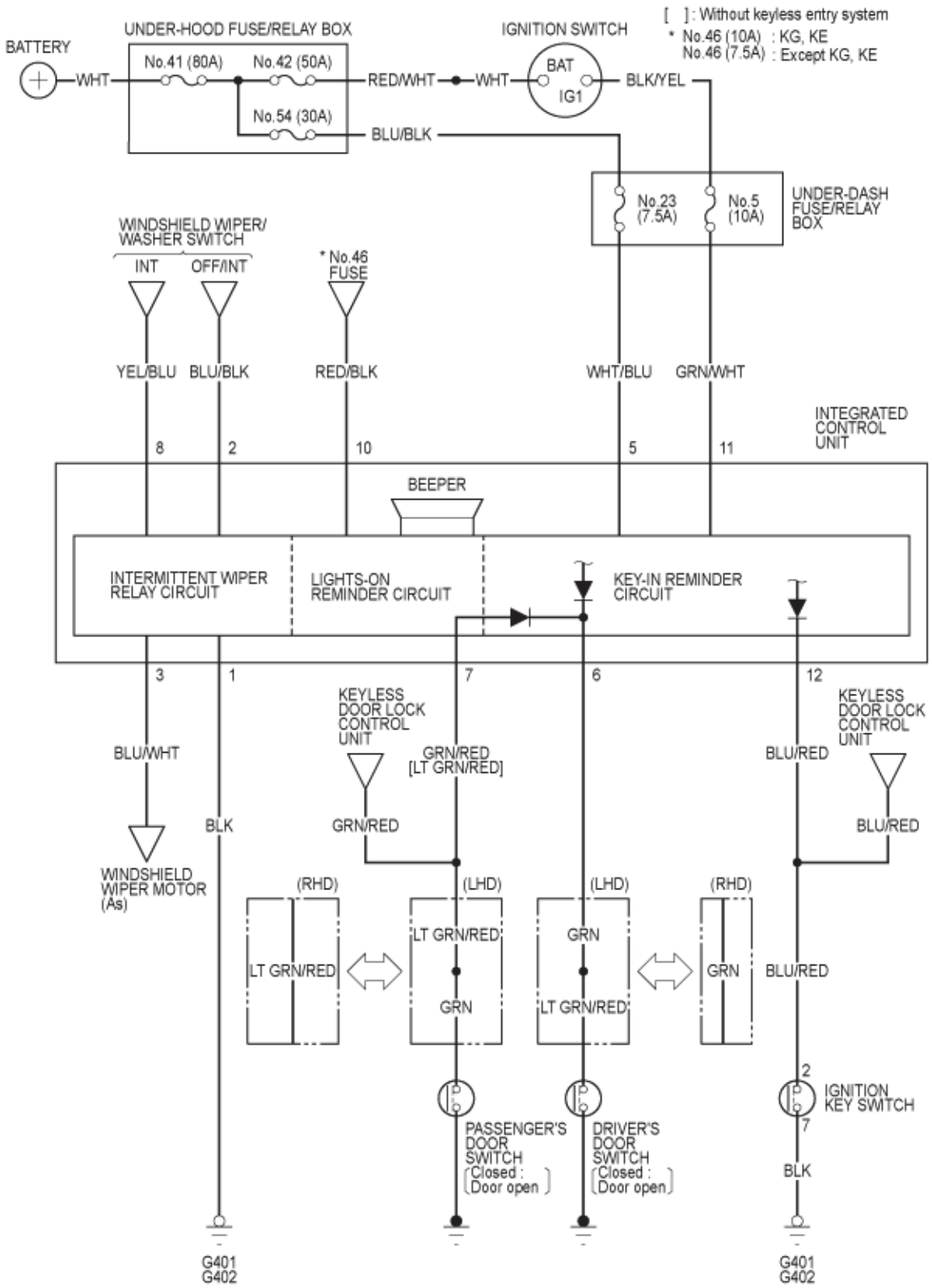
4. Check for continuity between the terminals in each switch position according to the table.

Terminals / Position	1	2
CLOSED (OFF)		
OPEN (ON)	○	○

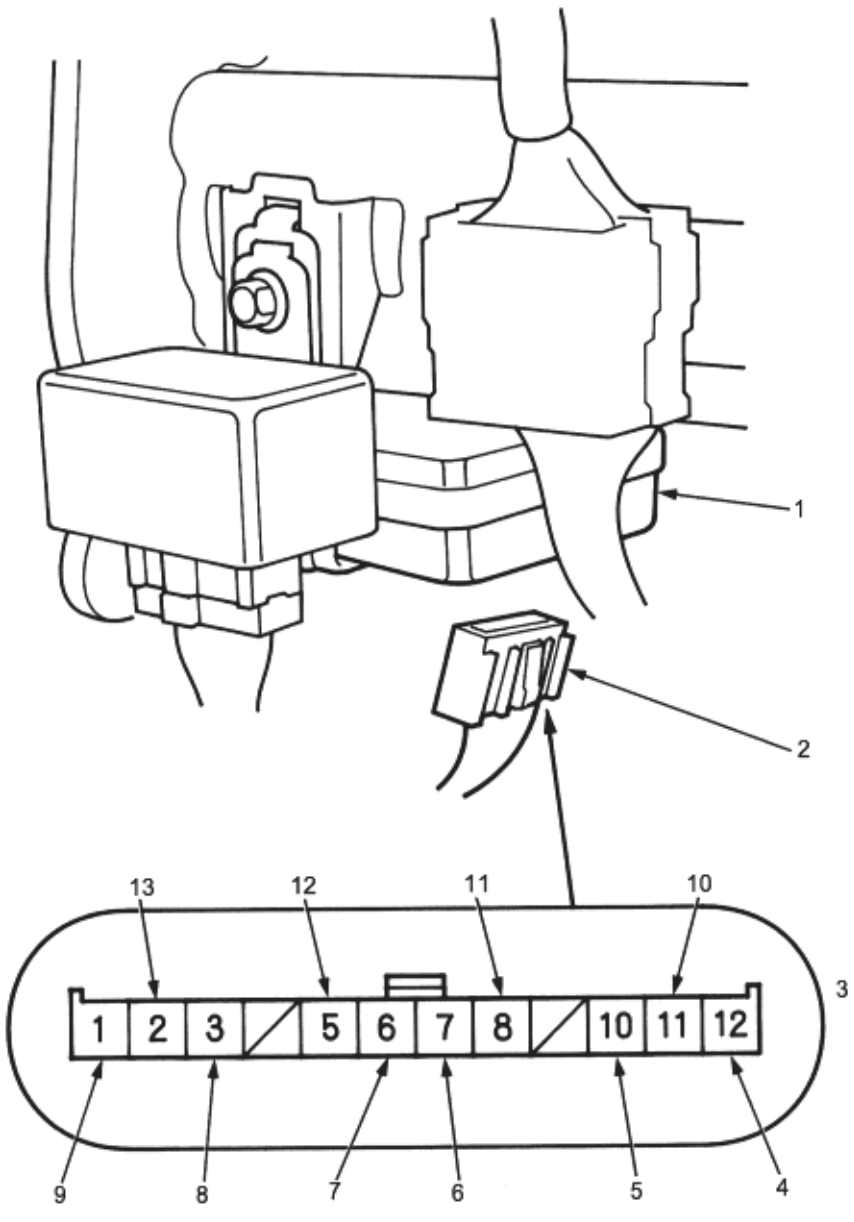
Ref No.	Tool Number	Description	Qty	Remark
1	07MAJ - SP00300	Keyless Entry Checker	1	



①


[ ] : Without keyless entry system
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
BLU/BLK
No.23 (7.5A)
No.5 (10A)
UNDER-DASH FUSE/RELAY BOX
WINDSHIELD WIPER/ WASHER SWITCH
INT
OFF/INT
* No.46 FUSE
YEL/BLU
BLU/BLK
RED/BLK
WHT/BLU
GRN/WHT
INTEGRATED CONTROL UNIT
8
2
10
5
11
BEEPER
INTERMITTENT WIPER RELAY CIRCUIT
LIGHTS-ON REMINDER CIRCUIT
KEY-IN REMINDER CIRCUIT
3
1
7
6
12
KEYLESS DOOR LOCK CONTROL UNIT
BLU/WHT
BLK
GRN/RED
[LT GRN/RED]
GRN/RED
BLU/RED
KEYLESS DOOR LOCK CONTROL UNIT
BLU/RED
WINDSHIELD WIPER MOTOR (As)
(RHD)
(LHD)
(LHD)
(RHD)
LT GRN/RED
LT GRN/RED
GRN
LT GRN/RED
GRN
GRN
BLU/RED
2
IGNITION KEY SWITCH
7
PASSENGER'S DOOR SWITCH
(Closed : Door open)
DRIVER'S DOOR SWITCH
(Closed : Door open)
BLK
G401
G402
G401
G402

1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 12P connector from the integrated control unit.
3. 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, make the following 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, the control unit must be faulty, replace it.



1. **INTEGRATED CONTROL UNIT**
2. **12P CONNECTOR**
3. Wire side of female terminals
4. **BLU/RED**
5. **RED/BLK**
6. **GRN/RED [LT GRN/RED]**
7. **GRN**
8. **BLU/WHT**
9. **BLK**
10. **GRN/WHT**
11. **YEL/BLU**
12. **WHT/BLU**
13. **BLU/BLK**

[ ]: Without keyless entry system

Intermittent Wiper Relay System

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	BLK	Under all conditions	Check for continuity to ground: There should be continuity	• Poor ground (G401, G402) • An open in the wire
8	YEL/BLU	Ignition switch ON (II) and windshield wiper switch at INT	Check for voltage to ground: There should be battery voltage	• Blown No 3 (20A) fuse in the under-dash fuse/relay box. • Faulty windshield wiper switch • An open in the wire
2	BLU/BLK	Ignition switch ON (II) and windshield wiper switch at OFF or INT	Check for voltage to ground: There should be battery voltage	• Blown No 3 (7.5A) fuse in the under-dash fuse/relay box. • Faulty windshield wiper switch • An open in the wire • Faulty windsheild wiper motor
3	BLU/WHT	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Blown No 3 (20A) fuse in the under-dash fuse/relay box. • Faulty windsheild wiper motor • An open in the wire

Lights-on Reminder System

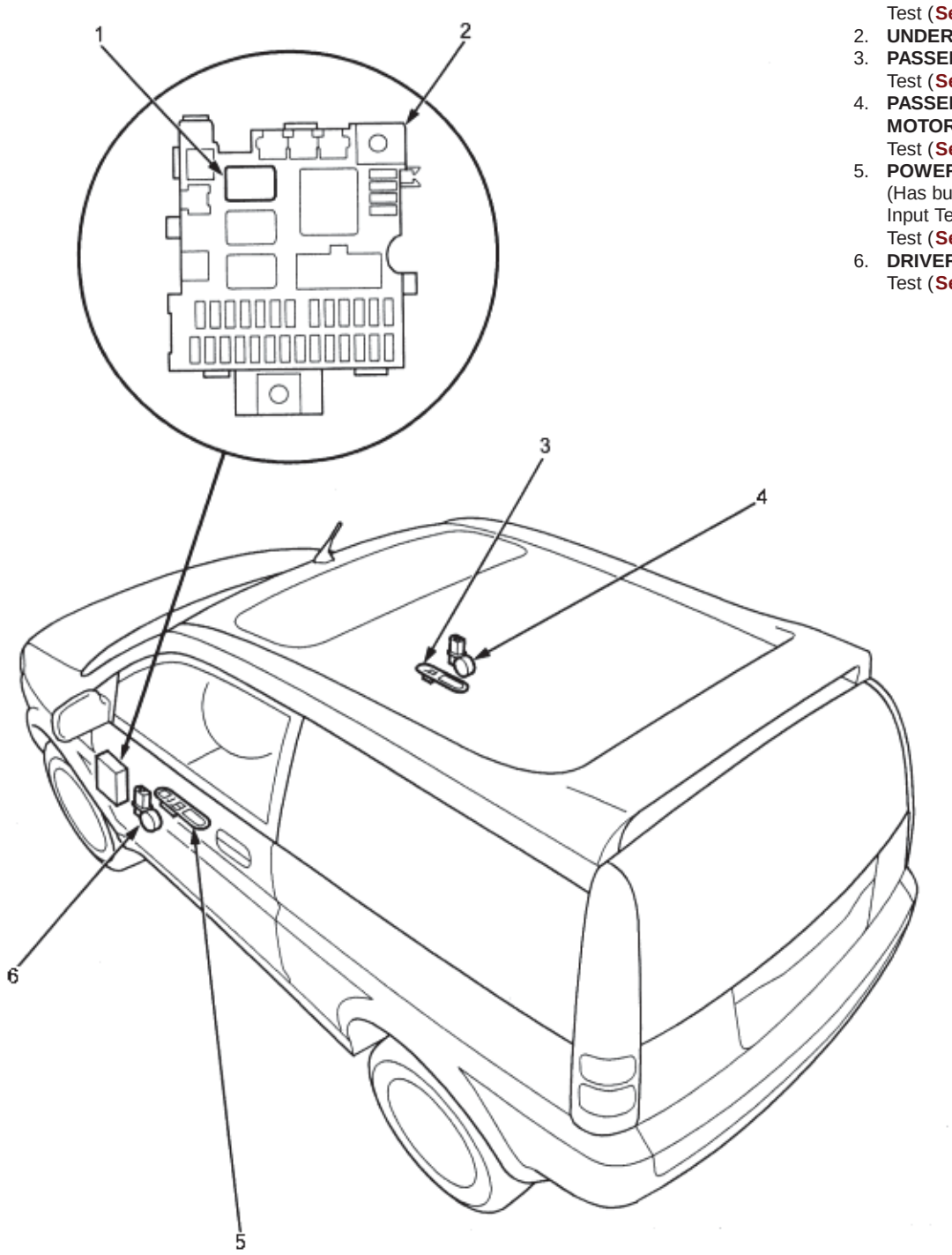
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
1	BLK	Under all conditions	Check for continuity to ground: There should be continuity	• Poor ground (G401, G402) • An open in the wire
10	RED/BLK	Combination light switch ON	Check for voltage to ground: There should be battery voltage	• Blown No 46 (7.5A) fuse in the under-hood fuse/relay box. • Faulty combination light switch • An open in the wire • Faulty taillight relay
11	GRN/WHT	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Blown No 5 (10A) fuse in the under-dash fuse/relay box. • An open in the wire
6	GRN	Driver's door open	Check for continuity to ground: There should be continuity	• Faulty driver's door switch • Poor ground • An open in the wire
7	GRN/RED [LT GRN/RED]	Passenger's door open	Check for continuity to ground: There should be continuity	• Faulty passenger's door switch • Poor ground • An open in the wire

[ ]: Without keyless entry system

Key-in Reminder System

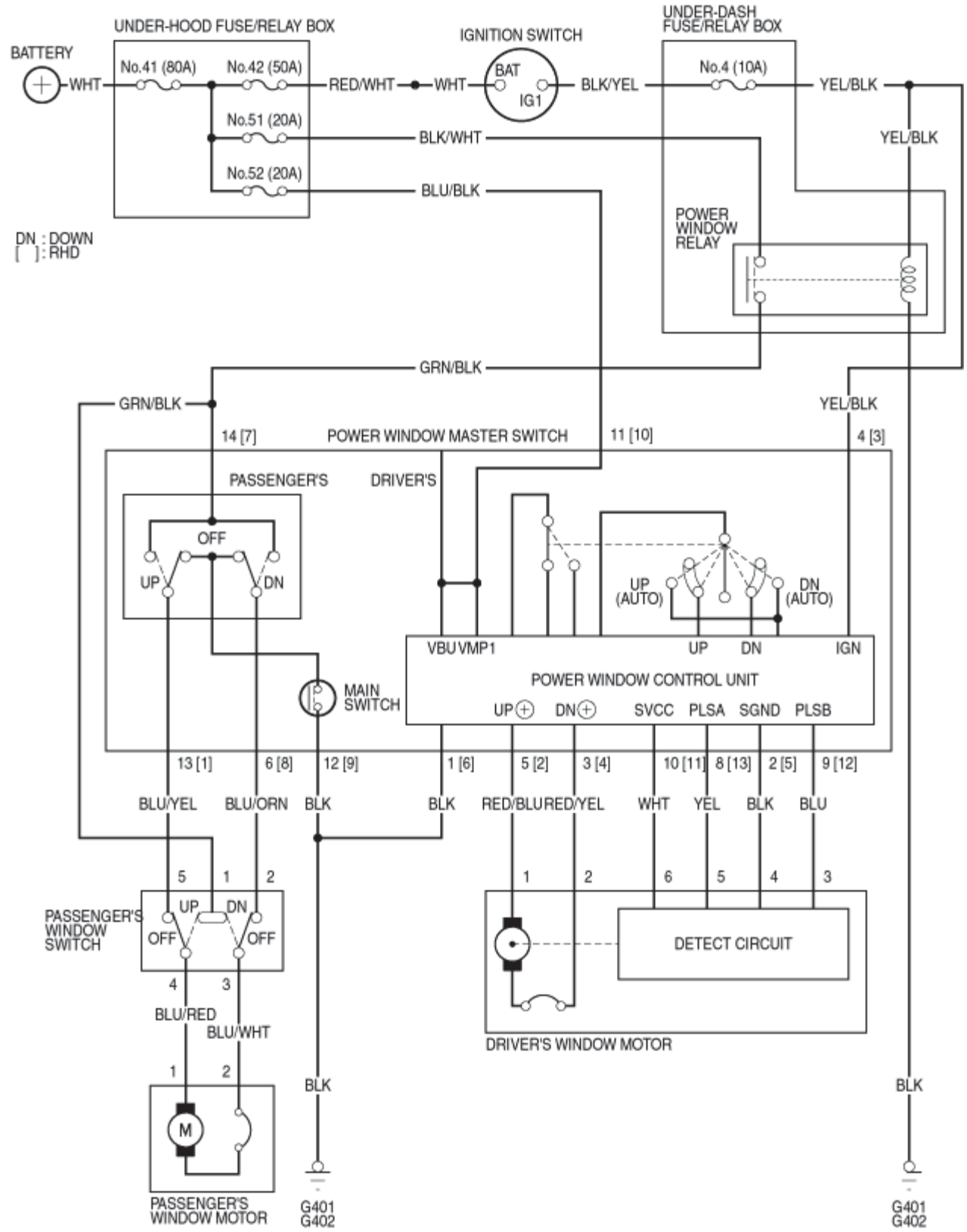
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
5	WHT/BLU	Under all conditions	Check for voltage to ground: There should be battery voltage	• Blown No 23 (7.5A) fuse in the under-dash fuse/relay box. • An open in the wire
11	GRN/WHT	Under all conditions	Check for voltage to ground: There should be battery voltage	• Blown No. 5 (7.5A) fuse in the under-dash fuse/relay box • An open in the wire
6	GRN		Check for voltage to ground: There should be 1V or less	• Faulty driver's door switch • An open in the wire
12	BLU/RED	Under all conditions	Check for voltage to ground: There should be 1V or less	• Faulty ignition key switch • Poor ground G401, G402) • An open in the wire

NOTE: LHD type is shown, RHD type is similar.



1. **POWER WINDOW RELAY**
   Test (**See Page** 23-B-3)
2. **UNDER-DASH FUSE/RELAY BOX**
3. **PASSENGER'S WINDOW SWITCH**
   Test (**See Page** 23-E-13)
4. **PASSENGER'S POWER WINDOW MOTOR**
   Test (**See Page** 23-E-13)
5. **POWER WINDOW MASTER SWITCH**
   (Has built-in control unit)
   Input Test (**See Page** 23-E-10)
   Test (**See Page** 23-E-9)
6. **DRIVER'S WINDOW MOTOR**
   Test (**See Page** 23-E-12)

Driver's Window Motor Description
The driver's window will stop and automatically open if you pinch your hand or something during auto-up operation.


UNDER-HOOD FUSE/RELAY BOX
BATTERY
No.41 (80A)
No.42 (50A)
WHT
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.4 (10A)
YEL/BLK
No.51 (20A)
BLK/WHT
YEL/BLK
No.52 (20A)
BLU/BLK
POWER WINDOW RELAY
DN : DOWN
[ ] : RHD
GRN/BLK
GRN/BLK
YEL/BLK
14 [7]
POWER WINDOW MASTER SWITCH
11 [10]
4 [3]
PASSENGER'S
DRIVER'S
OFF
UP
DN
UP (AUTO)
DN (AUTO)
VBU VMP1
UP
DN
IGN
POWER WINDOW CONTROL UNIT
MAIN SWITCH
UP
DN
SVCC
PLSA
SGND
PLSB
13 [1]
6 [8]
12 [9]
1 [6]
5 [2]
3 [4]
10 [11]
8 [13]
2 [5]
9 [12]
BLU/YEL
BLU/ORN
BLK
BLK
RED/BLU
RED/YEL
WHT
YEL
BLK
BLU
5
1
2
1
2
6
5
4
3
PASSENGER'S WINDOW SWITCH
UP
DN
OFF
OFF
DETECT CIRCUIT
4
3
BLU/RED
BLU/WHT
1
2
M
BLK
BLK
PASSENGER'S WINDOW MOTOR
DRIVER'S WINDOW MOTOR
G401
G402
G401
G402

NOTE: The numbers in the table show the troubleshooting sequence.

Symptom / Item to be inspected	Power window relay	Blown No. 4 (10 A) fuse	Under-dash fuse/relay box	Blown No. 51 (20 A) fuse	Under-hood fuse/relay box	Blown No. 52 (20 A) fuse	Power window master switch	Passenger's switch	Driver's window motor	Passenger's window motor	Window regulator	Control unit input	Control unit reset or driver's window motor detect circuit	Driver's window glass channel	Poor ground	Open circuit in the wires, loose or disconnected terminals
All windows do not work.		1					2								G401 G402	YEL/BLK
Driver's window does not work.				1					2		4	3				BLU/BLK, RED/BLU, RED/YEL
Driver's window does not work in AUTO.												2	1			WHT, BLK, YEL, BLU
The driver's window moves automatically downward during AUTO UP operation.													1	2		
The driver's window does not stop or open automatically if your hand or an object is being squashed.													1			
Passenger's window does not work.	3	2	1					6		4	7	5			G401 G402	GRN/BLK, BLU/ORN, BLU/YEL

Resetting the power window unit

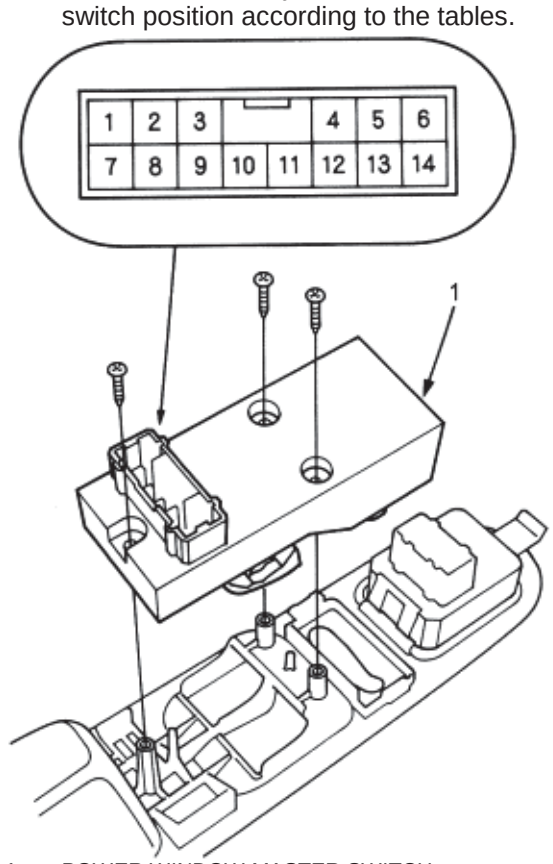
Resetting the power window control unit is required after performing the following procedure:

- Shutdown of battery power.
- Shutdown of the electric power caused by both No. 52 (20A) and No. 4 (7.5A) fuses.
- Open circuit caused by disconnected 14P connector from the power window master switch.
- Removal of the regulator, glass or glass run channel.

1. Make sure the glass is installed properly.
2. Turn the ignition switch OFF.
3. Remove the No. 52 (20A) fuse in the under-hood fuse/relay box.
4. Turn the ignition switch ON (II) and hold on for one seconds, then turn it OFF. Install the No. 52 (20A) fuse in the under-hood fuse/relay box five seconds later after turning the ignitions switch OFF>
5. Make sure the driver’s window does not work in AUTO with the ignition switch ON (II).
6. Turn the ignition switch ON (II) to crank the engine.
7. Move the driver’s window all the way down by using the driver’s switch of the master switch by manual down.
8. Move the driver’s window all the way up by using the driver’s switch of the master switch by manual down for more than one second.

* If the window does not work in AUTO, reset the power window master switch according to the above procedures again.

1. Remove the armrest pocket (**See Page** 23-E-10).
2. Disconnect the 14P connector from the power window master switch.
3. Check for continuity between the terminals in each switch position according to the tables.



1. POWER WINDOW MASTER SWITCH

Driver's Switch:
The driver's switch is combined with the control unit so you cannot isolate the switch to test it. Instead run the master switch input test procedure (**See Page** 23-E-11). If the tests are normal, the driver's switch must be faulty.

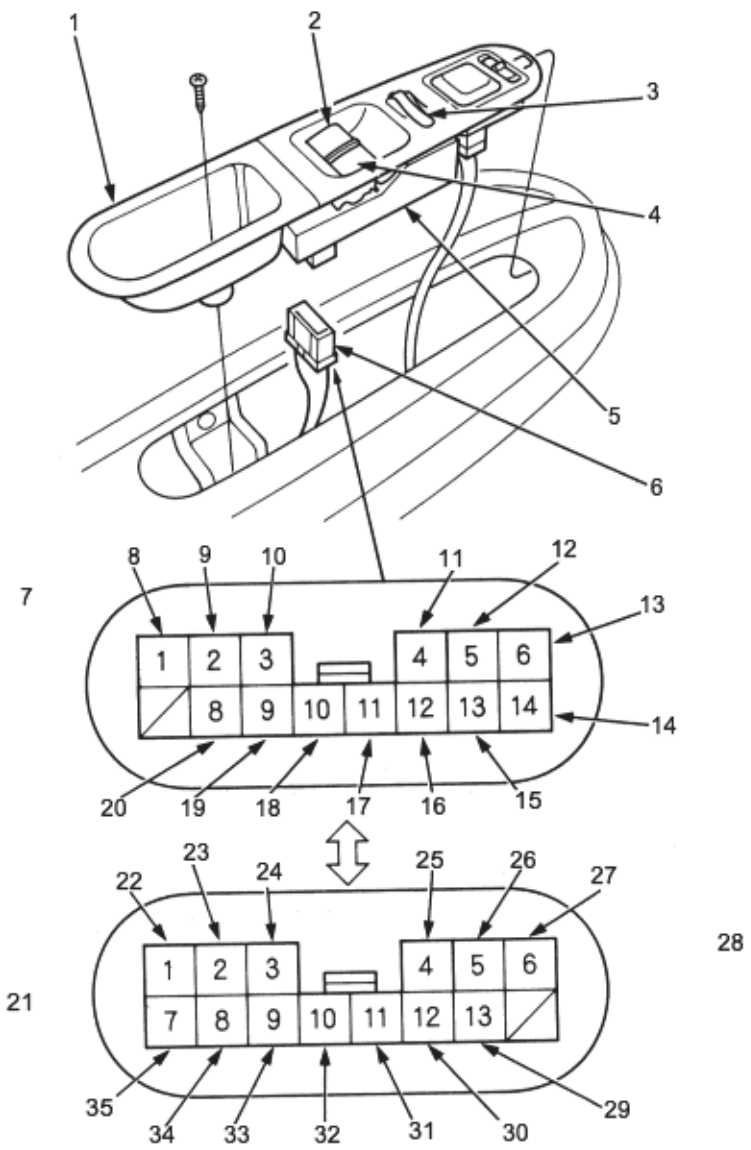
Passenger's Switch

Position	Main Switch \ Terminal	13 [1]	14 [7]	6 [8]	12 [9]
OFF	ON	○		○	○
	OFF	○		○	
UP	ON	○	○		
	OFF				
DOWN	ON	○			○
	OFF		○	○	

[ ]: RHD type

NOTE: The control unit is built into the power window master switch and only controls driver's door window operations.

1. Remove the power window master switch and armrest pocket from the door panel.
2. Disconnect the 14P connector from the power window master switch.
3. 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, make the following 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, the control unit must be faulty, replace it.



1. **ARMREST POCKET**
2. **DRIVER'S SWITCH (LHD type) OR PASSENGER'S SWITCH (RHD type)**
3. **MAIN SWITCH**
4. **PASSENGER'S SWITCH (LHD type) OR DRIVER'S SWITCH (RHD type)**
5. **POWER WINDOW MASTER SWITCH**
6. **14P CONNECTOR**
7. **LHD TYPE**
8. BLK
9. BLK
10. RED/YEL
11. YEL/BLK
12. RED/BLU
13. BLU/ORN
14. GRN/BLK
15. BLU/YEL
16. BLK
17. BLU/BLK
18. WHT
19. BLU
20. YEL
21. **RHD TYPE**
22. BLU/YEL
23. RED/BLU
24. YEL/BLK
25. RED/YEL
26. BLK
27. BLK
28. Wire side of female terminals
29. YEL
30. BLU
31. WHT
32. BLU/BLK
33. BLK
34. BLU/ORN
35. GRN/BLK

Disconnect the connector to the power window master switch

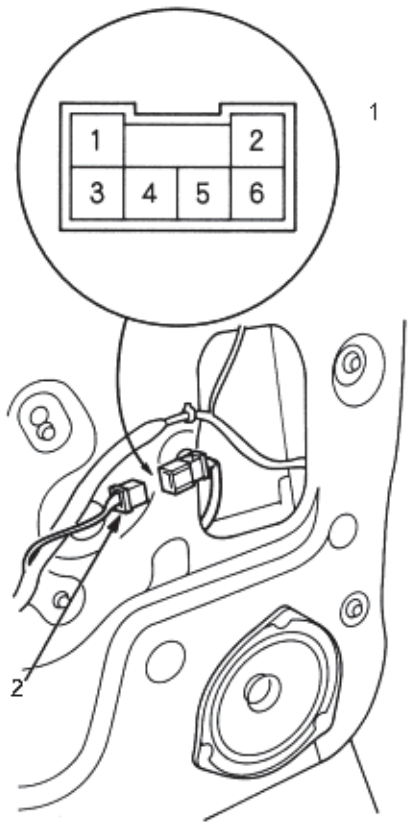
Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
4 [3]	YEL/BLK	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Blown No 51 (20A) fuse in the under-hood fuse/relay box. • Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window relay • Poor ground (G401, G402) • An open in the wire
14 [7]	GRN/BLK	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Blown No 51 (20A) fuse in the under-hood fuse/relay box. • Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window relay • Poor ground (G401, G402) • An open in the wire
1 [6] 12 [9]	BLK	Under all conditions	Check for continuity to ground: There should be continuity	• Poor ground (G401, G402) • An open in the wire
13 [1]	BLU/YEL	Connect the No. 14 [7] terminal to the No. 13 [1] terminal and the No. 6 [8] terminal to the No. 12 [9] terminal then turn the ignition switch to ON (II).	Check for passenger's window motor: It should run	• Faulty passenger's window motor • Faulty passenger's window switch • An open in the wire
6 [8]	BLU/ORN	Connect the No. 14 [7] terminal to the No. 13 [1] terminal and the No. 6 [8] terminal to the No. 12 [9] terminal then turn the ignition switch to ON (II).	Check for passenger's window motor: It should run	• Faulty passenger's window motor • Faulty passenger's window switch • An open in the wire
11 [10]	BLU/BLK	Under all conditions	Check for voltage to ground: There should be battery voltage	• Blown No. 52 (20A) fuse in the under-hood fuse/relay box • An open in the wire
5 [2]	RED/BLU	Ignition switch ON (II) and the driver's window switch MANUAL UP. Ignition switch ON (II) and the driver's window switch AUTO UP	Check the voltage between the No. 5 [2] and No. 1 [6] terminals: There should be battery voltage.	• Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window master switch • An open in the wire
3 [4]	RED/YEL	Ignition switch ON (II) and the driver's window switch MANUAL DOWN. Ignition switch ON (II) and the driver's window switch AUTO DOWN	Check the voltage between the No. 3 [4] and No. 1 [6] terminals: There should be battery voltage.	• Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window master switch • An open in the wire

Reconnect the connector to the power window master switch.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
10 [11]	WHT	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Faulty power window master switch • An open in the wire
9 [12]	BLU	Ignition switch ON (II) and the driver's window switch AUTO UP	Check for voltage the No. 9 [12] and No. 2 [5] terminals: There should be battery voltage	• Blown No 52 920A) fuse in the under-hood fuse/relay box • Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window master switch • An open in the wire
8 [13]	YEL	Ignition switch ON (II) and the driver's window switch AUTO DOWN	Check for voltage the No. 8 [13] and No. 2 [5] terminals: There should be battery voltage	• Blown No 52 920A) fuse in the under-hood fuse/relay box • Blown No. 4 (10A) fuse in the under-dash fuse/relay box • Faulty power window master switch • An open in the wire
2 [5]	BLK	Under all conditions	Check for continuity to ground: There should be continuity	• Faulty power window master switch • An open in the wire

Motor Test:

1. Remove the driver's door panel and disconnect all connectors (see section 20).
2. Disconnect the 6P connector from the window motor.



1. Terminal side of male terminals
2. 6P CONNECTOR

⚠ CAUTION

When the motor stops running, disconnect one lead immediately.

3. Test the motor in each direction by connecting battery power and ground according to the table.

Terminal / Direction	1	2
UP	⊕	⊖
DOWN	⊖	⊕

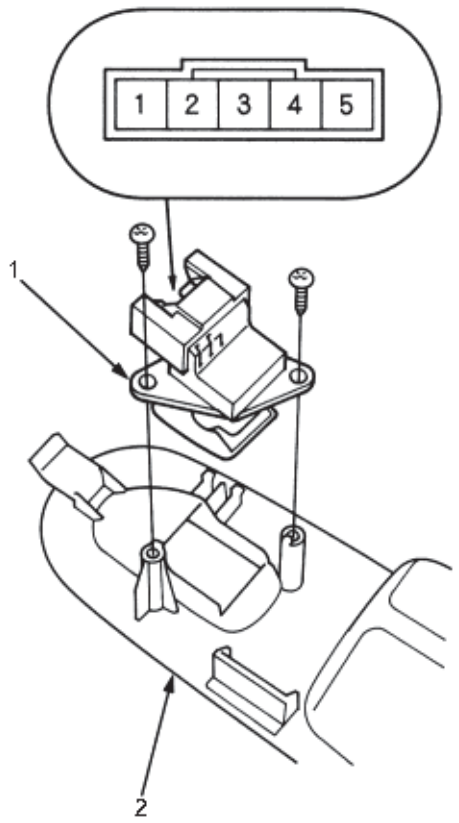
4. If the motor does not run or fails to run smoothly, replace it.

Detect Circuit Test:

1. Reconnect the 6P connector to the window motor.
2. Check for voltage between the terminals:
   - There should be battery voltage between No. 6 (+) and No. 4 (-) terminals when the ignition switch is ON (II).
   - Connect the analogue voltmeter between the No. 5 (+) and No. 4 (-) terminals and run the window motor down or up.
     The voltmeter needle should move back and forth alternately.
   - Connect the analogue voltmeter between the No. 3 (+) and No. 4 (-) terminals and run the window motor down or up.
     The voltmeter needle should move back and forth alternately.

Passenger's Window Switch Test

1. Remove the armrest pocket (see section 20).
2. Disconnect the 5P connector then remove the mounting screws from the switch.



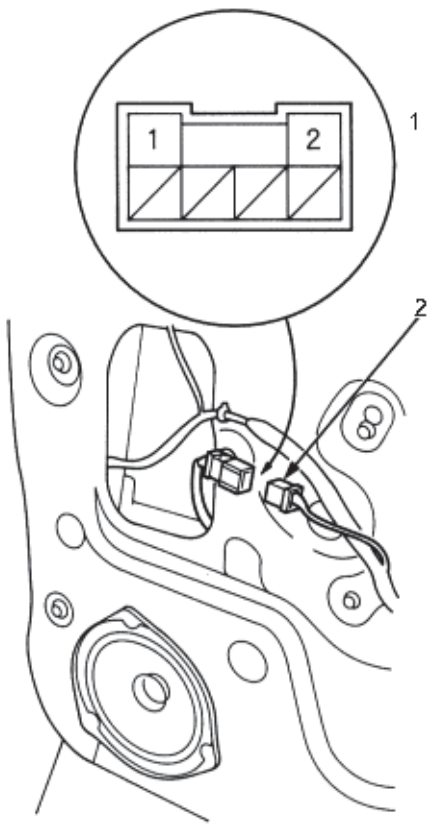
1. PASSENGER'S WINDOW SWITCH
2. ARMREST POCKET

3. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	1	2	3	4	5
UP	○			○	
		○	○		
OFF		○	○		
				○	○
DOWN	○		○		
				○	○

Passenger's Window Motor Test

1. Remove the passenger's door panel and disconnect all the connectors (see section 20).
2. Disconnect the 6P connector from the window motor.



1. Terminal side of male terminals
2. 6P CONNECTOR

⚠ CAUTION

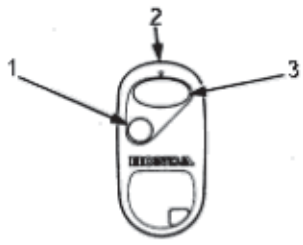
When the motor stops running, disconnect one lead immediately.

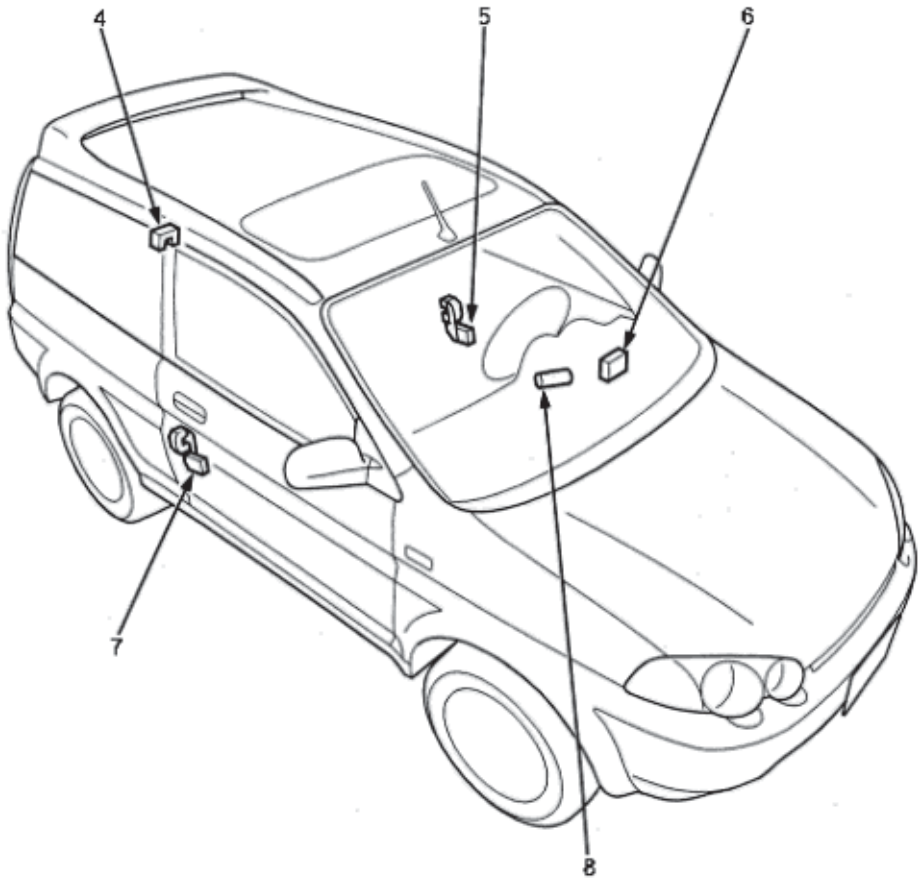
3. Test the motor in each direction by connecting battery power and ground according to the table.

Direction \ Terminal	1	2
UP	⊕	⊖
DOWN	⊖	⊕

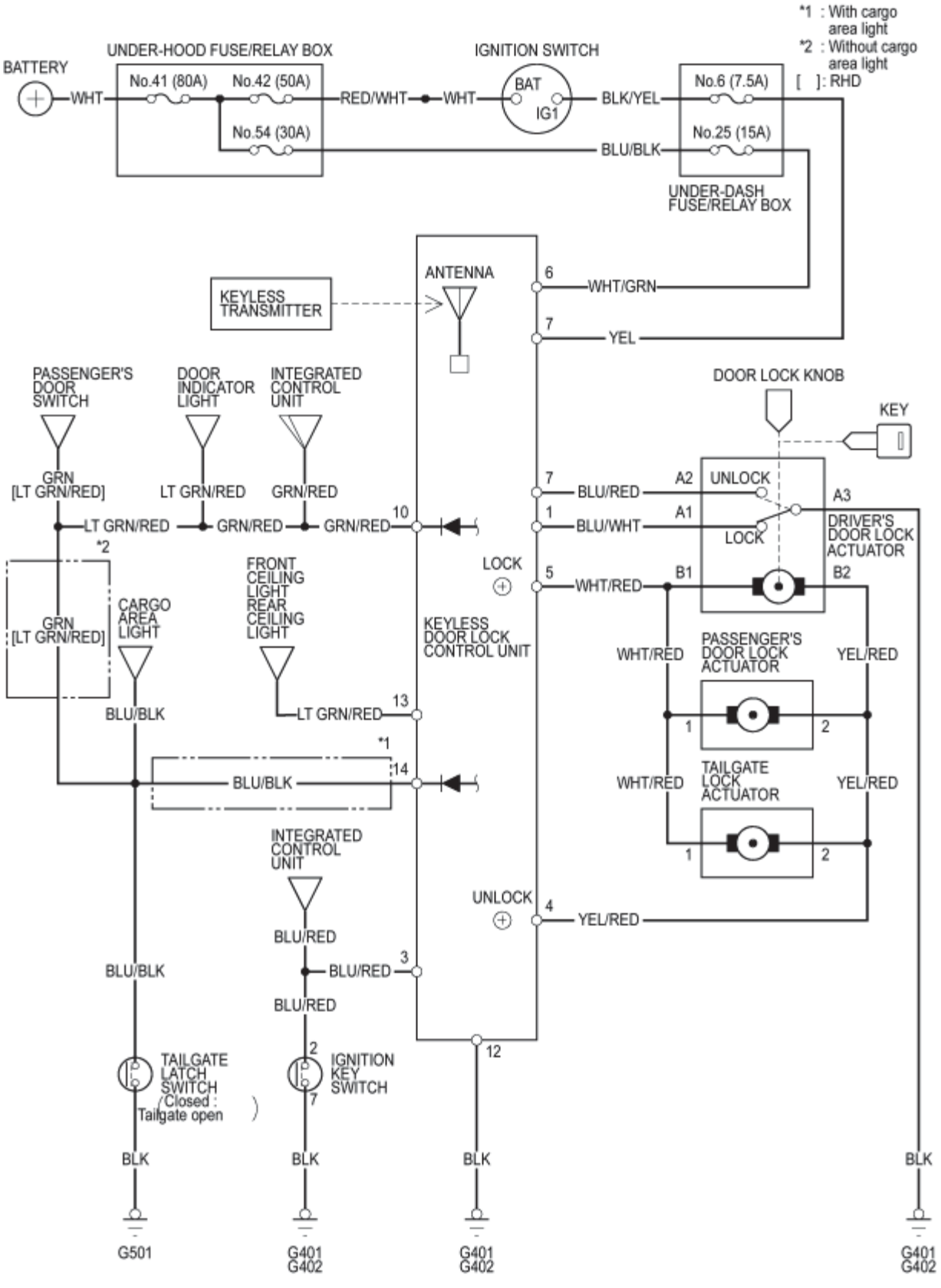
4. If the motor does not run or fails to run smoothly, replace it.

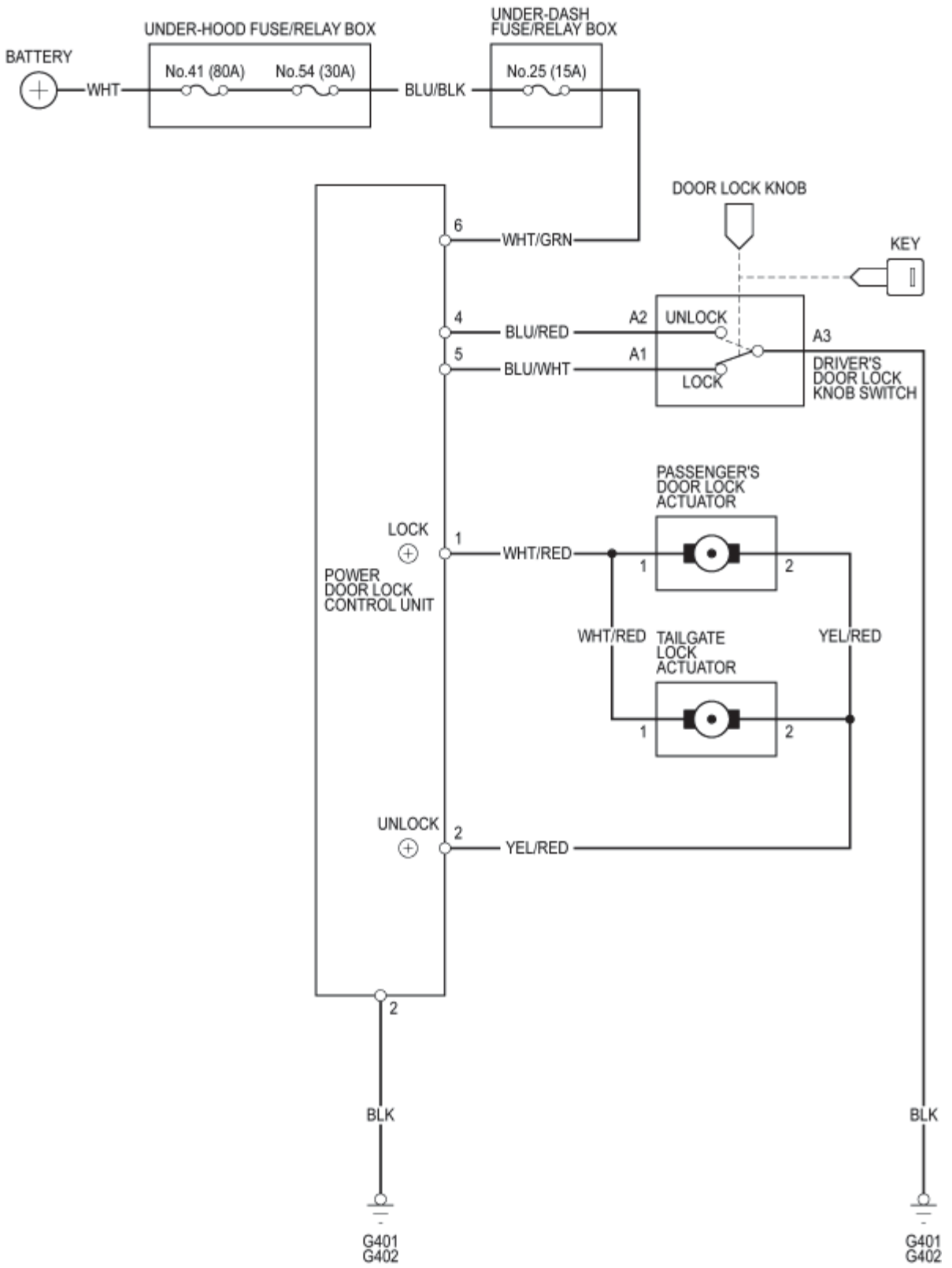
NOTE: LHD type is shown, RHD type is similar.



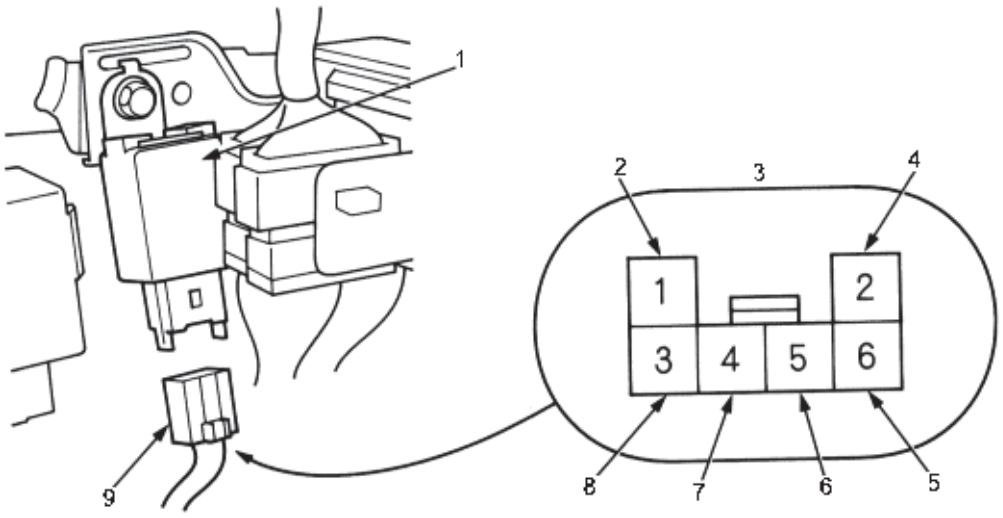


1. **UNLOCK BUTTON**
2. **TRANSMITTER**
   Test (**See Page** 23-E-22)
   Programming (**See Page** 23-E-22)
3. **LOCK BUTTON**
4. **TAILGATE LOCK ACTUATOR**
   Test (**See Page** 23-E-21)
   Replacement, section 20)
5. **DRIVER'S DOOR LOCK KNOB SWITCH (without keyless entry)**
   Test (**See Page** 23-E-20)
   Replacement (section 20)
   DRIVER'S DOOR LOCK ACTUATOR (with keyless entry)
   Test (**See Page** 23-E-20)
   Replacement (section 20)
6. **KEYLESS DOOR LOCK CONTROL UNIT**
   Input test (**See Page** 23-E-18)
   POWER DOOR LOCK CONTROL UNIT
   Input test (**See Page** 23-E-17)
7. **PASSENGER'S DOOR LOCK ACTUATOR**
   Test (**See Page** 23-E-21)
   Replacement (section 20)
8. **IGNITION KEY SWITCH**
   Test (**See Page** 23-E-23)


*1 : With cargo area light
*2 : Without cargo area light
[ ]: RHD
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
BLU/BLK
No.6 (7.5A)
No.25 (15A)
UNDER-DASH FUSE/RELAY BOX
KEYLESS TRANSMITTER
ANTENNA
6
WHT/GRN
7
YEL
PASSENGER'S DOOR SWITCH
DOOR INDICATOR LIGHT
INTEGRATED CONTROL UNIT
DOOR LOCK KNOB
KEY
GRN [LT GRN/RED]
LT GRN/RED
GRN/RED
10
7
BLU/RED
A2
UNLOCK
A3
1
BLU/WHT
A1
LOCK
DRIVER'S DOOR LOCK ACTUATOR
*2
FRONT CEILING LIGHT
REAR CEILING LIGHT
CARGO AREA LIGHT
LOCK
5
WHT/RED
B1
B2
KEYLESS DOOR LOCK CONTROL UNIT
PASSENGER'S DOOR LOCK ACTUATOR
YEL/RED
13
*1
14
TAILGATE LOCK ACTUATOR
INTEGRATED CONTROL UNIT
UNLOCK
4
3
12
TAILGATE LATCH SWITCH
(Closed : Tailgate open)
IGNITION KEY SWITCH
2
7
G501
G401
G402


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.54 (30A)
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.25 (15A)
DOOR LOCK KNOB
KEY
6
WHT/GRN
4
BLU/RED
A2
UNLOCK
A3
5
BLU/WHT
A1
LOCK
DRIVER'S DOOR LOCK KNOB SWITCH
PASSENGER'S DOOR LOCK ACTUATOR
LOCK
1
WHT/RED
1
2
POWER DOOR LOCK CONTROL UNIT
WHT/RED
TAILGATE LOCK ACTUATOR
YEL/RED
1
2
UNLOCK
2
YEL/RED
2
BLK
BLK
G401
G402
G401
G402

1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 6P connector from the control unit.
3. 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, make the following 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, the control unit must be faulty, replace it.



1. **POWER DOOR LOCK CONTROL UNIT**
2. **WHT/RED**
3. Wire side of female terminals
4. **YEL/RED**
5. **WHT/GRN**
6. **BLU/WHT**
7. **BLU/RED**
8. **BLK**
9. **6P CONNECTOR**

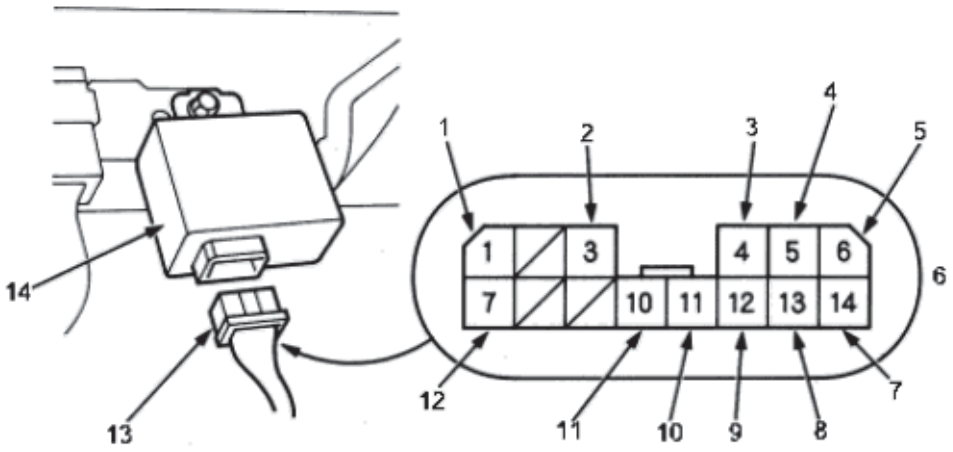
Disconnect the 6P connector from the power door lock control unit

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
3	BLK	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ An open in the wire
2	YEL/RED	Connect the No. 2 terminal to the No. 6 terminal and the No. 1 terminal to the No. 3 terminal momentarily	Check door lock operation: All doors should unlock	♦ Faulty actuator ♦ An open in the wire ♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box
1	WHT/RED	Connect the No. 1 terminal to the No. 6 terminal and the No. 2 terminal to the No. 3 terminal momentarily	Check door lock operation: All doors should unlock	♦ Faulty actuator ♦ An open in the wire ♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box

Reconnect the 6P connector to the power door lock control unit

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
6	WHT/GRN	Under all conditions	Check for voltage to ground: There should be battery voltage	♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box ♦ An open in the wire
5	BLU/WHT	Driver's door lock knob in LOCK	Check for voltage to ground: There should be battery voltage	♦ Faulty driver's door lock knob switch ♦ An open in the wire ♦ Poor ground (G401, G402)
4	BLU/RED	Driver's door lock knob in UNLOCK	Check for voltage to ground: There should be battery voltage	♦ Faulty driver's door lock knob switch ♦ An open in the wire ♦ Poor ground (G401, G402)

1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 14P connector from the control unit.
3. 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, make the following 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, the control unit must be faulty, replace it.



1. **BLU/WHT**
2. **BLU/RED**
3. **YEL/RED**
4. **WHT/RED**
5. **WHT/GRN**
6. Wire side of female terminals
7. **BLU/BLK**
8. **LT GRN/RED**
9. **BLK**
10. **YEL**
11. **GRN/RED**
12. **BLU/RED**
13. **14P CONNECTOR**
14. **KEYLESS DOOR LOCK CONTROL UNIT**

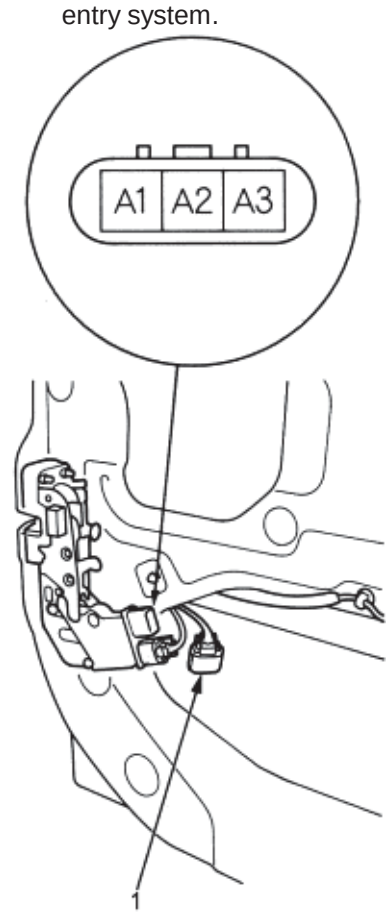
Disconnect the 14P connector from the keyless door lock control unit

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
12	BLK	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ An open in the wire
4	YEL/RED	Connect the No. 4 terminal to the No. 6 terminal and the No. 5 terminal to the No. 12 terminal momentarily	Check door lock operation: All doors should unlock	♦ Faulty actuator ♦ An open in the wire ♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box
5	WHT/RED	Connect the No. 5 terminal to the No. 6 terminal and the No. 4 terminal to the No. 12 terminal momentarily	Check door lock operation: All doors should unlock	♦ Faulty actuator ♦ An open in the wire ♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box

Reconnect the 14P connector to the keyless door lock control unit.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
6	WHT/GRN	Under all conditions	Check for voltage to ground: There should be battery voltage	♦ Blown No. 25 (15A) fuse in the under-dash fuse/relay box ♦ An open in the wire
1	BLU/WHT	Driver's door lock knob in LOCK	Check for voltage to ground: There should be 1V or less	♦ Faulty driver's door lock actuator ♦ An open in the wire ♦ Poor ground (G401, G402)
7	BLU/RED	Driver's door lock knob in UNLOCK	Check for voltage to ground: There should be 1V or less	♦ Faulty driver's door lock actuator ♦ An open in the wire ♦ Poor ground (G401, G402)
3	BLU/RED	Ignition key in the ignition switch	Check for voltage to ground: There should be 1V or less	♦ Faulty ignition key switch ♦ An open in the wire ♦ Poor ground (G401, G402)
11	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	♦ Blown No. 6 (7.5A) fuse in the under-dash fuse/relay box ♦ An open in the wire
14	BLU/BLK	Tailgate open/close	Check for voltage to ground: There should be 1V or less when the tailgate is opened There should be battery voltage when the tailgate is closed	♦ Faulty tailgate latch switch ♦ An open in the wire ♦ Poor ground (G501)
10	GRN/RED	Passenger's door opened	Check for continuity to ground: There should be continuity	♦ Faulty door switch ♦ An open in the wire
13	LT GRN/RED	All doors closed and front ceiling light switch position MIDDLE	Connect to ground: Front ceiling light should come on	♦ Blown No. 23 (7.5A) fuse in the under-dash fuse/relay box ♦ Blown front ceiling light bulb ♦ An open in the wire

1. Remove the driver's door panel (see section 20).
2. Disconnect the 3P connector from the knob switch (without keyless entry system or actuator (with keyless entry system.

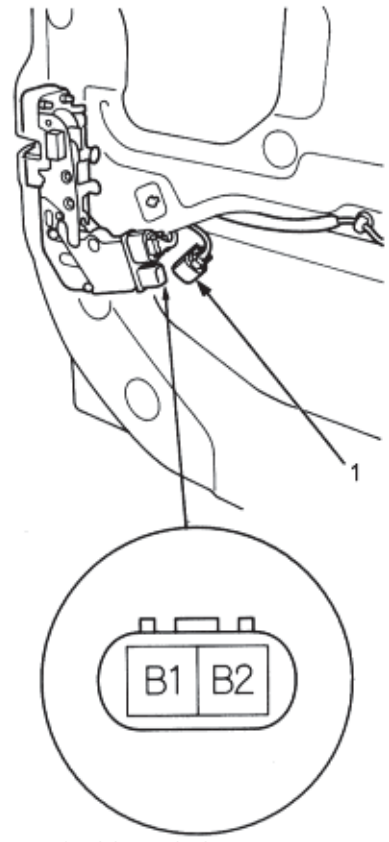


1. 3P CONNECTOR

3. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal	A1	A2	A3
LOCK	○		○
UNLOCK		○	○

1. Remove the driver's door panel (see section 20).
2. Disconnect the 2P connector from the actuator.



1. 2P CONNECTOR

⚠ CAUTION

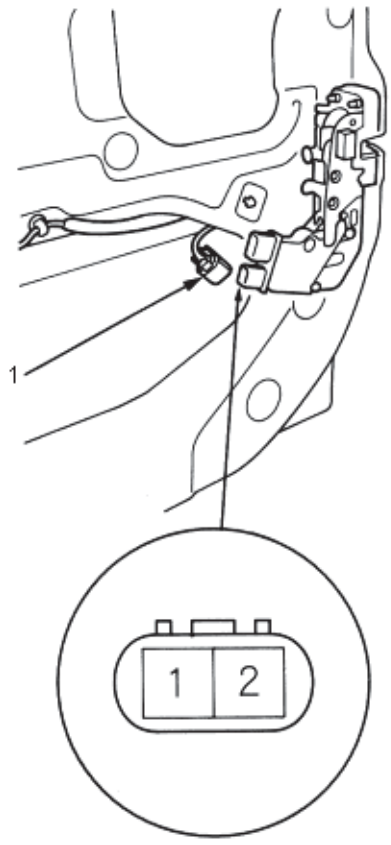
To prevent damage to the actuator, apply battery voltage only momentarily.

3. Check actuator operation by connecting power and ground according to the table.

Position \ Terminal	B1	B2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Passenger's Door Lock Actuator Test

1. Remove the passenger's door panel (see section 20).
2. Disconnect the2P connector from the actuator.



1. 2P CONNECTOR

CAUTION

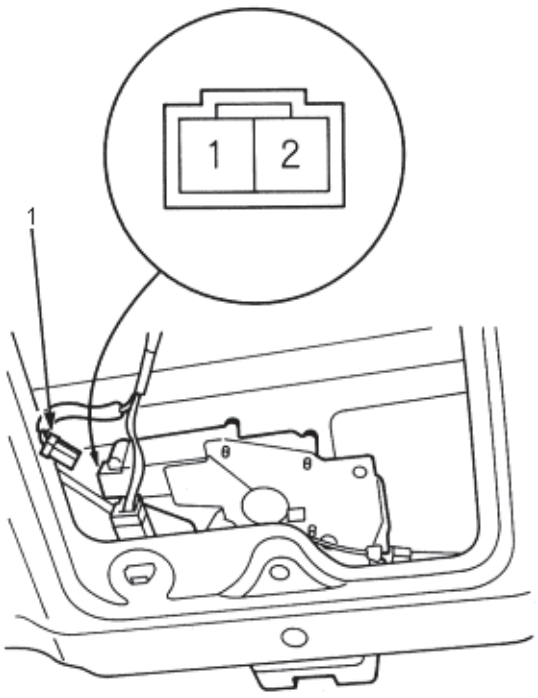
To prevent damage to the actuator, apply battery voltage only momentarily.

3. Check actuator operation by connecting power and ground according to the table.

Terminal / Position	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

Tailgate Lock Actuator Test

1. Remove the tailgate trim panel (see section 20).
2. Disconnect the 2P connector from the actuator.



1. 2P CONNECTOR

CAUTION

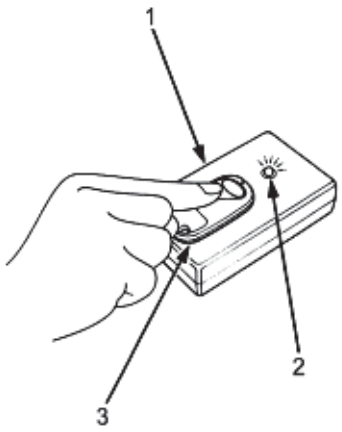
To prevent damage to the actuator, apply battery voltage only momentarily.

3. Check actuator operation by connecting power and ground according to the table.

Terminal / Position	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

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 or unlock the door 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.

1. Using a keyless entry checker (07MAJ-SP00300): Place the transmitter on the keyless entry checker and press the transmitter button.
   - If the indicator light does not come on, check for:
     - A dead or low battery
     - A faulty transmitter.
   - If the indicator light comes on, the transmitter is OK.



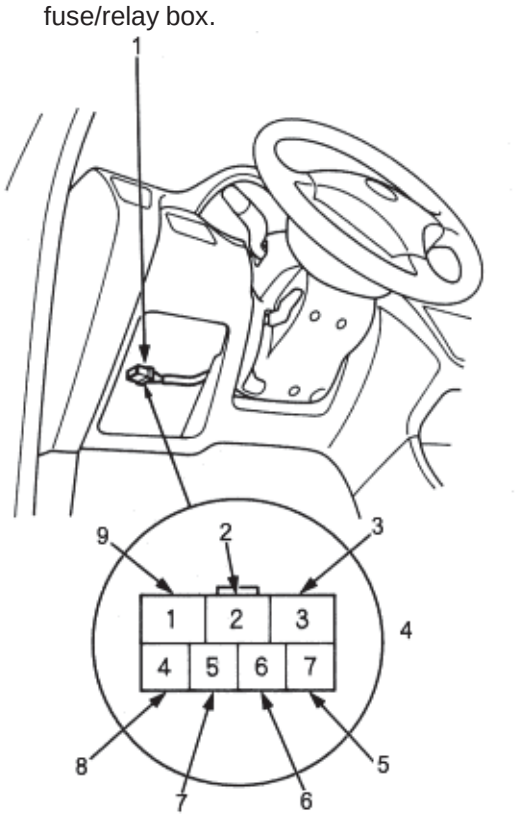
1. KEYLESS ENTRY CHECKER
2. INDICATOR LIGHT
3. TRANSMITTER

NOTE: After a transmitter battery has been replaced, aim the transmitter at the receiver and press the transmitter button six times.
Confirm you can hear the sound of the door lock actuators when you press the sixth time.

Storing transmitter codes:
The codes op up to three transmitters can be read into the keyless receiver unit memory. If a fourth code is stored, the code which was input first will be erased.
NOTE: It is important to maintain the time limits between the steps.

1. Turn the ignition switch ON (II).
2. Within 1 to 4 seconds push the transmitter lock or unlock button with the transmitter aimed at the receive (control unit).
3. Within 1 to 4 seconds turn the ignition switch OFF.
4. Within 1 to 4 seconds turn the ignition switch ON (II).
5. Within 1 to 4 seconds push the transmitter lock or unlock button with the transmitter aimed at the receiver (control unit).
6. Within 1 to 4 seconds turn the ignition switch OFF.
7. Within 4 seconds turn the ignition switch ON (II).
8. Within 1 to 4 seconds push the transmitter lock or unlock button with the transmitter aimed at the receiver (control unit).
9. Within 1 to 4 seconds turn the ignition switch OFF.
10. Within 1 to 4 seconds turn the ignition switch ON (II).
11. Within 1 to 4 seconds push the transmitter lock or unlock button with the transmitter aimed at the receiver (control unit).
12. Confirm you can hear the sound of the door lock actuators. Within 1 to 4 seconds push the transmitter lock or unlock button again.
13. Within 15 seconds aim the transmitter (up to three) whose codes you want to store at the receiver and press the transmitter lock or unlock buttons. Confirm you can hear the sound of the door lock actuators after each transmitter code is stored.
14. Turn the ignition switch OFF and pull out the key.
15. Confirm proper operation with the new code(s).

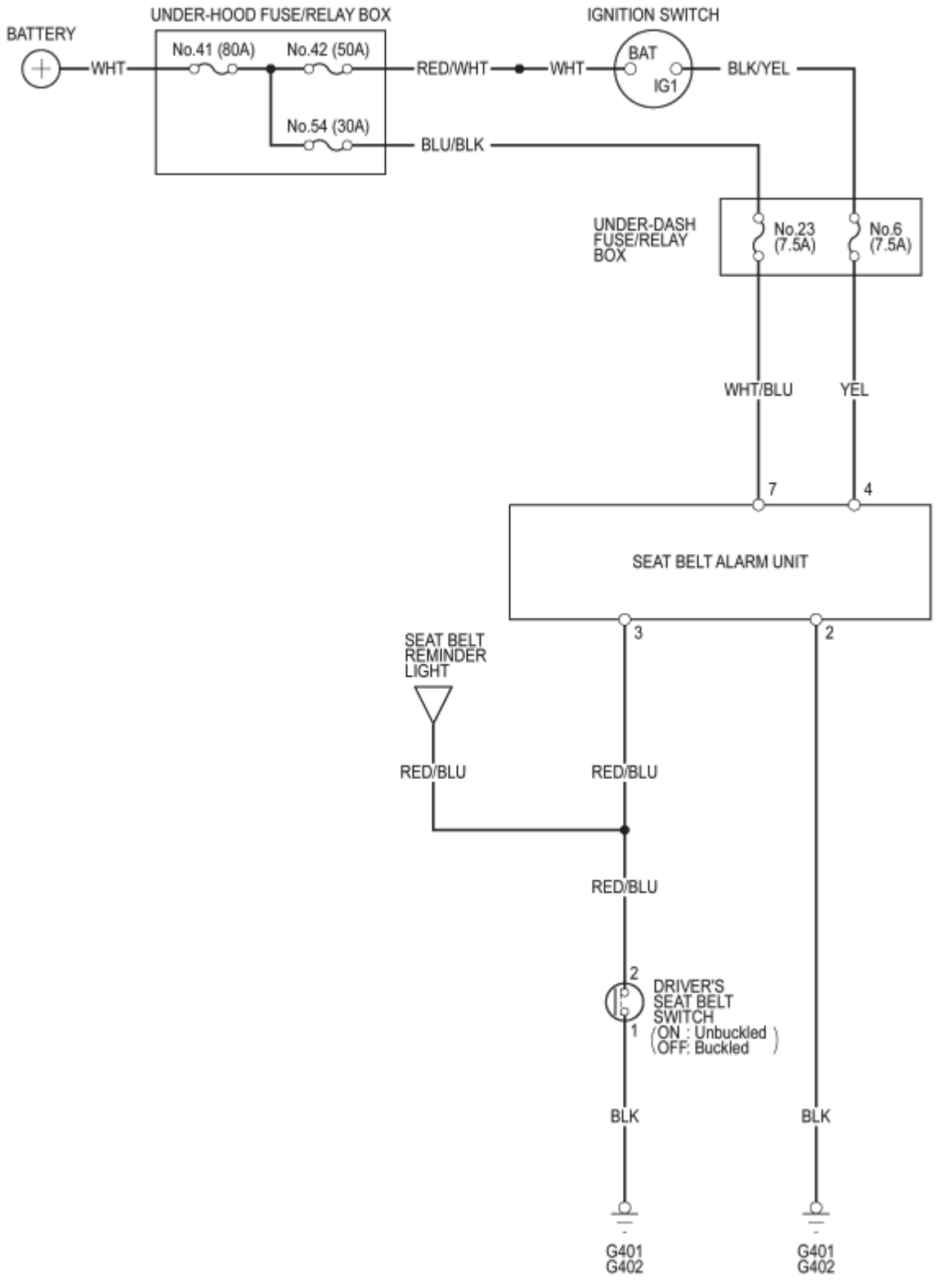
1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 7P connector from the under-dash fuse/relay box.



1. 7P CONNECTOR
2. BLU/WHT
3. WHT
4. Wire side of female terminal
5. BLU/WHT
6. WHT/BLK
7. YEL
8. BLK/YEL
9. BLK/WHT

3. Check for continuity between the No. 2 and No. 7 terminals in each condition according to the table.

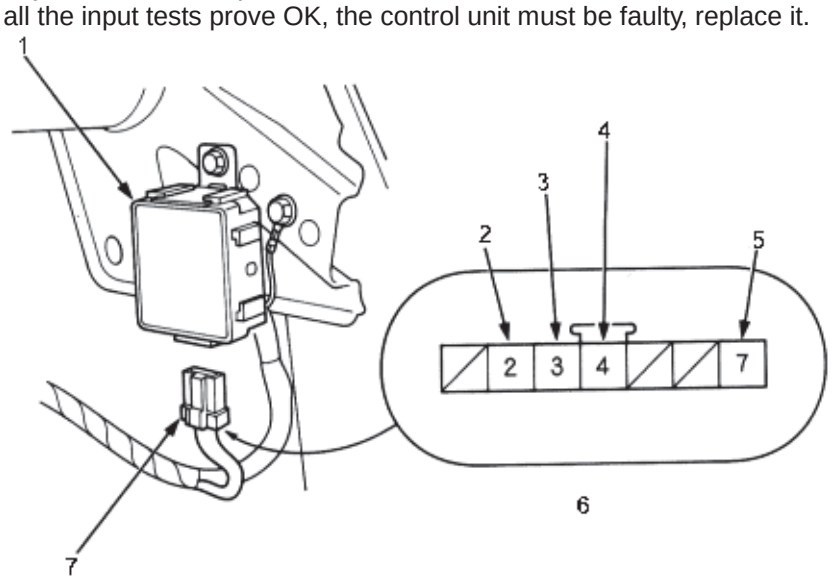
Terminal / Condition	2	7
Key inserted	○	○
Key removed		


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.23 (7.5A)
No.6 (7.5A)
WHT/BLU
YEL
7
4
SEAT BELT ALARM UNIT
3
2
SEAT BELT REMINDER LIGHT
RED/BLU
RED/BLU
RED/BLU
2
DRIVER'S SEAT BELT SWITCH
1
(ON : Unbuckled
OFF: Buckled)
BLK
BLK
G401
G402
G401
G402

Seat Belt Reminder System (KY and KQ models)

Control Unit Input Test

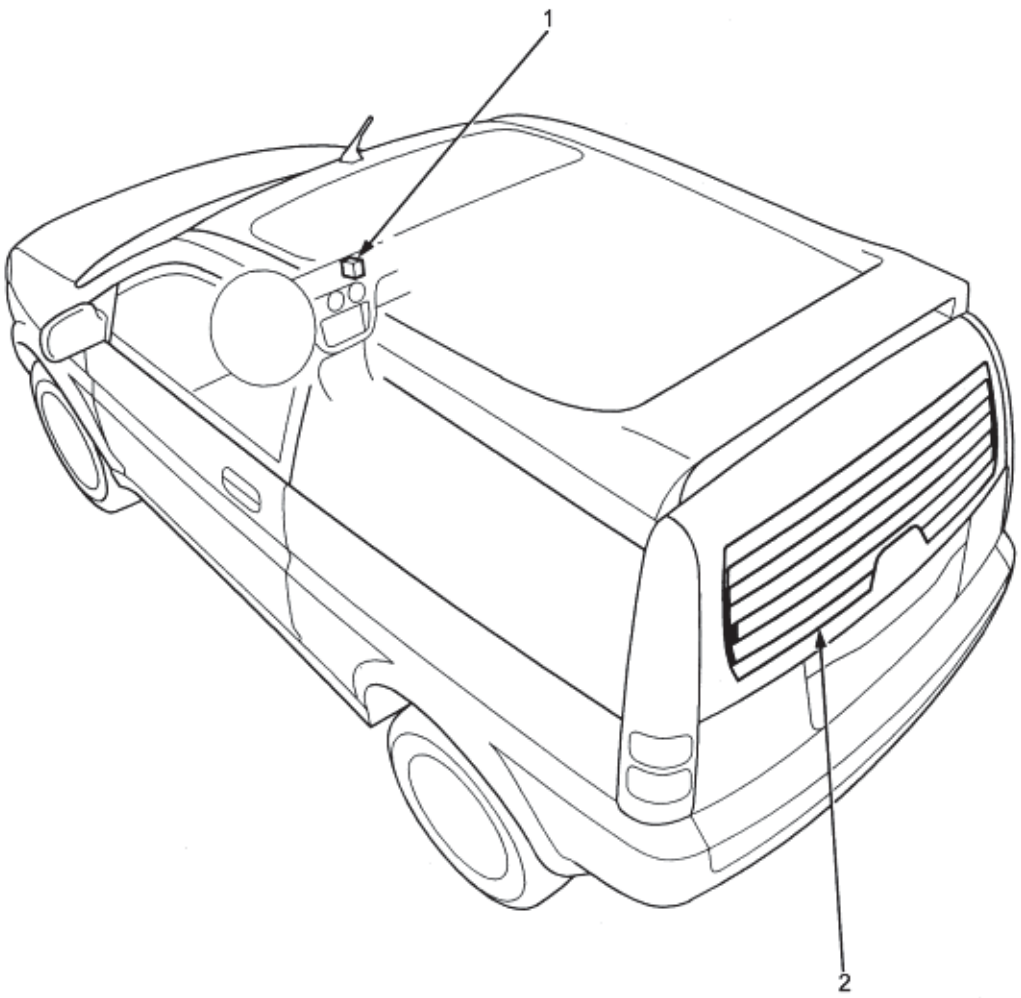
1. Disconnect the 7P connector from the control unit.
2. Inspect the connector and socket terminals to make sure they are all making good contact.
   - If the terminals are bent, loose, or corroded, repair them as necessary and recheck the system.
   - If the terminals look OK, make the following input 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, the control unit must be faulty, replace it.



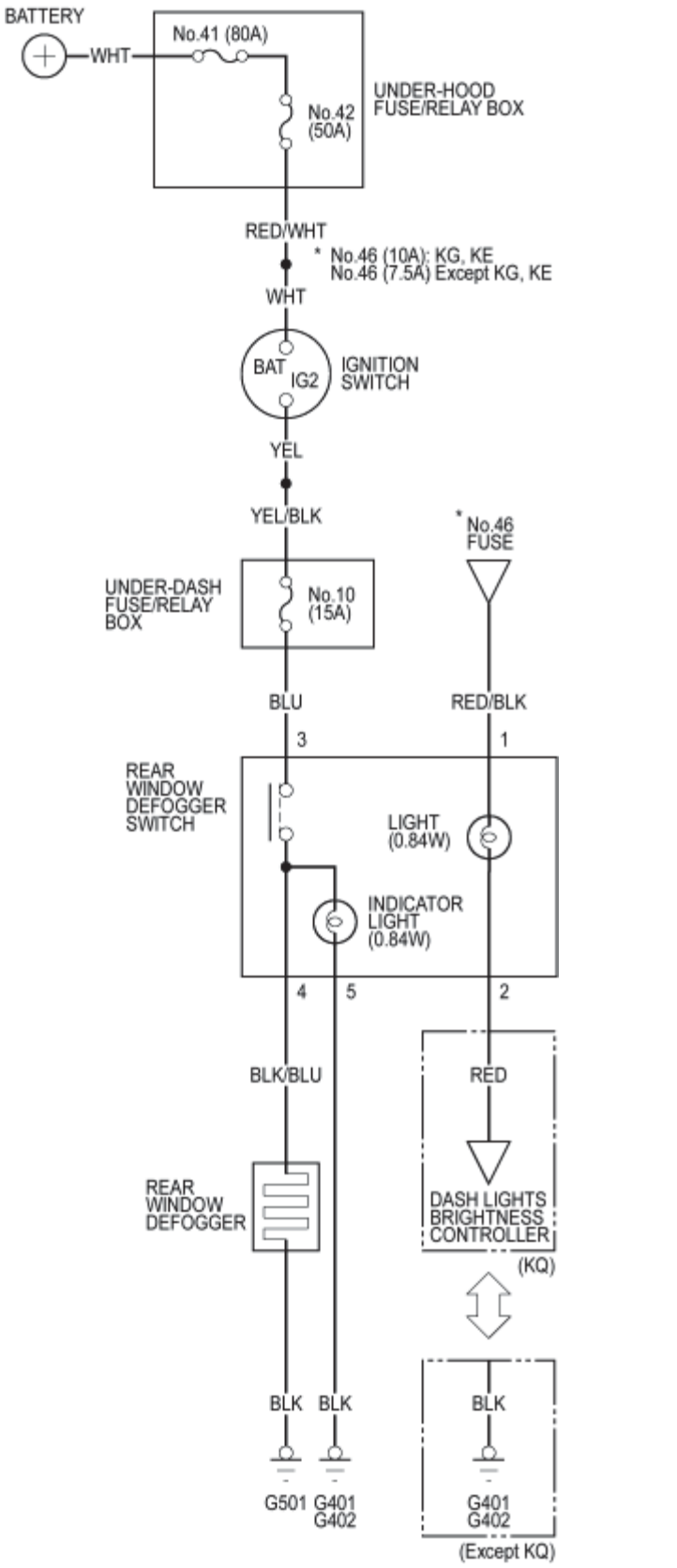
1. **SEAT BELT ALARM UNIT**
2. **BLK**
3. **RED/BLU**
4. **YEL**
5. **WHT/BLU**
6. Wire side of female terminals
7. **7P CONNECTOR**

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
2	BLK	Under all conditions	Check for continuity to ground: There should be continuity	• Poor ground (G401, G402) • An open in the wire
3	RED/BLU	Ignition switch ON (II) and driver's seat belt switch unbuckled	Check for voltage to ground: There should be 1V or less	• Poor ground (G401, G402) • Faulty seat belt switch • An open in the wire
4	YEL	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	• Blown No. 6 (7.5A) fuse in the under-dash fuse/relay box • An open in the wire
7	WHT/BLU	Under all conditions	Check for voltage to ground: There should be battery voltage	• Blown No. 23 (7.5A) fuse in the under-dash fuse/relay box • An open in the wire

NOTE: LHD type is shown, RHD type is similar

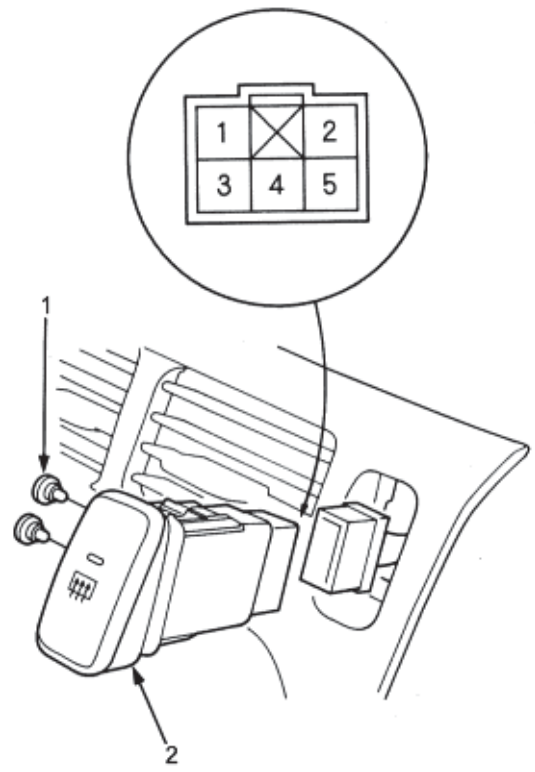


1. **REAR WINDOW DEFOGGER SWITCH**
   Test (**See Page** 23-F-3)
2. **REAR WINDOW DEFOGGER** (**See Page** 23-F-3)
   Function Test (**See Page** 23-F-4)
   Defogger Wire Repair (**See Page** 23-F-4)



1. Remove the centre panel from the dashboard (see section 20).
2. Disconnect the 5P connector from the switch.
3. Push the switch out from behind the centre panel.

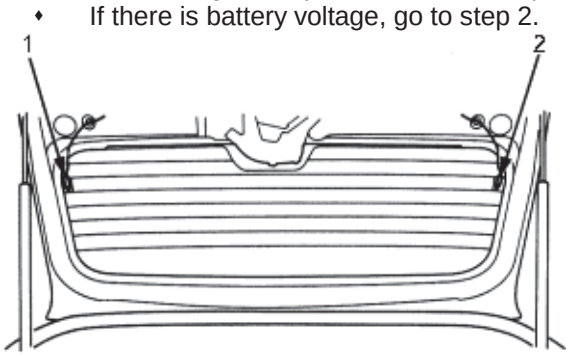
Terminal / Position	1		2	3	4		5
OFF	○	⊖	○		○	⊖	○
ON	○	⊖	○	○	○	⊖	○



1. BULB (0.84W x 2)
2. REAR WINDOW DEFOGGER SW1

NOTE: Be careful not to scratch or damage the defogger wires with the tester probe.

1. Check for voltage between the positive terminal and body ground with the ignition switch and defogger switch ON.
   There should be battery voltage.
   - If there is no voltage, check for:
     - Faulty defogger switch.
     - An open in the BLK/BLU wire.
     - Poor ground (G401, G402, G501).
   - If there is battery voltage, go to step 2.

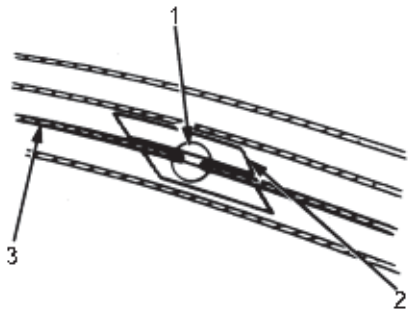


1. NEGATIVE TERMINAL
2. POSITIVE TERMINAL

2. Check for continuity between the negative terminal and body ground.
   If there is no continuity check for an open in the defogger ground wire.
3. Touch the voltmeter positive probe to the halfway point of each defogger wire and the negative probe to the negative terminal.
   There should be approximately 6V with the ignition switch and the defogger switch ON.
   - If the voltage is as specified, the defogger wire is OK.
   - If the voltage is not as specified, repair the defogger wire.
     - If it is more than 6V, there is a break in the negative half of the wire.
     - If it is less than 6V, there is a break in the positive half of the wire.

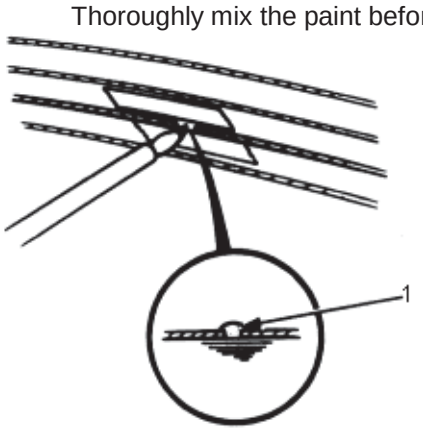
NOTE: To make an effective repair, the broken section must be no longer than one inch.

1. Lightly rub the area around the broken section with fine steel wool, then clean it with alcohol.



1. OPEN
2. CELLOPHANE TAPE
3. BROKEN WIRE

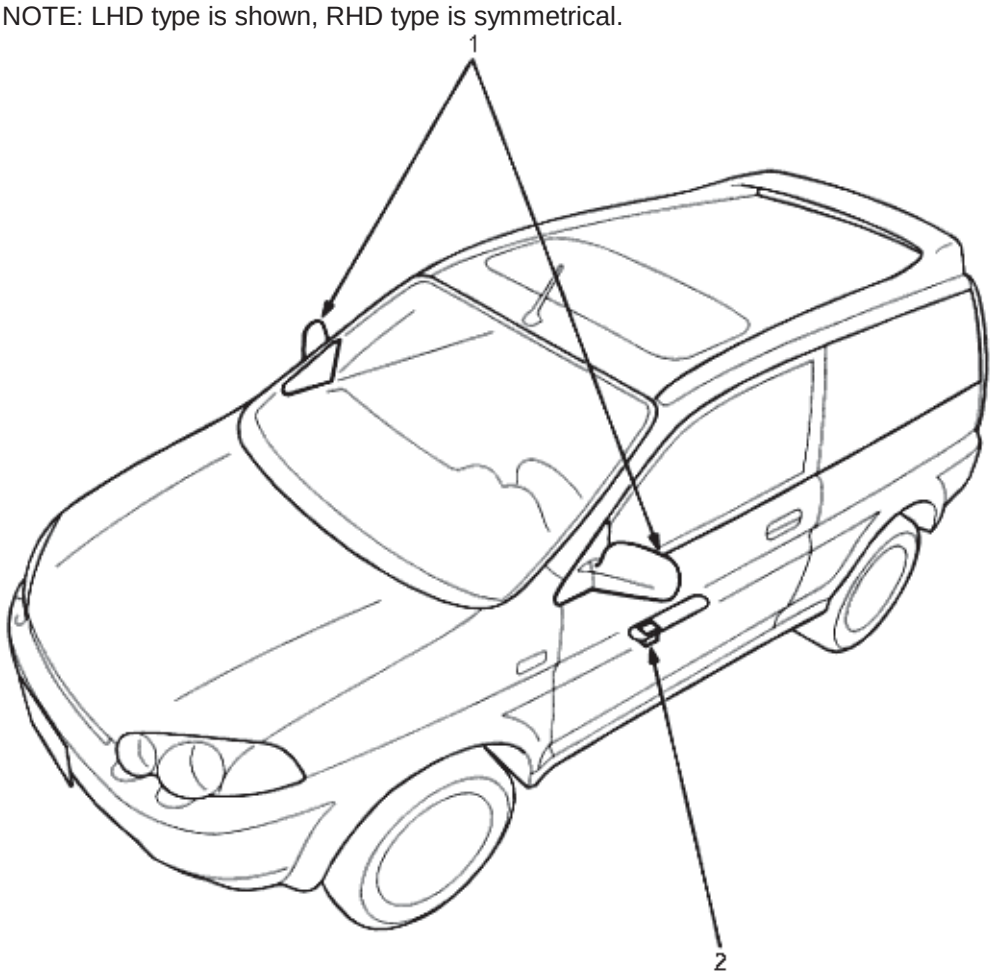
2. Carefully mask above and below the broken portion of the defogger wire with cellophane tape.
3. Using a small brush, apply a heavy coat of silver conductive paint extending about 1/8” on both sides of the break. Allow 25 minutes to dry. Thoroughly mix the paint before use.



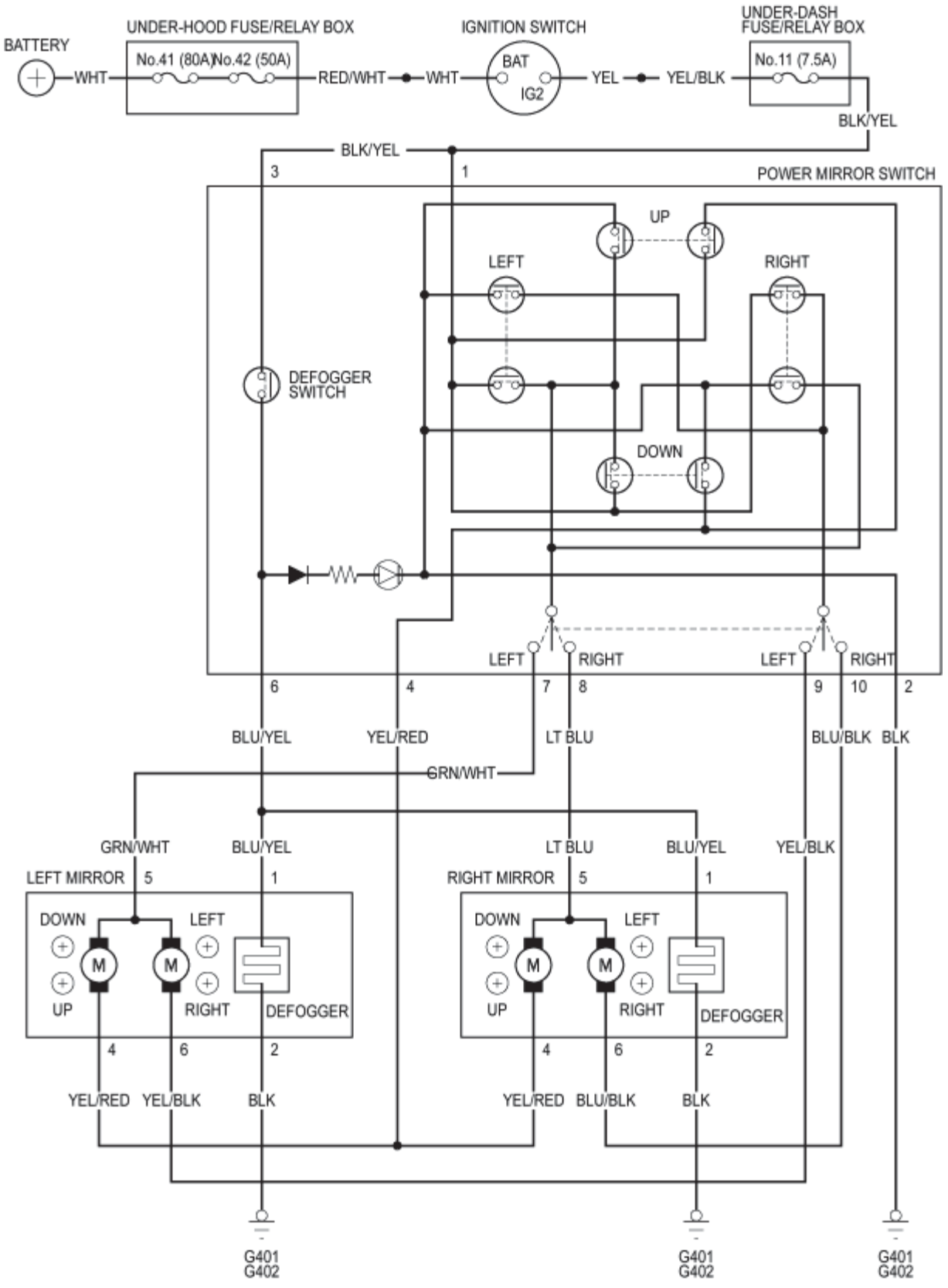
1. PAINT

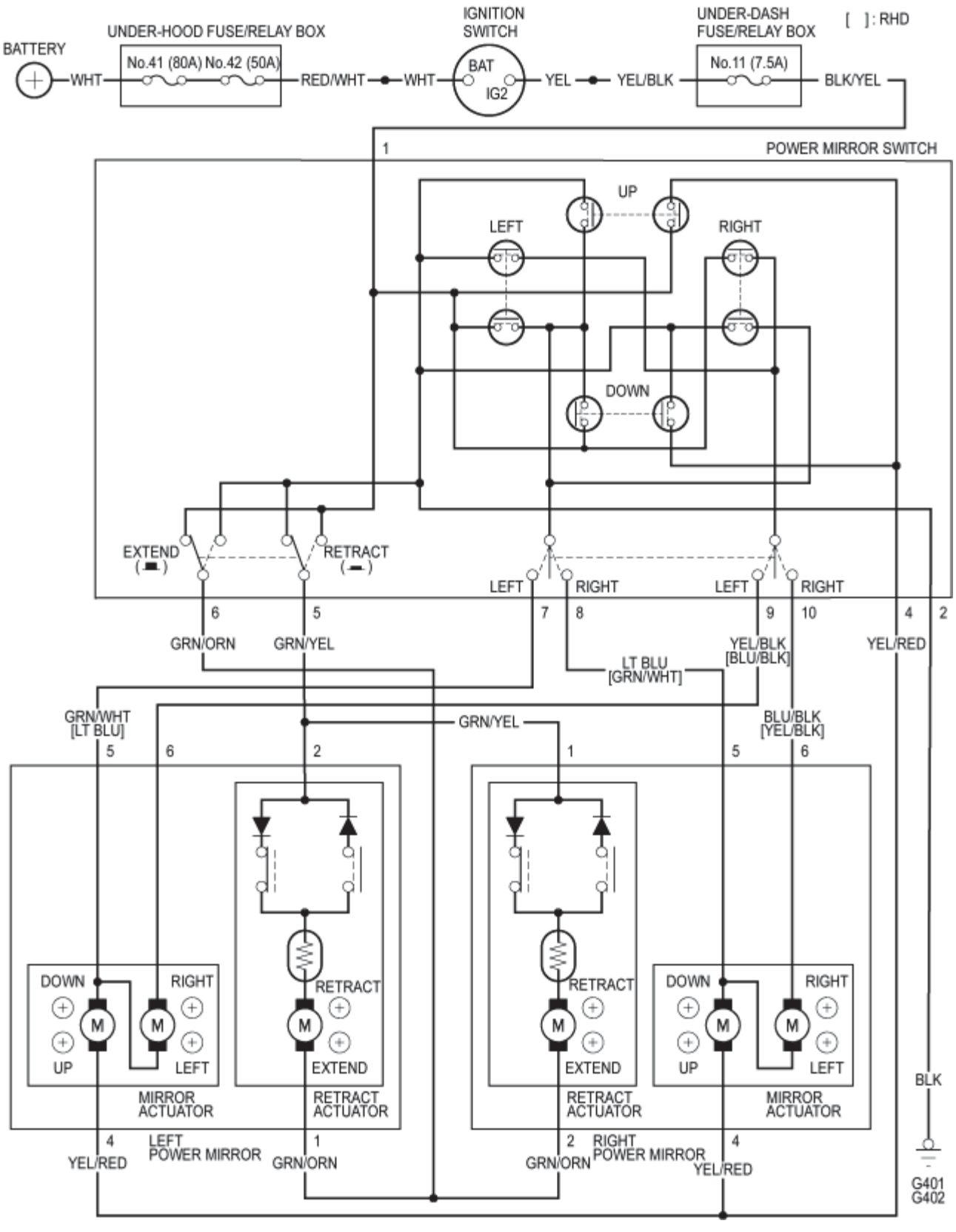
4. Check for continuity in the repaired wire.
5. Apply a second coat of paint in the same way. Let it dry for three hours before removing the tape.

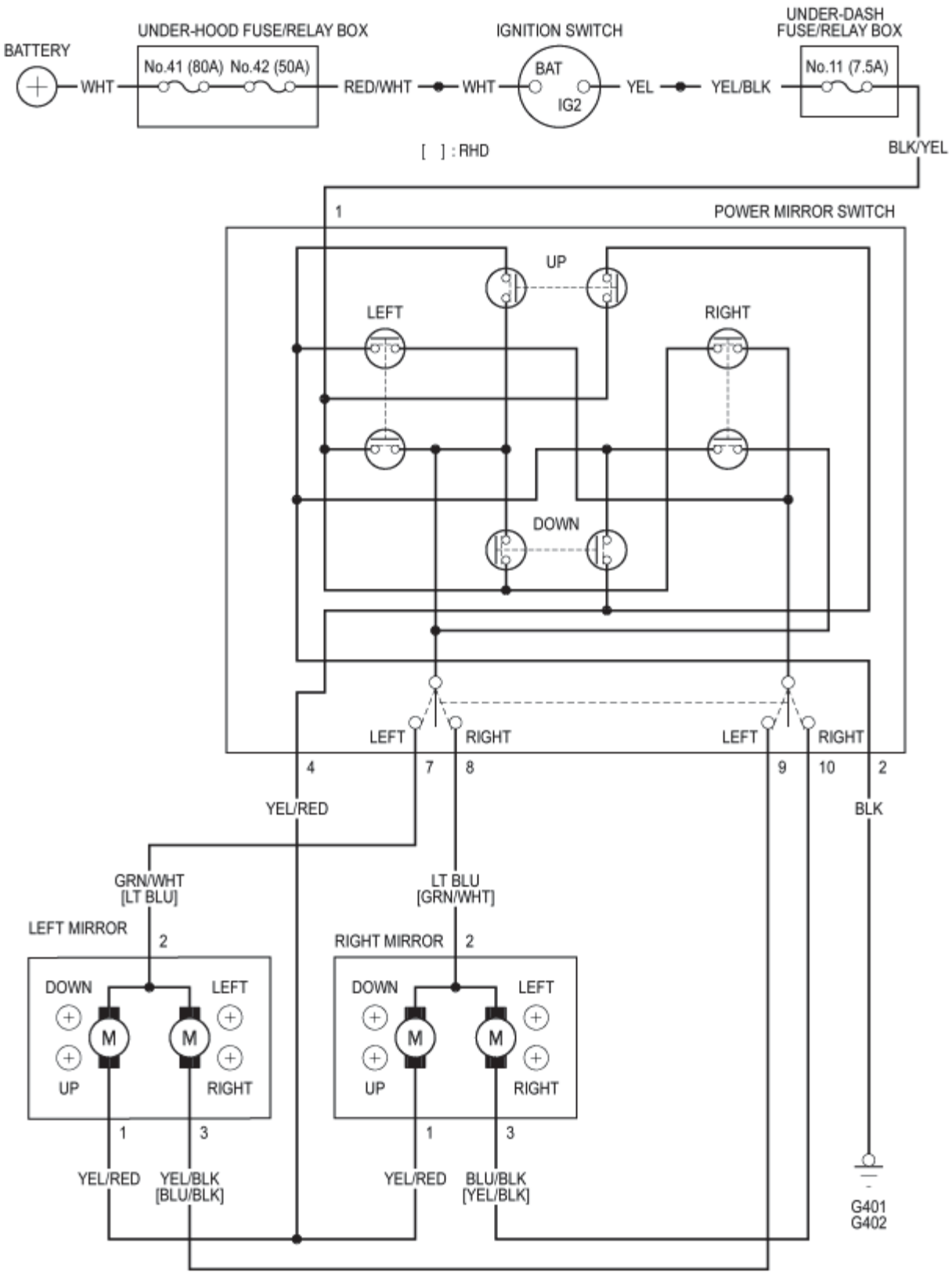
NOTE: LHD type is shown, RHD type is symmetrical.



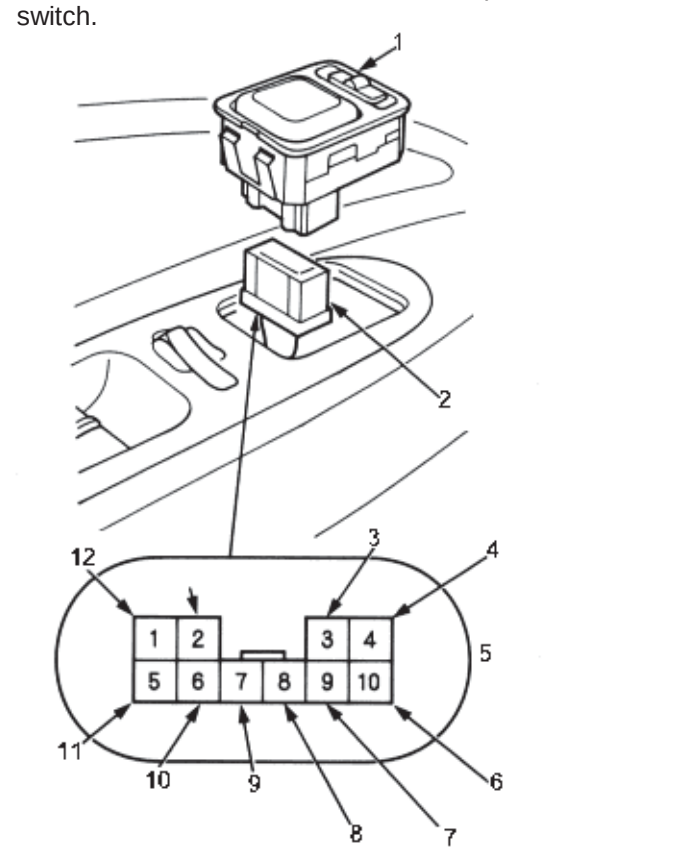
1. **POWER MIRROR**
   Function Test (**See Page** 23-F-9)
   Power Mirror Actuator Test (**See Page** 23-F-11)
   Replacement (section 20)
   Actuator Replacement (**See Page** 23-F-12)
2. **POWER MIRROR SWITCH**
   Test (**See Page** 23-F-10)


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No.11 (7.5A)
BLK/YEL
BLK/YEL
3
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DEFOGGER SWITCH
DOWN
LEFT
RIGHT
LEFT
RIGHT
LEFT
RIGHT
6
4
7
8
9
10
2
BLU/YEL
YEL/RED
LT BLU
BLU/BLK
BLK
GRN/WHT
GRN/WHT
BLU/YEL
LT BLU
BLU/YEL
YEL/BLK
LEFT MIRROR
5
1
RIGHT MIRROR
5
1
DOWN
LEFT
UP
RIGHT
DEFOGGER
DOWN
LEFT
UP
RIGHT
DEFOGGER
4
6
2
4
6
2
YEL/RED
YEL/BLK
BLK
YEL/RED
BLU/BLK
BLK
G401
G402
G401
G402
G401
G402


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No.11 (7.5A)
BLK/YEL
[ ] : RHD
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
EXTEND
RETRACT
LEFT
RIGHT
LEFT
RIGHT
6
5
7
8
9
10
4
2
GRN/ORN
GRN/YEL
YEL/BLK [BLU/BLK]
YEL/RED
LT BLU [GRN/WHT]
GRN/WHT [LT BLU]
GRN/YEL
BLU/BLK [YEL/BLK]
5
6
2
1
5
6
DOWN
RIGHT
UP
LEFT
M
RETRACT
EXTEND
MIRROR ACTUATOR
RETRACT ACTUATOR
4
YEL/RED
LEFT POWER MIRROR
1
GRN/ORN
2
GRN/ORN
RIGHT POWER MIRROR
4
YEL/RED
BLK
G401
G402


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No.11 (7.5A)
BLK/YEL
[ ] : RHD
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
LEFT
RIGHT
LEFT
RIGHT
4
7
8
9
10
2
YEL/RED
BLK
GRN/WHT
[LT BLU]
LT BLU
[GRN/WHT]
LEFT MIRROR
2
RIGHT MIRROR
2
DOWN
LEFT
UP
RIGHT
M
M
1
3
YEL/RED
YEL/BLK
[BLU/BLK]
YEL/RED
BLU/BLK
[YEL/BLK]
G401
G402

1. Remove the driver's door panel (see section 20).
2. Disconnect the 10P connector from the power mirror switch.



1. POWER MIRROR SWITCH
2. 10P CONNECTOR
3. BLK/YEL
4. YEL/RED
5. Wire side of female connectors
6. BLU/BLK [YEL/BLK]
7. YEL/BLK [BLU/BLK]
8. LT BLU [GRN/WHT]
9. GRN/WHT [LT BLU]
10. *1 BLU/YEL, *2 GRN/ORN
11. GRN/YEL
12. BLK/YEL
13. BLK

[ ]: RHD type
*1: With defogger
*2: With retractable power mirror

Mirror Test
Both Inoperative:

1. Check for voltage between the No. 1 terminal and body ground with the ignition switch ON (II).
   There should be battery voltage.
   - If there is no battery voltage, check for:
     - Blown No. 11 (7.5A) fuse in the under-dash fuse/relay box.
     - An open in the BLK/YEL wire.
   - If there is battery voltage, go to step 2.
2. Check for continuity between the No. 2 terminal and body ground.
   There should be continuity.
   - If there is no continuity, check for:
     - An open in the BLK wire.
     - Poor ground (G401, G402).
   - If there is continuity, check both mirrors individually as described in the next column.

Left mirror inoperative:
Connect the No. 1 terminal to the No. 7 terminal and the No. 4 (or No. 9) terminal to body ground with jumper wires. The left mirror should tilt down (or swing left) with the ignition switch ON (II).

- If the mirror does not tilt down (or does not swing left) check for an open in the No. 4 (or No. 9) terminal wire between the left mirror and the 10P connector. If the wire is OK, check the left mirror actuator.
- If the mirror neither tilts down nor swings left, repair the No. 7 terminal wire.
- If the mirror works properly, check the mirror switch.

Right mirror inoperative:
Connect the No. 1 terminal to the No. 8 terminal and the No. 4 (or No. 10) terminal to body ground with jumper wires. The right mirror should tilt down (or swing left) with the ignition switch ON (II).

- If the mirror does not tilt down (or does not swing left) check for an open in the No. 4 (or No. 10) terminal wire between the left mirror and the 10P connector. If the wire is OK, check the left mirror actuator.
- If the mirror neither tilts down nor swings left, repair the No. 8 terminal wire.
- If the mirror works properly, check the mirror switch.

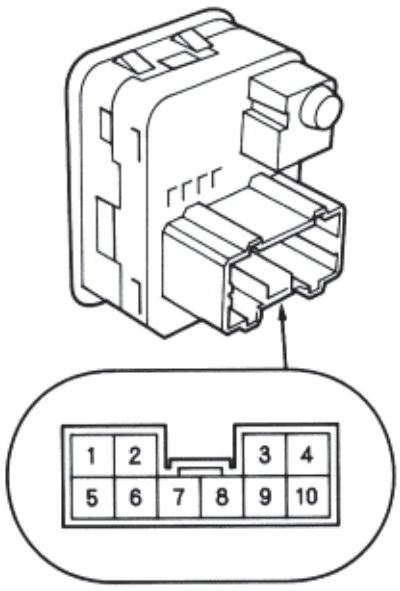
Defogger Test:
Connect the No. 3 and No. 6 terminals with a jumper wire and check for voltage between the No. 3 terminal and body ground.. There should be battery voltage and both mirrors should warm up with the ignition switch ON (II).

- If there is no voltage or neither warms up, check for:
  - An open in the BLK/YEL and BLU/YEL wires.
  - Blown No. 11 (7.5A) in the under-dash fuse/relay box.
  - Poor ground (G401, G402).
- If only one fails to warm up, check its defogger.
- If both fail to warm up, check the defogger switch.

Retractable Mirror Inoperative:
Connect the No. 1 (BLK/YEL) terminal of the 10P connector to the No. 6 (GRN/ORN) terminal and the No. 5 (GRN/YEL) terminal to body ground with jumper wires. The mirrors should extend when the ignition switch is turned ON (II).
Connect the No. 1 (BLK/YEL) terminal of the 10P connector to the No. 5 (GRN/YEL) terminal and the No. 6 (GRN/ORN) terminal to body ground with jumper wires. The mirrors should retract when the ignition switch is turned ON (II).

- If one of the mirrors does not retract or extend, check the retractable mirror actuator.
- If the mirrors operate properly, replace the switch.

1. Remove the driver's door panel (see section 20).
2. Disconnect the 10P connector from the power mirror switch.



Check for continuity between the terminals in each switch position according to the table.

Mirror Switch

	Terminal / Position	1	2	4	7	8	9	10
L	UP	○		○	○			
	DOWN	○	○	○				
	LEFT	○	○		○		○	
	RIGHT	○	○		○		○	
R	UP	○	○	○		○		
	DOWN	○	○	○		○		
	LEFT	○	○			○		○
	RIGHT	○	○			○		○

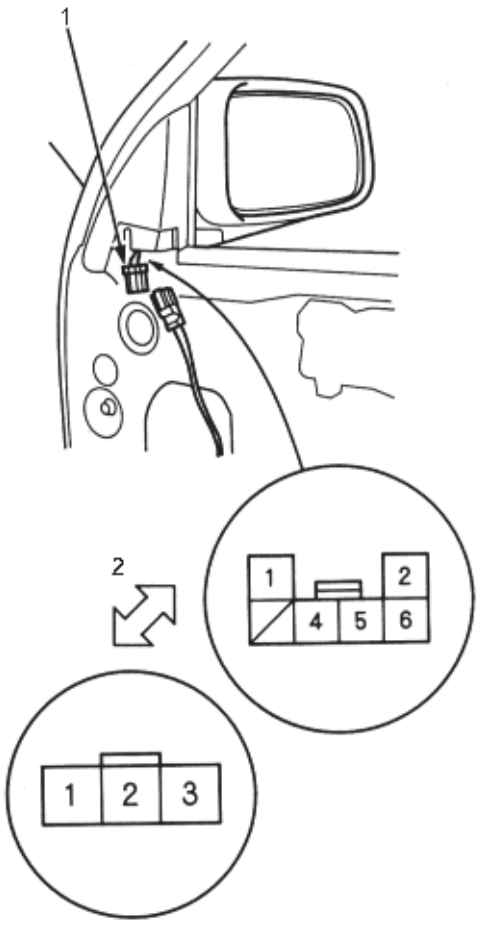
Retract Switch

Terminal / Position	1	2	5	6
RETRACT	○	○	○	
EXTEND	○	○	○	○

Defogger Switch

Terminal / Position	3	6		LED	2
ON	○	○	▶	⊗	○
OFF		○	▶	⊗	○

1. Remove the door panel (see section 20).
2. Disconnect the 3P or 6P connector from the power mirror.



1. 3P OR 6 P CONNECTOR
2. Wire side of female terminals

- **6P CONNECTOR: With defogger or retractable power mirror**
- **3P CONNECTOR: Without defogger and retractable power mirror**

3. Check actuator operation by connecting power and ground according to the table.

Terminal / Position	4 (1)	5 (2)	6 (3)
TILT UP	⊕	⊖	
TILT DOWN	⊖	⊕	
SWING LEFT		⊕	⊖
SWING RIGHT		⊖	⊕

{ }: Without defogger and retractable power mirror

Defogger Test:

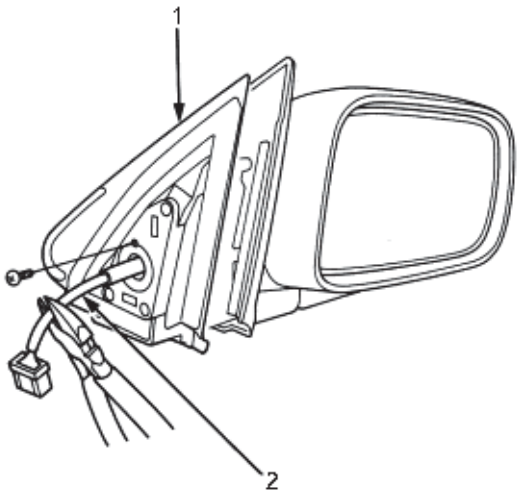
4. Check for continuity between the No. 1 and No. 2 terminals of the 6P connector. There should be continuity.
5. If the mirror fails to work properly, replace the mirror actuator.

Retract Actuator:

Terminals / Position	2 (1)	1 (2)
Mirrors retracts from extend position.	⊕	⊖
Mirrors extends from retract position.	⊖	⊕

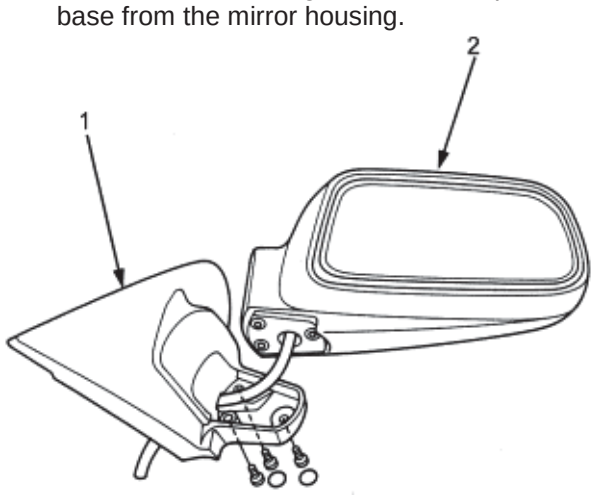
{ }: Right side

1. Remove the power mirror from the door (see section 20) and disconnect the 6P or 3P connector.
2. Cut the wire harness with wire cutter.
3. Remove the seat base.



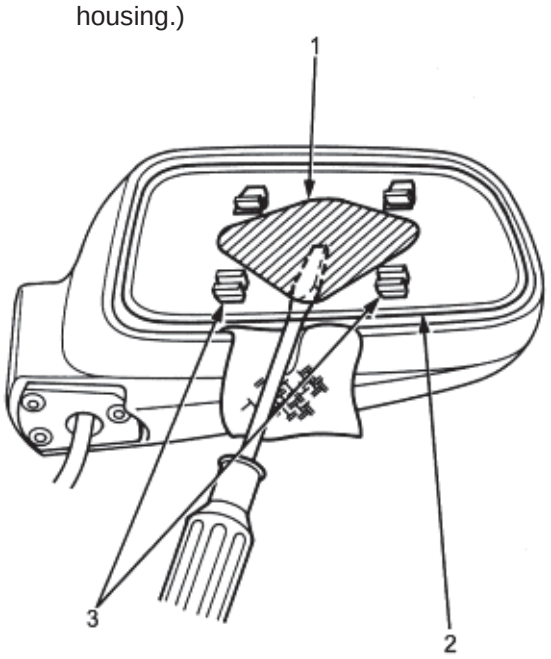
1. SEAT BASE
2. WIRE HARNESS

4. Remove the mounting screws and separate the mirror base from the mirror housing.



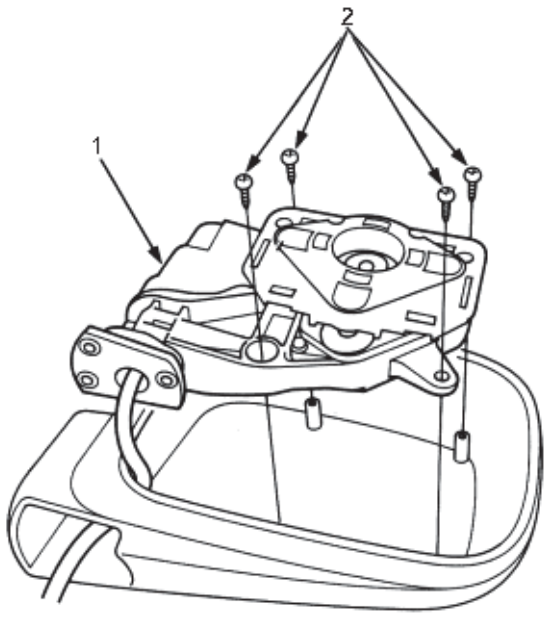
1. MIRROR BASE
2. MIRROR HOUSING

5. Insert a flat tip screwdriver into the two slots. The mirror is fastened to the actuator with double sided adhesive tape. Twist the screwdriver gently to release the mirror. (Protect the paint with a towel inserted between the screwdriver and the mirror housing.)



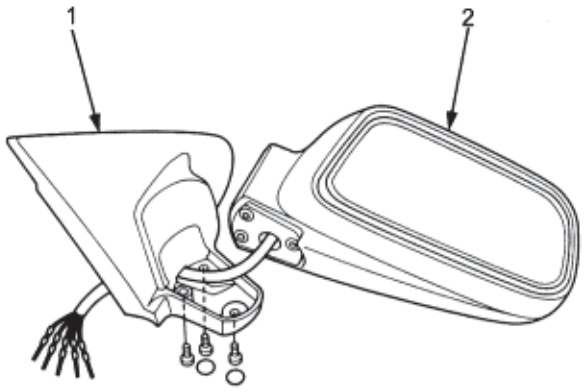
1. ADHESIVE TAPE
2. MIRROR HOLDER
3. LOCATOR CLIPS

6. Remove the screws and the actuator from the housing.



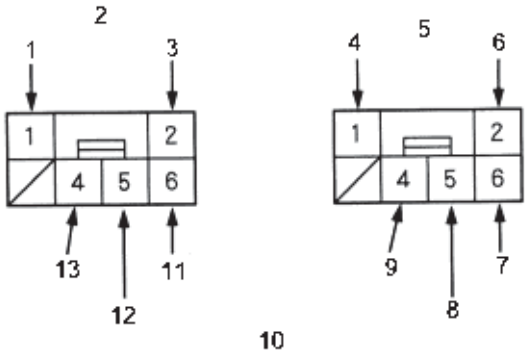
1. ACTUATOR
2. SCREWS

7. Install in the reverse order of removal. Replace the seat base and three screws with new ones.
8. Insert the terminals into the connector in the original arrangement as shown below.



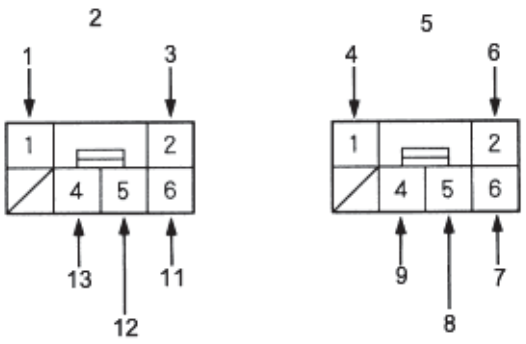
1. MIRROR BASE
2. MIRROR HOUSING

With mirror defogger:



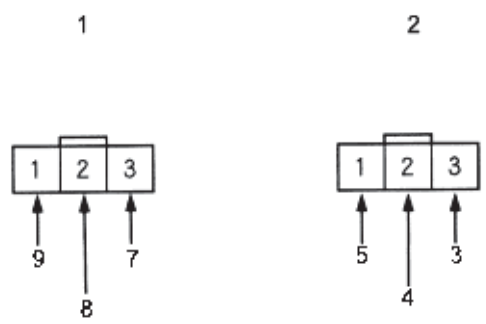
1. BLU/RED
2. LEFT
3. BLK/WHT
4. BLU/RED
5. RIGHT
6. BLK/WHT
7. BLU/BLK
8. BLU/GRN
9. YEL/WHT
10. Wire side of female terminals
11. YEL/BLK
12. YEL/RED
13. YEL/WHT

With retractable power mirror:



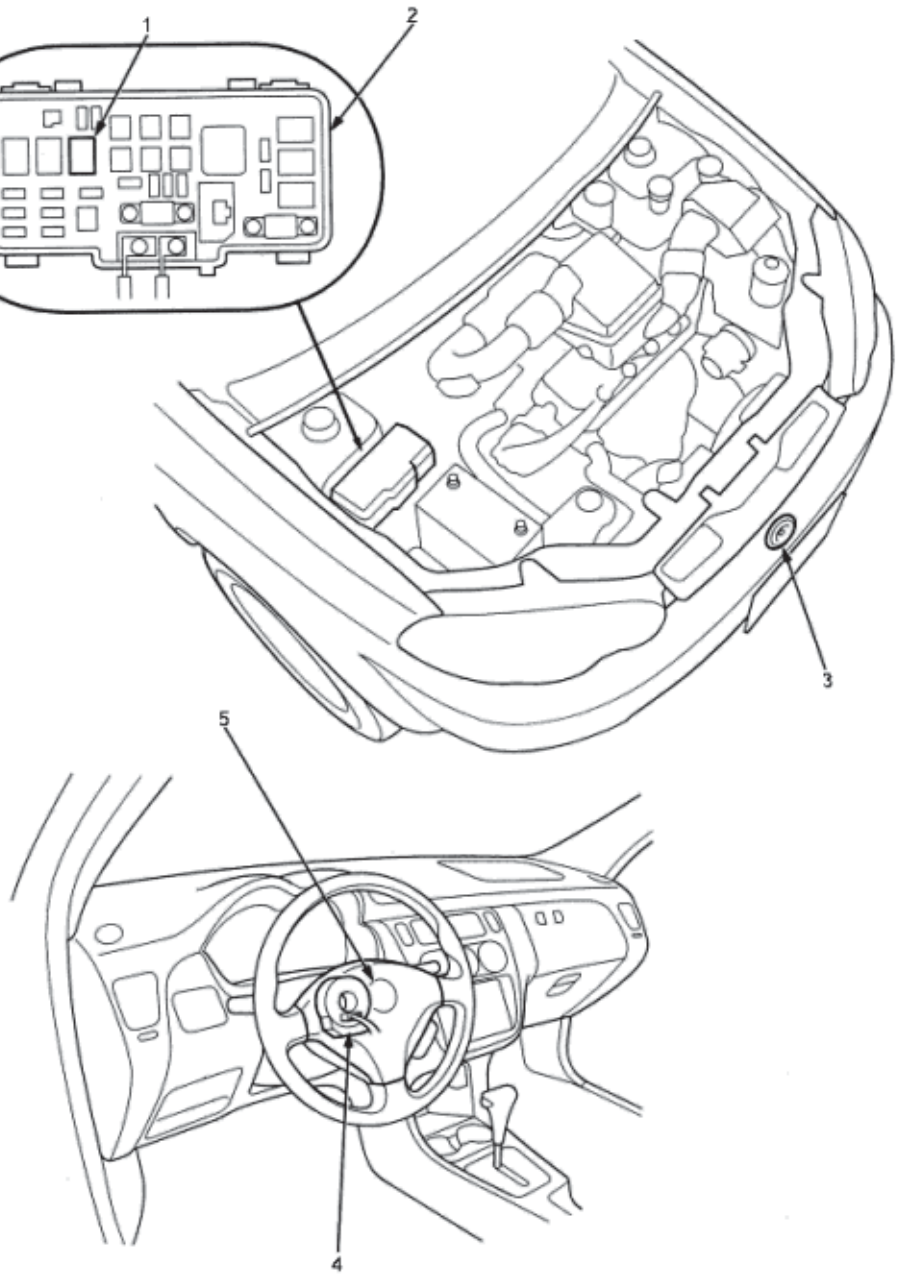
1. BLK
2. LEFT
3. WHT
4. WHT
5. RIGHT
6. BLK
7. BLU/BLK
8. BLU/GRN
9. YEL/WHT
10. Wire side of female terminals
11. YEL/BLK
12. YEL/RED
13. YEL/WHT

Without mirror defogger and retractable power mirror

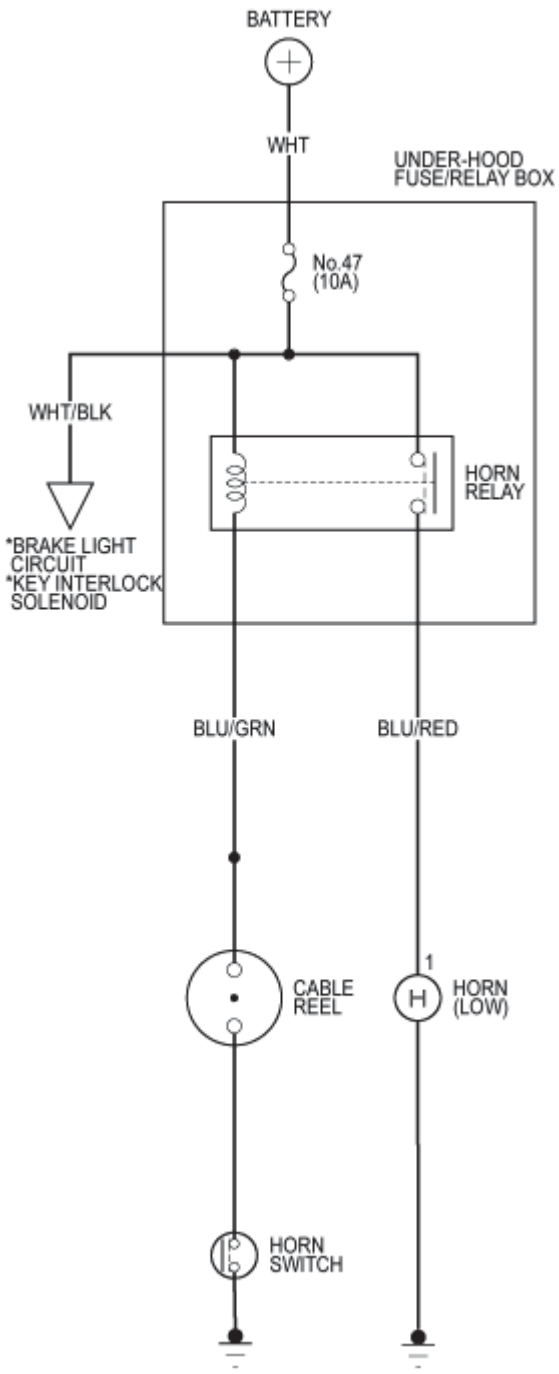


1. LEFT
2. RIGHT
3. BLU/BLK
4. BLU/GRN
5. YEL/WHT
6. Wire side of female terminals
7. YEL/BLK
8. YEL/RED
9. YEL/WHT

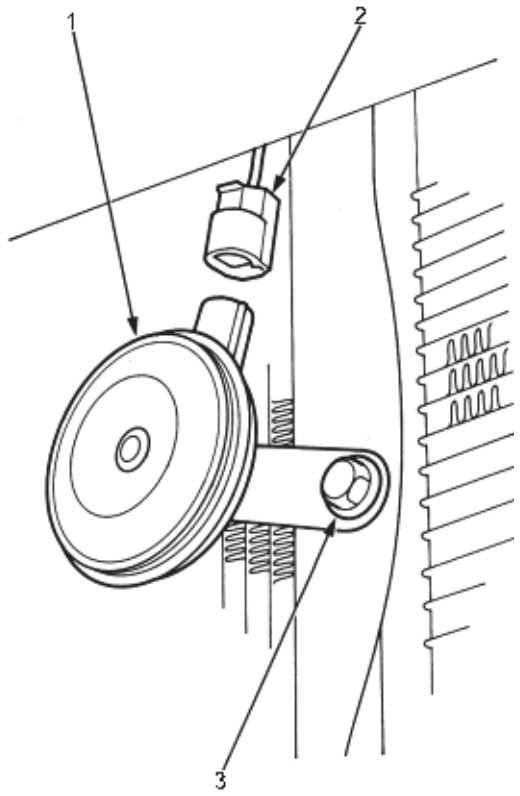
SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
NOTE: LHD type is shown, RHD type is similar.



1. **HORN RELAY**
   Test (**See Page** 23-B-3)
2. **UNDER-HOOD FUSE/RELAY BOX**
3. **HORN**
   Test (**See Page** 23-F-15)
4. **CABLE REEL**
   (See section 24)
5. **HORN SWITCH**
   Test (**See Page** 23-F-16)



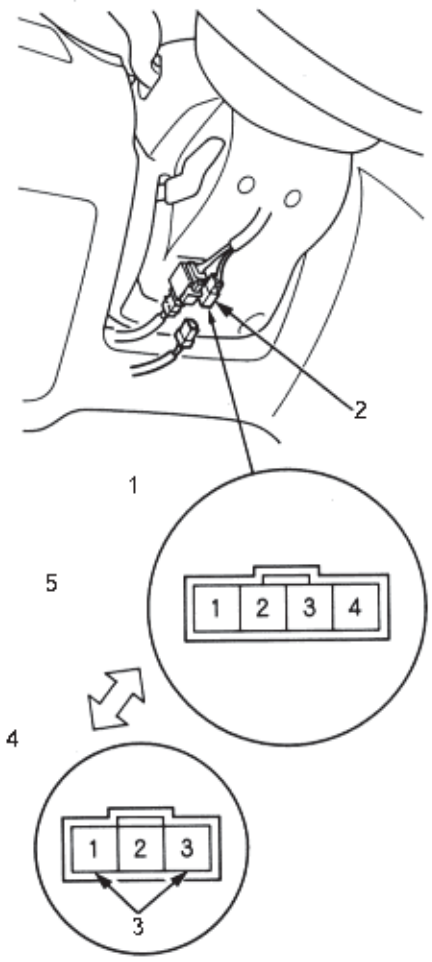
1. Disconnect the 1P connector from the horn.



1. HORN
2. 1P CONNECTOR
3. GROUNDING

2. Test the horn by connecting battery power to the terminal and grounding the bracket. The horn should sound.
3. If it fails to sound, replace it.

1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 4P [3P] connector from the cable reel.



1. CVT
2. 4P [3P] CONNECTOR
3. Not used
4. M/T
5. Wire side of female terminals

[ ]: M/T

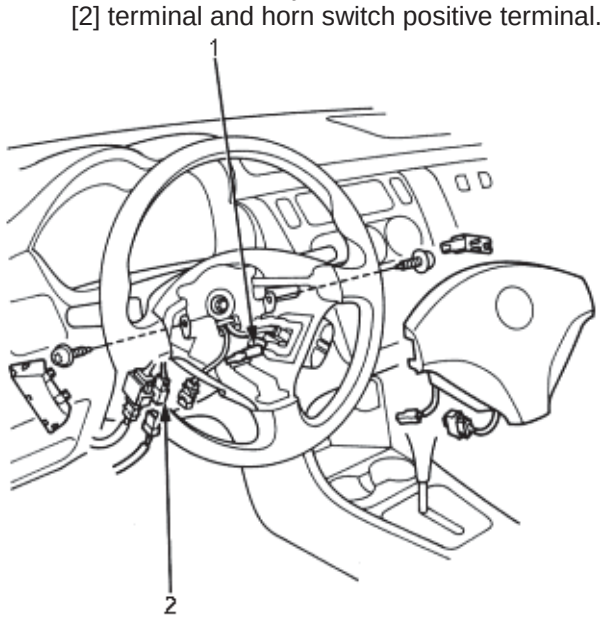
3. Check for continuity between the cable reel No. 4 [2] terminal and body ground in each switch position.

Terminal / Position	4 [2]	Body ground
Pushed	○———	———○
Released		

[ ]: M/T

- If there is continuity, the horn switch is OK.
- If there is no continuity, go to step 4.

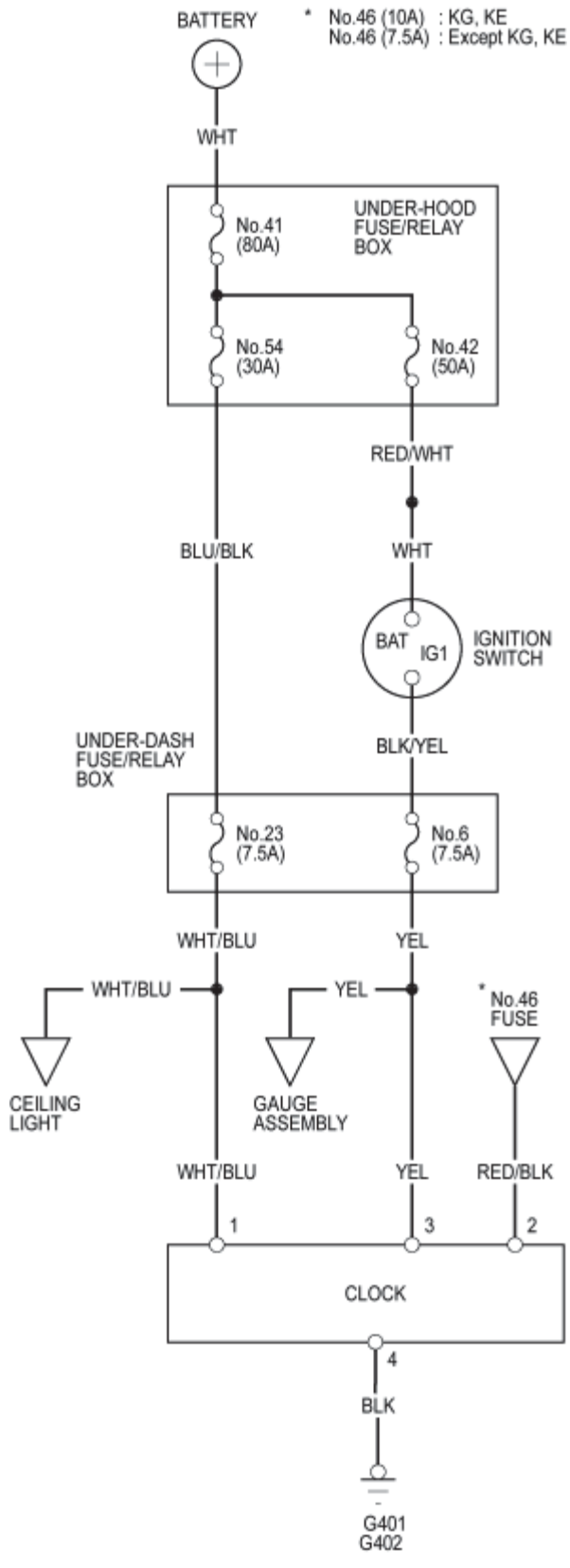
4. Remove the SRS airbag assembly (see section 24)
5. Check for continuity between the cable reel No. 4 [2] terminal and horn switch positive terminal.



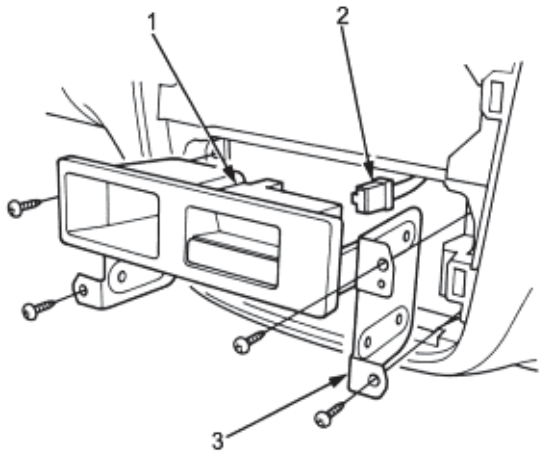
1. HORN SWITCH POSITIVE TERMINAL
2. CABLE REEL 4P [3P] CONNECTOR

[ ]: M/T

- If there is continuity, replace the horn switch (SRS airbag assembly, see section 24).
- If there is no continuity, replace the cable reel (see section 24) and confirm the proper operation.

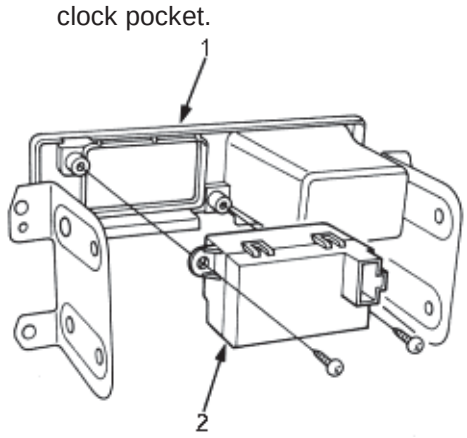

BATTERY
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
WHT
No.41 (80A)
UNDER-HOOD FUSE/RELAY BOX
No.54 (30A)
No.42 (50A)
RED/WHT
BLU/BLK
WHT
BAT
IG1
IGNITION SWITCH
UNDER-DASH FUSE/RELAY BOX
BLK/YEL
No.23 (7.5A)
No.6 (7.5A)
WHT/BLU
YEL
WHT/BLU
YEL
* No.46 FUSE
CEILING LIGHT
GAUGE ASSEMBLY
WHT/BLU
YEL
RED/BLK
1
3
2
CLOCK
4
BLK
G401
G402

1. Remove the centre panel from the dashboard (see section 20).
2. Remove the radio panel (see section 20).
3. Remove the screws from the bracket.
4. Disconnect the 4P connector from the clock.

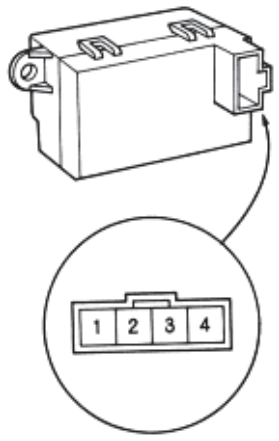


1. CLOCK
2. 4P CONNECTOR
3. BRACKET

5. Remove the screws, then remove the clock from the clock pocket.

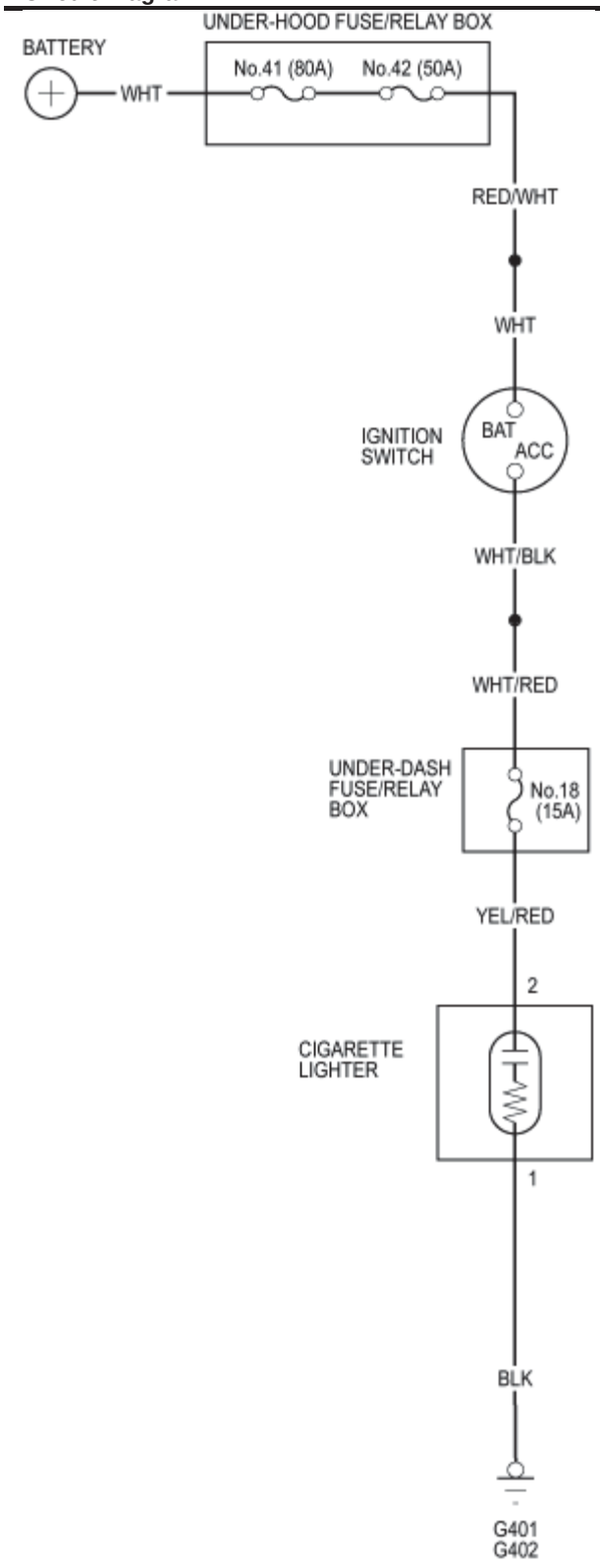


1. CLOCK POCKET
2. CLOCK

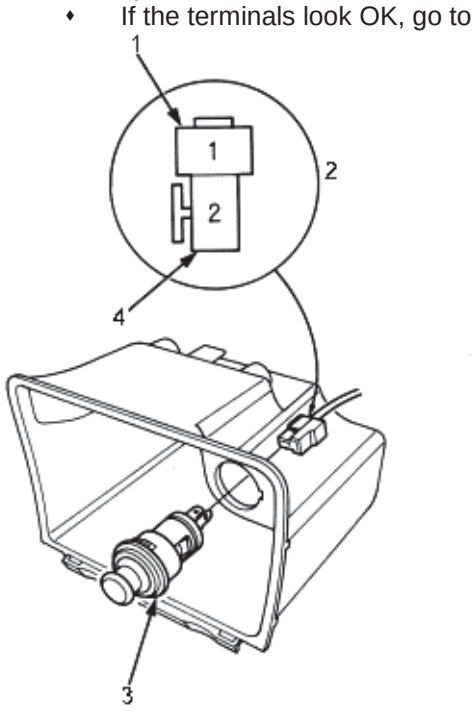


Terminals

Cavity	Wire	Connect to
1	WHT/BLU	Constant power (Time memory)
2	RED/BLK	Lights-on signal
3	YEL	IG1 (Main clock power supply)
4	BLK	Ground



1. Remove the centre panel from the dashboard (see section20).
2. Remove the radio panel (see section 20).
3. Disconnect the 2P connector from the cigarette lighter.
4. Inspect the connector 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.

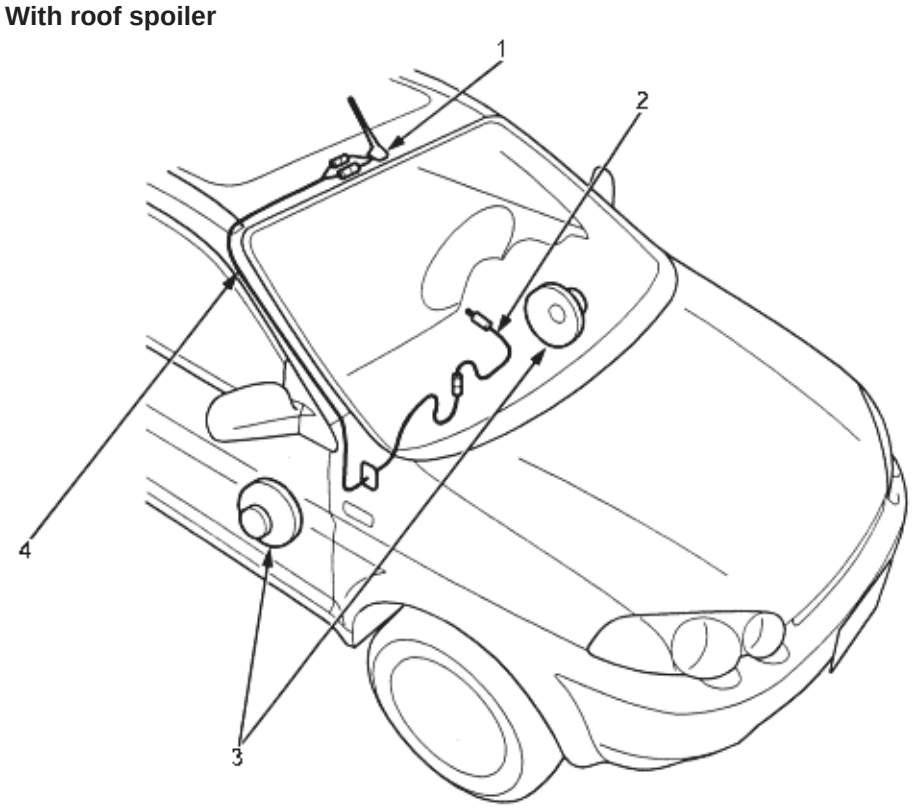


1. BLK
2. Wire side of female terminals
3. CIGARETTE LIGHTER
4. YEL/RED

5. Turn the ignition switch ON (II) and check for voltage between the No. 2 and No. 1 terminals.
   - There should be battery voltage.
   - If there is no battery voltage, check for:
     - Blown No. 18 (15A) fuse in the under-dash fuse/relay box
     - Poor ground (G401, G402)
     - An open in the wire.
6. If the test proves OK, replace the cigarette lighter.

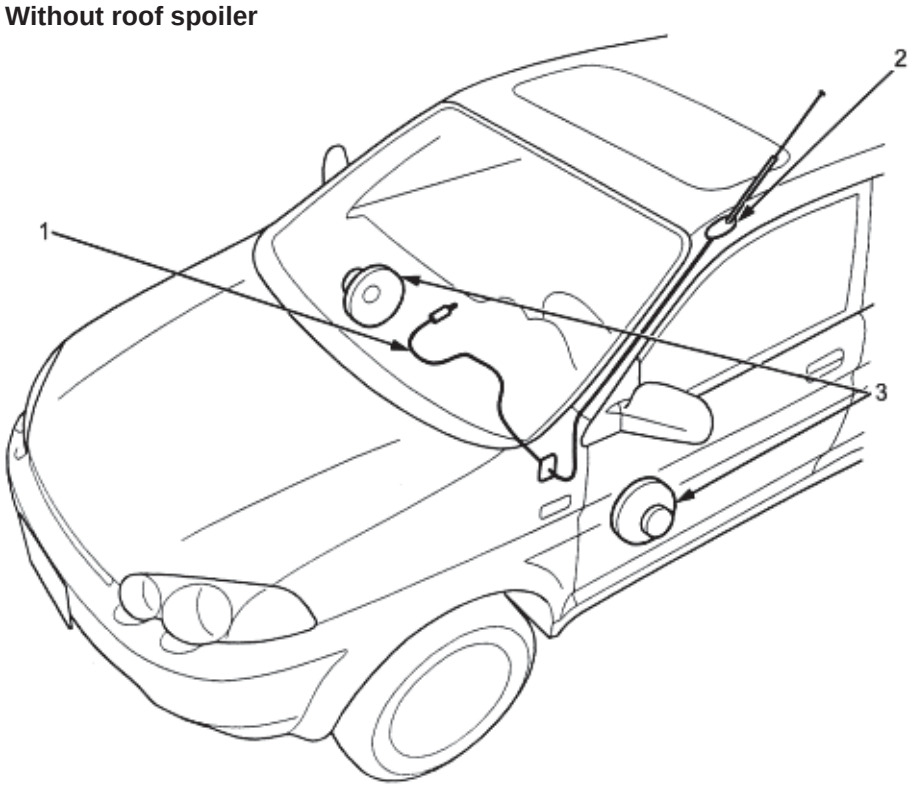
NOTE: LHD type is shown, RHD type is similar.

With roof spoiler



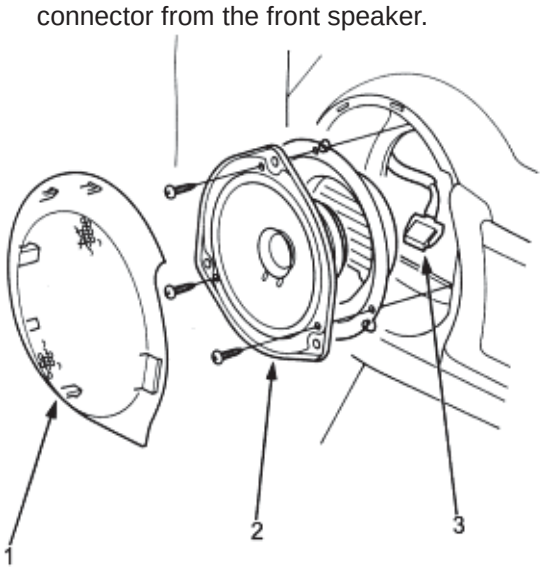
1. **ANTENNA MAST**
   Replacement (**See Page** 23-F-21)
2. **ANTENNA SUB-LEAD**
3. **FRONT SPEAKER**
   Replacement (**See Page** 23-F-21)
4. **ANTENNA LEAD**

Without roof spoiler



1. **ANTENNA LEAD**
2. **ANTENNA MAST**
   Replacement (**See Page** 23-F-21)
3. **FRONT SPEAKER**
   Replacement (**See Page** 23-F-21)

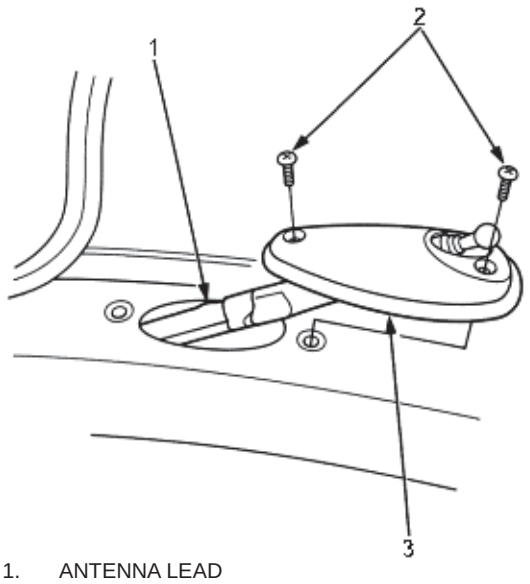
1. Remove the speaker cover.
2. Remove the three screws, then disconnect the 2P connector from the front speaker.



1. SPEAKER COVER
2. FRONT SPEAKER
3. 2P CONNECTOR

Without roof spoiler:

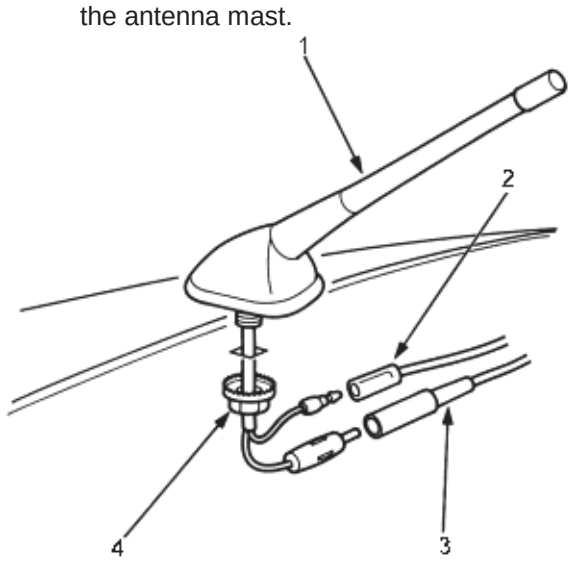
1. Remove the two mounting screws, then remove the antenna mast.



1. ANTENNA LEAD
2. MOUNTING SCREW
3. ANTENNA MAST

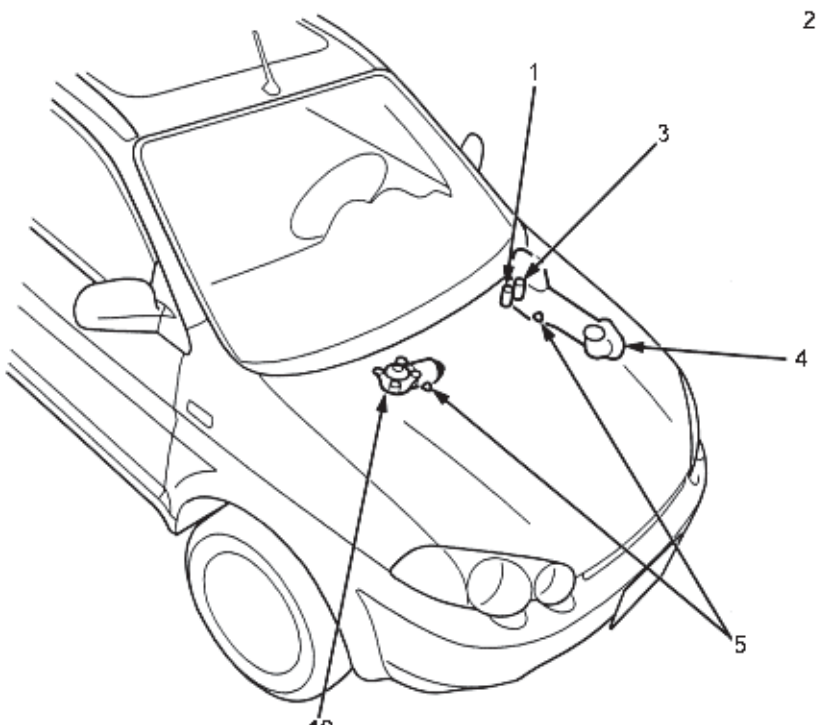
With roof spoiler:

1. Remove the front ceiling light (**See Page** 23-D-26).
2. Remove the mounting nut from the antenna mast.
3. Disconnect the connector and antenna lead from the antenna mast.

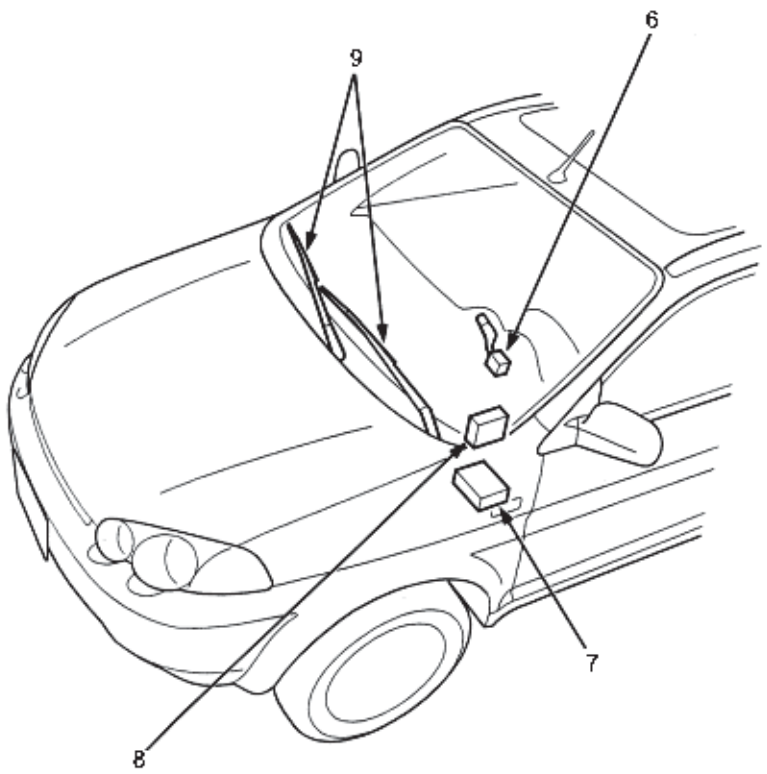


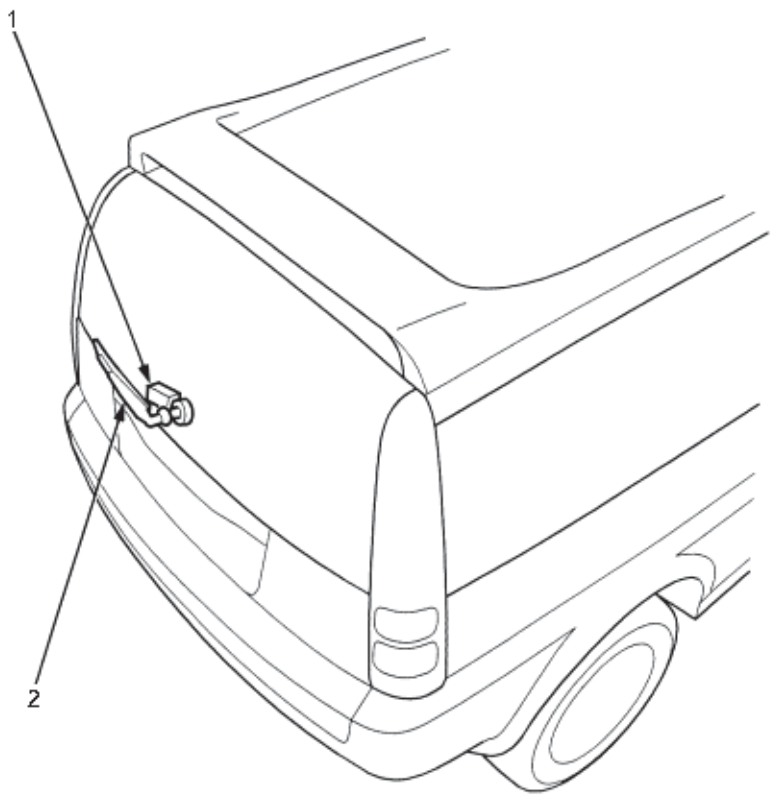
1. ANTENNA MAST
2. CONNECTOR
3. ANTENNA LEAD
4. MOUNTING NUT

NOTE: LHD type is shown, RHD type is similar.(**See Page** 20-41).

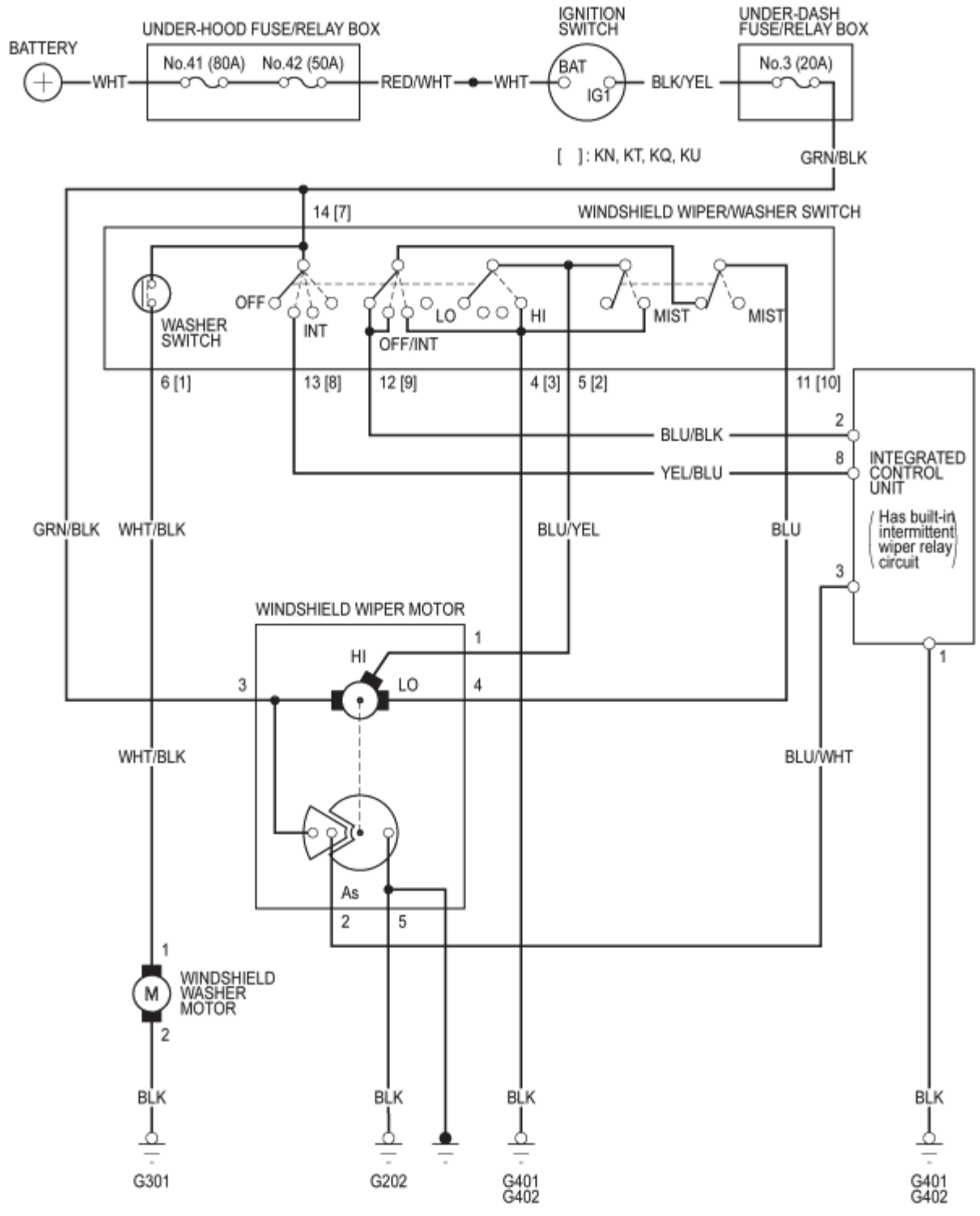


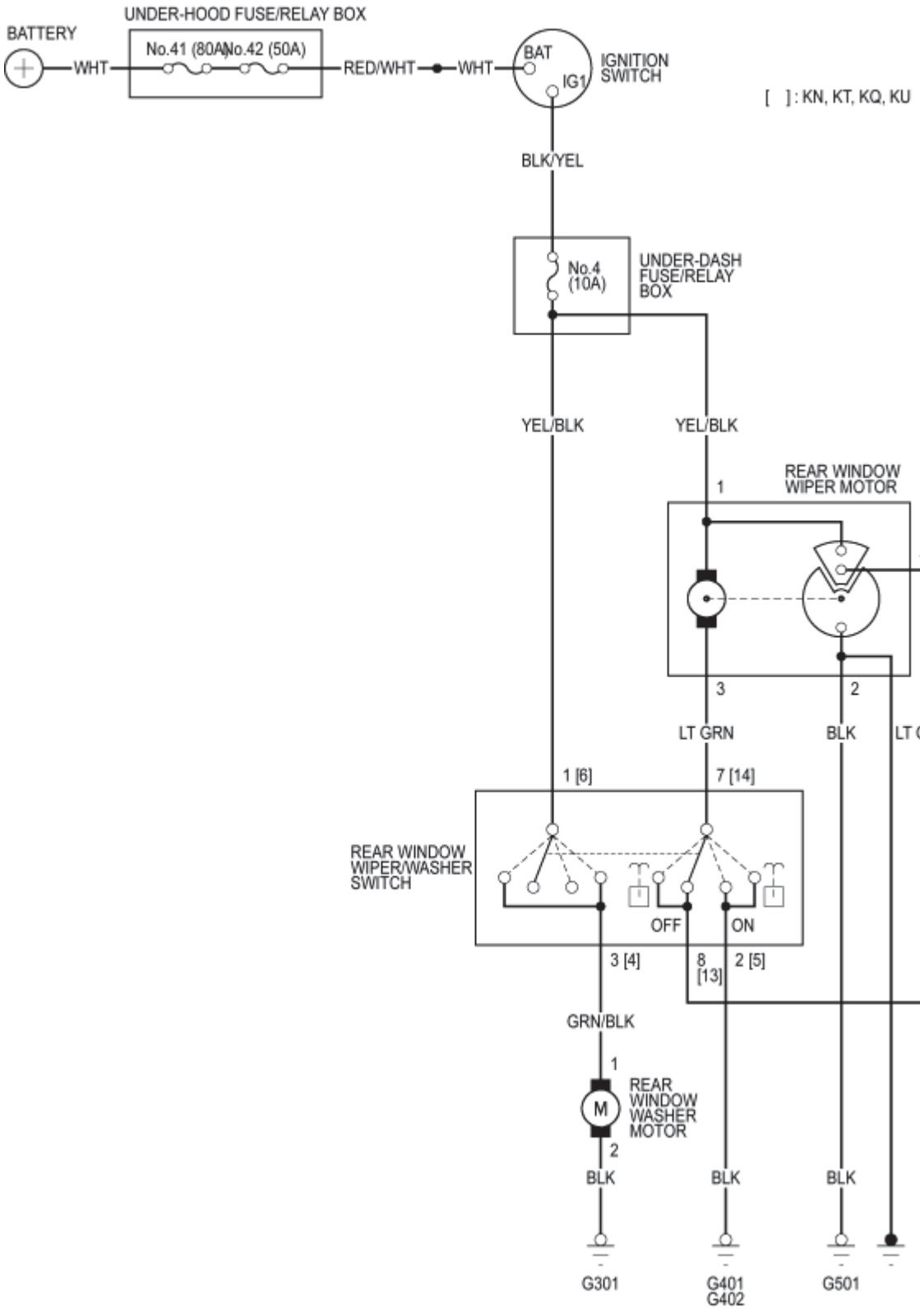
1. **REAR WINDOW WASHER MOTOR**
   Test (**See Page** 23-F-32).
2. **WINDSHIELD WASHER TUBE**
   Replacement (**See Page** 23-F-33)
   REAR WASHER TUBE
   Replacement (**See Page** 23-F-34).
3. **WINDSHIELD WASHER MOTOR**
   Test (**See Page** 23-F-32).
4. **WASHER RESERVOIR**
   Replacement (**See Page** 23-F-32).
5. **WINDSHIELD WASHER NOZZLE**
   Replacement (**See Page** 23-F-33).
6. **WINDSHIELD/REAR WINDOW WIPER/WASHER SWITCH**
   Test (**See Page** 23-F-27).
7. **INTERMITTENT WIPER RELAY CIRCUIT**
   (In the integrated control unit)
   Input Test (**See Page** 23-E-4).
8. **REAR WINDOW INTERMITTENT WIPER CONTROL UNIT (KG AND KE MODELS)**
   Input Test (**See Page** 23-F-28).
9. **WINDSHIELD WIPER ARMS and LINKAGE**
   Replacement (**See Page** 23-F-30).
10. **WINDSHIELD WIPER MOTOR**
    Test (**See Page** 23-F-29).
    Replacement (**See Page** 23-F-30).

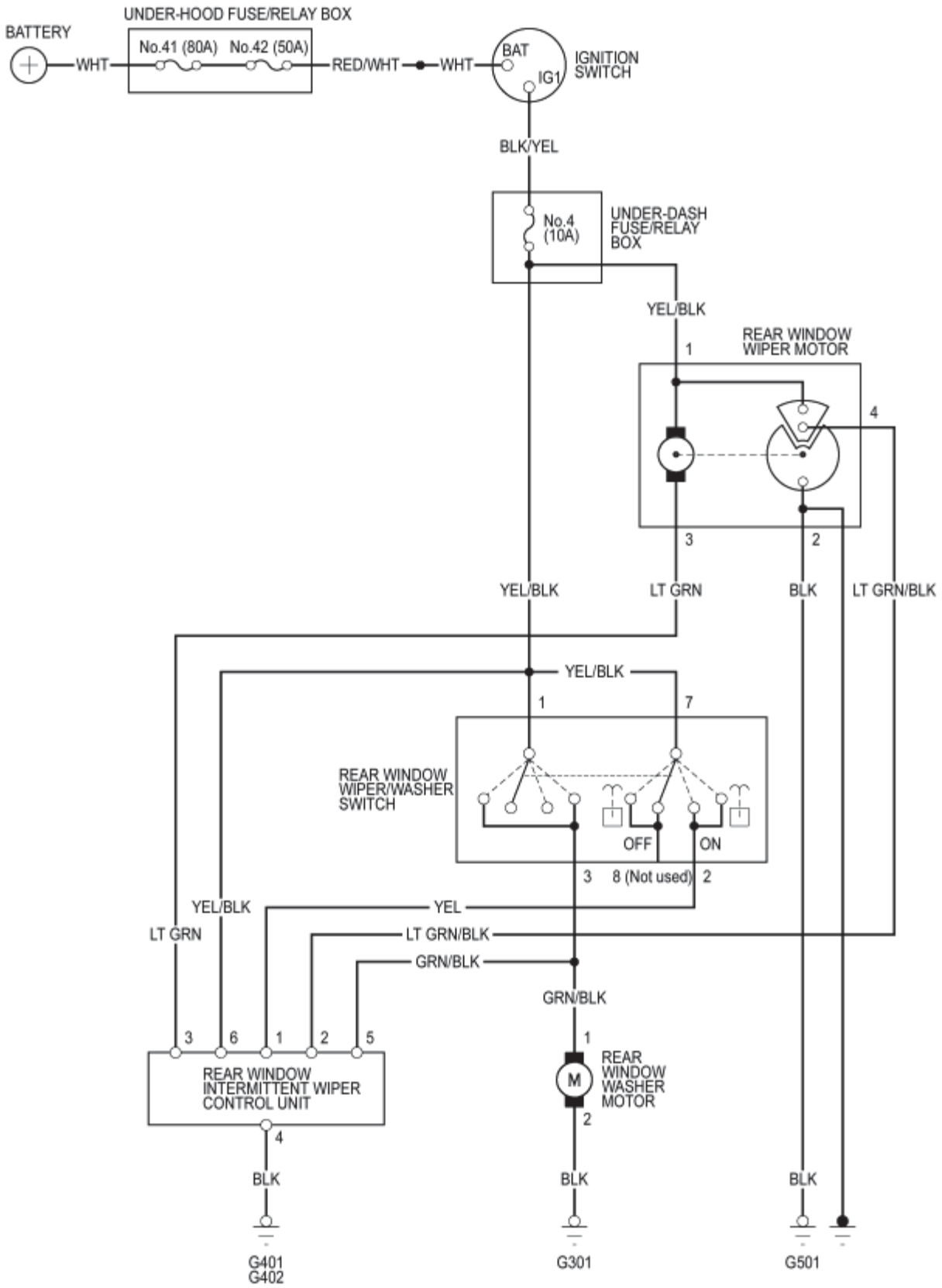




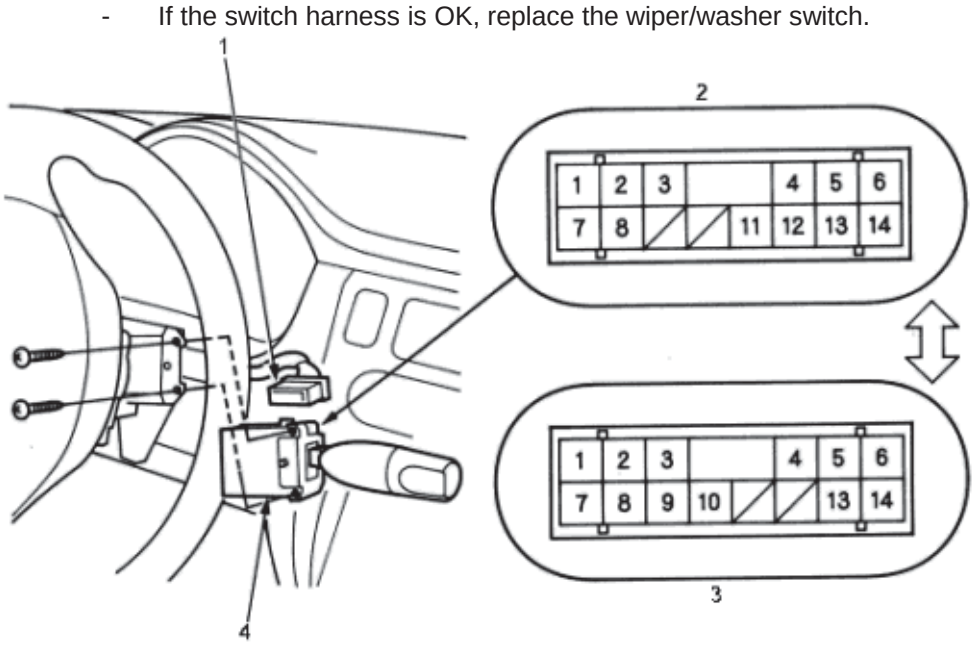
1. **REAR WINDOW WIPER MOTOR**
   Test (**See Page** 23-F-31)
   Replacement (**See Page** 23-F-31)
2. **REAR WIPER ARMS and LINKAGE**
   Replacement (**See Page** 23-F-31)


BATTERY
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
WHT
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.3 (20A)
[ ] : KN, KT, KQ, KU
GRN/BLK
14 [7]
WINDSHIELD WIPER/WASHER SWITCH
WASHER SWITCH
OFF
INT
LO
HI
MIST
MIST
OFF/INT
6 [1]
13 [8]
12 [9]
4 [3]
5 [2]
11 [10]
BLU/BLK
2
YEL/BLU
8
INTEGRATED CONTROL UNIT
Has built-in intermittent wiper relay circuit
3
1
GRN/BLK
WHT/BLK
BLU/YEL
BLU
WINDSHIELD WIPER MOTOR
1
HI
LO
3
4
WHT/BLK
BLU/WHT
As
2
5
1
M
WINDSHIELD WASHER MOTOR
2
BLK
BLK
BLK
BLK
G301
G202
G401
G402
G401
G402


BATTERY
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
WHT
RED/WHT
WHT
BAT
IG1
IGNITION SWITCH
[ ] : KN, KT, KQ, KU
BLK/YEL
No.4 (10A)
UNDER-DASH FUSE/RELAY BOX
YEL/BLK
YEL/BLK
REAR WINDOW WIPER MOTOR
1
4
3
2
LT GRN
BLK
LT GRN/BLK
1 [6]
7 [14]
REAR WINDOW WIPER/WASHER SWITCH
OFF
ON
3 [4]
8 [13]
2 [5]
GRN/BLK
1
M
REAR WINDOW WASHER MOTOR
2
BLK
BLK
BLK
G301
G401
G402
G501


BATTERY
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
WHT
RED/WHT
WHT
BAT
IG1
IGNITION SWITCH
BLK/YEL
No.4 (10A)
UNDER-DASH FUSE/RELAY BOX
YEL/BLK
REAR WINDOW WIPER MOTOR
1
4
3
2
YEL/BLK
LT GRN
BLK
LT GRN/BLK
YEL/BLK
1
7
REAR WINDOW WIPER/WASHER SWITCH
OFF
ON
3
8 (Not used)
2
YEL/BLK
YEL
LT GRN
LT GRN/BLK
GRN/BLK
GRN/BLK
3
6
1
2
5
1
REAR WINDOW INTERMITTENT WIPER CONTROL UNIT
M
REAR WINDOW WASHER MOTOR
2
4
BLK
BLK
BLK
G401
G402
G301
G501

1. Remove the steering column covers (see section 17).
2. Disconnect the 14P connector from the wiper/washer switch, then remove the two screws and the switch.
3. Check for continuity between the terminals in each switch position according to the table.
   - If there is continuity, the switch is OK.
   - If there is no continuity, check for continuity between the switch harnesses.
     - If the switch harness is OK, replace the wiper/washer switch.



1. **14P CONNECTOR**
2. KG, KY, KE models
3. KN, KT, KQ, KU models
4. **WIPER/WASHER SWITCH**

Windshield Wiper/Washer Switch:

Position \ Terminal	6 [1]	5 [2]	4 [3]	14 [7]	13 [8]	12 [9]	11 [10]
OFF						○	○
INT				○	○	○	○
LO			○				○
HI		○	○				
Mist switch "ON"		○	○				
Washer switch "ON"	○			○			

[ ]: KN, KT, KQ, KU models

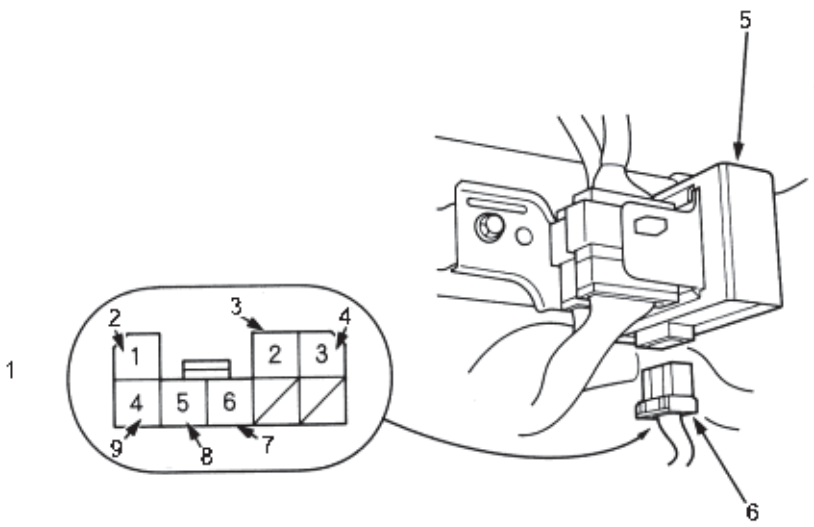
Rear Window Wiper/Washer Switch:

Position \ Terminal	3 [4]	2 [5]	1 [6]	8 [13]	7 [14]
Washer switch "ON" (Wiper switch OFF)	○		○	○	○
OFF				○	○
ON		○			○
Washer switch "ON" (Wiper switch "ON")	○	○	○		○

[ ]: KN, KT, KQ, KU models

Rear Window Intermittent Wiper Control Unit Input Test (KG and KE models)

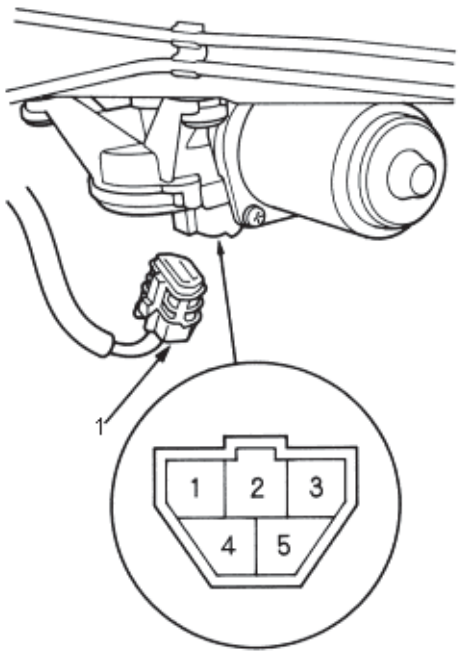
1. Remove the driver's lower pocket (see section 20).
2. Disconnect the 8P connector from the control unit.
3. Inspect the connector and socket terminals to make sure they are all making good contact.
   - ♦ If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
   - ♦ If all the input tests are OK, the control unit must be faulty, replace it.
     - If a test indicates a problem, find and correct the cause, then recheck the system.
     - If all the input tests OK, the control unit must be faulty, replace it.



1. Wire side of female terminals
2. **YEL**
3. **LT GRN/BLK**
4. **LT GRN**
5. **REAR WINDOW INTERMITTENT WIPER CONTROL UNIT**
6. **8P CONNECTOR**
7. **YEL/BLK**
8. **GRN/BLK**
9. **BLK**

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
4	BLK	Under all conditions	Check for continuity to ground: There should be continuity	♦ Poor ground (G401, G402) ♦ An open in the wire
6	YEL/BLK	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage	♦ Blown No 4 (10A) fuse in the under-dash fuse/relay box. ♦ An open in the wire
1	YEL	Ignition switch ON (II) rear window wiper/washer switch ON	Check for voltage to ground: There should be battery voltage	♦ Blown No 4 (10A) fuse in the under-dash fuse/relay box. ♦ Faulty rear window wiper/washer relay ♦ An open in the wire
2	LT GRN/BLK	Ignition switch ON (II) wiper arm to park position	Check for voltage to ground: There should be battery voltage	♦ Blown No 4 (10A) fuse in the under-dash fuse/relay box. ♦ Faulty rear window wiper motor ♦ An open in the wire
3	LT GRN	Ignition switch ON (II)	Connect to ground: The rear window wiper motor should run	♦ Blown No 4 (10A) fuse in the under-dash fuse/relay box. ♦ Faulty rear window wiper motor ♦ An open in the wire
5	GRN/BLK	Ignition switch ON (II) rear window wiper/washer switch ON	Check for voltage to ground: There should be battery voltage	♦ Blown No 4 (10A) fuse in the under-dash fuse/relay box. ♦ Faulty rear window wiper/washer relay ♦ An open in the wire

1. Open the hood.
2. Disconnect the 5P connector from the windshield wiper motor.



1. 5P CONNECTOR

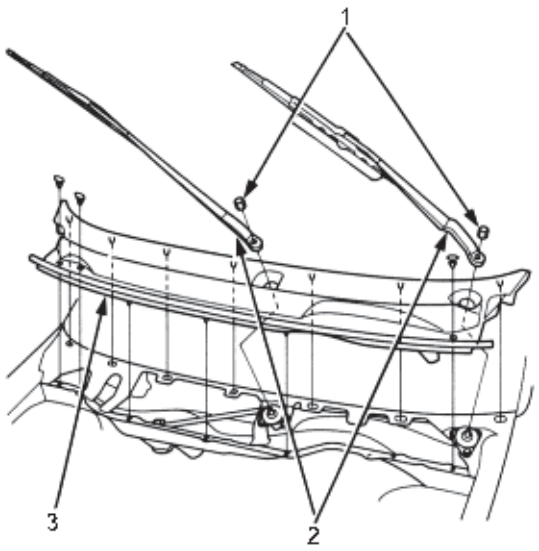
3. Test the motor by connecting battery power and ground according to the table.

Terminal / Position	1	4	3
LOW SPEED		⊖	⊕
HIGH SPEED	⊖		⊕

If the motor does not run or fails to run smoothly, replace it.

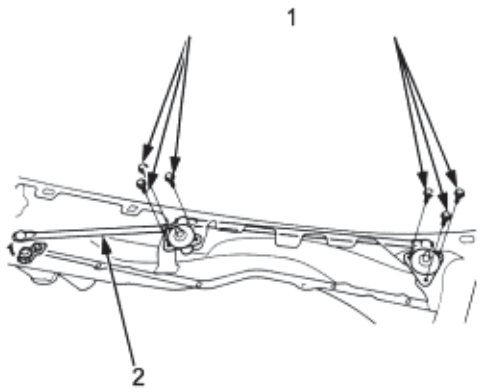
4. Connect an analog voltmeter between the No. 5 (+) and No. 3 (-) terminals and run the motor at low or high speed.
The voltmeter should indicate 0V and 4V or less alternately.

1. Open the hood and remove the cap nuts and the wiper arms.
   NOTE: Remove the wiper arms carefully without damaging the hood.



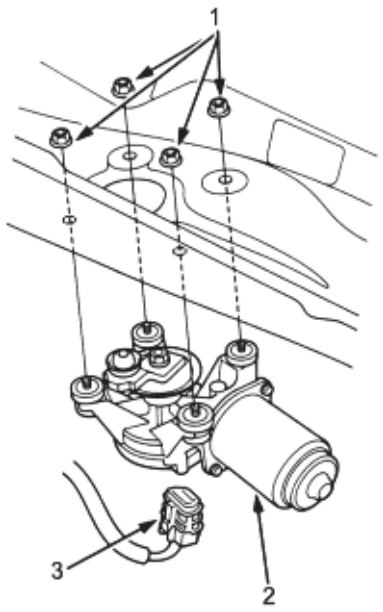
1. 10 x 1.25 mm, 18 Nm (1.8 kgf/m, 13 lbf/ft)
2. WIPER ARMS
3. COWL COVER

2. Remove the hood seal and cowl cover.
3. Remove the bolts and windshield wiper linkage assembly.



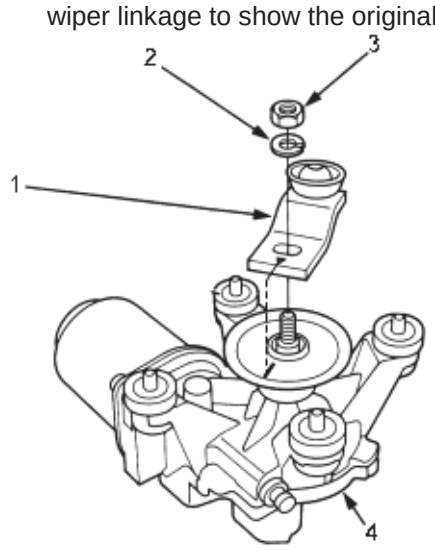
1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. WINDSHIELD WIPER LINKAGE ASSEMBLY

4. Remove the four mounting nuts, then disconnect the 5P connector from the windshield wiper motor.



1. 6 x 1.0 mm, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. WINDSHIELD WIPER MOTOR
3. 5P CONNECTOR

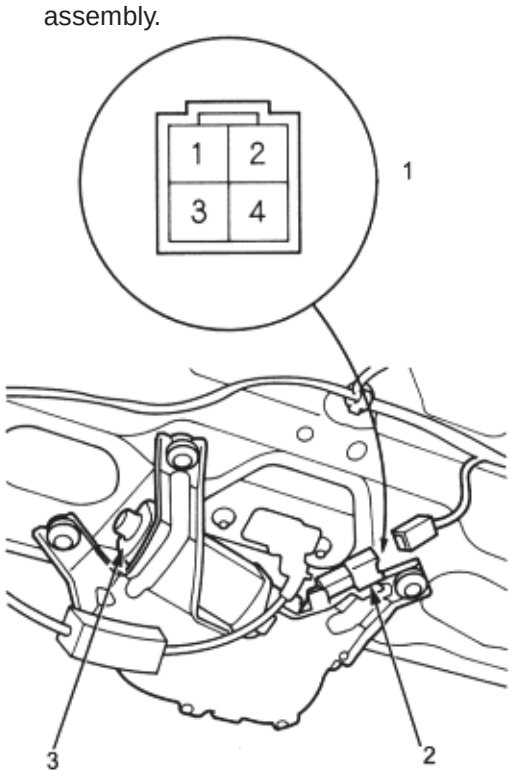
5. Remove the link from the windshield wiper motor.
   NOTE: Scribe a line across the link and windshield wiper linkage to show the original adjustment.



1. LINK
2. SPRING WASHER
3. 8 x 1.25 mm, 15 Nm (1.5 kgf/m, 11 lbf/ft)
4. WINDSHIELD WIPER MOTOR

6. Install in the reverse order of removal. Grease the moving parts. If necessary, replace any damaged clips. Check the wiper motor operation.

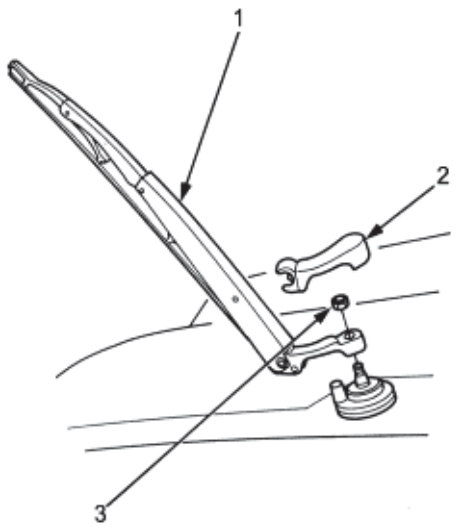
1. Remove the tailgate trim panel (see section 20).
2. Disconnect the 4P connector from the wiper motor assembly.



1. Terminal side of male terminals
2. 4P CONNECTOR
3. REAR WIPER MOTOR

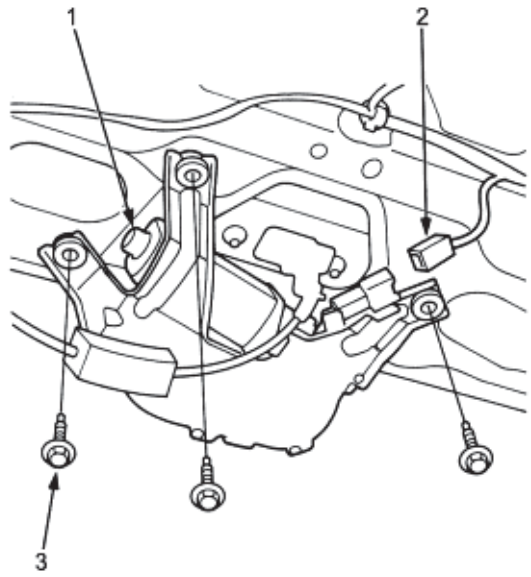
3. Test the motor by connecting battery power to the No. 1 terminal and ground to the No. 3 terminal.
   If the motor does not run or fails to run smoothly, replace it.
4. Reconnect the 4P connector to the wiper motor.
5. Connect an analogue voltmeter between the No. 4 (+) and No. 2 (-) terminals.
6. Run the motor by turning the wiper switch ON.
   The voltmeter should indicate 0V and 4V or less alternately.

1. Remove the tailgate trim panel (see section 20).
2. Remove the rear window wiper arm.



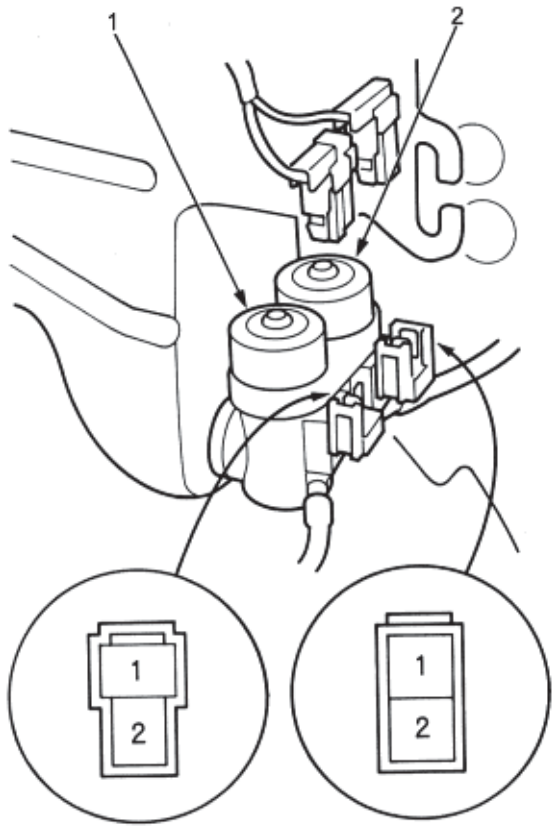
1. REAR WINDOW WIPER ARM
2. COVER
3. 6 x 1.0 mm, 14 Nm (1.4 kgf/m, 10 lbf/ft)

3. Disconnect the 4P connector from the motor.
4. Remove the three mounting bolts from the tailgate.



1. REAR WIPER MOTOR
2. 4P CONNECTOR
3. 6 x 1.0 mm, 8 Nm (0.8 kgf/m, 6 lbf/ft)

1. Remove the left front inner fender (see section 20).
2. Disconnect the 2P connector from the washer motor.



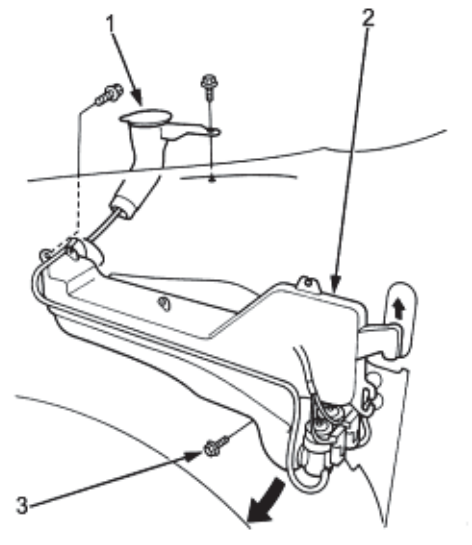
1. WINDSHIELD WASHER MOTOR
2. REAR WINDOW WASHER MOTOR

3. Test the washer motor operation by connecting battery power and ground according to the table.

Terminal / Battery	1	2
Disconnected		
Connected	⊕	⊖

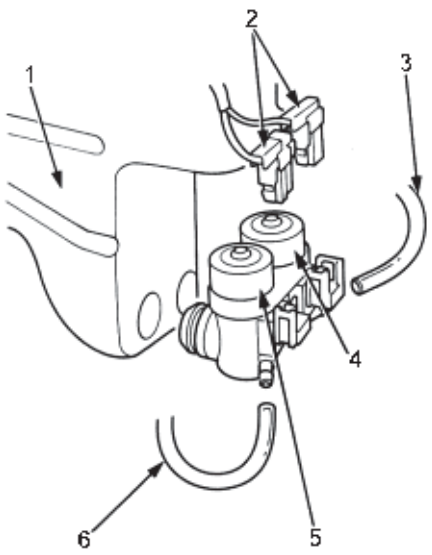
- If the motor does not run or fails to run smoothly, replace it.
- If the motor runs smoothly, but little or no washer fluid is pumped, check for a disconnected or blocked washer hose, or a clogged pump outlet in the motor.

1. Remove the left front inner fender (see section 20).
2. Remove the washer filler.
3. Remove the three mounting bolts from the washer reservoir.



1. WASHER FILLER
2. WASHER FLUID RESERVOIR
3. 6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

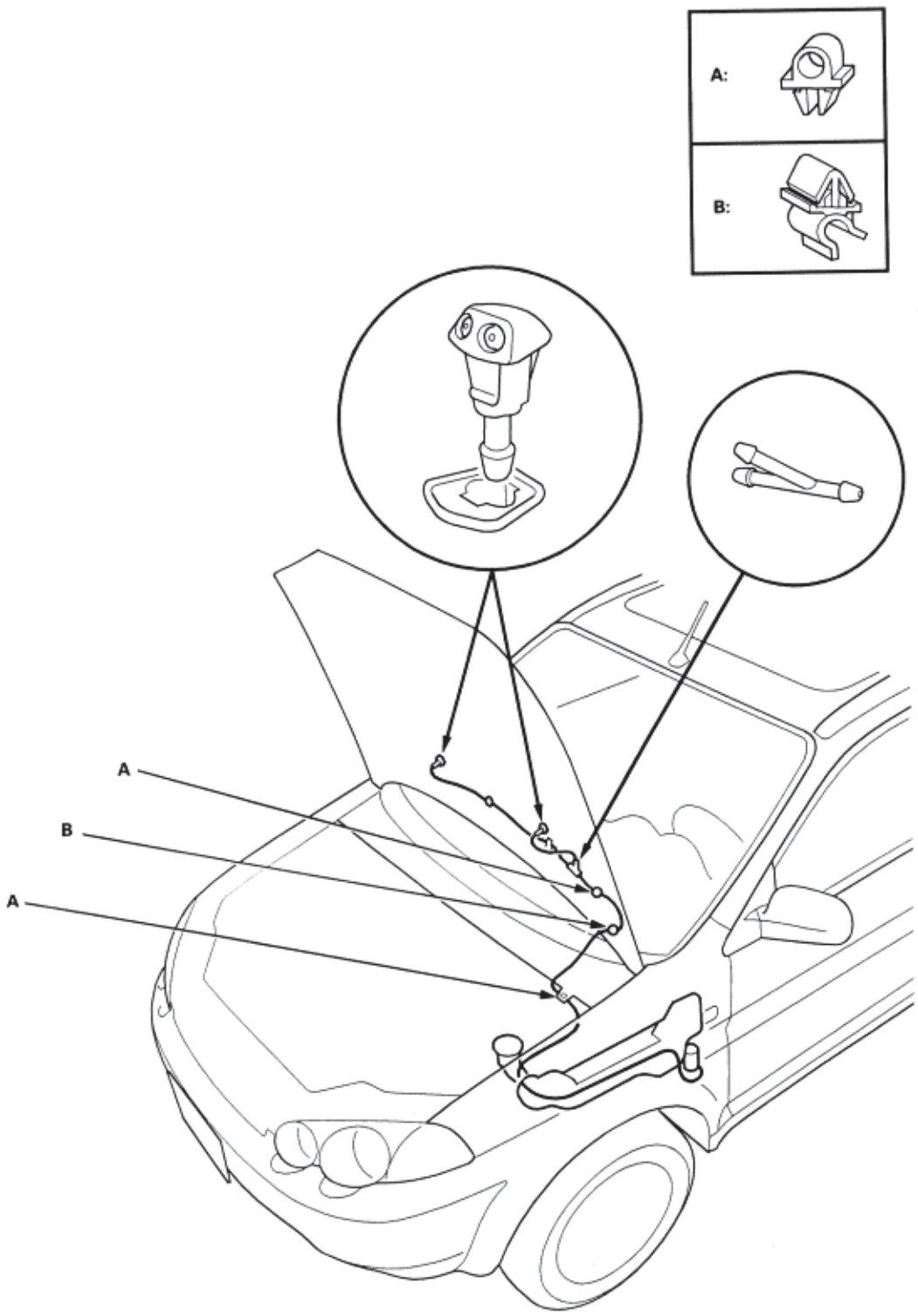
4. Disconnect the connectors and washer hoses from the washer motors.

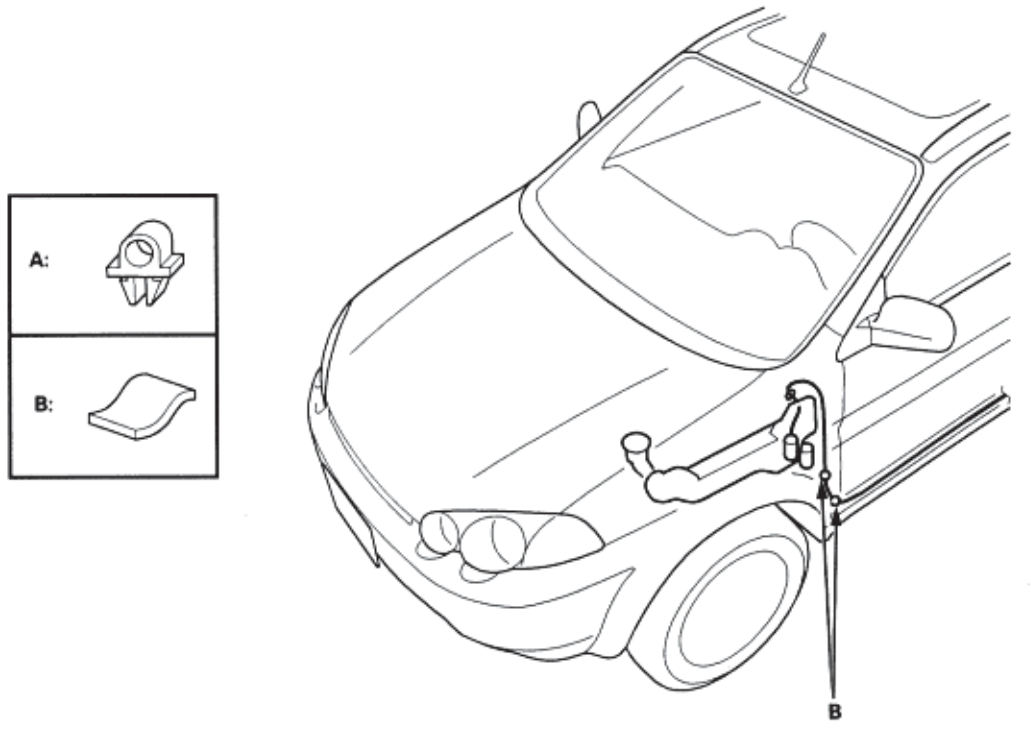


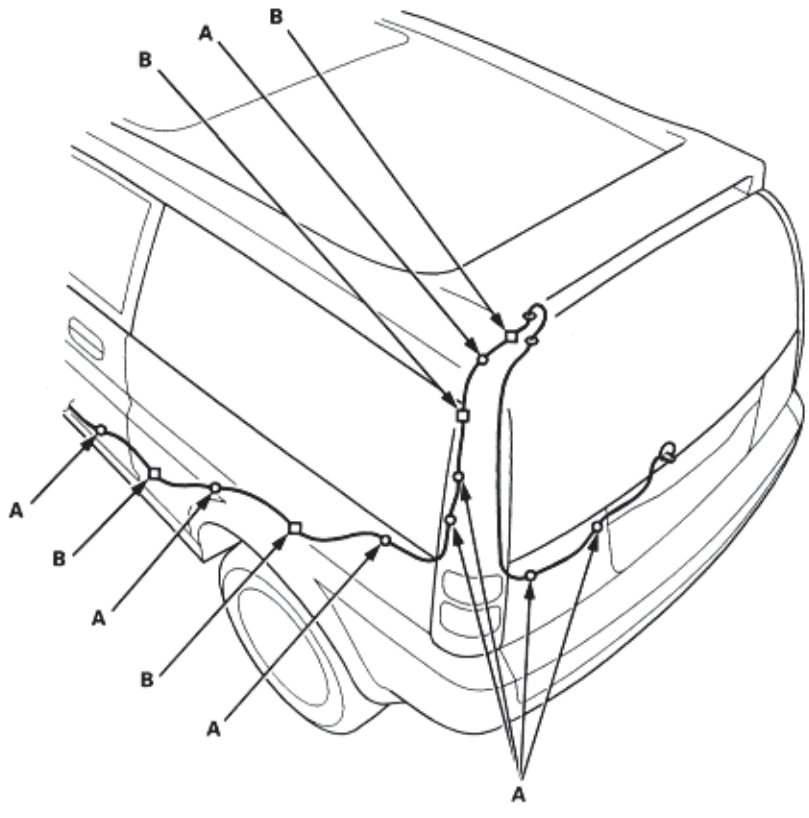
1. WASHER FLUID RESERVOIR
2. CONNECTORS
3. REAR WASHER HOSE
4. REAR WINDOW WASHER MOTOR
5. WINDSHIELD WASHER MOTOR
6. WINDSHIELD WASHER HOSE

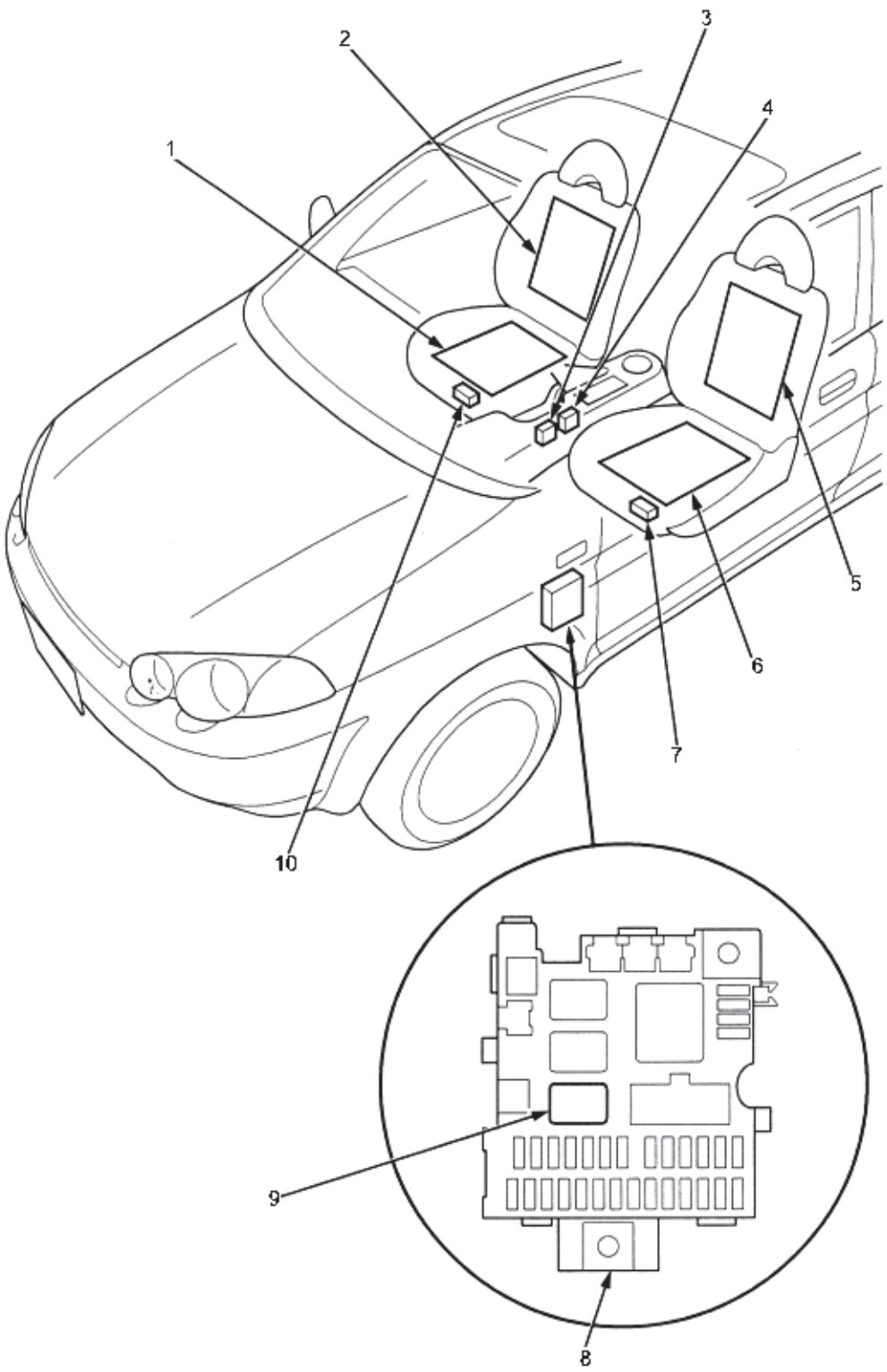
NOTE:
- Make sure the connectors and washer hoses are connected properly.
- Check the washer motor operation.

1. Remove the front bumper (see section 20).
2. Remove the left front inner fender.
3. Disconnect the 2P connectors and washer hose from the washer motors.
4. Remove the three mounting bolts and washer reservoir.
5. Remove the washer nozzle and washer hoses.
6. Install in the reverse order of removal.
   NOTE:
   - Take care not to pinch the hoses during installation.
   - Install the clips firmly.
   - After installing, adjust the aim of the water nozzles.

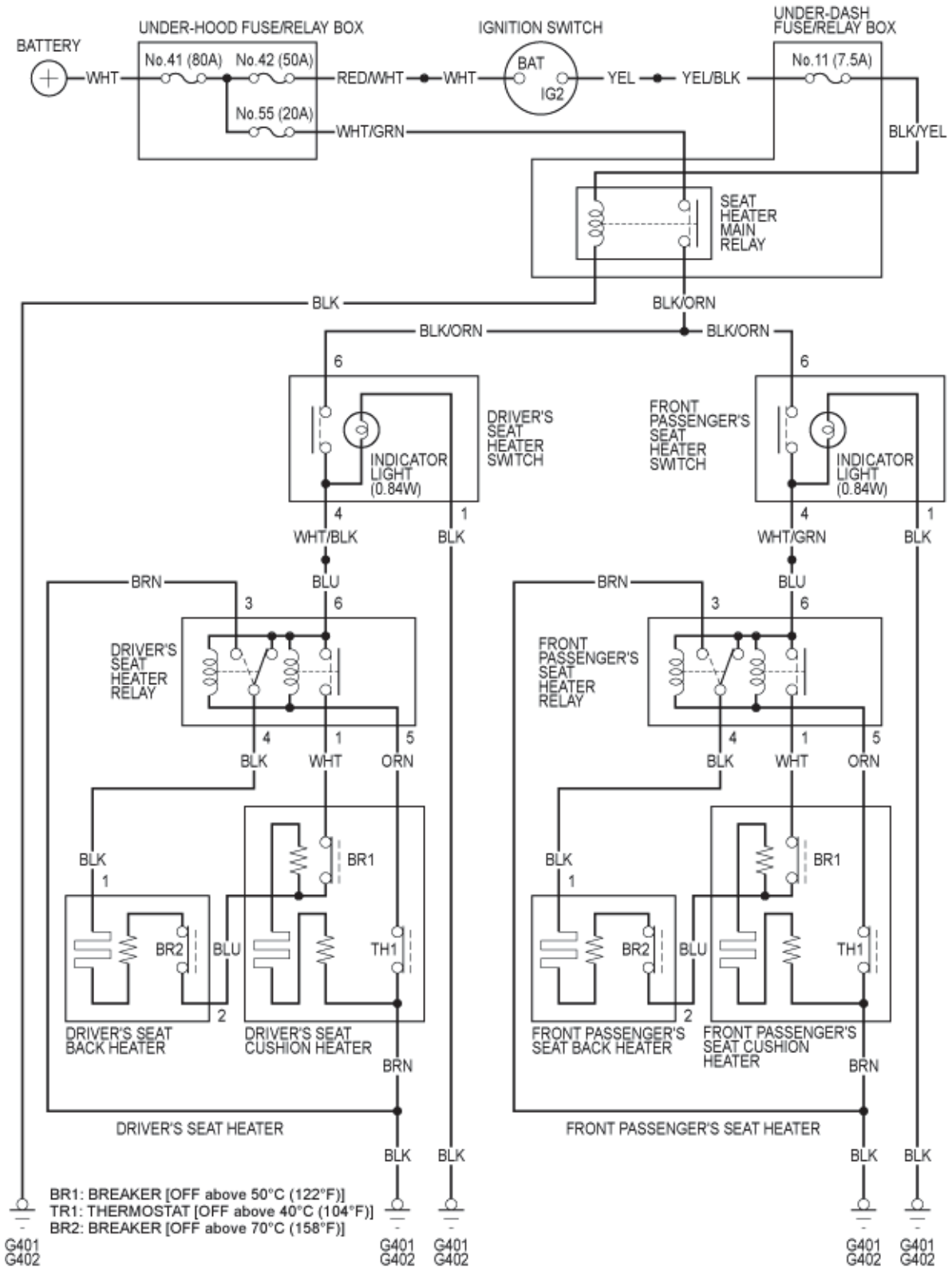



A:
B:
B

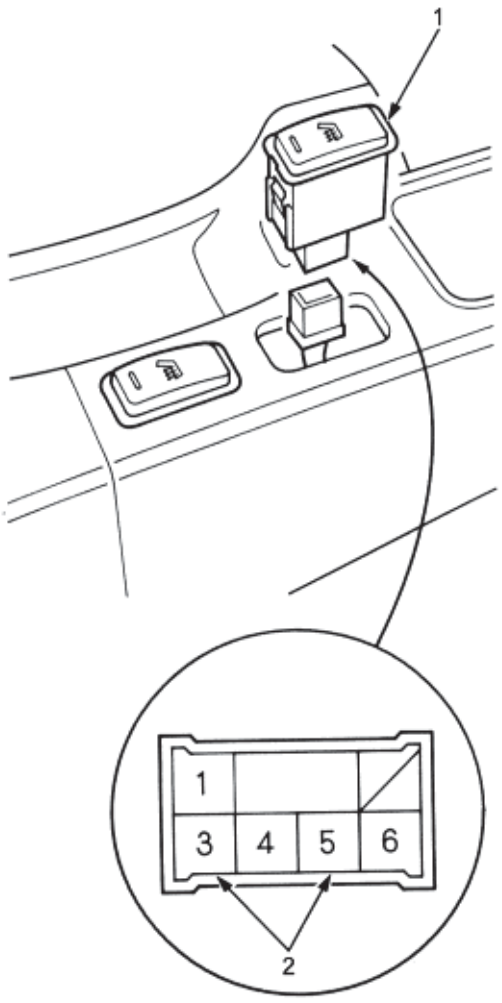

B
A
B
A
B
A
B
A
B
A
A



1. **FRONT PASSENGER'S SEAT CUSHION HEATER**
   Test (**See Page** 23-F-38)
2. **FRONT PASSENGER'S SEAT-BACK HEATER**
   Test(**See Page** 23-F-38)
3. **DRIVER'S SEAT HEATER SWITCH**
   Test/Replacement (**See Page** 23-F-37)
4. **FRONT PASSENGER'S SEAT HEATER SWITCH**
   Test/Replacement (**See Page** 23-F-37)
5. **DRIVER'S SEAT-BACK HEATER**
   Test (**See Page** 23-F-38)
6. **DRIVER'S SEAT CUSHION HEATER**
   Test (**See Page** 23-F-38)
7. **DRIVER'S SEAT HEATER RELAY**
   Test (**See Page** 23-F-38)
8. **UNDER-DASH FUSE/RELAY BOX**
9. **SEAT HEATER MAIN RELAY**
   Test (**See Page** 23-F-32)
10. **FRONT PASSENGER'S SEAT HEATER RELAY**
    Test (**See Page** 23-F-38)


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
No.55 (20A)
RED/WHT
WHT/GRN
IGNITION SWITCH
BAT
IG2
WHT
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No.11 (7.5A)
BLK/YEL
SEAT HEATER MAIN RELAY
BLK
BLK/ORN
BLK/ORN
BLK/ORN
6
6
DRIVER'S SEAT HEATER SWITCH
INDICATOR LIGHT (0.84W)
FRONT PASSENGER'S SEAT HEATER SWITCH
INDICATOR LIGHT (0.84W)
4
1
WHT/BLK
BLK
4
1
WHT/GRN
BLK
BRN
BLU
3
6
DRIVER'S SEAT HEATER RELAY
FRONT PASSENGER'S SEAT HEATER RELAY
4
1
5
BLK
WHT
ORN
BLK
1
BR1
BR2
BLU
TH1
2
DRIVER'S SEAT BACK HEATER
DRIVER'S SEAT CUSHION HEATER
FRONT PASSENGER'S SEAT BACK HEATER
FRONT PASSENGER'S SEAT CUSHION HEATER
BRN
DRIVER'S SEAT HEATER
FRONT PASSENGER'S SEAT HEATER
BLK
BLK
BR1: BREAKER [OFF above 50°C (122°F)]
TR1: THERMOSTAT [OFF above 40°C (104°F)]
BR2: BREAKER [OFF above 70°C (158°F)]
G401
G402

1. Remove the rear console (see section 20).
2. Disconnect the 6P connector from the switch.
3. Push the switch out from behind the rear console.

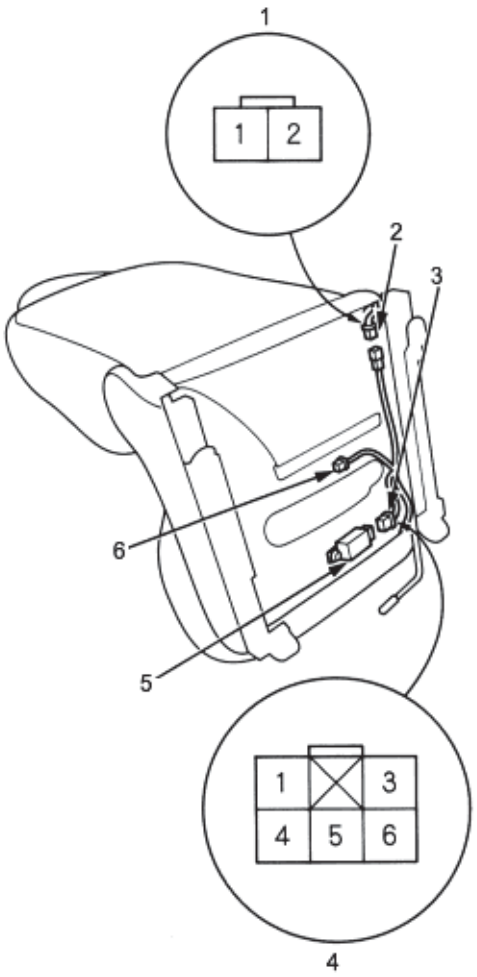


1. SEAT HEATER SWITCH
2. Not used

4. Check for continuity between the terminals according to the table.

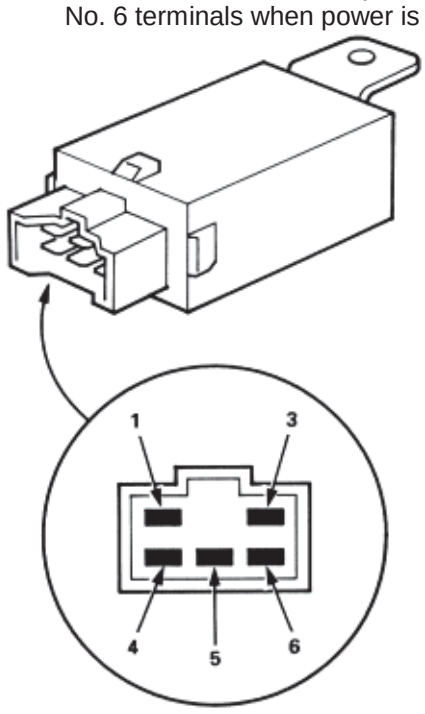
Terminal / Position	1		4	6
ON	○	⊖	○	○
OFF	○	⊖	○	

1. Remove the front seat (see section 20), then disconnect the 6P and 2P connectors as shown below.
2. Check for continuity between the No. 1 and No. 5 terminals of the 6P connector and between the No. 1 and No. 2 terminals of the 2P connector (R x 10 3 scale).
   There should be continuity.

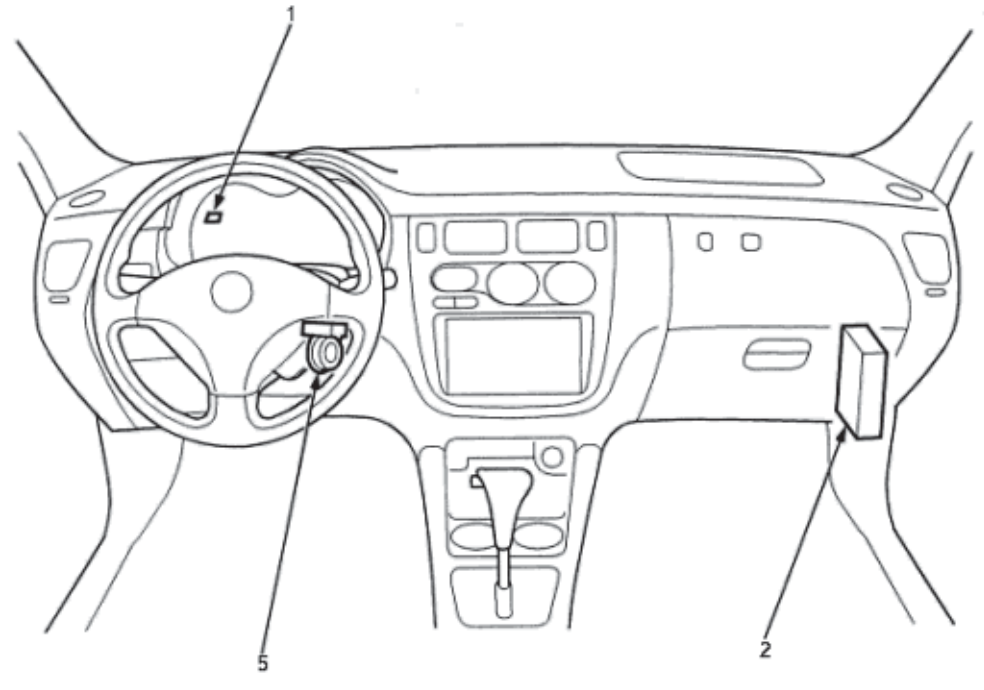


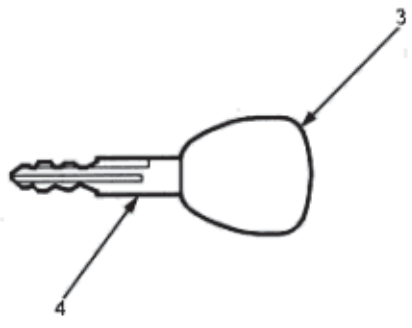
1. Wire side of female terminals
2. 2P CONNECTOR
3. 6P CONNECTOR
4. Wire side of female terminals
5. SEAT HEATER RELAY
6. 2P CONNECTOR (To main wire harness)

1. Remove the front seat (section 20) then remove the seat heater relay from the bottom of the seat.
2. There should be continuity between the No. 1 and No. 6 terminals and between the No. 3 and No. 4 terminals when power and ground are connected across the No. 5 and No. 6 terminals.
   There should be continuity between the No. 4 and No. 6 terminals when power is disconnected.



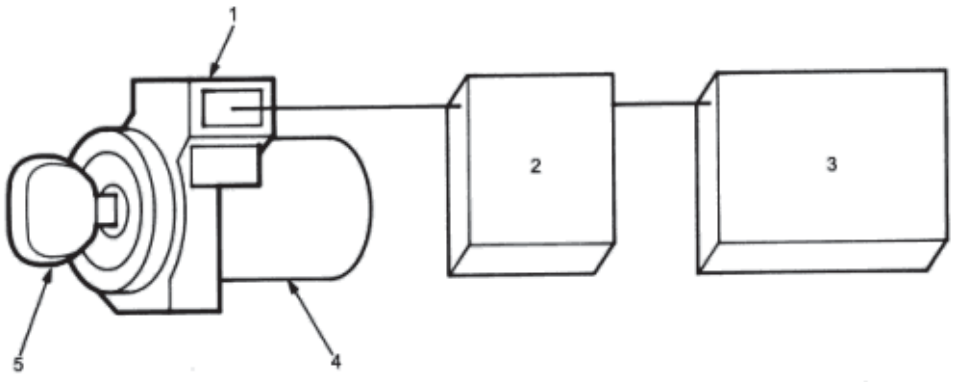
NOTE: LHD type is shown, RHD type is similar





1. **IMMOBILISER INDICATOR LIGHT**
   Bulb Location (**See Page** 23-C-9)
2. **ECM/PCM**
3. **TRANSPONDER** (Built into the ignition key)
4. **IGNITION KEY**
5. **IMMOBILISER RECEIVER UNIT**
   Troubleshooting (**See Page** 23-G-5)
   Replacement (**See Page** 23-G-7)

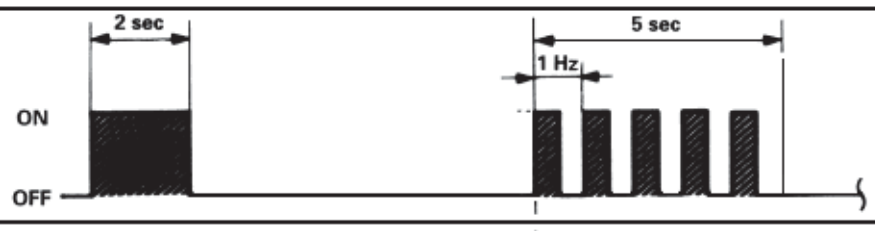
The vehicle is equipped with an immobiliser system that will disable the vehicle unless the proper ignition key is used. This system consists of a transponder located in the ignition key, an immobiliser receiver unit, an indicator light and the ECM/PCM.
When the key is inserted in the ignition switch and turned to the ON (II) position, the immobiliser unit sends power to the transponder in the ignition key. The transponder then sends back through the immobiliser receiver unit to the ECM/PCM.

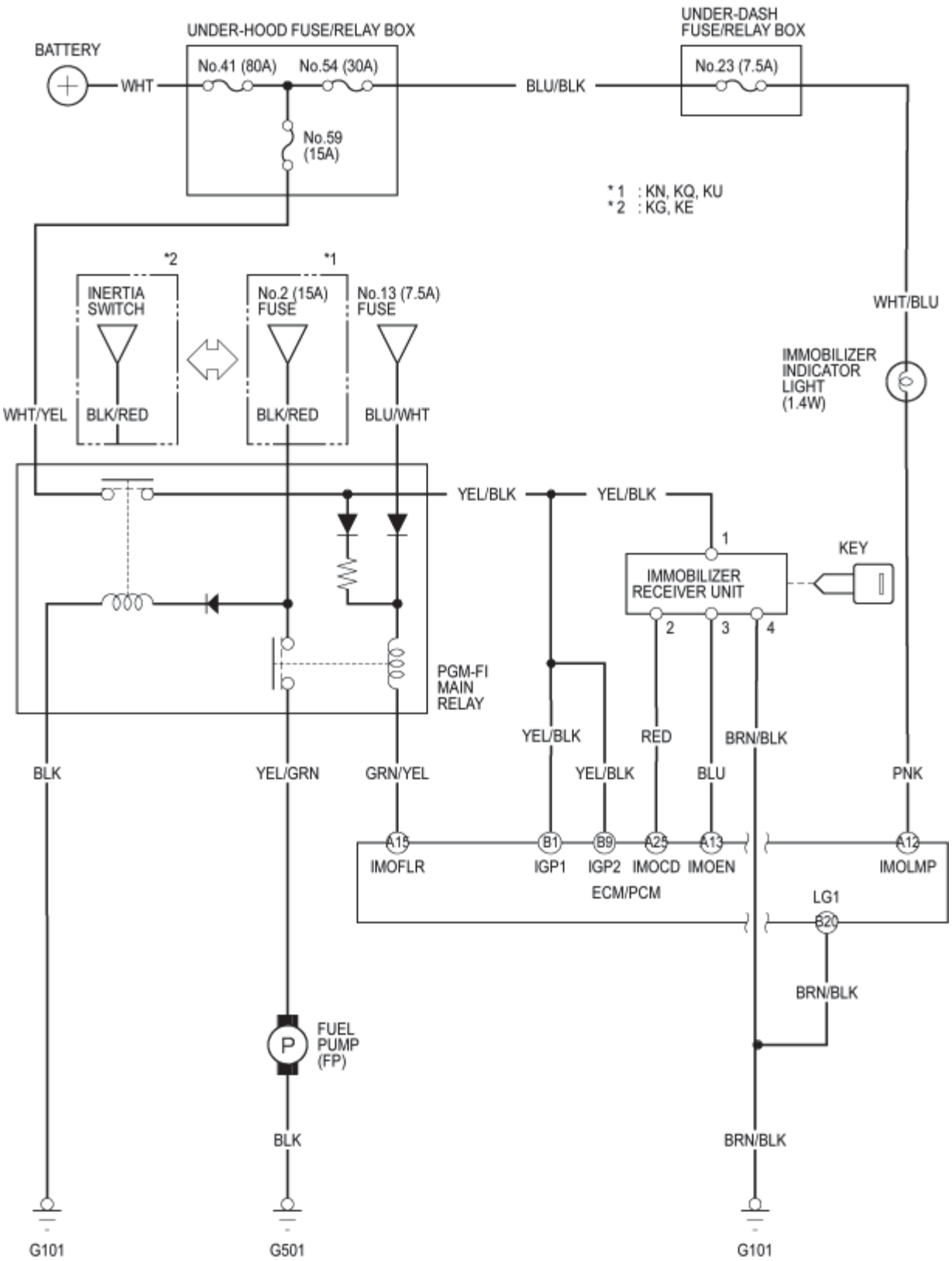


1. **IMMOBILISER RECEIVER UNIT**
2. **ECM/PCM**
3. **FUEL SUPPLY SYSTEM**
4. **KEY CYLINDER**
5. **IGNITION KEY** (Has built-in transponder)

- If the proper key has been used, the immobiliser indicator light will come on for about two seconds, then go off.
- If the wrong key has been used, whose code was not received by the unit, the indicator light will come on for about two seconds, then it will blink until the ignition switch is turned OFF.
- If the ignition switch is turned OFF, the indicator will blink for about five seconds to signal that the unit has been set correctly, then the indicator will go off.
- If the customer has lost his key and cannot restart the engine, contact Honda Customer Relations.

Immobiliser Indicator Light Blinking Pattern:

IGNITION SWITCH		
PROPER KEY INSERTED	INDICATOR LIGHT	
WRONG KEY INSERTED	INDICATOR LIGHT	


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.54 (30A)
No.59
(15A)
BLU/BLK
UNDER-DASH
FUSE/RELAY BOX
No.23 (7.5A)
*1 : KN, KQ, KU
*2 : KG, KE
*2
*1
INERTIA
SWITCH
No.2 (15A)
FUSE
No.13 (7.5A)
FUSE
WHT/YEL
BLK/RED
BLK/RED
BLU/WHT
WHT/BLU
IMMOBILIZER
INDICATOR
LIGHT
(1.4W)
YEL/BLK
YEL/BLK
1
KEY
IMMOBILIZER
RECEIVER UNIT
2
3
4
PGM-FI
MAIN
RELAY
YEL/BLK
RED
BRN/BLK
BLK
YEL/GRN
GRN/YEL
YEL/BLK
BLU
PNK
A15
B1
B9
A25
A13
A12
IMOFLR
IGP1
IGP2
IMOCD
IMOEN
IMOLMP
ECM/PCM
LG1
B20
BRN/BLK
P
FUEL
PUMP
(FP)
BLK
BRN/BLK
G101
G501
G101

Follow this flowchart if the vehicle does not start after rewriting the ECM/PCM with the Honda PGM Tester.

Using a scan tool, check for a Diagnostic Trouble Code (DTC) (see section 11).

Is DTC P1607 indicated?

YES → **Replace the ECM/PCM.**

NO

1. Turn the ignition switch ON (II) with the proper key.
2. Check to see if the immobilizer indicator light flashes.

Does the indicator light blink?

NO → **Check for these problems:**
- A faulty transponder (ignition key).
- An open in the PNK wire between the gauge assembly and ECM/PCM.
- A faulty immobilizer indicator light.

YES

1. Disconnect the 4P connector from the immobilizer receiver unit.
2. Check for voltage between the No. 1 terminal and body ground.

Is there battery voltage?

NO → **Check for these problems:**
- A blown No. 59 (15 A) fuse in the under-hood fuse/relay box.
- An open in the YEL/BLK wire between the PGM-FI main relay and immobilizer reciever unit.

YES

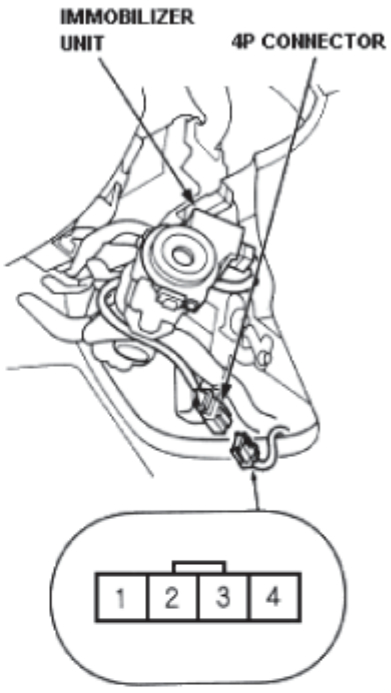
Check for continuity between the No. 4 terminal and body ground.

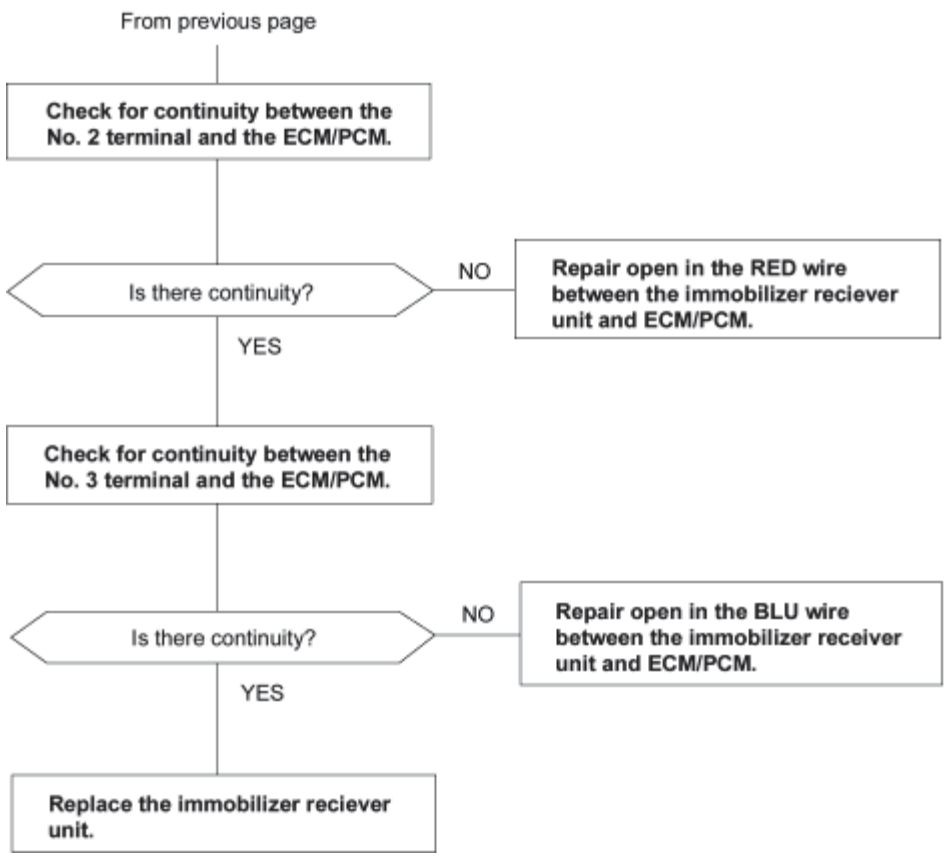
Is there continuity?

NO → **Repair open in the BLK wire between the immobilizer reciever unit and G101.**

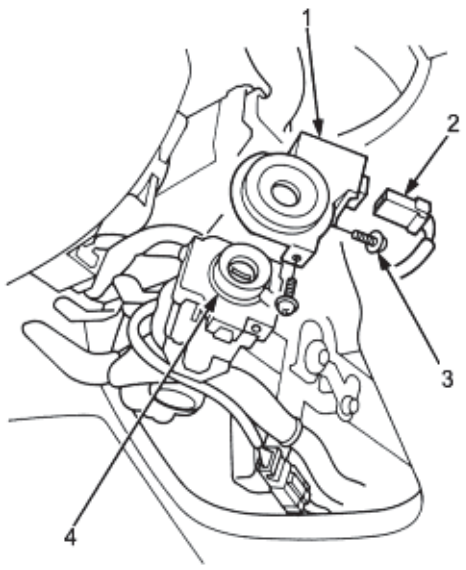
YES

To next page



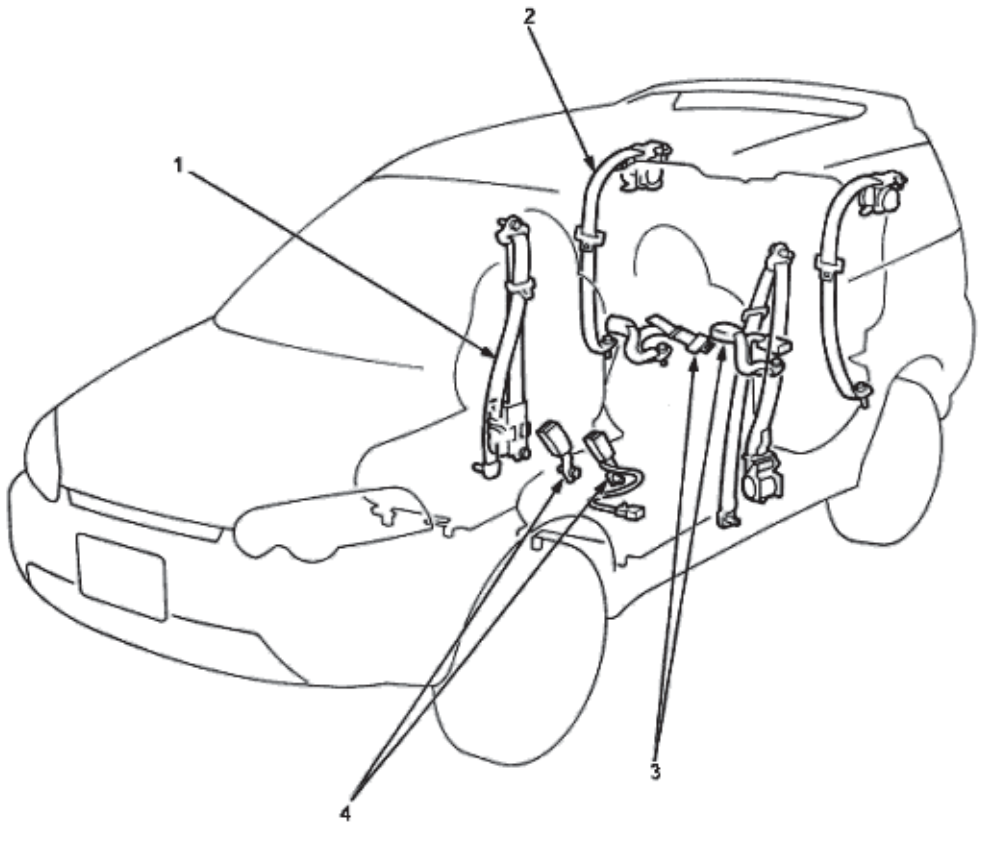

From previous page
Check for continuity between the No. 2 terminal and the ECM/PCM.
Is there continuity?
NO
Repair open in the RED wire between the immobilizer reciever unit and ECM/PCM.
YES
Check for continuity between the No. 3 terminal and the ECM/PCM.
Is there continuity?
NO
Repair open in the BLU wire between the immobilizer receiver unit and ECM/PCM.
YES
Replace the immobilizer reciever unit.

1. Remove the steering column covers (see section 17).
2. Disconnect the 5P connector from the immobiliser receiver unit.



1. IMMOBILISER RECEIVER UNIT
2. CONNECTOR
3. SCREW
4. IGNITION KEY CYLINDER

3. Remove the screws and the immobiliser receiver unit from the ignition key cylinder.
4. Install in the reverse order of removal.
5. After replacement, makes sure of the function by checking the immobiliser indicator light.



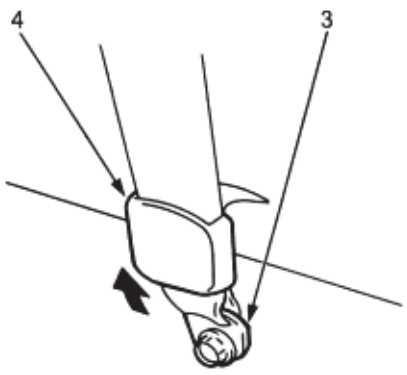
1. **FRONT SEAT BELT**
   Replacement (**See Page** 24-3)
   Inspection (**See Page** 24-8)
2. **REAR SEAT BELT**
   Replacement (**See Page** 24-6)
   Inspection (**See Page** 24-8)
3. **REAR CENTRE BELT and REAR SEAT BELT BUCKLES** (**See Page** 24-7)
4. **FRONT SEAT BELT BUCKLES** (**See Page** 24-5)

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the SRS section (24) before performing repairs or service.
Check the front seat belts for damage and replace them if necessary. Be careful not to damage them during removal and installation.

Front seat belt:

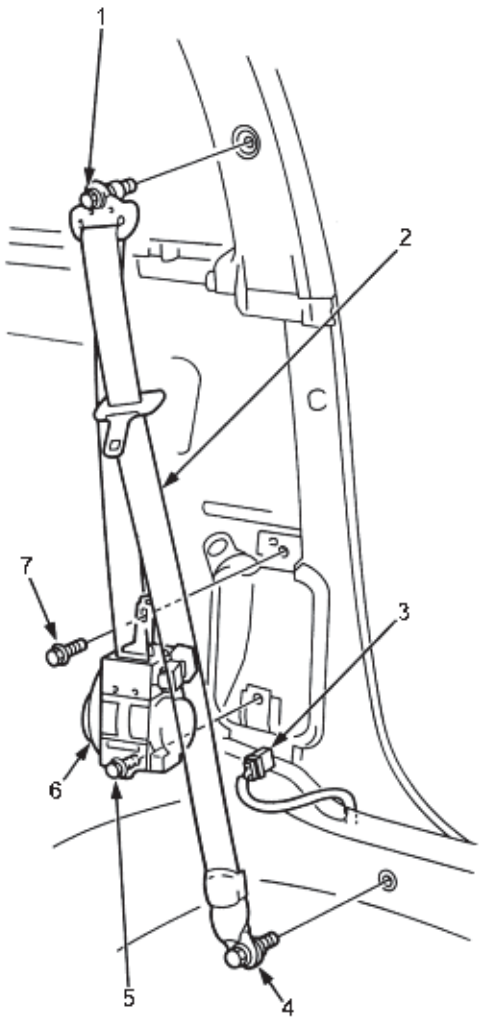
1. Slide the front seat forward fully.
2. Remove (see section 20):
   - Rear seat-backs
   - Rear seat cushion
   - Side trim
   - Rear side trim panel
3. Remove the upper anchor cap. Pull back the lower anchor cap.





1. UPPER ANCHOR CAP
2. FRONT SEAT BELT
3. LOWER ANCHOR BOLT
4. LOWER ANCHOR CAP

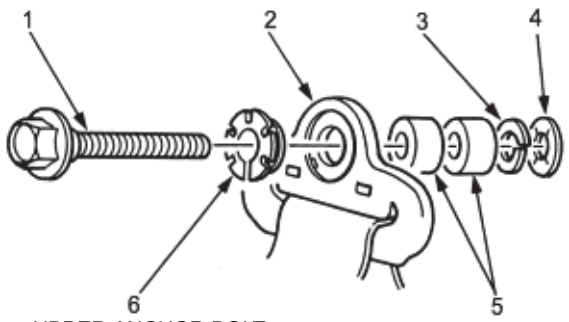
4. Disconnect the seat belt tensioner connector.
5. Remove the upper anchor bolt and lower anchor bolt, the retractor mounting screw and the retractor bolt. Remove the front seat belt and retractor.



1. UPPER ANCHOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
2. FRONT SEAT BELT
3. SEAT BELT TENSIONER CONNECTOR
4. LOWER ANCHOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
5. RETRACTOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
6. RETRACTOR
7. RETRACTOR MOUNTING SCREW, 6 x 1.0 mm, 4 Nm (0.4 kgf/m, 3 lbf/ft)

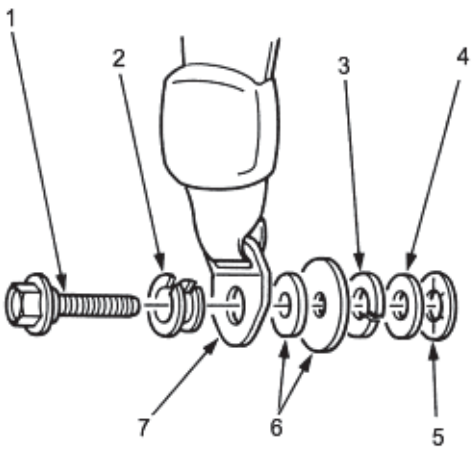
6. Install in the reverse order of removal and note the following items:
   - If the threads on the retractor mounting screw are worn out, use an oversized screw made specifically for this application.
   - Check that the retractor locking mechanism functions (**See Page** 24-8).
   - Assemble the washers, collar and bushing on the upper and lower anchor bolts as shown.
   - Before installing the anchor bolts, make sure there are no twists or kinks in the front seat belt.
   - Make sure the seat belt tensioner connector is connected securely.

Upper anchor bolt construction:



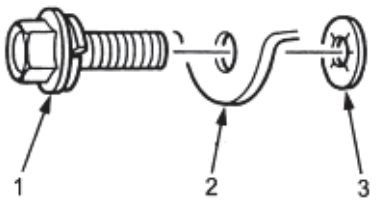
1. UPPER ANCHOR BOLT
2. UPPER ANCHOR
3. SPRING WASHER
4. TOOTHED LOCK WASHER
5. COLLARS
6. BUSHING

Lower anchor bolt construction:



1. LOWER ANCHOR BOLT
2. BUSHING
3. SPRING WASHER
4. WASHER
5. TOOTHED LOCK WASHER
6. WASHERS
7. LOWER ANCHOR

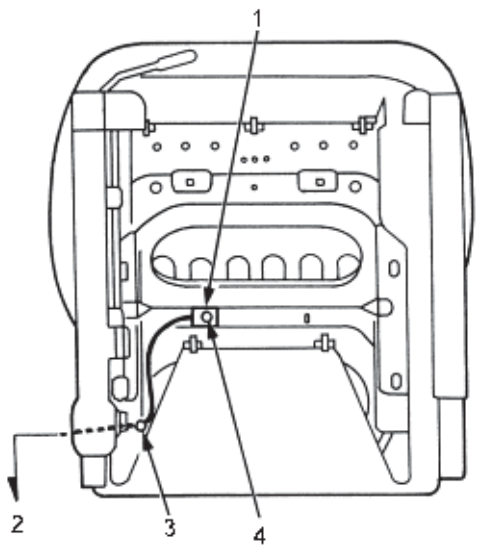
Retractor bolt construction:



1. RETRACTOR BOLT
2. RETRACTOR
3. TOOTHED LOCK WASHER

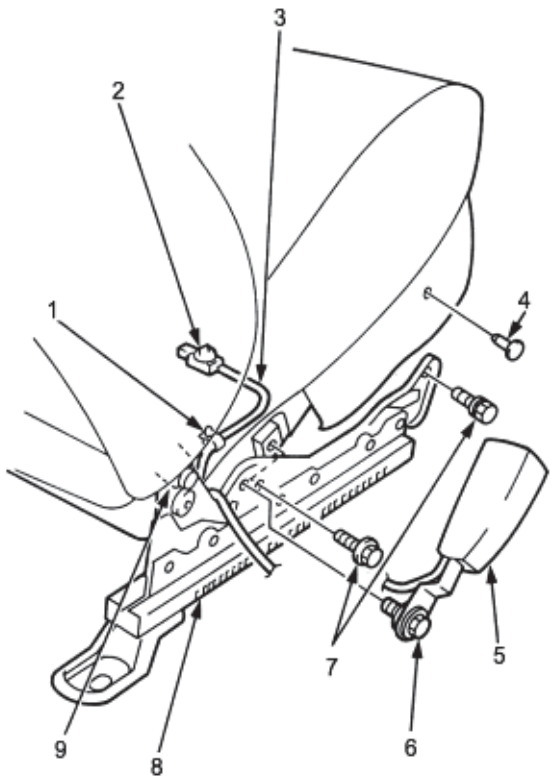
Seat Belt Buckle:

1. Remove the front seat (see section 20).
2. Remove the centre cover (see section 20).
3. Driver's for some models: Detach the seat belt switch connector and harness clip.



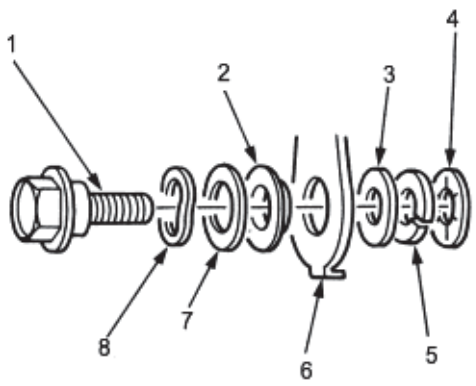
1. SEAT BELT SWITCH CONNECTOR
2. To seat belt buckle
3. CLIP
4. CLIP

4. Remove the centre anchor bolt and remove the seat belt buckle.



1. HARNESS CLIP
2. SEAT BELT SWITCH CONNECTOR
3. SEAT BELT SWITCH HARNESS
4. CLIP
5. SEAT BELT BUCKLE
6. CENTRE ANCHOR BOLT
7. 1.0 x 1.25 mm (47 Nm (4.8 kgf/m, 35 lbf/ft)
8. INNER SEAT TRACK
9. HINGE BRACKET

Centre anchor bolt construction:



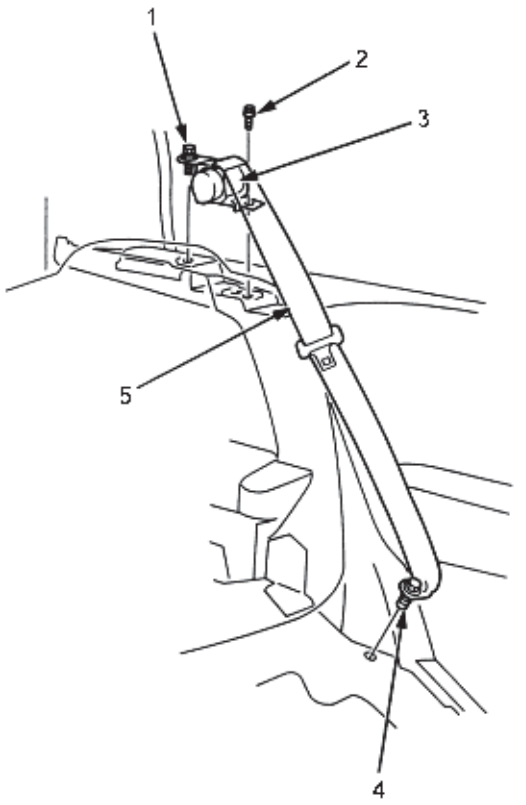
1. CENTRE ANCHOR BOLT
2. BEARING
3. WASHER
4. TOOTHED LOCK WASHER
5. SPRING WASHER
6. CENTRE ANCHOR
7. WASHER
8. WAVE WASHER

5. Install in the reverse order of removal; assemble the washers on the centre anchor bolt as shown.

Check the rear seat belts for damage and replace them if necessary. Be careful not to damage them during removal and installation.

Rear seat belt:

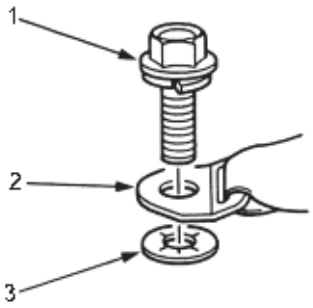
1. Slide the front seat forward fully.
2. Remove (see section 20):
   - Rear seat-backs
   - Rear seat cushion
   - Side trim
   - Rear side trim panel
3. Remove the lower anchor bolt, then remove the retractor bolt and retractor mounting bolt. remove the rear seat belt and retractor.



1. RETRACTOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
2. RETRACTOR MOUNTING BOLT
3. RETRACTOR
4. LOWER ANCHOR BOLT, 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
5. REAR SEAT BELT

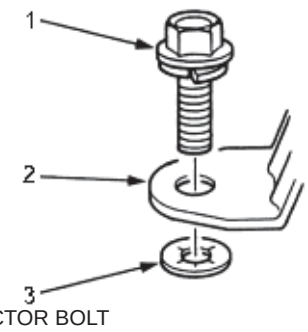
4. Install in the reverse order of removal and note the following items:
   - Check that the retractor locking mechanism functions (**See Page** 24-8).
   - Assemble the washers, collar and bushing on the upper and lower anchor bolts as shown.
   - Before installing the anchor bolts, make sure there are no twists or kinks in the front seat belt.

Lower anchor bolt construction:



1. LOWER ANCHOR BOLT
2. LOWER ANCHOR
3. TOOTHED LOCK WASHER

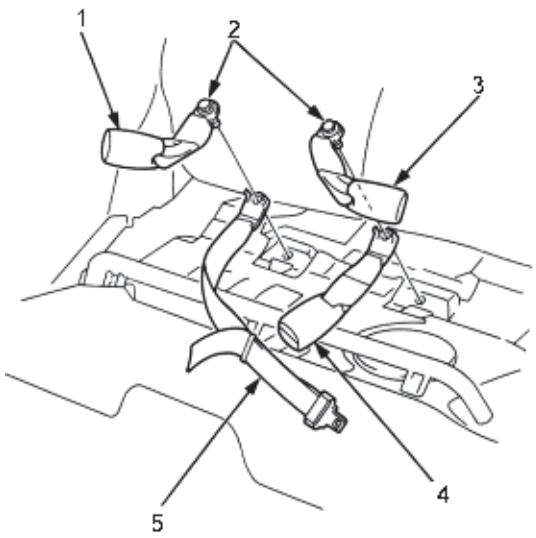
Retractor bolt construction:



1. RETRACTOR BOLT
2. RETRACTOR
3. TOOTHED LOCK WASHER

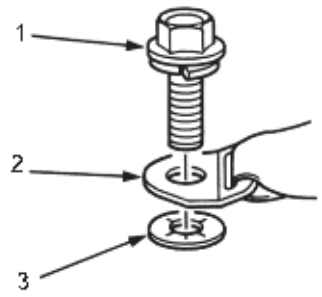
Centre belt and seat belt buckles:

1. Slide the front seat forward fully.
2. Remove the rear seat-backs and rear seat cushion (see section 20).
3. Remove the centre anchor bolts and remove the seat belt buckles.



1. REAR SEAT BELT BUCKLE
2. CENTRE ANCHOR BOLTS 7/16-20 UNF, 32 Nm (3.3 kgf/m, 24 lbf/ft)
3. REAR SEAT BELT BUCKLE
4. CENTRE BELT BUCKLE, For some models
5. CENTRE BELT, For some models

Rear seat belt buckle construction:



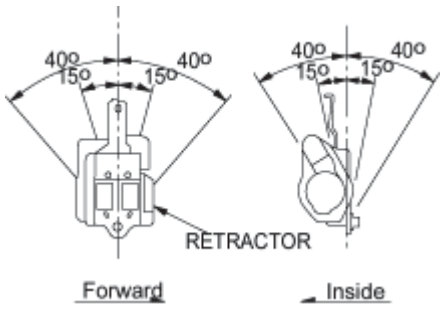
1. CENTRE ANCHOR BOLT
2. CENTRE ANCHOR
3. TOOTHED LOCK WASHER

4. Install in the reverse order of removal and note the following items:
   - Check that the retractor locking mechanism functions (**See Page** 24-8).
   - Assemble the washers on the centre anchor bolt as shown.
   - Before installing the centre anchor bolt, make sure there are no twists or kinks in the centre belt.

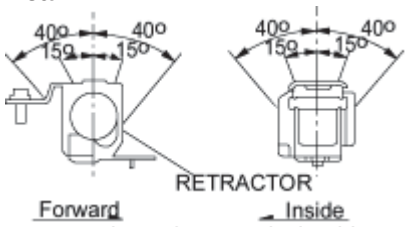
Retractor:

1. Before installing the retractor, check that the seat belt can be pulled out freely.
2. Make sure the seatbelt does not lock when the retractor 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.

Front:



Rear:

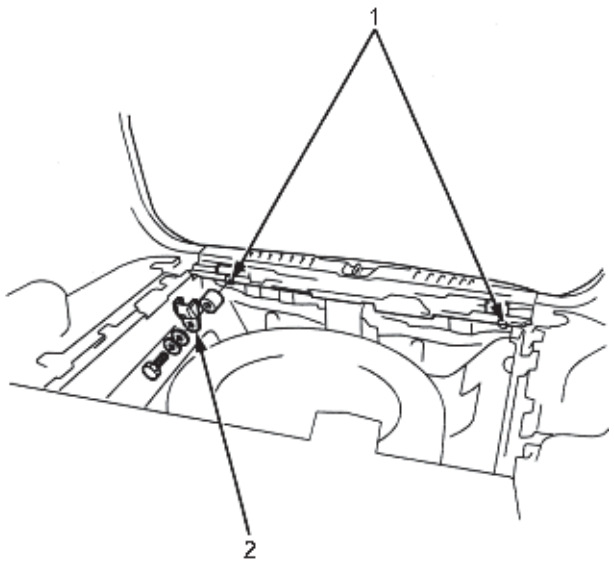


3. Replace the seat belt with a new one if there is any abnormality.

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 discolouration. Clean with a shop towel if necessary. Use only soap and water to clean.
   NOTE: Dirt build-up in the metal loops of the upper anchors can cause the seat belts to retract slowly. Wipe the inside loops with a clean cloth dampened in isopropyl alcohol.
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. For each passenger's seat belt, make sure that the locking mechanism in the seat belt retractor will engage when the seat belt is pulled all the way out.
7. Replace the seat belt with a new one if there is any abnormality.

Attachment points are provided for a rear seat mounted child restraint system which uses a top tether. The attachment points are located on rear trim panel. When using a child seat with a top tether, install the child seat anchor fitting securely.
NOTE: Make sure the child seat anchor fitting is installed properly.



1. ATTACHMENT POINTS
2. CHILD SEAT ANCHOR FITTING 5/16-18 UNF, 22 Nm (2.2 kgf/m, 16 lbf/ft)

NOTE:

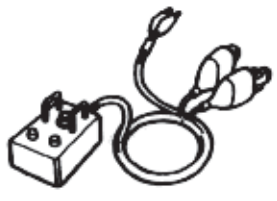
- Do not remove the toothed washer from the child seat anchor fitting. Use the child seat anchor fitting with the toothed washer attached to it.
- When installing a child seat on the rear seat, follow the instructions of the manufacturer of the child seat.
- Additional anchor fittings are available.

WARNING

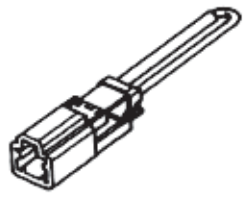
- Do not use the child seat anchor fitting for any other purpose; it is designed exclusively for installation of a child seat.
- Make sure the rear seat-back is locked firmly when installing a child seat.

Ref No.	Tool Number	Description	Qty	Remark
1 *1	07HAZ - SG00500	Deployment Tool	1	
2 *1	07PAZ - 0010100	SCS Short Connector	1	
3	07SAZ - TB4011A	SRS Inflator Simulator	1	
4	07TAZ - SZ5011A	SRS Simulator Lead C	1	

*1: Included in SRS Tool Set 07MAZ - SM5000B.



①



②

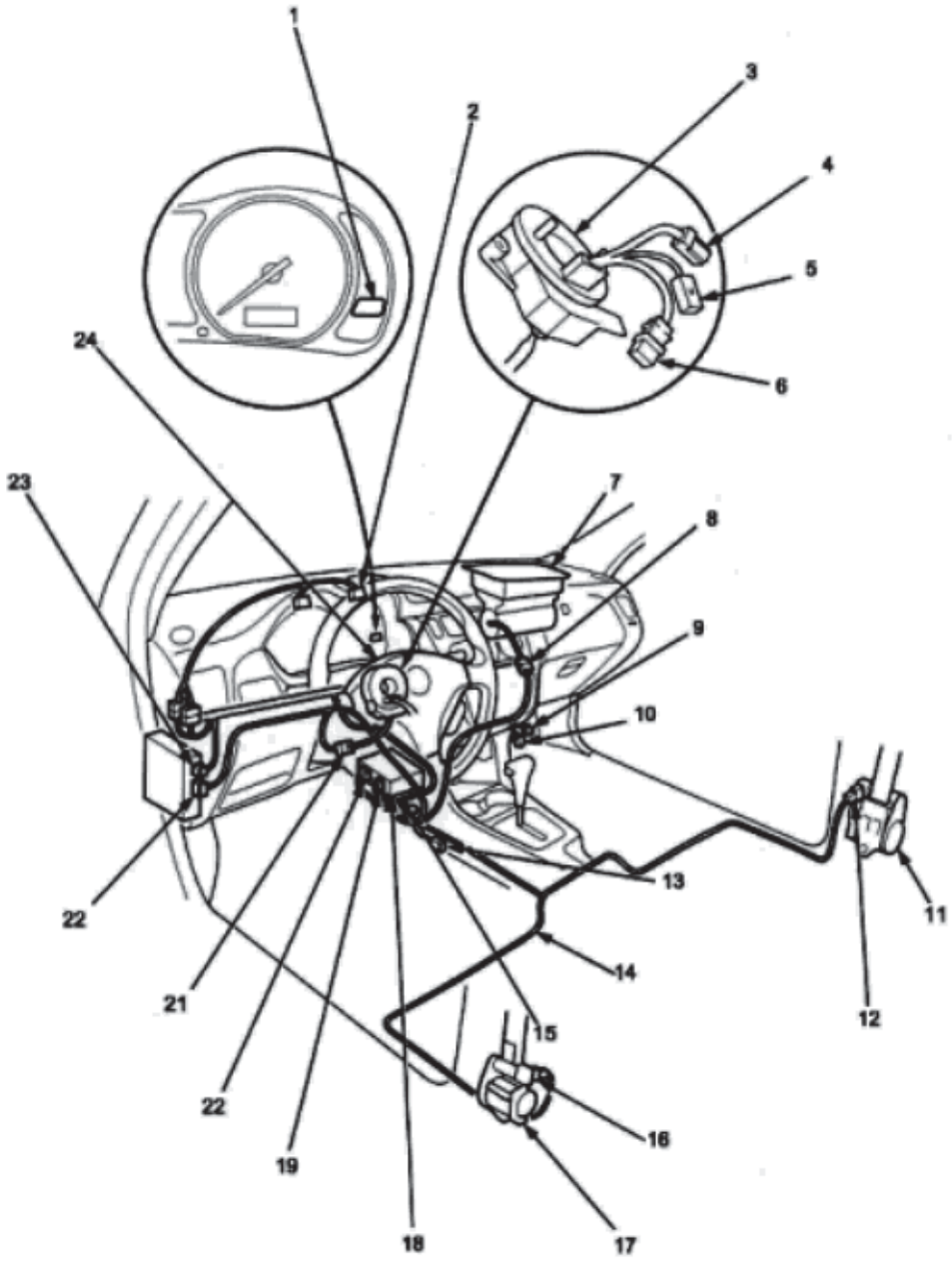


③

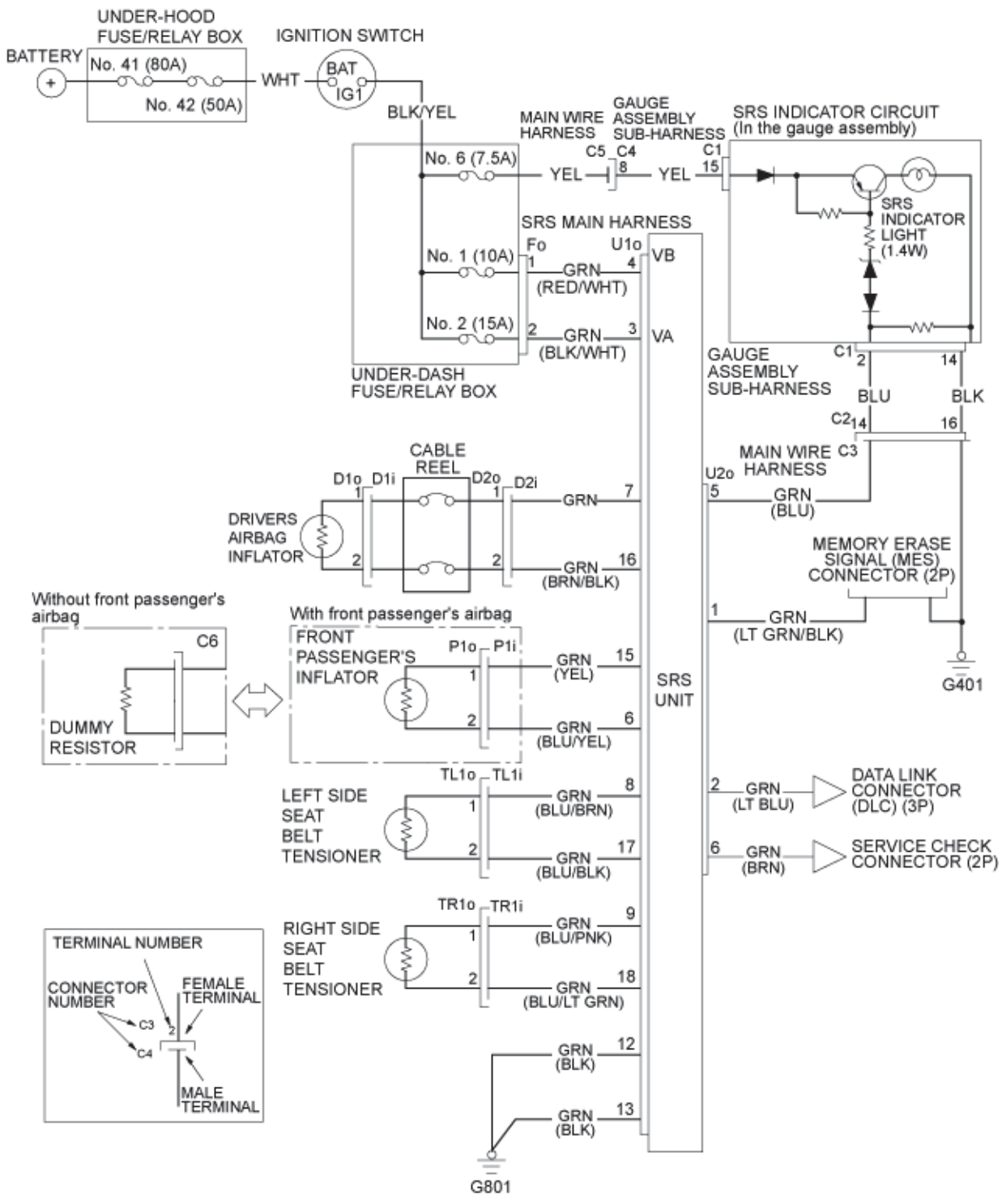


④

NOTE: LHD type is shown, RHD type is symmetrical.



1. SRS INDICATOR LIGHT
   Troubleshooting (**See Page** 24-24)
2. DASHBOARD WIRE HARNESS to SRS INDICATOR LIGHT in GAUGE ASSEMBLY 16P CONNECTOR
3. CABLE REEL
   Replacement, (**See Page** 24-66)
4. To MODE SELECT SWITCH
5. To HORN SWITCH
6. To DRIVER'S AIRBAG
7. FRONT PASSENGER'S AIRBAG
   Replacement, (**See Page** 24-62)
   Scrapping, (**See Page** 24-70)
8. SRS MAIN HARNESS to FRONT PASSENGER'S AIRBAG 2P CONNECTOR
9. SERVICE CHECK CONNECTOR (2P) [BRN, BRN/BLK]
10. DATA LINK CONNECTOR (DLC) (3P)
11. RIGHT SIDE SEAT BELT TENSIONER
    Replacement, (**See Page** 24-64)
    Scrapping, (**See Page** 24-70)
12. SRS MAIN HARNESS to SEAT BELT TENSIONER 2P CONNECTOR
13. DUMMY RESISTOR
    (Without front passenger's airbag)
14. SRS MAIN HARNESS
15. SRS UNIT GROUND
16. SRS MAIN HARNESS to SEAT BELT TENSIONER 2P CONNECTOR
17. LEFT SIDE SEAT BELT TENSIONER
    Replacement, (**See Page** 24-64)
    Scrapping, (**See Page** 24-70)
18. SRS UNIT
    Replacement, (**See Page** 24-69)
19. MAIN WIRE HARNESS 8P CONNECTOR
20. SRS MAIN HARNESS 18P CONNECTOR
21. SRS MAIN HARNESS to CABLE REEL 2P CONNECTOR
22. SRS MAIN HARNESS to DRIVER'S UNDER-DASH FUSE/RELAY BOX 2P CONNECTOR
23. MEMORY ERASE SIGNAL (MES) CONNECTOR (2P) [GRN, GRN] or [BLK, LT GRN/BLK]
24. DRIVER'S AIRBAG
    Replacement, (**See Page** 24-60)
    Scrapping, (**See Page** 24-70)


UNDER-HOOD FUSE/RELAY BOX
BATTERY
No. 41 (80A)
No. 42 (50A)
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
MAIN WIRE HARNESS
GAUGE ASSEMBLY SUB-HARNESS
SRS INDICATOR CIRCUIT (In the gauge assembly)
No. 6 (7.5A)
YEL
C5 C4
8
YEL
C1
15
SRS INDICATOR LIGHT (1.4W)
SRS MAIN HARNESS
Fo
U1o
No. 1 (10A)
1
GRN (RED/WHT)
4
VB
No. 2 (15A)
2
GRN (BLK/WHT)
3
VA
UNDER-DASH FUSE/RELAY BOX
GAUGE ASSEMBLY SUB-HARNESS
C1
2
14
BLU
BLK
C2
14
16
CABLE REEL
D1o D1i
D2o D2i
MAIN WIRE HARNESS
C3
U2o
5
GRN (BLU)
DRIVERS AIRBAG INFLATOR
GRN
7
GRN (BRN/BLK)
16
MEMORY ERASE SIGNAL (MES) CONNECTOR (2P)
1
GRN (LT GRN/BLK)
G401
Without front passenger's airbag
C6
DUMMY RESISTOR
With front passenger's airbag
FRONT PASSENGER'S INFLATOR
P1o P1i
GRN (YEL)
15
GRN (BLU/YEL)
6
SRS UNIT
TL1o TL1i
LEFT SIDE SEAT BELT TENSIONER
GRN (BLU/BRN)
8
GRN (BLU/BLK)
17
2
GRN (LT BLU)
DATA LINK CONNECTOR (DLC) (3P)
6
GRN (BRN)
SERVICE CHECK CONNECTOR (2P)
TR1o TR1i
RIGHT SIDE SEAT BELT TENSIONER
GRN (BLU/PNK)
9
GRN (BLU/LT GRN)
18
TERMINAL NUMBER
CONNECTOR NUMBER
FEMALE TERMINAL
MALE TERMINAL
C3
C4
GRN (BLK)
12
GRN (BLK)
13
G801

Connector No. *1		Wire harness and connector	Terminal		Note *2	Ref. No.
			Male	Female		
Fo		SRS main harness 2P connector		O	(1)	1
U1o		SRS main harness 14P connector		O	(1)	3
U2o		SRS floor harness 18P connector		O	(1)	4
D1	D1o	Driver's airbag 2P connector		O	(1)(2)	1
D1	D1i	Cable reel 2P connector	O		(1)(2)	2
D2	D2o	Cable reel 2P connector		O	(1)	1
D2	D2i	SRS main harness 2P connector	O		(1)	2
P1	P1o	Front passenger's airbag connector		O	(1)(2)	1
P1	P1i	SRS main harness 2P connector	O		(1)(2)	2
TL1	TL1o	Left side seat belt tensioner 2P connector		O	(1)2)	1
TL1	TL1i	SRS floor harness 2P connector	O		(1)(2)	2
TR1	TR1o	Right side seat belt tensioner 2P connector		O	((1)2)	1
TR1	TR1i	SRS main harness 2P connector	O		(1)(2)	2
C1		Gauge assembly sub-harness 16P connector		O		5
C2		Gauge assembly sub-harness 24P connector		O		6
C3		Main wire harness 24P connector	O			7
C4		Gauge assembly sub-harness 16P connector		O		8
C5		Main wire harness 16P connector	O			9
C6		SRS main harness 2P connector		O		10

*1 : The connector numbers is original in this section that are different from other sections.
*2 : Note
(1) : Spring loaded lock connector
(2) : With built-in short contact connector

1. Fo, D1o, D2o, P1o, TLo, TRo



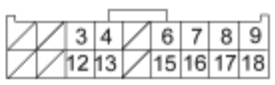
Wire side of female terminals.

2. D1i, D2i, P1i, TL1i, TR1i



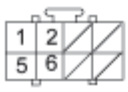
Terminal side of male terminals

3. U1o



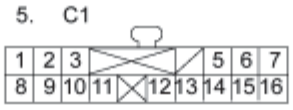
Wire side of female terminals.

4. U2o



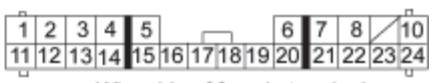
Wire side of female terminals.

5. C1



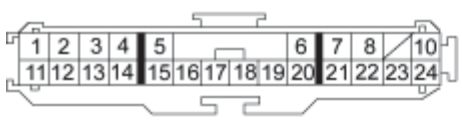
Wire side of female terminals.

6. C2



Wire side of female terminals.

7. C3



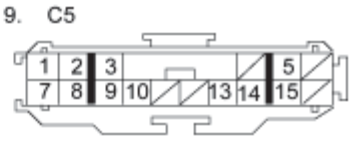
Terminal side of male terminals

8. C4



Wire side of female terminals.

9. C5



Terminal side of male terminals

10. C6

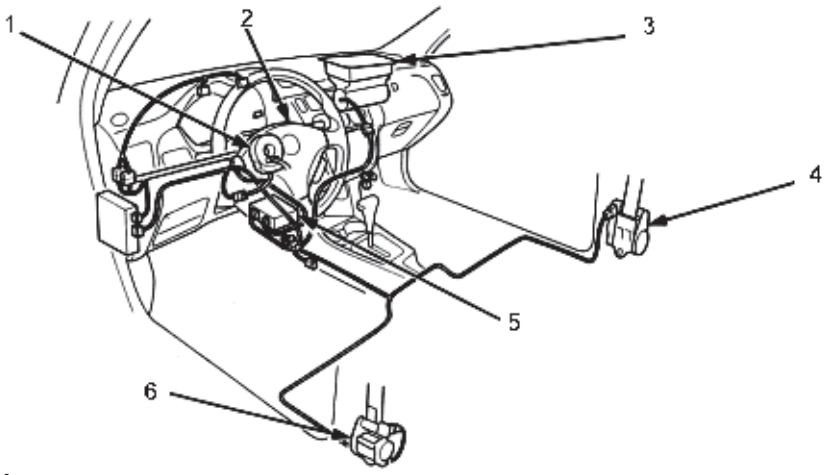


Wire side of female terminals.

The SRS is a safety device which, when used in conjunction with the seat belt, is designed to help protect the driver and front passenger in a frontal impact exceeding a certain set limit. The system consists of the SRS unit (including safety sensor and impact sensor), the cable reel, the driver's airbag and front passenger's airbag.

Seat Belt Tensioner

The seat belt tensioner is linked with the SRS airbags to further increase the effectiveness of the seat belt. In a front-end collision, the tensioner instantly retracts the belt firmly to secure the occupants in their seats.



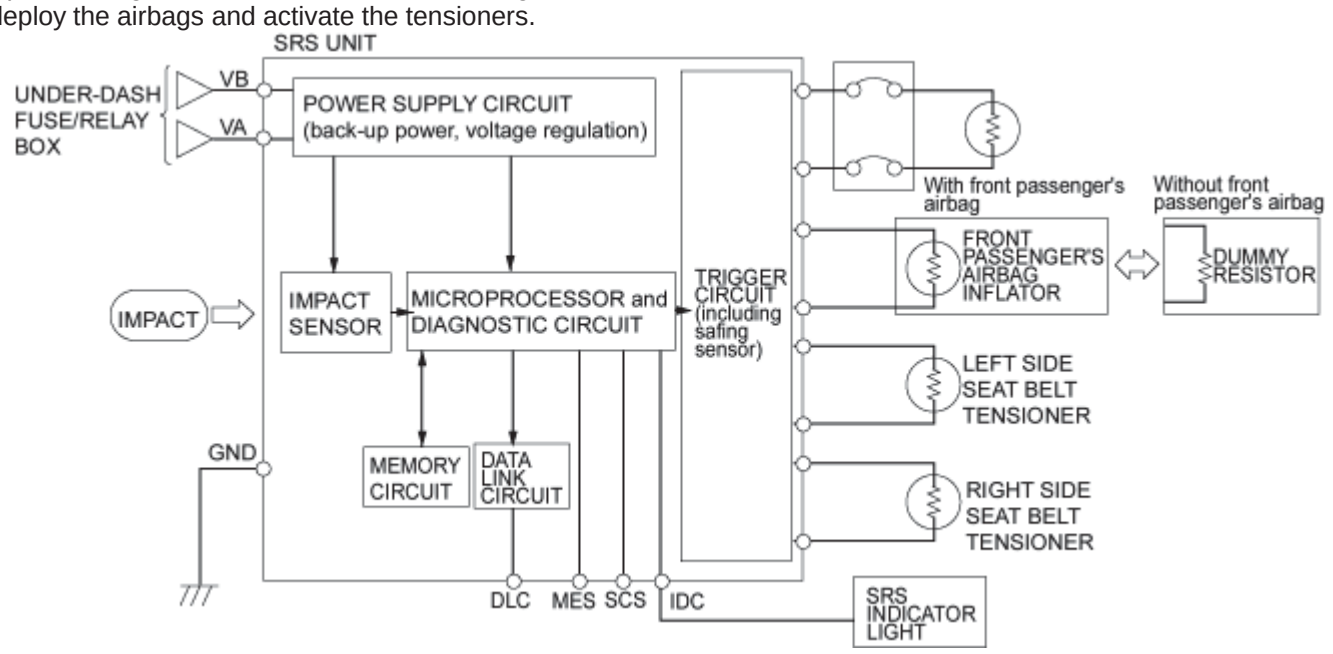
1. **CABLE REEL**
2. **DRIVER'S AIRBAG**
3. **FRONT PASSENGER'S AIRBAG**
4. **RIGHT SIDE SEAT BELT TENSIONER**
5. **SRS UNIT**
6. **LEFT SIDE SEAT BELT TENSIONER**

Operation

The main circuit in the SRS unit senses and judges the force of impact and, if necessary, ignites the inflator charges. If battery voltage is too low or power is disconnected due to the impact, the voltage regulator and the back-up power circuit respectively will keep voltage at a constant level.

For the SRS to operate:

(1) The impact sensor must activate and send electric signals to the microprocessor.
(2) The microprocessor must compute the signals and send them to the airbag inflators and seat belt tensioners.
(3) The inflators must ignite and deploy the airbags and activate the tensioners.



Self-diagnosis System

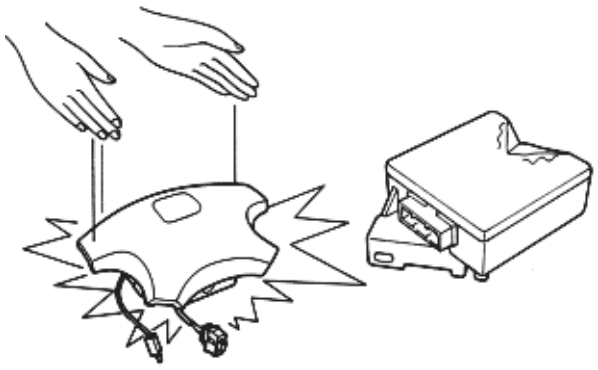
A self-diagnosis circuit is built into the SRS unit; when the ignition switch is turned ON (II), the SRS indicator light comes on and goes off after about six seconds if the system is operating normally.

If the light does not come on, or does not go off after six seconds or if it comes on while driving, it indicates an abnormality in the system. The system must be inspected and repaired as soon as possible.

For better serviceability, the SRS unit memory stores the cause of the malfunction and the unit is connected to the data link connector (DLC). This information can be read with the Honda PGM Tester when it is connected to the DLC (3P).

Please read the following precautions carefully before performing the airbag system service. Observe the instructions described in this manual, or the airbags could accidently deploy and cause damage or injuries.

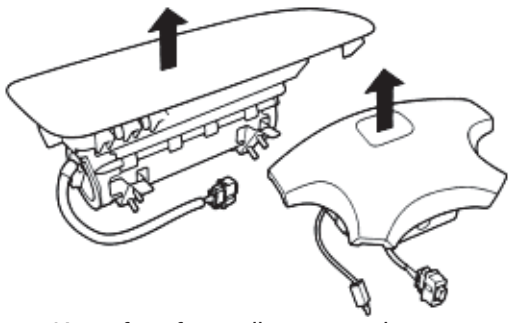
- Except when performing electrical inspections, always turn the ignition switch OFF and disconnect the negative cable from the battery and wait at least three minutes before beginning work.
  NOTE: The contents in the memory is not erased even if the ignition switch is turned OFF or the battery cables are disconnected from the battery.
- Use the replacement parts which are manufactured to the same standards as the original parts and quality. Do not install used SRS parts from another vehicle. 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 deformations.



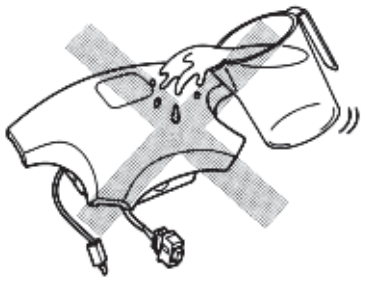
- Before removing any of the SRS parts (including the disconnection of the connectors), always disconnect the SRS connectors. For disconnection of the airbag connectors (**See Page** 24-22).
- Use only a digital multimeter to check the system. If it is not a Honda multimeter, make sure its output is 10 mA (0.01A) or less when switched to the lowest value in the ohmeter range. A tester with a higher output could cause accidental deployment and possible injury.
- Do not put objects on the front passenger's airbag assembly.

Do not disassemble the airbag, seat belt tensioner. It has no serviceable parts. Once an airbag has been deployed it cannot be repaired or reused.
For temporary storage of the airbag during service, please observe the following precautions.

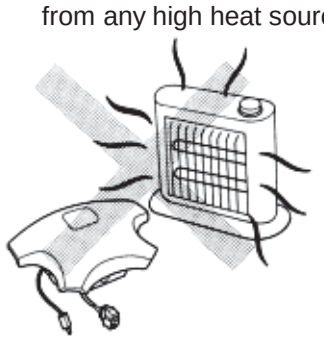
- Store the removed airbag with pad surface up. Never put anything on the removed airbag assembly.



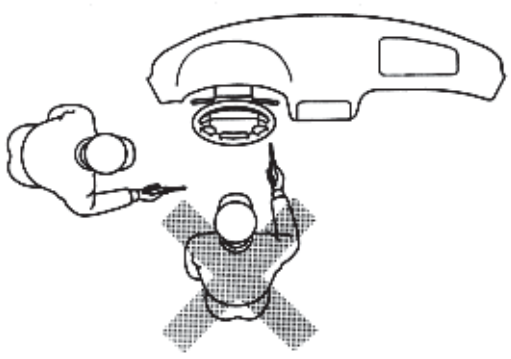
- Keep free from oil, grease, detergent or water to prevent damage to the airbag and seat belt tensioner assembly.



- Store the removed airbag on a secure flat surface away from any high heat source (exceeding 93°C/200°F).

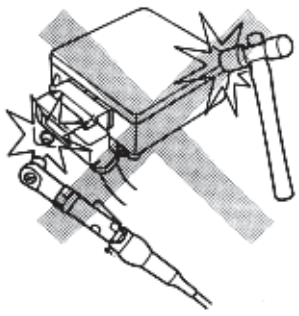


- Never perform electrical inspections to the airbag, seat belt tensioner such as measuring resistance.
- Do not position yourself in front of the airbag assembly during removal, inspection or replacement.

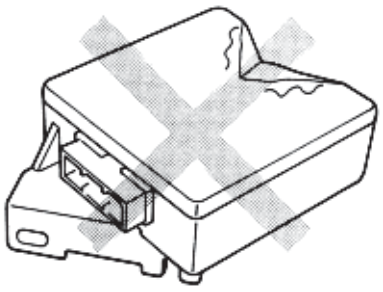


- Refer to the scrapping procedures for disposal of the damaged airbag.

- Be careful not to bump or impact the SRS unit whenever the ignition switch is ON (II), or at least for three minutes after the ignition switch is turned OFF.
- During installation or replacement, be careful not to bump (by impact wrench, hammer, etc.) the area around the SRS unit. The airbags could accidently deploy and cause damage or injury.



- After a collision in which the airbags were deployed, replace the SRS unit. After a collision in which the airbags were not deployed, inspect for any damage or deformation on the SRS unit. If there is any damage, replace the SRS unit.

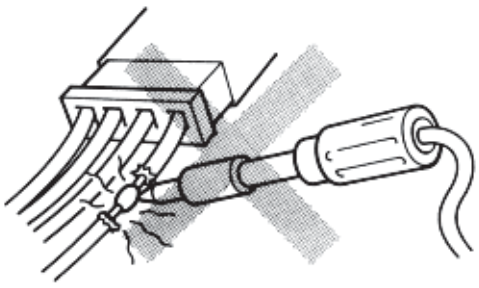


- Do not disassemble the SRS unit.
- Turn the ignition switch OFF, disconnect the battery negative cable and wait at least three minutes before beginning installation or replacement of the SRS unit, and disconnection of the 18P connector.
- Be sure the SRS unit is installed securely to the specified torque.
  TORQUE: 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
- Do not spill water or oil on the SRS unit and keep it away from dust.
- Store the SRS unit in a cool (less than 40°C/104°F) and dry (less than 80% relative humidity, not moisture) area.

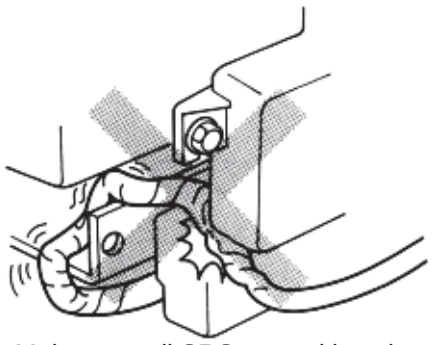
Cable Reel Alignment

- Centre the cable reel whenever the following is performed (**See Page** 24-68). Misalignment of the cable reel (the cable reel is not centred) could cause an open in the cable reel, making the SRS system and the horns inoperative.
  - 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 on the cable reel.
- If the cable reel shows any signs of damage for example, it does not rotate smoothly, replace the cable reel with a new one.

- SRS wiring can be identified by special yellow outer covering (except the SRS indicator light circuit). Observe the instructions described in this section.
- Never attempt to modify, splice, or repair SRS wiring. If there is an open or damage in SRS wiring, replace the harness.

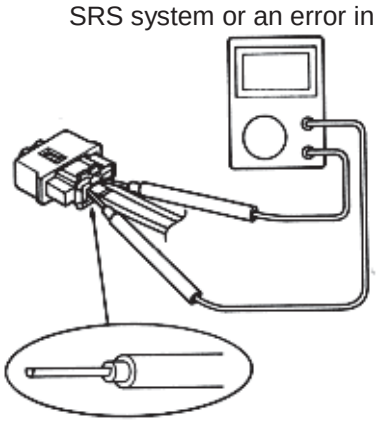


- Be sure to install the harness wires so that they are not pinched, or interfere with other parts.

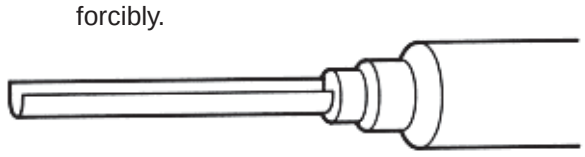


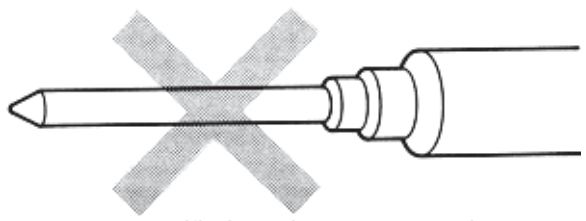
- Make sure all SRS ground locations are clean and grounds are securely fastened for optimum metal-to-metal contact. Poor grounding can cause intermittent problems that are difficult to diagnose.

- When using electrical test equipment, insert the probe of the tester into the wire side of the connector. Do not insert the probe of the tester into the terminal side of the connector and do not tamper with the connector. Inserting the probe into the terminal side of the connector, and tampering with the connector could cause malfunction of the SRS system or an error in inspection.



- Use a U-shaped probe. Do not insert the probe forcibly.



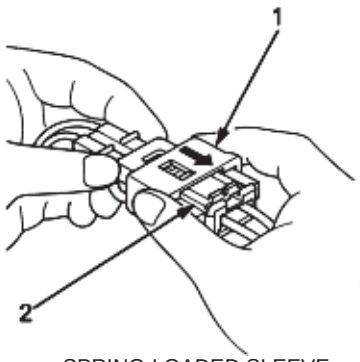


- Use specified service connectors in troubleshooting. Using tools which are not specified standard design could cause an error in inspection due to poor metal-to-metal contact.

Some SRS system connectors have a spring-loaded lock.

Disconnecting

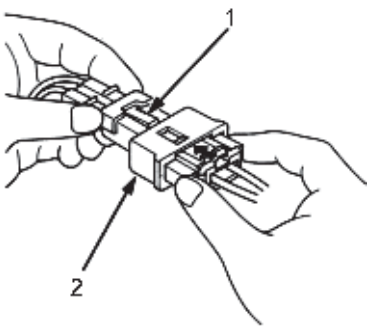
To release the lock, pull the spring-loaded sleeve towards the stop while holding the opposite half of the connector. Then pull the connector halves apart. Be sure to pull on the sleeve and not on the connector half.



1. SPRING-LOADED SLEEVE
2. STOP

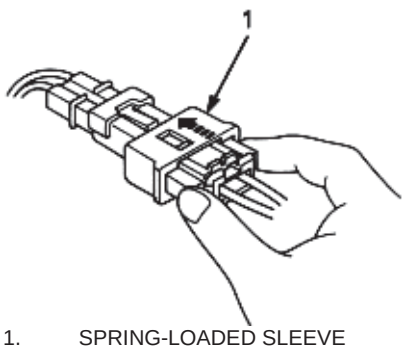
Connecting

1. Hold the pawl-side connector half and press on the back of the sleeve-side connector half in the directions shown. As the two connector halves are pressed together, the sleeve is pushed back by the pawl. Do not touch the sleeve.



1. PAWL
2. SPRING-LOADED SLEEVE

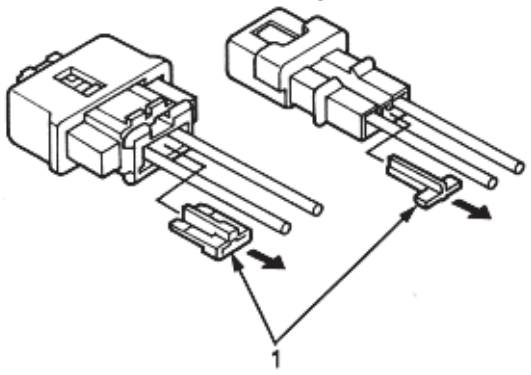
2. When the connector halves are completely connected, the pawl is released and the spring-loaded sleeve locks the connector.



1. SPRING-LOADED SLEEVE

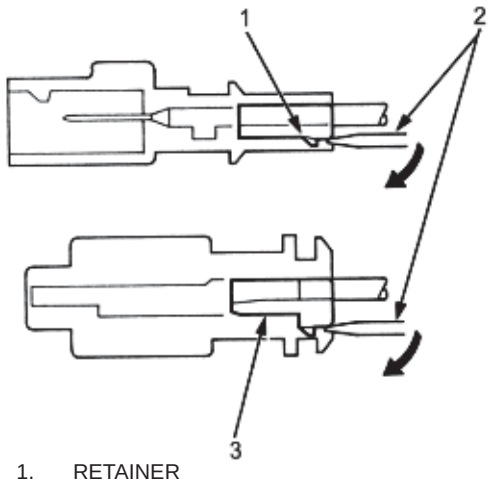
Backprobing Spring-loaded Lock Connectors

- When checking voltage or resistance on this type of connector the first time, it is necessary to remove the retainer to insert the tester probe from the wire side. It is not necessary to reinstall the removed retainer; the terminals will stay locked in the connector housing.



1. RETAINER
   * Discard after removal

- To remove the retainer, insert a flat-tip screwdriver between the connector body and the retainer, then carefully pry out the retainer. Take care not to break the connector.



1. RETAINER
2. FLAT-TIP SCREWDRIVER
3. RETAINER

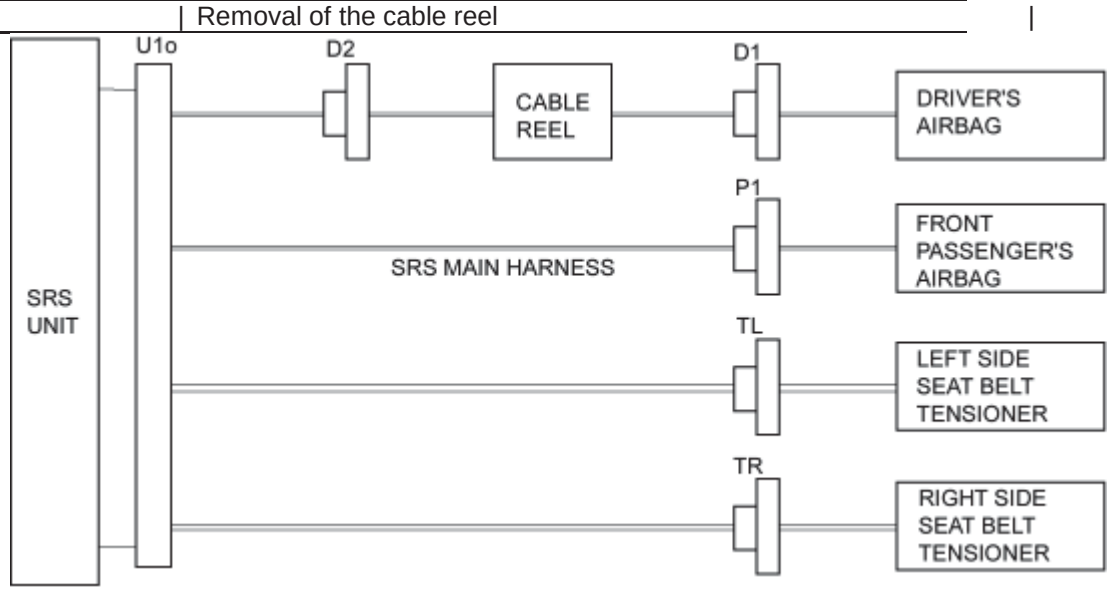
Disconnecting the Airbag Connectors and Seat Belt Tensioner Connectors

Before removing the airbag or SRS related devices (the SRS unit, the cable reel and the seat belt tensioner connector), disconnecting connectors from related devices, or removing the dashboard or the steering column, disconnect the airbag connectors from the airbags to prevent accidental deployment.

⚠ WARNING

Turn the ignition switch OFF and disconnect the negative cable from the battery, and wait at least three minutes before beginning the following procedures A and B. (procedure B follows the procedure A.)

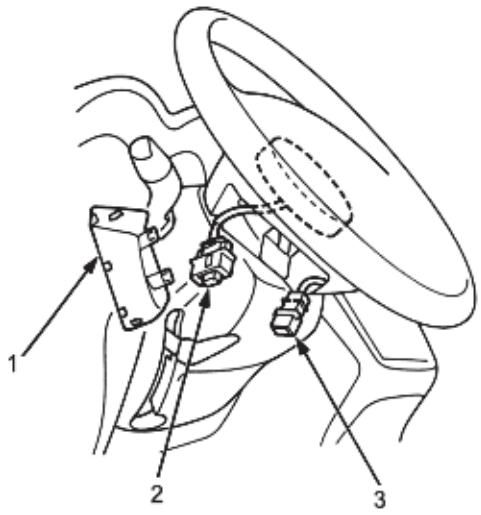
A. Airbag connectors to be disconnected	B. SRS devices to be removed/SRS-related connectors to be disconnected
Disconnect the D1, P1, TL and TR connectors	Removal of the SRS unit
Disconnect the D1, P1, TL and TR connectors	Disconnection of the U1o connector
Disconnect the D1 connector	Disconnection of the D2 connector
Disconnect the D1 connector	Removal of the cable reel



1. Disconnect the battery negative cable and wait at least three minutes.
2. Disconnect the airbag connector(s) and (or) seat belt tensioner(s) connector(s).

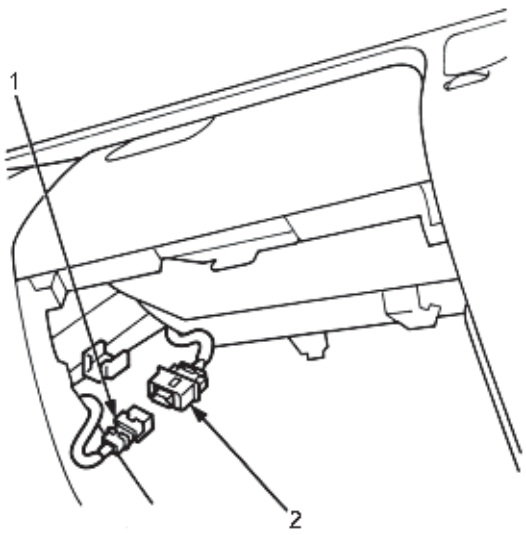
Driver's Side:

- Remove the access panel from the steering wheel, then disconnect the D1i connector and D1o connector.



1. ACCESS PANEL
2. D1o CONNECTOR
3. D1i CONNECTOR

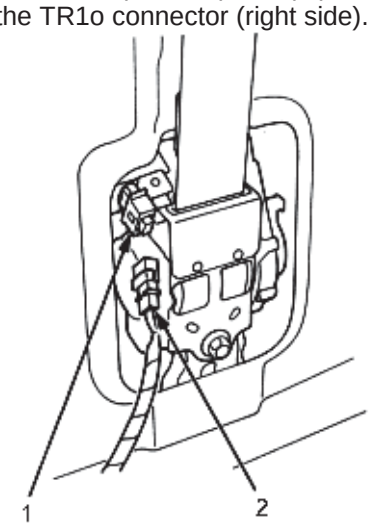
- Remove the glove box (see section 20) then disconnect the P1i connector and P1o connector.



1. P1i CONNECTOR
2. P1o CONNECTOR

Seat Belt Tensioner:

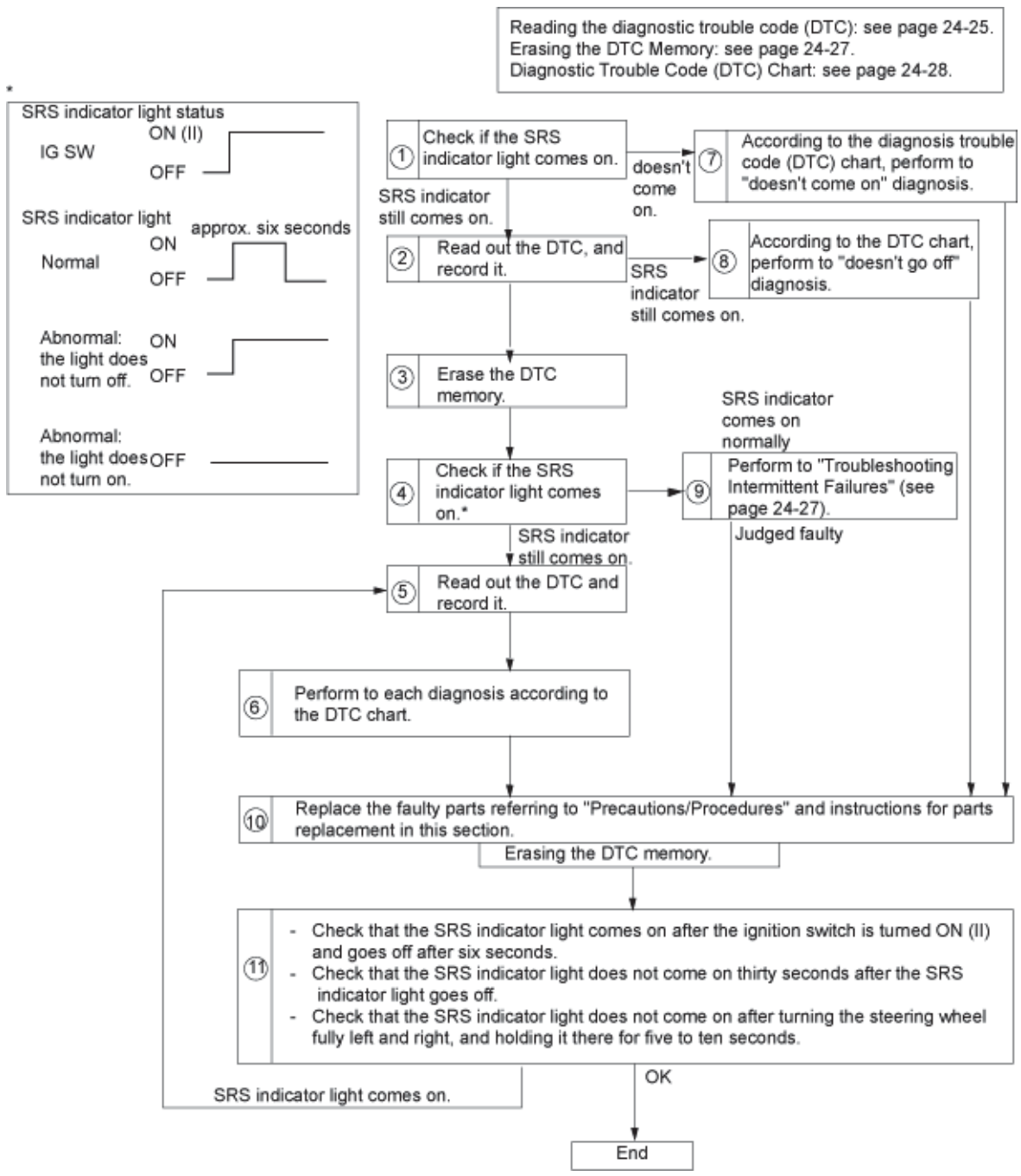
- Remove the left and (or) right "B" pillar trim panel (see section 20).
- Disconnect the TL1i connector from the TL1o connector (left side) and (or) TR1connector from the TR1o connector (right side).



1. TL1o CONNECTOR or (TR1o CONNECTOR)
2. TL1i CONNECTOR or (TR1i CONNECTOR)

For correct and effective troubleshooting, follow the flowchart below.
NOTE:

- Observe the precautions and the procedure described in this section in performing troubleshooting.
- Make sure the battery is sufficiently charged. If the battery is dead or low, measuring value won't be correct.
- When performing diagnosis for an open or damage in the wire harness, check the condition of the connectors and visually inspect the terminals for corrosion, bent pins or other damage.



The SRS indicator light indicates the DTC by the number of blinks when the SCS short connector is connected to the service check connector (2P).

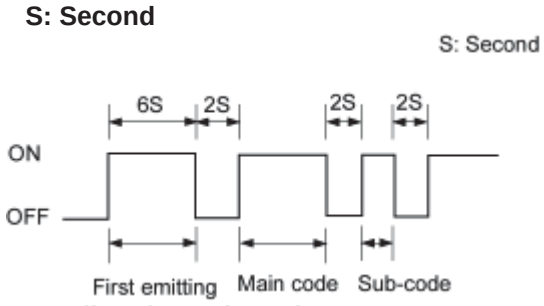
1. Turn the ignition switch OFF, and wait for ten seconds. Then connect the SCS short connector to the service check connector (2P). If you don't wait ten seconds, the SRS unit won't be completely reset or outputs DTCs.



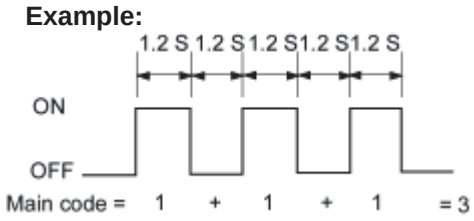
1. SRS INDICATOR LIGHT
2. SCS SHORT CONNECTOR, 07PAZ-0010100
3. SERVICE CHECK CONNECTOR (2P), [BRN/BLK, BRN]

2. Turn the ignition switch ON (II). The SRS indicator light comes on for about six seconds and then goes off. Then it will indicate the DTC.
3. Read the DTC.
4. Turn the ignition switch OFF, and wait for ten seconds. Then disconnect the SCS short connector from the service check connector (2P).

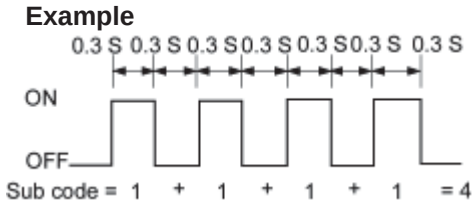
Patterns of the DTC Indications:
The DTC consists of a main code and sub-code.
S: Second



Reading the main code:
Count the number of blinks.
Example:



Reading the sub code:
Count the number of blinks.
Example

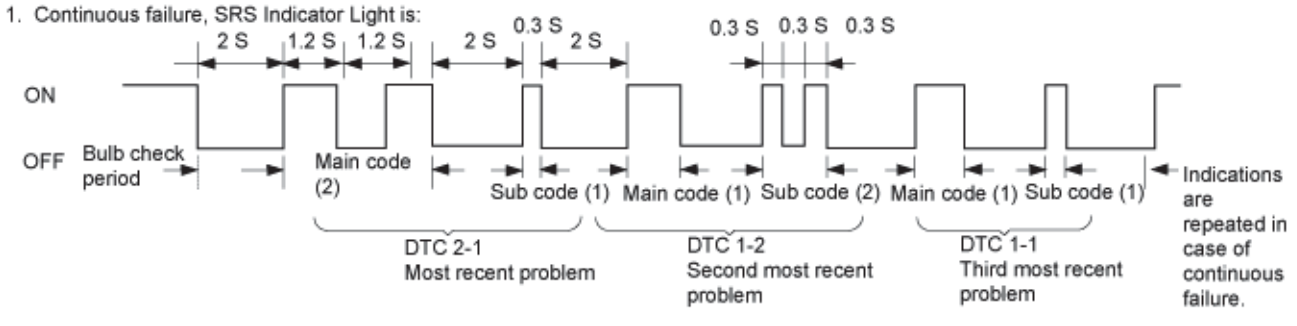


In case of main code is '3', sub code is '4', record DTC3-4.

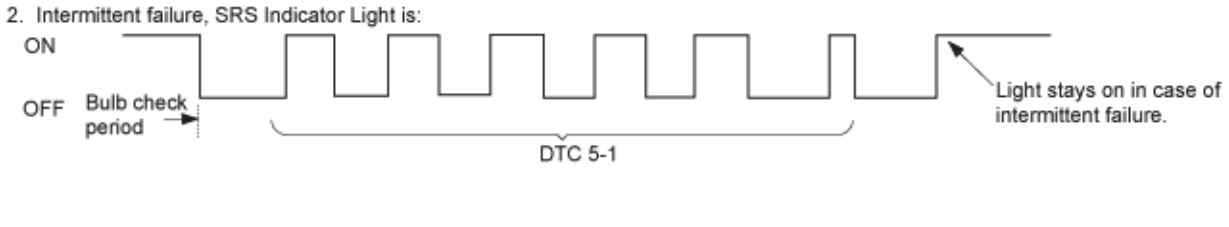
- Including the most recent problem, up to three different malfunctions can be indicated (see example 1 below).
- In case of a continuous failure, the DTC will be indicated repeatedly (see example 1 below).
- In case of an intermittent failure, the SRS indicator light will indicate the DTC one time, then it will stay on (see example 2 below).
- If both a continuous and an intermittent failure occurs, both DTCs will be indicated as continuous failures.
- When the system is normal (no DTC), the SRS indicator light will stay on (see example 3).
- If the SRS indicator light comes on continually without DTC, it will be faulty.

Examples of the DTC Indications:

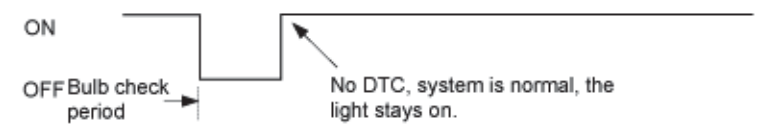
1. Continuous failure, SRS Indicator Light is:



2. Intermittent failure, SRS Indicator Light is:

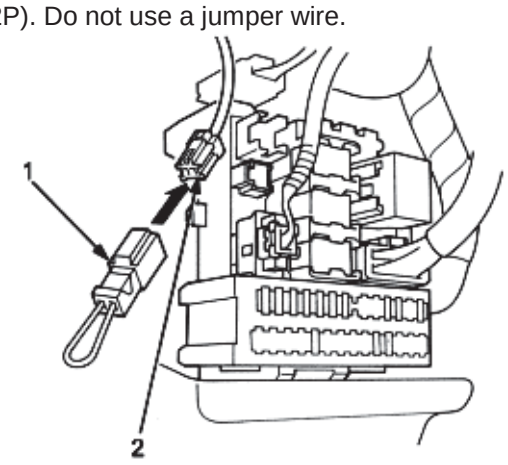


3. Normal (no failure), SRS Indicator Light is:



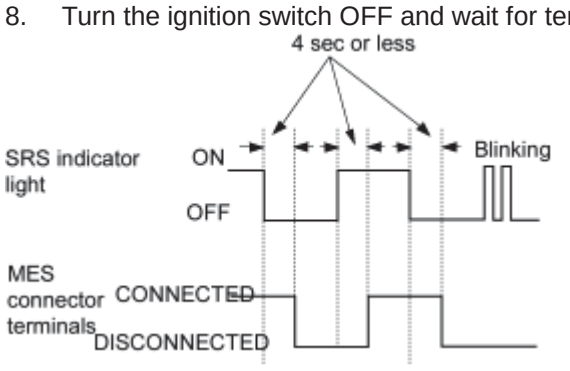
To erase the DTC(s) from the SRS unit, use a Honda PGM Tester SRS vehicle System Supplement or the following procedure.

1. Make sure the ignition switch is OFF.
2. Connect the SCS short connector to the MES connector (2P). Do not use a jumper wire.



1. SCS SHORT CONNECTOR, 07PAZ-0010100
2. MEMORY ERASE SIGNAL (MES) CONNECTOR (2P) [GRN, GRN] or [BLK, LT GRN/BLK]

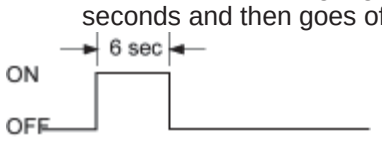
3. Turn the ignition switch ON (II).
4. The SRS indicator light comes on for about six seconds and goes off. Remove the SCS short connector from the MES connector (2P) within four seconds after the SRS indicator goes off.
5. The SRS indicator light comes on again. Reconnect the SCS short connector to the MES connector (2P) within four seconds.
6. The SRS indicator light goes off. Remove the SCS short connector from the MES connector (2P) within four seconds.
7. The SRS indicator light indicates that the memory is erased by blinking two times.
8. Turn the ignition switch OFF and wait for ten seconds.



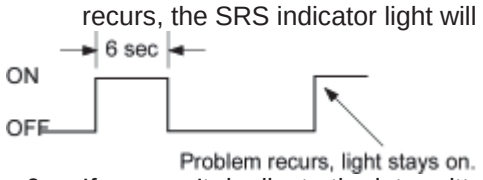
If there was a malfunction, but it doesn't recur, it will be stored in the memory as an intermittent failure and the SRS indicator light comes on.

After checking the DTC, troubleshoot as follows:

1. Read the DTC (see Reading the DTC).
2. Erase the DTC memory (see "Erasing the DTC Memory").
3. With the shift lever in neutral, start the engine and let the engine idle.
4. The SRS indicator light goes on for about six seconds and then goes off.



5. Shake the wire harness and connector, take a test drive (quick acceleration, quick braking, cornering), and turn the steering wheel fully left and right, and hold it there for five to ten seconds. If the problem recurs, the SRS indicator light will stay on.



6. If you can't duplicate the intermittent failure, the system is OK at this time.

SRS indicator light	DTC	Possible cause	Corrective action	See page
doesn't come on	none (doesn't come on)	Faulty SRS indicator light circuit	Troubleshooting	(**See Page** 24-33)
comes on	none (doesn't go off)	Faulty SRS indicator light circuit, internal failure of SRS unit, faulty SRS power supply (VB line)	Troubleshooting	(**See Page** 24-36)
comes on	1-1	Open or increased resistance in the driver's airbag	Troubleshooting	(**See Page** 24-40)
comes on	1-2	Increased resistance in the driver's airbag inflator	Troubleshooting	(**See Page** 24-40)
comes on	1-3	Short to another wire or decreased resistance in the driver's airbag inflator	Troubleshooting	(**See Page** 24-41)
comes on	1-4	Short to power in the driver's airbag inflator	Troubleshooting	(**See Page** 24-42)
comes on	1-5	Short to ground in the driver's airbag inflator	Troubleshooting	(**See Page** 24-43)
comes on	2-1	With front passenger's airbag: Open in the front passenger's airbag inflator Without front passenger's airbag: Open in the dummy resistor	Troubleshooting Troubleshooting	(**See Page** 24-44) (**See Page** 24-48)
comes on	2-2	With front passenger's airbag: Increased resistance in the front passenger's airbag inflator	Troubleshooting	(**See Page** 24-44)
		Without front passenger's airbag: Increased resistance in the dummy resistor	Troubleshooting	(**See Page** 24-48)
comes on	2-3	With front passenger's airbag: Short to another wire or decreased resistance in the passenger's airbag inflator	Troubleshooting	(**See Page** 24-45)
		Without front passenger's airbag: Short to another wire or decreased resistance in the dummy resistor	Troubleshooting	(**See Page** 24-49)
comes on	2-4	With front passenger's airbag: Short to power in the front passenger's airbag inflator	Troubleshooting	(**See Page** 24-46)
		Without front passenger's airbag: Short to power in the dummy resistor	Troubleshooting	(**See Page** 24-50)
comes on	2-5	With front passenger's airbag: Short to ground in the front passenger's airbag inflator	Troubleshooting	(**See Page** 24-47)
		Without front passenger's airbag: Short to power in the dummy resistor	Troubleshooting	(**See Page** 24-51)

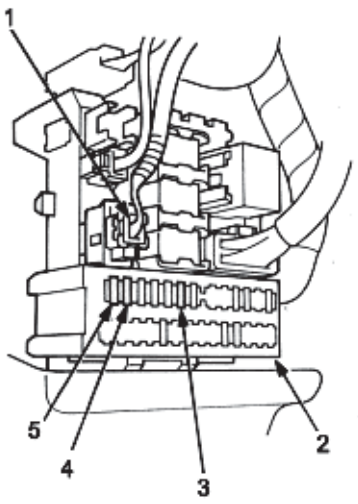
SRS indicator light	DTC	Possible cause	Corrective action	See page
comes on	3-1	Open in the left side seat belt tensioner	Troubleshooting	(**See Page** 24-52)
comes on	3-2	Increased resistance in the left side seat belt tensioner	Troubleshooting	(**See Page** 24-52)
comes on	3-3	Short to another wire or decreased resistance in the left side seat belt tensioner	Troubleshooting	(**See Page** 24-53)
comes on	3-4	Short to power in the left side seat belt tensioner	Troubleshooting	(**See Page** 24-54)
comes on	3-5	Short to ground in the left side seat belt tensioner	Troubleshooting	(**See Page** 24-55)
comes on	4-1	Open in the right side seat belt tensioner	Troubleshooting	(**See Page** 24-56)
comes on	4-2	Increased resistance in the right side seat belt tensioner	Troubleshooting	(**See Page** 24-56)
comes on	4-3	Short to another wire or decreased resistance in the right side seat belt tensioner	Troubleshooting	(**See Page** 24-57)
comes on	4-4	Short to power in the right side seat belt tensioner	Troubleshooting	(**See Page** 24-58)
comes on	4-5	Short to ground in the right side seat belt tensioner	Troubleshooting	(**See Page** 24-59)
comes on	5-2	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	5-4	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	6-4	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	7-1	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	7-2	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	7-3	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-1	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-2	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-3	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-4	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-5	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	8-6	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	9-1 *1	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	9-2 *2	Internal failure of the SRS unit	SRS unit replacement	(**See Page** 24-69)
comes on	10-1	SRS airbags deployed (SRS unit must be replaced)	SRS unit replacement	(**See Page** 24-69)

NOTE:

*1: In case of an intermittent failure DTC 9-1, it means there was an internal failure of the SRS unit or a faulty SRS indicator light circuit. Do the troubleshooting for intermittent failures (**See Page** 24-27).

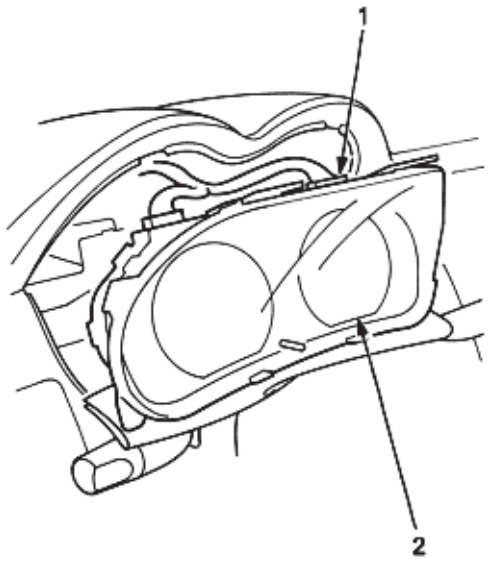
*2: In case of an intermittent failure DTC 9-2, it means there was an internal failure of the power supply (VB line). Do the troubleshooting for intermittent failures (**See Page** 24-27).

Fuse and Fo Connector:



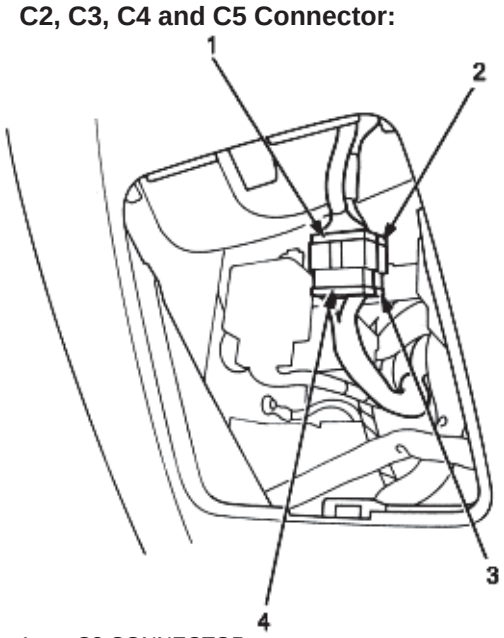
1. Fo CONNECTOR
2. UNDER-DASH FUSE/RELAY BOX
3. No. 6 (7.5A) FUSE
4. No. 2 (15A) FUSE
5. No. 1 (10A) FUSE

C1 Connector:



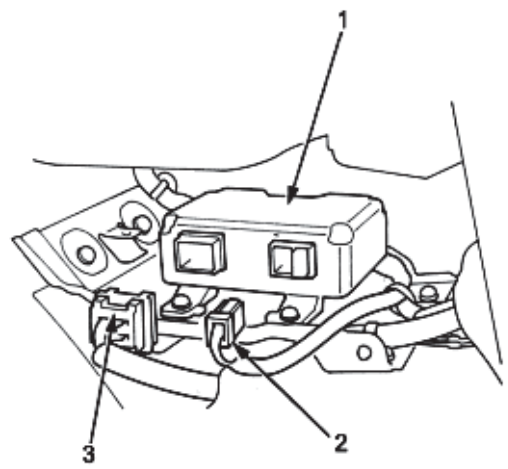
1. C1 CONNECTOR
2. GAUGE ASSEMBLY

C2, C3, C4 and C5 Connector:



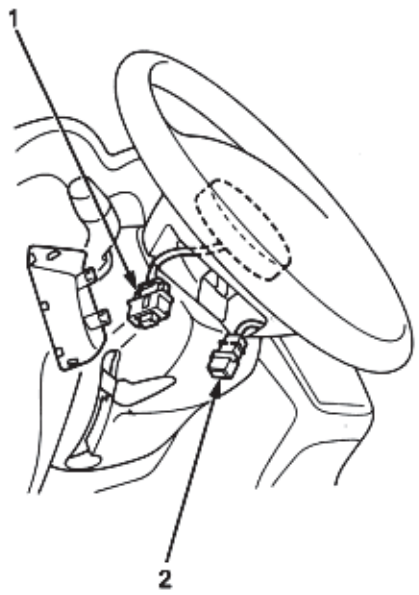
1. C2 CONNECTOR
2. C4 CONNECTOR
3. C5 CONNECTOR
4. C3 CONNECTOR

U1o and U2o Connector:



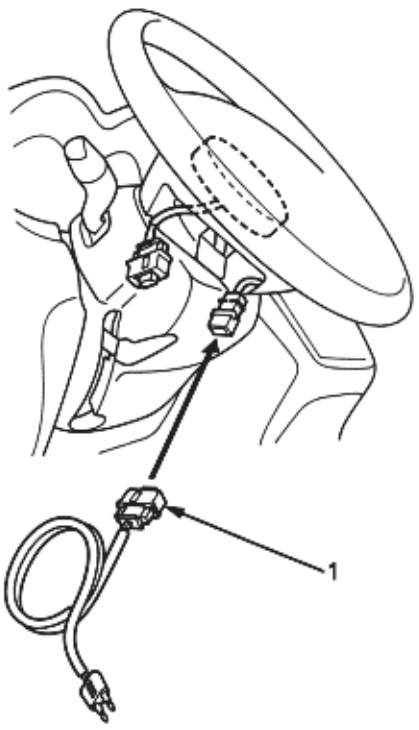
1. SRS UNIT
2. U2o CONNECTOR
3. U1o CONNECTOR

D1o Connector and D1i Connector:



1. D1o CONNECTOR
2. D1i CONNECTOR

Connecting the special tool to the D1i connector:



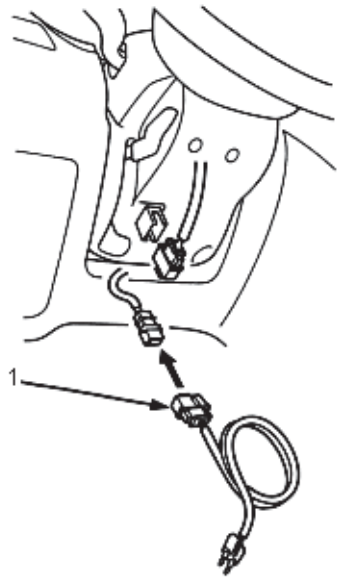
1. SRS SIMULATOR LEAD C, 07TAZ-SZ5011A and SRS INFLATOR SIMULATOR (2 OHM JACK), 07SAZ-TB4011A

D2o and D2i connector:



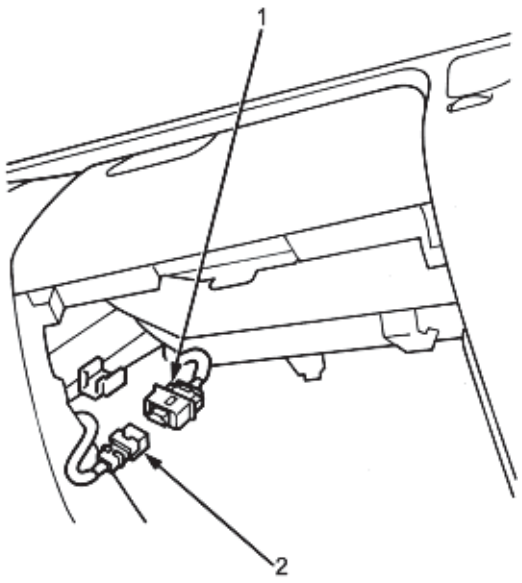
1. D2o CONNECTOR
2. D2i CONNECTOR

Connecting the special tool to the D2i connector:



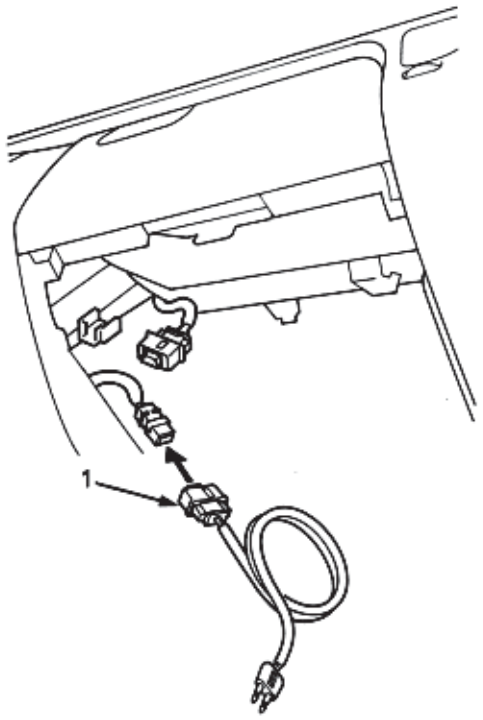
1. SRS SIMULATOR LEAD C, 07TAZ-SZ5011A and SRS INFLATOR SIMULATOR (2 OHM JACK), 07SAZ-TB4011A

P1o and P1i connector:



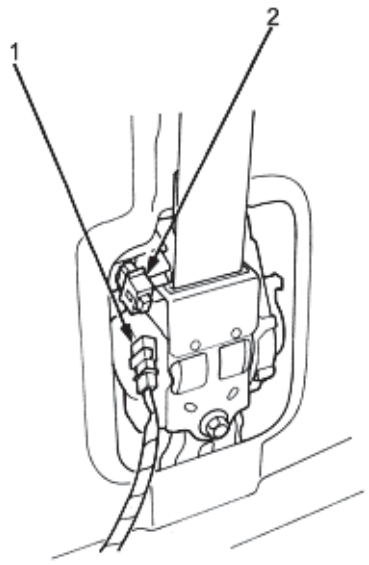
1. P1o CONNECTOR
2. P1i CONNECTOR

Connecting the special tool to the P1i Connector:



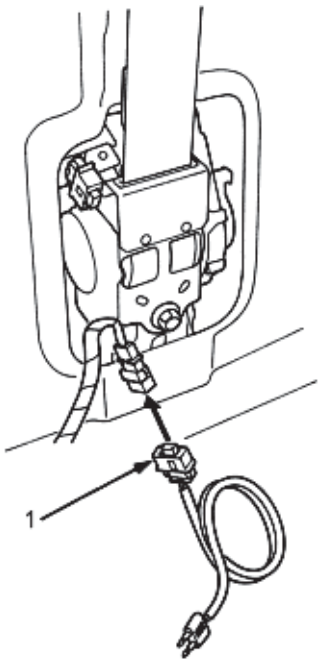
1. SRS SIMULATOR LEAD C, 07TAZ-SZ5011A and SRS INFLATOR SIMULATOR (2 OHM JACK), 07SAZ-TB4011A

TL1i Connector and TL1i Connector (left side) or TR1o Connector and TR1i Connector (right side)|:



1. TL1i (TR1i) CONNECTOR
2. TL1o (TR1o) CONNECTOR

Connecting the special tool to the TL1i (or TR1i) Connector:

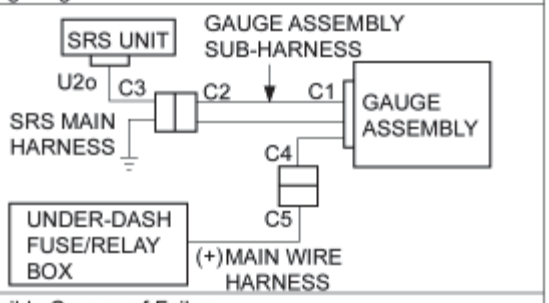


1. SRS SIMULATOR LEAD C, 07TAZ-SZ5011A and SRS INFLATOR SIMULATOR (2 OHM JACK), 07SAZ-TB4011A

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failure:

- Blown No. 6 (7.5 A) fuse in the under-dash fuse/relay box.
- There is a possibility of short to ground between the under-dash fuse/relay box and C1 connector or short to ground in other circuits in relation to the No. 6 fuse.
- Open between the under-dash fuse/relay box and C1 connector.
- Short to power between the U2o to C1 connectors.
- Open in the wire between the C1 connector to body ground. Faulty SRS unit.
- Failure or blown bulbs in the gauge assembly.

Refer to page 24-30 for the fuse box and connector locations.

Check the power supply (fuse):
Turn the ignition switch ON (II), and check whether the other indicator lights come on or not (brake system, etc).

Do the other indicator lights come on?

YES — (A) To page 24-34

NO

Check the fuse:
Turn the ignition switch OFF and check the No. 6 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse ok?

YES

NO — (B)

(A) To page 24-34

(B)

Check the SRS indicator light:
1. Check the No. 6 (7.5 A) fuse in the under-dash fuse/relay box.
2. Turn the ignition switch ON (II), and check whether the SRS indicator light comes on.

Does the SRS indicator light come on?

YES — END

NO

Check the fuse:
1. Turn the ignition switch OFF and check the No. 6 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

YES

NO — **Return to the power supply check (the top of this flowchart).**

Check for a short to ground in the power supply circuit:
1. Replace the No. 6 (7.5 A) fuse in the under-dash fuse/relay box.
2. Disconnect the C1 connector from the gauge assembly.
3. Turn the ignition switch OFF thirty seconds after turning the ignition switch ON (II).
4. Check the No. 6 (7.5 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

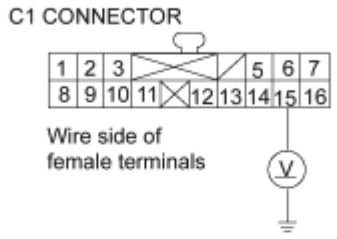
YES — Short to ground in other circuits beside the SRS indicator light circuit in relation to the No. 6 (7.5 A) fuse; refer to the "Power Distribution" in the "Electrical" section of this manual to proceed to check any short to ground in the circuits excluding the SRS indicator light circuit in relation to the No. 6 (7.5 A) fuse.

NO — Short to ground in the yellow wire of the SRS indicator light circuit in the gauge assembly; replace the gauge assembly.

(A) From page 24-33

Check for an open between the under-dash fuse/relay box and C1 connector:

1. Turn the ignition switch OFF.
2. Disconnect the C1 connector from the gauge assembly.
3. Turn the ignition switch ON (II) and check for voltage between the No. 15 terminal of the C1 connector and body ground. There should be battery voltage.



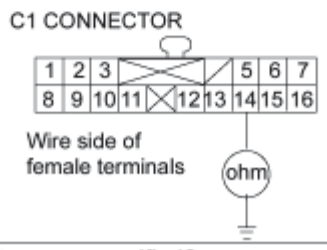
Is the voltage as specified?

YES

NO (C)

Check for an open between the C1 connector and body ground:

1. Turn the ignition switch OFF and check resistance between the No. 14 terminal of the C1 connector and body ground. There should be 0 - 1.0 ohms.



Is the resistance as specified?

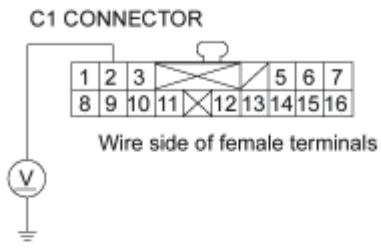
YES (D)

NO To page 24-35 (E)

(D)

Check for a short to power between the C1 connector and the SRS unit:

1. Turn the ignition switch ON (II) and wait for six seconds. Check for voltage between the No. 2 terminal of the C1 connector and body ground. There should be 8.5 V or less.



Is the voltage as specified?

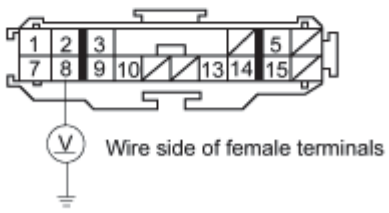
YES (F) To page 24-35

NO To page 24-35 (G)

(C)

Check for an open between the under-dash fuse/relay box and the C5 connector:

1. Turn the ignition switch OFF.
2. Disconnect the C5 connector from the C4 connector.
3. Turn the ignition switch ON (II) and check for voltage between the No. 8 terminal of the C5 connector and body ground. There should be battery voltage.



Is the voltage as specified?

YES

NO

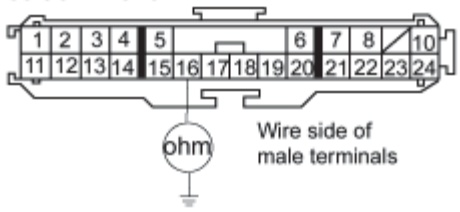
Open in the yellow wire of the main wire harness; replace the gauge assembly main harness.

Open in the yellow wire of the gauge assembly sub-harness; replace the gauge assembly sub-harness.

From page 24-34 (E)

Check for an open between the C3 connector and body ground:
1. Disconnect the C3 connector from the C2 connector.
2. Check the resistance between the No. 16 terminal of the C3 connector and body ground. There should be 0 - 1.0 ohm.

C3 CONNECTOR



Is there resistance as specified?

YES

Open in the balck wire of the main wire harness or poor body ground; replace the main wire harness

NO

Open in the black wire of the gauge assembly sub-harness: replace the gauge assembly sub-harness.

(F) From page 24-34

Check the SRS indicator light blub:
1. Turn the ignition switch OFF.
2. Remove the gauge assembly.
3. Check for a blown SRS indicator light blub.

Is the SRS indicator light blub OK?

YES

Blown SRS indicator light blub; replace the SRS indicator light blub.

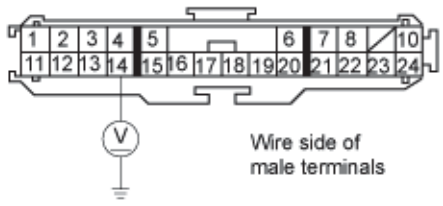
NO

Faulty SRS indicator light circuit in the gauge assembly; replace the gauge assembly.

From page 24-34 (G)

Check for a short to power between the SRS unit and the C3 connector:
1. Turn the ignition switch OFF.
2. Disconnect the C3 connector from the C2 connector.
3. Check for voltage between the No. 14 terminal of the C3 connector and body ground for six seconds after turning the ignition switch ON (II). There should be 8.5 V or less.

C3 CONNECTOR



Is there 8.5 V or less for six seconds after the ignition switch has been turned ON (II)?

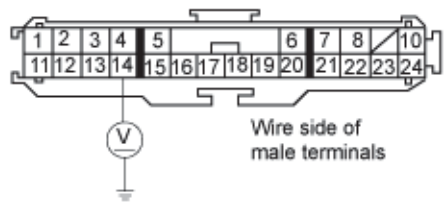
YES

Short to power in the blue wire of the gauge assembly sub-harness; replace the gauge assembly sub-harness

NO

Check for short to power between the U2o and C3 connectors:
1. Turn the ignition switch OFF.
2. Disconnect the U2o connector from the SRS unit.
3. Turn the ignition switch ON (II) and check the voltage between the No. 14 terminal of the C3 connector and body ground. There sholud be 0.5 V or less.

C3 CONNECTOR



Is the voltage as specified?

YES

Faulty SRS unit; replace the SRS unit.

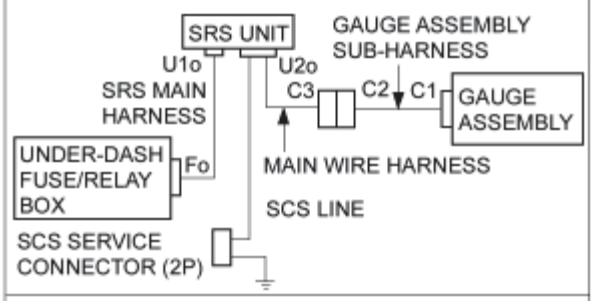
NO

Short to power in the main wire harness; replace the main wire harness.

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failure:

- Open or short to ground between the U2o and C1 connectors.
- Faulty SRS indicator light circuit in the gauge assembly.
- Faulty SRS unit.
- Faulty power supply circuit in the SRS unit.
- Failure in SCS line with the record of the SRS unit trouble.

Refer to page 24-30 for the fuse box and connector locations and page 24-27 for erasing the DTC memory.

Check that the SRS indicator light is blinking:
1. Erase the DTC memory.

Does the SRS indicator light go out after the DTC memory has been erased?

YES — NO

(A) To page 24-39

Check the fuse:
1. Check the No 1 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES — NO

(B) To page 24-37

Check the fuse:
Replace the No. 1 (10 A) fuse in the under-dash fuse/ relay box.
Turn the ignition switch ON (II) and wait for thirty seconds. Then turn the ignition switch OFF.
Check the No. 1 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES — NO (C)

END

Check for a short to ground in the SRS unit:
1. Replace the No. 1 (10 A) fuse in the under-dash fuse/ relay box.
2. Disconnect the battery negative cable and wait for three minutes.
3. Disconnect the D1, P1, TL and TR connectors to prevent an accidental deployment of the airbag and seat belt tensioner.
4. Disconnect the U1o connector from the SRS unit.
5. Reconnect the battery negative cable.
6. Turn the ignition switch ON (II) and wait for thirty seconds. Then turn the ignitionswitch OFF.
7. Check the No. 1 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES — NO

Short to ground in the SRS unit, replace the SRS unit.

Check for a short to ground in the SRS main harness:
1. Replace the No. 1 (10 A) fuse in the under-dash fuse/ relay box.
2. Disconnect the Fo connector from the under-dash fuse/relay box.
3. Turn the ignition switch ON (II) and wait for thirty seconds. Then turn the ignitiom switch OFF.
4. Check the No. 1 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES — NO

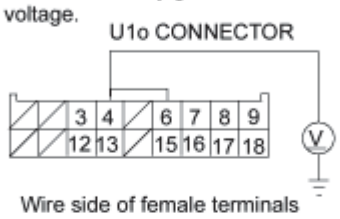
Short to ground in the SRS main harness; replace the SRS main harness.

Short to ground in the under-dash fuse/relay box or in the circuits in relation to the No. 1 (10 A) fuse of the VB line; refer to the "Power Distribution" in the "Electrical" section of this manual to proceed to check any short to ground in relation to the No. 1 (10 A) fuse.

(B) From page 24-36

Check for an open in the VB line:

1. Disconnect the battery negative cable and wait for three minutes.
2. Disconnect the D1, P1, TL and TR connectors to prevent an accidental deployment of the airbag and seat belt tensioner.
3. Disconnect the U1o connector from the SRS unit.
4. Reconnect the battery negative cable.
5. Turn the ignition switch ON (II).
6. Check for voltage between the No. 4 terminal of the U1o connector and body ground. There should be battery voltage.



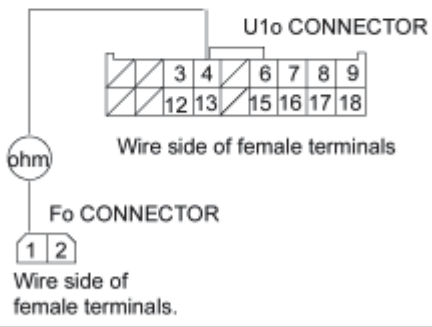
Is the voltage as specified?

YES (D)

NO

Check for an open between the Fo and U1o connectors:

1. Turn the ignition switch OFF.
2. Disconnect rge Fo connector from the under-dash fuse/relay box.
3. Check for resistance between the No. 4 terminal of the U1o connector and the No. 1 terminal of the Fo connector. There should be 0 - 1.0 ohm.



Is the resistance as specified?

YES

NO

Open in the under-dash fuse/relay box or poor contact at the Fo connector; check the connector.

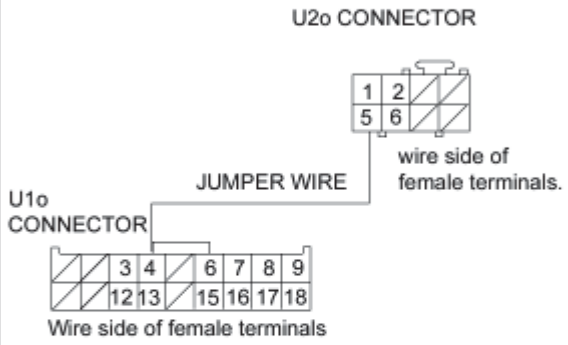
- **If the connect is OK, replace the under-dash fuse /relay box or repair it.**

Open in the SRS main harness; replace the SRS main harness.

(D)

Check for an open or a short to ground between the U1o connector and the gauge assembly:

1. Turn the ignition switch OFF.
2. Disconnect the U2o connector from the SRS unit.
3. Connect a jumper wire between the No. 4 terminal of the U1o connector and the No. 5 terminal of the U2o connector.
4. Turn the ignition switch ON (II).
5. Check that the SRS indicator light goes off.



Does the SRS indicator light go off?

YES

NO

Faulty SRS unit; replace the SRS unit.

Check for a short to ground between the U2o connector and the gauge assembly:

1. Turn the ignition switch OFF.
2. Disconnect the jumper wire between the No. 4 terminal of the U1o connector and the No. 5 terminal of the U2o
3. connector.
   Check the No. 1 (10 A) fuse in the under-dash fuse/ relay box.

Is the fuse OK?

YES

NO

(E) To page 24-38

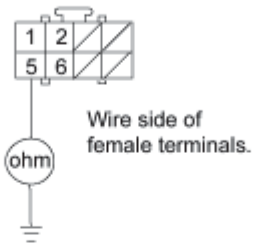
To page 24-38 (F)

From page 24-37 (F)

Check for a short to ground between the U2o and C1 connectors:

1. Replace the No. 1 (10 A) fuse in the under-dash fuse/ relay box.
2. Disconnect the C1 connector from the gauge assembly.
3. Check the resistance between the No. 5 terminal of the U2o connector and body ground. There should be 1 M ohm or more.

U2o CONNECTOR



Is the resistance as specified?

YES

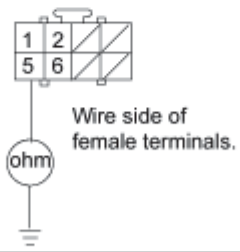
Faulty SRS indicator light circuit in the gauge assembly; replace the gauge assembly.

NO

Check for a short to ground between the U2o and C3 connectors:

Disconnect the C2 connector from the C3 connector. Check resistance between the No. 5 terminal of the U2o connector and body ground. There should be 1 M ohm or more.

U2o CONNECTOR



Is the resistance as specified?

YES

Short to ground between the C2 and C1 connectors in the gauge assembly sub-harness; replace the gauge assembly sub-harness.

NO

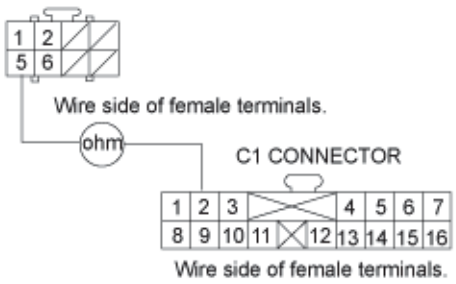
Short to ground between the U2o and C3 connectors in the main wire harness; replace the main wire harness.

(E) From page 24-37

Check for a short to ground between the U2o and C1 connectors:

1. Disconnect the C1 connector from the gauge assembly.
2. Check the resistance between the No. 5 terminal of the U2o connector and the No. 2 terminal of the C1 connector. There should be 0 - 1.0 ohm.

U2o CONNECTOR



Is the resistance as specified?

YES

Faulty SRS indicator light circuit in the gauge assembly or poor contact at the C1 connector; check the connection between the c1 connector and the gauge assembly.

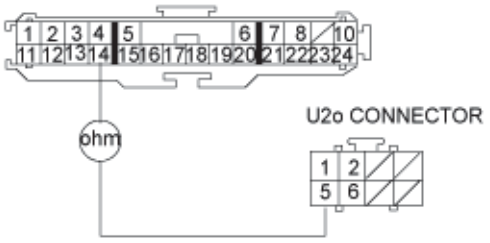
- **If the connection is OK, replace the gauge assembly.**

NO

Check for open between the U2o and C3 connectors:

1. Check resistance between the No. 5 terminal of the U2o connector and the No. 14 terminal of the C3 connector. There should be 0 - 1.0 ohm.

C3 CONNECTOR



Is the resistance as specified?

YES

Open in the gauge assembly sub-harness or poor connection between the C3 and C2 connectors; check the connection between the No. 14 terminal of the C3 and C2 connectors.

- **If the connection is OK, replace the gauge assembly sub-harness**

NO

Open in the SRS main harness: replace the SRS main harness

(A) From page 24-36

Check for an open in the SCS line.

1. Disconnect the U2o connector from the SRS unit.
2. Connect the SCS short connector to the SCS service connector (2P).
3. Check resistance between the No. 6 terminal of the U2o connector and body ground. There should be 0 - 1.0 ohm.

U2o CONNECTOR

Is the resistance as specified?

YES

Faulty SRS unit or poor contact between the U2o and the SRS unit; check the connection between the U2o connector and the SRS unit.

- If the connection is OK, replace the SRS unit.

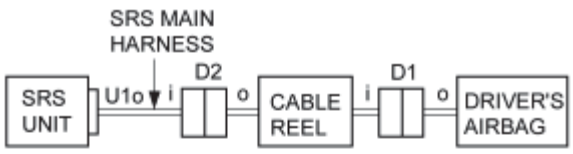
NO

Open in the SCS line or an open between the No. 6 terminal of the U2o connector and the No. 1 terminal (brown wire) of the SCS service connector (2P) or an open between the No. 2 terminal of the SCS service connector and body ground; refer to the"Electrical" section, then continue troubleshooting.

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Open or increased resistance between the U1o connector and the D1i connectors.
- Open or increased resistance in the driver's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II), and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for an open or increased resistance in the driver's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1i connector from the D1o connector (see page 24-31).
3. Connect the special tool (2 ohm) to the D1i connector (see page 24-31).
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 1-1 or DTC 1-2 indicated?

YES — **Open or increased resistance in the driver's airbag inflator; replace the driver's airbag (see page 24-60).**

NO — (A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-31)
(**See Page** 24-25)
(**See Page** 24-60)

(A)

Check for an open or increased resistance in the cable reel:

1. Disconnect the D2o connector from the D2i connector (see page 24-31).
2. Connect the special tool (2 ohm) to the D2i connector (see page24-31.
3. Erase the DTC memory.
4. Read the DTC.

Is DTC 1-1 or DTC 1-2 indicated?

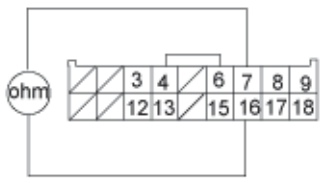
YES — Open or increased resistance in the cable reel; replace the cable reel (see page 24-66).

NO

Check for an open or increased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see page 24-32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Check the resistance between the No. 7 terminal and the No. 16 terminal of the U1o connector. There should be 2.0 - 3.0 ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES — **Faulty SRS unit or poor contact at the SRS main harness U1o connector and the SRS unit, check the connection between the SRS main harness U1o connector and the SRS unit.**
- If the connection is OK, repalce the SRS unit (see page 24-69)

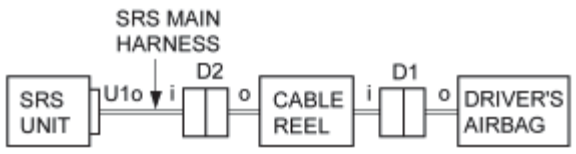
NO — **Open or increased resistance in the SRS main harness; replace the SRS main harness**

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-66)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to another wire or decreased resistance between the U1o connector and the D1i connectors.
- Short to another wire or increased resistance in the driver's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II), and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for an open or increased resistance in the driver's airbag inflator:

Disconnect the negative battery cable and wait for three minutes.
Disconnect the D1i connector from the D1o connector (see page 24-31).
Connect the special tool (2 ohm) to the D1i connector (see page 24-31).
Reconnect the negative battery cable.
Erase the DTC memory (see page 24-27).
Read the DTC (see page 24-25).

Is DTC 1-3 indicated?

YES — NO

Short to another wire or decreased resistance in the driver's airbag inflator; replace the driver's airbag (see page 24-60).

(A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-31)
(**See Page** 24-25)
(**See Page** 24-60)

(A)

Check for a short to another wire or decreased resistance in the cable reel:

1. Disconnect the D2o connector from the D2i connector (see page 24-31).
2. Connect the special tool (2 ohm) to the D2i connector (see page24-31.
3. Erase the DTC memory.
4. Read the DTC.

Is DTC 1-3 indicated?

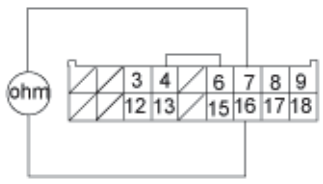
YES — NO

Short to another wire or decreased resistance in the cable reel; replace the cable reel (see page 24-66).

Check fora short to another wire or decreased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for
2. three minutes.
3. Disconnect the P1, TL1 and TR1 connectors (see page
4. 24-32).
   Disconnect the U1o connector from the SRS unit (see
5. page 24-30).
   Disconnect the special tool (2 ohm) from the D2i connector, (see page 24-31).
   Check the resistance between the No. 7 terminal and the No. 16 terminal of the U1o connector. There should be 1 M ohm or more.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

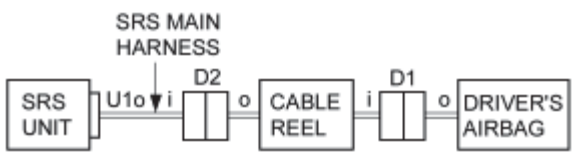
Short to another wire or decreased resistance in the SRS main harness; replace the SRS main harness

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-66)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to power between the U1o connector and the D1i connectors.
- Short to power in the driver's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II), and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to power in the driver's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1i connector from the D1o connector (see page 24-31).
3. Connect the special tool (2 ohm) to the D1i connector (see page 24-31).
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 1-4 indicated?

YES — NO

Short to power in the driver's airbag inflator; replace the driver's airbag (see page 24-60).

(A)

To go to the pages referenced on the diagram above, click on the following:

(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-31)
(**See Page** 24-25)
(**See Page** 24-60)

(A)

Check for a short to power in the cable reel:

1. Disconnect the D2o connector from the D2i connector (see page 24-31).
2. Connect the special tool (2 ohm) to the D2i connector (see page24-31.
3. Erase the DTC memory.
4. Read the DTC.

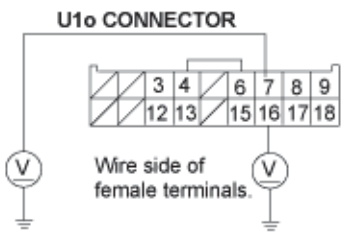
Is DTC 1-4 indicated?

YES — NO

Short to power in the cable reel; replace the cable reel (see page 24-66).

Check for a short to power in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see page 24-32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the D2i connector, (see page 24-31).
5. Reconnect the negative battery cable.
6. Turn the ignition switch ON (II).
7. Check the voltage between the No. 7 terminal of the U1o connector and body ground. There should be 0.5 V or less. Check the voltage between the No. 16 terminal of the U1o connector and body ground. There should be 0.5 V or less.



Is the voltage as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to power in the SRS main harness; replace the SRS main harness

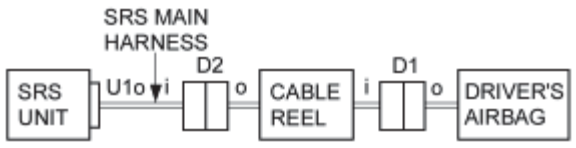
To go to the pages referenced on the diagram above, click on the following:

(**See Page** 24-31)
(**See Page** 24-66)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to ground between the U1o connector and the D1i connectors.
- Short to ground in the driver's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:
1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II), and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to ground in the driver's airbag inflator:
1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1i connector from the D1o connector (see page 24-31).
3. Connect the special tool (2 ohm) to the D1i connector (see page 24-31).
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 1-5 indicated?

YES — NO

Short to ground in the driver's airbag inflator; replace the driver's airbag (see page 24-60).

(A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-31)
(**See Page** 24-25)
(**See Page** 24-60)

(A)

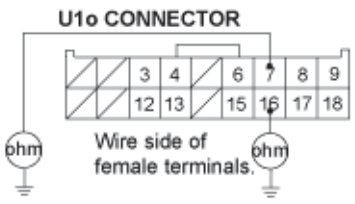
Check for a short to ground in the cable reel:
1. Disconnect the D2o connector from the D2i connector (see page 24-31).
2. Connect the special tool (2 ohm) to the D2i connector (see page24-31.
3. Erase the DTC memory.
4. Read the DTC.

Is DTC 1-5 indicated?

YES — NO

Short to ground in the cable reel; replace the cable reel (see page 24-66).

Check for a short to ground in the SRS main harness:
1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see page 24-32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the D2i connector, (see page 24-31).
5. Check the resistance between the No. 7 terminal of the U1o connector and body ground. There should be 1 M ohm or more. Then check the resistance between the No. 16 terminal of the U1o connector and body ground. There should be 1 M ohm or more.



Is the resistance as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

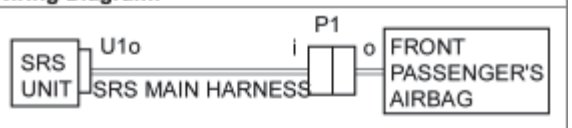
Short to ground in the SRS main harness; replace the SRS main harness

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-66)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Open or increased resistance between the U1o connector and the P1i connector.
- Open or increased resistance in the front passenger's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for an open or increased resistance in the front passenger's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1i connector from the P1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the P1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 2-1 or 2-2 indicated?

YES — NO

Open or increased resistance in the front passenger's airbag inflator; replace the front passenger's airbag inflator (see page 24-62).

(A)

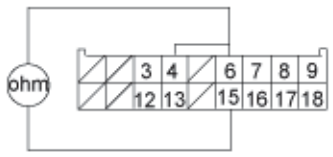
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-31)
(**See Page** 24-25)
(**See Page** 24-60)

(A)

Check for an open or increased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit then check the resistance between the No. 6 and No. 15 terminals of the U1o connector. There should be 2.0 - 3.0 ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES — NO

Faulty SRS unit or poor contact at the U1o connector and the SRS unit; check the connection between the U1o connector and the SRS unit.

- **If the connector is OK, replace the SRS unit (see page 24-69)**

Open or increased resistance in the SRS main harness; replace the main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to another wire or decreased resistance between the U1o connector and the P1i connector.
- Short to another wire or decreased resistance in the front passenger's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to another wire or de increased resistance in the front passenger's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1i connector from the P1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the P1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 2-3 indicated?

YES — NO

Short to another wire or decreased resistance in the front passenger's airbaginflator; replace the front passenger's airbag inflator (see page 24-62).

(A)

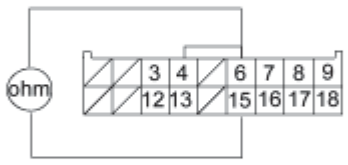
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-32)
(**See Page** 24-25)
(**See Page** 24-62)

(A)

Check for a short to another wire or decreased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the special tool (2 ohm) from the P1i connector (see page 24-32).
4. Disconnect the U1o connector from the SRS unit then check the resistance between the No. 6 and No. 15 terminals of the U1o connector. There should be 1 M ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69).

Short to another wire or decreased resistance in the SRS main harness; replace the SRS main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to power between the U1o connector and the P1i connector.
- Short power in the front passenger's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to power in the front passenger's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1i connector from the P1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the P1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 2-4 indicated?

YES — NO

Short to power in the front passenger's airbag inflator; replace the front passenger's airbag inflator (see page 24-62).

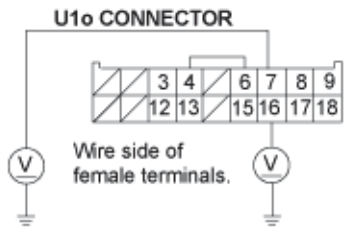
(A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-32)
(**See Page** 24-25)
(**See Page** 24-62)

(A)

Check for a short to power in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-69).
4. Disconnect the special tool (2 ohm) from the P1i connector, (see page 24-32).
5. Reconnect the negative battery cable.
6. Turn the ignition switch ON (II).
7. Check the voltage between the No. 7 terminal of the U1o connector and body ground. There should be 0.5 V or less. Check the voltage between the No. 16 terminal of the U1o connector and body ground. There should be 0.5 V or less.



Is the voltage as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to power in the SRS main harness; replace the SRS main harness

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to ground between the U1o connector and the
- P1i connector.
- Short to ground in the front passenger's airbag inflator.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for a short to ground in the front passenger's airbag inflator:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1i connector from the P1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the P1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 2-5 indicated?

YES

Short to ground in the front passenger's airbag inflator; replace the front passenger's airbag inflator (see page 24-62).

NO

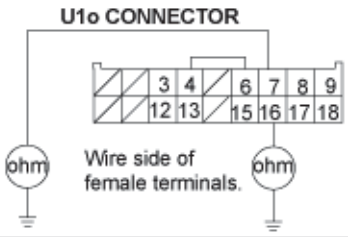
(A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-32)
(**See Page** 24-25)
(**See Page** 24-62)

(A)

Check for a short to ground in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the P1i connector, (see page 24-32).
5. Check the resistancebetween the No. 6 terminal of the U1o connector and body ground. There should be 1 M ohm or more.
6. Check the resistance between the No. 15 terminal of the U1o connector and body ground. There should be 1 M ohm or more.



Is the resistance as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69)

NO

Short to ground in the SRS main harness; replace the SRS main harness

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Open or increased resistance between the U1o connector and the P1i connector.
- Open or increased resistance in the dummy resistor.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is ok at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for an open or increased resistance in the dummy resistor:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the dummy resistor from the SRS main harness 2P connector.
3. Check resistance between the A and B terminals of the dummy resistor. There should be 1.5 - 2.5 ohm.

Is the resistance as specified?

YES

Faulty dummy resistor; replace dummy resistor.

NO

(A)

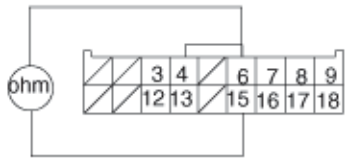
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)

(A)

Check for an open or increased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30.
4. Reconnect the dummy resistor ti the SRS main harness 2P connector.
5. Check the resistance between the No. 6 and No. 15 terminals of the U1o connector. There should be 2.0 - 3.0 ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES

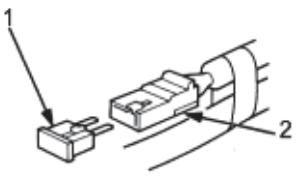
Faulty SRS unit or poor contact at the U1o connector and the SRS unit; check the connection between the U1o connector and the SRS unit.

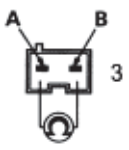
- **If the connector is OK, replace the SRS unit (see page 24-69)**

NO

Open or increased resistance in the SRS main harness; replace the main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)





1. DUMMY RESISTOR
2. SRS MAIN HARNESS 2P CONNECTOR
3. DUMMY RESISTOR

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to another wire or decreased resistance between the U1o connector and the P1i connector.
- Short to another wire or decreased resistance in the dummy resistor.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is ok at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to another wire or decreased resistance in the dummy resistor:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the dummy resistor from the SRS main harness 2P connector.
3. Check resistance between the A and B terminals of the dummy resistor. There should be 1.5 - 2.5 ohm.

Is the resistance as specified?

YES — NO

Faulty dummy resistor; replace dummy resistor.

(A)

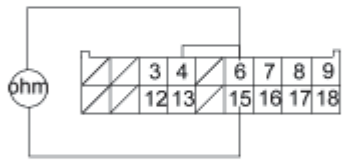
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)

(A)

Check for a short to another wire or decreased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30.
   NOTE: Do not reconnect the dummy resistor to the SRS main harness 2P connector.
4. Check the resistance between the No. 6 and No. 15 terminals of the U1o connector. There should be 1 M ohms or more.

U1o CONNECTOR



Wire side of female terminals.

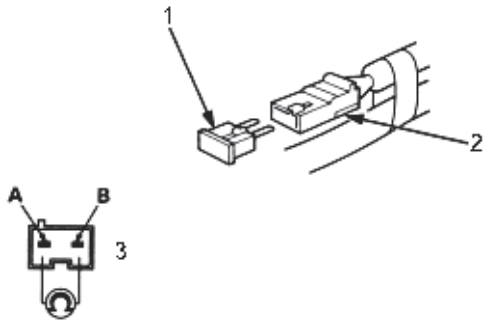
Is the resistance as specified?

YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to another wire or decreased resistance in the SRS main harness; replace the main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

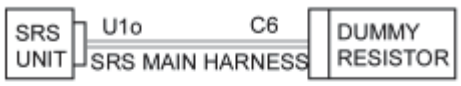


1. DUMMY RESISTOR
2. SRS MAIN HARNESS 2P CONNECTOR
3. DUMMY RESISTOR

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to power between the U1o connector and the P1i connector.
- Short to power in the dummy resistor.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is ok at this time. See Troubleshooting Intermittent Failures on page 24-27.

(A)

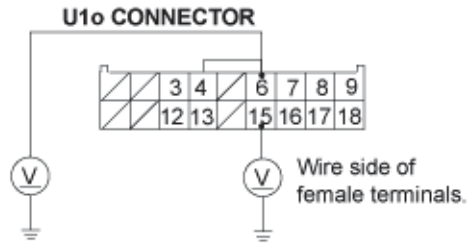
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)

(A)

Check for a short to power in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-69).
4. Reconnect the negative battery cable.
5. Turn the ignition switch ON (II).
6. Check the voltage between the No. 6 terminal of the U1o connector and body ground. There should be 0.5 V or less. Check the voltage between the No. 15 terminals of the U1o connector and body ground. There should be 0.5 V or less.

U1o CONNECTOR



Is the voltage as specified?

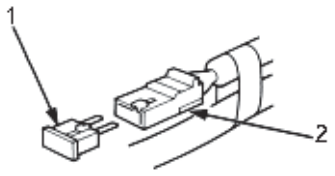
YES — NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to ground in the SRS main harness or the dummy resistor; check the dummy resistor.

- **If the dummy resistor is OK, replace the SRS main harness.**

To go to the page referenced on the diagram above, click on the following:
(**See Page** 24-69)



1. DUMMY RESISTOR
2. SRS MAIN HARNESS 2P CONNECTOR

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to ground between the U1o connector and the P1i connector.
- Short to ground in the dummy resistor.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reproduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES — NO

Intermittent failure, system is ok at this time. See Troubleshooting Intermittent Failures on page 24-27.

(A)

To go to the pages referenced on the diagram above, click on the following:

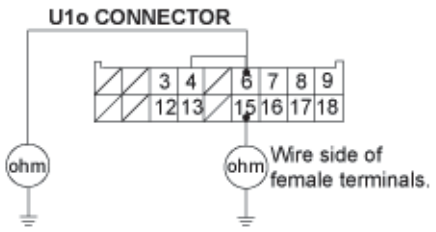
(**See Page** 24-30)
(**See Page** 24-27)

(A)

Check for a short to ground in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Check the resistancebetween the No. 6 terminal of the U1o connector and body ground. There should be 1 M ohm or more.
   Then check the resistance between the No. 15 terminal of the U1o connector and body ground. There should be 1 M ohm or more.

U1o CONNECTOR



Is the resistance as specified?

YES — NO

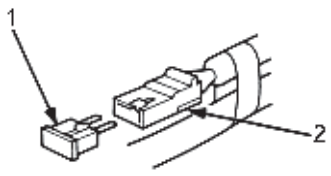
Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to powerin the SRS main harness or the dummy resistor; check the dummy resistor.

- **If the dummy resistor is OK, replace the SRS main harness.**

To go to the pages referenced on the diagram above, click on the following:

(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)



1. DUMMY RESISTOR
2. SRS MAIN HARNESS 2P CONNECTOR

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Open or increased resistance between the U1o connector and the P1i connector.
- Open or increased resistance in the left side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for an open or increased resistance in the left side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TL1i connector from the TL1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TL1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 3-1 or 3-2 indicated?

YES

Open or increased resistance in the left side seat belt tensioner; replace the left side seat belt tensioner (see page 24-64).

NO

(A)

To go to the pages referenced on the diagram above, click on the following:

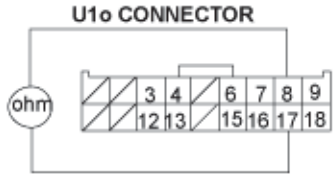
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-32)
(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for an open or increased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TR1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30). Do not disconnect the special tool (2 ohm) from the TL1i connector.
4. Check the resistance between the No. 8 and No. 17 terminals of the U1o connector. There should be 2.0 - 3.0 ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES

Faulty SRS unit or poor contact at the U1o connector and the SRS unit; check the connection between the U1o connector and the SRS unit.

- **If the connector is OK, replace the SRS unit (see page 24-69)**

NO

Open or increased resistance in the SRS main harness; replace the main harness.

To go to the pages referenced on the diagram above, click on the following:

(**See Page** 24-31)
(**See Page** 24-32)
(**See Page** 24-30)
(**See Page** 24-69)

⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to another wire or decreased resistance between the U1o connector and the TL1i connector.
- Short to another wire or decreased resistance in the right side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for short to another wire or decreased resistance in the left side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TL1i connector from the TL1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TL1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 4-3 indicated?

YES

Short to another wire or decreased resistance in the left side seat belt tensioner; replace the left side seat belt tensioner (see page 24-64).

NO

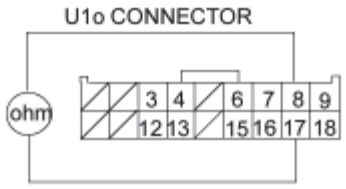
(A)

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-30)
(**See Page** 24-27)
(**See Page** 24-32)
(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for a short to another wire or decreased resistance in the SRS floor harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, P1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TL1i connector (see page 24-32)
5. Check the resistance between the No. 8 and No. 17 terminals of the U1o connector. There should be 1 M ohms.



Is the resistance as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69).

NO

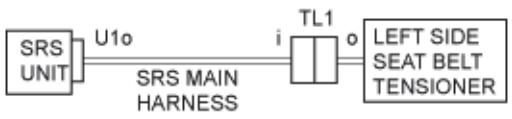
Short to another wire or decreased resistance in the SRS main harness; replace the SRS main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to power between the U1o connector and the TL1i connector.
- Short power in the left side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for a short to power in the left side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TL1i connector from the TL1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TL1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 3-4 indicated?

YES

Short to power in the left side seat belt tensioner; replace the left side seat belt tensioner (see page 24-64).

NO

(A)

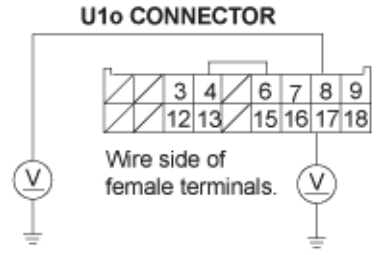
To go to the pages referenced on the diagram above, click on the following:
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(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for a short to power in the SRS floor harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TL1i connector, (see page 24-32).
5. Reconnect the negative battery cable.
6. Turn the ignition switch ON (II).
7. Check the voltage between the No. 8 terminal of the U1o connector and body ground. There should be 0.5 V or less. Check the voltage between the No. 17 terminal of the U1o connector and body ground. There should be 0.5 V or less.

U1o CONNECTOR



Is the voltage as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69)

NO

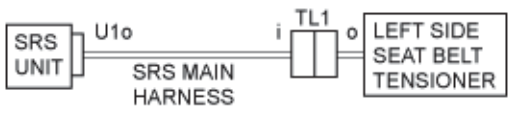
Short to power in the SRS main harness; replace the SRS main harness

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to ground between the U1o connector and the TL1i connector.
- Short to ground in the left side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

NO

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

Check for a short to ground in the left side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TL1i connector from the TL1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TL1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 3-5 indicated?

YES

NO

Short to ground in the left side seat belt tensioner; replace the left side seat belt tensioner (see page 24-64).

(A)

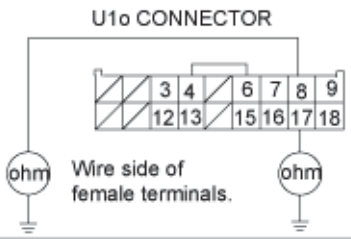
To go to the pages referenced on the diagram above, click on the following:

(**See Page** 24-30)
(**See Page** 24-27)
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(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for a short to ground in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, D1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TL1i connector, (see page 24-32).
5. Check the resistancebetween the No. 8 terminal of the U1o connector and body ground. There should be 1 M ohm or more.Check the resistance between the No. 17 terminal of the U1o connector and body ground. There should be 1 M ohm or more.



Is the resistance as specified?

YES

NO

Faulty SRS unit; replace the SRS unit (see page 24-69)

Short to ground in the SRS main harness; replace the SRS main harness

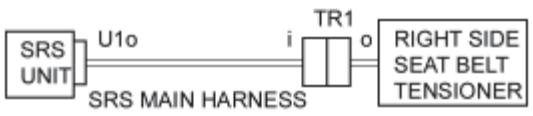
To go to the pages referenced on the diagram above, click on the following:

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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Open or increased resistance between the U1o connector and the P1i connector.
- Open or increased resistance in the right side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for an open or increased resistance in the right side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TR1i connector from the TR1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TR1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 4-1 or 4-2 indicated?

YES

Open or increased resistance in the right side seat belt tensioner; replace the right side seat belt tensioner (see page 24-64).

NO

(A)

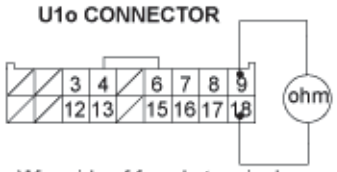
To go to the pages referenced on the diagram above, click on the following:
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(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for an open or increased resistance in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, TL1 and TR1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30). Do not disconnect the special tool (2 ohm) from the TR1i connector.
4. Check the resistance between the No. 9 and No. 18 terminals of the U1o connector.
   There should be 2.0 - 3.0 ohms.

U1o CONNECTOR



Wire side of female terminals.

Is the resistance as specified?

YES

Faulty SRS unit or poor contact at the U1o connector and the SRS unit; check the connection between the U1o connector and the SRS unit.

- **If the connector is OK, replace the SRS unit (see page 24-69)**

NO

Open or increased resistance in the SRS main harness; replace the main harness.

To go to the pages referenced on the diagram above, click on the following:
(**See Page** 24-31)
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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to another wire or decreased resistance between the U1o connector and the TR1i connector.
- Short to another wire or decreased resistance in the right side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for short to another wire or decreased resistance in the right side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TR1i connector from the TR1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TR1i connector (see page 24-32).
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 4-3 indicated?

YES

Short to another wire or decreased resistance in the right side seat belt tensioner; replace the right side seat belt tensioner (see page 24-64).

NO

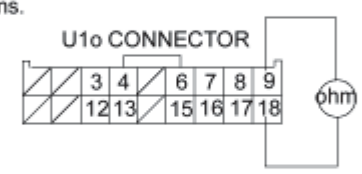
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(**See Page** 24-25)
(**See Page** 24-64)

(A)

Check for a short to another wire or decreased resistance in the SRS floor harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the D1, P1 and TL1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TR1i connector (see page 24-32)
5. Check the resistance between the No. 9 and No. 18 terminals of the U1o connector. There should be 1 M ohms.



Wire side of female terminals.

Is the resistance as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69).

NO

Short to another wire or decreased resistance in the SRS main harness; replace the SRS main harness.

To go to the pages referenced on the diagram above, click on the following:
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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to power between the U1o connector and the TR1i connector.
- Short power in the right side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for a short to power in the right side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TR1i connector from the TR1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TR1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 4-4 indicated?

YES

Short to power in the right side seat belt tensioner; replace the left side seat belt tensioner (see page 24-64).

NO

(A)

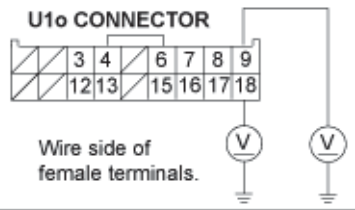
To go to the pages referenced on the diagram above, click on the following:

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(A)

Check for a short to power in the SRS floor harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, TL1 and D1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TL1i connector, (see page 24-32).
5. Reconnect the negative battery cable. Turn the ignition switch ON (II).
6. Check the voltage between the No.9 terminal of the U1o connector and body ground. There should be 0.5 V or less.
7. Check the voltage between the No. 18 terminal of the U1o connector and body ground. There should be 0.5 V or less.



Is the voltage as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69)

NO

Short to power in the SRS main harness; replace the SRS main harness

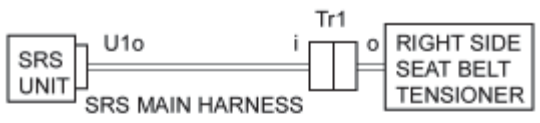
To go to the pages referenced on the diagram above, click on the following:

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⚠ CAUTION

Follow the precautions/procedures described beforehand in this section without fail or the airbags could accidentally deploy and cause damage or injuries.

Wiring Diagram:



Possible Causes of Failures:

- Short to ground between the U1o connector and the TR1i connector.
- Short to ground in the right side seat belt tensioner.
- Faulty SRS unit.

Refer to page 24-30 for the fuse box and connector locations.

Try to reporoduce the SRS indicator light:

1. Erase the DTC memory (see page 24-27).
2. Turn the ignition switch ON (II) and check that the SRS indicator light comes on for about six seconds and then goes off.

Does the SRS indicator light stay on?

YES

Intermittent failure, system is OK at this time. See Troubleshooting Intermittent Failures on page 24-27.

NO

Check for a short to ground in the right side seat belt tensioner:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the TR1i connector from the TR1o connector (see page 24-32).
3. Connect the special tool (2 ohm) to the TR1i connector (see page 24-32)
4. Reconnect the negative battery cable.
5. Erase the DTC memory (see page 24-27).
6. Read the DTC (see page 24-25).

Is DTC 4-5 indicated?

YES

Short to ground in the right side seat belt tensioner; replace the right side seat belt tensioner (see page 24-64).

NO

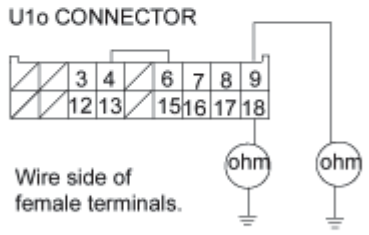
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To go to the pages referenced on the diagram above, click on the following:
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(A)

Check for a short to ground in the SRS main harness:

1. Disconnect the negative battery cable and wait for three minutes.
2. Disconnect the P1, D1 and TL1 connectors (see pages 24-31, 32).
3. Disconnect the U1o connector from the SRS unit (see page 24-30).
4. Disconnect the special tool (2 ohm) from the TL1i connector, (see page 24-32).
   Check the resistancebetween the No. 9 terminal of the U1o connector and body ground. There should be 1 M ohm or more.
5. Check the resistance between the No. 18 terminal of the U1o connector and body ground. There should be 1 M ohm or more.



Is the resistance as specified?

YES

Faulty SRS unit; replace the SRS unit (see page 24-69)

NO

Short to ground in the SRS main harness; replace the SRS main harness

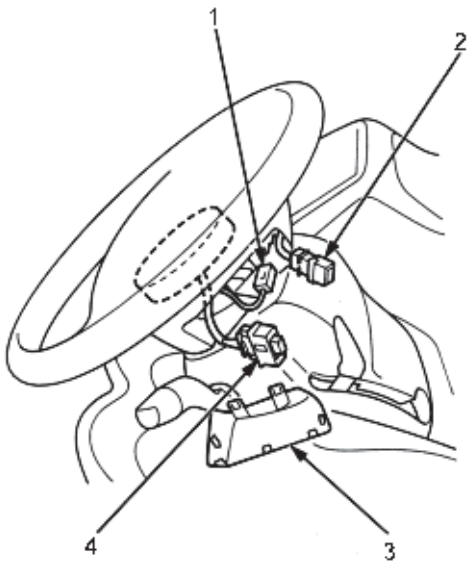
To go to the pages referenced on the diagram above, click on the following:
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⚠ CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before.

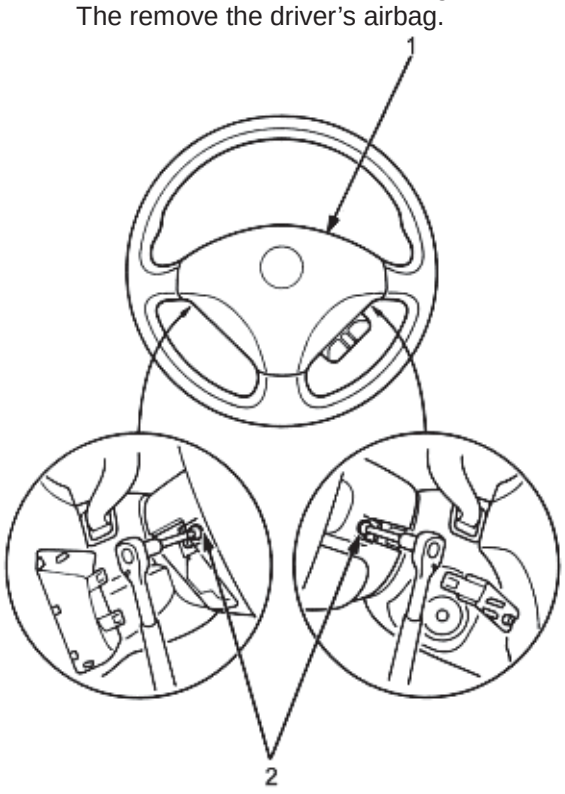
Removal

1. Disconnect the negative battery cable and wait at least three minutes before beginning work.
2. Remove the access panel from the steering wheel, then disconnect the connector between the cable reel 2P connector and driver's airbag 2P connector. Then disconnect the horn connector.



1. HORN CONNECTOR
2. CABLE REEL 2P CONNECTOR
3. ACCESS PANEL
4. DRIVER'S AIRBAG 2P CONNECTOR

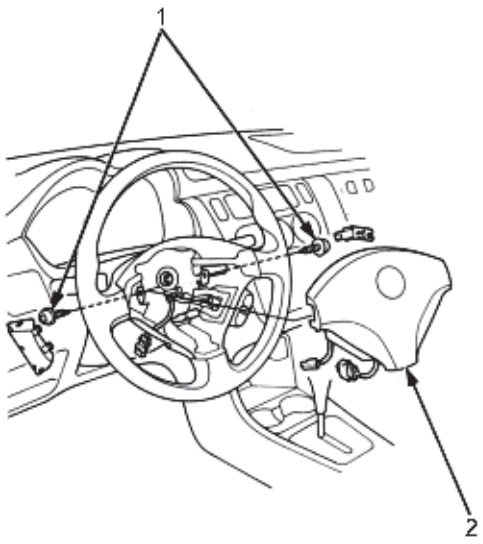
3. Remove the covers from the steering wheel, then remove the two Torx bolts using a Torx T30 bit. The remove the driver's airbag.



1. DRIVER'S AIRBAG
2. TORX BOLTS
   Use a Torx T30 bit

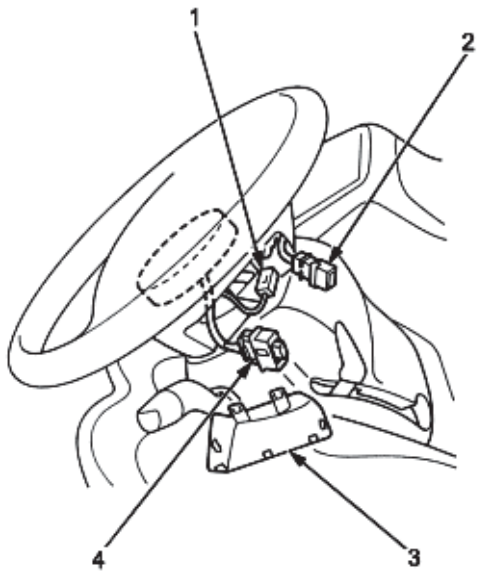
Installation

1. Place the new driver's airbag in the steering wheel and secure it with new Torx bolts.



1. TORX BOLTS, 9.8 Nm (10. kgf/m, 7.2 lbf/ft) Replace
2. DRIVER'S AIRBAG

2. Connect the cable reel 2P connector to the driver's airbag 2P connector, and horn connector, then install the access panel on the steering wheel.



1. HORN CONNECTOR
2. CABLE REEL 2P CONNECTOR
3. ACCESS PANEL
4. DRIVER'S AIRBAG 2P CONNECTOR

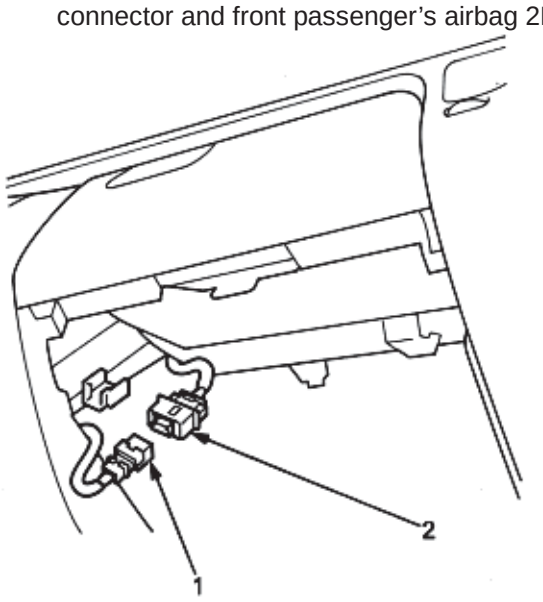
3. Connect the negative battery cable.
4. After installing the airbag, confirm proper system operation:
   - Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds and then go off.
   - Make sure the horn button works.

⚠ CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before.

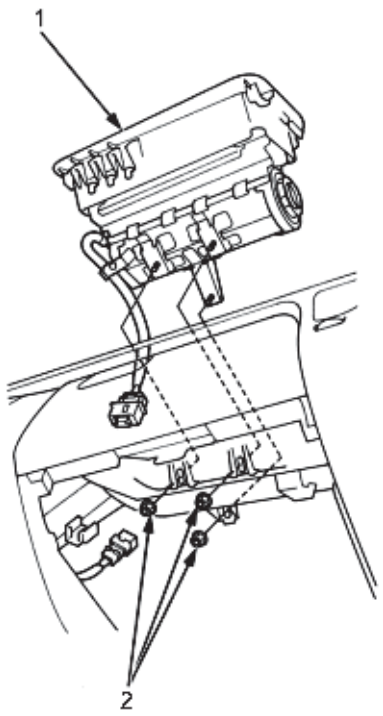
Removal

1. Disconnect the negative battery cable, and wait at least three minutes before beginning work.
2. Remove the glove box (see section 20), then disconnect the connector between the SRS main harness 2P connector and front passenger's airbag 2P connector.



1. SRS MAIN HARNESS 2P CONNECTOR
2. FRONT PASSENGER'S AIRBAG 2P CONNECTOR

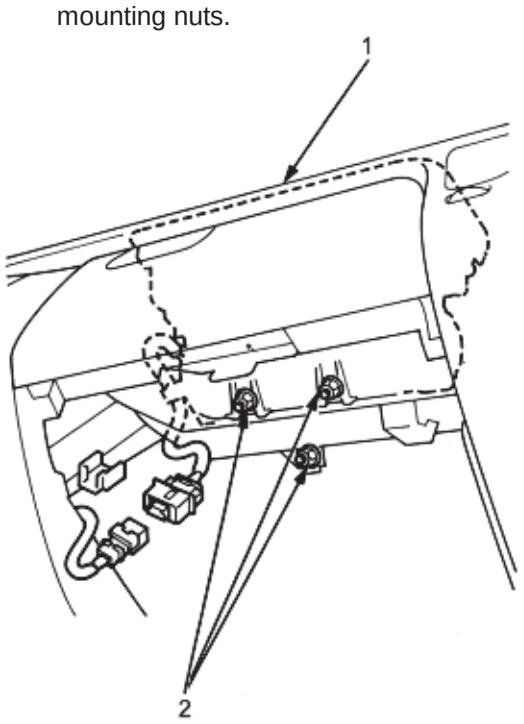
3. Remove the three mounting nuts from the bracket. Cover the lid and dashboard with a cloth, and pry carefully with a screwdriver to lift the front passenger's airbag out of the dashboard.
   NOTE: The airbag lid has pawls on the side which is attached to the dashboard.



1. FRONT PASSENGER'S AIRBAG
2. FRONT PASSENGER'S AIRBAG MOUNTING NUTS

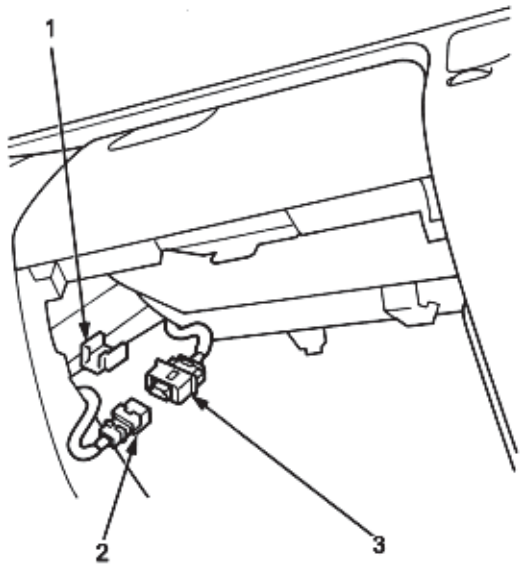
Installation

1. Place the new front passenger's airbag into the dashboard. tighten the front passenger's airbag mounting nuts.



1. FRONT PASSENGER'S AIRBAG
2. FRONT PASSENGER'S AIRBAG MOUNTING NUTS, 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)

2. Connect the front passenger's airbag 2P connector to the SRS main harness 2P connector. Attach the front passenger's airbag connector to the connector holder, then reinstall the glove box.



1. CONNECTOR HOLDER
2. SRS MAIN HARNESS 2P CONNECTOR
3. FRONT PASSENGER'S AIRBAG 2P CONNECTOR

3. Reconnect the negative battery cable.
4. After installing the airbag, confirm proper system operation. Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds and then go off.

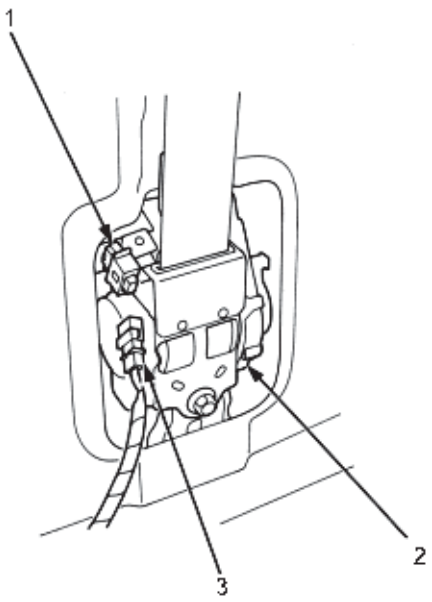
CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before.

Review the front seat belt replacement in the Seat Belts section (24) before performing repair or service.

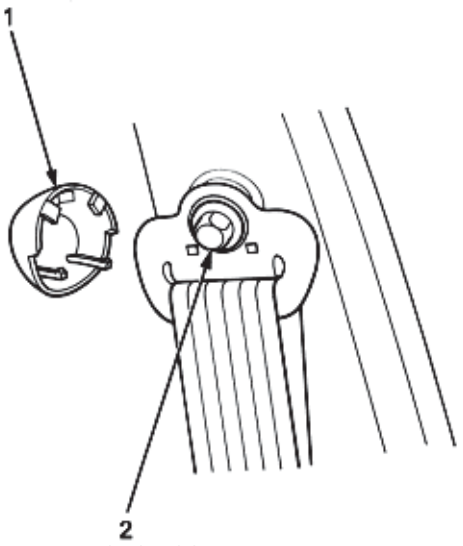
Removal

1. Disconnect the negative battery cable and wait at least three minutes before beginning work.
2. Remove the rear set then remove the centre pillar trim (see section 20).
3. Disconnect the seatbelt tensioner 2P connector from the SRS main harness 2P connector.



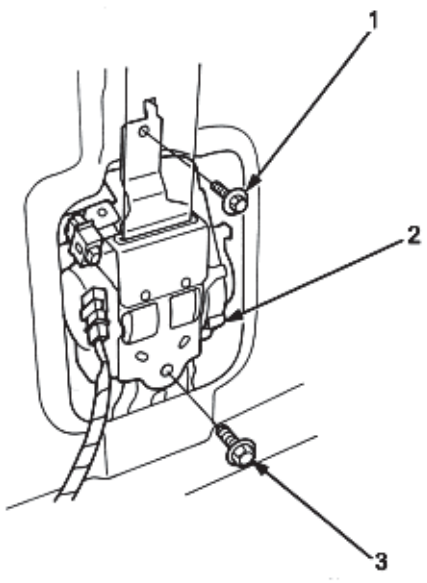
1. SEAT BELT TENSIONER 2P CONNECTOR
2. RETRACTOR
3. SRS MAIN HARNESS 2P CONNECTOR

4. Remove the upper anchor cover and upper anchor bolt.



1. UPPER ANCHOR COVER
2. UPPER ANCHOR BOLT

5. Remove the two retractor mounting bolts, then remove the retractor.



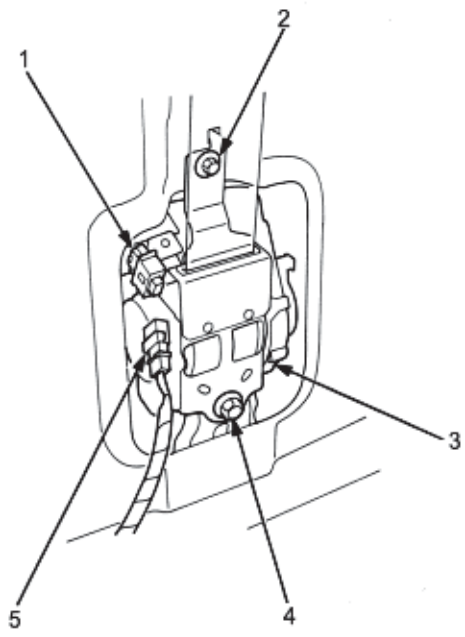
1. MOUNTING BOLT
2. RETRACTOR
3. MOUNTING BOLT

Installation

⚠ CAUTION

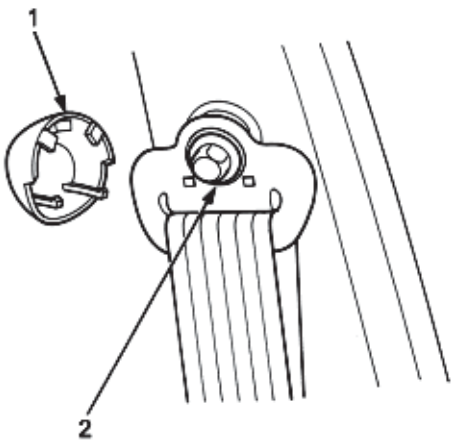
Removal of the airbag must be performed according to the precautions/procedures described before.

1. Install the new seat belt.



1. SEAT BELT TENSIONER 2P CONNECTOR
2. MOUNTING BOLT 9.8 Nm (1.0 kgf/m, 7.2lbf/ft)
3. RETRACTOR
4. MOUNTING BOLT 32 Nm (3.3 kgf/m, 24lbf/ft)
5. SRS MAIN HARNESS 2P CONNECTOR

2. Reinstall the upper anchor bolt and upper anchor cover.



1. UPPER ANCHOR COVER
2. UPPER ANCHOR BOLT, 32 Nm (3.3 kgf/m, 24 lbf/ft)

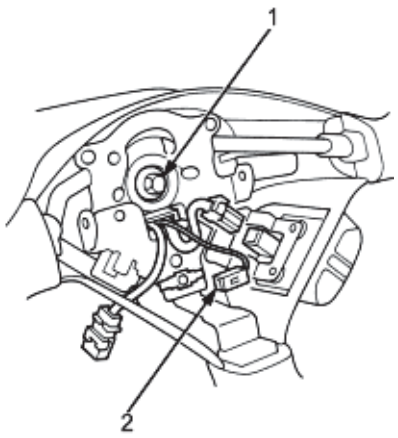
3. Reconnect the seat belt tensioner 2P connector to SRS main harness 2P connector.
4. Reinstall the centre pillar trim and the rear seat (see section20).
5. Reconnect the negative battery cable.
6. After installing the seat belt, confirm proper system operation. Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds and then go off.

⚠ CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before.

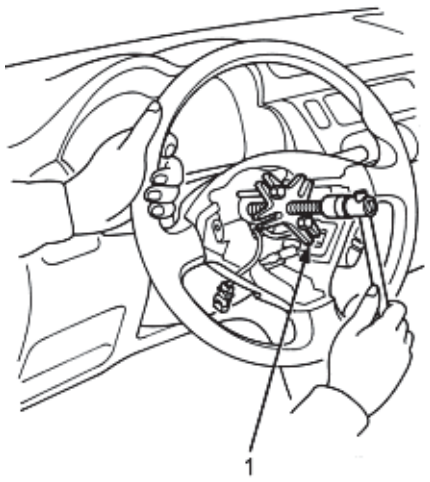
Removal

1. Make sure the wheels are aligned straight ahead.
2. Disconnect the negative battery cable and wait at least three minutes.
3. Remove the driver's airbag (**See Page** 24-60).
4. Disconnect the connector from the mode select switch, then remove the steering wheel bolt.



1. STEERING WHEEL BOLT
2. MODE SELECT SWITCH CONNECTOR

5. Align the front wheels straight ahead, then remove the steering wheel with a steering wheel puller. Do not tap on the steering wheel or steering column shaft when removing the steering wheel.



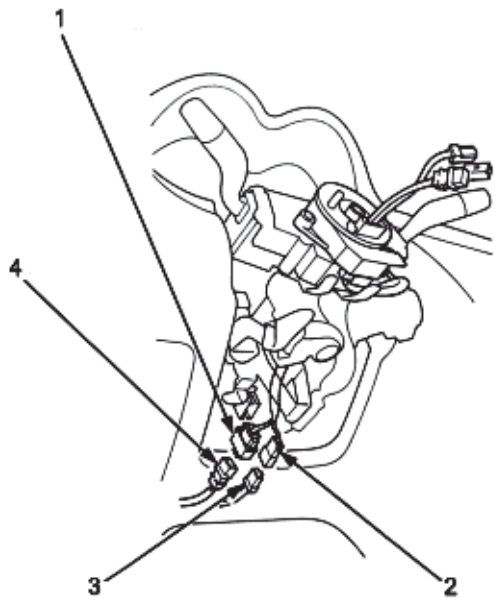
1. STEERING WHEEL PULLER

6. Remove the column covers.



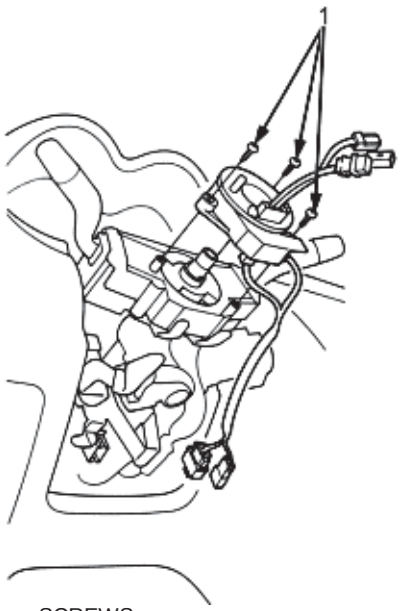
1. UPPER COLUMN COVER
2. LOWER COLUMN COVER

7. Disconnect the SRS main harness 2P connector from the cable reel 2P connector, then disconnect the main wire harness 4P (3P) connector from the horn/mode select switch connector.



1. CABLE REEL 2P CONNECTOR
2. HORN/MODE SELECT SWITCH CONNECTOR
3. MAIN WIRE HARNESS 4P (3P) CONNECTOR
4. SRS MAIN HARNESS 2P CONNECTOR

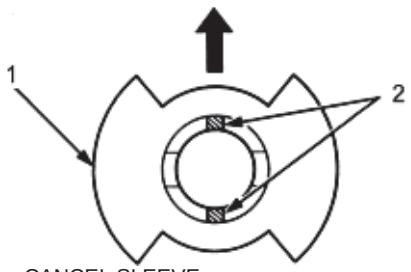
8. Remove the screw from the cable reel, then remove the cable reel from the column.



1. SCREWS

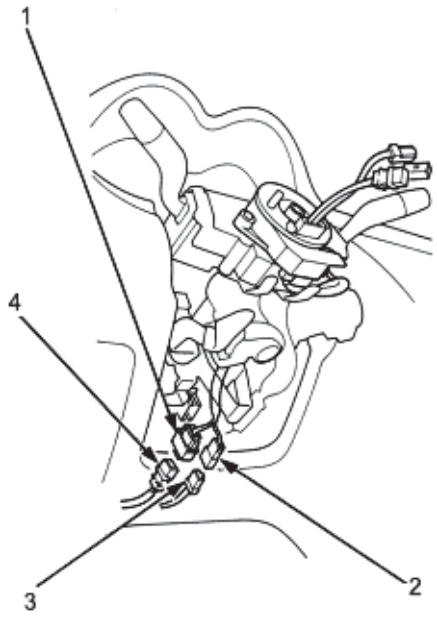
Installation

1. Before installing the steering wheel, the front wheels should be aligned straight ahead.
2. Be sure to check the negative cable from the battery is disconnected.
3. Set the cancel sleeve so that the projections are aligned vertically.



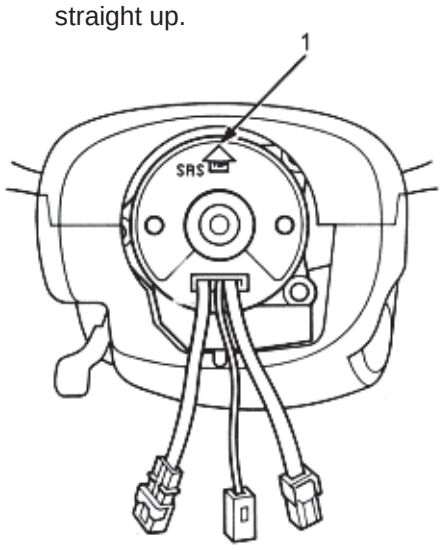
1. CANCEL SLEEVE
2. PROJECTIONS

4. Carefully install the cable reel on the steering column shaft. Then connect the 4P (3P) connector to the horn/mode select switch connector and connect the 2P connector to the SRS main harness.



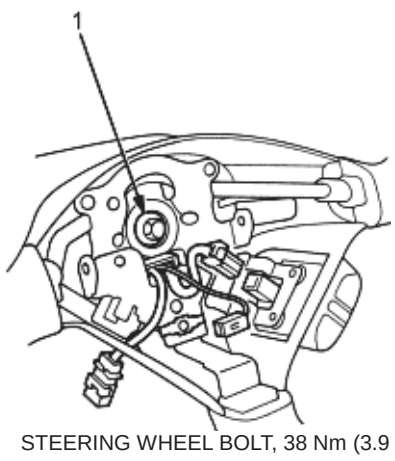
1. CABLE REEL 2P CONNECTOR
2. HORN/MODE SELECT SWITCH CONNECTOR
3. MAIN WIRE HARNESS 4P (3P) CONNECTOR
4. SRS MAIN HARNESS 2P CONNECTOR

5. Install the steering column covers.
6. If necessary, centre the cable reel. (New replacement cable reels come centred.) Do this by first rotating the cable reel clockwise until it stops. Then rotate it counterclockwise (approximately two and a half turns) until the arrow mark on the cable reel label points straight up.



1. ARROW MARK

7. Align the projections on the cable reel with the holes on the steering wheel and install the steering wheel with a new steering wheel bolt.



1. STEERING WHEEL BOLT, 38 Nm (3.9 kgf/m, 28 lbf/ft)

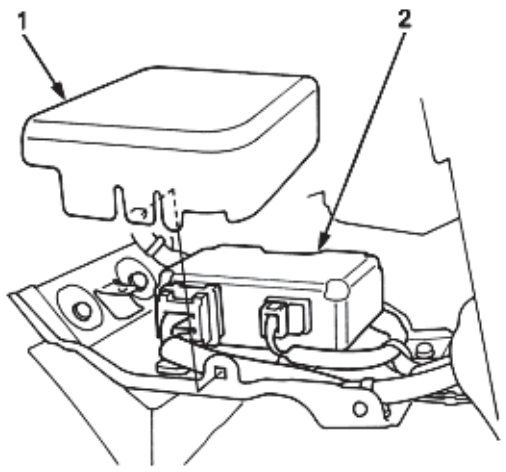
8. Install the driver's airbag (**See Page** 24-61).
9. Reconnect the negative battery cable.
10. After installing the cable reel, confirm proper system operation:
    - Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds and then go off.
    - After the SRS indicator light has gone off, turn the steering wheel fully left and right to confirm the SRS indicator light does not come on.
    - Make sure the horn button works.

⚠ CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before.

Removal

1. Disconnect the negative battery cable and wait at least three minutes before beginning work.
2. Disconnect the airbag and seat belt tensioner connectors (**See Page** 24-23).
3. Remove the console assembly (see section 20).
4. Remove the SRS unit cover.



1. SRS UNIT COVER
2. SRS UNIT

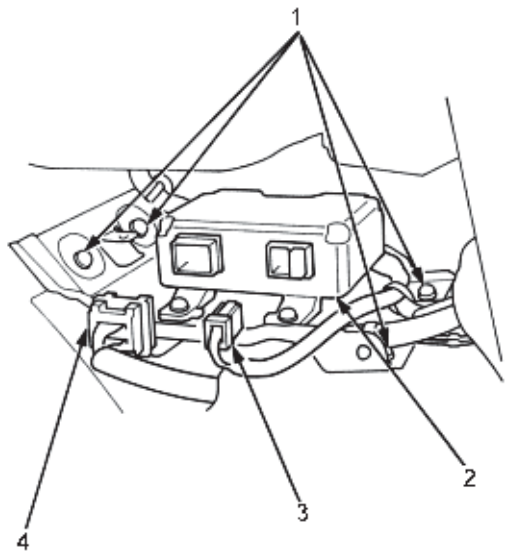
5. Disconnect the SRS main harness 18P and main wire harness 8P connectors from the SRS unit.
6. Remove the four Torx bolts from the bracket then pull out the SRS unit.



1. TORX BOLTS
2. MAIN WIRE HARNESS 8P CONNECTOR
3. SRS MAIN HARNESS 18P CONNECTOR

Installation

1. Install the new SRS unit with Torx bolts, then connect the SRS main harness 18P and main wire harness 8P connectors to the SRS unit; push it into position until it clicks.
   NOTE: When tightening the Torx bolts to the specified torque after replacement, be careful to turn them in so that their heads rest squarely on the brackets.



1. TORX BOLTS 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
   Use a Torx T30 bit
2. SRS UNIT
3. MAIN WIRE HARNESS 8P CONNECTOR
4. SRS MAIN HARNESS 18P CONNECTOR

2. Install the SRS unit cover.
3. Install the console assembly (see section 20).
4. Reconnect the airbag and seat belt tensioner connectors (**See Page** 24-23).
5. Reconnect the negative battery cable.
6. After installing the SRS unit, confirm proper system operation. Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds then go off.

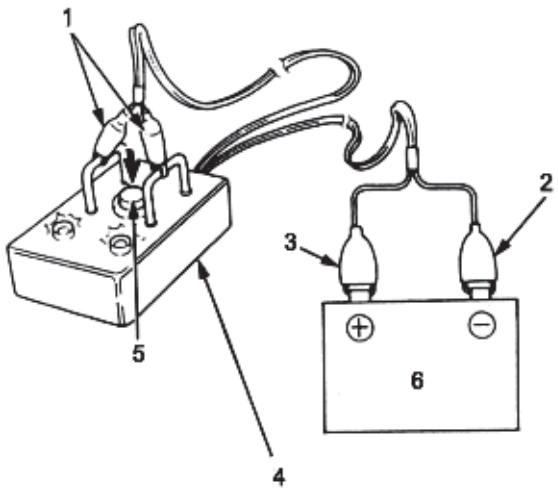
Before scrapping any deployment units (airbags or seat belt tensioners) (including those in a whole vehicle to be scrapped), the deployment units must be deployed. If the vehicle is still within the warranty period, before you deploy the deployment units, the local Honda Service Manager must give approval and/or special instructions. Only after the deployment units (as a result of vehicle collision, for example), can they be scrapped. If the deployment units appear intact (not deployed or triggered) treat them with extreme caution.
Follow this procedure:

1. Deployment Preparations (**See Page** 24-71).
2. Deployment (**See Page** 24-75) and (**See Page** 24-76).
3. Disposal (**See Page** 24-76).

⚠ WARNING

If you scrap more than one deployment unit, first complete the deployment procedure for one deployment unit, and only then start with step 1 of Deployment Preparations. Otherwise, severe personal injury could result from deployment.

1. Connect the yellow clips to both switch protector handles on the tool and connect the red (+) and black (-) clips to a 12V battery.

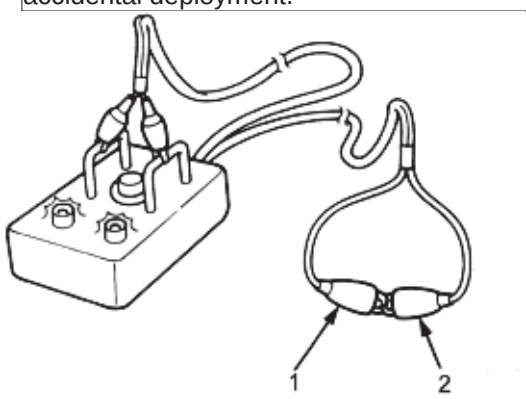


1. YELLOW CLIPS
2. BLACK CLIP
3. RED CLIP
4. DEPLOYMENT TOOL, 07HAZ-SG00500
5. OPERATION SWITCH
6. 12V BATTERY

2. Push the operation switch; green means the tool is OK, red means the tool is faulty.
3. After the check, disconnect the red and black clips from the battery and connect them to each other.

⚠ WARNING

Do not reconnect the red and black clips to the battery until all preparations for deployment are finished. Otherwise, severe personal injury could result from accidental deployment.



1. RED CLIP
2. BLACK CLIP

NOTE: If an SRS vehicle is to be entirely scrapped, its deployment units should be deployed while still in the vehicle. The deployment units should not be considered as salvageable parts and should never be installed in another vehicle.

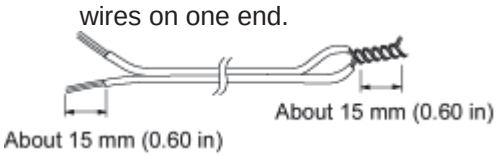
⚠ WARNING

Confirm that the deployment units are securely mounted; otherwise, severe personal injury could result from deployment.

Necessary equipment:
- Deployment tool
- Fully charged 12 volt battery

Without deployment tool
- Fully charged 12 volt battery
- 12 to 15 m (40 to 50 ft) of vinyl double cable
- Insulation tape

1. Disconnect the negative battery cable and wait for at least three minutes.
2. With Deployment Tool: Confirm that the deployment tool is functioning properly by following the check procedure on the tool box label (**See Page** 24-70).
3. Without Deployment Tool: Strip both ends of the vinyl double cable about 15 mm (0.60 in) and intertwine the wires on one end.



Driver's Airbag

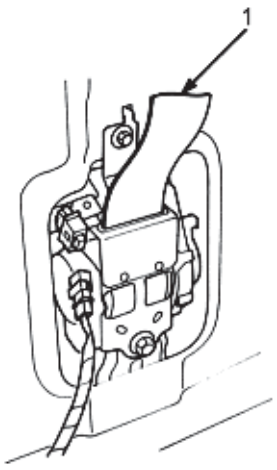
4. Disconnect the driver's airbag 2P connector from the cable reel (**See Page** 24-31).

Front Passenger's Airbag

5. Disconnect the front passenger's airbag 2P connector from the SRS main harness (**See Page** 24-32).

Seat Belt Tensioner:

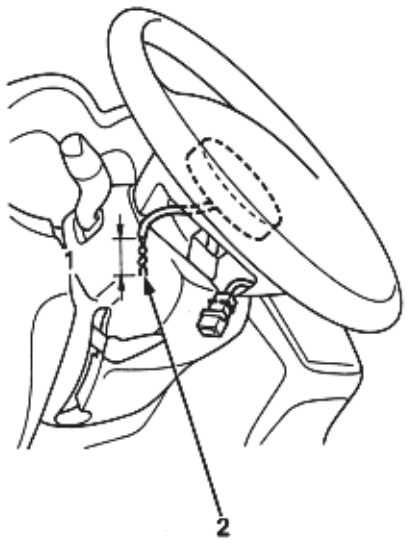
6. Disconnect the seat belt tensioner 2P connector from the SRS main harness (**See Page** 24-32).
7. Pull the seat belt out all the way and cut it.



1. CUT

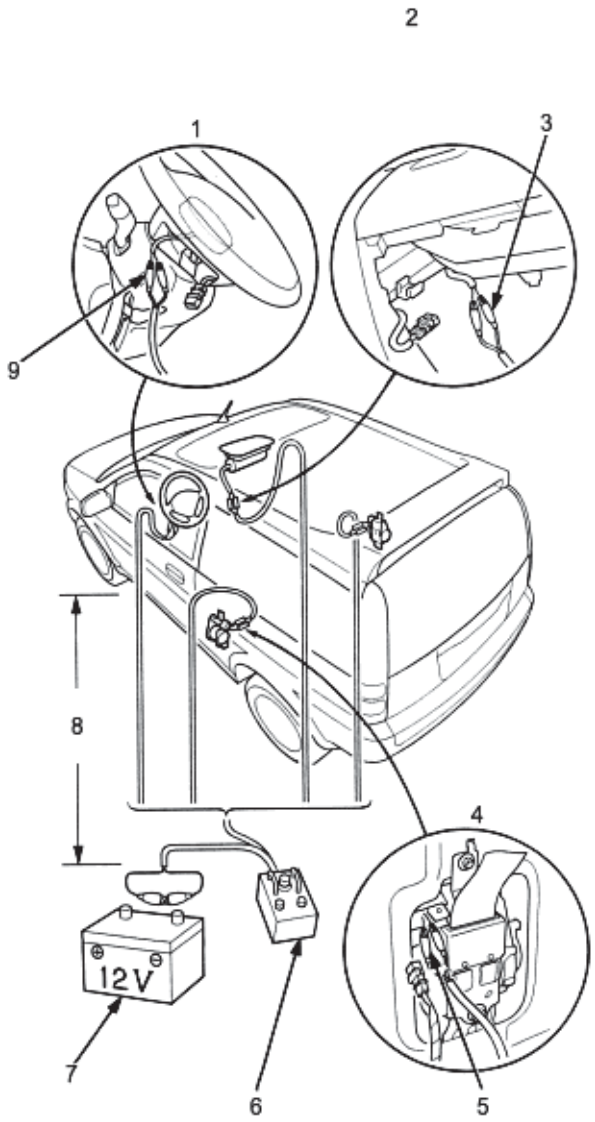
8. Cut off the airbag or seat belt tensioner connector, and strip the ends of the airbag wires about 15 mm (0.60 in) and twist them together.

Example



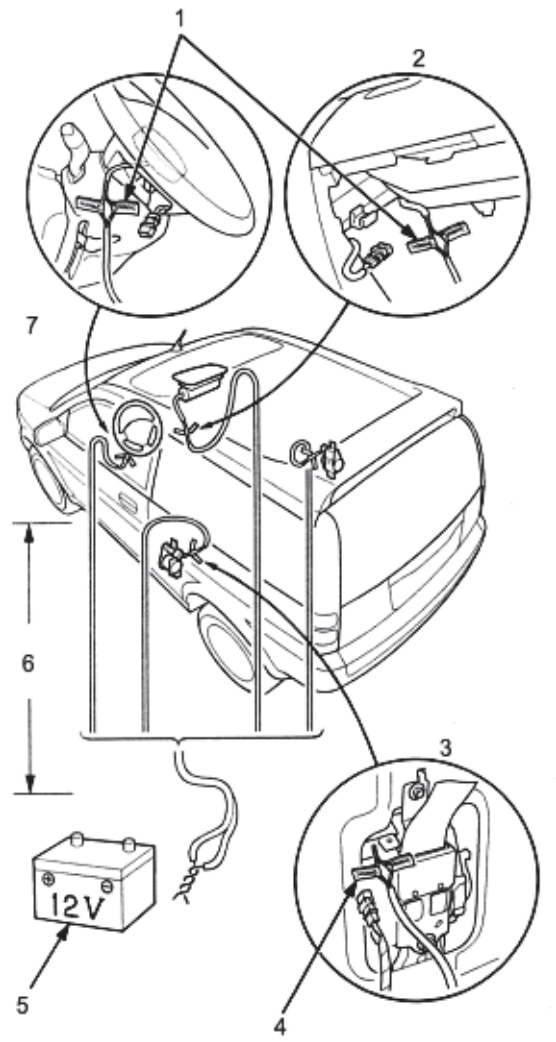
1. About 15 mm (0.60 in)
2. Twist

9. With Deployment Tool: Connect the deployment tool alligator clips to the deployment wires as shown. Place the deployment tool at least 10 metres (thirty feet) away from the airbag.



1. DRIVER'S AIRBAG
2. FRONT PASSENGER'S AIRBAG
3. ALLIGATOR CLIPS (Yellow)
4. SEAT BELT TENSIONER
5. ALLIGATOR CLIPS (Yellow)
6. DEPLOYMENT TOOL, 07HAZ-SG00500
7. BATTERY
8. At least 10 metres (thirty feet)
9. ALLIGATOR CLIPS (Yellow)

10. Without Deployment Tool: Connect the wires of the vinyl double cable which were not intertwined in step 8 to the deployment unit wires as shown and put insulation tape over the connections. Place the battery at least 10 metres (thirty feet) away from the vehicle.



1. INTERTWINED WIRES
2. FRONT PASSENGER'S AIRBAG
3. SEAT BELT TENSIONER
4. INTERTWINED WIRES
5. BATTERY
6. At least 10 metres (thirty feet)
7. DRIVER'S AIRBAG

11. With Deployment Tool (**See Page** 24-75).
12. Without Deployment Tool (**See Page** 24-76).

NOTE: If an intact airbag or seat belt 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:

Necessary equipment:

- Deployment tool

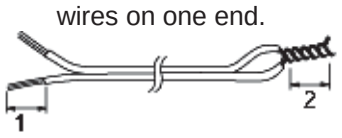
Without deployment tool

- 12 to 15 m (40 to 50 ft) of vinyl double cable
- Insulation tape

Other

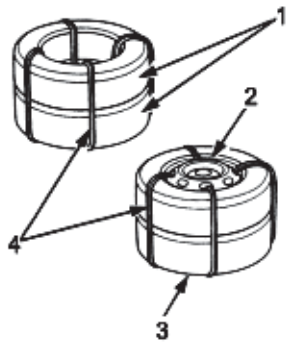
- Fully charged 12 volt battery
- Four tyres for 15 inch wheels or bigger without wheel and one tyre of the same size with wheel.
  NOTE:
  - Preferably used tyres.
  - Tyres which were used for airbag deployment can be reused on vehicles after carefully cleaning their inner side with water.
- Vehicle wire harness with a core wire cross sectional area of at least 1.25 mm ^{2} (0.002 in^2) or iron wire with a diameter of more than 1.2 mm (0.05 in).

1. Turn the ignition switch OFF. Disconnect the negative battery cable and wait for at least three minutes.
2. With Deployment Tool: Confirm that the deployment tool is functioning properly by following the check procedure on the tool box label (**See Page** 24-70).
3. Without Deployment Tool: Strip both ends of the vinyl double cable about 15 mm (0.60 in) and intertwine the wires on one end.



1. About 15 mm (0.60 in)
2. About 15 mm (0.60 in)

4. Remove the driver's airbag (**See Page** 24-60).
5. Remove the front passenger's airbag (**See Page** 24-62).
6. Remove the seat belt tensioner (**See Page** 24-64).
7. With vehicle wire harness or wire, tie two of the wheel-less tyres together, then tie one wheel-less tyre and the wheel-installed tyre together. (Wind around at least two times.)

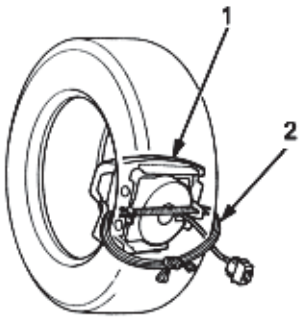


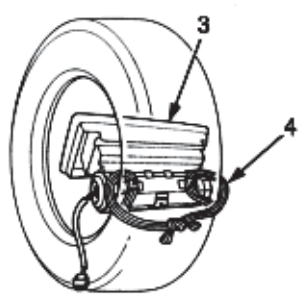
1. WHEEL-LESS TYRES
2. WHEEL INSTALLED TYRE
3. WHEEL-LESS TYRE
4. WIRE HARNESS or WIRE
   Wind around at least two times

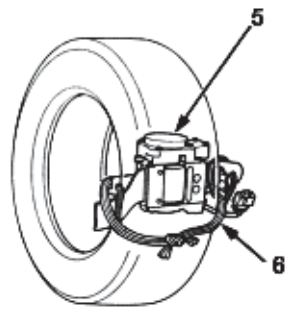
8. Tie the airbag or the seat belt tensioner with vehicle wire harness or wire to the remaining wheel-less tyre as shown. (Wind around three times.)

⚠ CAUTION

Make sure the pad surface is turned to the center of the tire.

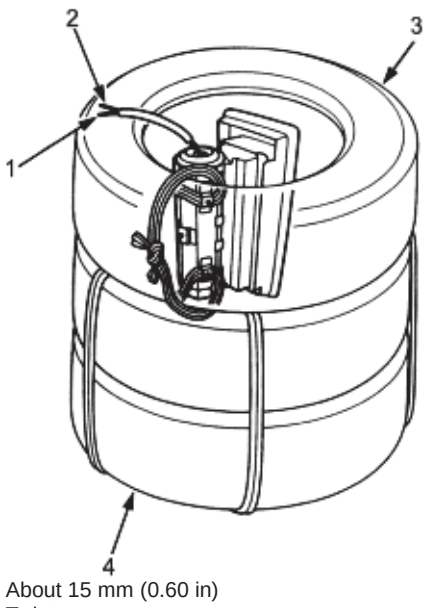






1. DRIVER'S AIRBAG
2. WIRE HARNESS or WIRE
   Wind around three times
3. FRONT PASSENGER'S AIRBAG
4. WIRE HARNESS or WIRE
   Wind around three times
5. SEAT BELT TENSIONER
6. WIRE HARNESS or WIRE
   Wind around three times

9. Place the set of two wheel-less tyres on flat ground and place the tyre with the airbag or sea belt tensioner on them.
10. Cut off the airbag or seat belt tensioner connector, strip the ends of the airbag or seat belt tensioner wires about 15 mm (0.60 in) and twist them together.

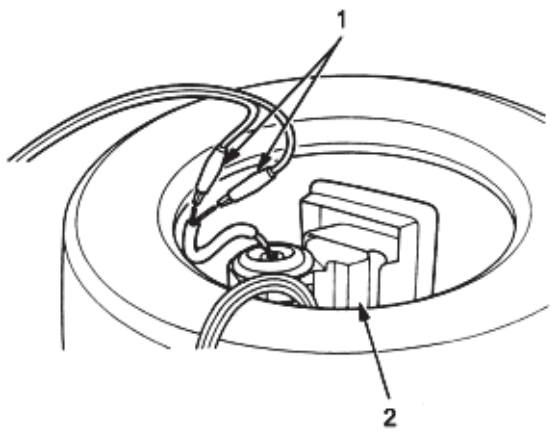


1. About 15 mm (0.60 in)
2. Twist
3. TYRE with installed AIRBAG OR SIDE AIRBAG OR SEATBELT TENSIONER
4. WHEEL-LESS TYRE SET

11. With Deployment Tool: Connect the deployment tool alligator clips to the airbag or seat belt tensioner wires.

⚠ CAUTION

Do not route the vinyl double cable near the pad surface of the airbag or the inflator body.

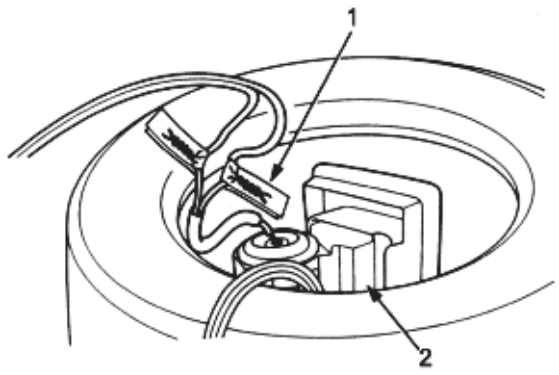


1. ALLIGATOR CLIPS (Yellow)
2. INFLATOR BODY

12. Without Deployment Tool: Connect the wires of the vinyl double cable which were not intertwined in step 3 to the airbag or seat belt tensioner wires as shown and put insulation tape over the connections.

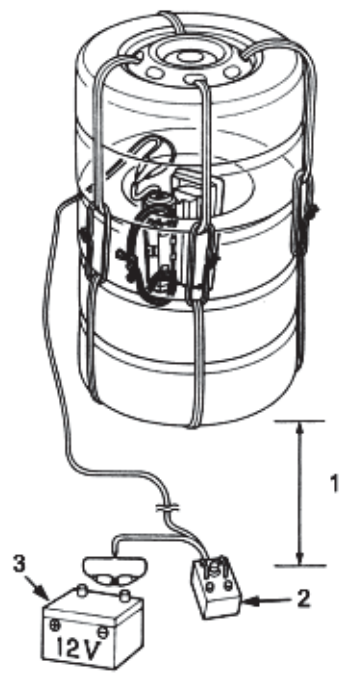
⚠ CAUTION

Do not route the vinyl double cable near the pad surface of the airbag or the inflator body.



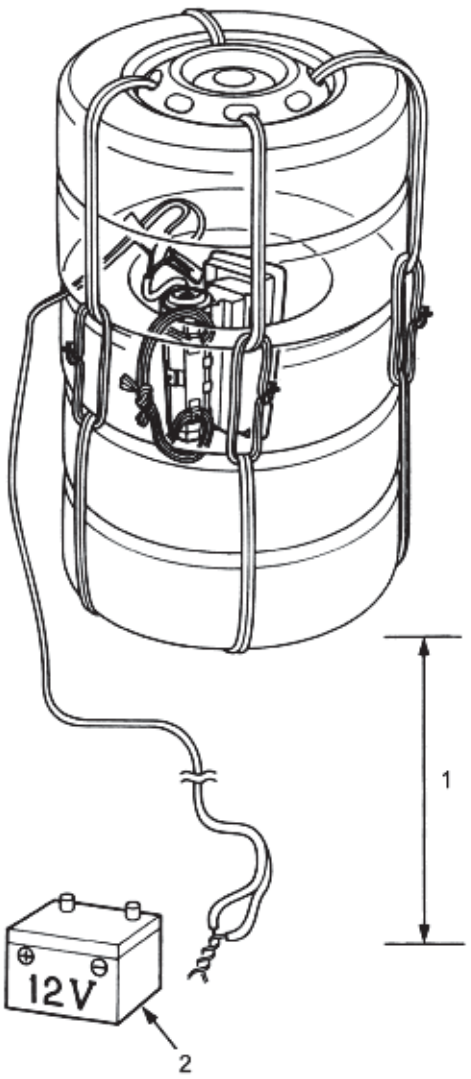
1. INSULATION TAPE
2. INFLATOR BODY

13. With Deployment Tool: With the wheel-installed tyre up, put the second pair of tyres on top of the other three tyres and tie the upper and lower tyre sets together. Place the deployment tool at lest 10 metres (thirty feet) away from the tyres.



1. At least 10 metres (thirty feet)
2. DEPLOYMENT TOOL, 07HAZ-SG00500
3. BATTERY

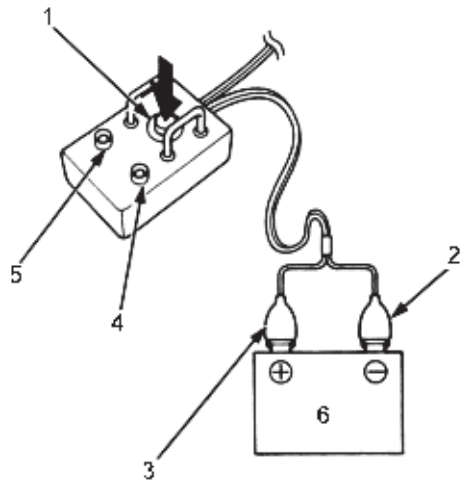
14. Without Deployment Tool: With the wheel-installed tyre up, put the second pair of tyres on top of the other three tyres and tie the upper and lower tyre sets together. Place the deployment tool at lest 10 metres (thirty feet) away from the tyres.



1. At least 10 metres (thirty feet)
2. BATTERY

15. With Deployment Tool (**See Page** 24-75).
16. Without Deployment Tool (**See Page** 24-76).

1. Connect the red (+) and black (-) clips of the deployment tool to the 12V battery.
   - If the green light on the tool comes on, the airbag igniter circuit is defective and cannot deploy the airbag. In this case refer to Damaged Airbag, Seat Belt Tensioner Special Procedure under Disposal (**See Page** 24-76).
   - If the red light on the tool comes on, the airbag is ready to be deployed.
2. Push the tool's operation switch. The airbag should deploy (deployment is both highly audible and visible; a loud noise and rapid inflation of the bag followed by slow deflation).
   - If audible/visible deployment happens and the green light on the tool comes on go to Disposal (**See Page** 24-76).
   - If the airbag does not deploy, yet the green light comes on, the igniter is defective. Go to Damaged Airbag, Seat Belt Tensioner Special Procedure under Disposal (**See Page** 24-76).



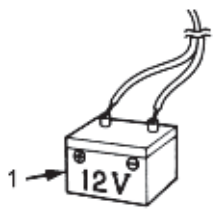
1. OPERATION SWITCH
2. BLACK CLIP
3. RED CLIP
4. RED LIGHT
5. GREEN LIGHT
6. 12V BATTERY

⚠ CAUTION

During deployment, the deployment unit can become hot enough to burn you. Wait thirty minutes after deployment before touching the unit.

Untwist the stripped ends of the vinyl double cable and connect them to the 12 volt battery. The deployment unit should deploy (deployment is both highly audible and visible; a loud noise and rapid inflation of the bag followed by slow deflation).

- If audible/visible deployment happens and the green light on the tool comes on go to Disposal (**See Page** 24-76).
- If the airbag does not deploy, yet the green light comes on, the igniter is defective. Go to Damaged Airbag, Seat Belt Tensioner Special Procedure under Disposal (**See Page** 24-76).



1. BATTERY

⚠ CAUTION

During deployment, the deployment unit can become hot enough to burn you. Wait thirty minutes after deployment before touching the unit.

In accordance with local regulations, dispose of the complete deployment unit. No part of it can be reused. Place it in a sturdy plastic bad and seal it securely.

⚠ CAUTION

- Wear a face shield and gloves when handling a deployed unit.
- Wash your hands and rinse them well with water after handling a deployed unit.



1. STURDY PLASTIC BAG
2. AIRBAG

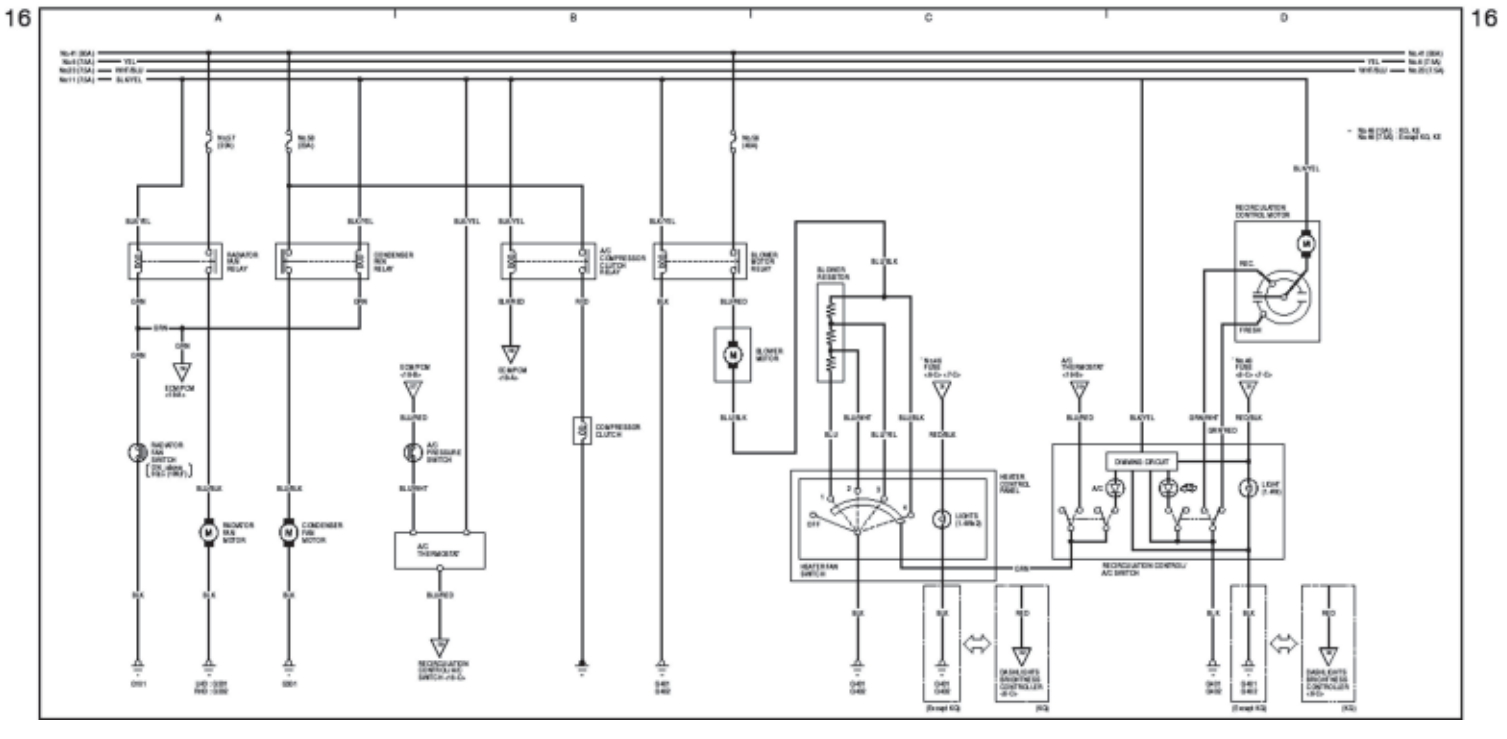
Damaged Airbag, Seat Belt Tensioner Special Procedure

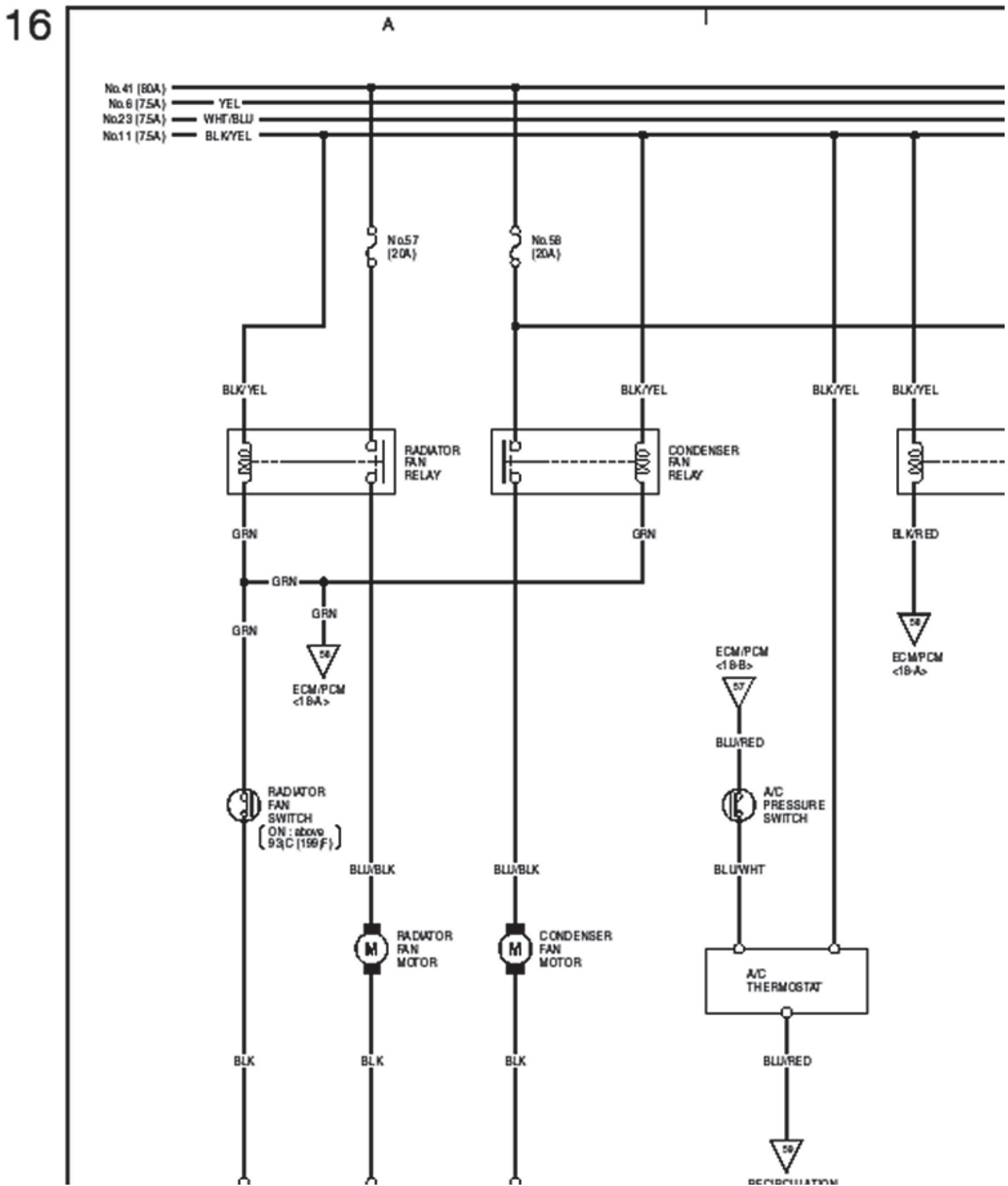
⚠ WARNING

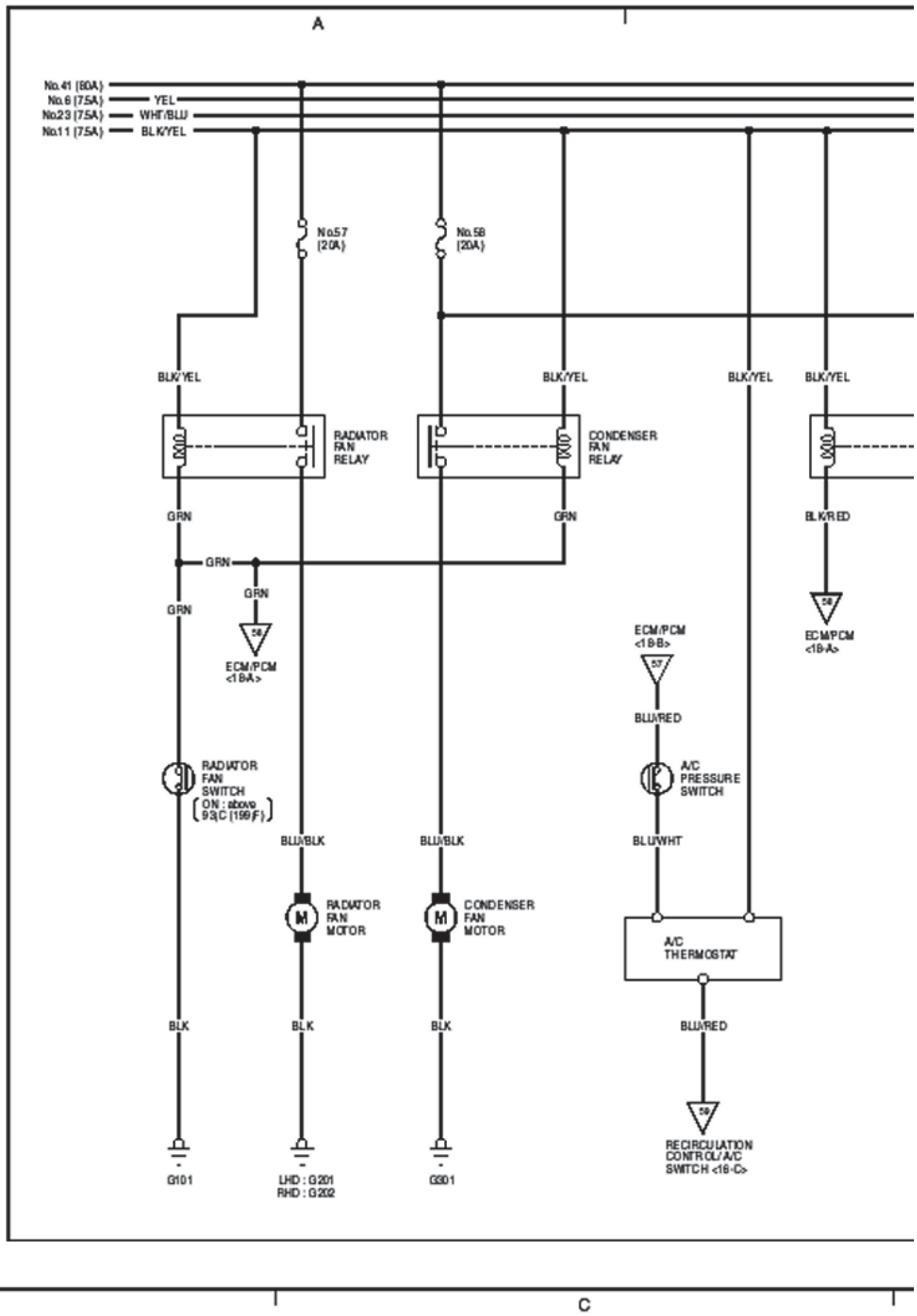
If a deployment unit cannot be deployed, it should not be treated as normal scrap, it should still be considered a potentially explosive device that can cause serious injury.

1. If installed in a vehicle, follow the removal procedure (**See Page** 24-60).
2. Intertwine the stripped ends of the two deployment unit wires to make a short circuit.
3. Package the deployment unit in exactly the same packaging that the new replacement part came in.
4. Mark the outside of the box “DAMAGED AIRBAG NOT DEPLOYED” so it does not get confused with your parts stock.
5. Contact your local Honda Service Manager for how and where to return it for disposal.

Wiring Diagrams
Air Conditioning






A
No.41 (80A)
No.6 (7.5A)
No.23 (7.5A)
No.11 (7.5A)
YEL
WHT/BLU
BLK/YEL
No.57 (20A)
No.58 (20A)
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
RADIATOR FAN RELAY
CONDENSER FAN RELAY
GRN
GRN
BLK/RED
GRN
GRN
GRN
E6
ECM/PCM <18-A>
ECM/PCM <18-B>
E7
BLU/RED
RADIATOR FAN SWITCH (ON : above 93C (199F))
A/C PRESSURE SWITCH
BLU/BLK
BLU/BLK
BLU/WHT
RADIATOR FAN MOTOR
CONDENSER FAN MOTOR
A/C THERMOSTAT
BLK
BLK
BLK
BLU/RED
E9
RECIRCULATION CONTROL/A/C SWITCH <18-C>
G101
LHD : G201
RHD : G202
G301
B
C
No.56 (40A)
BLK/YEL
BLU/BLK
A/C COMPRESSOR CLUTCH RELAY
BLOWER MOTOR RELAY
BLOWER RESISTOR
RED
BLK
BLU/RED
BLOWER MOTOR
No.46 FUSE <9-C> <7-C>
A/C THERMOSTAT <18-B>

B

C

No.56
(40A)

BLK/YEL

A/C
COMPRESSOR
CLUTCH
RELAY

BLOWER
MOTOR
RELAY

BLOWER
RESISTOR

BLU/BLK

RED

BLK

BLU/RED

BLOWER
MOTOR

M

BLU/BLK

COMPRESSOR
CLUTCH

No.46
FUSE
<6-C> <7-C>

A/C
THERMOSTAT
<16-B>

BLU/RED

BLU

BLU/WHT

BLU/YEL

BLU/BLK

RED/BLK

HEATER
CONTROL
PANEL

1
2
3
4

OFF

LIGHTS
(1.4W x 2)

A/C

HEATER FAN
SWITCH

GRN

RECI
A/C S

BLK

BLK

RED

32

DASHLIGHTS
BRIGHTNESS
CONTROLLER
<8-C>

G401
G402

G401
G402

G401
G402

(Except KQ)

(KQ)

D

16

No.41 (80A)

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE

BLK/YEL

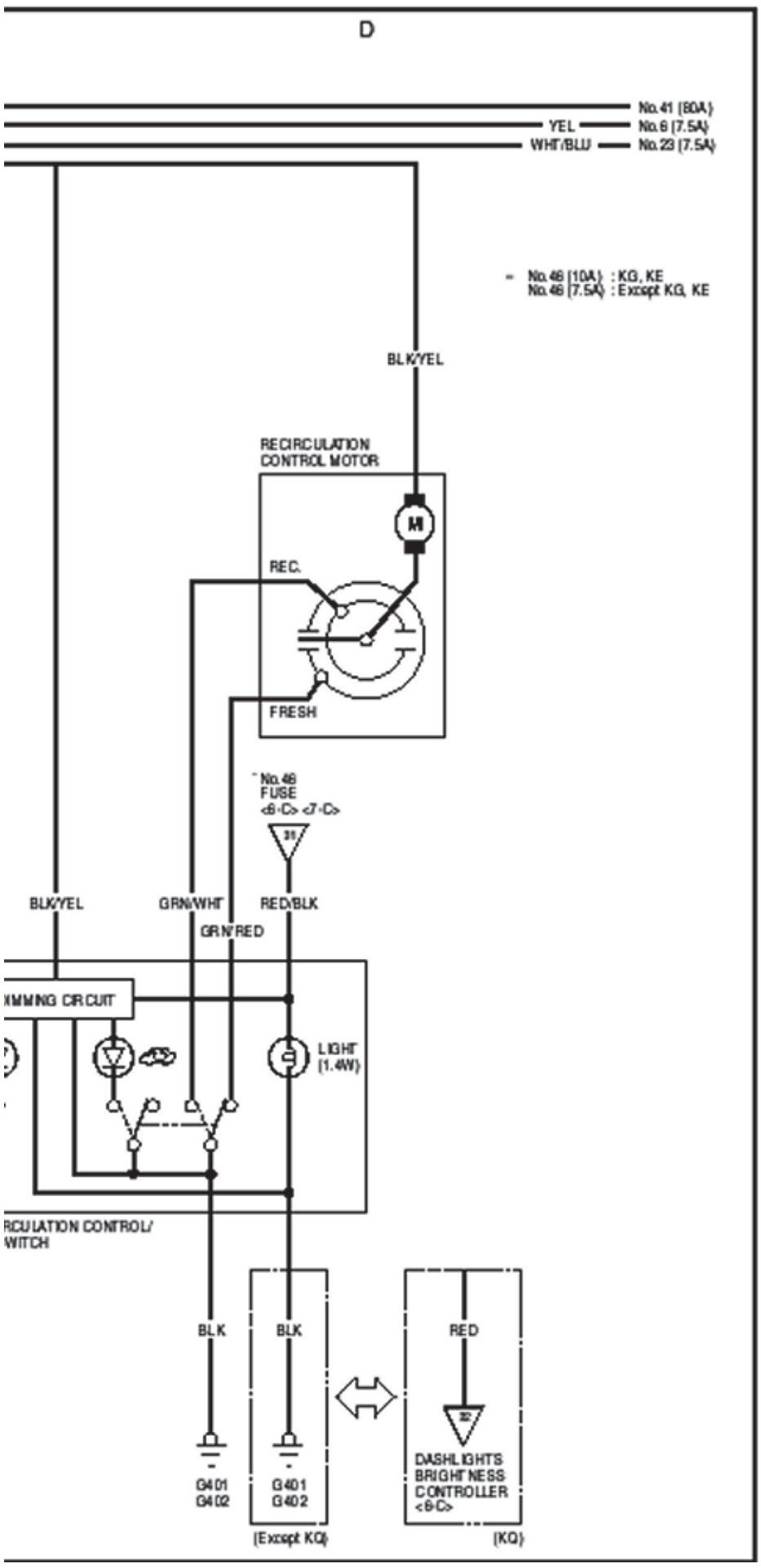
RECIRCULATION
CONTROL MOTOR

M

REC.

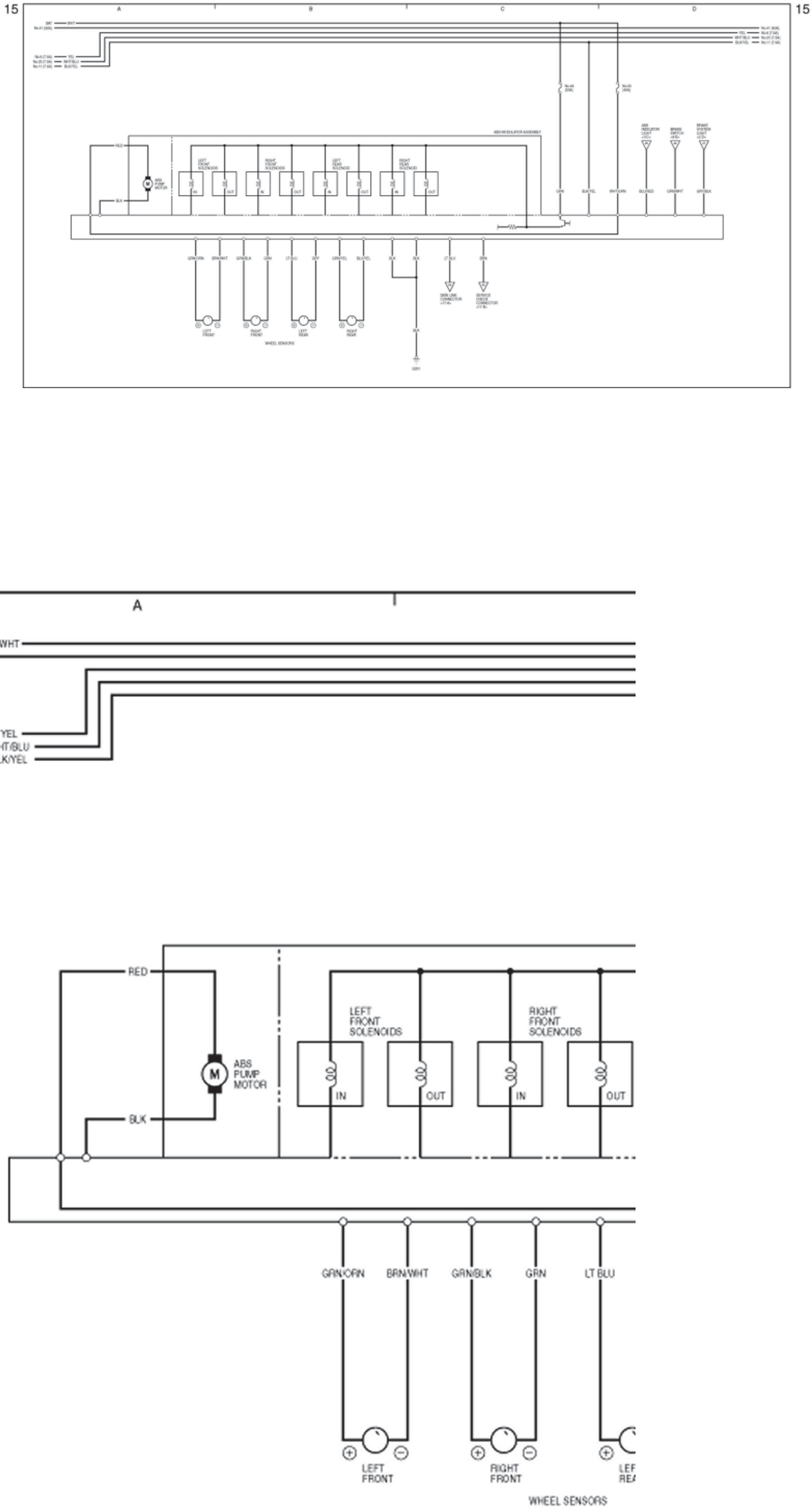
FRESH

* No.46
FUSE
<6-C> <7-C>


D
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
No.46 (10A) : K.G, KE
No.46 (7.5A) : Except K.G, KE
BLK/YEL
RECIRCULATION CONTROL MOTOR
M
REC.
FRESH
No.46 FUSE
<6-C> <7-C>
31
BLK/YEL
GRN/WHT
RED/BLK
GRN/RED
MMING CIRCUIT
LIGHT (1.4W)
RCULATION CONTROL/ WITCH
BLK
BLK
RED
32
DASHLIGHTS BRIGHTNESS CONTROLLER <6-C>
G401 G402
G401 G402
(Except KQ)
(KQ)

Wiring Diagrams

Anti-lock Brake system (ABS)



15

A

BAT — WHT
No.41 (80A)

No.6 (7.5A) — YEL
No.23 (7.5A) — WHT/BLU
No.11 (7.5A) — BLK/YEL

RED

BLK

M
ABS
PUMP
MOTOR

LEFT
FRONT
SOLENOIDS

RIGHT
FRONT
SOLENOIDS

IN
OUT
IN
OUT

GRN/ORN
BRN/WHT
GRN/BLK
GRN
LT BLU

LEFT
FRONT

RIGHT
FRONT

WHEEL SENSORS

B
C

No.48
(20A)

ABS MODULATOR ASSEMBLY

LEFT
REAR
SOLENOID

RIGHT
REAR
SOLENOID

IN
OUT
IN
OUT

GRN
BLK/YEL

B

C

No.48
(20A)

ABS MODULATOR ASSEMBLY

LEFT
REAR
SOLENOID

RIGHT
REAR
SOLENOID

IN

OUT

IN

OUT

GRN

BLK/YEL

GRY

GRN/YEL

BLU/YEL

BLK

BLK

LT BLU

BRN

54

55

DATA LINK
CONNECTOR
<17-A>

SERVICE
CHECK
CONNECTOR
<17-B>

T
AR

RIGHT
REAR

BLK

G201

D

15

No.41 (80A)

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

BLK/YEL — No.11 (7.5A)

No.50
(40A)

ABS
INDICATOR
LIGHT
<3-C>

BRAKE
SWITCH
<8-B>

BRAKE
SYSTEM
LIGHT
<2-D>

26

42

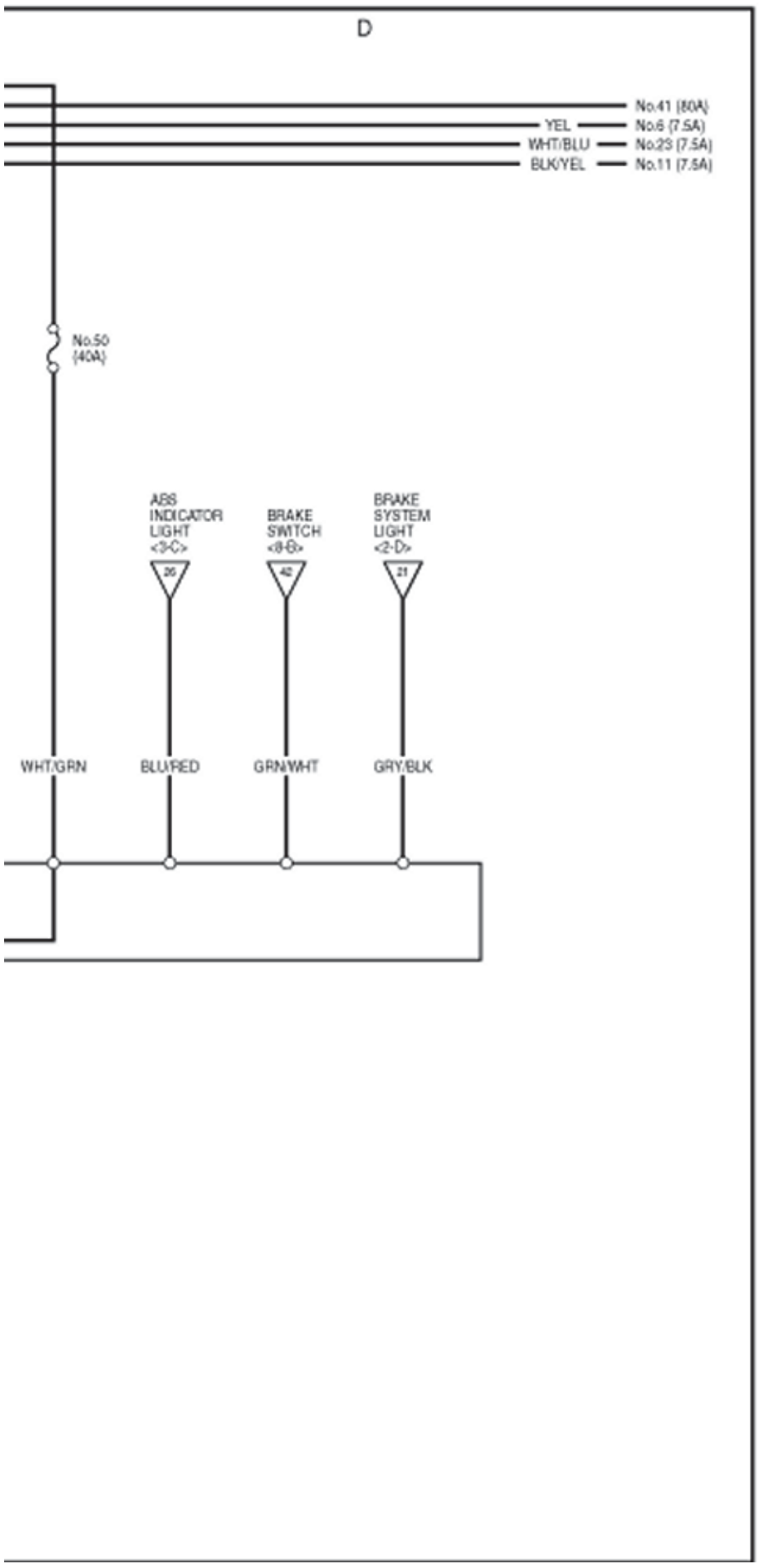
21

WHT/GRN

BLU/RED

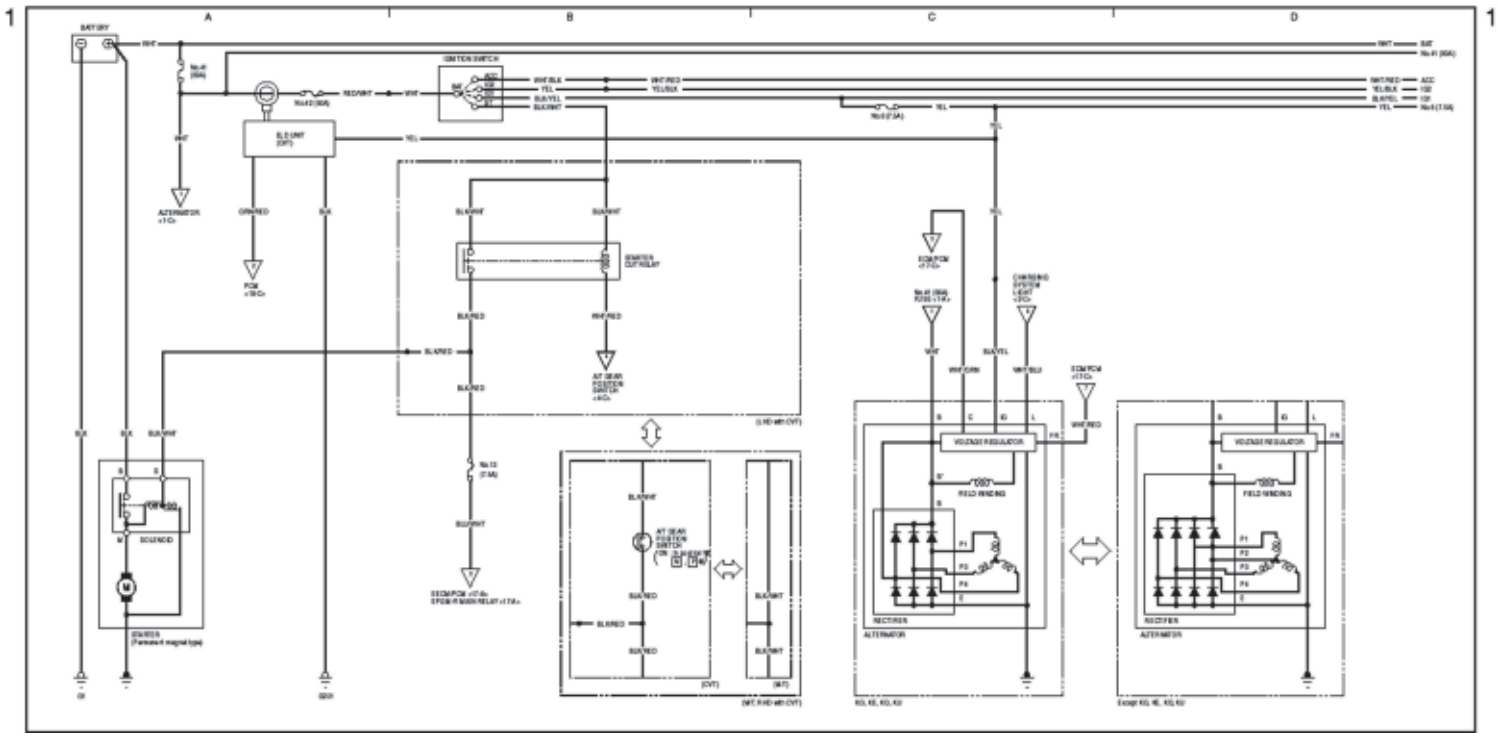
GRN/WHT

GRY/BLK

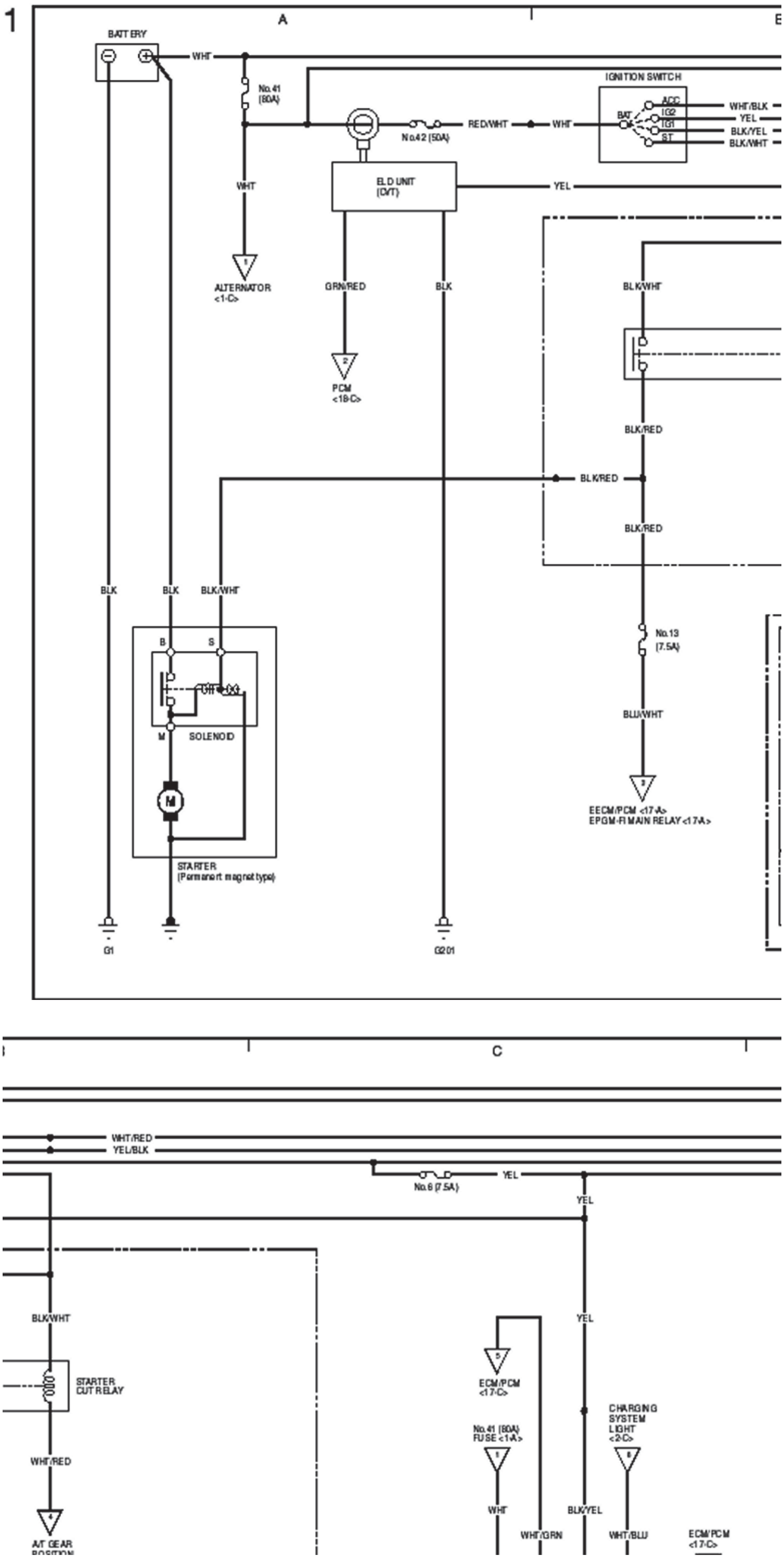

D
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
BLK/YEL
No.11 (7.5A)
No.50
(40A)
ABS
INDICATOR
LIGHT
<3-C>
26
BRAKE
SWITCH
<8-G>
42
BRAKE
SYSTEM
LIGHT
<2-D>
21
WHT/GRN
BLU/RED
GRN/WHT
GRY/BLK

Wiring Diagrams

Battery



1


A
B
C
BATTERY
WHT
No.41 (80A)
IGNITION SWITCH
ACC
IG2
BAT
IG1
ST
WHT/BLK
YEL
BLK/YEL
BLK/WHT
No.42 (50A)
RED/WHT
WHT
ELD UNIT (CVT)
YEL
WHT
1
ALTERNATOR <1-C>
GRN/RED
BLK
2
PCM <18-C>
BLK/WHT
BLK/RED
BLK/RED
BLK/RED
BLK
BLK
BLK/WHT
B
S
OFF
ST
M
SOLENOID
M
STARTER (Permanent magnet type)
No.13 (7.5A)
BLU/WHT
3
EECM/PCM <17-A>
EPGM-FI MAIN RELAY <17-A>
G1
G201
WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
CHARGING SYSTEM LIGHT <2-C>
6
WHT/BLU
ECM/PCM <17-C>

C

WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION SWITCH <4-C>
(LHD with CVT)
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
WHT/BLU
CHARGING SYSTEM LIGHT <2-C>
6
ECM/PCM <17-C>
7
WHT/RED
B
C
IG
L
FR
VOLTAGE REGULATOR
B'
FIELD WINDING
B
P1
P3
P4
E
RECTIFIER
ALTERNATOR
KG, KE, KQ, KU
Except
BLK/WHT
A/T GEAR POSITION SWITCH (ON : In position N, P)
BLK/RED
BLK/RED
BLK/RED
(CVT)
BLK/WHT
BLK/WHT
(M/T)
(M/T, RHD with CVT)

D

1

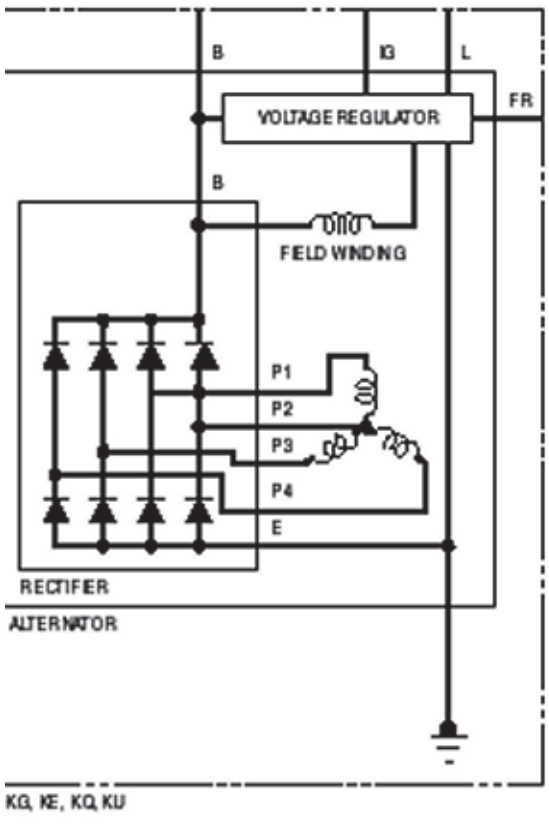
WHT — BAT
No.41 (80A)
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

D

1

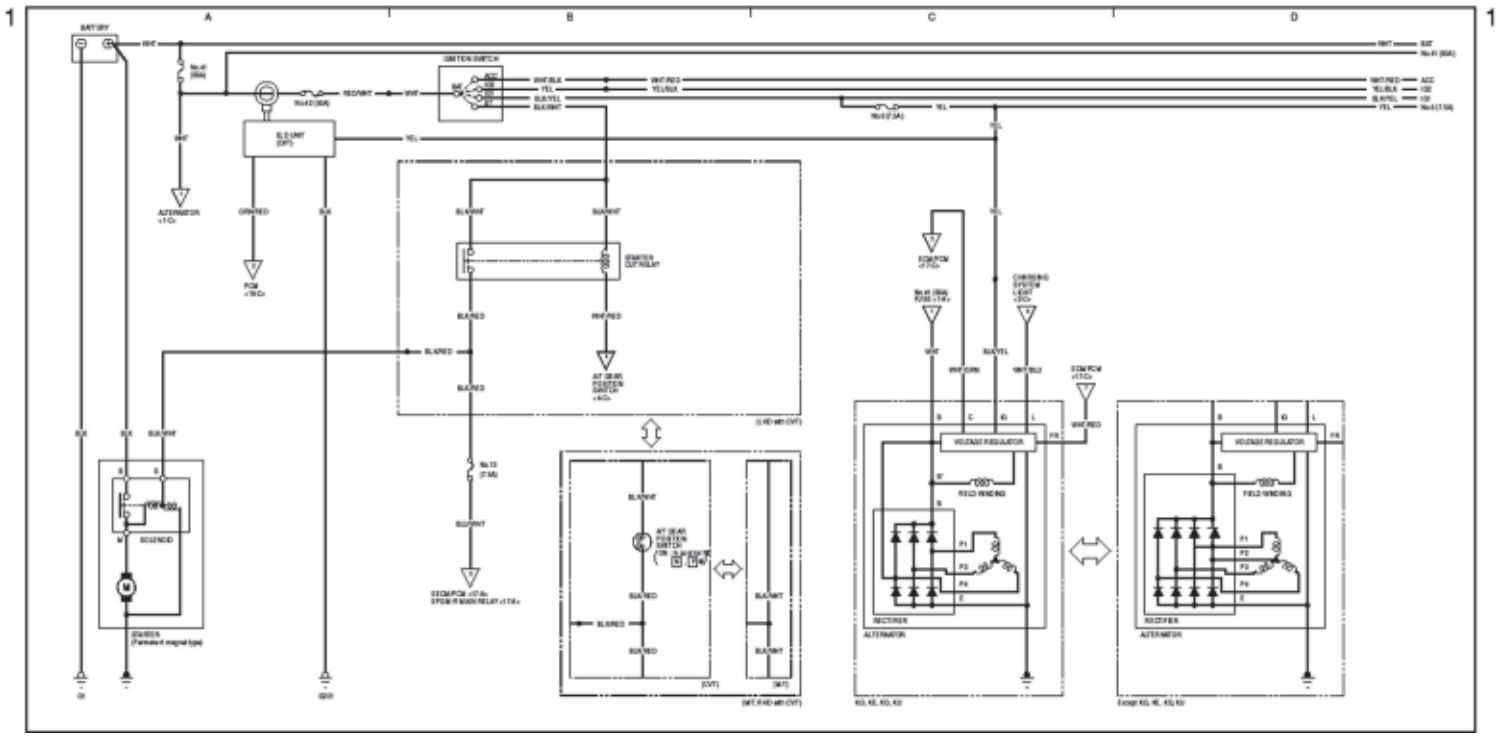
WHT — BAT
No. 41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

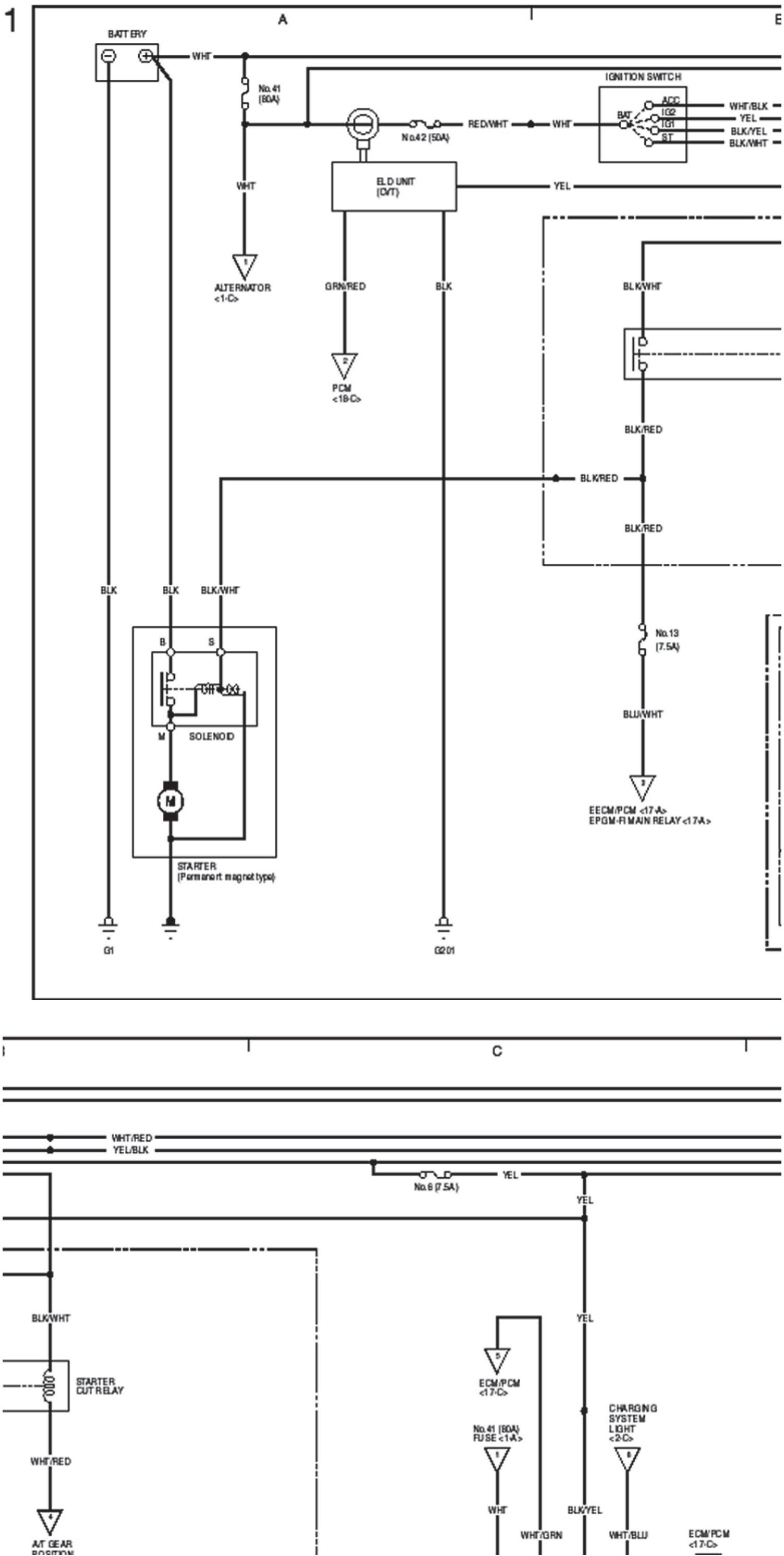


KG, KE, KQ, KU

Wiring Diagrams
Charging System



1


A
B
C
BATTERY
WHT
No.41 (80A)
IGNITION SWITCH
ACC
IG2
BAT
IG1
ST
WHT/BLK
YEL
BLK/YEL
BLK/WHT
No.42 (50A)
RED/WHT
WHT
ELD UNIT (CVT)
YEL
WHT
1
ALTERNATOR <1-C>
GRN/RED
BLK
2
PCM <18-C>
BLK/WHT
BLK/RED
BLK/RED
BLK/RED
BLK
BLK
BLK/WHT
B
S
OFF
ST
M
SOLENOID
M
STARTER (Permanent magnet type)
No.13 (7.5A)
BLU/WHT
3
EECM/PCM <17-A>
EPGM-FI MAIN RELAY <17-A>
G1
G201
WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
CHARGING SYSTEM LIGHT <2-C>
6
WHT/BLU
ECM/PCM <17-C>

C

WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION SWITCH <4-C>
(LHD with CVT)
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
WHT/BLU
CHARGING SYSTEM LIGHT <2-C>
6
ECM/PCM <17-C>
7
WHT/RED
B
C
IG
L
FR
VOLTAGE REGULATOR
B'
FIELD WINDING
B
P1
P3
P4
E
RECTIFIER
ALTERNATOR
KG, KE, KQ, KU
Except
BLK/WHT
A/T GEAR POSITION SWITCH (ON : In position N, P)
BLK/RED
BLK/RED
BLK/RED
(CVT)
BLK/WHT
BLK/WHT
(M/T)
(M/T, RHD with CVT)

D

1

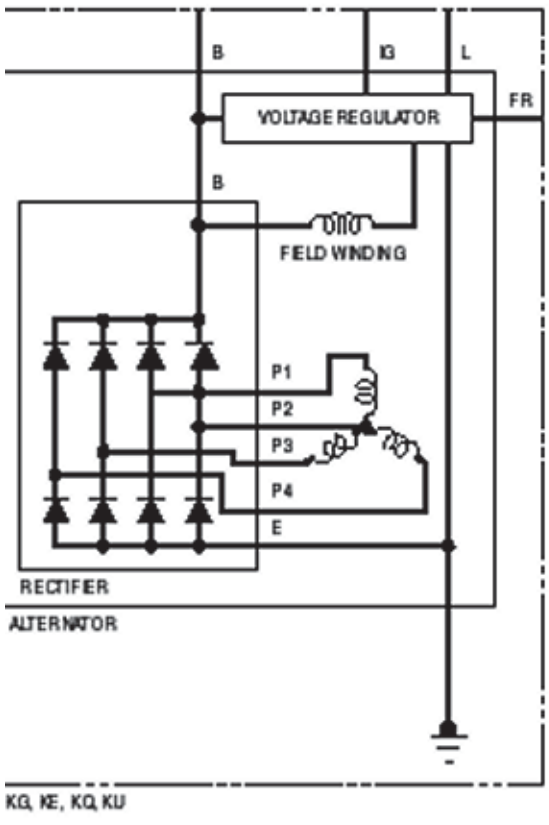
WHT — BAT
No.41 (80A)
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

D

1

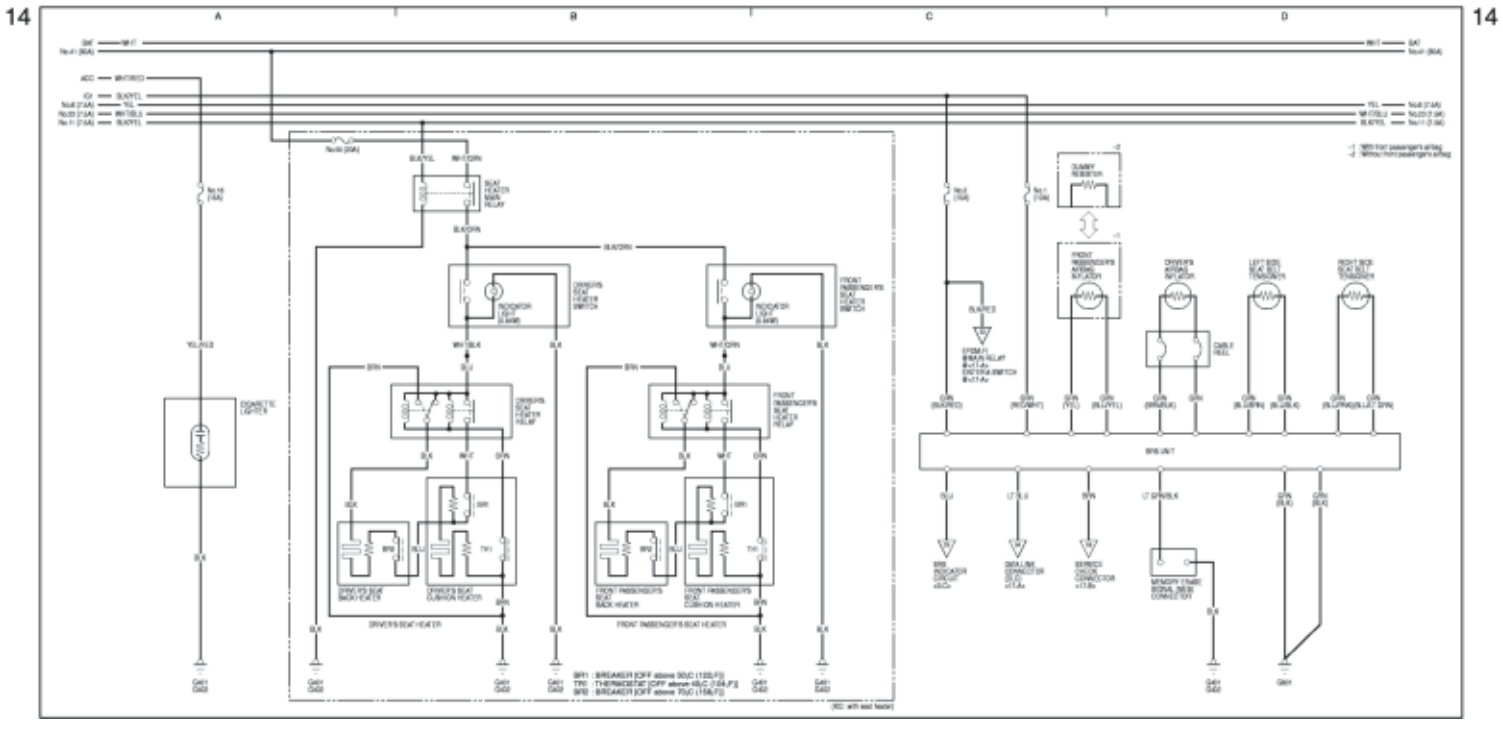
WHT — BAT
No. 41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

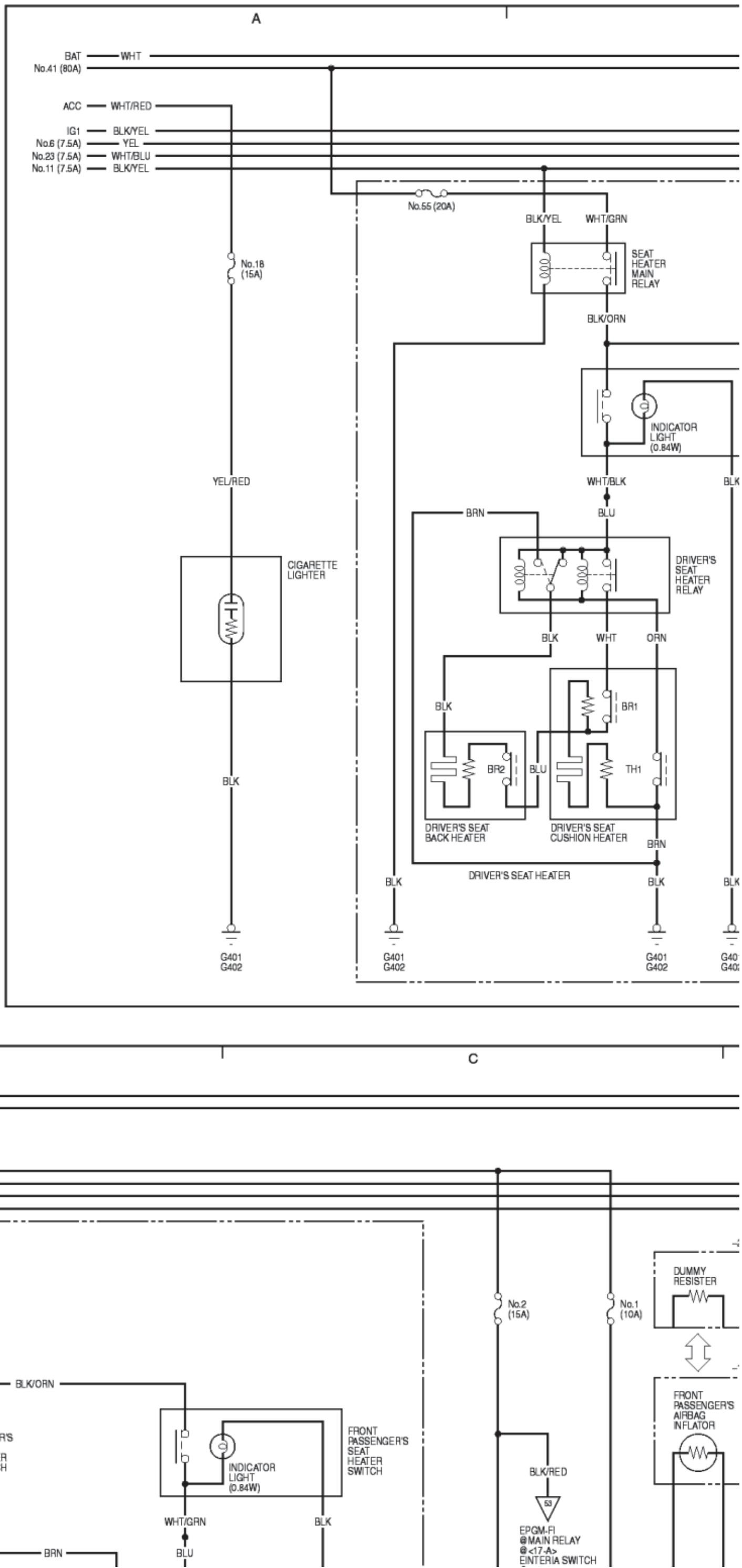


KG, KE, KQ, KU

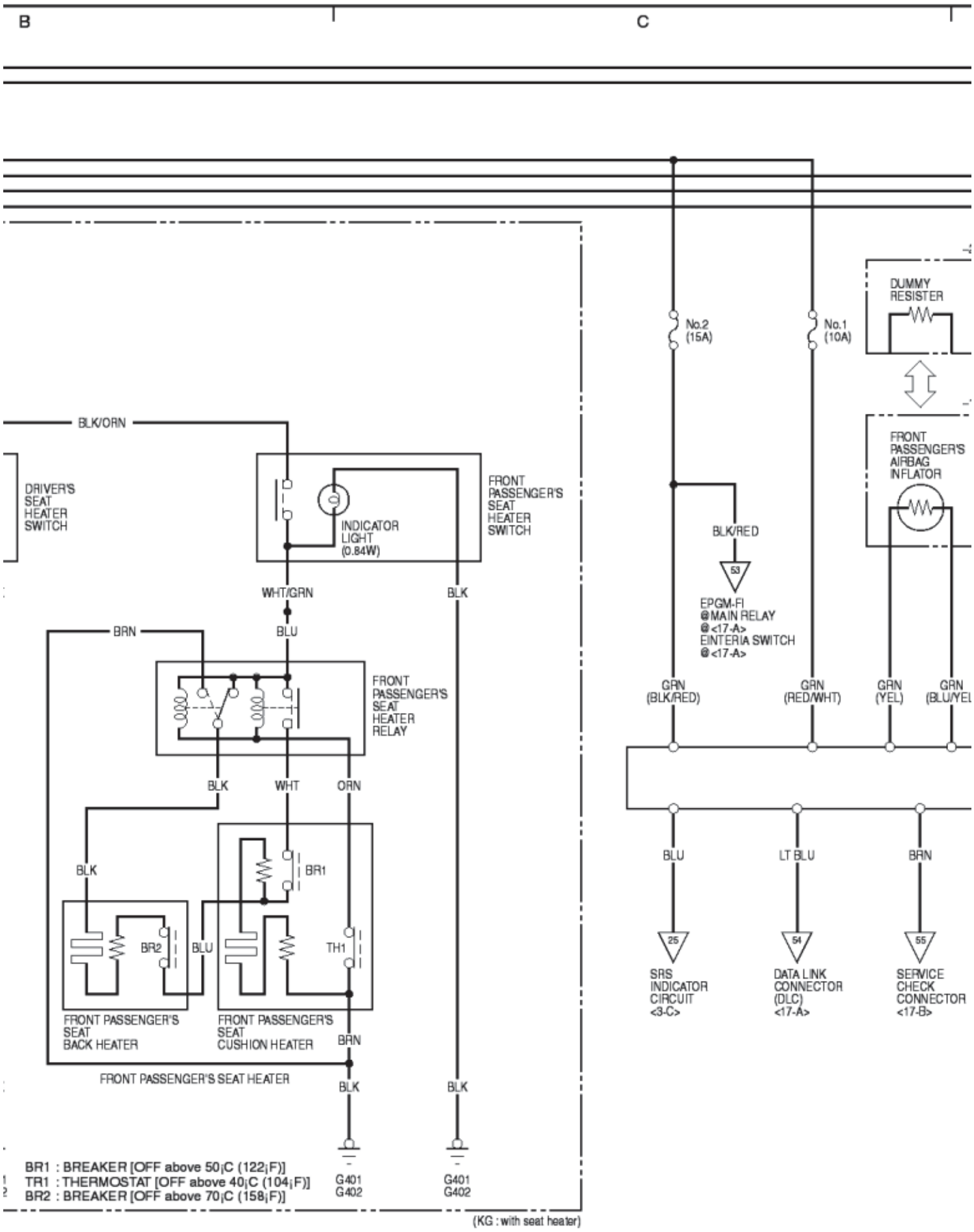
Wiring Diagrams
Cigarette Lighter

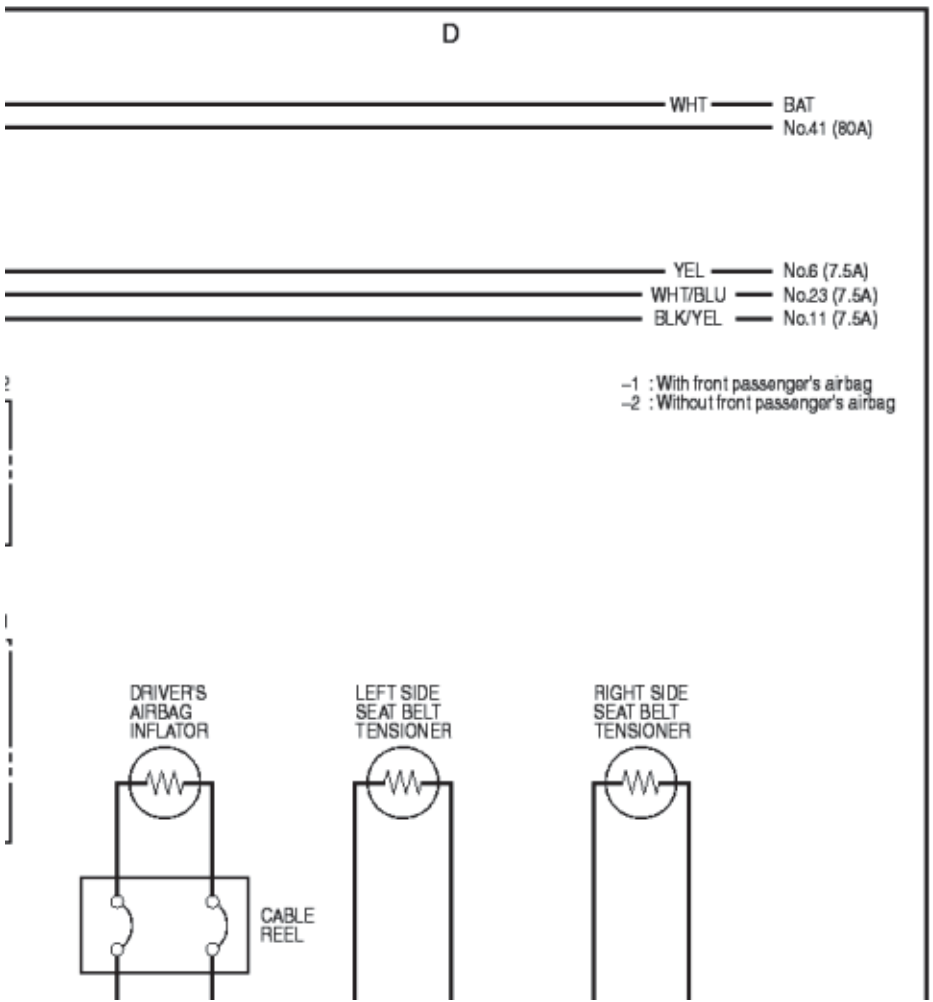


14


A
BAT
WHT
No.41 (80A)
ACC
WHT/RED
IG1
BLK/YEL
No.6 (7.5A)
YEL
No.23 (7.5A)
WHT/BLU
No.11 (7.5A)
BLK/YEL
No.55 (20A)
BLK/YEL
WHT/GRN
No.18
(15A)
SEAT
HEATER
MAIN
RELAY
BLK/ORN
INDICATOR
LIGHT
(0.84W)
YEL/RED
WHT/BLK
BLK
BRN
BLU
CIGARETTE
LIGHTER
DRIVER'S
SEAT
HEATER
RELAY
BLK
WHT
ORN
BLK
BR1
BR2
BLU
TH1
DRIVER'S SEAT
BACK HEATER
DRIVER'S SEAT
CUSHION HEATER
BRN
DRIVER'S SEAT HEATER
BLK
BLK
BLK
BLK
G401
G402
G401
G402
G401
G402

B
C
BLK/ORN
DRIVER'S
SEAT
HEATER
SWITCH
INDICATOR
LIGHT
(0.84W)
FRONT
PASSENGER'S
SEAT
HEATER
SWITCH
WHT/GRN
BLK
BRN
BLU
No.2
(15A)
No.1
(10A)
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
DUMMY
RESISTER
FRONT
PASSENGER'S
AIRBAG
INFLATOR


B
C
No.2 (15A)
No.1 (10A)
DUMMY RESISTER
FRONT PASSENGER'S AIRBAG INFLATOR
BLK/ORN
DRIVER'S SEAT HEATER SWITCH
FRONT PASSENGER'S SEAT HEATER SWITCH
INDICATOR LIGHT (0.84W)
WHT/GRN
BLK
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
@<17-A>
BRN
BLU
FRONT PASSENGER'S SEAT HEATER RELAY
GRN (BLK/RED)
GRN (RED/WHT)
GRN (YEL)
GRN (BLU/YEL
BLK
WHT
ORN
BR1
BLK
BR2
BLU
TH1
BLU
LT BLU
BRN
25
54
55
SRS INDICATOR CIRCUIT <3-C>
DATA LINK CONNECTOR (DLC) <17-A>
SERVICE CHECK CONNECTOR <17-B>
FRONT PASSENGER'S SEAT BACK HEATER
FRONT PASSENGER'S SEAT CUSHION HEATER
BRN
FRONT PASSENGER'S SEAT HEATER
BLK
BLK
G401
G402
G401
G402
BR1 : BREAKER [OFF above 50¡C (122¡F)]
TR1 : THERMOSTAT [OFF above 40¡C (104¡F)]
BR2 : BREAKER [OFF above 70¡C (158¡F)]
(KG : with seat heater)

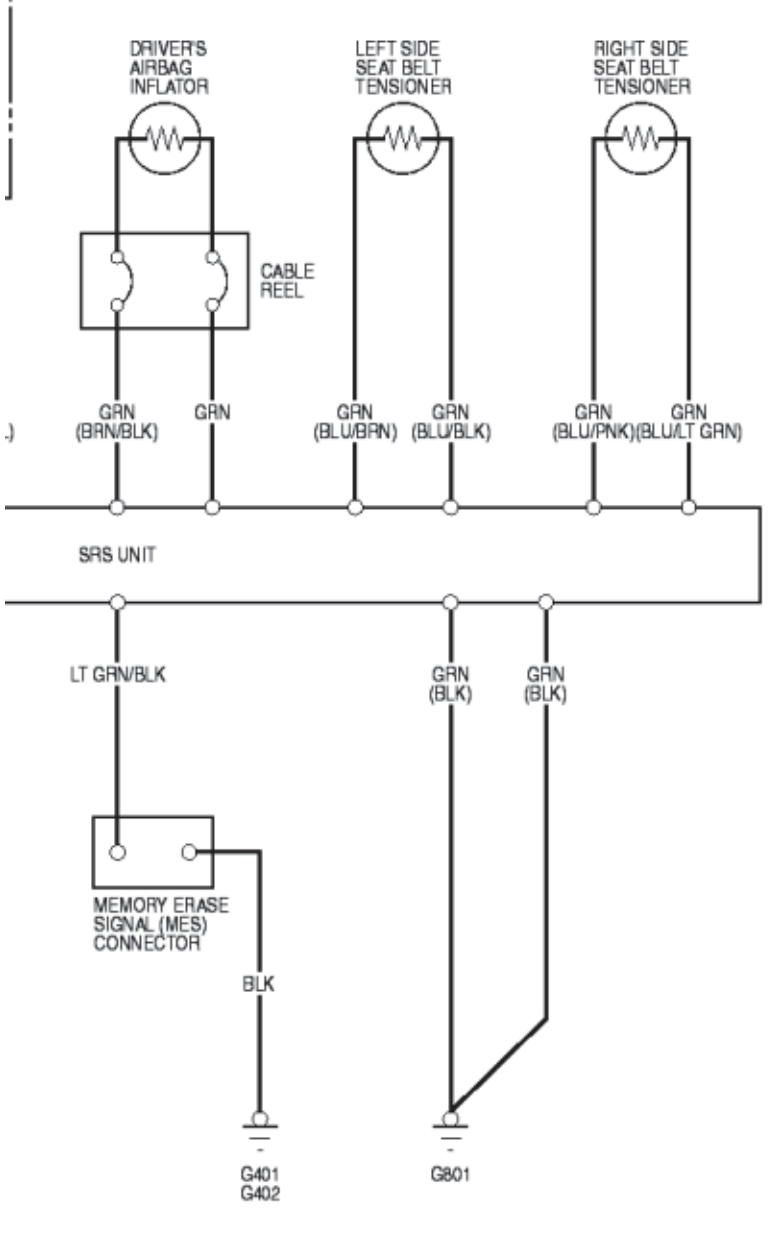

D
WHT
BAT
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
BLK/YEL
No.11 (7.5A)
–1 : With front passenger's airbag
–2 : Without front passenger's airbag
DRIVER'S AIRBAG INFLATOR
LEFT SIDE SEAT BELT TENSIONER
RIGHT SIDE SEAT BELT TENSIONER
CABLE REEL

D

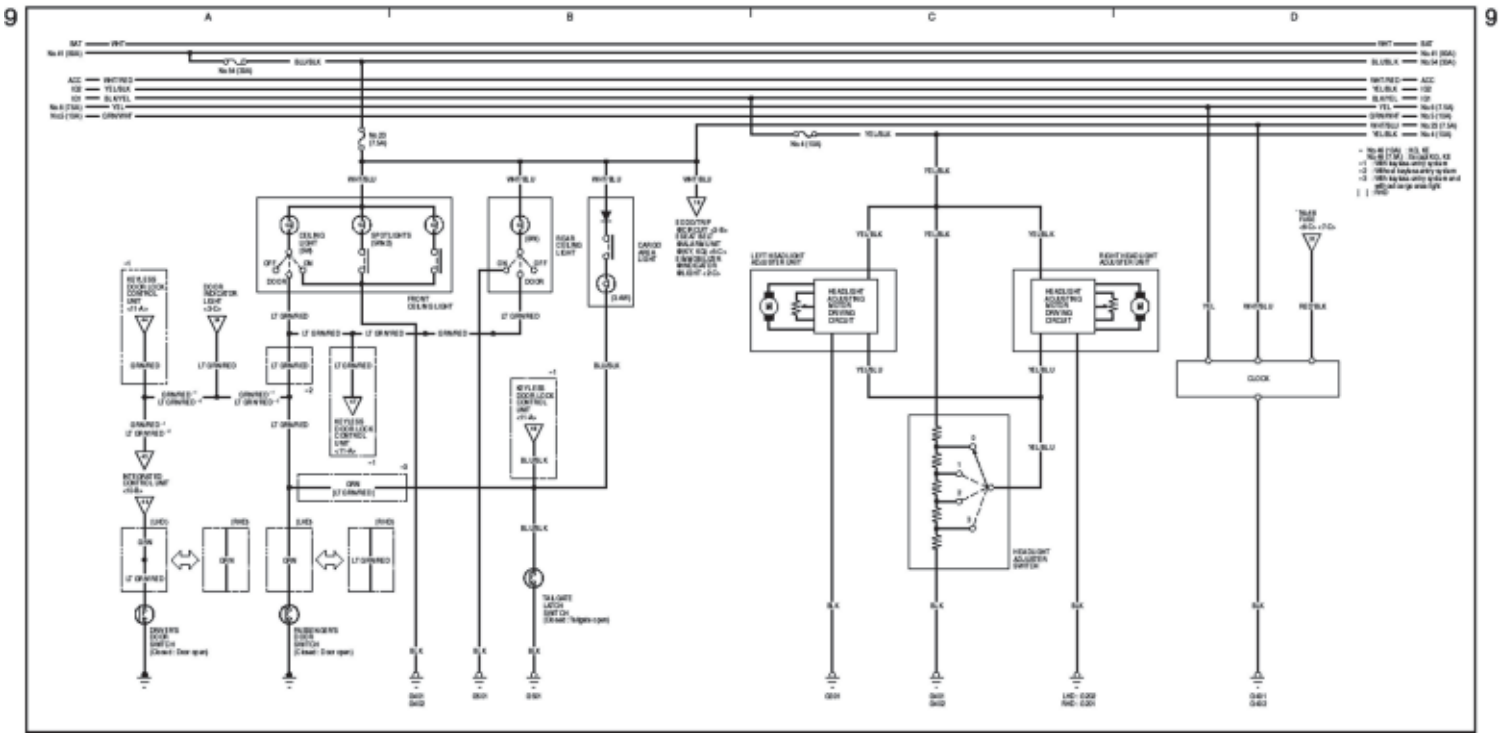
WHT — BAT
No.41 (80A)

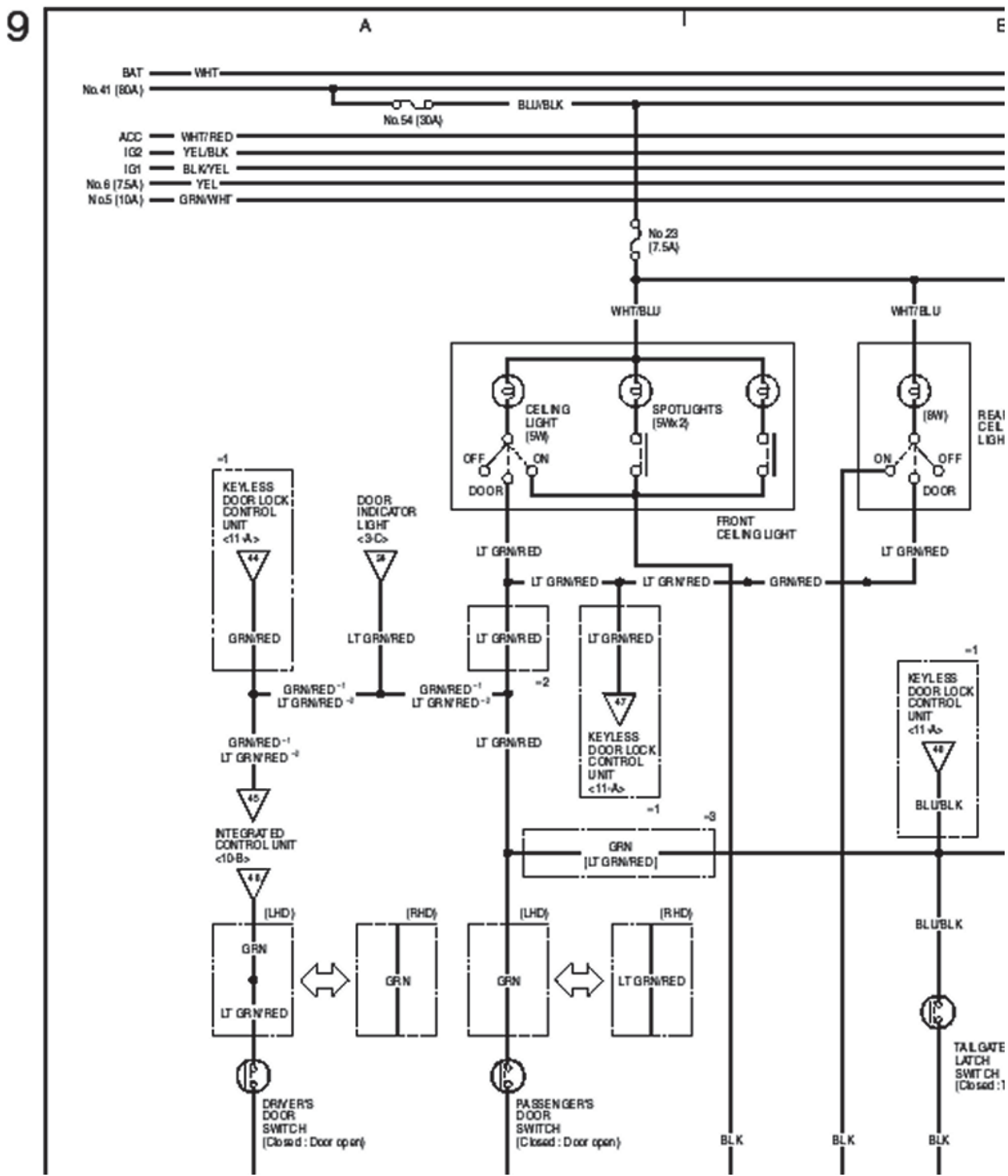
YEL — No.6 (7.5A)
WHT/BLU — No.23 (7.5A)
BLK/YEL — No.11 (7.5A)

–1 : With front passenger's airbag
–2 : Without front passenger's airbag



Wiring Diagrams
Clock





9

A

B

BAT — WHT
No.41 (80A) — BLU/BLK
No.54 (30A)
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A)
WHT/BLU
WHT/BLU
CEILING LIGHT (5W)
SPOTLIGHTS (5W×2)
OFF
ON
DOOR
FRONT CEILING LIGHT
(8W)
ON
OFF
DOOR
REAR CEILING LIGHT
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
BLU/BLK
INTEGRATED CONTROL UNIT <10-B>
GRN (LT GRN/RED)
(LHD)
(RHD)
(LHD)
(RHD)
GRN
LT GRN/RED
GRN
GRN
LT GRN/RED
BLU/BLK
DRIVER'S DOOR SWITCH (Closed : Door open)
PASSENGER'S DOOR SWITCH (Closed : Door open)
TAILGATE LATCH SWITCH (Closed :
BLK
BLK
BLK
G401
G402
G501
G501

C

No.4 (10A)
YEL/BLK
YEL/BLK
WHT/BLU
WHT/BLU
YEL/BLK
YEL/BLK
YEL/BLK
CARGO AREA LIGHT (3.4W)
ODO/TRIP CIRCUIT <3-B>
SEAT BELT ALARM UNIT
(KY, KO) <5-C>
IMMOBILIZER INDICATOR LIGHT <2-C>
LEFT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
RIGHT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
BLU/BLK
YEL/BLU
YEL/BLU

C

No.4 (10A)

YEL/BLK

YEL/BLK

WHT/BLU

WHT/BLU

19

EODO/TRIP
◎CIRCUIT <3-B>
ESEAT BELT
◎ALARM UNIT
◎(KY, KQ) <5-C>
EIMMOBILIZER
◎INDICATOR
◎LIGHT <2-C>

CARGO
AREA
LIGHT

(3.4W)

YEL/BLK

YEL/BLK

YEL/BLK

LEFT HEADLIGHT
ADJUSTER UNIT

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

RIGHT HEAD
ADJUSTER U

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

BLU/BLK

YEL/BLU

YEL/BLU

YEL/BLU

0

1

2

3

HEADLIGHT
ADJUSTER
SWITCH

BLK

BLK

BLK

G301

G401
G402

LHD : G202
RHD : G201

D

9

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)
GRN/WHT — No.5 (10A)
WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- : No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
=1 : With keyless entry system
=2 : Without keyless entry system
=3 : With keyless entry system and without cargo area light
| | : RHD

No.46
FUSE
<6-C> <7-C>

31

LIGHT
NIT

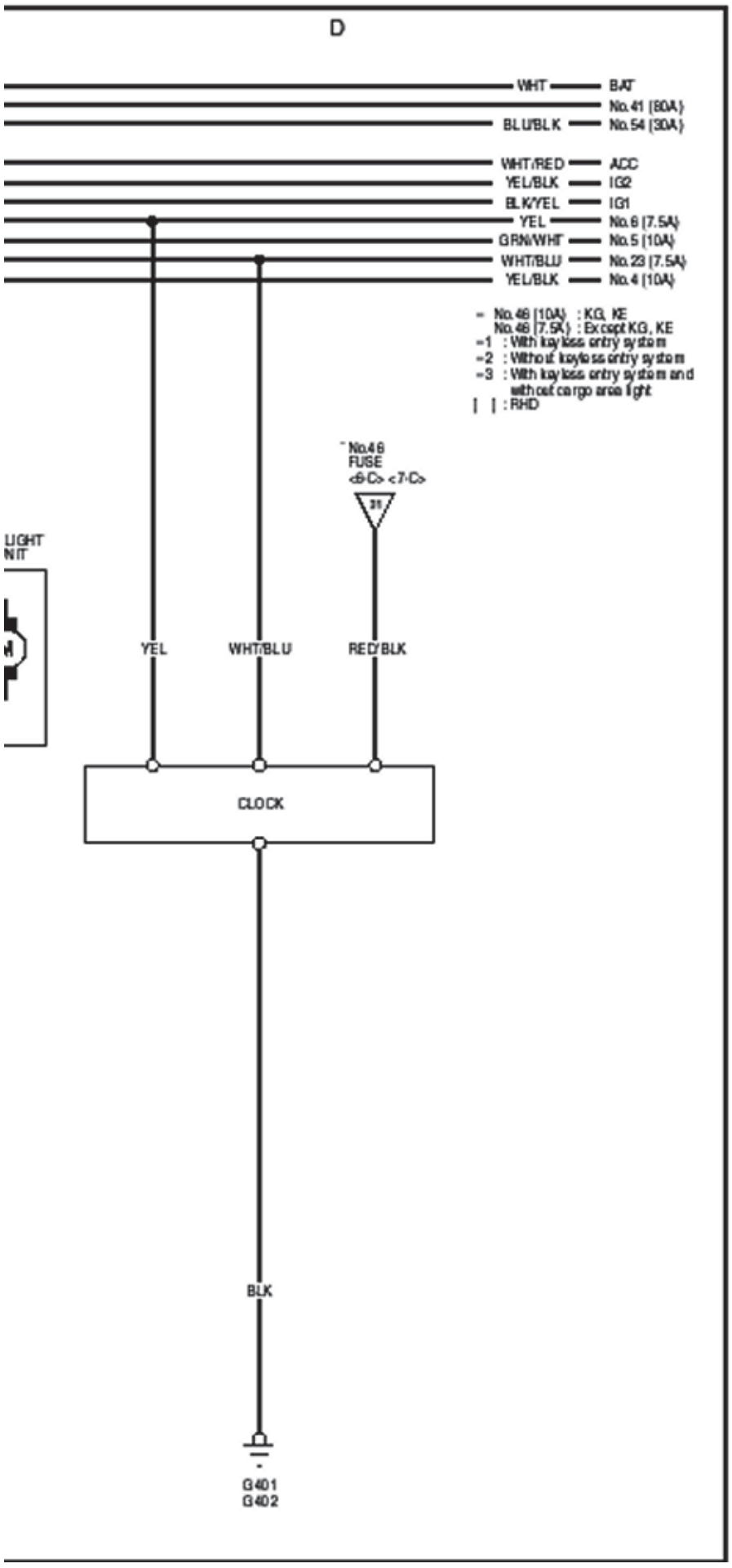
YEL

WHT/BLU

RED/BLK

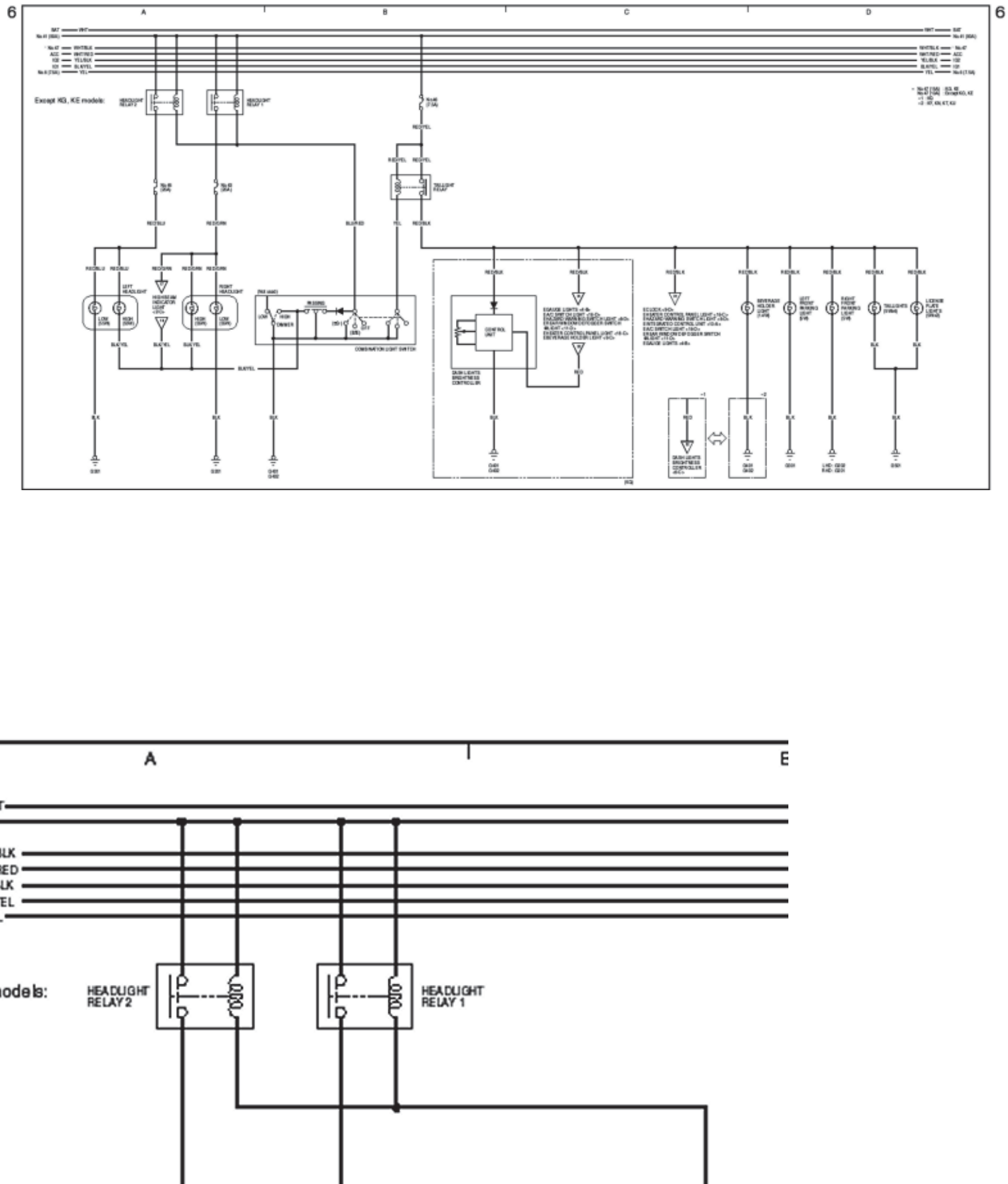
CLOCK

D


WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
*3 : With keyless entry system and without cargo area light
| | : RHD
*
No.46
FUSE
<6-C> <7-C>
31
LIGHT
NIT
YEL
WHT/BLU
RED/BLK
CLOCK
BLK
G401
G402

Wiring Diagrams

Dash Lights Brightness Controller



6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

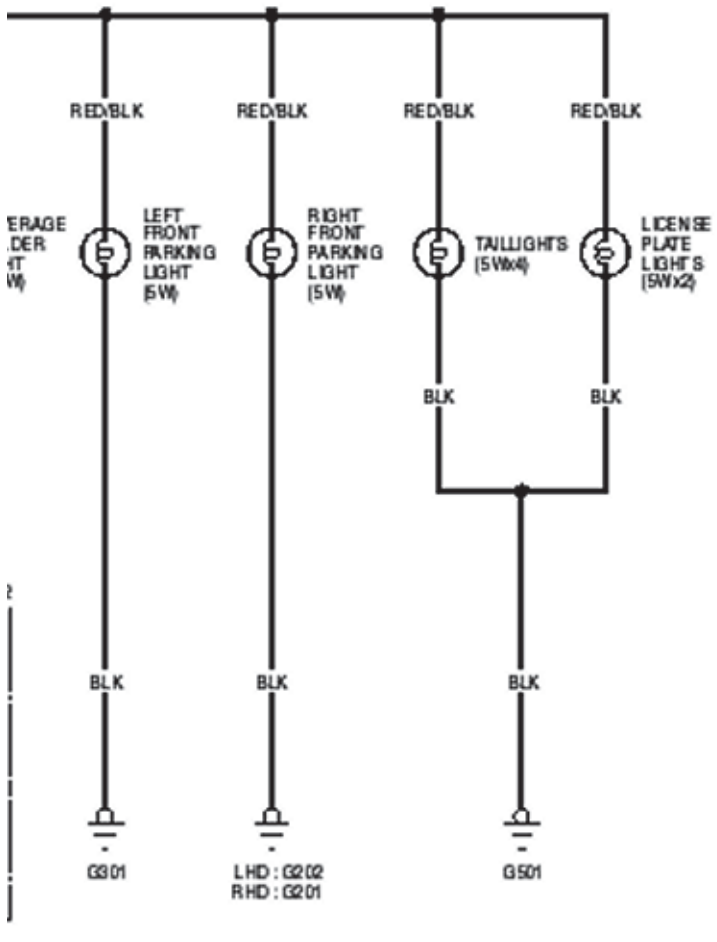
D

6

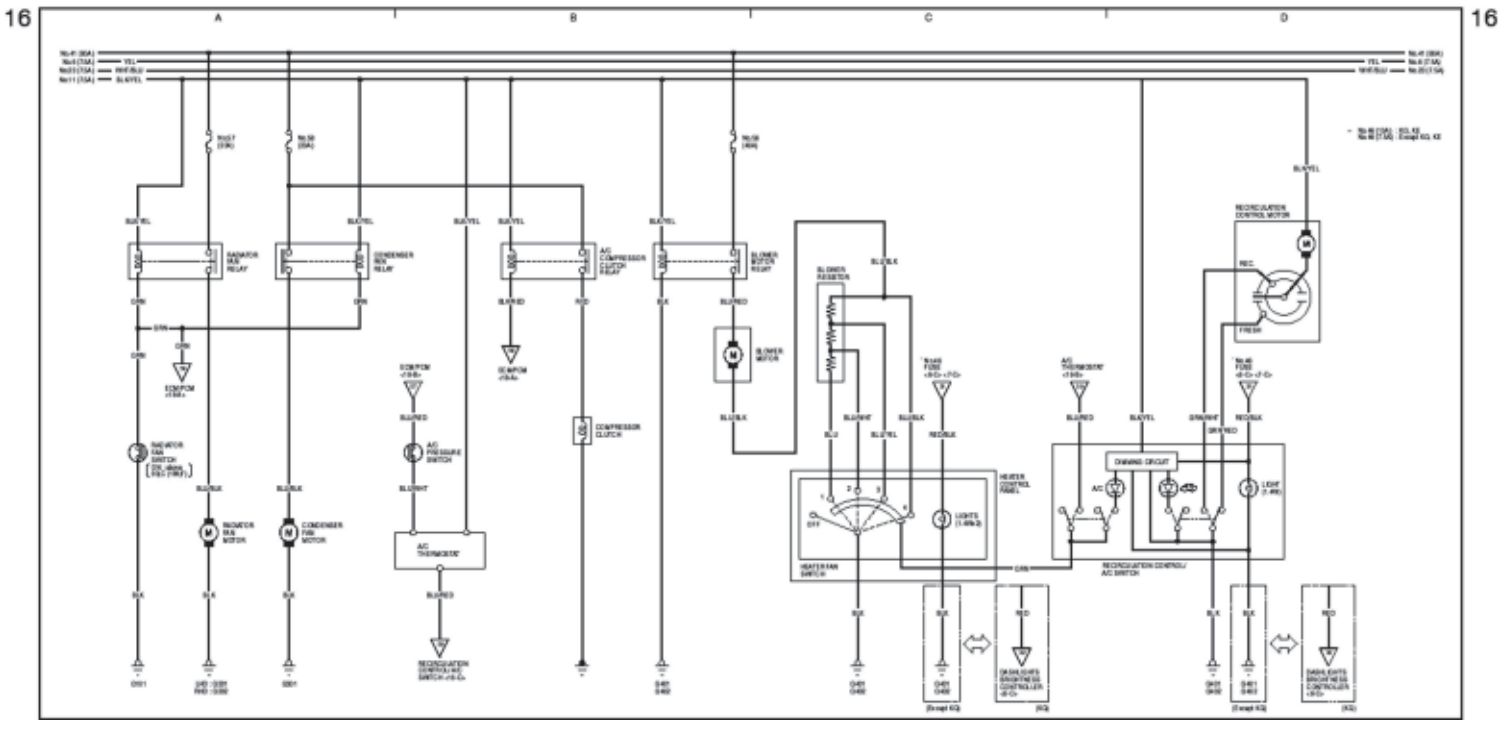
WHT — BAT
No.41 (80A)

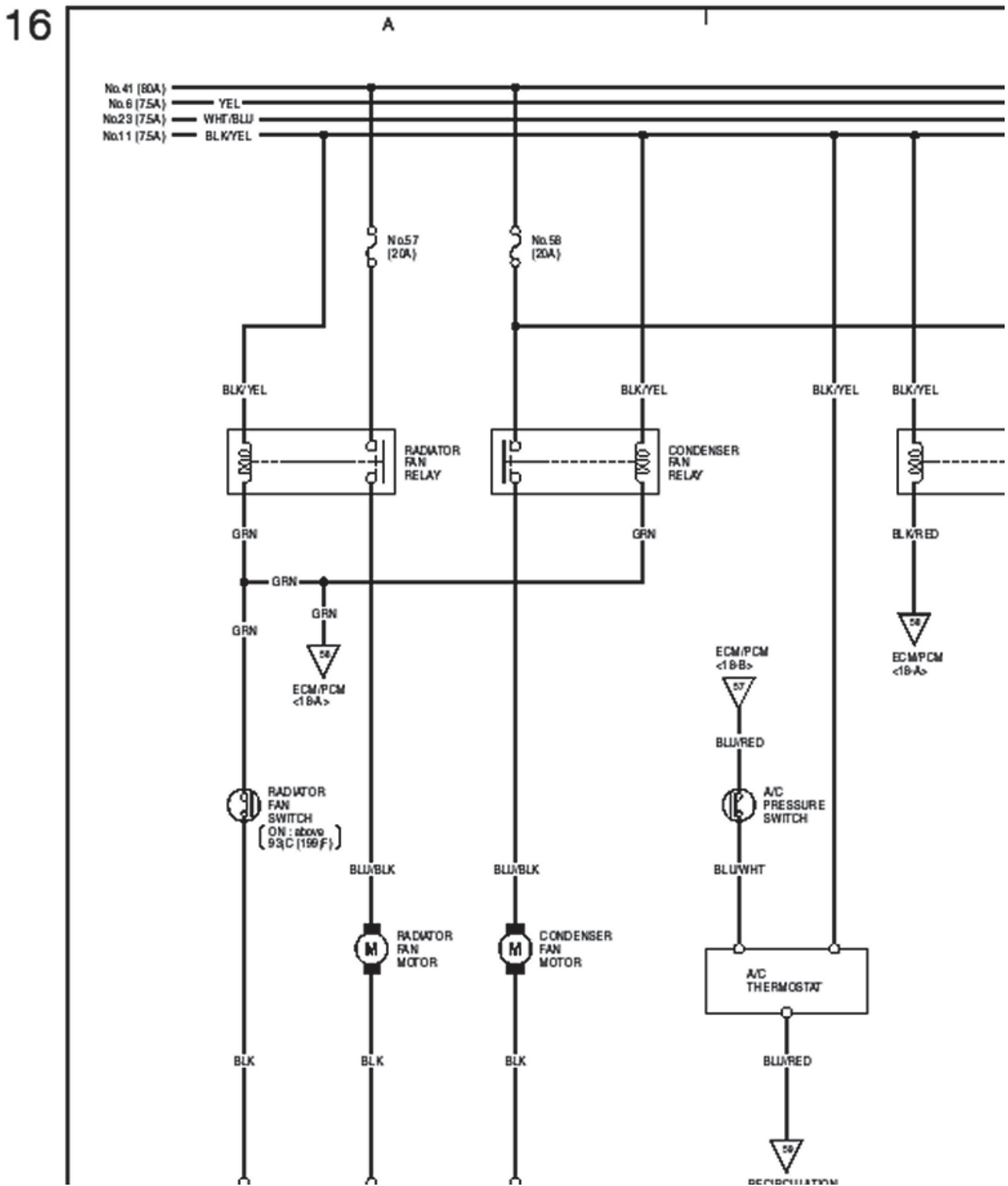
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

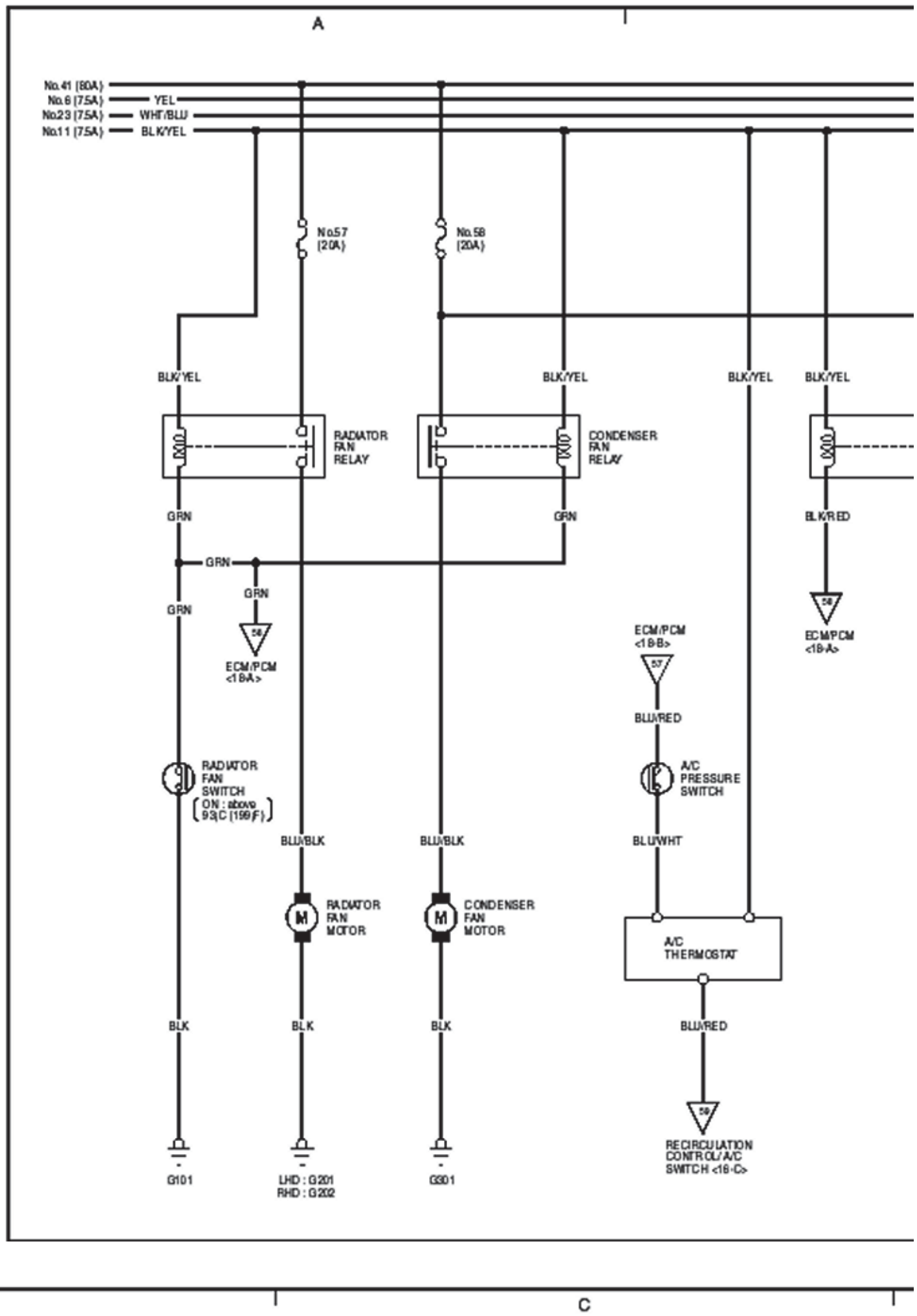
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams
Fan Controls






A
No.41 (80A)
No.6 (7.5A)
No.23 (7.5A)
No.11 (7.5A)
YEL
WHT/BLU
BLK/YEL
No.57 (20A)
No.58 (20A)
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
RADIATOR FAN RELAY
CONDENSER FAN RELAY
GRN
GRN
BLK/RED
GRN
GRN
GRN
E6
ECM/PCM <18-A>
ECM/PCM <18-B>
E7
BLU/RED
RADIATOR FAN SWITCH (ON : above 93C (199F))
A/C PRESSURE SWITCH
BLU/BLK
BLU/BLK
BLU/WHT
RADIATOR FAN MOTOR
CONDENSER FAN MOTOR
A/C THERMOSTAT
BLK
BLK
BLK
BLU/RED
E9
RECIRCULATION CONTROL/A/C SWITCH <18-C>
G101
LHD : G201
RHD : G202
G301
B
C
No.56 (40A)
BLK/YEL
BLU/BLK
A/C COMPRESSOR CLUTCH RELAY
BLOWER MOTOR RELAY
BLOWER RESISTOR
RED
BLK
BLU/RED
BLOWER MOTOR
No.46 FUSE <9-C> <7-C>
A/C THERMOSTAT <18-B>

B

C

No.56
(40A)

BLK/YEL

A/C
COMPRESSOR
CLUTCH
RELAY

BLOWER
MOTOR
RELAY

BLOWER
RESISTOR

BLU/BLK

RED

BLK

BLU/RED

BLOWER
MOTOR

M

BLU/BLK

COMPRESSOR
CLUTCH

No.46
FUSE
<6-C> <7-C>

A/C
THERMOSTAT
<16-B>

BLU/RED

BLU

BLU/WHT

BLU/YEL

BLU/BLK

RED/BLK

HEATER
CONTROL
PANEL

1
2
3
4

OFF

LIGHTS
(1.4W x 2)

A/C

HEATER FAN
SWITCH

GRN

RECI
A/C S

BLK

BLK

RED

32

DASHLIGHTS
BRIGHTNESS
CONTROLLER
<8-C>

G401
G402

G401
G402

G401
G402

(Except KQ)

(KQ)

D

16

No.41 (80A)

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE

BLK/YEL

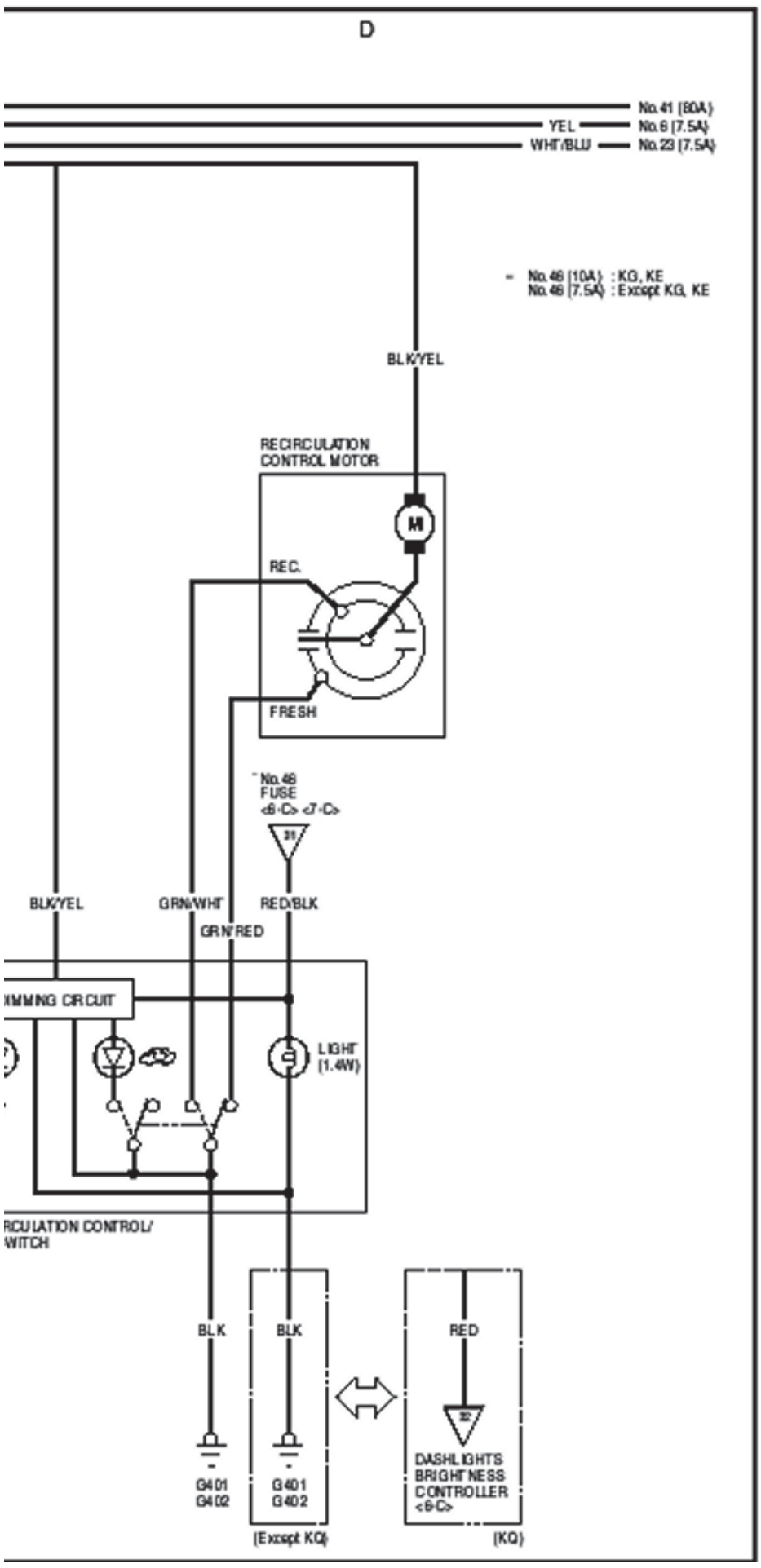
RECIRCULATION
CONTROL MOTOR

M

REC.

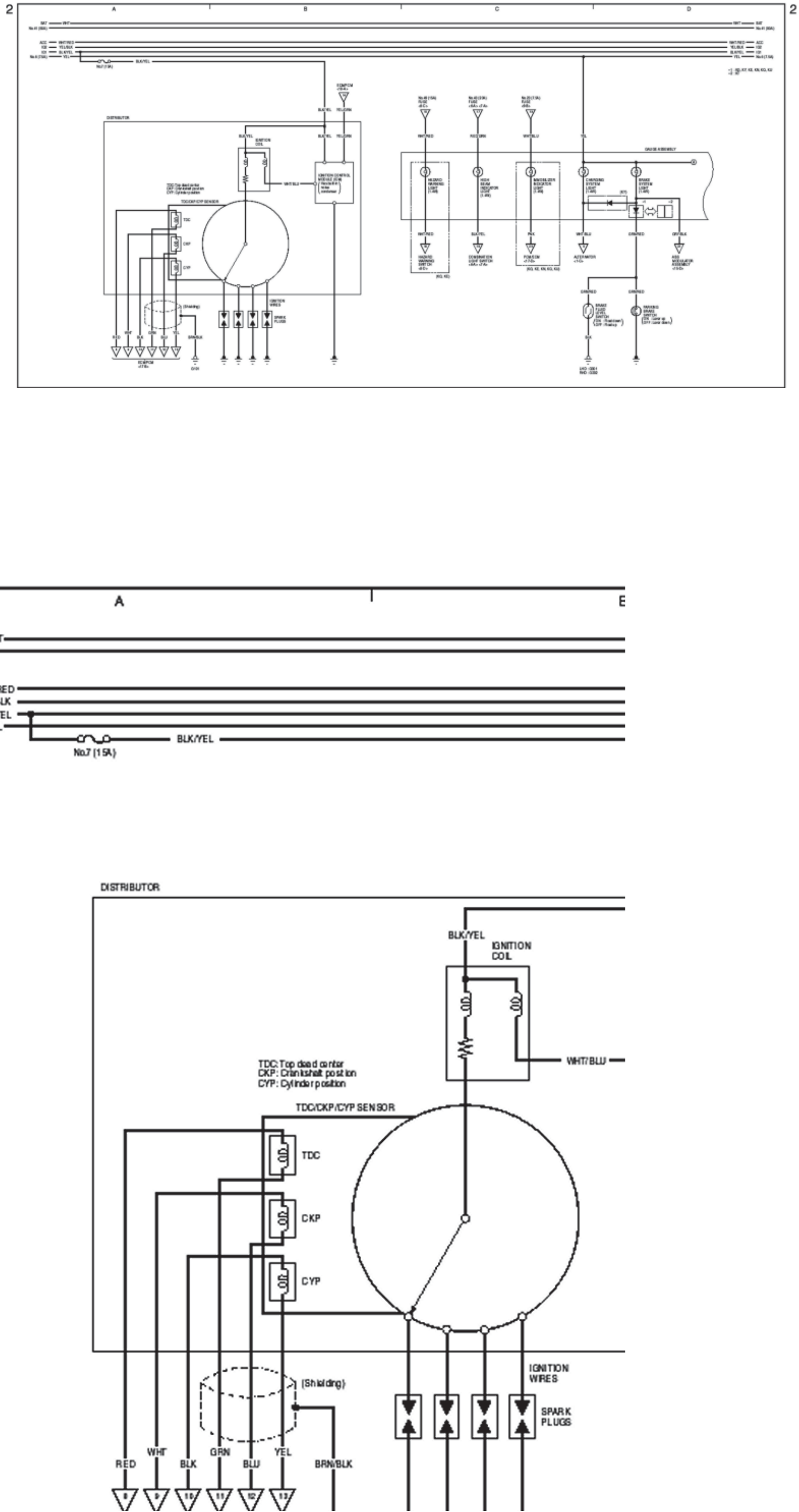
FRESH

* No.46
FUSE
<6-C> <7-C>


D
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
No.46 (10A) : K.G, KE
No.46 (7.5A) : Except K.G, KE
BLK/YEL
RECIRCULATION CONTROL MOTOR
M
REC.
FRESH
No.46 FUSE
<6-C> <7-C>
31
BLK/YEL
GRN/WHT
RED/BLK
GRN/RED
MMING CIRCUIT
LIGHT (1.4W)
RCULATION CONTROL/ WITCH
BLK
BLK
RED
32
DASHLIGHTS BRIGHTNESS CONTROLLER <6-C>
G401 G402
G401 G402
(Except KQ)
(KQ)

Wiring Diagrams

Gauges



2

A

B

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BLK/YEL
No.7 (15A)

DISTRIBUTOR

BLK/YEL

IGNITION COIL

WHT/BLU

TDC: Top dead center
CKP: Crankshaft position
CYP: Cylinder position

TDC/CKP/CYP SENSOR

TDC

CKP

CYP

(Shielding)

IGNITION WIRES

SPARK PLUGS

RED WHT BLK GRN BLU YEL BRN/BLK

8 9 10 11 12 13

ECM/PCM <17 B>

G101

C

ECM/PCM <18 A>

14

BLK/YEL YEL/GRN

BLK/YEL YEL/GRN

IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE <8 C>

No.43 (20A) FUSE <6 A> <7 A>

No.23 (7.5A) FUSE <9 B>

15 17 19

WHT/RED RED/GRN WHT/BLU YEL

HAZARD WARNING LIGHT (1.4W)

HIGH BEAM INDICATOR LIGHT (1.4W)

IMMOBILIZER INDICATOR LIGHT (1.4W)

CHARGING SYSTEM LIGHT (1.4W)

C

ECM/PCM
<18-A>
14
BLK/YEL
YEL/GRN
BLK/YEL
YEL/GRN
IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE
<8-C>
15
WHT/RED
No.43 (20A) FUSE
<6-A> <7-A>
17
RED/GRN
No.23 (7.5A) FUSE
<9-B>
19
WHT/BLU
YEL

HAZARD WARNING LIGHT (1.4W)
HIGH BEAM INDICATOR LIGHT (1.4W)
IMMOBILIZER INDICATOR LIGHT (1.4W)
CHARGING SYSTEM LIGHT (1.4W)

WHT/RED
16
HAZARD WARNING SWITCH
<8-D>
(KG, KE)
BLK/YEL
18
COMBINATION LIGHT SWITCH
<6-A> <7-A>
PNK
20
PCM/ECM
<17-D>
(KG, KE, KN, KQ, KU)
WHT/BLU
6
ALTERNATOR
<1-C>

GRN/RED
BRAKE FLUID LEVEL SWITCH
(ON : R
OFF : R
BLK
LHD : G301
RHD : G202

D

2

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : KG, KY, KE, KN, KQ, KU
=2 : KT

GAUGE ASSEMBLY
A
BRAKE SYSTEM LIGHT (1.4W)
(KY)
=1
=2

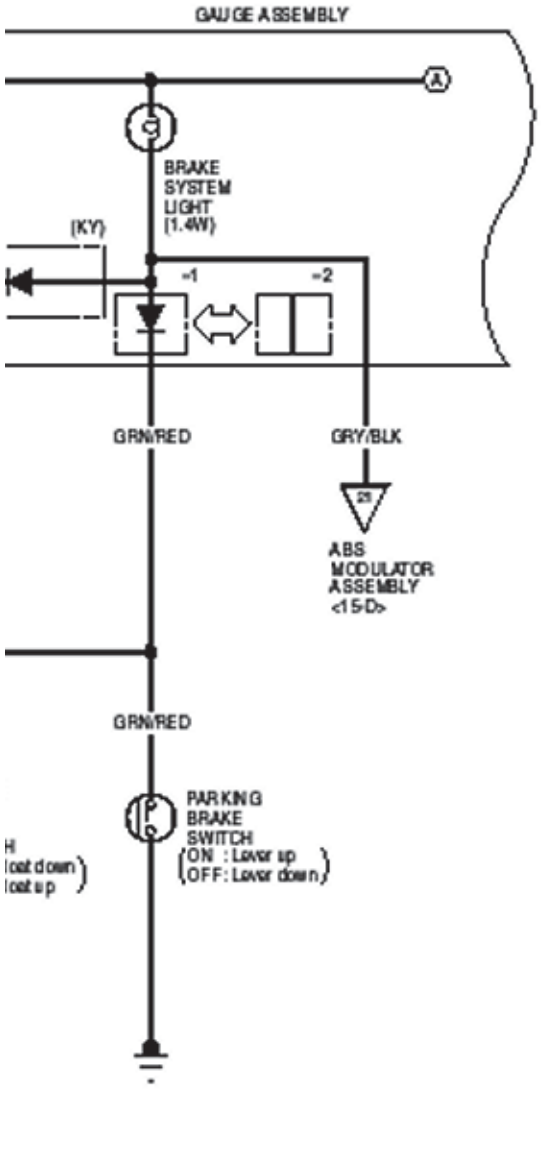
D

2

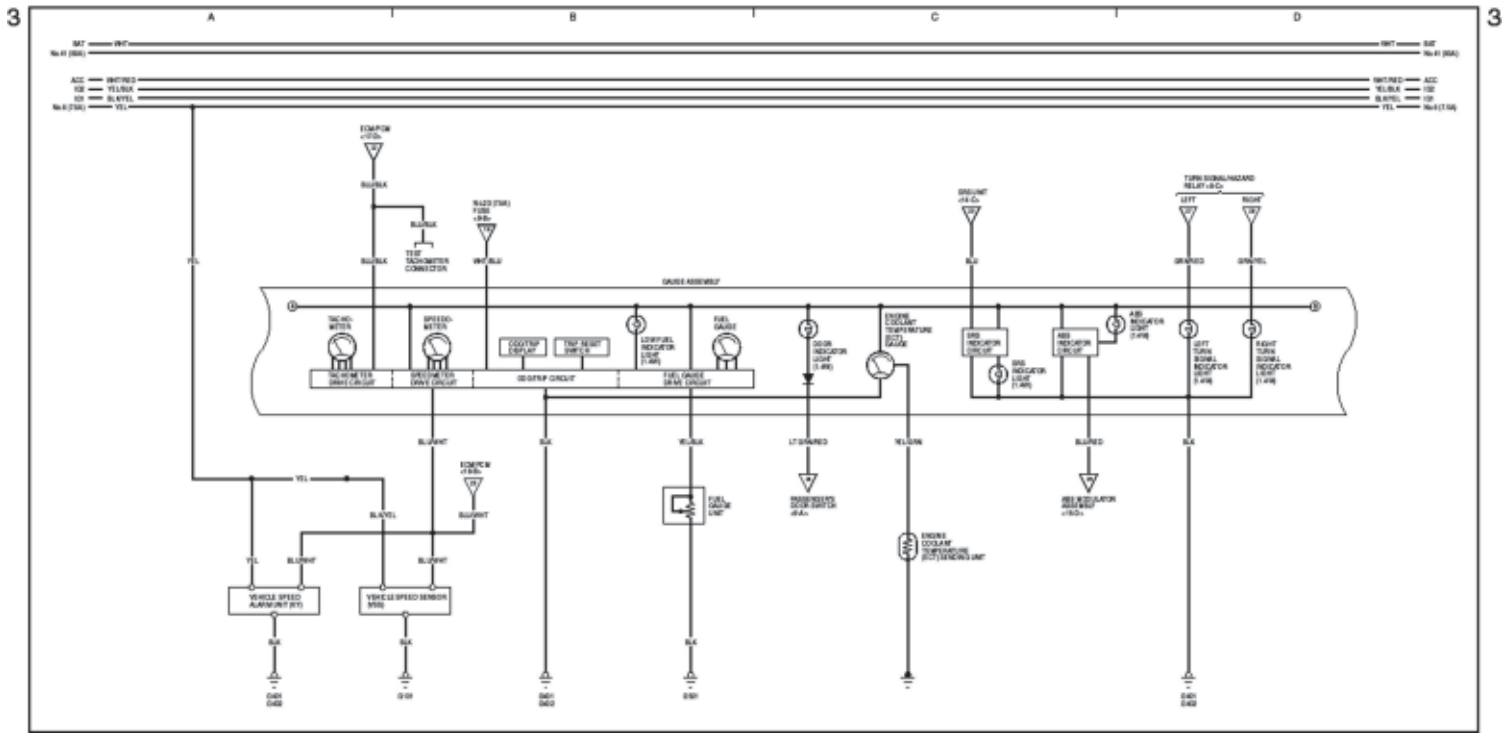
WHT — BAT
No.41 (80A)

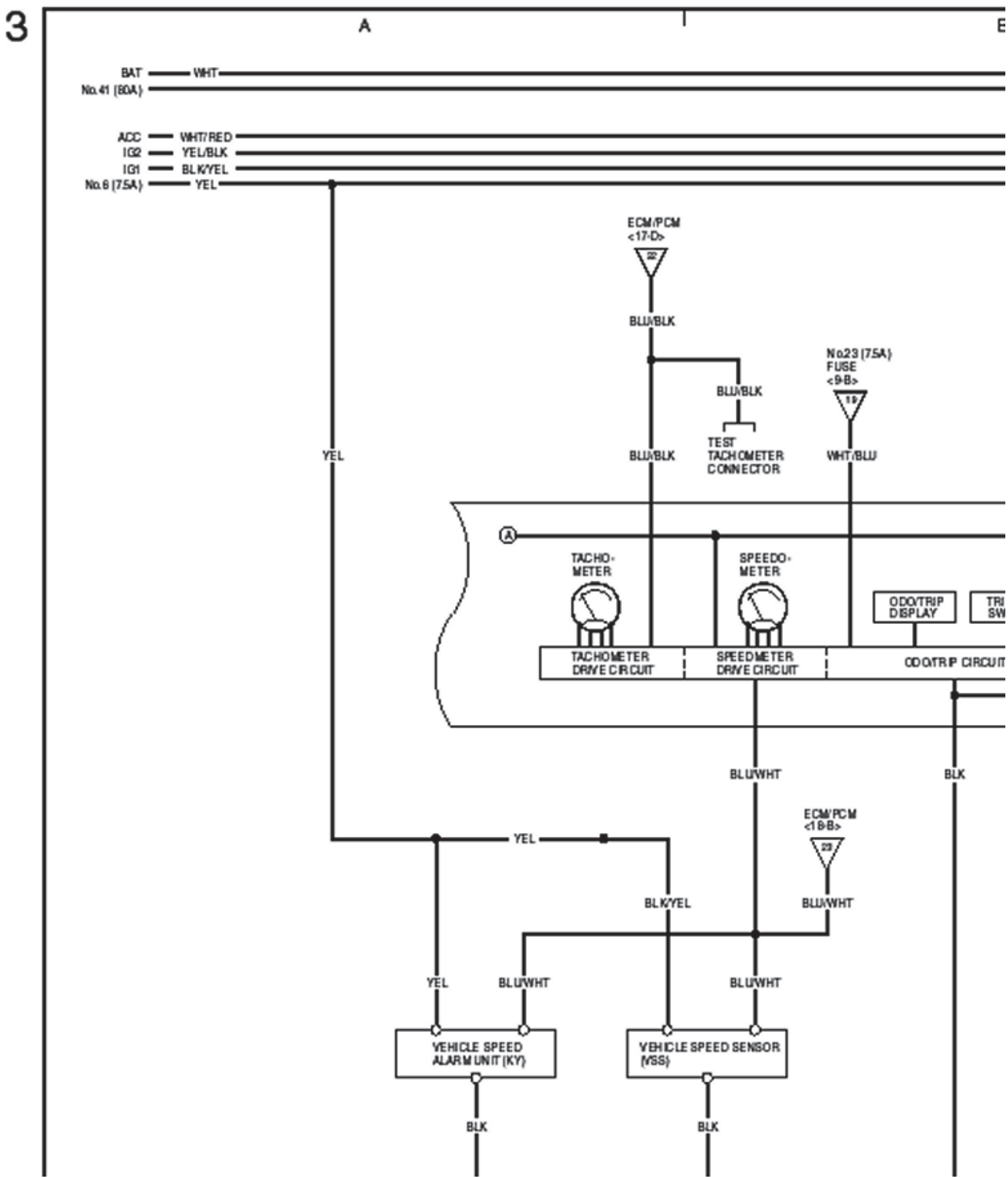
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : K3, KY, KE, KN, KQ, KU
=2 : KT



Wiring Diagrams
Gauges





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

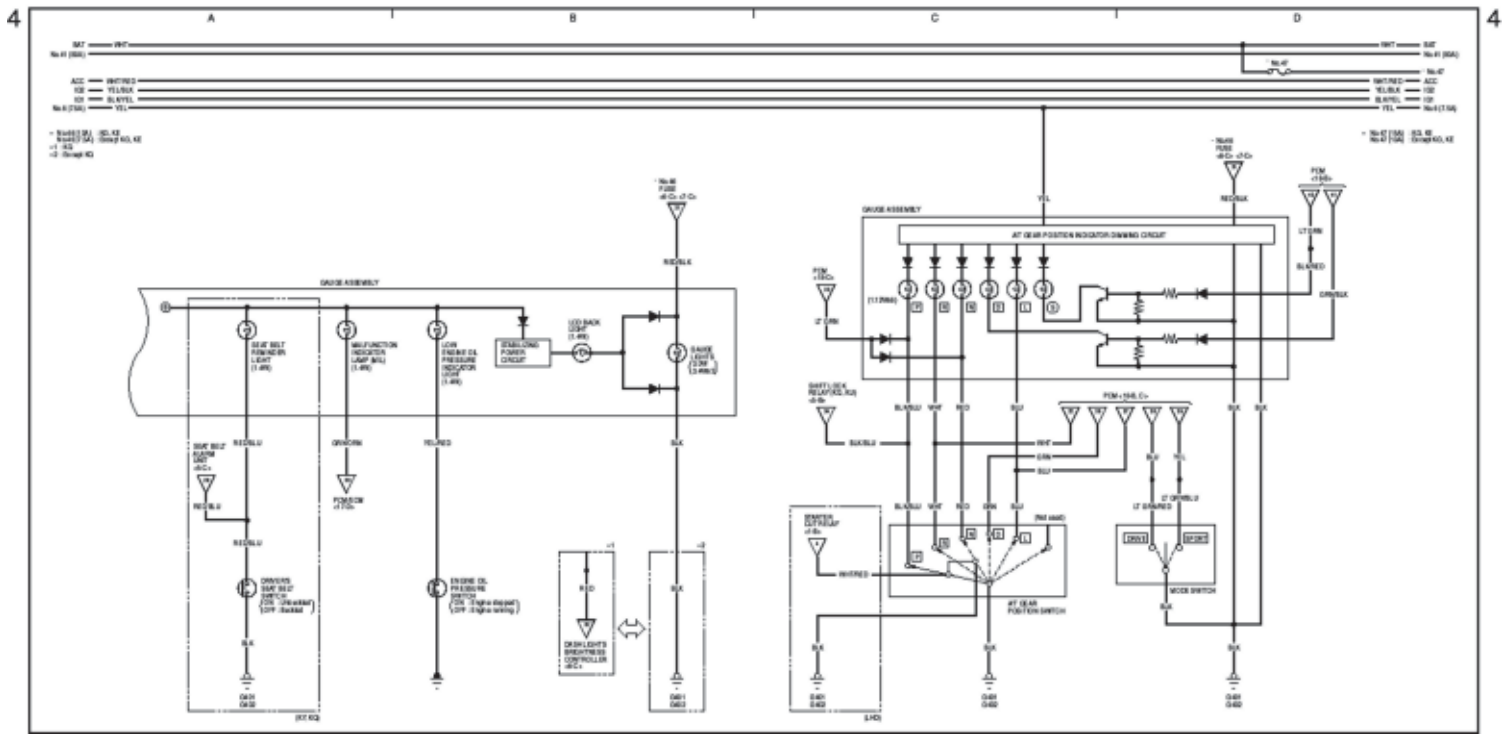
LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

BLK

G401
G402

Wiring Diagrams
Gauges



4

A

B

BAT — WHT
No.41 (80A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
-1 : KQ
-2 : Except KQ

GAUGE ASSEMBLY

B

SEAT BELT REMINDER LIGHT (1.4W)

MALFUNCTION INDICATOR LAMP (MIL) (1.4W)

LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)

STABILIZING POWER CIRCUIT

SEAT BELT ALARM UNIT <5-C>

29

RED/BLU

RED/BLU

RED/BLU

GRN/ORN

30

PCM/ECM <17-D>

YEL/RED

DRIVER'S SEAT BELT SWITCH (ON : Unbuckled) (OFF : Buckled)

BLK

G401
G402

(KY, KQ)

ENGINE OIL PRESSURE SWITCH (ON : Engine stopped) (OFF : Engine running)

C

- No.46 FUSE <6-C> <7-C>

31

RED/BLK

GAUGE LIGHTS (3.0W) (3.4W x 3)

GAUGE ASSEMBLY

YEL

AT GEAR POSITION INDICATOR DIMMING

PCM <18-C>

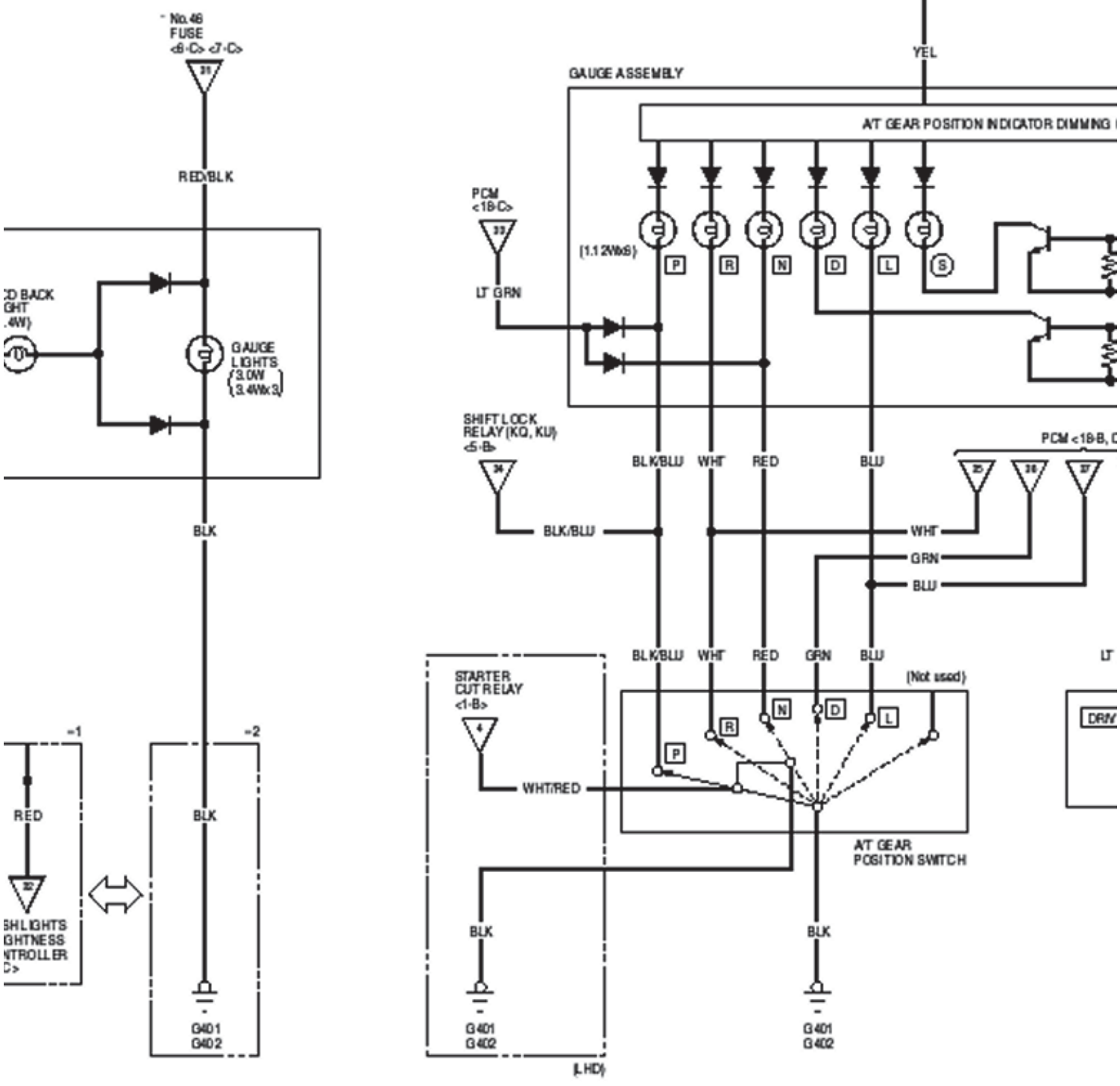
33

LT GRN

(1.12W x 6)

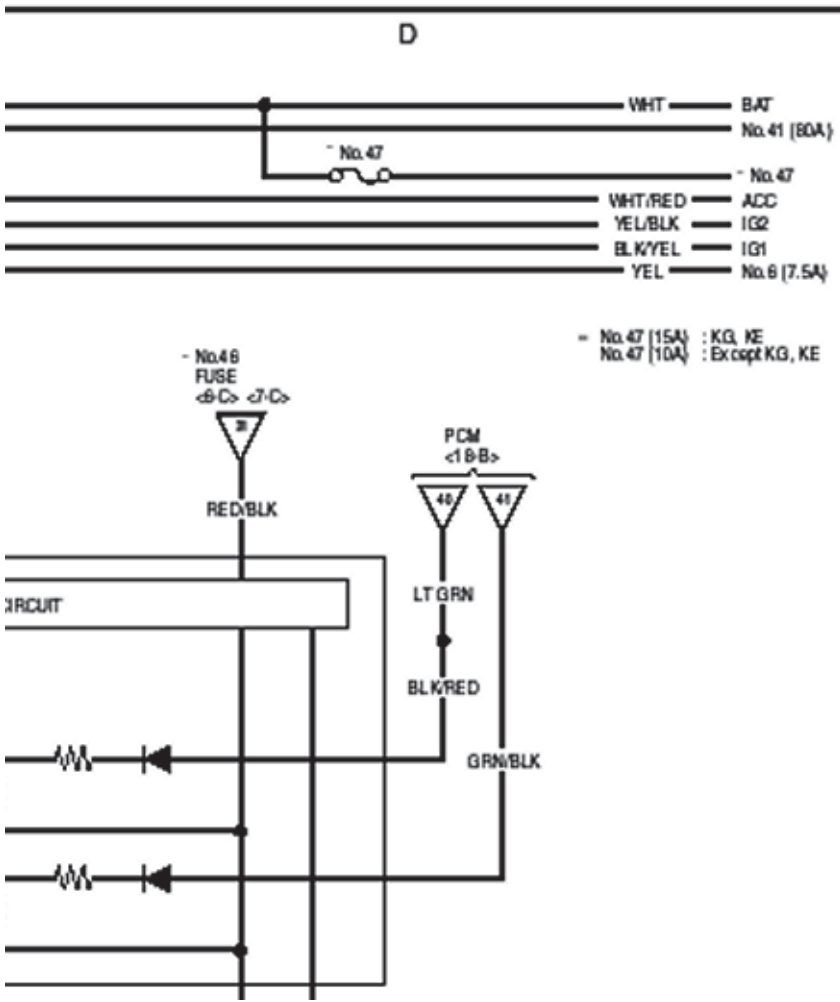
P R N D L S

C


No.46
FUSE
<6-C> <7-C>
31
RED/BLK
GAUGE
LIGHTS
(3.0W
(3.4W×3)
BLK
=1
=2
RED
BLK
G401
G402
PCM
<18-C>
33
LT GRN
GAUGE ASSEMBLY
YEL
AT GEAR POSITION INDICATOR DIMMING
(1.12W×6)
P
R
N
D
L
S
SHIFT LOCK
RELAY (KQ, KU)
<5-B>
34
BLK/BLU
WHT
RED
BLU
PCM <18-B, C
35
36
37
GRN
STARTER
CUT RELAY
<1-B>
4
WHT/RED
(Not used)
A/T GEAR
POSITION SWITCH
(LHD)

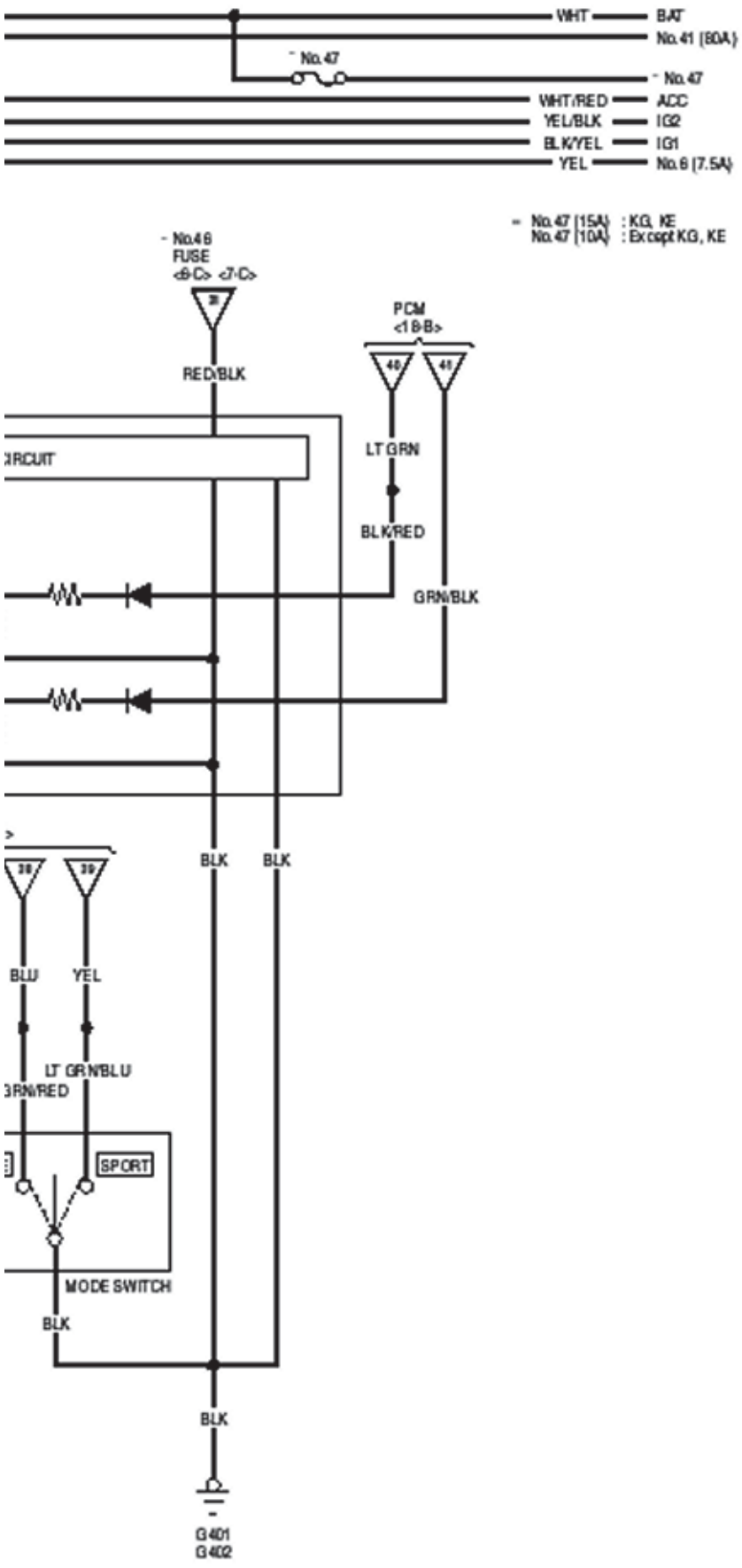
D

4

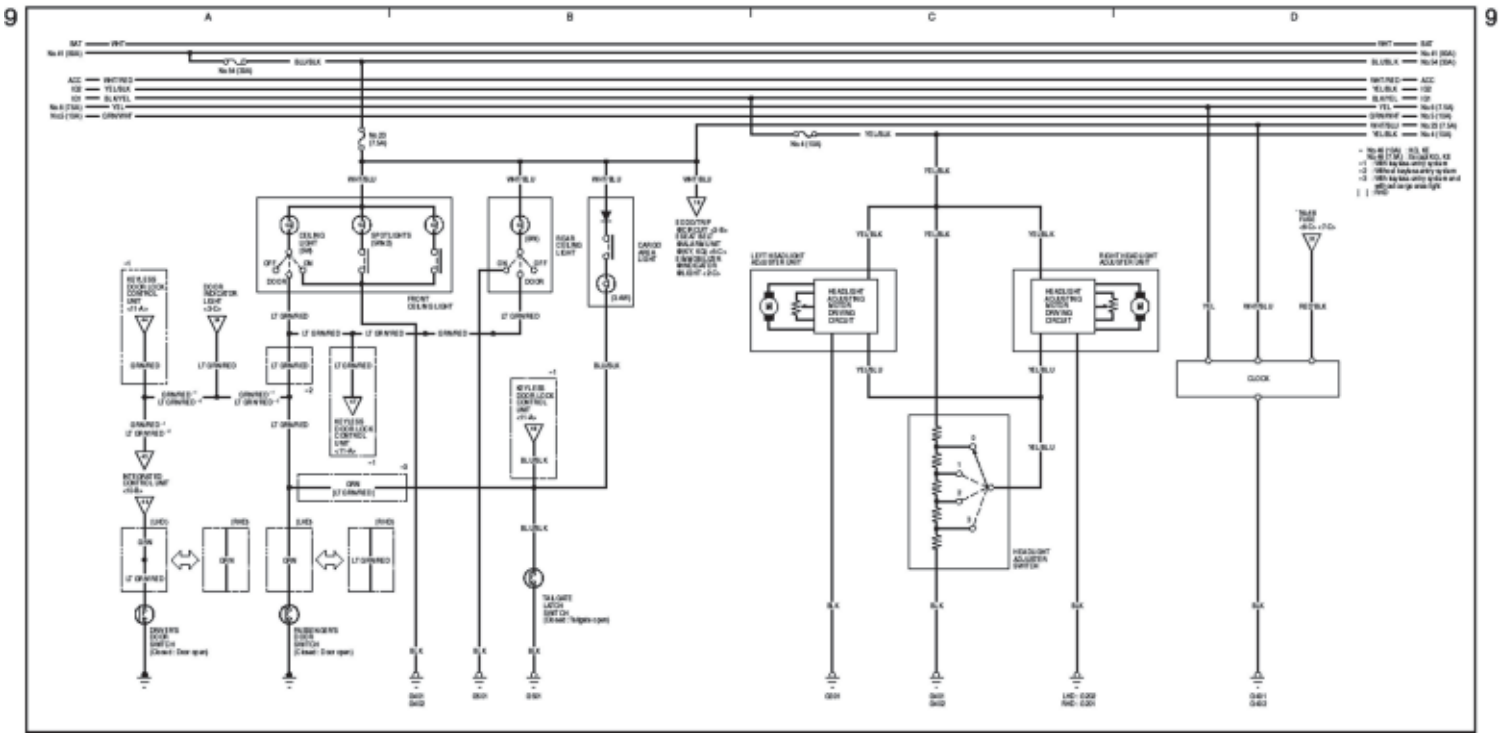

WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
<6-C> <7-C>
31
RED/BLK
PCM
<18-B>
46
41
LT GRN
BLK/RED
GRN/BLK

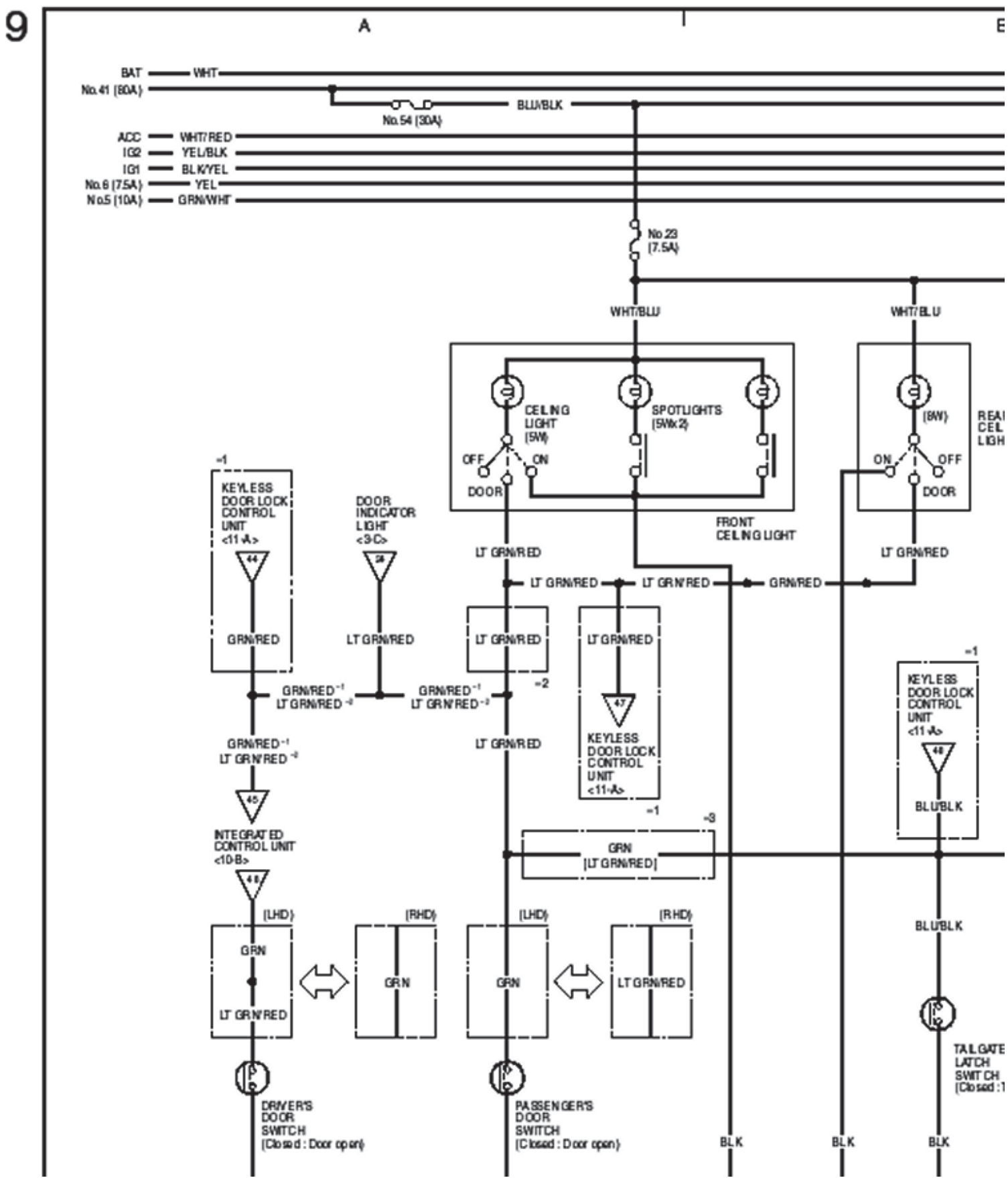
D

4


WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
PCM
RED/BLK
LT GRN
BLK/RED
GRN/BLK
BLK
BLK
BLU
YEL
LT GRN/BLU
SPORT
MODE SWITCH
BLK
BLK
G401
G402

Wiring Diagrams
Headlight Adjuster





9

A

B

BAT — WHT
No.41 (80A) — BLU/BLK
No.54 (30A)
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A)
WHT/BLU
WHT/BLU
CEILING LIGHT (5W)
SPOTLIGHTS (5W×2)
OFF
ON
DOOR
FRONT CEILING LIGHT
(8W)
ON
OFF
DOOR
REAR CEILING LIGHT
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
BLU/BLK
INTEGRATED CONTROL UNIT <10-B>
GRN (LT GRN/RED)
(LHD)
(RHD)
(LHD)
(RHD)
GRN
LT GRN/RED
GRN
GRN
LT GRN/RED
BLU/BLK
DRIVER'S DOOR SWITCH (Closed : Door open)
PASSENGER'S DOOR SWITCH (Closed : Door open)
TAILGATE LATCH SWITCH (Closed :
BLK
BLK
BLK
G401
G402
G501
G501

C

No.4 (10A)
YEL/BLK
YEL/BLK
WHT/BLU
WHT/BLU
YEL/BLK
YEL/BLK
YEL/BLK
CARGO AREA LIGHT (3.4W)
ODO/TRIP CIRCUIT <3-B>
SEAT BELT ALARM UNIT
(KY, KO) <5-C>
IMMOBILIZER INDICATOR LIGHT <2-C>
LEFT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
RIGHT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
BLU/BLK
YEL/BLU
YEL/BLU

C

No.4 (10A)

YEL/BLK

YEL/BLK

WHT/BLU

WHT/BLU

19

EODO/TRIP
◎CIRCUIT <3-B>
ESEAT BELT
◎ALARM UNIT
◎(KY, KQ) <5-C>
EIMMOBILIZER
◎INDICATOR
◎LIGHT <2-C>

CARGO
AREA
LIGHT

(3.4W)

YEL/BLK

YEL/BLK

YEL/BLK

LEFT HEADLIGHT
ADJUSTER UNIT

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

RIGHT HEAD
ADJUSTER U

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

BLU/BLK

YEL/BLU

YEL/BLU

YEL/BLU

0

1

2

3

HEADLIGHT
ADJUSTER
SWITCH

BLK

BLK

BLK

G301

G401
G402

LHD : G202
RHD : G201

D

9

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)
GRN/WHT — No.5 (10A)
WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- : No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
=1 : With keyless entry system
=2 : Without keyless entry system
=3 : With keyless entry system and without cargo area light
| | : RHD

No.46
FUSE
<6-C> <7-C>

31

LIGHT
NIT

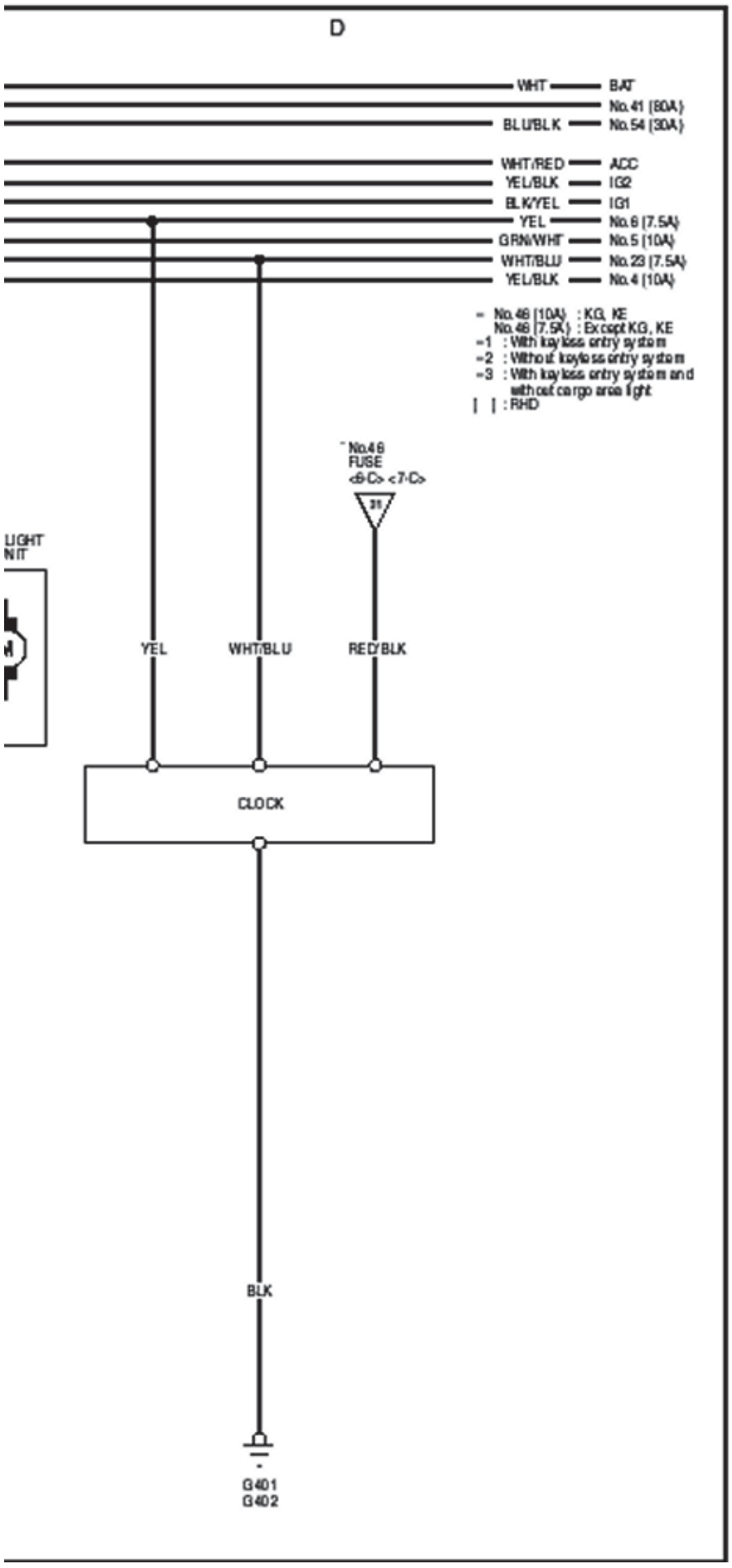
YEL

WHT/BLU

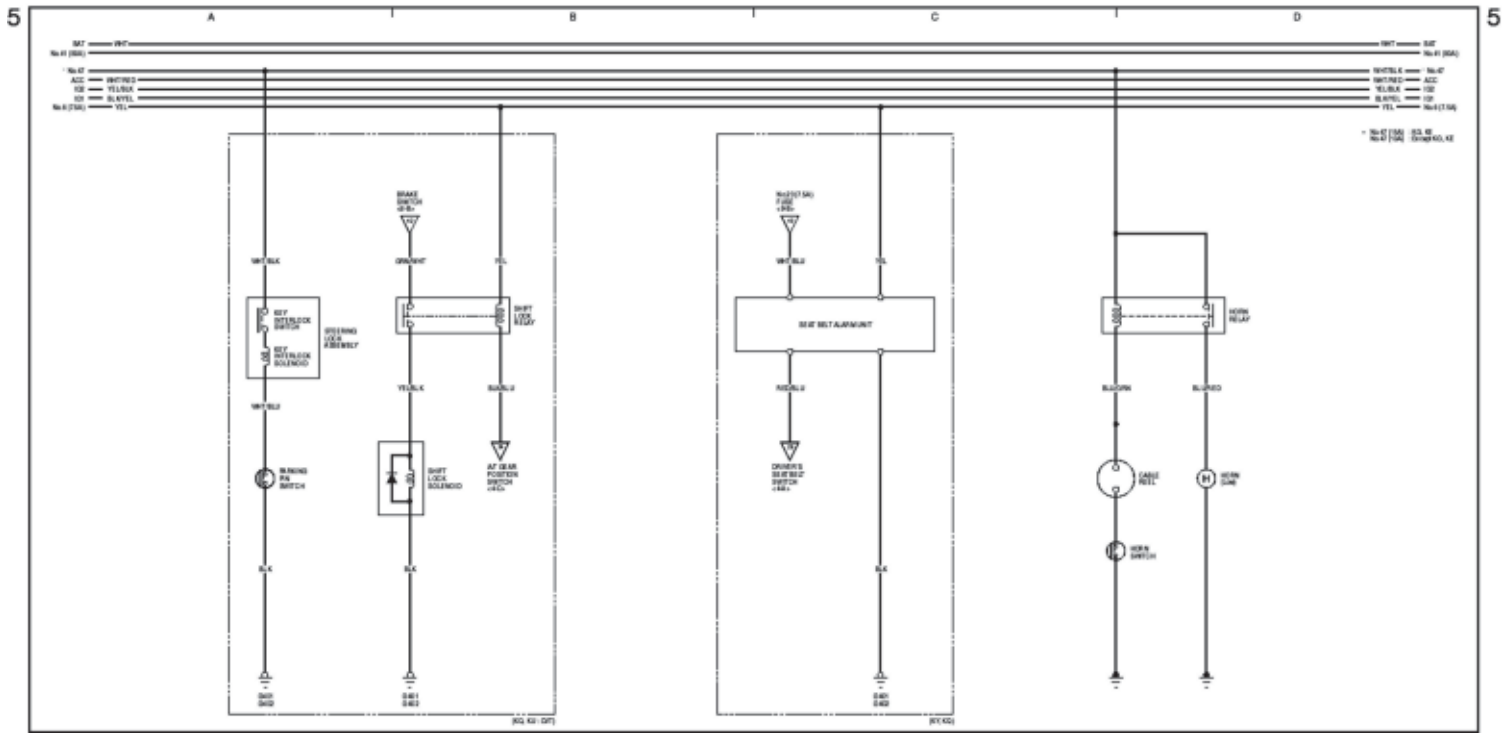
RED/BLK

CLOCK

D


WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
*3 : With keyless entry system and without cargo area light
| | : RHD
*
No.46
FUSE
<6-C> <7-C>
31
LIGHT
NIT
YEL
WHT/BLU
RED/BLK
CLOCK
BLK
G401
G402

Wiring Diagrams
Horn



5

A

B

BAT — WHT
No.41 (60A)
No.47
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BRAKE SWITCH <B-B>
42

WHT/BLK
GRN/WHT
YEL

KEY INTERLOCK SWITCH
KEY INTERLOCK SOLENOID
STEERING LOCK ASSEMBLY

SHIFT LOCK RELAY

YEL/BLK
BLK/BLU

WHT/BLU

PARKING PIN SWITCH

SHIFT LOCK SOLENOID

34
A/T GEAR POSITION SWITCH <4-C>

BLK
BLK

G401
G402
G401
G402

(KQ, KU : CVT)

C

No.23 (7.5A) FUSE <9-B>
43

WHT/BLU
YEL

SEAT BELT ALARM UNIT

C

No.23 (7.5A)
FUSE
<9-B>

43

WHT/BLU

YEL

SEAT BELT ALARM UNIT

RED/BLU

29

DRIVER'S
SEAT BELT
SWITCH
<4A>

BLK

G401
G402

(KY, KQ)

BLU/GRN

HOR
SW

D

5

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

HORN
RELAY

D

5

WHT — BAT
No. 41 (60A)

WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE

HORN
RELAY

BLU/RED

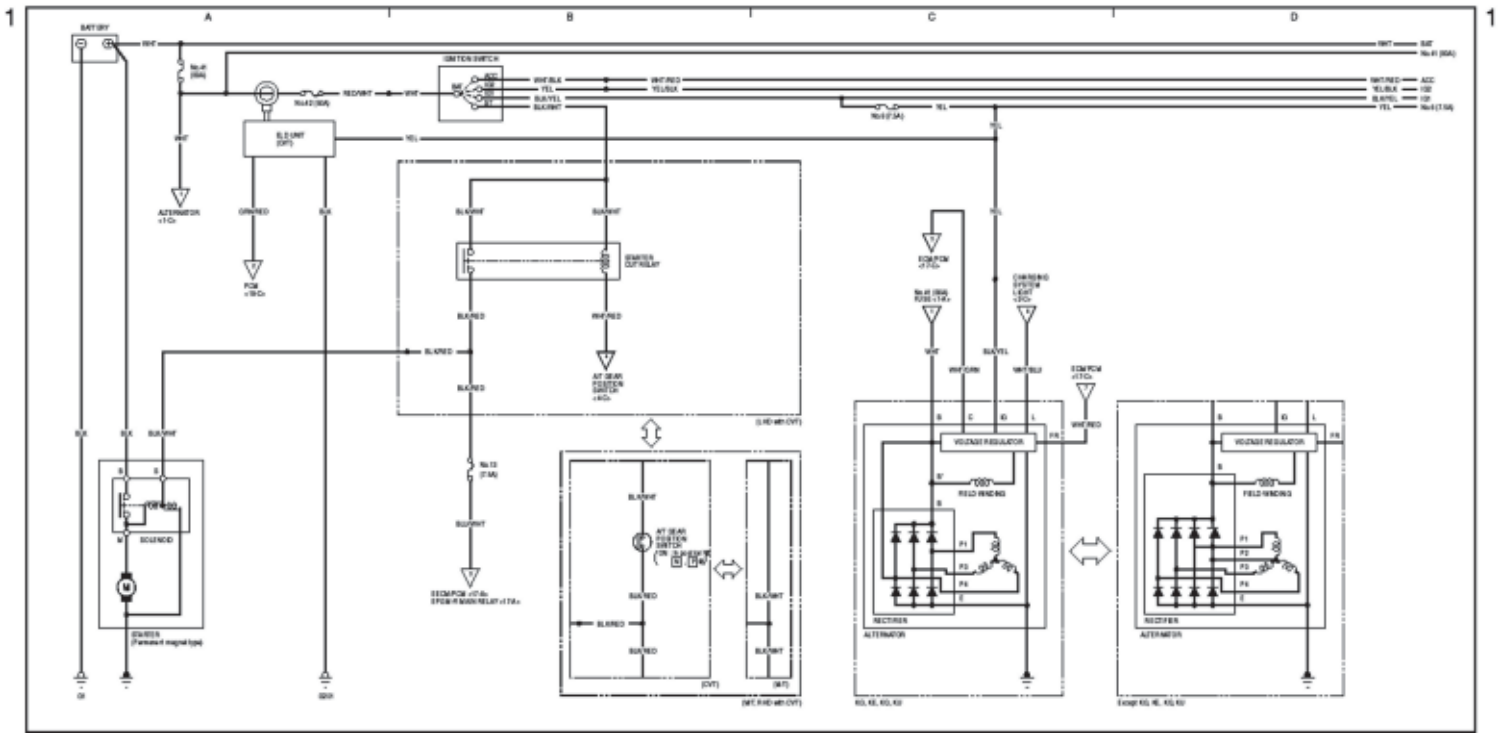
ABLE
EEL

H

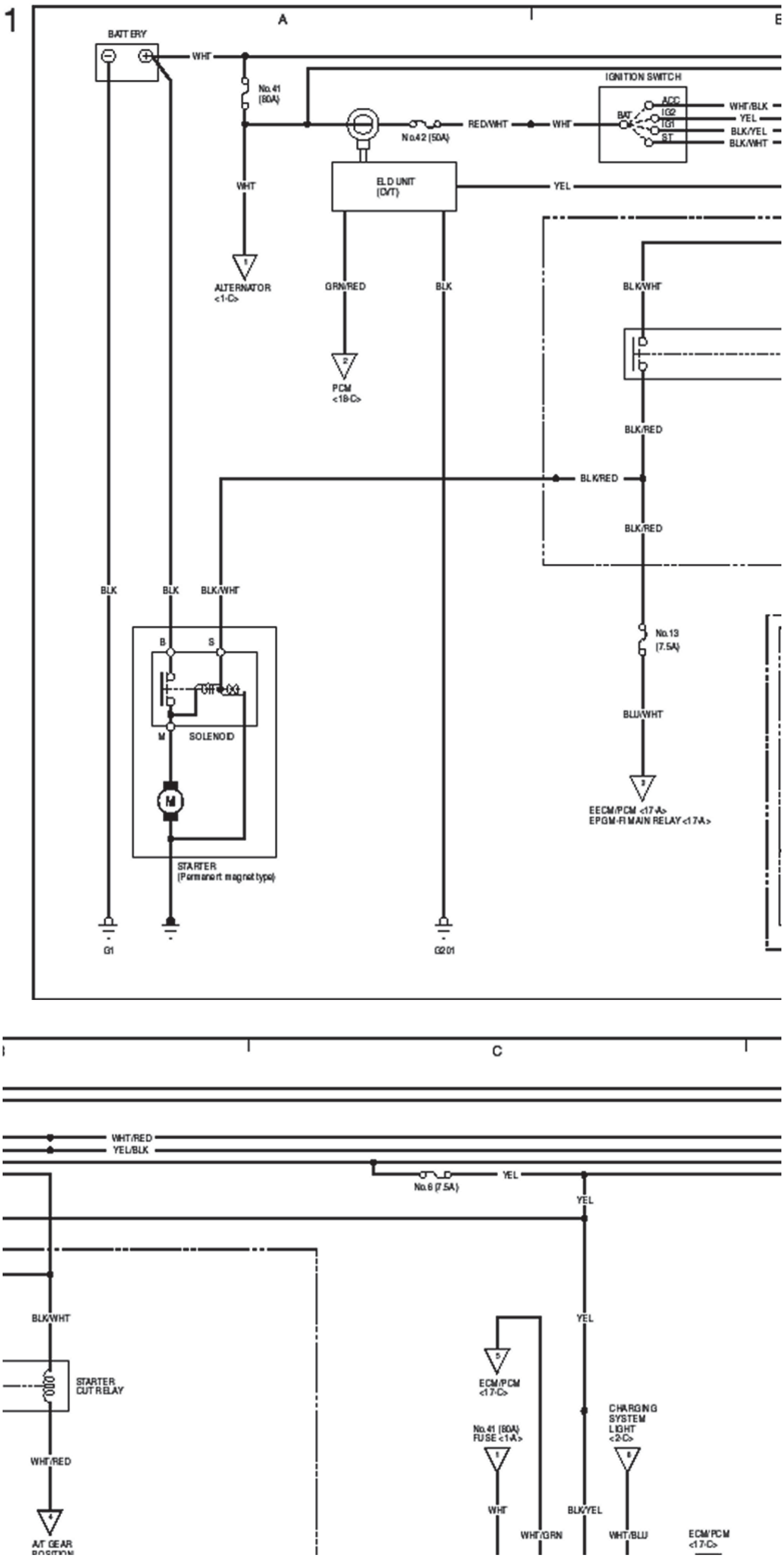
HORN
(Low)

IN
TCH

Wiring Diagrams
Ignition Switch



1


A
B
C
BATTERY
WHT
No.41 (80A)
IGNITION SWITCH
ACC
IG2
BAT
IG1
ST
WHT/BLK
YEL
BLK/YEL
BLK/WHT
No.42 (50A)
RED/WHT
WHT
ELD UNIT (CVT)
YEL
WHT
1
ALTERNATOR <1-C>
GRN/RED
BLK
2
PCM <18-C>
BLK/WHT
BLK/RED
BLK/RED
BLK/RED
BLK
BLK
BLK/WHT
B
S
OFF
ST
M
SOLENOID
M
STARTER (Permanent magnet type)
No.13 (7.5A)
BLU/WHT
3
EECM/PCM <17-A>
EPGM-FI MAIN RELAY <17-A>
G1
G201
WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
CHARGING SYSTEM LIGHT <2-C>
6
WHT/BLU
ECM/PCM <17-C>

C

WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION SWITCH <4-C>
(LHD with CVT)
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
WHT/BLU
CHARGING SYSTEM LIGHT <2-C>
6
ECM/PCM <17-C>
7
WHT/RED
B
C
IG
L
FR
VOLTAGE REGULATOR
B'
FIELD WINDING
B
P1
P3
P4
E
RECTIFIER
ALTERNATOR
KG, KE, KQ, KU
Except
BLK/WHT
A/T GEAR POSITION SWITCH (ON : In position N, P)
BLK/RED
BLK/RED
BLK/RED
(CVT)
BLK/WHT
BLK/WHT
(M/T)
(M/T, RHD with CVT)

D

1

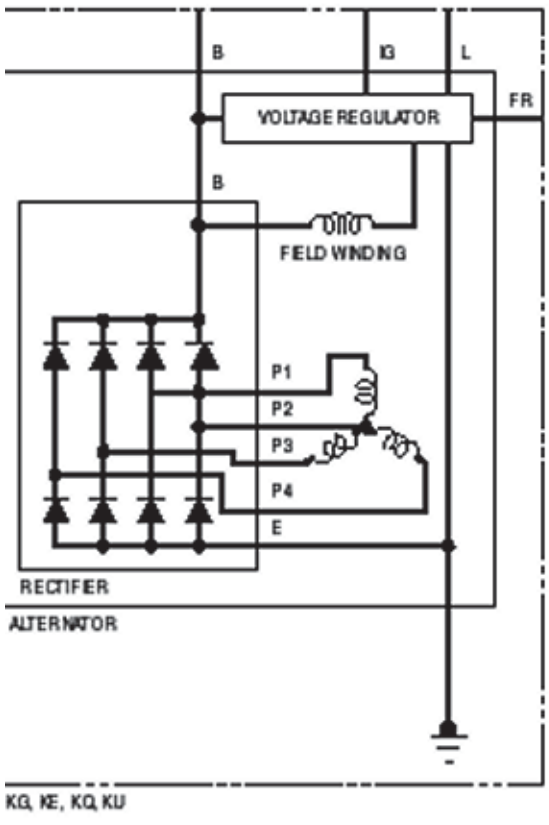
WHT — BAT
No.41 (80A)
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

D

1

WHT — BAT
No. 41 (80A)

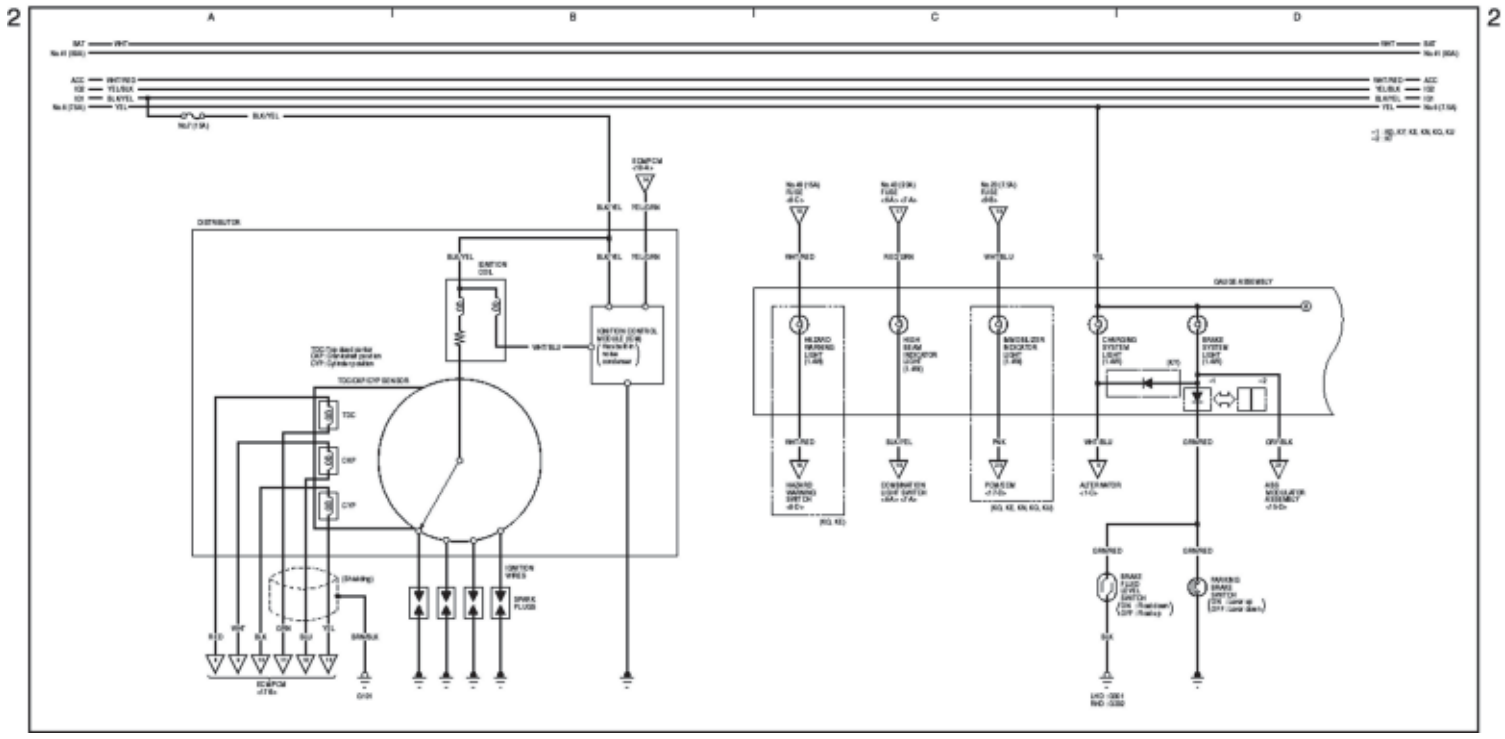
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

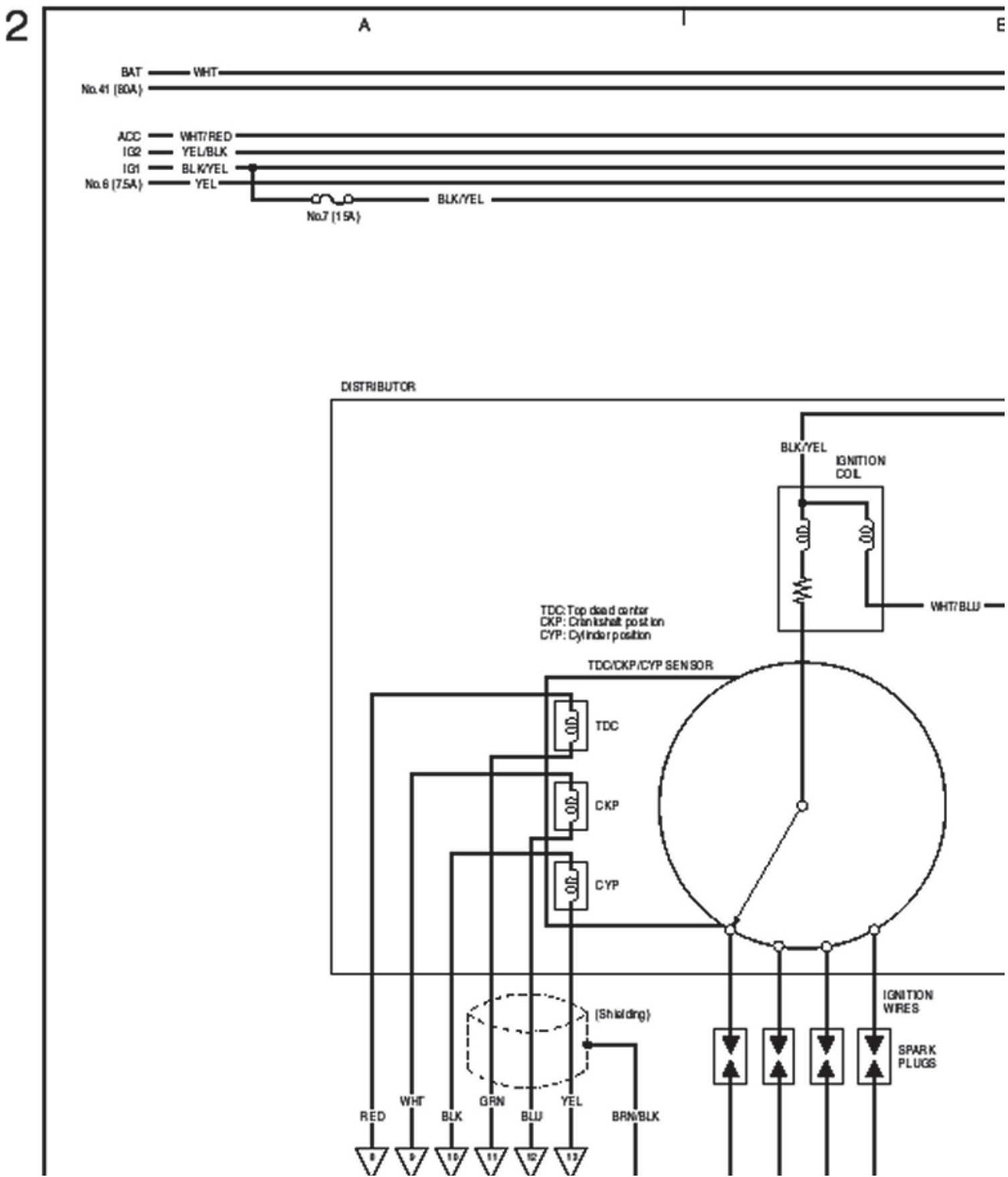


KG, KE, KQ, KU

Wiring Diagrams

Ignition System





2

A

B

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BLK/YEL
No.7 (15A)

DISTRIBUTOR

BLK/YEL

IGNITION COIL

WHT/BLU

TDC: Top dead center
CKP: Crankshaft position
CYP: Cylinder position

TDC/CKP/CYP SENSOR

TDC

CKP

CYP

(Shielding)

IGNITION WIRES

SPARK PLUGS

RED WHT BLK GRN BLU YEL BRN/BLK

8 9 10 11 12 13

ECM/PCM <17 B>

G101

C

ECM/PCM <18 A>

14

BLK/YEL YEL/GRN

BLK/YEL YEL/GRN

IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE <8 C>

No.43 (20A) FUSE <6 A> <7 A>

No.23 (7.5A) FUSE <9 B>

15 17 19

WHT/RED RED/GRN WHT/BLU YEL

HAZARD WARNING LIGHT (1.4W)

HIGH BEAM INDICATOR LIGHT (1.4W)

IMMOBILIZER INDICATOR LIGHT (1.4W)

CHARGING SYSTEM LIGHT (1.4W)

C

ECM/PCM
<18-A>
14
BLK/YEL
YEL/GRN
BLK/YEL
YEL/GRN
IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE
<8-C>
15
WHT/RED
No.43 (20A) FUSE
<6-A> <7-A>
17
RED/GRN
No.23 (7.5A) FUSE
<9-B>
19
WHT/BLU
YEL

HAZARD WARNING LIGHT (1.4W)
HIGH BEAM INDICATOR LIGHT (1.4W)
IMMOBILIZER INDICATOR LIGHT (1.4W)
CHARGING SYSTEM LIGHT (1.4W)

WHT/RED
16
HAZARD WARNING SWITCH
<8-D>
(KG, KE)
BLK/YEL
18
COMBINATION LIGHT SWITCH
<6-A> <7-A>
PNK
20
PCM/ECM
<17-D>
(KG, KE, KN, KQ, KU)
WHT/BLU
6
ALTERNATOR
<1-C>

GRN/RED
BRAKE FLUID LEVEL SWITCH
(ON : R
OFF : R
BLK
LHD : G301
RHD : G202

D

2

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : KG, KY, KE, KN, KQ, KU
=2 : KT

GAUGE ASSEMBLY
A
BRAKE SYSTEM LIGHT (1.4W)
(KY)
=1
=2

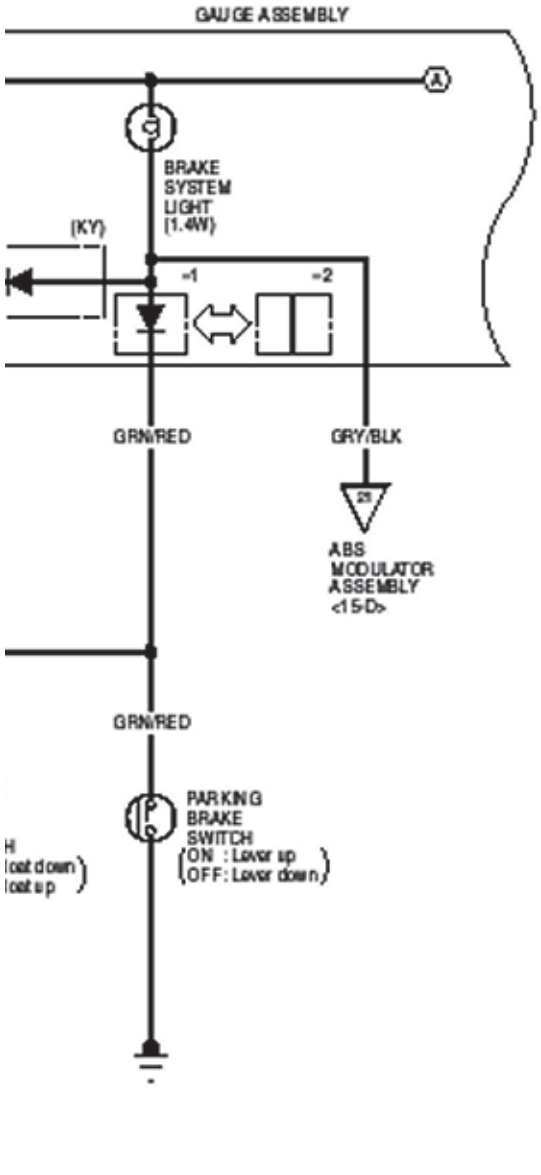
D

2

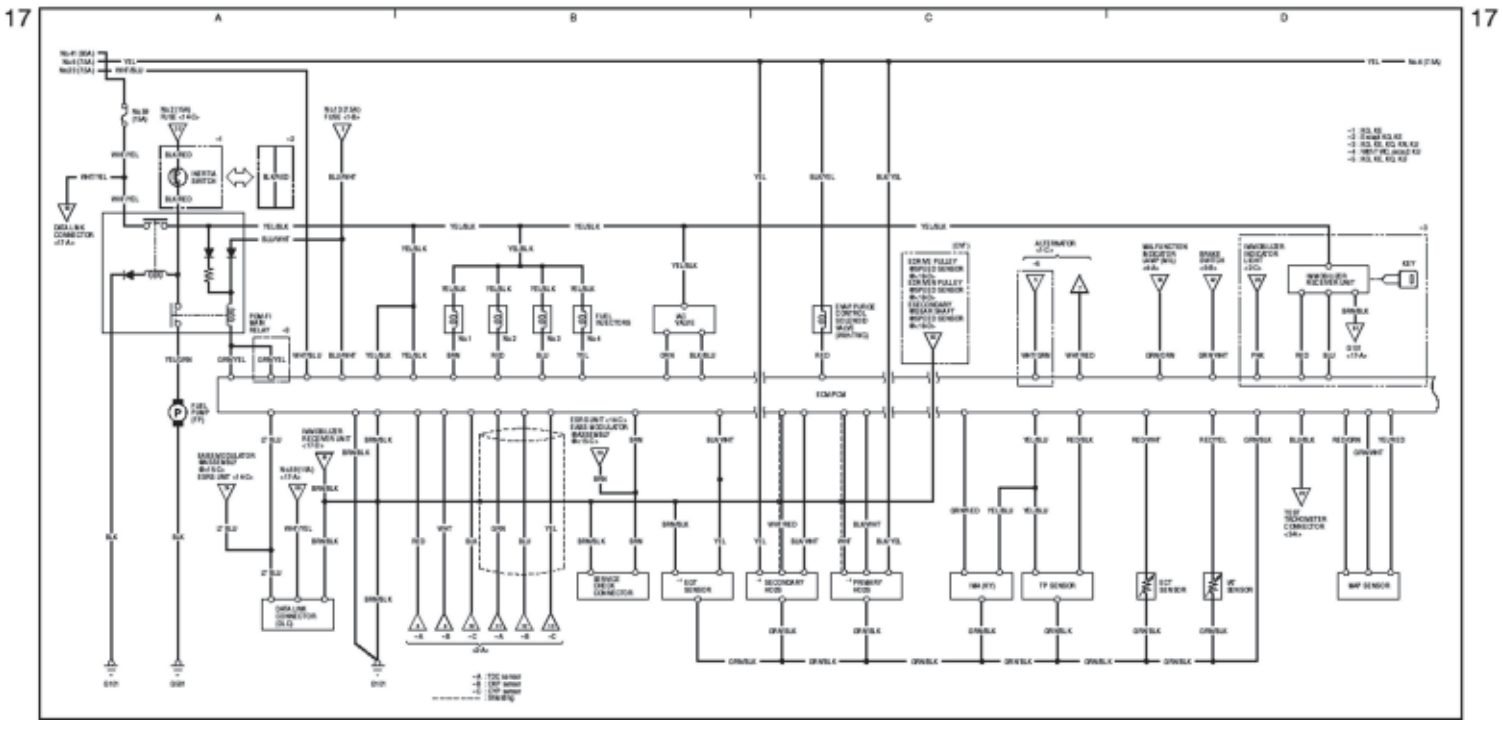
WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

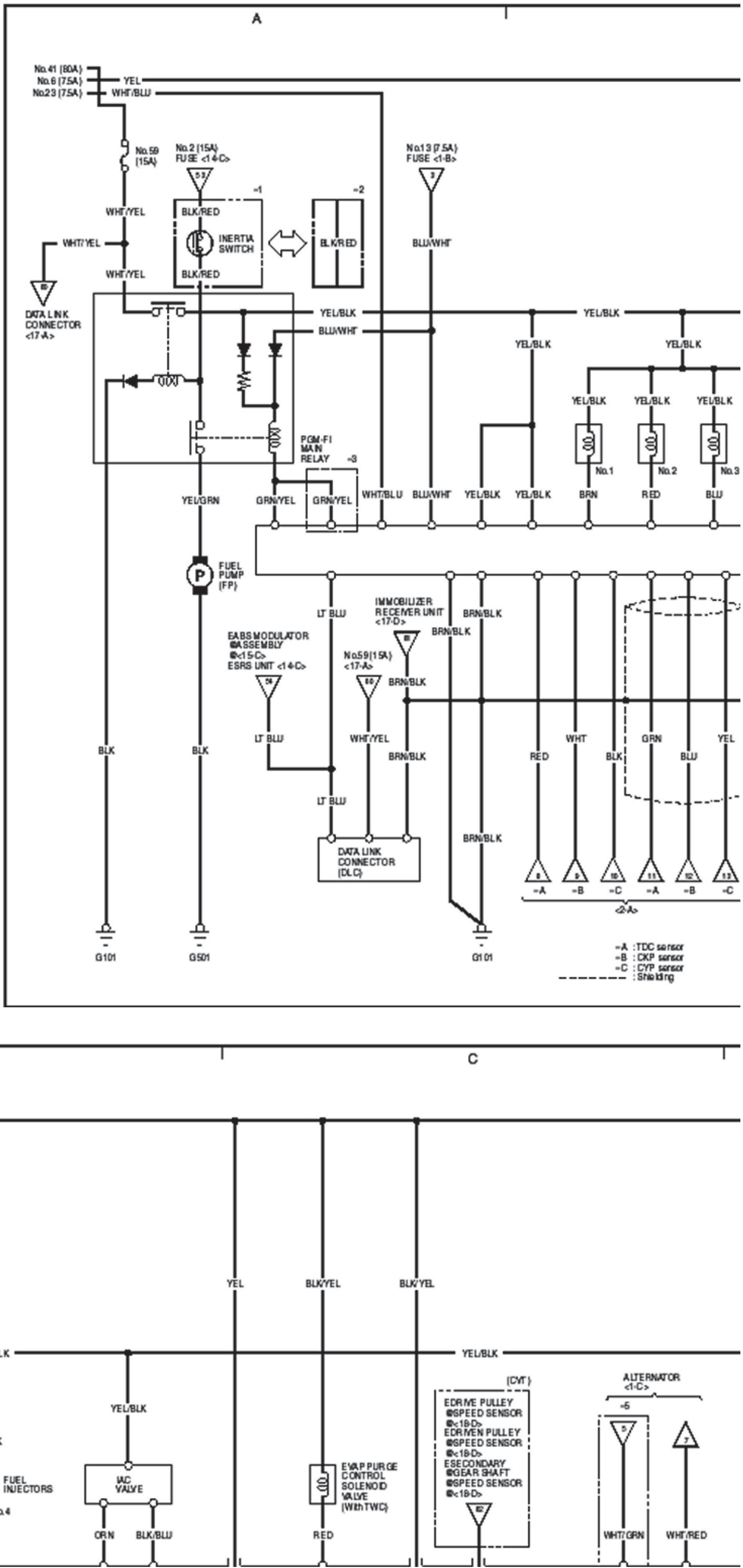
=1 : K3, KY, KE, KN, KQ, KU
=2 : KT

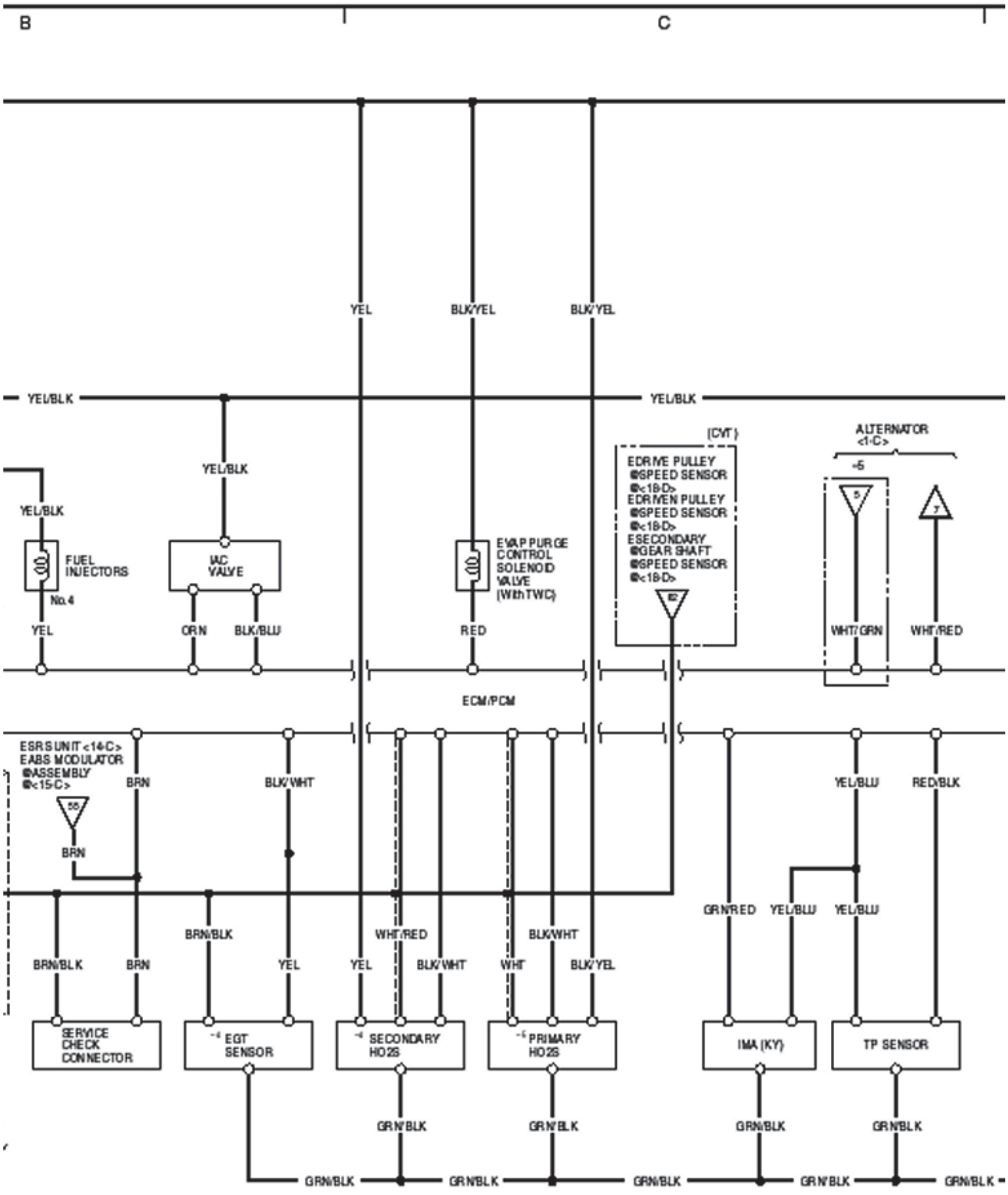


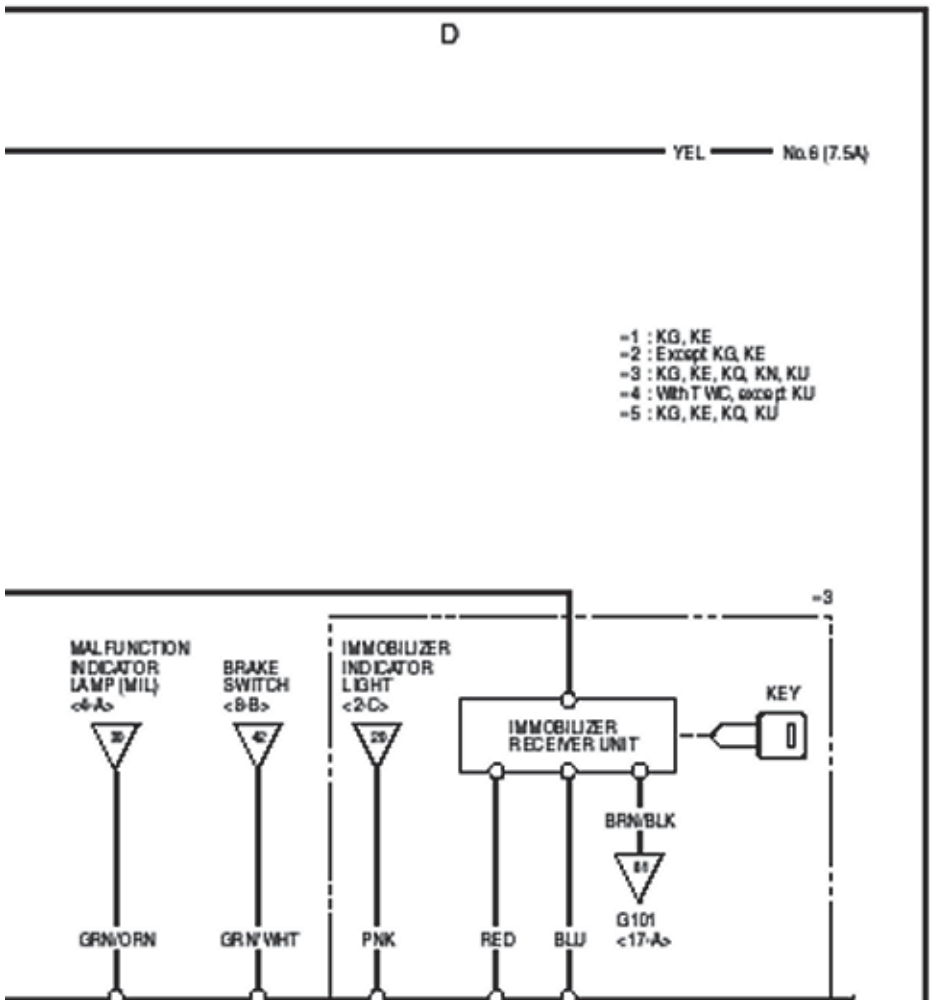
Wiring Diagrams
Immobiliser System



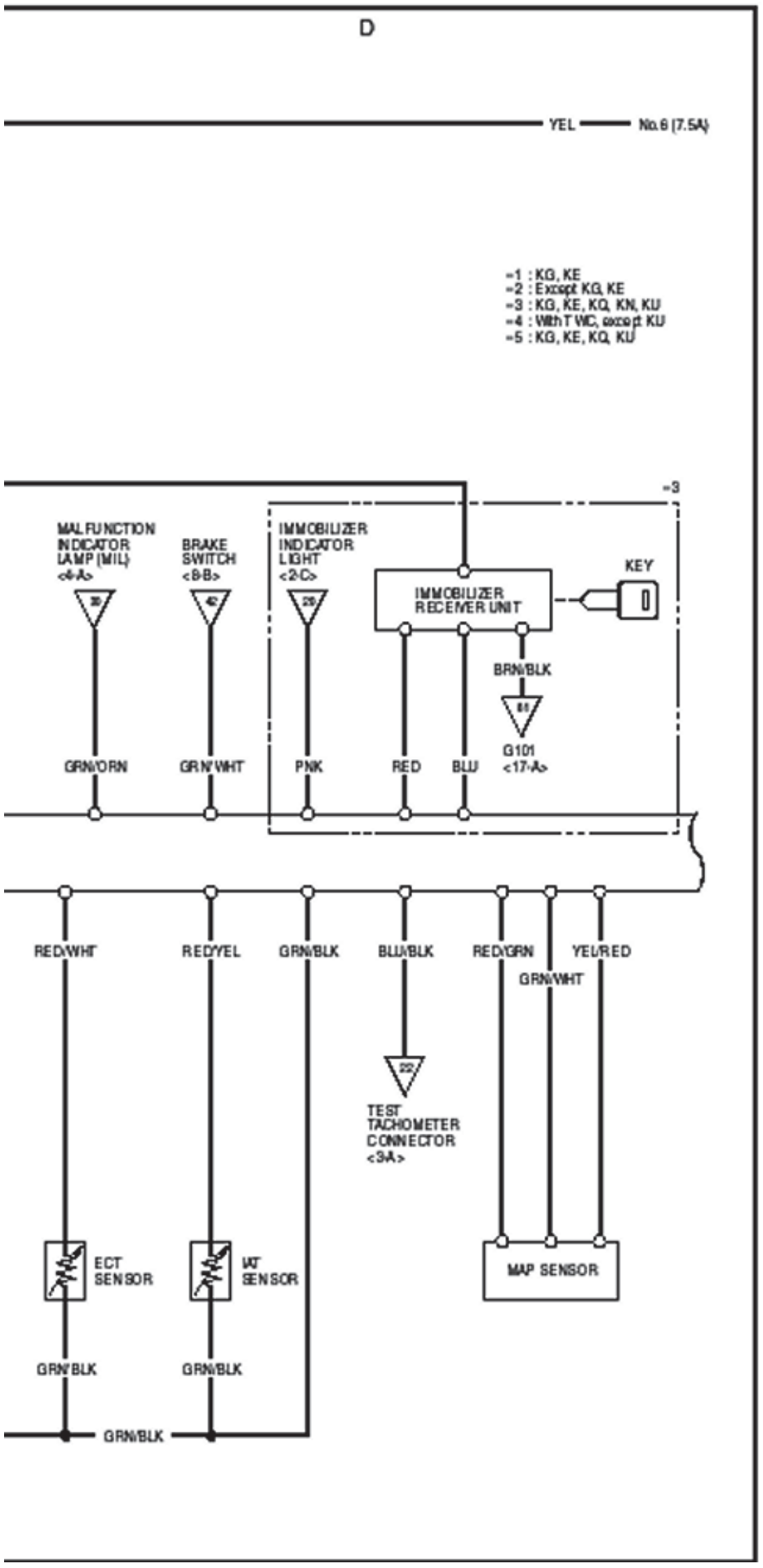
17


A
B
C
No.41 (80A)
No.6 (7.5A)
No.23 (7.5A)
YEL
WHT/BLU
No.59 (15A)
No.2 (15A)
FUSE <1-C>
No.13 (7.5A)
FUSE <1-B>
WHT/YEL
BLK/RED
INERTIA SWITCH
BLU/WHT
DATA LINK CONNECTOR <17-A>
YEL/BLK
PGM-FI MAIN RELAY
YEL/GRN
GRN/YEL
WHT/BLU
BLU/WHT
BRN
RED
BLU
FUEL PUMP (FP)
IMMOBILIZER RECEIVER UNIT <17-D>
EABS MODULATOR ASSEMBLY <15-C>
ESRS UNIT <14-C>
No.59 (15A) <17-A>
LT BLU
BRN/BLK
WHT/YEL
DATA LINK CONNECTOR (DLC)
BLK
RED
WHT
GRN
YEL
=A
=B
=C
<2-A>
G101
G501
=A : TDC sensor
=B : CKP sensor
=C : CYP sensor
: Shielding
YEL/BLK
FUEL INJECTORS
No.4
IAC VALVE
ORN
BLK/BLU
EVAP PURGE CONTROL SOLENOID VALVE (With TWC)
(CVT)
EDRIVE PULLEY SPEED SENSOR <18-D>
EDRIVEN PULLEY SPEED SENSOR <18-D>
ESECONDARY GEAR SHAFT SPEED SENSOR <18-D>
ALTERNATOR <1-C>
=5
WHT/GRN
WHT/RED

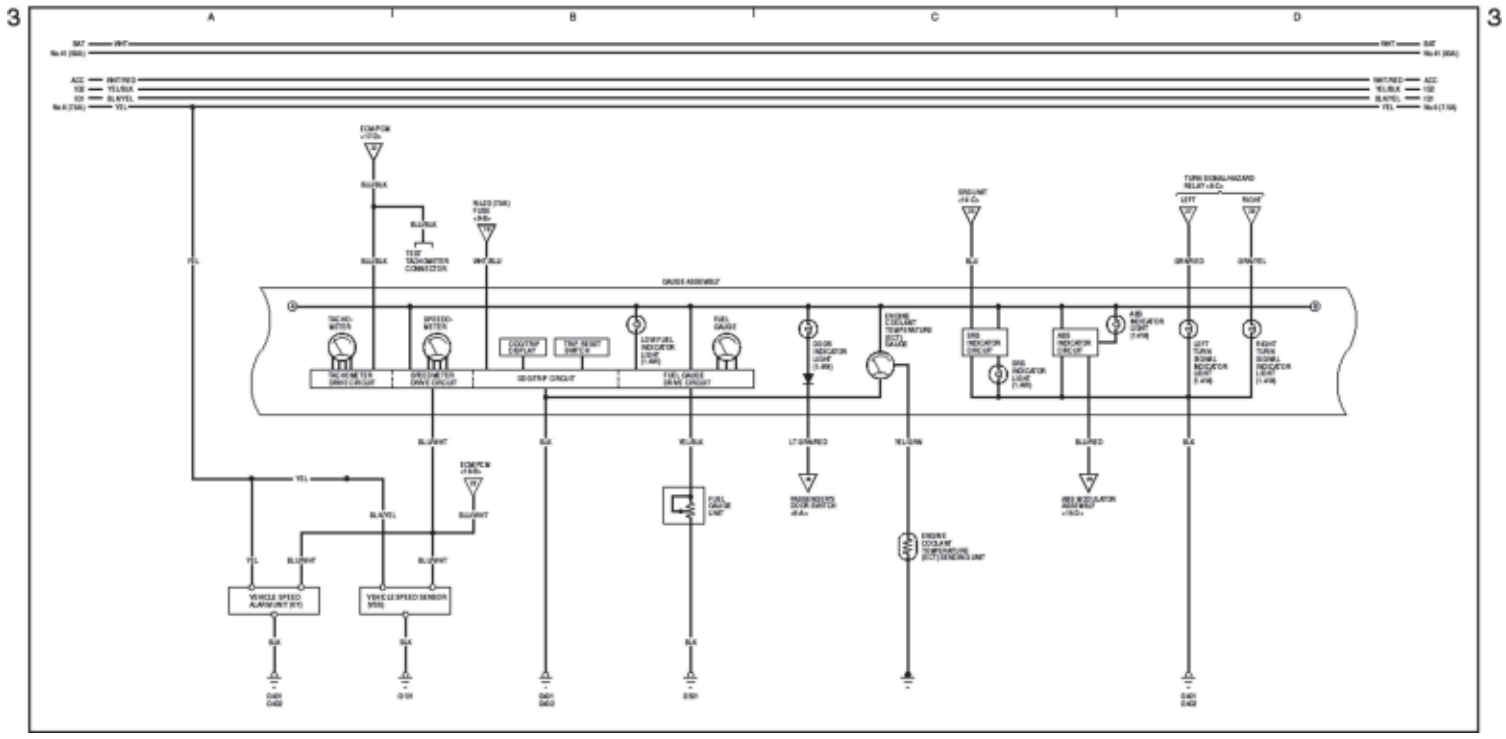

B
C
YEL
BLK/YEL
BLK/YEL
YEL/BLK
YEL/BLK
(CVT)
EDRIVE PULLEY
SPEED SENSOR
<1-B>
EDRIVEN PULLEY
SPEED SENSOR
<1-B>
ESECONDARY
GEAR SHAFT
SPEED SENSOR
<1-B>
ALTERNATOR
<1-C>
YEL/BLK
FUEL
INJECTORS
No.4
IAC
VALVE
EVAP PURGE
CONTROL
SOLENOID
VALVE
(With TWC)
YEL
ORN
BLK/BLU
RED
WHT/GRN
WHT/RED
ECM/PCM
ESRS UNIT <14-C>
EABS MODULATOR
ASSEMBLY
<15-C>
BRN
BLK/WHT
YEL/BLU
RED/BLK
BRN
BRN/BLK
BRN
BRN/BLK
YEL
YEL
WHT/RED
BLK/WHT
WHT
BLK/YEL
GRN/RED
YEL/BLU
YEL/BLU
SERVICE
CHECK
CONNECTOR
EGT
SENSOR
SECONDARY
HO2S
PRIMARY
HO2S
IMA (KY)
TP SENSOR
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK

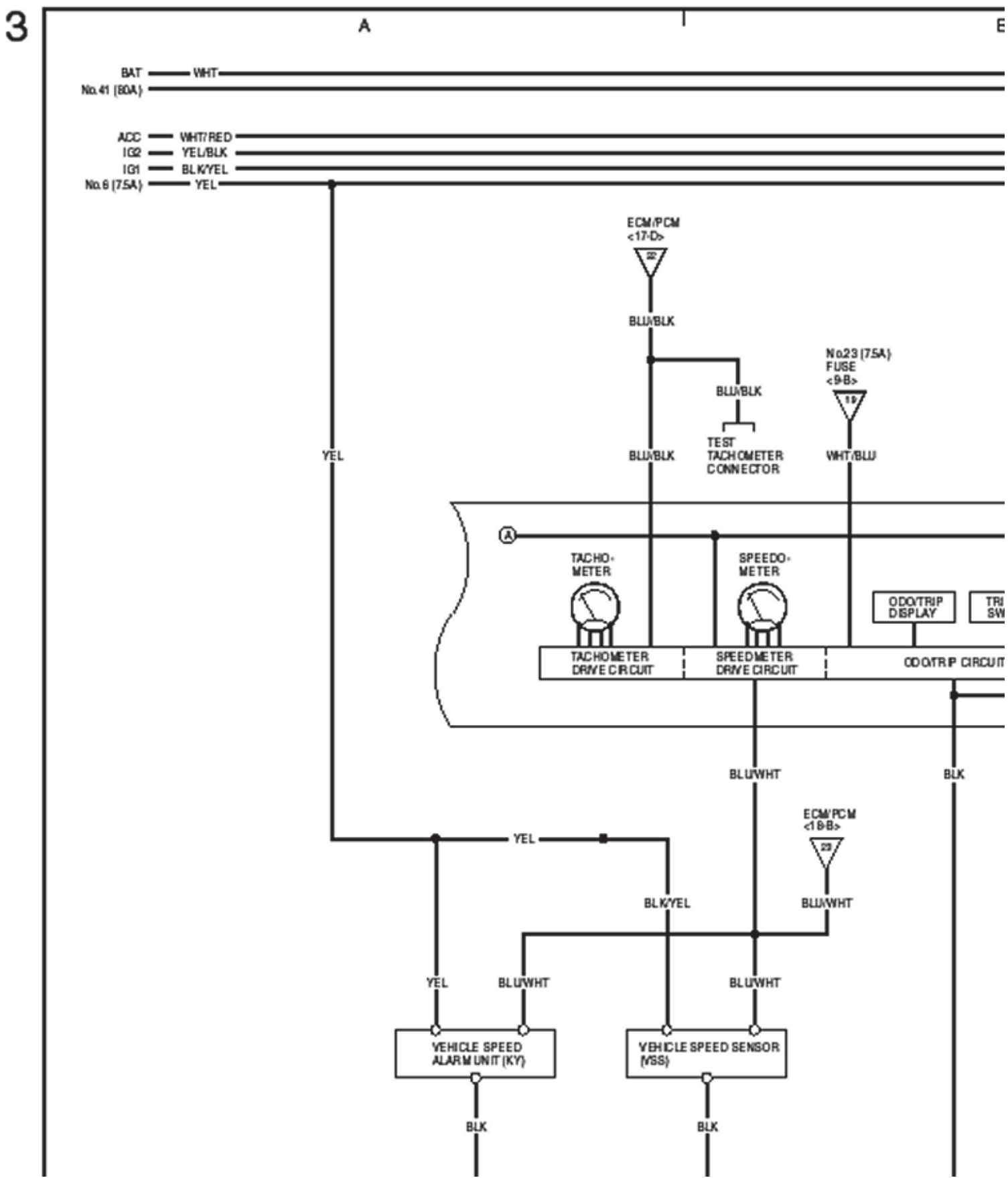

D
YEL
No.6 (7.5A)
=1 : KG, KE
=2 : Except KG, KE
=3 : KG, KE, KQ, KN, KU
=4 : With TWC, except KU
=5 : KG, KE, KQ, KU
=3
MALFUNCTION
INDICATOR
LAMP (MIL)
<6-A>
BRAKE
SWITCH
<8-B>
IMMOBILIZER
INDICATOR
LIGHT
<2-C>
IMMOBILIZER
RECEIVER UNIT
KEY
BRN/BLK
G101
<17-A>
GRN/ORN
GRN/WHT
PNK
RED
BLU

D


YEL
No.6 (7.5A)
*1 : KG, KE
*2 : Except KG, KE
*3 : KG, KE, KQ, KN, KU
*4 : With TWC, except KU
*5 : KG, KE, KQ, KU
*3
MALFUNCTION INDICATOR LAMP (MIL) <4-A>
BRAKE SWITCH <8-B>
IMMOBILIZER INDICATOR LIGHT <2-C>
IMMOBILIZER RECEIVER UNIT
KEY
BRN/BLK
G101 <17-A>
GRN/ORN
GRN/WHT
PNK
RED
BLU
RED/WHT
RED/YEL
GRN/BLK
BLU/BLK
RED/GRN
GRN/WHT
YEL/RED
TEST TACHOMETER CONNECTOR <3-A>
ECT SENSOR
IAT SENSOR
MAP SENSOR
GRN/BLK
GRN/BLK
GRN/BLK

Wiring Diagrams
Indicators - ABS Indicator





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

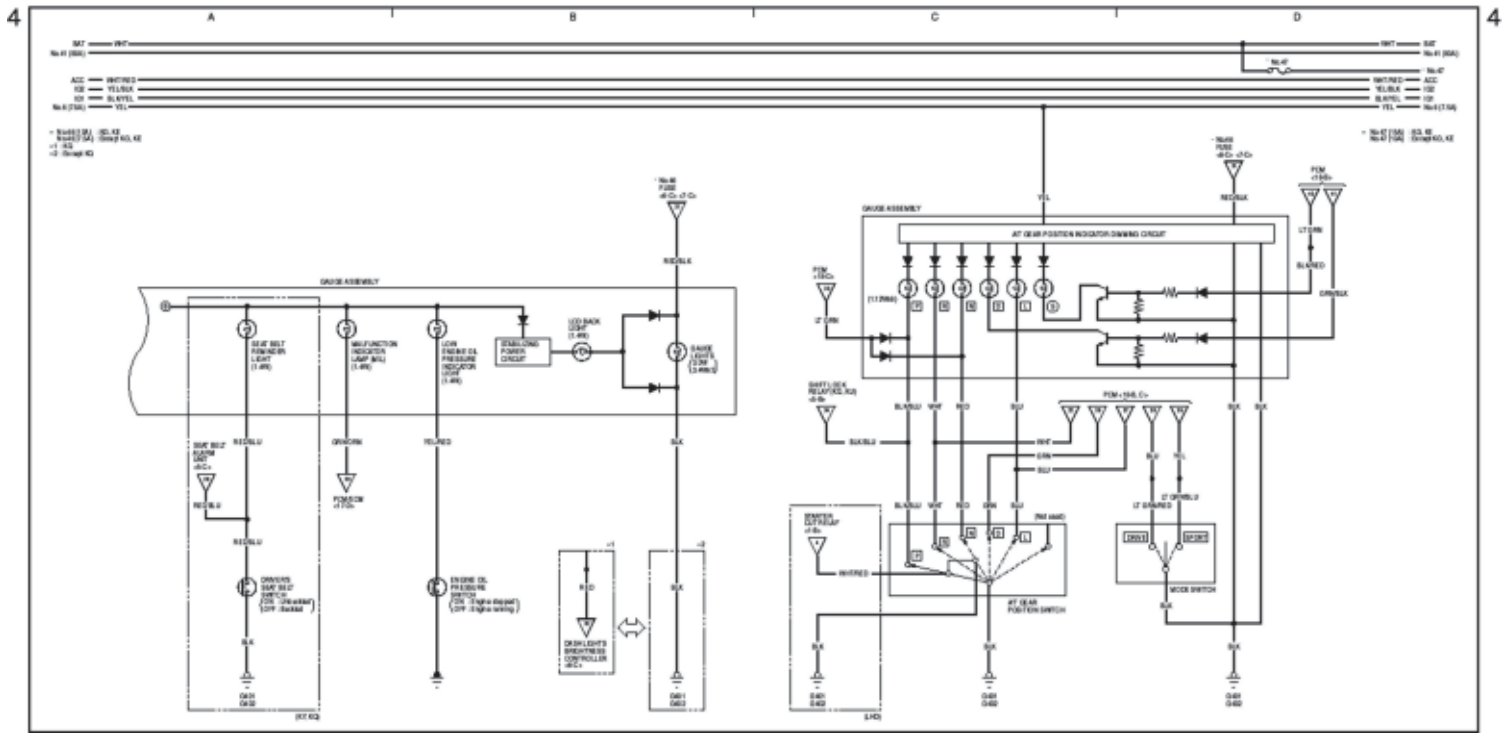
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

BLK

G401
G402

Wiring Diagrams

Indicators - A/T Gear Position Indicator



4

A

B

BAT — WHT
No.41 (80A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
-1 : KQ
-2 : Except KQ

GAUGE ASSEMBLY

B

SEAT BELT REMINDER LIGHT (1.4W)

MALFUNCTION INDICATOR LAMP (MIL) (1.4W)

LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)

STABILIZING POWER CIRCUIT

SEAT BELT ALARM UNIT <5-C>

29

RED/BLU

RED/BLU

RED/BLU

GRN/ORN

30

PCM/ECM <17-D>

YEL/RED

DRIVER'S SEAT BELT SWITCH (ON : Unbuckled) (OFF : Buckled)

BLK

G401
G402

(KY, KQ)

ENGINE OIL PRESSURE SWITCH (ON : Engine stopped) (OFF : Engine running)

C

- No.46 FUSE <6-C> <7-C>

31

RED/BLK

GAUGE LIGHTS (3.0W) (3.4W x 3)

GAUGE ASSEMBLY

YEL

AT GEAR POSITION INDICATOR DIMMING

PCM <18-C>

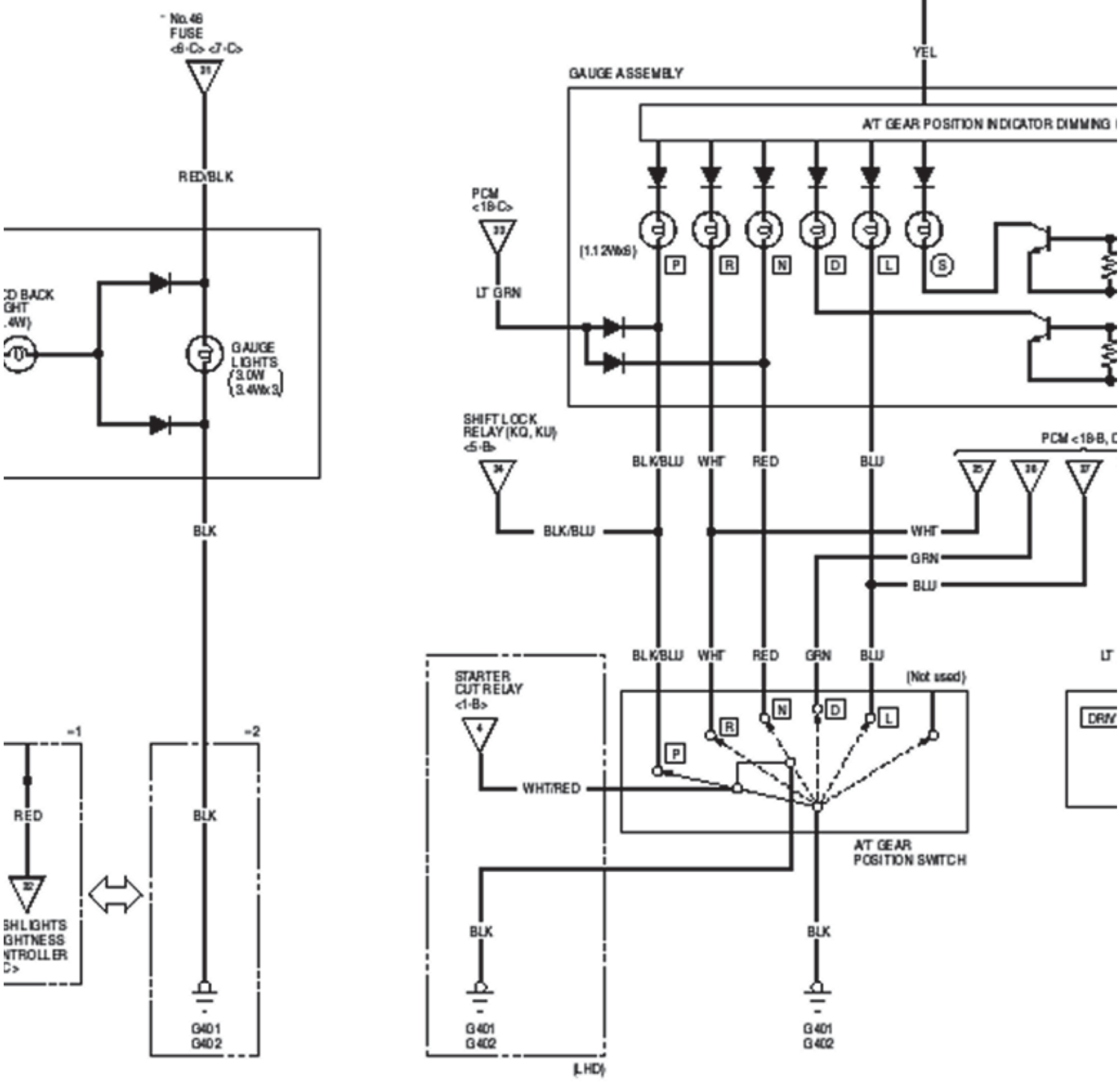
33

LT GRN

(1.12W x 6)

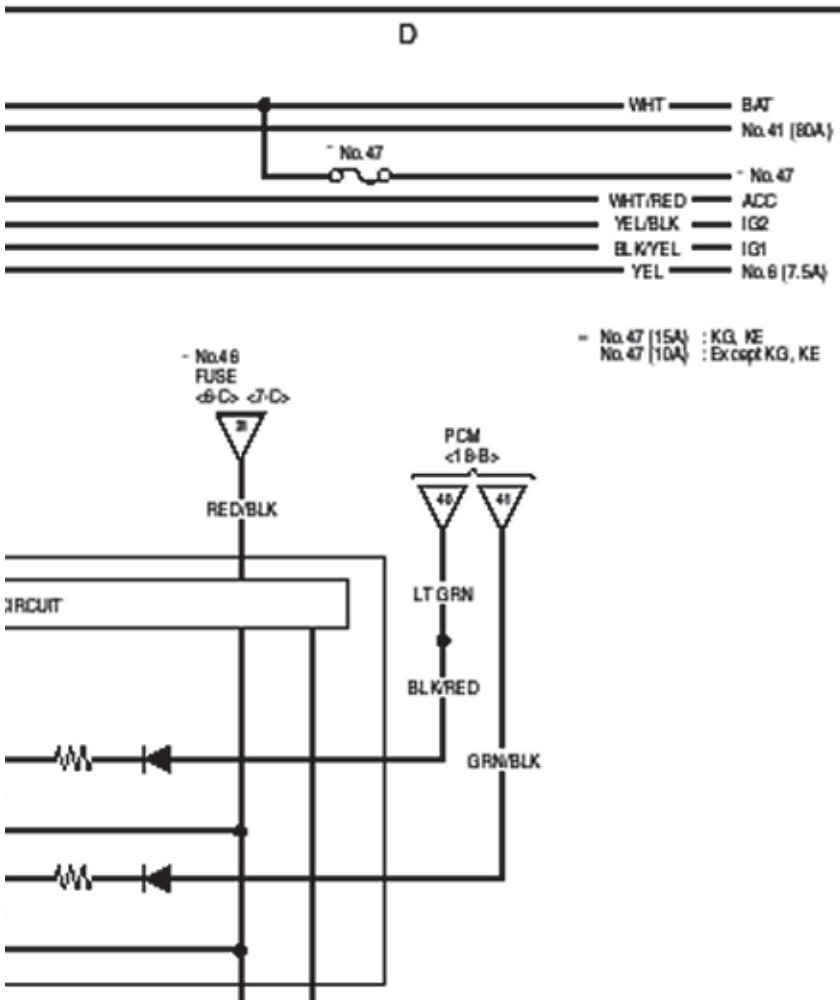
P R N D L S

C


No.46
FUSE
<6-C> <7-C>
31
RED/BLK
GAUGE
LIGHTS
(3.0W
(3.4W×3)
BLK
=1
=2
RED
BLK
G401
G402
PCM
<18-C>
33
LT GRN
GAUGE ASSEMBLY
YEL
AT GEAR POSITION INDICATOR DIMMING
(1.12W×6)
P
R
N
D
L
S
SHIFT LOCK
RELAY (KQ, KU)
<5-B>
34
BLK/BLU
WHT
RED
BLU
PCM <18-B, C
35
36
37
GRN
STARTER
CUT RELAY
<1-B>
4
WHT/RED
(Not used)
A/T GEAR
POSITION SWITCH
(LHD)

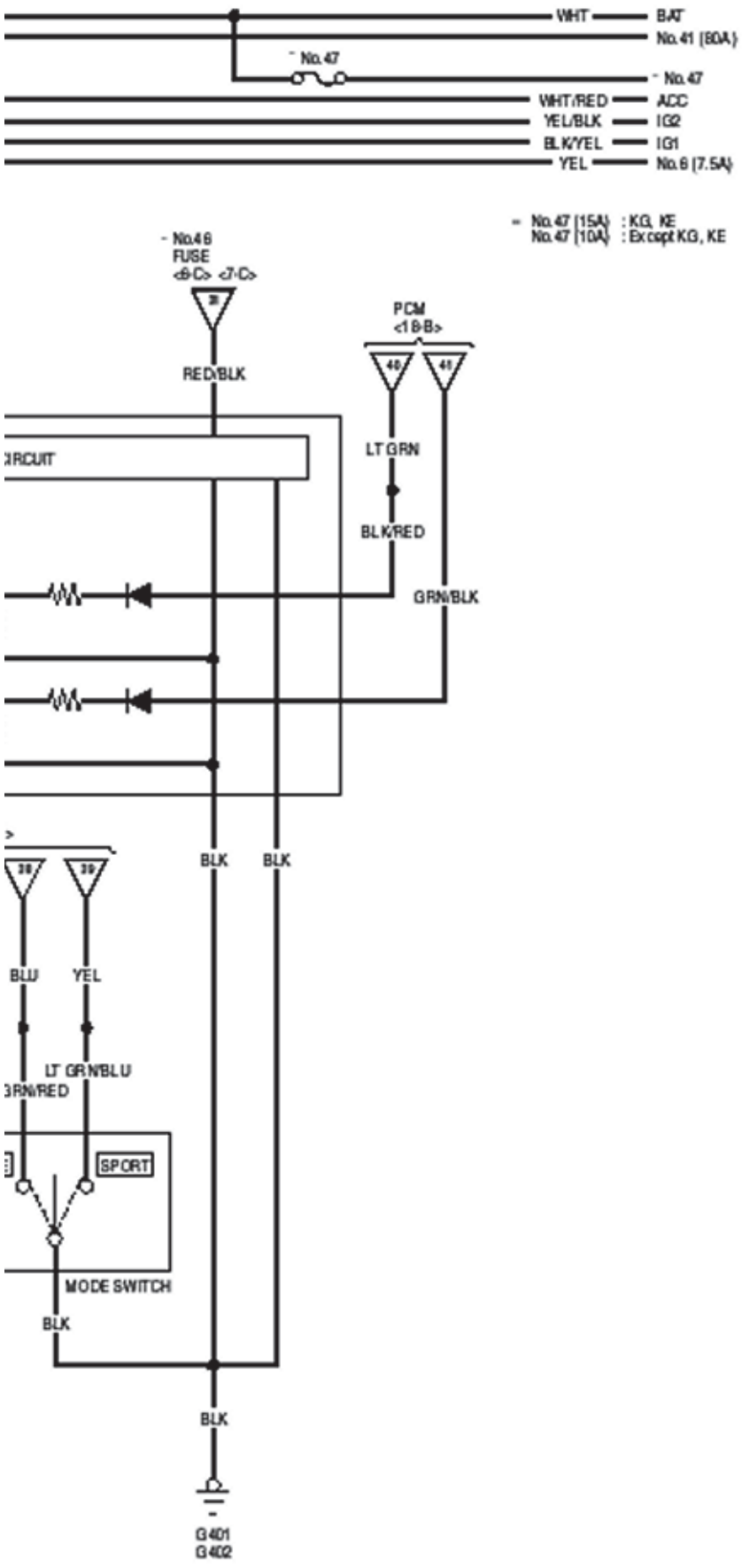
D

4

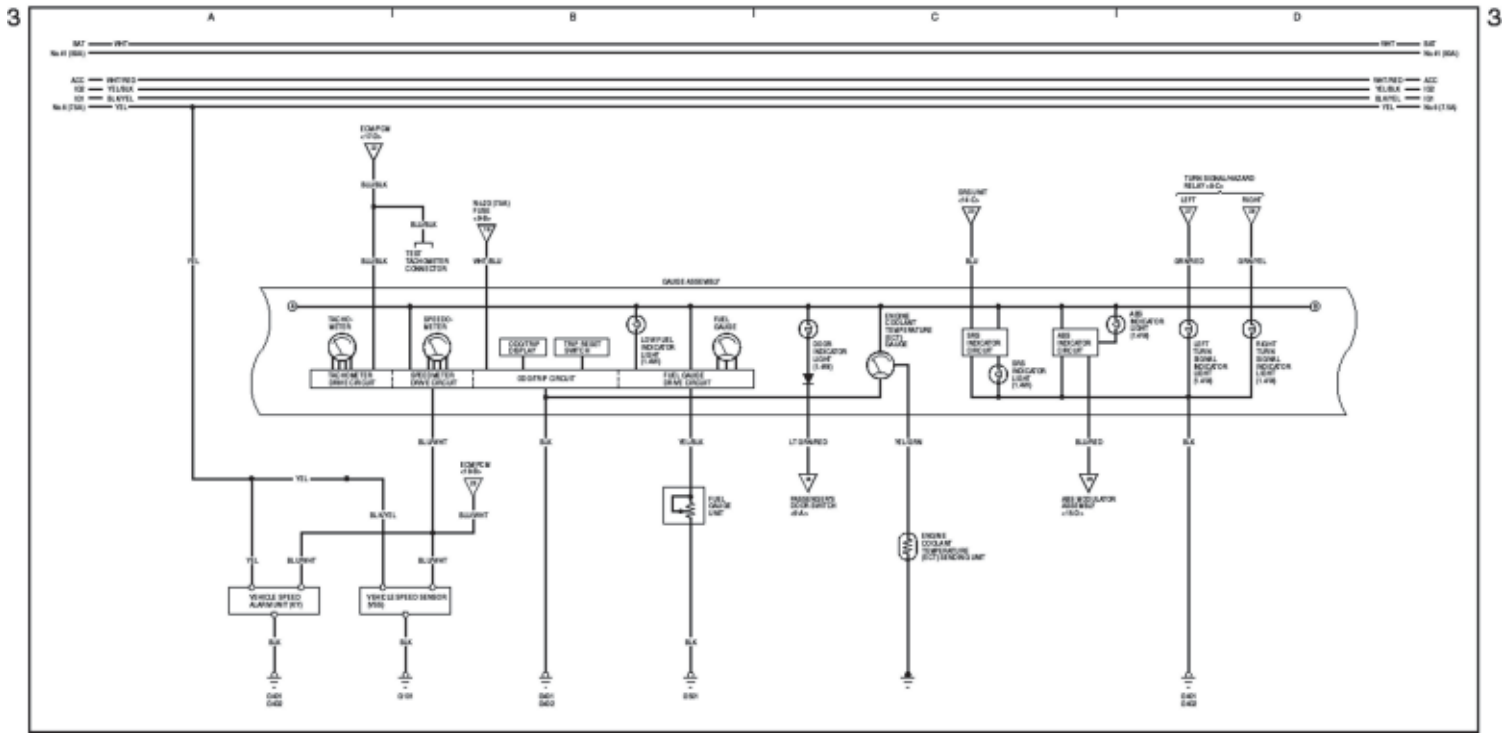

WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
<6-C> <7-C>
31
RED/BLK
PCM
<18-B>
46
41
LT GRN
BLK/RED
GRN/BLK

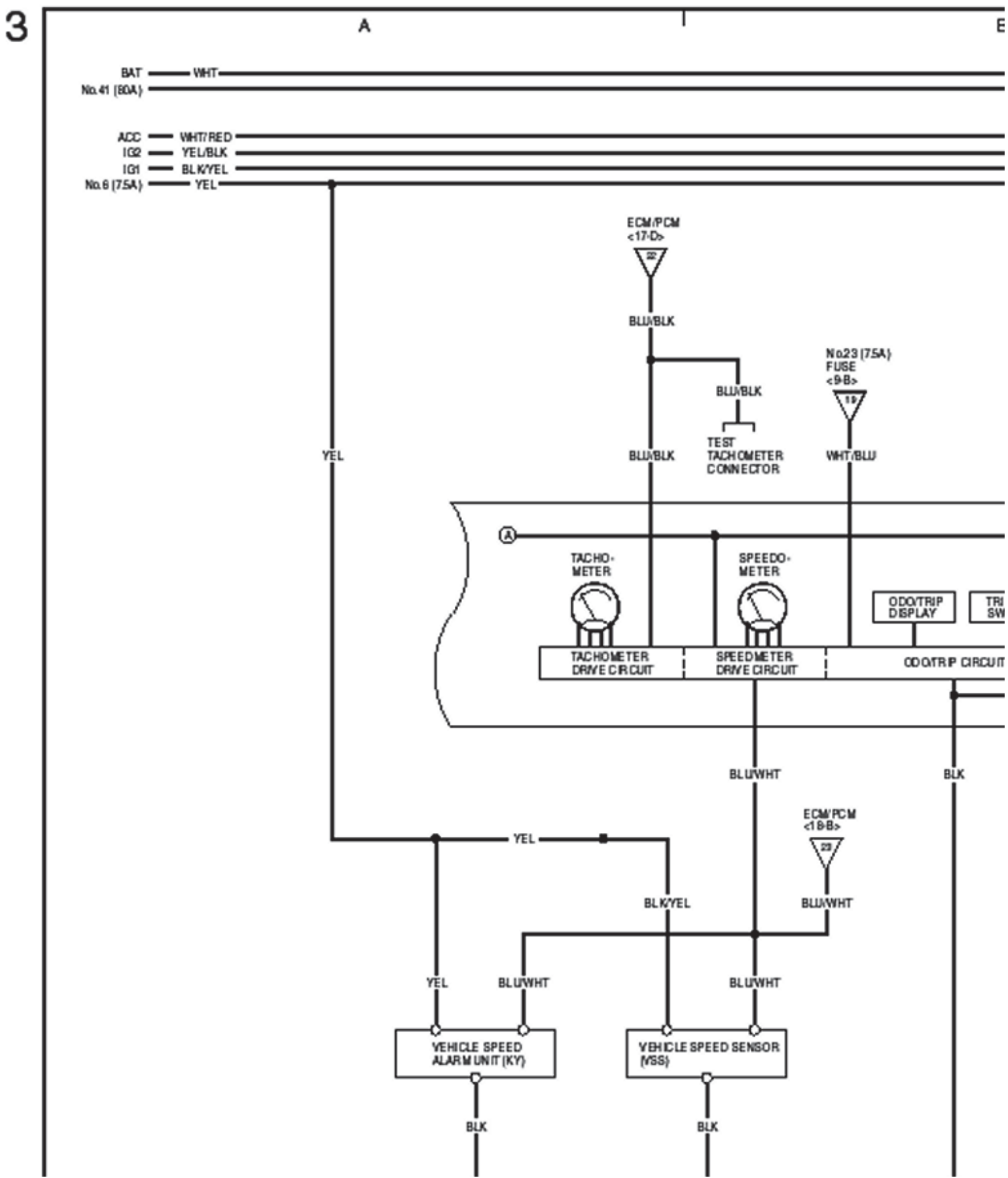
D

4


WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
PCM
RED/BLK
LT GRN
BLK/RED
GRN/BLK
BLK
BLK
BLU
YEL
LT GRN/BLU
SPORT
MODE SWITCH
BLK
BLK
G401
G402

Wiring Diagrams
Indicators - Door Indicator





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

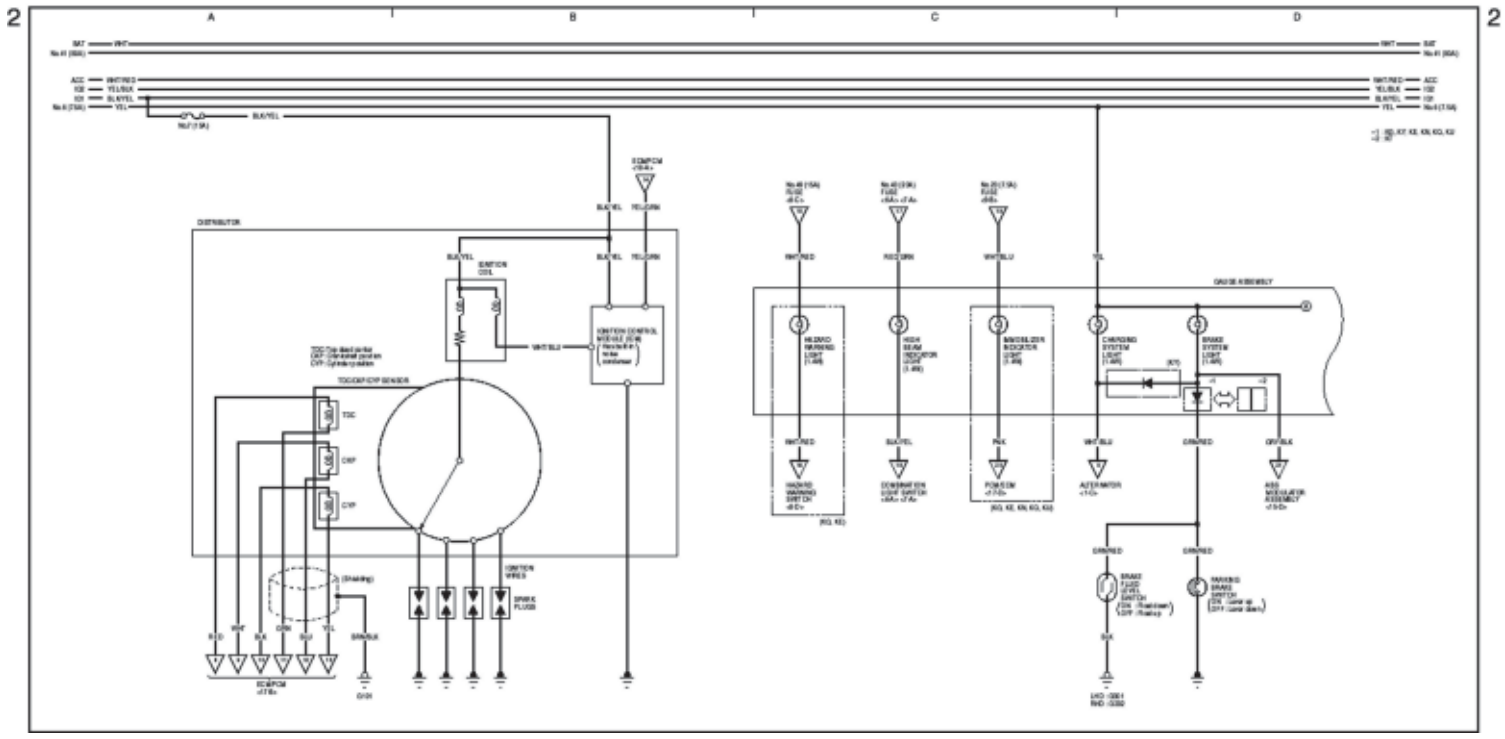
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

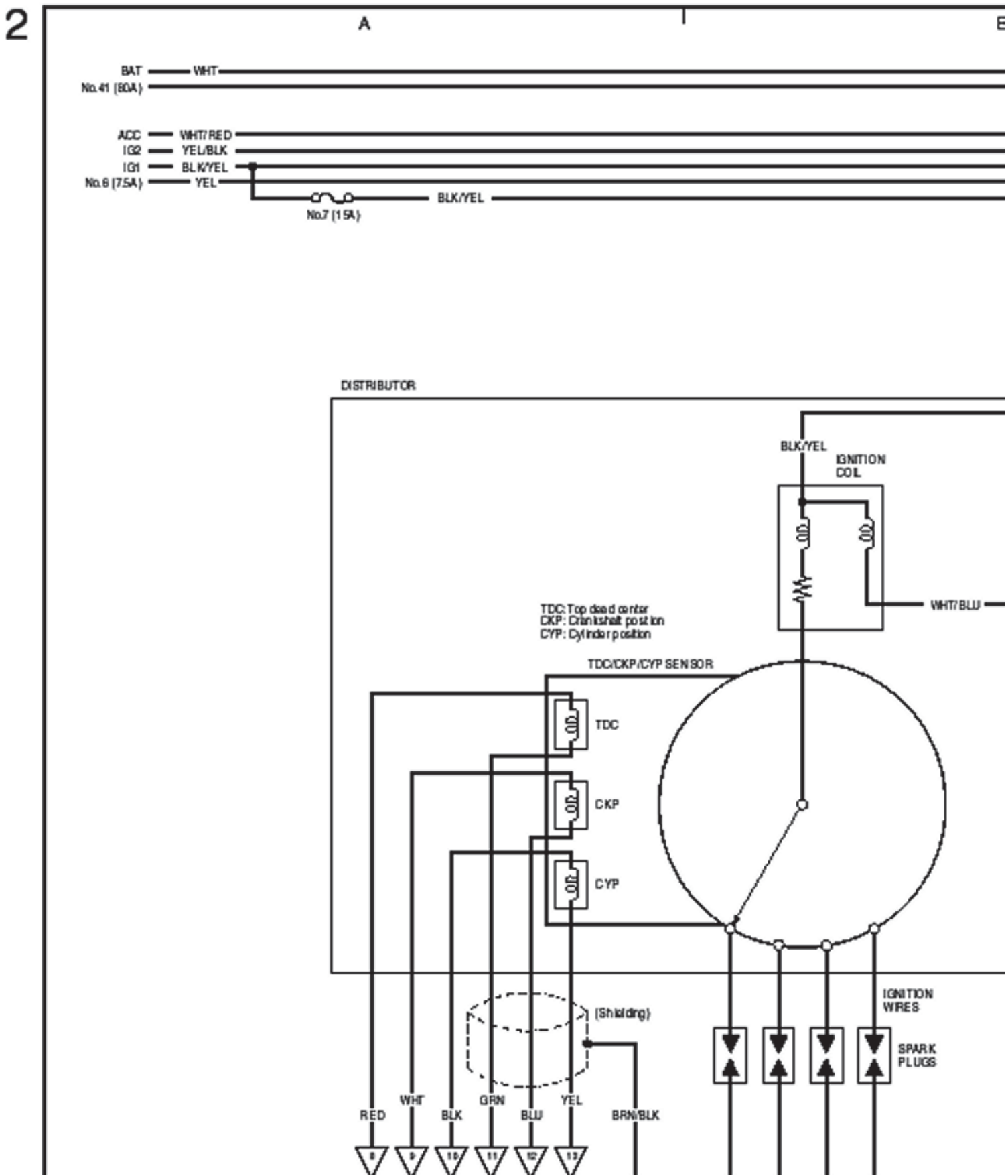
BLK

G401
G402

Wiring Diagrams

Indicators - High Beam Indicator





2

A

B

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BLK/YEL
No.7 (15A)

DISTRIBUTOR

BLK/YEL

IGNITION COIL

WHT/BLU

TDC: Top dead center
CKP: Crankshaft position
CYP: Cylinder position

TDC/CKP/CYP SENSOR

TDC

CKP

CYP

(Shielding)

IGNITION WIRES

SPARK PLUGS

RED WHT BLK GRN BLU YEL BRN/BLK

8 9 10 11 12 13

ECM/PCM <17 B>

G101

C

ECM/PCM <18 A>

14

BLK/YEL YEL/GRN

BLK/YEL YEL/GRN

IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE <8 C>

No.43 (20A) FUSE <6 A> <7 A>

No.23 (7.5A) FUSE <9 B>

15 17 19

WHT/RED RED/GRN WHT/BLU YEL

HAZARD WARNING LIGHT (1.4W)

HIGH BEAM INDICATOR LIGHT (1.4W)

IMMOBILIZER INDICATOR LIGHT (1.4W)

CHARGING SYSTEM LIGHT (1.4W)

C

ECM/PCM
<18-A>
14
BLK/YEL
YEL/GRN
BLK/YEL
YEL/GRN
IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE
<8-C>
15
WHT/RED
No.43 (20A) FUSE
<6-A> <7-A>
17
RED/GRN
No.23 (7.5A) FUSE
<9-B>
19
WHT/BLU
YEL

HAZARD WARNING LIGHT (1.4W)
HIGH BEAM INDICATOR LIGHT (1.4W)
IMMOBILIZER INDICATOR LIGHT (1.4W)
CHARGING SYSTEM LIGHT (1.4W)

WHT/RED
16
HAZARD WARNING SWITCH
<8-D>
(KG, KE)
BLK/YEL
18
COMBINATION LIGHT SWITCH
<6-A> <7-A>
PNK
20
PCM/ECM
<17-D>
(KG, KE, KN, KQ, KU)
WHT/BLU
6
ALTERNATOR
<1-C>

GRN/RED
BRAKE FLUID LEVEL SWITCH
(ON : R
OFF : R
BLK
LHD : G301
RHD : G202

D

2

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : KG, KY, KE, KN, KQ, KU
=2 : KT

GAUGE ASSEMBLY
A
BRAKE SYSTEM LIGHT (1.4W)
(KY)
=1
=2

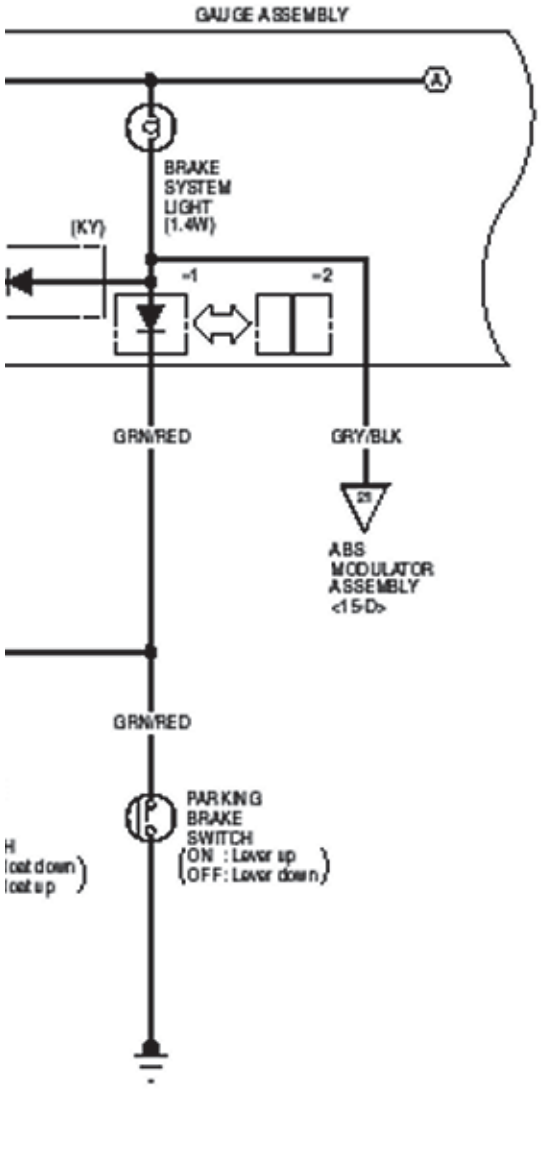
D

2

WHT — BAT
No.41 (80A)

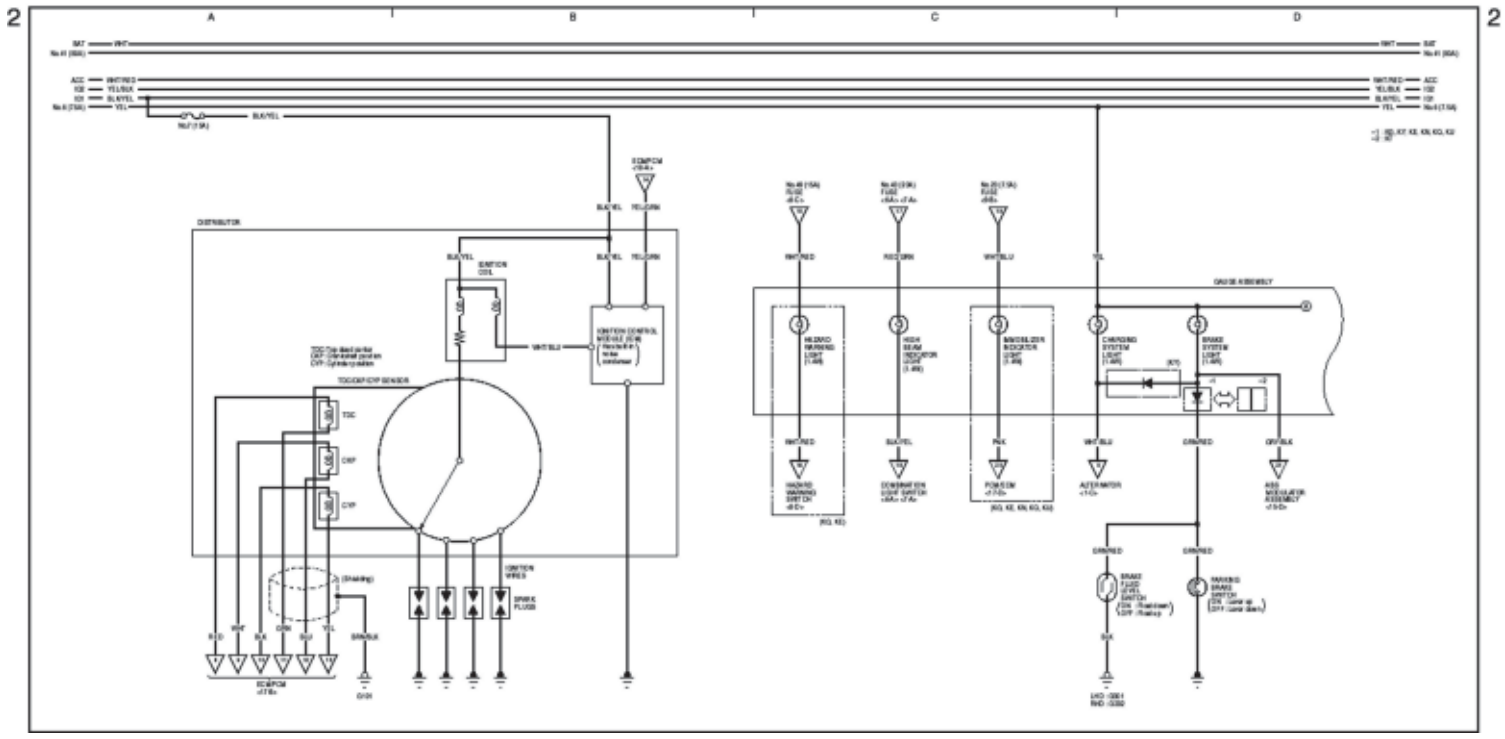
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

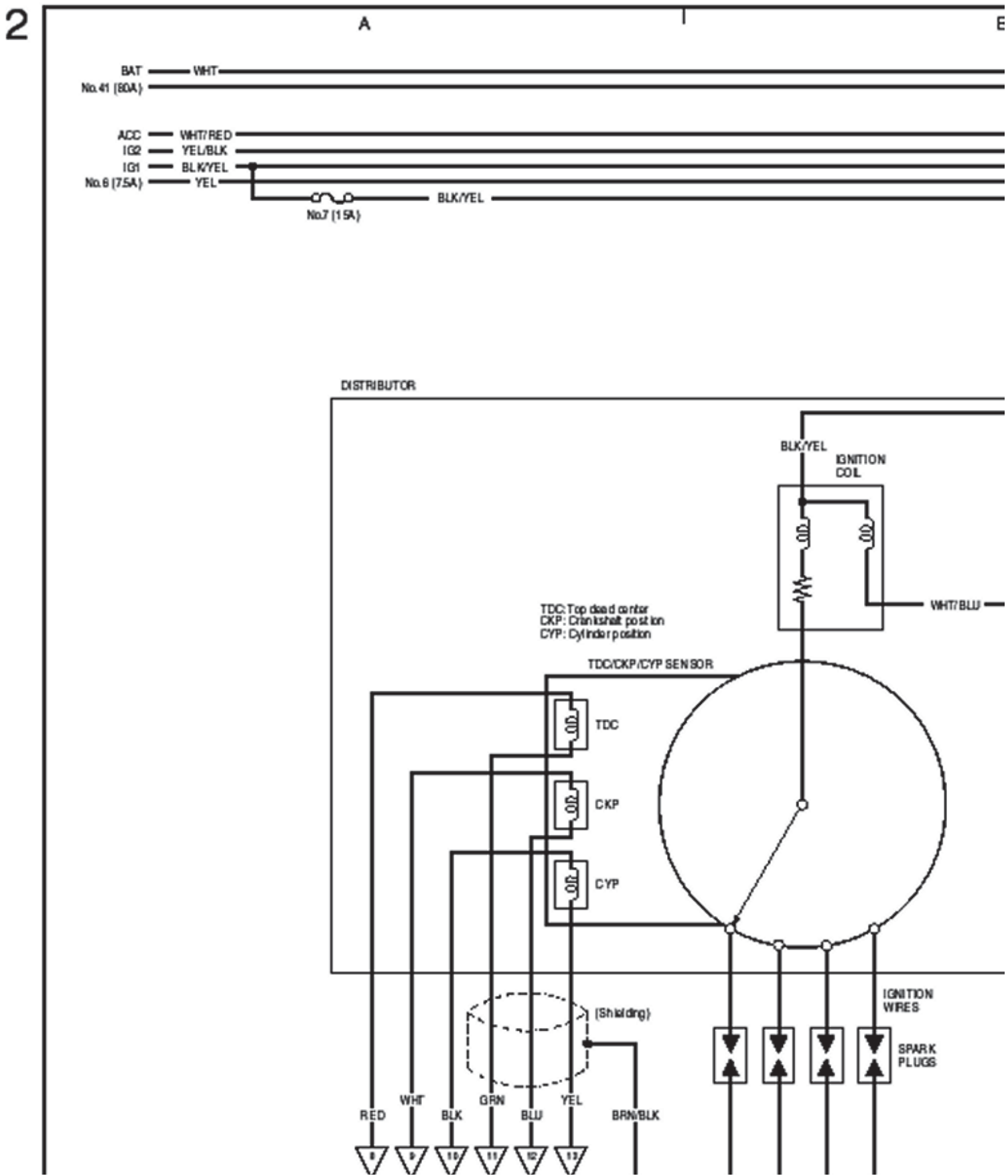
=1 : K3, KY, KE, KN, KQ, KU
=2 : KT



Wiring Diagrams

Indicators - Immobiliser Indicator





2

A

B

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BLK/YEL
No.7 (15A)

DISTRIBUTOR

BLK/YEL

IGNITION COIL

WHT/BLU

TDC: Top dead center
CKP: Crankshaft position
CYP: Cylinder position

TDC/CKP/CYP SENSOR

TDC

CKP

CYP

(Shielding)

IGNITION WIRES

SPARK PLUGS

RED WHT BLK GRN BLU YEL BRN/BLK

8 9 10 11 12 13

ECM/PCM <17 B>

G101

C

ECM/PCM <18 A>

14

BLK/YEL YEL/GRN

BLK/YEL YEL/GRN

IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE <8 C>

No.43 (20A) FUSE <6 A> <7 A>

No.23 (7.5A) FUSE <9 B>

15 17 19

WHT/RED RED/GRN WHT/BLU YEL

HAZARD WARNING LIGHT (1.4W)

HIGH BEAM INDICATOR LIGHT (1.4W)

IMMOBILIZER INDICATOR LIGHT (1.4W)

CHARGING SYSTEM LIGHT (1.4W)

C

ECM/PCM
<18-A>
14
BLK/YEL
YEL/GRN
BLK/YEL
YEL/GRN
IGNITION CONTROL MODULE (ICM)
(Has built-in noise condenser)

No.49 (15A) FUSE
<8-C>
15
WHT/RED
No.43 (20A) FUSE
<6-A> <7-A>
17
RED/GRN
No.23 (7.5A) FUSE
<9-B>
19
WHT/BLU
YEL

HAZARD WARNING LIGHT (1.4W)
HIGH BEAM INDICATOR LIGHT (1.4W)
IMMOBILIZER INDICATOR LIGHT (1.4W)
CHARGING SYSTEM LIGHT (1.4W)

WHT/RED
16
HAZARD WARNING SWITCH
<8-D>
(KG, KE)
BLK/YEL
18
COMBINATION LIGHT SWITCH
<6-A> <7-A>
PNK
20
PCM/ECM
<17-D>
(KG, KE, KN, KQ, KU)
WHT/BLU
6
ALTERNATOR
<1-C>

GRN/RED
BRAKE FLUID LEVEL SWITCH
(ON : R
OFF : R
BLK
LHD : G301
RHD : G202

D

2

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : KG, KY, KE, KN, KQ, KU
=2 : KT

GAUGE ASSEMBLY
A
BRAKE SYSTEM LIGHT (1.4W)
(KY)
=1
=2

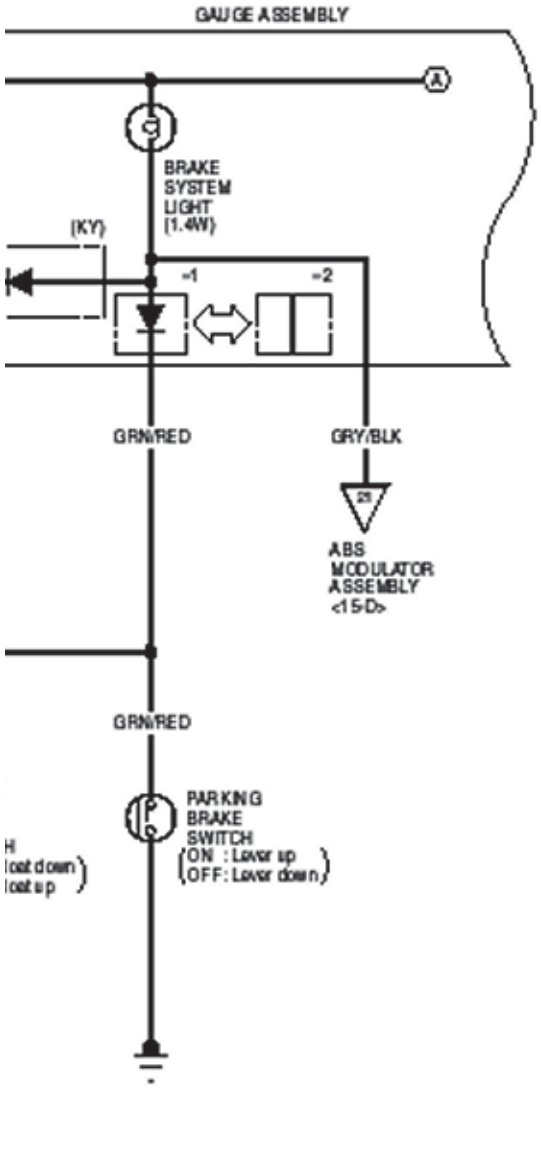
D

2

WHT — BAT
No.41 (80A)

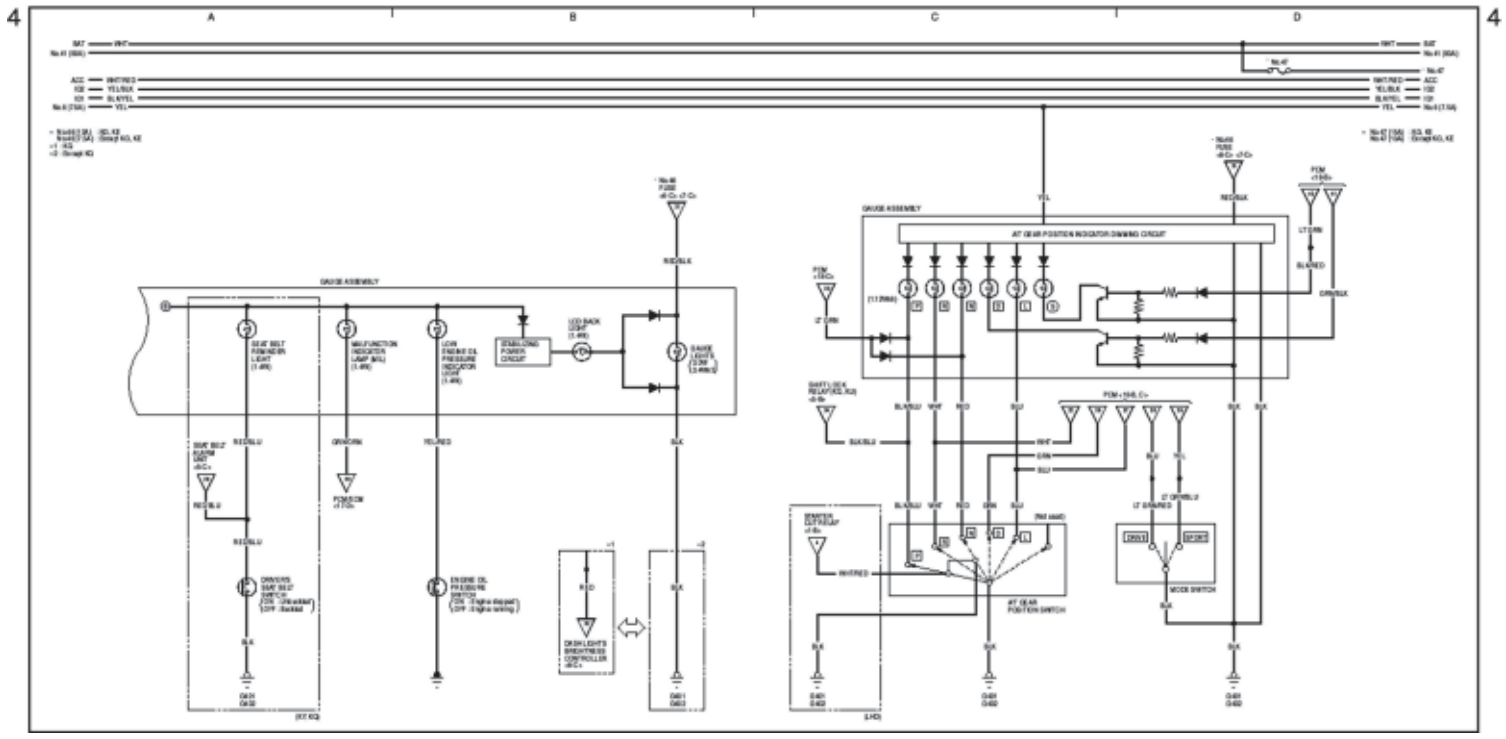
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

=1 : K3, KY, KE, KN, KQ, KU
=2 : KT



Wiring Diagrams

Indicators - Low Engine Oil Pressure Indicator



4

A

B

BAT — WHT
No.41 (80A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
-1 : KQ
-2 : Except KQ

GAUGE ASSEMBLY

B

SEAT BELT REMINDER LIGHT (1.4W)

MALFUNCTION INDICATOR LAMP (MIL) (1.4W)

LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)

STABILIZING POWER CIRCUIT

SEAT BELT ALARM UNIT <5-C>

29

RED/BLU

RED/BLU

RED/BLU

GRN/ORN

30

PCM/ECM <17-D>

YEL/RED

DRIVER'S SEAT BELT SWITCH (ON : Unbuckled) (OFF : Buckled)

BLK

G401
G402

(KY, KQ)

ENGINE OIL PRESSURE SWITCH (ON : Engine stopped) (OFF : Engine running)

C

- No.46 FUSE <6-C> <7-C>

31

RED/BLK

GAUGE LIGHTS (3.0W) (3.4W x 3)

GAUGE ASSEMBLY

YEL

AT GEAR POSITION INDICATOR DIMMING

PCM <18-C>

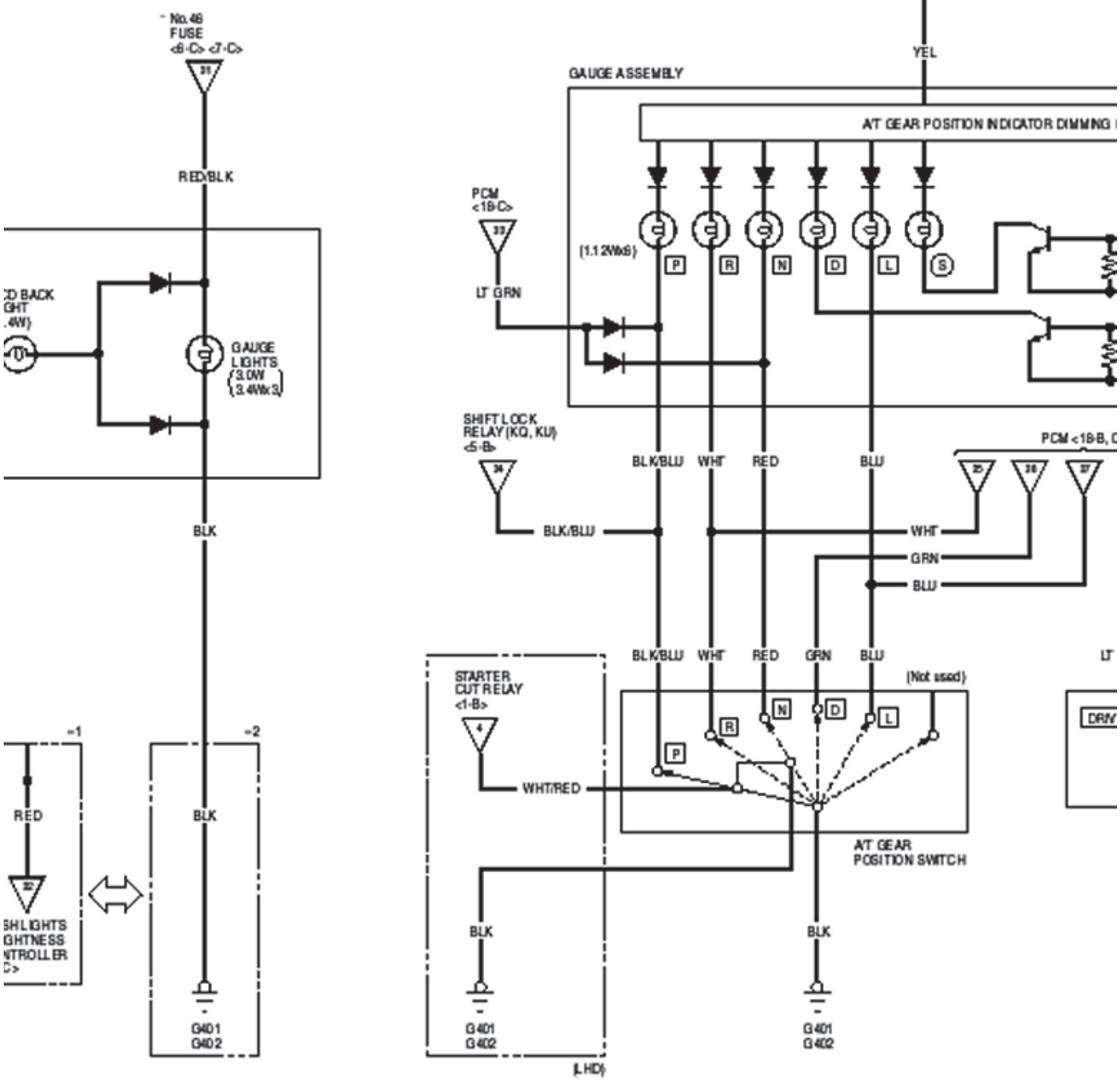
33

LT GRN

(1.12W x 6)

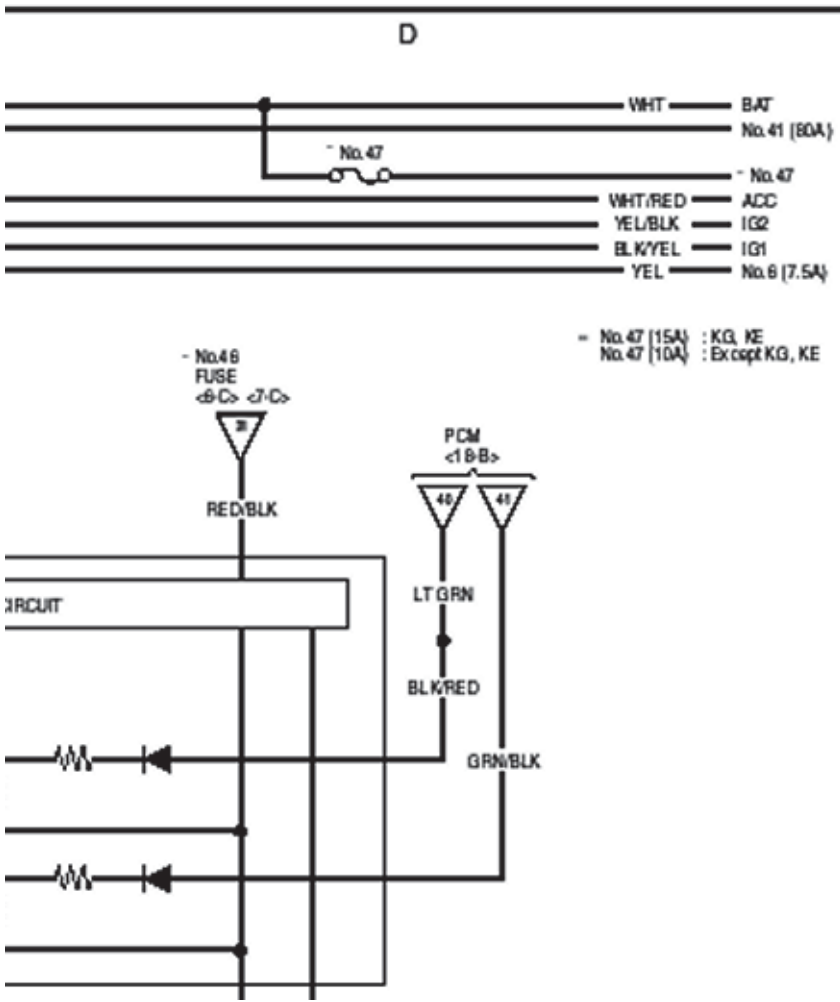
P R N D L S

C


No.46
FUSE
<6-C> <7-C>
31
RED/BLK
GAUGE
LIGHTS
(3.0W
(3.4W×3)
BLK
=1
=2
RED
BLK
G401
G402
PCM
<18-C>
33
LT GRN
GAUGE ASSEMBLY
YEL
AT GEAR POSITION INDICATOR DIMMING
(1.12W×6)
P
R
N
D
L
S
SHIFT LOCK
RELAY (KQ, KU)
<5-B>
34
BLK/BLU
WHT
RED
BLU
PCM <18-B, C
35
36
37
GRN
STARTER
CUT RELAY
<1-B>
4
WHT/RED
(Not used)
A/T GEAR
POSITION SWITCH
(LHD)

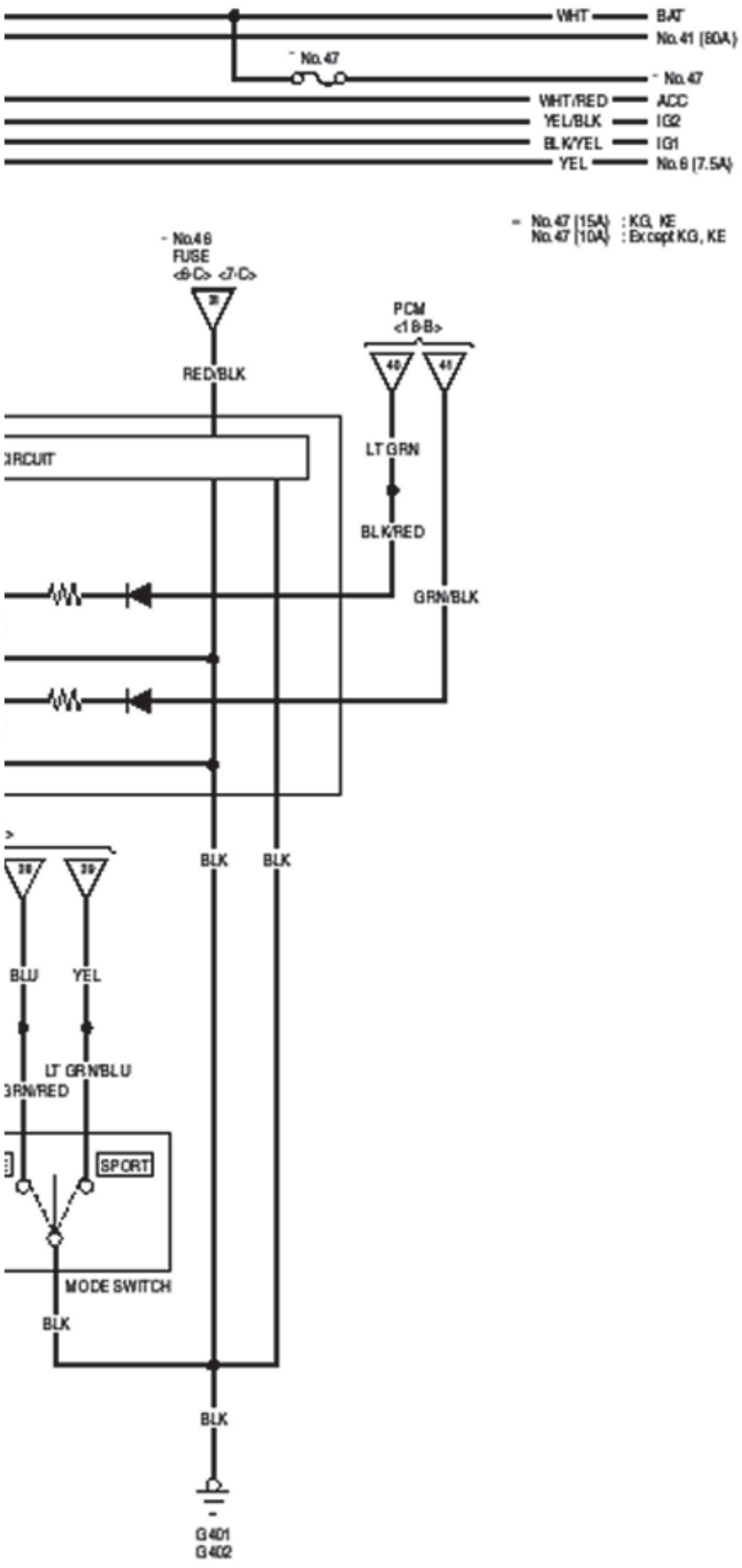
D

4


WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
<6-C> <7-C>
31
RED/BLK
PCM
<18-B>
46
41
LT GRN
BLK/RED
GRN/BLK

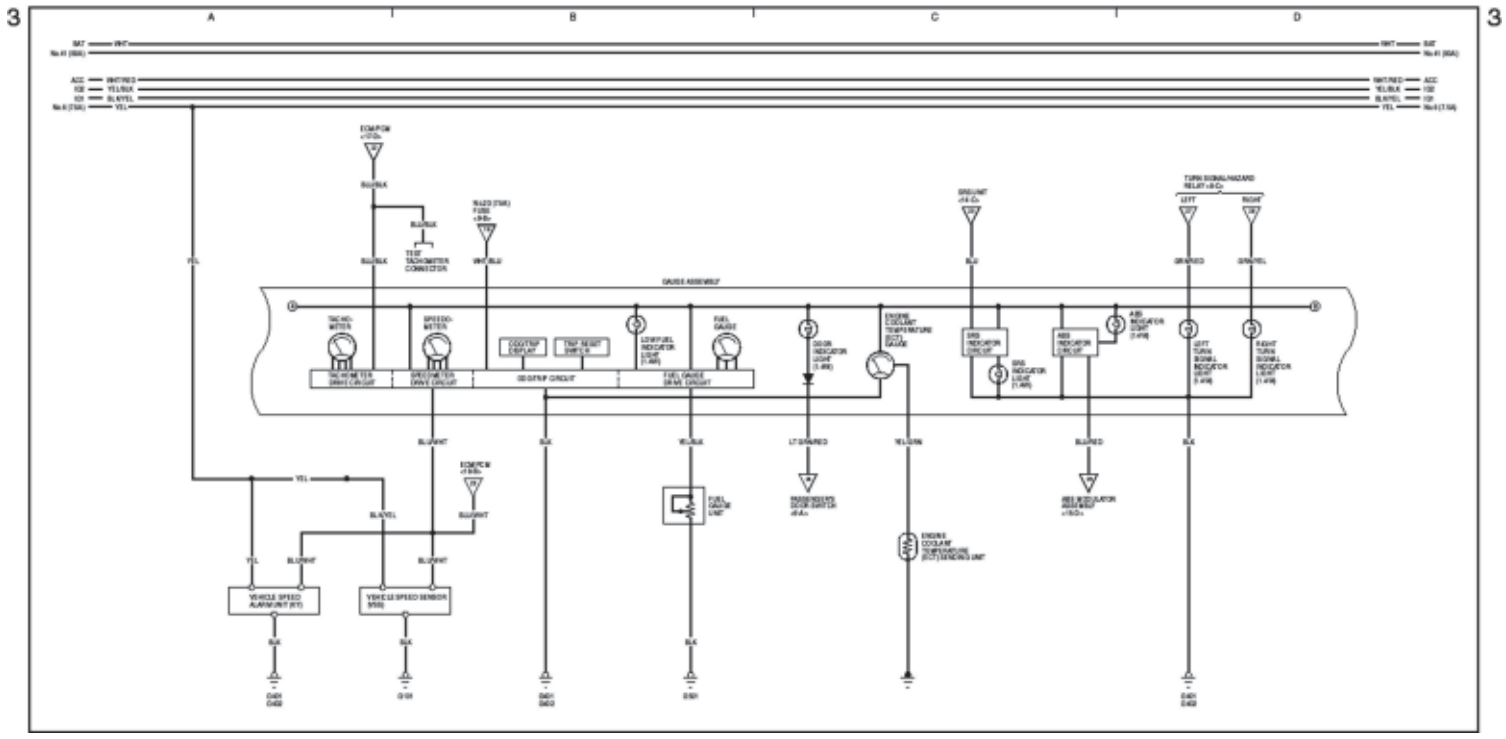
D

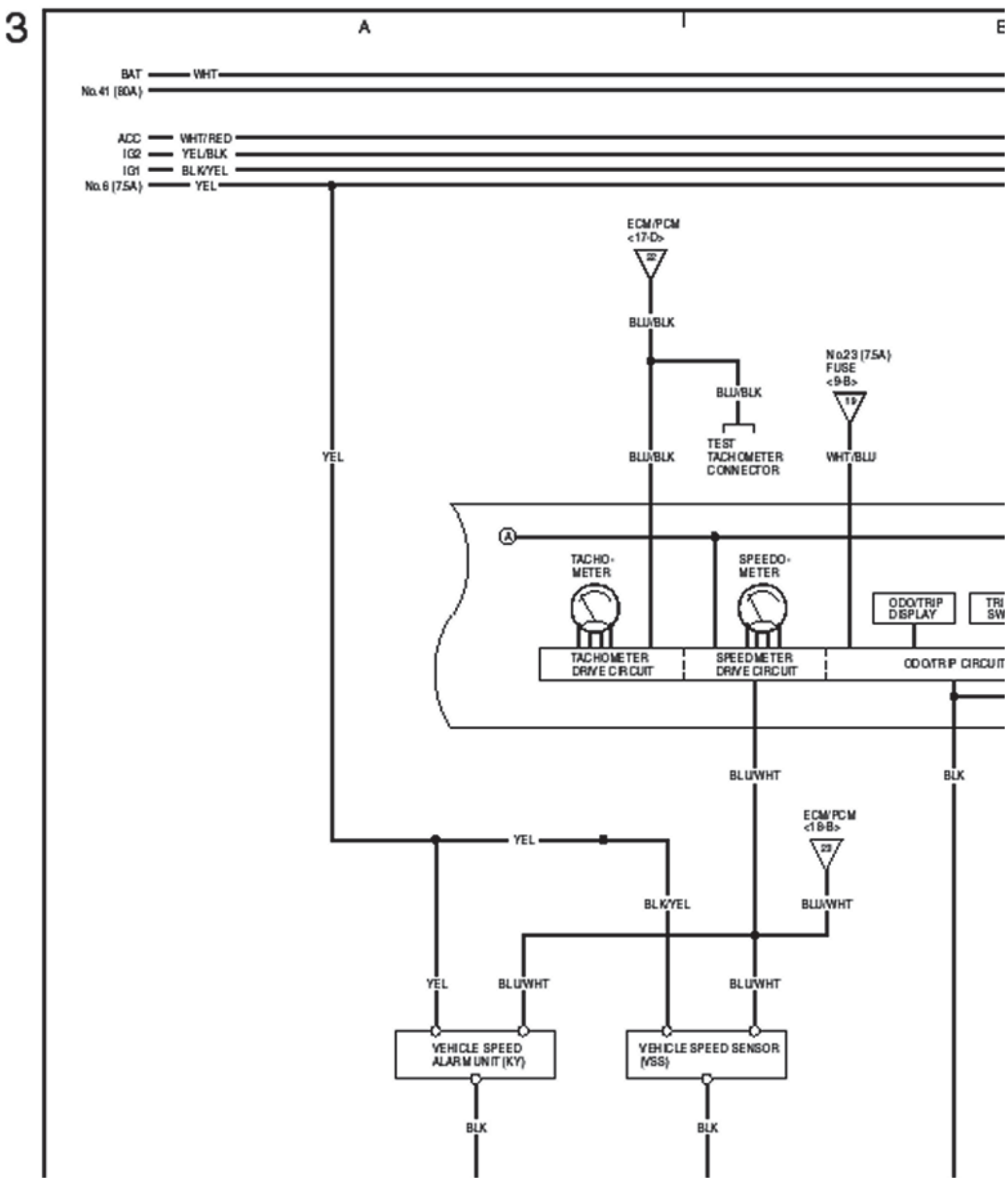
4


WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
PCM
RED/BLK
LT GRN
BLK/RED
GRN/BLK
BLK
BLK
BLU
YEL
LT GRN/BLU
SPORT
MODE SWITCH
BLK
BLK
G401
G402

Wiring Diagrams

Indicators - Low Fuel Indicator





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

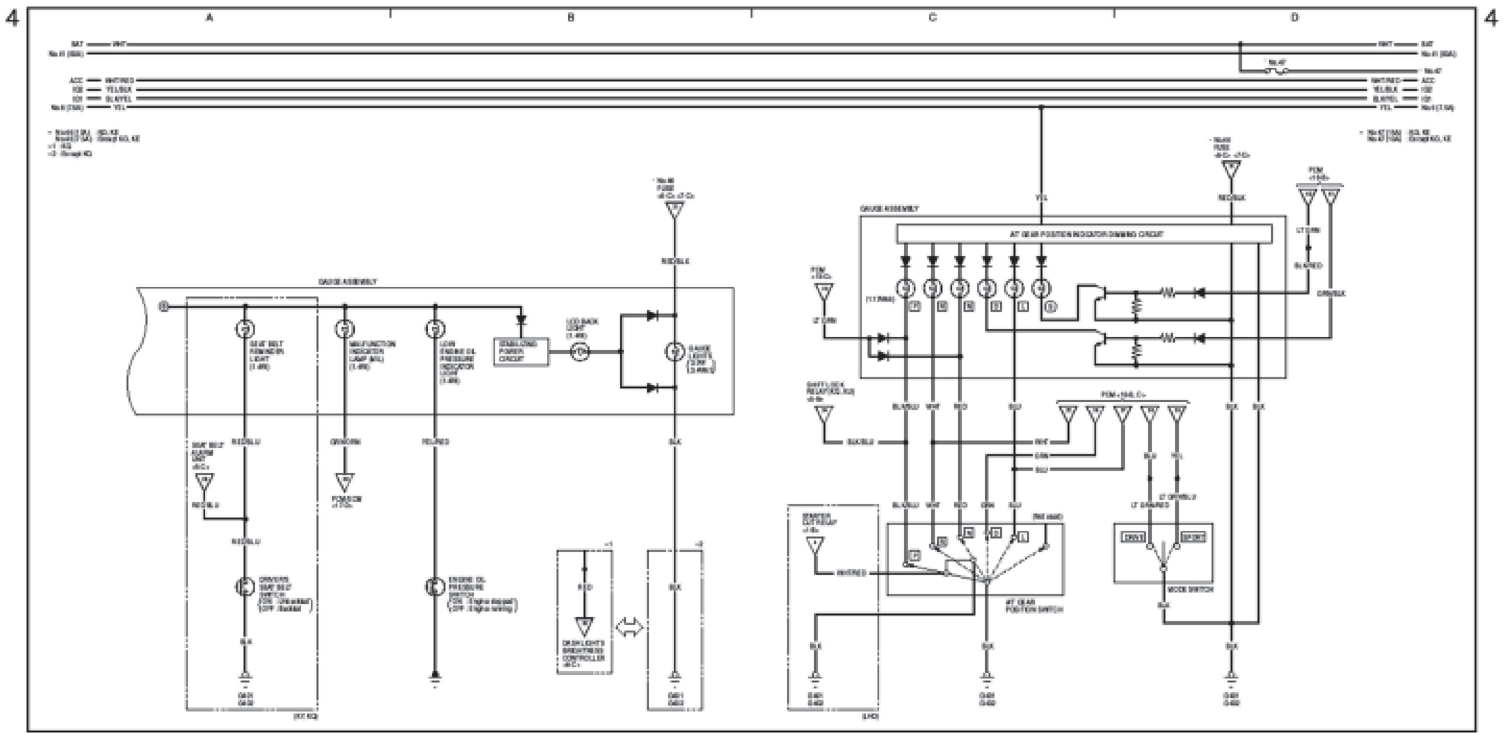
B

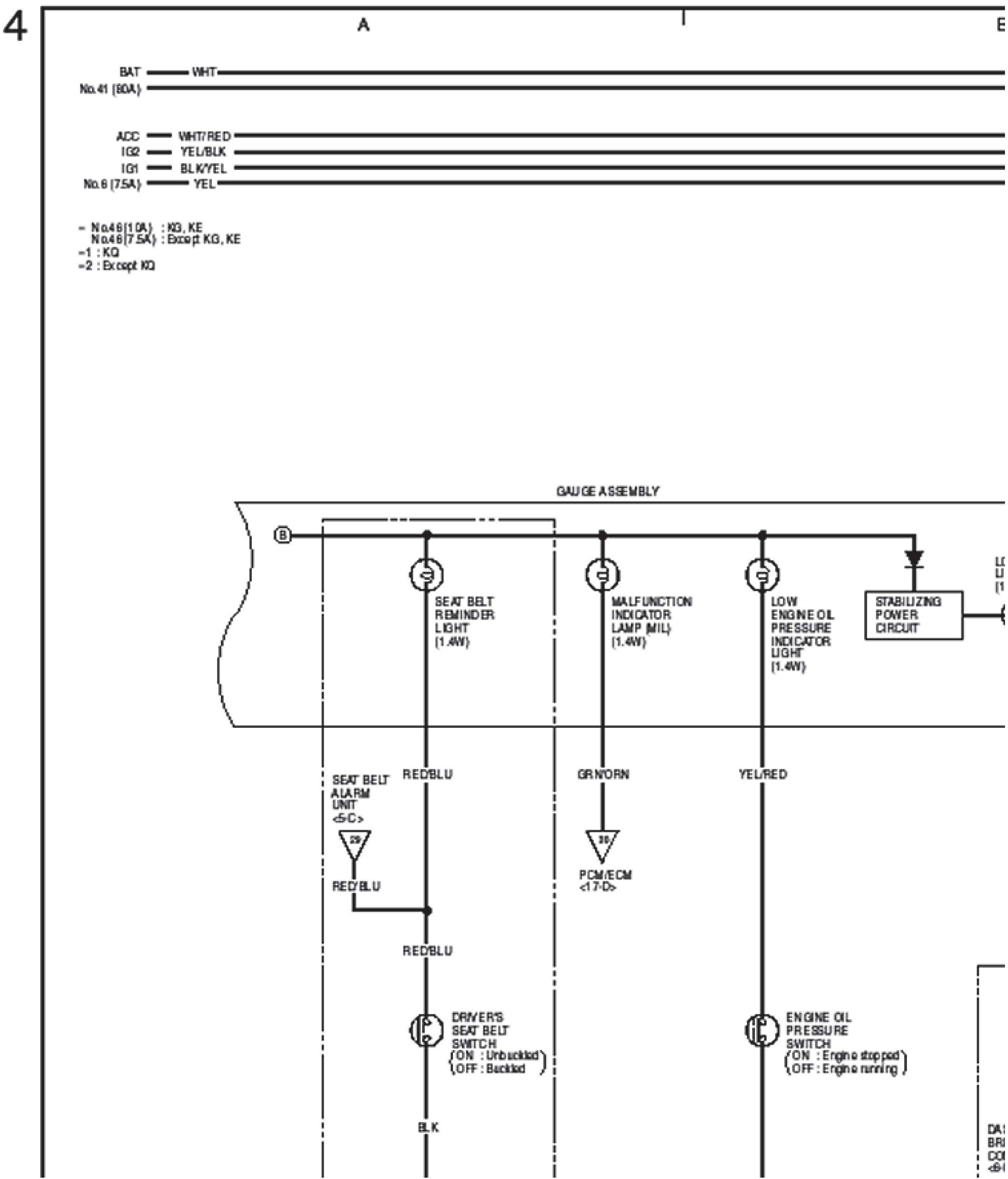
LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

BLK

G401
G402





4
A
BAT
WHT
No. 41 (80A)
ACC
WHT/RED
IG2
YEL/BLK
IG1
BLK/YEL
No. 6 (7.5A)
YEL
= No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
=1 : KQ
=2 : Except KQ
GAUGE ASSEMBLY
B
SEAT BELT REMINDER LIGHT (1.4W)
MALFUNCTION INDICATOR LAMP (MIL) (1.4W)
LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)
STABILIZING POWER CIRCUIT
RED/BLU
GRN/ORN
YEL/RED
SEAT BELT ALARM UNIT <5-C>
29
RED/BLU
30
PCM/ECM <17-D>
RED/BLU
DRIVER'S SEAT BELT SWITCH (ON : Unbuckled OFF : Buckled)
ENGINE OIL PRESSURE SWITCH (ON : Engine stopped OFF : Engine running)
BLK

4

A

B

BAT — WHT
No.41 (80A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
-1 : KQ
-2 : Except KQ

GAUGE ASSEMBLY

B

SEAT BELT REMINDER LIGHT (1.4W)

MALFUNCTION INDICATOR LAMP (MIL) (1.4W)

LOW ENGINE OIL PRESSURE INDICATOR LIGHT (1.4W)

STABILIZING POWER CIRCUIT

SEAT BELT ALARM UNIT <5-C>

29

RED/BLU

RED/BLU

RED/BLU

GRN/ORN

30

PCM/ECM <17-D>

YEL/RED

DRIVER'S SEAT BELT SWITCH (ON : Unbuckled) (OFF : Buckled)

BLK

G401
G402

(KY, KQ)

ENGINE OIL PRESSURE SWITCH (ON : Engine stopped) (OFF : Engine running)

C

- No.46 FUSE <6-C> <7-C>

31

RED/BLK

GAUGE LIGHTS (3.0W) (3.4W x 3)

GAUGE ASSEMBLY

YEL

AT GEAR POSITION INDICATOR DIMMING

PCM <18-C>

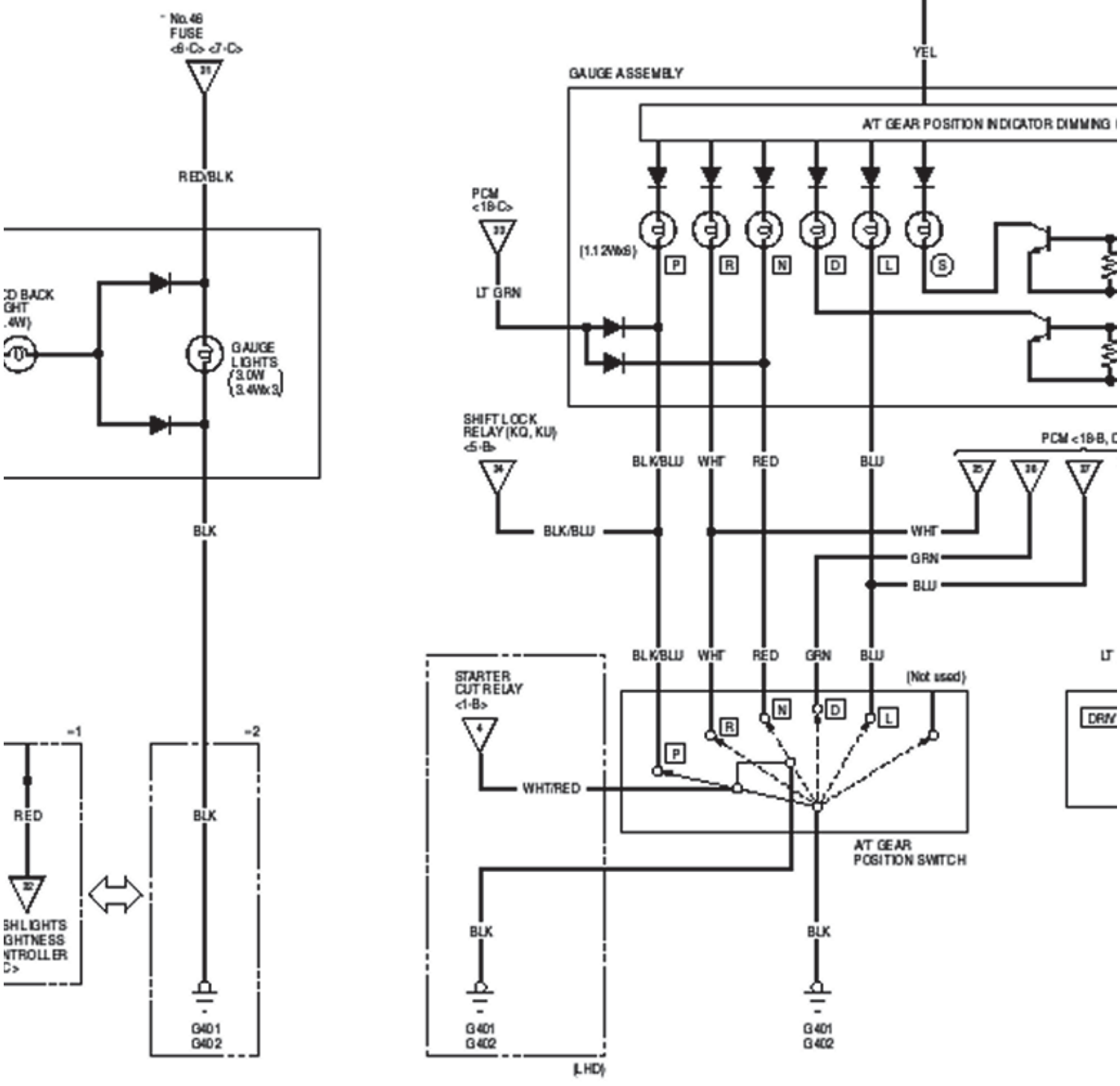
33

LT GRN

(1.12W x 6)

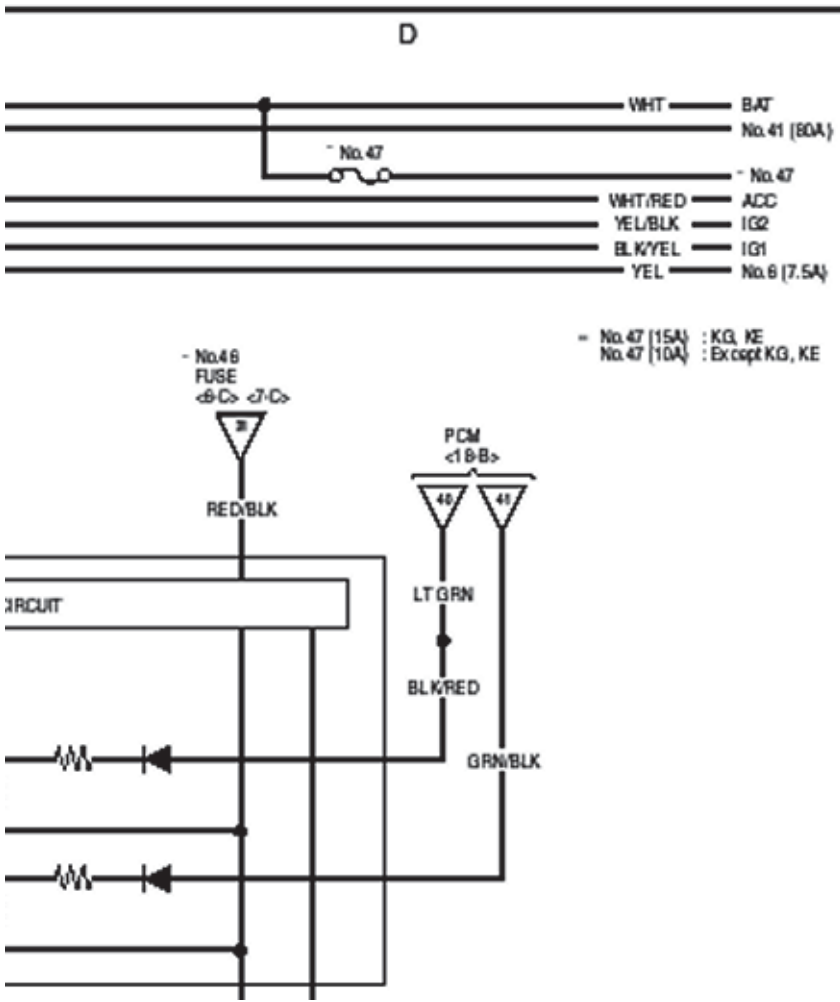
P R N D L S

C


No.46
FUSE
<6-C> <7-C>
31
RED/BLK
GAUGE
LIGHTS
(3.0W
(3.4W×3)
BLK
=1
=2
RED
BLK
G401
G402
PCM
<18-C>
33
LT GRN
GAUGE ASSEMBLY
YEL
AT GEAR POSITION INDICATOR DIMMING
(1.12W×6)
P
R
N
D
L
S
SHIFT LOCK
RELAY (KQ, KU)
<5-B>
34
BLK/BLU
WHT
RED
BLU
PCM <18-B, C
35
36
37
GRN
STARTER
CUT RELAY
<1-B>
4
WHT/RED
(Not used)
A/T GEAR
POSITION SWITCH
(LHD)

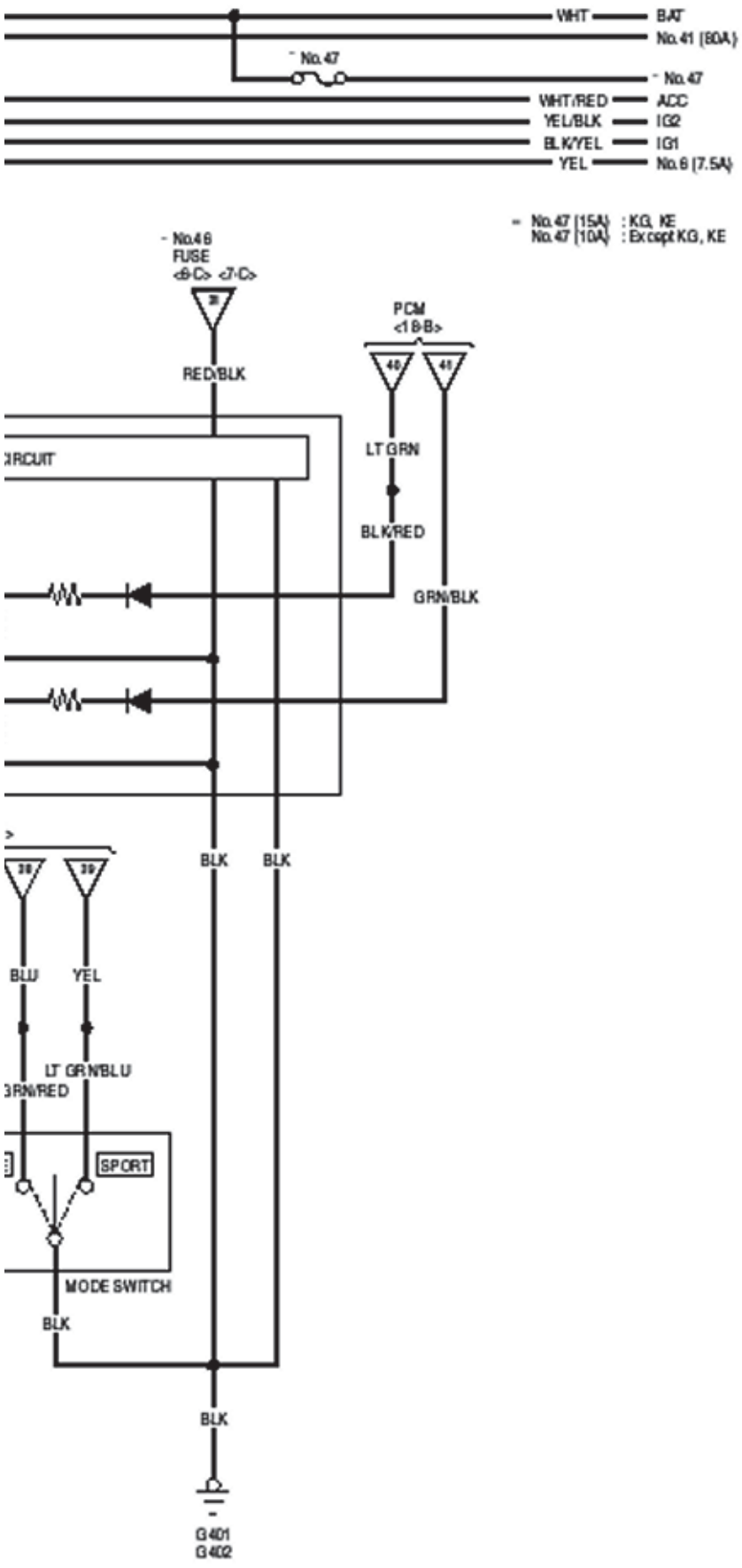
D

4

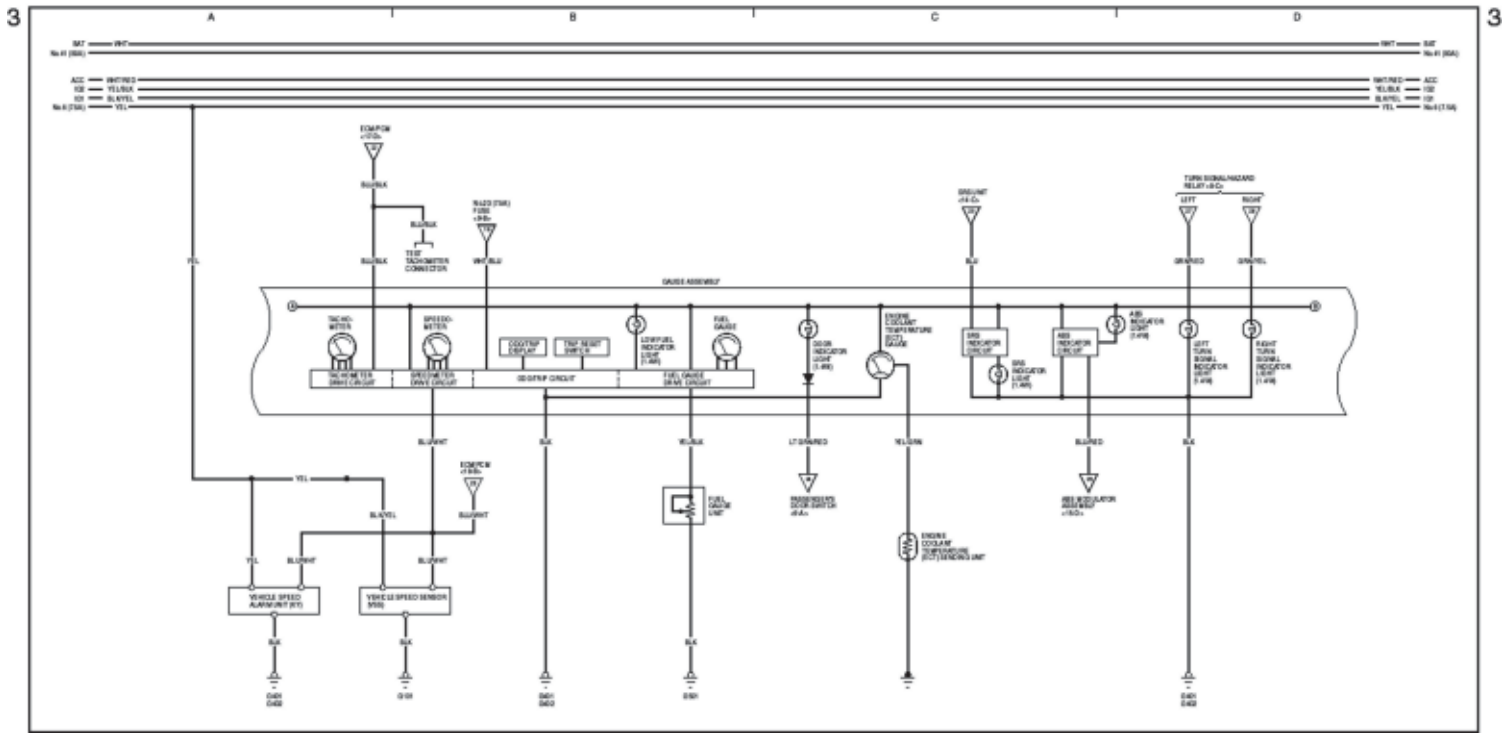

WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
<6-C> <7-C>
31
RED/BLK
PCM
<18-B>
46
41
LT GRN
BLK/RED
GRN/BLK

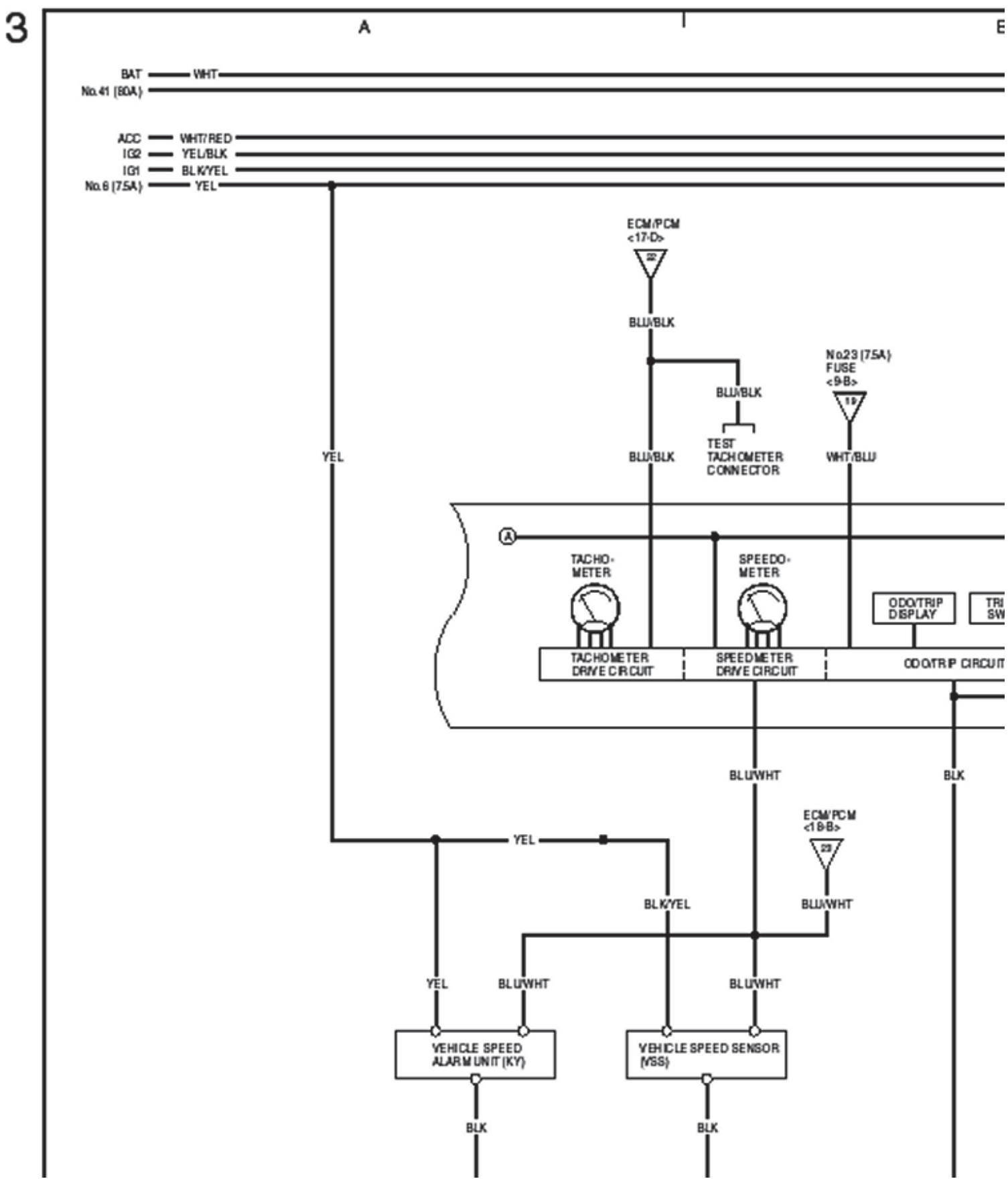
D

4


WHT
BAT
No.41 (80A)
No.47
No.47
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
No.46
FUSE
PCM
RED/BLK
LT GRN
BLK/RED
GRN/BLK
BLK
BLK
BLU
YEL
LT GRN/BLU
SPORT
MODE SWITCH
BLK
BLK
G401
G402

Wiring Diagrams
Indicators - SRS Indicator





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

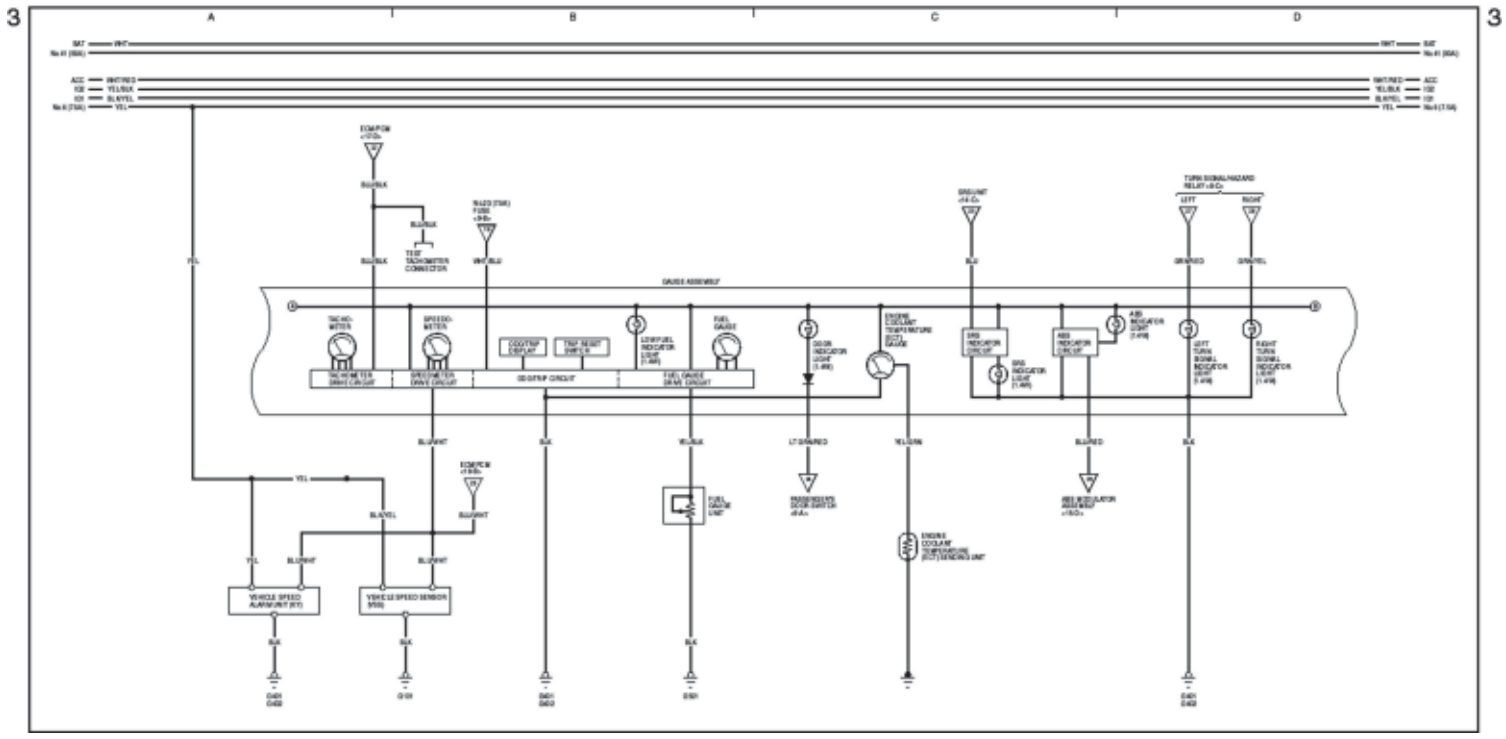
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

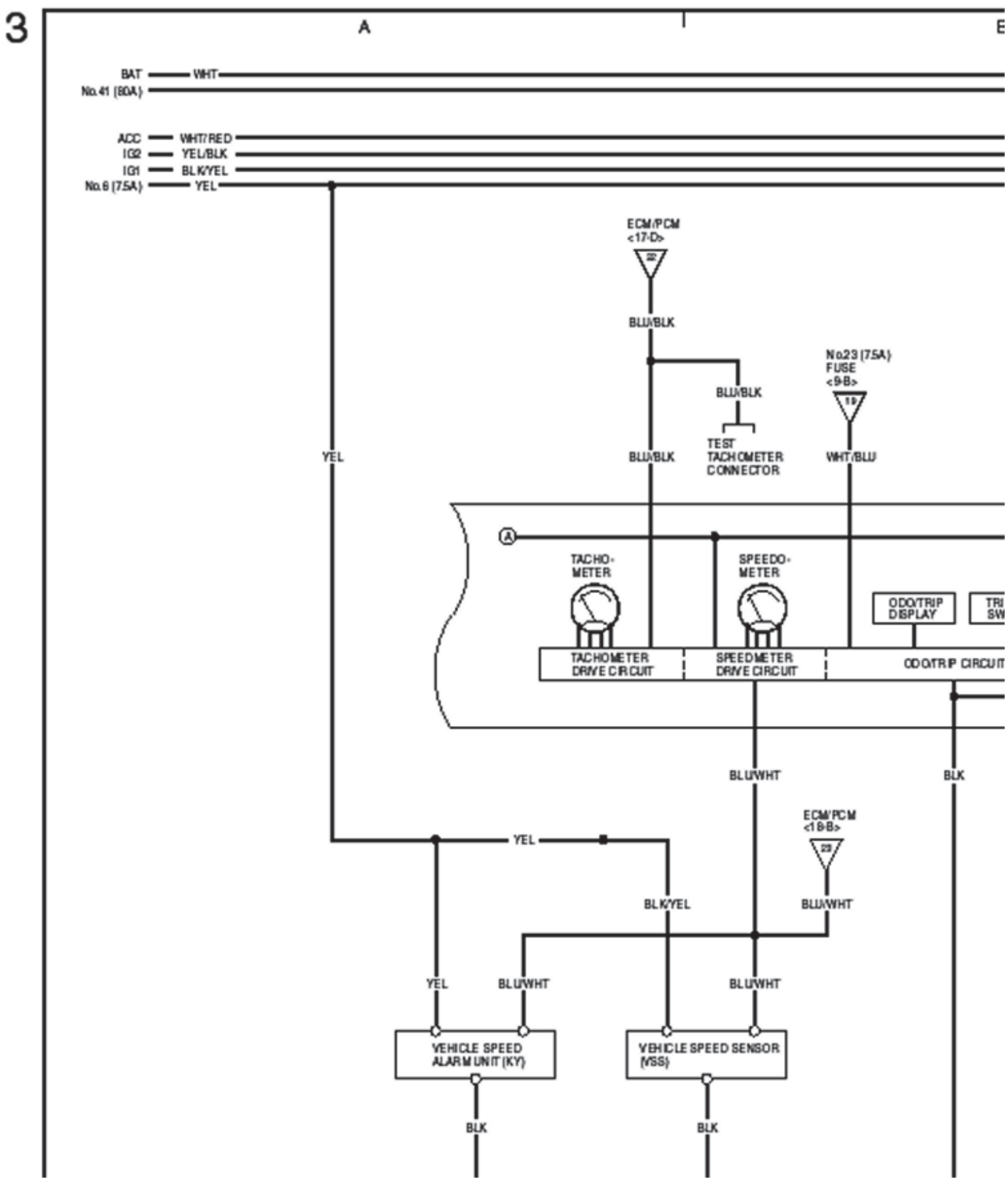
BLK

G401
G402

Wiring Diagrams

Indicators - Turn Signal Indicator





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

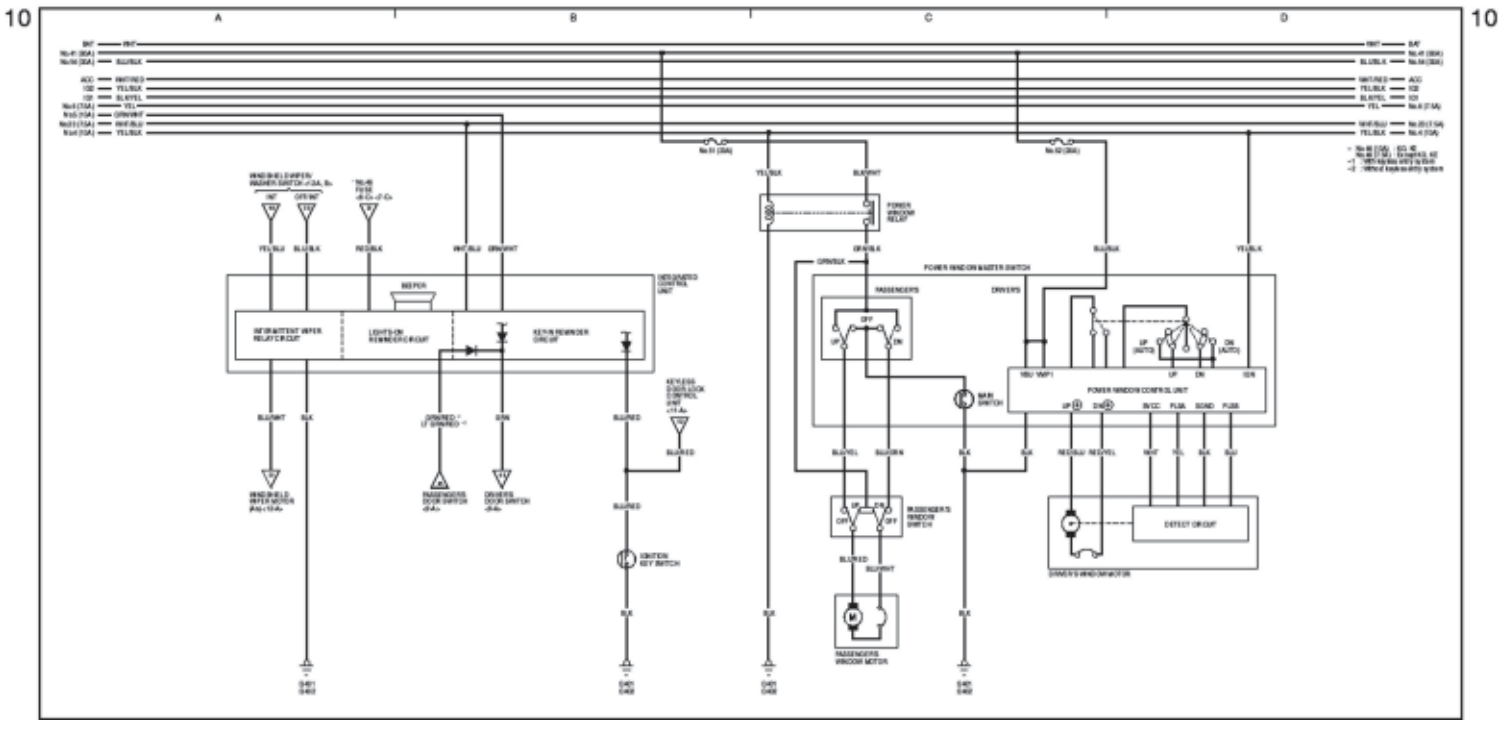
LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

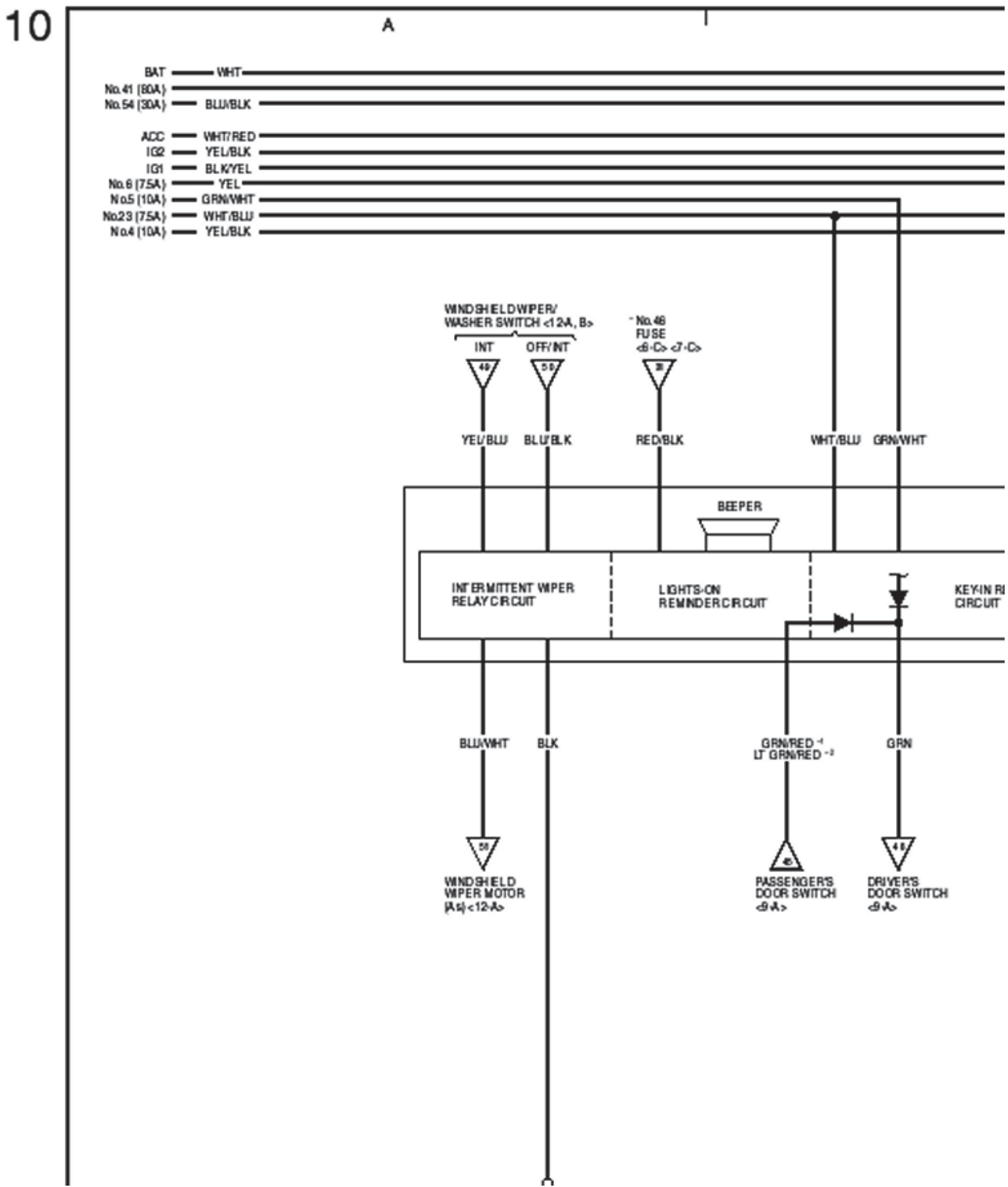
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

BLK

G401
G402

Wiring Diagrams
Integrated Control Unit





10

A

BAT — WHT
No.41 (80A) —
No.54 (30A) — BLU/BLK

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A) — WHT/BLU
No.4 (10A) — YEL/BLK

WINDSHIELD WIPER/
WASHER SWITCH <12A, B>
INT
OFF/INT
49
50
No.46
FUSE
<8-C> <7-C>
YEL/BLU
BLU/BLK
RED/BLK
WHT/BLU
GRN/WHT

BEEPER

INTERMITTENT WIPER
RELAY CIRCUIT
LIGHTS-ON
REMINDER CIRCUIT
KEY-IN R
CIRCUIT

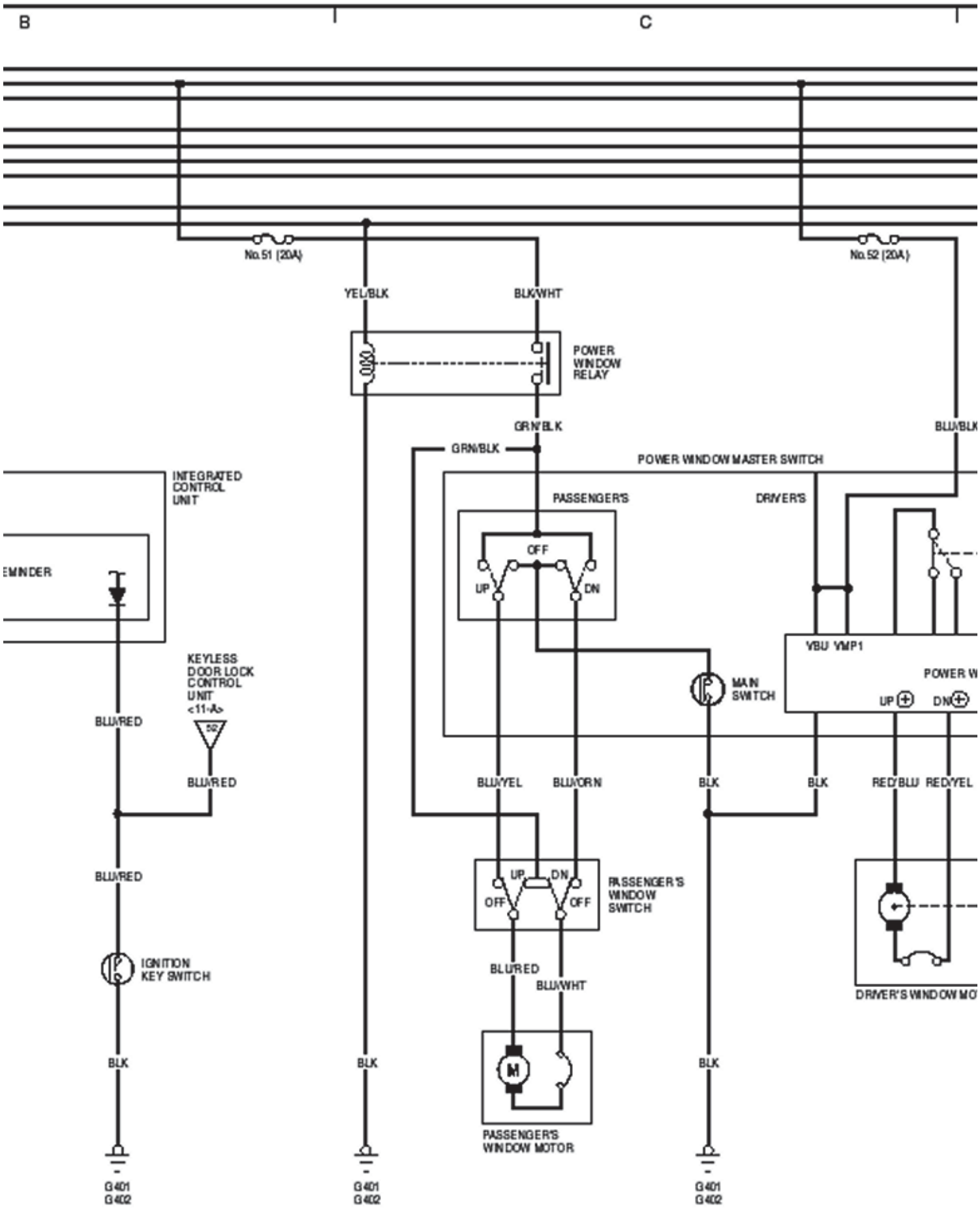
BLU/WHT
BLK
GRN/RED *1
LT GRN/RED *2
GRN
56
45
46
WINDSHIELD
WIPER MOTOR
(Hi) <12-A>
PASSENGER'S
DOOR SWITCH
<9-A>
DRIVER'S
DOOR SWITCH
<9-A>

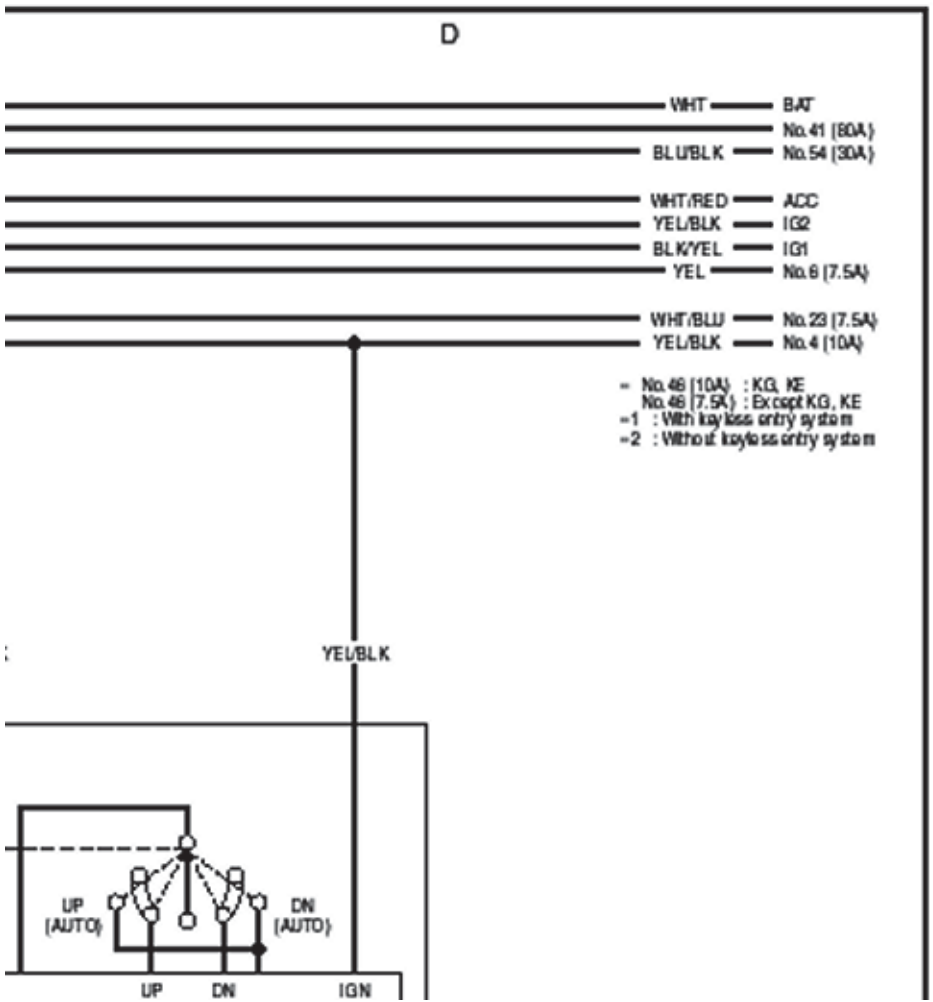
G401
G402

B

C

No.51 (20A)
No.52 (20A)
YEL/BLK
BLK/WHT
POWER
WINDOW
RELAY
GRN/BLK
GRN/BLK
BLU/BLK
POWER WINDOW MASTER SWITCH
INTEGRATED
CONTROL
UNIT
PASSENGER'S
DRIVER'S
OFF
UP
DN
YBU YMP1


B
C
No.51 (20A)
No.52 (20A)
YEL/BLK
BLK/WHT
POWER WINDOW RELAY
GRN/BLK
GRN/BLK
BLU/BLK
POWER WINDOW MASTER SWITCH
INTEGRATED CONTROL UNIT
PASSENGER'S
DRIVER'S
OFF
UP
DN
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
MAIN SWITCH
BLU/RED
BLU/RED
BLU/RED
BLU/YEL
BLU/ORN
BLK
BLK
RED/BLU
RED/YEL
IGNITION KEY SWITCH
PASSENGER'S WINDOW SWITCH
BLU/RED
BLU/WHT
BLK
BLK
BLK
PASSENGER'S WINDOW MOTOR
G401
G402
G401
G402
G401
G402


D
WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
*: No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
YEL/BLK
UP (AUTO)
DN (AUTO)
UP
DN
IGN

D

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system

YEL/BLK

UP (AUTO)
DN (AUTO)

UP
DN
IGN

INDOW CONTROL UNIT

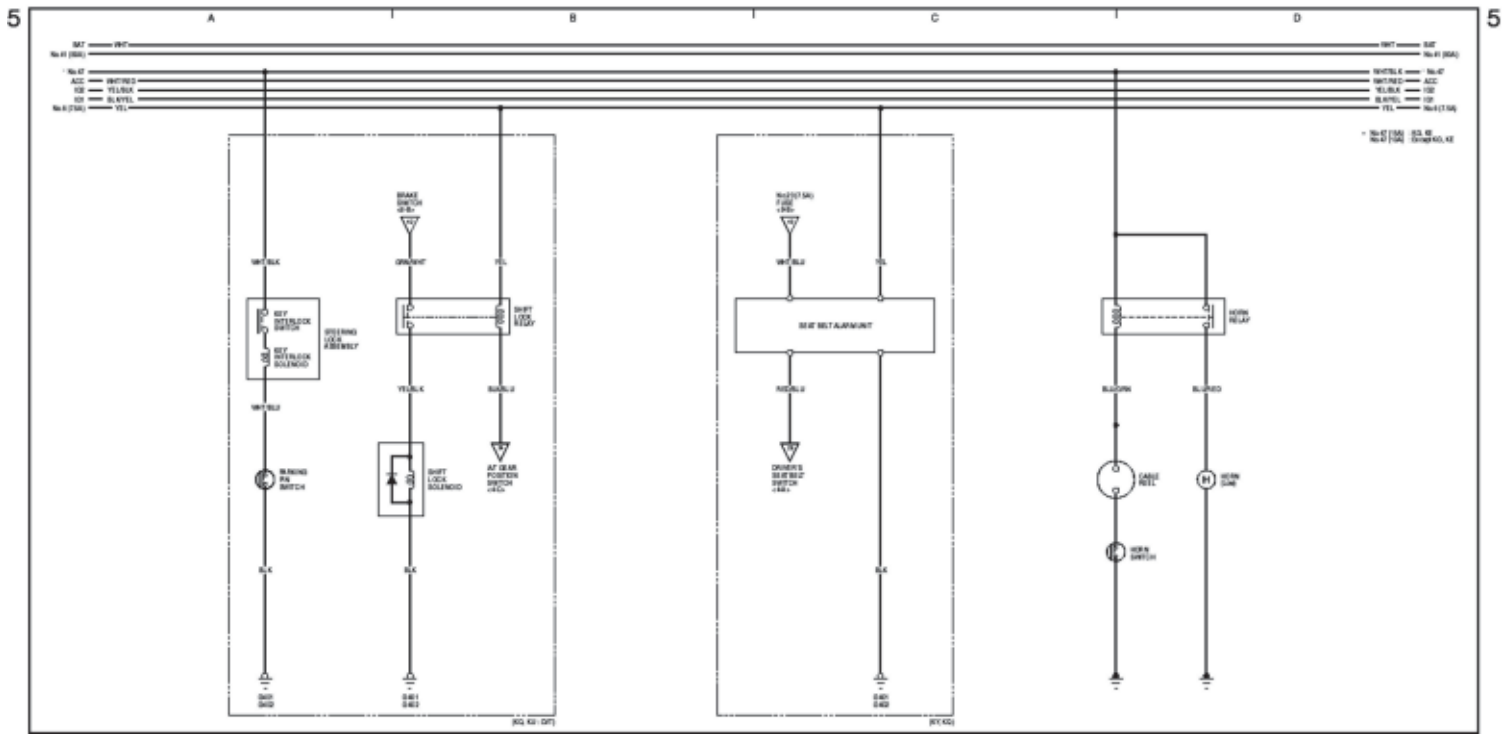
SVCC
PLSA
SGND
PLSB

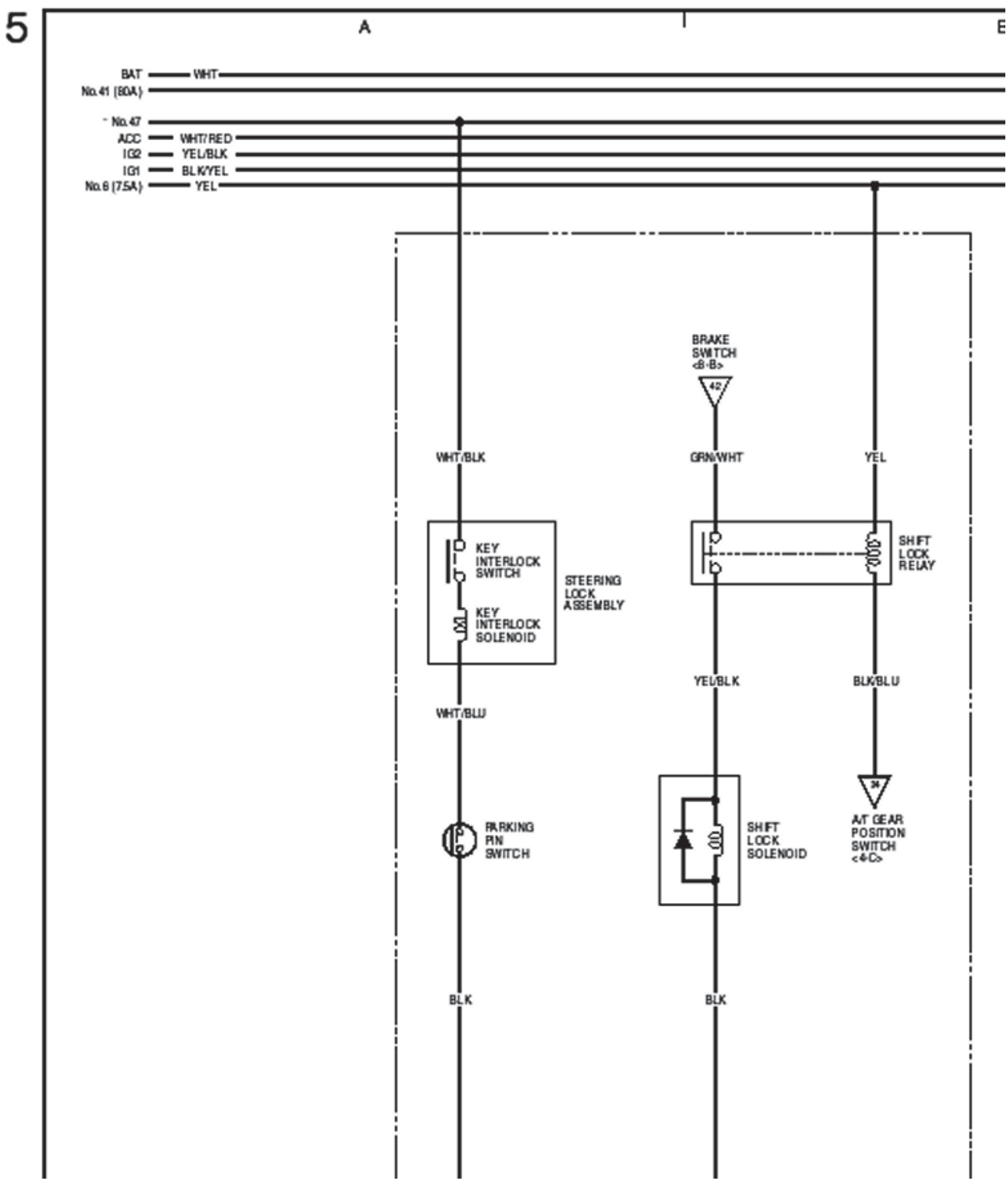
WHT
YEL
BLK
BLU

DETECT CIRCUIT

TOR

Wiring Diagrams
Interlock System





5

A

B

BAT — WHT
No.41 (60A)
No.47
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BRAKE SWITCH <B-B>
42

WHT/BLK
GRN/WHT
YEL

KEY INTERLOCK SWITCH
KEY INTERLOCK SOLENOID
STEERING LOCK ASSEMBLY

SHIFT LOCK RELAY

YEL/BLK
BLK/BLU

WHT/BLU

PARKING PIN SWITCH

SHIFT LOCK SOLENOID

34
A/T GEAR POSITION SWITCH <4-C>

BLK
BLK

G401
G402
G401
G402

(KQ, KU : CVT)

C

No.23 (7.5A) FUSE <9-B>
43

WHT/BLU
YEL

SEAT BELT ALARM UNIT

C

No.23 (7.5A)
FUSE
<9-B>

43

WHT/BLU

YEL

SEAT BELT ALARM UNIT

RED/BLU

29

DRIVER'S
SEAT BELT
SWITCH
<4A>

BLK

G401
G402

(KY, KQ)

BLU/GRN

HOR
SW

D

5

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

HORN
RELAY

D

5

WHT — BAT
No. 41 (60A)

WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE

HORN
RELAY

BLU/RED

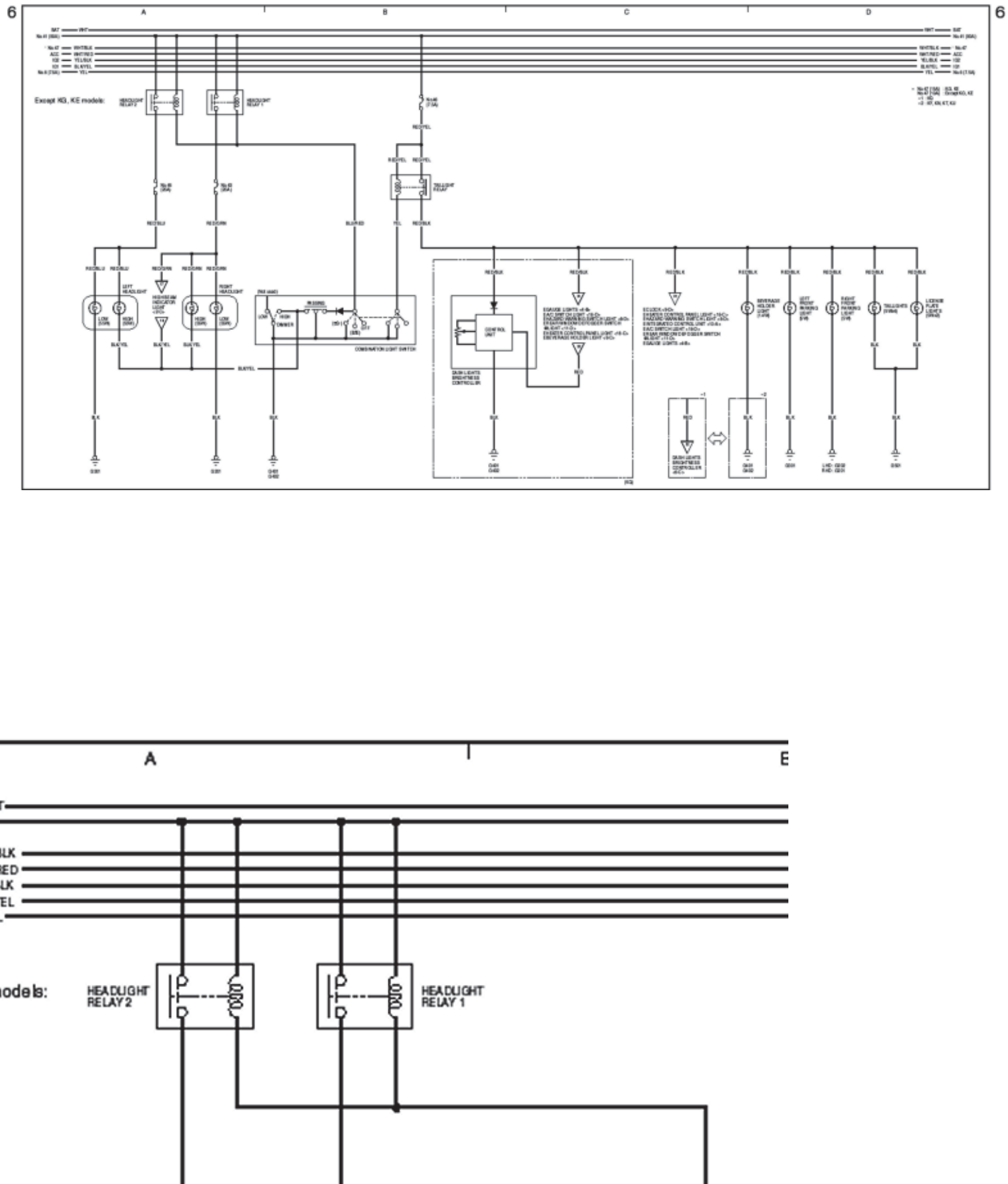
ABLE
EEL

H

HORN
(Low)

IN
TCH

Wiring Diagrams
Lighting System



6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

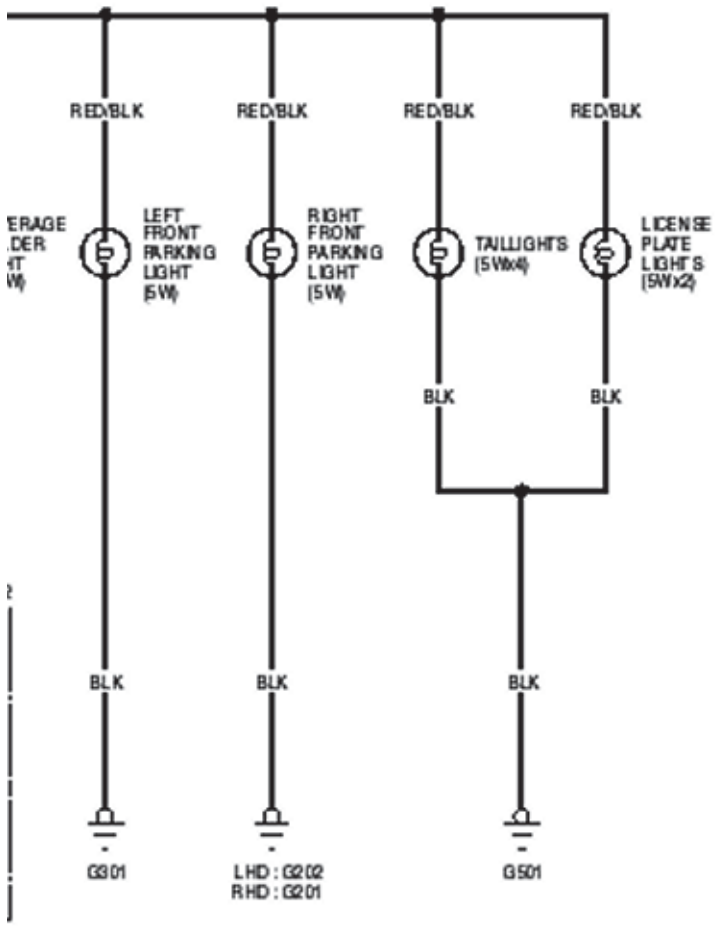
D

6

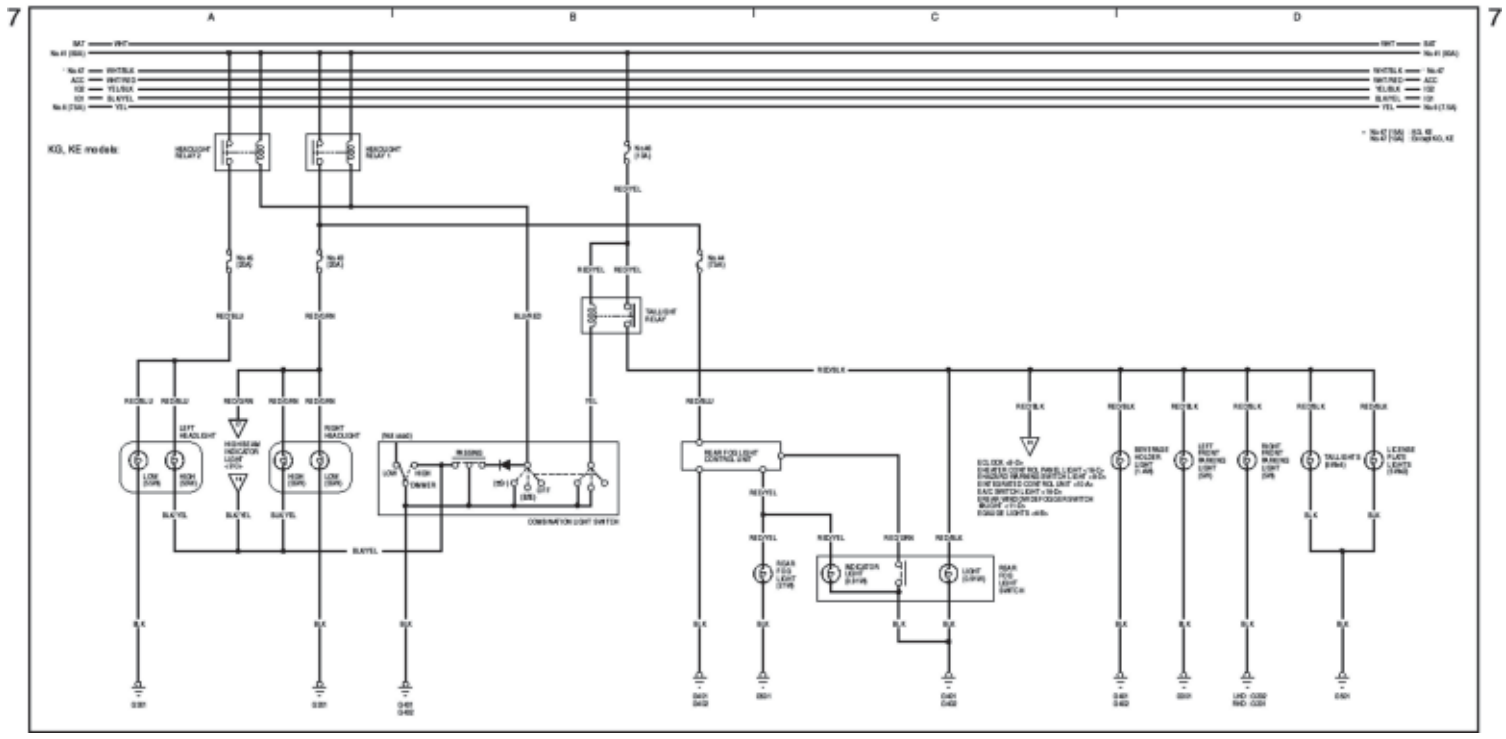
WHT — BAT
No.41 (80A)

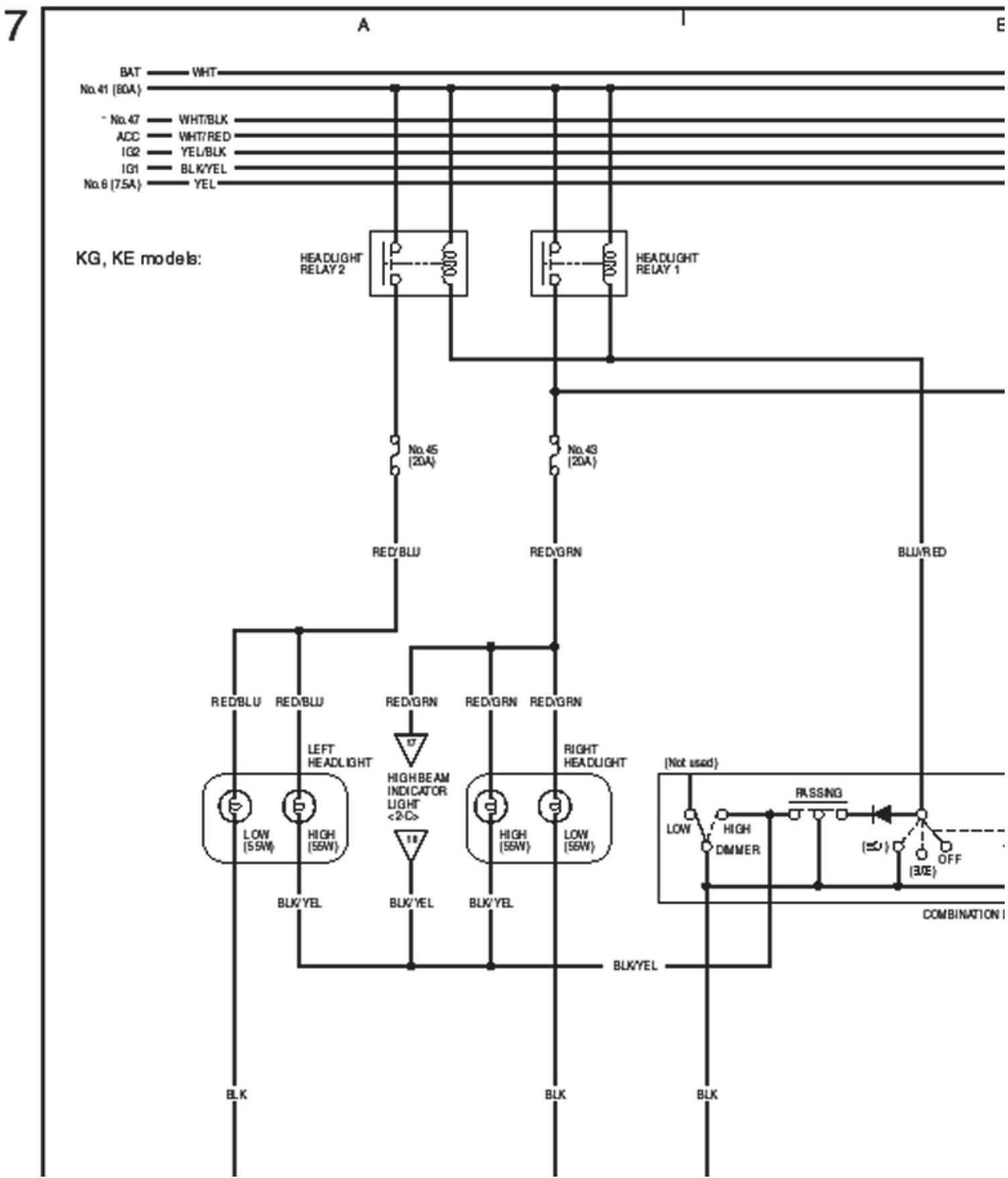
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams
Lighting System





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

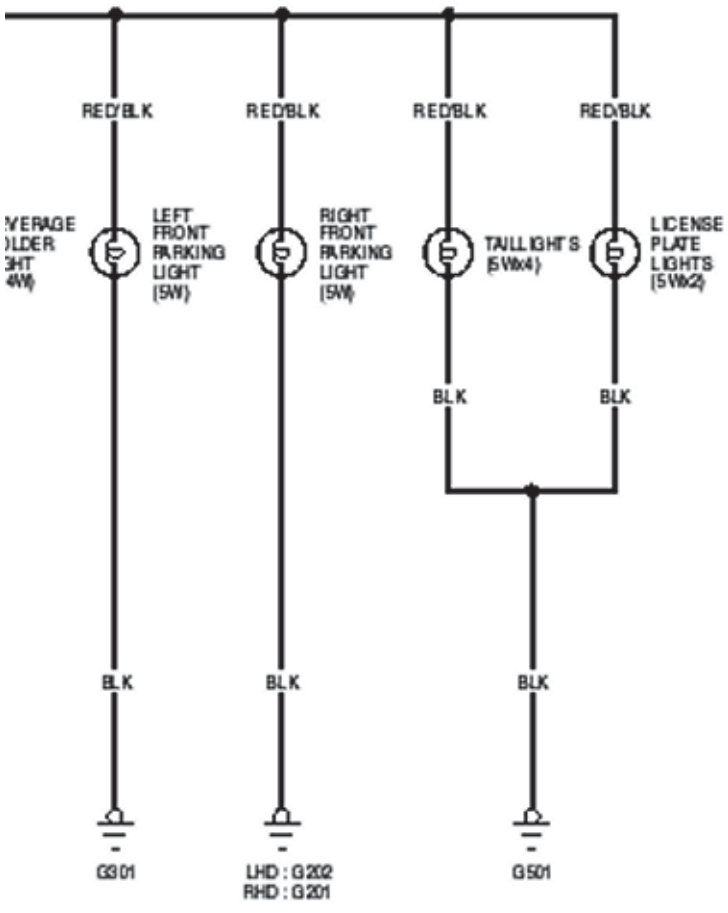
D

7

WHT — BAT
No. 41 (80A)

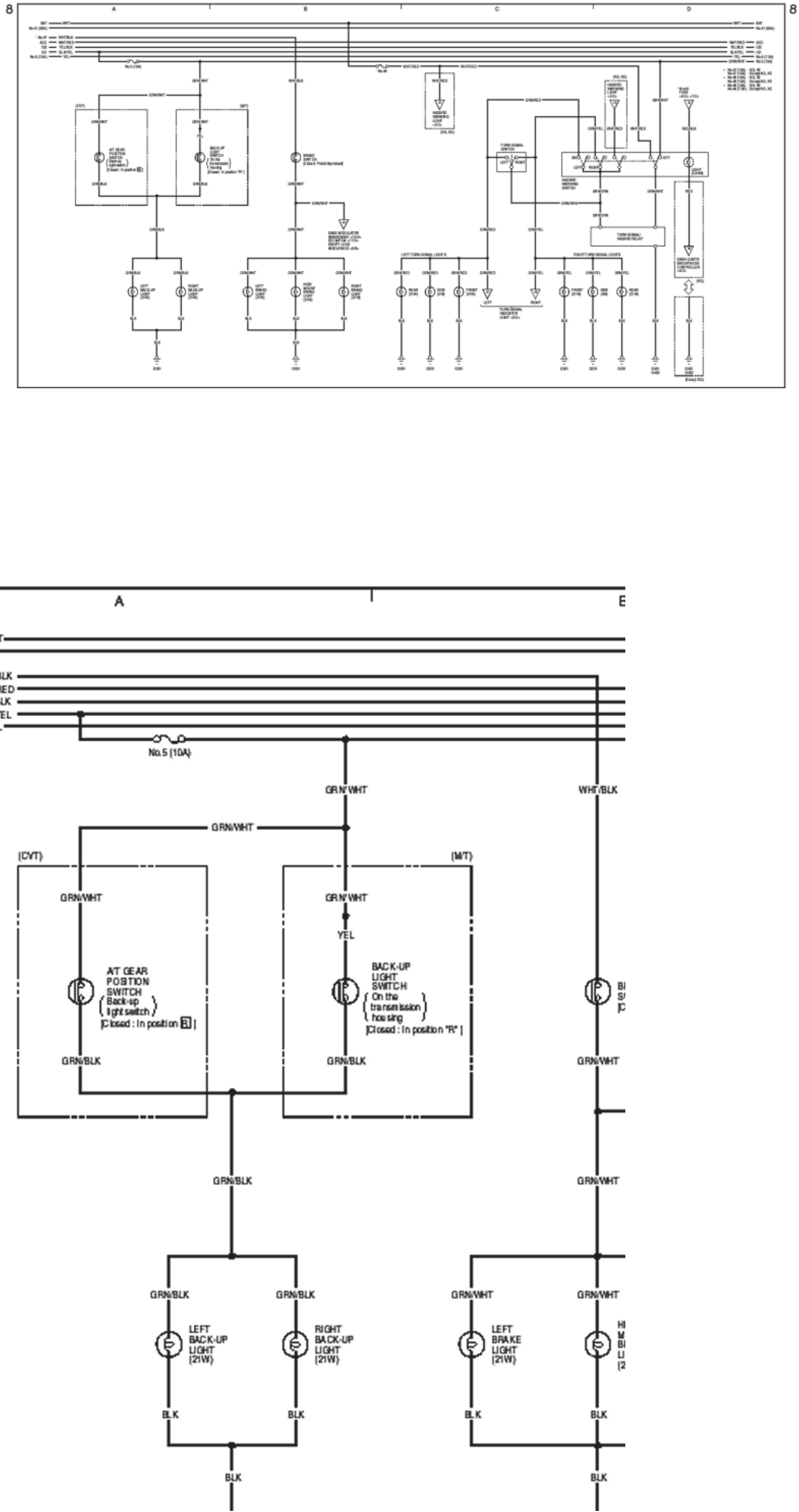
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Exterior - Back-up Lights



8

A

B

C

BAT — WHT
No. 41 (80A)

No. 47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No. 6 (7.5A) — YEL

No. 5 (10A)

GRN/WHT

WHT/BLK

GRN/WHT

(CVT)

(M/T)

GRN/WHT

GRN/WHT

YEL

A/T GEAR POSITION SWITCH
(Back-up light switch)
(Closed : In position R)

BACK-UP LIGHT SWITCH
(On the transmission housing)
(Closed : In position "R")

GRN/BLK

GRN/BLK

GRN/WHT

GRN/BLK

GRN/WHT

GRN/BLK

GRN/BLK

GRN/WHT

GRN/WHT

LEFT BACK-UP LIGHT (21W)

RIGHT BACK-UP LIGHT (21W)

LEFT BRAKE LIGHT (21W)

BLK

BLK

BLK

BLK

BLK

G501

G501

WHT/RED

WHT/RED

No. 49

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

C

WHT/RED

No.49

WHT/RED

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

GRN/ORN

RAKE
WITCH
losed: Pedal depressed)

GRN/WHT

42

EABS MODULATOR
@ASSEMBLY <15-D>
EECM/PCM <17-D>
ESHIFT LOCK
@SOLENOID <5-B>

GRN/RED

GRN/YEL

LEFT TURN SIGNAL LIGHTS

RIGHT TURN SIGNAL

GRN/WHT

GH
OUNT
RAKE
GHT
1W)

RIGHT BRAKE LIGHT (21W)

BLK

GRN/RED

GRN/RED

GRN/RED

GRN/RED

GRN/YEL

GRN/YEL

GRN/YEL

REAR (21W)

SIDE (5W)

FRONT (21W)

27

LEFT

28

RIGHT

FRONT (21W)

SIDE (5W)

TURN SIGNAL INDICATOR LIGHT <3-D>

BLK

BLK

BLK

BLK

BLK

G501

G301

G301

G201

G201

D

8

WHT

BAT

No.41 (80A)

WHT/RED

ACC

YEL/BLK

IG2

BLK/YEL

IG1

YEL

No.6 (7.5A)

GRN/WHT

No.5 (10A)

- No.47 (15A) : KG, KE
  No.47 (10A) : Except KG, KE
- No.49 (15A) : KG, KE
  No.49 (10A) : Except KG, KE
- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE

(KG, KE)

HAZARD WARNING LIGHT <2-C>

10

WHT/RED

GRN/WHT

No.46 FUSE <6-C> <7-C>

30

RED/BLK

WHT/RED

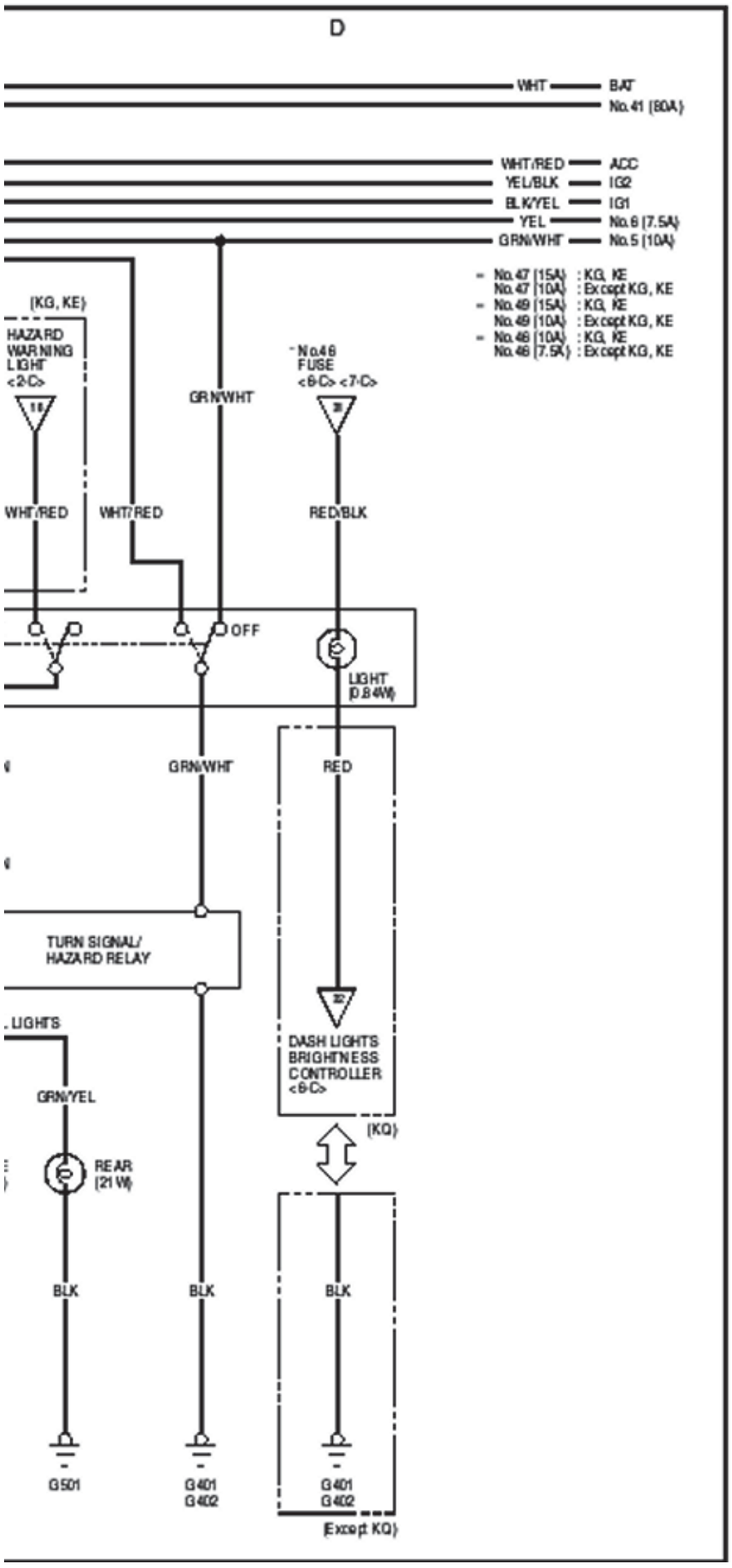
OFF

LIGHT (3.8W)

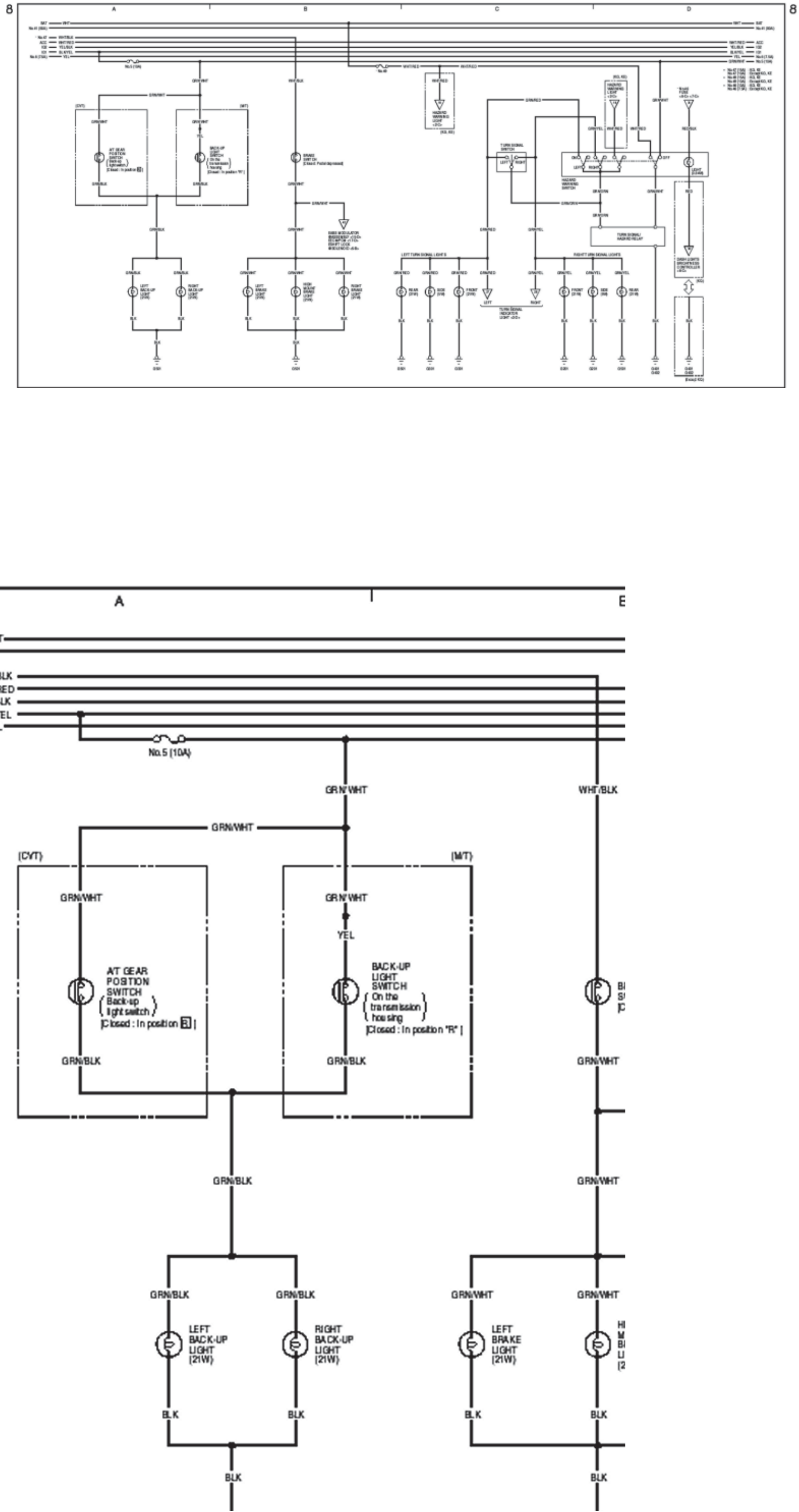
GRN/WHT

RED

D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
* No.49 (15A) : KG, KE
No.49 (10A) : Except KG, KE
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
(KG, KE)
HAZARD WARNING LIGHT <2-C>
* No.46 FUSE
<6-C> <7-C>
GRN/WHT
WHT/RED
WHT/RED
RED/BLK
OFF
LIGHT (3.8W)
GRN/WHT
RED
TURN SIGNAL/ HAZARD RELAY
LIGHTS
GRN/YEL
REAR (21W)
DASH LIGHTS BRIGHTNESS CONTROLLER <6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams
Lights, Exterior - Brake Lights



8

A

B

C

BAT — WHT
No. 41 (80A)

No. 47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No. 6 (7.5A) — YEL

No. 5 (10A)

GRN/WHT

WHT/BLK

GRN/WHT

(CVT)

(M/T)

GRN/WHT

GRN/WHT

YEL

A/T GEAR POSITION SWITCH
(Back-up light switch)
(Closed : In position R)

BACK-UP LIGHT SWITCH
(On the transmission housing)
(Closed : In position "R")

GRN/BLK

GRN/BLK

GRN/WHT

GRN/BLK

GRN/WHT

GRN/BLK

GRN/BLK

GRN/WHT

GRN/WHT

LEFT BACK-UP LIGHT (21W)

RIGHT BACK-UP LIGHT (21W)

LEFT BRAKE LIGHT (21W)

BLK

BLK

BLK

BLK

BLK

G501

G501

WHT/RED

WHT/RED

No. 49

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

C

WHT/RED

No.49

WHT/RED

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

GRN/ORN

RAKE
WITCH
losed: Pedal depressed)

GRN/WHT

42

EABS MODULATOR
@ASSEMBLY <15-D>
EECM/PCM <17-D>
ESHIFT LOCK
@SOLENOID <5-B>

GRN/RED

GRN/YEL

LEFT TURN SIGNAL LIGHTS

RIGHT TURN SIGNAL

GRN/WHT

GH
OUNT
RAKE
GHT
1W)

RIGHT BRAKE LIGHT (21W)

BLK

GRN/RED

GRN/RED

GRN/RED

GRN/RED

GRN/YEL

GRN/YEL

GRN/YEL

REAR (21W)

SIDE (5W)

FRONT (21W)

27

LEFT

28

RIGHT

FRONT (21W)

SIDE (5W)

TURN SIGNAL INDICATOR LIGHT <3-D>

BLK

BLK

BLK

BLK

BLK

G501

G301

G301

G201

G201

D

8

WHT

BAT

No.41 (80A)

WHT/RED

ACC

YEL/BLK

IG2

BLK/YEL

IG1

YEL

No.6 (7.5A)

GRN/WHT

No.5 (10A)

- No.47 (15A) : KG, KE
  No.47 (10A) : Except KG, KE
- No.49 (15A) : KG, KE
  No.49 (10A) : Except KG, KE
- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE

(KG, KE)

HAZARD WARNING LIGHT <2-C>

10

WHT/RED

GRN/WHT

No.46 FUSE <6-C> <7-C>

30

RED/BLK

WHT/RED

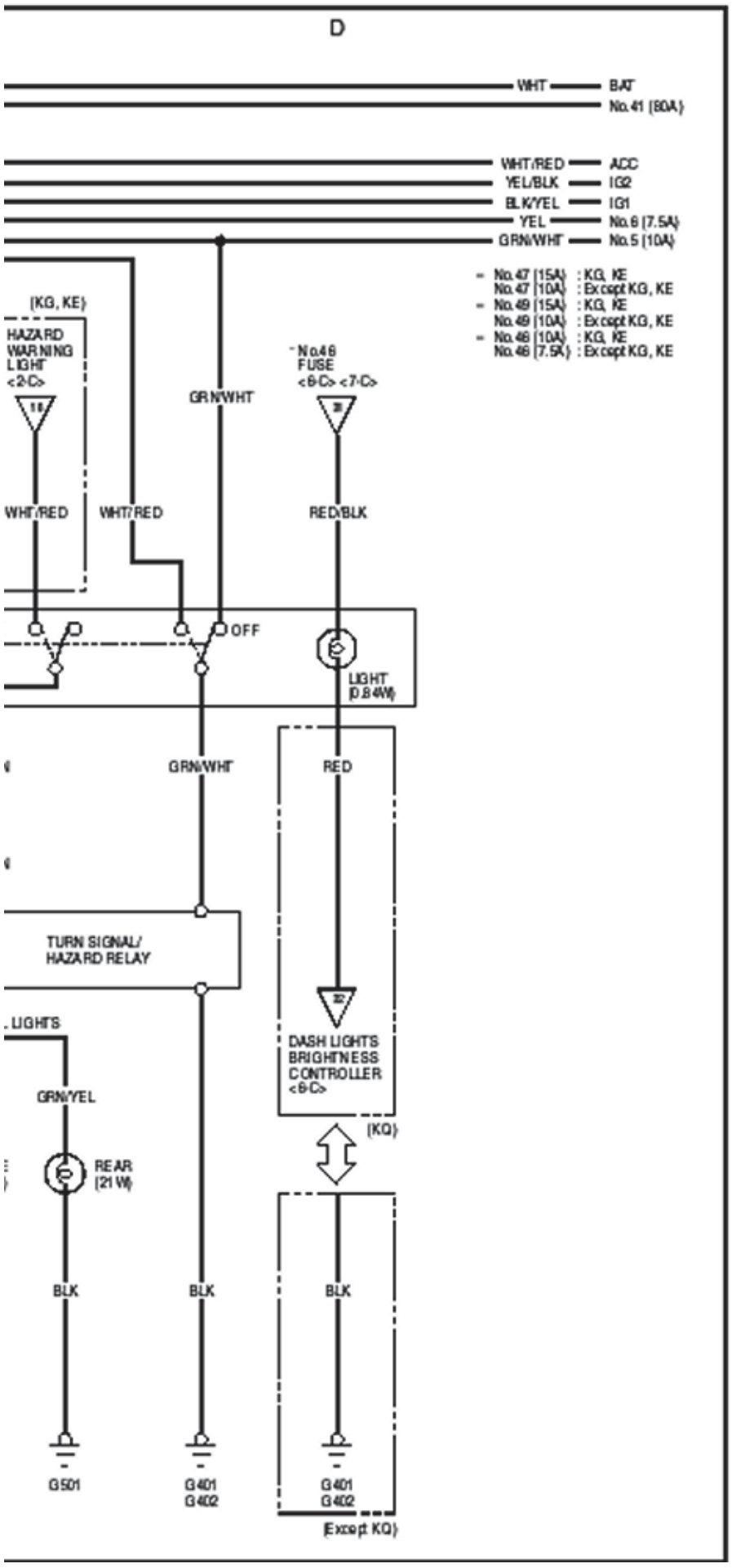
OFF

LIGHT (3.8W)

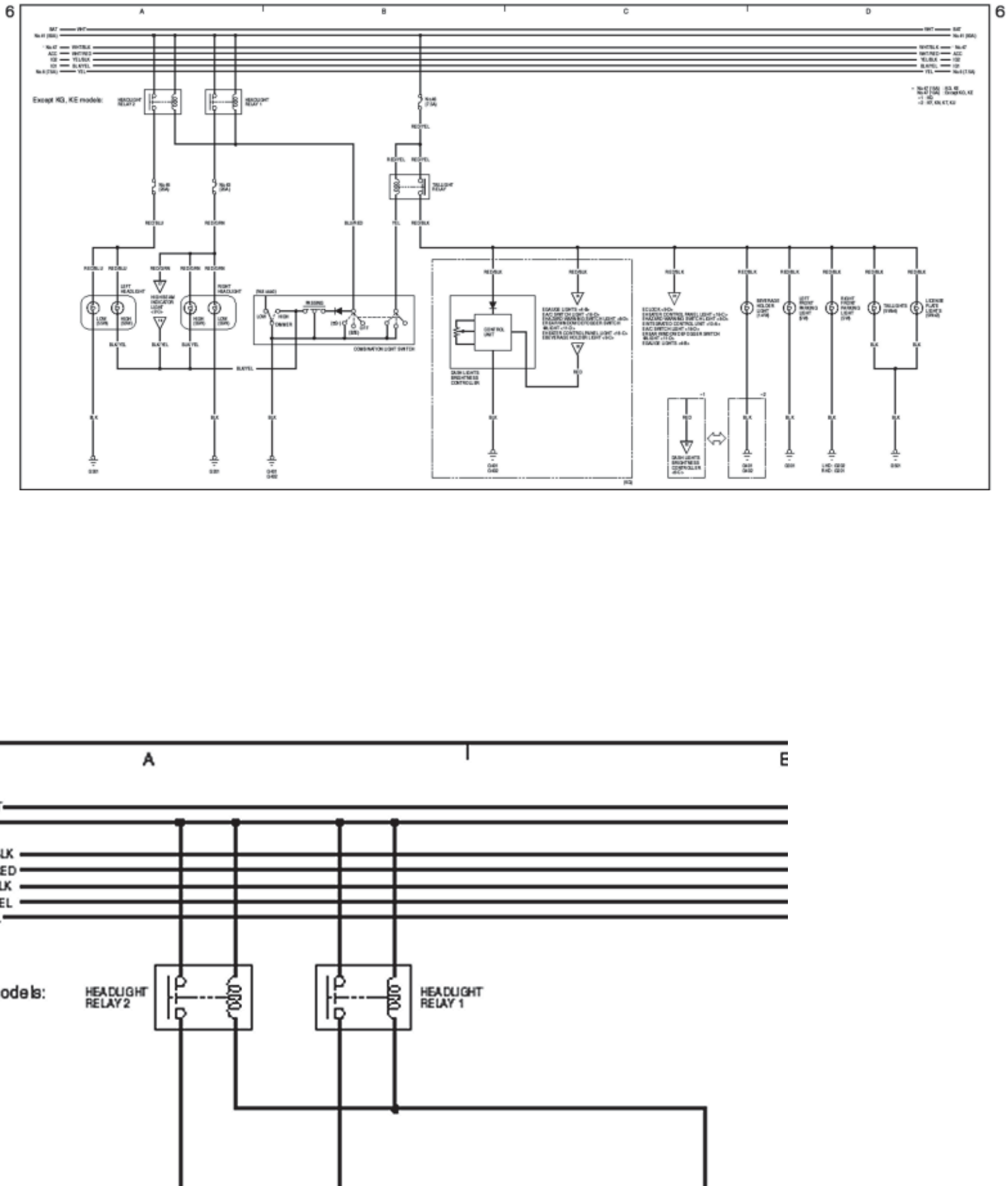
GRN/WHT

RED

D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
* No.49 (15A) : KG, KE
No.49 (10A) : Except KG, KE
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
(KG, KE)
HAZARD WARNING LIGHT <2-C>
* No.46 FUSE
<6-C> <7-C>
GRN/WHT
WHT/RED
WHT/RED
RED/BLK
OFF
LIGHT (3.8W)
GRN/WHT
RED
TURN SIGNAL/ HAZARD RELAY
LIGHTS
GRN/YEL
REAR (21W)
DASH LIGHTS BRIGHTNESS CONTROLLER <6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams
Lights, Exterior - Headlights



6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

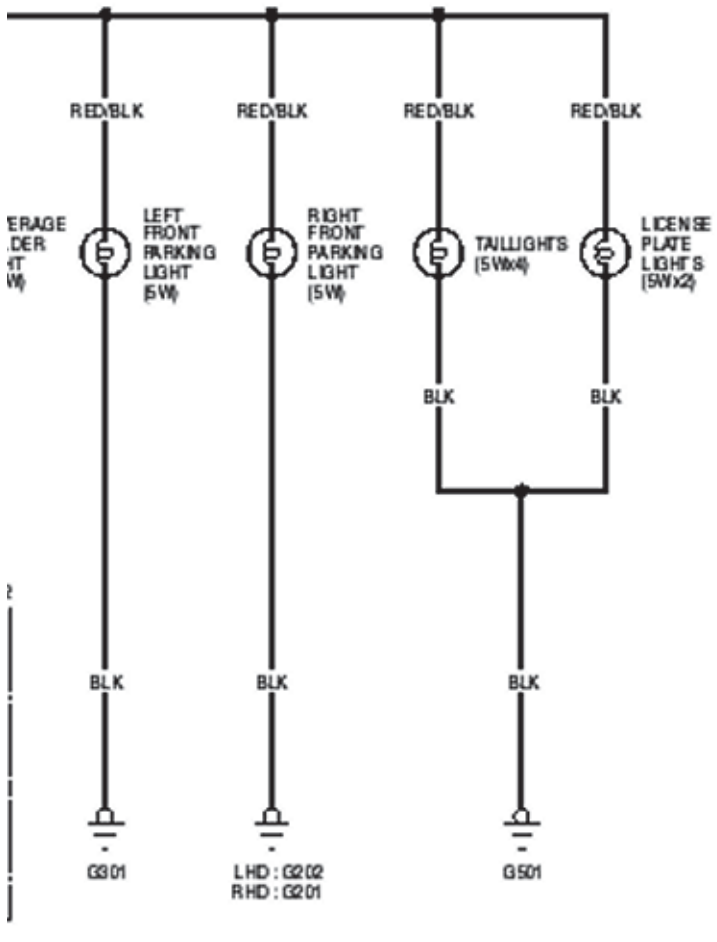
D

6

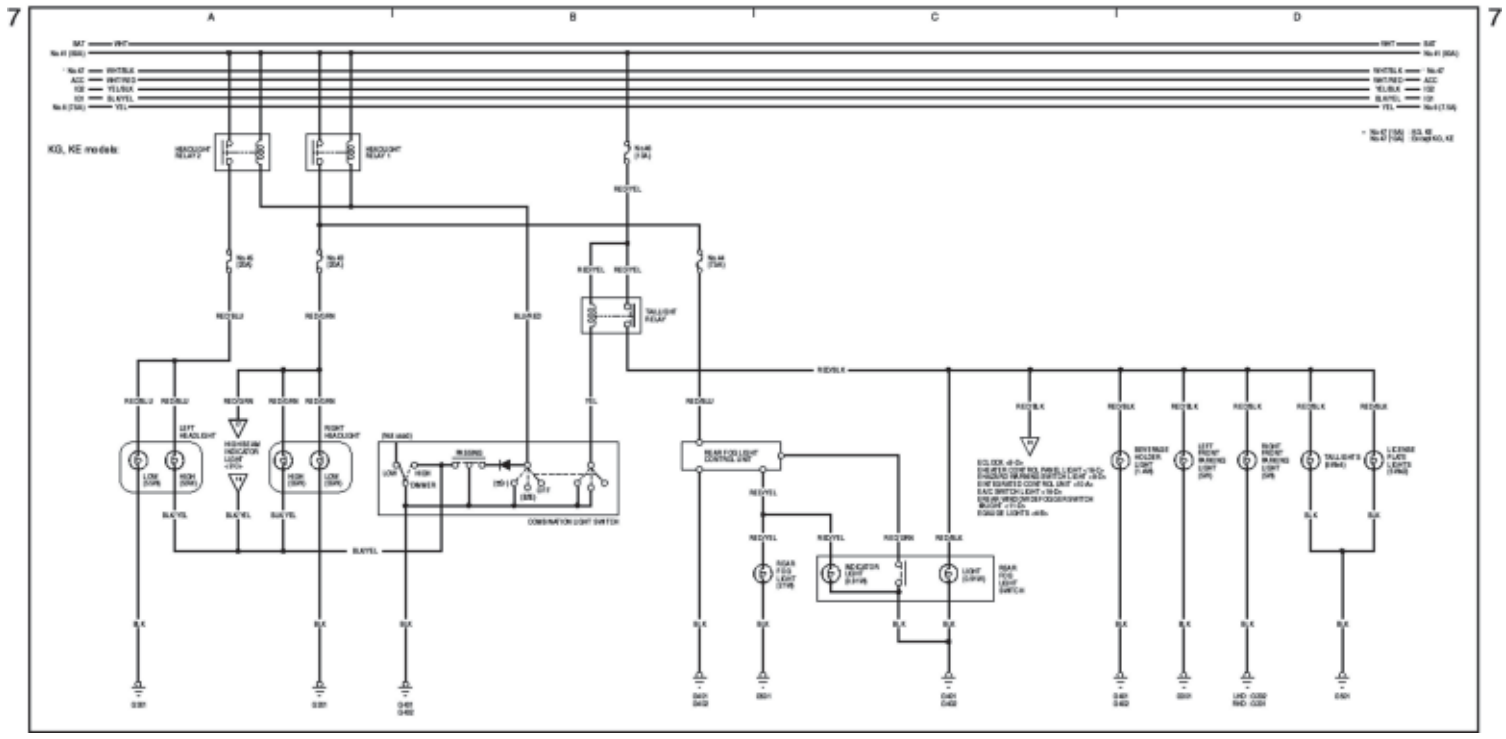
WHT — BAT
No.41 (80A)

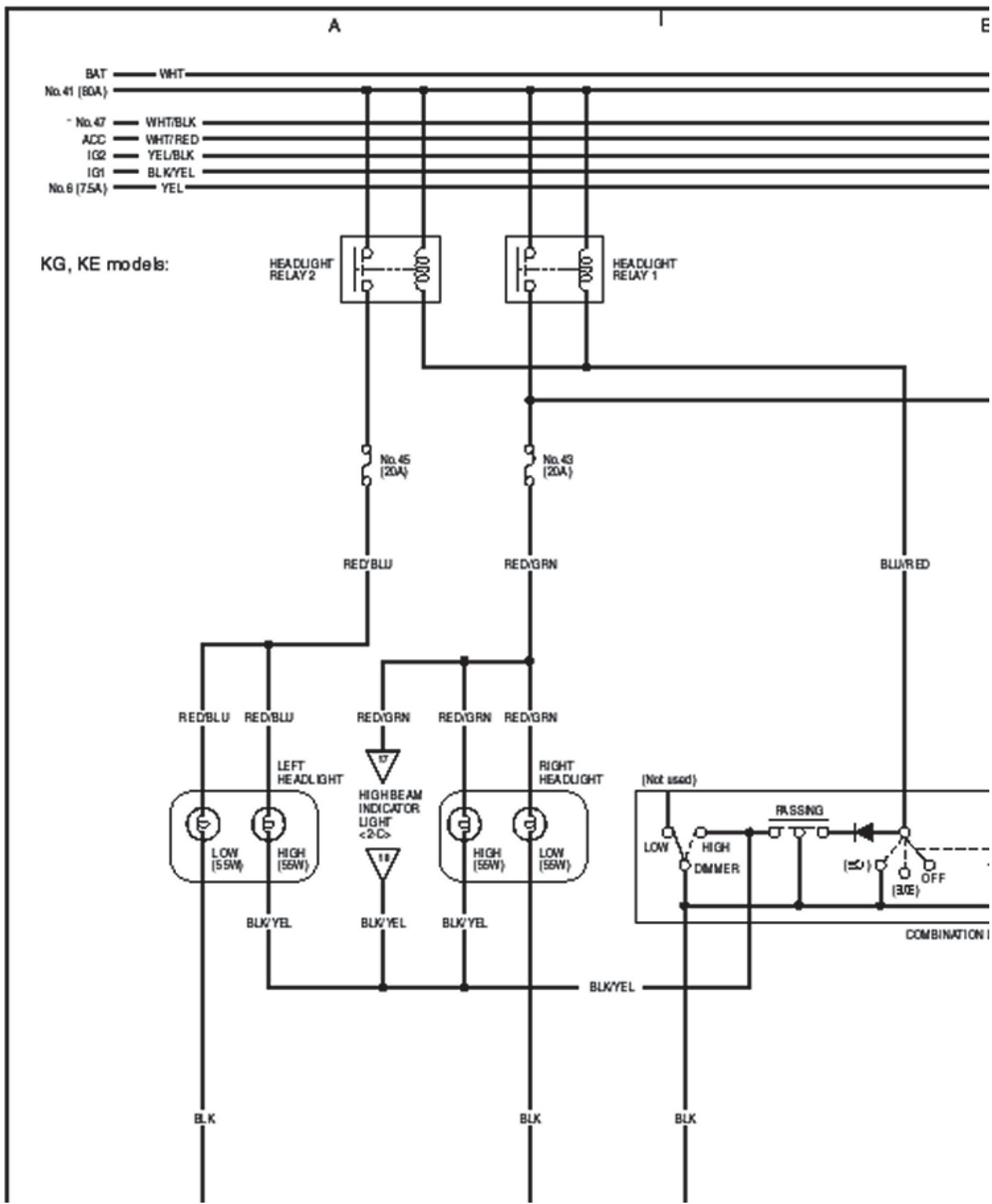
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams
Lights, Exterior - Headlights





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

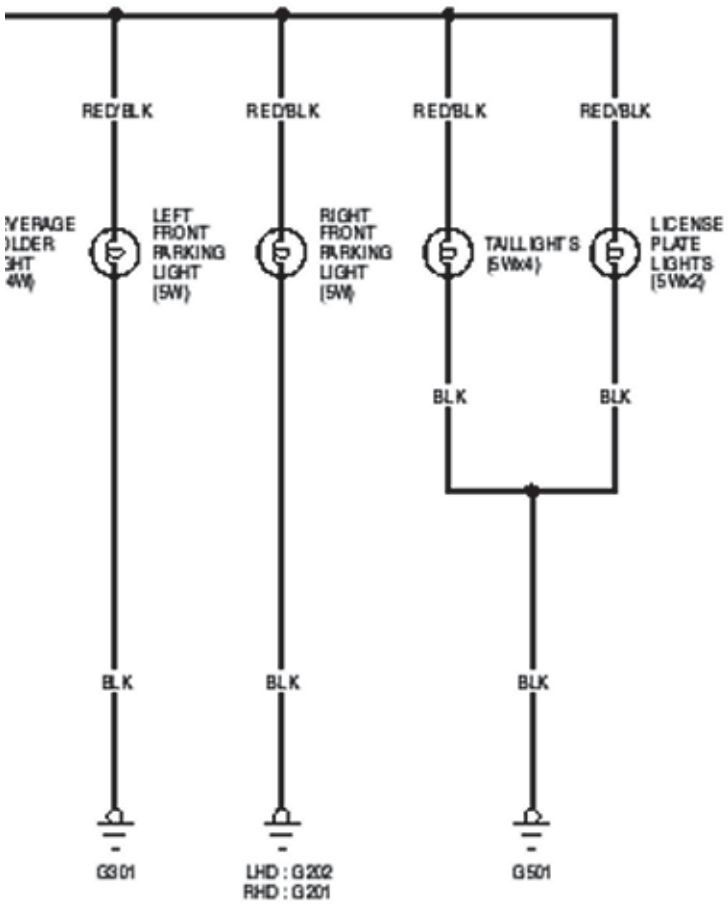
D

7

WHT — BAT
No. 41 (80A)

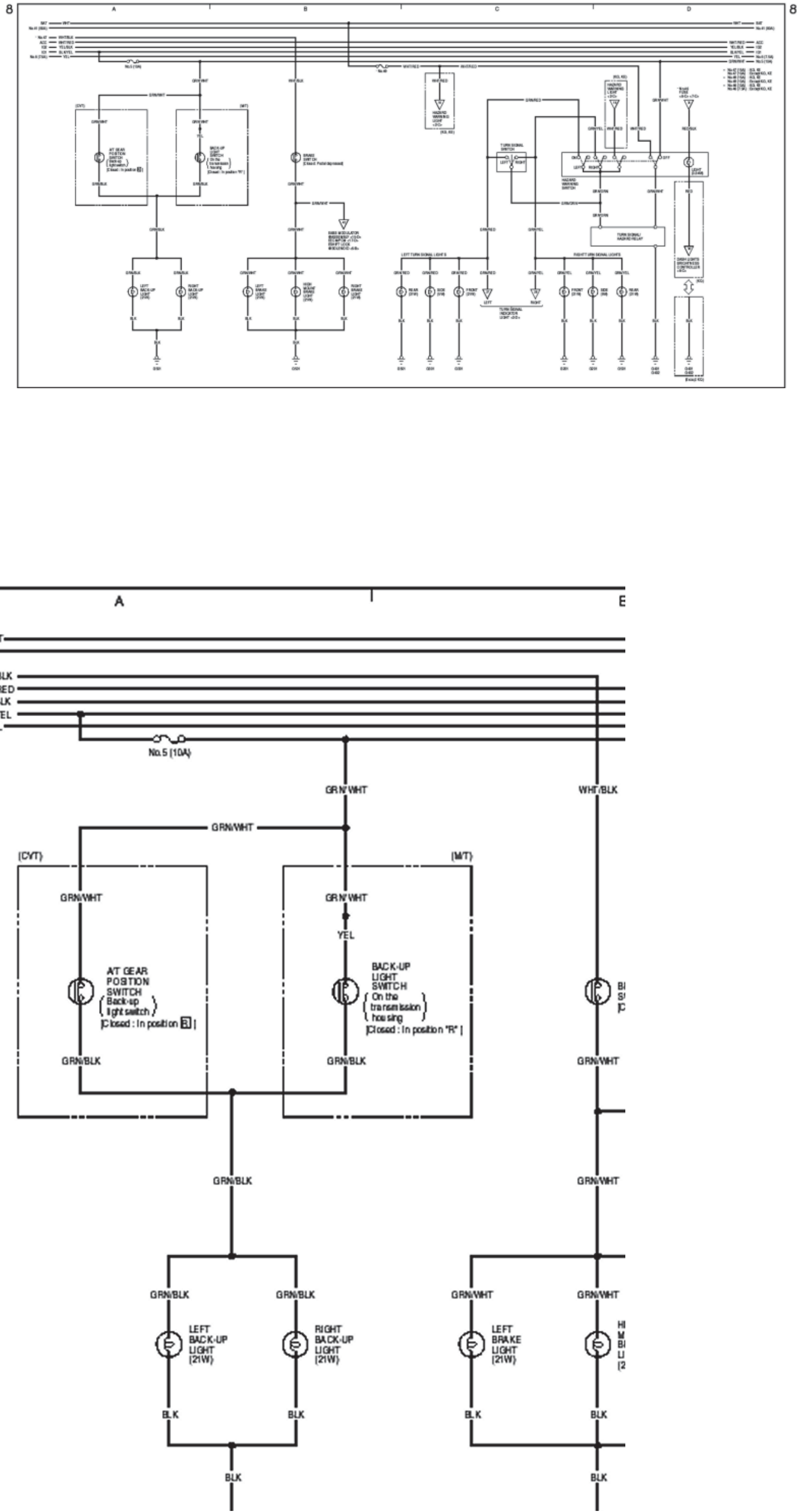
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Exterior - High Mount Brake Light



8

A

B

C

BAT — WHT
No. 41 (80A)

No. 47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No. 6 (7.5A) — YEL

No. 5 (10A)

GRN/WHT

WHT/BLK

GRN/WHT

(CVT)

(M/T)

GRN/WHT

GRN/WHT

YEL

A/T GEAR POSITION SWITCH
(Back-up light switch)
(Closed : In position R)

BACK-UP LIGHT SWITCH
(On the transmission housing)
(Closed : In position "R")

GRN/BLK

GRN/BLK

GRN/WHT

GRN/BLK

GRN/WHT

GRN/BLK

GRN/BLK

GRN/WHT

GRN/WHT

LEFT BACK-UP LIGHT (21W)

RIGHT BACK-UP LIGHT (21W)

LEFT BRAKE LIGHT (21W)

BLK

BLK

BLK

BLK

BLK

G501

G501

WHT/RED

WHT/RED

No. 49

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

C

WHT/RED

No.49

WHT/RED

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

GRN/ORN

RAKE
WITCH
losed: Pedal depressed)

GRN/WHT

42

EABS MODULATOR
@ASSEMBLY <15-D>
EECM/PCM <17-D>
ESHIFT LOCK
@SOLENOID <5-B>

GRN/RED

GRN/YEL

LEFT TURN SIGNAL LIGHTS

RIGHT TURN SIGNAL

GRN/WHT

GH
OUNT
RAKE
GHT
1W)

RIGHT BRAKE LIGHT (21W)

BLK

GRN/RED

GRN/RED

GRN/RED

GRN/RED

GRN/YEL

GRN/YEL

GRN/YEL

REAR (21W)

SIDE (5W)

FRONT (21W)

27

LEFT

28

RIGHT

FRONT (21W)

SIDE (5W)

TURN SIGNAL INDICATOR LIGHT <3-D>

BLK

BLK

BLK

BLK

BLK

G501

G301

G301

G201

G201

D

8

WHT

BAT

No.41 (80A)

WHT/RED

ACC

YEL/BLK

IG2

BLK/YEL

IG1

YEL

No.6 (7.5A)

GRN/WHT

No.5 (10A)

- No.47 (15A) : KG, KE
  No.47 (10A) : Except KG, KE
- No.49 (15A) : KG, KE
  No.49 (10A) : Except KG, KE
- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE

(KG, KE)

HAZARD WARNING LIGHT <2-C>

10

WHT/RED

GRN/WHT

No.46 FUSE <6-C> <7-C>

30

RED/BLK

WHT/RED

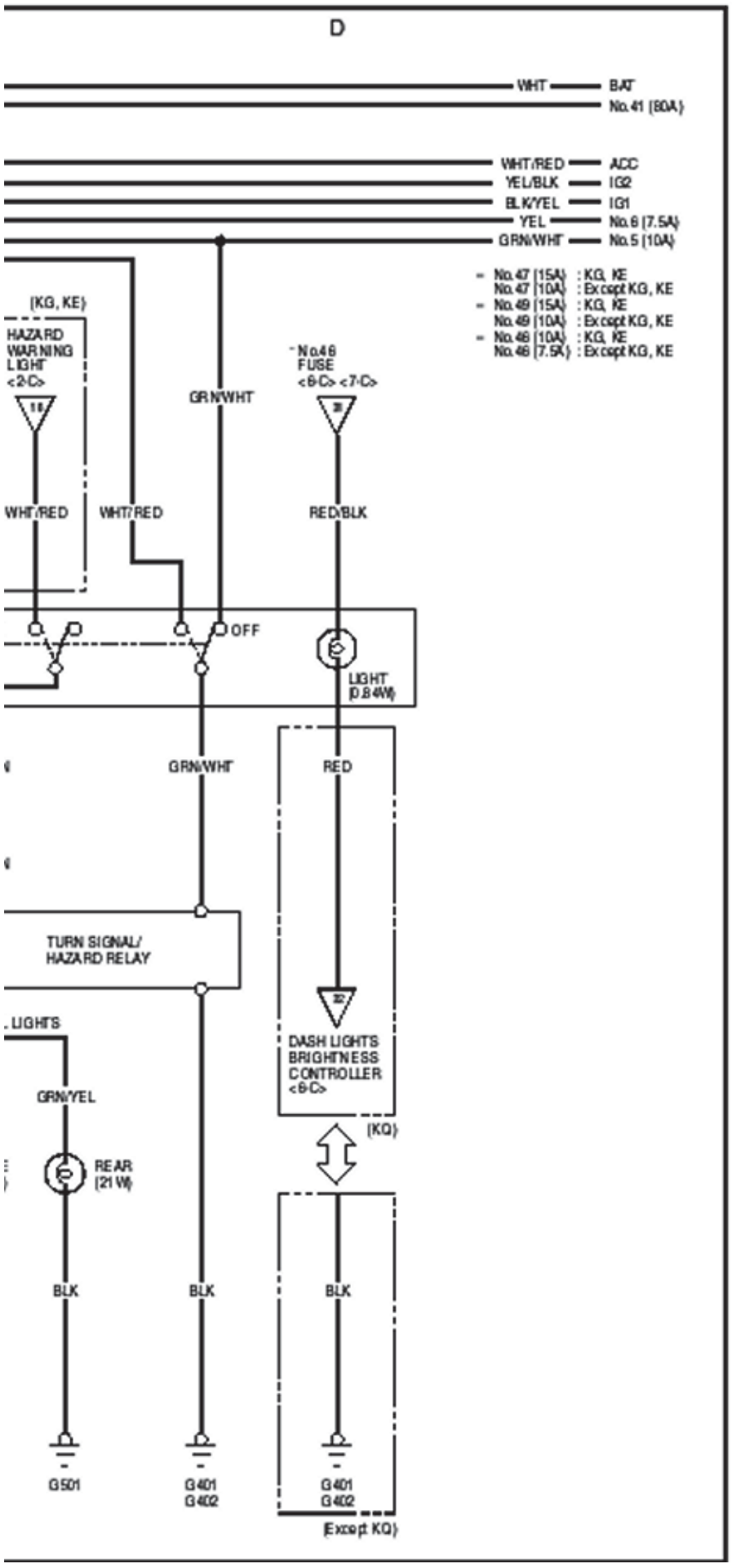
OFF

LIGHT (3.8W)

GRN/WHT

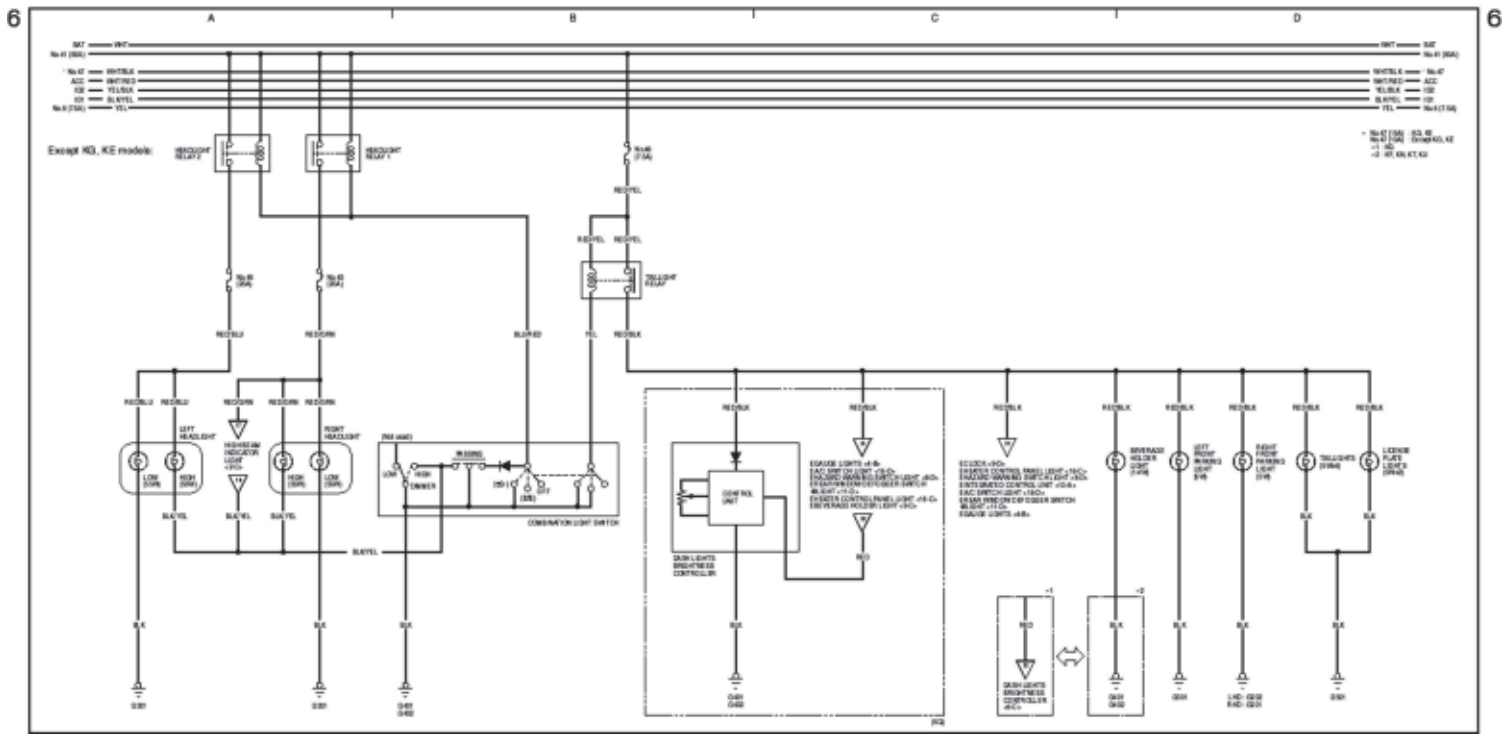
RED

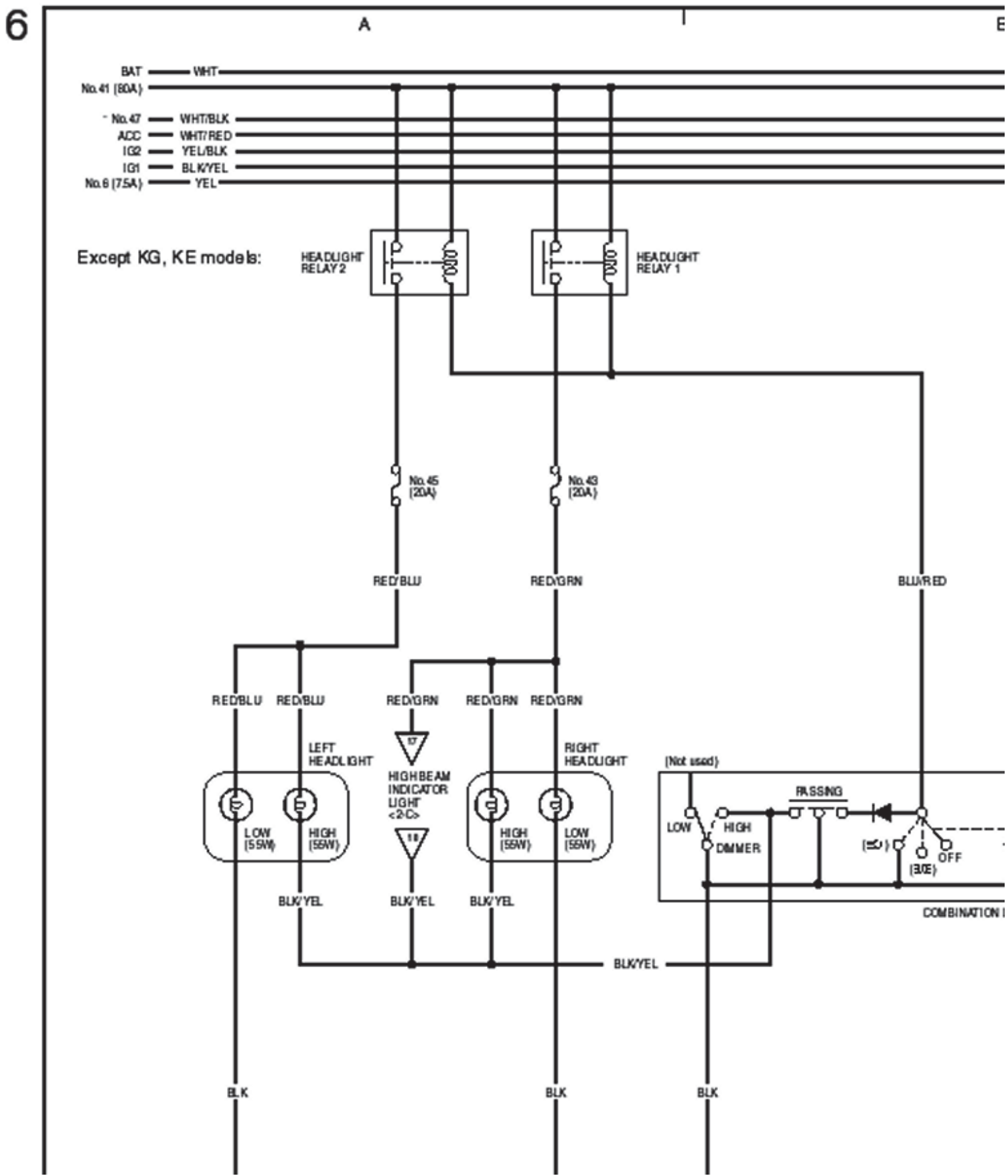
D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
* No.49 (15A) : KG, KE
No.49 (10A) : Except KG, KE
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
(KG, KE)
HAZARD WARNING LIGHT <2-C>
* No.46 FUSE
<6-C> <7-C>
GRN/WHT
WHT/RED
WHT/RED
RED/BLK
OFF
LIGHT (3.8W)
GRN/WHT
RED
TURN SIGNAL/ HAZARD RELAY
LIGHTS
GRN/YEL
REAR (21W)
DASH LIGHTS BRIGHTNESS CONTROLLER <6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams

Lights, Exterior - License Plate Lights





6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

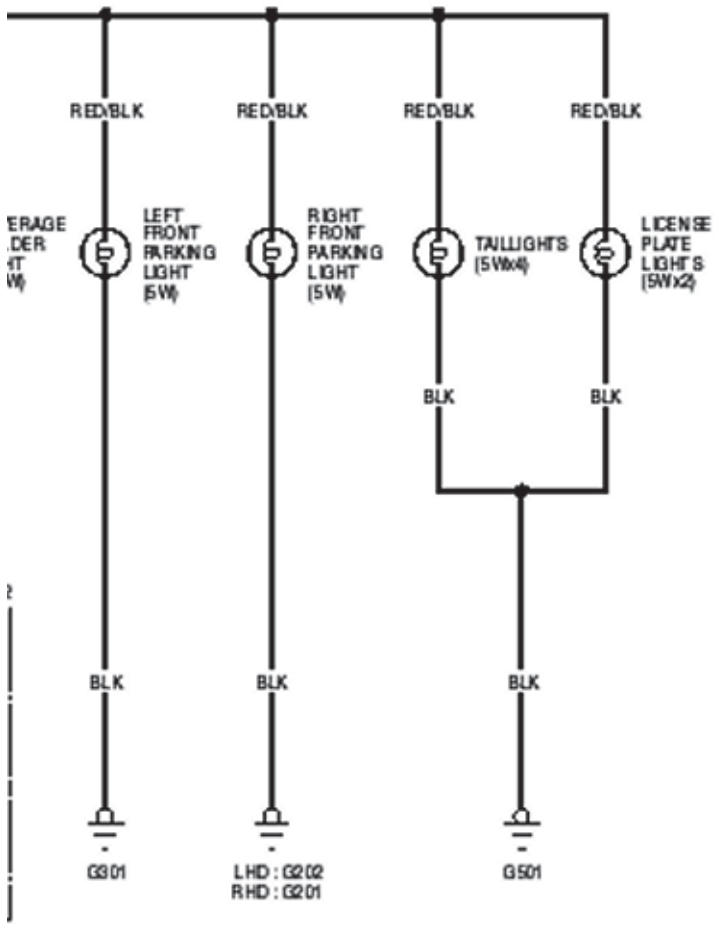
D

6

WHT — BAT
No.41 (80A)

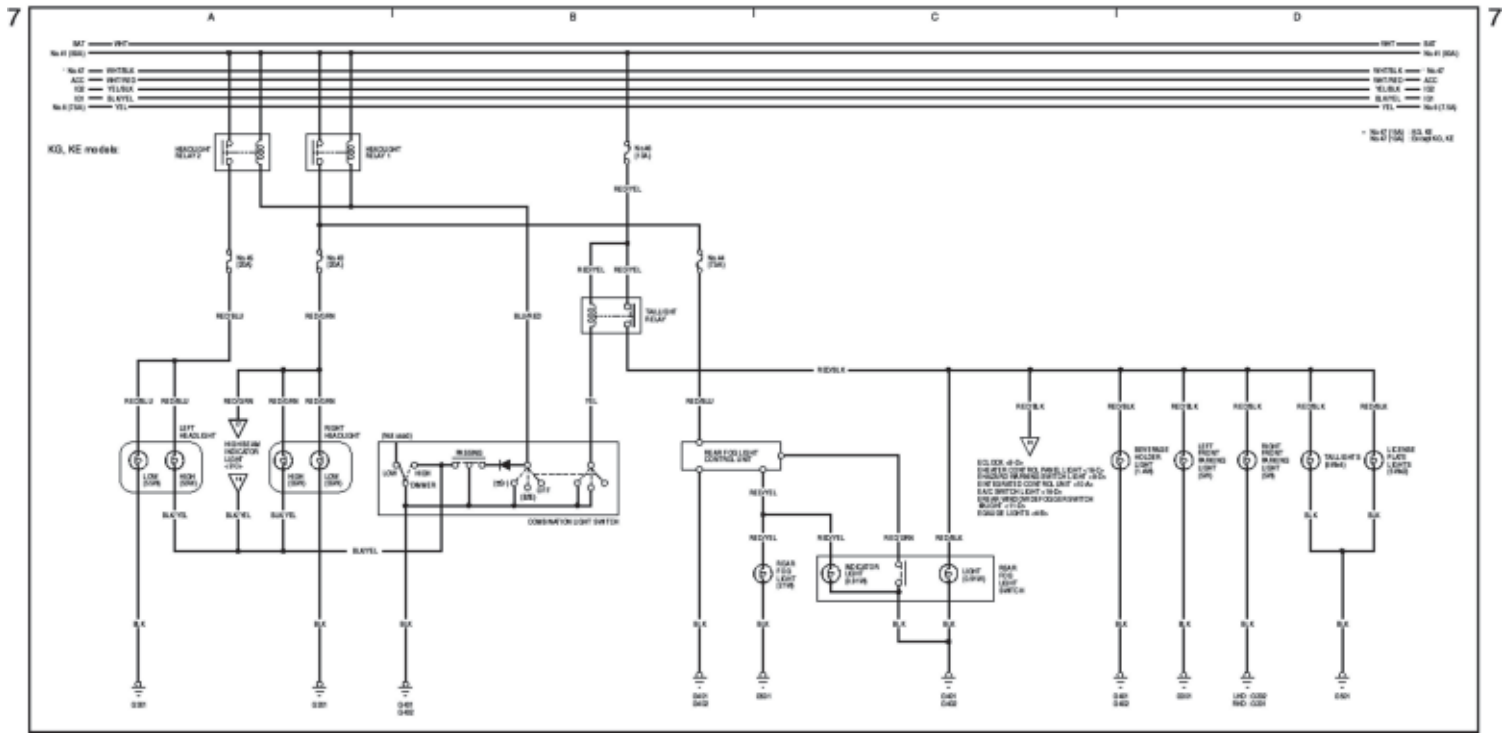
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

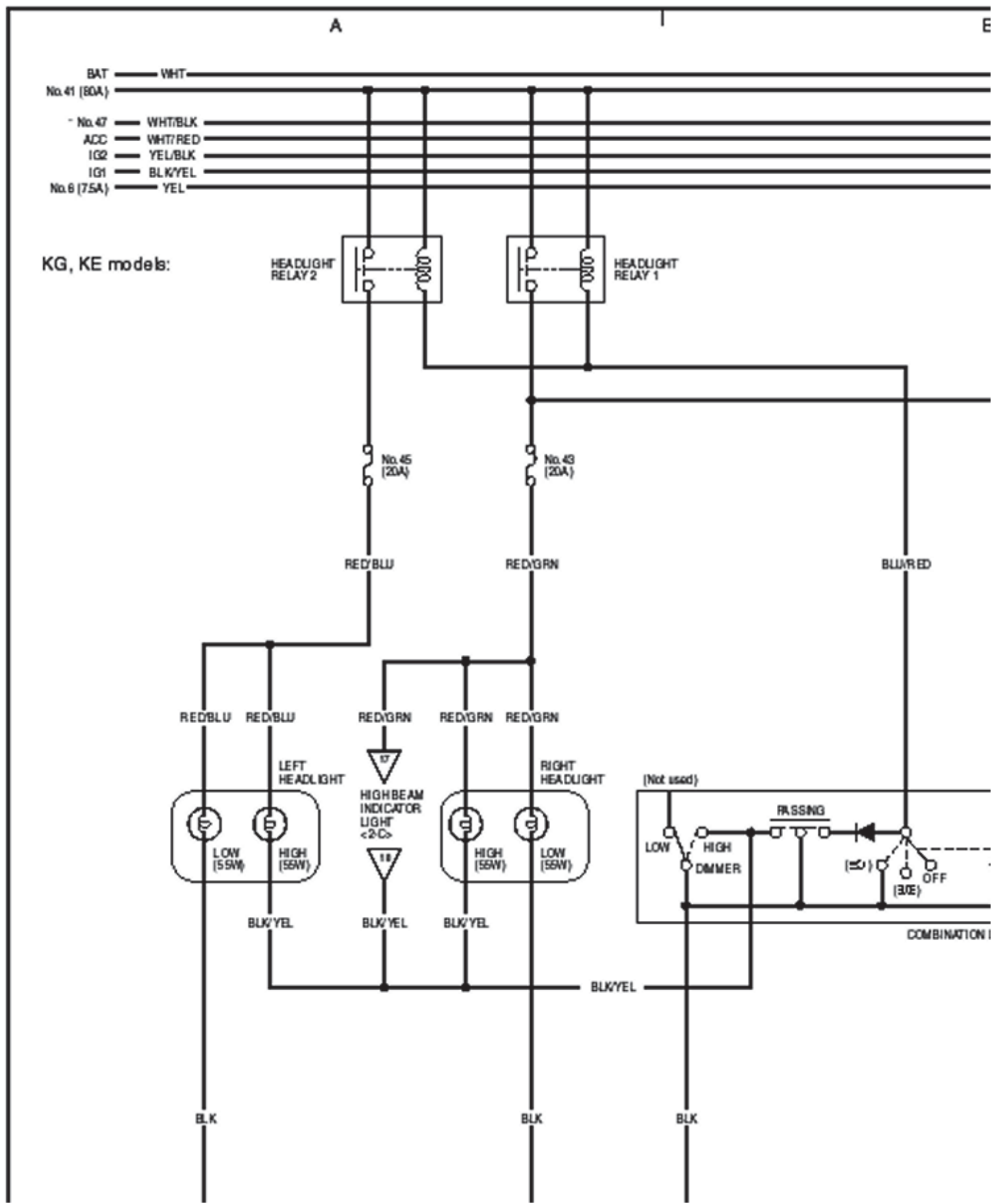
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams

Lights, Exterior - License Plate Lights





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

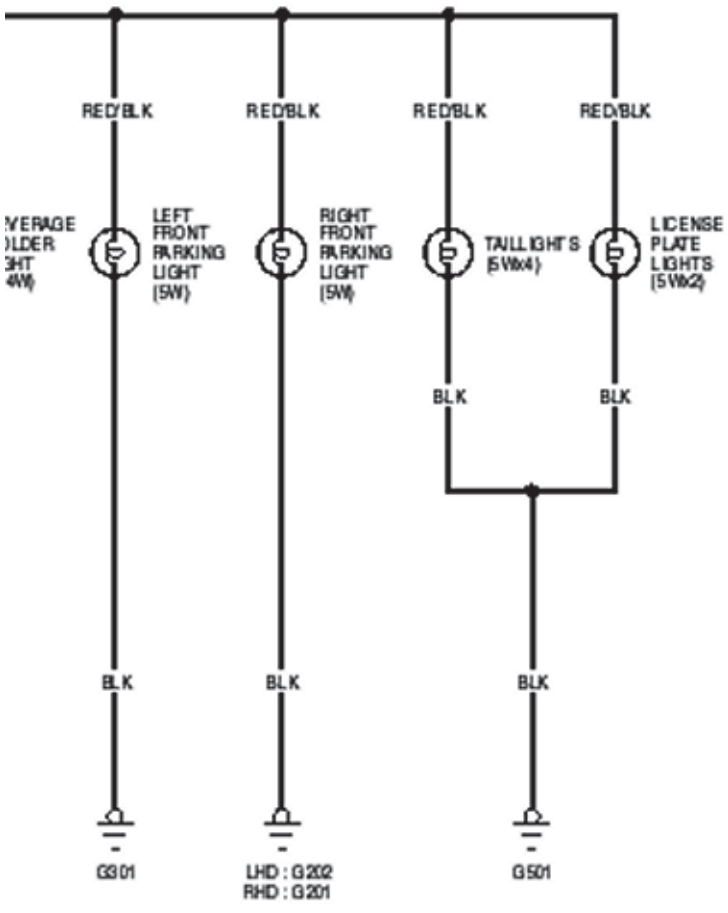
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7

WHT — BAT
No. 41 (80A)

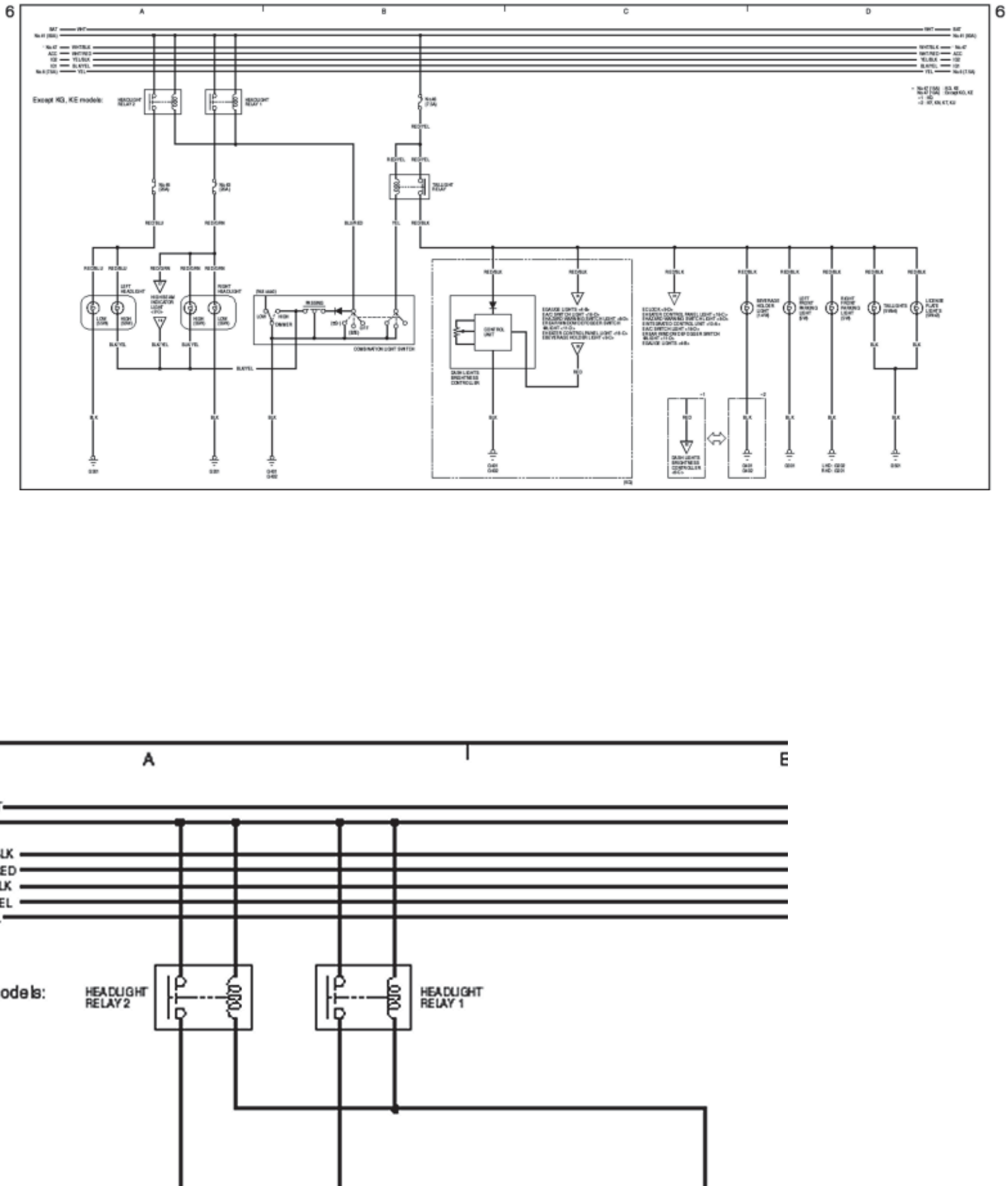
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Exterior - Parking Lights



6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

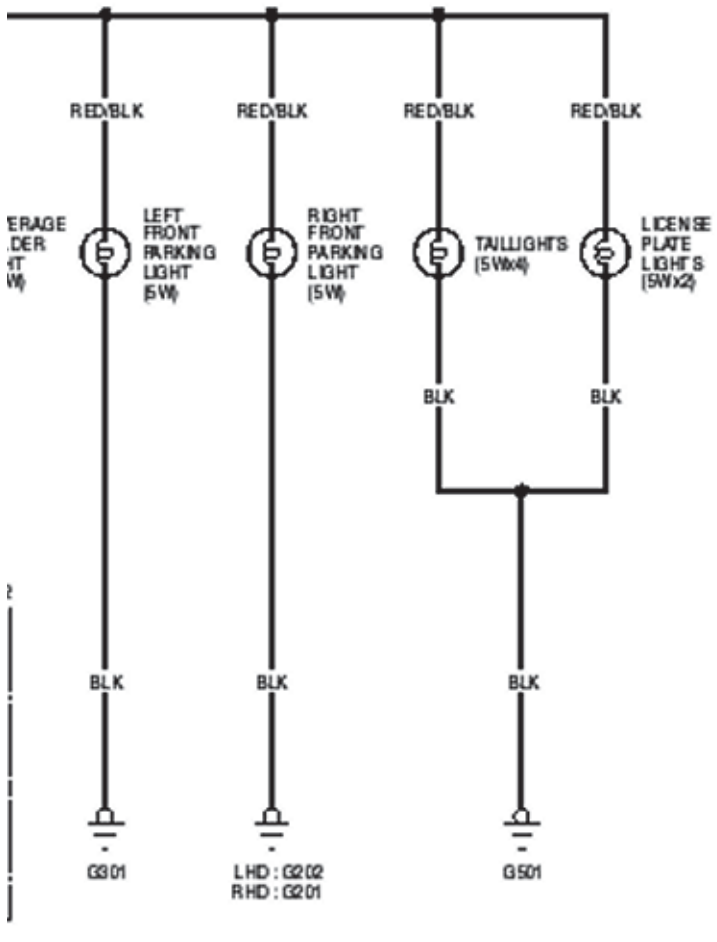
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6

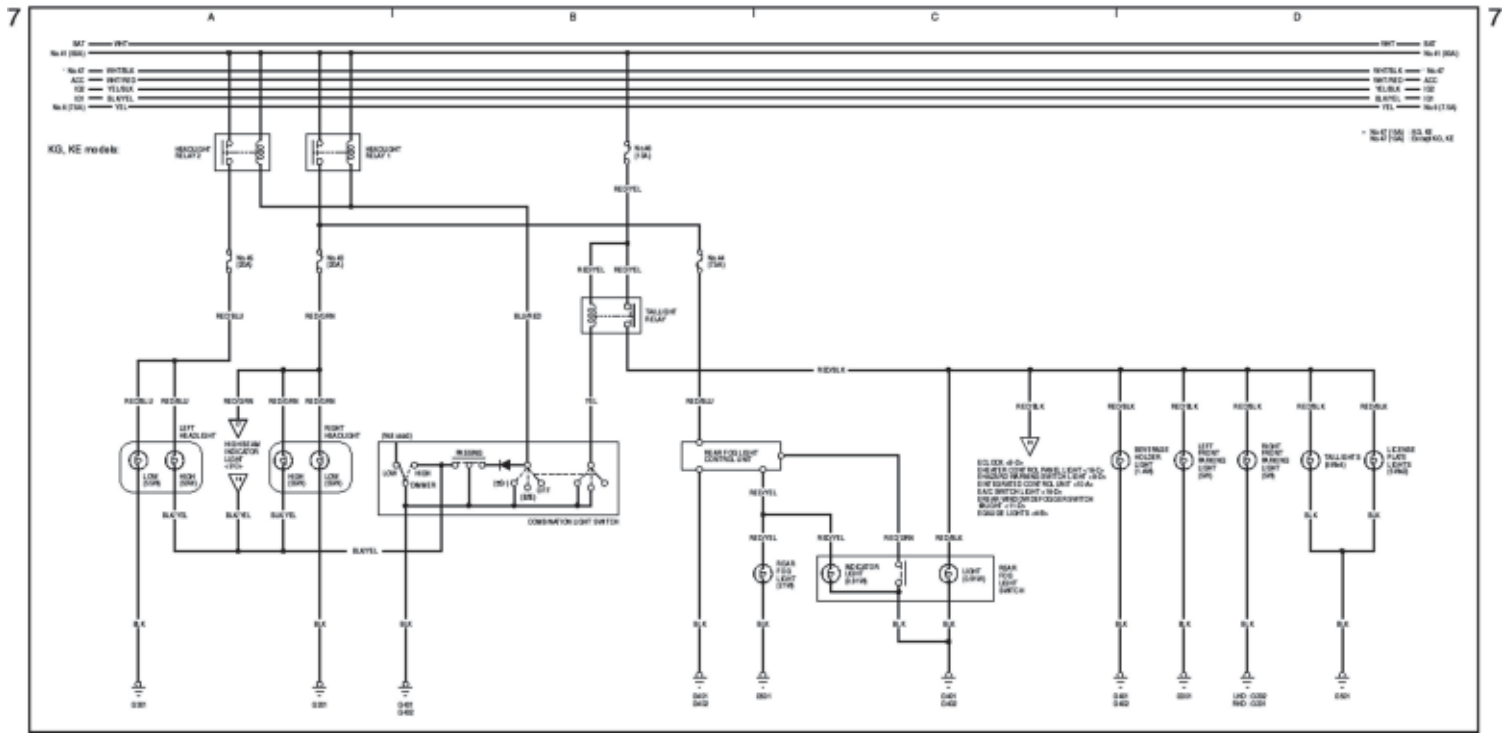
WHT — BAT
No.41 (80A)

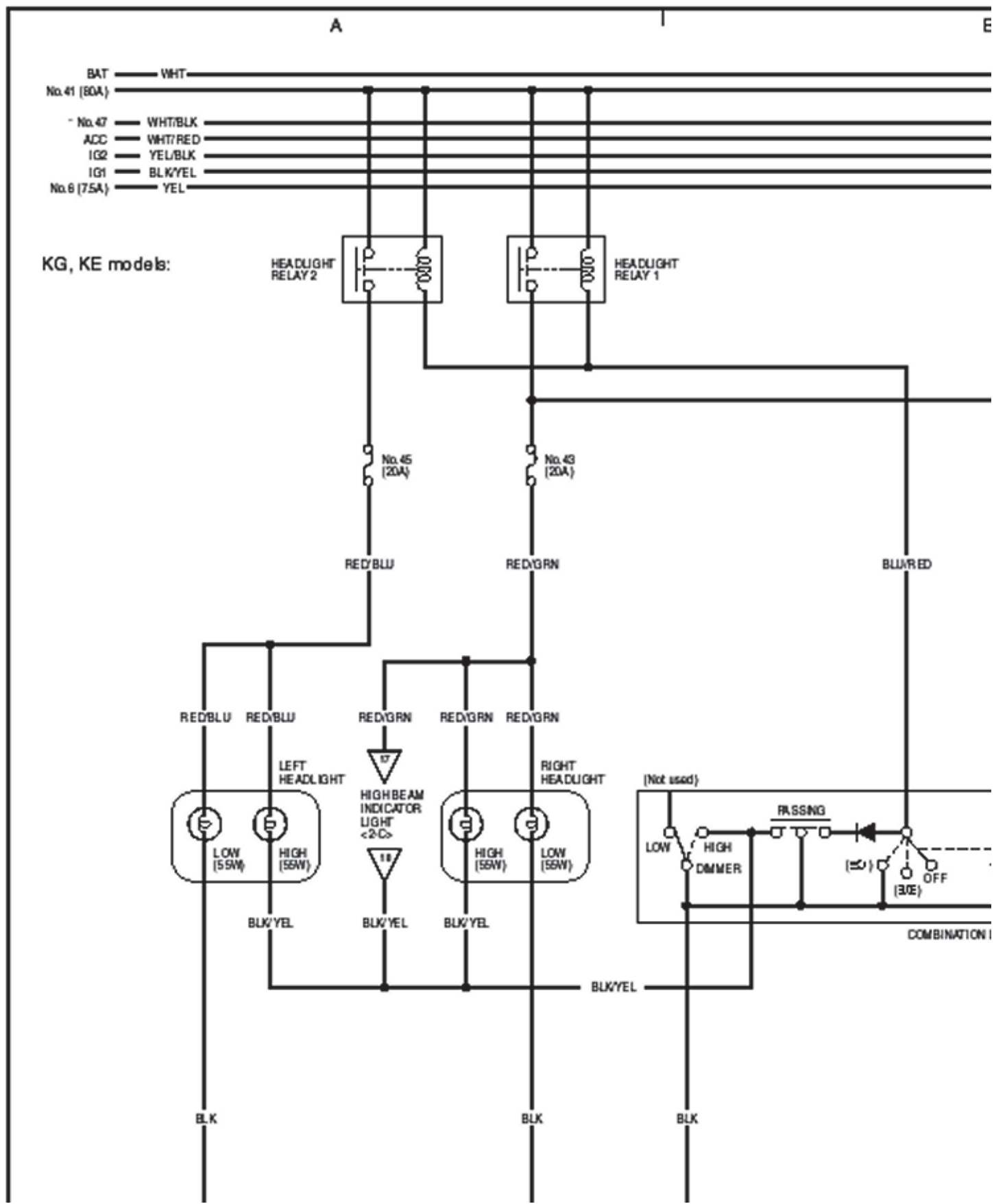
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams
Lights, Exterior - Parking Lights





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

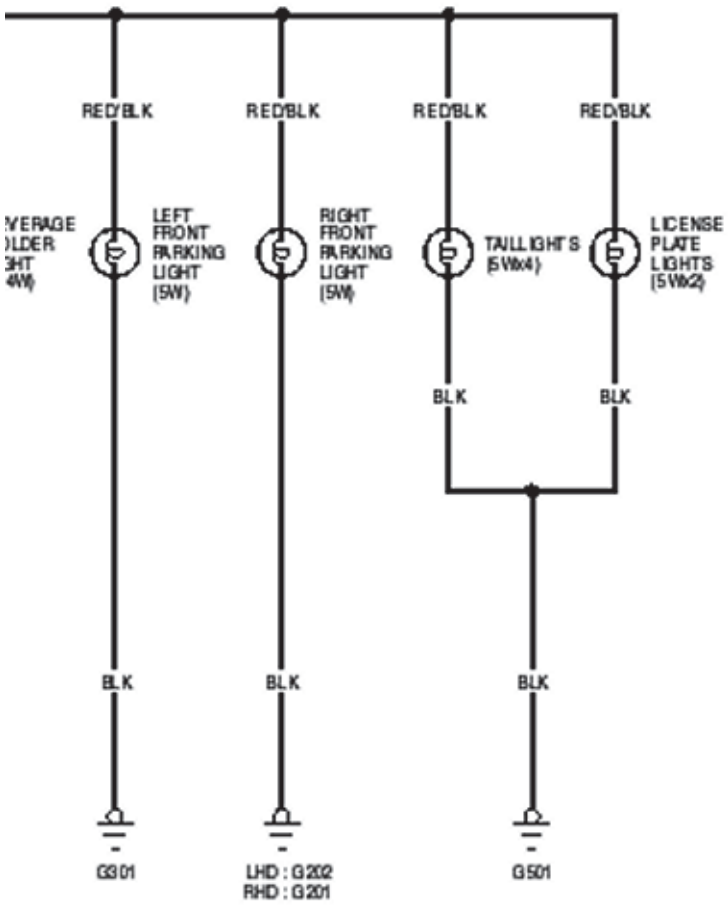
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7

WHT — BAT
No. 41 (80A)

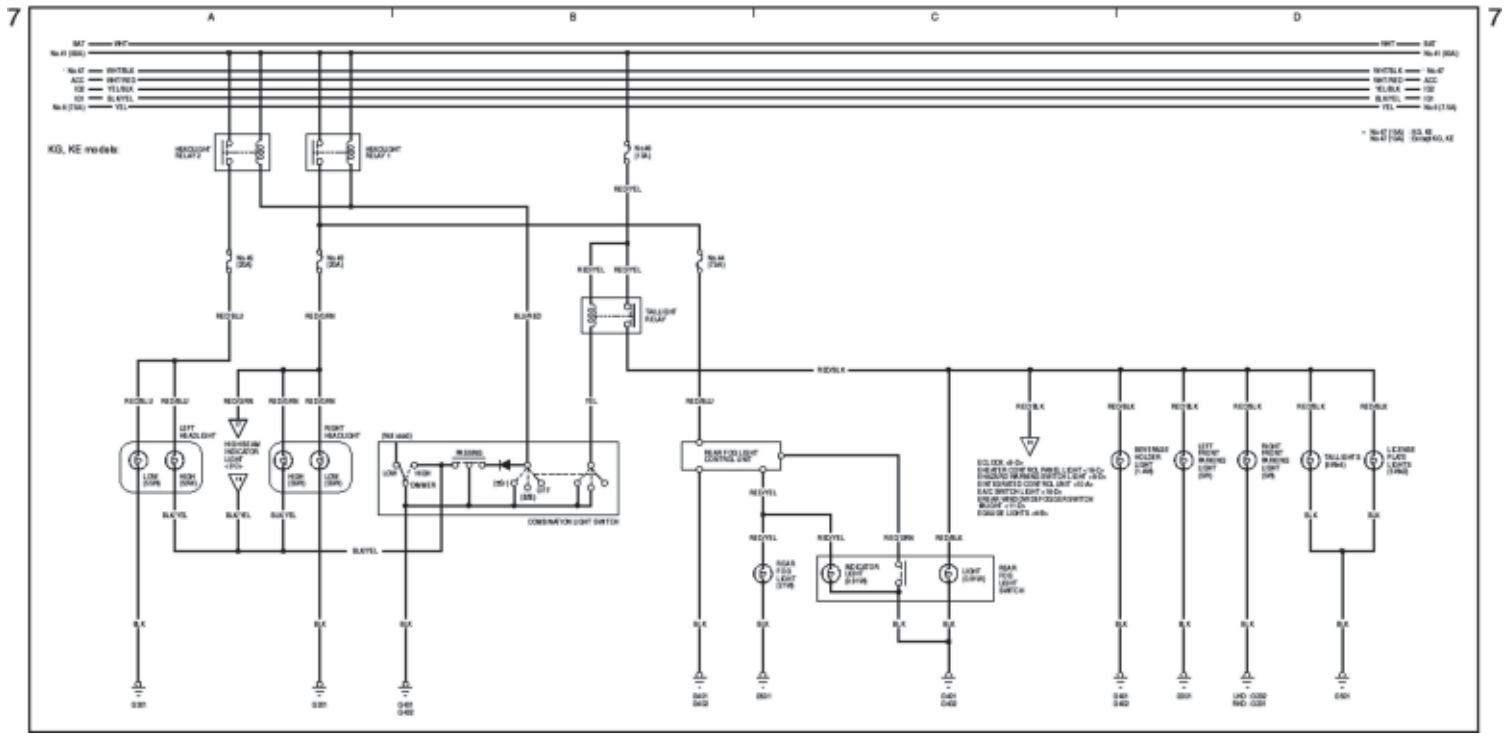
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

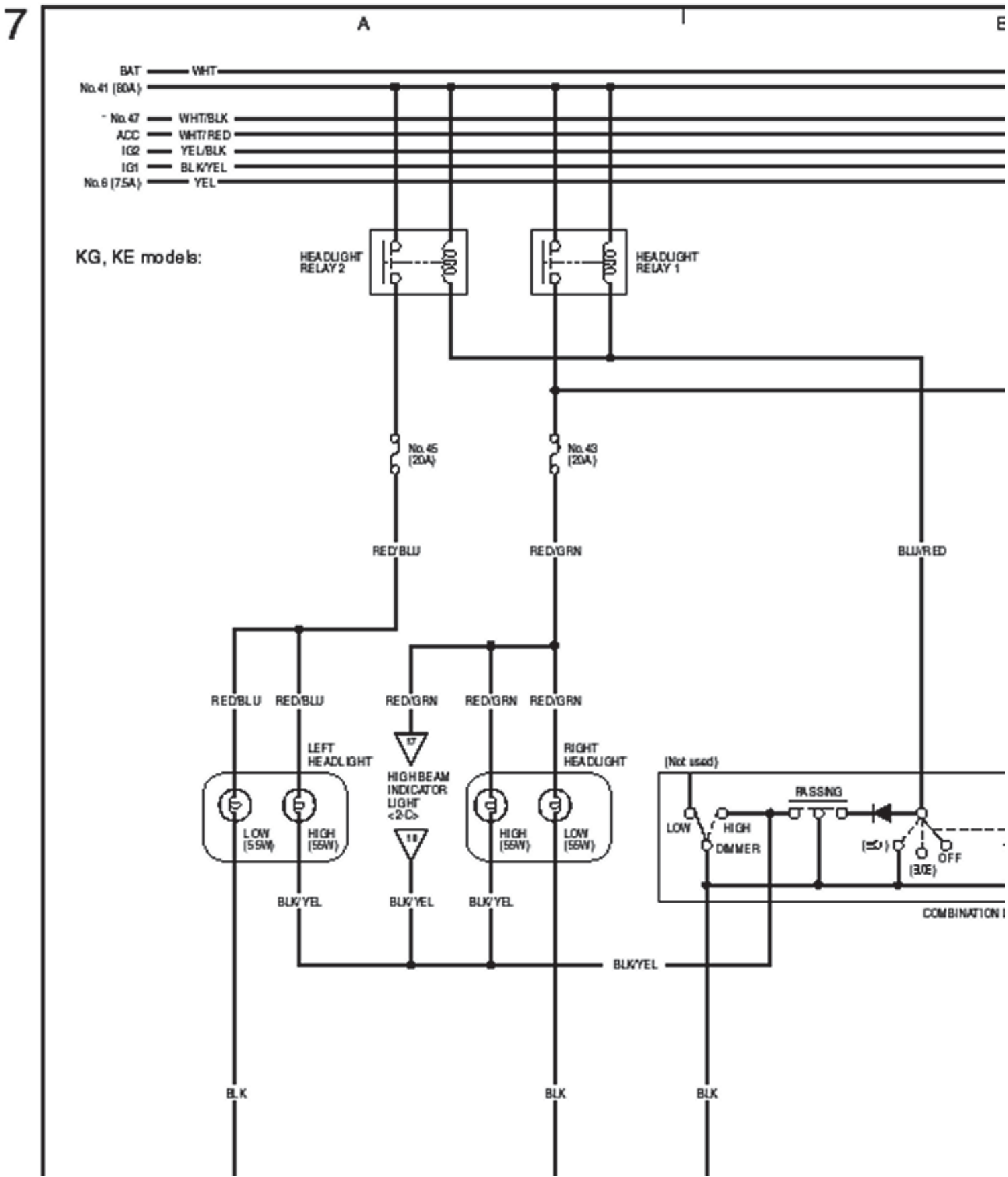
* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Exterior - Rear Fog Lights





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

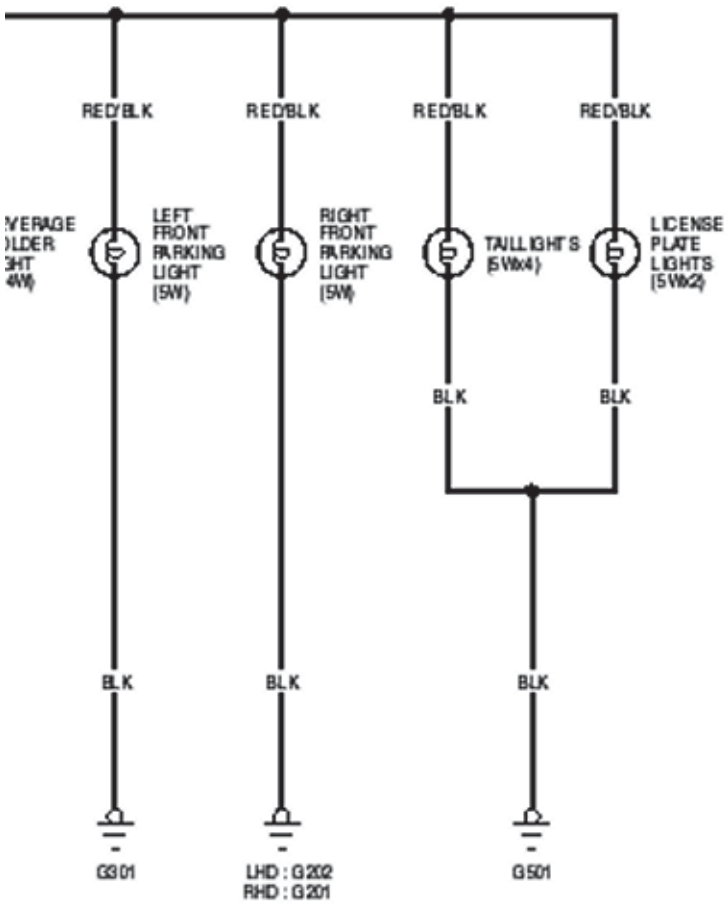
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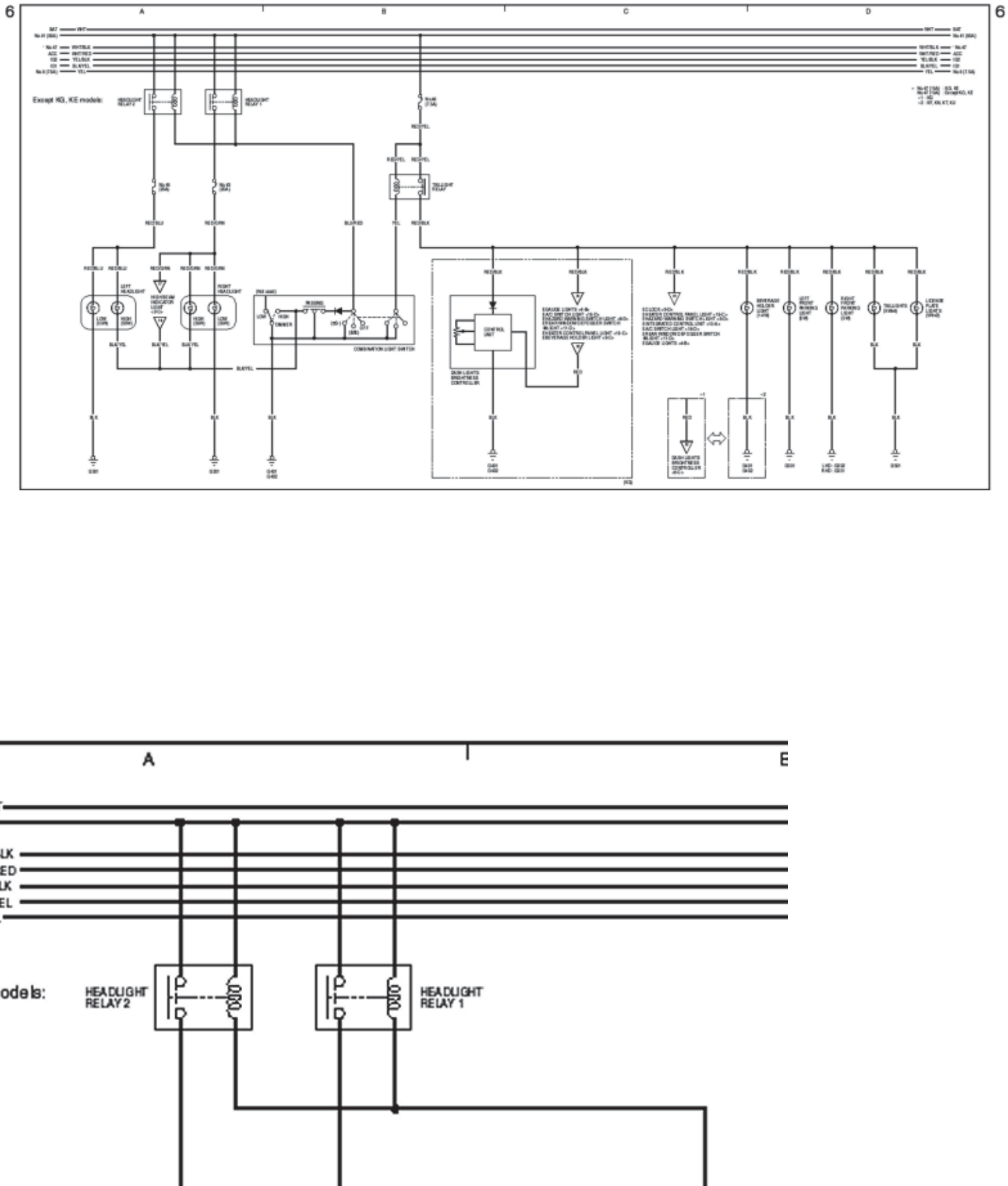
WHT — BAT
No. 41 (80A)

WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams
Lights, Exterior - Taillights



6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

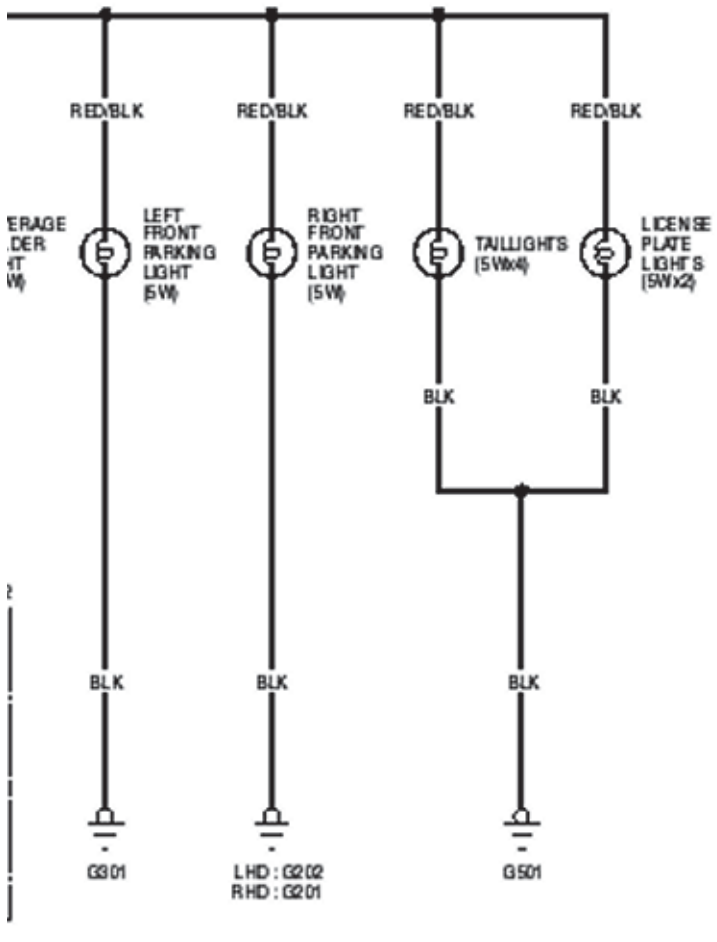
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6

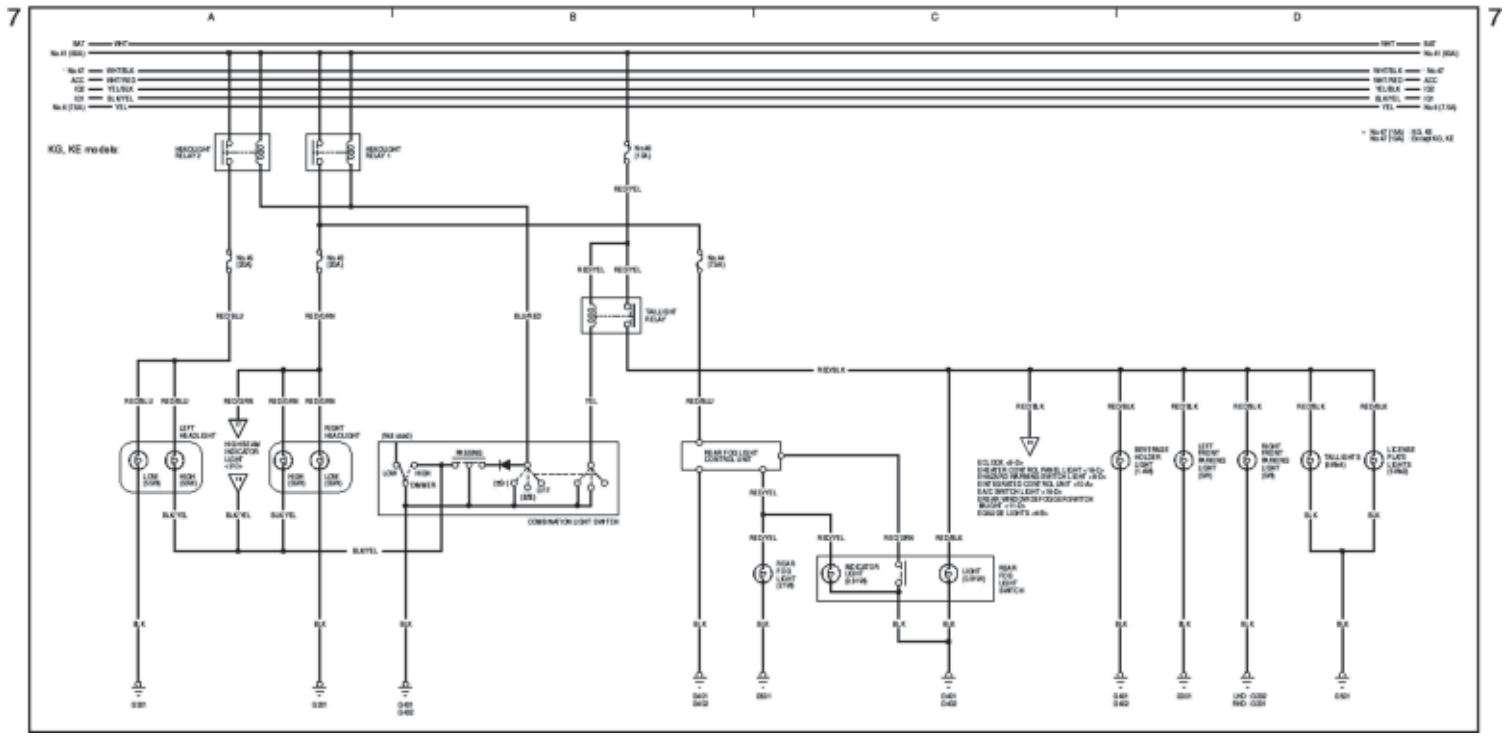
WHT — BAT
No.41 (80A)

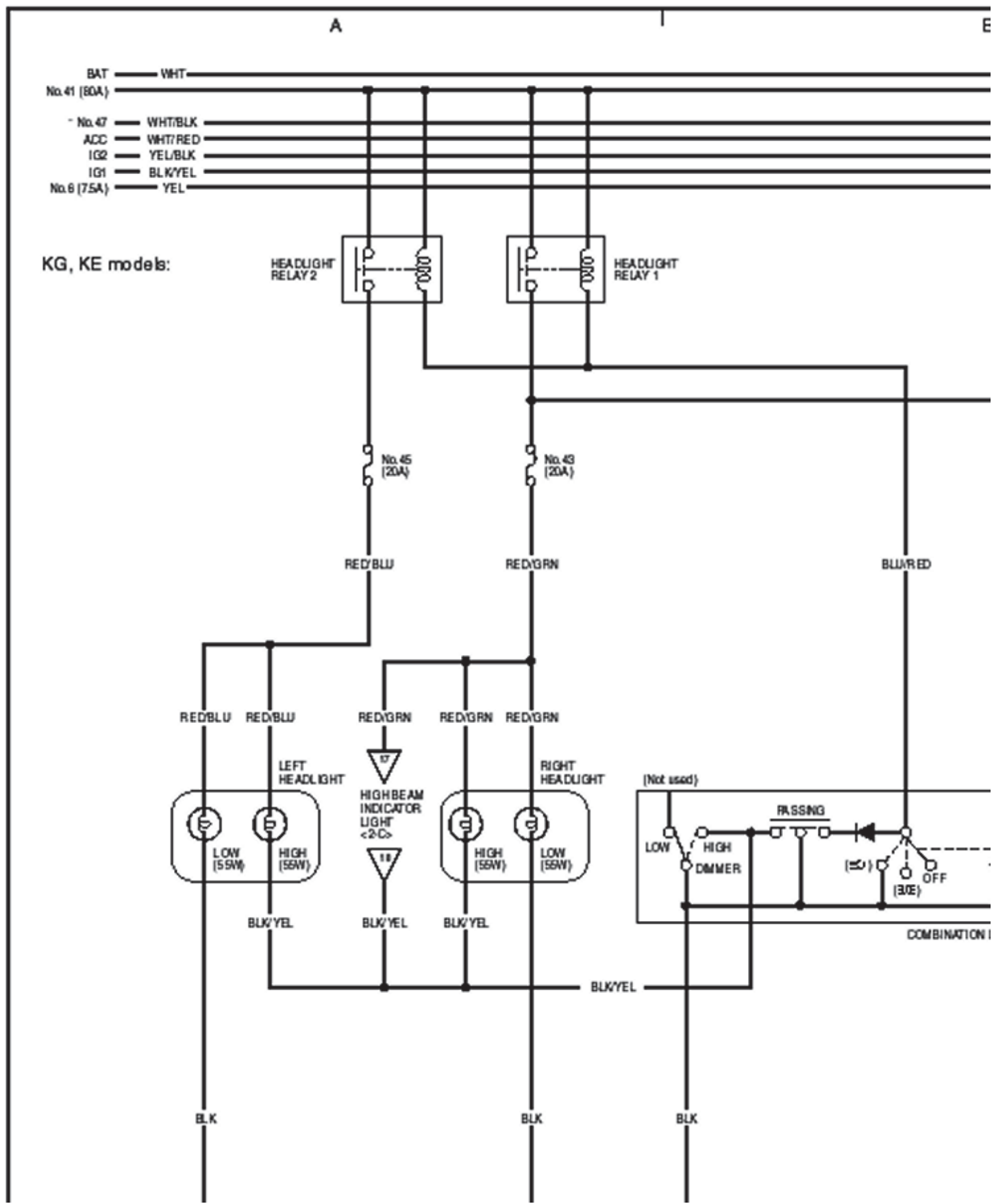
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams
Lights, Exterior - Taillights





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

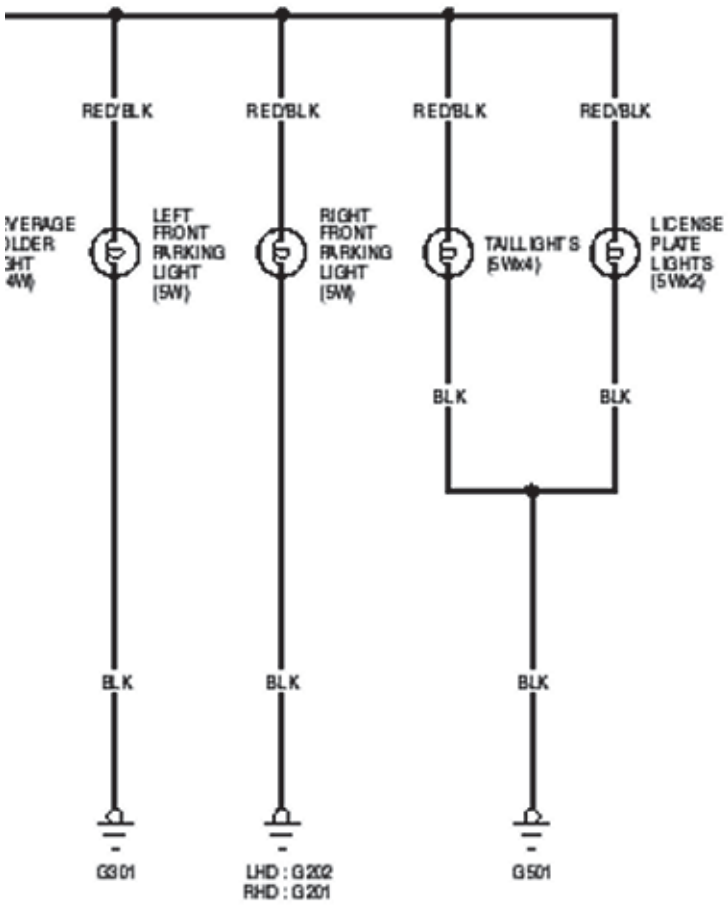
D

7

WHT — BAT
No. 41 (80A)

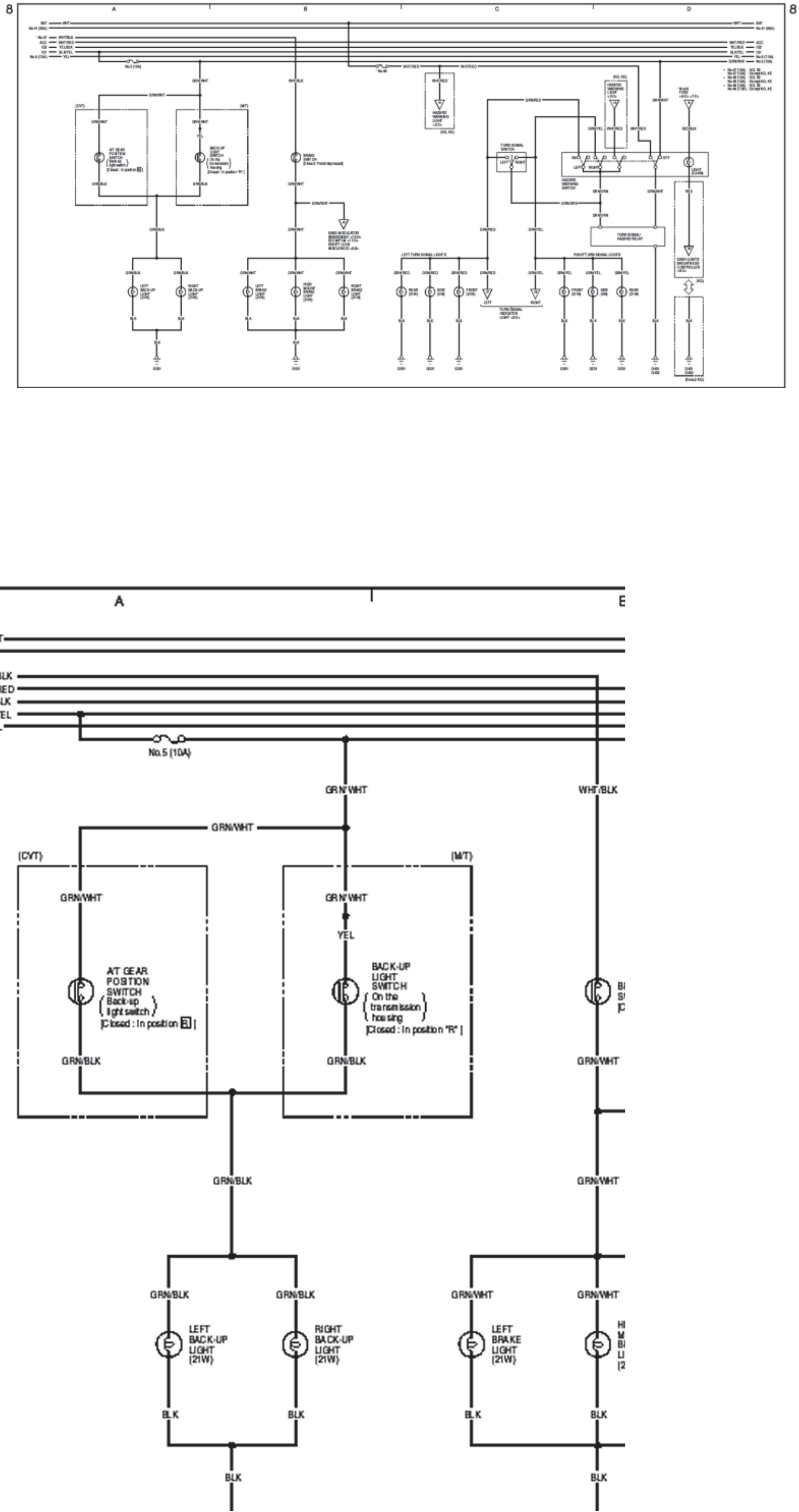
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Exterior - Turn Signal Lights



8

A

B

C

BAT — WHT
No. 41 (80A)

No. 47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No. 6 (7.5A) — YEL

No. 5 (10A)

GRN/WHT

WHT/BLK

GRN/WHT

(CVT)

(M/T)

GRN/WHT

GRN/WHT

YEL

A/T GEAR POSITION SWITCH
(Back-up light switch)
(Closed : In position R)

BACK-UP LIGHT SWITCH
(On the transmission housing)
(Closed : In position "R")

GRN/BLK

GRN/BLK

GRN/WHT

GRN/BLK

GRN/WHT

GRN/BLK

GRN/BLK

GRN/WHT

GRN/WHT

LEFT BACK-UP LIGHT (21W)

RIGHT BACK-UP LIGHT (21W)

LEFT BRAKE LIGHT (21W)

BLK

BLK

BLK

BLK

BLK

G501

G501

WHT/RED

WHT/RED

No. 49

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

C

WHT/RED

No.49

WHT/RED

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

GRN/ORN

RAKE
WITCH
losed: Pedal depressed)

GRN/WHT

42

EABS MODULATOR
@ASSEMBLY <15-D>
EECM/PCM <17-D>
ESHIFT LOCK
@SOLENOID <5-B>

GRN/RED

GRN/YEL

LEFT TURN SIGNAL LIGHTS

RIGHT TURN SIGNAL

GRN/WHT

GH
OUNT
RAKE
GHT
1W)

RIGHT BRAKE LIGHT (21W)

BLK

GRN/RED

GRN/RED

GRN/RED

GRN/RED

GRN/YEL

GRN/YEL

GRN/YEL

REAR (21W)

SIDE (5W)

FRONT (21W)

27

LEFT

28

RIGHT

FRONT (21W)

SIDE (5W)

TURN SIGNAL INDICATOR LIGHT <3-D>

BLK

BLK

BLK

BLK

BLK

G501

G301

G301

G201

G201

D

8

WHT

BAT

No.41 (80A)

WHT/RED

ACC

YEL/BLK

IG2

BLK/YEL

IG1

YEL

No.6 (7.5A)

GRN/WHT

No.5 (10A)

- No.47 (15A) : KG, KE
  No.47 (10A) : Except KG, KE
- No.49 (15A) : KG, KE
  No.49 (10A) : Except KG, KE
- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE

(KG, KE)

HAZARD WARNING LIGHT <2-C>

10

WHT/RED

GRN/WHT

No.46 FUSE <6-C> <7-C>

30

RED/BLK

WHT/RED

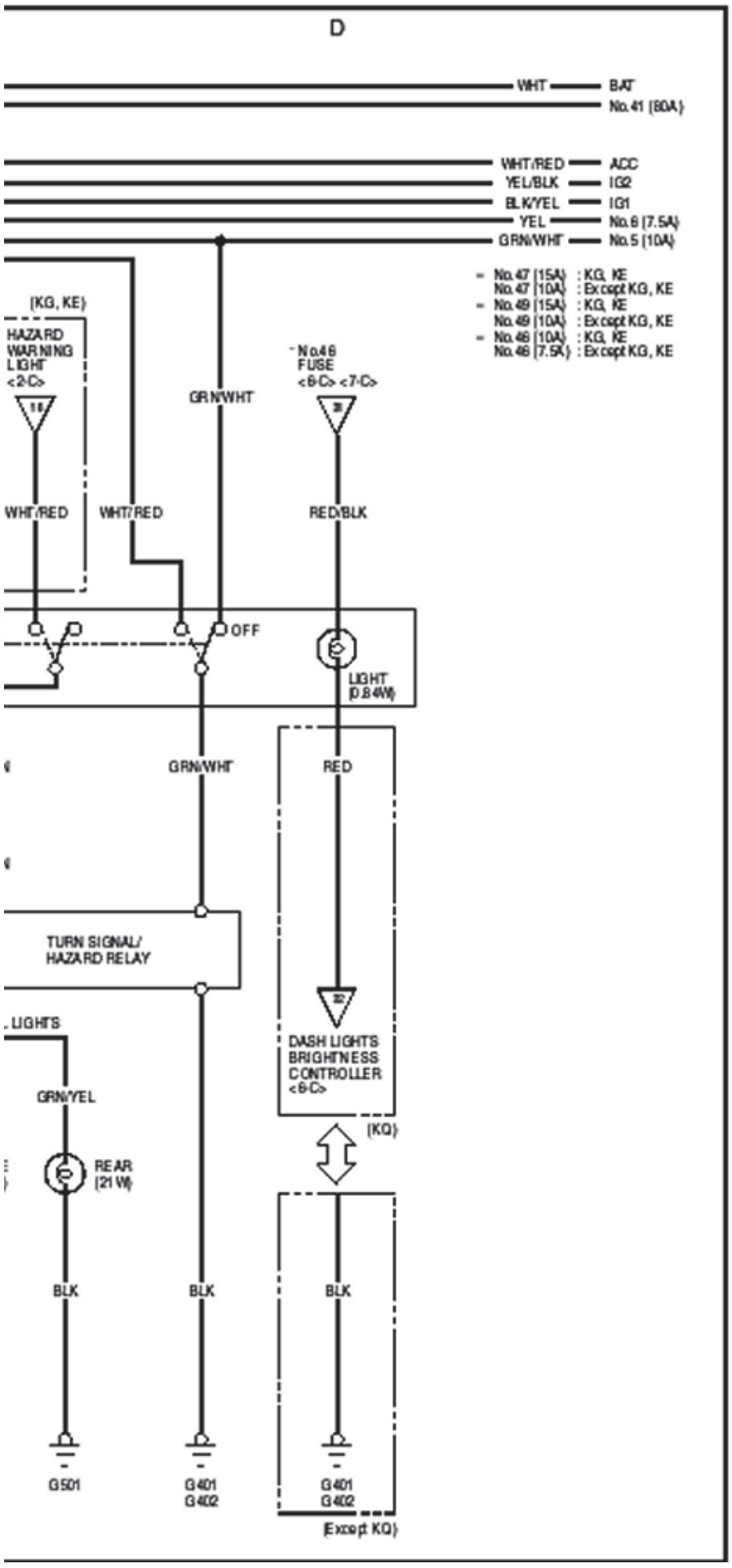
OFF

LIGHT (3.8W)

GRN/WHT

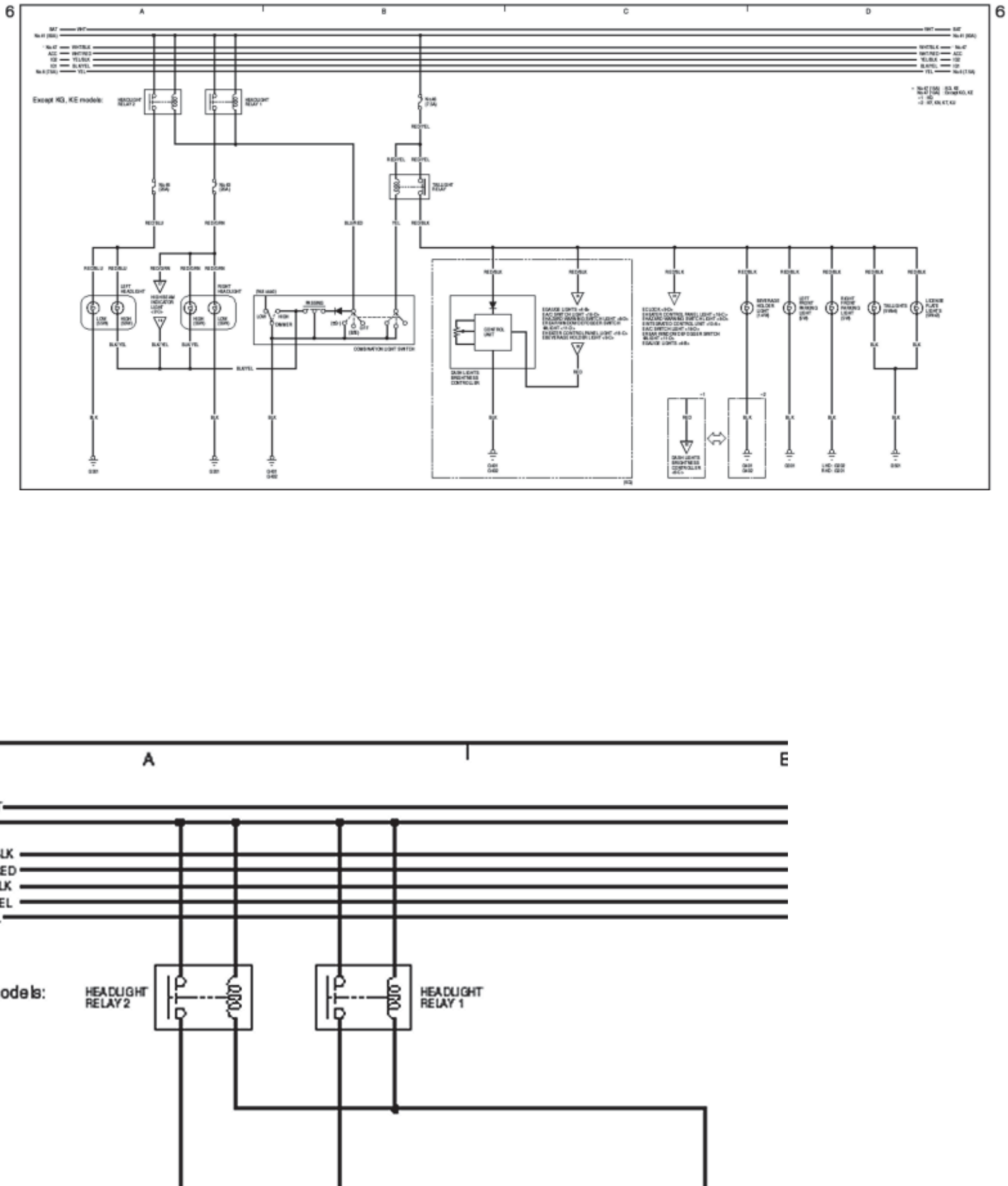
RED

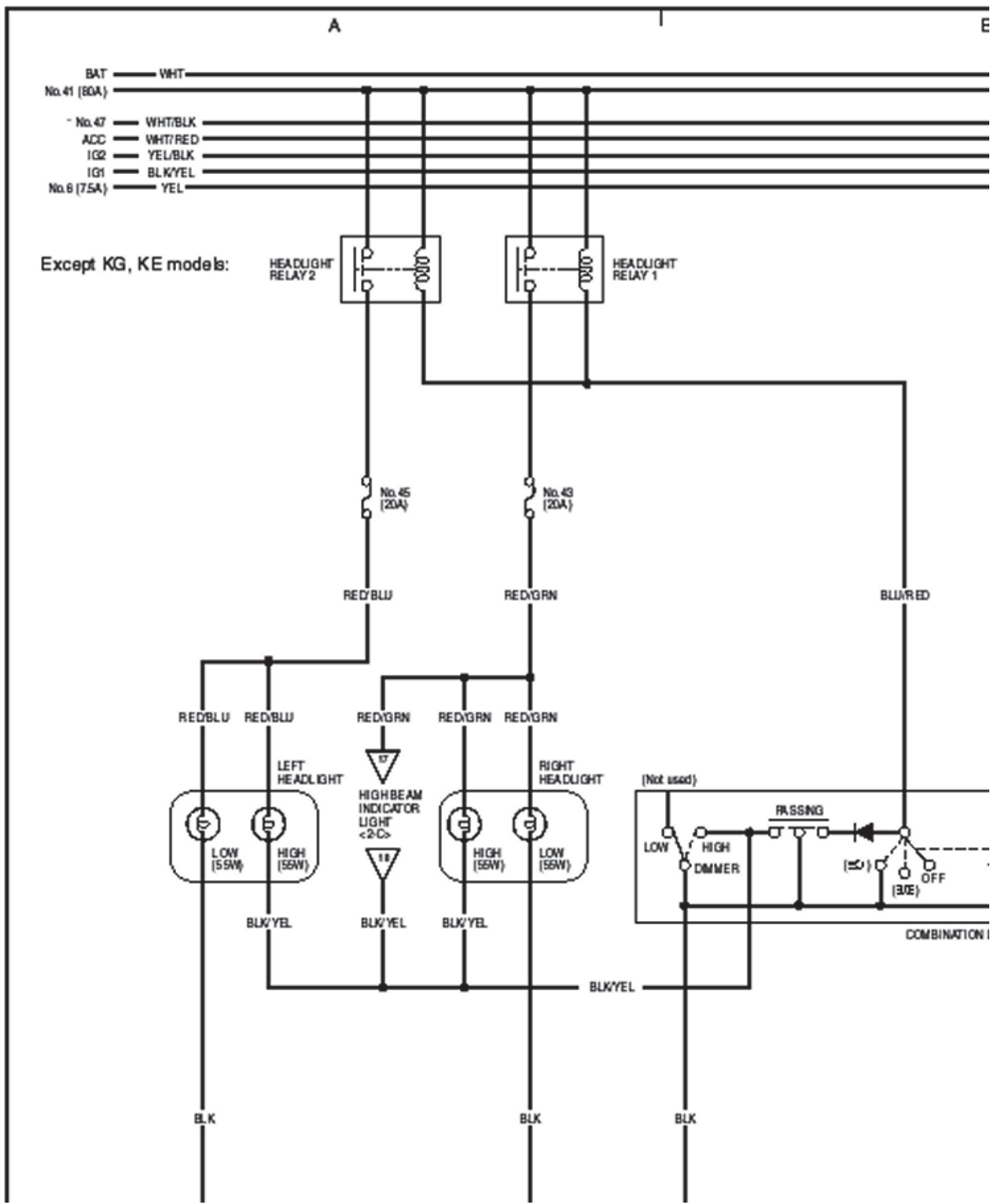
D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
* No.49 (15A) : KG, KE
No.49 (10A) : Except KG, KE
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
(KG, KE)
HAZARD WARNING LIGHT <2-C>
* No.46 FUSE
<6-C> <7-C>
GRN/WHT
WHT/RED
WHT/RED
RED/BLK
OFF
LIGHT (3.8W)
GRN/WHT
RED
TURN SIGNAL/ HAZARD RELAY
LIGHTS
GRN/YEL
REAR (21W)
DASH LIGHTS BRIGHTNESS CONTROLLER <6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams

Lights, Interior - Beverage Holder Light





6

A

B

BAT — WHT
No.41 (80A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

Except KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(30E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

C

No.46 (7.5A)

RED/YEL

RED/YEL RED/YEL

TAILLIGHT RELAY

YEL RED/BLK

LIGHT SWITCH

RED/BLK RED/BLK RED/BLK RED/BLK

CONTROL UNIT

DASH LIGHTS BRIGHTNESS CONTROLLER

EGAUGE LIGHTS <4-B>
EA/C SWITCH LIGHT <16-D>
EHAZARD WARNING SWITCH LIGHT <9-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EBEVERAGE HOLDER LIGHT <9-C>

RED

ECLOCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH @LIGHT <11-D>
EGAUGE LIGHTS <4-B>

BEV HOL LIG (1.4

BLK

G401 G402

=1

RED

DASH LIGHTS BRIGHTNESS CONTROLLER <9-C>

BLK

G401 G402

(KQ)

D

6

WHT — BAT
No.41 (60A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU

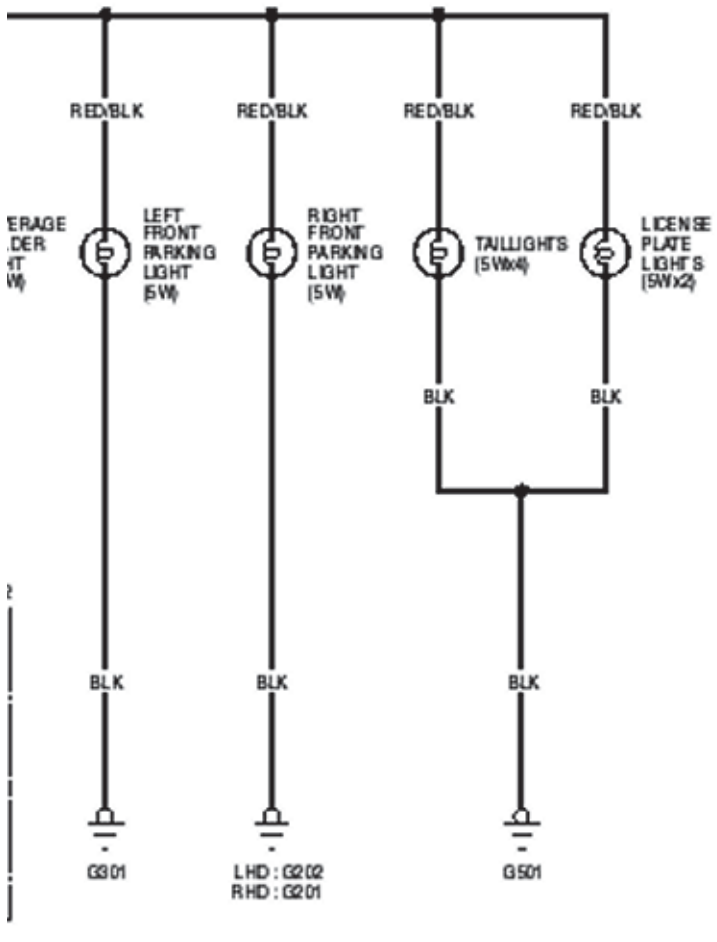
D

6

WHT — BAT
No.41 (80A)

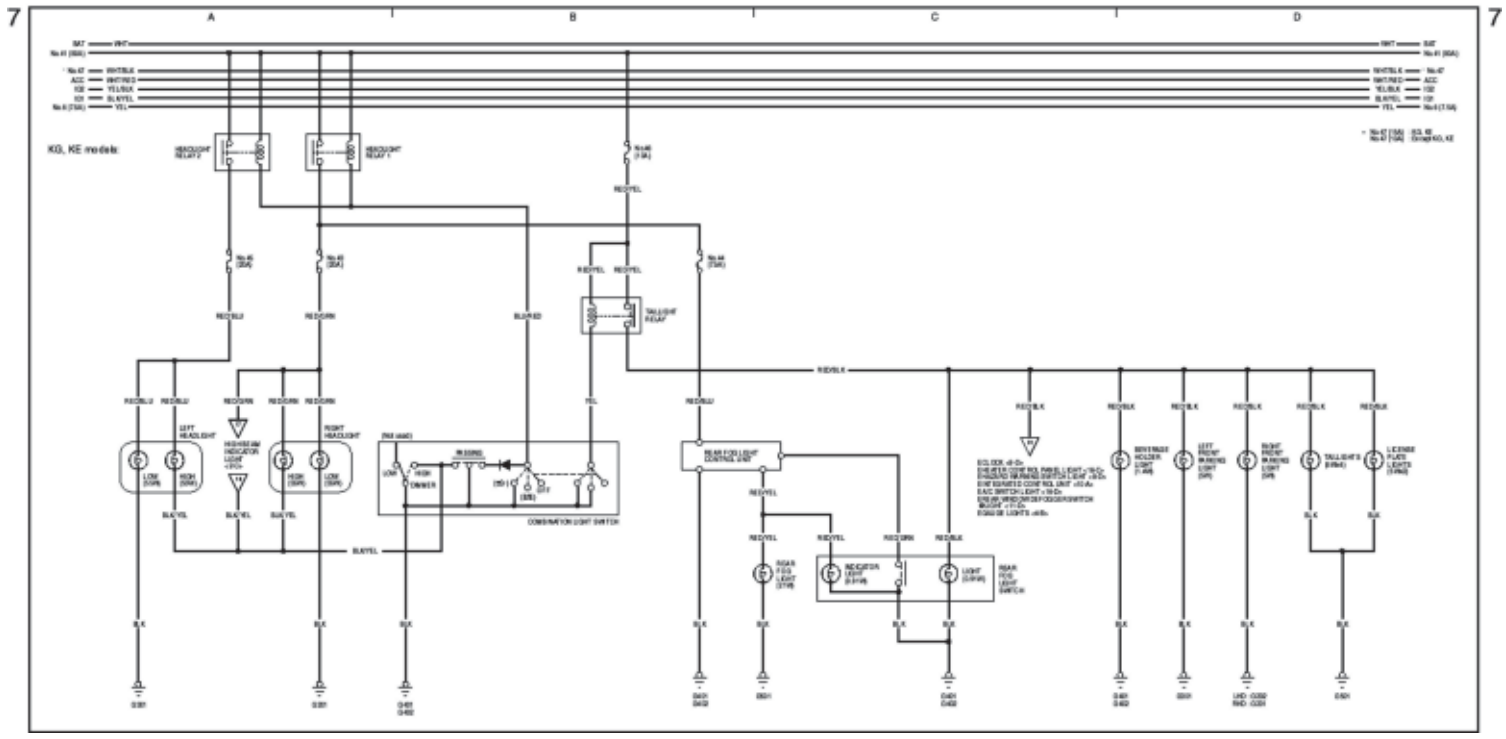
WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

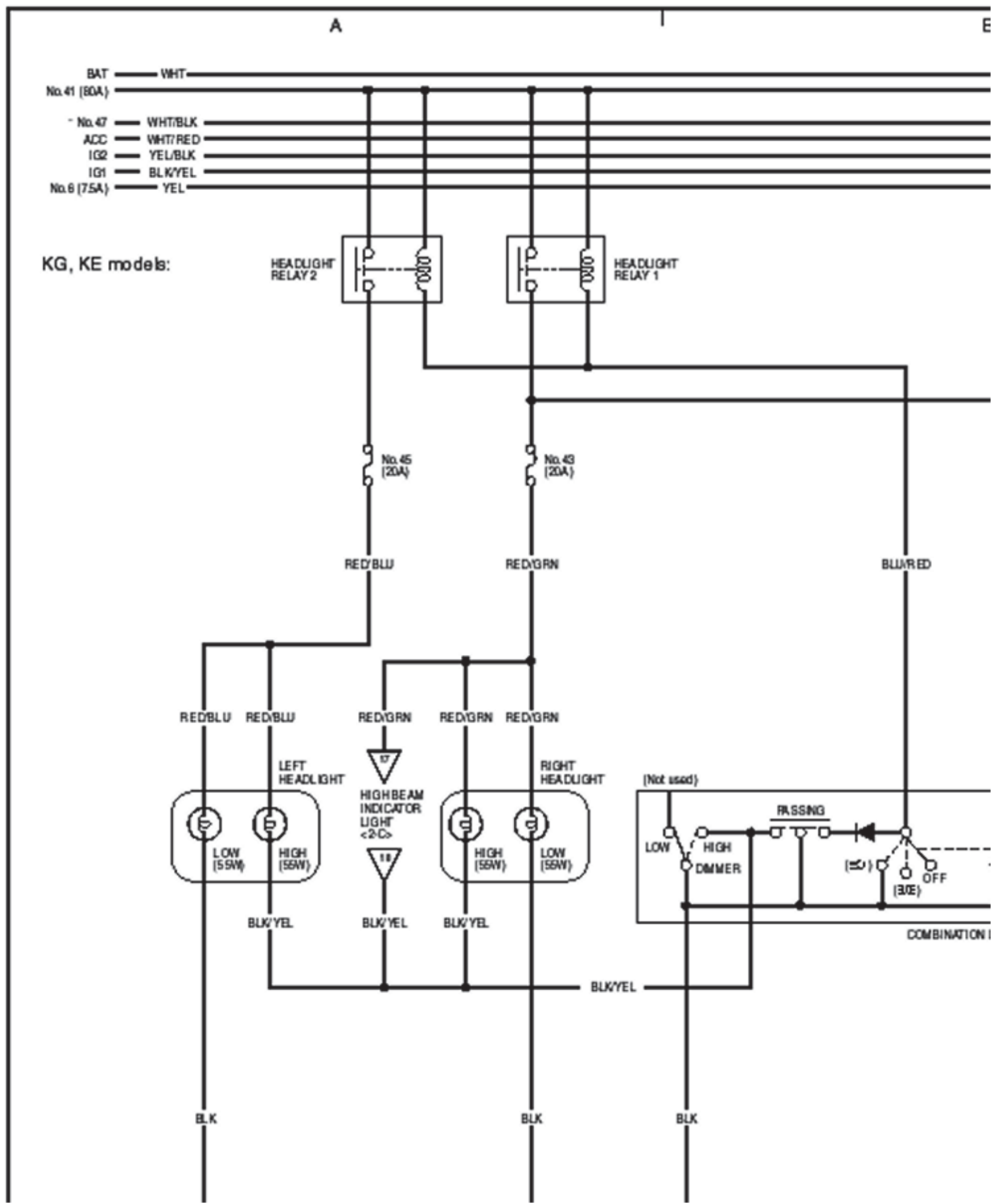
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
=1 : KQ
=2 : KY, KN, KT, KU



Wiring Diagrams

Lights, Interior - Beverage Holder Light





7

A

B

BAT — WHT
No.41 (60A)
No.47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

KG, KE models:

HEADLIGHT RELAY 2

HEADLIGHT RELAY 1

No.45 (20A)

No.43 (20A)

RED/BLU

RED/GRN

BLU/RED

RED/BLU RED/BLU

RED/GRN RED/GRN RED/GRN

LEFT HEADLIGHT

HIGH BEAM INDICATOR LIGHT <2-C>

RIGHT HEADLIGHT

LOW (55W) HIGH (55W)

HIGH (55W) LOW (55W)

(Not used)

PASSING

LOW HIGH DIMMER

OFF

(3.0E)

COMBINATION

BLK/YEL

BLK/YEL BLK/YEL BLK/YEL

BLK/YEL

BLK BLK BLK

G301 G201 G401 G402

C

No.46 (10A)

RED/YEL

No.44 (7.5A)

RED/YEL RED/YEL

TAILLIGHT RELAY

RED/BLK

C

No.46
(10A)

RED/YEL

No.44
(7.5A)

RED/YEL RED/YEL

TAILLIGHT
RELAY

RED/BLK

YEL

RED/BLU

RED/BLK

RED/BLK

31

ECL OCK <9-D>
EHEATER CONTROL PANEL LIGHT <16-C>
EHAZARD WARNING SWITCH LIGHT <9-D>
EINTEGRATED CONTROL UNIT <10-A>
EA/C SWITCH LIGHT <16-D>
EREAR WINDOW DEFOGGER SWITCH
@LIGHT <11-D>
EGAUGE LIGHTS <4-B>

LIGHT SWITCH

REAR FOG LIGHT
CONTROL UNIT

RED/YEL

RED/YEL RED/YEL RED/GRN RED/BLK

REAR
FOG
LIGHT
(21W)

INDICATOR
LIGHT
(0.91W)

LIGHT
(0.91W)

REAR
FOG
LIGHT
SWITCH

BLK BLK BLK BLK BLK

G401
G402

G501

G401
G402

G401
G402

D

7

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

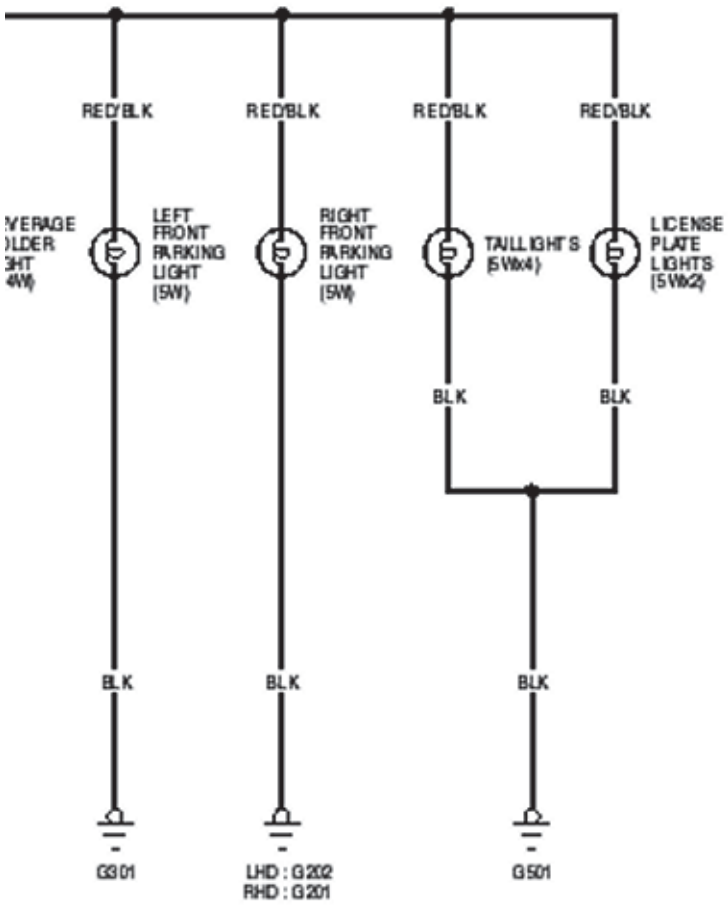
D

7

WHT — BAT
No. 41 (80A)

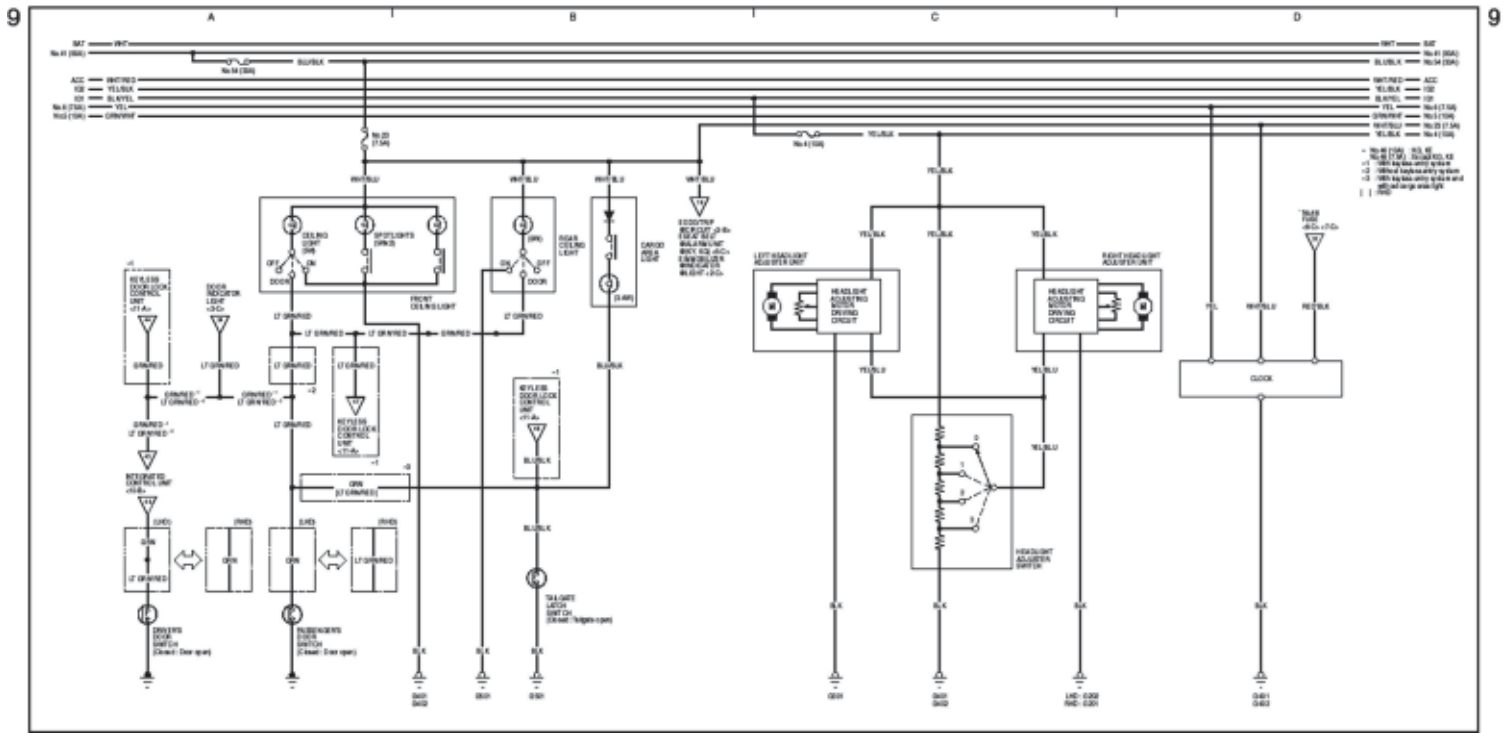
WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

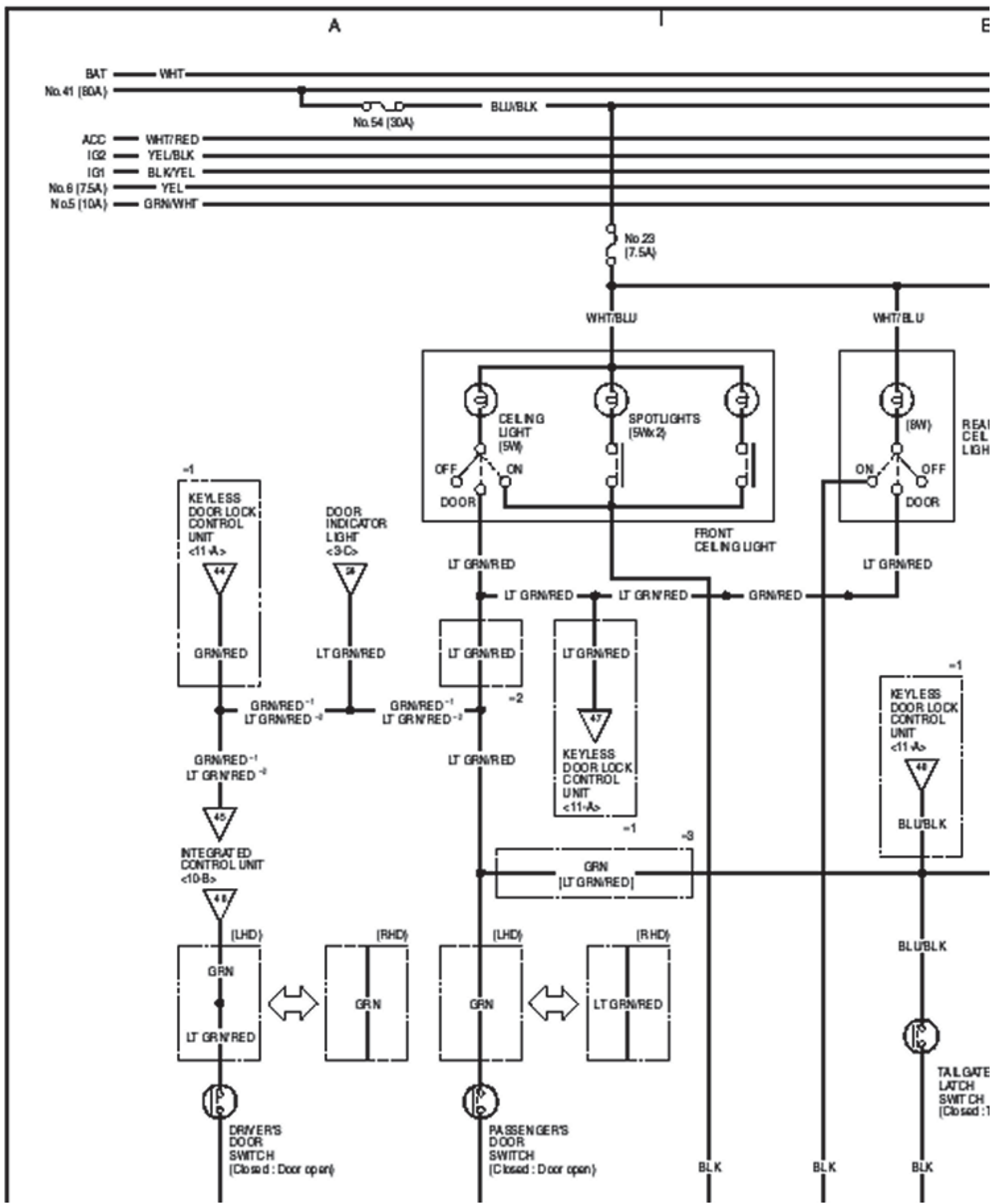
* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE



Wiring Diagrams

Lights, Interior - Cargo Area Light





9

A

B

BAT — WHT
No.41 (80A) — BLU/BLK
No.54 (30A)
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A)
WHT/BLU
WHT/BLU
CEILING LIGHT (5W)
SPOTLIGHTS (5W×2)
OFF
ON
DOOR
FRONT CEILING LIGHT
(8W)
ON
OFF
DOOR
REAR CEILING LIGHT
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
BLU/BLK
INTEGRATED CONTROL UNIT <10-B>
GRN (LT GRN/RED)
(LHD)
(RHD)
(LHD)
(RHD)
GRN
LT GRN/RED
GRN
GRN
LT GRN/RED
BLU/BLK
DRIVER'S DOOR SWITCH (Closed : Door open)
PASSENGER'S DOOR SWITCH (Closed : Door open)
TAILGATE LATCH SWITCH (Closed :
BLK
BLK
BLK
G401
G402
G501
G501

C

No.4 (10A)
YEL/BLK
YEL/BLK
WHT/BLU
WHT/BLU
YEL/BLK
YEL/BLK
YEL/BLK
CARGO AREA LIGHT (3.4W)
ODO/TRIP CIRCUIT <3-B>
SEAT BELT ALARM UNIT
(KY, KO) <5-C>
IMMOBILIZER INDICATOR LIGHT <2-C>
LEFT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
RIGHT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
BLU/BLK
YEL/BLU
YEL/BLU

C

No.4 (10A)

YEL/BLK

YEL/BLK

WHT/BLU

WHT/BLU

19

EODO/TRIP
◎CIRCUIT <3-B>
ESEAT BELT
◎ALARM UNIT
◎(KY, KQ) <5-C>
EIMMOBILIZER
◎INDICATOR
◎LIGHT <2-C>

CARGO
AREA
LIGHT

(3.4W)

YEL/BLK

YEL/BLK

YEL/BLK

LEFT HEADLIGHT
ADJUSTER UNIT

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

RIGHT HEAD
ADJUSTER U

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

BLU/BLK

YEL/BLU

YEL/BLU

YEL/BLU

0

1

2

3

HEADLIGHT
ADJUSTER
SWITCH

BLK

BLK

BLK

G301

G401
G402

LHD : G202
RHD : G201

D

9

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)
GRN/WHT — No.5 (10A)
WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- : No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
=1 : With keyless entry system
=2 : Without keyless entry system
=3 : With keyless entry system and without cargo area light
| | : RHD

No.46
FUSE
<6-C> <7-C>

31

LIGHT
NIT

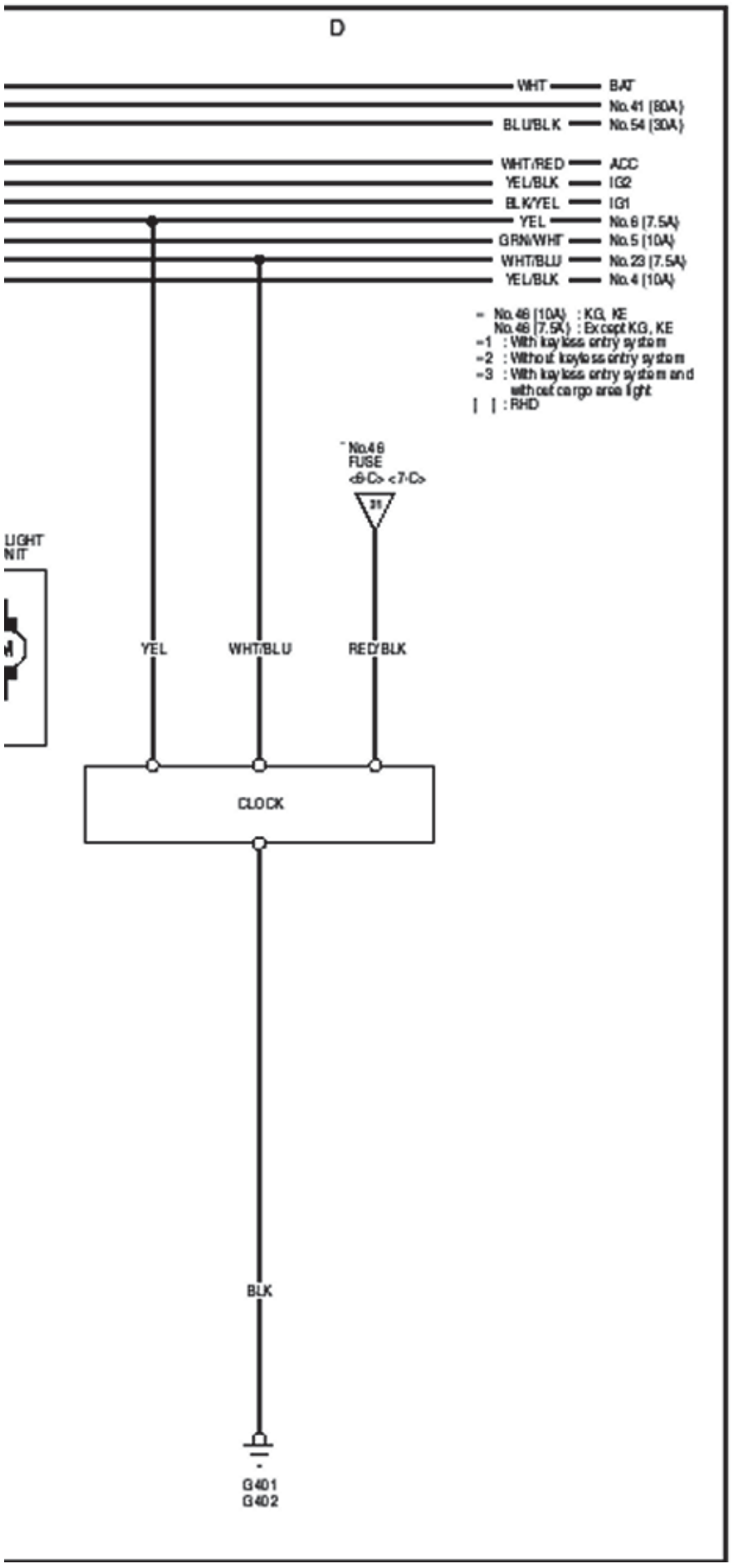
YEL

WHT/BLU

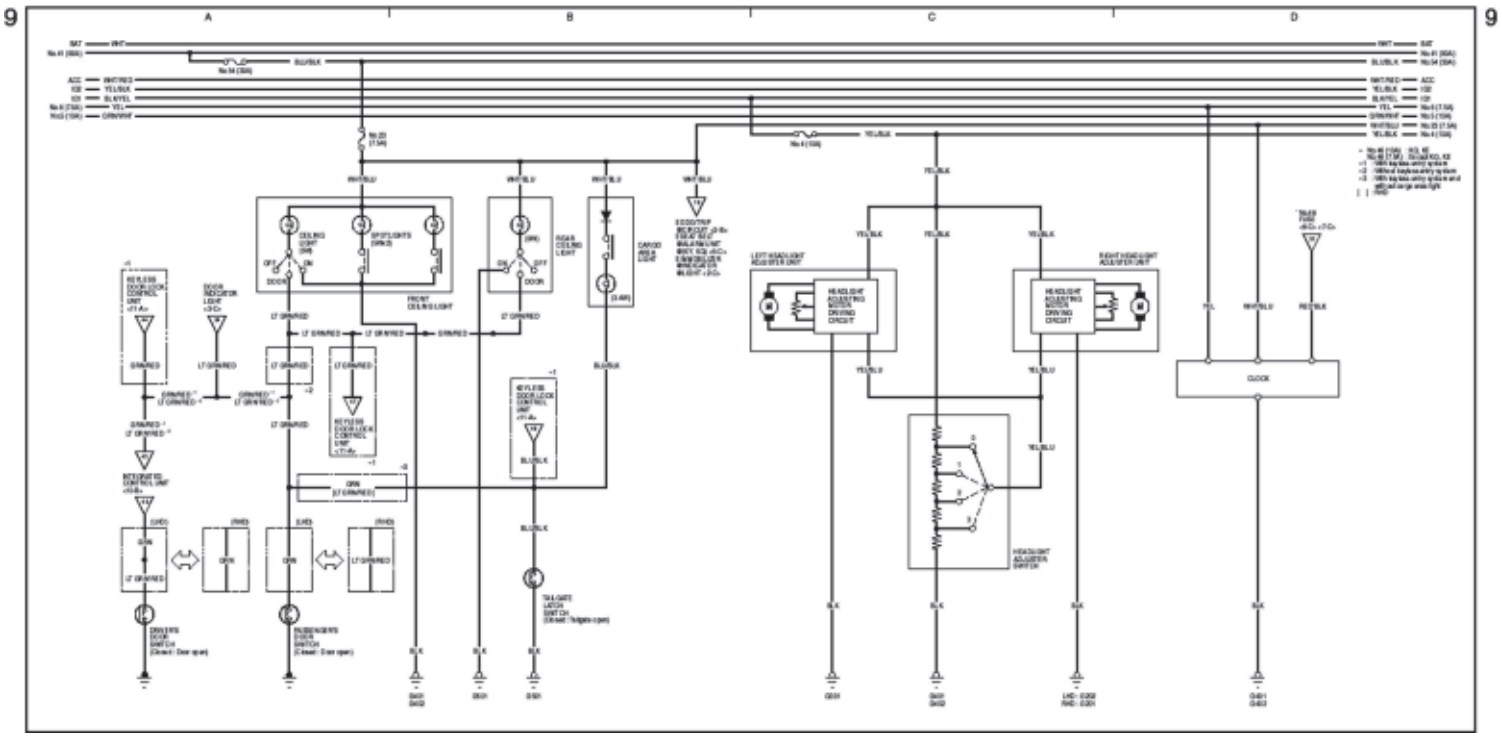
RED/BLK

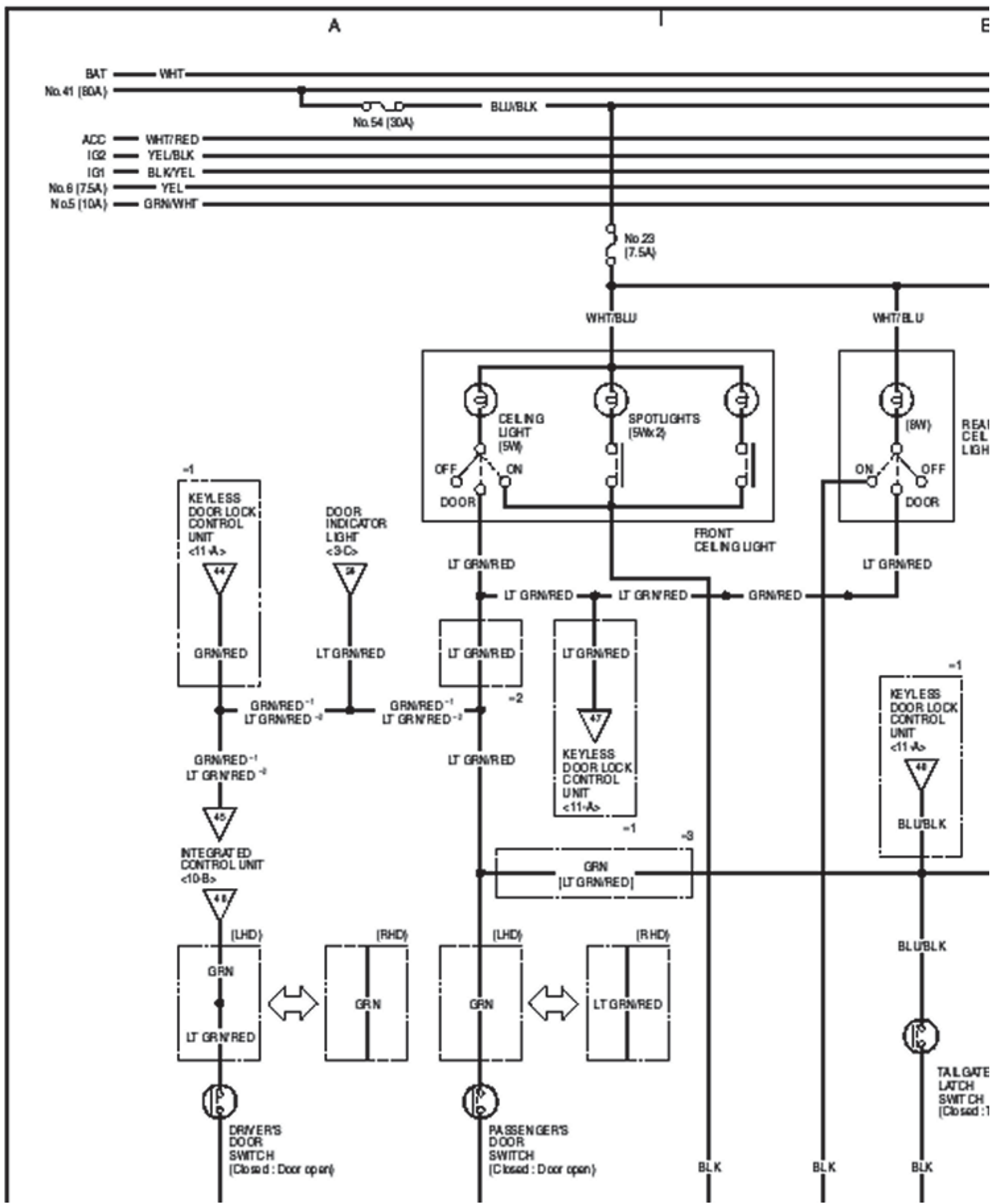
CLOCK

D


WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
*3 : With keyless entry system and without cargo area light
| | : RHD
*
No.46
FUSE
<6-C> <7-C>
31
LIGHT
NIT
YEL
WHT/BLU
RED/BLK
CLOCK
BLK
G401
G402

Wiring Diagrams
Lights, Interior - Ceiling Lights





9

A

B

BAT — WHT
No.41 (80A) — BLU/BLK
No.54 (30A)
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A)
WHT/BLU
WHT/BLU
CEILING LIGHT (5W)
SPOTLIGHTS (5W×2)
OFF
ON
DOOR
FRONT CEILING LIGHT
(8W)
ON
OFF
DOOR
REAR CEILING LIGHT
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
LT GRN/RED
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
BLU/BLK
INTEGRATED CONTROL UNIT <10-B>
GRN (LT GRN/RED)
(LHD)
(RHD)
(LHD)
(RHD)
GRN
LT GRN/RED
GRN
GRN
LT GRN/RED
BLU/BLK
DRIVER'S DOOR SWITCH (Closed : Door open)
PASSENGER'S DOOR SWITCH (Closed : Door open)
TAILGATE LATCH SWITCH (Closed :
BLK
BLK
BLK
G401
G402
G501
G501

C

No.4 (10A)
YEL/BLK
YEL/BLK
WHT/BLU
WHT/BLU
YEL/BLK
YEL/BLK
YEL/BLK
CARGO AREA LIGHT (3.4W)
ODO/TRIP CIRCUIT <3-B>
SEAT BELT ALARM UNIT
(KY, KO) <5-C>
IMMOBILIZER INDICATOR LIGHT <2-C>
LEFT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
RIGHT HEADLIGHT ADJUSTER UNIT
HEADLIGHT ADJUSTING MOTOR DRIVING CIRCUIT
BLU/BLK
YEL/BLU
YEL/BLU

C

No.4 (10A)

YEL/BLK

YEL/BLK

WHT/BLU

WHT/BLU

19

EODO/TRIP
◎CIRCUIT <3-B>
ESEAT BELT
◎ALARM UNIT
◎(KY, KQ) <5-C>
EIMMOBILIZER
◎INDICATOR
◎LIGHT <2-C>

CARGO
AREA
LIGHT

(3.4W)

YEL/BLK

YEL/BLK

YEL/BLK

LEFT HEADLIGHT
ADJUSTER UNIT

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

RIGHT HEAD
ADJUSTER U

HEADLIGHT
ADJUSTING
MOTOR
DRIVING
CIRCUIT

BLU/BLK

YEL/BLU

YEL/BLU

YEL/BLU

0

1

2

3

HEADLIGHT
ADJUSTER
SWITCH

BLK

BLK

BLK

G301

G401
G402

LHD : G202
RHD : G201

D

9

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)
GRN/WHT — No.5 (10A)
WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- : No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
=1 : With keyless entry system
=2 : Without keyless entry system
=3 : With keyless entry system and without cargo area light
| | : RHD

No.46
FUSE
<6-C> <7-C>

31

LIGHT
NIT

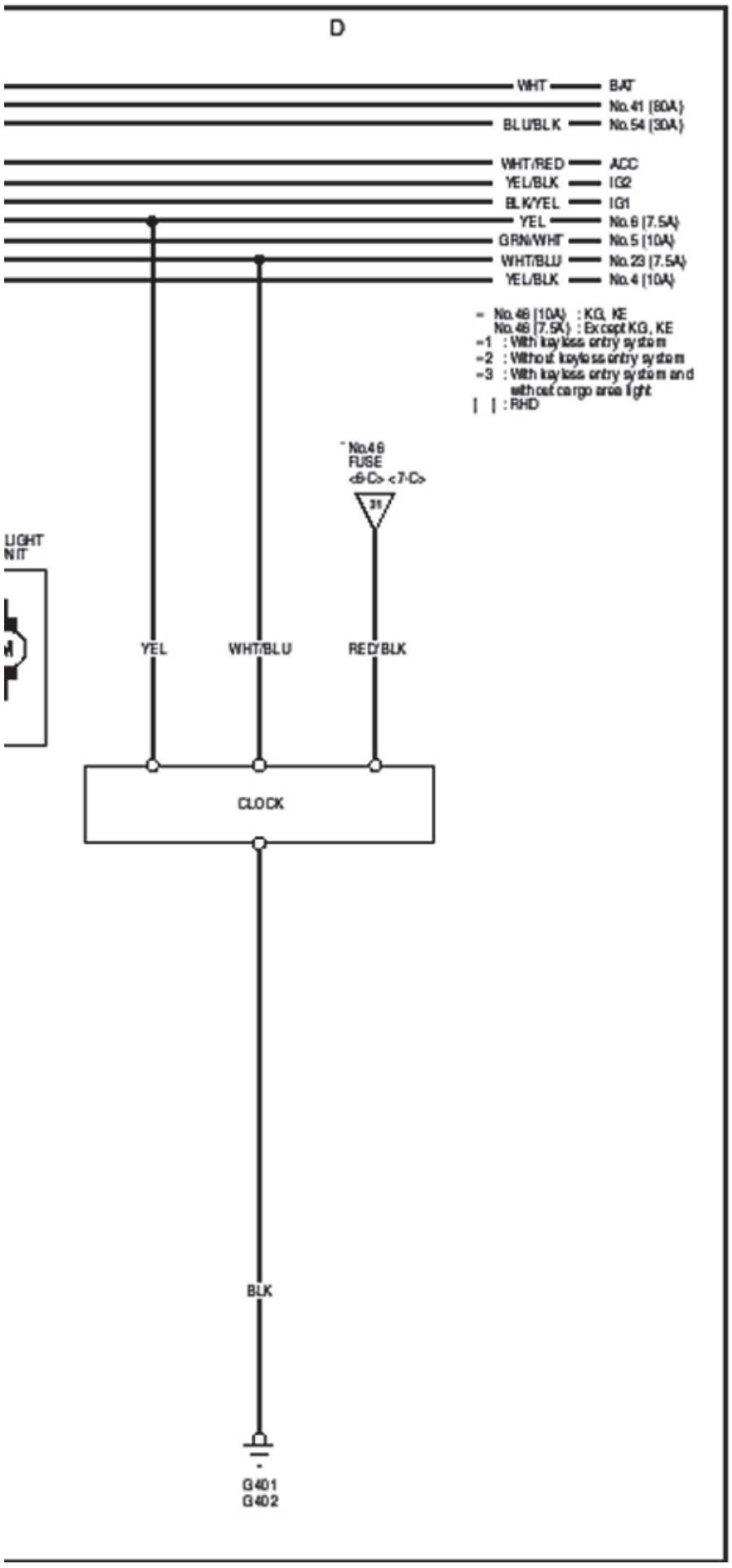
YEL

WHT/BLU

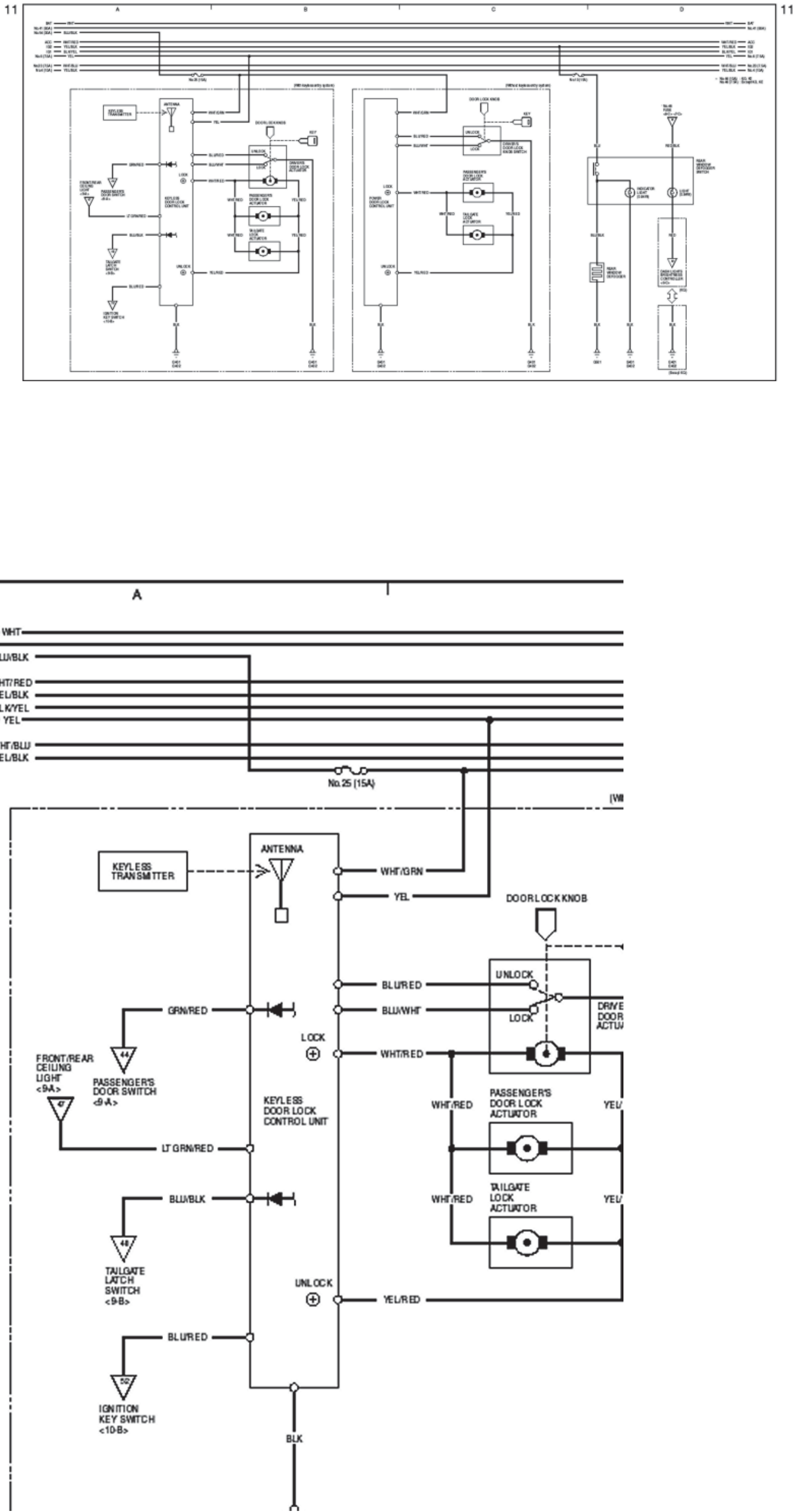
RED/BLK

CLOCK

D


WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
*3 : With keyless entry system and without cargo area light
| | : RHD
*
No.46
FUSE
<6-C> <7-C>
31
LIGHT
NIT
YEL
WHT/BLU
RED/BLK
CLOCK
BLK
G401
G402

Wiring Diagrams
Power Door Locks



11

A

BAT — WHT
No.41 (80A)
No.54 (30A) — BLU/BLK

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

No.23 (7.5A) — WHT/BLU
No.4 (10A) — YEL/BLK

No.25 (15A)

(W

KEYLESS TRANSMITTER

ANTENNA

WHT/GRN

YEL

DOOR LOCK KNOB

UNLOCK

BLU/RED

BLU/WHT

LOCK

DRIVE DOOR ACTU

LOCK

WHT/RED

GRN/RED

44

FRONT/REAR CEILING LIGHT <9A>

PASSENGER'S DOOR SWITCH <9A>

47

KEYLESS DOOR LOCK CONTROL UNIT

WHT/RED

PASSENGER'S DOOR LOCK ACTUATOR

YEL/

LT GRN/RED

BLU/BLK

WHT/RED

TAILGATE LOCK ACTUATOR

YEL/

48

TAILGATE LATCH SWITCH <9B>

UNLOCK

YEL/RED

BLU/RED

52

IGNITION KEY SWITCH <10B>

BLK

G401
G402

B

C

No.10 (15A)

(Without keyless entry system)

DOOR LOCK KNOB

WHT/GRN

KEY

UNLOCK

BLU/RED

BLU/WHT

LOCK

DRIVER'S DOOR LOCK KNOB SWITCH

KEY

PASSENGER'S DOOR LOCK ACTUATOR

LOCK

WHT/RED

POWER

B

C

No.10 (15A)

(With keyless entry system)

(Without keyless entry system)

DOOR LOCK KNOB

KEY

KEY

WHT/GRN

BLU/RED

BLU/WHT

UNLOCK

LOCK

DRIVER'S DOOR LOCK KNOB SWITCH

PASSENGER'S DOOR LOCK ACTUATOR

LOCK

WHT/RED

POWER DOOR LOCK CONTROL UNIT

WHT/RED

TAILGATE LOCK ACTUATOR

YEL/RED

UNLOCK

YEL/RED

BLK

BLK

BLK

G401
G402

G401
G402

G401
G402

D

11

WHT — BAT

No.41 (80A)

WHT/RED — ACC

YEL/BLK — IG2

BLK/YEL — IG1

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

YEL/BLK — No.4 (10A)

* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE

* No.46
FUSE
<6-C> <7-C>

BLU

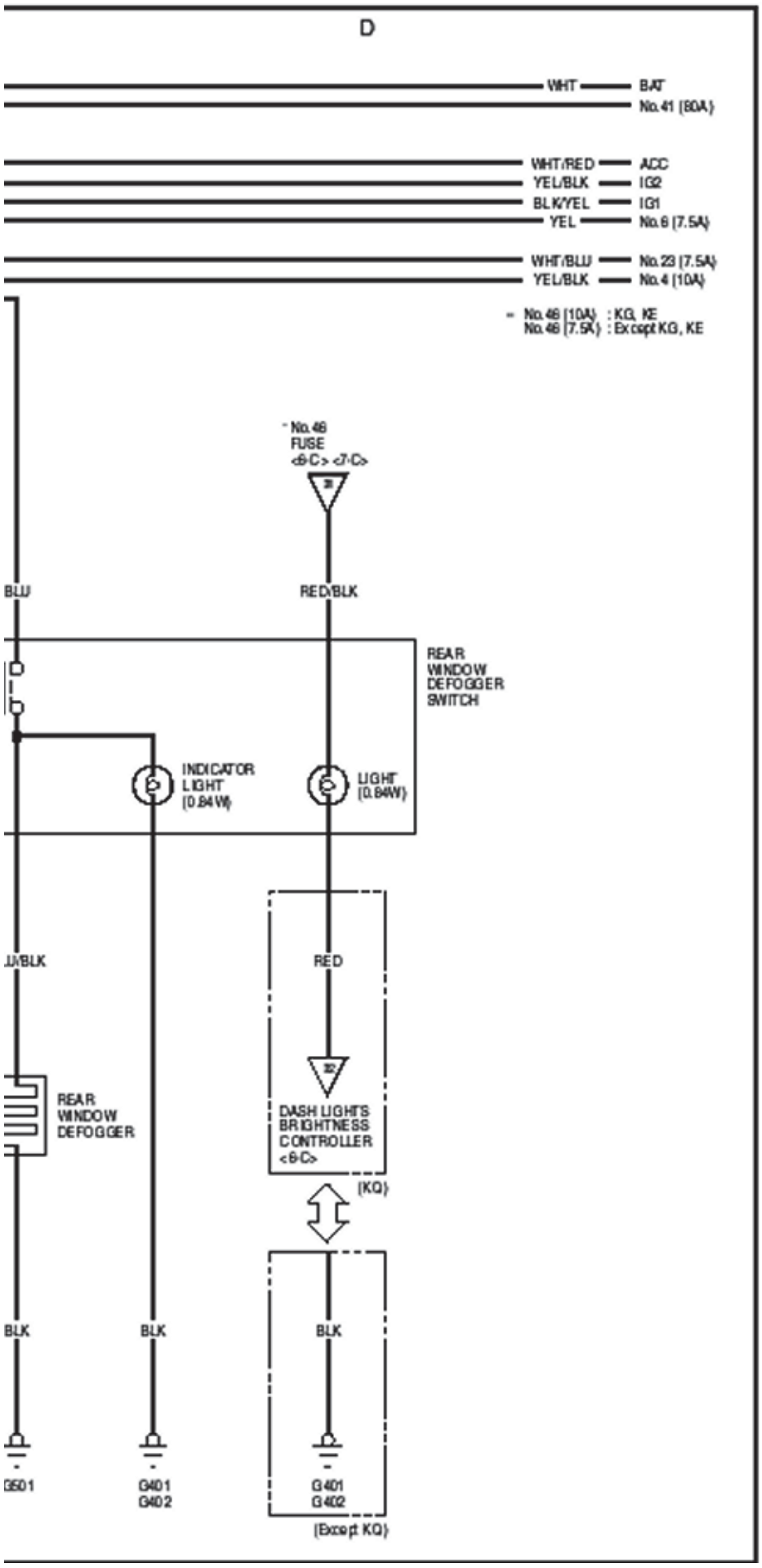
RED/BLK

REAR WINDOW DEFOGGER SWITCH

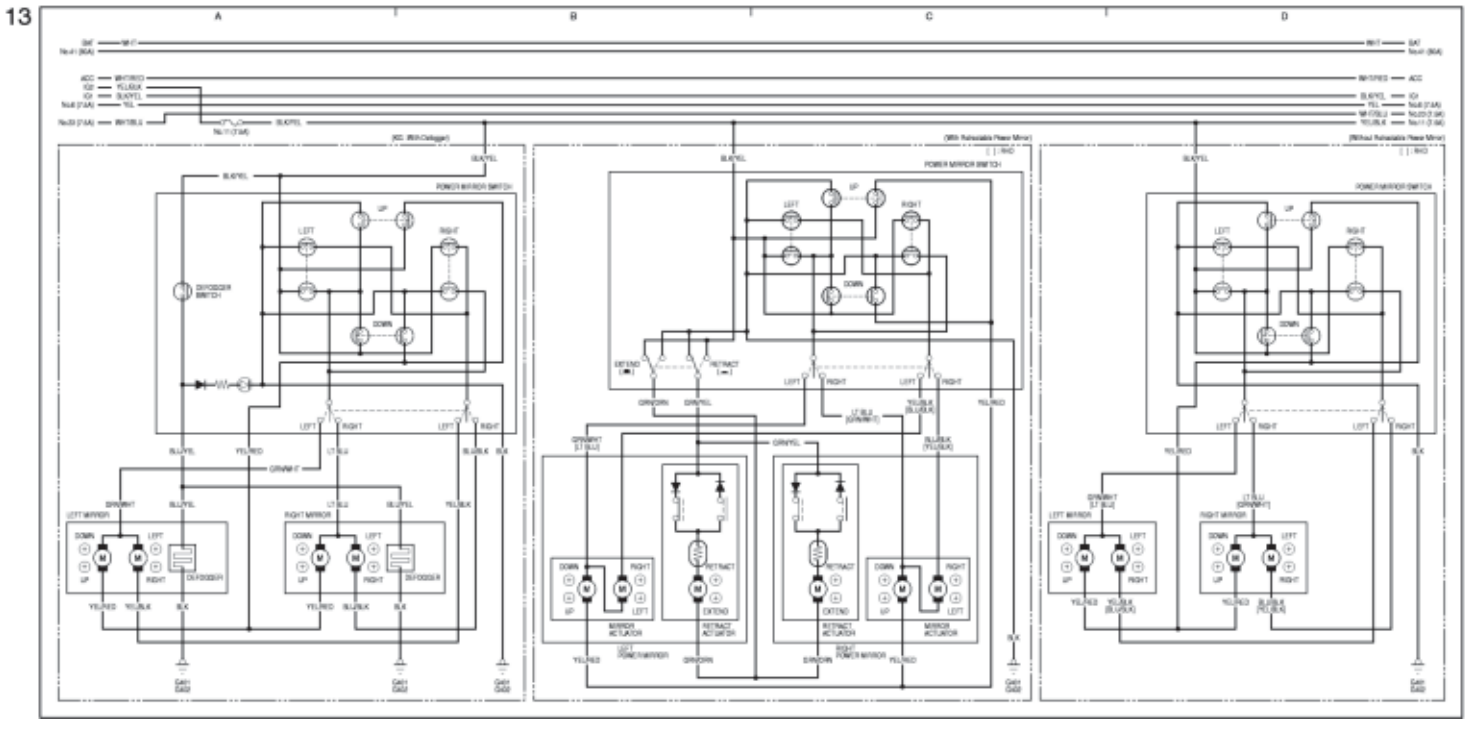
INDICATOR LIGHT (0.84W)

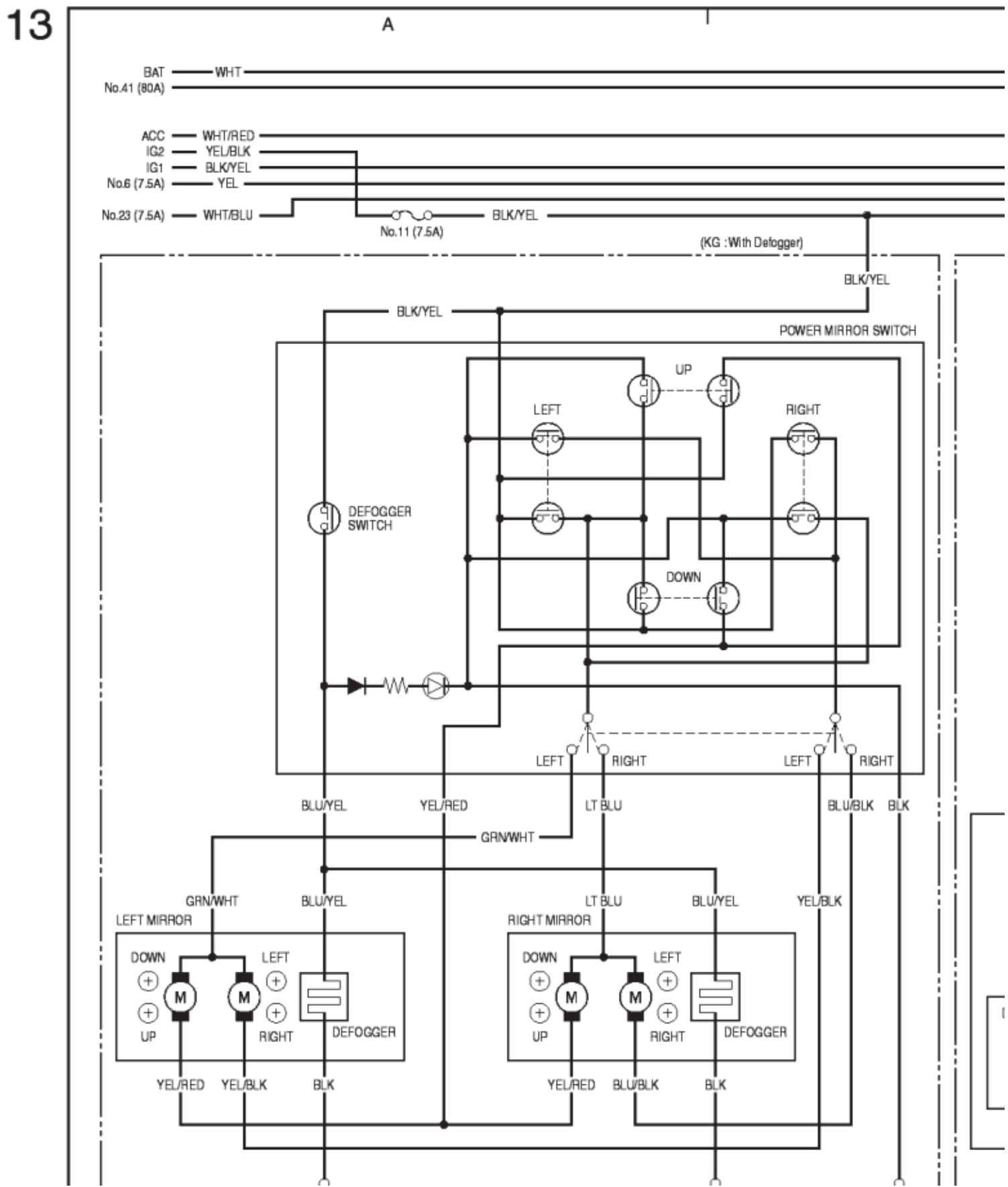
LIGHT (0.84W)

D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
* No.46
FUSE
<6-C> <7-C>
BLU
RED/BLK
REAR
WINDOW
DEFOGGER
SWITCH
INDICATOR
LIGHT
(0.84W)
LIGHT
(0.84W)
L/BLK
RED
REAR
WINDOW
DEFOGGER
DASH LIGHTS
BRIGHTNESS
CONTROLLER
<6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams
Power Mirrors





13

A

BAT — WHT
No.41 (80A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

No.23 (7.5A) — WHT/BLU — No.11 (7.5A) — BLK/YEL

(KG : With Defogger)

BLK/YEL

BLK/YEL

POWER MIRROR SWITCH

UP
LEFT
RIGHT
DOWN

DEFOGGER SWITCH

LEFT RIGHT LEFT RIGHT

BLU/YEL YEL/RED LT BLU BLU/BLK BLK

GRN/WHT

GRN/WHT BLU/YEL LT BLU BLU/YEL YEL/BLK

LEFT MIRROR

DOWN LEFT
UP RIGHT DEFOGGER

YEL/RED YEL/BLK BLK

RIGHT MIRROR

DOWN LEFT
UP RIGHT DEFOGGER

YEL/RED BLU/BLK BLK

G401
G402

G401
G402

G401
G402

B C

(With Retractable Power Mirror)

[ ] : RHD

BLK/YEL

POWER MIRROR SWITCH

UP
LEFT
RIGHT
DOWN

EXTEND
RETRACT

B C

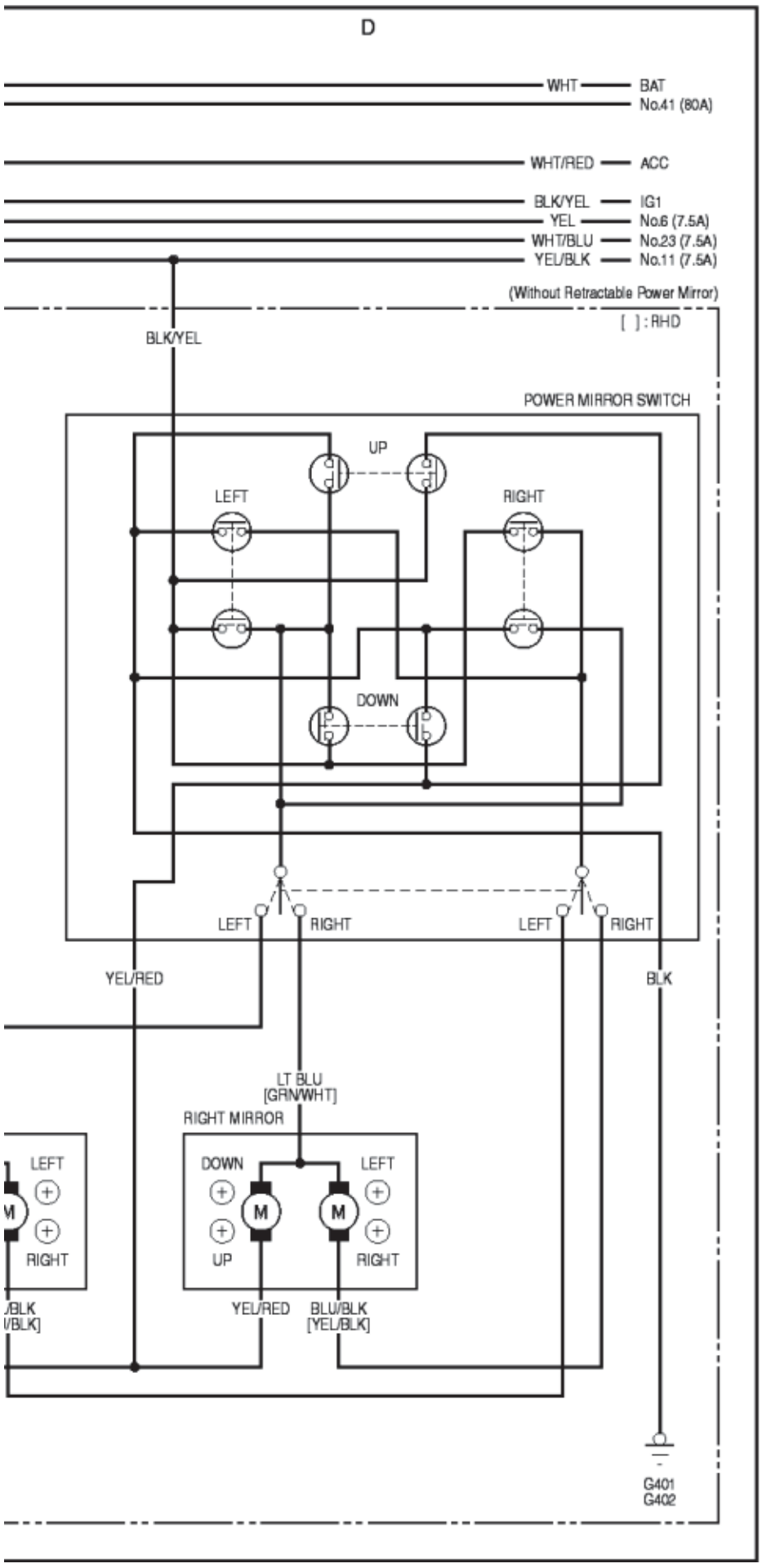
(With Retractable Power Mirror)
[ ] : RHD
BLK/YEL
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
EXTEND
RETRACT
LEFT
RIGHT
LEFT
RIGHT
GRN/ORN
GRN/YEL
LT BLU
[GRN/WHT]
YEL/BLK
[BLU/BLK]
YEL/RED
GRN/WHT
[LT BLU]
GRN/YEL
BLU/BLK
[YEL/BLK]
DOWN
RIGHT
UP
LEFT
RETRACT
EXTEND
MIRROR
ACTUATOR
RETRACT
ACTUATOR
LEFT
POWER MIRROR
YEL/RED
GRN/ORN
RETRACT
EXTEND
RETRACT
ACTUATOR
RIGHT
POWER MIRROR
GRN/ORN
DOWN
RIGHT
UP
LEFT
MIRROR
ACTUATOR
YEL/RED
BLK
G401
G402
GRN/WHT
[LT BLU]
LEFT MIRROR
DOWN
UP
YEL/RED

D

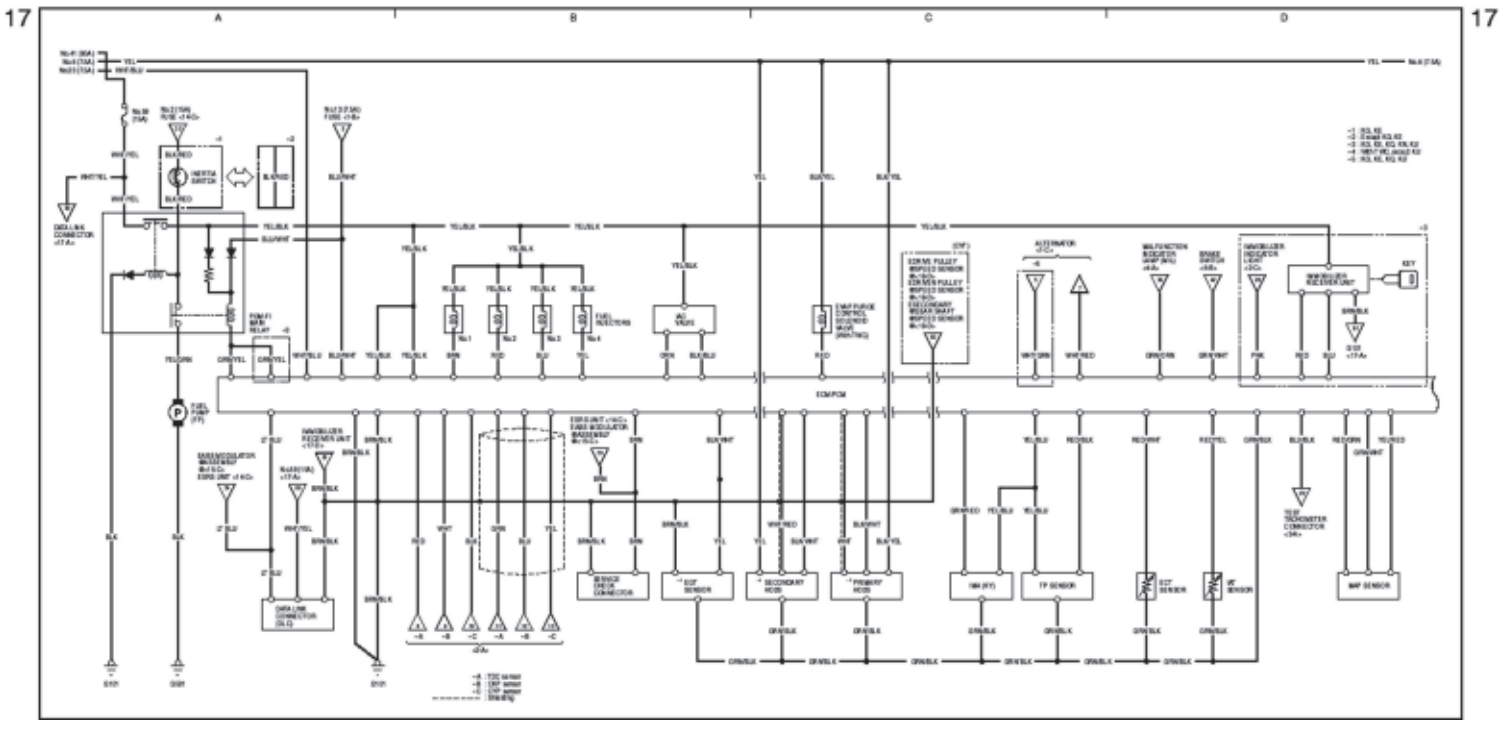
13

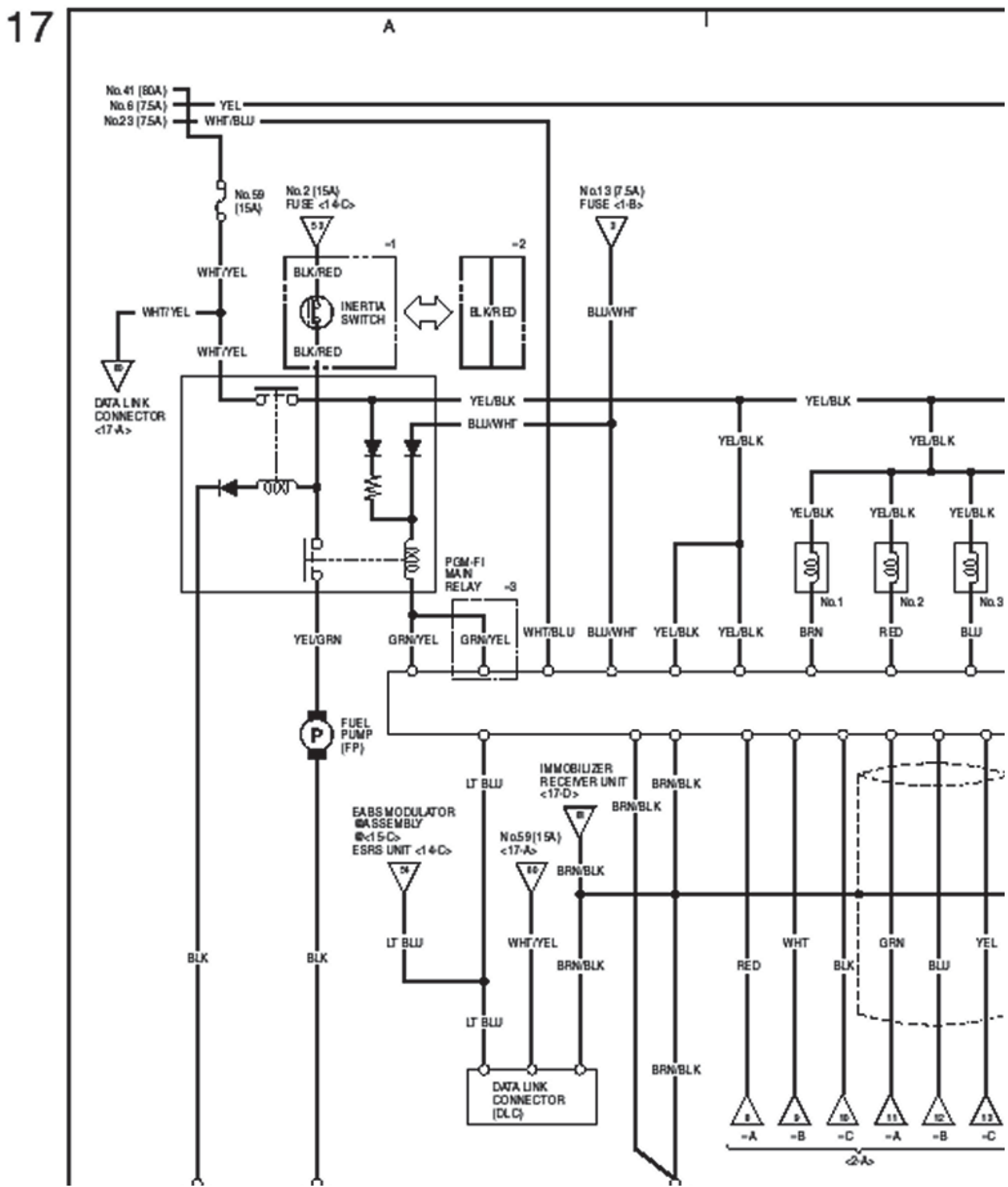
WHT — BAT
No.41 (80A)
WHT/RED — ACC
BLK/YEL — IG1
YEL — No.6 (7.5A)
WHT/BLU — No.23 (7.5A)
YEL/BLK — No.11 (7.5A)

(Without Retractable Power Mirror)
[ ] : RHD
BLK/YEL
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN

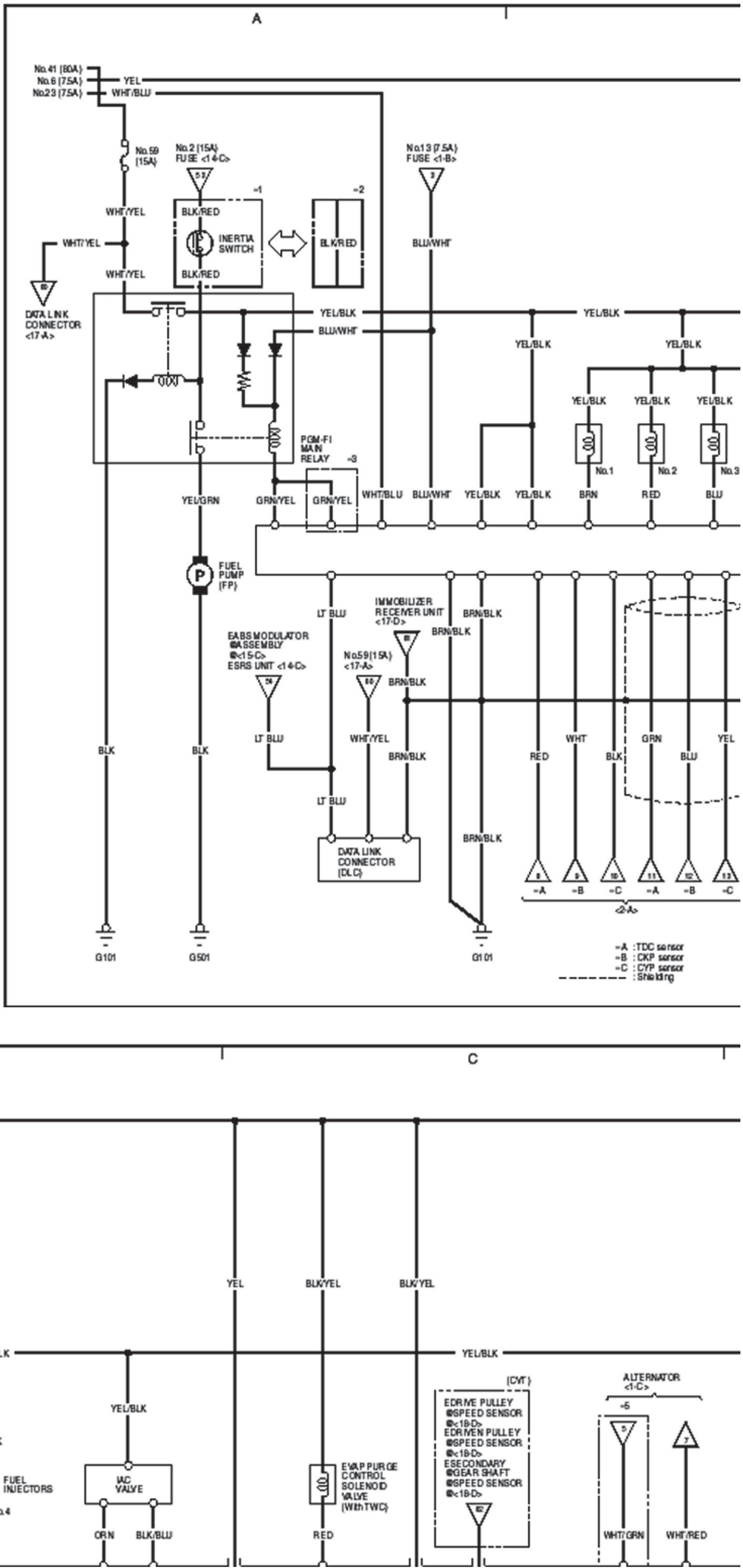

D
WHT
BAT
No.41 (80A)
WHT/RED
ACC
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.11 (7.5A)
(Without Retractable Power Mirror)
[ ] : RHD
BLK/YEL
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
LEFT
RIGHT
LEFT
RIGHT
YEL/RED
BLK
LT BLU
[GRN/WHT]
RIGHT MIRROR
LEFT
RIGHT
DOWN
LEFT
M
M
UP
RIGHT
YEL/RED
BLU/BLK
[YEL/BLK]
G401
G402

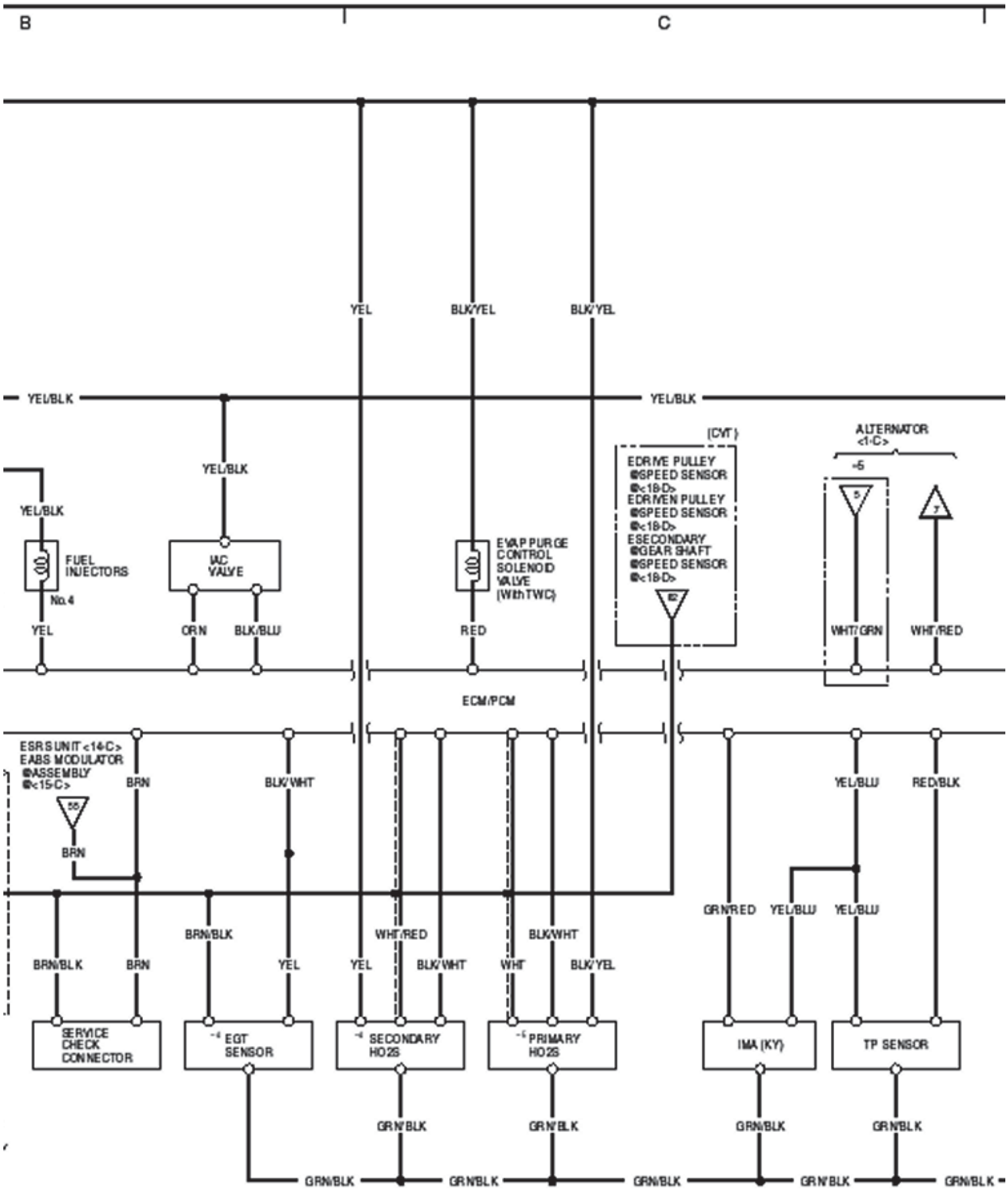
Wiring Diagrams
ECM/PCM

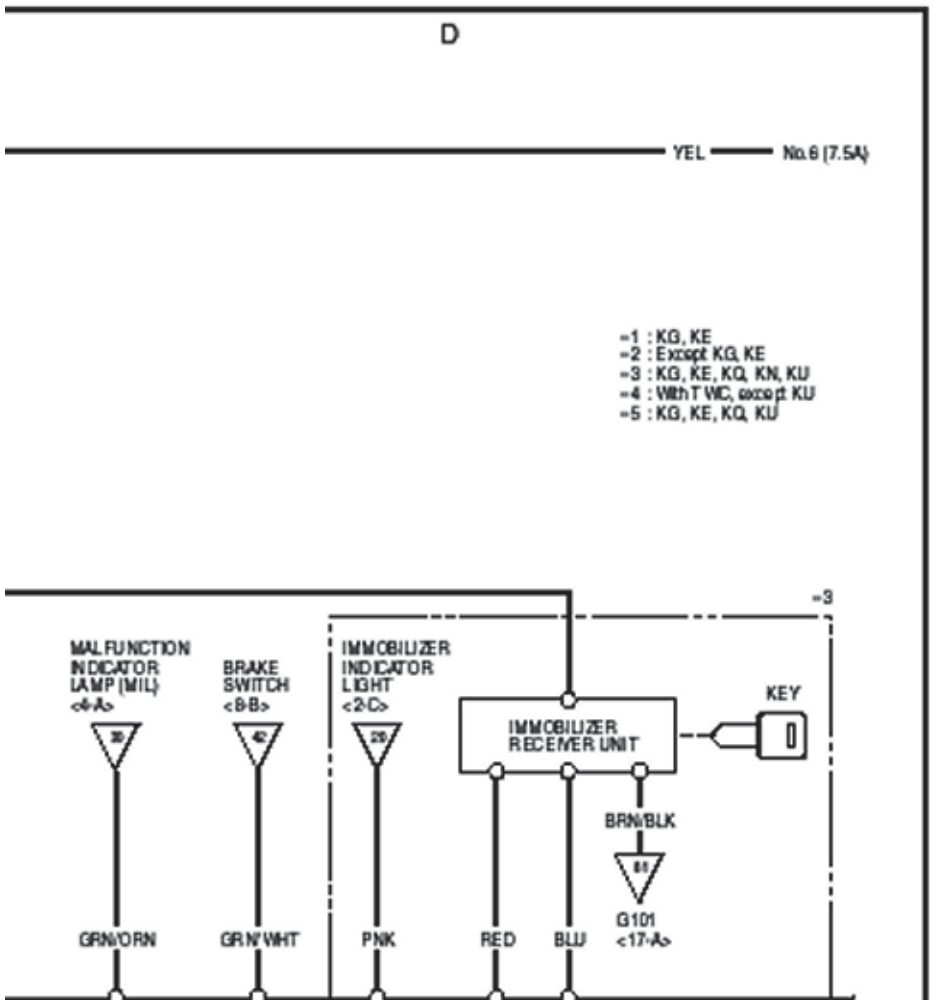




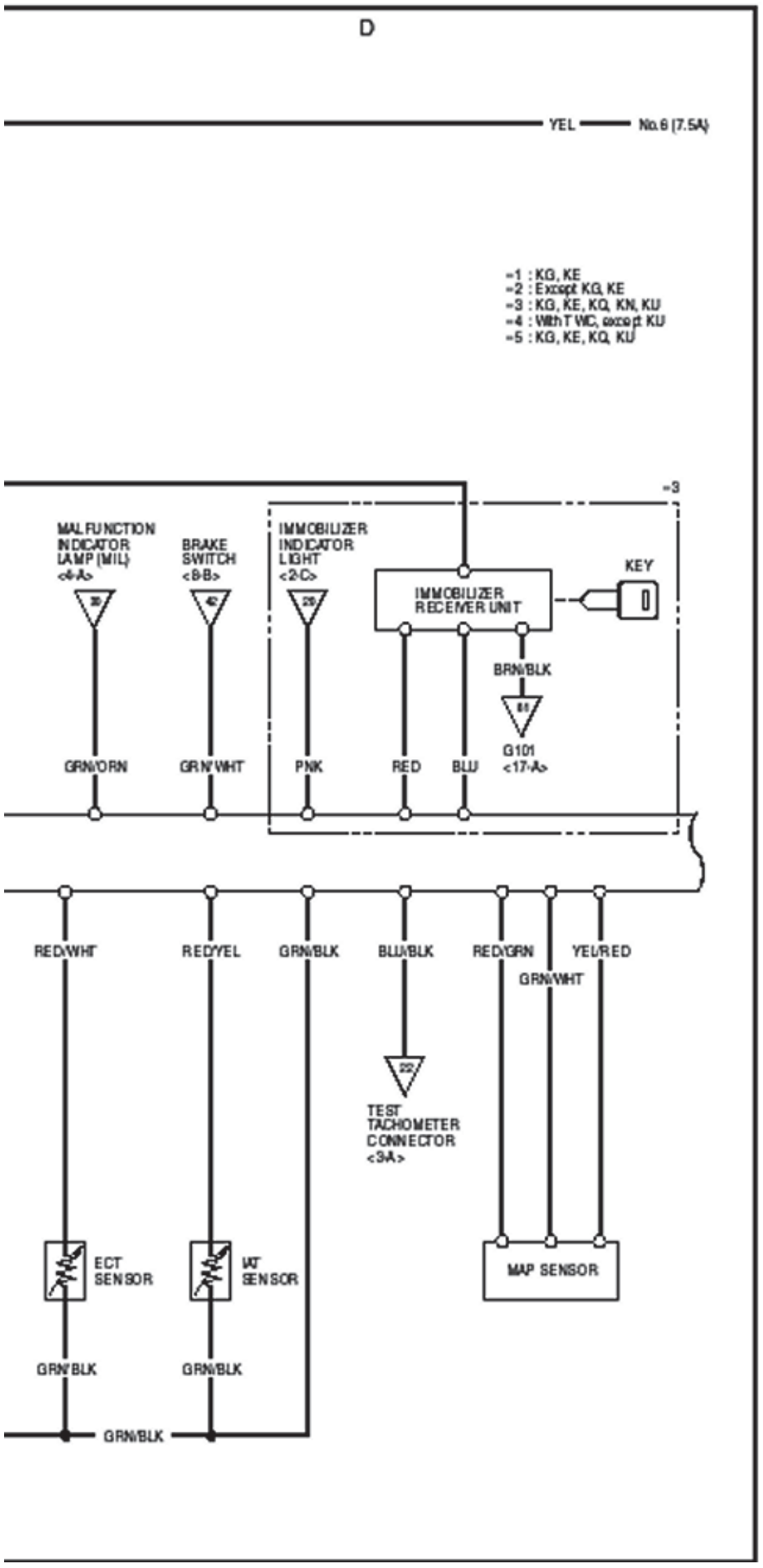
17


A
B
C
No.41 (80A)
No.6 (7.5A)
No.23 (7.5A)
YEL
WHT/BLU
No.59 (15A)
No.2 (15A)
FUSE <1-C>
No.13 (7.5A)
FUSE <1-B>
WHT/YEL
BLK/RED
INERTIA SWITCH
BLU/WHT
DATA LINK CONNECTOR <17-A>
YEL/BLK
PGM-FI MAIN RELAY
YEL/GRN
GRN/YEL
WHT/BLU
BLU/WHT
BRN
RED
BLU
FUEL PUMP (FP)
IMMOBILIZER RECEIVER UNIT <17-D>
EABS MODULATOR ASSEMBLY <15-C>
ESRS UNIT <14-C>
No.59 (15A) <17-A>
LT BLU
BRN/BLK
WHT/YEL
DATA LINK CONNECTOR (DLC)
BLK
RED
WHT
GRN
YEL
=A
=B
=C
<2-A>
G101
G501
=A : TDC sensor
=B : CKP sensor
=C : CYP sensor
: Shielding
YEL/BLK
FUEL INJECTORS
No.4
IAC VALVE
ORN
BLK/BLU
EVAP PURGE CONTROL SOLENOID VALVE (With TWC)
(CVT)
EDRIVE PULLEY SPEED SENSOR <18-D>
EDRIVEN PULLEY SPEED SENSOR <18-D>
ESECONDARY GEAR SHAFT SPEED SENSOR <18-D>
ALTERNATOR <1-C>
=5
WHT/GRN
WHT/RED


B
C
YEL
BLK/YEL
BLK/YEL
YEL/BLK
YEL/BLK
(CVT)
EDRIVE PULLEY
SPEED SENSOR
<1-B>
EDRIVEN PULLEY
SPEED SENSOR
<1-B>
ESECONDARY
GEAR SHAFT
SPEED SENSOR
<1-B>
ALTERNATOR
<1-C>
YEL/BLK
FUEL
INJECTORS
No.4
IAC
VALVE
EVAP PURGE
CONTROL
SOLENOID
VALVE
(With TWC)
YEL
ORN
BLK/BLU
RED
WHT/GRN
WHT/RED
ECM/PCM
ESRS UNIT <14-C>
EABS MODULATOR
ASSEMBLY
<15-C>
BRN
BLK/WHT
YEL/BLU
RED/BLK
BRN
BRN/BLK
BRN
BRN/BLK
YEL
YEL
WHT/RED
BLK/WHT
WHT
BLK/YEL
GRN/RED
YEL/BLU
YEL/BLU
SERVICE
CHECK
CONNECTOR
EGT
SENSOR
SECONDARY
HO2S
PRIMARY
HO2S
IMA (KY)
TP SENSOR
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK

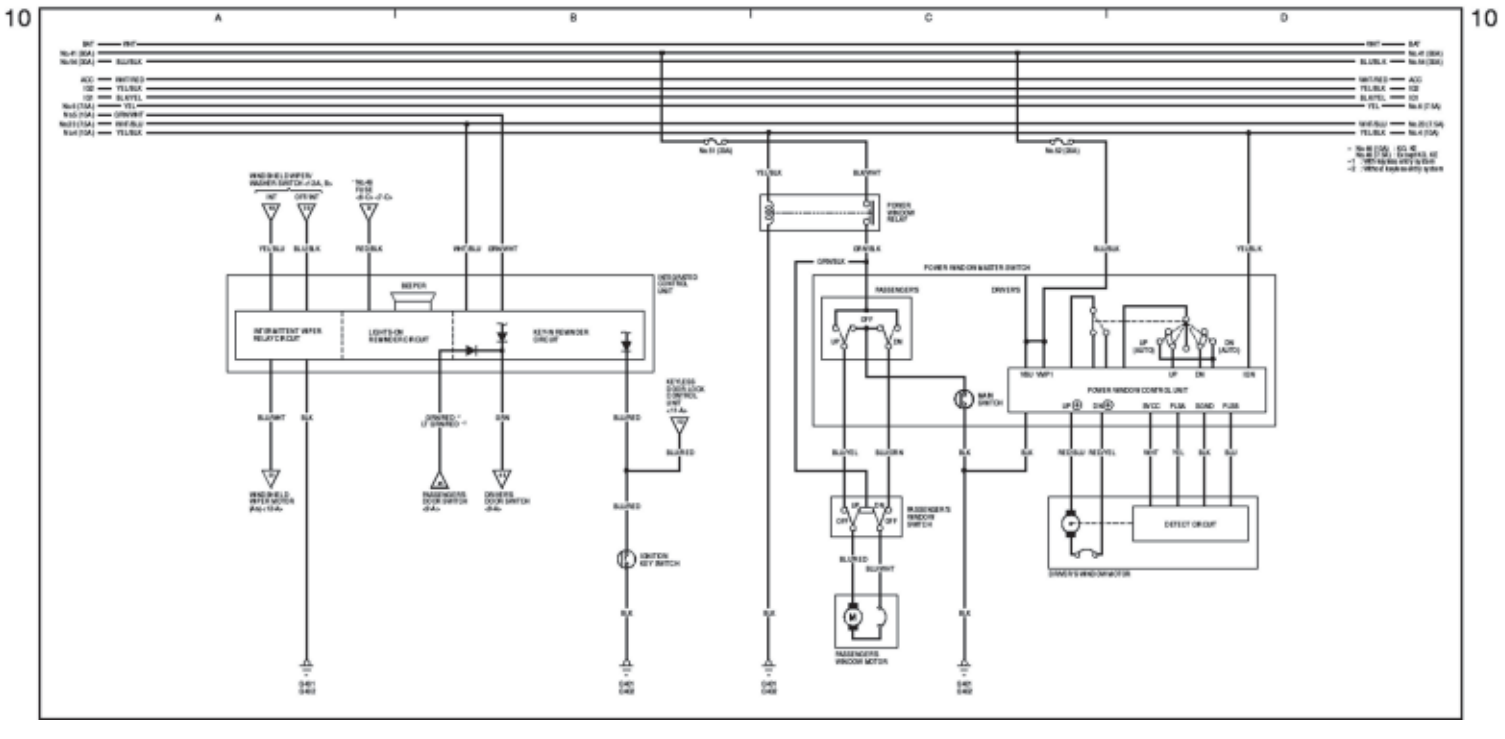

D
YEL
No.6 (7.5A)
=1 : KG, KE
=2 : Except KG, KE
=3 : KG, KE, KQ, KN, KU
=4 : With TWC, except KU
=5 : KG, KE, KQ, KU
=3
MALFUNCTION
INDICATOR
LAMP (MIL)
<6-A>
BRAKE
SWITCH
<8-B>
IMMOBILIZER
INDICATOR
LIGHT
<2-C>
IMMOBILIZER
RECEIVER UNIT
KEY
BRN/BLK
G101
<17-A>
GRN/ORN
GRN/WHT
PNK
RED
BLU

D


YEL
No.6 (7.5A)
*1 : KG, KE
*2 : Except KG, KE
*3 : KG, KE, KQ, KN, KU
*4 : With TWC, except KU
*5 : KG, KE, KQ, KU
*3
MALFUNCTION INDICATOR LAMP (MIL) <4-A>
BRAKE SWITCH <8-B>
IMMOBILIZER INDICATOR LIGHT <2-C>
IMMOBILIZER RECEIVER UNIT
KEY
BRN/BLK
G101 <17-A>
GRN/ORN
GRN/WHT
PNK
RED
BLU
RED/WHT
RED/YEL
GRN/BLK
BLU/BLK
RED/GRN
GRN/WHT
YEL/RED
TEST TACHOMETER CONNECTOR <3-A>
ECT SENSOR
IAT SENSOR
MAP SENSOR
GRN/BLK
GRN/BLK
GRN/BLK

Wiring Diagrams
ECM/PCM

Wiring Diagrams
Power Windows



10

A

BAT — WHT
No.41 (80A) —
No.54 (30A) — BLU/BLK

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL
No.5 (10A) — GRN/WHT
No.23 (7.5A) — WHT/BLU
No.4 (10A) — YEL/BLK

WINDSHIELD WIPER/
WASHER SWITCH <12A, B>
INT
OFF/INT
49
50
No.46
FUSE
<8-C> <7-C>
YEL/BLU
BLU/BLK
RED/BLK
WHT/BLU
GRN/WHT

BEEPER

INTERMITTENT WIPER
RELAY CIRCUIT
LIGHTS-ON
REMINDER CIRCUIT
KEY-IN R
CIRCUIT

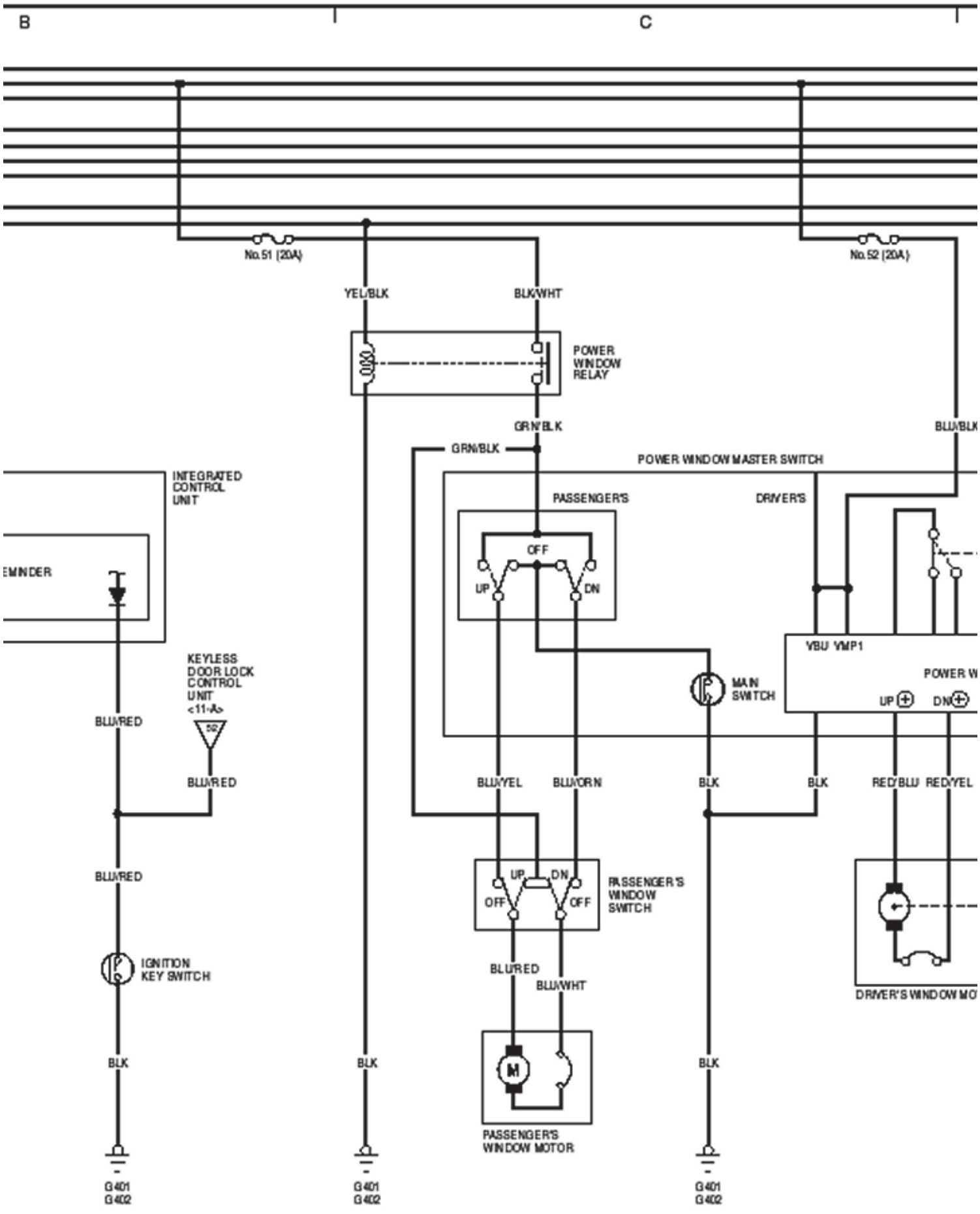
BLU/WHT
BLK
GRN/RED *1
LT GRN/RED *2
GRN
56
45
46
WINDSHIELD
WIPER MOTOR
(Hi) <12-A>
PASSENGER'S
DOOR SWITCH
<9-A>
DRIVER'S
DOOR SWITCH
<9-A>

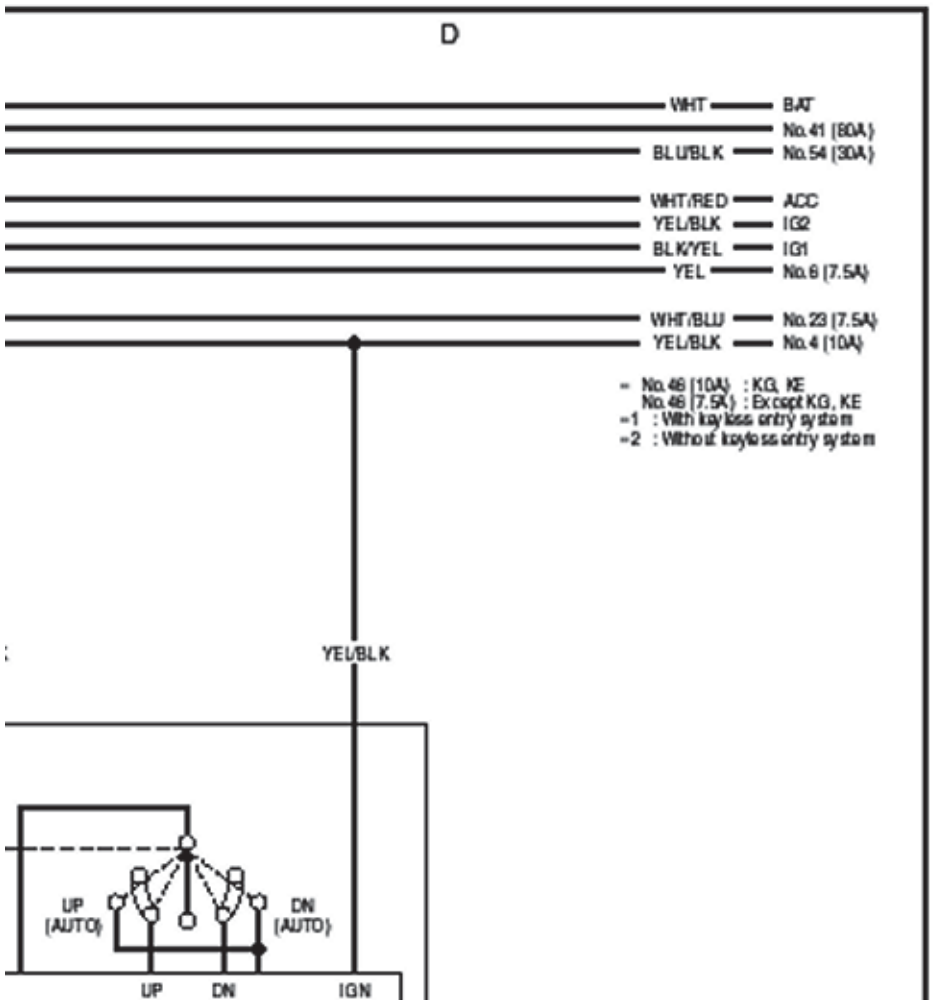
G401
G402

B

C

No.51 (20A)
No.52 (20A)
YEL/BLK
BLK/WHT
POWER
WINDOW
RELAY
GRN/BLK
GRN/BLK
BLU/BLK
POWER WINDOW MASTER SWITCH
INTEGRATED
CONTROL
UNIT
PASSENGER'S
DRIVER'S
OFF
UP
DN
YBU YMP1


B
C
No.51 (20A)
No.52 (20A)
YEL/BLK
BLK/WHT
POWER WINDOW RELAY
GRN/BLK
GRN/BLK
BLU/BLK
POWER WINDOW MASTER SWITCH
INTEGRATED CONTROL UNIT
PASSENGER'S
DRIVER'S
OFF
UP
DN
KEYLESS DOOR LOCK CONTROL UNIT <11-A>
MAIN SWITCH
BLU/RED
BLU/RED
BLU/RED
BLU/YEL
BLU/ORN
BLK
BLK
RED/BLU
RED/YEL
IGNITION KEY SWITCH
PASSENGER'S WINDOW SWITCH
BLU/RED
BLU/WHT
BLK
BLK
BLK
PASSENGER'S WINDOW MOTOR
G401
G402
G401
G402
G401
G402


D
WHT
BAT
No.41 (80A)
BLU/BLK
No.54 (30A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
*: No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system
YEL/BLK
UP (AUTO)
DN (AUTO)
UP
DN
IGN

D

WHT — BAT
No.41 (80A)
BLU/BLK — No.54 (30A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)
YEL/BLK — No.4 (10A)

- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE
*1 : With keyless entry system
*2 : Without keyless entry system

YEL/BLK

UP (AUTO)
DN (AUTO)

UP
DN
IGN

INDOW CONTROL UNIT

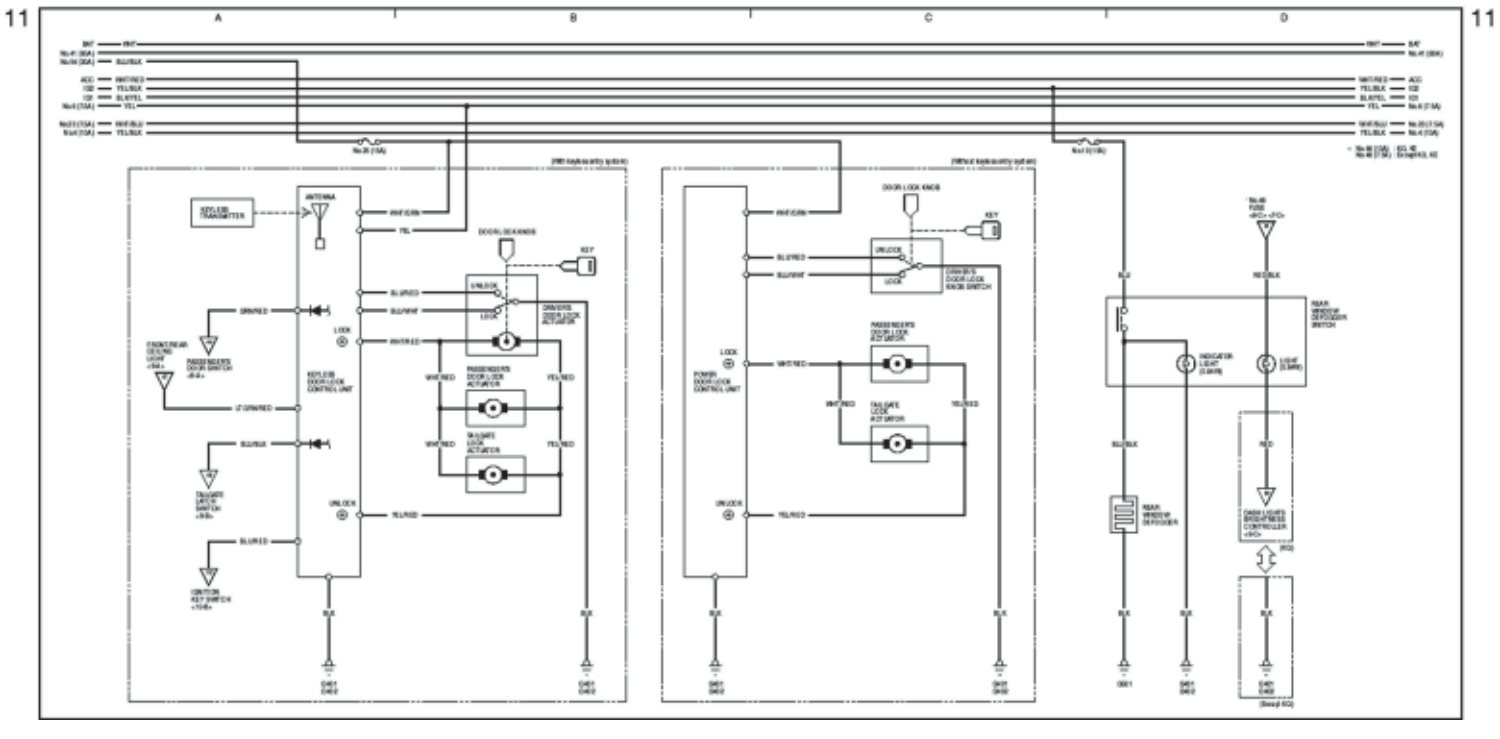
SVCC
PLSA
SGND
PLSB

WHT
YEL
BLK
BLU

DETECT CIRCUIT

TOR

Wiring Diagrams
Rear Window Defogger



11

A

BAT — WHT
No.41 (80A)
No.54 (30A) — BLU/BLK

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

No.23 (7.5A) — WHT/BLU
No.4 (10A) — YEL/BLK

No.25 (15A)

(W

KEYLESS TRANSMITTER

ANTENNA

WHT/GRN

YEL

DOOR LOCK KNOB

UNLOCK

BLU/RED

BLU/WHT

LOCK

DRIVE DOOR ACTU

LOCK

WHT/RED

GRN/RED

44

FRONT/REAR CEILING LIGHT <9A>

PASSENGER'S DOOR SWITCH <9A>

47

KEYLESS DOOR LOCK CONTROL UNIT

WHT/RED

PASSENGER'S DOOR LOCK ACTUATOR

YEL/

LT GRN/RED

BLU/BLK

WHT/RED

TAILGATE LOCK ACTUATOR

YEL/

48

TAILGATE LATCH SWITCH <9B>

UNLOCK

YEL/RED

BLU/RED

52

IGNITION KEY SWITCH <10B>

BLK

G401
G402

B

C

No.10 (15A)

(Without keyless entry system)

DOOR LOCK KNOB

WHT/GRN

KEY

UNLOCK

BLU/RED

BLU/WHT

LOCK

DRIVER'S DOOR LOCK KNOB SWITCH

KEY

PASSENGER'S DOOR LOCK ACTUATOR

LOCK

WHT/RED

POWER

B

C

No.10 (15A)

(With keyless entry system)

(Without keyless entry system)

DOOR LOCK KNOB

KEY

KEY

WHT/GRN

BLU/RED

BLU/WHT

UNLOCK

LOCK

DRIVER'S DOOR LOCK KNOB SWITCH

PASSENGER'S DOOR LOCK ACTUATOR

LOCK

WHT/RED

POWER DOOR LOCK CONTROL UNIT

WHT/RED

TAILGATE LOCK ACTUATOR

YEL/RED

UNLOCK

YEL/RED

BLK

BLK

BLK

G401
G402

G401
G402

G401
G402

D

11

WHT — BAT

No.41 (80A)

WHT/RED — ACC

YEL/BLK — IG2

BLK/YEL — IG1

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

YEL/BLK — No.4 (10A)

* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE

* No.46
FUSE
<6-C> <7-C>

BLU

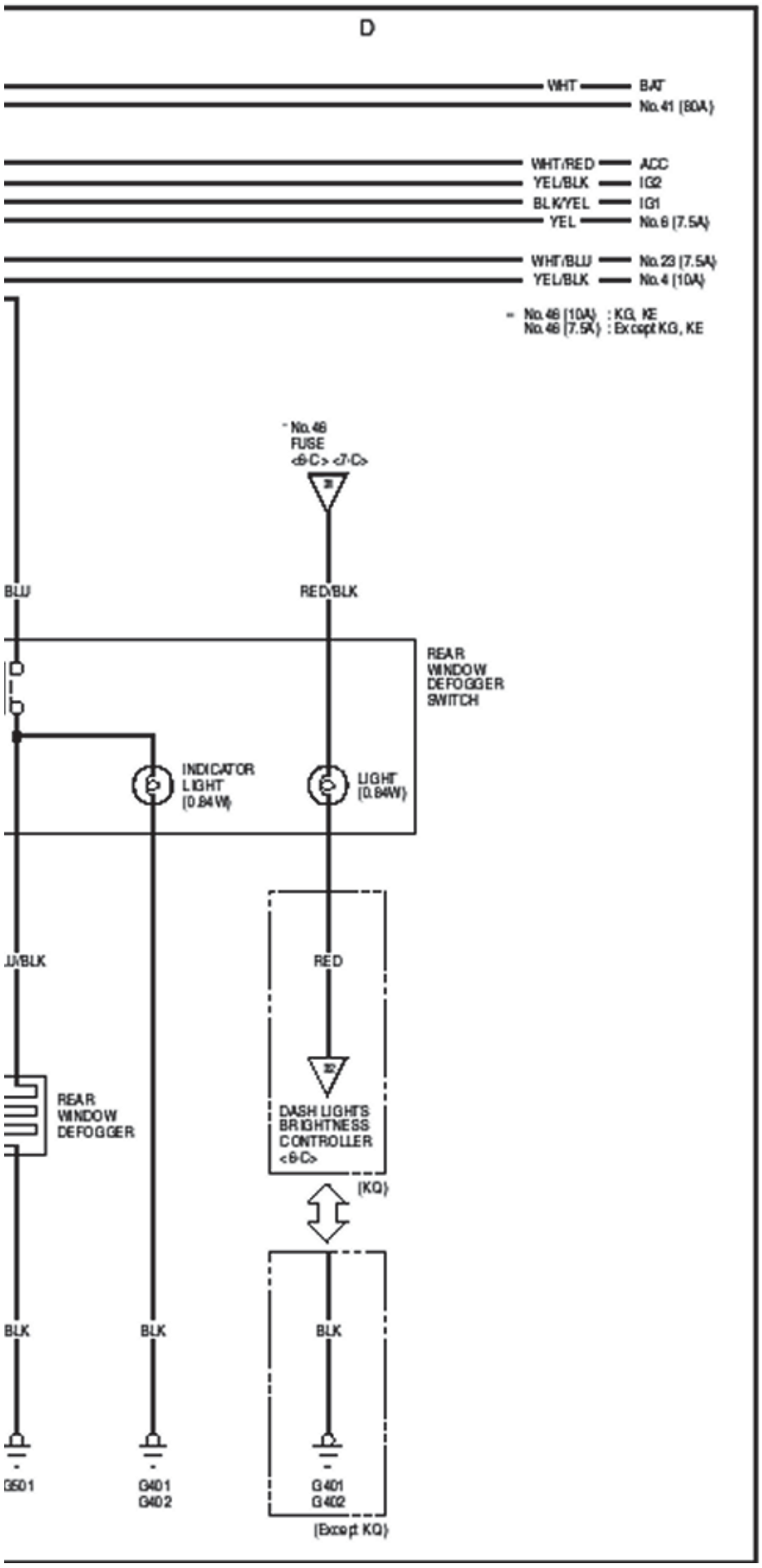
RED/BLK

REAR WINDOW DEFOGGER SWITCH

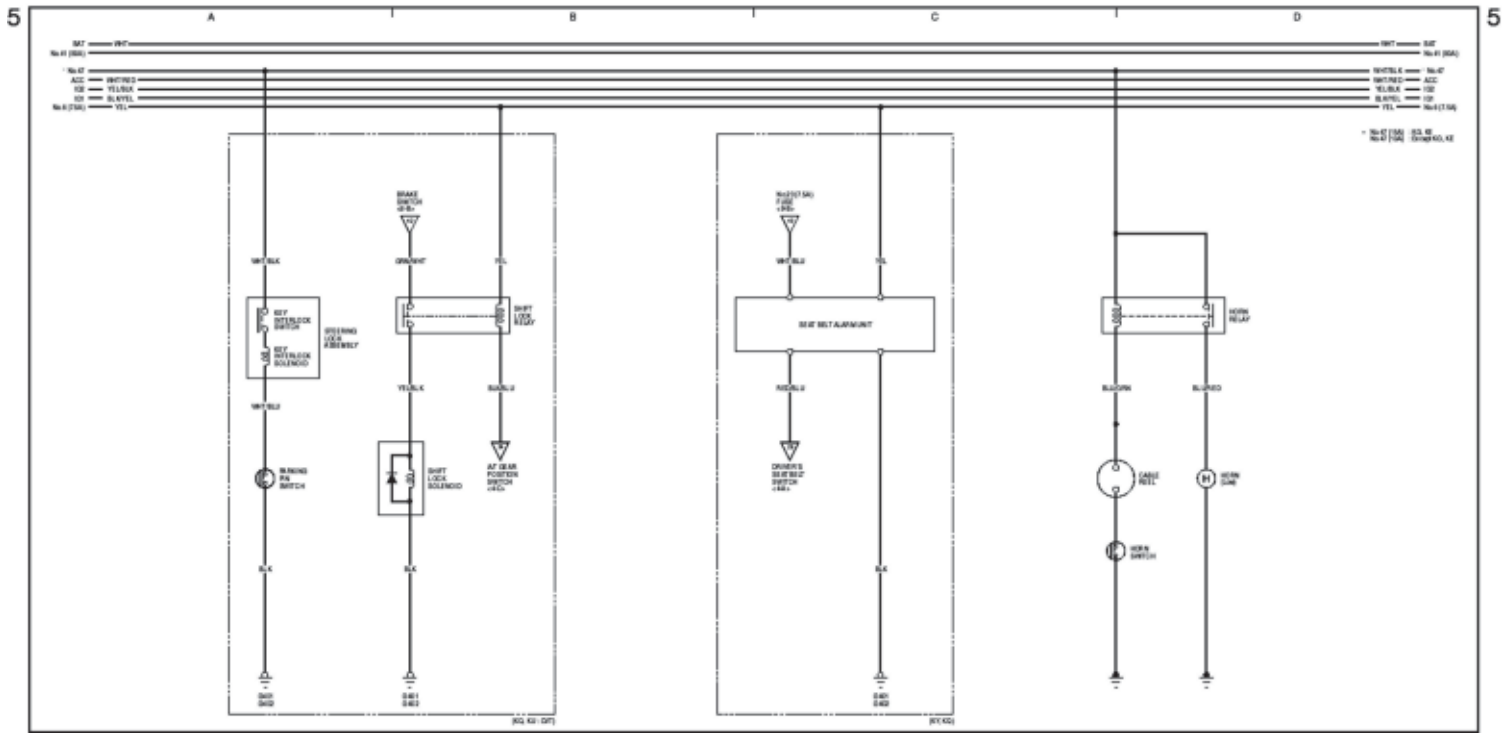
INDICATOR LIGHT (0.84W)

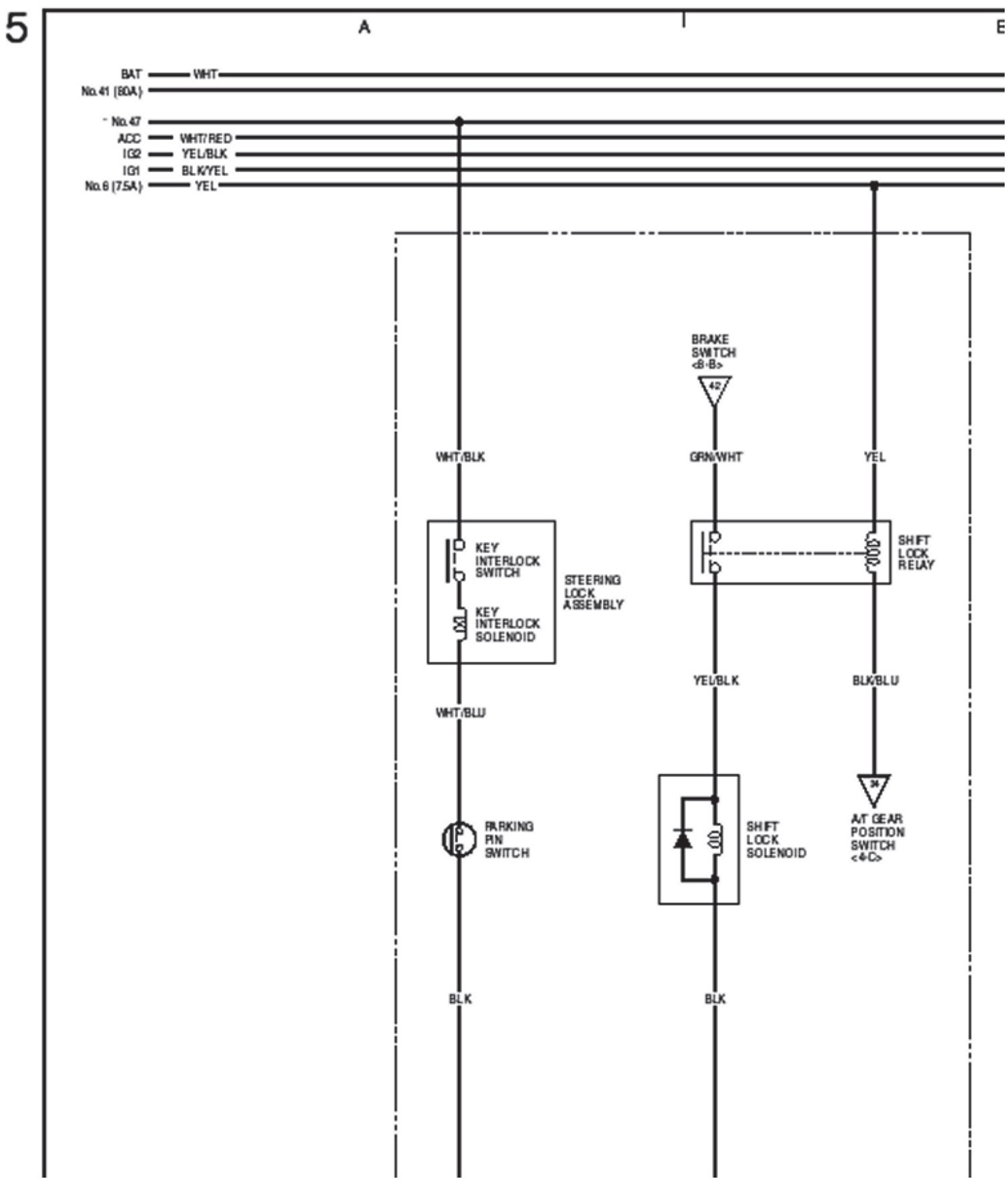
LIGHT (0.84W)

D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
YEL/BLK
No.4 (10A)
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
* No.46
FUSE
<6-C> <7-C>
BLU
RED/BLK
REAR
WINDOW
DEFOGGER
SWITCH
INDICATOR
LIGHT
(0.84W)
LIGHT
(0.84W)
L/BLK
RED
REAR
WINDOW
DEFOGGER
DASH LIGHTS
BRIGHTNESS
CONTROLLER
<6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams
Seat Belt Reminder System





5

A

B

BAT — WHT
No.41 (60A)
No.47
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

BRAKE SWITCH <B-B>
42

WHT/BLK
GRN/WHT
YEL

KEY INTERLOCK SWITCH
KEY INTERLOCK SOLENOID
STEERING LOCK ASSEMBLY

SHIFT LOCK RELAY

YEL/BLK
BLK/BLU

WHT/BLU

PARKING PIN SWITCH

SHIFT LOCK SOLENOID

34
A/T GEAR POSITION SWITCH <4-C>

BLK
BLK

G401
G402
G401
G402

(KQ, KU : CVT)

C

No.23 (7.5A) FUSE <9-B>
43

WHT/BLU
YEL

SEAT BELT ALARM UNIT

C

No.23 (7.5A)
FUSE
<9-B>

43

WHT/BLU

YEL

SEAT BELT ALARM UNIT

RED/BLU

29

DRIVER'S
SEAT BELT
SWITCH
<4A>

BLK

G401
G402

(KY, KQ)

BLU/GRN

HOR
SW

D

5

WHT — BAT
No.41 (80A)

WHT/BLK — * No.47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE

HORN
RELAY

D

5

WHT — BAT
No. 41 (60A)

WHT/BLK — * No. 47
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

* No. 47 (15A) : KG, KE
No. 47 (10A) : Except KG, KE

HORN
RELAY

BLU/RED

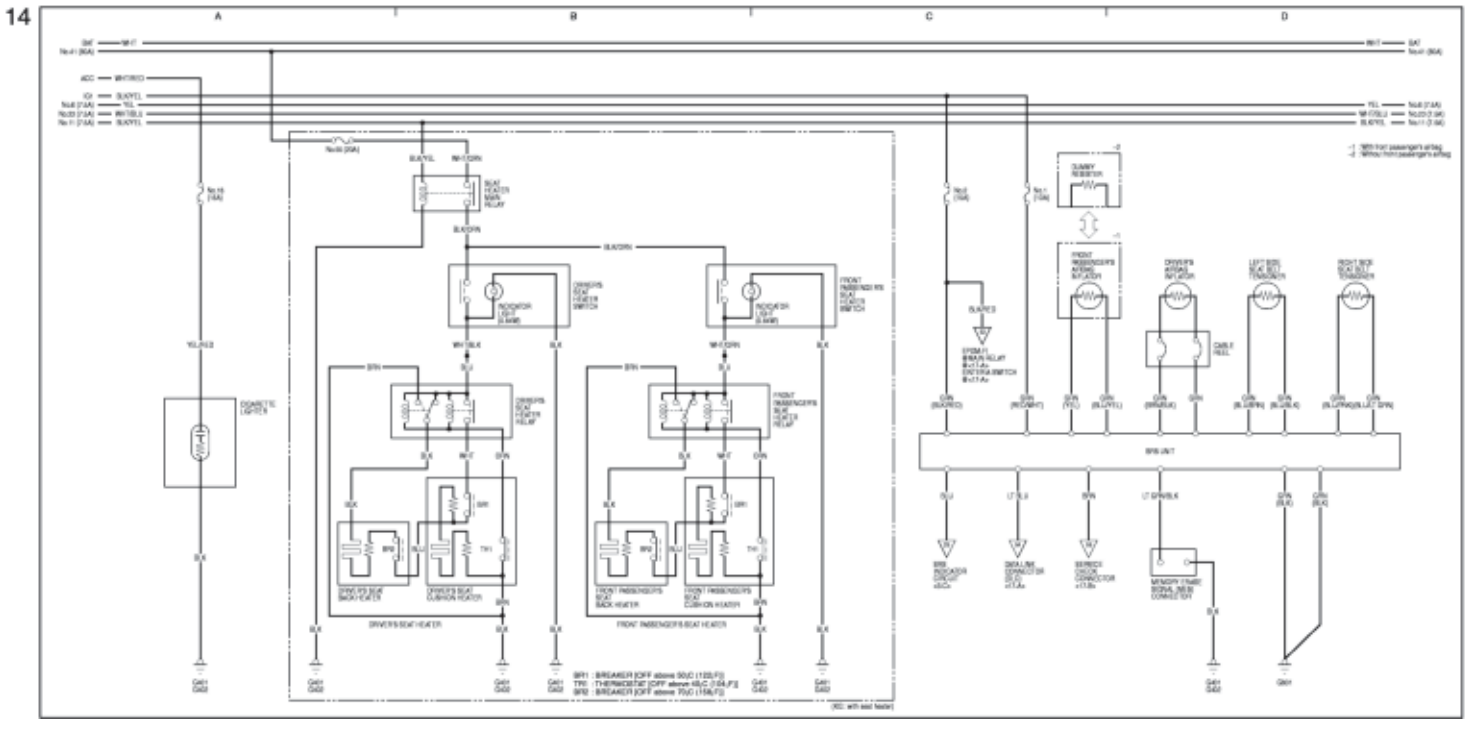
ABLE
EEL

H

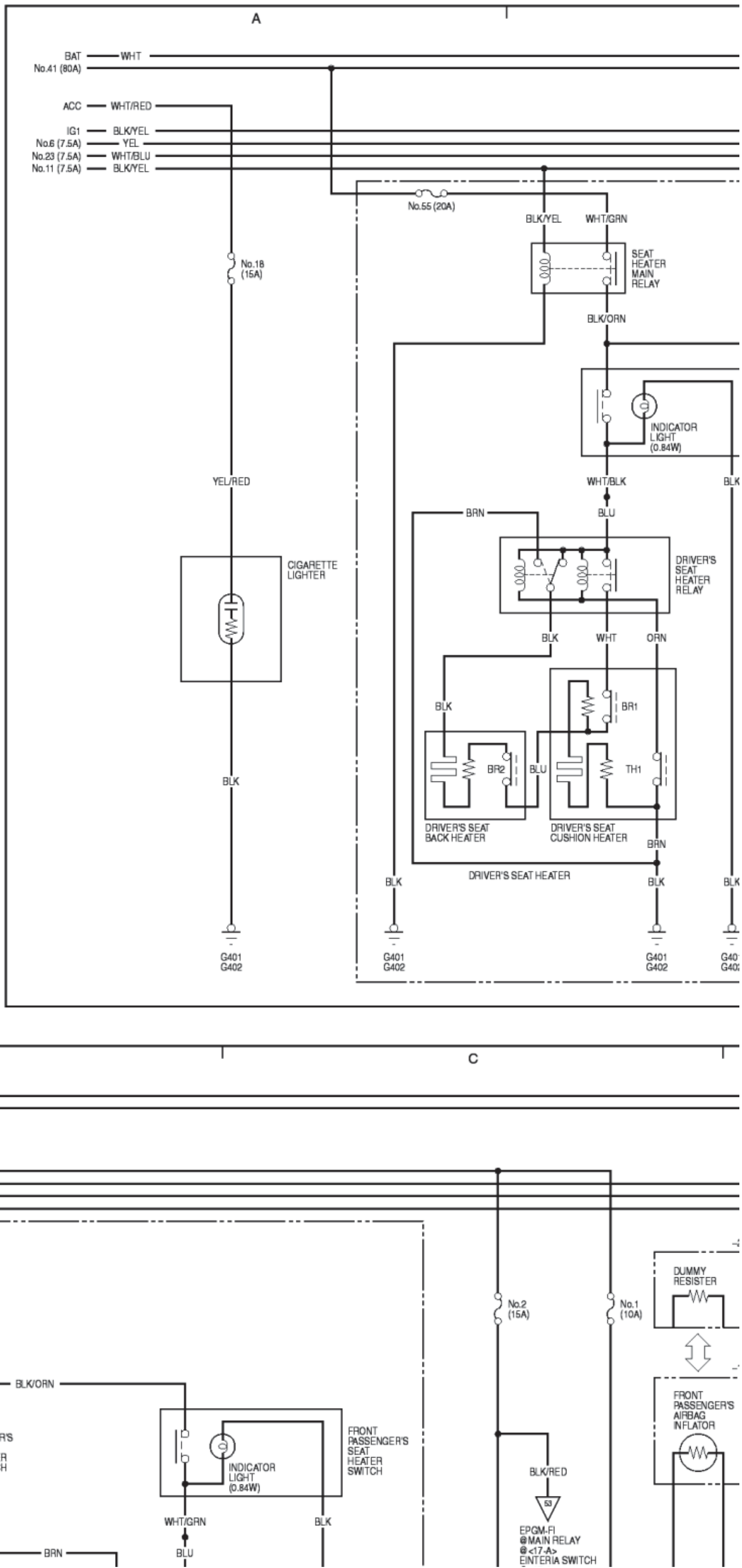
HORN
(Low)

IN
TCH

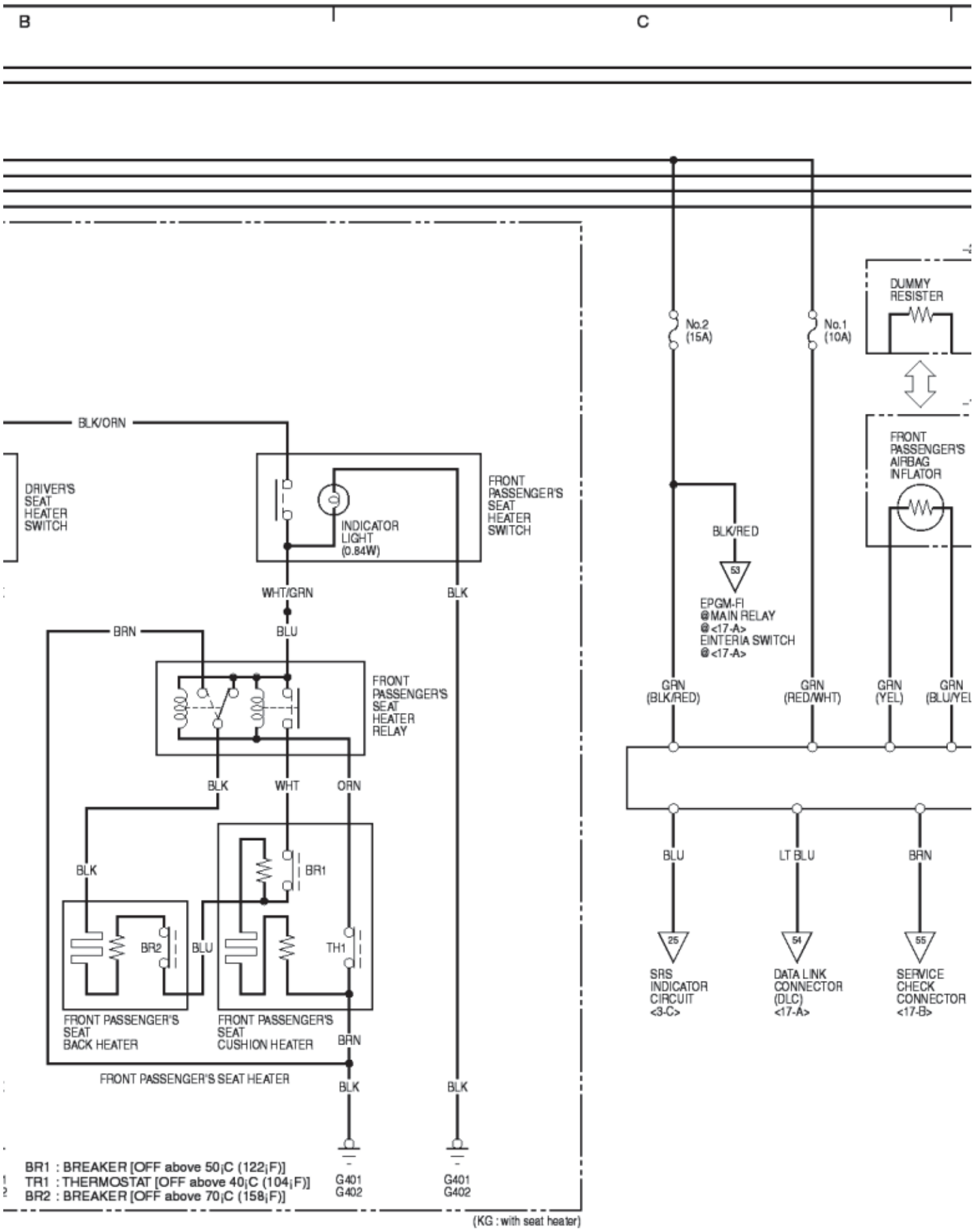
Wiring Diagrams
Seat Heater

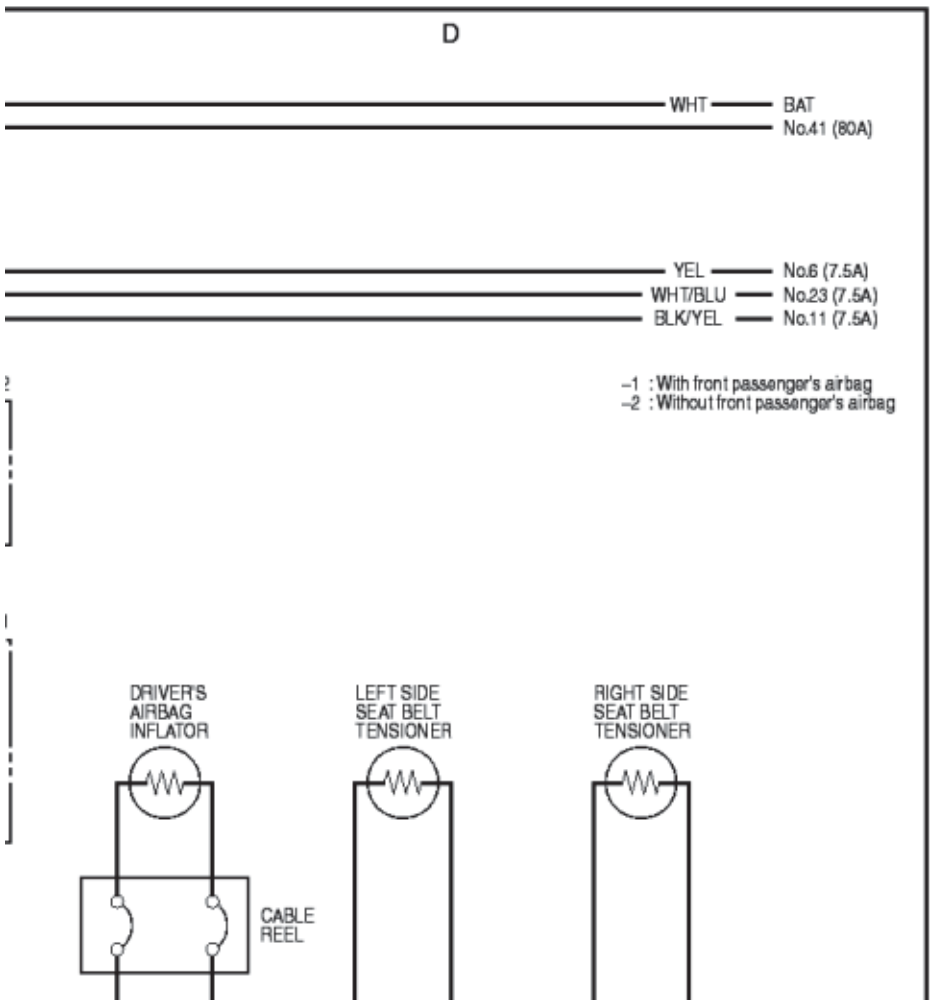


14


A
BAT
WHT
No.41 (80A)
ACC
WHT/RED
IG1
BLK/YEL
No.6 (7.5A)
YEL
No.23 (7.5A)
WHT/BLU
No.11 (7.5A)
BLK/YEL
No.55 (20A)
BLK/YEL
WHT/GRN
No.18
(15A)
SEAT
HEATER
MAIN
RELAY
BLK/ORN
INDICATOR
LIGHT
(0.84W)
YEL/RED
WHT/BLK
BLK
BRN
BLU
CIGARETTE
LIGHTER
DRIVER'S
SEAT
HEATER
RELAY
BLK
WHT
ORN
BLK
BR1
BR2
BLU
TH1
DRIVER'S SEAT
BACK HEATER
DRIVER'S SEAT
CUSHION HEATER
BRN
DRIVER'S SEAT HEATER
BLK
BLK
BLK
BLK
G401
G402
G401
G402
G401
G402

B
C
BLK/ORN
DRIVER'S
SEAT
HEATER
SWITCH
INDICATOR
LIGHT
(0.84W)
FRONT
PASSENGER'S
SEAT
HEATER
SWITCH
WHT/GRN
BLK
BRN
BLU
No.2
(15A)
No.1
(10A)
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
DUMMY
RESISTER
FRONT
PASSENGER'S
AIRBAG
INFLATOR


B
C
No.2 (15A)
No.1 (10A)
DUMMY RESISTER
FRONT PASSENGER'S AIRBAG INFLATOR
BLK/ORN
DRIVER'S SEAT HEATER SWITCH
FRONT PASSENGER'S SEAT HEATER SWITCH
INDICATOR LIGHT (0.84W)
WHT/GRN
BLK
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
@<17-A>
BRN
BLU
FRONT PASSENGER'S SEAT HEATER RELAY
GRN (BLK/RED)
GRN (RED/WHT)
GRN (YEL)
GRN (BLU/YEL
BLK
WHT
ORN
BR1
BLK
BR2
BLU
TH1
BLU
LT BLU
BRN
25
54
55
SRS INDICATOR CIRCUIT <3-C>
DATA LINK CONNECTOR (DLC) <17-A>
SERVICE CHECK CONNECTOR <17-B>
FRONT PASSENGER'S SEAT BACK HEATER
FRONT PASSENGER'S SEAT CUSHION HEATER
BRN
FRONT PASSENGER'S SEAT HEATER
BLK
BLK
G401
G402
G401
G402
BR1 : BREAKER [OFF above 50¡C (122¡F)]
TR1 : THERMOSTAT [OFF above 40¡C (104¡F)]
BR2 : BREAKER [OFF above 70¡C (158¡F)]
(KG : with seat heater)

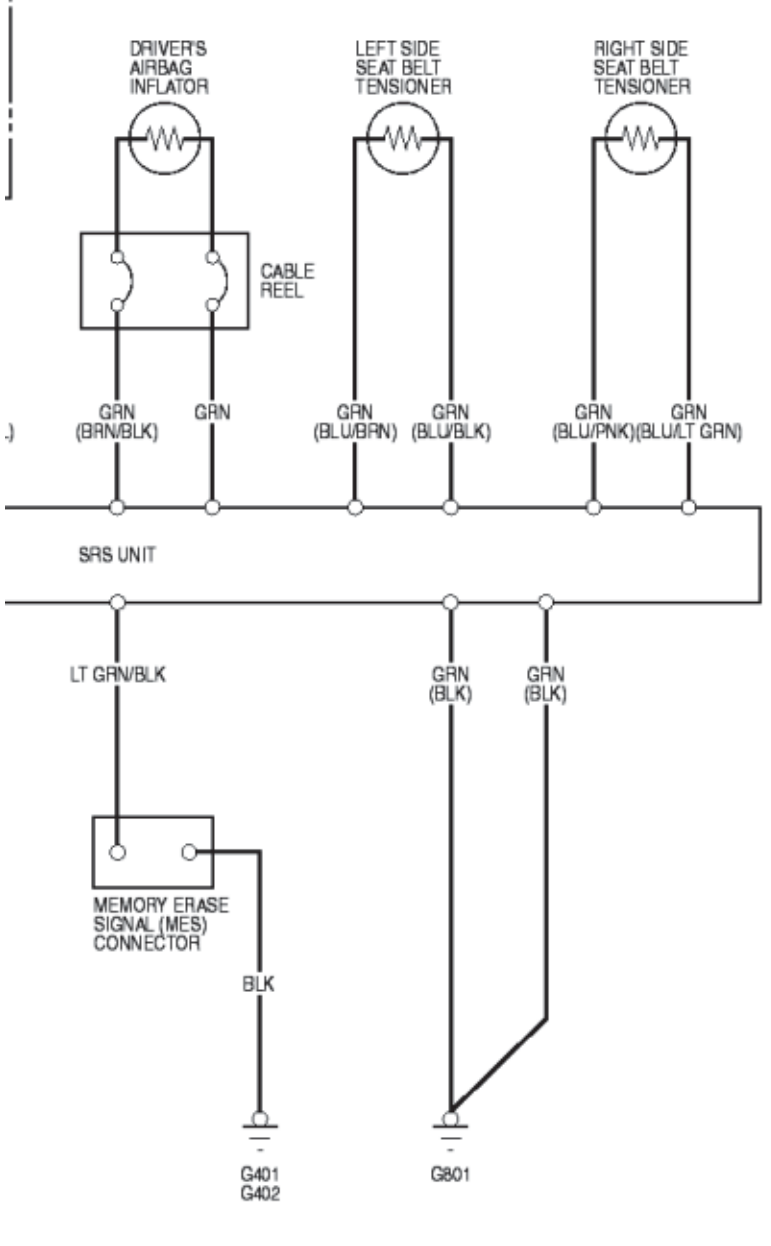

D
WHT
BAT
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
BLK/YEL
No.11 (7.5A)
–1 : With front passenger's airbag
–2 : Without front passenger's airbag
DRIVER'S AIRBAG INFLATOR
LEFT SIDE SEAT BELT TENSIONER
RIGHT SIDE SEAT BELT TENSIONER
CABLE REEL

D

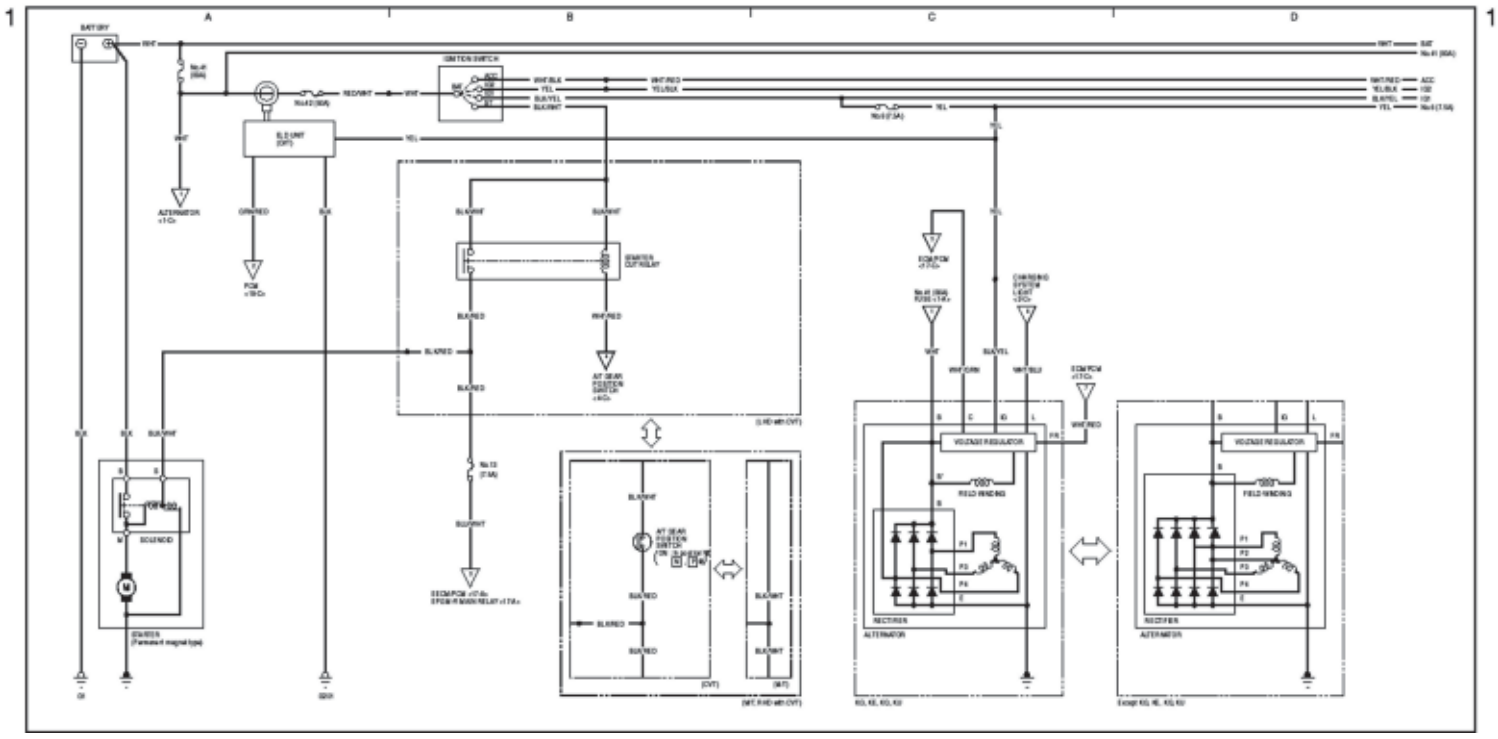
WHT — BAT
No.41 (80A)

YEL — No.6 (7.5A)
WHT/BLU — No.23 (7.5A)
BLK/YEL — No.11 (7.5A)

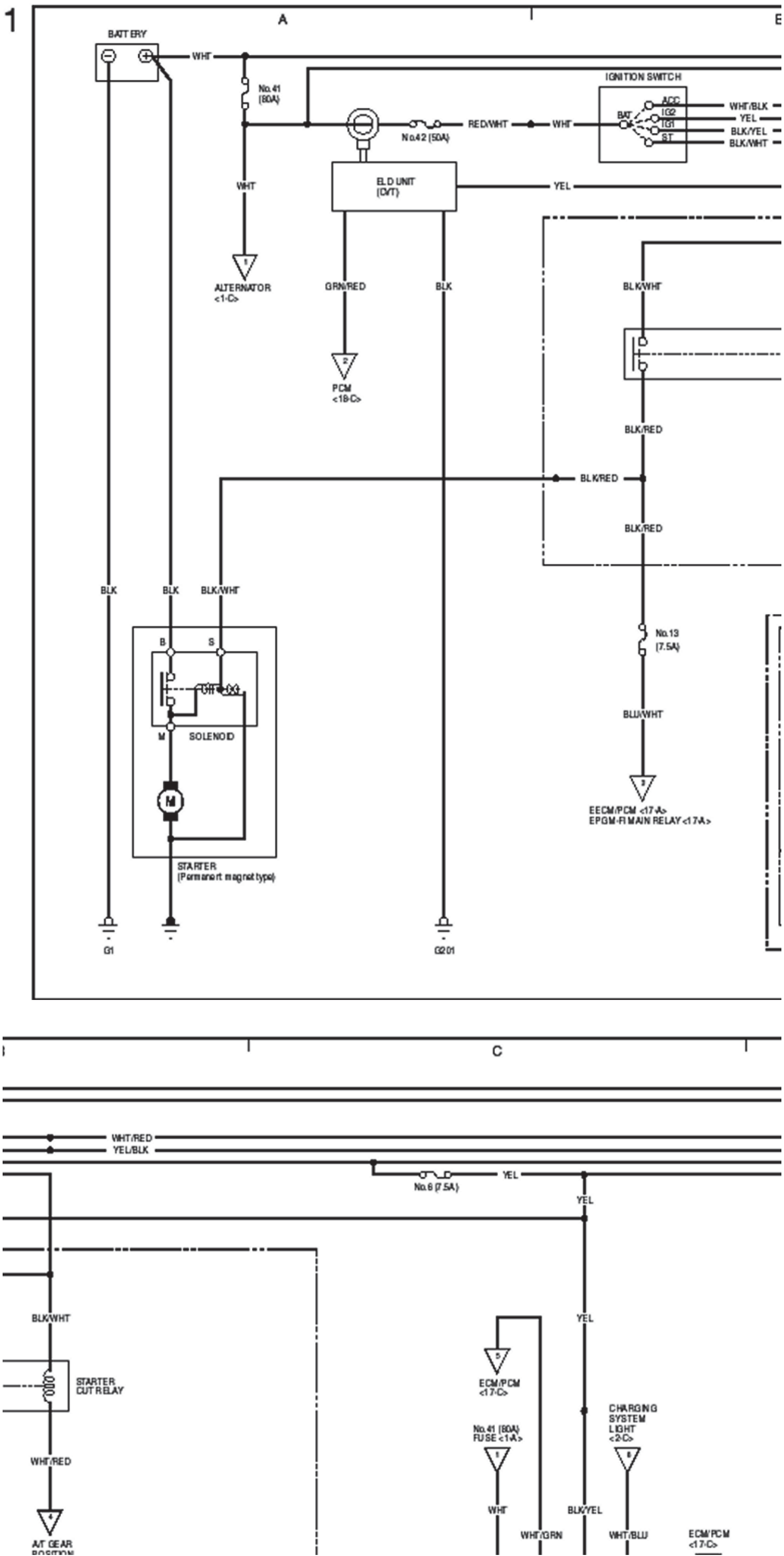
–1 : With front passenger's airbag
–2 : Without front passenger's airbag



Wiring Diagrams
Starting System



1


A
B
C
BATTERY
WHT
No.41 (80A)
IGNITION SWITCH
ACC
IG2
BAT
IG1
ST
WHT/BLK
YEL
BLK/YEL
BLK/WHT
No.42 (50A)
RED/WHT
WHT
ELD UNIT (CVT)
YEL
WHT
1
ALTERNATOR <1-C>
GRN/RED
BLK
2
PCM <18-C>
BLK/WHT
BLK/RED
BLK/RED
BLK/RED
BLK
BLK
BLK/WHT
B
S
OFF
ST
M
SOLENOID
M
STARTER (Permanent magnet type)
No.13 (7.5A)
BLU/WHT
3
EECM/PCM <17-A>
EPGM-FI MAIN RELAY <17-A>
G1
G201
WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
CHARGING SYSTEM LIGHT <2-C>
6
WHT/BLU
ECM/PCM <17-C>

C

WHT/RED
YEL/BLK
No.6 (7.5A)
YEL
YEL
BLK/WHT
STARTER CUT RELAY
WHT/RED
4
A/T GEAR POSITION SWITCH <4-C>
(LHD with CVT)
5
ECM/PCM <17-C>
No.41 (80A) FUSE <1-A>
1
WHT
WHT/GRN
BLK/YEL
WHT/BLU
CHARGING SYSTEM LIGHT <2-C>
6
ECM/PCM <17-C>
7
WHT/RED
B
C
IG
L
FR
VOLTAGE REGULATOR
B'
FIELD WINDING
B
P1
P3
P4
E
RECTIFIER
ALTERNATOR
KG, KE, KQ, KU
Except
BLK/WHT
A/T GEAR POSITION SWITCH (ON : In position N, P)
BLK/RED
BLK/RED
BLK/RED
(CVT)
BLK/WHT
BLK/WHT
(M/T)
(M/T, RHD with CVT)

D

1

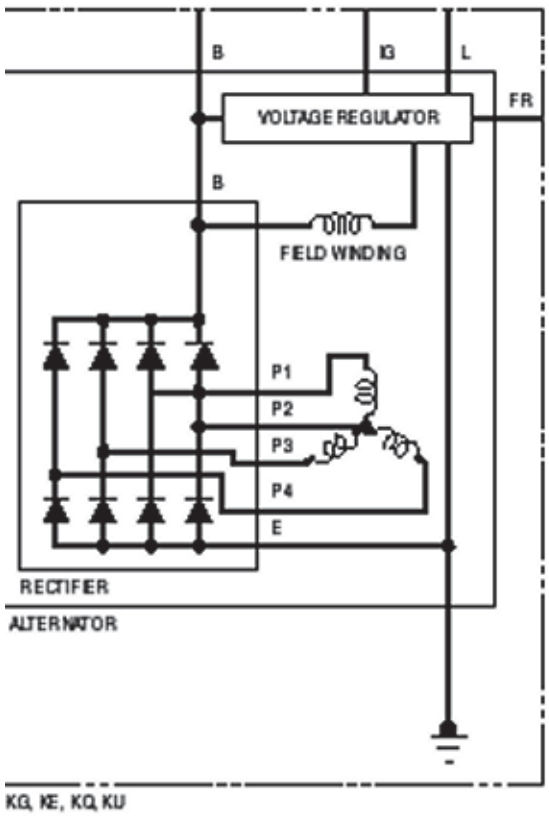
WHT — BAT
No.41 (80A)
WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

D

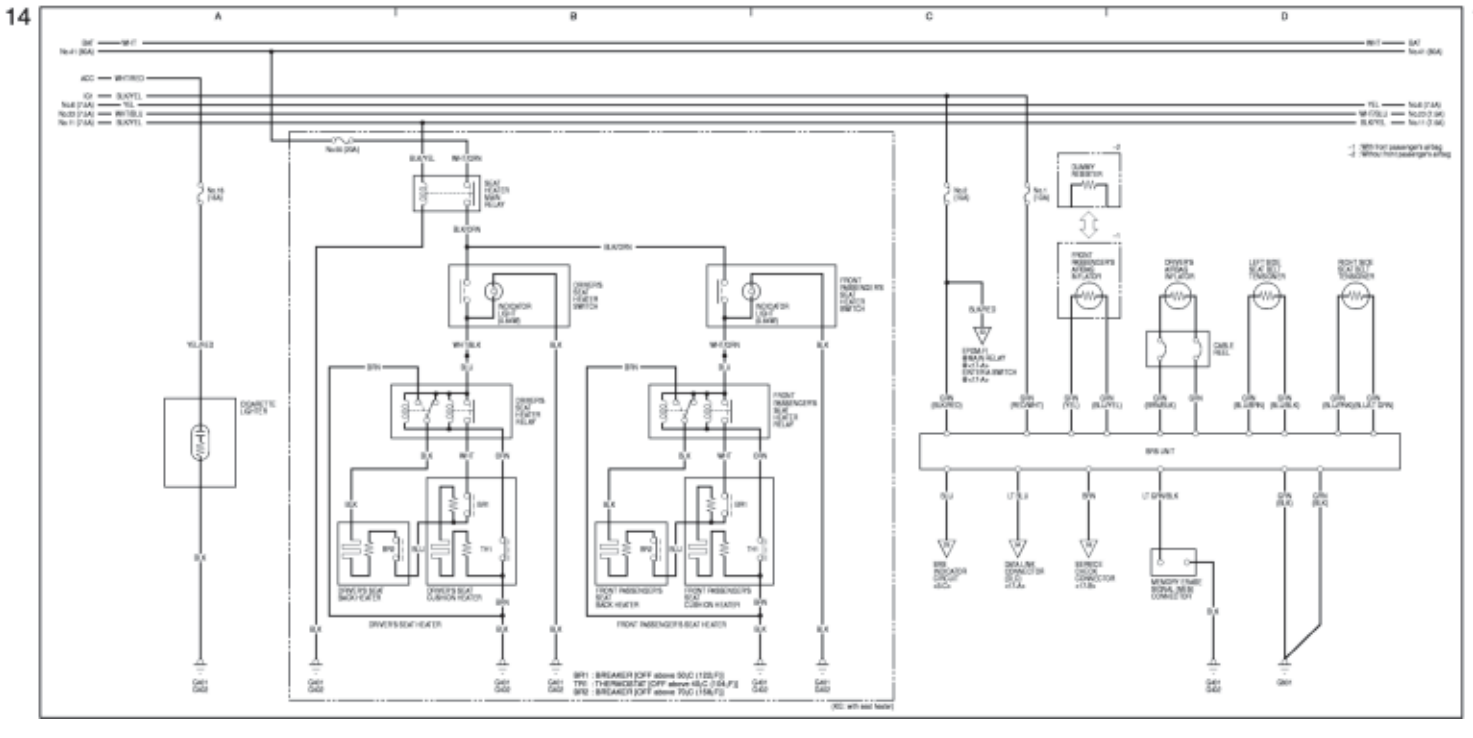
1

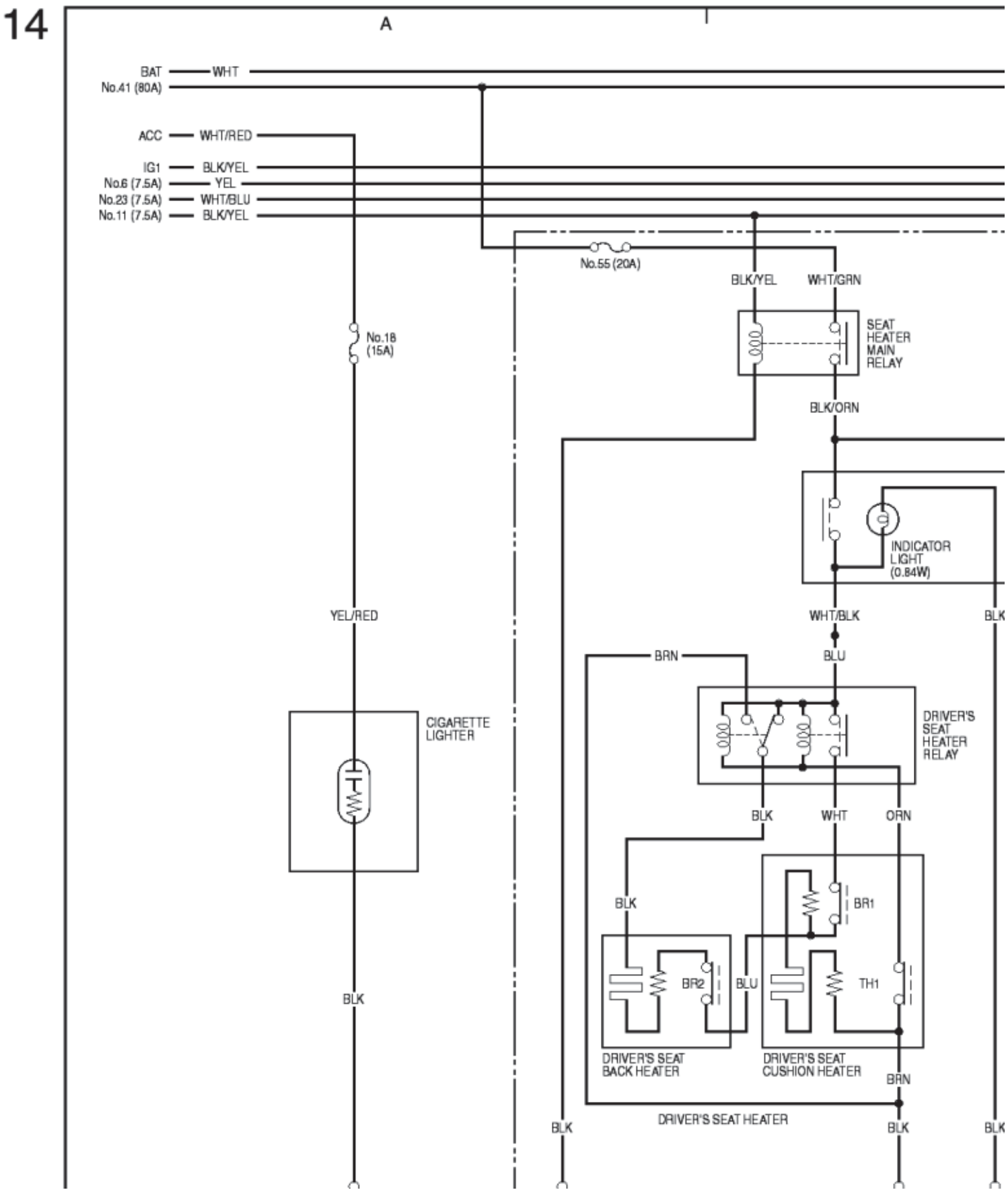
WHT — BAT
No. 41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No. 6 (7.5A)

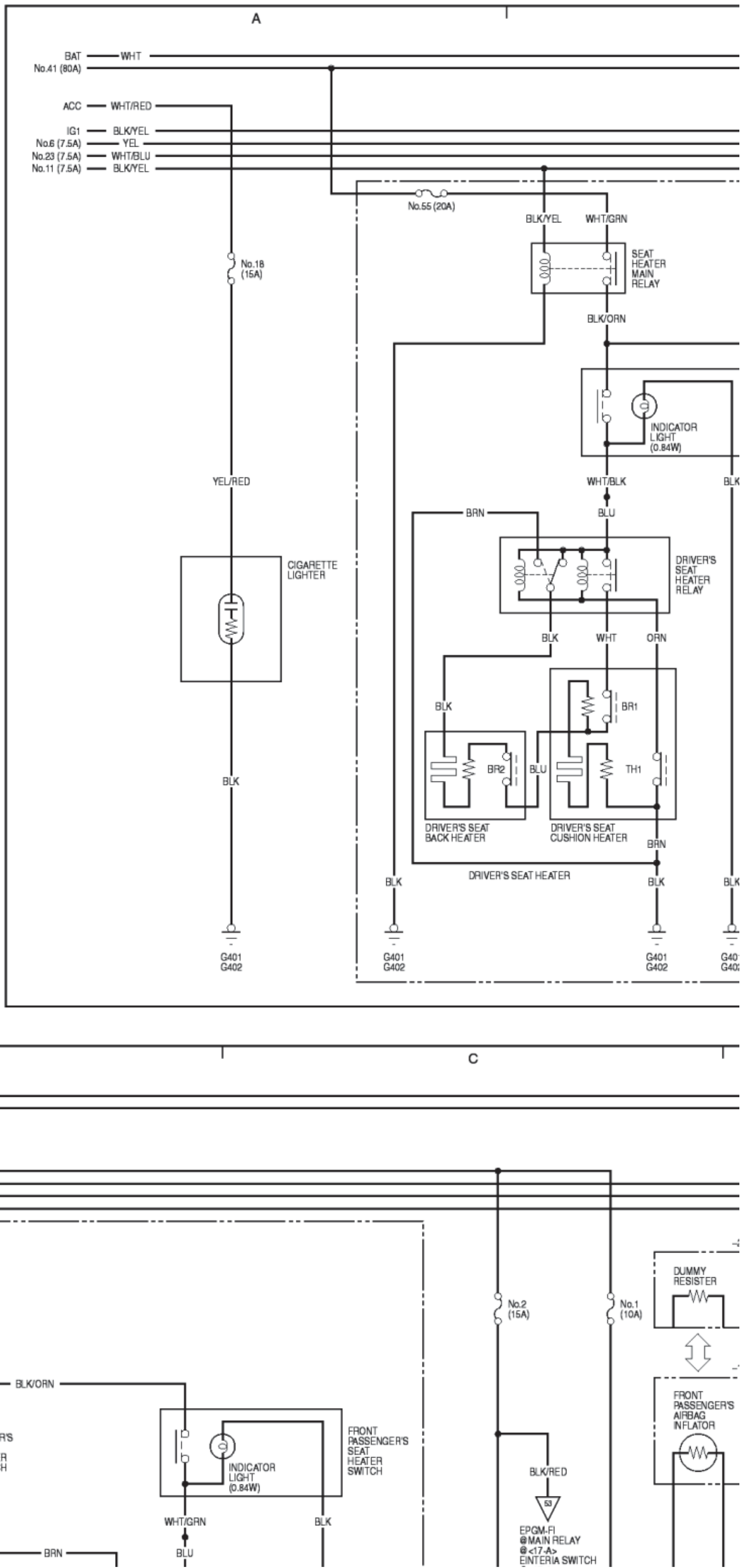


KG, KE, KQ, KU

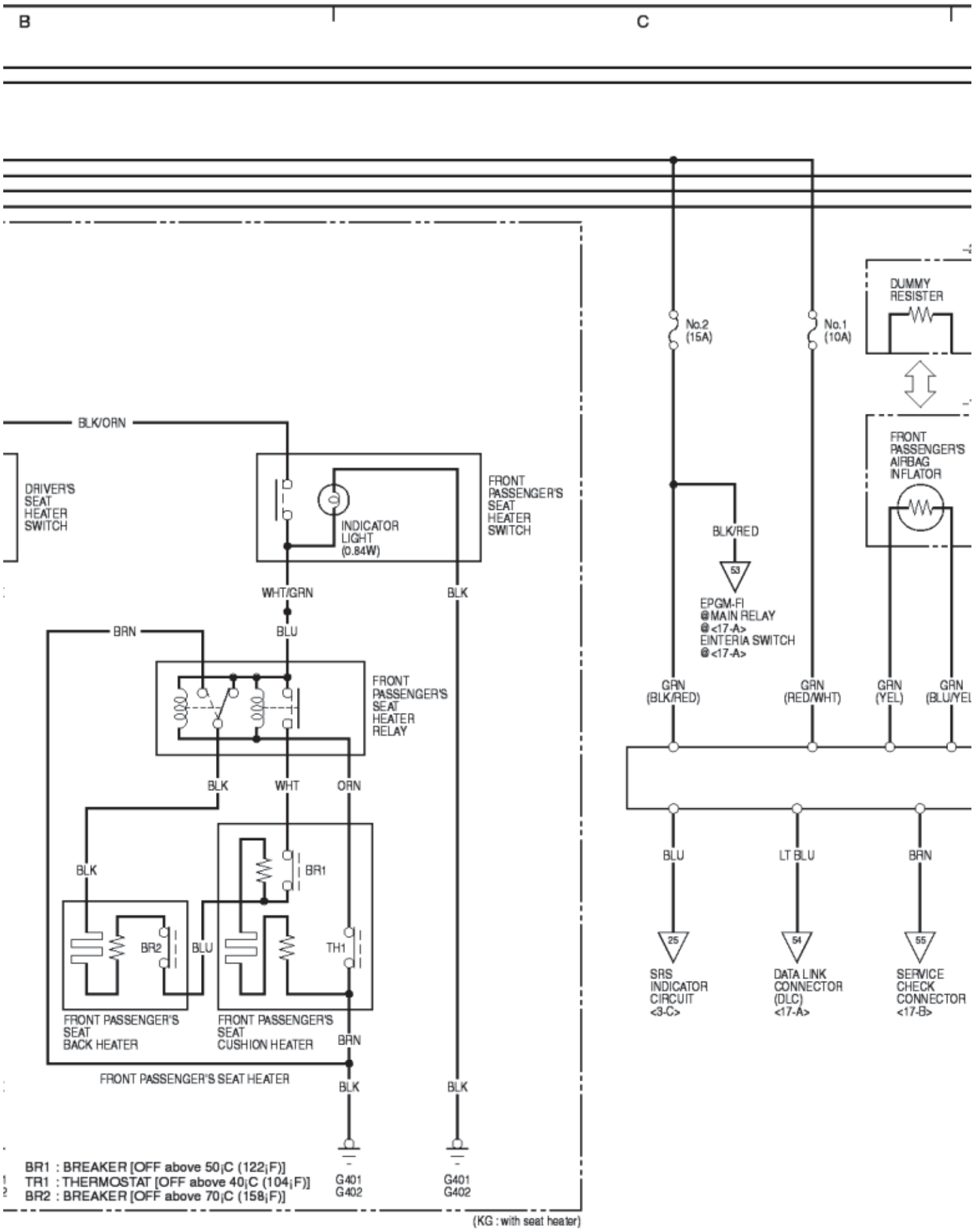


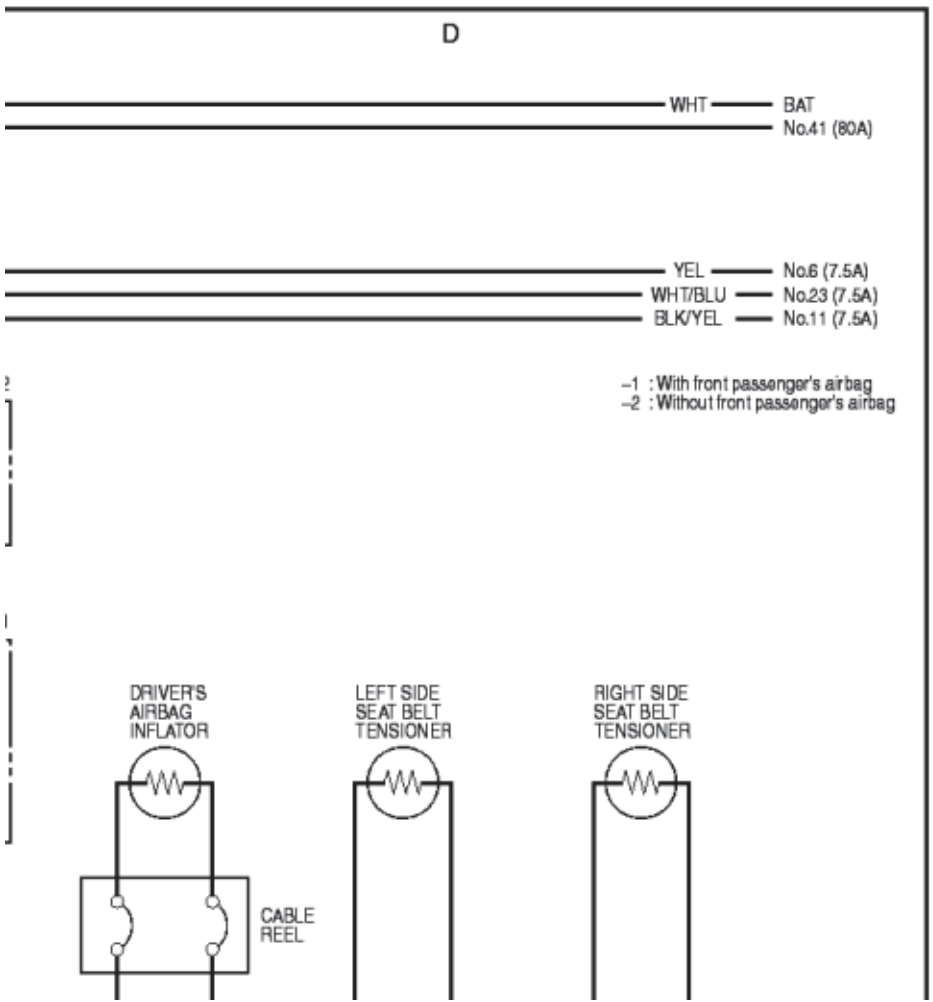

14
A
BAT
WHT
No.41 (80A)
ACC
WHT/RED
IG1
BLK/YEL
No.6 (7.5A)
YEL
No.23 (7.5A)
WHT/BLU
No.11 (7.5A)
BLK/YEL
No.55 (20A)
BLK/YEL
WHT/GRN
No.18
(15A)
SEAT
HEATER
MAIN
RELAY
BLK/ORN
INDICATOR
LIGHT
(0.84W)
YEL/RED
WHT/BLK
BLK
BRN
BLU
CIGARETTE
LIGHTER
DRIVER'S
SEAT
HEATER
RELAY
BLK
WHT
ORN
BLK
BR1
BR2
BLU
TH1
DRIVER'S SEAT
BACK HEATER
DRIVER'S SEAT
CUSHION HEATER
BRN
DRIVER'S SEAT HEATER
BLK
BLK
BLK
BLK

14


A
BAT
WHT
No.41 (80A)
ACC
WHT/RED
IG1
BLK/YEL
No.6 (7.5A)
YEL
No.23 (7.5A)
WHT/BLU
No.11 (7.5A)
BLK/YEL
No.55 (20A)
BLK/YEL
WHT/GRN
No.18
(15A)
SEAT
HEATER
MAIN
RELAY
BLK/ORN
INDICATOR
LIGHT
(0.84W)
YEL/RED
WHT/BLK
BLK
BRN
BLU
CIGARETTE
LIGHTER
DRIVER'S
SEAT
HEATER
RELAY
BLK
WHT
ORN
BLK
BR1
BR2
BLU
TH1
DRIVER'S SEAT
BACK HEATER
DRIVER'S SEAT
CUSHION HEATER
BRN
DRIVER'S SEAT HEATER
BLK
BLK
BLK
BLK
G401
G402
G401
G402
G401
G402

B
C
BLK/ORN
DRIVER'S
SEAT
HEATER
SWITCH
INDICATOR
LIGHT
(0.84W)
FRONT
PASSENGER'S
SEAT
HEATER
SWITCH
WHT/GRN
BLK
BRN
BLU
No.2
(15A)
No.1
(10A)
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
DUMMY
RESISTER
FRONT
PASSENGER'S
AIRBAG
INFLATOR


B
C
No.2 (15A)
No.1 (10A)
DUMMY RESISTER
FRONT PASSENGER'S AIRBAG INFLATOR
BLK/ORN
DRIVER'S SEAT HEATER SWITCH
FRONT PASSENGER'S SEAT HEATER SWITCH
INDICATOR LIGHT (0.84W)
WHT/GRN
BLK
BLK/RED
53
EPGM-FI
@MAIN RELAY
@<17-A>
EINTERIA SWITCH
@<17-A>
BRN
BLU
FRONT PASSENGER'S SEAT HEATER RELAY
GRN (BLK/RED)
GRN (RED/WHT)
GRN (YEL)
GRN (BLU/YEL
BLK
WHT
ORN
BR1
BLK
BR2
BLU
TH1
BLU
LT BLU
BRN
25
54
55
SRS INDICATOR CIRCUIT <3-C>
DATA LINK CONNECTOR (DLC) <17-A>
SERVICE CHECK CONNECTOR <17-B>
FRONT PASSENGER'S SEAT BACK HEATER
FRONT PASSENGER'S SEAT CUSHION HEATER
BRN
FRONT PASSENGER'S SEAT HEATER
BLK
BLK
G401
G402
G401
G402
BR1 : BREAKER [OFF above 50¡C (122¡F)]
TR1 : THERMOSTAT [OFF above 40¡C (104¡F)]
BR2 : BREAKER [OFF above 70¡C (158¡F)]
(KG : with seat heater)

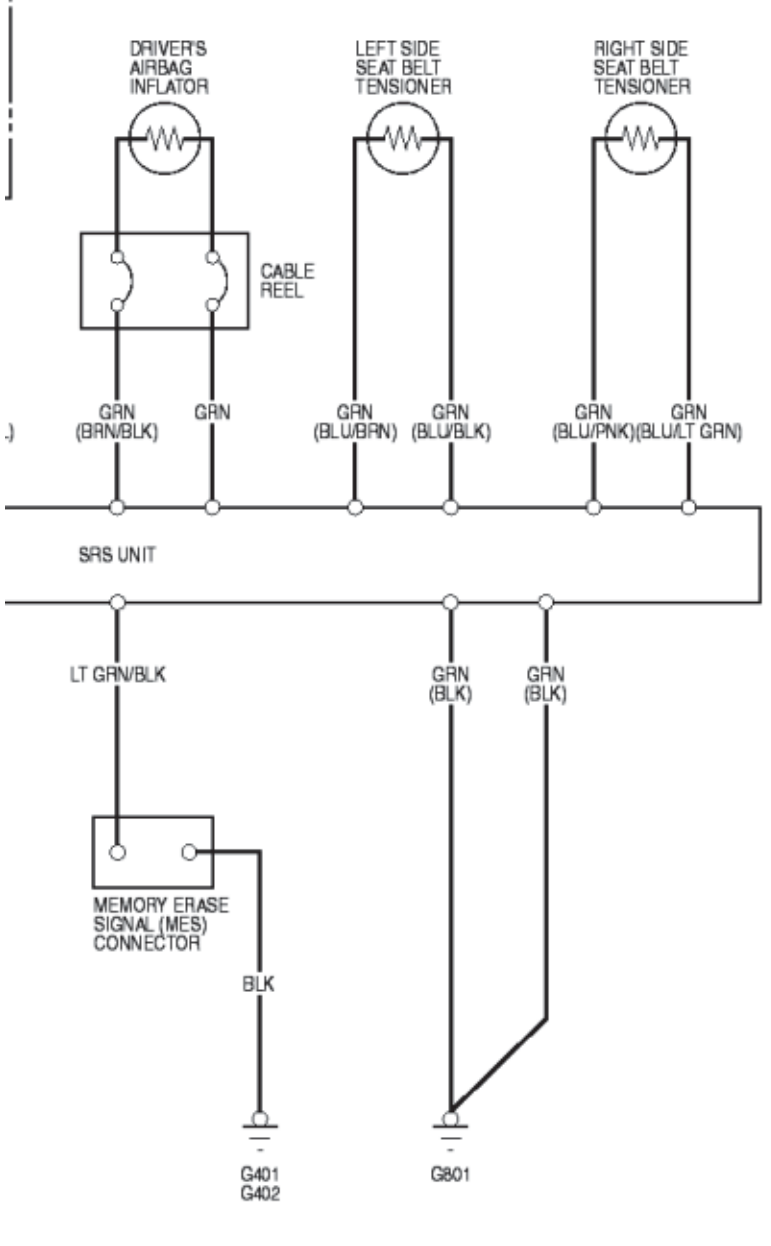

D
WHT
BAT
No.41 (80A)
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
BLK/YEL
No.11 (7.5A)
–1 : With front passenger's airbag
–2 : Without front passenger's airbag
DRIVER'S AIRBAG INFLATOR
LEFT SIDE SEAT BELT TENSIONER
RIGHT SIDE SEAT BELT TENSIONER
CABLE REEL

D

WHT — BAT
No.41 (80A)

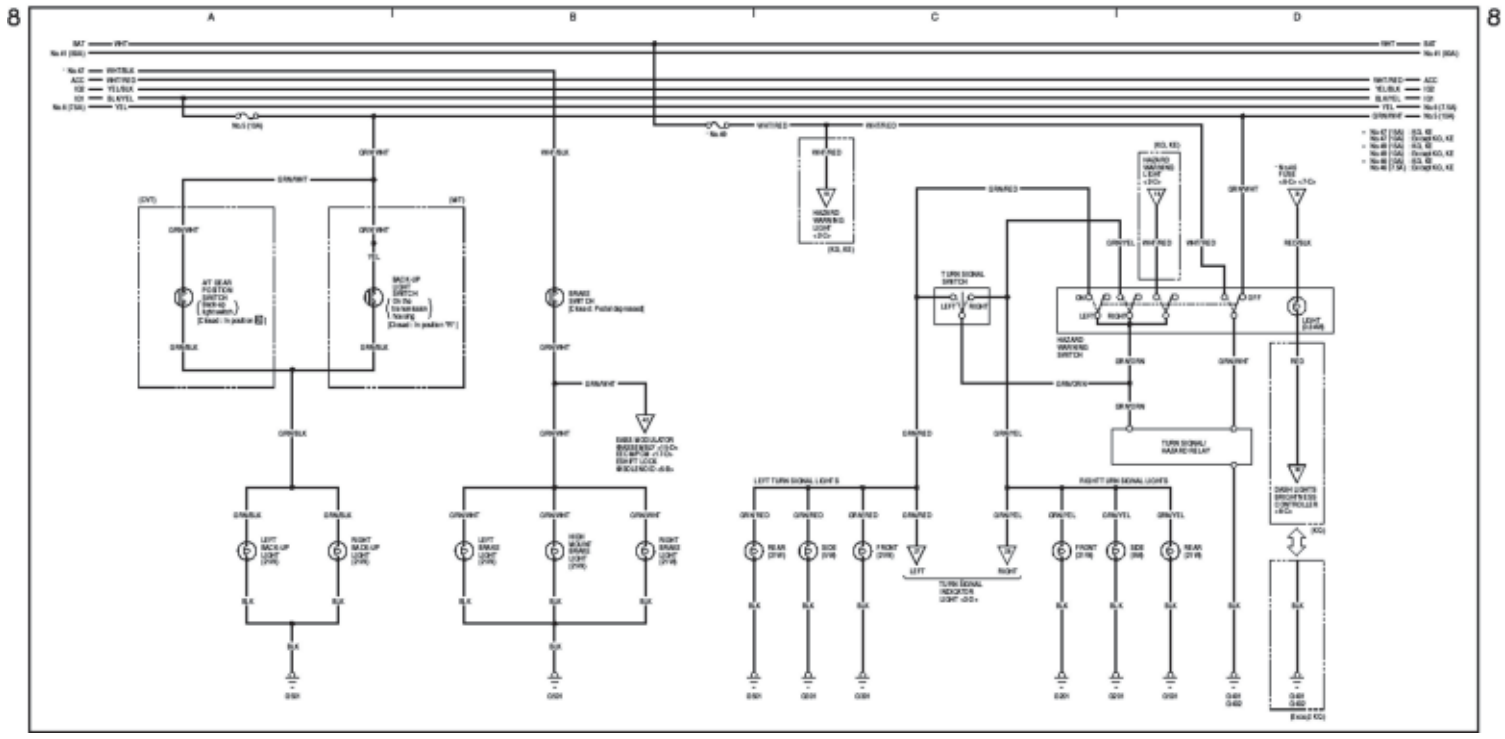
YEL — No.6 (7.5A)
WHT/BLU — No.23 (7.5A)
BLK/YEL — No.11 (7.5A)

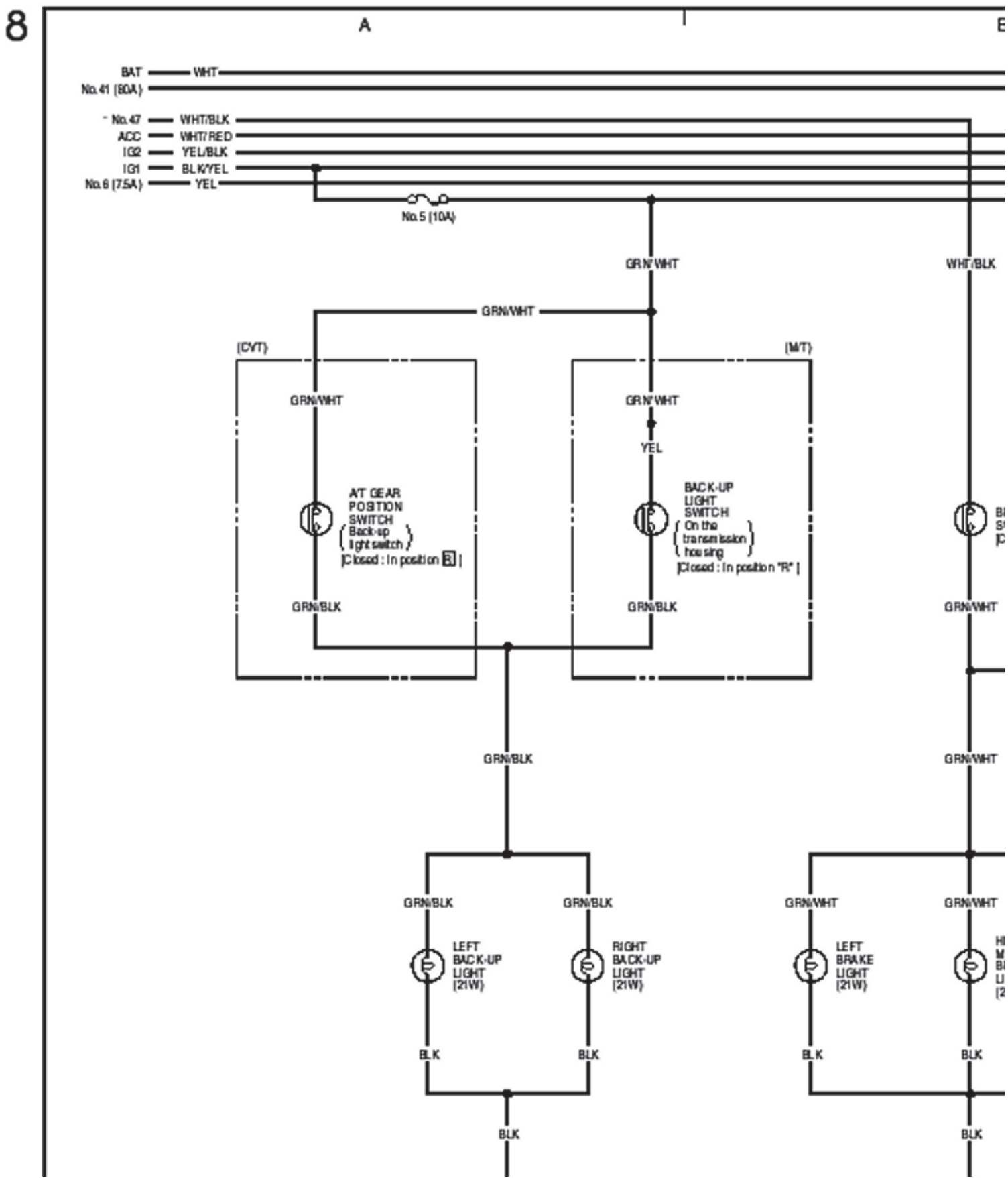
–1 : With front passenger's airbag
–2 : Without front passenger's airbag



Wiring Diagrams

Turn Signal/Hazard Flasher System





8

A

B

C

BAT — WHT
No. 41 (80A)

No. 47 — WHT/BLK
ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No. 6 (7.5A) — YEL

No. 5 (10A)

GRN/WHT

WHT/BLK

GRN/WHT

(CVT)

(M/T)

GRN/WHT

GRN/WHT

YEL

A/T GEAR POSITION SWITCH
(Back-up light switch)
(Closed : In position R)

BACK-UP LIGHT SWITCH
(On the transmission housing)
(Closed : In position "R")

GRN/BLK

GRN/BLK

GRN/WHT

GRN/BLK

GRN/WHT

GRN/BLK

GRN/BLK

GRN/WHT

GRN/WHT

LEFT BACK-UP LIGHT (21W)

RIGHT BACK-UP LIGHT (21W)

LEFT BRAKE LIGHT (21W)

BLK

BLK

BLK

BLK

BLK

G501

G501

WHT/RED

WHT/RED

No. 49

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

C

WHT/RED

No.49

WHT/RED

WHT/RED

15

HAZARD WARNING LIGHT <2-C>

(KG, KE)

GRN/RED

GRN/YEL

TURN SIGNAL SWITCH

LEFT

RIGHT

ON

LEFT

RIGHT

HAZARD WARNING SWITCH

GRN/ORN

GRN/ORN

GRN/ORN

RAKE
WITCH
losed: Pedal depressed)

GRN/WHT

42

EABS MODULATOR
@ASSEMBLY <15-D>
EECM/PCM <17-D>
ESHIFT LOCK
@SOLENOID <5-B>

GRN/RED

GRN/YEL

LEFT TURN SIGNAL LIGHTS

RIGHT TURN SIGNAL

GRN/WHT

GH
OUNT
RAKE
GHT
1W)

RIGHT BRAKE LIGHT (21W)

BLK

GRN/RED

GRN/RED

GRN/RED

GRN/RED

GRN/YEL

GRN/YEL

GRN/YEL

REAR (21W)

SIDE (5W)

FRONT (21W)

27

LEFT

28

RIGHT

FRONT (21W)

SIDE (5W)

TURN SIGNAL INDICATOR LIGHT <3-D>

BLK

BLK

BLK

BLK

BLK

G501

G301

G301

G201

G201

D

8

WHT

BAT

No.41 (80A)

WHT/RED

ACC

YEL/BLK

IG2

BLK/YEL

IG1

YEL

No.6 (7.5A)

GRN/WHT

No.5 (10A)

- No.47 (15A) : KG, KE
  No.47 (10A) : Except KG, KE
- No.49 (15A) : KG, KE
  No.49 (10A) : Except KG, KE
- No.46 (10A) : KG, KE
  No.46 (7.5A) : Except KG, KE

(KG, KE)

HAZARD WARNING LIGHT <2-C>

10

WHT/RED

GRN/WHT

No.46 FUSE <6-C> <7-C>

30

RED/BLK

WHT/RED

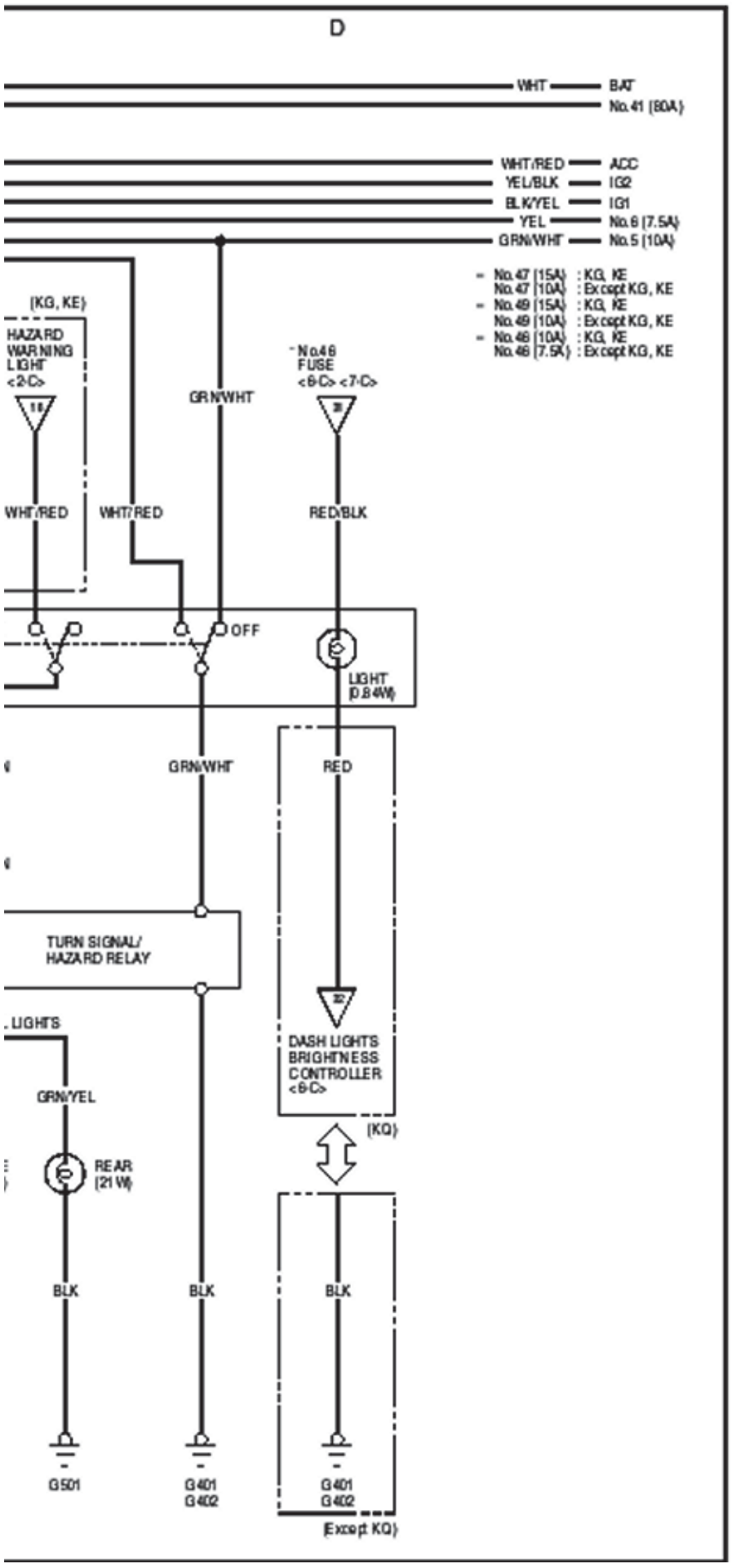
OFF

LIGHT (3.8W)

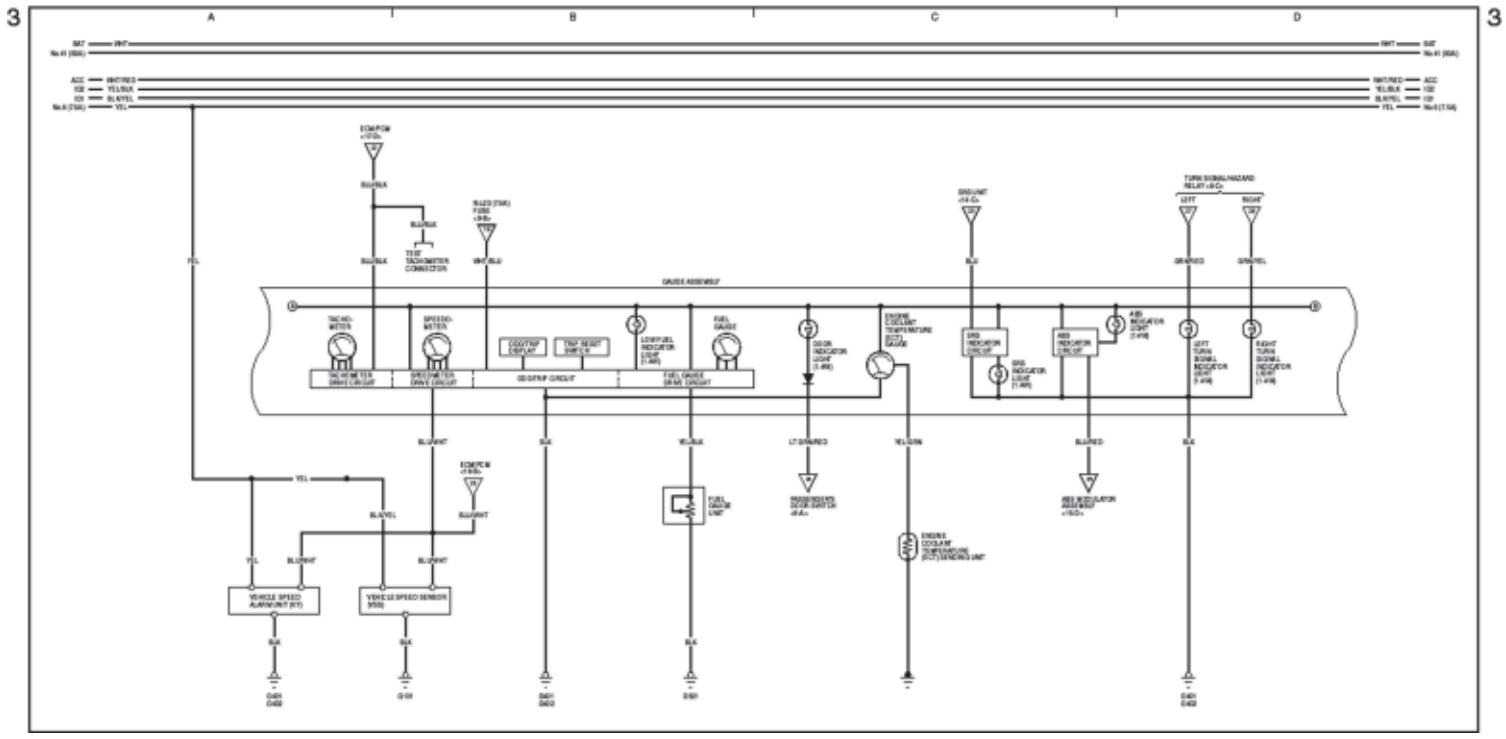
GRN/WHT

RED

D


WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
GRN/WHT
No.5 (10A)
* No.47 (15A) : KG, KE
No.47 (10A) : Except KG, KE
* No.49 (15A) : KG, KE
No.49 (10A) : Except KG, KE
* No.46 (10A) : KG, KE
No.46 (7.5A) : Except KG, KE
(KG, KE)
HAZARD WARNING LIGHT <2-C>
* No.46 FUSE
<6-C> <7-C>
GRN/WHT
WHT/RED
WHT/RED
RED/BLK
OFF
LIGHT (3.8W)
GRN/WHT
RED
TURN SIGNAL/ HAZARD RELAY
LIGHTS
GRN/YEL
REAR (21W)
DASH LIGHTS BRIGHTNESS CONTROLLER <6-C>
(KQ)
BLK
BLK
BLK
G501
G401
G402
G401
G402
(Except KQ)

Wiring Diagrams
Vehicle Speed Alarm



3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

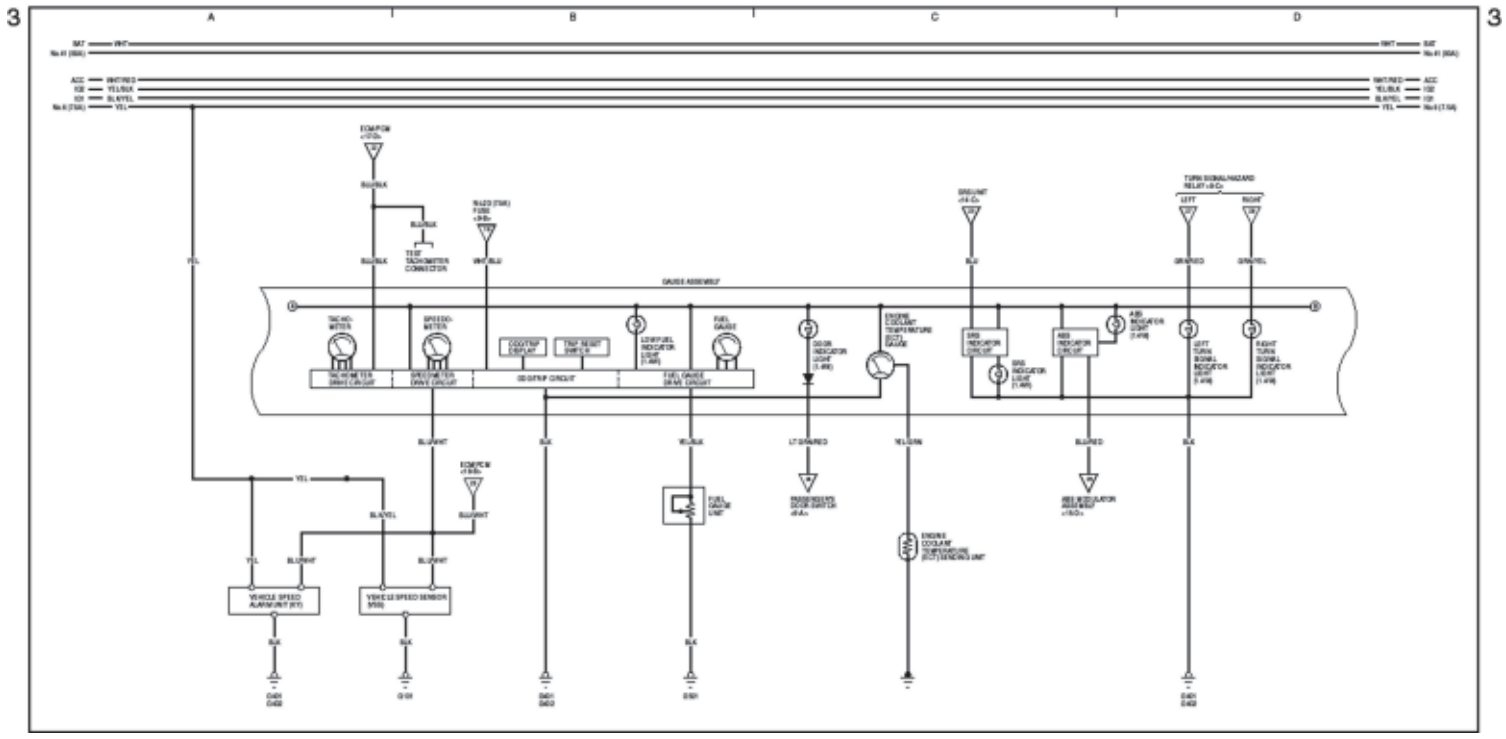
RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

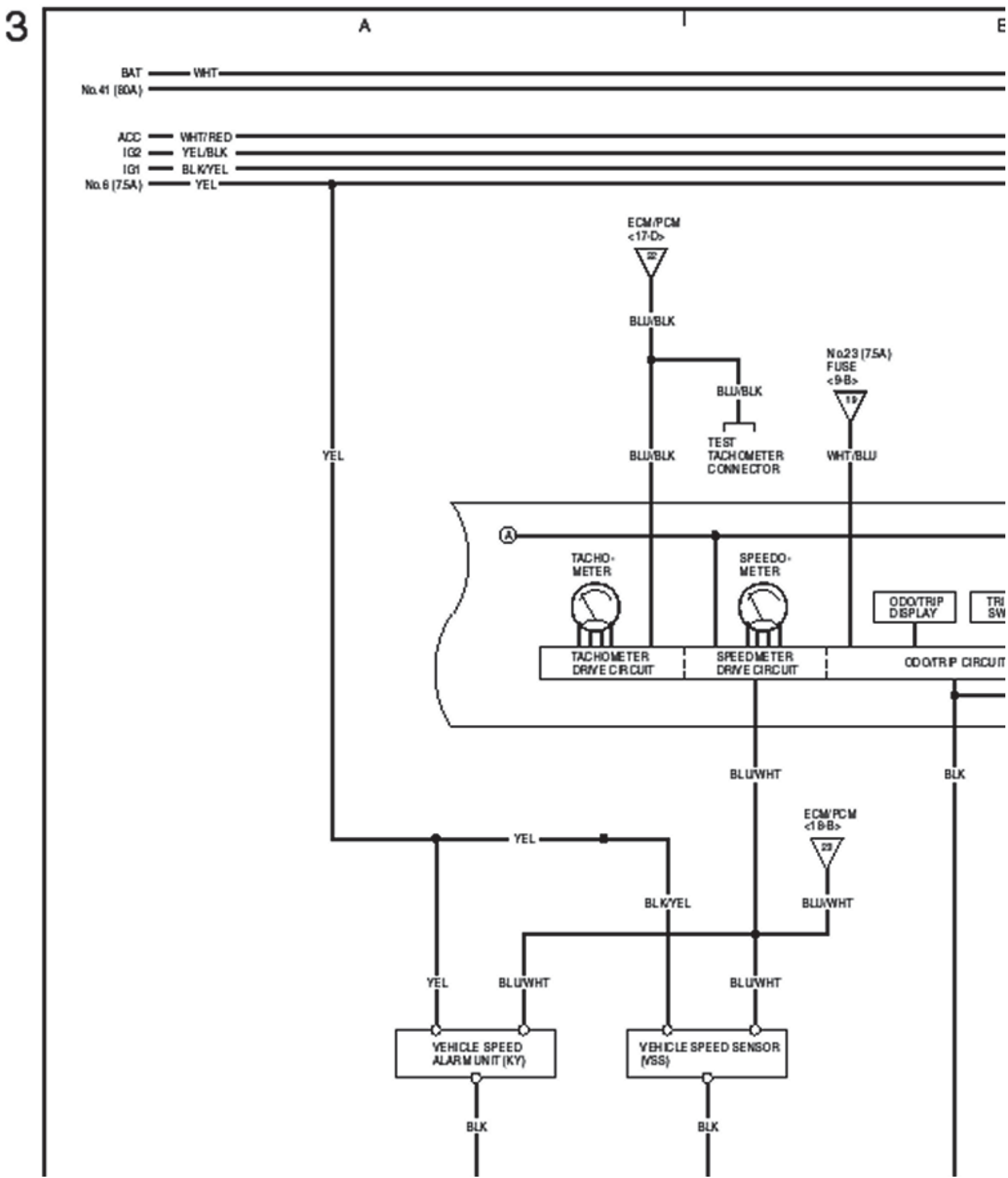
BLK

G401
G402

Wiring Diagrams

Vehicle Speed Sensor (VSS)





3

A

B

C

BAT — WHT
No.41 (60A)

ACC — WHT/RED
IG2 — YEL/BLK
IG1 — BLK/YEL
No.6 (7.5A) — YEL

YEL

ECM/PCM
<17-D>
22
BLU/BLK

BLU/BLK

TEST
TACHOMETER
CONNECTOR

No.23 (7.5A)
FUSE
<9-B>
19
WHT/BLU

A

TACHO-
METER

SPEEDO-
METER

ODO/TRIP
DISPLAY

TRI
SW

TACHOMETER
DRIVE CIRCUIT

SPEEDMETER
DRIVE CIRCUIT

ODO/TRIP CIRCUIT

BLU/WHT

BLK

ECM/PCM
<18-B>
23
BLU/WHT

YEL

BLK/YEL

YEL

BLU/WHT

BLU/WHT

VEHICLE SPEED
ALARM UNIT (KY)

VEHICLE SPEED SENSOR
(VSS)

BLK

BLK

G401
G402

G101

G401
G402

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH

LOW FUEL
INDICATOR
LIGHT
(1.4W)

FUEL
GAUGE

FUEL GAUGE
DRIVE CIRCUIT

DOOR
INDICATOR
LIGHT
(1.4W)

ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE

SRS
INDICATOR
CIRCUIT

SRS
INDICATOR
LIGHT

ABS
INDICATOR
CIRCUIT

ABS
IND
LIG
(1.4

C

SRS UNIT
<14-C>
25
BLU

GAUGE ASSEMBLY

P RESET
ITCH
LOW FUEL
INDICATOR
LIGHT
(1.4W)
FUEL
GAUGE
FUEL GAUGE
DRIVE CIRCUIT
DOOR
INDICATOR
LIGHT
(1.4W)
ENGINE
COOLANT
TEMPERATURE
(ECT)
GAUGE
SRS
INDICATOR
CIRCUIT
SRS
INDICATOR
LIGHT
(1.4W)
ABS
INDICATOR
CIRCUIT
ABS
IND
LIGHT
(1.4W)

YEL/BLK
LT GRN/RED
YEL/GRN
BLU/RED

FUEL
GAUGE
UNIT
PASSENGER'S
DOOR SWITCH
<9-A>
ABS MODULATOR
ASSEMBLY
<15-D>
ENGINE
COOLANT
TEMPERATURE
(ECT) SENDING UNIT

BLK
G501

D

3

WHT — BAT
No.41 (60A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD
RELAY <8-C>
LEFT
RIGHT
27
28
GRN/RED
GRN/YEL
B
ATOR
T
W)
LEFT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)
RIGHT
TURN
SIGNAL
INDICATOR
LIGHT
(1.4W)

D

3

WHT — BAT
No.41 (80A)

WHT/RED — ACC
YEL/BLK — IG2
BLK/YEL — IG1
YEL — No.6 (7.5A)

TURN SIGNAL/HAZARD RELAY <B-C>

LEFT
27

RIGHT
28

GRN/RED

GRN/YEL

ATOR

B

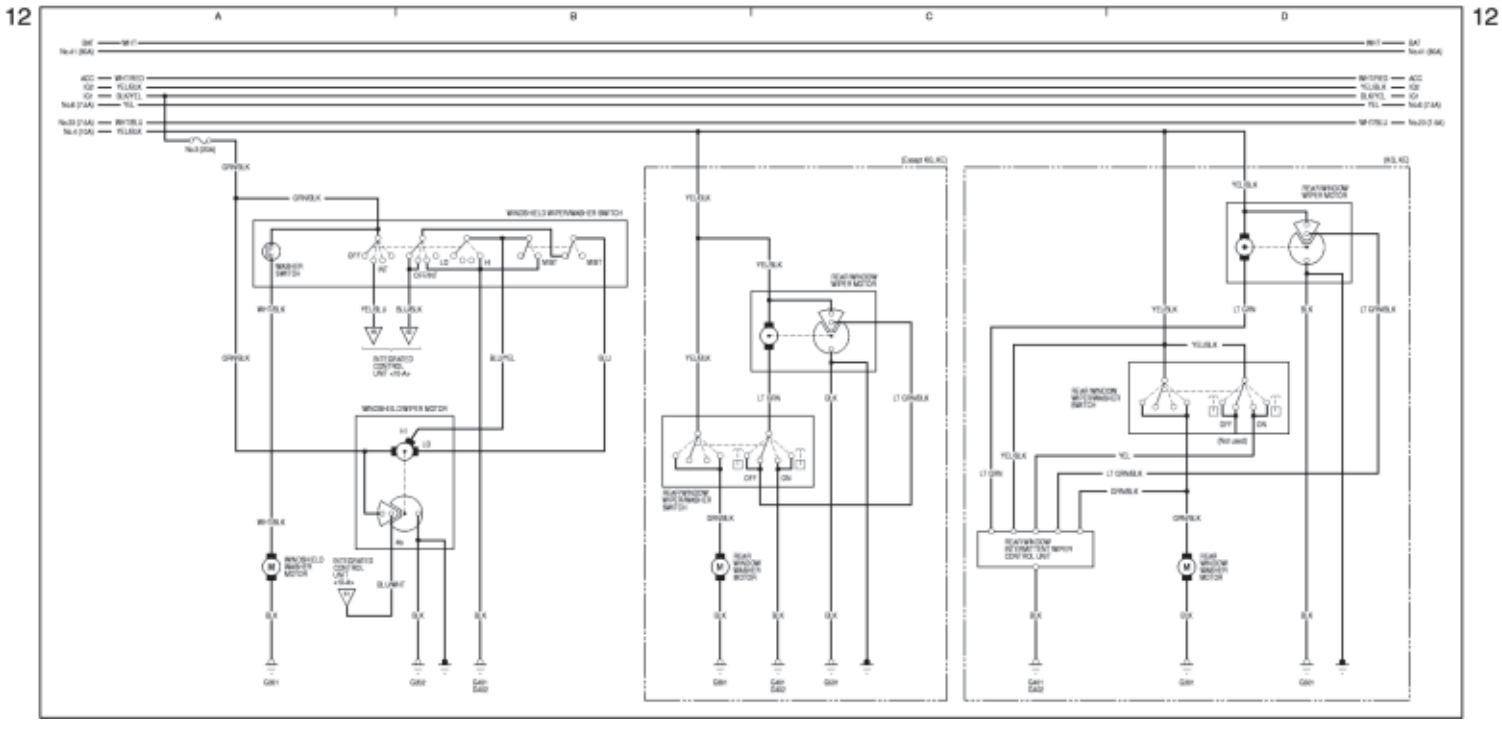
LEFT TURN SIGNAL INDICATOR LIGHT (1.4W)

RIGHT TURN SIGNAL INDICATOR LIGHT (1.4W)

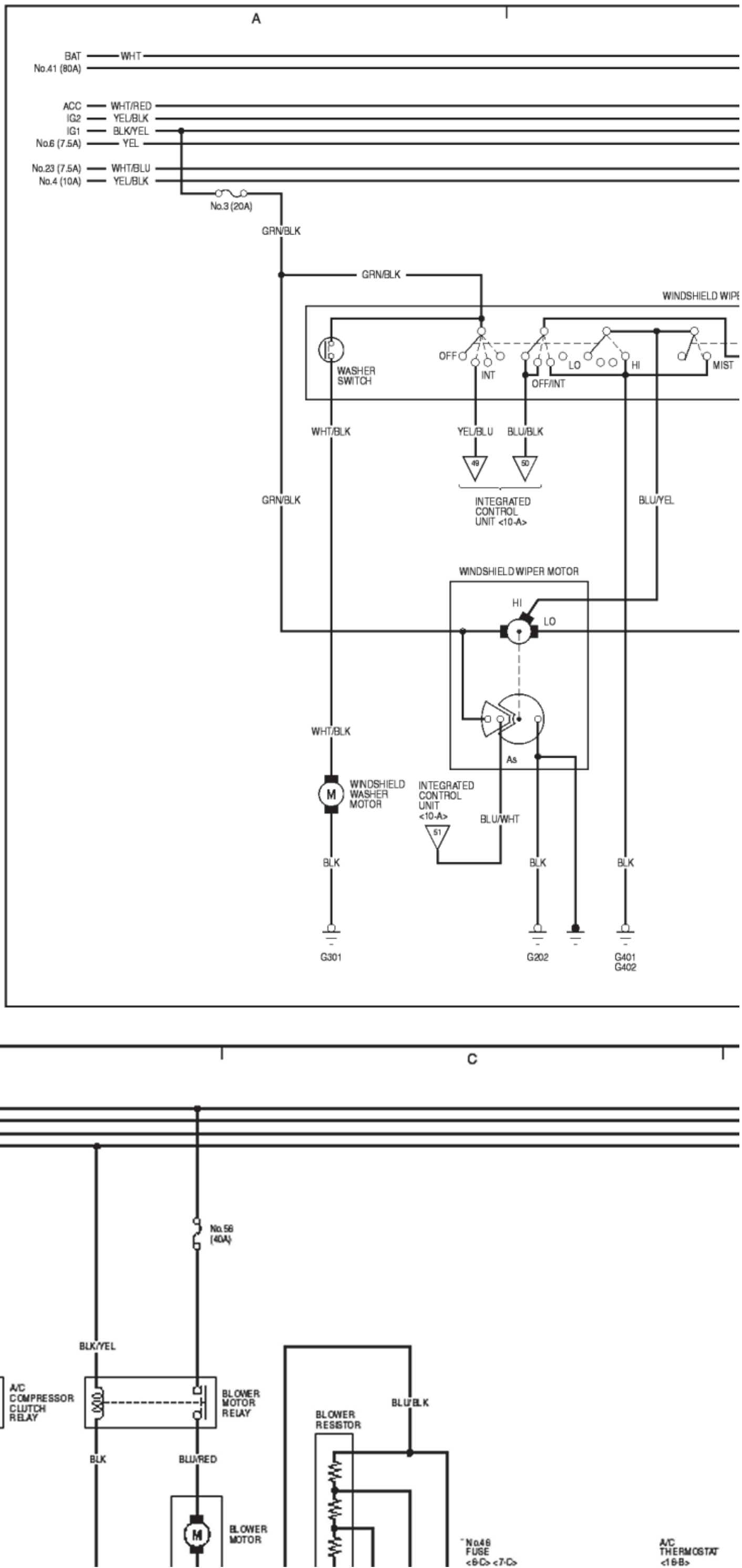
BLK

G401
G402

Wiring Diagrams
Wiper/Washer



12


A
BAT
No.41 (80A)
WHT
ACC
IG2
IG1
No.6 (7.5A)
WHT/RED
YEL/BLK
BLK/YEL
YEL
No.23 (7.5A)
No.4 (10A)
WHT/BLU
YEL/BLK
No.3 (20A)
GRN/BLK
GRN/BLK
WINDSHIELD WIPE
WASHER SWITCH
OFF
INT
OFF/INT
LO
HI
MIST
WHT/BLK
YEL/BLU
BLU/BLK
49
50
INTEGRATED CONTROL UNIT <10-A>
GRN/BLK
BLU/YEL
WINDSHIELD WIPER MOTOR
HI
LO
As
WHT/BLK
M
WINDSHIELD WASHER MOTOR
INTEGRATED CONTROL UNIT <10-A>
51
BLU/WHT
BLK
BLK
BLK
G301
G202
G401
G402
B
C
No.56 (40A)
BLK/YEL
A/C COMPRESSOR CLUTCH RELAY
BLOWER MOTOR RELAY
RED
BLK
BLU/RED
BLU/BLK
BLOWER RESISTOR
M
BLOWER MOTOR
No.46 FUSE <6-C> <7-C>
A/C THERMOSTAT <16-B>

B

C

No.56
(40A)

BLK/YEL

A/C
COMPRESSOR
CLUTCH
RELAY

BLOWER
MOTOR
RELAY

BLOWER
RESISTOR

BLU/BLK

RED

BLK

BLU/RED

BLOWER
MOTOR

M

BLU/BLK

COMPRESSOR
CLUTCH

BLU

BLU/WHT

BLU/YEL

BLU/BLK

No.46
FUSE
<6-C> <7-C>

RED/BLK

A/C
THERMOSTAT
<16-B>

BLU/RED

HEATER
CONTROL
PANEL

OFF

1

2

3

4

LIGHTS
(1.4W x 2)

A/C

HEATER FAN
SWITCH

GRN

G401
G402

BLK

G401
G402

BLK

G401
G402

(Except KQ)

RED

32

DASHLIGHTS
BRIGHTNESS
CONTROLLER
<8-C>

(KQ)

D

12

WHT — BAT

No.41 (80A)

WHT/RED — ACC

YEL/BLK — IG2

BLK/YEL — IG1

YEL — No.6 (7.5A)

WHT/BLU — No.23 (7.5A)

(KG, KE)

YEL/BLK

REAR WINDOW
WIPER MOTOR

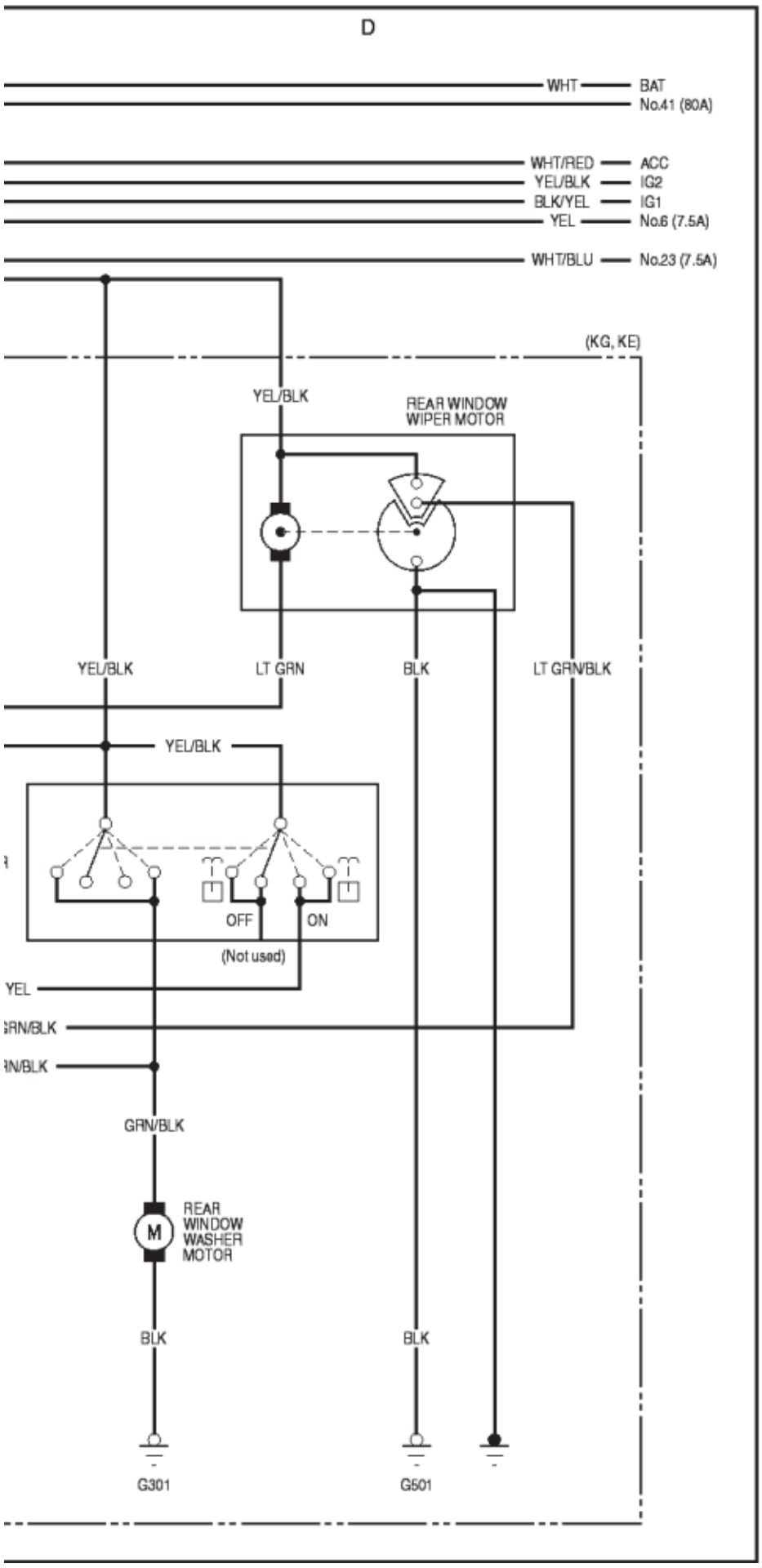
YEL/BLK

LT GRN

BLK

LT GRN/BLK

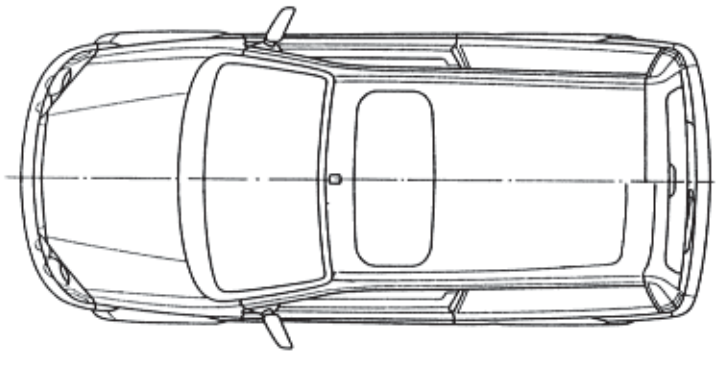
YEL/BLK

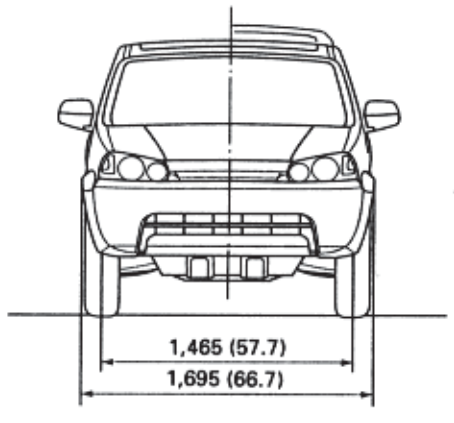

D
WHT
BAT
No.41 (80A)
WHT/RED
ACC
YEL/BLK
IG2
BLK/YEL
IG1
YEL
No.6 (7.5A)
WHT/BLU
No.23 (7.5A)
(KG, KE)
YEL/BLK
REAR WINDOW WIPER MOTOR
YEL/BLK
LT GRN
BLK
LT GRN/BLK
YEL/BLK
OFF
ON
(Not used)
YEL
GRN/BLK
GRN/BLK
M
REAR WINDOW WASHER MOTOR
BLK
BLK
G301
G501

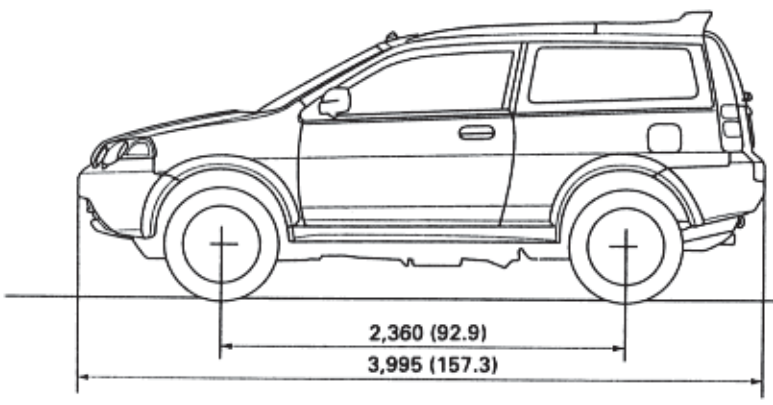
Description

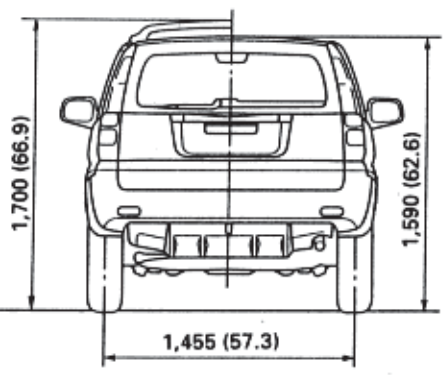
Most monocoque bodies are composed as a single unit by welding together pressed parts made of steel plates which come in a variety of different shapes and sizes. Each part is responsible for displaying a certain strength and durability in order that it may play its role in meeting the functions of the body as a whole.
Damage to the exterior of the body can be inspected visually, but where there has been an external impact, it is necessary to inspect the extent of the damage. In some cases, the deformation may have spread beyond the actual areas that were in the collision so the deformation must be inspected closely.
Unit: mm (in)

Unit: mm (in.)









Front Wheel Alignment:

Camber:	0°00’ ±1°	
Caster	2°15’ ±1°	
Total Toe	0 ±3 (0 ±0.12)	
Wheel turning angle	in	38°00’ ±2°
Wheel turning angle	out	30°00’ (Reference)

Rear Wheel Alignment:

Camber	-0°30’ ±1°
Total Toe	IN 2 ±5 (0.08 ±0.1)

Accurate Inspection of Damaged Parts (Visual)

Seat Belts

Replace the seat belts if:

- The airbags were deployed.
- The seat belt tensioners were tirggered.
- The belt material is cut, punctured, burned, or in any way damaged.
- The buckle or retractor does not work properly.
- They were worn at the time of a collision (check for damage at the seat belt anchor points).
- Their condition is questionable.

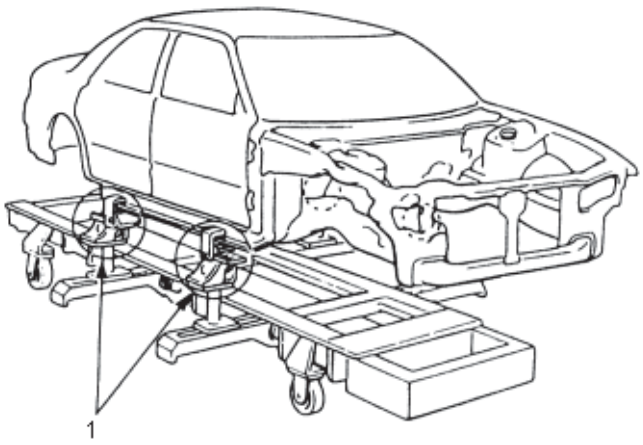
Front Section:

- Is there any bending, splitting, denting or other damage to the suspension and its related parts?
- Is there any deformation of the front bulkhead or radiator core? Have any of the connected sections come apart?
- Are there any creases or distortion in the front wheelhouse or side frame? Have any of the connected sections come apart?
- Is there any bending or twisting of the whole front area?
- Is there any deformation like creases, bulges, or dents in the front pillar, dashboard, floor, or other areas?
- Is there any vertical twisting or misaligned clearance in the door?
- Is the windshield seal broken?
- Is there any deformation in the vicinity of the top part of the roof panel's center pillar?
- Is there any damage inside the vehicle (is there any twisting of the dashboard, or anything irregular with the clearances or mounting parts)?
- Is there any damage to the steering wheel? Is there any deformation in the column and the column-mounted parts?
- Is there any oil or water leakage and damage to the engine, transmission, or brakes?
- Is there any irregular noise in the gear changing operation, engine or transmission rotation?
- Are there any traces of contact between the engine block and the dashboard lower panel?
- Is there any damage to brake or fuel lines, or wire harnesses?

Rear Section:

- Is there any twisting, bulging or denting of the rear floor and rear bulkhead? Have any of the connected sections come apart?
- Is there any irregular bulging or denting in the rear fender?
- Is there any distortion in the rear inner panel? Is there any bending and denting in the vicinity of the rear pillar?
- Is there any distortion or creasing in the rear wheelhouse and arch sections? Have any of the connected sections come apart?
- Is there anything irregular in the quarter glass seal clearance?
- Is there any twisting or misalignment of the clearances of the tailgate opening section?
- Is there any bending, splitting, denting or other damage to the suspension and its related parts?
- Is there any deformation of the rear floor, rear floor cross member and damper base? Have any of the connected sections come apart?

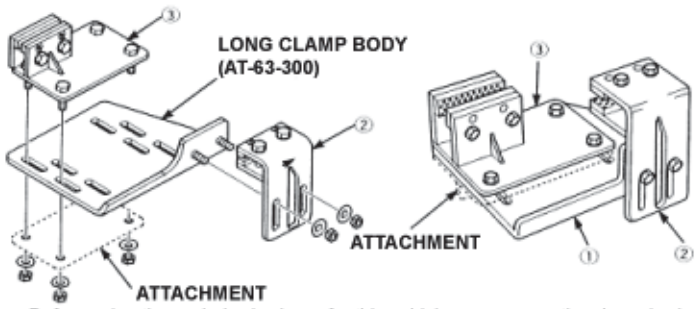
Connect the frame corrector to the vehicle body. The side sill is flangeless to allow reshaping by pulling it out. Use the horizontal pinch welds for anchoring the vehicle.

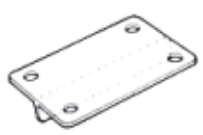
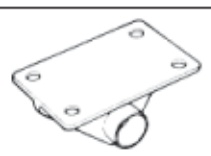
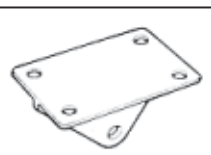


1. **UNDERBODY CLAMPS**

Underbody Clamp:
V.L CHURCHILL Ltd.
PO Box 3, London Road,
Daventry, Northants,
NN114NF
TEL + 44 (01327) 704461
FAX + 44 (01327) 71625

Underbody Clamp Specifications:

UNDERBODY CLAMP (Special tool)	Clamp Number
 ● Before using the underbody clamp for this vehicle, recompose the clamp body of the underbody clamp (AT-63) to the long clamp body (AT-63-300).	AT-63 ①Clamp body ②Side clamp ③Under clamp AT-63-300 Long clamp body

Attachment	Clamp Number	Frame correctors
Standard type: 	AT-63-AL	● Dataliner ● Celette ● Car-o-liner ● Flex o-liner ● ect.
C-type: 	AT-63-C Inner diameter 65 mm (2.6 in.)	● Korek ● Auto pole ● ect.
U-type: 	AT-63-U Inner diameter 20 mm (0.8 in.)	● U-Base ● Pro-Tec ● ect.

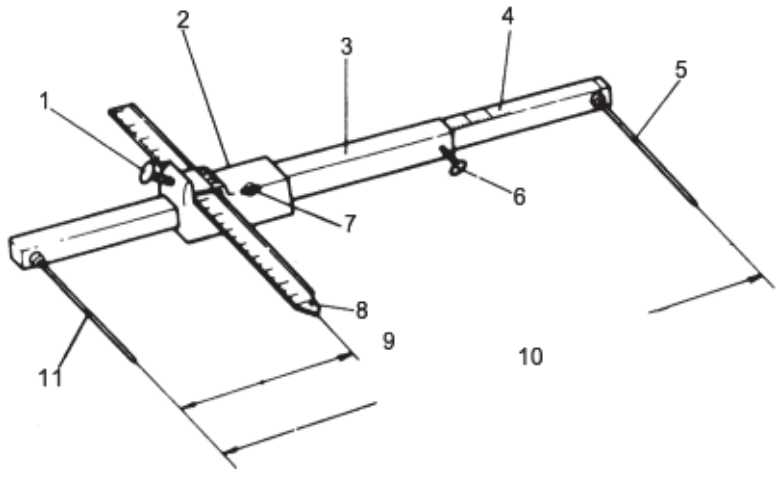
1. Apply load to the damaged section and pull on it until the section is almost restored to its original shape.
2. Check that the parts of the body are more or less restored to their original shapes.
   NOTE: Check the original position using the body dimensional drawings (see section 6) and the positioning jigs (**see page** 1-7).
3. Remove the parts that require replacement.
4. Decide whether to replace all the affected parts or to cut the weld joint parts and replace them.
5. Cut off and separate the damaged parts.
   NOTE: When cutting the parts off, take special care that you do not damage adjacent parts on the vehicle.
   Setting Conditions for Replacement Parts Joint Sections:
   - Make sure that you can perform straightening work after welding.
   - Make sure that the locations will not be susceptible to distortion caused by other parts.
   - Make sure that there are few removable parts and that the location allows for safe welding.
   - Make sure that the joints are short and that the paint repair can be performed easily.
   - Make sure the locations are such that the joints can be finished in a way that will not affect the outward appearance.
   - Make sure that the locations do not hinder the removing and attaching of parts.
     NOTE: Keep all of these conditions in mind, and after determining the joint locations, cut the joints for an overlap of 20~30 mm (0.8~1.2 in).
6. Straighten the related parts.
7. Set and tack weld the replacement parts.
   NOTE: Temporarily mount the related parts and check for clearance and level differences.
8. Weld the replacement parts.
   Use proper welding methods (see section 2).
   NOTE: Use of the positioning jig is recommended.

⚠ CAUTION

Protect body parts with the heat resistant protective cover to prevent damage when welding.

The paint film designed to prevent corrosion will be destroyed around the edges of areas that were welded. Therefore these areas and other areas not clearly visible must be repainted. Refer to rust prevention in section 7 of this manual.

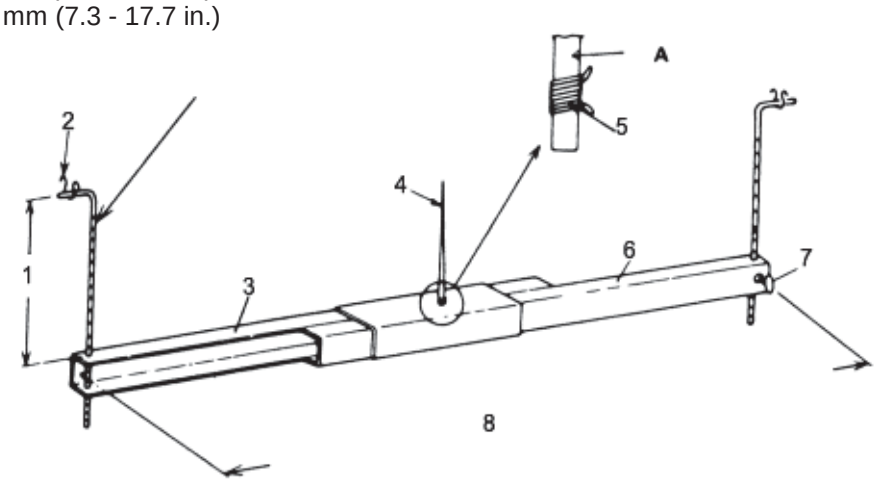
Whenever possible, make judgements and conclusions based on measurement. Measure the wheel alignment (**see page** 1-2) to prevent uneven tyre wear or incorrect steering wheel alignment.
If there are any deviations, use a tram tracking gauge and measure parts of the body.



1. ADJUST SCREW A
2. POINTER C HOLDER
3. REFERENCE SCALE
4. EXPANDING/ CONTRACTING SCALE
5. POINTER B
6. ADJUST SCREW C
7. ADJUST SCREW B
8. POINTER C
9. Adjust this to the diameter of the wheel disc
10. Adjust this to the vehicle
11. POINTER A

If there is any twisting to the body, measure by using a frame centering gauge.

Pointer B - short pointer (height adjustment 15 - 290 mm (0.6 - 11.4 in.)
long pointer (height adjustmetn 185 - 450 mm (7.3 - 17.7 in.)

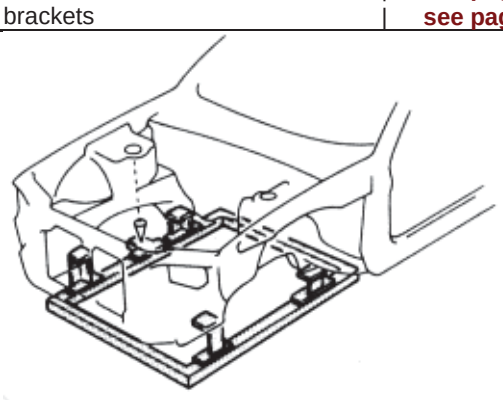


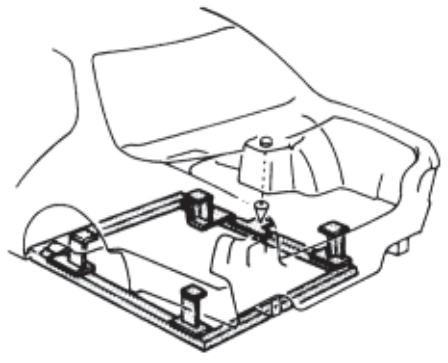
1. HEIGHT
2. SET RING
3. FRAME
4. POINTER 4
5. CLIP
6. FRAME
7. SET SCREW
8. Move within a range of 250 - 1,570 mm (9.8 - 61.8 in.)

To measure body dimensions, use a universal tram gauge.

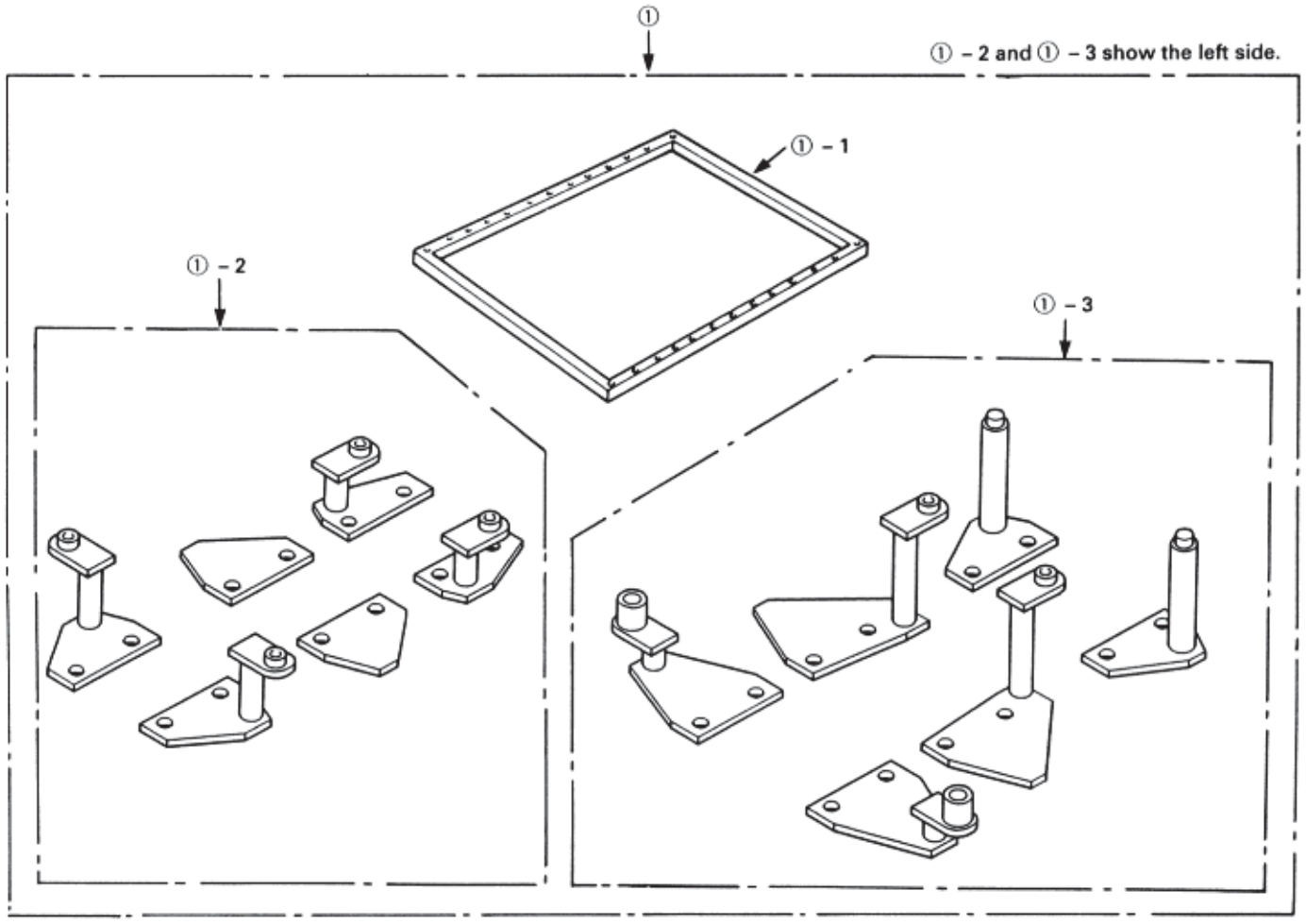


No.	Jig Number	Description	Page Reference
1	HJ-49	Under frame positioning jig set	
1-1	HJF-01	Frame	**see page**4-11, **see page** 4-17, **see page** 4-45
1-2	HJ-49-F	Front jig brackets	**see page** 4-11, **see page** 4-17
1-3	HJ-44-R	Rear jig brackets	**see page** 4-45



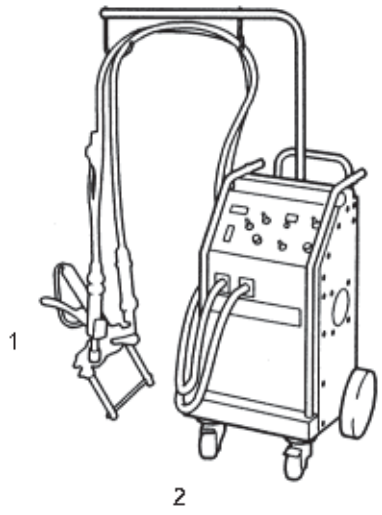


Positioning Jig:
V.L. CHURCHILL Ltd.
PO BOX 3, London Road, Daventry, Northants, NN114NF
TEL + 44 (01327) 704461 FAX + 44 (01327) 71625



Spot welding is also known as resistance spot welding, and it is the most suitable method of welding for vehicles. It has three main features: the welding can be performed instantaneously, it has a minimal effect on the source material, and it has a minimum effect on distortion to the absolute minimum. However for reliable results, please remember to remove all paint and other impurities from the surface of the material you intend to weld.

Welders:



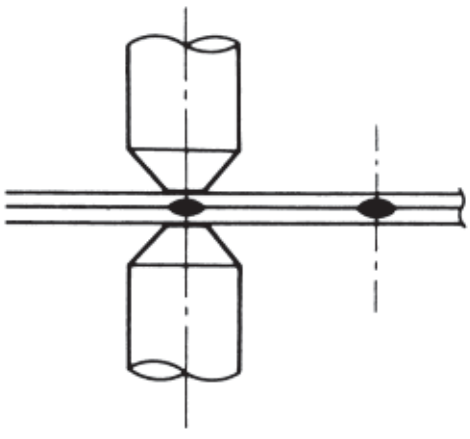
1. **SPOT WELDER**
2. **TIMER/TRANSFORMER**

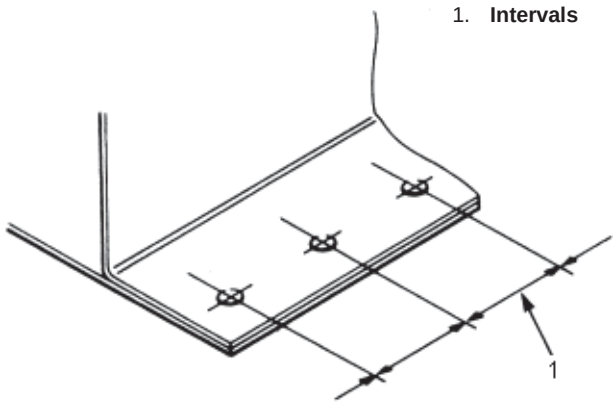
Welding Conditions:

When performing spot welding, make sure that you conform to the following conditions: use the correct current, conductivity time, welding pressure, holding time, and shutdown time recommended for the spot welder.

Please bear in mind the following points when welding:

- Plate thickness and minimum welding pitch



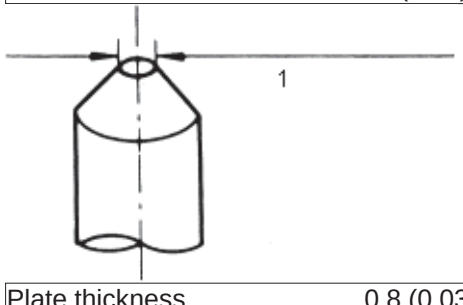


1. **Intervals**

NOTE: If the welding intervals are too short, branching may occur, making it impossible to maintain the desired soldering state.

Unit: mm (in)

Plate thickness	0.6 (0.02)	0.9 (0.04)	1.2 (0.05)	1.6 (0.06)
Minimum intervals	11 (0.43)	16 (0.63)	20 (0.79)	24 (0.94)



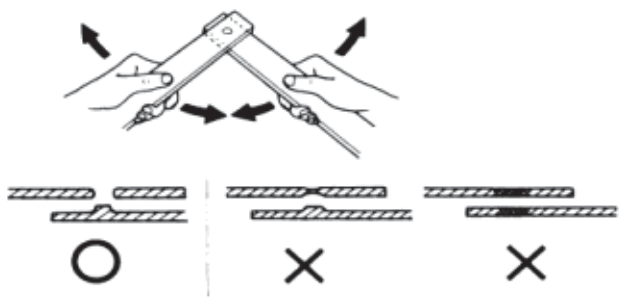
1. **Tip Diameter**

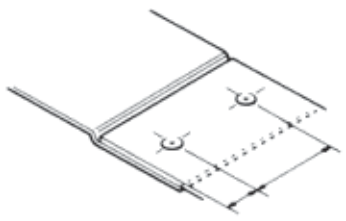
Plate thickness	0.8 (0.03)	0.9 (0.04)	1.2 (0.05)	1.6 (0.06)
Tip diameter	4.5 (0.12)	5.0 (0.2)	5.5 (0.22)	6.0 (0.24)

Welding Strength Test

Even if you perform the welding according to the proper conditions, the strength of the welded sections may fluctuate due to drops in the voltage and other factors. The quality of the welding cannot be evaluated unless the welded sections are destroyed. Provide yourself with a steel plate of the same thickness and conduct a destruction test.

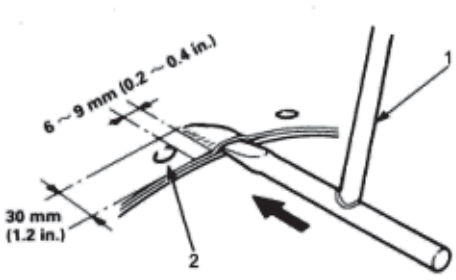
- If holes appear in the steel plates, it means that the welding is of standard strength.

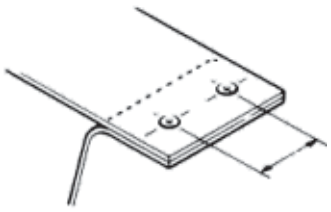






- Drive a wedge between two panels near the nugget. If the welded parts do not come apart and the diameter of the nugget is more than 3mm (0.1 in), the welding should be satisfactory.





1. **WEDGE**
2. **Stop inserting the wedge when the full size of the nugget appears**

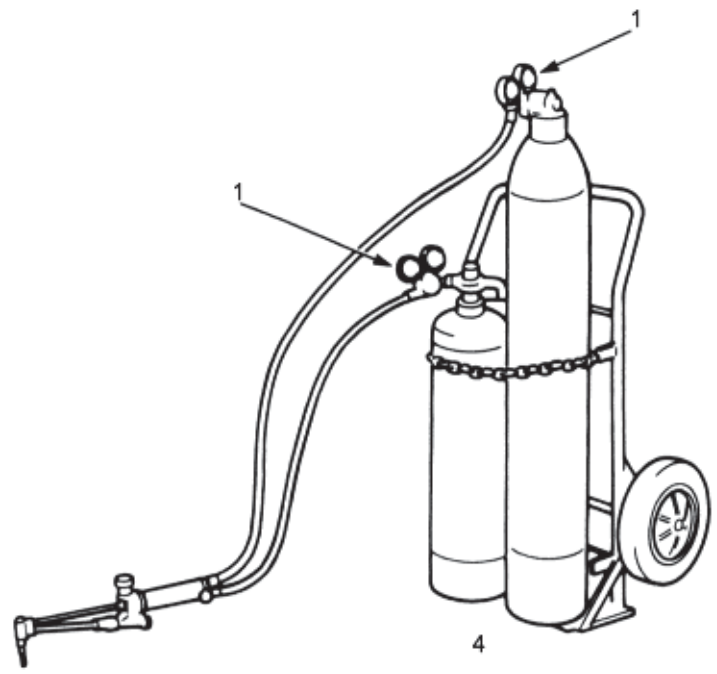
NOTE: It is difficult to perform spot welding in the following circumstances:

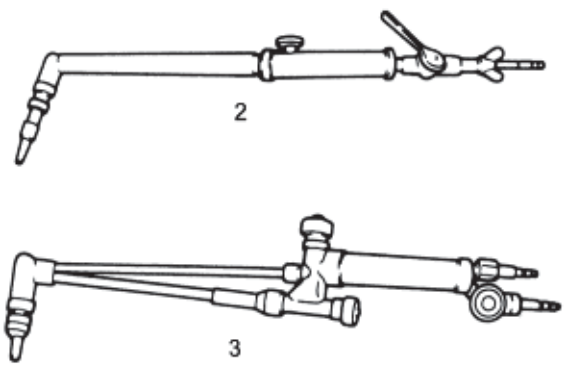
- When it is not possible to remove any rust or paint attached to the welding surfaces.
- When the tip of the spot welder cannot be inserted into the welding section.
- When the welding surfaces can be seen from the outside and welding will impair the exterior appearance.

In all these cases, the gas welding method should be employed. Moreover, if it is not possible to perform spot welding because of space restrictions, plug welding using the arc welding method may be performed instead. For plug welding, the sections to be welded must be closer together.

Gas welding is indispensable for body repair because of the broad range of its applications to join the body panels, cut the materials that construct the body and apply heat to reform panels.
However, this method requires experience.

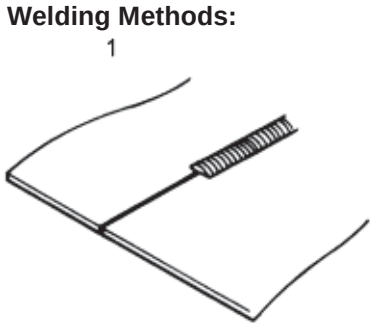
Welders:

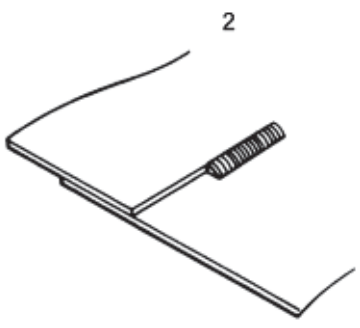




1. **Gas regulator**
2. **Welder**
3. **Cutter**
4. **Oxygen/Acetylene tanks**

Welding Methods:

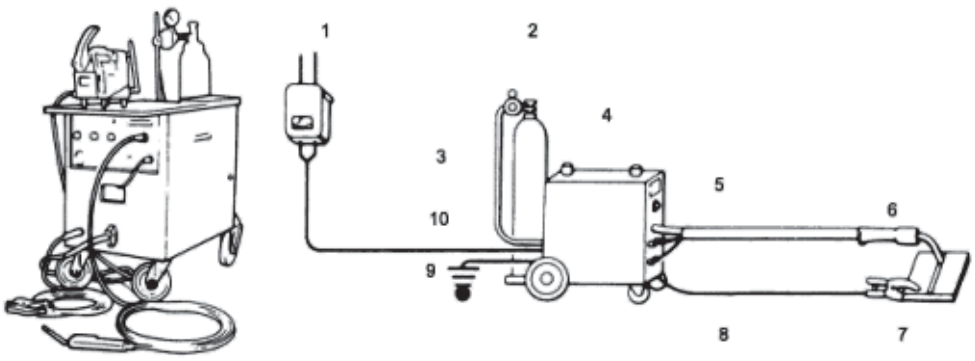




1. **Butt welding**
2. **Filler welding or soldering**

This welding process uses inexpensive carbon dioxide instead of expensive inert gases as a shielding means. Consumable metal electrodes are employed. It has a wide range of applications, including butt welding of a thin plate, fillet welding, plug welding and MIG spot welding. In terms of the weld strength, it is also highly stable.

Welders:

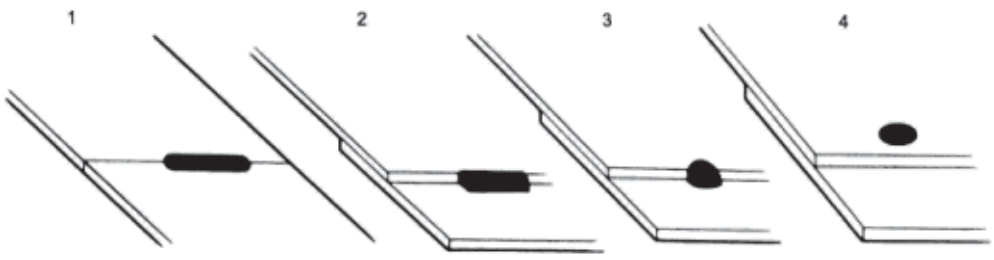


1. **Single phase 110V, Three phase 200 - 240V**
2. **Gas regulator**
3. **Gas hose**
4. **Carbon dioxide or Argon + Carbon dioxide**
5. **Welding power supply (built-in wire feed mechanism)**
6. **Welding torch**
7. **Workpiece**
8. **Work cable**
9. **Ground wire**
10. **Input cable**

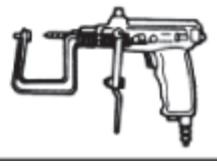
⚠ CAUTION

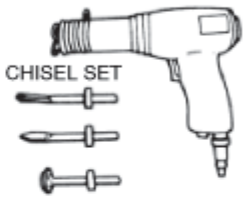
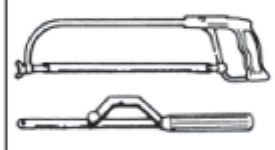
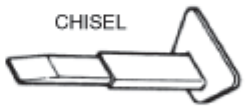
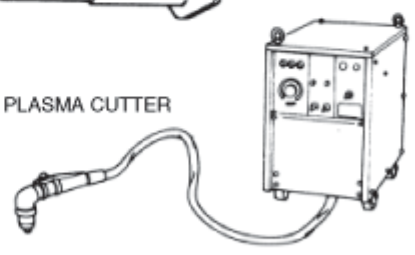
Disconnect the negative battery cable before arc welding.

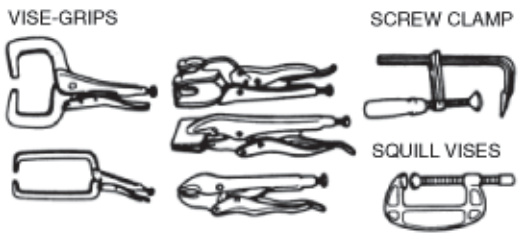
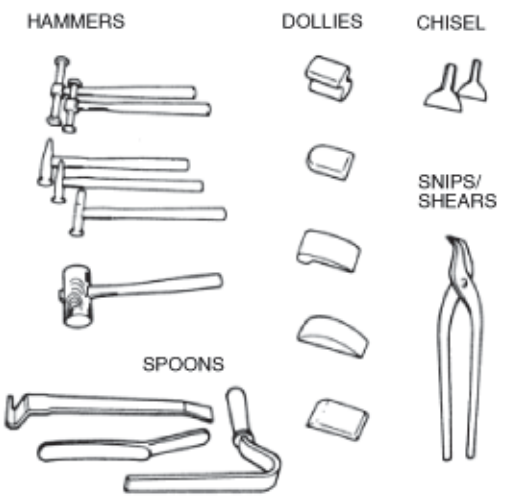
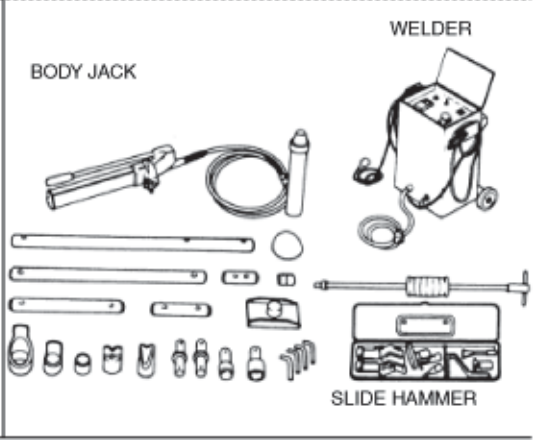
Welding Methods:



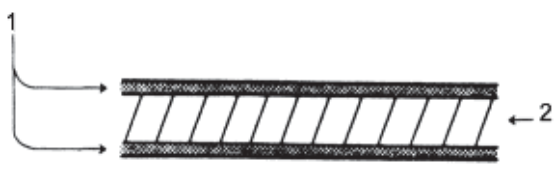
1. **Butt welding**
2. **Fillet welding**
3. **Spot welding**
4. **Plug welding**

<table>
<tr><th>Item</th><th>Work</th><th>Tools, equipment used</th></tr>
<tr><td rowspan="2">Protective tools</td><td>Operator</td><td>1. Protective goggles
2. Cap
3. Ear plug
4. Shield for eyes
5. Overalls with long sleeves
6. Dust-proof mask
7. Protective apron
8. Welding gloves
9. Foot protectors
10. Safety shoes
11. Work gloves
12. Splatter guard
  </td></tr>
<tr><td>Vehicle body</td><td>Heat-resistant protective cover.
12
  </td></tr>
<tr><td>Processing tools</td><td>Plug hole drilling</td><td>DRILLING BLADE, DRILL, SPOT CUTTER
 
PUNCH
 
PRESSURE DRILL
  </td></tr>
</table>

Item	Work	Tools, equipment used
Flange tools	Edge preperation	
Cutting tools	Cutting	AIRSAW  AIR JIGSAW  AIR IMPACT CUTTER  CHISEL SET HANDSAW  HAND NIBBLER  CHISEL   PLASMA CUTTER 
Sanding tools	Cleaning	DISC SANDER BELT SANDER Air type: Electric type:   

Item	Work	Tools, equipment used
Fixing tools	Base metal fixing	
Shaping tools	Skin panel shaping	
	Body and frame shaping	

The zinc-plated steel plate used in some panels of the HR-V requires different repair techniques than ordinary steel plate. Refer to “Body Construction” (**see page** 4-2) for the location of the zinc-plated panels.



1. ZINC PLATING (5 ~ 6 microns)
2. Steel plate

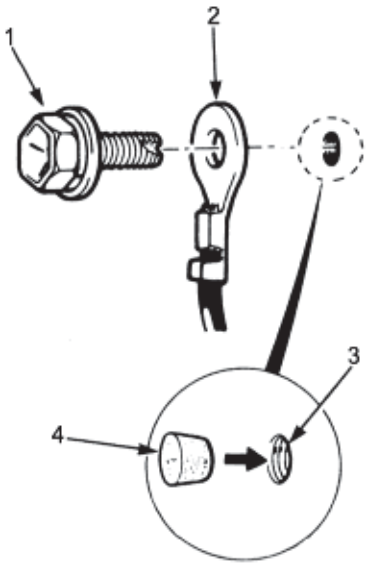
1. Before spot welding the zinc-plated steel plate, remove the paint from both sides of the flange to be welded. Apply sealer to the flange after welding.

> **⚠ WARNING**
> To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   NOTE: Seal the sanded surfaces thoroughly to prevent rust.
2. The electric continuity properties of zinc-plated steel plate are different from ordinary steel plate. When spot welding, increase the current by 10-20%, or increase the resistance welding time. Increase the weld spots by 10-20%.
   NOTE: The MIG welding procedures for zinc-plated steel plate are the same as for ordinary steel plate.

> **⚠ WARNING**
> To prevent eye injury and burns when welding, wear approved welding helmet, gloves and safety shoes.

3. Before applying putty or body filler to the zinc-plated steel plate, sand the zinc plating thoroughly to promote adhesion and to prevent blistering.
   NOTE:
   - Use only epoxy-based putties and fillers on zinc-plated steel plate.
   - Follow the manufacturer’s specification.
4. When performing paintwork, apply caulking to the ground wire mounting hole to keep the paint out.



1. SPECIAL BOLT
2. GROUND WIRE
3. GROUND WIRE MOUNTING HOLE
4. CAULKING

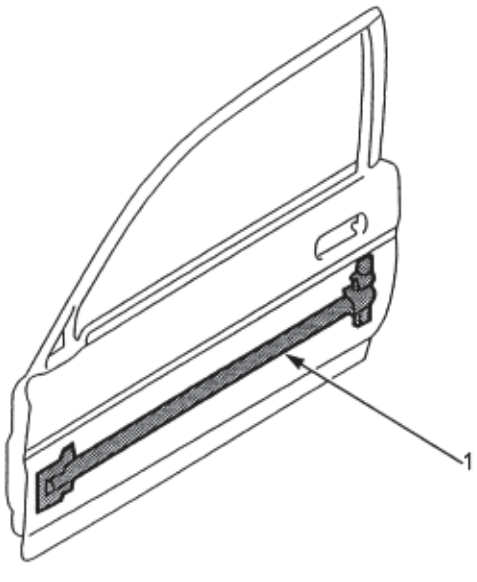
Avoid using putty as much as possible when repairing a new vehicle. Use alternative methods if possible.

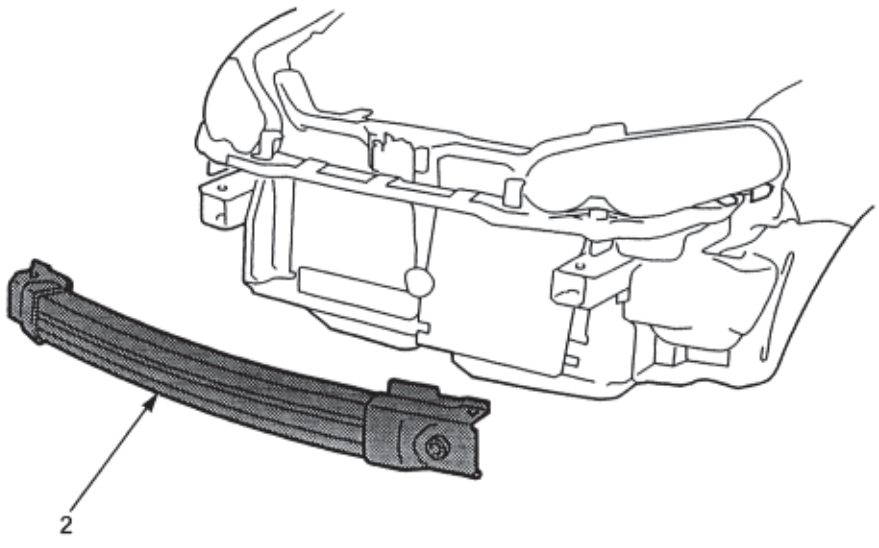
⚠ WARNING

- Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.
- Cover spilled paint with sand, or wipe it up at once.
- Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid eye contact with skin.
- If paint gets in your mouth or on your skin, rinse and wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.
- Paint is flammable. Store it in a safe place, and keep away from sparks, flames or cigarettes.

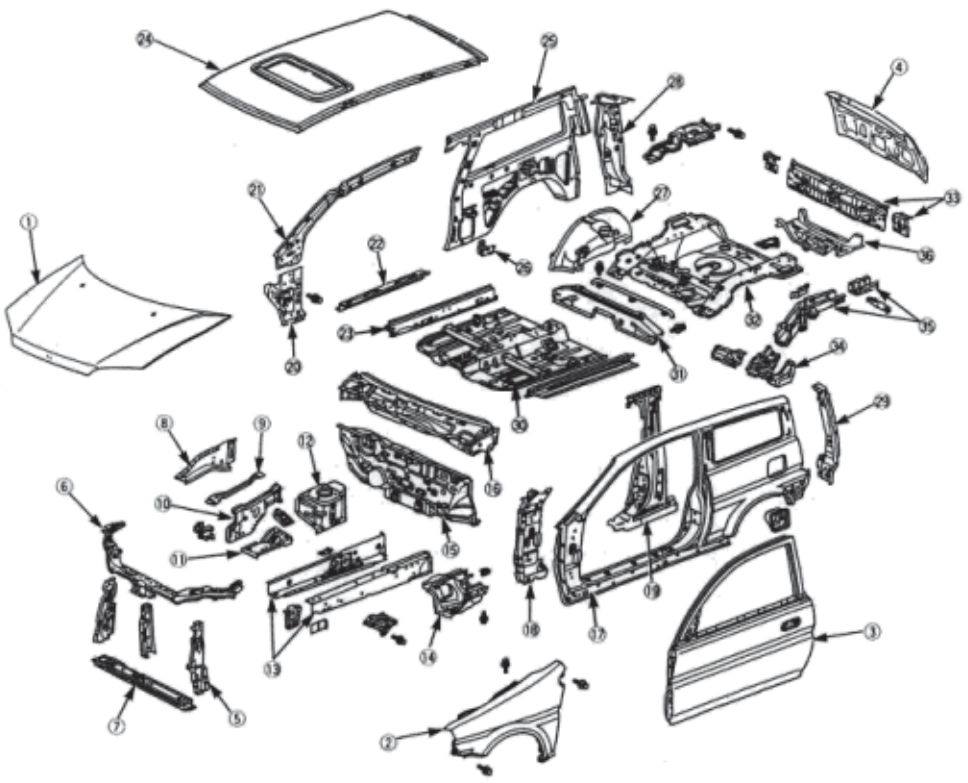
Operation	Tools/Materials	Procedure	Remarks
1. Prep the repair area.	Double-action sander, #80 sandpaper	Sand the area with a double-action sander and #80 sandpaper. Clean with wax and grease remover.	
2. Apply putty. NOTE: Putty can be applied after priming as described in step 4.	Epoxy-based putty. Mix the putty and hardener according to the manufacturer's directions. Polyester resin putty. Body filler.	Apply in several thin coats if necessary. Try to avoid leaving pinholes in the putty. Follow the manufacturer's recommendations for preparation.	
3. Sand and clean the puttied area.	Double-action sander, orbital sander, hand sanding file, #80, #120, #240 sandpaper, wax and grease remover, shop towels.	Rough-sand the area with a double-action sander and #80 sandpaper, then sand with #120 sandpaper. Featheredge with #240 sandpaper. Clean with wax and grease remover.	
4. Coat with primer. NOTE: Apply to bare sheet metal and puttied area.	Epoxy-based primer and hardener, epoxy thinner: Mix and thin the primer according to the manufacturer's directions.	Apply 2 - 4 coats, allowing sufficient flash time between coats. Force dry at 140 - 158°F (60 - 70°C) for at least 30 minutes.	Spray to a thickness of 30 - 35 microns.
5. Sand and clean the whole area.	Double-action sander, #300, #400 sandpaper, wax and grease remover, shop towels.	Sand the repair area by hand with #300, #400 sandpaper. Blow off with compressed air. Clean with wax and grease remover.	
6. Apply intermediate coat to the whole area to be repainted.	Polyester/urethane resin primer/surfacer or top-coat enamel: Mix and thin the primer according to the manufacturer's directions.	Apply 2 - 4 coats, allow sufficient flash time between coats. Force dry at 140 - 158°F (60 - 70°C) for at least 30 minutes.	Spray to a thickness of 30 - 35 microns.
7. Sand and clean the whole area to be repainted	Hand sanding file, double-action sander, #400, #600 sandpaper, wax and grease remover, shop towels.	Sand the repair area by hand with #400 sandpaper until it is level. Sand the whole area to be repainted with #400 - 600 sandpaper. Clean with wax and grease remover.	
8. Top-coat the whole area to be repainted.	Acrylic urethane resin top coat paint, hardener and thinner: Mix and thin the paint according to the manufacturer's directions.	Apply 2 - 4 coats allowing sufficient flash time between coats. Force dry at 140 - 158°F (60 - 70°C) for at least 30 minutes.	Spray to a thickness of 40 - 50 microns.

Door and Bumper reinforcement beams used on Honda vehicles are made from a metal equivalent to High Strength Steel.
If High Strength Steel is heated, the strength of the steel will be reduced. If High Strength Steel is damaged, as in a vehicle accident, where the door and bumper reinforcement beams are bent, the beams may crack if an attempt is made to straighten them.
For this reason, door and bumper reinforcement beams should never be repaired, they should be replaced if they are damaged.
NOTE: If a door reinforcement beam is damaged, the whole door panel assembly should be replaced.





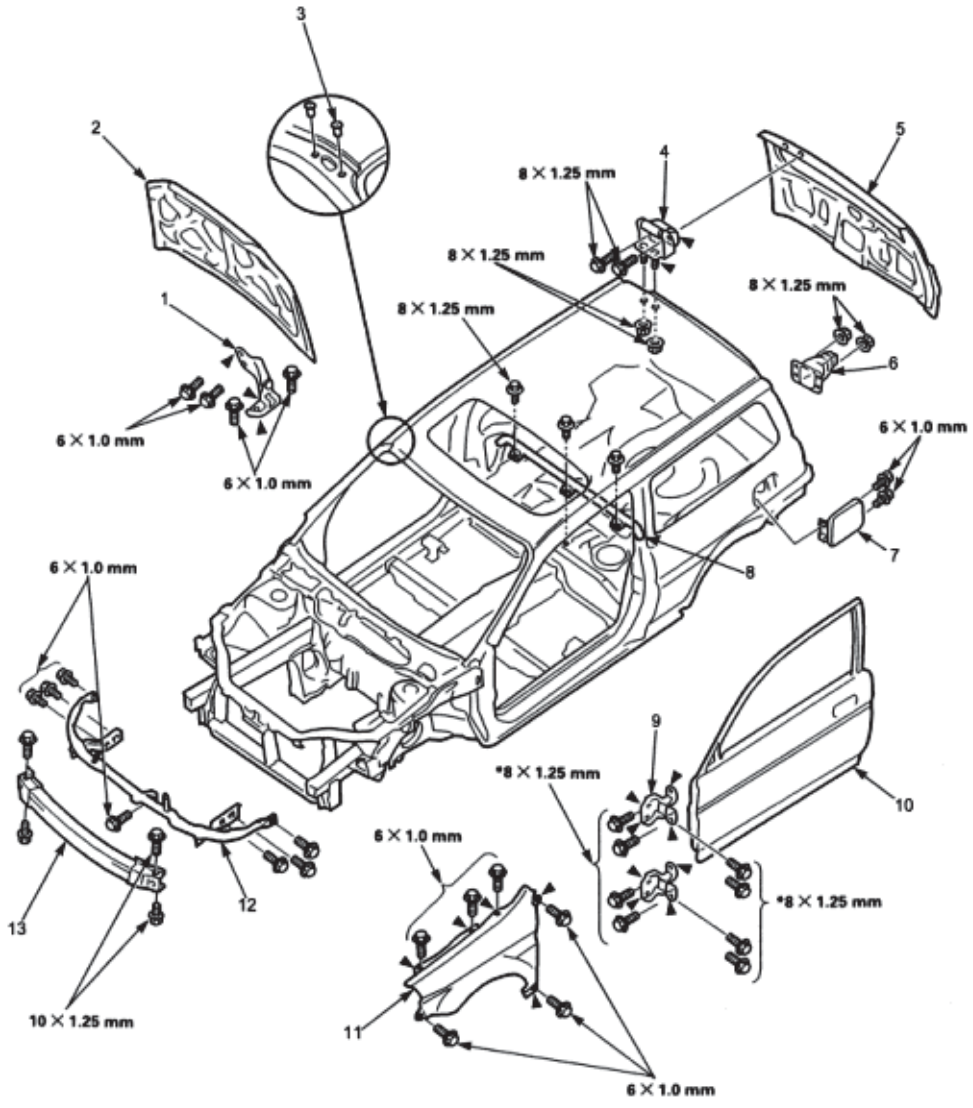
1. DOOR REINFORCEMENT BEAM
2. FRONT BUMPER REINFORCEMENT BEAM



NOTE: Be sure to use epoxy-based putty and primer surfacer to make any repairs on paint coats or zinc-plated sheet metal (**see page** 3-3).

No.	Part Name	Zinc-plated	No.	Part Name	Zinc-plated
1	Hood	O	19	Centre Pillar Stiffener	
2	Front Fender	O	20	Front Pillar Inner Lower	O
3	Door Panel/Door Skin	O	21	Front Pillar Inner Upper/Roof Side Panel	
4	Tailgate	O	22	Side Sill Stiffener	O
5	Bulkhead Side Stay	O	23	Inside Sill	O
6	Bulkhead Upper Frame	O	24	Roof Panel	
7	Front Lower Cross-member	O	25	Rear Inner Panel	O
8	Wheelhouse Upper Member		26	Wheel Arch Extension	
9	Front Fender Support		27	Rear Wheelhouse	O
10	Wheelhouse Extension		28	Rear Pillar Stiffener	O
11	Front Wheelhouse	O	29	Rear Pillar Gutter	O
12	Damper Housing	O	30	Front Floor	O
13	Front Side Frame	O	31	Middle Floor Cross-member	O
14	Front Side Outrigger/Lower Arm Support	O	32	Rear Floor	O
15	Dashboard Lower	O	33	Rear Panel	O
16	Dashboard Upper	O	34	Side Sill Extension	O
17	Outer Panel	O	35	Rear Frame	O
18	Front Pillar Stiffener	O	36	Rear Floor Cross-member	O

NOTE: To adjust the clearance with the hood, door and tailgate alignment, refer to the HR-V Shop Manual.
Mounting bolts/nuts Torque:
6 x 1.0 mm: 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
8 x 1.25 mm: 22 Nm (2.2 kgf/m, 16 lbf/ft)
*8 x 1.25 mm: 28 Nm (2.9 kgf/m, 21 lbf/ft)
10 x 1.25 mm: 38 Nm (3.9 kgf/m, 28 lbf/ft)
▶ : Sealing locations
NOTE: Seal the following areas to prevent water leak and rust.
Mastic sealer: 3M #08654 or equivalent.



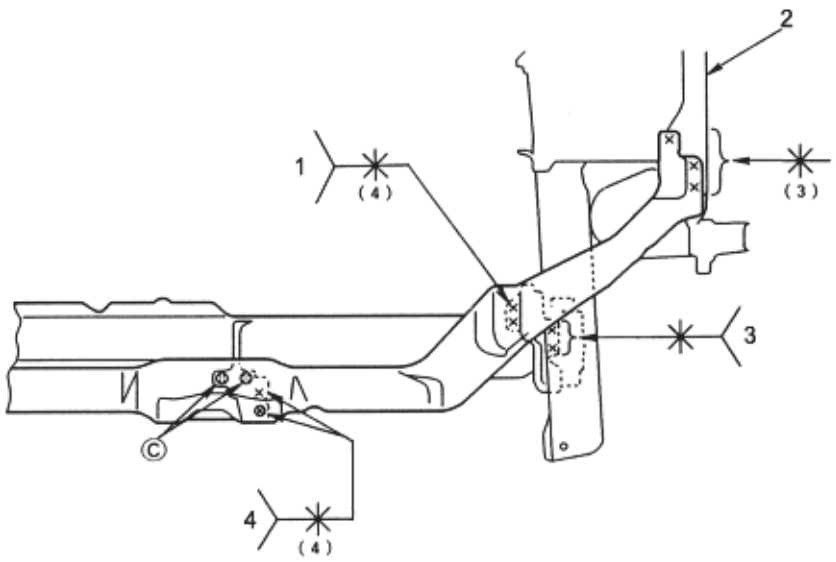
1. **HOOD HINGE**
2. **HOOD**
3. **POP NUT,** 4 mm (0.16 in), Staking stroke: 2.5 mm (0.1 in) (with mast antenna)
4. **TAILGATE HINGE**
5. **TAILGATE**
6. **REAR BUMPER EXTENSION**
7. **FUEL LID**
8. **REAR FLOOR PIPE**
9. **DOOR HINGE**
10. **DOOR**
11. **FRONT FENDER**
12. **UPPER BEAM**
13. **FRONT BUMPER BEAM**

Front Bulkhead

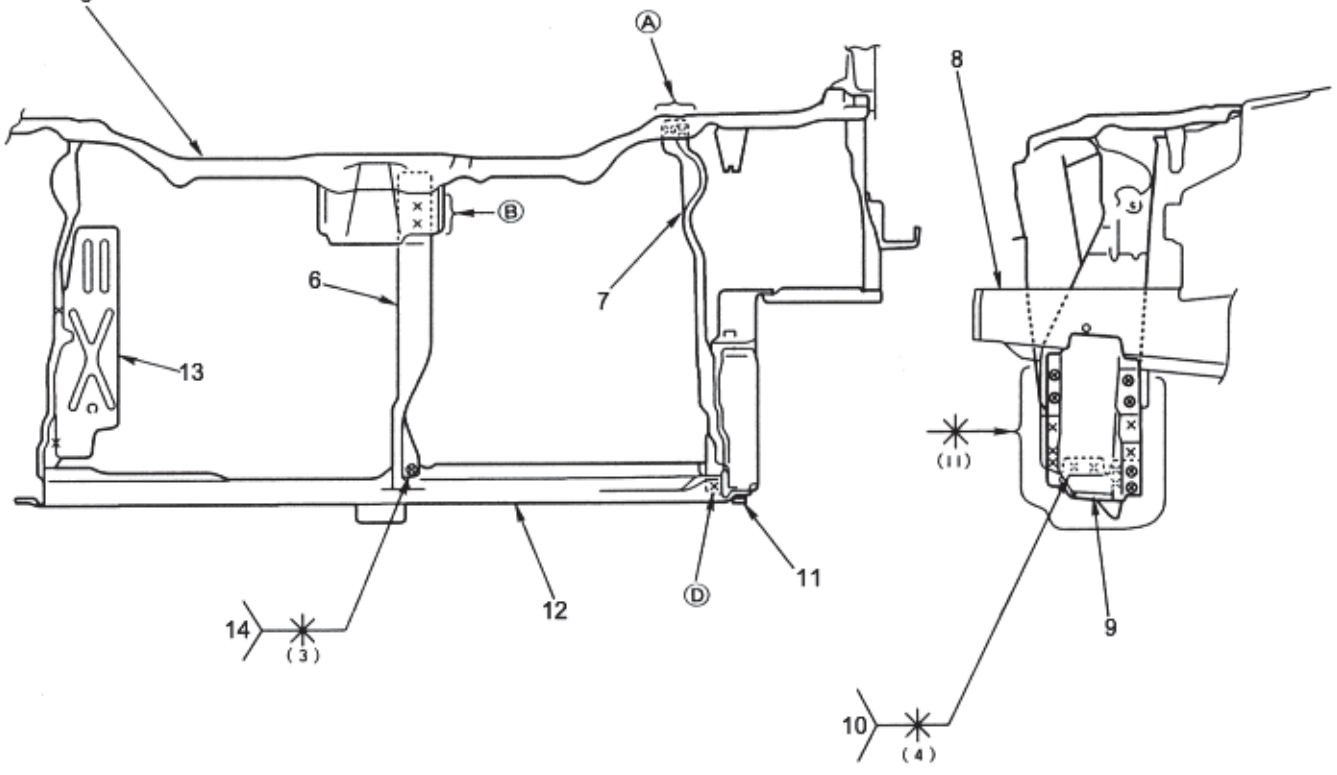
Mass Production Body Welding Diagram

4-4

The front bulkhead is joined to the front wheelhouse and front side frame. It forms the base for the headlights and other parts and maintains the rigidity of the front section of the body. Pay particular attention to twists and parallelism and check mountings of related parts when welding.



1. **Bulkhead upper frame and Bulkhead side stay (Include A)**
2. **Wheelhouse extension**
3. **Bulkhead side stay and Front lower cross-member (Include D)**
4. **Bulkhead upper frame and Bulkhead centre stay (Include B)**
5. **Bulkhead upper frame**
6. **Bulkhead centre stay**
7. **Bulkhead side stay**
8. **Front side frame**
9. **Bulkhead lower cross-member bracket**
10. **Bulkhead side stay and Front lower cross-member**
11. **Mounting bolt, 6 x 1.0 mm**
12. **Front lower cross-member**
13. **Bulkhead side plate**
14. **Bulkhead centre stay and Front lower cross-member (Include C)**



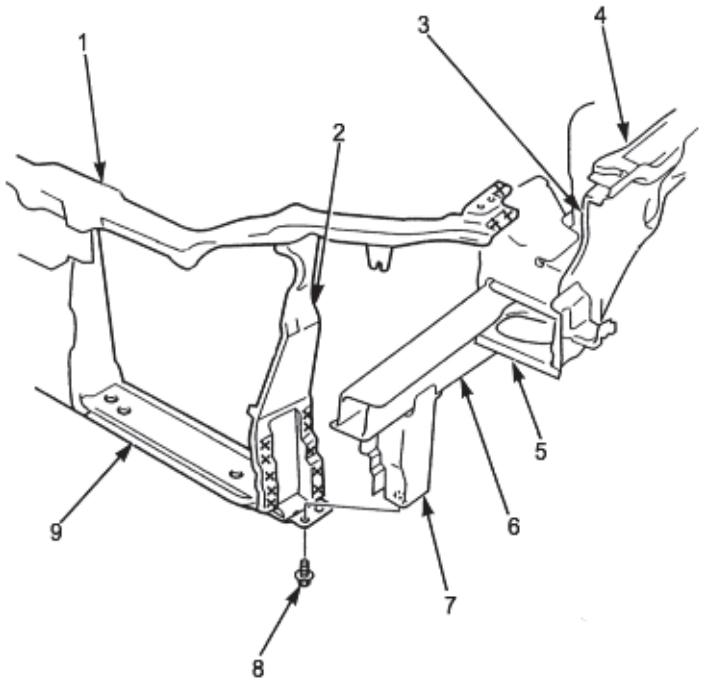
1. Remove the related parts.
   - Front bumper.
   - Right and left headlights.
   - Right and left front fenders.
   - Radiator, condenser.
   - Hood latch.
2. Roughly pull out and straighten the damaged area.
   - Check the damage to the front wheelhouse and front side frame before removing the front bulkhead. Use the frame straightener to roughly pull out and repair the damaged bulkhead before removing the bulkhead.

   NOTE: Check the fit of the door, taking care not to pull the damaged area out more than necessary.
   - Use the horizontal pinch weld clamps and attach the car to the frame straightener at the clamping points securely.
3. Keep the body level.
   Jack up the body, and place safety stands at the four designated places of the side sills.
   NOTE: Refer to the HR-V Shop Manual for safety stand location points.
4. Cut and pry off the front bulkhead.
   - Centre punch around the spot weld imprints.
   - Use the special spot cutter to drill holes at the spot weld nuggets on the front wheelhouse and front side frame.

   NOTE: When drilling holes, be careful not to drill through the front wheelhouse or side frame.
   - Cut off the bulkhead with an air chisel, leaving the welding flanges intact.
   - Level and finish the burrs from the pried off spot welds with a disc sander.

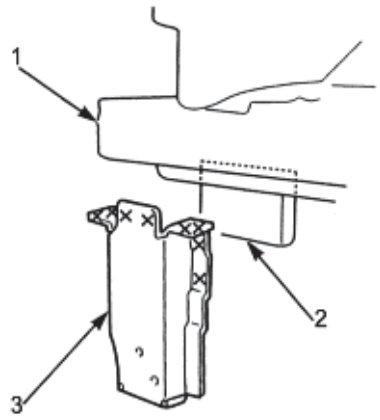
⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.



1. BULKHEAD UPPER FRAME
2. BULKHEAD EXTENSION
3. WHEELHOUSE EXTENSION
4. FRONT FENDER SUPPORT
5. FRONT WHEELHOUSE
6. FRONT SIDE FRAME
7. BULKHEAD LOWER CROSS-MEMBER BRACKET A
8. MOUNTING BOLT 6 x 1.0 MM
9. FRONT LOWER CROSS-MEMBER

5. Check the front side frame, front wheelhouse and wheelhouse extension for position and damage. If necessary, replace the bulkhead lower cross-member bracket A.



1. FRONT SIDE FRAME
2. BULKHEAD LOWER CROSS-MEMBER BRACKET B
3. BULKHEAD LOWER CROSS-MEMBER BRACKET A

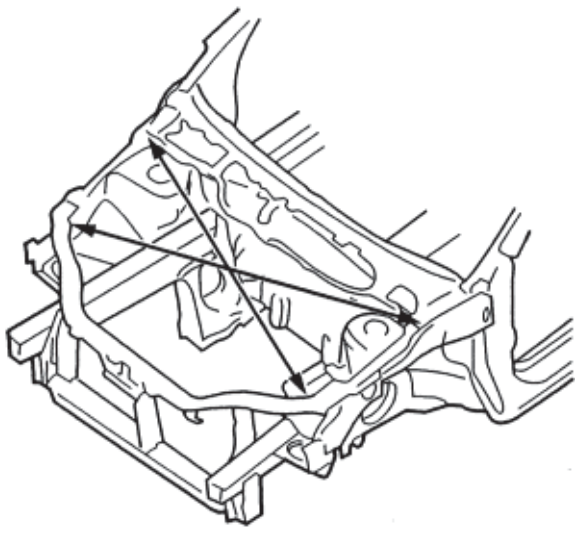
6. Straighten the damaged related parts.
   - Use a hammer and dolly to mold the damaged areas of the front wheelhouse and side frame.
   - Even out the welding flanges with a hammer and dolly.
   - Fill all drilled holes by MIG or gas welding.
7. Set the new front bulkhead and bulkhead lower cross-member bracket A.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Grind both sides of the welding section of the bulkhead with a sander to remove the undercoat and to expose the steel plate.
   - Clamp both the right and left sides with the vice-grips

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Check the front bulkhead position using the body dimensional drawings (see section 6).
8. Measure the front compartment diagonally with a tracking gauge or convex tools as shown to check it for twisting or bending.



9. Tack weld the new front bulkhead.

⚠ WARNING

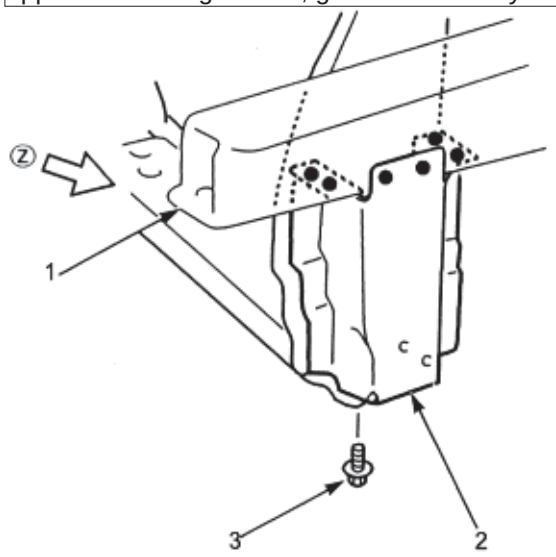
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   Spot weld the clamped sections.
   NOTE: Make sure that the right and left bulkheads are in line with each other.
10. Temporarily assemble the hood, headlight, front fender and front bumper, then check the clearances and level differences.
11. Perform the main welding.
    - plug weld the holes in the bulkhead lower cross-member bracket A with a MIG welder.
    - Spot weld the bulkhead as shown.
    - Make 20% to 30% more spot welds than there were holes drilled.

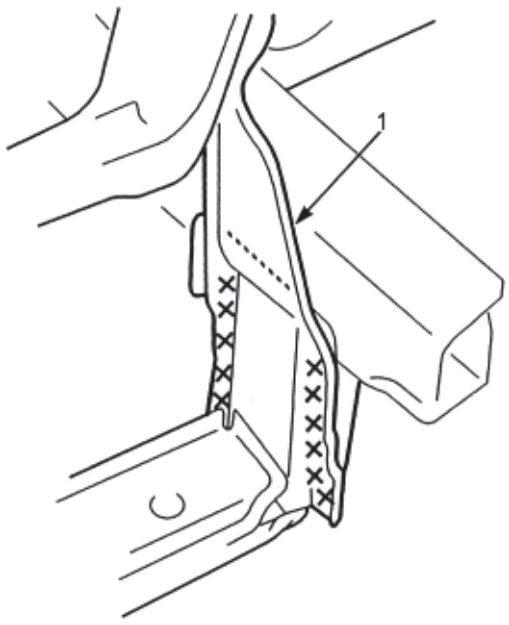
    NOTE: If there is no room for spot welds, compensate by using MIG welds.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. FRONT SIDE FRAME
2. BULKHEAD LOWER CROSS-MEMBER BRACKET A
3. MOUNTING BOLT 6 x 1.0 mm



1. BULKHEAD SIDE STAY

VIEW Z



1. BULKHEAD UPPER FRAME

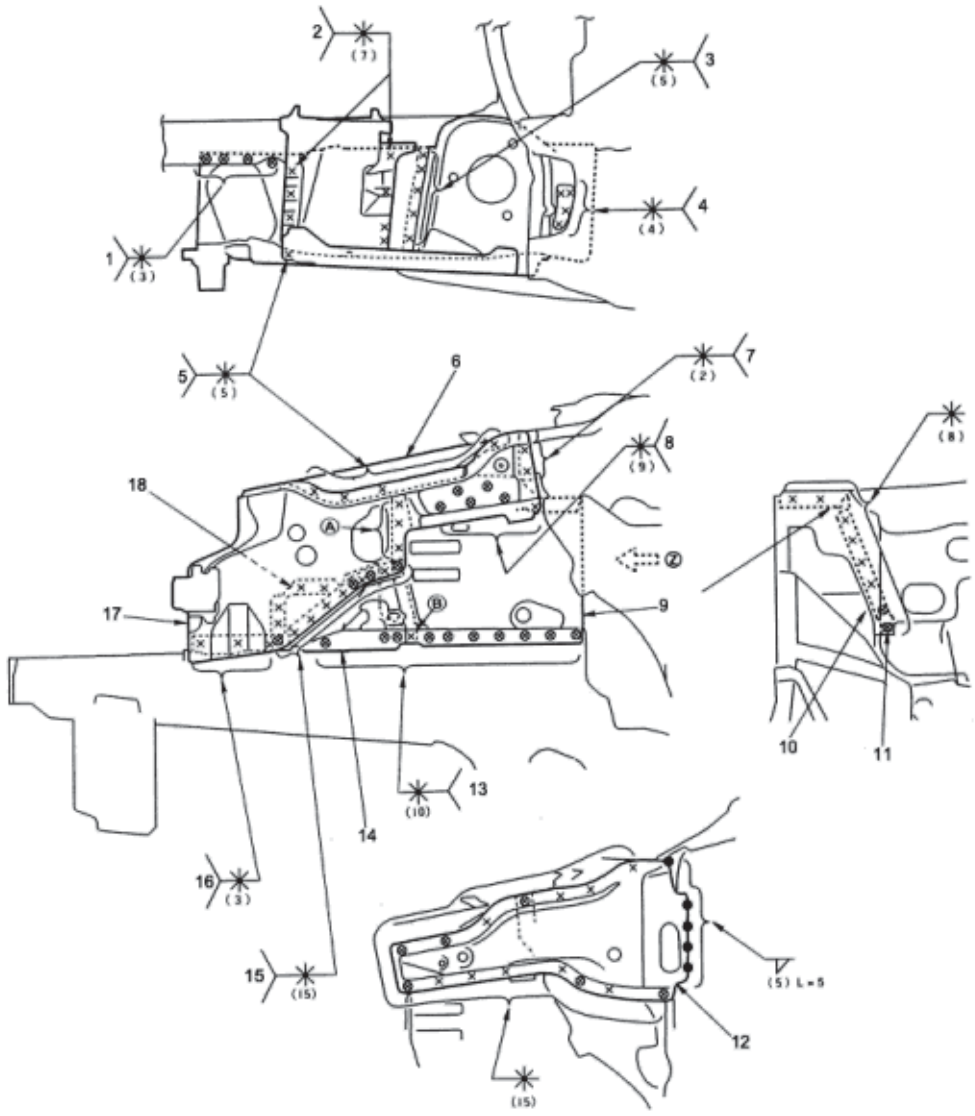
12. Finish the welds. Use a hammer and dolly to even out the front wheelhouse extension and bulkhead lower cross-member bracket A flanges for a close fit with the surface of the front bulkhead.
13. Apply the undercoat (see section 7).
14. Attach the front fender.
15. Lower the body.
16. Apply the paint. See Paint Repair Section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

17. Install the related parts.
18. Inspect, check and make adjustments.
    - Adjust the headlight aim.
    - Check that the electrical components light up and operate properly.
    - Replenish radiator coolant and inspect for leaks.

The front wheelhouse component is constructed as a unit with the front damper housing. Therefore, replacement of the component affects the front wheel alignment. When assembling it, either use a positioning jig or follow the dimensions on the frame repair chart for positioning. Weld Carefully.



1. **Front wheelhouse and front side frame**
2. **Engine mount bracket support and Front wheelhouse**
3. **Front wheelhouse and Damper housing**
4. **Damper base and Dashboard upper**
5. **Front fender support and Wheelhouse extension**
6. **Front fender support**
7. **Wheelhouse extension and Dashboard upper side member**
8. **Wheelhouse extension and Damper housing (Include A)**
9. **Damper housing**
10. **Dashboard lower**
11. **4-plate welding**
12. **Wheelhouse upper member**
13. **Front wheelhouse, Damper housing and Front side frame**
14. **Front wheelhouse**
15. **Front wheelhouse, Wheelhouse extension, Engine mount bracket and Damper housing (Include B)**
16. **Front wheelhouse and Wheelhouse extension**
17. **Wheelhouse extension**
18. **Engine mount bracket support**

VIEW Z (Inside)

1. Remove the related parts.
   - Parts that must be removed when removing the front bulkhead.
   - Parts on passenger side of lower dashboard which are especially flammable.
   - Electrical accessories in engine the compartment and the wire harnesses.

   NOTE: See the HR-V Shop Manual, for removal and installation of the engine, front suspension and brakes.
2. Pull out and straighten the damaged area to approximately the original shape.
   - Attach the vehicle to the frame straightener by tightening the underbody clamps at the horizontal pinch weld points.

   NOTE: Refer to the HR-V Shop Manual for safety stand location points.
   - Before cutting off the damaged sections, pull them out so that they are restored to the original shape.
   - Do not pull out more than necessary.
   - Pull out and straighten the damaged area of the lower dashboard, front pillar and other parts.
   - After pulling, check the damper housing position using the body dimensional drawings (see section 6) and positioning jig (**see page** 1-7).

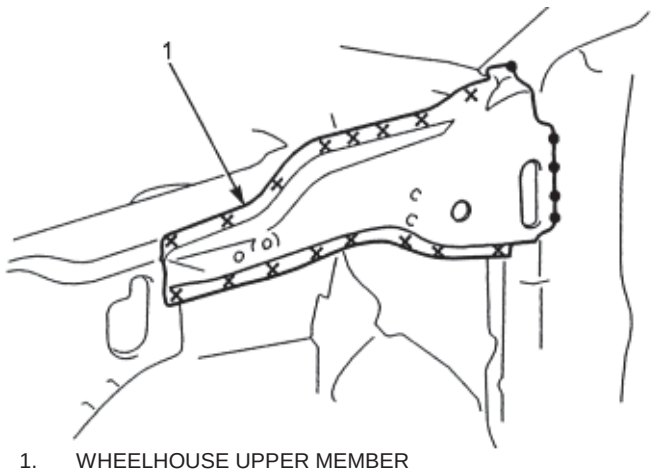
   NOTE: Check the condition of the door and hinges.
3. Peel off the undercoat.
   Heat the undercoat at the weld areas of the wheelhouse and front side frame with a gas torch and peel off the undercoat with a metal spatula.
4. Remove the wheelhouse upper member carefully so it can be reused.
   - Centre punch around the spot weld imprints.
   - Use the special spot cutter to drill holes at the spot weld nuggets.
   - Remove the MIG weld flange with a disc sander.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Using a chisel, pry off the welded flange from the front pillar.

NOTE: Remove the wheelhouse upper member carefully so it can be reused.



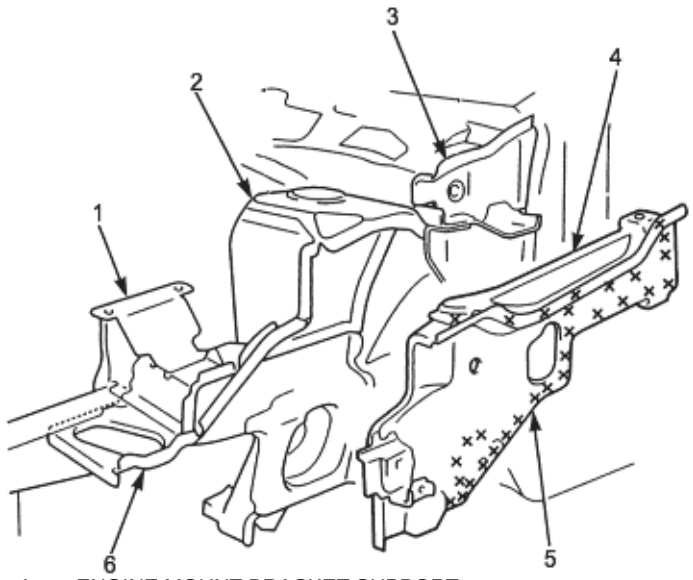
1. WHEELHOUSE UPPER MEMBER

5. Check the wheelhouse extension for position and damage. If necessary, replace it.
   - Centre punch around the spot weld imprints on the front side frame and damper housing.
   - Use the special spot cutter to drill holes at the spot weld nuggets.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Using a chisel, pry off the welded flange from the dashboard upper side member, front wheelhouse and damper housing.



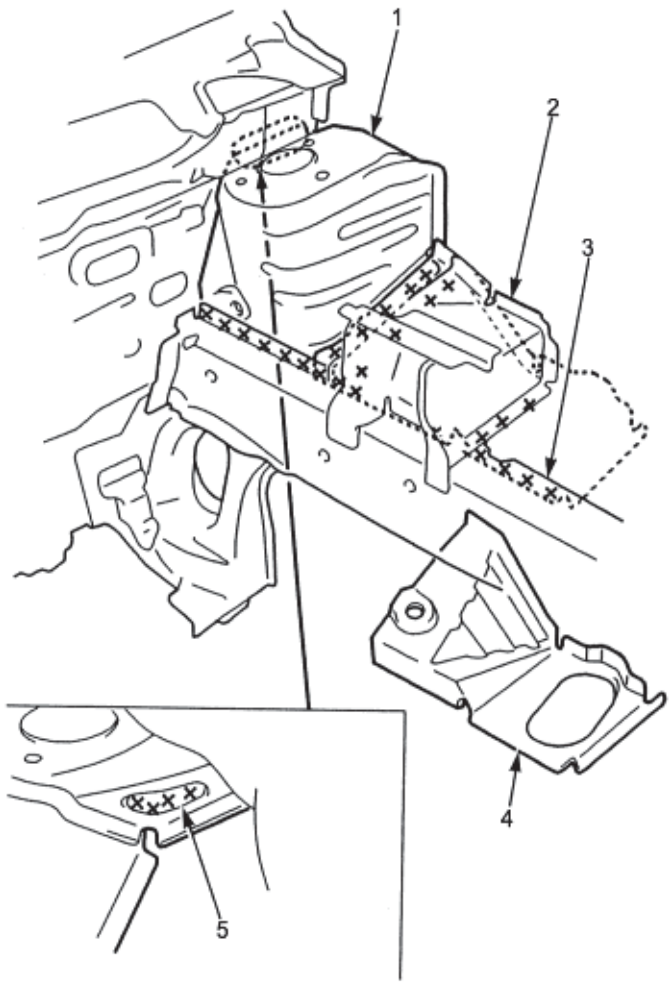
1. ENGINE MOUNT BRACKET SUPPORT
2. DAMPER HOUSING
3. DASHBOARD UPPER SIDE MEMBER
4. FRONT FENDER SUPPORT
5. WHEELHOUSE EXTENSION
6. FRONT WHEELHOUSE

6. Replace the front wheelhouse.
   - Centre punch around the spot weld imprints on the front side frame, engine mount bracket support and damper housing..
   - Drill holes in the centre punched areas using a spot cutter.
   - Using a chisel, pry off the weld flange.
   - Level and finish the burrs left on the welding surfaces with a sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

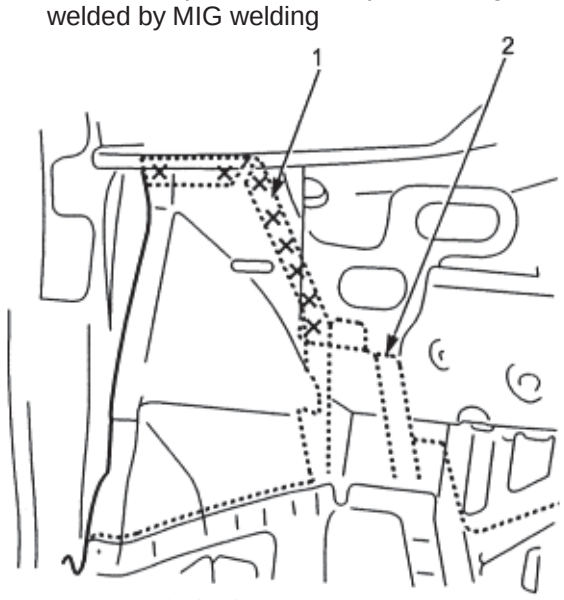
7. Check the damper housing for position and damage. If necessary, replace the damper housing.
   - Centre punch around the spot weld imprints on the front side frame, dashboard lower and dashboard upper.
   - Drill holes using a spot cutter.
   - Using a chisel, pry off the weld flange.



1. DAMPER HOUSING
2. ENGINE MOUNT BRACKET SUPPORT
3. FRONT SIDE FRAME
4. FRONT WHEELHOUSE
5. Drill holes from under the damper housing.

   - From the passenger compartment side, drill holes in the spot welded area with a 5 mm (0.2 in.) spot weld cutter.

NOTE: Drill holes completely through the parts since the replacement damper housing will be welded by MIG welding



1. DAMPER HOUSING
2. FRONT SIDE FRAME

8. Straighten the related parts.
   - Level and finish the burrs left on the welding surfaces with a sander.
   - Fill all drilled holes by MIG or gas welding.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Use a hammer and dolly to even out the welded areas of the lower dashboard, front side frame and dashboard upper side member.

9. Set the new front wheelhouse, damper housing and wheelhouse extension.
   - Apply body paint to both sides of the new front wheelhouse and damper housing.
   - See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

   - Remove the undercoat from both sides of the welding section and expose the steel plate using a disc sander.

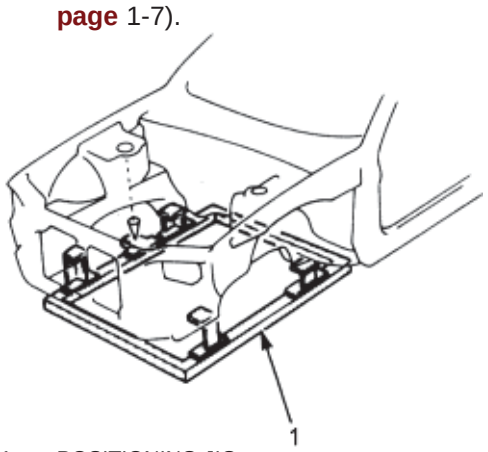
⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Clamp the front side frame with vice-grips and squill vices.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Clamp the front bulkhead with vice-grips.
   - Measure the front compartment diagonally.

   NOTE: Use of a positioning jig is recommended (**see page** 1-7).



1. POSITIONING JIG

   - Spot weld several points in the clamped sections and temporarily attach the front wheelhouse and damper housing.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

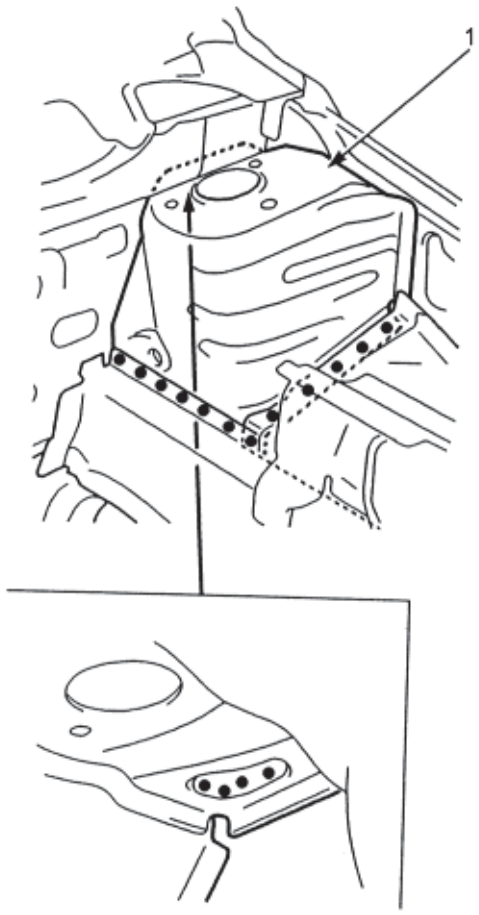
10. Check the dimensions (see section 6)., temporarily install the hood, front fender and headlight and check for differences in level and clearance.
11. Perform the main welding.
    - Weld as much as possible with the jig still mounted.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

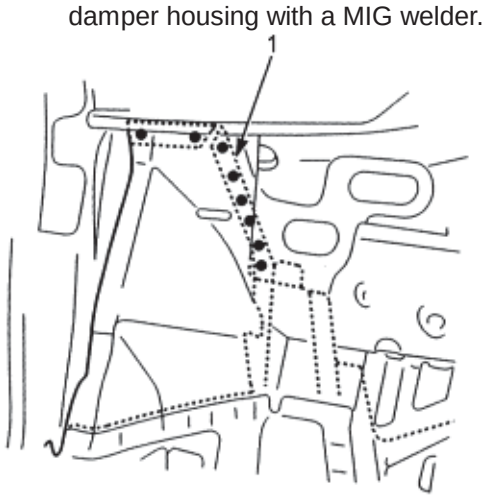
    - Make 20% to 30% more spot welds than there were holes drilled.

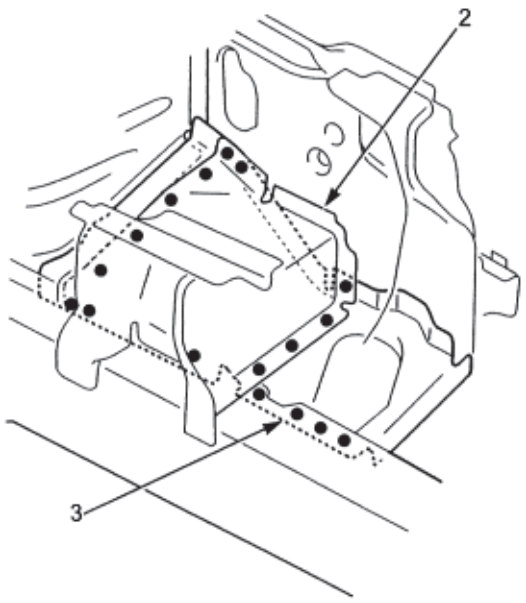
    NOTE: If there is no room for spot welds, compensate by using MIG welds.

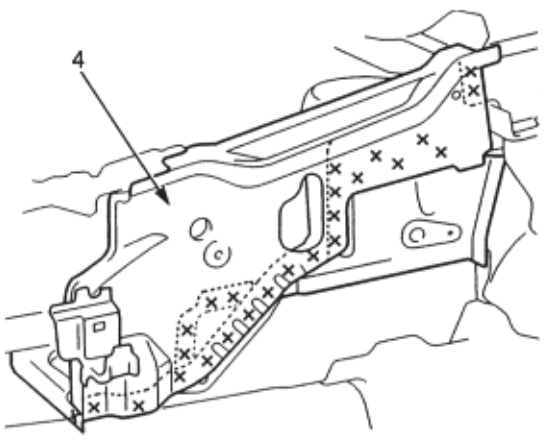


1. DAMPER HOUSING

- Plug weld the holes in the lower dashboard and damper housing with a MIG welder.





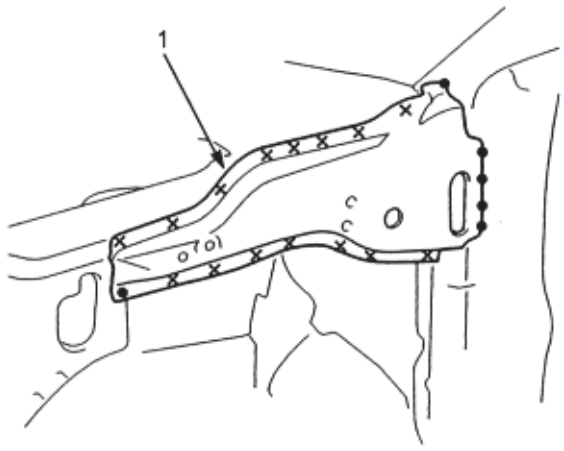


1. DAMPER HOUSING
2. ENGINE MOUNT BRACKET SUPPORT
3. FRONT WHEELHOUSE
4. WHEELHOUSE EXTENSION

12. Weld the wheelhouse upper member.
    If the upper member is to be reused, make MIG plug welds at the drilled holes.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. WHEELHOUSE UPPER MEMBER

13. Weld the front bulkhead.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

14. Finish the welded area. Use a hammer and a dolly to even the side bulkhead and front side frame flanges for a close fit with the surface of the front wheelhouse and damper housing.
15. Apply sealer (see section 5) to the mating surface of the lower dashboard and front side frame, etc.

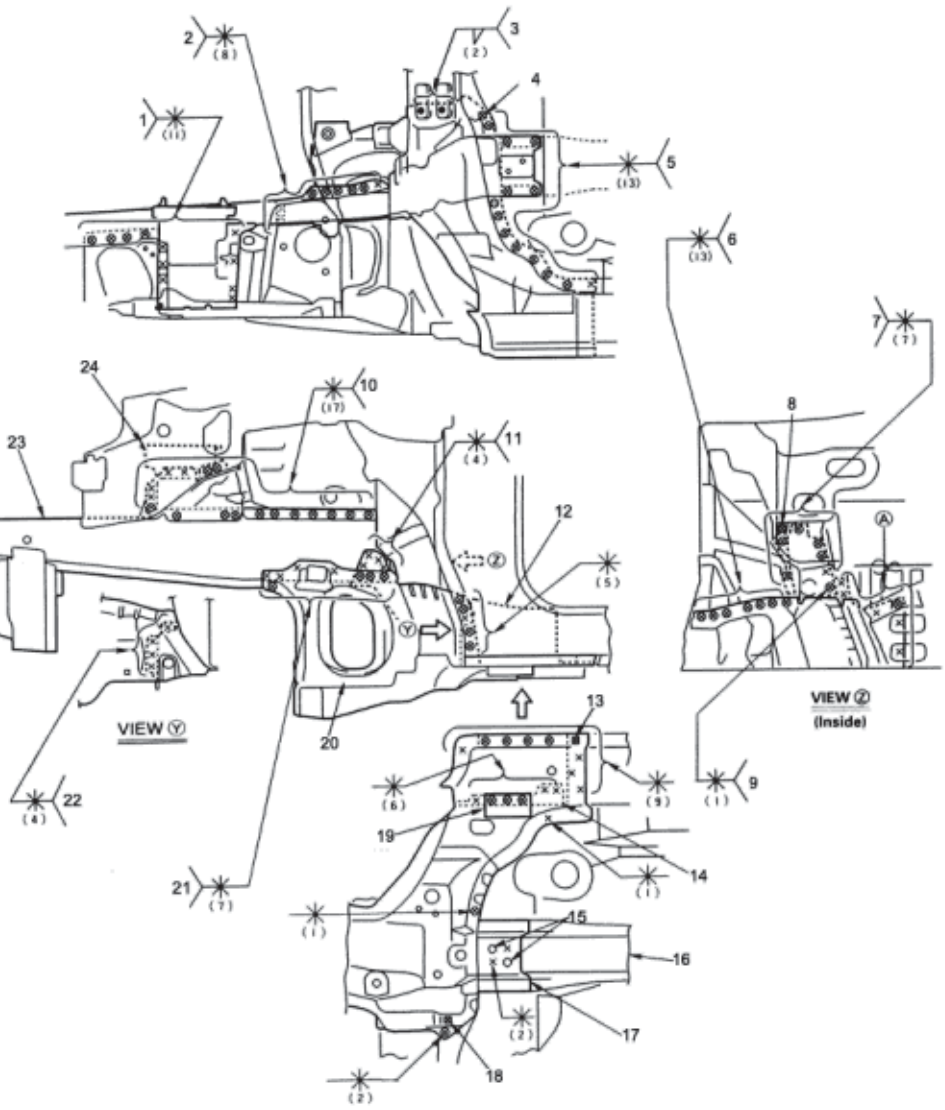
16. Apply the paint. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

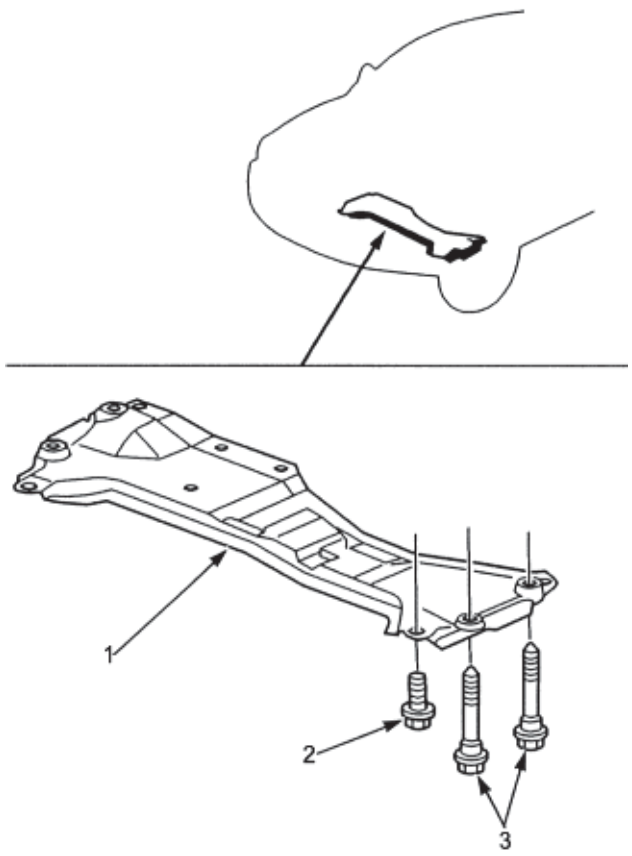
17. Apply the undercoat. Undercoat the front floor, etc., and apply anti-rust agent to the inside of the welding section of the front side frame, lower dashboard, and upper member, etc., (see section 7).
18. Install in the parts in the reverse order in which they were removed.
19. Inspect, check, and make adjustments.
    - Measure the front wheel alignment.
    - Inspect the brake system.
    - Adjust the headlight aim.

The front side frame acts as a base for the front suspension and is highly important in maintaining the rigidity of the front section. Pay careful attention to the position and dimensions of the weld joints and weld carefully.
The front side outriggers connect the front side frames to the body and are vital to the rigidity of the entire body frame. Pay particular attention when welding the front side outriggers from beneath the front floor and side sill.



1. **Front side frame and Front wheelhouse**
2. **Front side frame and Lower arm support**
3. **Front side outrigger and Dashboard lower cross-member**
4. **4-plate welding**
5. **Front side outrigger, Dashboard lower, Front floor and Floor frame.**
6. **Front side outrigger, Dashboard lower gusset and Dashboard lower (Include A)**
7. **Front side frame and Dashboard lower (Include 1 point of damper housing)**
8. **4-plate welding**
9. **Front side frame, Front side outrigger and Dashboard lower**
10. **Front side frame, Damper housing, Front wheelhouse and Wheelhouse extension**
11. **Outrigger gusset and Front side frame**
12. **Inside sill extension**
13. **4-plate welding**
14. **Inside sill extension**
15. **Mounting bolts 6 x 1.0 mm**
16. **Floor frame**
17. **Front side outrigger**
18. **4-plate welding**
19. **Jack-up bracket**
20. **Lower arm support**
21. **Front side frame and Lower arm support (Include 3 points of outrigger gusset).**
22. **Inside sill extension and Front side outrigger**
23. **Front side frame**
24. **Engine mount bracket support**

1. Remove the related parts.
   - Front suspension parts.
   - Brake hose and lines.
   - Engine compartment electrical components.
   - Fittings in passenger compartment, etc.
   - Steering gearbox.
2. Remove the rear beam.



1. REAR BEAM
2. 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)
3. SPECIAL BOLTS, 12 x 1.25 mm, 64 Nm (6.5 kgf/m, 47 lbf/ft)

3. Roughly pull out and straighten the damaged area.
   - Attach the vehicle to the frame straightener by tightening the underbody clamps located at the horizontal pinch welds.

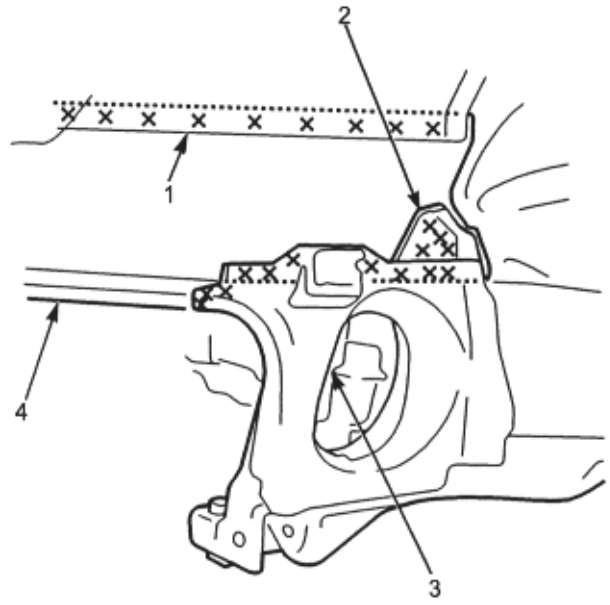
   NOTE: Refer to the HR-V Shop Manual for safety stand location points.
   - Before cutting off the damaged sections, pull them out so that they are restored to the original shape.
   - Cutting off the front side frame before pulling out the damage makes repair of the front floor, dashboard lower and other related parts difficult.

4. Peel off the undercoat. Heat the undercoat at the weld areas of the lower dashboard, front floor and side sill with a gas torch and peel off the undercoat with a metal spatula.

⚠ CAUTION

Be careful not to burn the fittings inside the passenger compartment and dashboard insulator when heating.

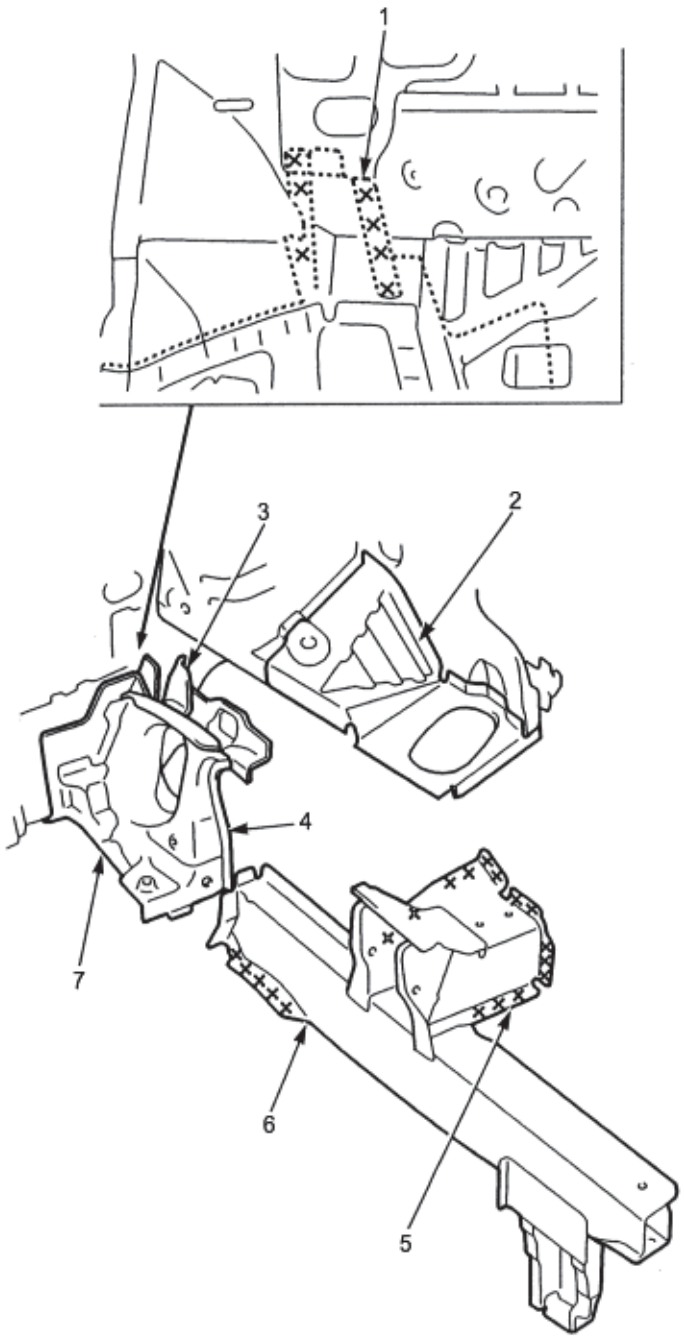
5. Remove the front side frame.
   NOTE: It is not necessary to separate the front wheelhouse from the front side frame if the wheelhouse/damper housing also needs replacing.
   - Centre punch around the spot weld imprints on the wheelhouse, damper housing, lower arm support, dashboard lower and lower arm support.
   - Using a spot cutter, drill holes in the spot welded areas.
   - Peel off the welding flange using a chisel.



1. DAMPER HOUSING
2. OUTRIGGER GUSSET
3. LOWER ARM SUPPORT
4. FRONT SIDE FRAME

- Centre punch around the spot weld imprints on the front side frame from inside the passenger compartment.
- Drill holes in the spot welded area with a 5 mm (0.2 in.) drill.

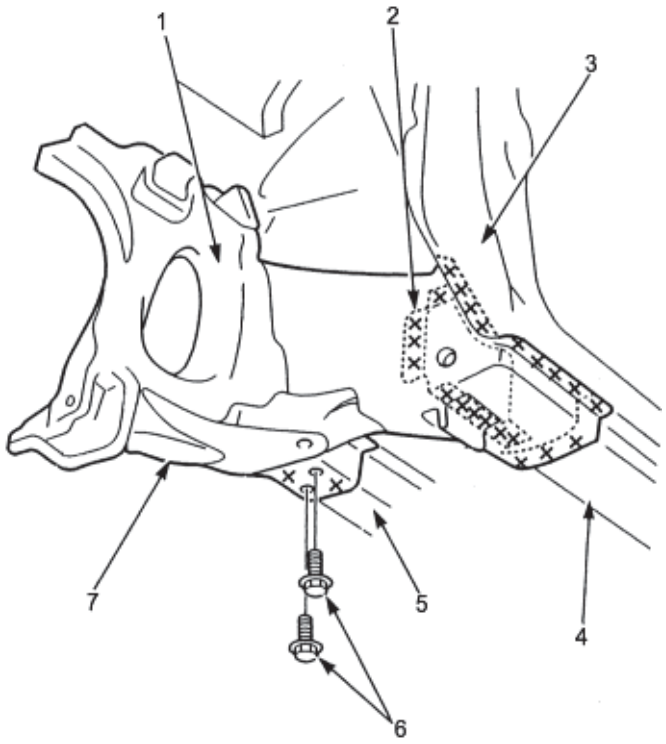
NOTE: Drill holes completely through the parts since the replacement front side frame will be welded by MIG welding.



1. FRONT SIDE FRAME
2. FRONT WHEELHOUSE
3. OUTRIGGER GUSSET
4. LOWER ARM SUPPORT
5. ENGINE MOUNT BRACKET SUPPORT
6. FRONT SIDE FRAME
7. FRONT SIDE OUTRIGGER

6. Check the front side outrigger and lower arm support for position and damage.
   If necessary, replace the front side out rigger and lower arm support as an assembly.
   - Leave the inside sill extension attached to the dashboard lower side.
   - Centre punch around the spot weld imprints on the outer panel, floor frame and inside sill.
   - Drill holes in the centre punched areas using a spot weld cutter.

   NOTE: When drilling holes be careful not to drill down to the floor frame and the inside sill.

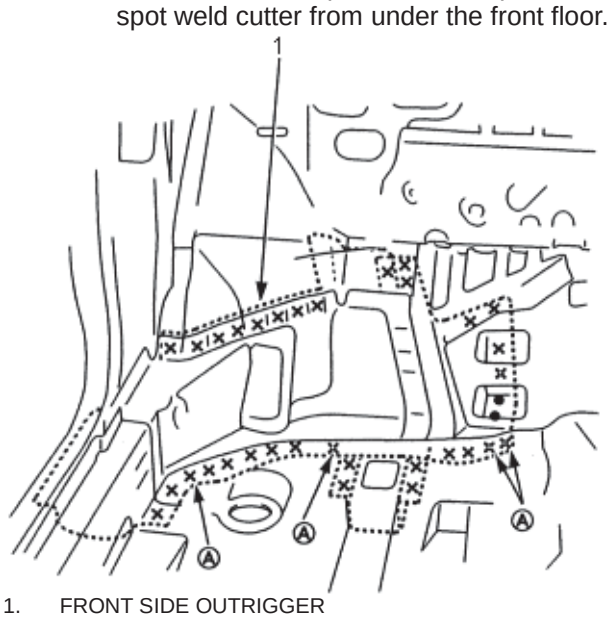


1. LOWER ARM SUPPORT
2. INSIDE SILL EXTENSION
3. OUTER PANEL
4. INSIDE SILL
5. FLOOR FRAME
6. MOUNTING BOLTS 6 x 1.0 mm
7. FRONT SIDE OUTRIGGER

- Centre punch around the spot weld imprints on the front side outrigger from inside the passenger compartment.
- Drill holes in the centre punched areas with a 5 mm (0.2 in) spot weld cutter.

NOTE: Drill holes through the parts completely since the replacement front side outrigger will be welded by MIG welding.

- Remove the MIG welds of the front side outrigger and dashboard lower cross-member with a disc sander.
- Drill holes to the spot welds of A portions with a spot weld cutter from under the front floor.



1. FRONT SIDE OUTRIGGER

- Level off and finish the burrs of the pried off spot welds with a disc sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

7. Straighten the related parts.
   Reshape the dashboard lower, floor frame, front floor, inside sill and side sill inner joint using a hammer and dolly. Check the floor frame and inside sill for position and damage.

8. Set the new front side outrigger and front side frame.
   - Remove the undercoat from both sides of the welding section and expose the steel plate using a disc sander.

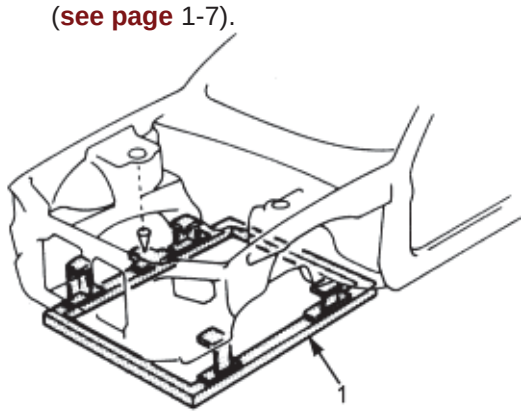
⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

NOTE: Apply the spot sealer to the welding surface when spot welding.

- Tighten the front side frame against the front floor and side sill using vice-grips or pliers.
- Drill 3 mm (0.12 in.) holes and screw 5 mm self-tapping screws into the drilled holes at the areas where the front side outriggers do not fit closely.
- Even out the welded flange and damaged area with a hammer and dolly.
- Place a jack under the front side outrigger and support it, then measure the positions for temporary attachment.

NOTE: Use of a positioning jig is recommended (**see page** 1-7).



1. POSITIONING JIG

- Clamp the front bulkhead and front wheelhouse/damper housing with squill vices and vice-grips.
- Measure the front compartment diagonally.
- Spot weld several points in the clamped sections and temporarily attach the front side frame and front side outrigger.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Check the body dimensions (see section 6).
- Install the rear beam and check the front side frame position.

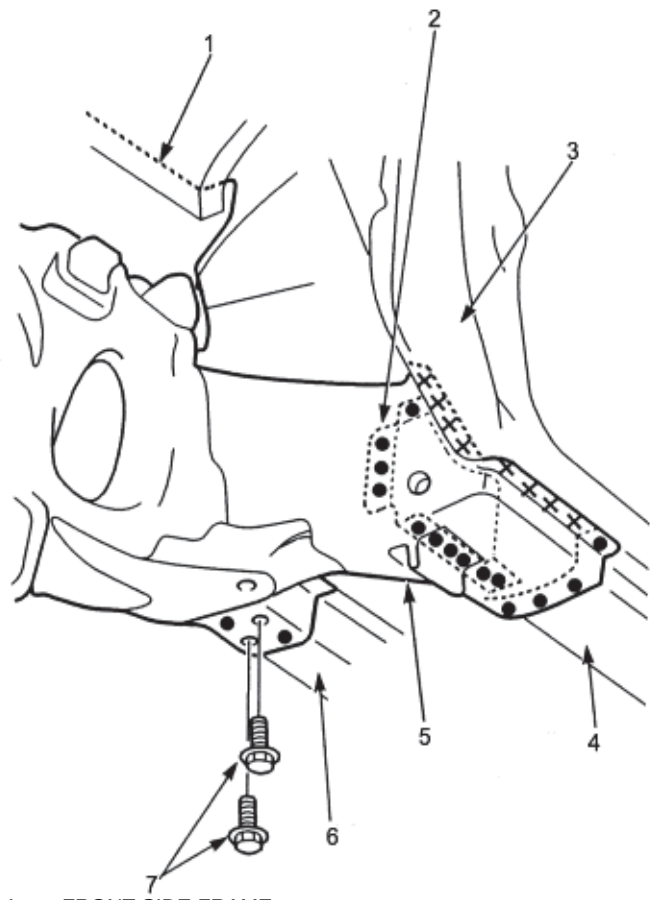
9. Perform the main welding.
   - Make 20% to 30% more spot welds than there were holes drilled.

   NOTE: If there is no room for spot welds, compensate by using MIG welds.
   - Weld as much as possible with the jig still mounted.

⚠ WARNING

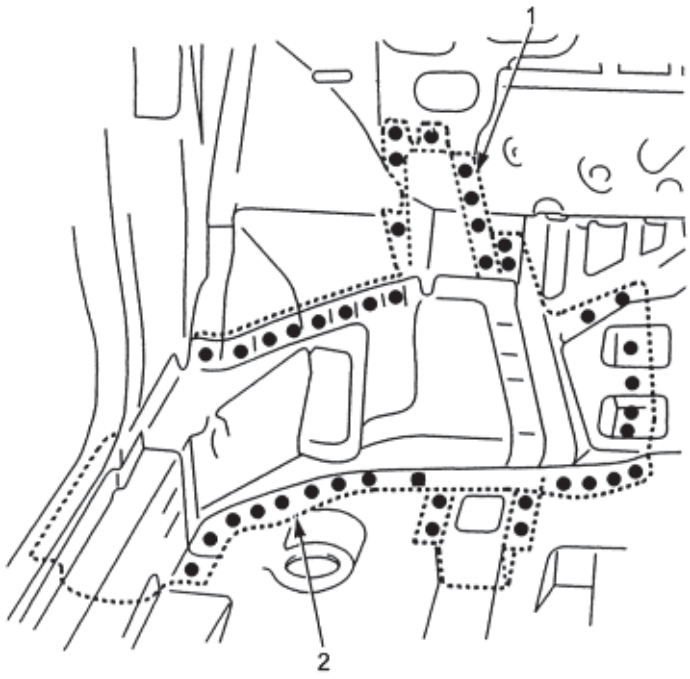
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Weld the outer panel and front side outrigger.
   - Make 5 mm (0.2 in) holes in the MIG weld holes with the front side outrigger and plug weld the floor frame, inside sill and inside sill extension with a MIG welder.



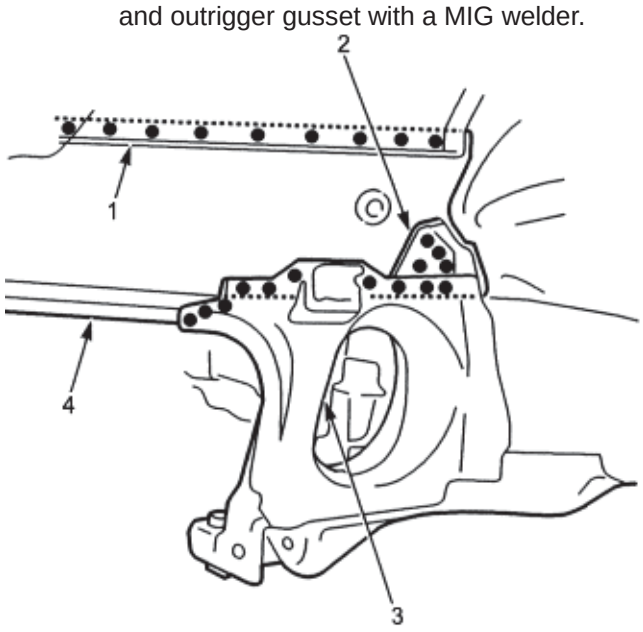
1. FRONT SIDE FRAME
2. INSIDE SILL EXTENSION
3. OUTER PANEL
4. INSIDE SILL
5. FRONT SIDE OUTRIGGER
6. FLOOR FRAME
7. MOUNTING BOLTS

   - From the passenger compartment side, plug weld the holed areas of the dashboard lower and front floor with a MIG welder.



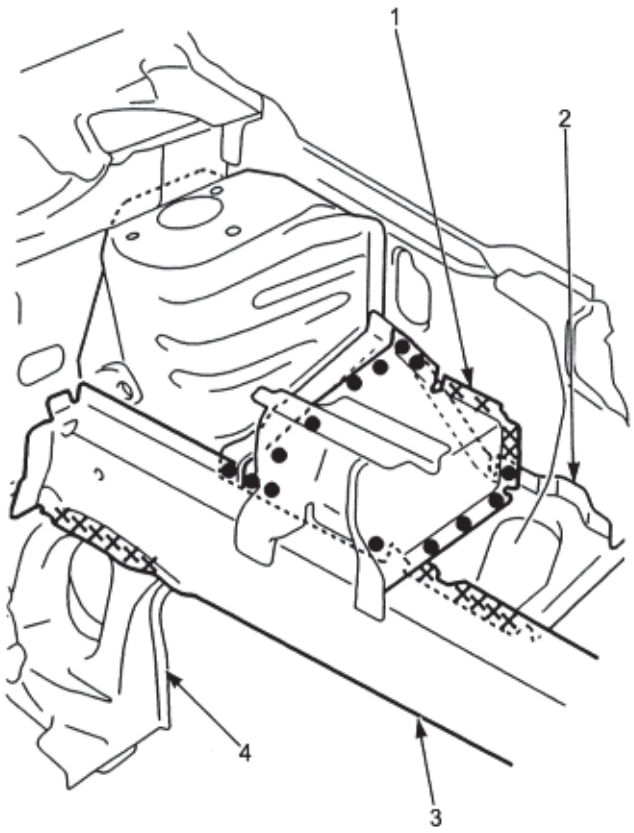
1. FRONT SIDE FRAME
2. FRONT SIDE OUTRIGGER

   - Make 5 mm (0.2 in) holes in the MIG weld holes with the lower arm support and plug weld the front side frame, damper housing and outrigger gusset with a MIG welder.



1. DAMPER HOUSING
2. OUTRIGGER GUSSET
3. LOWER ARM SUPPORT
4. FRONT SIDE FRAME

- Weld the lower arm support, front side frame, engine mount bracket support and front wheelhouse.



1. ENGINE MOUNT BRACKET SUPPORT
2. FRONT WHEELHOUSE
3. FRONT SIDE FRAME
4. LOWER ARM SUPPORT

10. Finish the welds. Use a hammer and dolly to even out the damper housing, wheelhouse, dashboard lower, front bulkhead and side sill flanges for a close fit with the surface of the front side frame.
11. Apply sealer (see section 5) to the mating surfaces of the lower dashboard, etc.
12. Apply the paint. See Paint Repair section.

⚠ WARNING

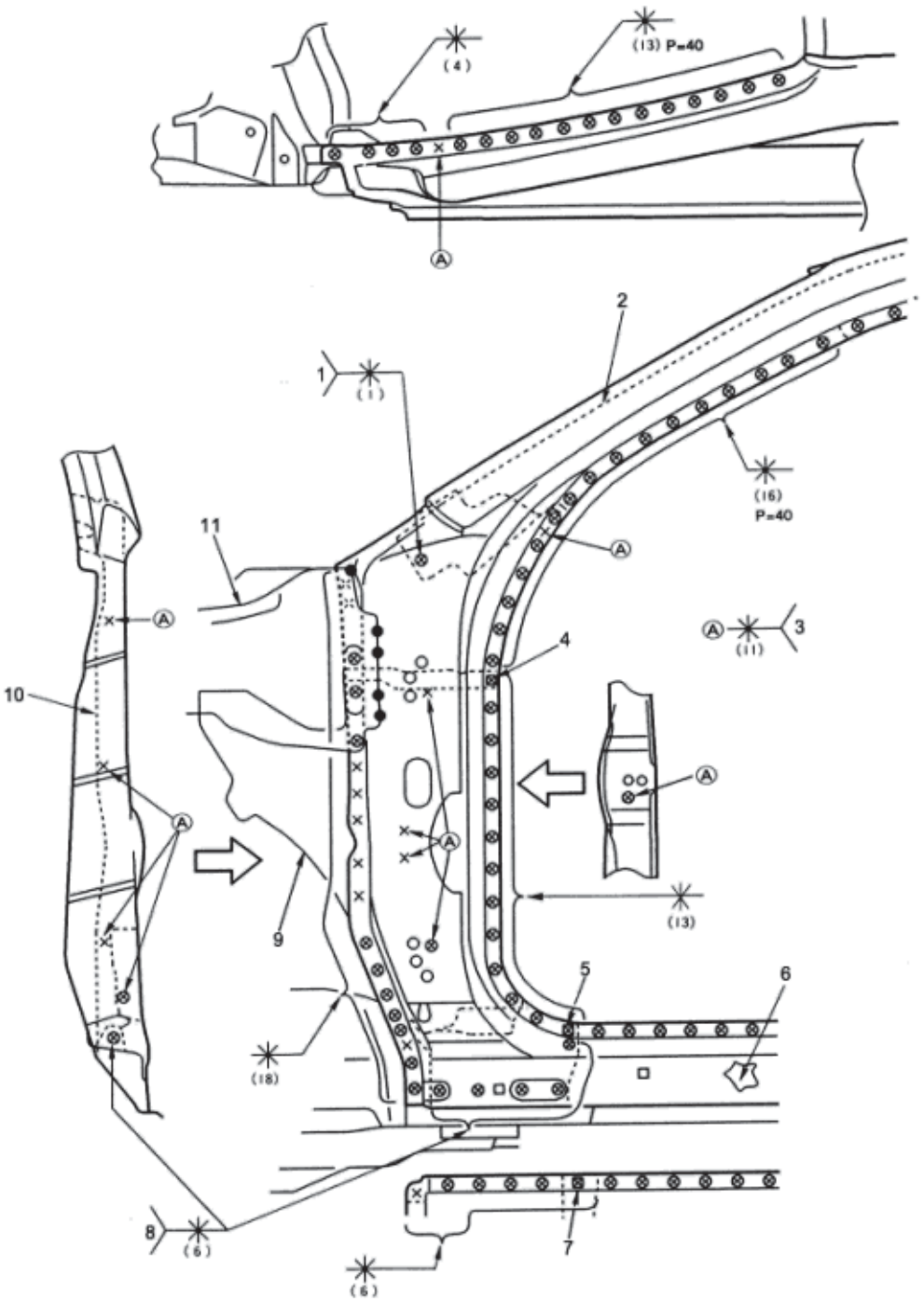
- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

13. Apply the undercoat.
    Undercoat the front floor, and apply anti-rust agent to the inside of the welding section of the side sill, front side frame and front side outrigger (see section 7).
14. Install the related parts in the reverse order in which they were removed.
15. Inspect, check and adjust.
    - Measure the front wheel alignment.
    - Inspect the brake system.
    - Adjust the headlight aim.

Front Pillar (Outer Panel)

Mass Production Body Welding Diagram

The front pillar is connected to the roof, windshield door hinges and side sills and the front pillar is a very important support. Proper connection of the front pillar determines the position of the windshield and front door. Align the front fender, door and windshield while the front pillar is loosely mounted, then check the clearances and level differences.

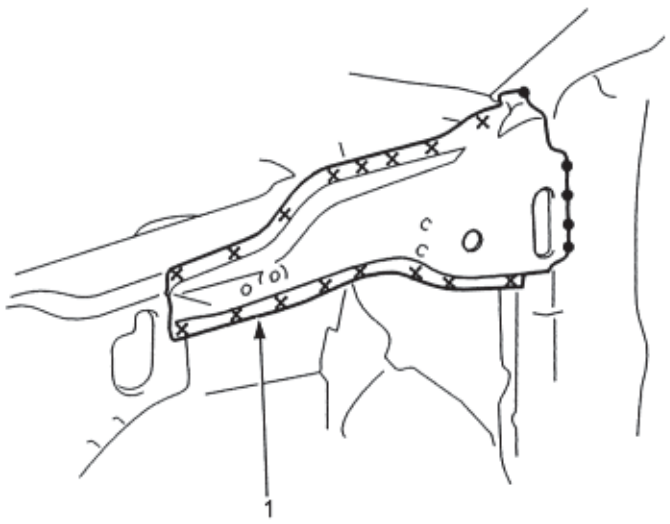


1. **Outer panel, Front pillar stiffener and Front pillar upper stiffener**
2. **Front pillar upper stiffener**
3. **Outer panel and Front pillar stiffener**
4. **4-plate welding**
5. **4-plate welding**
6. **Side sill stiffener**
7. **4-plate welding**
8. **Outer panel, Front pillar stiffener and Side sill stiffener**
9. **Inner lower**
10. **Front pillar stiffener**
11. **Wheelhouse upper member** (**see page** 4-8).

1. Remove the related parts:
   - Hood.
   - Front fender.
   - Door.
   - Windshield.
   - Side trim.
   - Door opening trim.
   - Kick panel.
   - Dashboard.
   - Front pillar trim.
   - Wire harness, etc.
   - Steering column.
   - Steering hanger brace.

   NOTE: Make sure that the right and left pillars are parallel with the windshield surface. Check the door for proper opening and closing.
2. Pull out and straighten the damaged area.
   - Pull out the damaged area with the frame straightener before cutting off the wheelhouse upper member and front pillar.

   NOTE: Pull out until the pillar is lined up with the surface of the windshield.
   - With the pillar pulled out, pull out and straighten the related lower dashboard and floor section
   - After pulling, check the inner pillar position using the body dimensional drawings (see section 6).
3. Remove the wheelhouse upper member carefully so it can be reused.



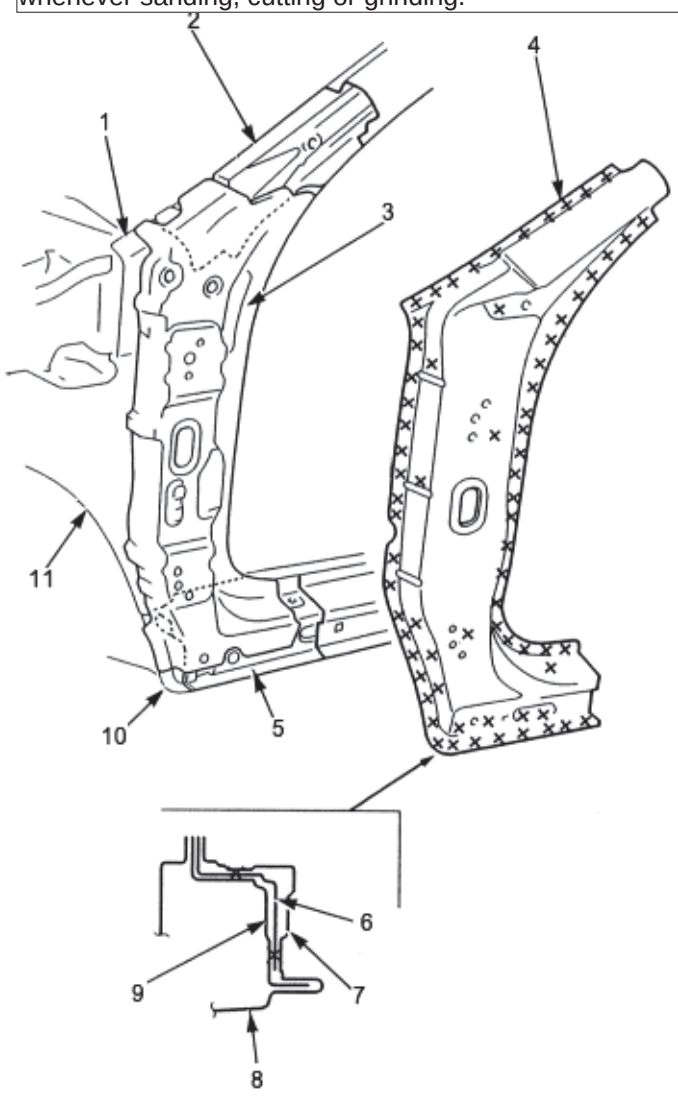
1. WHEELHOUSE UPPER MEMBER

4. Cut off the front pillar.
   - Use a die grinder to cut the windshield and side sill areas.

   NOTE: Be careful not to cut the inner section.
   - Centre punch around the spot weld imprints.
   - Drill holes using a spot cutter.
   - Chisel off the weld flanges.
   - Finish the burs at the drilled areas with a disc sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.



1. INNER UPPER
2. FRONT PILLAR UPPER STIFFENER
3. FRONT PILLAR STIFFENER
4. OUTER PANEL
5. SIDE SILL STIFFENER
6. FRONT PILLAR
7. OUTER PANEL
8. INSIDE SILL
9. SIDE SILL STIFFENER
10. FRONT SIDE OUTRIGGER
11. INNER LOWER

5. Check the front pillar lower stiffener for position and damage, if necessary replace it.
6. Straighten the related parts.
   Fill any holes by MIG or gas welding and even out with a hammer and dolly.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

7. Set the new front pillar lower stiffener and repair part.
   - Remove the undercoat from both sides of the areas to be spot welded with a sander to expose the steel plate.

   NOTE: Apply the spot sealer to the welding surface of the new front pillar lower stiffener
   - Clamp the new front pillar stiffener and check the position.
   - Tack weld the new front pillar stiffener.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

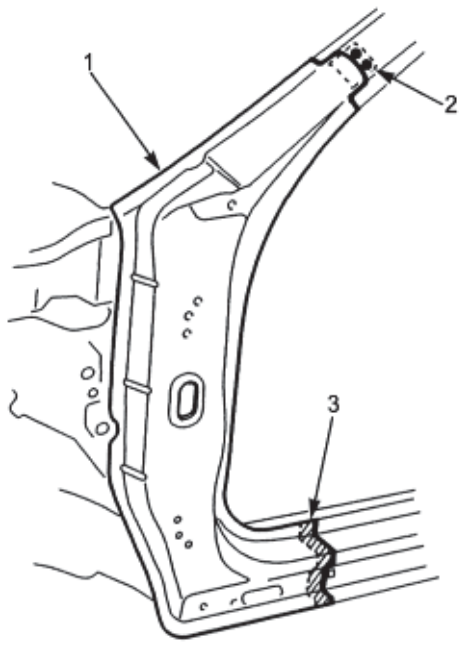
   - Align the repair part with the top cut section, then cut it with a handsaw.

   NOTE: Cut the side sill joint with a handsaw leaving an overlap of 30 mm (1.2 in.)
   - Attach the patch to the cut section of the front pillar (body side) and plug weld it.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Check the body dimensions (see section 6)
   - Clamp the repair part and temporarily install the door, and check the door hinge mounting position.
   - Remove the repair part.

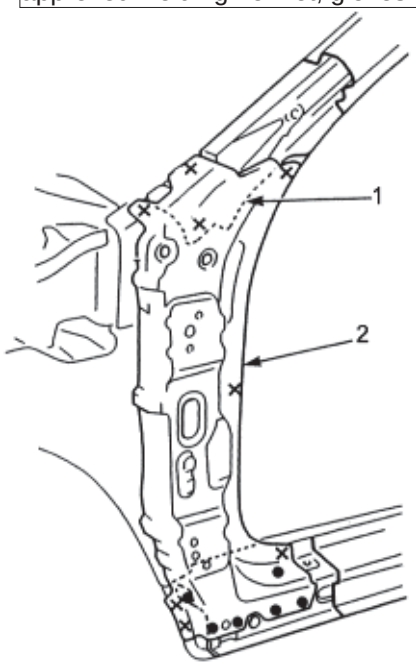


1. OUTER PANEL (Repair part)
2. PATCH
3. Overlap 30 mm (1.2 in)

8. Weld new front pillar stiffener.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. FRONT PILLAR UPPER STIFFENER
2. FRONT PILLAR STIFFENER

9. Set the repair part.
   - Sand off the undercoat from both sides of the welded flange on the repair part.
   - Clamp the repair part in place with vice-grips.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Check the body dimensions (see section 6).
10. Tack weld the repair part.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

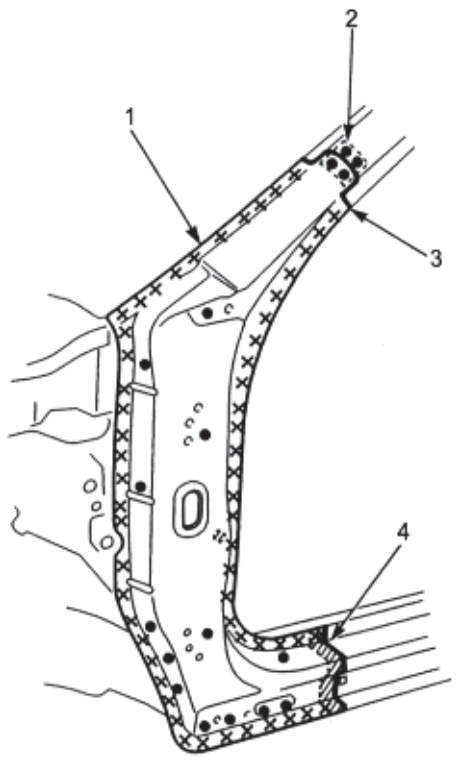
   - Remove the vice-grips and install the front fender, door and windshield. Check for differences in level and clearance.
11. Perform the main welding.
   - Weld the front pillar and side sill outer joints with a MIG welder.
   - Make 20 to 30% more spot welds than there were holes drilled.

   NOTE: If there is no room for spot welds, compensate by using MIG welds.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Make 5 mm (0.2 in.) holes in the MIG weld holes with the repair part, and weld the lower stiffener and dashboard upper side member with a MIG welder.



1. OUTER PANEL (Repair part)
2. PATCH
3. Butt welding
4. Fillet welding

12. Weld the wheelhouse upper member

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

13. Finish the welding areas.
   - Grind the finishing allowance with a disc sander until it is smooth.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Smooth the flanged section of the door opening with a hammer and dolly.

14. Apply the sealer (see section 5).
15. Apply the paint.
    See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

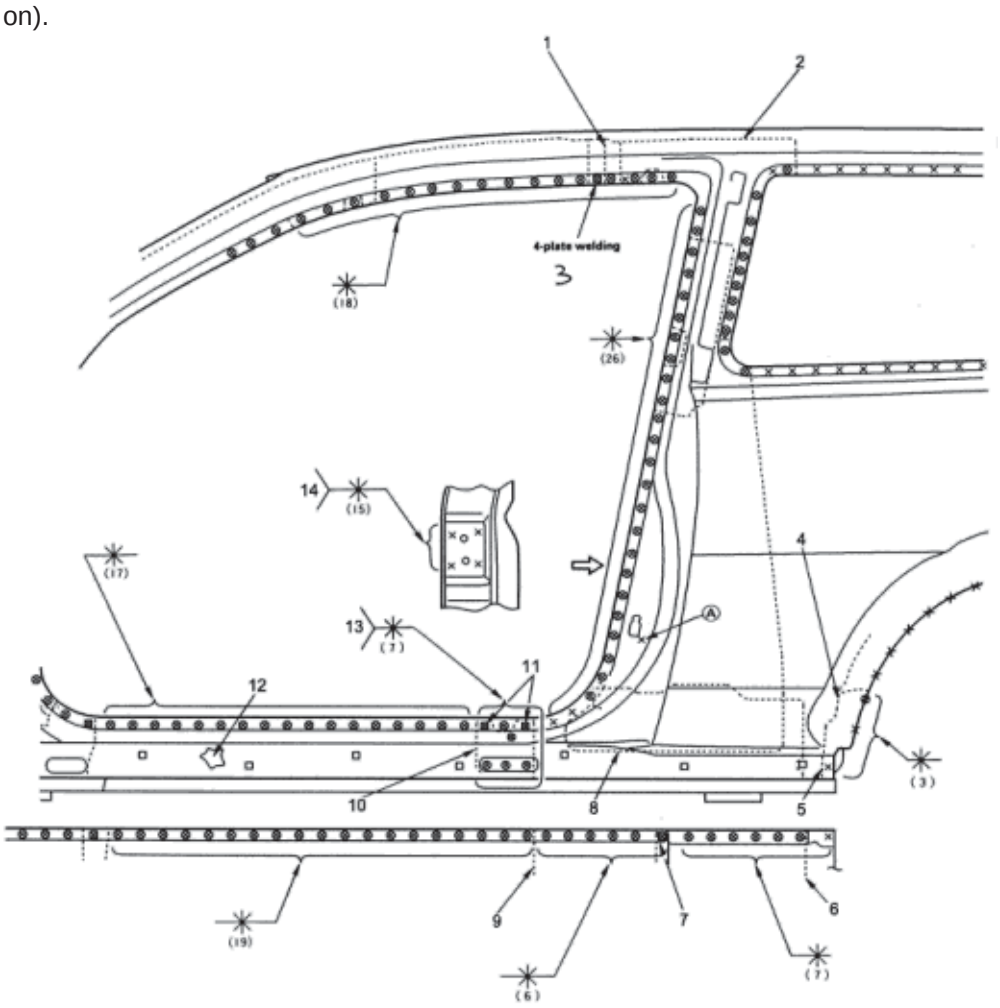
16. Apply anti-rust agent to the inside of the front pillar, wheelhouse upper member and side sill (see section 7).
17. Install the related parts.
    - Install in the reverse order of removal.
    - Check the door for proper installation and alignment with the fenders.
18. Clean and check.
    - After installing the dashboard, check the lights and gauges for proper operation.
    - Clean the passenger compartment and check for water leaks.

Side Sill (Outer Panel)

Mass Production Body Welding Diagram

4-25

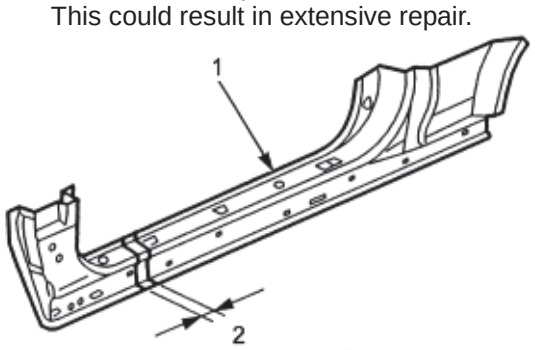
The side sill should, depending on the degree of damage, be repaired as much as possible rather than replaced (Repair by pulling out with slide hammer with pin and washer welded on).



1. **Front pillar upper stiffener**
2. **Centre pillar stiffener**
3. **4-plate welding**
4. **Wheel arch extension**
5. **Side sill end bulkhead**
6. **Centre pillar lower stiffener**
7. **4-plate welding**
8. **Centre pillar stiffener**
9. **Side sill stiffener**
10. **Centre pillar lower stiffener**
11. **4-plate welding**
12. **Side sill stiffener**
13. **Outer panel, Side sill stiffener, Centre pillar lower stiffener and Inside sill**
14. **Outer panel and Centre pillar stiffener (Include A)**

1. Remove the related parts.
   - Doors (remove according to part damaged).
   - Side trim panel.
   - Door opening trim and door sill moldings.
   - Carpet.
   - Door switch.
   - Seat belt.
2. Pull out and straighten the damage area.
   Damage may extend to the inside sill and floor.
   Determine the extent of the damage first, so that the frame can be pulled out properly.
3. Cut and pry off the side sill.
   - Check the damage on the outer side sill, then cut the repair outer side sill so it will overlap by 30 mm (0.2 in.) in the front and back.
   - Cut the side sill with a handsaw.

   NOTE: Be careful not to cut the inside sill, side sill stiffener, centre pillar stiffener and wheel arch extension. This could result in extensive repair.

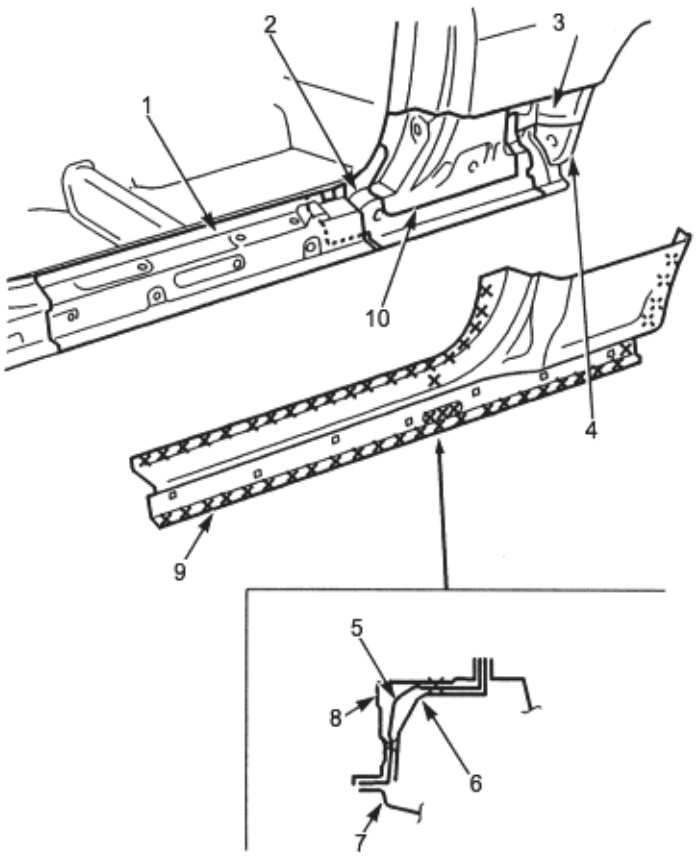


1. REPAIR PART
2. Overlap 30 mm (1.2 in)

   - Centre punch around the spot weld imprints on the welded flange.
   - Drill holes using the spot cutter.
   - Pry of the welded flange with a chisel.

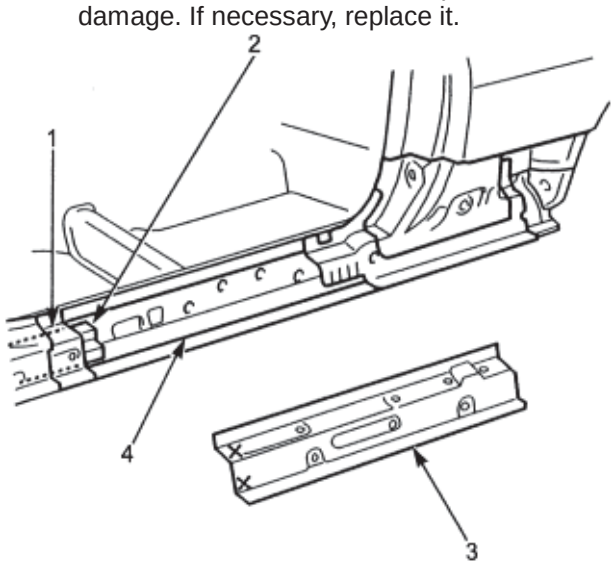
   NOTE: Be careful not to let the holes penetrate down to the inner section.

   - If the damage involves part of the centre pillar and rear wheel arch, cut them as shown with a handsaw.



1. SIDE SILL STIFFENER
2. CENTRE PILLAR LOWER STIFFENER
3. INNER PANEL
4. WHEEL ARCH EXTENSION
5. SIDE SILL STIFFENER
6. CENTRE PILLAR LOWER STIFFENER
7. INSIDE SILL
8. OUTER PANEL
9. OUTER PANEL
10. CENTRE PILLAR STIFFENER

4. Check the side sill stiffener for position and damage. If necessary, replace it.



1. SIDE SILL STIFFENER (Body side)
2. SIDE SILL STIFFENER REINFORCEMENT. Do not cut it.
3. SIDE SILL STIFFENER
4. INSIDE SILL

5. Straighten the related parts.
   - Fill any holed areas by MIG or gas welding.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

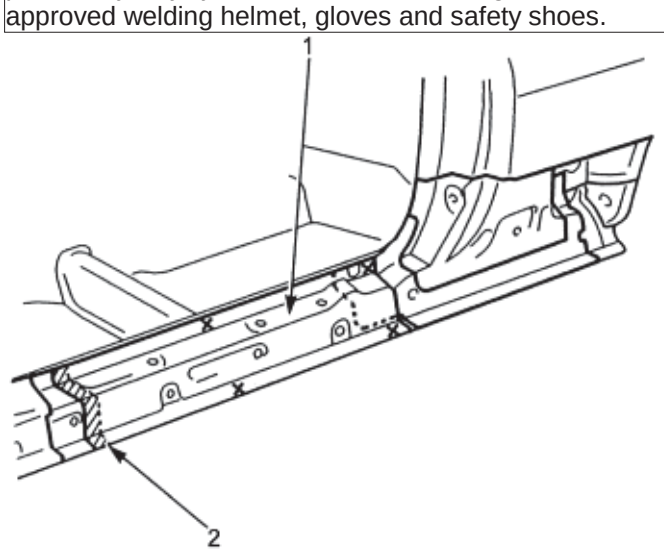
   - Level and finish burrs at welded areas with a disc sander, then even them out with a hammer and dolly.
   - Sand off the undercoat from both sides of the flange to be welded.

6. Set the side sill stiffener and repair part.
   - Cut the new stiffener so it overlaps the body side stiffener by approximately 20 mm (0.8 in).
   - Sand off the undercoat from both sides of the welded flange with a sander to expose the steel plate.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Clamp the side sill stiffener and check the position of it using the body dimensional drawings (see section 6).
   - Tack weld the new side sill stiffener.

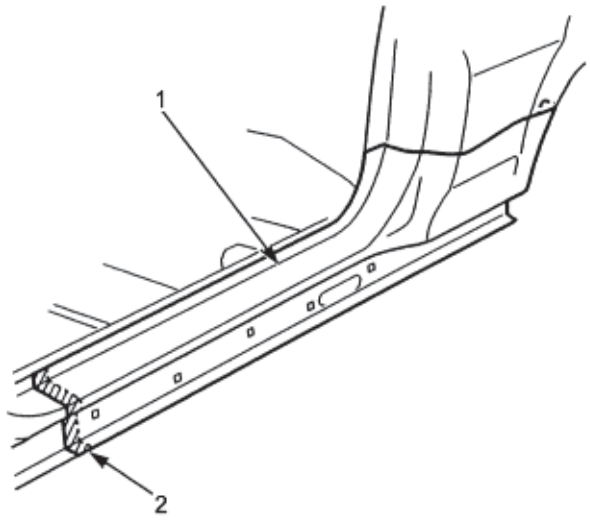
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. SIDE SILL STIFFENER (New parts)
2. Overlap 20 mm (0.8 in)

   - Clamps the repair parts and temporarily install the doors and check the door hinge mounting positions.
   - Remove the repair parts.

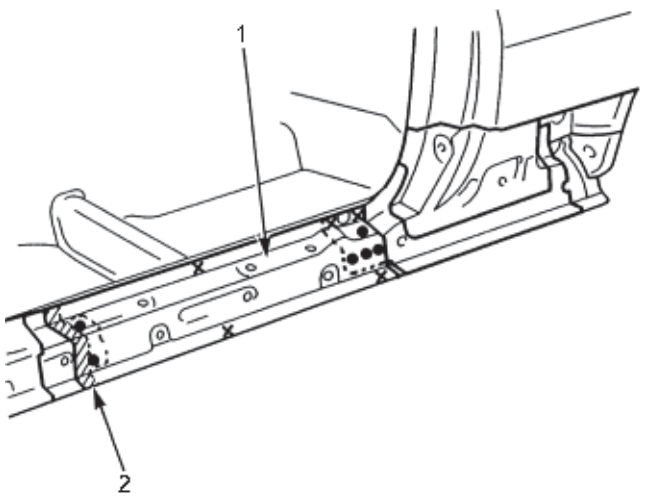


1. OUTER PANEL (Repair part)
2. Overlap 30 mm (1.2 in)

7. Weld the new side sill stiffener.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. SIDE SILL STIFFENER (New parts)
2. Fillet welding

8. Set the repair part (outer panel).
   - Sand off the undercoat from both sides of the welded flange on the repair part.
   - Clamp the repair part in place with vice-grips.

   NOTE: Apply the spot sealer to the welded surface when spot welding.
   - Check the body dimensions (see section 6)
9. Tack weld the repair part.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Remove the vice-grips and install the front fender and door. Check for differences in level and clearance.
10. Perform main welding.

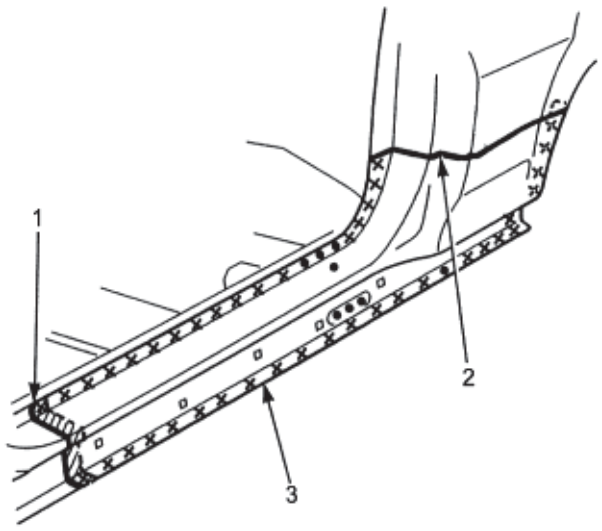
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Weld the side sill and rear side outer joints with a MIG welder.
   - Spot weld the side sill flanges.
   - Make 20% to 30% more spot welds than there were holes drilled.

NOTE: If there is no room for spot welds, compensate by using MIG welds.

- Make 5 mm (0.2 in.) holes in the MIG weld holes with the new outer panel, and weld the centre pillar lower stiffener and side sill stiffener with a MIG welder.



1. Fillet welding
2. Butt welding
3. OUTER PANEL (Repair part)

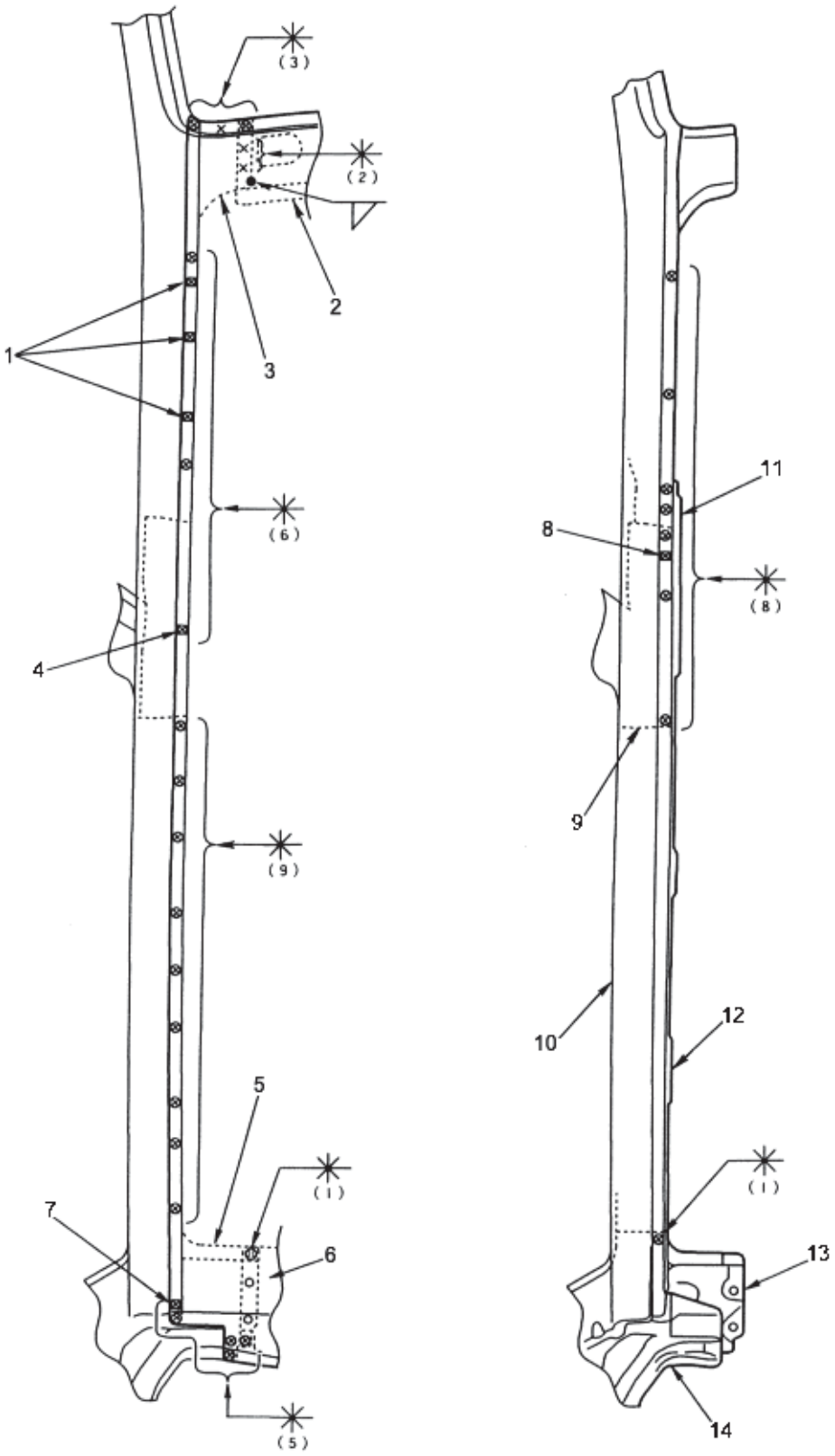
   - Level the weld beads at the front and rear with a disc sander. Hammer down the projections, then fill with solder or putty to finish it.
11. Apply sealer to the mating surfaces of the floor and inside sill (see section 5).
12. Apply the paint. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

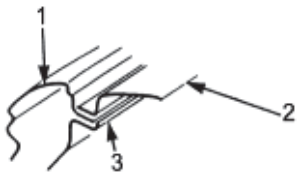
13. Apply the undercoat.
    Undercoat the front floor, and apply an anti-rust agent to the inside of the side sill and centre pillar (see section 7).
14. Install the related parts.
    - Install in the reverse order of removal.
    - Check the doors for proper installation and level differences from the fender.
15. Clean the passenger compartment and check for water leaks.

Deformation of the roof panel is highly noticeable in terms of the vehicle's outer appearance.
Before replacing the roof rail, make sure that the body is horizontal. Before welding the roof panel, adjust the roof rail flanges so that they contact the roof panel.
NOTE: When replacing the outer panel, drill holes at the areas where it joins to the roof side rail and rear inner panel as shown.

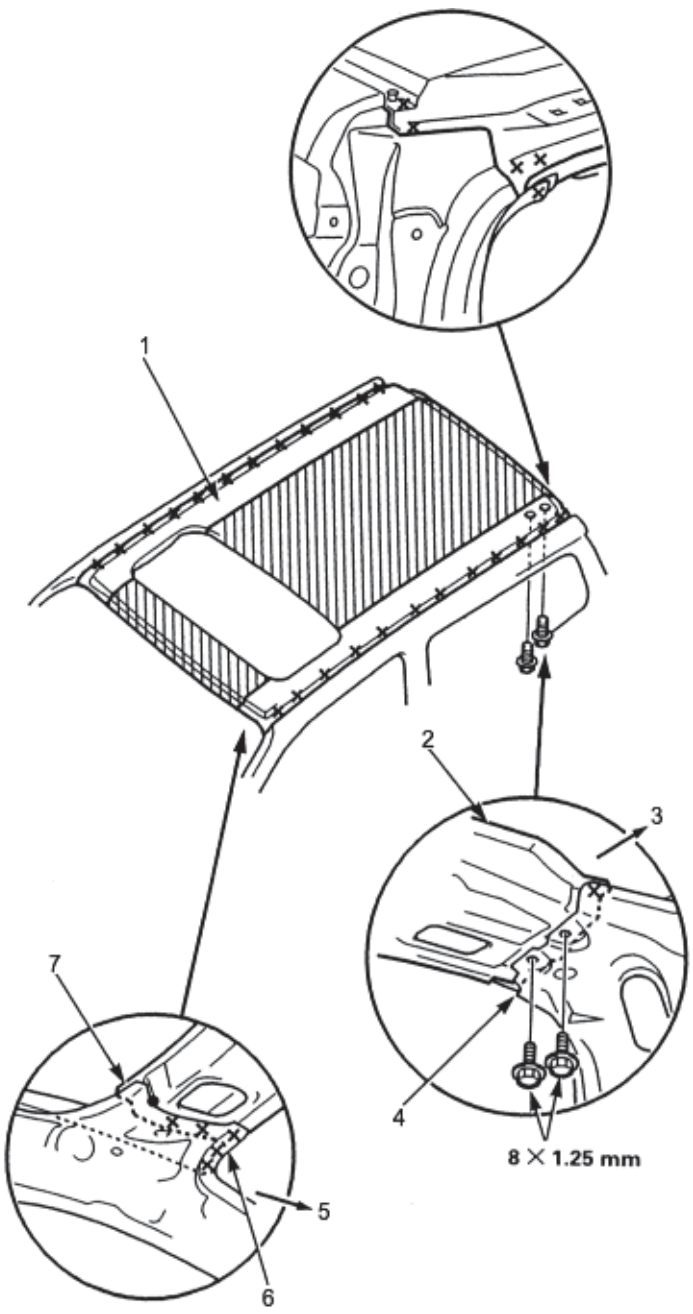


1. **4-plate welding**
2. **Front roof rail**
3. **Roof side rail**
4. **4-plate welding**
5. **Rear pillar stiffener**
6. **Rear roof rail**
7. **4-plate welding**
8. **4-plate welding**
9. **Centre pillar stiffener**
10. **Outer panel**
11. **Roof side rail**
12. **Rear inner panel**
13. **Rear pillar stiffener**
14. **Rear pillar gutter**

1. Remove the related parts.
   - Windshield.
   - Tailgate.
   - Sunvisor.
   - Ceiling lights.
   - Headliner.
   - Sunroof glass (for some models).
   - Roof antenna (for some models).
   - Roof spoiler and roof side trim (for some models).
2. Pull out and straighten the damaged area to approximately the original shape.
   NOTE: Check the inner front pillar and the inner centre pillar for position and damage.
   Cut the roof panel and pull out the pillars if necessary.
   - Pull out the damaged area with the frame straightener before removing the roof panel.
   - Attach the vehicle to the frame straightener by tightening the underbody clamps located at the horizontal pinch welds.
3. Keep the body level.
   NOTE: Refer to the HR-V Shop Manual for safety stand location points.
   Jack-up the body at the front and back. Place safety stands to support engine weight, at the four designated place of the side sills.
   NOTE: Make sure that the right and left pillars are parallel with the windshield surface. Check the door for proper opening and closing.
4. Cut off the shaded areas of the roof panel.
   - Cut the roof rail weld flange with a handsaw at the four corners.
   - Using a chisel, pry off the roof panel along the bold lines as shown.
   - Centre punch around the spot weld imprints of the roof gutter welded flange.
   - Drill holes using the spot cutter.
   - Using a chisel, pry off the welded flange.

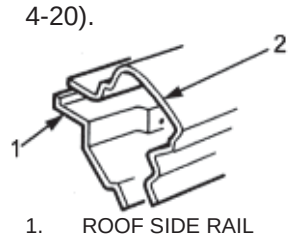


1. OUTER PANEL
2. ROOF PANEL
3. ROOF SIDE PANEL



1. ROOF PANEL
2. REAR ROOF RAIL
3. Forward
4. 8 x 1.25 mm
5. Forward
6. ROOF SIDE RAIL
7. FRONT ROOF RAIL

NOTE: If necessary, replace the outer panel (**see page** 4-20).



1. ROOF SIDE RAIL
2. OUTER PANEL

5. Plug weld the holes with a MIG welder.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Level and finish the burrs on the welded flanges with a disc sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Even out the roof side rail welded flange with a hammer and dolly for a close fit with the roof panel welded flange.

6. Apply paint to the underside of the new roof panel. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

7. Set the new roof panel.
   - Sand off the undercoat from both sides of the flange sections to be spot welded to expose the steel plate.

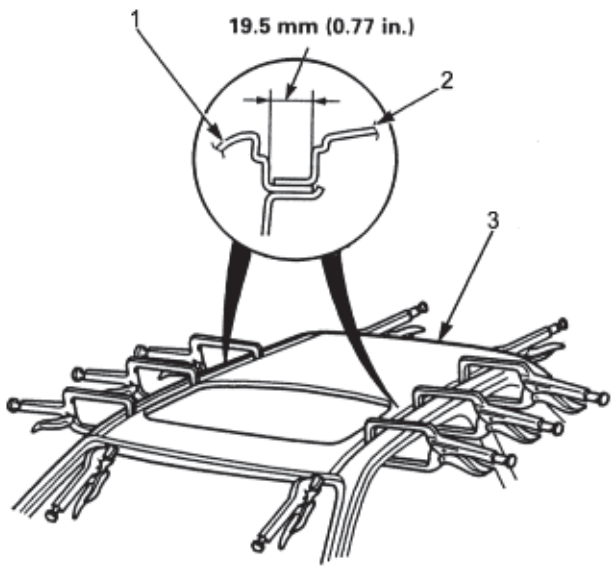
⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

- Clamp the roof panel with vice-grips.

NOTE:

- Check that the flange surfaces fit closely. Be careful not to twist or deform the roof panel..
- Check the width of the groove of the roof moldings on both sides.
- Apply the spot sealer to the welding surface when spot welding.



1. OUTER PANEL
2. ROOF PANEL
3. NEW ROOF PANEL

- Check the body dimension (see section 6).

8. Tack weld the new roof panel.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Spot weld the clamped sections to temporarily install the roof panel.
- Set the windshield and tailgate and check the roof panel for proper installation.
- Install the roof molding and check the width of the groove.

9. Perform the main welding.

⚠ WARNING

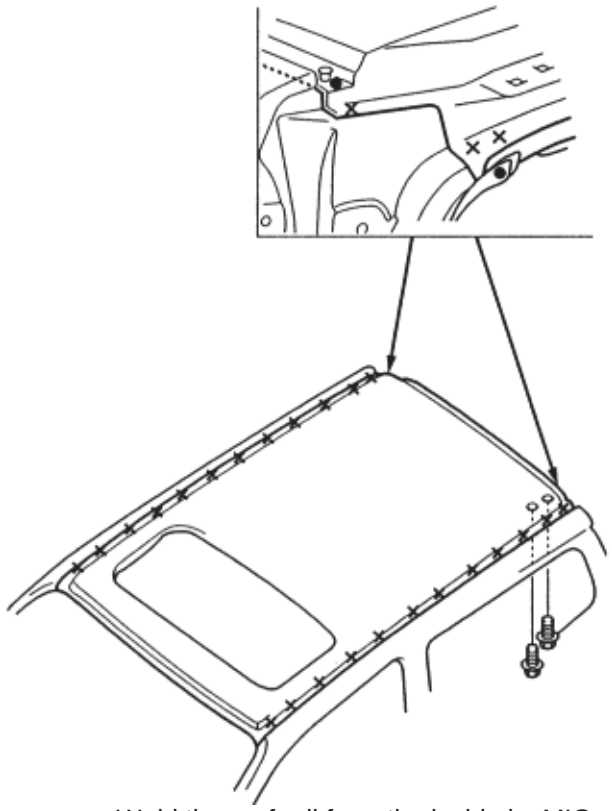
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Spot weld the roof rails at the front and rear.
- Spot weld the roof arch.
- Make 20% to 30% more spot welds than there were holes drilled.

NOTE: If there is no room for spot welds, compensate by MIG welds.

- Smooth the spot weld areas under the windshield and rear window with a hammer and dolly.

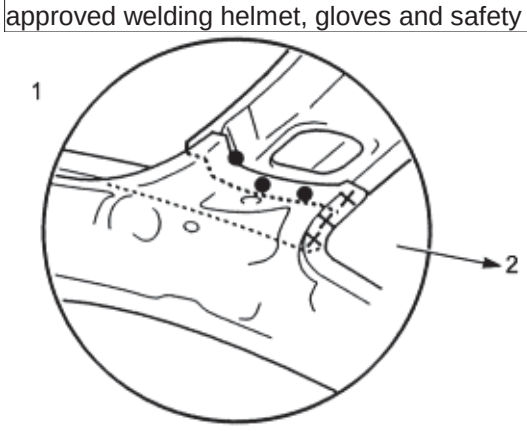
NOTE: After welding the pillars, grind and finish the welded areas flat and blend them into the roof panel.



- Weld the roof rail from the inside by MIG welding as shown.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. Front
2. Forward



1. Rear
2. Forward

10. Apply and level the sealer to the welded areas.



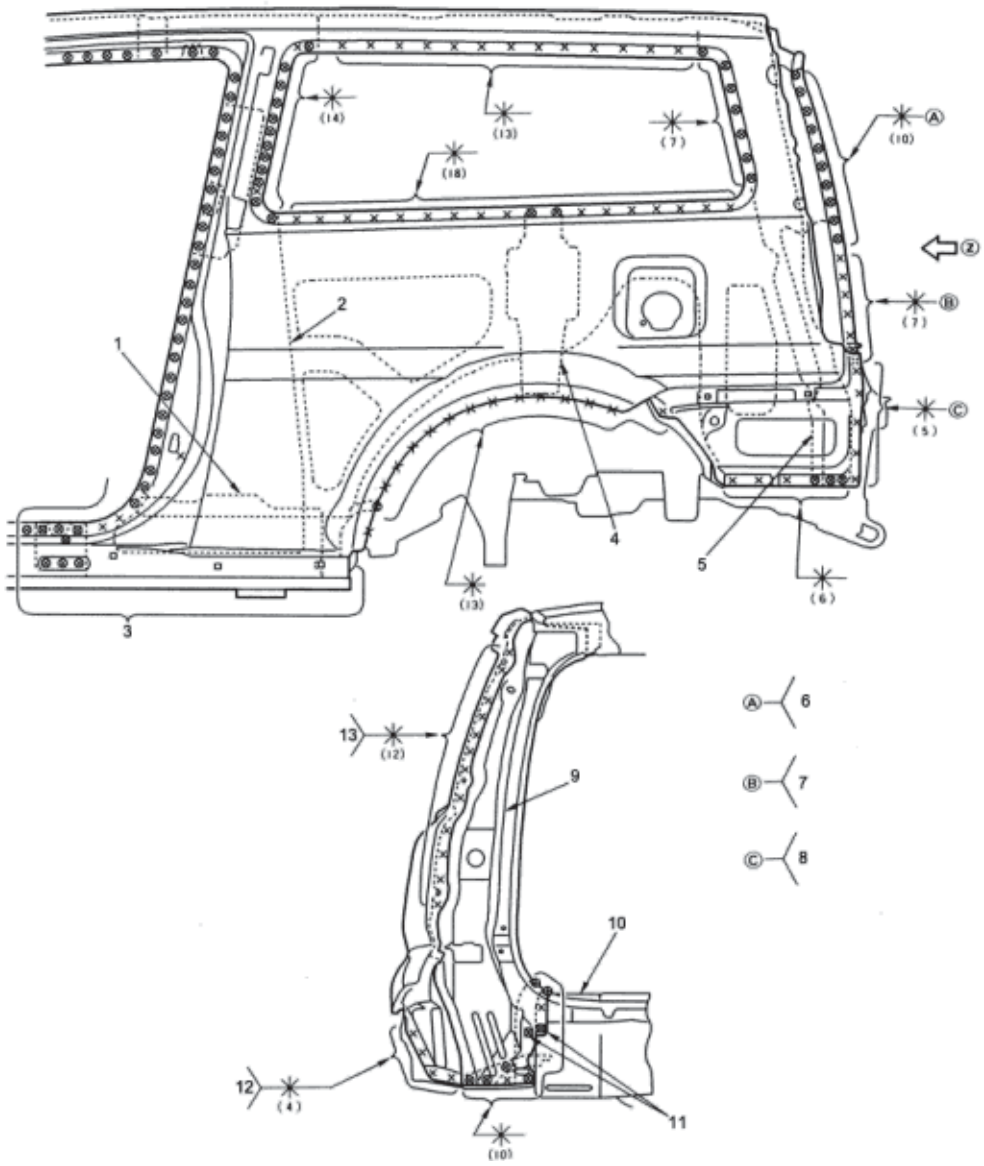
11. Apply the paint. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

12. Apply an anti-rust agent to the inside of the roof side rail.
13. Install the related parts in the reverse order of removal.
14. Check and clean.
    - Check the windshield and tailgate opening area for water leaks.
    - Adjust the clearance with the tailgate, then adjust the level differences and fit. Check for operation.
    - Clean the passenger compartment thoroughly.

The rear side outer panel is a conspicuous part of the vehicle. It is especially important for the body line continuing from the door. Therefore, pay particular attention to it when conducting work. This part is also next to the trunk lid, door and rear window, and other parts and must be aligned with them.



1. **Centre pillar lower stiffener**
2. **Centre pillar stiffener**
3. **Side sill (outer panel)** (**see page** 4-25).
4. **Rear damper stiffener**
5. **Rear pillar stiffener**
6. **Rear pillar, Rear inner panel and Rear pillar stiffener**
7. **Rear pillar gutter and Rear pillar stiffener**
8. **Outer panel and Rear pillar gutter**
9. **Rear pillar gutter**
10. **Rear panel**
11. **4-plate welding**
12. **Outer panel and Rear inner panel**
13. **Outer panel and Rear pillar gutter**

VIEW Z

1. Remove the related parts.
   - Rear bumper.
   - Tailgate.
   - Taillight.
   - Rear seat.
   - Trim, trim panel and luggage compartment fitting.
   - Rear seat belt.
   - Fuel fill pipe (left side only).

⚠ WARNING

Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.

2. Pull out and straighten the damaged area.
   NOTE: Carefully check the inner pillar and rear pillar gutter for position and damage. Pull out the inner panel by cutting the outer if necessary.
   - Jack-up the body and place safety stands at the four designated support points.
   - Pull out the damaged rear side outer panel with the frame straightener, then pull out and straighten the inner panel and rear wheelhouse.

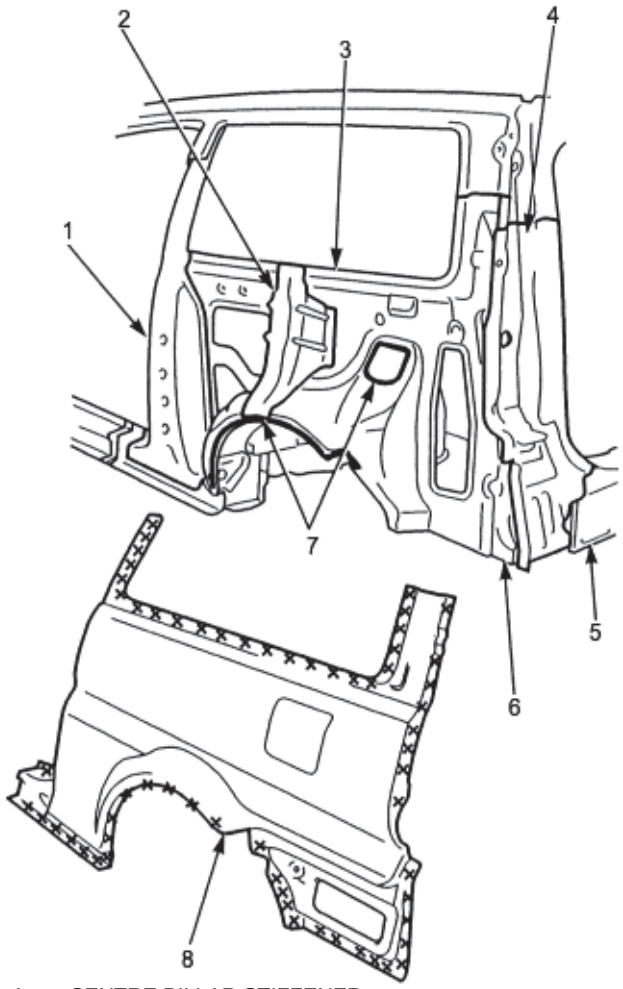
   NOTE: Be careful not to pull out more than necessary.
   - After pulling, check the inner pillar and rear panel gutter position using the body dimensional drawings (see section 6).
3. Peel off the undercoat.
   Heat the undercoat at the weld areas of the rear wheel house with a gas torch and peel off the undercoat with metal spatula.

⚠ WARNING

Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.

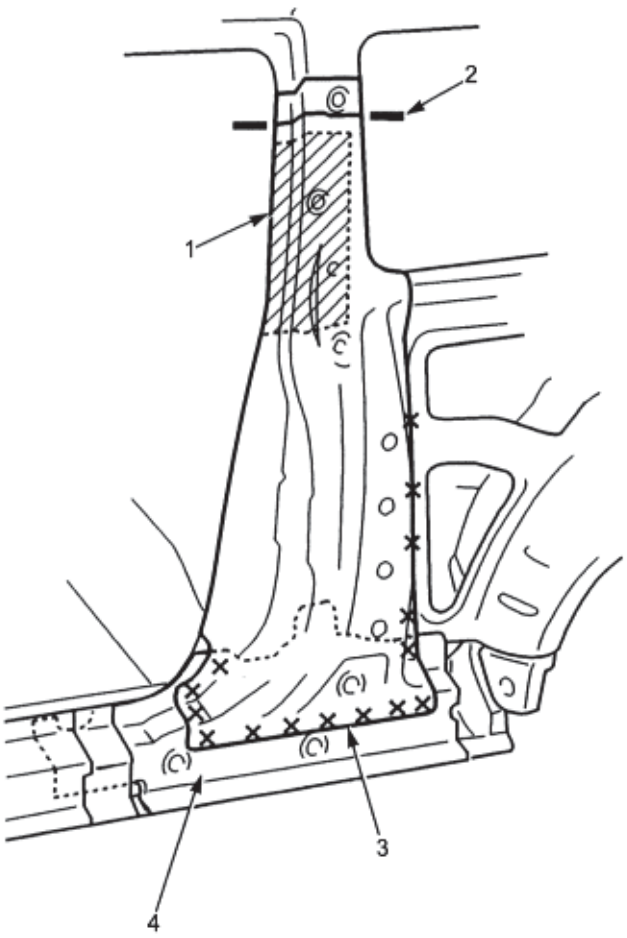
4. Cut and pry off the rear side outer panel.
   - Cut at the centre pillar and side sill with a handsaw.
   - Cut the panel from the body with a chisel, leaving the weld flange at the inner panel intact.

   NOTE: Do not cut or damage the centre pillar stiffener, inner panel, rear damper stiffener and rear pillar gutter.
   - Cut at the side sill or wheel arch according to the extent of the damage.
   - Centre punch around the spot weld imprints on the remaining flange.
   - Drill out the spot welds with the spot cutter.
   - Pry off the welded flange sections using a chisel.



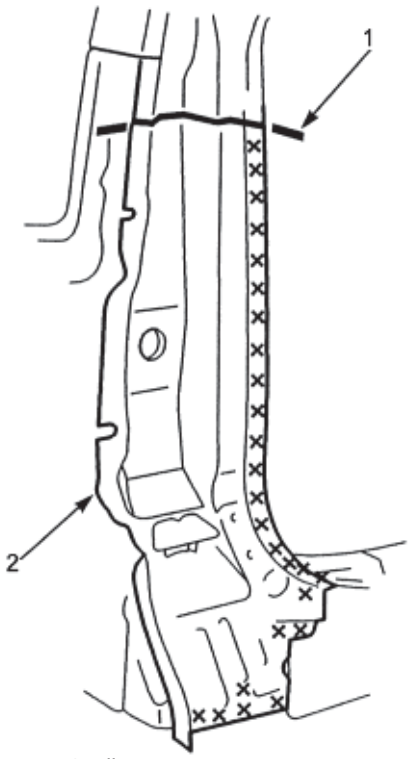
1. CENTRE PILLAR STIFFENER
2. REAR DAMPER STIFFENER
3. INNER PANEL
4. REAR PILLAR GUTTER
5. REAR PANEL
6. REAR PILLAR STIFFENER
7. MASTIC SEALERS
8. OUTER PANEL

5. Check the centre pillar stiffener for position and damage. Replace the centre pillar stiffener if necessary.
6. Cut and drill out the spot welds and pry off the centre pillar stiffener.
   - Leave the centre pillar lower stiffener attached to the inside sill.
   - Cut at over the centre pillar upper anchor



1. CENTRE PILLAR UPPER ANCHOR
2. Cut line
3. CENTRE PILLAR STIFFENER
4. CENTRE PILLAR LOWER STIFFENER

7. Check the rear pillar gutter for position and damage. Replace the rear pillar gutter if necessary.
8. Cut and drill out the spot welds and pry off the rear pillar gutter.
   - Cut the rear pillar gutter at under portion from the outer panel cut line.



1. Cut line
2. REAR PILLAR GUTTER

9. Straighten the inner panel and related parts.
   - Use a slide hammer to even out the damaged areas of the rear wheel arch.
   - Fill the holes drilled by MIG or gas welding.

⚠ WARNING

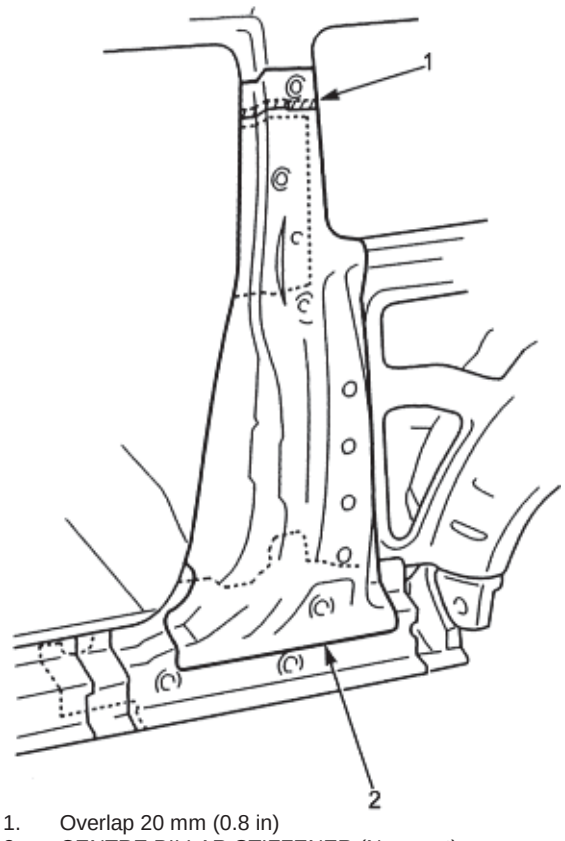
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Level and finish burrs, etc., with a disc sander.

⚠ WARNING

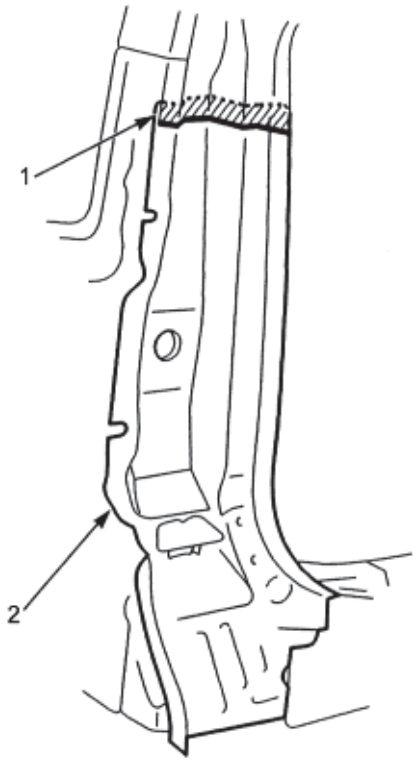
To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

10. Cut the new centre pillar stiffener so it overlaps the body side stiffener by approximately 20 mm (0.8 in).



1. Overlap 20 mm (0.8 in)
2. CENTRE PILLAR STIFFENER (New part)

11. Cut the new rear pillar gutter so it overlaps the body side gutter by approximately 20 mm (0.8 in).



1. Overlap 20 mm (0.8 in)
2. REAR PILLAR GUTTER (New part)

12. Clamp and check the centre pillar stiffener and rear pillar gutter in its correct position using the body dimensional drawings (see section 6).
   - Remove the undercoat from both sides of the weld flange with a sander to expose the steel plate.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
13. Temporarily spot weld the centre pillar stiffener and rear pillar gutter at the clamped positions.

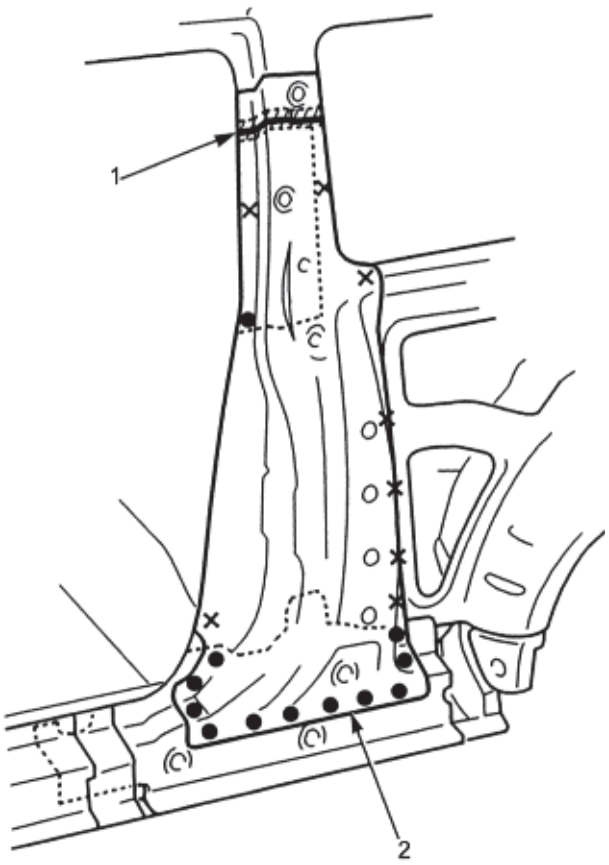
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

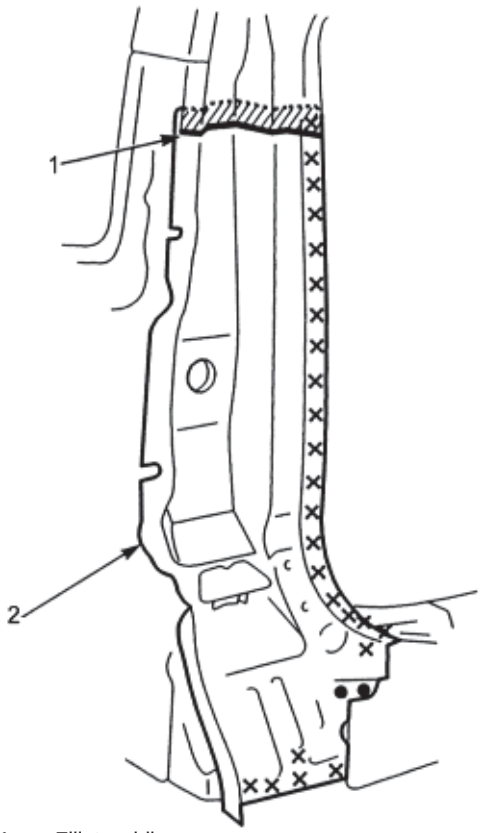
14. Cut and clamp the rear part.
    - Cut so that the repair part overlaps the side sill by 30 mm (1.2 in.).
    - Remove the undercoat from both sides of the weld flange with a sander to expose the steel plate.
15. Check the position of the repair part using the body dimensional drawings (see section 6).
16. Remove the repair part and weld the new centre pillar stiffener and the new rear pillar gutter.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. Fillet welding
2. CENTRE PILLAR STIFFENER (New part)



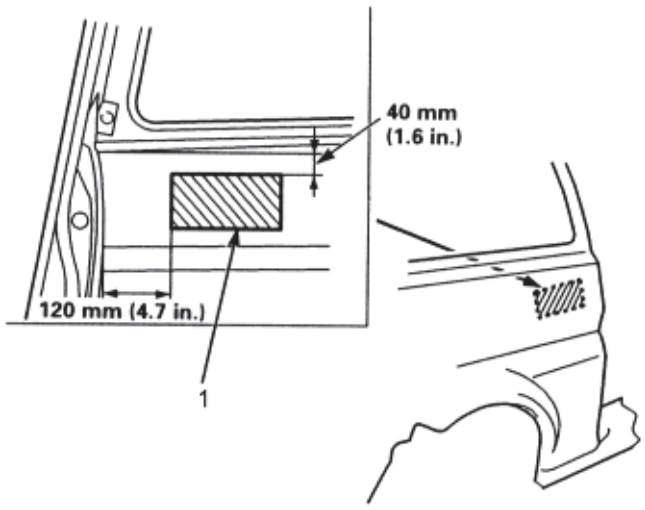
1. Fillet welding
2. REAR PILLAR GUTTER (New part)

17. Apply body paint to the back of the repair part.
    - See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

18. Apply the reinforcement tape to the inside face of the repair part as shown (right side only).
    NOTE:
    - Before applying, clean the repair part surface with a sponge dampened in alcohol.
    - After applying, heat the reinforcement tape equality for about 30 minutes with a drier.



1. REINFORCEMENT TAPE (P/N 67112-S50-310)

19. Set and tack weld repair part.
    - Attach the patch at cut section of the rear pillar (body side) and plug weld it.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

    NOTE: Apply the spot sealer to the welding surface when spot welding.

20. Remove the vice-grips and check the alignment of the taillight, door, rear bumper and tailgate.
    NOTE:
    - Check for flushness of the front fender, door and the rear fender, taillight, rear bumper and make sure that the body lines flow smoothly.

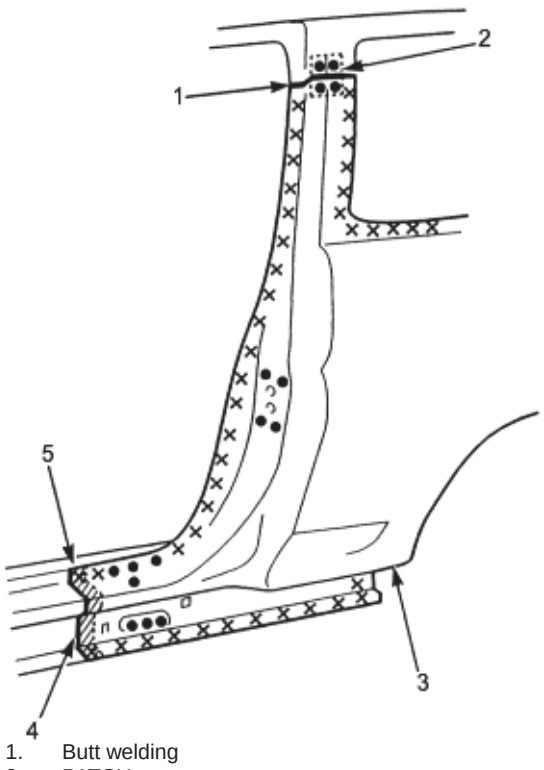
21. Perform the main welding.

⚠ WARNING

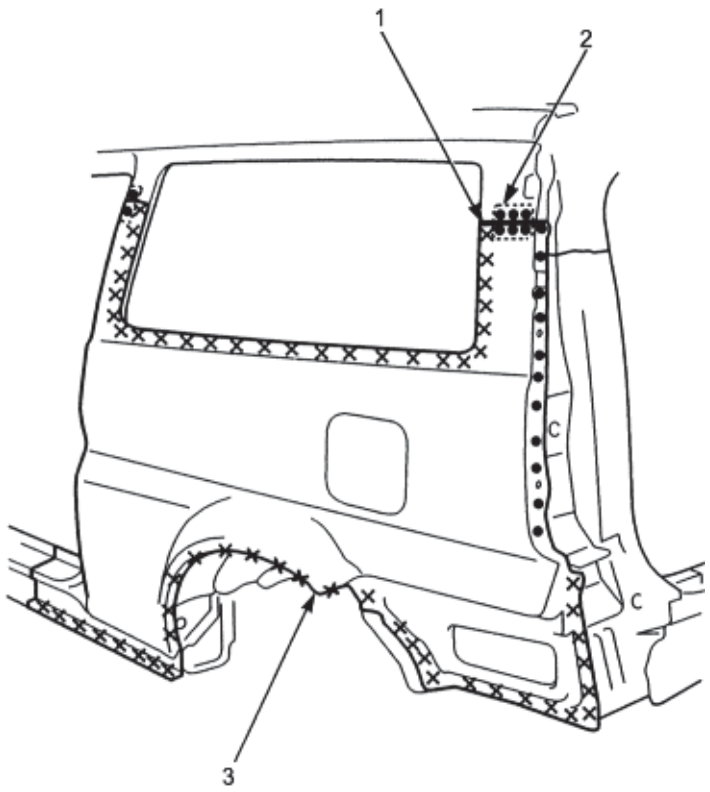
To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

    - Make 20% to 30% more spot welds than there were holes drilled.

    NOTE: If there is not room for spot welds, compensate by using MIG welds.
    - Make 5 mm (0.2 in.) holes in the MIG weld hole with the repair part and the inner panel and centre pillar stiffener with a MIG welder.
    - Weld the outer panel at the centre pillar and side sill with a MIG welder.



1. Butt welding
2. PATCH
3. OUTER PANEL (Repair part)
4. Fillet welding
5. Overlap 30 mm (1.2 in.)



1. Butt welding
2. PATCH
3. OUTER PANEL (Repair part)

22. Finish the welded areas.
    - Level the MIG welded areas with a disc sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

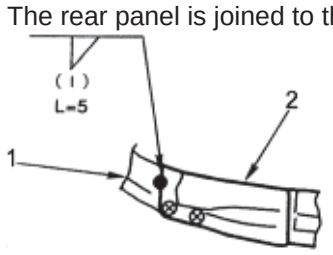
    - Even out high areas with a hammer. Be careful not to deform them.
    - Even out the spot welded flange areas with a hammer and dolly.
    - Fill in deformations and level differences of the welded areas with solder or putty, then finish.
23. Apply the sealer (see section 5).
    Apply sealer to the fuel filler sections, tailgate opening joint and around the taillight area of the rear pillar gutter.
24. Apply paint. See Paint Repair section.

⚠ WARNING

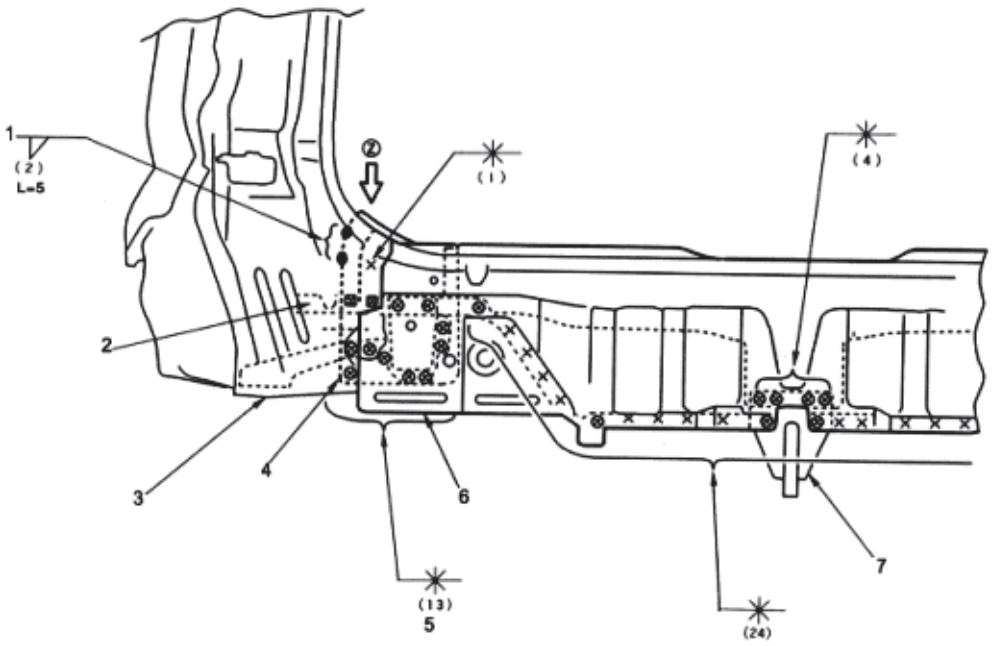
- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

25. Apply the undercoat.
    Apply undercoat to the wheelhouse and apply anti-rust agent to the inside of the outer panel and rear pillar gutter (see section 7).
26. Install the related parts in the reverse order in which they were removed.
27. Inspect, check and clean.
    - Adjust the clearance with the door and tailgate then adjust the level differences and fit. Check operation.
    - Test for leaks in the trunk and passenger compartments.
    - Check the quarter glass for water leaks.
    - Clean the trunk floor.

The rear panel is joined to the rear outer panel and rear floor, and maintains the rigidity of both sides of the rear body. It must be welded carefully.



1. **Rear pillar stiffener**
2. **Rear panel side stiffener**

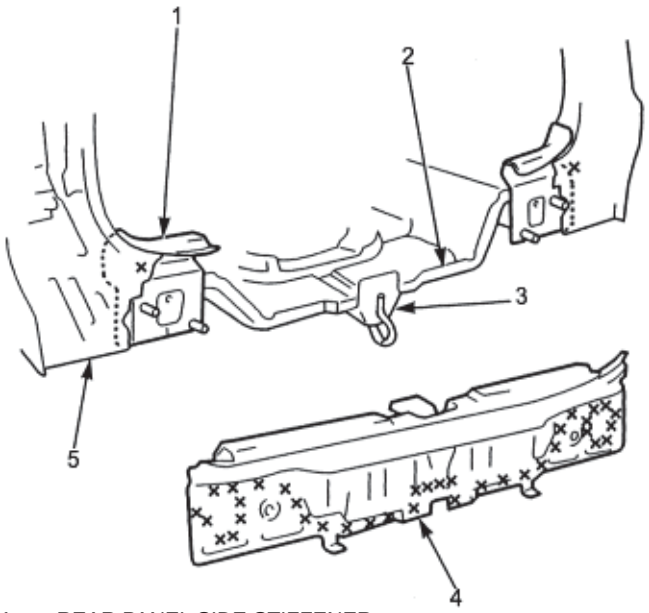


View Z

1. **Inside**
2. **Rear floor**
3. **Rear pillar gutter**
4. **Rear panel side stiffener**
5. **Include 2 points of 4-plate welding**
6. **Rear panel**
7. **Tie down stiffener**

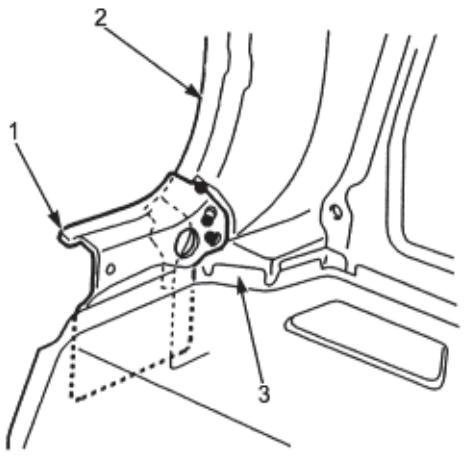
1. Remove the related parts.
   - Rear bumper.
   - Rear bumper extension.
   - Tailgate striker.
   - Other related parts.
   - Trim, panels and luggage compartment fitting..
   - Taillights.
2. Pull out and straighten the damaged area.
   - Pull out the related rear side inner panel, rear pillar gutter, rear floor, rear side frame, and other damaged parts with the frame straightener.
   - Attach the vehicle to the frame straightener by tightening the underbody clamps located at the jack-up points on the bottom of the side sill and the side sill side flanges.
3. Cut and pry off the rear panel.
   - Centre punch around the spot weld imprints with the rear side outer panel and rear floor.
   - Drill holes using the spot cutter.

   NOTE: Be careful not to let holes penetrate through to the rear floor.
   - Remove weld flange with a chisel.



1. REAR PANEL SIDE STIFFENER
2. REAR FLOOR
3. TIE DOWN STIFFENER
4. REAR PANEL
5. REAR PILLAR GUTTER

4. Check the rear panel side stiffener for damage. Replace the rear panel side stiffener if necessary.



1. REAR PANEL SIDE STIFFENER
2. REAR PILLAR STIFFENER
3. REAR FLOOR

5. Straighten the related parts.
   Repair all cracks, holes or other defects by MIG o gas welding.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

6. Set the new rear panel side stiffener and the new rear panel.
   - Paint the inside of the rear panel with the body colour.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

   - Remove the undercoat from the welding section of the panels and expose the steel plate using a disc sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Check the rear panel position using the body dimensional drawings (see section 6).

7. Tack weld the rear panel and rear panel side stiffener.
   - Weld the clamped sections for temporary installation.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

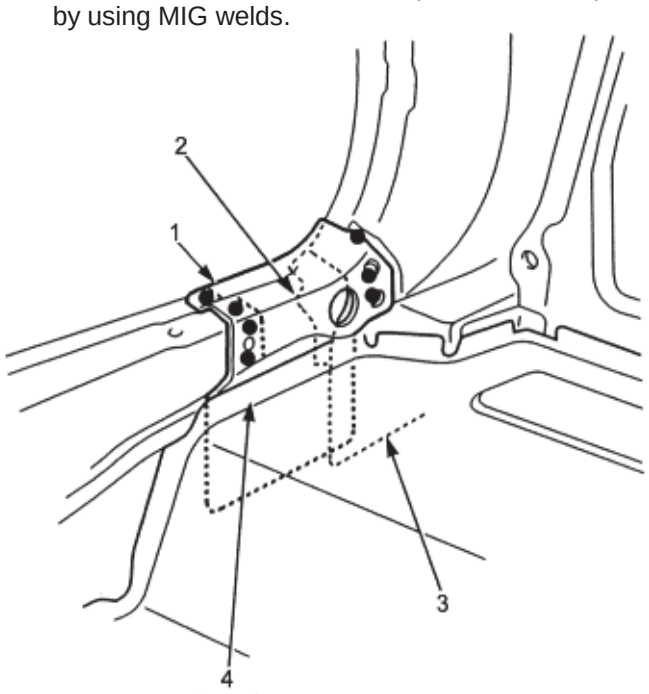
8. Open and close the tailgate to check for proper installation.
   NOTE: Make sure the tailgate locks securely.
   Position the rear pillar gutter and rear panel in its correct position with the rear bumper and taillight installed.
9. Perform the main welding.

⚠ WARNING

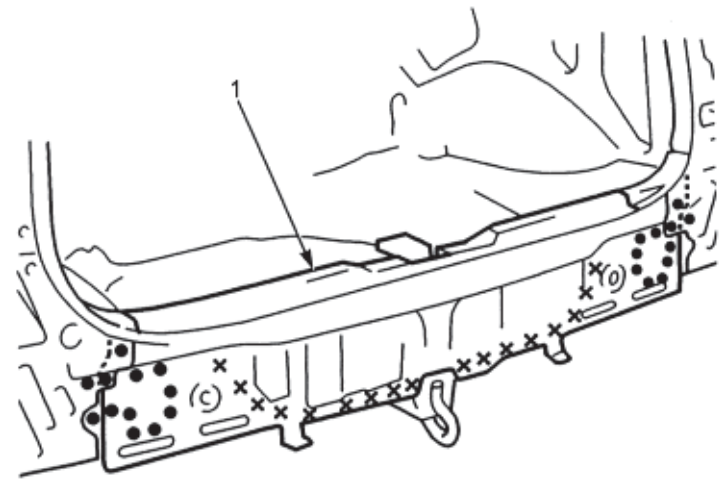
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Make 20% to 30% more spot welds than there were holes drilled.

   NOTE: If there is no room for spot welds, compensate by using MIG welds.



1. REAR PANEL SIDE STIFFENER
2. REAR PILLAR GUTTER
3. REAR PILLAR STIFFENER
4. REAR FLOOR



1. REAL PANEL

10. Finish the welding area.
    - Level the welded areas with a disc sander, then even out high areas with a hammer. Be careful not to deform them.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

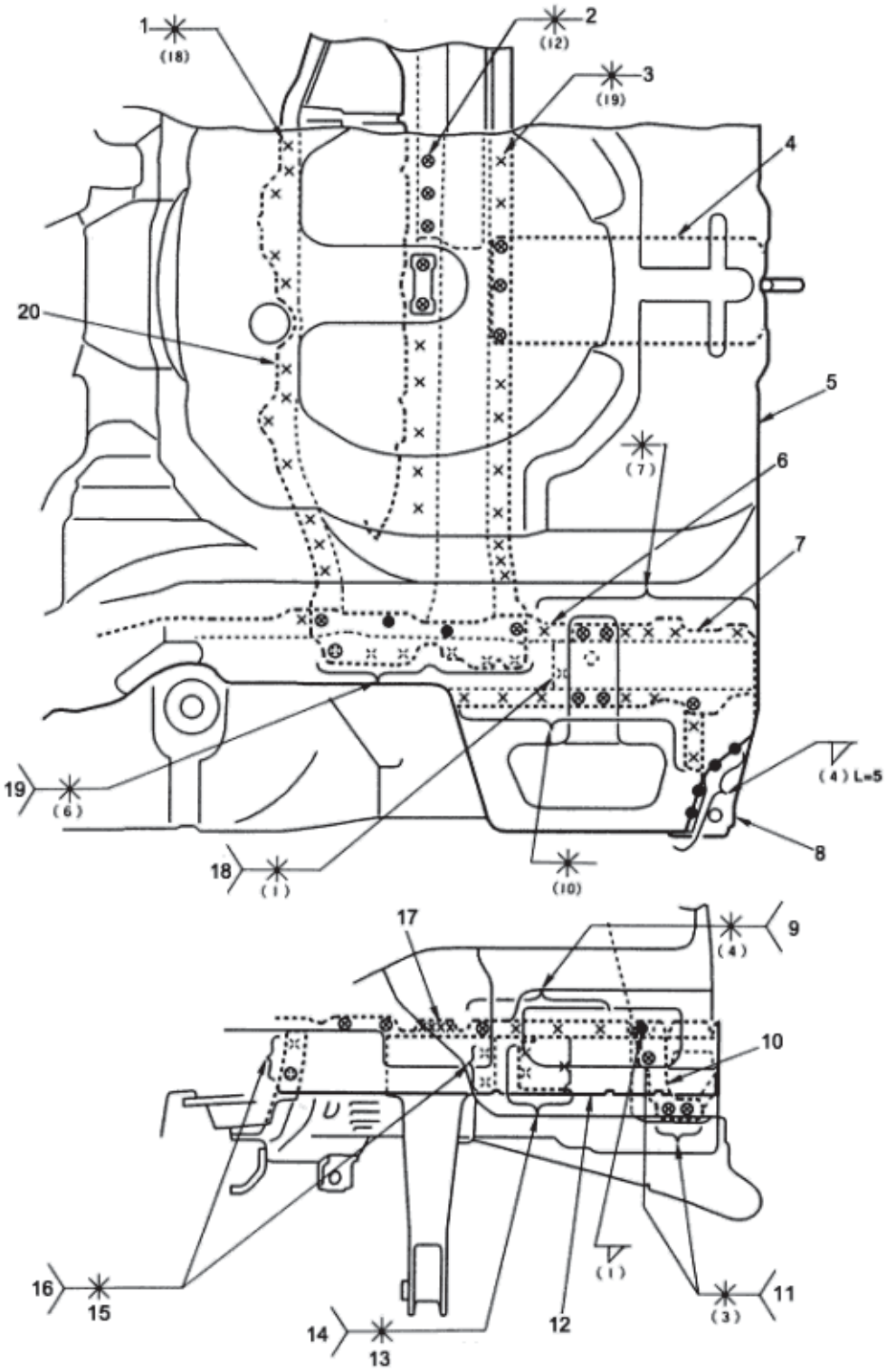
    - Even out the spot welded flange area with a hammer and dolly.
11. Apply the sealer (see section 5).
    - Apply sealer to the rear side outer joint and around the taillight areas of the rear panel.
    - Apply sealer to the rear panel and rear floor joint.
12. Apply the paint. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

13. Apply anti-rust agent (see section 7).
    - Apply agent to the outer panel, rear panel and rear floor joint.
    - Apply agent to the inside of the jack position stiffener.
14. Install the related parts in the reverse order in which they were remove.
15. Inspect, check and clean.
    - Adjust the clearance with the tailgate, then adjust the level differences and fit. Check operation.
    - Test for leaks in the trunk compartment.
    - Clean the trunk floor.

The rear floor and rear floor cross-member are the base of the rear body and it is critical for the rigidity of the rear body. During replacement, refer to the body dimension chart or body correction chart and determine the position to set the rear floor, and rear floor cross-member, properly. Be sure that the rear floor is not bent or deformed. Weld securely, following the welder manufacturer's instructions to maintain the rigidity of the body.



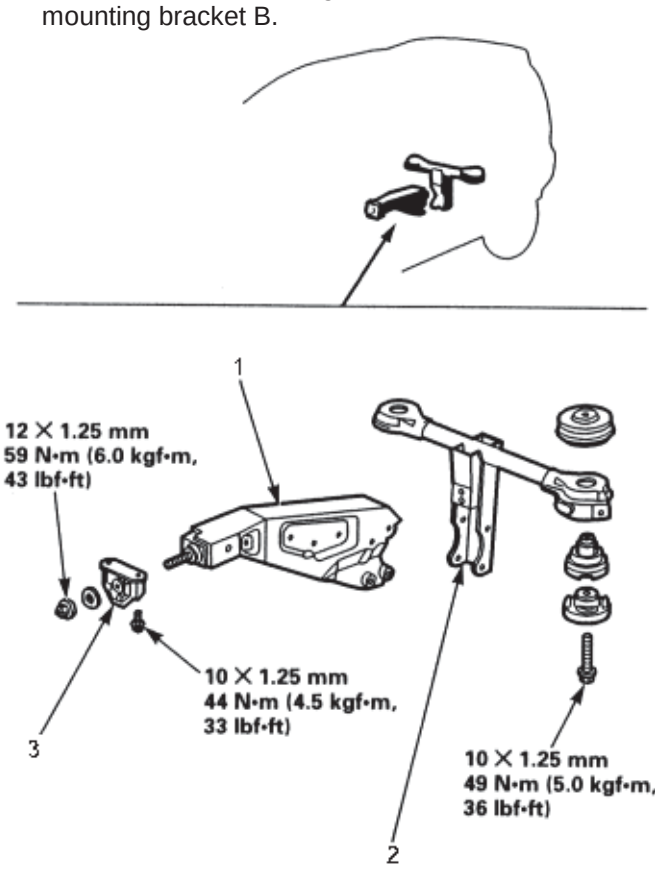
1. **Include 2 points of rear frame B**
2. **Include 3-plate welding of panhard rod bracket**
3. **Include 2 points of rear frame B**
4. **Tie down stiffener**
5. **Rear floor**
6. **Rear frame B**
7. **Rear frame C**
8. **Rear frame end gusset**
9. **Rear floor, Rear inner panel and Rear wheelhouse**
10. **Rear frame end gusset**
11. **Rear frame end gusset, Rear pillar stiffener and Outer panel**
12. **Rear frame C**
13. **Both sides, 6**
14. **Rear frame C and Rear frame B**
15. **Both sides, B**
16. **Rear floor cross-member and Rear frame B**
17. **Rear floor**
18. **Rear frame C and Rear frame B**
19. **Rear floor cross-member and rear frame B**
20. **Rear floor cross-member**

1. Remove the related parts.
   - Rear seat.
   - Trim and other luggage compartment fittings.
   - Left and right rear suspension assembly.
   - Parking brake parts.
   - Muffler.
   - Wire harness.
   - Other parts as necessary.
   - Propeller shaft, rear differential and related parts (4WD)
   - Fuel tank and fuel lines.

⚠ WARNING

Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.

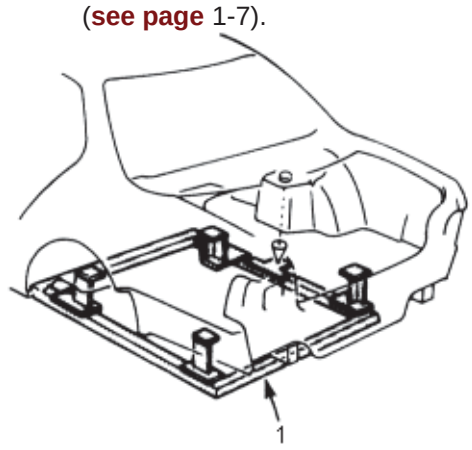
2. 4WD: Remove the rear differential mounting bracket A, rear differential mounting rubber and rear differential mounting bracket B.



1. REAR DIFFERENTIAL MOUNTING BRACKET A
2. REAR DIFFERENTIAL MOUNTING BRACKET B
3. REAR DIFFERENTIAL MOUNTING RUBBER

3. Pull out and straighten the damage area.
   - Check whether the damage extended to the rear floor cross-member, rear wheelhouse, and the passenger compartment. Pull out the damaged parts using the frame corrector.
   - Impact damage to the rear floor spreads to related parts such as the rear frame, rear floor cross-member and rear wheelhouse.
   - Therefore, pull out the damaged areas with the frame straightener and measure in reference to body dimensional drawing.

   NOTE: Use of a positioning jig is recommended (**see page** 1-7).



1. POSITIONING JIG

4. Peel off the undercoat. Heat the undercoat at the weld areas of the lower rear floor with a gas torch and peel off the undercoat with a metal spatula.

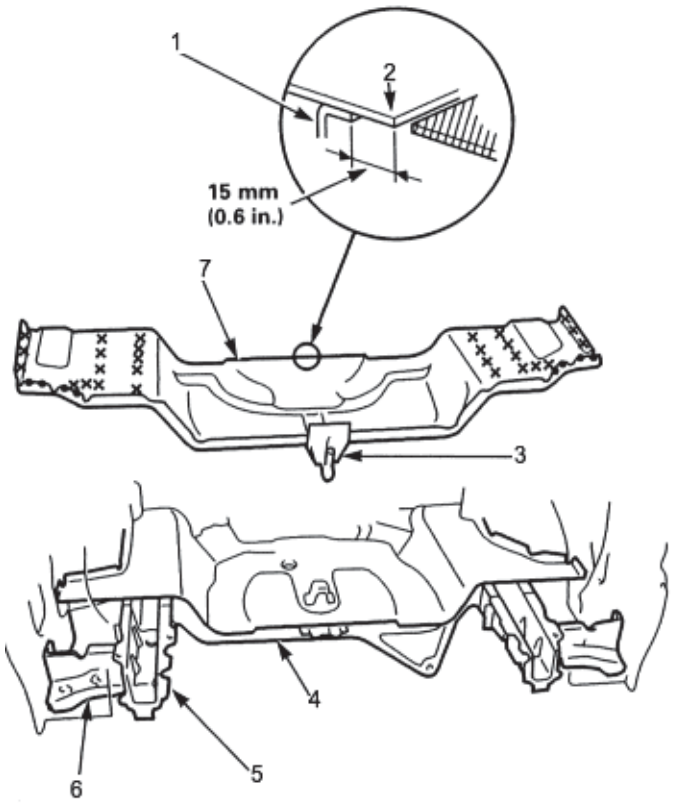
⚠ CAUTION

Be careful not to burn the fittings inside the trunk compartment and rear wheelhouse insulator while heating.

5. Cut and pry off the rear panel (**see page** 4-41).

6. Cut and pry off the rear floor.
   - Cut off the rear floor with a gas cutter or air chisel.
   - Leave the spot welded flanges of the rear frame and rear floor cross-member.

   NOTE:
   - Cut the rear floor 15 mm (0.6 in.) from the welded flange of the rear floor cross-member.
   - Do not drill down to the rear frame.



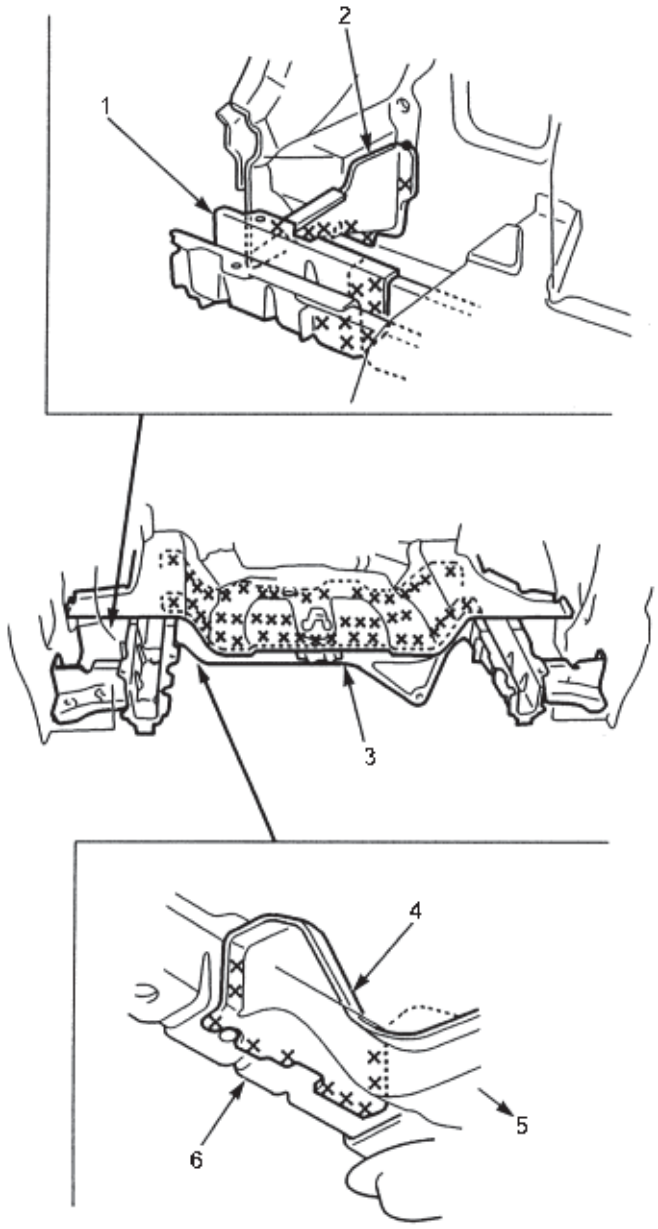
1. REAR FLOOR CROSS-MEMBER
2. REAR FLOOR
3. TIE DOWN STIFFENER
4. REAR FLOOR CROSS-MEMBER
5. REAR FRAME C
6. REAR FRAME GUSSET
7. REAR FLOOR

   - Centre punch around the spot weld imprints on the remaining welded flanges.
   - Drill holes with a spot cutter.

7. Check the damage and position of the rear frame and rear floor cross-member.
   - Smooth the welding flanges of the rear frame with a hammer and dolly.

   NOTE: Check that the rear frame is parallel at the right and left.

8. If necessary, cut the rear frame C and rear floor cross-member.
   NOTE: Replace the rear frame and gusset and rear frame C as an assembly.



1. REAR FRAME C
2. REAR FRAME END GUSSET
3. REAR FLOOR CROSS-MEMBER
4. REAR FLOOR CROSS-MEMBER
5. Forward
6. REAR FRAME B

   - Strike a centre punch around the spot weld imprints on the rear floor cross-member from inside the trunk compartment.
   - Drill out the spot welds with the spot cutter.

   NOTE: Keep the holes to a minimum since they will be used as weld holes MIG welding of the new part.

9. Straighten the related parts.
   - Remove the burrs from the spot weld or MIG weld using a sander.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

   - Fill any holes made in the spot welded areas of the flange by MIG or gas welding.

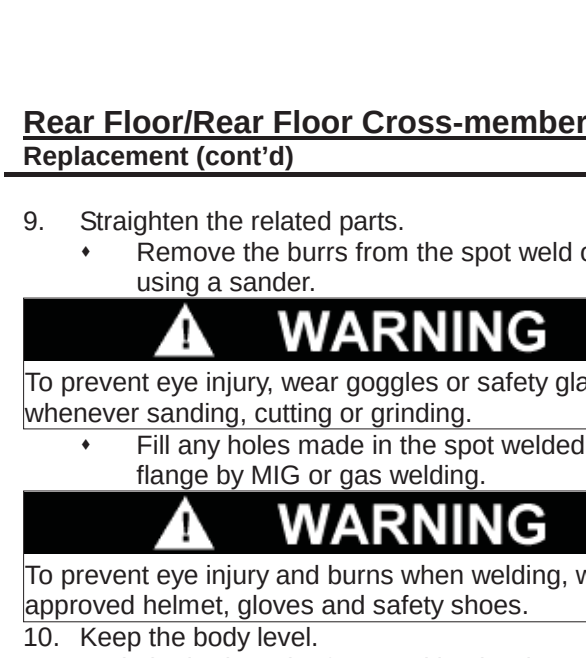
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved helmet, gloves and safety shoes.

10. Keep the body level.
    Jack the body at the front and back. Place safety stands at the four designated places of the side sill.
11. Set the new rear floor cross-member and rear frame C and check the position of the rear frames using the body dimensional drawings (see section 6) and the positioning jig.
12. Tack weld the new rear floor cross-member and rear frame C.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



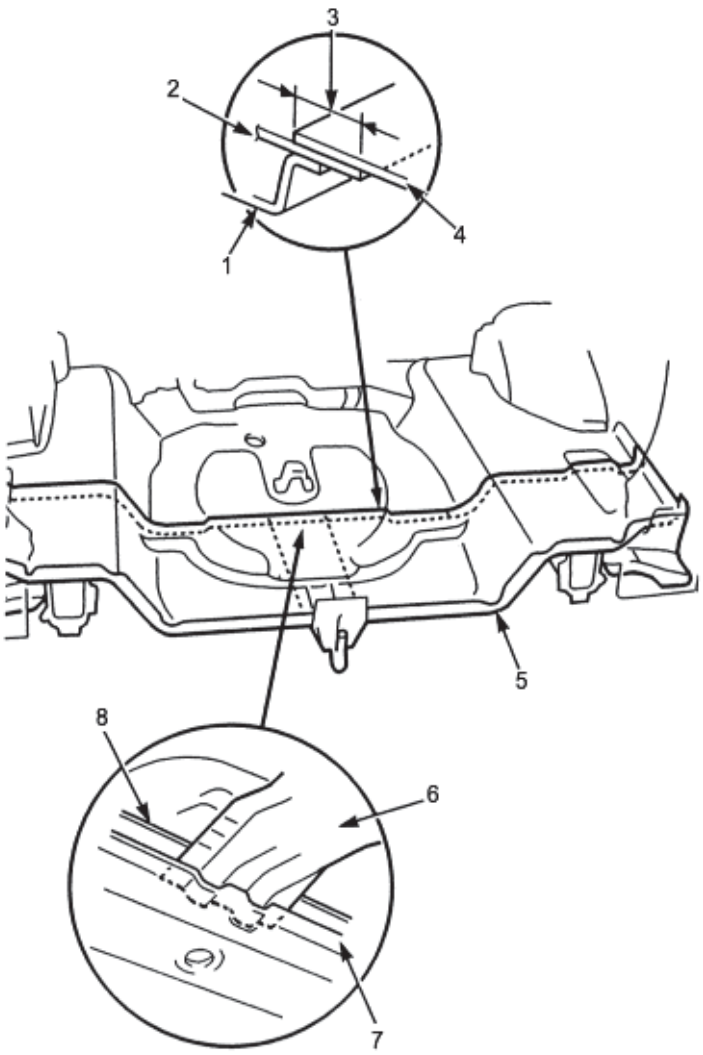
1. REAR FRAME END GUSSET
2. REAR FRAME C
3. REAR FLOOR
4. REAR FLOOR CROSS-MEMBER

13. Cut the new rear floor to align it with the body.
    NOTE:
    - Cut the new part so it overlaps the body side floor by approximately 40 mm (1.6 in.)
    - Do not cut the tie down stiffener.
    - Insert the tie down stiffener of the new rear floor between the body side rear floor and rear floor cross-member.

    Remove the undercoat from both sides of the areas to be welded with a sander to expose the steel plate.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.



1. REAR FLOOR CROSS-MEMBER
2. REAR FLOOR (Body side)
3. Overlap 40 mm (1.6 in.)
4. REAR FLOOR (New part)
5. REAR FLOOR (New part)
6. TIE DOWN STIFFENER
7. REAR FLOOR CROSS-MEMBER
8. REAR FLOOR (Body side)

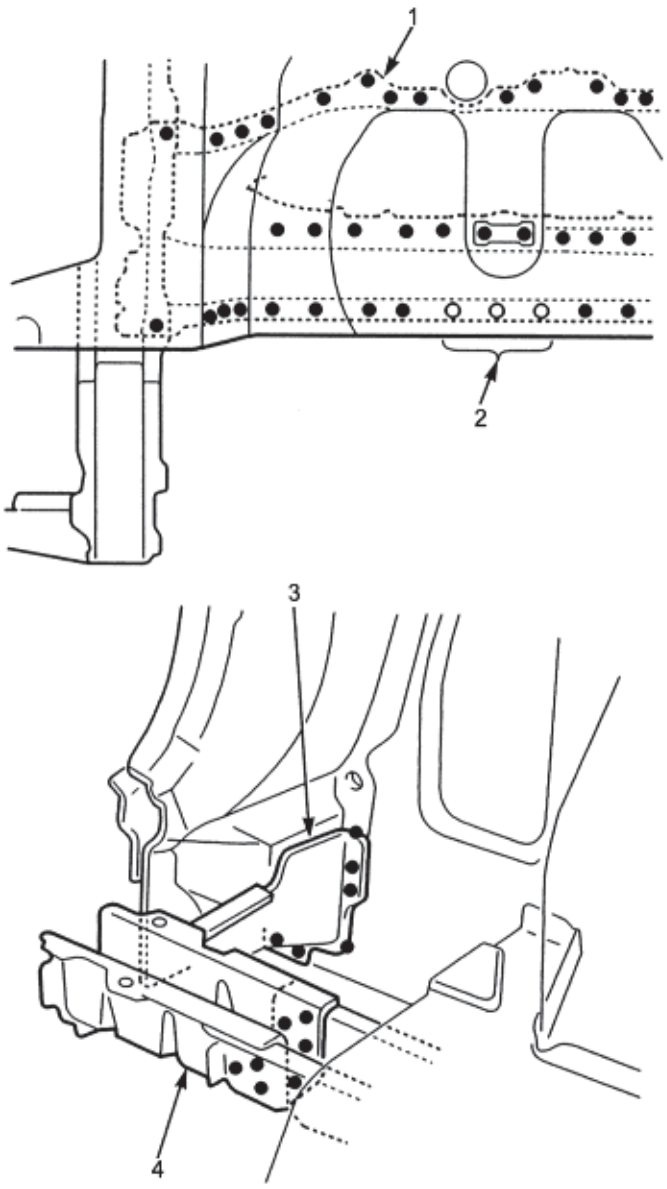
14. Clamp the new rear floor and check the position of the rear wheelhouse, inner panel and outer panel.
15. Remove the new rear floor.

16. Weld the rear floor cross-member and rear floor (body side) and weld the rear frame C and rear frame end gusset.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

NOTE: Weld as much as possible with the positioning jig still mounted.



1. REAR FLOOR CROSS-MEMBER
2. Do not weld the welding portion of the tie down stiffener
3. REAR FRAME END GUSSET
4. REAR FRAME C

17. Finish the welding area.
Roughly grind the welds in the trunk compartment with a disc grinder. Be sure to leave the finishing allowance.
NOTE: Take care not to grind excessively.

18. Set the new rear floor.
    - Drill the holes for welding the new rear floor.
    - Check that the weld flange surfaces fit closely.
    - Tack weld the new rear floor.

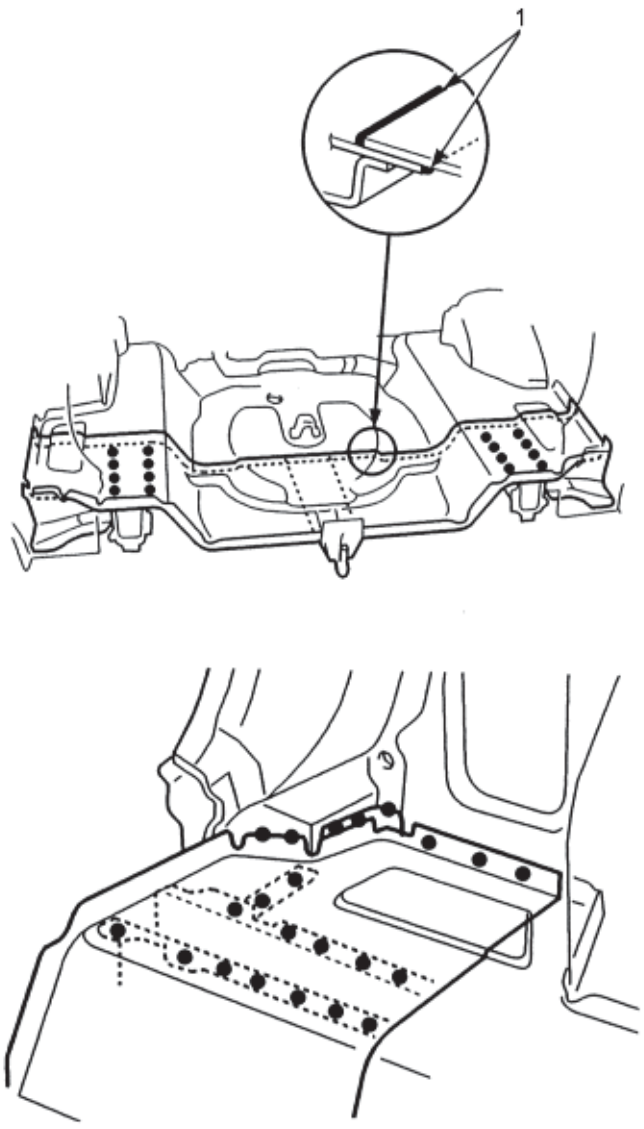
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

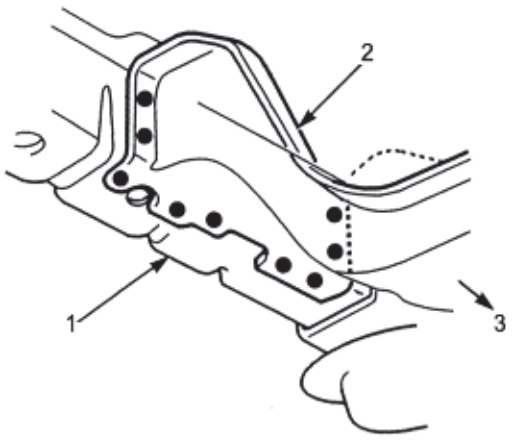
19. Clamp the rear panel and check the outer panel and rear pillar gutter position.
20. Main weld the new rear floor, rear frame C and rear floor cross-member.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

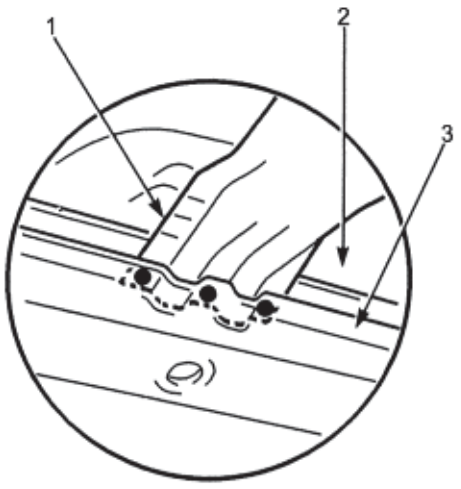


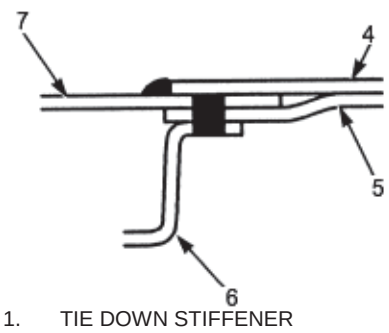
1. Fillet welding



1. REAR FRAME B
2. REAR FLOOR CROSS-MEMBER
3. Forward

- Drill the holes for welding the tie down stiffener from under the rear floor and weld the rear floor, tie down stiffener and rear floor cross-member with a MIG welder.





1. TIE DOWN STIFFENER
2. REAR FLOOR (Body side)
3. REAR FLOOR CROSS-MEMBER
4. REAR FLOOR (New part)
5. TIE DOWN STIFFENER
6. REAR FLOOR CROSS-MEMBER
7. REAR FLOOR (Body side)

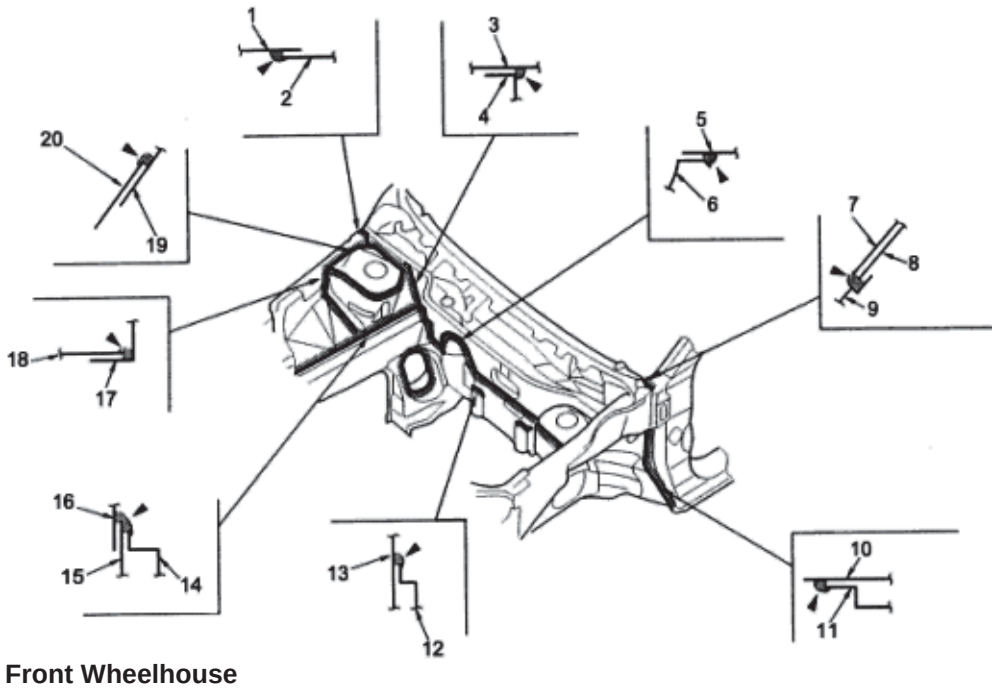
21. Weld the rear panel (**see page** 4-21).
22. Finish the welded area.
    Even out the welded area with a hammer and dolly and fit the flange surfaces closely together.
23. Apply sealer at the overlapped area of the rear floor, and the welded surfaces of the rear wheelhouse and rear end inner panel. Seal gaps completely (see section 5).
24. Apply the paint. See Pant Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

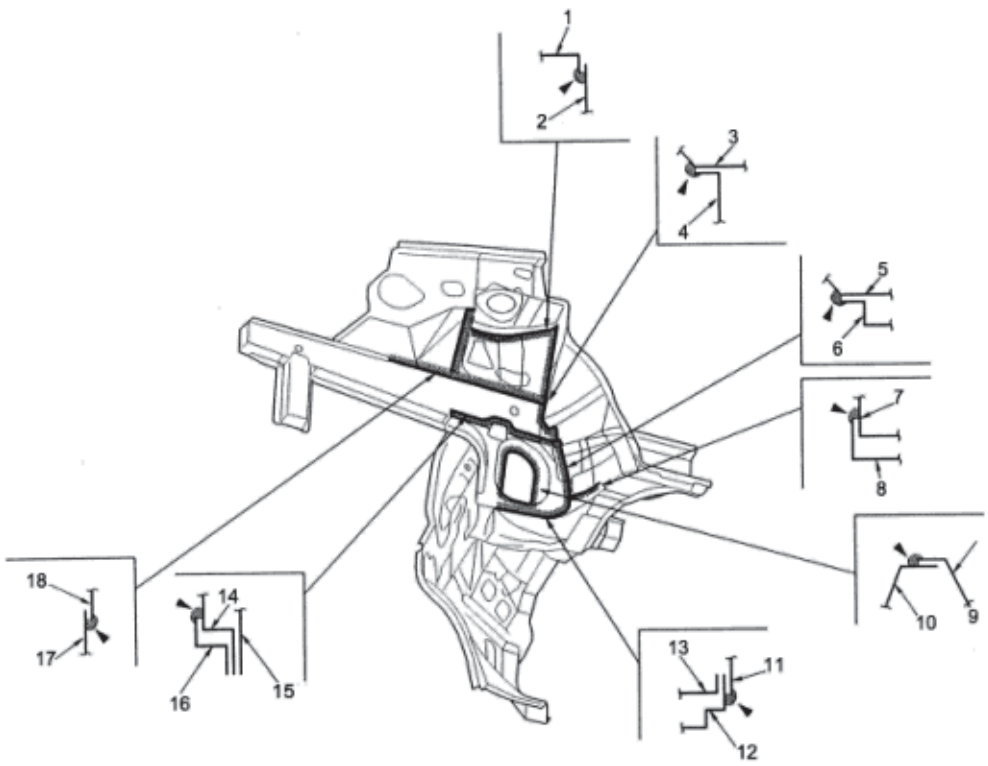
25. Apply the undercoat.
    Apply anti-rust agent to the inside of the rear floor cross-member, tie down stiffener, and jointed areas of the rear floor (see section 7).
26. Weld the rear panel and install the related parts. Install in the reverse order in which they were removed.
27. Inspect and clean.
    - Measure the rear wheel alignment.
    - Clean the inside of the trunk compartment.

Engine Compartment

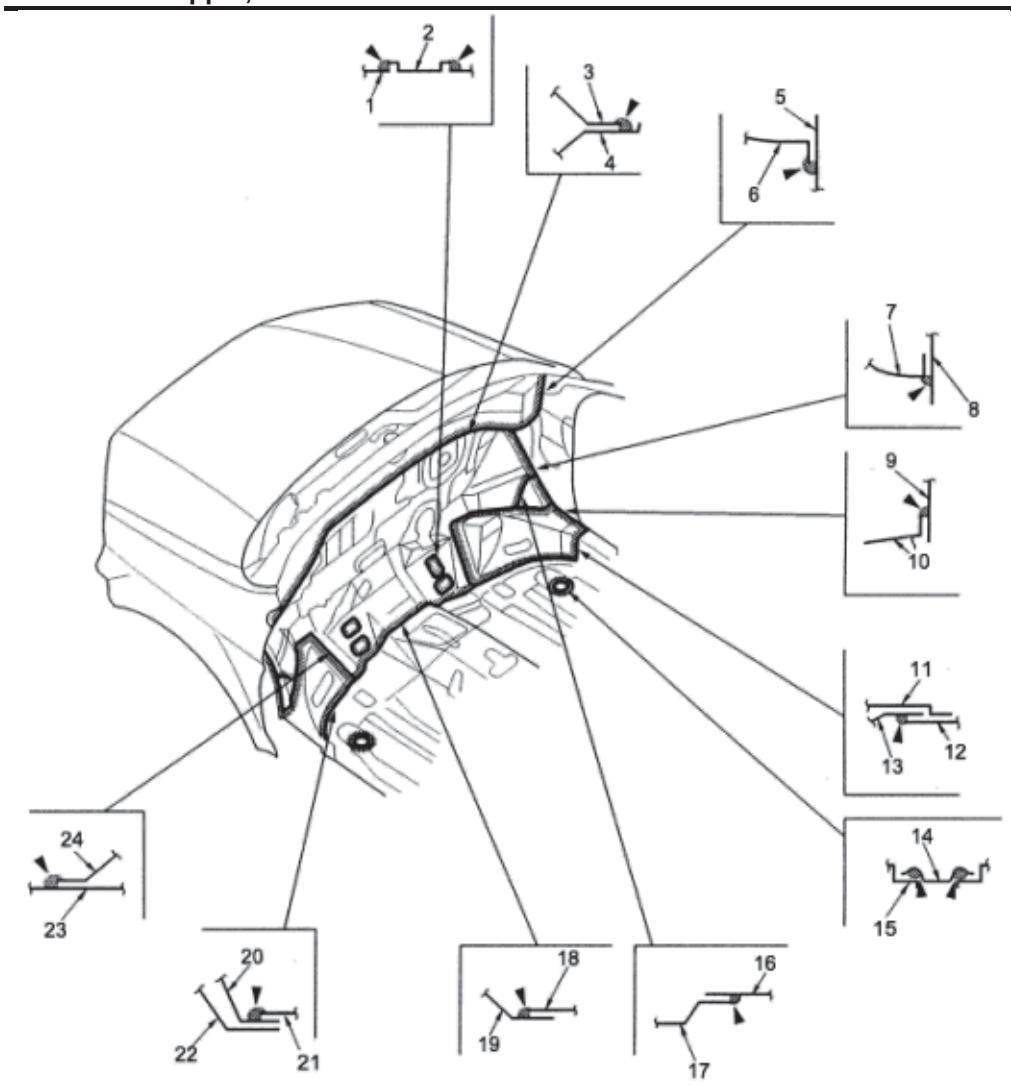


1. **Wheelhouse extension**
2. **Dashboard upper side member**
3. **Dashboard lower**
4. **Damper housing**
5. **Dashboard lower**
6. **Steering joint cover**
7. **Outer panel**
8. **Inner panel**
9. **Windshield lower**
10. **Front pillar inner**
11. **Outer panel**
12. **Steering gear box stiffener**
13. **Dashboard lower cross-member**
14. **Front side frame**
15. **Back plate**
16. **Damper housing**
17. **Damper housing**
18. **Wheel house**
19. **Damper base**
20. **Damper housing**

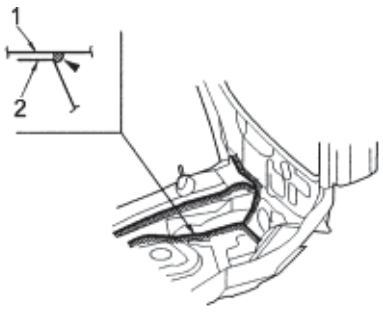
Front Wheelhouse



1. **Damper base**
2. **Damper housing**
3. **Dashboard lower**
4. **Back plate**
5. **Dashboard lower**
6. **Lower arm support**
7. **Outrigger**
8. **Lower**
9. **Lower arm support A**
10. **Lower arm support B**
11. **Lower arm support**
12. **Lower stay**
13. **Upper stay**
14. **Back plate**
15. **Front side frame**
16. **Lower arm support**
17. **Back plate**
18. **Wheelhouse**



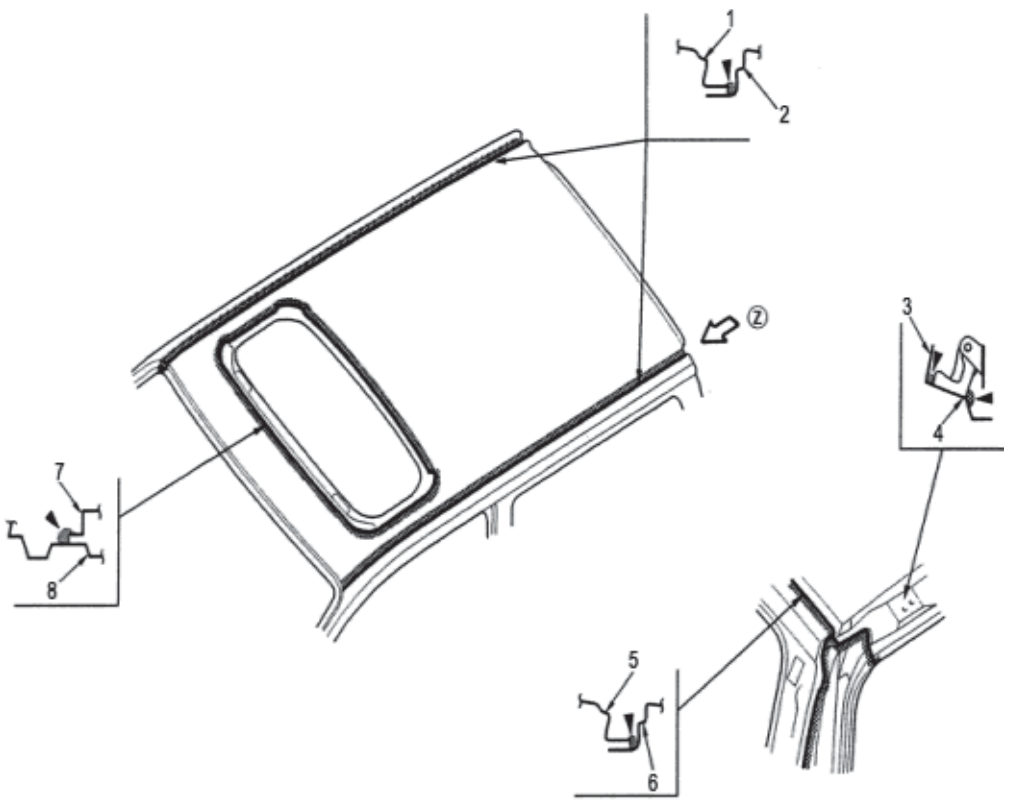
1. **Dashboard lower**
2. **Hole cap**
3. **Windshield lower**
4. **Dashboard lower**
5. **Front pillar**
6. **Windshield lower**
7. **Dashboard lower**
8. **Inner lower pillar**
9. **Inner lower pillar**
10. **Dashboard lower gusset**
11. **Side sill extension**
12. **Side sill**
13. **Dashboard lower gusset**
14. **Floor cap**
15. **Front floor**
16. **Dashboard lower**
17. **Dashboard lower plate**
18. **Front floor**
19. **Dashboard lower**
20. **Dashboard lower gusset**
21. **Front floor**
22. **Dashboard lower**
23. **Dashboard lower**
24. **Dashboard lower gusset**



VIEW Z

1. **Dashboard upper**
2. **Dashboard lower**

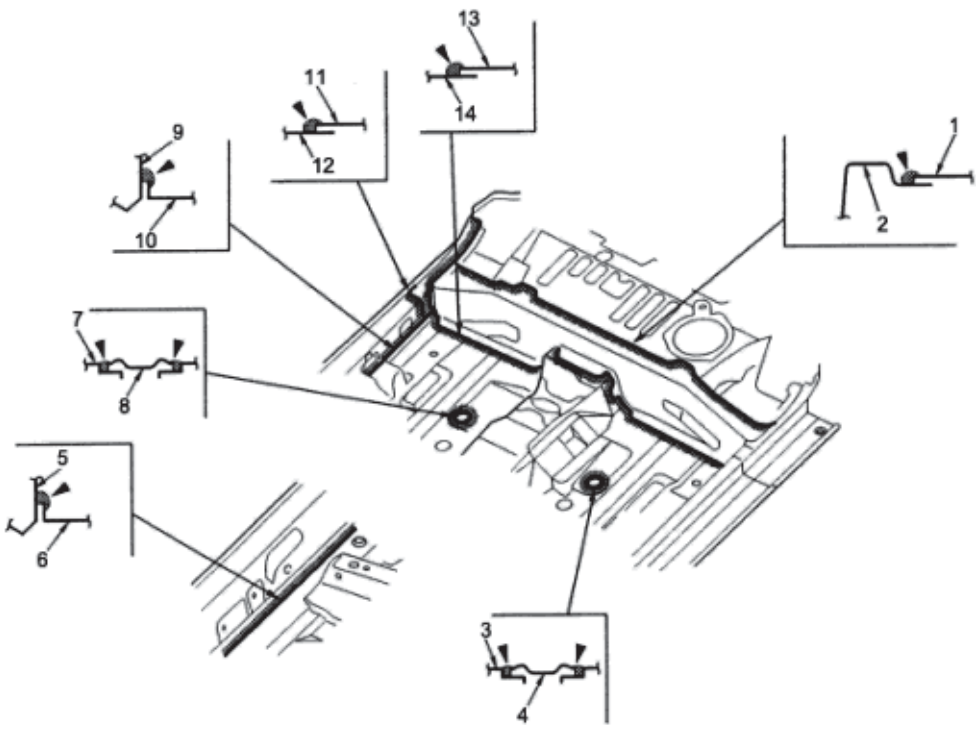
Roof Panel



1. **Roof panel**
2. **Outer panel**
3. **Roof panel**
4. **Tailgate hinge**
5. **Roof panel**
6. **Outer panel**
7. **Roof panel**
8. **Sunroof stiffener**

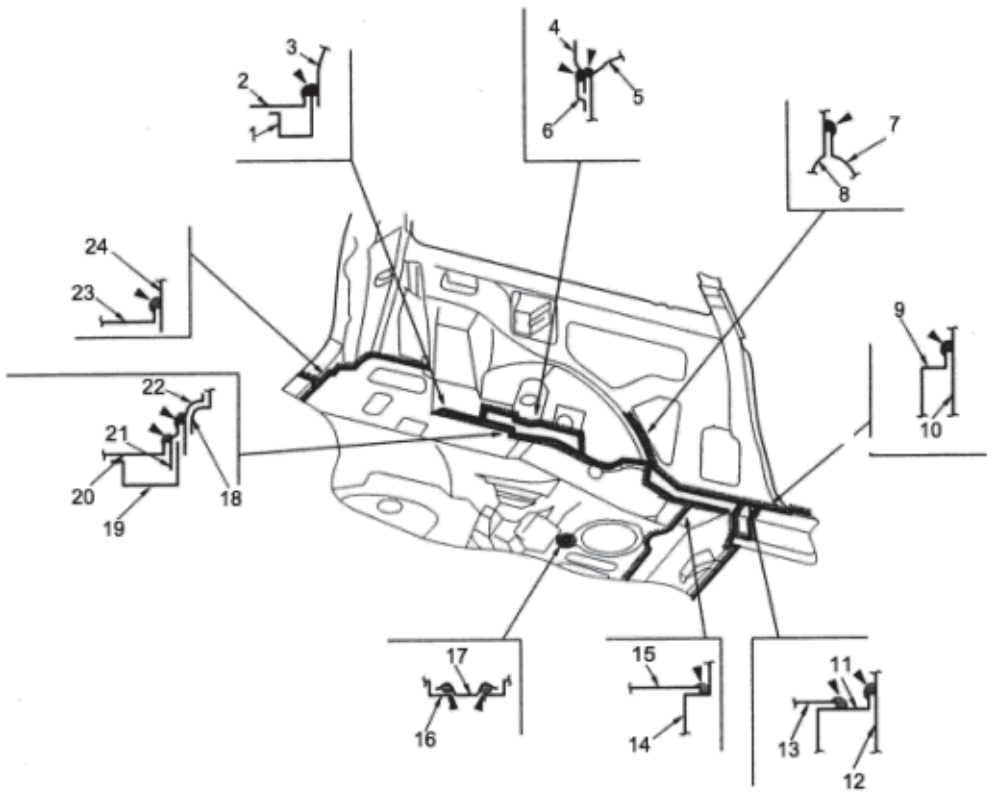
VIEW Z

Middle Floor



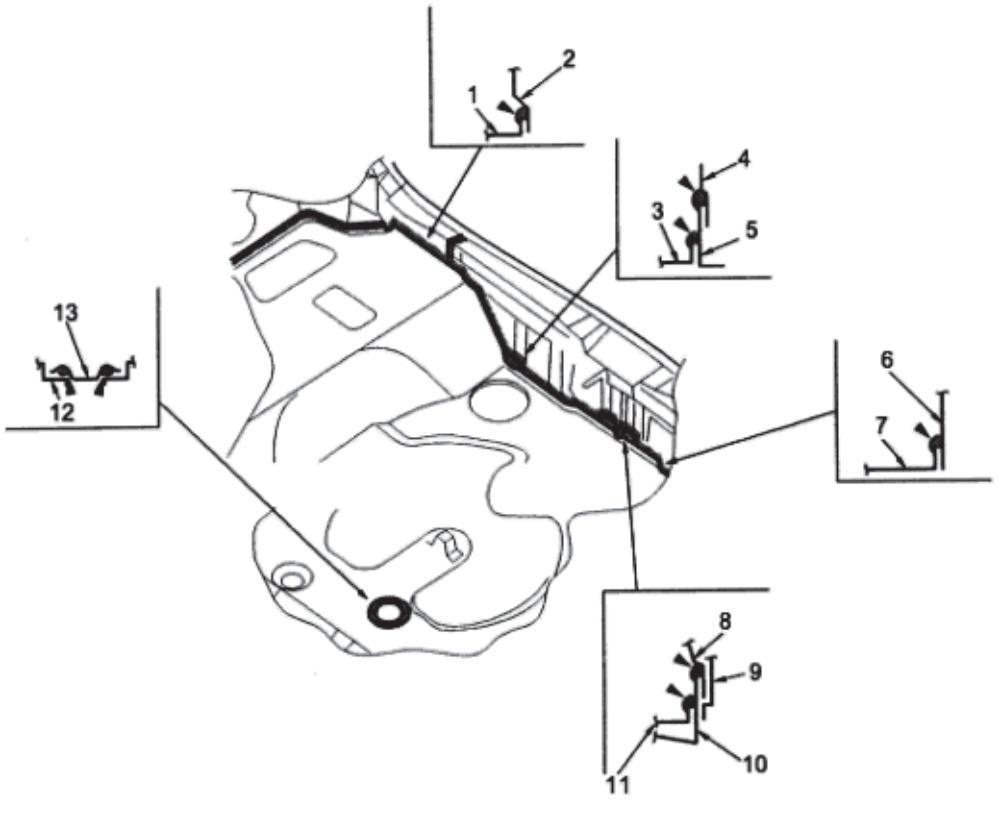
1. **Rear floor**
2. **Middle floor**
3. **Front floor**
4. **Floor cap**
5. **Side sill**
6. **Front floor**
7. **Front floor**
8. **Floor cap**
9. **Side sill**
10. **Front floor**
11. **Side sill extension**
12. **Side sill**
13. **Middle floor**
14. **Front floor**

Rear Floor



1. **Rear frame**
2. **Rear floor**
3. **Rear wheelhouse**
4. **Seat bracket**
5. **Rear wheelhouse**
6. **Stiffener extension**
7. **Rear wheelhouse**
8. **Rear inner panel**
9. **Side sill**
10. **Rear inner panel**
11. **Side sill extension**
12. **Rear inner panel**
13. **Rear floor**
14. **Side sill extension**
15. **Rear floor**
16. **Rear floor**
17. **Floor cap**
18. **Damper base**
19. **Rear frame**
20. **Rear floor**
21. **Stiffener extension**
22. **Rear wheelhouse**
23. **Rear floor**
24. **Rear panel side stiffener**

Rear Panel

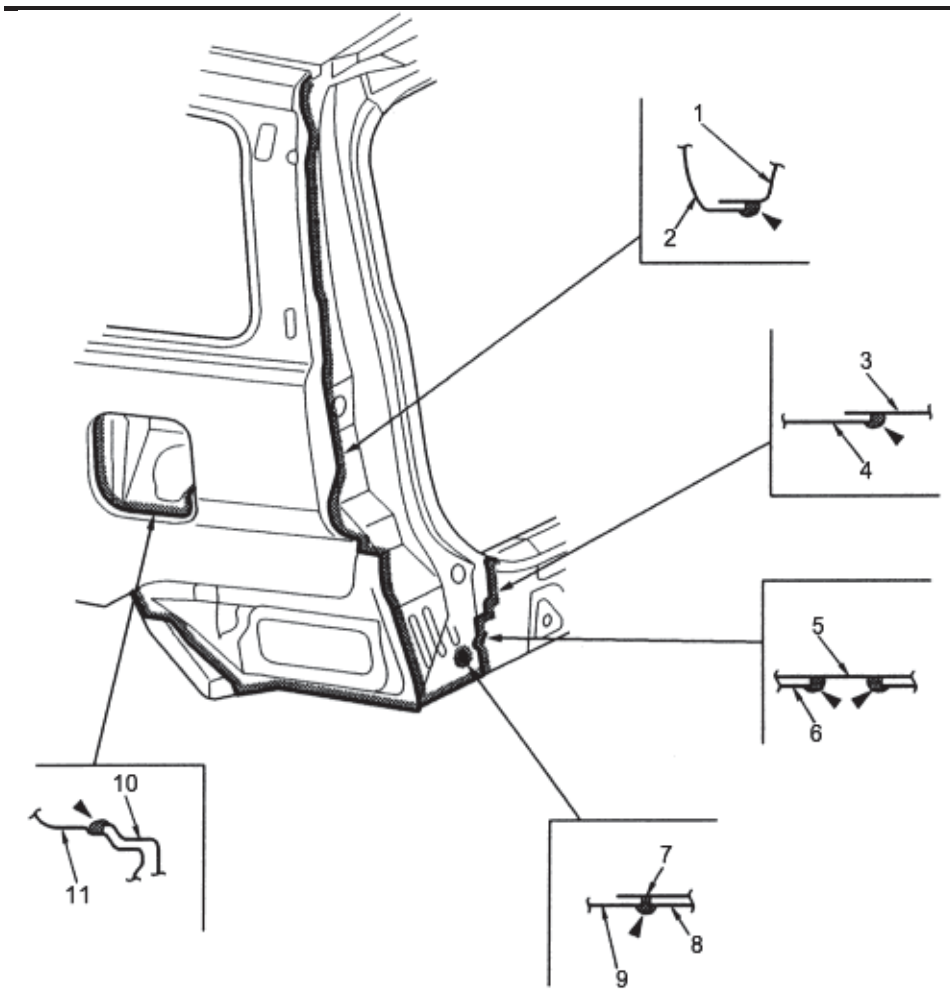


1. **Rear floor**
2. **Rear panel side stiffener**
3. **Rear floor**
4. **Rear panel**
5. **Rear bumper lower bracket**
6. **Rear panel**
7. **Rear floor**
8. **Rear panel side stiffener**
9. **Rear panel**
10. **Tie down stiffener**
11. **Rear floor**
12. **Rear floor**
13. **Floor cap**

Cross Section of Body and Sealants

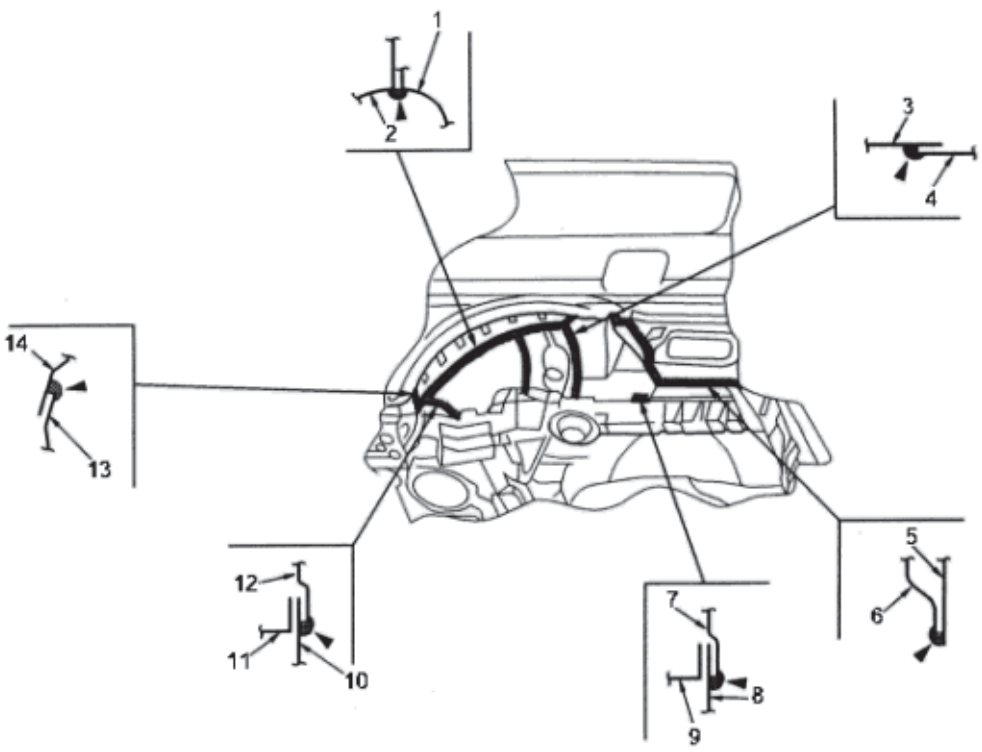
Rear Side Outer Panel/Rear Pillar Gutter

5-6



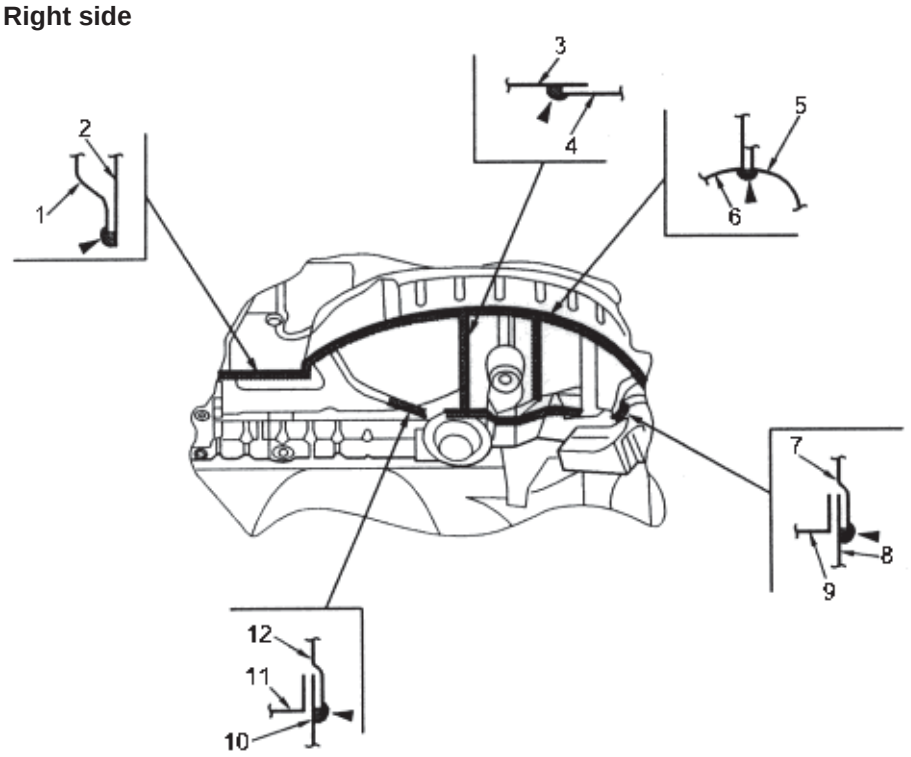
1. **Rear pillar gutter**
2. **Outer panel**
3. **Rear panel**
4. **Rear pillar gutter**
5. **Rear pillar stiffener**
6. **Rear pillar gutter**
7. **Rear panel side stiffener**
8. **Rear panel**
9. **Rear pillar gutter**
10. **Outer panel**
11. **Fuel cap adapter**

Left side



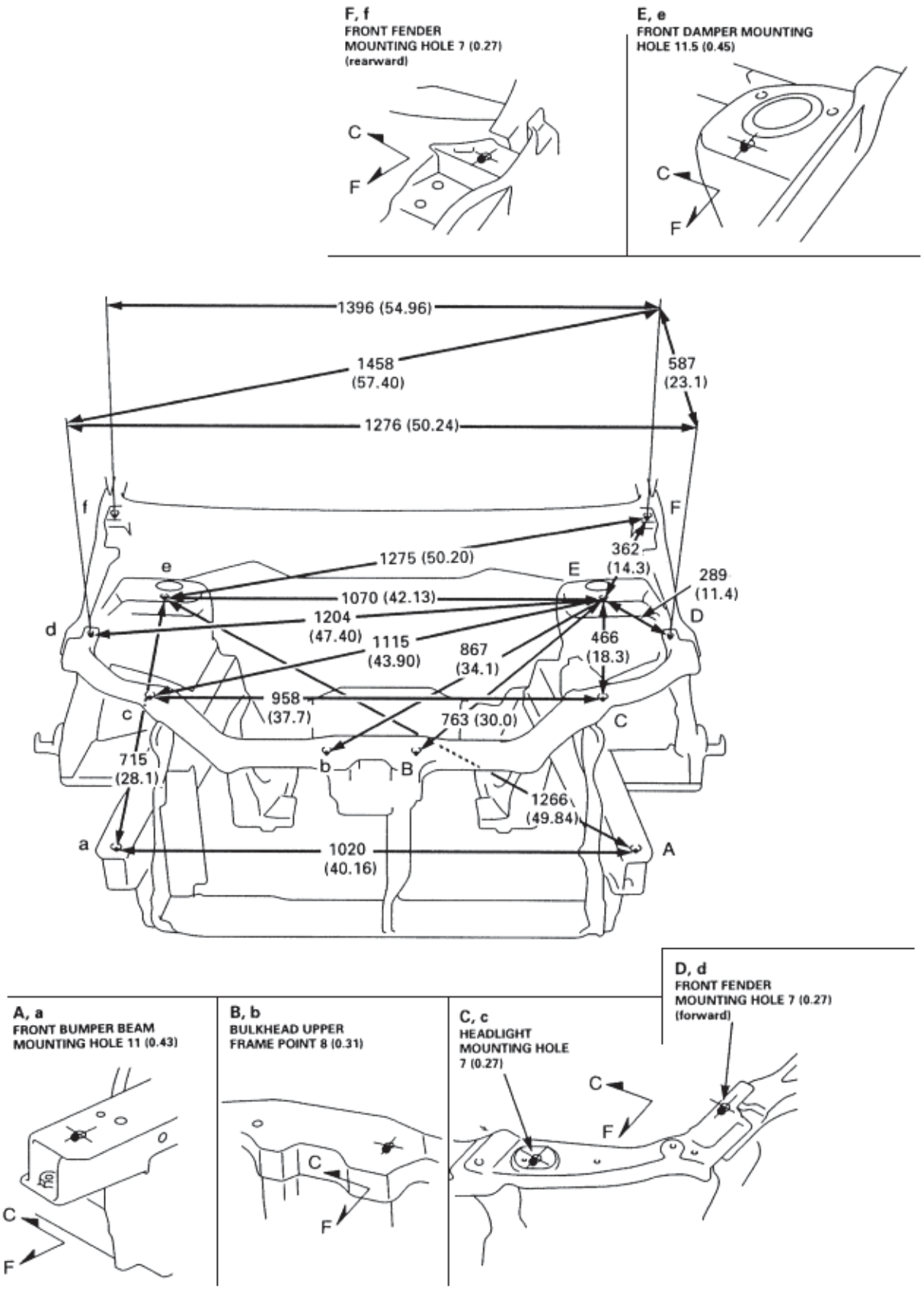
1. **Wheelhouse**
2. **Rear inner**
3. **Wheelhouse**
4. **Damper base**
5. **Inner**
6. **Outer**
7. **Wheelhouse**
8. **Rear frame**
9. **Rear floor**
10. **Rear frame**
11. **Rear floor**
12. **Wheelhouse**
13. **Wheel arch extension**
14. **Rear inner**

Right side

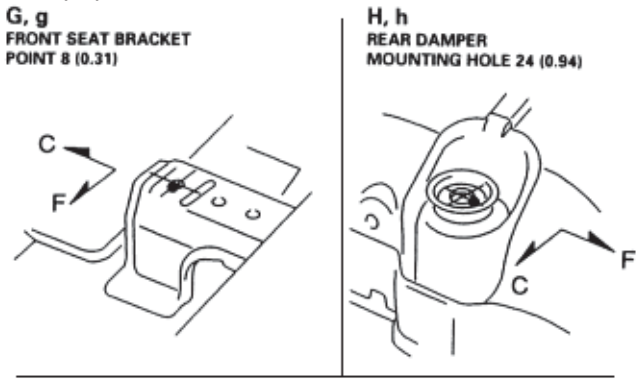


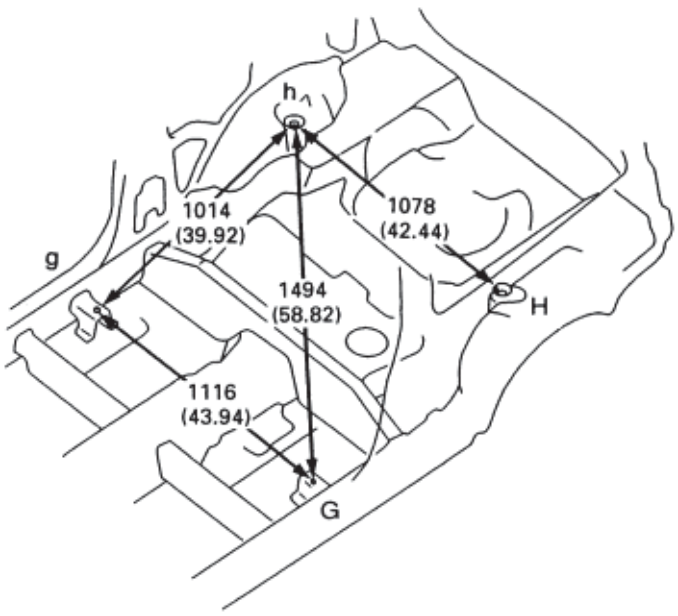
1. **Outer**
2. **Inner**
3. **Wheelhouse**
4. **Damper base**
5. **Wheelhouse**
6. **Rear inner**
7. **Wheelhouse**
8. **Rear frame**
9. **Rear floor**
10. **Rear frame**
11. **Rear floor**
12. **Wheelhouse**

(Engine Compartment)
Unit: mm (in.)

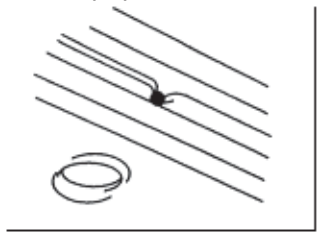


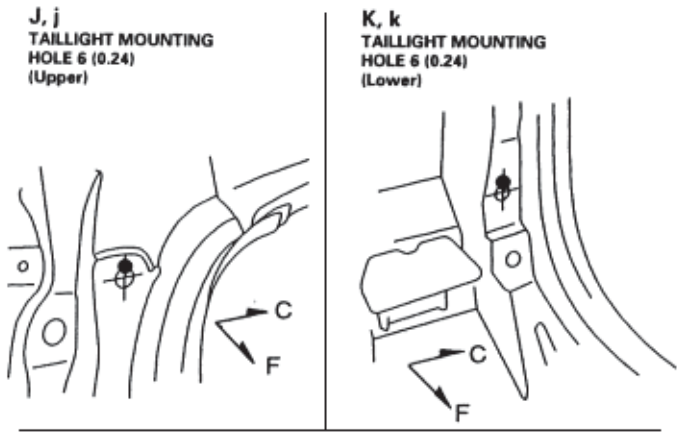
(Passenger Compartment)
Unit: mm (in.)

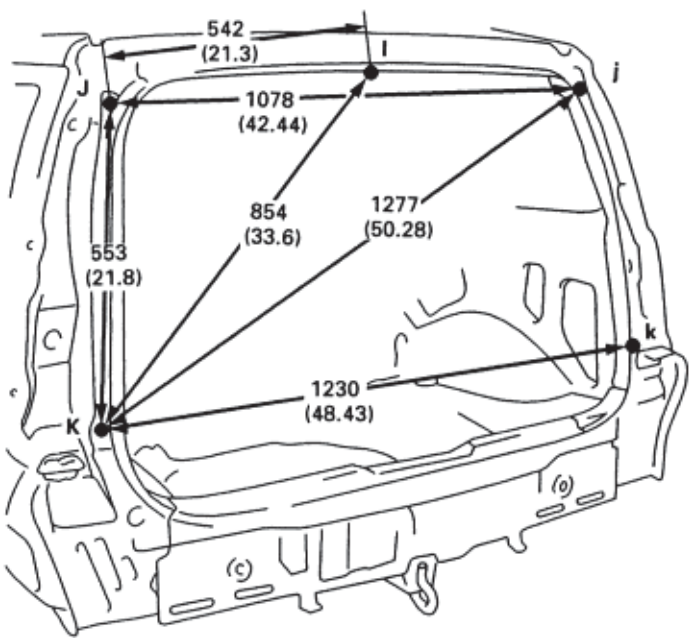




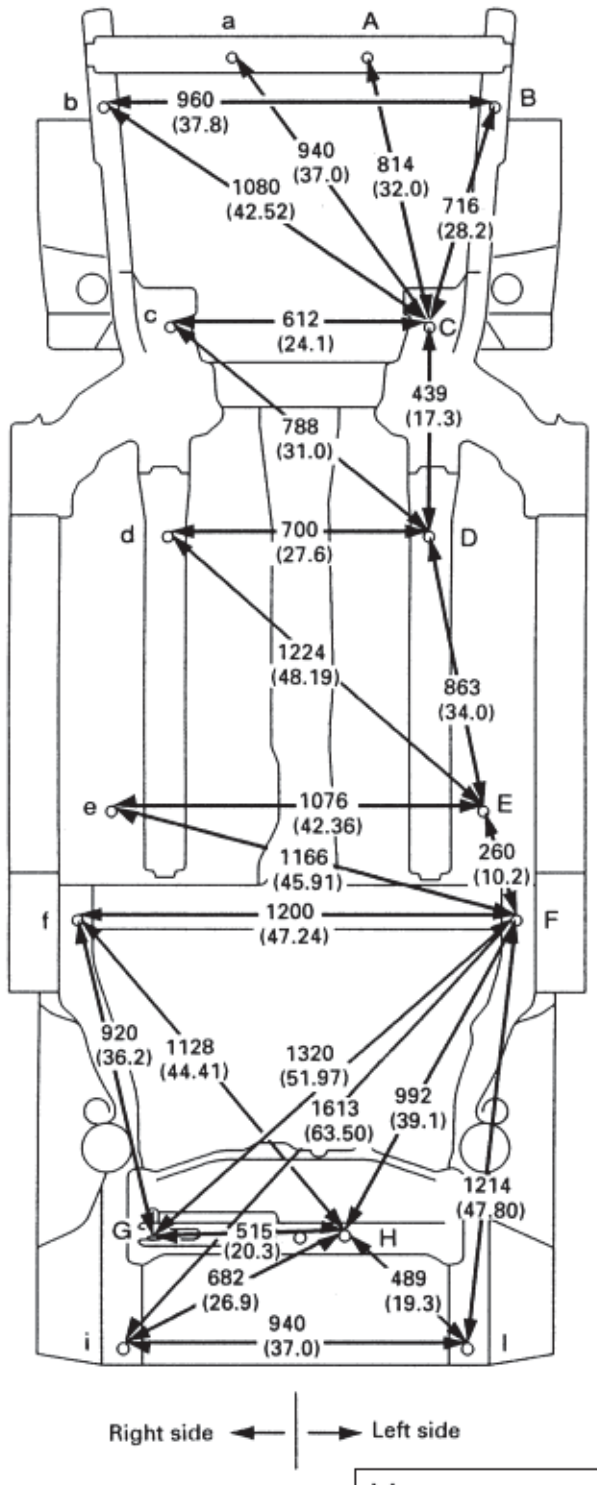
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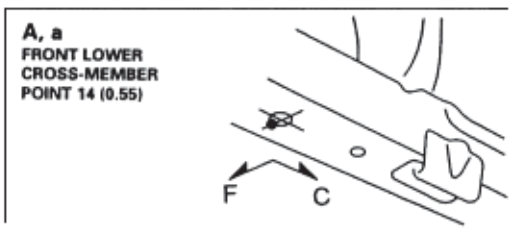


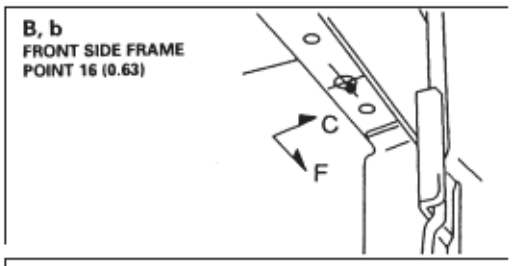


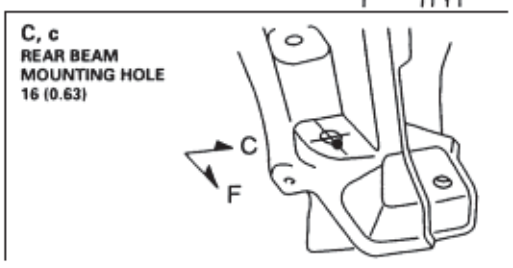


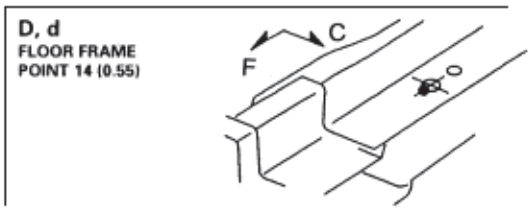
Unit: mm (in.)

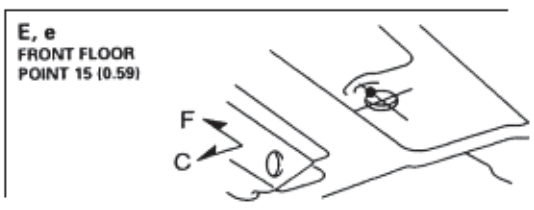

a
A
b
B
960
(37.8)
940
(37.0)
814
(32.0)
1080
(42.52)
716
(28.2)
c
612
(24.1)
C
439
(17.3)
788
(31.0)
d
700
(27.6)
D
1224
(48.19)
863
(34.0)
e
1076
(42.36)
E
1166
(45.91)
260
(10.2)
f
1200
(47.24)
F
920
(36.2)
1128
(44.41)
1320
(51.97)
1613
(63.50)
992
(39.1)
1214
(47.80)
G
515
(20.3)
H
682
(26.9)
489
(19.3)
i
940
(37.0)
I
Right side
Left side

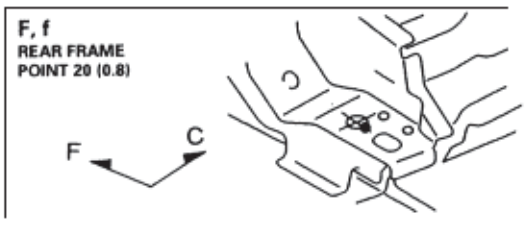

A, a
FRONT LOWER
CROSS-MEMBER
POINT 14 (0.55)
F
C

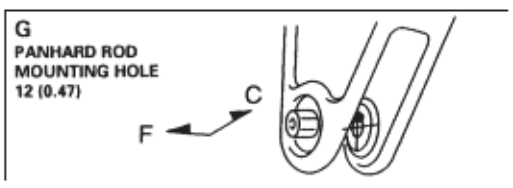

B, b
FRONT SIDE FRAME
POINT 16 (0.63)
C
F

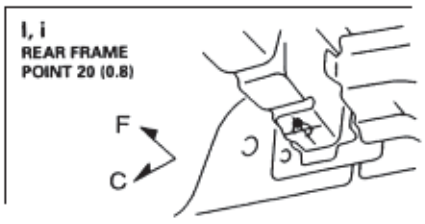

C, c
REAR BEAM
MOUNTING HOLE
16 (0.63)
C
F

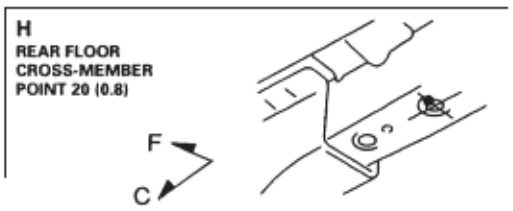

D, d
FLOOR FRAME
POINT 14 (0.55)
C
F


E, e
FRONT FLOOR
POINT 15 (0.59)
F
C


F, f
REAR FRAME
POINT 20 (0.8)
F
C


G
PANHARD ROD
MOUNTING HOLE
12 (0.47)
C
F

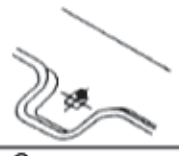

I, i
REAR FRAME
POINT 20 (0.8)
F
C


H
REAR FLOOR
CROSS-MEMBER
POINT 20 (0.8)
F
C

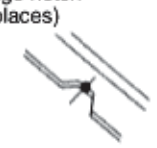
Unit: mm (in.)

<Windshield/Door Opening>

A
Windshield lower
cowl cover mounting hole

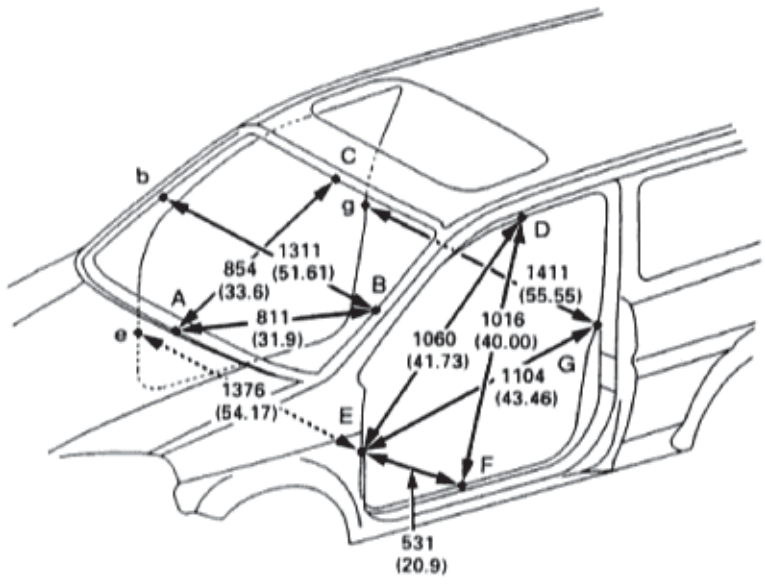


B, b, C
Windshield opening
flange notch
(3 places)



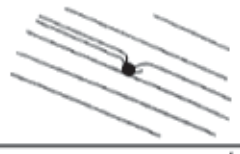
D, E, e, F, G, g
Door opening
flange notch
(8 places)



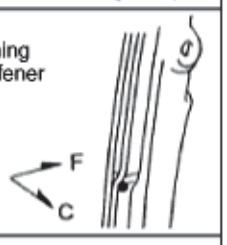


<Tailgate opening>

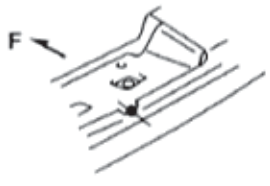
H
Rear roof rail notch

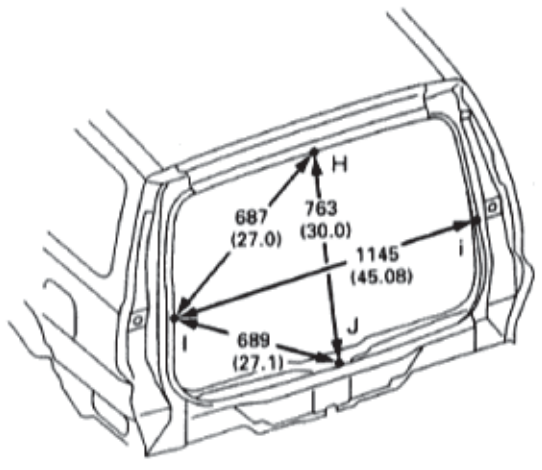


I, i
Tailgate opening
rear pillar stiffener
joggle

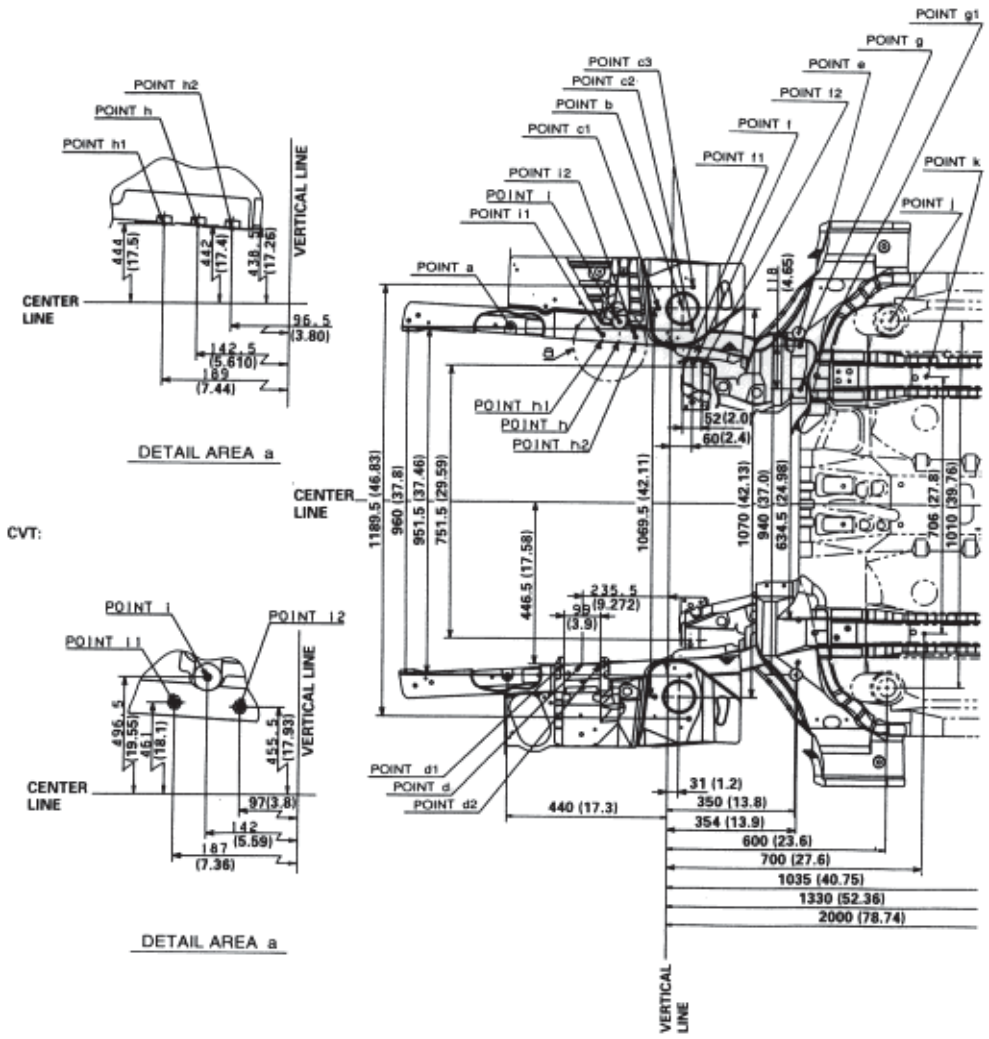


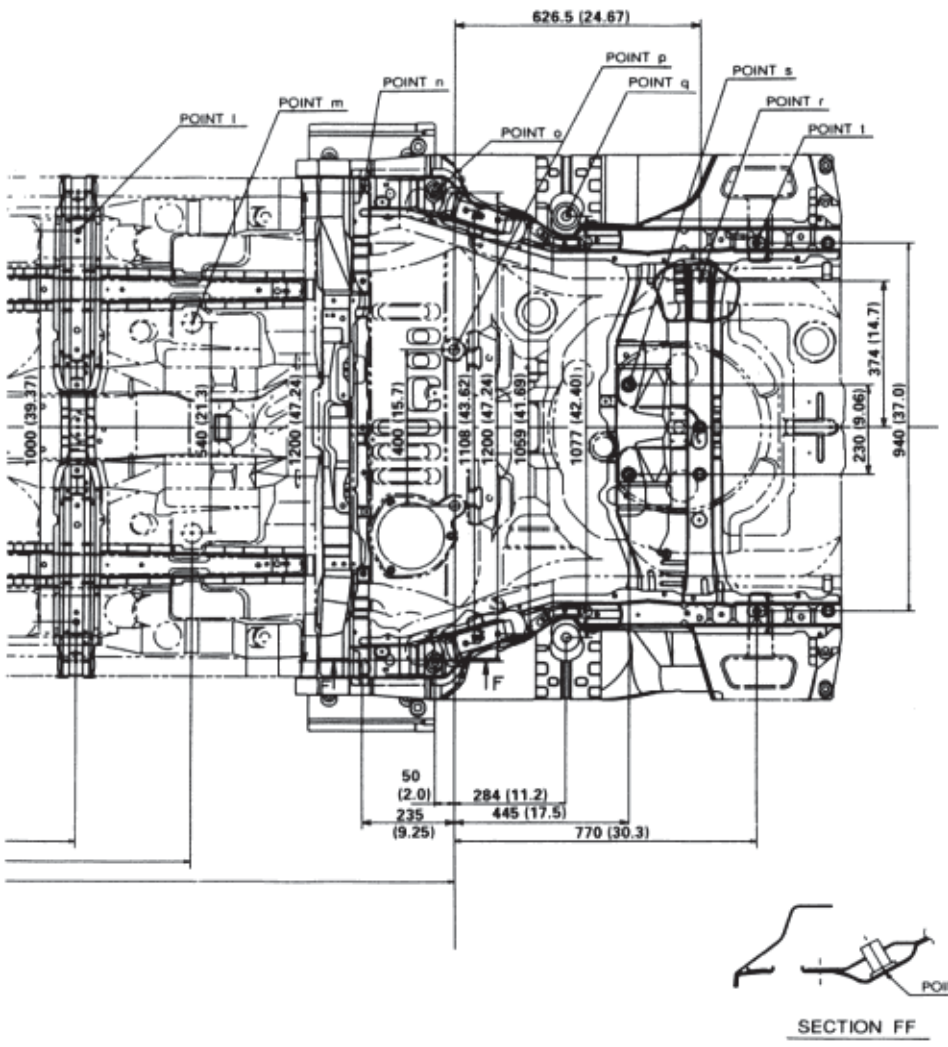
J
Tailgate striker mounting
opening flange notch



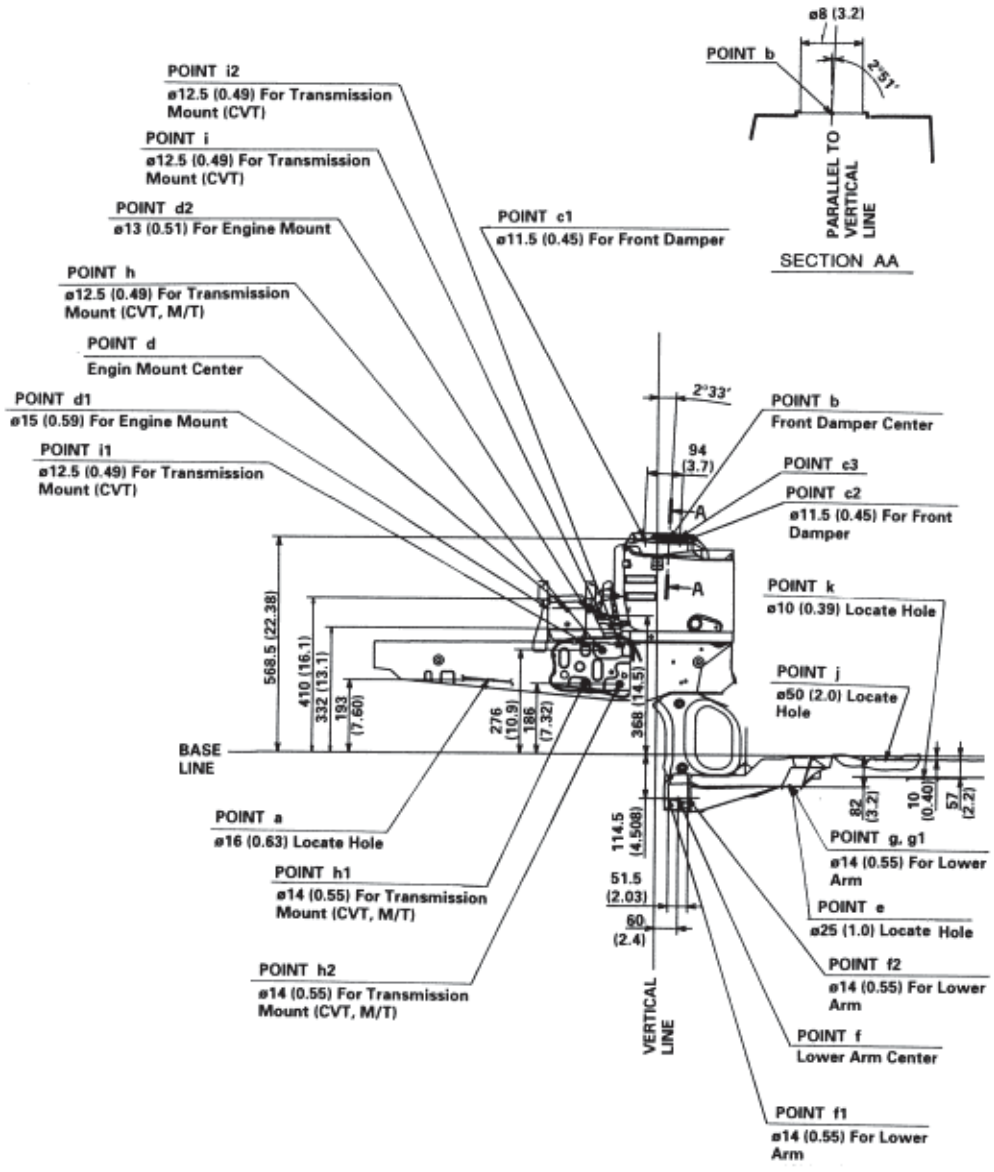


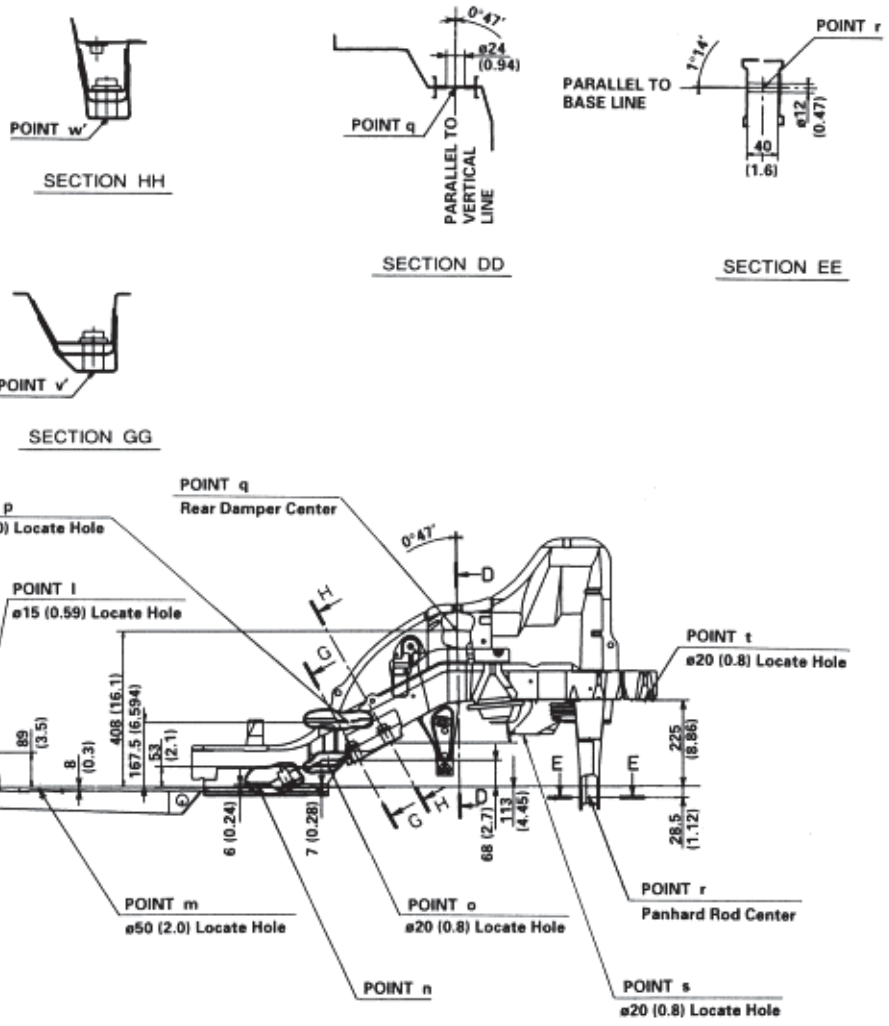
Top View:
Unit: mm (in.)




626.5 (24.67)
POINT l
POINT m
POINT n
POINT o
POINT p
POINT q
POINT s
POINT r
POINT t
1000 (39.37)
540 (21.3)
1200 (47.24)
400 (15.7)
1108 (43.62)
1200 (47.24)
1059 (41.69)
1077 (42.40)
374 (14.7)
230 (9.06)
940 (37.0)
F
50
(2.0)
284 (11.2)
235
(9.25)
445 (17.5)
770 (30.3)
POINT n'
SECTION FF

Side View:
Unit: mm (in.)
Ø: Inner diameter




POINT w'
SECTION HH
0°47'
ø24
(0.94)
POINT q
PARALLEL TO
VERTICAL
LINE
SECTION DD
POINT r
7°14'
PARALLEL TO
BASE LINE
ø12
(0.47)
40
(1.6)
SECTION EE
POINT v'
SECTION GG
POINT p
ø25 (1.0) Locate Hole
POINT q
Rear Damper Center
0°47'
POINT l
ø15 (0.59) Locate Hole
POINT t
ø20 (0.8) Locate Hole
89
(3.5)
8
(0.3)
408 (16.1)
167.5 (6.594)
53
(2.1)
6 (0.24)
7 (0.28)
68 (2.7)
113
(4.45)
225
(8.86)
28.5
(1.12)
POINT m
ø50 (2.0) Locate Hole
POINT n
POINT o
ø20 (0.8) Locate Hole
POINT r
Panhard Rod Center
POINT s
ø20 (0.8) Locate Hole

Corrosion starts immediately after the steel base contacts the atmosphere. The condition is aggravated by sea wind, road salt, rain, snow and industrial fallout. There are many ways to protect vehicles against corrosion. Primer surfaces and paints are applied by electrodeposition or spray to protect the body.

Anti-rust Agents and Spray Guns

Use the following anti-rust agents or equivalents when making a body repair.

⚠ WARNING

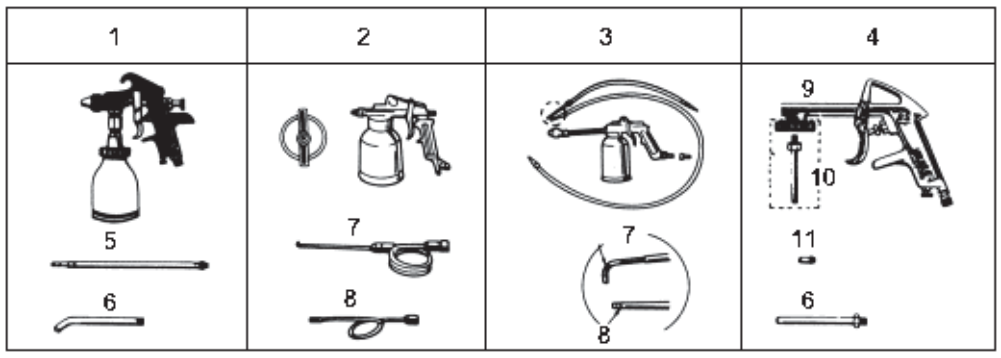
ANTI-RUST agents contain substances that are harmful if you breathe or swallow them, or get them on your skin. Wear overalls, gloves, eye protection and an approved respirator while using such agents.

RUSTOP DEOX #100 WAXOYL or equivalent	To be applied to welded joints inside body panel.
NOX-RUST 409-20S SOLTON 1000S or equivalent	To be applied under floor and wheelhouse.

Spray guns:

Use the correct gun for the agent being used.

- Use of a pressure type spray gun is recommended when work involves a considerable number of vehicles.



1. **FOR RUSTOP**
2. **FOR DEOX#100**
3. **FOR WAXOYL**
4. **FOR NOXRUST 409-20S/SOLTON 1000S**
5. **Flexible nozzle**
6. **Open nozzle**
7. **L-type nozzle**
8. **360° nozzle**
9. **Air gun**
10. **Siphon**
11. **V-type nozzle**

Protectors: Wear gloves, mask and suitable eye protection.

- Use light oil and a rag to clean up spilled anti-rust agents.

Precautions:

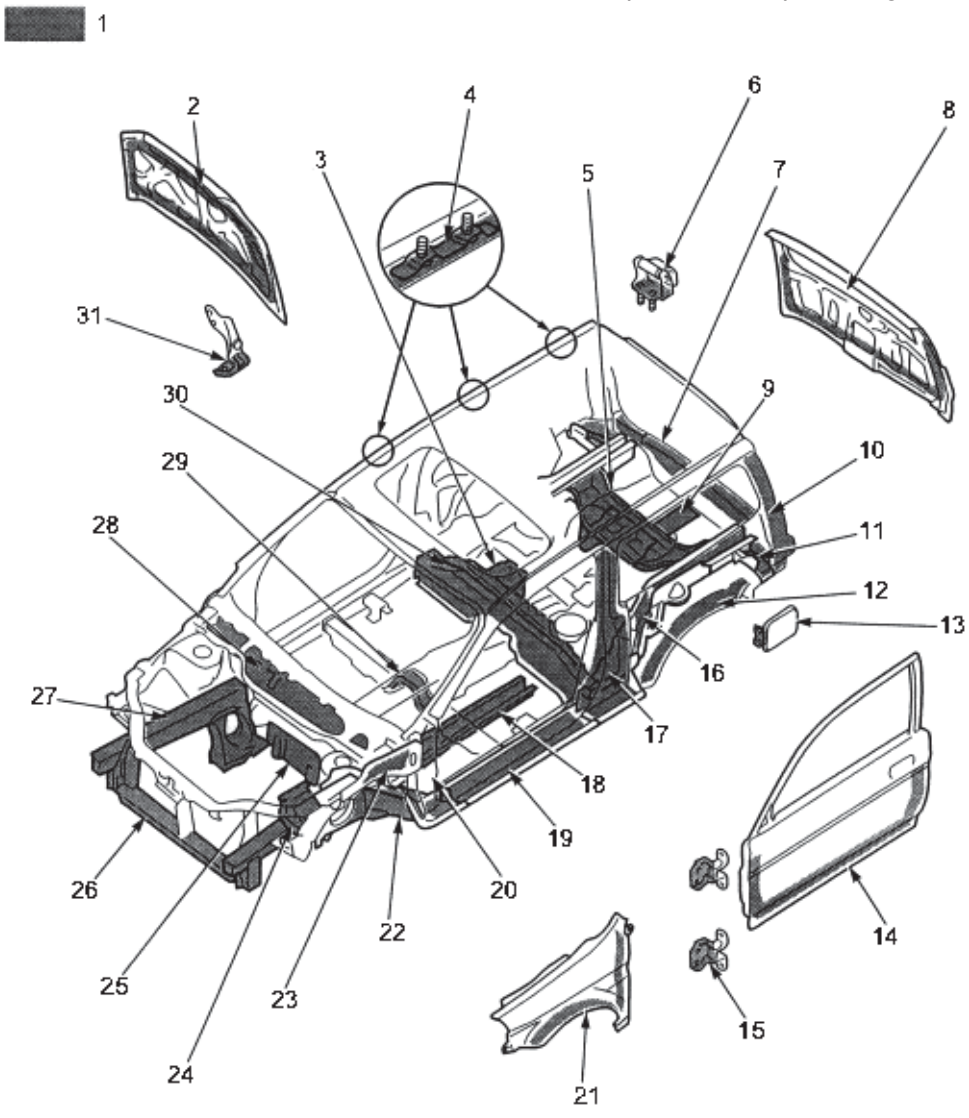
1. Before applying an anti-rust agent, thoroughly clean the areas to be coated with a steam cleaner, etc., and let the areas dry.
   NOTE: Waxoyl may be applied to a wet surface.
2. Spray an anti-rust agent sufficiently until the excess amount oozes out when filling the doors, side sills etc. Wipe away the excess agent with a clean rag dampened with light oil.
3. Do not spray an anti-rust agent on the brake hoses, brake wheel cylinders, brake drums, exhaust muffler and its related parts, emission control devices in the engine department, ball joint covers, plastic fuel strainer, etc. Wipe up any spilled agent at once.
4. Heat an anti-rust agent to room temperature 97.7°F (36.5°C) by submerging the container in hot water when the outside temperature is below 50°F (10°C).
5. Ventilate when spraying an anti-rust agent as it contains a small amount of organic solvent. Keep sparks, flames and cigarettes away.
   Clean the spray gun after spraying with anti-rust agent

⚠ CAUTION

Any remaining agent will harden in the passages of the spray gun, making it unserviceable.

NOTE:
- Apply the designated thickness over surfaces including gaps and edges.
- Avoid spraying agents on the following parts:
  Window glass, lights, grille, exhaust parts, tyres, bumper and lower skirt.
- Wipe off spilled agents at once from rubber and plastic parts.

Anti-rust Agents:
- Use RUSTOP, DEOX # 100, WAXOYL or equivalents for protecting inner surfaces.
- Use NOX-RUST 409-20S, SOLTON 1000S or equivalents for protecting outer surfaces.



1. Indicates anti-rust agents
2. **HOOD FRAME** (Inside)
3. **REAR DIFFERENTIAL MOUNT BRACKET**
4. **ROOF RAIL BRACKET**
5. **REAR FLOOR CROSS-MEMBER** (Inside)
6. **TAILGATE HINGE**
7. **REAR PANEL** (Inside)
8. **TAILGATE FRAME** (Inside)
9. **DOWN STIFFENER** (Inside)
10. **REAR PILLAR GUTTER** (Inside)
11. **REAR FRAME END GUSSET** (Inside)
12. **REAR WHEELHOUSE**
13. **FUEL LID HINGE**
14. **DOOR PANEL** (Inside)
15. **DOOR HINGES**
16. **REAR FRAME** (Inside)
17. **CENTRE PILLAR** (Inside)
18. **FLOOR FRAME** (Inside)
19. **SIDE SILL** (Inside)
20. **FRONT PILLAR** (Inside)
21. **FRONT FENDER** (Inside mounting area)
22. **FRONT SIDE OUTRIGGER** (Inside)
23. **WHEELHOUSE UPPER MEMBER** (Inside)
24. **ENGINE MOUNT BRACKET SUPPORT**
25. **DASHBOARD LOWER CROSS-MEMBER** (Inside)
26. **FRONT LOWER CROSS-MEMBER** (Inside)
27. **FRONT SIDE FRAME** (Inside)
28. **DASHBOARD UPPER** (Inside)
29. **FRONT FLOOR CROSS-MEMBER CENTRE** (Inside)
30. **MIDDLE FLOOR CROSS-MEMBER** (Inside)
31. **HOOD HINGE**

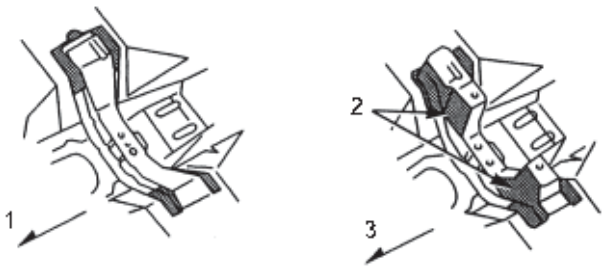
Undercoating Diagram

Toned area on diagram indicates PVC coating areas.

NOTE:

- Coating thickness: 0.5 mm (0.02 in.) min.
- Follow the above instructions for paint repair or refinishing.
- Avoid coating on the front and rear suspensions, and exhaust system mount area.
- Items marked with an asterisk (*) on the important control areas. Coating thickness 1 mm (0.04 in.)

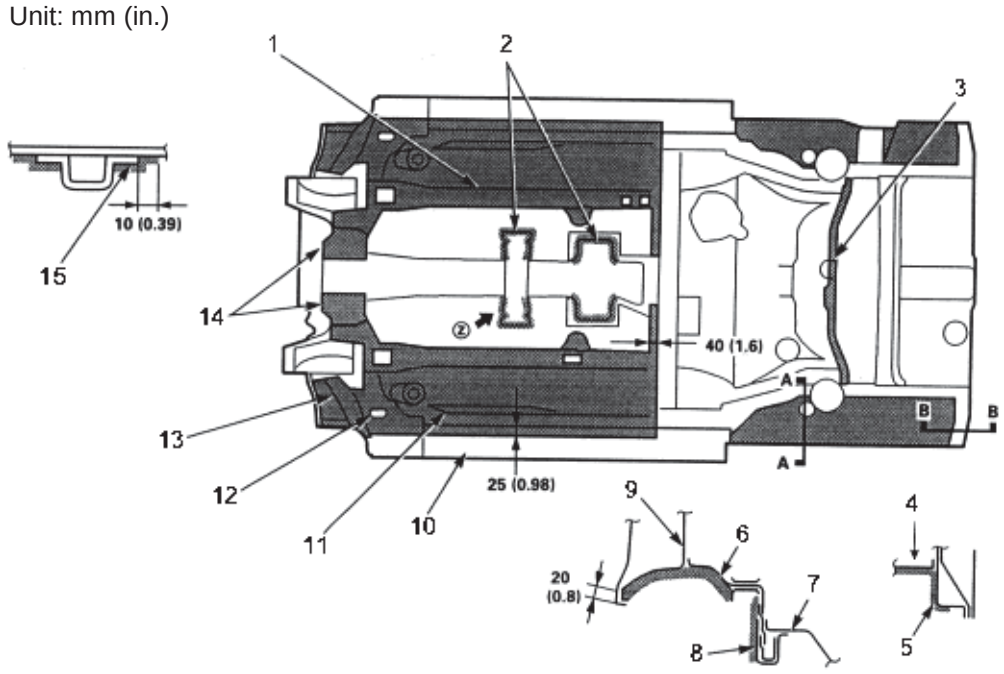
2WD: **4WD**



VIEW Z

1. Forward
2. Front side only
3. Forward

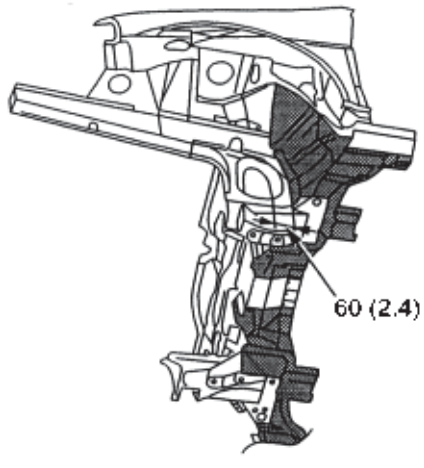
Unit: mm (in.)



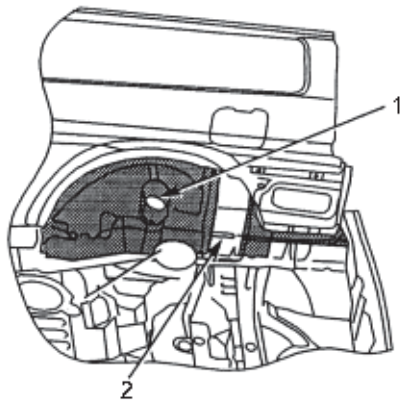
1. **FLOOR FRAME**
2. **Coat the flanges of the floor cross-member and parking brake stiffener**
3. **REAR FLOOR CROSS-MEMBER**
4. **REAR FLOOR**
5. **REAR FLOOR GUSSET**
6. **REAR DAMPER BASE**
7. **REAR FLOOR**
8. **REAR FRAME B**
9. **INNER PANEL**
10. **INSIDE SILL**
11. **FRONT FLOOR**
12. **Do not fill up the hole for the tie down hook**
13. **FRONT SIDE OUTRIGGER**
14. **DASHBOARD LOWER**
15. **Welded frame**

SECTION AA **SECTION BB**

Front Wheelhouse



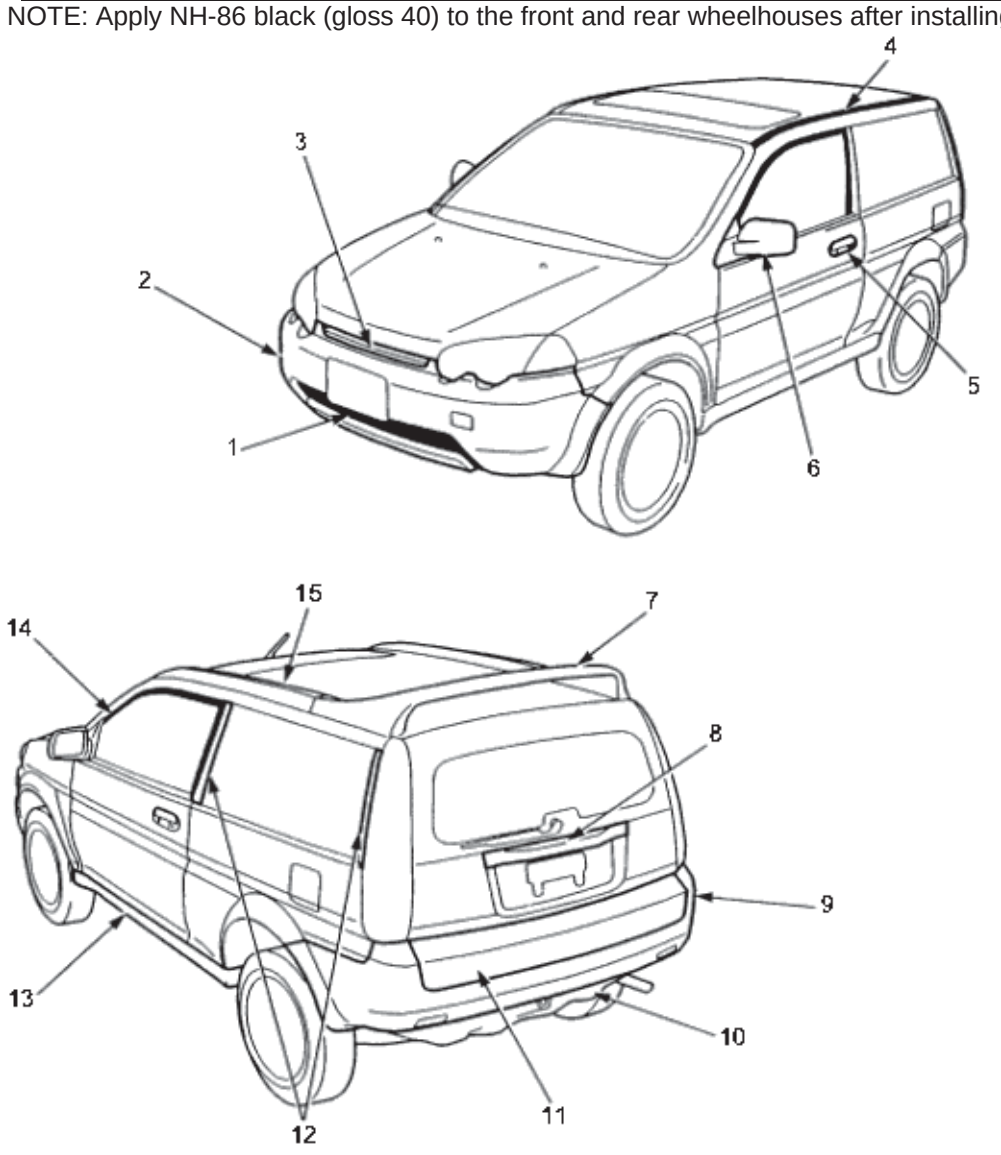
Rear Wheelhouse



1. **Do not coat the rear damper mounting area.**
2. **Do not coat the fuel pipe mounting area (left side).**

Body Colour Code Name	Type
New Vogue Silver Metallic, NH-583M Starlight Black Pearl, NH-592P Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P	KG
New Vogue Silver Metallic, NH-583M Starlight Black Pearl, NH-592P Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P	KE
Taffeta White, NH-578 New Vogue Silver Metallic, NH-583M Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P	KY
Taffeta White, NH-578 New Vogue Silver Metallic, NH-583M Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P	KN
Taffeta White, NH-578 New Vogue Silver Metallic, NH-583M Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P	KT
Taffeta White, NH-578 New Vogue Silver Metallic, NH-583M Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P Burning Red Pearl, R-505P	KQ
New Vogue Silver Metallic, NH-583M Sunburst Yellow Metallic, Y-57M Clover Green Pearl, G-95P Super Sonic Blue Pearl, R-90P Burning Red Pearl, R-505P Adriatic Blue Pearl, B-74P	KU

NOTE: Apply NH-86 black (gloss 40) to the front and rear wheelhouses after installing equipment (except vehicle painted with NH592P, G-95P, B-90P and B-74P).



1. **GRILLE**
   BP - Dark Grey, NH_533
2. **FRONT BUMPER**
   Body colour
3. **FRONT GRILLE**
   BP-Dark Grey, NH-533
4. **ROOF MOLDING**
   Black NH-72 (Gloss 30)
5. **DOOR OUTER HANDLE**
   Body colour
6. **DOOR MIRROR**
   Body colour
7. **ROOF SPOILER**
   Body colour (for some models)
8. **REAR LICENSE TRIM**
   Body colour
9. **REAR BUMPER**
   Body colour
10. **REAR UNDER COVER**
    BP. Medium dark grey NH-590
11. **TAILGATE LOWER TRIM**
    Body colour
12. **QUARTER GLASS MOLDING**
    Black NH-72 (Glass 30)
13. **SIDE SILL PANEL**
    BP. Medium dark grey NH-590
    Body colour (for some models)
14. **DOOR SASH**
    Black NH-86 (Gloss 40)
    Apply the door channel tape (refer to the HR-V Shop Manual)
15. **ROOF SIDE TRIM**
    Body colour (for some models)

The 3-coat-3-bake (3C-3B) paint finishes give the HR-V a deep gloss and stunning finish. This manual provides information on paint defect, repair and refinishing. Throughout, the objective is to explain in a simple yet comprehensive manner the basic items you should know about paint repairs. Select the correct material for the defect and repaint or refinish in the correct manner as described in this manual.

⚠ WARNING

- Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.
- Cover spilled paint with sand, or wipe it up at once.
- Wear an approved respirator, gloves, eye protection, and appropriate clothing when painting. Avoid contact with skin.
- If paint gets in your mouth or on your skin, rinse and wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

Basic Rules for Repairing a Paint Finish

To repair paint damage, always use the 2-part acrylic urethane paints designated; polish and bake each of the three coats, as in production to maintain the original film thickness, and so assure the same quality as the original finish.

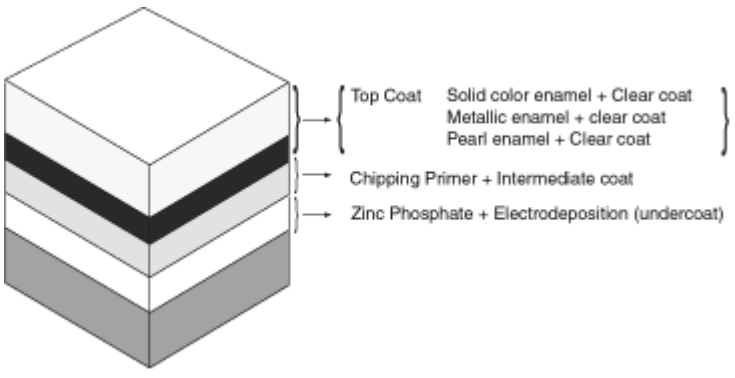
Outline of Factory Painting Process:



Features in Each Work Process

1. **Pretreatment and Electrodeposition**
   In the pretreatment process, the entire body is degreased, cleaned and coated with zinc phosphate by dipping.
   After the body has been cleaned with pure water, it is placed in an electrolytic bath of soluble primer (Cationic Electrodeposition). This produces a thorough corrosion inhibiting coating on the inner surface and corners of the body, pillars, sills and panel joints. Chipping primer is then applied to the most susceptible areas (**see page** 8-11).
2. **Intermediate coat**
   The intermediate coat is applied to the prepared surface for further protection against damage.
3. **Top coat**
   Enamel paint and either polyester or acrylic resin paint are used in the top coat for higher solidity, smoothness, brightness and weather resistance.

Sectional View of Paint Coats:



Paint Refinishing

Paint damage can appear in any form. Before making a repair, check the damaged area carefully, and determine the procedure best suited to the type. The following relates to paint refinishing methods for various types of paint damage or defects.

Defects and Refinishing Processes

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

A. Damage or defects that have gone through to the metal surface.

Rusting or deformation:

1. Featheredge the damaged area.
2. Prepare the metal surface.
3. Apply a chemical coating to the metal surface. Metal conditioner, precoat, A.C.P treatment.
4. Apply an undercoat (primer surfacer).
5. Apply an intermediate coat (colour matched to top enamel paint).
6. Apply a top coat (body colour paint).
   Solid colour: Enamel top coat paint.
   Metallic colour: Metallic enamel paint + Clear top coat.
   Pearl colour: Pearl enamel paint + Clear top coat.

B. Damage or defects up to undercoat or intermediate coat.

For external damage or blisters, perform steps 4 through 6 under item A.

For external damage only perform steps 5 through 6 under item A.

C. Damage or defects that have not gone through to the intermediate coats (only in top coat)

Shallow scratches or score marks:

(1) If damage has gone through to the metallic paint, spray metallic enamel, then apply top coat wet on wet.

(2) If damage has not reached the metallic color paint and remained in the clear top coat, polish the damaged surface or spray the top clear coat only.

NOTE: Try to repair by polishing as much as possible if the damage has not reached the metallic color paint.

D. Replacement of Parts

Welded parts

Rear side outer panel, etc.

(1) Perform step 1 through 6 if the damaged area is covered with filler or welded with reinforcement plate.

(2) Perform steps 5 and 6 for undercoats except those on joints (intermediate coat for replacement parts).

(3) On inner panels, apply paint where the undercoat is burned by welding heat. Follow this with a rust preventative treatment (see section 7).

Single parts

- Painting the outer and inner hood, door, trunk, lid etc. Perform steps 5 and 6 under item A.
- Painting the inside of the front fender. Only enamel top coat paint may be used on solid color enamel, metallic enamel or pearl enamel.
- After spraying enamel paint, perform rust preventative treatment (apply inner or outer rust preventative agent).

NOTE: (▭ : Indicates steps which may be required depending on the degree of damage)

Refinishing Processing \ Damage	To metal surface	To under/ intermediate coats	To top coat	Replacement Parts	
				Welded part	Single part
1. Feather edging (polishing damaged surface)					
2. Preparation of metal surface					
3. Air blowing/Degreasing					
4. Treatment of metal surface					
5. Filling/Drying/Polishing					
6. Air blowing/Degreasing					
7. Masking (part)					
8. Undercoating/Drying					
9. Polishing undercoat					
10. Air blowing/Degreasing					
11. Masking					
12. Spraying intermediate coat/Drying					
13. Polishing intermediate coat/Top coat					
14. Air blowing/Degreasing					
15. Masking					
16. Spraying top coat/Drying					
17. Polishing/Buffing					

1. Featheredging (polishing damaged areas)

Damage to metal surface

- Sand the damaged area flat and smooth with a double action sander and #60 or #80 disc paper.
- Sand the boundary between the metal surface and undercoat with a double action sander and #180 or #280 disc paper. Try to sand a larger area than the damage.

NOTE:

- Make sure there is no height difference between the metal surface and undercoat.
- If double action sander is not available, use a rubber block and wrap sandpaper around it to sand the surface.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

Damage to Undercoat
Intermediate coat
Top coat
Paint coat on replacement parts

Sand the damaged surface flat and smooth with a double action sander and #280 or #320 paper.

NOTE:

- If double action sander is not available, use a rubber pad and wet or dry sand the surface with #280, #320, #400 or #600 sandpaper.
- After sanding, check that the surface is flat and smooth.
- Perform the operations detailed in "damage to metal surface" above for areas where parts are welded to the body.

2. Preparation of metal surface

Remove all corrosion from the damaged area using #180 or #280 paper.

3. Air Blowing/Degreasing

- Air blow the sanded area, then degrease with a wax and grease remover.
- Use the following materials:
  - 38125 Enamel Reducer (Dupont)
  - Spies Hecker Silicon Remover (Hoechst)
  - Standox Silicon Remover (Herberts)

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

4. Treatment of metal surface

- Brush or spray a solution of chrome phosphate or washer primer on the exposed metal surface.
- Use the following materials to treat the metal surface:
  - 2145 Kwik-Prep TM (Dupont)
  - 6155/6165 Vari Prim Self Etching Primer TM (Dupont)
  - Spies Hecker Priomat 1:1 Wash Primer 3688 (Hoechst)
  - Standox Etching Adhesion Primer (Herberts)

NOTE:

- Follow the manufacturer's instructions.
- Treat the metal surface, as much as possible, to provide a better bonding surface for the subsequent paint.

5. Application of Filler, Drying and Sanding

- Small cracks or pinholes in the sheet metal should be repaired with a filler and sanded flat and smooth.

NOTE:

- Mix the putty with the hardener in the correct ratio.
- Follow the filler manufacturer's instructions.

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

- Allow the filler to air dry for about 5-6 minutes, then force dry with an infra-red lamp.

NOTE: Keep the lamp 40-50 cm (16-20 in) from the filler when drying.

- Stop drying the filler if a white mark appears when the surface is scratched with your nail. Wet or dry sand the surface flat and smooth with a #280 or #320 sandpaper.

6. Air Blowing/Degreasing

- Blow the surface to be repaired with compressed air, then degrease with a wax and grease remover.
- Use the following materials:
  - 38125 Enamel Reducer (Dupont).
  - Spies Hecker Silicon Remover (Hoechst).
  - Standox Silicon Remover (Herberts).

NOTE: Also clean and degrease surfaces where masking tape will be attached.

7. Masking

Mask the areas surrounding the damage to prevent overspray from the primer.

8. Application and Drying of Primer/Drying

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Spray the primer over the filler and surface (use epoxy or urethane 2-part primer).
  Spray: 2-3 coats.
- Use the following materials:
  - 615S Primer Surfacer (Dupont).
  - Primer Surfacer EP (Akzo).
  - NPS735 Urethane Primer Surfacer (R-M).
  - Spies Hecker Permacron HS Surfacer (Hoechst).
  - Standox 2K HS Filler (Herberts).
- Let the primer air dry for 5-10 minutes, then force dry with a infra-red lamp.

NOTE: Keep the lamp 40-50 cm (16-20 in) from the surfaces.

9. Application of Polishing Undercoat

- Remove the masking paper and tape.
- Check that the undercoat has dried thoroughly, then dry or wet sand the surface with #280 or #320 sandpaper.

NOTE:

- Use a rubber block and sand flat and smooth.
- Sand the entire surface to be refinished.

10. Air Blowing/Degreasing

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- Blow all the surfaces with compressed air then degrease with a wax and grease remover.
- Use the following materials:
  - 38125 Enamel Reducer (Dupont).
  - Spies Hecker Silicon Remover (Hoechst).
  - Standox Silicon Remover (Herberts).

NOTE: Also clean and degrease surfaces where masking tape will be attached.

11. Masking

Mask the undamaged areas surrounding the damage to prevent overspray from primer surfacer (undercoat).
NOTE: Use masking tape and paper to mask the body. A vinyl cover may also be used to effectively mask the body.

12. Application of Intermediate Coat (same colour as enamel) top coat spraying/drying

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Use the same colour paint as the top coat. Spray it over the surface until the undercoat (primer surfacer) is fully covered.
- Spray the paint slightly thicker than normal to allow for loss during subsequent polishing
  - Super ponacle II (R-M).
  - Super Centri (Dupont).
  - Auto cryl (Akzo).
  - Spies Hecker Permacron 2K Acrylic Top Coat (Hoechst).
  - Standox Standocryl 2K (Herberts).

13. Polishing of Intermediate Coat

- Check that the paint coat has dried thoroughly, then dry or wet sand the surface with #600 and #800 sandpaper.

NOTE: Use a rubber block to sand flat and smooth, being careful not to expose the undercoat.

Polishing the Top Coat (if damaged)

Use the same technique described above.

14. Air Blowing/Degreasing

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- Blow the entire surface with compressed air then degrease with a wax and grease remover.
- Use the following materials:
  - 38125 Enamel Reducer (Dupont).
  - Spies Hecker Silicon Remover (Hoechst).
  - Standox Silicon Remover (Herberts).
- For shading or spot painting, polish the area with a polishing compound. Sand with a #2000 paper to give a better bonding surface for the subsequent paint.

15. Masking

- Remove all existing masking paper, then mask with new paper.
- Use a heat resistant type masking tape (SCOTCH TAPE) where tape is attached directly to the body.
- Use brown paper or masking roll paper to cover.

NOTE:

- Mask the area surrounding the damage sufficiently to prevent overspray. It is also good practice to use a vinyl cover to protect other areas.
- Protect resin parts with aluminium foil under the brown paper or masking paper to prevent damage due to heat during baking.

16. Application of Top Coat Spraying/Drying

- Prior to putting the vehicle in the painting booth, thoroughly clean the interior and spray water over the floor. Be careful about blowing dust and dirt.

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- Blow with compressed air and degrease the surface before spraying the paint. Also clean the surface with a tack cloth.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Spray colour matched top coat over the prepared surface. Apply 2-3 coats in two directions until the intermediate coat is fully covered.

NOTE: For application of the top coat, refer to step 12 "Application of Intermediate Coat".
Solid colour: Colour enamel + Colour clear coat
Metallic colour: Metallic enamel + Clear coat
Pearl colour: Pearl enamel + Clear coat

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

- After spraying, allow the paint to settle for about 10 minutes, then force dry with an infra-red lamp.

NOTE: Follow the paint manufacturer's instructions.

17. Polishing/Buffing

- Let the paint dry gradually, then polish the surface carefully using a polishing compound and sponge buff.
- To remove lint or dirt, wet sand the surface with #2000 sand paper or finer first, then polish with compound.

NOTE: Polish all roughness caused by sanding thoroughly. To do this, first polish with very fine compound, then with ultra fine compound.

- After polishing, remove the masking paper and tape, then wash the entire vehicle thoroughly.

Body Paint Repair - Soft Chipping Guard Primer Coat

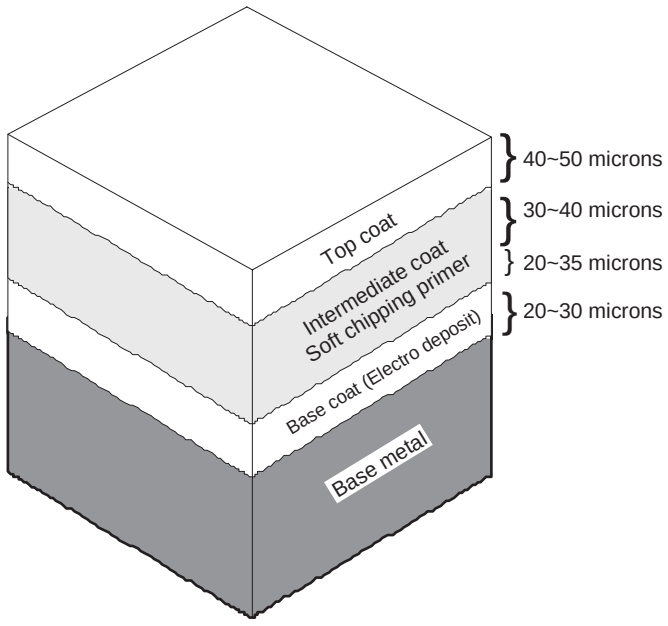
8-10

General

The removal of paint and undercoating by stones and gravel immediately exposes metal to the atmosphere, causing it to rust. The thickness of this rust increases if the process continues unchecked. The soft chipping guard primer protects against damage due to the impact of flying objects. The purpose of this guide is to provide information you will find useful when repairing damage to the protective coating. Refer to the Soft Chipping Primer Undercoating Diagram.

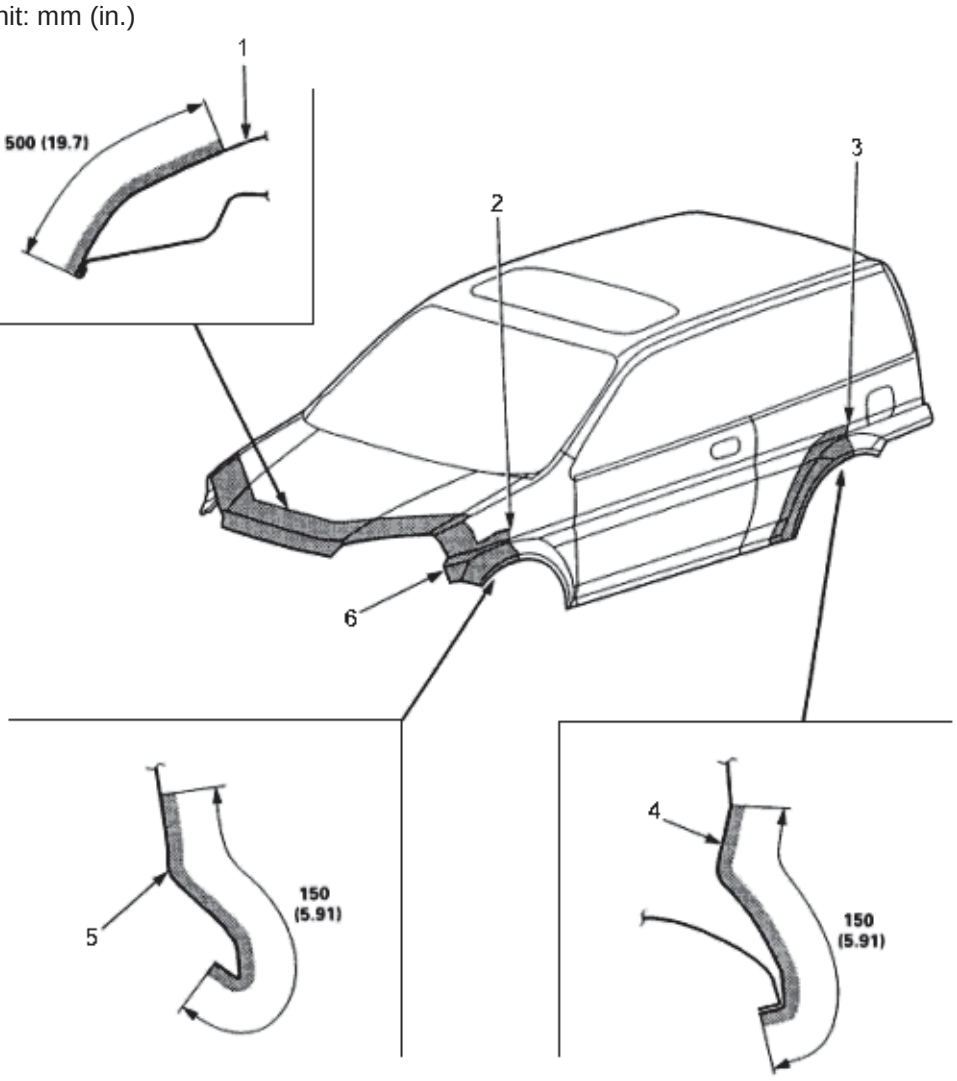
Type	Composition	Physical properties		Drying times
Polyester resin	Polyester Resin - 100%	Colour	Grey	
	Pigment - 100%	Viscosity	26 sec/68°F (20°C)	
	Additive - 100%		(at painting)	
	Solvent - 100%	Non volatile	40 - 45%	302 - 320°F
			(At painting)	(150 - 160°C) x 30 minutes

The soft chipping guard primer is applied over the E.D. (Electrostatically Deposited) primer. It is followed by guide coating and top coating.
The soft chipping guard primer produces a smooth surface when dry. It should be sprayed so the thickness of the protective film is 20 microns.



Coating Diagram

The diagram shows the areas to which soft chipping primer is to be applied.
NOTE: Make sure to coat the flange on front and rear wheel arches.
Unit: mm (in.)



1. **HOOD**
2. **FRONT WHEEL ARCH CENTRE**
3. **REAR WHEEL ARCH CENTRE**
4. **OUTER PANEL**
5. **FRONT FENDER**
6. **FRONT FENDER**

Body Paint Repair - Soft Chipping Guard Primer Coat

Types of Soft Chipping Guard Primer (Reference)

Type	Application	Composition	Physical property	Drying time
Dual liquid synthetic resin	Room temperature Baked at 176°F (80°C) for 40 minutes	Pigment 12% Calcic pigment: 37% Epoxy poliole resin: 15% Additive, Solvent: 36% 100%	Colour: Grey Viscosity: 68°F (120°C) Non volatile: 65% mini. Specific gravity: 68°F (20°C), 1:378	Room temperature: 68°F (20°C), 3 days Baked: 176°F (80°C), 40 minutes (to harden thoroughly)
Dual liquid Acrylic resin Urethane resin	Room temperature Baked at 176°F (80°C) for 30 minutes	Pigment: 40% Acrylic resin: 37% Additive, Solvent: 23% 100%	Colour: Grey Viscosity: 68°F (120°C) 4 - 6 Poiseuille Non volatile: 65% mini. Specific gravity: 68°F (20°C), 1.35	Room temperature: 68°F (20°C), a day Baked: 176°F (80°C), 30 minutes (to harden thoroughly)

Repair Materials and Tools

Gun and brushes:
- Spray gun
  NOTE: Any gun having a tip of more than 1.0 mm (0.04 in.) in diameter may be used for spraying the primer.
- Viscosity measure
  Iwata-type (IHS) cup, Ford cup
- Beaker
  1-2 l (1.05-2, 10 US. qt, 0.9-2 Imp. qt) in capacity
- Stirring stick

Tools:
- Air or double action sander
- Sandpaper (#240-#400)

Materials
- Use primers equivalent to the ones shown in Types of Chipping Guard Primer (Reference).
- Make sure to keep the thickness of the coat at 20 microns.

Masking:
- Masking tape, paper, vinyl sheet and plate (veneer and steel).
- Masking plates are not necessary when spraying in a booth.

Protectors:
- Wear an approved respirator or dust mask, gloves, safety goggles and other protective clothing.
- Rags.

Thinner and cleaner:
- Use the thinner specified for the primer.
- Any commercially available lacquer thinner may be used to clean the gun.

⚠ WARNING

- Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Spray paint only in a well ventilated area.
- Cover spilled paint with sand, or wipe it up at once.
- Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.
- If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames or cigarettes.

NOTE: This section covers the application of the soft chipping primer to the replacement part.

1. Sanding the replacement part

⚠ WARNING

Wear goggles or safety glasses to prevent eye injury.

Sand the area to be painted with #240-#400 sandpaper.
NOTE:
- Do not oversand the edges or corners of the part.
- Do not expose bare metal.

2. Air blowing/degreasing

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

Clean the surface with compressed air and wax and grease remover.

3. Masking
- Place masking tape or paper around the surface to be painted.
- Cover as wide an area as possible with tape or paper to keep primer from spreading.

4. Spraying chipping guard primer.
- Stir the primer thoroughly.
- Put the primer in a beaker and weigh the needed amount of primer to be used.
- Mix the hardener into the primer, following the manufacturer's instructions.

NOTE: Measure the primer and hardener so they are in correct ratio.

Item	Primer		Hardener
* High Primer Surfacer 2C	10	:	1
* Auto Primer Surfacer Mighty	5	:	1

- Add the specified thinner to the mixture of hardener and primer to attain the proper viscosity for spraying
  2C 68°F (20°C) 18 sec ± 1
- These substances are not available with Dupont's 123 Vinyl Coating or Sherwin-William's Vinyl Gravel Guard. Follow the manufacturer's instructions for application.
- Use the following materials:
  - Spies Hecker Permacron 4:1 Surfacer 4:1 (Hoechst)
  - Standox 2K 4:1 Special Filter (Herberts).
- Once mixed with the hardener and thinner, the primer must be used within the times shown below.

Temperature	41°F (5°C)	50°F (10°C)	68°F (20°C)
High Primer Surfacer 2C Time	30H	24H	8H
Auto Primer Surfacer Mighty	4H	3.5H	3H

⚠ WARNING

- Most paints contain substances that are harmful if inhaled or swallowed. Read the paint label before opening the container. Spray paint only in a well ventilated area.
- Cover spilled paint with sand, or wipe it up at once.
- Wear an approved respirator, gloves, eye protection and appropriate clothing when painting. Avoid contact with skin.
- If paint gets in your mouth or on your skin, rinse or wash thoroughly with water. If paint gets in your eyes, flush with water and get prompt medical attention.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames, or cigarettes.

- Fill the gun's paint cup with the primer. Use a strainer when pouring the primer into the cup.
- Primer should never be applied to a dirty or greasy surface. Before spraying, blow dust and dirt off the surface and clean with wax and grease remover.

(Method of spraying)

- Do not try to cover the surface with one heavy coat. Apply several thin coats.

NOTE:

- Spray coat 4 - 5 coats to get 20 microns of thickness, as one coat deposits 5 - 7 microns.
- Spray the primer at 250 - 300 kPa (2.5 - 3.0 kgf/cm2, 35.6 - 42.7 psi) pressure. Spraying with improper air pressure will cause imperfections.
- Open the gun 3 - 4 turns.
- Wipe up unwanted primer immediately with thinner.

5. Cleaning spray gun

- After spraying, be sure to clean the spray gun thoroughly with thinner or solvent.
- The gun will be permanently clogged if the primer is allowed to dry.

6. Drying

- After spraying the chipping guard primer, air-dry for 7 - 1- minutes to evaporate the thinner in the primer. Then dry it with infrared lamps at 176°F (80°C) for 30 - 40 minutes.

NOTE: Insufficient baking may cause pinholes if the primer coat is too thick.

- The temperature lamps and drying time recommendations should be followed closely.

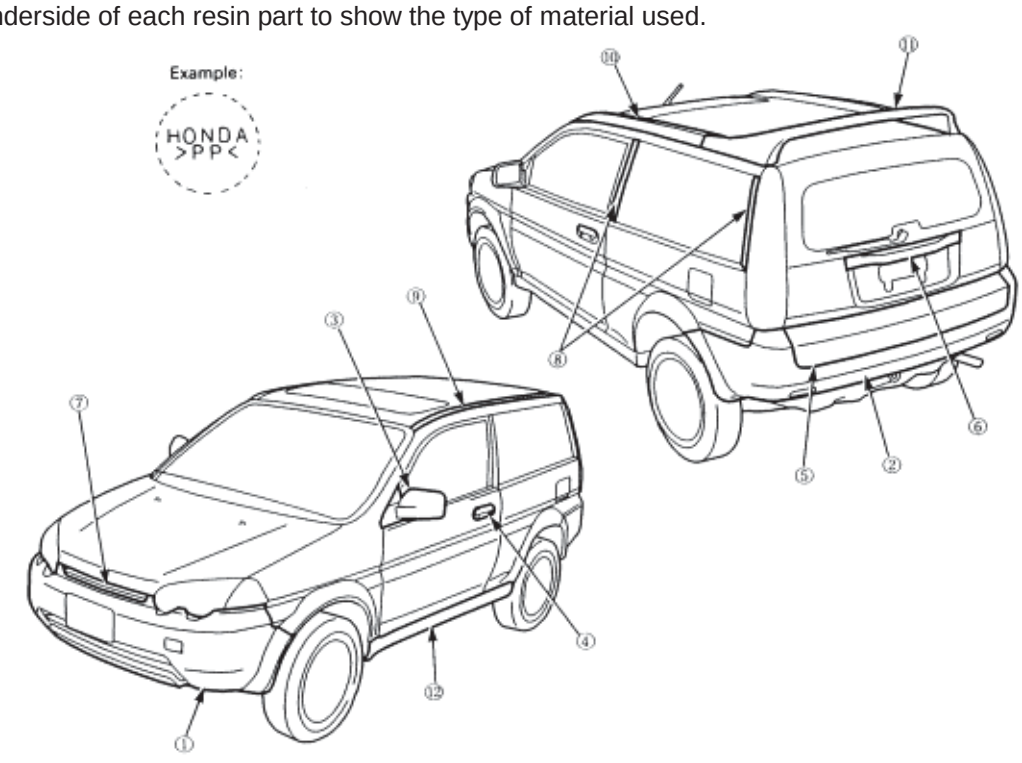
Temperature		41°F (5°C)	68°F (20°C)	86°F (30°C)	140°F (60°C)	176°F (80°C)
Time	Before	8 - 13H	3.5 - 5H	2 - 3H	30 Min.	20 Min.
	sanding	6 - 10H	4 - 5H	2 - 4H	15 - 20 Min.	10 - 15 Min.
Minimum	Before	8H	4H	3H	30 Min	20 Min.
time	Painting	10 - 18H	6 - 8H	4 - 8H	20 - 40 Min.	15 - 30 Min.

NOTE: The upper line of time shows specifications for High Primer Surfacer 2C, and the lower line Auto Primer Surfacer Mighty.

7. Intermediate and Top coating.

- Sand the chipping guard primer film with #280 - #400 sandpaper.
- Follow the intermediate/top coating Procedures (**see page** 8-8).

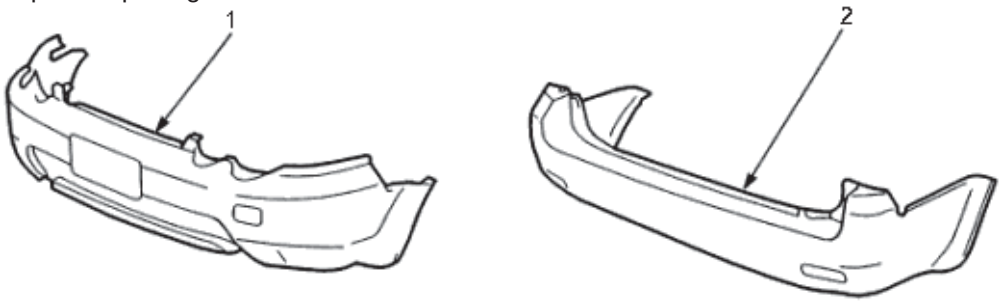
NOTE: A standard symbol is stamped on the underside of each resin part to show the type of material used.



No	Part Name		Material
1	Front Bumper		Polypropylene (PP)
2	Rear Bumper		Polypropylene (PP)
3	Door Mirror Housing	Body colour	Acrylonitrile/Butadiene/Styrene (ABS)
	Door Mirror Housing	Black	Acrylonitrile/Styrene/Acrylite (ASA)
4	Outer Door Handle		Poly carbonate plastics (PC)
5	Tailgate Lower Trim		Polypropylene (PP)
6	Rear License Trim		Acrylonitrile/Butadiene/Styrene (ABS)
7	Front Grille		Polypropylene (PP)
8	Quarter Glass Molding		Acrylonitrile/Ethylene/Styrene (AES)
9	Roof Molding		Poly vinyl chloride (PVC)
10	Roof Side Trim		Acrylonitrile/Butadiene/Styrene (ABS)
11	Roof Spoiler		Polyester unsaturated thermostat (UP - G + K)
12	Side Sill Panel		Polypropylene (PP)

- No. 1, 2, 5, 7, 12 : Repair procedures (**see page** 9-3).
- No. 3, 4, 6, 8, 10 : Repair procedures (**see page** 9-12).
- No. 11 : Repair procedures (**see page** 9-15).

The front bumper, rear bumper, and side sill panel are made of polypropylene (PP) resin. They can be repaired if the damage or deformation is minor in nature. This section covers PP repair. Repairing PP is different from other resins such as ABS and urethane.



1. **FRONT BUMPER**
2. **REAR BUMPER**

Repair Materials and Tools
The following materials and tools are required to resin bumpers

Adhesive and Filler (examples):
- Bumper primer (clear type)
- Bond quick mender
- High art mat black
- High art thinner
- High art hardener

Primer surfacer (examples):
- Dual-liquid type bumper primer surfacer (grey) Reference (Isam Paint)
- Pigment: (1kg) (35.3 oz)
- Hardener: (100g) (3.5 oz)
- Thinner: (900 m l) (30.4f / . oz, 31.7 Imp. oz)

NOTE: Follow the manufacturer's recommendations.

Tools:
- Putty knife
- Base (putty)
- Sandpaper
- Cutter
- Brush
- Masking tape
- Masking paper

1. Bumper Primer (Clear): Premixed type
The primer provides a good support for the filler and primer surfacer. It is applied to the surface of the bumper.
Drying time:

Natural	68°F (20°C) 20 minutes
Baked	140°F (60°C) 10 minutes

2. PUTTY BOND QUICK MENDER
After the PP primer has dried thoroughly, apply the PUTTY BOND QUICK MENDER.

-1. Mix one part of the mender (A) and one part of the hardener (B) and stir thoroughly

NOTE: Do not mix the mender and hardener in excess of 20g (0.7 oz) at a time.

-2. Hardening starts immediately after mixing. Practical hardness will be obtained within 60 minutes. The surface will be tacky within 5 minutes and nearly hardened after 15 minutes. It takes 12 hours for the surface to harden thoroughly 68°F (20°C).

-3. Sanding can be done after:

3 hours	68°F (20°C) - natural drying
30 minutes	140°F (60°C) - baked

3. Primer Surfacer

NOTE: Use a dual-liquid type bumper primer surfacer (grey).

- The primer surface is used to protect the PP resin surface and to fill cavities or flaws in the intermediate and top coats.
- Mix 10 parts of primer surfacer and 1 part of hardener. Add the specific thinner (30 - 60%) to the mixture of the hardener and primer to attain the proper viscosity for spraying.

4. Intermediate and Top Paint Coats (body colour)

NOTE:

- The paints are the dual liquid type based on the colour chart.
- Measure the pigment and hardener as described so they are in correct ratio.
- Use the acrylic urethane paint prepared according to the mixing chart as the intermediate coat.

Mixing Ratio:

Mix 5 parts of body colour pigment to 1 part of additive.
Mix 4 parts of the mixture of the pigment and additive with 1 part of the hardener.

NOTE:

- Dilute the mixture with 40 - 50% of the specified thinner (High art Thinner.
- Be sure to mix the correct amount of the additive.
- Use a spray gun to apply the paint. Do not use a brush.

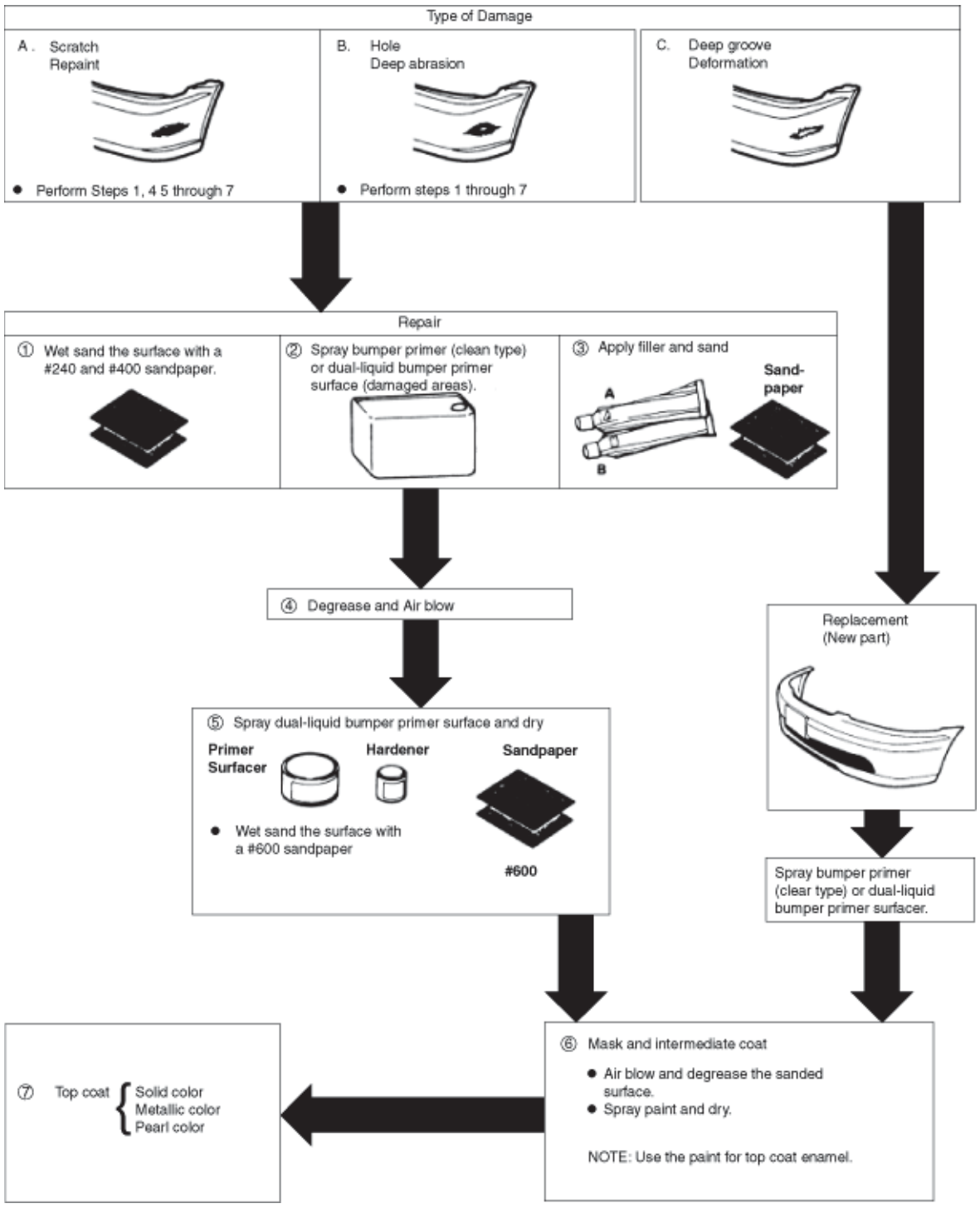
⚠ WARNING

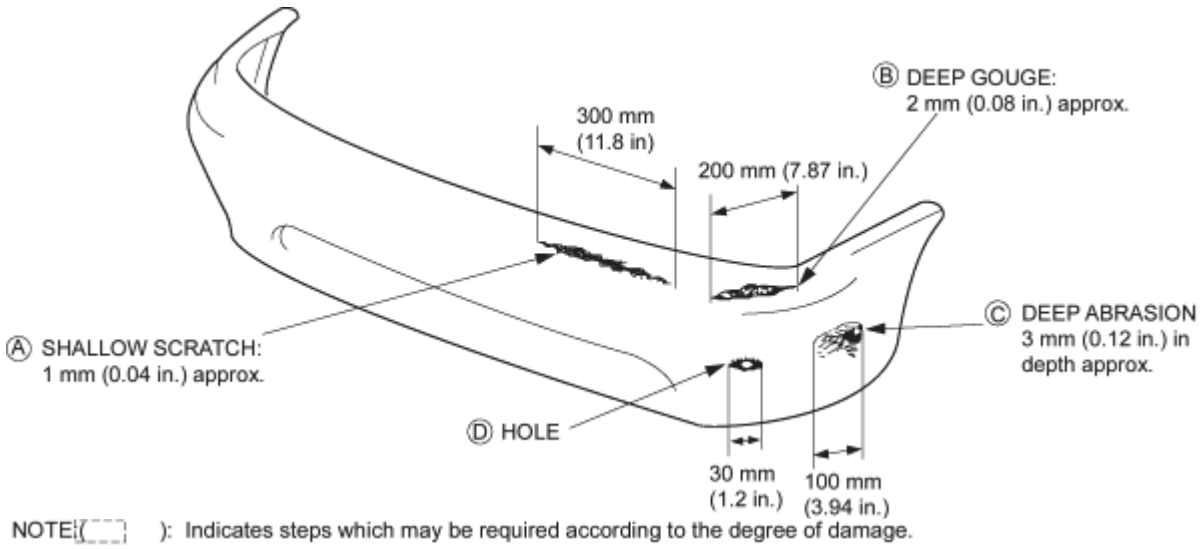
- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

Drying time:

Natural	68°F (20°C)
Surface only	20 minutes
Almost hardened	4 hours
Thoroughly hardened	96 hours

NOTE: The HIGH ART MAT BLACK SURFACER is a dual liquid type. If mixed, it will harden in a matter of hours.


Type of Damage
A. Scratch
Repaint
● Perform Steps 1, 4 5 through 7
B. Hole
Deep abrasion
● Perform steps 1 through 7
C. Deep groove
Deformation
Repair
① Wet sand the surface with a #240 and #400 sandpaper.
② Spray bumper primer (clean type) or dual-liquid bumper primer surface (damaged areas).
③ Apply filler and sand
A
B
Sand-paper
④ Degrease and Air blow
⑤ Spray dual-liquid bumper primer surface and dry
Primer Surfacer
Hardener
Sandpaper
● Wet sand the surface with a #600 sandpaper
#600
Replacement
(New part)
Spray bumper primer (clear type) or dual-liquid bumper primer surfacer.
⑥ Mask and intermediate coat
● Air blow and degrease the sanded surface.
● Spray paint and dry.
NOTE: Use the paint for top coat enamel.
⑦ Top coat { Solid color
Metallic color
Pearl color



NOTE: ( ): Indicates steps which may be required according to the degree of damage.

Work Steps \ Damage	Ⓐ	Ⓑ	Ⓒ Ⓓ	Repaint	Replacement
1. Sanding 2. Degreasing/Cleaning (damaged areas) 3. Spraying primer or primer 4. Drying surfacer 5. Applying filler 6. Drying filler 7. Sanding filler 8. Degreasing/Cleaning (filled area) 9. Spraying primer surfacer 10. Polishing (Air blowing/ degreasing) 11. Intermediate coating 12. Degreasing/Cleaning 13. Masking 14. Top coating 15. Drying top coat 16. Polishing/Buffing	↓ (4–16)	↓	↓	Sanding top coat ↕	↕

NOTE: Intermediate coating is recommended for bright colors.

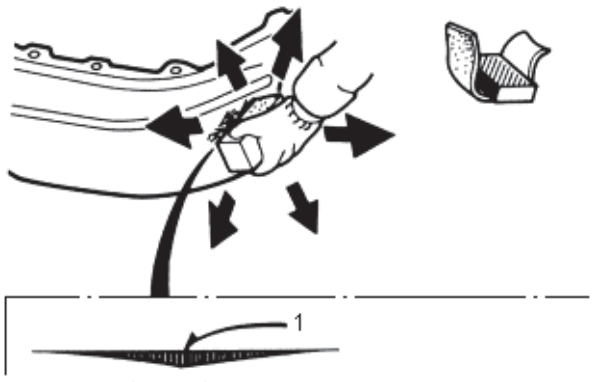
1. Sanding damaged areas

Shallow scratch:

- Level and finish damaged areas with #240 - #400 sandpaper.
- Polish the levelled area with #400 sandpaper

NOTE:

- Use a flexible block to sand the surface evenly.
- Do not remove too much material.



1. LEVEL SURFACE EVENLY

Deep groove/tear:

- Level and finish burrs and other irregularities with #240 sandpaper. Keep the surface as even as possible.



2. Degreasing/Cleaning

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- Clean with wax and grease remover and dry with compressed air.
- Wipe off all lint and other foreign particles from the surface with a tack cloth.

NOTE: Be sure to use a tack cloth. Dust and dirt are electrostatically drawn to the surface.

3. Applying bumper primer (clear type).

- Stir thoroughly before applying the primer. Use a spray gun or brush depending on working conditions.

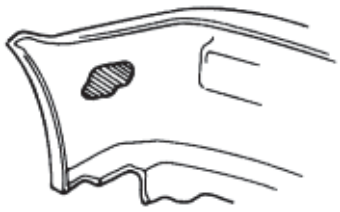
⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Cover as wide an area as possible, except for shallow grooves (2 - 3 coats).

NOTE:

- Do not dilute the primer with thinner.
- Warm the primer if the outside temperature is below 50°F (10°C).
- Apply the primer to the back of the bumper if the damage is a tear or hole.



4. Drying bumper primer.

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

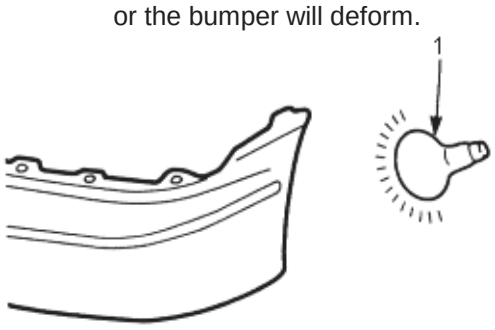
- Dry the primer thoroughly with an infrared dryer or other dryer suitable for the purpose.

- If the damage or groove is shallow, heat the entire surface evenly. Apply heat locally if the bumper is gouged or torn open.

Drying time:

Dryer	10 minutes 140°F (60°C)
Natural	20 minutes 68°F (20°C)

NOTE:
- Use a dryer whenever possible.
- Do not allow temperature to exceed 158°F (70°C) or the bumper will deform.



1. BELOW 158°F (70°C)

5. Apply filler (BOND QUICK MENDER)

Mix the mender (A) into the hardener (B) at a ratio of 1 to 1, and stir until they are thoroughly mixed.

-1. Apply the mixture over the damaged area with a putty knife using light pressure.
-2. Even out the surface to match the contour of the bumper.
-3. If there is a hole, cover it with a masking tape from the back, then apply the filler over the outside surface.

After the filler has been dried, remove the tape and apply filler to the side that was taped.

NOTE: Apply filler so it extends over more than the damaged area.



6. Drying filler

Drying time:

Almost hardened	5 minutes
Initial hardness	15 minutes
Practical hardness	60 minutes
Sanding 68° F (20°C)	After 3 hours
140°F (60°C)	After 30 minutes

7. Sanding filler

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

Wet sand first with #240 sandpaper then with #400 sandpaper.

NOTE: Sand the surface evenly, particularly at the area where the PP resin and mender meet.

8. Degreasing/Cleaning

- Blow off the sanded surface, then clean with wax and grease remover.

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- Remove all dust and dirt with a tack cloth.

9. Spraying dual-liquid bumper primer surfacer (grey).
NOTE: Use the urethane bumper primer.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

Spray the primer surfacer over a wider area than the filler and the exposed surfaces of bumper primer.
NOTE: Spray 2 - 3 coats to get 20 - 25 microns of thickness.
Mixing Ratio: (Reference)

Urethane bumper primer	10
Hardener	1
Thinner	30 - 60%

10. Drying and polishing
Force dry the primer surfacer with infrared lamps or other industrial dryer.

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

Drying temperature:

Force drying	140°F (60°C) 20 minutes
Natural drying	68°F (20°C) 2 hours min

NOTE:
- Use a dryer whenever possible.
- Do not allow the temperature to exceed 158°F (70°C).

- 1. After force drying, wet sand the primer surface with #600 sandpaper.

NOTE: Use #600 or finer sandpaper as any paper courser than this might scratch the surface.

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

-2. Blow the surface to be repaired with compressed air then degrease with a wax and grease remover.
-3. Also clean and degrease where masking tape will be attached.

11. Intermediate coating
NOTE: Intermediate coating is recommended for bright colours.
- Use the top coat enamel.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Mix the additive into the solid enamel colour, metallic enamel or pearl enamel colour in the ration of 1 to 5 (by weight).
- Mix the hardener into the mixture of pigment and additive described above in the ratio of 1 to 4 (by weight).

NOTE: Keep the correct ratio, especially of the additive. Excessive additive takes longer to dry.
- Adjust to the proper viscosity for spray by adding the thinner specified for the primer into the mixture of primer additive and hardener.
  Viscosity: 68°F (20°C) 11 - 13 sec.

NOTE: It is not necessary to apply the clear coat.

- Spray 2 - 3 coats of the top coat enamel to get 15 - 20 microns of thickness. The primer surfacer (grey) should not show through the top coat.

NOTE:

- Apply the top coat enamel to the repaired surface.
- Apply the top coat enamel to the entire surface of the primer surfacer when replacement is necessary.

12. Degreasing and Cleaning

Air dry the entire surface, then clean with wax and grease remover.

NOTE: For shading or spot painting, polish the area with a polishing compound. Also sand with a #1500 sandpaper to make a better bonding surface for the paint.

13. Masking

- Remove all existing masking paper, then mask with new paper.
- Use a heat resistant type masking tape (SCOTCH TAPE) where tape is attached directly to the bumper.
- Use brown paper or masking roll paper to cover.

NOTE:

- Mast the area completely to prevent overspray.
- Protect resin parts with aluminium foil under the brown paper or masking paper to prevent damage due to heat during baking.

14. Top Coating

- Air dry and degrease the surface before spraying the paint. Also clean the surface with a tack cloth.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

- Remove dust and dirt from the surface to be coated with compressed air, then use a tack cloth.
- Use a strainer when filling the cup with paint.
- Spray the paint evenly over the surface so the replacement part is completely covered.
- For application of the top coating refer to step 11 "Intermediate coating".

NOTE: Do not try to cover the surface with one heavy coat. Apply several thin coats.

- With solid colour (2 - coat type), metallic colour and pearl colour enamels, allow final coat to flash-off (5 - 20 minutes) before applying clear coat.
- Mix the additive into the clear at a ratio of 1 to 5. Adding the hardener and adjusting viscosity should be done the same way as described on the previous page.
  Viscosity: 68°F (20°C) 13 - 15 sec.

Mixing Ratio (weight)

Metallic enamel/Clear solid enamel		Additive		Hardener
5	:	1 = 4	:	1

15. Drying top coat

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

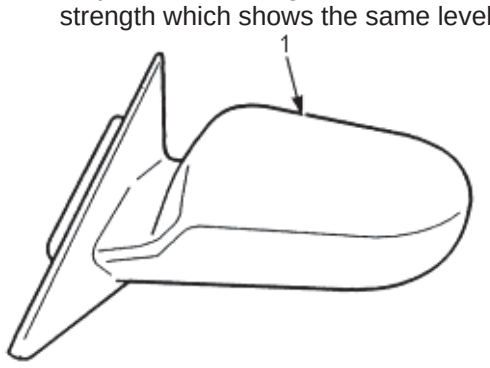
- Before force drying, let it air dry for 5 - 10 minutes.
- Force dry the sprayed surface under the infrared lamps for 60 90 minutes.
- Keep the drying temperature between 140°F (60°C) and 158°F (70°C).
  NOTE: Take care not to let the head deform the pat during the drying process.

16. Polishing and Buffing

- Let the paint dry gradually, then polish the surface carefully using a polishing compound and sponge buff.
- To remove lint or dirt, wet sand the surface with #2000 or finer paper first, then polish with compound.
  NOTE: Polish all roughness caused by sanding thoroughly. To do this, first polish with very fine compound, then with ultra fine compound.
- After polishing, remove the masking paper and tape and wash the entire vehicle thoroughly.

The door mirror housing, license plate trim, and front grille are made from ABS resin.
They can be repaired if the damage or deformation is minor in nature. This section covers ABS repair. Repairing ABS is different from other resins such as PP.
NOTE:

- The ABS resin is the copolymer resin consisting of the three monomers of acrylonitrile, butadiene and styrene.
- Polycarbonate is a generic name for high polymers which have the carbonic ester structure in the structural unit. The most prominent feature of polycarbonate is its tensile strength which shows the same level of yielding point as metals in the normal temperature. It also has outstanding impact strength compared to other plastics.



1. **DOOR MIRROR HOUSING**

NOTE: The following repair procedures also apply to the door out handle (PC) and front air spoiler, rear lower skirt and trunk lid spoiler (PUR).

Repair Materials
Examples:
Adhesive and filler: Epoxy

- Kemit TE2301 bond quick mender

Filler

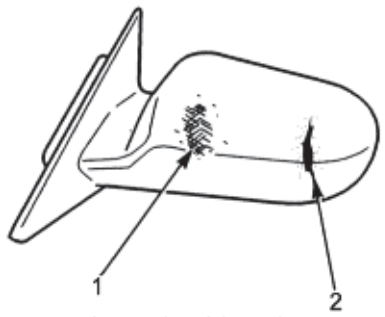
- R-M Stop zinc (R-M)
- 3M 5900 Repair Material (Akzo)

NOTE: Follow the manufacturer's specification
Top Coat:

- Super ponacle II, Solo de Diamont, Diamont (R-M)
- Autocryl Auto base (Akzo)
- Super Centari (Dupont)

Primer/Primer surfacer:
Use when the resin material is exposed.

- R-M fast filler + R-M flex primer (R-M)
- Plasto flex primer 2 coat (Akzo)
- 1220RH-S filler primer (Dupont)



1. **B. SHALLOW SCRATCH: 1mm APPROX. (0.04 in)**
2. **A. DEEP SCRATCH: 2mm APPROX. (0.08 in)**

A. Deep scratches, when filling:
(1) Sand the damage section. (#120~#240)
(2) Apply the filler and dry.
(3) Sand the filler (#240~#400)
(4) Coat with the primer/primer surfacer and dry.
(5) Sand the primer surfacer. (#600~#800)
(6) Top coating.

B. Shallow scratches:
(1) Coat with the primer/primer surfacer.
(2) Sand the primer surfacer. (#600~#800)
(3) Top coating

C. Repaint:
(1) Sand the primer surfacer. (#600~#800)
(2) Top coating

1. Base material reconditioning (sanding)
-1. Repaint the replacement part
Lightly sand the part with #400, #600 or #800.
-2. Slight scores or scratches
Use a flexible sanding block, wet sand the damaged section with #400, #600 sandpaper.
NOTE: Sand level to remove damage.
-3. Deep scratches when filling.
Use a flexible sanding block and wets and the damaged section with #240, #400 sandpaper.

2. Degreasing and cleaning
Clean the repaired area with wax and grease remover, then blow with compressed air.

⚠ WARNING
♦ Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
♦ Wear goggles or safety glasses to prevent eye injury.

NOTE: Wipe dust off surface with a tack cloth.

3. Filling, drying and sanding
Apply the filler in several thin coats.
NOTE: Mix and apply the filler according to the manufacturer's instructions.
-1. Dry the filler with an infrared dryer for 5 or 6 minutes.
Be sure to keep the dryer 40 - 50 cm (16 - 20 in.) away from the surface.
-2. Scratch the filled surface with your nail. If the surface is white when scratched, dry sand and wet sand with the #240~#400 sandpaper. Be sure to sand level.

4. Cleaning with compressed air, and degreasing
Blow the entire area to be coated with compressed air, then clean with wax and grease remover.

⚠ WARNING
♦ Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
♦ Wear goggles or safety glasses to prevent eye injury.

NOTE: Clean the whole surface to the help the masking tape adhere securely.

5. Masking
Use the masking tape and paper to mask the area that should not be sprayed.

6. Coat with primer/primer surfacer, followed by drying and sanding.
- Spray the primer surfacer over the filled area.

⚠ WARNING
- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.
- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

- The coating thickness should be 20 - 25 microns.

NOTE: Follow the primer/primer surfacer manufacturer's instruction.

-1. Drying
- Let the primer surfacer dry naturally for 5 to 10 minutes, then dry with an infrared dryer.

⚠ WARNING
Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

- Be sure to keep the dryer 40 - 50 cm (16 - 20 in.) away from the paint film.

-2. Sanding
Lightly dry sand the whole area to be painted with #600, #800 sandpaper.

7. Blow off with compressed air, then clean with wax and grease remover.

⚠ WARNING
- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

NOTE: Clean the whole surface to help the masking tape adhere securely.

8. Top coating
- Remove dust with a tack cloth before spraying.
- Spray the top coating. Spray until the primer surfacer is covered.
- The coating thickness should be 30 - 35 microns.

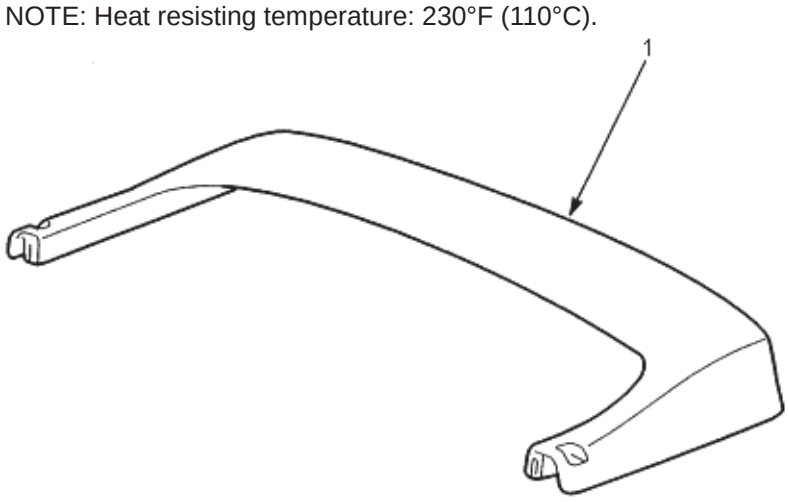
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- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.
- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

NOTE: For the recommended top coat paint, refer to "Example of repair materials".

Solid color:	Colour enamel + clear coat
Metallic:	Metallic enamel + clear coat
Pearl:	Pearl enamel + clear coat

9. Drying
After top coating for about 10 minutes, then dry with an infrared dryer.
NOTE: Follow the paint manufacturer's specification to dry properly.

The UP resin parts can be repaired if the damage or deformation is minor in nature. This repair procedure slightly differs from that of the PP, ABS resin and urethane resin parts..
NOTE: Heat resisting temperature: 230°F (110°C).



1. **ROOF SPOILER**

Repair Materials
Examples:
Adhesive and filler: Epoxy
- Kemit TE2301 bond quick mender

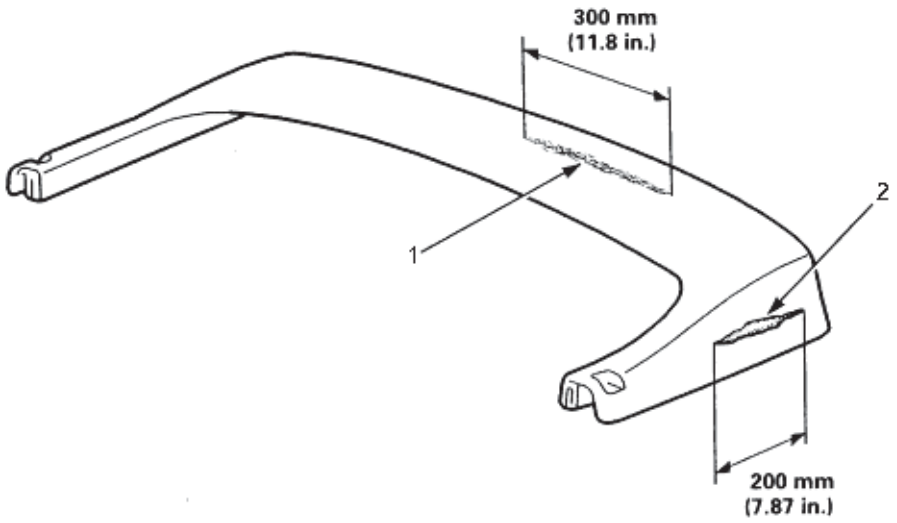
Filler
- Body filler 873 (R-M)
- 3M 5900 Repair Material (Akzo)

Top Coat:
Use when the resin material is exposed.
- Prast flex (Akzo)
- 800R Flexible filler (Dupont)

Primer surfacer:
Some primer surfacers can be applied to the basis material directly, depending on the manufacturer's.
NOTE: Coat with PP bumper primer when the resin material is exposed.
- 1220R H, S-filler primer (DuPont)
- Auto cryl filler (Akzo)
- NPS735 urethane primer surfacer (R-M)

Top coat:
- Super poncacle II (R-M)
- Super Centari (Dupont)
- Auto cryl (Akzo)

Repair materials and Paints:
Us the repair materials listed in the "Example of repair materials" as instructed in the manufacturer's instruction manual.
NOTE: Be sure to refer to the manual(s) and use the repair material(s) properly.



1. **SHALLOW SCRATCH: 1mm (0.04 in) approx.**
2. **DEEP SCRATCH: 2mm (0.08 in) approx.**

A. Replacement part:

1. Apply intermediate coat (grey). Sand both sides of the part (#400, #600).
2. Dry primer surfacer, then sand (#400, #600).
3. Apply top coating.
   -1. Metallic enamel + colour clear coat.
   -2. Solid colour enamel + clear coat.
   -3. Pearl enamel + clear coat.

NOTE: Also applicable to “Shallow scratches”, “Deep scratches” and “When filling”.

B. Shallow scratch:

Not down to the base material.

1. Sand top coat (#400, #600).
2. Apply top coating.

NOTE: Coat with primer surfacer when the base material is exposed.

C. Deep scratch, when filling:

1. Sand the damaged section (#180, #240).
2. Spray with primer and dry.

NOTE: When the base material is exposed.

3. Coat with primer surfacer.
4. Dry primer surfacer, then sand (#240, #400).
5. Apply polyester resin filler.
6. Dry polyester resin filler, then sand (#240, #320).
7. Coat with primer surfacer.
8. Dry primer surfacer, then sand (#400, #600).
9. Apply top coating.

1. Base material reconditioning (sanding)

-1. Replacement part.
Lightly sand both sides of the part.

-2. Slight scores or scratches.
Use a flexible sanding block and wet-sand the damaged section with #400, #600.
NOTE: Sand level to remove damage.

-3. Deep scratches, when filling.
Use a flexible sanding block and wet-sand the damaged section with #400, #600.

NOTE: Perform the featheredge on the material surface and coat surface (primer, intermediate coat and top coat) thoroughly and properly).

- Polish the levelled area with #400 sandpaper

2. Degreasing/Cleaning

Clean the repair area with wax and grease remover, then blow dry with air.

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

NOTE: Wipe dust off the surface with a tack cloth.

3. Primer application

- Apply to the deep scratches and areas to be filled. This procedure might not be required by some manufacturer's products.
- Spray wider than the damaged section (i.e. area to be filled) two to three times.

NOTE: Follow the manufacturer's specifications.

4. Coating with primer surfacer and drying

NOTE: Some manufacturer's might require puttying before performing this step.
Spray the primer surfacer wider than the filled area and the exposed base material.
The spray guideline should be 20 - 23 microns.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.

NOTE: Follow the manufacturer's instructions.

- After coating with the primer surfacer, let the primer surfacer dry naturally for 5 to 10 minutes, then dry the paint film of the primer surfacer with an infra-red dryer.
- When drying the primer surface with the dryer, be sure to keep the dryer 40 - 50 cm (16 - 20in) away from the paint film.

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

5. Filling, drying and sanding

- The exposed base material could be directly filled, depending on the manufacturer's specification.
- Be sure that the primer surfacer is completely dry.
- Lightly dry sand the primer surfacer paint film with the #240 paper.

- Apply the filler in several thin coats.

NOTE: Mix and apply the filler according to the manufacturer's instructions.

- Dry the filler with an infra-red dryer for 5 to 6 minutes.
- While drying the filler with the dryer, be sure to keep the dryer 40 -50 cm (16 - 20 in) away from the surface.
- Scratch the filled surface with your nail. If the surface is white when scratched, dry sand and wet sand with the #280, #320 paper. Be sure to sand level.

6. Cleaning with compressed air and degreasing

Blow the entire area that is to be coated with primer surfacer, with compressed air then clean with wax and grease remover.

⚠ WARNING

- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

NOTE: Also wipe the masking area to help the masking tape adhere securely.

7. Masking

- Mask the area that should not be sprayed with the primer surfacer.
- Use the masking tape and paper to mask.

8. Coating with primer surfacer and drying

- Spray the two primer surfacer over the filled area.
- The spray guideline should be 20 - 25 microns.

NOTE: Follow the primer surfacer manufacturer's instructions.

- After coating with the primer surfacer, let the primer surfacer dry naturally for 5 to 10 minutes, then dry with an infra-red dryer.

⚠ WARNING

Body parts being dried with an industrial dryer can get hot enough to cause injury. Do not touch parts being dried.

- While drying with the dryer, be sure to keep the dryer 40 -50 cm (16 - 20 in) away from the paint film.

9. Sanding and cleaning

Lightly wet-sand the whole area to be painted with #600 sandpaper. Blow off with compressed air, then clean with wax and grease remover.

10. Top coating

- Remove dust with a tack cloth before top coating.
- Spray the top coat paint.
  Spray until the primer surfacer is covered. The spray guideline should be 30 -35 microns.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place, and keep it away from sparks, flames and cigarettes.
- Do not use high air pressure; use only an approved 210 kPa (2.1 kgf/cm2, 30 psi) air nozzle.
- Wear goggles or safety glasses to prevent eye injury.

NOTE: For the recommended top coat paint, refer to the "4 Top coat" of "Example of repair materials".

Solid: Colour enamel + colour clear coat.
Metallic: Metallic enamel + clear coat.
Pearl: Pearl enamel + clear coat.

11. Drying

After top coating about 10 minutes, dry with an infra-red dryer.

NOTE: Follow the paint manufacturer's specification to dry properly.

All Paint	Painting of complete surface.
Air blow	Using compressed air to blow away dust and debris.
Block paint	Painting a section only, such as a door.
Clear paint (clear coat)	Clear paint without dye (pigment).
Double coat	Application of two paint coats.
Dry coat	Paint which left the spray gun and dried partially before it reached the surface, thereby making the painted surface rough. Dry coating is caused by too little paint being fed, too high an air pressure, too much distance between the painted surface and the gun, or moving the gun too fast.
Dry film	Paint which has dried completely.
Dust coat	Paint is applied thinner than a dry coat. Painted surface becomes rough.
ED painting	Electrostatic discharge painting.
Enamel	Finishing paint pigmented with dye.
Featheredging	Smoothing off the edges of painted surfaces.
Flash off	Evaporation of the paint solvent. (Flash off time is the period between paint coat applications).
Ford cup	A type of viscosity meter.
Gun stroke	Movement of the paint gun.
Hardener	Hardening agent of two-liquid type paint or fillers. Polycyanates and oxides are used for hardeners.
Heat-hardening acrylic resin paint	Composed of acrylic resin and meramine resin, and hardened (forms a paint film) by baking.

Lacquer	A type of paint that uses cellulose nitrate or other chemicals, and which dries by evaporation of its solvent agent.
Meramine resin	Used as component for aminoalkyd resin paint and heat-hardening acrylic resin paint.
Metallic-base paint	Paint with aluminium powder for metallic tone.
Mist coat	Painting for fade-in sections. A small amount of paint may be dissolved with slow-evaporating thinner, or thinner alone may be applied with low pressure 150 - 200 kPa (1.5 - 2.0 kgf/cm2, 21.3 - 28.4 psi).
Mixing scale	Colour mixing device.
Overlap	Blending of spray patterns.
Overspray	Spraying other than the area that needs painting.
Paddle	A tool to mix paint
Paint dust	Dust of paint formed by spraying
Paper dispenser	A paper posting device (masker) that combines tape and paper.
Scrapes	Traces of scratches.
Scuffing	Particles on the painted surface are lightly polished with fine emery paper (#600 or over).
Set (setting)	Evaporation time of solvent in the paint, before drying the layer forcefully or by baking (May be considered the same as flash-off time).
Single coat	Application of paint in single layer.
Spot paint	Painting of small section, such as for touch-up.
Undercoat	Undercoat paint (such as primer and surfacer). May be applied to lower section of car for noise prevention and rustproofing.

Wet coat	Paint is applied with an excess of solvent, thereby producing a painted surface that is smooth, glossy and has a wet look.
Wet film	Paint which has not dried completely.
Wet on wet	Application of the next coat of paint before the preceding layer has dried completely.
Wool bonnet	Wool grinder for compound polishing.

Vehicle Identification Number

JHM GH2 3 5 0 Y S 200001

Manufacturer, Make and Type of Vehicle
- JHL: HONDA MOTOR CO., LTD HONDA passenger car
- JHM: HONDA MOTOR CO., LTD HONDA passenger car

Line, Body and Engine Type
- GH1: HR-V/D16W1, D16W2
- GH2: HR-V/D16W1, D16W2 D16W5
- GH3: HR-V/D16W1, D16W2
- GH4: HR-V/D16W1, D16W2 D16W5

Body and Transmission Type
- 3: Hatchback, 2-door Hatchback/ 5-speed Manual
- 4: Hatchback, 2-door Hatchback/ CVT, Honda Multi Matic
- 7: Hatchback, 4-door Hatchback/ 5-speed Manual
- 8: Hatchback,4-door Hatchback/ CVT, Honda Multi Matic

Vehicle Grade
- 5: KG, KE, KN, KQ, KU, KT and KY
- 6: KG
- 7: KG, KE, KQ, KU and KY
- 8: KG

Fixed Code/Check Digit

Model Year
- X :2000

Factory Code
- S : Suzuka Factory in Japan (Mie)

Serial Number

Engine Number

D16W1 - 1100001

Engine Type
- D16W1: 1.6l SOHC Sequential Multiport Fuel-injected engine with three way catalytic converter
- D16W2: 1.6l SOHC Sequential Multiport Fuel-injected engine without three way catalytic converter
- D16W5:1.6l SOHC VTEC Sequential Multiport Fuel-injected engine with three way catalytic converter

Serial Number
- D16W1, D16W2, 1100001～
- D16W5, 1000001～

Transmission Number

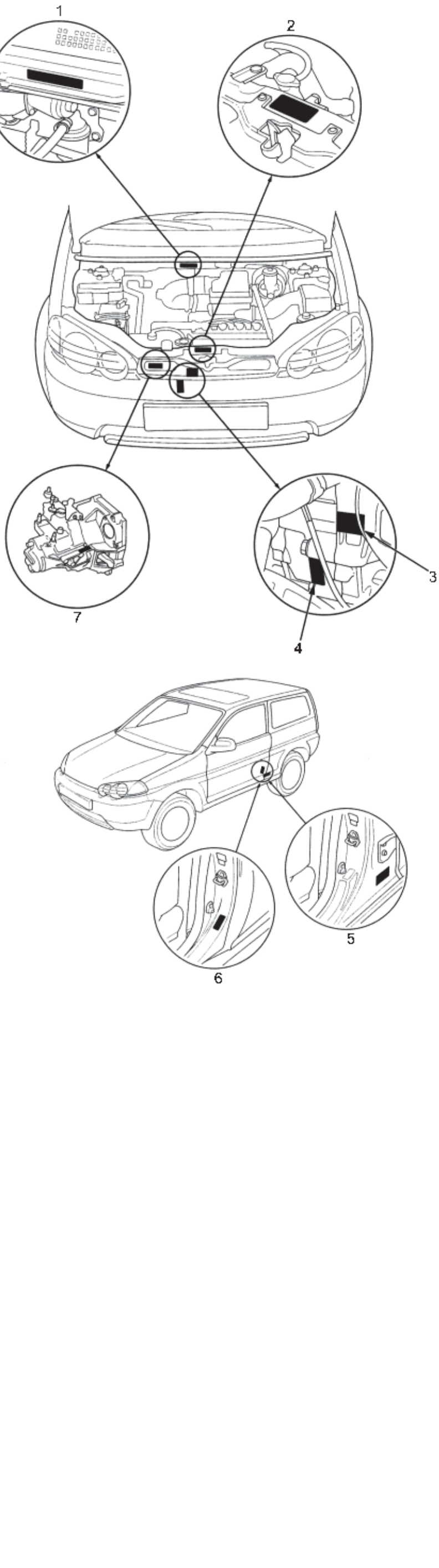
SEP - 2000001

Transmission Type
- SEP : 5-speed Manual (4WD)
- SEV : 5-speed Manual (2WD)
- MENA : CVT (2WD), Honda Multi Matic (2WD)
- META : CVT (4WD), Honda Multi Matic (4WD)

Serial Number
- SEP : 2000001～
- SEV : 2000001～
- MENA : 2000001～
- META : 2000001～

MODEL	APPLICABLE AREA CODE	DRIVE-TRAIN	TRANSMISSION TYPE	VEHICLE IDENTIFICATION NUMBER	ENGINE NUMBER	TRANSMISSION NUMBER
	KG		5MT	JHMGH2350YS200001~	D16W1-1100001~	SEP-2000001~
			5MT	JHMGH2370YS200001~	D16W5-1000001~	SEP-2000001~
		4WD	5MT	JHMGH2360YS200001~	D16W1-1100001~	SEP-2000001~
			5MT	JHMGH2380YS200001~	D16W5-1000001~	SEP-2000001~
			CVT	JHMGH2450YS200001~	D16W1-1100001~	META-2000001~
			CVT	JHMGH2460YS200001~	D16W1-1100001~	META-2000001~
	KG		5MT	JHMGH1350YS200001~	D16W1-1100001~	SEV-2000001~
		2WD	5MT	JHMGH1360YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH1450YS200001~	D16W1-1100001~	MENA-2000001~
			CVT	JHMGH1460YS200001~	D16W1-1100001~	MENA-2000001~
HR-V 3-door	KE		5MT	JHMGH2350YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	5MT	JHMGH2370YS200001~	D16W5-1000001~	SEP-2000001~
			CVT	JHMGH2450YS200001~	D16W1-1100001~	META-2000001~
	KE	2WD	5MT	JHMGH1350YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH1450YS200001~	D16W1-1100001~	MENA-2000001~
	KN	4WD	5MT	JHLGH2350YS200001~	D16W1-1100001~	SEP-2000001~
		2WD	5MT	JHMGH1350YS200001~	D16W1-1100001~	SEV-2000001~
	KQ		5MT	JHLGH2350YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	CVT	JHLGH2450YS200001~	D16W1-1100001~	META-2000001~
			CVT	JHLGH2470YS200001~	D16W5-1000001~	META-2000001~
	KQ	2WD	5MT	JHMGH1350YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH1450YS200001~	D16W1-1100001~	MENA-2000001~
	KU		5MT	JHLGH2350YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	Multi Matic	JHLGH2450YS200001~	D16W1-1100001~	META-2000001~
			Multi Matic	JHLGH2470YS200001~	D16W5-1000001~	META-2000001~
	KU	2WD	5MT	JHMGH1350YS200001~	D16W1-1100001~	SEV-2000001~
			Multi Matic	JHMGH1450YS200001~	D16W1-1100001~	MENA-2000001~
	KT	4WD	5MT	JHLGH2350YS200001~	D16W2-1100001~	SEP-2000001~
		2WD	5MT	JHMGH1350YS200001~	D16W2-1100001~	SEV-2000001~
	KY	4WD	5MT	JHLGH235*YS400001~	D16W2-1100001~	SEP-2000001~

MODEL	APPLICABLE AREA CODE	DRIVE-TRAIN	TRANSMISSION TYPE	VEHICLE IDENTIFICATION NUMBER	ENGINE NUMBER	TRANSMISSION NUMBER
	KG		5MT	JHMGH4750YS200001~	D16W1-1100001~	SEP-2000001~
			5MT	JHMGH4770YS200001~	D16W5-1000001~	SEP-2000001~
		4WD	5MT	JHMGH4760YS200001~	D16W1-1100001~	SEP-2000001~
			5MT	JHMGH4780YS200001~	D16W5-1000001~	SEP-2000001~
			CVT	JHMGH4850YS200001~	D16W1-1100001~	META-2000001~
			CVT	JHMGH4860YS200001~	D16W1-1100001~	META-2000001~
	KG		5MT	JHMGH3750YS200001~	D16W1-1100001~	SEV-2000001~
		2WD	5MT	JHMGH3760YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH3850YS200001~	D16W1-1100001~	MENA-2000001~
			CVT	JHMGH3860YS200001~	D16W1-1100001~	MENA-2000001~
HR-V 5-door	KE		5MT	JHMGH4750YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	5MT	JHMGH4770YS200001~	D16W5-1000001~	SEP-2000001~
			CVT	JHMGH4850YS200001~	D16W1-1100001~	META-2000001~
	KE	2WD	5MT	JHMGH3750YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH3850YS200001~	D16W1-1100001~	MENA-2000001~
	KN	4WD	5MT	JHLGH4750YS200001~	D16W1-1100001~	SEP-2000001~
		2WD	5MT	JHMGH3750YS200001~	D16W1-1100001~	SEV-2000001~
	KQ		5MT	JHLGH4750YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	CVT	JHLGH4850YS200001~	D16W1-1100001~	META-2000001~
			CVT	JHLGH4870YS200001~	D16W5-1000001~	META-2000001~
	KQ	2WD	5MT	JHMGH3750YS200001~	D16W1-1100001~	SEV-2000001~
			CVT	JHMGH3850YS200001~	D16W1-1100001~	MENA-2000001~
	KU		5MT	JHLGH4750YS200001~	D16W1-1100001~	SEP-2000001~
		4WD	Multi Matic	JHLGH4850YS200001~	D16W1-1100001~	META-2000001~
			Multi Matic	JHLGH4870YS200001~	D16W5-1000001~	META-2000001~
	KU	2WD	5MT	JHMGH3750YS200001~	D16W1-1100001~	SEV-2000001~
			Multi Matic	JHMGH3850YS200001~	D16W1-1100001~	MENA-2000001~
	KT	4WD	5MT	JHLGH4750YS200001~	D16W2-1100001~	SEP-2000001~
		2WD	5MT	JHMGH3750YS200001~	D16W2-1100001~	SEV-2000001~
	KY	4WD	5MT	JHLGH475*YS400001~	D16W2-1100001~	SEP-2000001~



1. **Vehicle Identification Number**
2. **Certification Plate (KG, KE, KN, KQ, KU, KT)**
3. **Engine Number**
4. **Transmission Number (CVT/Multi Matic)**
5. **Certification Plate (KY 5-door model)**
6. **Certification Plate (KY 3-door model)**
7. **Transmission Number (Manual)**

List of automotive abbreviations which may be used in shop manual.

ABS	Anti-lock Brake System
A/C	Air Conditioning, Air Conditioner
ACL	Air Cleaner
A/F	Air Fuel Ratio
ALR	Automatic Locking Retractor
ALT	Alternator
AMP	Ampere (s)
ANT	Antenna
API	American Petroleum Institute
APPROX.	Approximately
ASSY	Assembly
A/T	Automatic Transmission
ATDC	After Top Dead Centre
ATF	Automatic Transmission Fluid
ATT	Attachment
ATTS	Active Torque Transfer System
AUTO	Automatic
AUX	Auxiliary
BARO	Barometric
BAT	Battery
BDC	Bottom Dead Centre
BTDC	Before Top Dead Centre
CARB	Carburettor
CAT or CATA	Catalytic Converter
CHG	Charge
CKF	Crankshaft Speed Fluctuation
CKP	Crankshaft Position
CO	Carbon Monoxide
COMP	Complete
CPB	Clutch Pressure Back up
CPC	Clutch Pressure Control
CPU	Central Processing Unit
CVT	Continuously Variable Transmission
CYL	Cylinder
CYP	Cylinder Position
DI	Distributor Ignition
DIFF	Differential
DLC	Data Link Connector
DOHC	Double Overhead Camshaft
DPI	Dual Point Injection
DTC	Diagnostic Trouble Code
EBD	Electronic Brake Distribution
ECM	Engine Control Module
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
ELD	Electrical Load Detector
EPR	Evaporator Pressure Regulator
EPS	Electrical Power Steering
EVAP	Evaporative
EX	Exhaust
F	Front
FIA	Fuel Injection Air
FL	Front Left
FP	Fuel Pump
FR	Front Right
FSR	Fail Safe Relay
FWD	Front Wheel Drive
GAL	Gallon
GND	Ground
GPS	Global Positioning System
H/B	Hatchback
HC	Hydrocarbons
HID	High Intensity Discharge
HO2S	Heated Oxygen Sensor
IAB	Intake Air Bypass
IAC	Idle Air Control
IACV	Idle Air Control Valve
IAR	Intake Air Resonator
IAT	Intake Air Temperature
ICM	Ignition Control Module
ID	Identification
ID or I.D.	Inside Diameter
IG or IGN	Ignition
IMA	Idle Mixture Adjustment
IMMOBI.	Immobiliser
IN	Intake
INJ	Injection
INT	Intermittent
KS	Knock Sensor
L	Left
L/C	Lock-up Clutch
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LEV	Low Emission Vehicle
LF	Left Front
LH	Left Handle
LHD	Left Handle Drive
LR	Left Rear
LSD	Limited Slip Differential
L-4	In-line Four Cylinder (engine)

MAP	Manifold Absolute Pressure
MAX.	Maximum
MBS	Mainshaft Brake System
MCK	Motor Check
MCU	Moment Control Unit
MIL	Malfunction Indicator Lamp
MIN.	Minimum
MPI	Multi Point Injection
M/S	Manual Steering
M/T	Manual Transmission
N	Neutral
NOx	Oxides of Nitrogen
OBD	On-board Diagnostic
O2S	Oxygen Sensor
OD or O.D.	Outside Diameter
P	Park
PAIR	Pulsed Secondary Air Injection
PCM	Powertrain Control Module
PCV	Positive Crankcase Ventilation
	Proportioning Control Valve
PGM-FI	Programmed-fuel Injection
PGM-IG	Programmed Ignition
PH	Pressure High
PL	Pilot Light or Pressure Low
PMR	Pump Motor Relay
P/N	Part Number
PRI	Primary
P/S	Power Steering
PSF	Power Steering Fluid
PSP	Power Steering Pressure
PSW	Pressure Switch
Qty	Quantity
R	Right
REF	Reference
RGB	Red, Green, Black
RHD	Right Handle Drive
RL	Rear Left
RON	Research Octane Number
RR	Rear Right
SAE	Society of Automotive Engineers
SCS	Service Check Signal
SEC	Second
	Secondary
SOHC	Single Overhead Camshaft
SOL	Solenoid
SPEC	Specification
S/R	Sun Roof
SRS	Supplemental Restraint System
STD	Standard
SW	Switch
T	Torque
TB	Throttle Body
T/B	Timing Belt
TC	Torque Converter
TCM	Transmission Control Module
TCS	Traction Control System
TDC	Top Dead Centre
TFT	Thin Film Transistor
T/N	Tool Number
TP	Throttle Position
TWC	Three Way Catalytic Converter
VC	Viscous Coupling
VIN	Vehicle Identification Number
VSS	Vehicle Speed Sensor
VTEC	Variable Valve Timing & Valve Lift Electronic Control
VVIS	Variable Volume Intake System
W	With
W/O	Without
WOT	Wide Open Throttle
2WD	Two Wheel Drive
4WD	Four Wheel Drive
2WS	Two Wheel Steering
4WS	Four Wheel Steering
4AT	4-speed Automatic Transmission
5MT	5-speed Manual Transmission
6MT	6-speed Manual Transmission
P	Park
R	Reverse
N	Neutral
D4	Drive (1st through 4th gear)
D3	Drive (1st through 3rd gear)
2	Second
1	First
D	Drive
S	Second
L	Low
O/D	Over Drive
1ST	Low (gear)
2ND	Second (gear)
3RD	Third (gear)
4TH	Fourth (gear)
5TH	Fifth (gear)
6TH	Sixth (gear)

	MEASUREMENT		STANDARD (NEW)	
Ignition coil	Rated voltage V		12	
	Primary winding resistance at 20°C (68°F) ohms:		0.63 - 0.77	
	Secondary winding resistance at 20°C (68°F) k ohms		12.8 - 19.2	
Spark plug	Type		See section 4	
	Gap		1.1, 0,-0.1 (0.043, 0, -0.004)	
Ignition timing	At idle ° BTDC		12° ± 2° (Red) BTDC	
Alternator belt *1	Deflection with 98 Nm (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt 6.0-8.5 (0.24-0.33) with new belt	
Alternator belt *1	Tension measured with belt tension gauge N (kgf, lbf)			
	Used belt		340 - 490 (35 - 50, 77 - 110)	
	New belt		540 - 740 (55 - 75, 121 - 165)	
			Standard (New)	**Service Limit**
Alternator	MITSUBISHI			
	Output 13.5 V at hot	A	75	
	Coil resistance (rotor)	ohms	2.6- 2.9	-
	Slip ring O.D.		22.7 (0.89)	21.2 (0.83)
	Brush length		19 (0.75)	14. (0.55)
	Brush spring tension	g (oz)	340 - 420 (12.0 - 14.8)	-
			Standard (New)	**Service Limit**
Alternator	NIPPONDENSO			
	Output 13.5V at hot	A	75	
	Coil resistance (rotor)	ohms	2.9	-
	Slip ring O.D.		14.4 (0.567)	14.0 (0.551)
	Brush length		10.5 (0.41)	1.5 (0.06)
	Brush spring tension	g (oz)	330 (11.6)	-
			Standard (New)	**Service Limit**
Starter motor	MITSUBA: 1.0 kW			
	Type		Gear reduction	
	Mica depth		0.4-0.5 (0.016-0.020)	0.15 (0.006)
	Commutator runout		0-0.02 (0-0.001).	0.05 (0.002)
	Commutator O.D.		28.0-28.1 (1.102-1.106)	27.5 (1.083)
	Brush length		15.8-16.2 (0.62-0.64)	11.0 (0.43)
	Brush spring tension	N (kg, lbf)	16-18 (1.6-1.8, 3.5-4.0)	-

*1: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 rpm (min^{-1}) and			
	wide open throttle	Minimum	930 (9.5, 135)	
	kPa (kgf/cm^2, psi)	Max. variation	200 (2.0, 28)	
Cylinder head	Warpage		-	0.05 (0.002)
	Height		92.95-93.05 (3.659-3.663)	-
Camshaft	End play		0.05-0.15 (0.002-0.006)	0.5 (0.02)
	Camshaft-to-holder oil clearance		0.060-0.099 (0.002-0.004)	0.15 (0.006)
	Total runout		0.03 (0.001) max.	0.04 (0.002)
	Cam lobe height		35.299 (1.3897)	-
	D16W1, D16W2	IN		
	EX		37.281 (1.4678)	-
	D16W5 IN	PRIMARY	37.065 (1,4593)	-
		Mid	38,285 (1,5073)	-
		Secondary	38,778 (1,4480)	-
	EX		38,008 (1,4964)	-
Valve	Valve clearance (cold)	IN	0.18-0.22 (0.007-0.009)	-
		EX	0.23-0.27 (0.009-0.011)	-
	Valve stem O.D.	IN	5.48-5.49 (0.2157-0.2161)	5.45 (0.2146)
		EX	5.45-5.46 (0.2146-0.2150)	5.42 (0.2134)
	Stem-to-guide clearance	IN	0.02-0.05 (0.001-0.002)	0.08 (0.003)
		EX	0.05-0.08 (0.002-0.003)	0.11 (0.004)
Valve seat	Width	IN	0.85-1.15 (0.033-0.045)	1.6 (0.063)
		EX	1.25-1.55 (0.049-0.061	2.0 (0.079)
	Stem installed height	IN	53.17-53.64 (2.093-2.112)	53.89 (2.122)
		EX	53.17-53.64 (2.093-2.112)	53.89 (2.122)
Valve spring	Free length D16W1, D16W2	IN and EX	58.7 (2.31)	-
	D16W5	IN	58.0 (2.28)	-
		EX	58.7 (2.31)	-
Valve guide	I.D.	IN	5.51-5.53 (0.217-0.218)	5.55 (0.219)
		EX	5.51-5.53 (0.217-0.218)	5.55 (0.219)
	Installed height	IN	17.85-18.35 (0.703-0.72)	-
		EX	18.65-19.15 (0.734-0.754)	-
Rocker arm	Arm-to-shaft clearance			
	D16W1, D16W2	IN	0.017-0.050 (0.0007-0.0020)	0.08 (0.003)
		EX	0.018-0.054 (0.0007-0.0021)	0.08 (0.003)
	D16W5	IN	0.026-0.055 (0.0010-0.0022)	0.08 (0.003)
		EX	0.025-0.059 (0.0010-0.0023)	0.08 (0.003)

Engine Block - Section 7

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface		0.07(0.003) max	0.10 (0.004)
	Bore diameter		75.00-75.02 (2.953-2.954)	75.07 (2.956)
	Bore taper		-	0.05 (0.002)
	Reboring limit		-	0.5 (0.02)
Piston	Skirt O.D at 5mm (0.2 in) from bottom of skirt		74.980-74.990 (2.9520-2.9524)	74.970 (2.9516)
	Clearance in cylinder		0.010-0.040 (0.0004-0.0016)	0.05 (0.002)
	Groove width (for ring)			
	Top	D16W1, D16W5	1.020-1.030 (0.0402-0.0406)	1.05 (0.041)
		D16W2	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
	Second	D16W1, D16W5	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
		D16W2	1.520-1.530 (0.0598-0.0602)	1.55 (0.061)
	Oil		2.805-2.820 (0.1104-0.1110)	2.85 (0.112)
Piston ring	Ring to groove clearance			
	Top	D16W1, D16W5	0.035-0.060 (0.0014-0.0024)	0.13 (0.005)
		D16W2	0.030-0.060 (0.0012-0.0024)	0.13 (0.005)
	Second		0.030-0.055 (0.0012-0.0022)	0.13 (0.005)
	Ring end gap	Top	0.15-0.030 (0.006-0.012)	0.60 (0.024)
		Second	0.30-0.45 (0.012-0.018)	0.70 (0.028)
		Oil D16W1, D16W5	0.20-0.70 (0.008-0.028)	0.80 (0.031)
		D16W2	0.20-0.80 (0.008-0.031)	0.90 (0.035)

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Piston pin	O.D.	18.994-19.000 (0.7478-0.7480)	-
	Pin-to-piston clearance	0.010-0.022 (0.0004-0.0009)	-
Connecting rod	Pin-to-rod interference	0.014-0.040 (0.0006-0.0016)	-
	Small end bore diameter	18.96-18.98 (0.746-0.747)	-
	Large end bore diameter Nominal	48.0 (1.89)	-
	End play installed on crankshaft	0.15-0.30 (0.006-0.012)	0.40 (0.016)
Crankshaft	Main journal diameter	54.976-55.000 (2.1644-2.1654)	-
	Rod journal diameter	44.976-45.000 (1.7707-1.7717)	-
	Taper	0.0025 (0.00010) max.	0.005 (0.0002)
	Out of Round	0.0025 (0.00010) max.	0.005 (0.0002)
	End play	0.10-0.35 (0.004-0.014)	0.45 (0.018)
	Total runout	0.03 (0.001) max.	0.04 (0.002)
Bearing	Main bearing-to-journal oil clearance		
	No. 1 and 5 journals	0.018-0.036 (0.0007-0.0014)	0.05 (0.002)
	No. 2, 3 and 4 journals	0.024-0.042 (0.0009-0.0017)	0.05 (0.002)
	Rod bearing-to-journal oil clearance	0.020-0.038 (0.0008-0.0015)	0.05 (0.002)

Engine Lubrication - Section 8

	MAINTENANCE	STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity *l* (US qt, Imp qt)		
	KE, KG, KN, KQ models	3.7 (3.9, 3.3) for engine overhaul	
		3.3 (3.5, 2.9) for oil change, including filter	
		3.0 (3.2, 2.6) for oil change, without filter	
	KU, KT, KY models	4.3 (4.5, 3.8) for engine overhaul	
		3.6 (3.8, 3.2) for oil change, including filter	
		3.3 (3.5, 2.9) for oil change, without filter	
Oil pump	Inner-to-outer rotor radial clearance	0.02-0.14 (0.001-0.006)	0.20 (0.008)
	Pump body-to-outer rotor radial clearance	0.10-0.18 (0.004-0.007)	0.20 (0.008)
	Pump body-to-rotor axial clearance	0.03-0.08 (0.001-0.003)	0.15 (0.006)
Relief valve	Pressure setting 80°C (176°F) kPa (kgf/cm^2, psi)		
	at idle	70 (0.7, 10) min.	
	at 3,000 rpm (min^{-1})	340 (3.5, 50) min.	

Cooling - Section 10

	MAINTENANCE	STANDARD (NEW)
Radiator	Coolant capacity *l* (US qt. Imp qt.) (including engine, heater, cooling line and reservoir)	M/T: 3.9 (4.1, 3.4) for overhaul 2.8 (3.0, 2.5) for coolant change
	Reservoir capacity 0.4 *l* (0.42 US qt. 0.35 Imp qt.)	CVT: Honda Multi Matic 4.1 (4.3, 3.6) for overhaul 3.0 (3.2, 2.6) for coolant change
Radiator cap	Opening pressure kPa (kgf/cm^2, psi)	93-123 (0.95-1.25, 14-18)
Thermostat	Start to open °C (°F)	70-80 (169-176)
	Fully open °C (°F)	90 (194)
	Valve lift a fully open:	8.0 (0.31) min
Cooling fan	Thermostat "ON" temperature °C (°F)	91-95 (196-203)
	Thermostat "OFF" temperature °C (°F)	Subtract 3-8 (5-15) from actual "ON" temperature

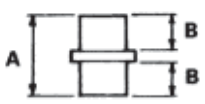
Fuel and Emissions - Section 11

	MEASUREMENT	STANDARD (NEW)
Pressure regulator	Pressure with regulator vacuum hose disconnected kPa (kgf/cm^2, psi)	260-310 (2.7-3.2, 38-46)
Fuel tank	Capacity *l* (US gal. Imp gal.)	55.0 (14.5, 12.1)
Engine	Idle speed with headlight and cooling fan off rpm (min^{-1})	M/T: Neutral CVT/Honda Multi Matic **N** or **P** positions
		Except KU model: 750±50 700±50
		KU model: 670±50
	Idle CO %	With TWC model: 0.1 max.
		Without TWC model: 1.0 ±1.0

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	to floor		
		LHD	179 (7.05)	-
		RHD	183 (7.20)	-
	Stroke		130-140 (5.12-5.51)	-
	Free play		8-18 (0.31-0.71)	-
	Disengagement height	to floor		
		LHD	87 (3.43) min.	-
		RHD	74 (2.91) min.	-
Flywheel	Clutch surface runout		0.05 (0.002) max.	0.15 (0.006)
Clutch disc	Rivet head depth		1.65-2.25 (0.06-0.09) min.	0.8 (0.03)
	Thickness		8.4-9.0 (0.33-0.35)	6.0 (0.24)
Pressure plate	Warpage		0.03 (0.001) max.	0.15 (0.006)
	Diaphragm spring finger alignment		0.6 (0.02) max.	0.8 (0.03)

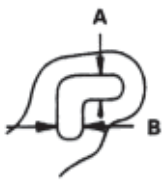
Manual Transmission - Section 13

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity *l* (US qt. Imp qt.)	2WD	1.8 (1.9, 1.6) at oil change	
		2WD	2.0 (2.1, 1.8) at overhaul	
		4WD	1.65 (1.7, 1.5) at oil change	
		4WD	2.1 (2.2, 1.8) at overhaul	
Mainshaft	End play		0.11-0.18 (0.004-0.007)	Adjust
	Diameter of ball bearing contact area (clutch side)		27.977-27.990 (1.1015-1.1020)	27.94 (1.100)
	Diameter of needle bearing contact area		37.984-38.000 (1.4954-1.4961)	37.93 (1.493)
	Diameter of ball bearing contact area (transmission housing side)		27.987-28.000 (1.1018-1.1024)	27.94 (1.100)
	Runout		0.02 (0.001) max.	0.05 (0.002)
Mainshaft 3rd and 4th gears	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.30 (0.012)
	Thickness	3rd gear	34.92-34.97 (1.375-1.377)	34.8 (1.37)
		4th gear	31.42-31.47 (1.237-1.239)	31.3 (1.23)
Mainshaft 5th gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.3 (0.01)
	Thickness		30.92-30.97 (1.217-1.219)	30.8 (1.21)
Countershaft	Diameter of needle bearing contact area		36.000-36.015 (1.4173-1.4179)	35.95 (1.415)
	Diameter of ball bearing and needle bearing contact area		24.987-25.000 (0.9837-0.9843)	24.94 (0.982)
	Diameter of 1st gear contact area		36.984-37.000 (1.4561-1.4567)	36.93 (1.454)
	Runout		0.02 (0.001) max	0.05 (0.002)
Countershaft 1st gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.08 (1.696)
	End play		0.06-0.18 (0.002-0.007)	0.23 (0.009)
	Thickness		26.95-27.00 (1.061-1.063)	-
Countershaft 2nd gear	I.D.		47.009-47.025 (1.8507-1.8514)	47.08 (1.854)
	End play		0.07-0.14 (0.003-0.006)	0.18 (0.007)
	Thickness		28.92-28.97 (1.139-1.141)	-
Thrust washer (Countershaft 1st gear)	Thickness		1.95-1.97 (0.077-0.078)	-
Spacer collar (Countershaft 2nd gear)	I.D.		36.48-36.49 (1.43-1.44)	36.5 (1.44)
	O.D.		41.989-42.000 (1.653-1.654)	41.94 (1.65)
	Length		29.07-29.09 (1.14-1.15)	-
Spacer collar (Mainshaft 4th and 5th gears)	 I.D.		31.002-31.012 (1.2205-1.2209)	31.06 (1.223)
	O.D.		37.989-38.000 (1.4956-1.4961)	37.94 (1.494)
	Length			
		A	56.45-56.55 (2.222-2.226)	-
		B	26.03-26.08 (1.025-1.027)	26.01 (1.024)
Reverse idler gear	I.D.		20.016-20.043 (0.7880-0.7891)	20.09 (0.7909)
	Gear-to-reverse gear shaft clearance		0.036-0.084 (0.0014-0.0033)	0.16 (0.0063)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.85-1.10 (0.033-0.043)	0.4 (0.02)
Dual cone synchro	Clearance (ring pushed against synchro)			
	Outer synchro ring-to-synchro cone		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Synchro cone-to-gear		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Outer synchro ring-to-gear		0.95-1.68 (0.037-0.066)	0.6 (0.02)
Shift fork	Finger thickness	3rd/4th fork	7.4-7.6 (0.29-0.30	-
		Except above	6.2-6.4 (0.24-0.25)	-
	Fork-to-synchro sleeve clearance		0.35-0.65 (0.014-0.026)	1.0 (0.039)

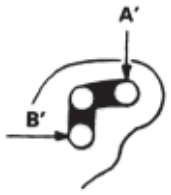
Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Reverse Shift Fork	Pawl groove width		13.0-13.3 (0.51-0.52)	-
	Fork-to-reverse idle gear clearance		0.5-1.1 (0.02-0.04)	1.8 (0.07)
	Groove width *1	at A	7.05-7.25 (0.278-0.285)	-
		at B	7.4-7.7 (0.29-0.30)	-
	Fork-to-5th/reverse shift shaft clearance *2	at A'	0.05-0.35 (0.002-0.014)	0.5 (0.02)
		at B'	0.4-0.8 (0.02-0.03)	1.0 (0.04)
Shift arm A	Shift fork diameter at contact area		12.9-13.0 (0.508-0.512)	-
	Shift arm A-to-shift fork shaft clearance		0.2-0.5 (0.008-0.020)	0.6 (0.024)
Shift arm C	Shift arm C-to-shift arm B clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm B contact area		12.9-13.0 (0.508-0.512)	-
Select arm	Select arm-to-shift arm A clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm A contact area		7.9-8.0 (0.311-0.315)	-
Select lever	O.D.		15.941-15.968 (0.6276-0.6287)	-
	Transmission housing clearance		0.032-0.086 (0.0013-0.0034)	-
Select lever	O.D.		15.941-15.968 (0.6276-0.6287)	-
	Transmission housing clearance		0.032-0.127 (0.0013-0.0050)	-
Differential carrier	Pinion shaft contact area I.D.			
		2WD	18.000-18.018 (0.7086-0.7093)	-
		4WD	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion shaft clearance			
		2WD	0.07-0.047 (0.0007-0.0081)	-
		4WD	0.027-0.057 (0.0011-0.0022)	0.1 (0.004)
	Driveshaft, intermediate shaft contact area I.D.		28.005-28.025 (1.1026-1.1033)	-
	Carrier-to-driveshaft clearance		0.025-0.066 (0.0010-0.0026)	0.12 (0.005)
	Carrier-to-intermediate shaft clearance		0.055-0.091 (0.0022-0.0036)	0.15 (0.006)
Differential pinion gear	Backlash		0.05-0.15 (0.002-0.006)	-
	I.D.		18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance		0.059-0.095 (0.0023-0.0037)	0.15 (0.006)
Differential tapered roller bearing preload Starting torque Nm (kgf/cm, lbf/in)			1.4-2.5 (14-26, 12-23)	Adjust
Transfer	Diameter of roller bearing contact area			
	Transfer shaft (driven gear side)		33.984-34.000 (1.337-1.339)	33.93 (1.336)
	Transfer shaft (middle gear side)		27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear		40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear shaft (driven gear side)		35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (spline side)		26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash		0.06-0.16 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)		2.68-3.47 (27.3-35.4, 23.7-30.7)	Adjust

*1: Measuring points



*2: Measuring points



Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity *l* (US qt, Imp qt)			
	KE, KG models	2WD	6.7 (7.1, 5.9) for overhaul	
			4.0 (4.2, 3.5) for fluid change	
		4WD	7.1 (7.5, 6.2) for overhaul	
			3.9 (4.1, 3.4) for fluid change	
	KQ, KU models	2WD	6.5 (6.9, 5.7) for overhaul	
			3.8 (4.0, 3.3) for fluid change	
		4WD	6.9 (7.3, 6.1) for overhaul	
			3.7 (3.9, 3.3) for fluid change	
Hydraulic pressure MPa (kgf/cm^2, psi)	Forward clutch pressure at 1,500 rpm (min^{-1}) in D position		1.4-17. (14.3-17.8, 203-253)	
Hydraulic pressure MPa (kgf/cm^2, psi)	Reverse brake pressure at 1,500 rpm (min^{-1}) in R position		1.4-17. (14.3-17.8, 203-253)	
	Drive pulley pressure at 1,500 rpm (min^{-1}) in N position		0.2-0.7 (2.0-7.1, 28-101)	
	Driven pulley pressure at 1,500 rpm (min^{-1}) in N position		1.5-2.3 (15.3-23.5, 218-334)	
	Lubrication pressure at 3,000 rpm (min-1) in N position		Above 0.2 (2, 30)	
Stall speed rpm (min^{-1}) (Check with vehicle on level ground				
	D position		2,500	2,350-2,650
	D position S mode, L and R positions		3,000	2,800-3,100
Clutch	Clutch initial clearance			
	Forward clutch		0.6-0.8 (0.024-0.031)	-
	Start clutch		0.5-0.7 (0.020-0.028)	-
	Reverse brake		0.45-0.75 (0.018-0.030)	-
	Clutch return spring free length			
	Forward clutch		30.5 (1.201)	28.5 (1.122)
	Start clutch		40.9 (1.610)	38.9 (1.531)
	Reverse brake		29.4 (1.157)	27.4 (1.079)
	Clutch disc thickness			
	Forward clutch		1.88-2.00 (0.074-0.079)	Until grooves worn out
	Start clutch		1.88-2.00 (0.074-0.079)	-
	Reverse brake		1.94-2.06 (0.076-0.081)	Until grooves worn out
	Clutch plate thickness			
	Forward clutch		1.95-2.05 (0.077-0.081)	Discolouration
	Start clutch		2.25-2.35 (0.089-0.093)	-
	Reverse Brake		1.90-2.00 (0.075-0.079)	Discolouration

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Forward clutch end plate thickness		
	Mark 1 or 15	3.4-3.5 (0.134-0.138)	Discolouration
	Mark 2 or 16	3.5-3.6 (0.138-0.142)	Discolouration
	Mark 3 or 17	3.6-3.7 (0.142-0.146)	Discolouration
	Mark 4 or 18	3.7-3.8 (0.146-0.150)	Discolouration
	Mark 5 or 19	3.8-3.9 (0.150-0.154)	Discolouration
	Mark 6 or 20	3.9-4.0 (0.154-0.157)	Discolouration
	Mark 7 or 21	4.0-4.1 (0.157-0.161)	Discolouration
	Mark 8 or 22	4.1-4.2 (0.161-0.165)	Discolouration
	Mark 9 or 23	4.2-4.3 (0.165-0.169)	Discolouration
	Mark 10 or 24	4.3-4.4 (0.169-0.173)	Discolouration
	Mark 11 or 25	4.4-4.5 (0.173-0.177)	Discolouration
	Mark 12 or 26	4.5-4.6 (0.177-0.181)	Discolouration
	Mark 13 or 27	4.6-4.7 (0.181-0.185)	Discolouration
	Reverse brake end plate thickness		
	Mark 1	3.55-3.65 (0.140-0.144)	Discolouration
	Mark 2	3.75-3.85 (0.148-0.152)	Discolouration
	Mark 3	3.95-4.05 (0.156-0.159)	Discolouration
	Mark 4	4.15-4.25 (0.163-0.167)	Discolouration
	Mark 5	4.35-4.45 (0.171-0.175)	Discolouration
	Mark 6	4.55-4.65 (0.179-0.183)	Discolouration
	Mark 7	4.75-4.85 (0.187-0.191)	Discolouration
	Mark 8	4.95-5.05 (0.195-0.199)	Discolouration
ATF pump	ATF pump drive gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump driven gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump body bushing I.D.		
	Drive gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	Driven gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	ATF pump gear side clearance	0.015-0.035 (0.0006-0.0014)	Wear or damage
	ATF pump gear-to-body clearance		
	Drive gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
	Driven gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
Transmission	Diameter of needle bearing contact area		
	Input shaft - flywheel side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Input shaft - forward clutch side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Drive pulley shaft - start clutch side	43.981-43.991 (1.7315-1.7319)	Wear or damage
	Drive pulley shaft - fly wheel side	24.007-24.020 (0.945-0.0043)	Wear or damage
	Drive pulley shaft - forward clutch side	24.007-24.020 (0.945-0.946)	Wear or damage
	Thrust clearance		
	Carrier and ring gear	0.050-0.110 (0.0020-0.0043)	-
	Driven pulley shaft and start clutch hub	0.000-0.130 (0.000-0.005)	-
	Input shaft and ATF pump driven sprocket	0.370-0.650 (0.015-0.026)	-
	Secondary gear shaft and fly wheel ball bearing	0.00-0.15 (0.00-0.006)	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Thrust shim, 25 x 31 mm thickness	1.02-1.05 (0.040-0.041)	Wear or damage
		1.09-1.12 (0.043-0.044)	Wear or damage
		1.16-1.19 (0.046-0.047)	Wear or damage
		1.23-1.26 (0.048- 0.050)	Wear or damage
		1.30-1.33 (0.051-0.052)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.44-1.47 (0.057-0.058)	Wear or damage
		1.51-1.54 (0.059-0.061)	Wear or damage
		1.58-1.61 (0.062-0.063)	Wear or damage
		1.65-1.68 (0.065-0.066)	Wear or damage
		1.72-1.75 (0.068-0.069)	Wear or damage
		1.79-1.82 (0.070-0.072)	Wear or damage
		1.055-1.085 (0.0415-0.0427)	Wear or damage
		1.125-1.155 (0.0443-0.0454)	Wear or damage
		1.195-1.225 (0.0470-0.0482)	Wear or damage
		1.265-1.295 (0.0498-0.510)	Wear or damage
		1.335-1.365 (0.0526-0.0537)	Wear or damage
		1.405-1.435 (0.0553-0.0565)	Wear or damage
		1.475-1.505 (0.0580-0.0593)	Wear or damage
		1.545-1.575 (0.0608-0.0620)	Wear or damage
		1.615-1.645 (0.0636-0.0648)	Wear or damage
		1.685-1.715 (0.0663-0.0675)	Wear or damage
		1.755-1.785 (0.0691-0.0703)	Wear or damage
	Cotters thickness	2.87-2.90 (0.113-0.114)	Wear or damage
		2.97-3.00 (0.117-0.118)	Wear or damage
		3.07-3.10 (0.121-0.122)	Wear or damage
		3.17-3.20 (0.125-0.126)	Wear or damage
	ATF pump drive sprocket thrust shim, 22 x 28 mm thickness	1.12-1.15 (0.044-0.045)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.62-1.65 (0.064-0.065)	Wear or damage
		1.87-1.90 (0.074-0.075)	Wear or damage
		2.12-2.15 (0.083-0.085)	Wear or damage
		2.37-2.40 (0.093-0.094)	Wear or damage
	Secondary gear shaft thrust shim, 25 x 35 mm thickness	2.80-2.85 (0.110-0.112)	Wear or damage
		2.90-2.95 (0.114-0.116)	Wear or damage
		3.00-3.05 (0.118-0.120)	Wear or damage
		3.10-3.15 (0.122-0.124)	Wear or damage
		3.20-3.25 (0.126-0.128)	Wear or damage
		3.30-3.35 (0.130-0.132)	Wear or damage
		3.40-3.45 (0.134-0.136)	Wear or damage
		3.50-3.55 (0.138-0.140)	Wear or damage
		3.60-3.65 (0.142-0.144)	Wear or damage
		3.70-3.75 (0.146-0.148)	Wear or damage
		3.80-3.85 (0.150-0.152)	Wear or damage
Transmission (cont'd)	Input shaft feed pipe O.D.		
	Drive pulley feed pipe	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Forward clutch feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Input shaft bushing I.D.		
	Drive pulley feed pipe bushing	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Forward clutch feed pipe bushing	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Driven shaft feed pipe O.D.		
	Start clutch feed pipe (right side cover side)	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Driven pulley feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Start clutch feed pipe (fly wheel housing side)	8.97-8.98 (0.353-0.354)	8.95 (0.352)
	Driven pulley shaft bushing I.D.		
	Start clutch feed pipe (right side cover side)	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Driven pulley feed pipe	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Start clutch feed pipe (fly wheel housing side)	9.000-9.015 (0.354-0.355)	9.03 (0.356)
	Secondary driven gear sealing ring groove width	2.50-2.65 (0.098-0.104)	2.655 (0.105)
	Start clutch end plate I.D.	88.900-88.935 (3.500-3.501)	Wear or damaged
	Input shaft sealing ring groove width	2.00-2.10 (0.079-0.083)	2.105 (0.083)
	Drive pulley shaft I.D. at sealing ring	24.007-24.020 (0.945-0.946)	Wear or damage
Shifting device and parking brake control	Parking brake cone	-	Wear or other defect
	Parking brake pawl	-	Wear or other defect
	Parking gear	-	Wear or other defect

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	
Differential carrier	Pinion shaft contact area I.D.	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion clearance	0.023-0.057 (0.0009-0.0022)	0.1 (0.004)
	Drive shaft contact area I.D.	26.025-26.045 (1.0246-1.0254)	-
	Carrier-to-driveshaft clearance	0.045-0.086 (0.0018-0.0034)	0.12 (0.005)
Differential pinion gear	Backlash	0.05-0.15 (0.002-0.006)	-
	I.D.	18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance	0.055-0.095 (0.0022-0.0037)	0.15 (0.006)
Set ring-to-bearing outer race clearance		0-0.15 (0-0.006)	Adjust
Transfer	Diameter of roller bearing contact area		
	Transfer shaft (transfer gear side)	38-485-38-500 (1.515-1.516)	38.43 (1.513)
	Transfer shaft (middle of shaft)	27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear	40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear (driven gear side)	35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (splined side)	26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash	0.060-0.160 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)	2.68-3.47 (27.3,35.4, 23.7-30.7)	Adjust

	MEASUREMENT	Wire Dia.	O.D.	Free length	No of Coils
Springs	PH regulator valve spring	1.2 (0.047)	9.0 (0.354)	26.7 (1.051)	10.0
	PH control valve spring	1.7 (0.067)	13.4 (0.528)	39.4 (1.551)	8.7
	PL regulator valve spring	0.9 (0.035)	7.2 (0.283)	14.6 (0.575)	7.2
	PH-PL control valve spring	1.0 (0.039)	10.0 (0.394)	31.4 (1.236)	8.6
	Clutch reducing valve spring	1.9 (0.075)	16.8 (0.661)	44.4 (1.748)	8.0
	Lubrication valve spring	1.6 (0.063)	13.4 (0.528)	51.6 (2.031)	11.6
	Shift valve spring	1.4 (0.055)	8.2 (0.323)	34.1 (1.343)	13.0
	Shift control valve spring	1.0 (0.039)	7.4 (0.291)	19.3 (0.760)	7.5
	Start clutch control valve spring	0.4 (0.016)	4.1 (0.161)	12.1 (0.476)	6.8
	Pitot regulator valve spring	0.6 (0.024)	5.7 (0.224)	9.5 (0.374)	5.0
	Start clutch valve accumulator spring	1.2 (0.047)	8.3 (0.327)	29.8 (1.173)	12.3
	Reverse control valve spring	1.2 (0.047)	9.4 (0.370)	31.4 (1.236)	11.0
	Shift inhibitor valve spring	1.3 (0.051)	13.2 (0.520)	48.3 (1.902)	10.6

Differential (4WD) - Section 15

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Differential fluid	Capacity L (US qt. Imp qt)	1.2 (1.3, 1.1) at overhaul	-
		1.0 (1.1, 0.9) at fluid change	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)
Steering wheel	Rotation play at steering wheel circumference	0-10 (0-0.39)
	Starting load at steering wheel circumference N (kgf, lbf) Engine running	34 (3.5, 7.7)
Gearbox	Angle of rack-guide-screw loosened from locked position	10°-15°
Pump	Pump pressure with shut-off valve closed kPa (kgf/cm^2, psi)	7,200-7,800 (73-80, 1,040-1,140)
Power steering fluid	Recommended fluid	Honda power steering fluid (V, II or S)
	Fluid capacity / (US qt. lmp qt) For overhaul RHD	0.65 (0.70, 0.57)
	LHD	0.61 (0.64, 0.54)
Power steering belt*	Deflection with 98 N (10 kgf. 22lbf) between pulleys	10.5-14.0 (0.41-0.55) with used belt 7.5-10.0 (0.30-0.39) with new belt
Power steering belt*	Belt tension N (kgf, lbf) Measured with belt tension gauge	340-490 (35-50, 80-110) with used belt 640-780 (65-80, 140-180) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Suspension - Section 18

	MEASUREMENT			STANDARD (NEW)	
Wheel alignment	Camber	Front	3 Door	-0°00' ± 1°	
		Rear	5 Door	-0°15' ± 1°	
		Rear		-0°30' ± 1'	
	Caster	Front		2°15' ±1°	
	Total toe	Front		0 ± 3 (0 ± 0.12)	
		Rear		IN 2 ± 5 (0.08 ± 0.02)	
	Front wheel turning angle				
	Inward wheel		3 Door	38°00' ± 2°	
			5 Door	35°00' ± 2°	
	Outward wheel			30°00' (Reference)	
Wheel bearing	End play		Front	0-0.05 (0-0.002)	
			Rear	0-0.05 (0-0.002)	
				STANDARD (NEW)	**SERVICE LIMIT**
Wheel	Rim runout	Aluminium wheel	Axial	0-0.7 (0-0.03)	2.0 (0.08)
			Radial	0-0.7 (0-0.03)	1.5 (0.06)
		Steel wheel	Axial	0-1.0 (0-0.04)	2.0 (0.08)
			Radial	0-1.0 (0-0.04)	1.5 (0.06)

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	
Parking brake lever	Play on stroke at 196 N (20 kgf, 44 lbf) lever force		To be locked when pulled 7-10 notches	
Foot brake pedal	Pedal height (With floor mat removed)			
		M/T	192	
		A/T	197	
	Free play		1-5 (0.04-0.20)	
Master cylinder	Piston-to-pushrod clearance		0-0.4 (0-0.02)	
			STANDARD (NEW)	**SERVICE LIMIT**
Disc brake	Disc thickness	Front	22.9-23.1 (0.902-0.909)	21.0 (0.83)
	Disc runout	Rear	-	0.10 (0.004)
	Disc parallelism	Front	-	0.015 (0.0006)
	Pad thickness	Front	10.5-11.5 (0.4-0.45)	1.6 (0.06)
Rear Drum brake	I.D.	3 Door	199.9-200.0 (7.870-7.874)	201.0 (7.913)
		5 Door	219.9-220.0 (8.657-8.861)	221.0 (6.701)
	Lining thickness	3 Door	4.0 (0.157)	2.0 (0.08)
		5 Door	4.5 (0.18)	2.0 (0.08)
Brake booster	Characteristics at 98 N (20 kgf, 44 lbf) pedal force			
	Vacuum kPa (mmHg. inHg)		N (kgf, lbf)	kPa (kgf/cm^2, psi)
	0 (0.0)		98 (10, 22)	0 (0, 0)
			294 (30, 66)	1,400 (14, 199)
	66.7 (500, 19.7)		98 (10, 22)	3,600 (37, 526)
			294 (30, 66)	9,000 (92, 1,308)

Air Conditioning - Section 22

	MEASUREMENT		STANDARD (NEW)
Air conditioning system	Lubricant type: SP-10 (P/N 38897-P13-003, 38898-P13-003 or 368899-P13-A01).		
	Lubricant capacity m/ (fl oz, lmp oz)	Condenser	20 (2/3, 0.7)
		Evaporator	35 (1 1/16, 1.2)
		Line or hose	10 (1/3, 0.4)
		Receiver	10 (1/3,0.4)
Compressor	Lubricant type: SP-10 (P/N 38899-003 or 38899-P13-A01)		
	Lubricant capacity m/ (fl oz, lmp oz)		130-150 (4.4-5.1, 4.6-5.3)
	Field coil resistance at 20°C (68°F) ohms		3.05-3.35
	Pulley-to-pressure plate clearance		0.5 ± 0.15 (0.02 ± 0.006)
Compressor belt	Deflection with 98 N (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt
			5.0-7.0 (0.20-0.28) with new belt
	Belt tension N (kgf, lbf)		330-480 (34-49, 75-108) with used belt
	Measured with belt tension gauge		680-810 (69-83, 152-183) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

	ITEM		METRIC	ENGLISH	NOTES
Dimensions	3 Door model				
	Overall Length	KE, KG models	4,010 mm	157.9 in	
		KQ model	4,005 mm	157.7 in	
		KY, KU models	3,995 mm	157.3 in	
	Overall Width		1,695 mm	66.7 in	
	Overall Height				
	Models without roof spoiler				
	All models except KG (Portugal)		1,575 mm	62.0 in	
	KG (Portugal) model		1,590 mm	62.6 in	
	Models with roof spoiler				
	All models except KG (Portugal) and KY		1,670 mm	65.7 in	
	KG (Portugal) model		1,685 mm	68.3 in	
	KY model		1,680 mm	66.1 in	
	Wheelbase		2,360 mm	92.9 in	
	Track	Front	1,470 mm	57.9 in	
		Rear	1,455 mm	57.3 in	
	Wheel Arch (EU)				
	Front	Except KG (Portugal) model	728 mm	28.6 in	
		KG (Portugal) model	741 mm	29.2 in	
	Rear	Except KG (Portugal) model	743 mm	29.3 in	
		KG (Portugal) model	758 mm	29.8 in	
	Seating capacity	Except KU model	Four (4)		
		KU model	Five (5)		
Dimensions	5 Door model				
	Overall Length	KE, KG models	4,110 mm	161.8 in	
		KQ model	4,105 mm	157.7 in	
		KY, KU models	4,095 mm	157.3 in	
	Overall Width		1,695 mm	66.7 in	
	Overall Height				
	Models without roof spoiler				
	All models except KG (Portugal)		1,580 mm	62.2 in	
	KG (Portugal) model		1,595 mm	62.8 in	
	Models with roof spoiler				
	All models except KG (Portugal) and KY		1,670 mm	65.7 in	
	KG (Portugal) and KY models		1,685 mm	66.3 in	
	Wheel Base		2,460 mm	96.9 in	
	Track	Front	1,470 mm	57.9 in	
		Rear	1,455 mm	57.3 in	
	Wheel Arch (EU)				
	Front	Except KG (Portugal) model	726 mm	28.6 in	
		KG (Portugal) model	741 mm	29.2 in	
	Rear	Except KG (Portugal) model	743 mm	29.3 in	
		KG (Portugal) model	758 mm	29.8 in	
	Seating Capacity	Except KU model	Four (4)		
		KU model	Five (5)		

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KE and KG
KE, KG 3-door	D16W1 engine model		s	models are
Models	2WD 5MT	1,137 kgs	2,507 lbs	equipped with
	5MT with roof spoiler	1,147 kgs	2,529 lbs	power steering,
	5MT with sunroof	1,149 kgs	2,533 lbs	ABS and SRS
	5MT with sunroof and roof spoiler	1,159 kgs	2,555 lbs	system.
	CVT	1,162 kgs	2,562 lbs	
	CVT with roof spoiler	1,172 kgs	2,584 lbs	
	CVT with sunroof	1,174 kgs	2,588 lbs	
	CVT with sunroof and roof spoiler	1,184 kgs	2,610 lbs	
	4WD 5MT	1,192 kgs	2,628 lbs	
	5MT with roof spoiler	1,202 kgs	2,650 lbs	
	5MT with sunroof	1,204 kgs	2,654 lbs	
	5MT with sunroof and roof spoiler	1,214 kgs	2,676 lbs	
	CVT	1,217 kgs	2,683 lbs	
	CVT with roof spoiler	1,227 kgs	2,705 lbs	
	CVT with sunroof	1,229 kgs	2,709 lbs	
	CVT with sunroof and roof spoiler	1,239 kgs	2,732 lbs	
	D16W5 engine model (4DW)			
	5MT	1,212 kgs	2,672 lbs	
	5MT with roof spoiler	1,222 kgs	2,694 lbs	
	5MT with sunroof	1,224 kgs	2,698 lbs	
	5MT with sunroof and roof spoiler	1,234 kgs	2,721 lbs	
WEIGHT	Weight Distribution (Front/Rear)			
KE, KG 3-door	D16W1 engine model			
Models	2WD 5MT	683/454 kgs	1,506/1,001 lbs	
	5MT with roof spoiler	683/464 kgs	1,506/1,023 lbs	
	5MT with sunroof	690/459 kgs	1,521/1,012 lbs	
	5MT with sunroof and roof spoiler	690/469 kgs	1,521/1,034 lbs	
	CVT	710/452 kgs	1,565/997 lbs	
	CVT with roof spoiler	710/462 kgs	1,565/1,019 lbs	
	CVT with sunroof	717/457 kgs	1,581/1,007 lbs	
	CVT with sunroof and roof spoiler	717/467 kgs	1,581/1,029 lbs	
	4WD 5MT	705/487 kgs	1,554/1,074 lbs	
	5MT with roof spoiler	705/497 kgs	1,554/1,096 lbs	
	5MT with sunroof	712/492 kgs	1,570/1,084 lbs	
	5MT with sunroof and roof spoiler	712/502 kgs	1,570/1,106 lbs	
	CVT	732/485 kgs	1,614/1,069 lbs	
	CVT with roof spoiler	732/495 kgs	1,614/1,091 lbs	
	CVT with sunroof	739/490 kgs	1,629/1,080 lbs	
	CVT with sunroof and roof spoiler	739/500 kgs	1,629/1,103 lbs	
	D16W5 engine model (4WD)			
	5MT	716/496 kgs	1,579/1,093 lbs	
	5MT with roof spoiler	716/506 kgs	1,579/1,115 lbs	
	5MT with sunroof	723/501 kgs	1,594/1,104 lbs	
	5MT with sunroof and roof spoiler	723/511 kgs	1,594/1,127 lbs	
	Max Permissable weight (EU) 2WD	1,530 kgs	3,373 lbs	
	4WD	1,580 kgs	3,483 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KE and KG
KE,	D16W1 engine model			models are
KG 5-Models	2WD 5MT	1,209 kgs	2,665 lbs	equipped with
	5MT with roof spoiler	1,219 kgs	2,687 lbs	power steering,
	5MT with sunroof	1,221 kgs	2,692 lbs	ABS and SRS
	5MT with sunroof and roof spoiler	1,231 kgs	2,714 lbs	system.
	CVT	1,234 kgs	2,721 lbs	
	CVT with roof spoiler	1,244 kgs	2,743 lbs	
	CVT with sunroof	1,246 kgs	2,747 lbs	
	CVT with sunroof and roof spoiler	1,256 kgs	2,769 lbs	
	4WD 5MT	1,261 kgs	2,780 lbs	
	5MT with roof spoiler	1,271 kgs	2,802 lbs	
	5MT with sunroof	1,273 kgs	2,806 lbs	
	5MT with sunroof and roof spoiler	1,383 kgs	2,829 lbs	
	CVT	1,286 kgs	2,835 lbs	
	CVT with roof spoiler	1,296 kgs	2,857 lbs	
	CVT with sunroof	1,298 kgs	2,862 lbs	
	CVT with sunroof and roof spoiler	1,308 kgs	2,884 lbs	
	D16W5 engine model (4WD)			
	5MT	1,269 kgs	2,798 lbs	
	5MT with roof spoiler	1,279 kgs	2,820 lbs	
	5MT with sunroof	1,281 kgs	2,824 lbs	
	5MT with sunroof and roof spoiler	1,291 kgs	2,846 lbs	
	Weight Distribution (Front/Rear)			
	D16W1 engine model			
	2WD 5MT	710/499 kgs	1,565/1,100 lbs	
	5MT with roof spoiler	710/509 kgs	1,565/1,122 lbs	
	5MT with sunroof	717/504 kgs	1,581/1,111 lbs	
	5MT with sunroof and roof spoiler	717/514 kgs	1,581/1,133 lbs	
	CVT	736/498 kgs	1,623/1,098 lbs	
	CVT with roof spoiler	736/508 kgs	1,623/1,120 lbs	
	CVT with sunroof	743/503 kgs	1,638/1,109 lbs	
	CVT with sunroof and roof spoiler	743/513 kgs	1,638/1,131 lbs	
	4WD 5MT	726/535 kgs	1,601/1,179 lbs	
	5MT with roof spoiler	726/545 kgs	1,601/1,201 lbs	
	5MT with sunroof	733/540 kgs	1,616/1,190 lbs	
	5MT with sunroof and roof spoiler	733/550 kgs	1,616/1,213 lbs	
	CVT	749/537 kgs	1,651/1,184 lbs	
	CVT with roof spoiler	749/547 kgs	1,651/1,206 lbs	
	CVT with sunroof	756/542 kgs	1,667/1,195 lbs	
	CVT with sunroof and roof spoiler	756/552 kgs	1,667/1,217 lbs	
Weight	D16W5 engine model (4WD)			
KY Model	5MT	733/536 kgs	1,616/1,182 lbs	
	5MT with roof spoiler	733/546 kgs	1,616/1,204lbs	
	5MT with sunroof	740/541 kgs	1,631/1,193 lbs	
	5MT with sunroof and roof spoiler	740/551 kgs	1,631/1,215 lbs	
	Max. Permissable Weight (EU) 2WD	1,610 kgs	3,549 lbs	
	4WD	1,640 kgs	3,615 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KG model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	1,135 kgs	2,502 lbs	power steering,
	5MT with ABS and roof spoiler	1,145 kgs	2,524 lbs	and SRS
	5MT with ABS and sunroof	1,145 kgs	2,524 lbs	system.
	5MT with ABS, sunroof and roof spoiler	1,155 kgs	2,546 lbs	
	CVT with ABS	1,160 kgs	2,557 lbs	
	CVT with ABS and roof spoiler	1,170 kgs	2,579 lbs	
	CVT with ABS and sunroof	1,170 kgs	2,579 lbs	
	CVT with ABS, sunroof and roof spoiler	1,180 kgs	2,601 lbs	
	4WD 5MT	1,185 kgs	2,612 lbs	
	5MT with roof spoiler	1,195 kgs	2,634 lbs	
	5MT with ABS	1,190 kgs	2,623 lbs	
	5MT with ABS and roof spoiler	1,200 kgs	2,645 lbs	
	5MT with sunroof	1,195 kgs	2,634 lbs	
	5MT with sunroof and roof spoiler	1,205 kgs	2,656 lbs	
	5MT with ABS and sunroof	1,200 kgs	2,645 lbs	
	5MT with ABS, sunroof and roof spoiler	1,210 kgs	2,667 lbs	
	CVT	1,210 kgs	2,667 lbs	
	CVT with roof spoiler	1,220 kgs	2,689 lbs	
	CVT with ABS	1,215 kgs	2,678 lbs	
	CVT with ABS and roof spoiler	1,225 kgs	2,700 lbs	
	CVT with sunroof	1,220 kgs	2,689 lbs	
	CVT with sunroof and roof spoiler	1,230 kgs	2,711 lbs	
	CVT with ABS and sunroof	1,223 kgs	2,696 lbs	
	CVT with ABS, sunroof and roof spoiler	1,233 kgs	2,718 lbs	
	D16W5 engine model (4WD)			
	CVT	1,215 kgs	2,678 lbs	
	CVT with roof spoiler	1,225 kgs	2,700 lbs	
	CVT with ABS	1,220 kgs	2,689 lbs	
	CVT with ABS and roof spoiler	1,230 kgs	2,711 lbs	
	CVT with sunroof	1,225 kgs	2,700 lbs	
	CVT with sunroof and roof spoiler	1,235 kgs	2,722 lbs	
	CVT with ABS and sunroof	1,228 kgs	2,707 lbs	
	CVT with ABS, sunroof and roof spoiler	1,238 kgs	2,729 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Weight Distribution (Front/Rear)			KG model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	680/456 kgs	1,499/1,003 lbs	power steering,
(cont'd)	5MT with ABS and roof spoiler	680/465 kgs	1,499/1,025 lbs	SRS system.
	5MT with ABS and sunroof	685/460 kgs	1,510/1,014 lbs	
	5MT with sunroof and roof spoiler	685/470 kgs	1,510/1,036 lbs	
	CVT with ABS	705/455 kgs	1,554/1,003 lbs	
	CVT with roof spoiler	705/465 kgs	1,554/1,025 lbs	
	CVT with ABS and sunroof	710/460 kgs	1,565/1,014 lbs	
	CVT with ABS, sunroof and roof spoiler	710/470 kgs	1,565/1,036 lbs	
	4WD 5MT	690/495 kgs	1,521/1,091 lbs	
	5MT with roof spoiler	690/505 kgs	1,521/1,113 lbs	
	5MT with ABS	695/495 kgs	1,532/1,091 lbs	
	5MT with ABS sunroof and roof spoiler	695/505 kgs	1,532/1,113 lbs	
	5MT with sunroof	695/500 kgs	1,532/1,102 lbs	
	5MT with sunroof and roof spoiler	695/510 kgs	1,532/1,124 lbs	
	5MT with ABS and sunroof	700/500 kgs	1,543/1,102 lbs	
	5MT with ABS, sunroof and roof spoiler	700/510 kgs	1,543/1,124 lbs	
	CVT	715/495 kgs	1,576/1,091 lbs	
	CVT with roof spoiler	715/505 kgs	1,576/1,113 lbs	
	CVT with ABS	720/495 kgs	1,587/1,091 lbs	
	CVT with ABS and roof spoiler	720/505 kgs	1,554/1,113 lbs	
	CVT with sunroof	720/500 kgs	1,587/1,103 lbs	
	CVT with sunroof and roof spoiler	720/510 kgs	1,587/1,124 lbs	
	CVT with ABS and sunroof	723/500 kgs	1,594/1,102 lbs	
	CVT with ABS, sunroof and roof spoiler	733/500 kgs	1,616/1,102 lbs	
	D16W5 engine model (4DW)			
	CVT	720/495 kgs	1,587/1,091 lbs	
	CVT with roof spoiler	720/505 kgs	1,587/1,113 lbs	
	CVT with ABS	725/495 kgs	1,598/1,091 lbs	
	CVT with ABS and roof spoiler	725/505 kgs	1,598/1,113 lbs	
	CVT with sunroof	725/500 kgs	1,598/1,102 lbs	
	CVT with sunroof and roof spoiler	725/510 kgs	1,598/1,124 lbs	
	CVT with ABS and sunroof	728/500 kgs	1,6051,102 lbs	
	CVT with ABS, sunroof and roof spoiler	728/510 kgs	1,605/1,124 lbs	
	Max Loaded Vehicle Weight (ADR)	1,580 kgs	3,483 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KQ model is
KQ 5-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	1,200 kgs	2,646 lbs	power steering
(cont'd)	5MT with ABS and roof spoiler	1,210 kgs	2,668 lbs	and SRS
	5MT with ABS and sunroof	1,210 kgs	2,668 lbs	system.
	5MT with ABS, sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	CVT with ABS	1,225 kgs	2,701 lbs	
	CVT with ABS and roof spoiler	1,235 kgs	2,723 lbs	
	CVT with ABS and sunroof	1,235 kgs	2,723 lbs	
	CVT with ABS, sunroof and roof spoiler	1,245 kgs	2,745 lbs	
	4WD 5MT	1,250 kgs	2,756 lbs	
	5MT with roof spoiler	1,260 kgs	2,778 lbs	
	5MT with ABS	1,255 kgs	2,767 lbs	
	5MT with ABS and roof spoiler	1,265 kgs	2,789 lbs	
	5MT with sunroof	1,260 kgs	2,778 lbs	
	5MT with sunroof and roof spoiler	1,270 kgs	2,800 lbs	
	5MT with ABS and sunroof	1,265 kgs	2,789 lbs	
	5MT with ABS, sunroof and roof spoiler	1,275 kgs	2,811 lbs	
	CVT	1,275 kgs	2,811 lbs	
	CVT with roof spoiler	1,285 kgs	2,833 lbs	
	CVT with ABS	1,280 kgs	2,822 lbs	
	CVT with ABS and roof spoiler	1,290 kgs	2,844 lbs	
	CVT with sunroof	1,285 kgs	2,833 lbs	
	CVT with sunroof and roof spoiler	1,295 kgs	2,855 lbs	
	CVT with ABS and sunroof	1,290 kgs	2,844 lbs	
	CVT with ABS, sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	D16W5 engine model (4WD)			
	CVT	1,280 kgs	2,822 lbs	
	CVT with roof spoiler	1,290 kgs	2,844 lbs	
	CVT with ABS	1,285 kgs	2,833 lbs	
	CVT with ABS and roof spoiler	1,295 kgs	2,855 lbs	
	CVT with sunroof	1,290 kgs	2,844 lbs	
	CVT with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	CVT with ABS and sunroof	1,295 kgs	2,855 lbs	
	CVT with ABS, sunroof and roof spoiler	1,305 kgs	2,877 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KQ model is
KQ 5-Model	D16W1 engine model			equipped with
(cont'd)	2WD 5MT with ABS	700/500 kgs	1,543/1,103 lbs	power steering,
	5MT with ABS and roof spoiler	700/510 kgs	1,543/1,125 lbs	and SRS
	5MT with ABS and sunroof	705/505 kgs	1,554/1,114 lbs	system.
	5MT with ABS, sunroof and roof spoiler	705/515 kgs	1,554/1,136 lbs	
	CVT with ABS	725/500 kgs	1,598/1,103 lbs	
	CVT with ABS and roof spoiler	725/510 kgs	1,598/1,125 lbs	
	CVT with ABS and sunroof	730/505 kgs	1,609/1,114 lbs	
	CVT with ABS, sunroof and roof spoiler	730/515 kgs	1,609/1,136 lbs	
	4WD 5MT	715/535 kgs	1,576/1,180 lbs	
	5MT with roof spoiler	715/545 kgs	1,576/1,202 lbs	
	5MT with ABS	720/535 kgs	1,587/1,180 lbs	
	5MT with ABS and roof spoiler	720/545 kgs	1,587/1,202 lbs	
	5MT with sunroof	720/540 kgs	1,587/1,191 lbs	
	5MT with sunroof and roof spoiler	720/550 kgs	1,587/1,213 lbs	
	5MT with ABS and sunroof	725/540 kgs	1,598/1,191 lbs	
	5MT with ABS, sunroof and roof spoiler	725/550 kgs	1,598/1,213 lbs	
	CVT	740/535 kgs	1,631/1,180 lbs	
	CVT with roof spoiler	740/545 kgs	1,631/1,202 lbs	
	CVT with ABS	745/535 kgs	1,642/1,180 lbs	
	CVT with ABS and roof spoiler	745/545 kgs	1,642/1,202 lbs	
	CVT with sunroof	745/540 kgs	1,642/1,191 lbs	
	CVT with sunroof and roof spoiler	745,550 kgs	1,642/1,213lbs	
	CVT with ABS and sunroof	750/540 kgs	1,653/1,191 lbs	
	CVT with ABS, sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	D16W5 engine model (4WD)			
	CVT	745/535 kgs	1,642/1,180 lbs	
	CVT with roof spoiler	745/545 kgs	1,642/1,202 lbs	
	CVT with ABS	750/535 kgs	1,653/1,180 lbs	
	CVT with ABS and roof spoiler	750/545 kgs	1,653/1,202 lbs	
	CVT with sunroof	750/540 kgs	1,653/1,191 lbs	
	CVT with sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	CVT with ABS and sunroof	755/540 kgs	1,664/1,191 lbs	
	CVT with ABS, sunroof and roof spoiler	755/550 kgs	1,664/1,213 lbs	
	Max. Loaded Vehicle Weight (ADR)	1,660 kgs	3,659 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KU model is
KU 3-door	D16W1 engine model			equipped with
Model	2WD 5MT	1,135 kgs	2,502 lbs	power steering,
	5MT with roof spoiler	1,145 kgs	2,524 lbs	ABS and SRS
	5MT with sunroof	1,145 kgs	2,524 lbs	system.
	5MT with sunroof and roof spoiler	1,155 kgs	2,546 lbs	
	Multi Matic	1,160 kgs	2,557 lbs	
	Multi Matic with roof spoiler	1,170 kgs	2,579 lbs	
	Multi Matic with sunroof	1,170 kgs	2,579 lbs	
	Multi Matic sunroof and roof spoiler	1,180 kgs	2,601 lbs	
	4WD 5MT	1,190 kgs	2,623 lbs	
	5MT with roof spoiler	1,200 kgs	2,646 lbs	
	5MT with sunroof	1,200 kgs	2,646 lbs	
	5MT with roof spoiler and roof spoiler	1,210 kgs	2,668 lbs	
	Multi Matic	1,215 kgs	2,679 lbs	
	Multi Matic with roof spoiler	1,225 kgs	2,701 lbs	
	Multi Matic with sunroof	1,223 kgs	2,697 lbs	
	Multi Matic with sunroof and roof spoiler	1,233 kgs	2,719 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	1,220 kgs	2,690 lbs	
	Multi Matic with roof spoiler	1,230 kgs	2,712 lbs	
	Multi Matic with sunroof	1,228 kgs	2,708 lbs	
	Multi Matic with sunroof and roof spoiler	1,238 kgs	2,730 lbs	
Weight	Weight Distribution (Front/Rear)			KU model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT	680/455 kgs	1,499/1,003 lbs	power steering,
	5MT with roof spoiler	680/465 kgs	1,499/1,025 lbs	ABS and SRS
	5MT with sunroof	685/460 kgs	1,510/1,014 lbs	system.
	5MT with sunroof and roof spoiler	685/470 kgs	1,510/1,036 lbs	
	Multi Matic	705/455 kgs	1,554/1,003 lbs	
	Multi Matic with roof spoiler	705/465 kgs	1,554/1,025 lbs	
	Multi Matic with sunroof	710/460 kgs	1,565/1,014 lbs	
	Multi Matic with sunroof and roof spoiler	710/470 kgs	1,565/1,036 lbs	
	4WD 5MT	695/495 kgs	1,532/1,091 lbs	
	5MT with roof spoiler	695/505 kgs	1,532/1,114 lbs	
	5MT with Sunroof	700/500 kgs	1,543/1,103 lbs	
	5MT with sunroof and roof spoiler	700/510 kgs	1,543/1,125 lbs	
	Multi Matic	720/495 kgs	1,587/1,092 lbs	
	Multi Matic with roof spoiler	720/505 kgs	1,587/1,114 lbs	
	Multi Matic with sunroof	723/500 kgs	1,594/1,103 lbs	
	Multi Matic with sunroof and roof spoiler	723/510 kgs	1,594/1,125 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	725/495 kgs	1,588/1,092 lbs	
	Multi Matic with roof spoiler	725/505 kgs	1,588/1,114 lbs	
	Multi Matic with sunroof	728/500 kgs	1,605/1,103 lbs	
	Multi Matic with sunroof and roof spoiler	728/510 kgs	1,6051,125 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KU model is
KU 5-door	D16W1 engine model			equipped with
Model	2WD 5MT	1,200 kgs	2,646 lbs	power steering,
	5MT with roof spoiler	1,210 kgs	2,668 lbs	ABS and SRS
	5MT with sunroof	1,210 kgs	2,668 lbs	system.
	5MT with sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	Multi Matic	1,225 kgs	2,701 lbs	
	Multi Matic with roof spoiler	1,235 kgs	2,723 lbs	
	Multi Matic with sunroof	1,235 kgs	2,723 lbs	
	Multi Matic with sunroof and roof spoiler	1,245 kgs	2,745 lbs	
	4WD 5MT	1,255 kgs	2,767 lbs	
	5MT with roof spoiler	1,265 kgs	2,789 lbs	
	5MT with sunroof	1,265 kgs	2,789 lbs	
	5MT with sunroof and roof spoiler	1,275 kgs	2,811 lbs	
	Multi Matic	1,280 kgs	2,822 lbs	
	Multi Matic with roof spoiler	1,290 kgs	2,844 lbs	
	Multi Matic with sunroof	1,290 kgs	2,844 lbs	
	Multi Matic with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	1,285 kgs	2,833 lbs	
	Multi Matic with roof spoiler	1,295 kgs	2,855 lbs	
	Multi Matic with sunroof	1,295 kgs	2,855 lbs	
	Multi Matic with sunroof and roof spoiler	1,305 kgs	2,866 lbs	
Weight	Weight Distribution (Front/Rear)			KU model is
KU 5-door	D16W1 engine model			equipped with
Model	2WD 5MT	700/500 kgs	1,543/1,103 lbs	power steering,
	5MT with roof spoiler	700/510 kgs	1,543/1,125 lbs	ABS and SRS
	5MT with sunroof	705/505 kgs	1,554/1,114 lbs	system.
	5MT with sunroof and roof spoiler	705/515 kgs	1,554/1,136 lbs	
	Multi Matic	725/500 kgs	1,598/1,103 lbs	
	Multi Matic with roof spoiler	725/510 kgs	1,598/1,125 lbs	
	Multi Matic with sunroof	730/505 kgs	1,609/1,114 lbs	
	Multi Matic with sunroof and roof spoiler	730/515 kgs	1,609/1,136 lbs	
	4WD 5MT	720/535 kgs	1,587/1,180 lbs	
	5MT with roof spoiler	720/545 kgs	1,587/1,202 lbs	
	5MT with Sunroof	725/540 kgs	1,598/1,191lbs	
	5MT with sunroof and roof spoiler	725/550 kgs	1,598/1,213 lbs	
	Multi Matic	745/535 kgs	1,642/1,180 lbs	
	Multi Matic with roof spoiler	745/545 kgs	1,642/1,202 lbs	
	Multi Matic with sunroof	750/540 kgs	1,593/1,191 lbs	
	Multi Matic with sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	750/535 kgs	1,653/1,080 lbs	
	Multi Matic with roof spoiler	750/545 kgs	1,653/1,202 lbs	
	Multi Matic with sunroof	755/540 kgs	1,664/1,191 lbs	
	Multi Matic with sunroof and roof spoiler	755/550 kgs	1,664/1,213 lbs	

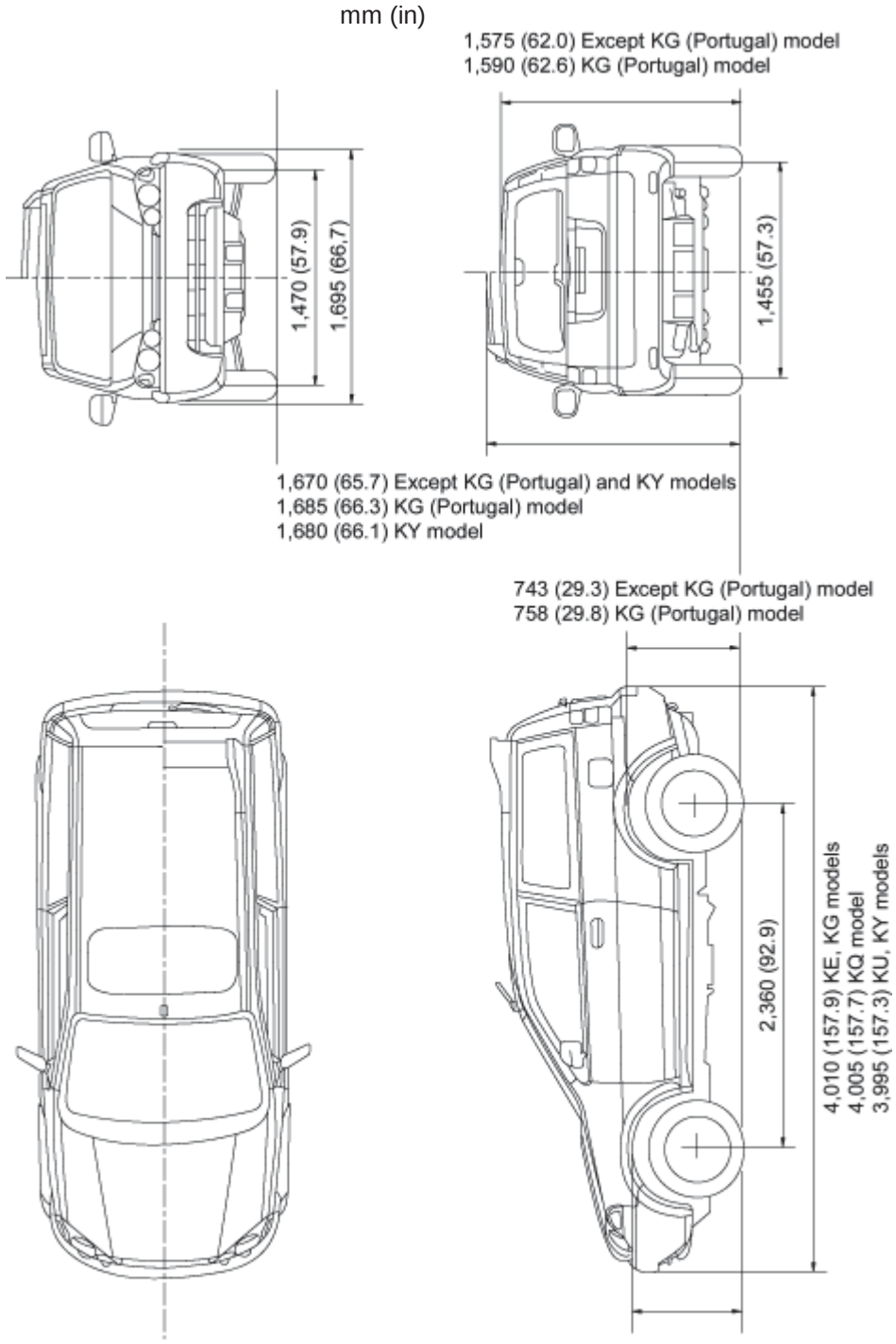
	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KY model is
KG 3-door	5MT	1,195 kgs	2,635 lbs	equipped with
Model	5MT with roof spoiler	1,205 kgs	2,657 lbs	power steering
	5MT with ABS	1,200 kgs	2,646 lbs	and SRS
	5MT with ABS and roof spoiler	1,210 kgs	2,668 lbs	system
	5MT with sunroof	1,210 kgs	2,668 lbs	
	5MT with sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	5MT with ABS and sunroof	1,215 kgs	2,679 lbs	
	5MT with ABS, sunroof and roof spoiler	1,225 kgs	2,701 lbs	
	Weight Distribution (Front/Rear)			
	5MT	700/495 kgs	1,543/1,092 lbs	
	5MT with roof spoiler	700/505 kgs	1,543/1,114 lbs	
	5MT with ABS	705/495 kgs	1,554/1,092 lbs	
	5MT with ABS and roof spoiler	705/505 kgs	1,554/1,114 lbs	
	5MT with sunroof	710/500 kgs	1,565/1,103 lbs	
	5MT with sunroof and roof spoiler	710/510 kgs	1,565/1,125 lbs	
	5MT with ABS and sunroof	715/500 kgs	1,576/1,103 lbs	
	5MT with ABS, sunroof and roof spoiler	715/510 kgs	1,576/1,125 lbs	
WEIGHT	Curb Weight			KY model is
KY 5-door	5MT	1,280 kgs	2,822 lbs	equipped with
Model	5MT with roof spoiler	1,290 kgs	2,844 lbs	power steering,
	5MT with ABS	1,285 kgs	2,833 lbs	and SRS
	5MT with ABS and roof spoiler	1,295 kgs	2,855 lbs	system.
	5MT with sunroof	1,290 kgs	2,844 lbs	
	5MT with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	5MT with ABS and sunroof	1,295 kgs	2,855 lbs	
	5MT with ABS, sunroof and roof spoiler	1,305 kgs	2,877 lbs	
	Weight Distribution (Front/Rear)			
	5MT	715/565 kgs	1,576/1,246 lbs	
	5MT with roof spoiler	715/575 kgs	1,576/1,268 lbs	
	5MT with ABS	720/565 kgs	1,587/1,246 lbs	
	5MT with ABS and roof spoiler	720/575 kgs	1,587/1,268 lbs	
	5MT with sunroof	720/570 kgs	1,587/1,257 lbs	
	5MT with sunroof and roof spoiler	720/580 kgs	1,587/1,279 lbs	
	5MT with ABS and sunroof	725/570 kgs	1,598/1,257 lbs	
	5MT with ABS, sunroof and roof spoiler	725/580 kgs	1,598/1,279 lbs	

	ITEM		DESCRIPTION		NOTES
ENGINE	Type D16W1, D16W2 engines		Water-cooled, 4-stroke SOHC		
	D16W5 engine		gasoline engine		
	Cylinder Arrangement		Water-cooled, 4-stroke SOHC		
			VTEC gasoline engine		
			Inline 4-cylinder, transverse		
			METRIC	**ENGLISH**	
	Bore and Stroke		75 x 90 mm	3.0 x 3.5 in	
	Displacement		1,590 cm^3	97 cu-in	
	Compression Ratio				
	D16W1, D16W5 engines		9.6		
	D16W1 engine		9.2		
	Valve Train		Belt Driven, SOHC		
	D16W1,D16W2 engines		4 valves per cylinder		
	D16W5 engine		Belt Driven, SOHC VTEC		
			4 valves per cylinder		
	Lubrication System		Forced and wet sump, trochoid pump		
	Oil pump Discharge rate		7.11 cm^3/rev	0.433 cu-in/rev	
	Water Pump Discharge rate at 6,000 rpm		125 *l* (132 US qt, 110 Imp qt/minute		
	Fuel Required				
	D16W1, D16W5 engine				
	European models		Premium UNLEADED gasoline with a Research Octane Number (RON) of 95 or higher		
	Except European models		UNLEADED gasoline with a Research Octane number (RON) of 91 or higher		
	D16W2 engine		LEADED gasoline with a Research Octane Number (RON) of 91 or higher		Unleaded gasoline with RON of 91 or higher may also be used
Starter	Type		Gear reduction		
	Normal Output		1.0kW		
	Normal Voltage		12V		
	Hour Rating		30 seconds		
	Direction of Rotation		Clockwise as viewed from gear end		
	Weight		3.1 kg	6.8 lbs	
Clutch	Type	M/T	Single plate dry diaphragm spring		
		A/T	Torque converter		
	Clutch facing area M/T		176 cm^2	27 sq in	
Transmission	Type M/T		Synchronised 5-speed forward, 1 reverse		
	CVT/Honda Multi Matic		Electronically controlled continuously variable transmission		
	Primary Gear Reduction	Type Ratio	Direct/1:1		
	Manual transmission				
	Gear Ratio	1st	3.500		
		2nd	1.956		
		3rd	1.344		
		4th	1.071		
		5th	0.870		
		Reverse	3.000		
	Final Reduction	Gear type	Single helical gear		
		Gear ratio	4.562		
	Transfer		0.434		
	Rear Differential		2.533		
	CVT/Honda Multi Matic				
	Gear Ratio	Low-High	2.466-0.449		
		Reverse	2.466		
	Final Reduction	Gear type	Single helical gear		
		Gear ratio	4.714		
	Transfer		0.433		
	Rear Differential		2.533		

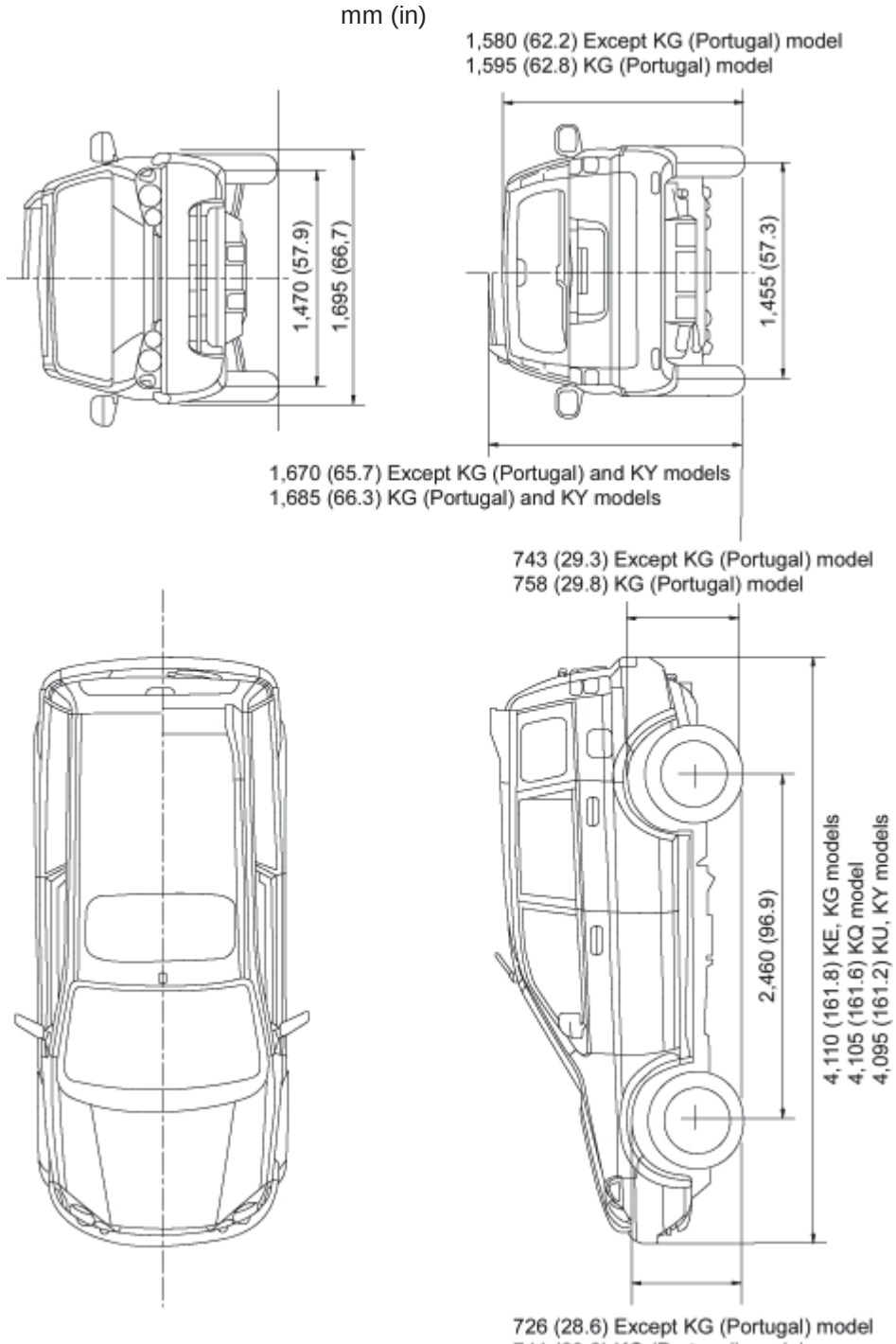
	ITEM			DESCRIPTION		NOTES
Air Conditioning	Cooling Capacity					
	Except KY models			3,172 Kcal/h	12,580 BTU/h	
	KY model			3,529 Kcal/h	14,000 BTU/h	
Air Conditioning	Compressor					
	Type/Manufacturer			Scroll/KEIHIN		
	Capacity			85.7 cm^3/rev	5.23 cu-in/rev	
	Max. Speed			10,000 rpm (min^{-1})		
	Lubricant Capacity			130 cm^3	4 1/3 fl oz,	
	Lubricant Type			SP-10 (P/N 38899-P13-003 or 38899-P13-A01		
	Condenser	Type		Corrugated fin		
	Evaporator	Type		Corrugated fin		
Air Conditioning	Blower	Type		Sirocco fan		
		Motor Input		190 W/12 V		
		Speed Control		4-speed		
		Max. Capacity		380 m^3/h	23 cu-ft/h	With A/C filter
				410 m^3/h	25 cu-ft/h	Without A/C filter
	Temp. Control	Type		Air Mix type		
	Compressor Clutch	Type		Dry, single plate, poly-V belt drive		
		Power Consumption		42 W max/12 V		
	Refrigerant	Type		HFC - 134a (R - 134a)		
		Quantity		600 + 0, -50 g	21.1 + 0 -1.8 oz	Except KY model
				650 + 0 -50 g	22.9 + 0 -1.8 oz	KY model
Steering System	Type			Power assisted, rack and pinion		
	Overall Ratio			15.1		
	Turns, Lock-to-Lock			2.75		
	Steering Wheel Dia.			375 mm	14.8 in	
Suspension	Type	Front		Independent double wishbone, coil spring with stabiliser		
		Rear		Independent double wishbone, coil spring with stabiliser		
	Shock Absorber	Front and Rear		Telescopic, hydraulic nitrogen gas-filled		
Wheel Alignment	Camber	Front	3-door	0°		
			5-door	-0°15'		
		Rear		-0°30'		
	Caster	Front		2°15'		
	Total Toe	Front		0 mm	0 in	
		Rear		In 2 mm	In 0.08 in	
Brake System	Type	Front		Power-assisted self-adjusting ventilated disc		
		Rear		Power-assisted self-adjusting drum		
	Pad Surface Area	Front		51 cm^2 x 4	7.9 sq-in x 4	
	Lining Surface Area	Rear	3-door	67.2 cm^2 x 4	10.4 sq-in x 4	
			5-door	73 cm^2 x 4	11.2 sq-in x 4	
	Parking brake	Type		Mechanical actuating, rear two wheel brakes		
Tyre	Size and pressure			See tyre label		
Washer Reservoir	Capacity			4.5 l (4.8 US qt, 4.0 Imp qt)		KE, KG models
				2.5 l (2.6 US qt, 2.2 Imp qt)		Except KE, KG models

	ITEM	DESCRIPTION	NOTES
Electrical	Battery	12 V, 36 AH, 5 HR	
	Starter	12V - 1.0 kW	
	Alternator	12V - 75A	
	Fuses		
	In the Under-dash Fuse Box	7.5A, 10A, 15A, 20A	
	In the Under-hood Fuse/Relay box	7.5A, 10A, 15A, 20A, 30A, 40A, 50A, 80A	
	Headlights High/Low	12V - 55/55 W	
	Front Turn Signal Lights	12V - 21 W	
	Front Position Lights	12V - 5 W	
	Side Turn Signal Lights	12V - 5 W	
	Rear Turn Signal Lights	12V - 21 W	
	Brake/Taillights	12V - 21/5 W	
	High Mount Brake Light	12V - 21 W	
	Back-up Lights	12V - 21 W	
	License Plate Lights	12V - 5 W	
	Ceiling Lights Front	12V - 5 W	
	Rear	12V - 8 W	
	Cargo Area Lights	12V - 3.4 W	
	Gauge Lights	12V - 1.4 W, 3.0 W	
	Indicator Lights	12V - 0.84 W, 1.12 W, 1.4 W, 0.91 W	
	Illumination and Pilot Lights	12V - 0.84 W, 0.91 W, 1.4 W	
	Rear Fog Light	12V - 21 W	European model
	Spot Lights	12V - 5 W	

mm (in)

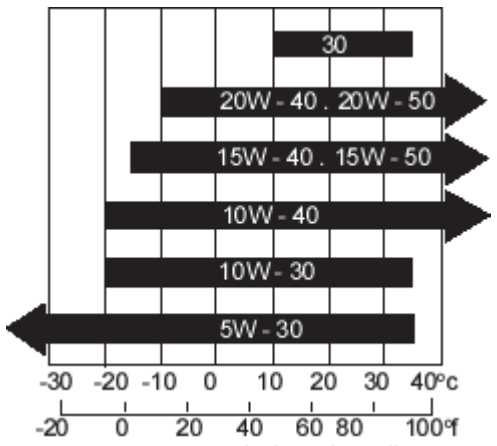

1,575 (62.0) Except KG (Portugal) model
1,590 (62.6) KG (Portugal) model
1,470 (57.9)
1,695 (66.7)
1,455 (57.3)
1,670 (65.7) Except KG (Portugal) and KY models
1,685 (66.3) KG (Portugal) model
1,680 (66.1) KY model
743 (29.3) Except KG (Portugal) model
758 (29.8) KG (Portugal) model
2,360 (92.9)
4,010 (157.9) KE, KG models
4,005 (157.7) KQ model
3,995 (157.3) KU, KY models
726 (28.6) Except KG (Portugal) model
741 (29.2) KG (Portugal) model

mm (in)


1,580 (62.2) Except KG (Portugal) model
1,595 (62.8) KG (Portugal) model
1,470 (57.9)
1,695 (66.7)
1,455 (57.3)
1,670 (65.7) Except KG (Portugal) and KY models
1,685 (66.3) KG (Portugal) and KY models
743 (29.3) Except KG (Portugal) model
758 (29.8) KG (Portugal) model
2,460 (96.9)
4,110 (161.8) KE, KG models
4,105 (161.6) KQ model
4,095 (161.2) KU, KY models
726 (28.6) Except KG (Portugal) model
741 (29.2) KG (Portugal) model

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

No.	LUBRICATION POINTS		LUBRICANT
1	Engine		Always use a fuel-efficient oil that says “API Service SG, SH or SJ.” SAE Viscosity: See chart below.
2	Transmission	Manual	Genuine Honda MTF*1
		CVT/Honda Multimatic	For European models: Genuine Honda CVT Fluid Except European models: Genuine Honda ATF PREMIUM (Automatic Transmission Fluid - PREMIUM)
3	Brake line (includes Anti-lock brake line)		Brake fluid DOT3 or DOT4*2
4	Clutch line		Brake fluid DOT3 or DOT4*2
5	Power steering gearbox		Steering grease P/N 08733 - B070E
6	Release fork (Manual transmission)		Urea Grease UM264 (P/N 41211 - PY5 - 305)
7	Shift and select cable ends (Manual transmission)		Urea Grease UM 264 (P/N 41211 - PY5 - 305)
8	Throttle cable end (Dashboard lower panel hole)		Silicone Grease
9	Throttle cable end (Throttle link)		Multi-purpose grease
10	Brake master cylinder pushrod		Multi-purpose grease
11	Clutch master cylinder pushrod		Multi-purpose grease
12	Hood hinges and hood latch		Multi-purpose grease
13	Battery terminals		Multi-purpose grease
14	Fuel fill lid		Multi-purpose grease
15	Tailgate hinges and latch		Multi-purpose grease
16	Door hinges, upper and lower		Multi-purpose grease
17	Door open detent		Multi-purpose grease
18	Rear brake shoe linkages		Multi-purpose grease
19	Brake calipers		Silicone grease
20	Power steering system		Genuine Honda Power Steering Fluid (V, II or S)
21	Air conditioning compressor		Compressor oil: SP-10 (P/N 38899 - P13 - 003 or 38899 - P13 - A01) (For Refrigerant: HFC - 134a (R-134a))
22	Rear Differential		Genuine Honda ATF PREMIUM (Automatic Transmission Fluid - PREMIUM)



Recommended engine oil

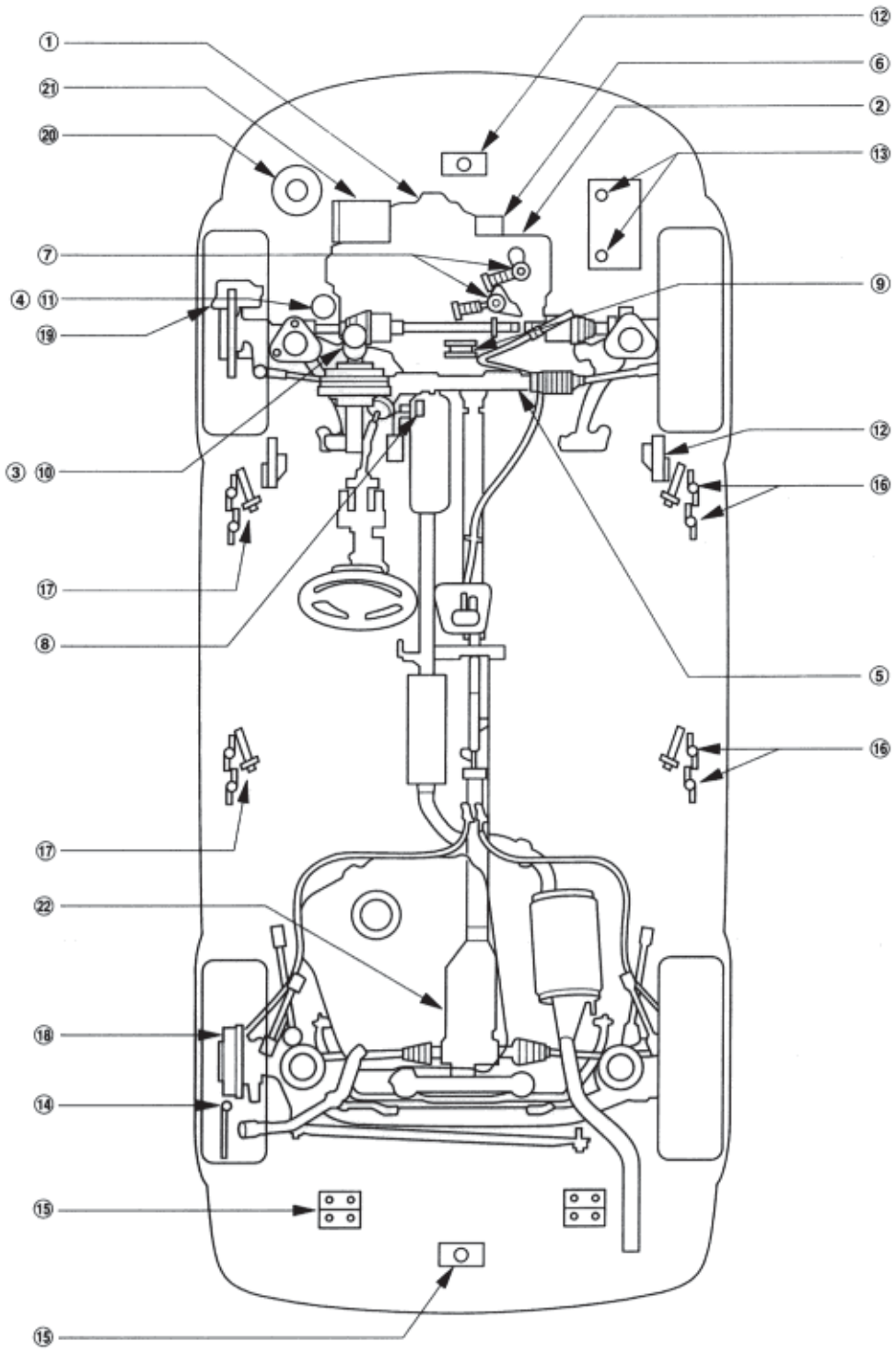
Engine oil viscosity for ambient temperature ranges

⚠ CAUTION

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

*1: If Honda MTF is not available, you may use an API service SG, SH or SJ - rated motor oil with a viscosity of SAE 10 W - 30 or 10 W - 40 temporarily. Motor oil can cause increased transmission wear and higher shifting effort.

*2: We recommend Genuine Honda Brake Fluid.


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Follow the Normal Maintenance Schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-6 and 3-7 do not apply.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Replace engine oil and oil filter		●	●	●	●	●	●	●	●	●	●	●		*3 **8-5** to **8-7**
Replace air cleaner element				●			●			●				*3 **11-99**
Inspect valve clearance				●			●			●			Check the valve clearance	*3 **6-3**, **6-4**
Replace fuel filter								●						*3 **11-86**
Replace spark plugs				●			●			●				*3 **4-21**, *3 **4-22**
Replace timing belt and inspect water pump									●				Check water pump for signs of seal leakage.	*3 **6-8**, *3 **10-11**
Inspect and adjust drive belts				●			●			●			♦ Check for cracks and damage. ♦ Check deflection and tension.	*3 **4-39**, *3 **17-16**, *3 **22-35**
Inspect idle speed								●						*3 **11-73**
Replace engine coolant						●			●			●	Check specific gravity for freezing point.	*3 **10-5**, **10-6**
Replace transmission fluid (O: Inspect)	MT				O*1				●				Genuine Honda MTF	*3 **13-4**
	CVT			●			●			●			Genuine Honda CVT Fluid	*3 **14-84**
Replace rear differential fluid									●*2				Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*3 **15-14**
Inspect front and rear brakes		●	●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. ♦ Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*3 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid		Every 3 years											Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*3 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●		Check the parking brake operation.	*3 **19-A-6**
Check lights alignment		●	●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*3 **23-D-7**
Test drive (noise, stability, dashboard operation)		●	●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Inspect at 45,000 km (27,000 miles)/36 months, and every 45,000 km (27,000 miles)/36 months after replacement.
*2: Replace at 120,000 km (72,000 miles)/96 months, thereafter 60,000 km (36,000 miles)/48 months.
*3: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Visually inspect the following items:													♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts, and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox, and boots		●	●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear	-

Service at the indicated distance or time whichever comes first — km x 1,000 / miles x 1,000 / months	7.5 / 4.5 / 6	15 / 9 / 12	22.5 / 13.5 / 18	30 / 18 / 24	37.5 / 22.5 / 30	45 / 27 / 36	52.5 / 31.5 / 42	60 / 36 / 48	67.5 / 40.5 / 54	75 / 45 / 60	82.5 / 49.5 / 66	90 / 54 / 72	97.5 / 58.5 / 78	105 / 63 / 84	113 / 67.5 / 90	120 / 72 / 96	NOTES	SECTION and PAGE
Replace engine oil and oil filter	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		*4 **8-5** to **8-7**
Replace air cleaner element - Use normal schedule except in dusty conditions			●			●			●			●			●			*4 **11-99**
Inspect valve clearance						●						●					Check the valve clearance	*4 **6-3**, **6-4**
Replace fuel filter														●				*4 **11-86**
Replace spark plugs						●						●						*4 **4-21**, **4-22**
Replace timing belt and inspect water pump																*1●	Check water pump for signs of seal leakage.	*4 **6-8**, *4 **10-11**
Inspect and adjust drive belts						●						●					♦ Check for cracks and damage. ♦ Check deflection and tension.	*4 **4-39**, *4 **17-16**, *4 **22-35**
Inspect idle speed														●				*4 **11-73**
Replace engine coolant										●						●	Check specific gravity for freezing point.	*4 **10-5**, **10-6**
Replace transmission fluid MT								●								●	Genuine Honda MTF	*4 **13-4**
Replace transmission fluid CVT						*2●						●					Genuine Honda CVT Fluid	*4 **14-84**
Replace rear differential fluid												*3 ●					Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*4 **15-14**
Inspect front and rear brakes	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*4 **19-A-4**, **19-A-9** **19-A-11** **19-A-12**, **19-A-20** **19-A-21**, **19-A-25**
Replace brake fluid	Every 3 years																Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*4 **19-A-7**
Check parking brake adjustment		●		●				●				●				●	Check the parking brake operation.	*4 **19-A-6**
Check lights alignment		●		●		●		●		●		●		●		●	Check the position of the headlights.	*4 **23-D-7**
Test drive (noise, stability, dashboard operations)		●		●		●		●		●		●		●		●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: The timing belt should normally be replaced at the intervals shown in the maintenance schedule. (Normal Conditions).
Replace the timing belt at 75,000 km or 45,000 miles if you regularly drive your vehicle in one or more of these conditions.
- ♦ In very high temperatures [43°C (110°F) above]
- ♦ In very low temperatures [-29°C (-20°F) under]

*2: Replace CVT fluid every 22,500 km (13,500 miles)/18 months, if the vehicle is driven mainly at high speed in extremely hot (over 32°C, 90°F) condition.

*3: Replace at 90,000 km (54,000 miles)/72 months, thereafter 45,000 km (27,000 miles)/36 months.

*4: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	7.5 4.5 6	15 9 12	22.5 13.5 18	30 18 24	37.5 22.5 30	45 27 36	52.5 31.5 42	60 36 48	67.5 40.5 54	75 45 60	82.5 49.5 66	90 54 72	97.5 58.5 78	105 63 84	113 67.5 90	120 72 96	NOTES	SECTION and PAGE
Visually inspect the following items:																		♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)			●		●		●		●		●		●		●		●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system			●		●		●		●		●		●		●		●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections			●		●		●		●		●		●		●		●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition			●		●		●		●		●		●		●		●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
Driving in extremely hot [over 32°C, (90°F)] conditions.
Extensive idling or long periods of stop-and-go driving.
Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
Driving on muddy, dusty or de-iced roads.

NOTE: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-4 and 3-5.

Follow the Maintenance Schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-10 and 3-11 do not apply.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil		Every 10,000 km (6,000 miles) or 12 months											*2 **8-5**, **8-6**
Replace engine oil filter		●	●	●	●	●	●	●	●	●	●		*2 **8-6**, **8-7**
Replace air cleaner element			●		●		●		●		●		*2 **11-99**
Inspect valve clearance			●		●		●		●		●	Check the valve clearance.	*2 **6-3**, **6-4**
Replace fuel filter			●		●		●		●		●		*2 **11-86**
Replace spark plugs			●		●		●		●		●		*2 **4-21**, **4-22**
Replace timing belt and inspect water pump						●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts			●		●		●		●		●	♦ Check for cracks and damage. ♦ Check deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed						●					●		*2 **11-73**
Replace engine coolant					●		●		●		●	Check specific gravity for freezing point.	*2 **10-5**, **10-6**
Replace transmission fluid MT (O: Inspect)			O		●		O		●		O	Honda Genuine MTF	*2 **13-4**
Replace transmission fluid CVT			●	●	●	●	●	●	●	●	●	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **14-84**
Replace rear differential fluid							*1●			●		Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **15-14**
Inspect front and rear brakes		●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, ,**19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid				●			●			●		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*2 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●	Check the parking brake operation.	*2 **19-A-6**
Check lights alignment		●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*2 **23-D-7**
Test drive (noise, stability, dashboard operations)		●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Replace at 120,000 km (72,000 miles)/72 months, thereafter 60,000 km (36,000 miles)/36 months.
*2: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first. km x 1,000 / miles x 1,000 / months	20 / 12 / 12	40 / 24 / 24	60 / 36 / 36	80 / 48 / 48	100 / 60 / 60	120 / 72 / 72	140 / 84 / 84	160 / 96 / 96	180 / 108 / 108	200 / 120 / 120	NOTES	SECTION and PAGE
Replace engine oil and oil filter	Every 5,000 km (3,000 miles) or 6 months											*2 **8-5** to **8-7**
Clean (O) or replace (●) air cleaner element - Use normal schedule except in dusty conditions	O	●	O	●	O	●	O	●	O	●		*2 **11-99**
Inspect valve clearance		●		●		●		●		●	Check the valve clearance	*2 **6-3**, **6-4**
Replace fuel filter		●		●		●		●		●		*2 **11-86**
Replace spark plugs		●		●		●		●		●		*2 **4-21**, **4-22**
Replace timing belt and inspect water pump					●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts		●		●		●		●		●	♦ Check for cracks and damage. ♦ Check deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed					●					●		*2 **11-73**
Replace engine coolant				●		●		●		●	Check specific gravity for freezing point.	*2 **10-5**, **10-6**
Replace transmission fluid MT		●		●		●		●		●	Honda Genuine MTF	*2 **13-4**
Replace transmission fluid CVT		●	●	●	●	●	●	●	●	●	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **14-84**
Replace rear differential fluid				*1●		●		●		●	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **15-14**
Inspect front and rear brakes	Every 10,000 km (6,000 miles) or 6 months										♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid			●			●			●		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*2 **19-A-7**
Check parking brake adjustment	●	●		●		●		●		●	Check the parking brake operation.	*2 **19-A-6**
Check lights alignment	●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*2 **23-D-7**
Test drive (noise, stability, dashboard operations)	●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Replace at 80,000 km (48,000 miles)/48 months, thereafter 40,000 km (24,000 miles)/24 months.
*2: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots	Every 10,000 km (6,000 miles) or 6 months											♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components	Every 10,000 km (6,000 miles) or 6 months											♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots	Every 10,000 km (6,000 miles) or 6 months											♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

- Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
- Driving in extremely hot [over 32°C, (90°F)] conditions.
- Extensive idling or long periods of stop-and-go driving.
- Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
- Driving on muddy, dusty or de-iced roads.

NOTE: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-8 and 3-9.

This Maintenance Schedule outlines the minimum required maintenance that you should perform to ensure the trouble-free operation of the customer's vehicle. Due to regional and climatic differences, some additional servicing maybe required.
Please consult the warranty handbook for a more detailed description.

Service at the indicated distance or time whichever comes first		km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil			Every 5,000 km (3,000 miles) or 6 months											*2 **8-5**, **8-6**
Replace engine oil filter			Every 5,000 km (3,000 miles) or 6 months											*2 **8-6**, **8-7**
Clean or replace air cleaner element	Dry type		Clean every 10,000 km (6,000 miles) or 6 months and replace every 20,000 km (12,000 miles) or 12 months.											*2 **11-99**
	Wet type		●	●	●	●	●	●	●	●	●	●		
Inspect valve clearance	KN, KU models			●		●		●		●		●	Check the valve clearance.	*2 **6-3**, **6-4**
	KT, KY models		●	●	●	●	●	●	●	●	●	●		
Replace fuel filter				●		●		●		●		●		*2 **11-86**
Replace spark plugs	KN, KU models			●		●		●		●		●		*2 **4-21**, **4-22**
	KT, KY models		●	●	●	●	●	●	●	●	●	●		
Inspect distributor cap, rotor and ignition wiring				●		●		●		●		●		*2 **4-19**
Replace timing belt and inspect water pump							●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts				●		●		●		●		●	♦ Check for cracks and damage. ♦ Check for deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed and idle CO			●	●	●	●	●	●	●	●	●	●		*2 **11-73**
Replace engine coolant						●		●		●		●	Check specific gravity for freezing point	*2 **10-5**, **10-6**
Inspect PCV valve				●		●		●		●		●	Check the clicking sound of motion from the PCV valve of idling.	*2 **11-105**
Inspect ignition timing				●		●		●		●		●		*2 **4-17**
Inspect evaporative emission control system							●					●	♦ Check the EVAPO control canister operation. ♦ Check the hose for blockage, cracks or disconnection.	*2 **11-106**
Replace transmission fluid	MT			●		●		●		●		●	Genuine Honda MTF	*2 **13-4**
	CVT/Honda Multi Matic			●	●	●	●	●	●	●	●	●	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **14-84**
Replace rear differential fluid						*1●		●		●		●	Genuine Honda ATF PREMIUM (Automatic Transmission Fluid-PREMIUM)	*2 **15-14**
Inspect front and rear brakes			Every 10,000 km (6,000 miles) or 6 months										♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**

*1: Replace at 80,000 km (48,000 miles)/48 months, thereafter 40,000 km (24,000 miles)/24 months.
*2: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace brake fluid (including ABS)			●		●		●		●		●	Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*1 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●	Check the parking brake operation.	*1 **19-A-6**
Rotate tyres (Check tyre inflation and condition at least once per month)		Rotate tyres every 10,000 km (6,000 miles)										The suggested rotation method is shown in the diagram of the Owner's Manual.	-
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		Every 10,000 km (6,000 miles) or 6 months										♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		Every 10,000 km (6,000 miles) or 6 months										♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		Every 10,000 km (6,000 miles) or 6 months										♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Cooling system hoses and connection		●	●	●	●	●	●	●	●	●	●	♦ Check all hoses for damage, leaks or deterioration. ♦ Check all hose clamps. Retighten if necessary.	*1 **10-2**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**

*1: Refer to shop manual: 99 HR-V MAINTENANCE, REPAIR and CONSTRUCTION Code No. 62S2H00.

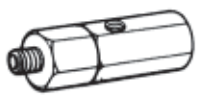
Ref No.	Tool Number	Description	Qty	Remark
1	07LAJ - PR30101	Valve Inspection Set	1	
2	07LAJ - PR30201	Air Stopper	1	
3	07NAJ - PO70100	Oil Pressure Gauge Attachment	1	
4	07406 - 0070001	Low Pressure Gauge	1	



①



②



③



④

21 Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 21: A problem in the VTEC (Variable Valve Timing and Valve Lift Electronic Control) Solenoid Valve circuit.
Refer to Troubleshooting Procedures (see section 11).

- **The MIL has been reported on.**
- **With the SCS short connector connected, code 21 is indicated.**

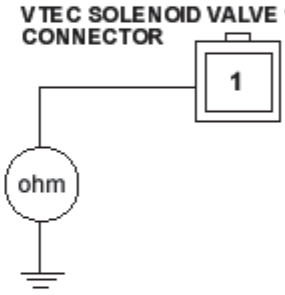
Check the VTEC System:
1. Do the engine control module (ECM)/powertrain control module (PCM) Reset Procedure (see section 11).
2. Start the engine.
3. Warm up to normal operating temperature (cooling fan comes on).
4. Do the Road Test.*

* Road Test:
Accelerate in 1st gear to an engine speed over 6,000 rpm (min^{-1}).
Hold that engine speed for at least two seconds.
If the MIL not come on during the first road test, repeat this test two more times.

Is the MIL on and does it indicate code 21?
NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires at VTEC solenoid valve and ECM/PCM.**
YES

Test the VTEC Solenoid Valve:
1. Turn the ignition switch OFF.
2. Disconnect the VTEC solenoid valve connector.
3. Check for continuity between VTEC solenoid valve 1P connector terminal No. 1 and body ground.

VTEC SOLENOID VALVE 1P CONNECTOR

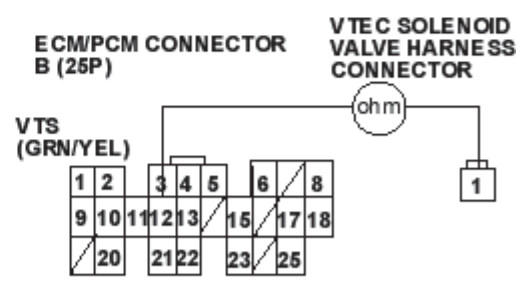


Terminal side of male terminal

Is there 14 - 30 ohm?
NO → **Replace the VTEC solenoid valve.**
YES

Test the VTEC Solenoid Valve wire:
Check for continuity between VTEC solenoid valve 1P connector terminal No. 1 and the ECM/PCM connector terminal B12.

ECM/PCM CONNECTOR B (25P)
VTEC SOLENOID VALVE HARNESS CONNECTOR



Wire side of female terminals

Is there continuity?
NO → **Repair open in the wire between the ECM/PCM (B12) and VTEC solenoid valve connector.**
YES

(To page 6-4)

(From page 6-3)

Test the VTEC Solenoid Valve Wire:
Check for continuity between VTEC solenoid valve connector terminal No. 1 and body ground.

Is there continuity?

YES → **Repair short in the wire between the ECM/PCM (B12) and VTEC solenoid valve connector.**

NO

Test the VTEC Solenoid Valve:
1. Connect the VTEC solenoid valve connector.
2. Remove the 10 mm bolt, and install the special tools as shown.
3. Connect a tachometer.
4. Start the engine.
5. Warm up engine to normal operating temperature (cooling fan comes on).
6. Check oil pressure at engine speeds of 1,000 and 2,000 rpm (min^{-1}).

NOTE: Keep measuring time as short as possible because engine is running with no load (less than one minute).

Is pressure below 49 KPa (0.5 kgf/cm^2 ,7 psi)?

NO → **Inspect the VTEC solenoid valve.**

YES

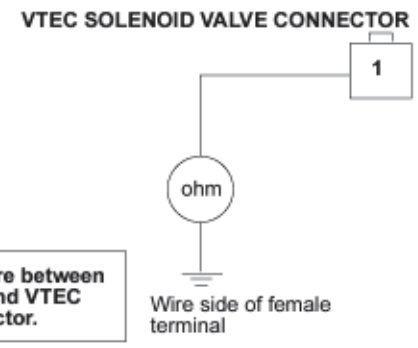
Test the VTEC Solenoid Valve:
1. Turn the ignition switch OFF.
2. Disconnect the VTEC solenoid valve connector.
3. Attach the battery positive terminal to the GRN/YEL terminal.
4. Start the engine and check oil pressure at an engine speed of 3,000 rpm (min^{-1})

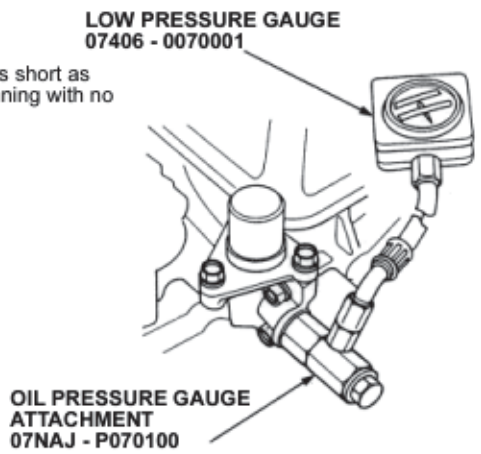
Is pressure above 250 KPa (2.5 kgf/cm^2 ,36 psi)?

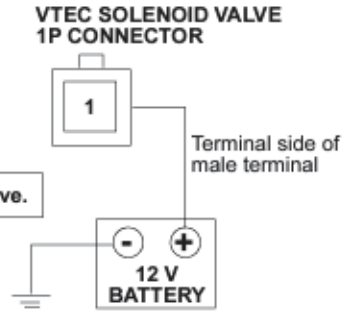
NO → **Inspect the VTEC solenoid valve.**

YES

Substitute a known-good ECM/PCM and recheck. If symptom/indication goes away, replace the original ECM/PCM.







P1259 The scan tool indicates Diagnostic Trouble Code (DTC) P1259: A problem in the VTEC Pressure Switch circuit or VTEC Solenoid Valve circuit. Refer to Troubleshooting Procedures (see section 11).

- **The MIL has been reported on.**
- **DTC P1259 is stored.**

Check the VTEC system:
1. Do the engine control module (ECM)/powertrain control module (PCM) Reset Procedure (see section 11).
2. Start the engine.
3. Warm up the engine to normal operating temperature (cooling fan comes on).
4. Do the Road Test.*

* Road Test:
Accelerate in 1st gear to an engine speed over 6,000 rpm (min^{-1}).
Hold that engine speed for at least two seconds.
If the DTC P1259 is not repeated during the first road test, repeat this test two more times.

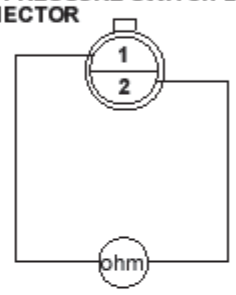
Is DTC P1259 indicated?

NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires at VTEC pressure switch, VTEC solenoid valve and ECM/PCM.**

YES

Test the VTEC Pressure Switch:
1. Turn the ignition switch OFF.
2. Disconnect the VTEC Pressure switch 2P connector.
3. Check for continuity between VTEC pressure switch 2P connector terminal No. 1 and No. 2.

VTEC PRESSURE SWITCH 2P CONNECTOR



Terminal side of male terminals

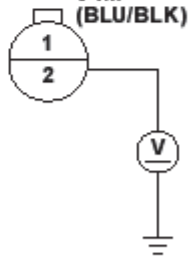
Is there continuity?

NO → **Replace the VTEC pressure switch.**

YES

Test the VTEC Pressure Switch:
1. Turn the ignition switch ON (II).
2. Measure the voltage between VTEC pressure switch 2P connector No. 2 and body ground.

VTM (BLU/BLK)



Wire side of female terminals

Is there battery voltage?

NO → **Inspect for an open or short to ground in the wire between the VTEC pressure switch and ECM/PCM (C10). If the wire is OK, substitute a known-good ECM/PCM and recheck.**

YES

(To page 6-6)

(From page 6-5)

Test the VTEC Pressure Switch Wire:
Measure voltage across the VTEC pressure switch 2P connector.

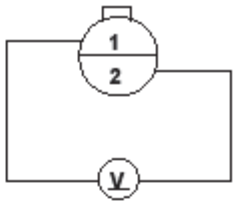
Is there battery voltage?

NO

- **Repair open in the wire between VTEC pressure switch and G101.**
- **If the wire is OK, substitute a known-good ECM/PCM and recheck.**

YES

VTEC PRESSURE SWITCH 2P CONNECTOR



Wire side of female terminals

Test the VTEC Solenoid Valve:
1. Turn the ignition switch OFF.
2. Disconnect the VTEC solenoid valve 1P connector.
3. Check for continuity between the VTEC solenoid valve 1P connector terminal No 1 and body ground.

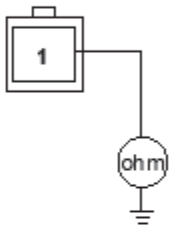
Is there 14 - 30 ohm?

NO

Replace VTEC solenoid valve.

YES

VTEC SOLENOID VALVE 1P CONNECTOR

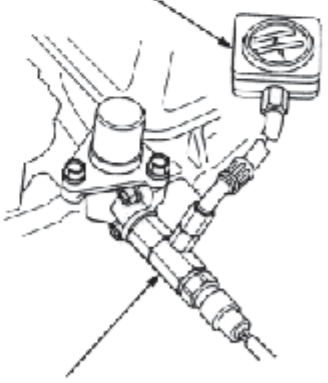


Terminal side of male terminal

Test the VTEC Solenoid Valve:
1. Remove the VTEC pressure switch and install the special tool as shown, then reinstall the VTEC pressure switch.
2. Reconnect the VTEC solenoid valve 1P connector and VTEC pressure switch 2P connector.
3. Connect the tachometer (see section 11).
4. Start the engine.
5. Warm up engine to normal operating temperature (cooling fan comes on).
6. Check oil pressure at engine speed of 1,000 and 2,000 rpm (min^{-1}).

Note: Keep measuring time as short as possible because engine is running with no load (less than one minute).

LOW PRESSURE GAUGE 07406 - 0070001



OIL PRESSURE GAUGE ATTACHMENT 07NAJ - P070100

Is pressure below 49 kPa (0.5 kgf/cm^2, 7 psi)?

NO

Inspect the VTEC solenoid valve (see page 6-8).

YES

(To page 6-7)

(From page 6-6)

Test the VTEC Solenoid Valve:
1. Turn the ignition switch OFF.
2. Disconnect the VTEC solenoid valve 1P connector.
3. Attach the battery positive terminal to the VTEC solenoid valve terminal.
4. Start the engine and check the oil pressure at engine speed of 3,000 rpm (min^{-1}).

Is the pressure above 250 kPa (2.5 kgf/cm^2, 36 psi)?

NO → **Inspect the VTEC solenoid valve (see page 6-8).**

YES

Test the VTEC Pressure Switch:
With the battery positive terminal connected the the VTEC solenoid valve measure voltage between the ECM/PCM connector terminal C10 and body ground.

Is there battery voltage above 4,000 rpm (min^{-1}).

NO → **Replace the VTEC pressure switch.**

YES

Test the VTEC Solenoid Valve Wire:
1. Turn the ignition switch OFF.
2. Check for continuity between the VTEC solenoid valve. 1P connector terminal and the ECM/PCM connector terminal B12.

Is there continuity?

NO → **Repair open in the wire between the ECM/PCM (B12) and VTEC solenoid valve connector.**

YES

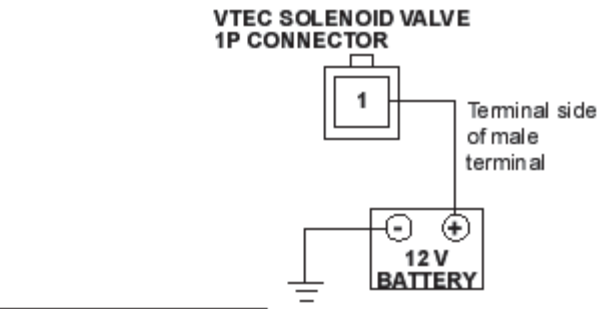
Test the VTEC Solenoid Valve Wire:
Check for continuity between the VTEC solenoid valve 1P connector terminal No. 1 and body ground.

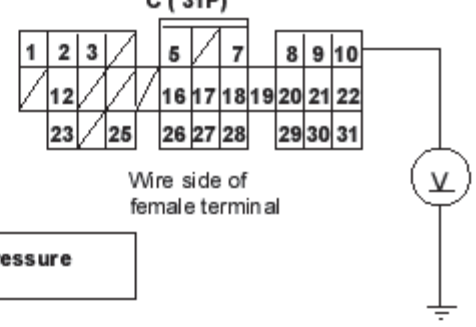
Is there continuity?

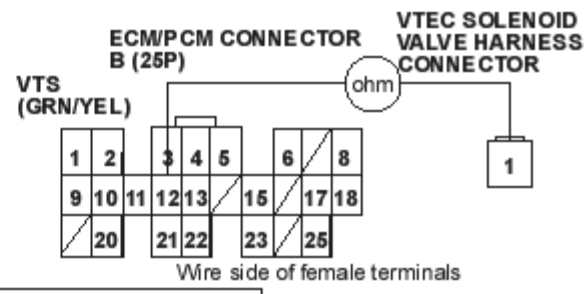
YES → **Repair short in the wire between the ECM/PCM (B12) and VTEC solenoid valve connector.**

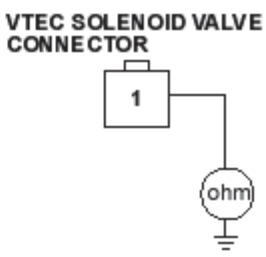
NO

Substitute a known-good PCM and recheck. If symptom/ indication goes away, replace the original ECM/PCM.

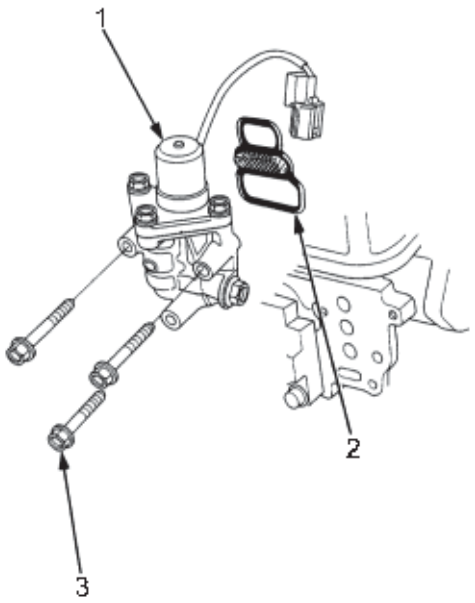






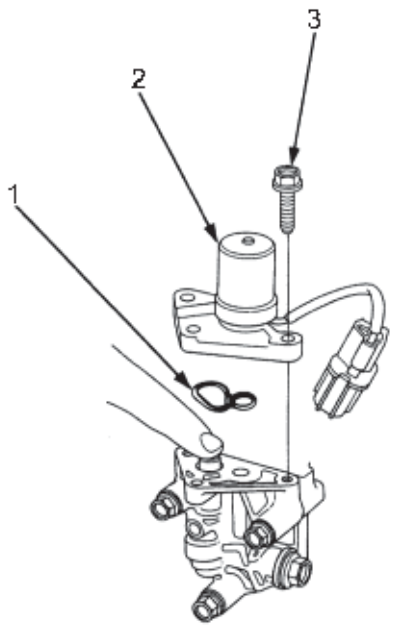


1. Disconnect the 1P connector from the VTEC solenoid valve.
2. If the resistance is within the specifications, remove the VTEC solenoid valve assembly from the cylinder head and check the VTEC solenoid valve filter/ O-ring for clogging.
   If there is clogging, replace the engine oil filter and the engine oil.



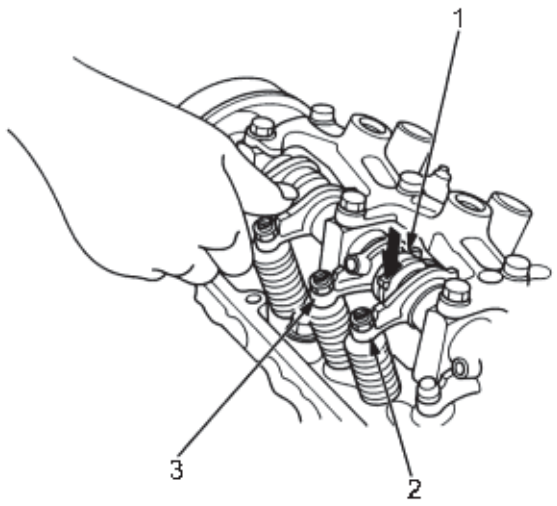
1. VTEC SOLENOID VALVE ASSEMBLY
2. VTEC SOLENOID VALVE FILTER/O-RING, Replace.
3. 6 x 1.0 mm 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

3. If the filter is not clogged, push the VTEC solenoid valve with your finger and check its movement. If the VTEC solenoid valve is normal, check the engine oil pressure.



1. O-RING, Replace.
2. VTEC SOLENOID VALVE ASSEMBLY
3. 6 x 1.0 mm 12 Nm (1.2 kgf/m, 8.7 lbf/ft)

1. Set the No. 1 piston at TDC.
2. Remove the cylinder head cover.
3. Push the intake mid rocker arm on the No. 1 cylinder manually.
4. Check that the intake mid rocker arm moves independently of the primary and secondary intake rocker arms.

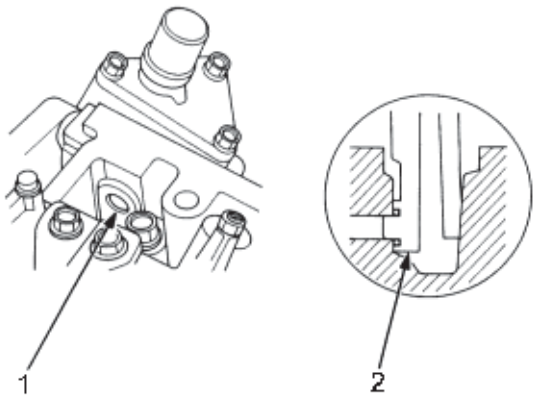


1. MID ROCKER ARM
2. SECONDARY ROCKER ARM
3. PRIMARY ROCKER ARM

5. Check the intake mid rocker arm of each cylinder at TDC.
   - If the intake mid rocker arm does not move, remove the mid, primary and secondary intake rocker arms as an assembly and check that the pistons in the mid and primary rocker arms move smoothly.
   - If any rocker arm needs replacing, replace the primary, mid and secondary rocker arms as an assembly

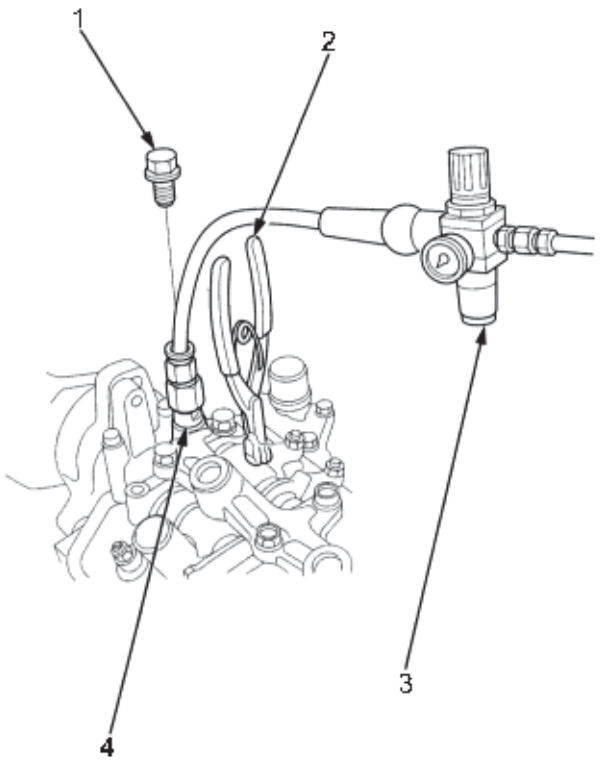
NOTE:
- Before using the Valve Inspection Tool, make sure that the air pressure gauge on the air compressor indicates over 400 kPa (4 kgf/cm^2, 57 psi).
- Inspect the valve clearance before rocker arm inspection.
- Cover the timing belt with a shop towel to protect the belt.
- Check the intake primary rocker arm of each cylinder at TDC.

1. Remove the cylinder head cover.
2. Plug the relief hole with the special tool.



1. RELIEF HOLE
2. AIR STOPPER, 07LAJ - PR30201

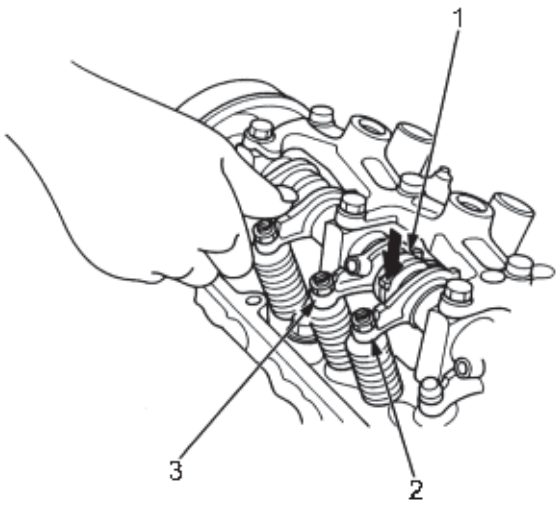
3. Remove the sealing bolt from the inspection hole, and connect the special tool.
   NOTE: Remove any oil from the bolt threads and camshaft holder threads before retightening the sealing bolt.



1. 10 x 1.0 mm SEALING BOLT, 20 Nm (2.0 kgf/m, 14 lbf/ft)
2. AIR STOPPER, 07LAJ - PR30201
3. VALVE INSPECTION SET, 07LAJ - PR30101
   - Pull the dial and turn to adjust.
4. INSPECTION HOLE

4. Loosen the regulator valve on the valve inspection tool, and apply the specified air pressure to the rocker arm synchronising pistons A/B.
   Specified Air Pressure:
   250kPa (2.5 kgf/cm^2, 36 psi)

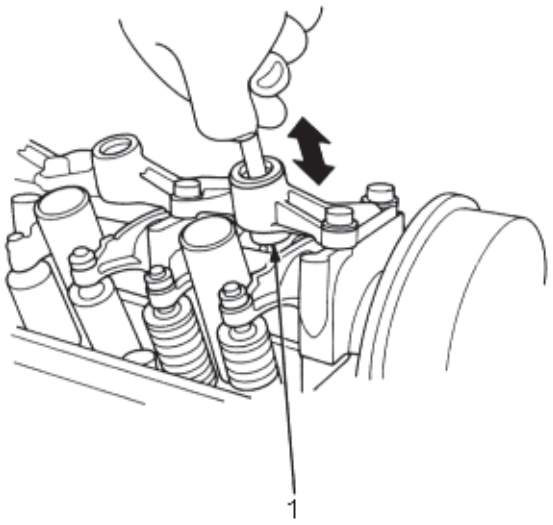
5. Make sure that the intake primary and secondary rocker arms are mechanically connected by piston and that the mid rocker arm does not move when pushed manually.



1. MID ROCKER ARM
2. SECONDARY ROCKER ARM
3. PRIMARY ROCKER ARM

   - If the intake mid rocker arms move independently of the primary and secondary rocker arms, replace the rocker arms as a set.

6. Remove the special tools.
7. Use a 10 mm diameter rod to depress each lost motion assembly through its full movement. Replace any lost motion assembly that does not move smoothly.

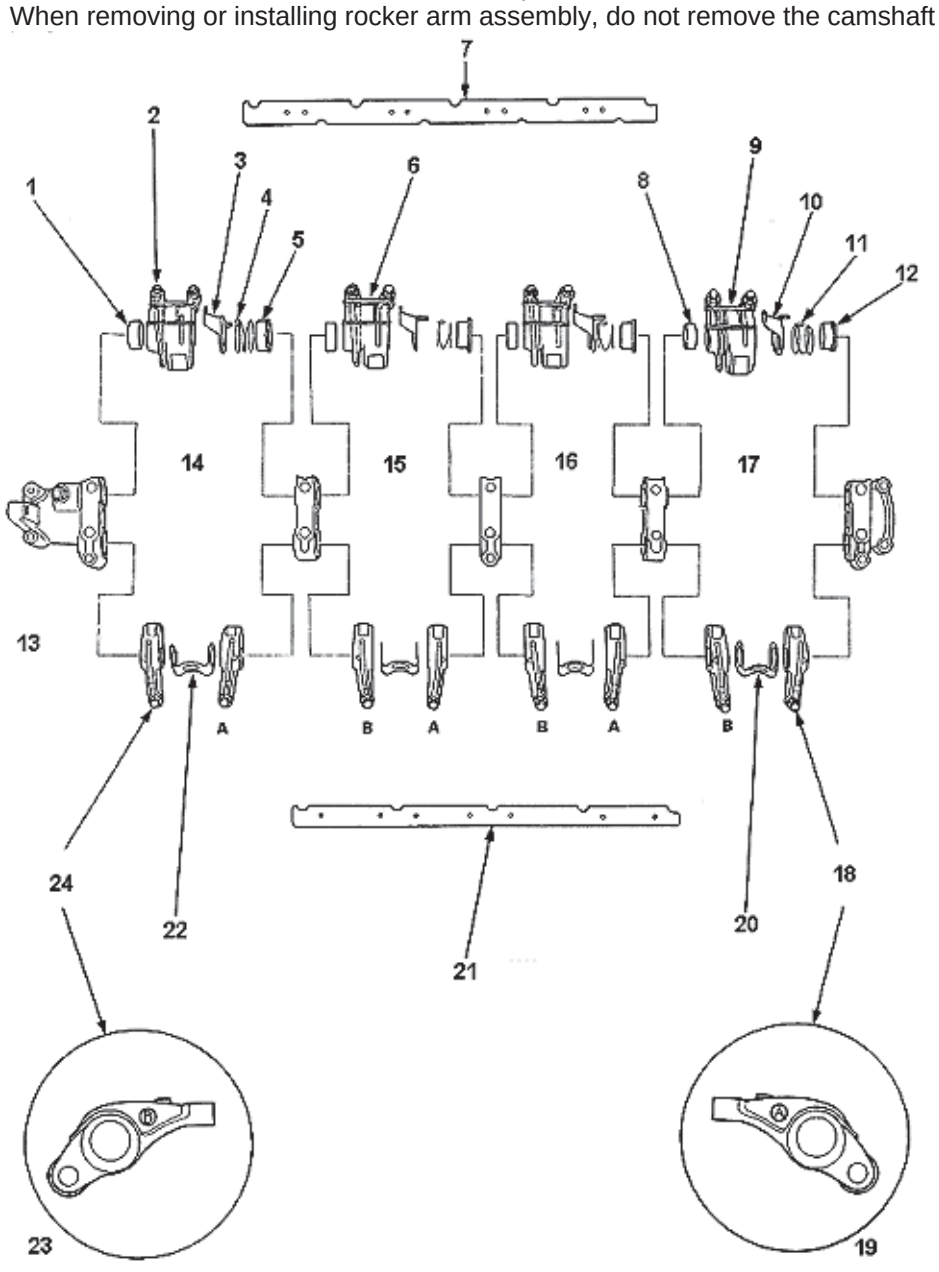


1. LOST MOTION ASSEMBLY

8. After inspection, check that the MIL does not come on.

NOTE:

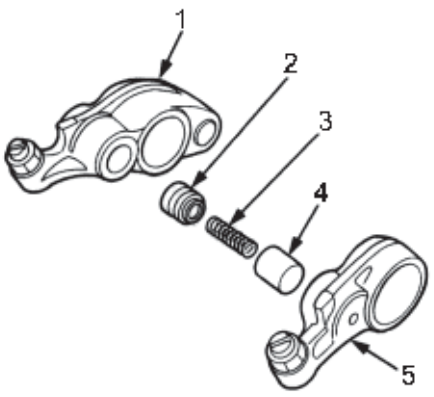
- Identify parts as they are removed to ensure reinstallation in original locations.
- Inspect rocker shafts and rocker arms (**See Page** 6-13).
- Rocker arms must be installed in the same position if reused.
- When removing or installing rocker arm assembly, do not remove the camshaft holder bolts. The bolts will keep the holders, springs and rocker arms on the shaft.



1. **ROCKER SHAFT COLLAR**
2. **ROCKER ARMS**
3. **TIMING PLATE**
4. **RETURN SPRING**
5. **COLLAR**
6. **RUBBER BAND**
7. **INTAKE ROCKER SHAFT**
8. **ROCKER SHAFT COLLAR (4 places)**
9. **INTAKE ROCKER ARM ASSEMBLY**
10. **TIMING PLATE (4 places)**
11. **RETURN SPRING**
12. **COLLAR**
13. **No. 5 CAMSHAFT HOLDER**
14. **No. 4 CAMSHAFT HOLDER**
15. **No. 3 CAMSHAFT HOLDER**
16. **No. 2 CAMSHAFT HOLDER**
17. **No .1 CAMSHAFT HOLDER**
18. **EXHAUST ROCKER ARM A (4 places)**
19. Letter “A” is stamped on rocker arm.
20. **ROCKER SHAFT SPRING**
21. **EXHAUST ROCKER SHAFT**
22. **ROCKER SHAFT SPRING (4 places)**
23. Letter “B” is stamped on rocker arm.
24. **EXHAUST ROCKER ARM B (4 places)**

NOTE: When reassembling the primary rocker arm, carefully apply air pressure to the oil passage of the rocker arm.

1. Inspect the rocker arm piston. Push it manually.
   – If it does not move smoothly, replace the rocker arm assembly.

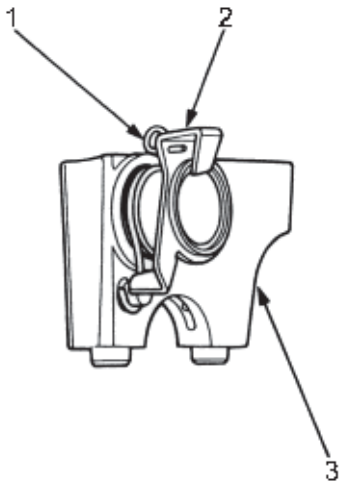


1. PRIMARY ROCKER ARM
2. TIMING PISTON
3. TIMING SPRING
4. SYNCHRONISING PISTON
5. SECONDARY ROCKER ARM

NOTE:

- Apply oil to the pistons when reassembling.
- Bundle the rocker arms with a band to prevent them from separating.

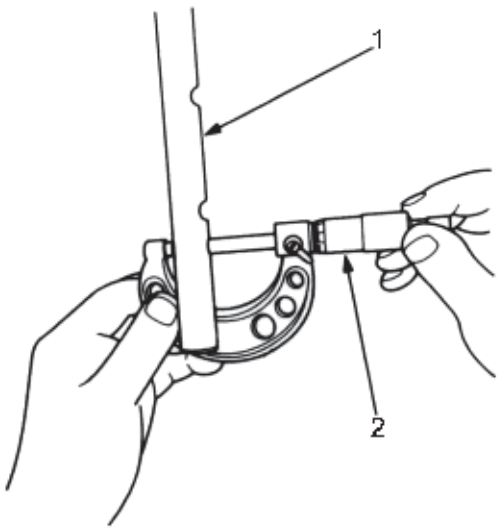
NOTE: Set the timing plate and return spring as shown below.



1. RETURN SPRING
2. TIMING PLATE
3. CAMSHAFT HOLDER

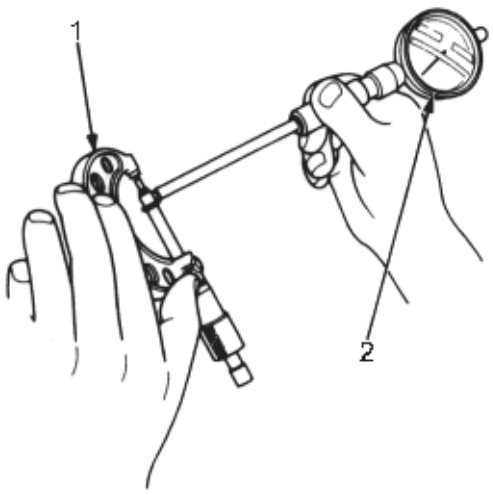
Measure both the intake rocker shaft and exhaust rocker shaft.

1. Measure the diameter of shaft at the first rocker location.



1. Surface should be smooth.
2. MICROMETER

2. Zero the gauge to the shaft diameter

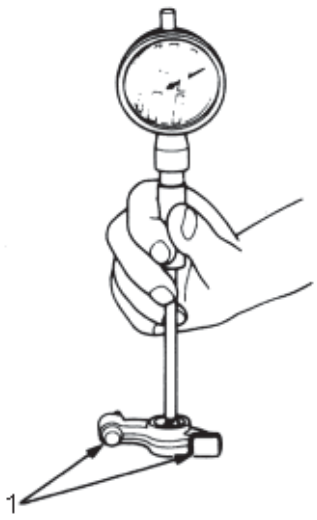


1. MICROMETER
2. CYLINDER BORE GAUGE

3. Measure inside diameter of rocker arm and check for out-of-round condition.

Rocker Arm-to-Shaft Clearance:
Standard (New):

Intake:	**0.017 - 0.050 mm (0.0007 - 0.0020 in)**
Exhaust:	**0.018 - 0.054 mm (0.0007 - 0.0021 in)**
Service Limit:	**0.08 mm (0.003 in)**

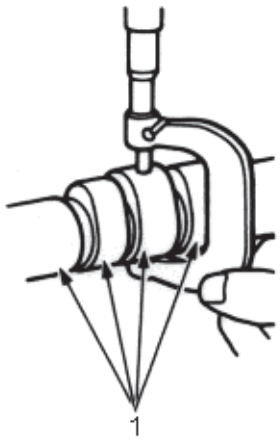


1. Inspect rocker arm face for wear.

4. Repeat for all the rockers.
   – If the clearance is over the service limit, replace the rocker shaft and all over tolerance rocker arms.

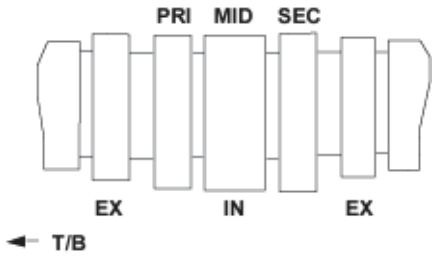
Cam Lobe Height Standard (New):

		INTAKE	EXHAUST
PRI	37.065 (1.4593)	38.008 (1.4964)	
MID	38.285 (1.5073)	38.008 (1.4964)	
SEC	36.778 (1.4480)	38.008 (1.4964)	



1. Check this area for wear.

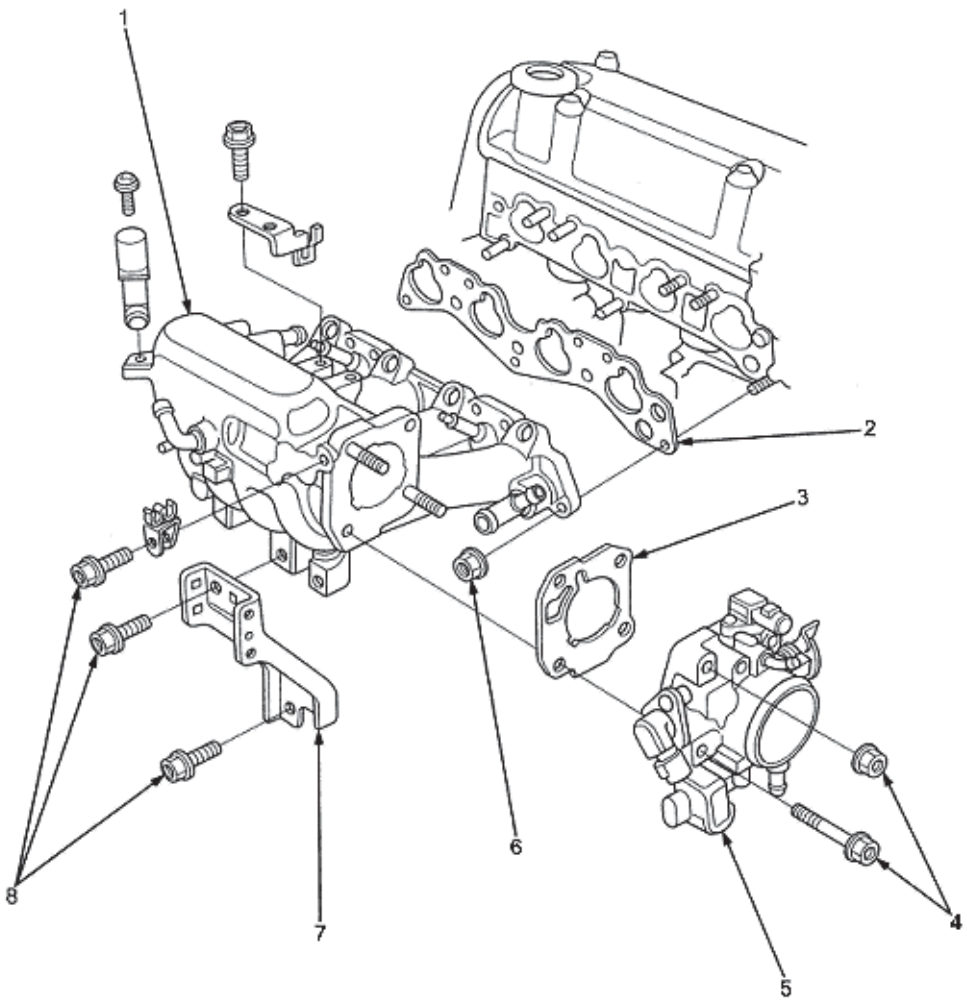
PRI: Primary MID: Mid SEC: Secondary
IN: Intake EX: Exhaust T/B: Timing Belt



NOTE: Use new gaskets when reassembling.

⚠ CAUTION

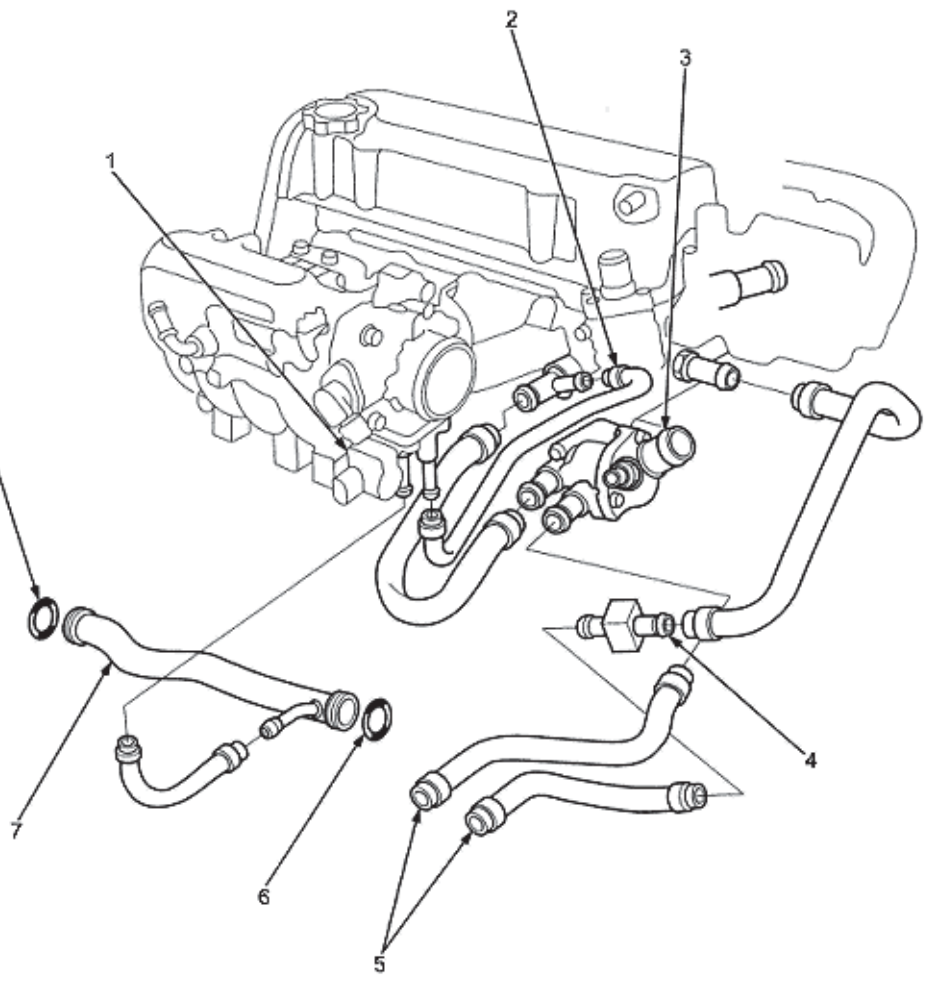
- **Check for folds or scratches on the surface of the gasket.**
- **Replace with a new gasket if damaged.**



1. **INTAKE MANIFOLD**
   Replace if cracked or if mating surfaces are damaged.
2. **GASKET,** Replace.
3. **GASKET,** Replace.
4. **8 x 1.25 mm 22 Nm (2.2 kgf/m, 16 lbf/ft)**
5. **THROTTLE BODY,** See section 11.
6. **8 x 1.25 mm 24 Nm (2.4 kgf/m, 17 lbf/ft)**
7. **INTAKE MANIFOLD BRACKET**
8. **8 x 1.25 mm 24Nm (24 kgf/m, 17 lbf/ft)**

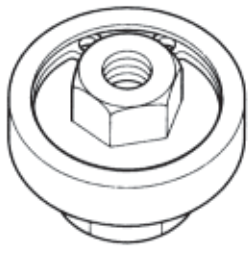
Total Cooling System Capacity [Including heater and reservoir]
M/T: 3.9 *l* (4.1 US qt, 3.4 Imp qt)
CVT: 4.1 *l* (4.3 US qt, 3,6 Imp qt)
Reservoir capacity: 0.4 *l* (0.42 Us qt, 0.35 Imp qt)

NOTE:
- Check all cooling system hoses for damage, leaks or deterioration and replace if necessary.
- Check all hose clamps and retighten if necessary.
- Use new O-rings when reassembling.



1. **IDLE AIR CONTROL (IAC) VALVE**
2. **WATER BYPASS HOSE**
3. **THERMOSTAT HOUSING**
4. **HEATER VALVE**
5. **HEATER HOSES**
6. **O-RING,** Replace.
7. **CONNECTING PIPE**
8. **O-RING,** Replace.

Ref No.	Tool Number	Description	Qty	Remark
(1)	07VAJ - 0040100	Fuel Pressure Gauge Attachment	1	
(2)	07406 - 0040002	Fuel Pressure Gauge Set	1	
(2)-1	07406 - 0040202	Fuel Pressure Hose Assembly	(1)	Component Tools



①

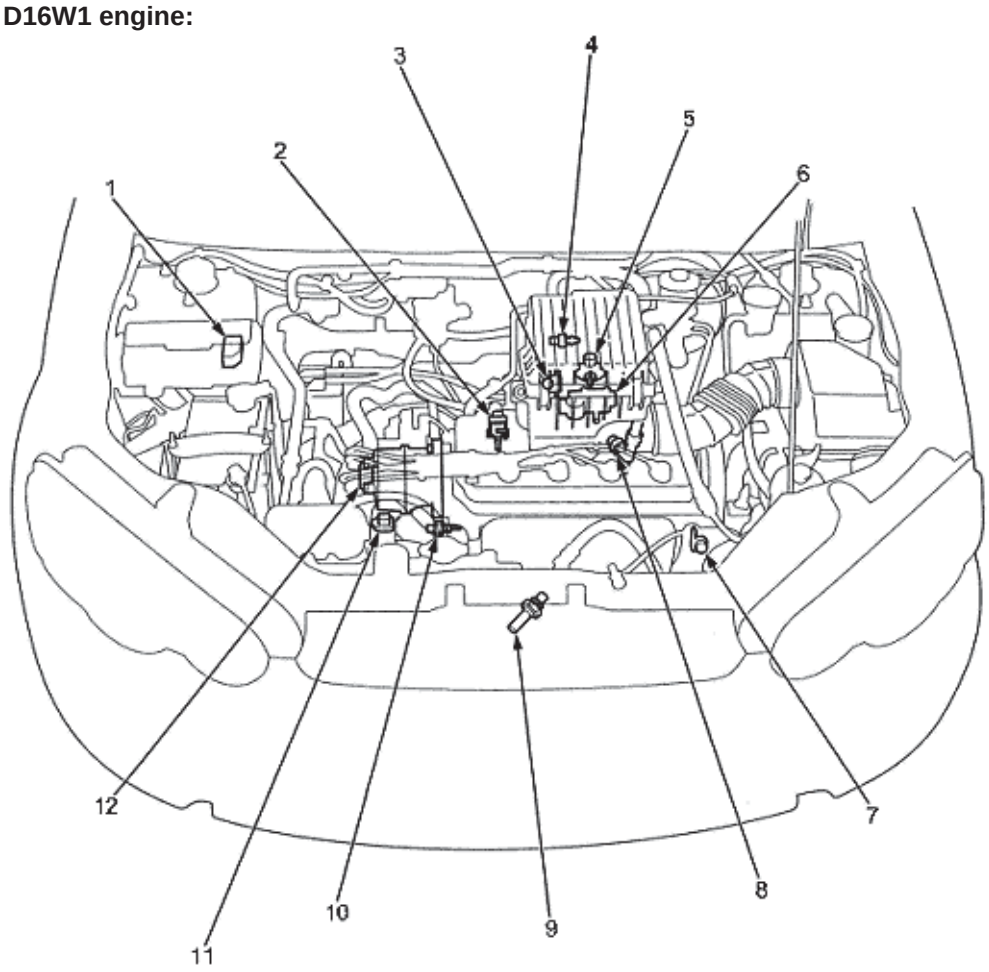


②

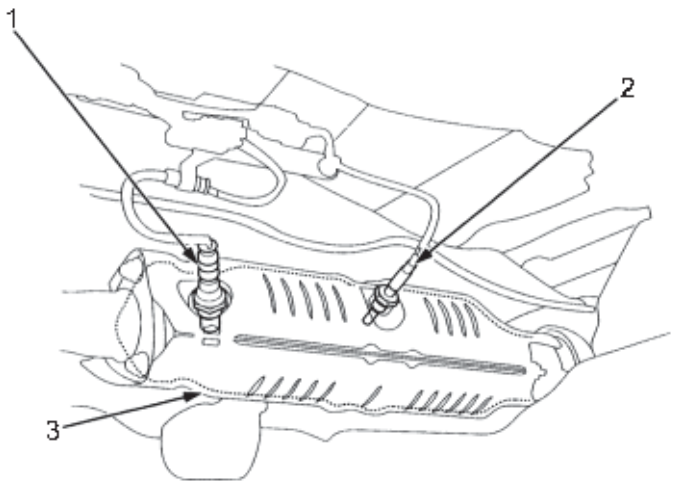


②-1

D16W1 engine:

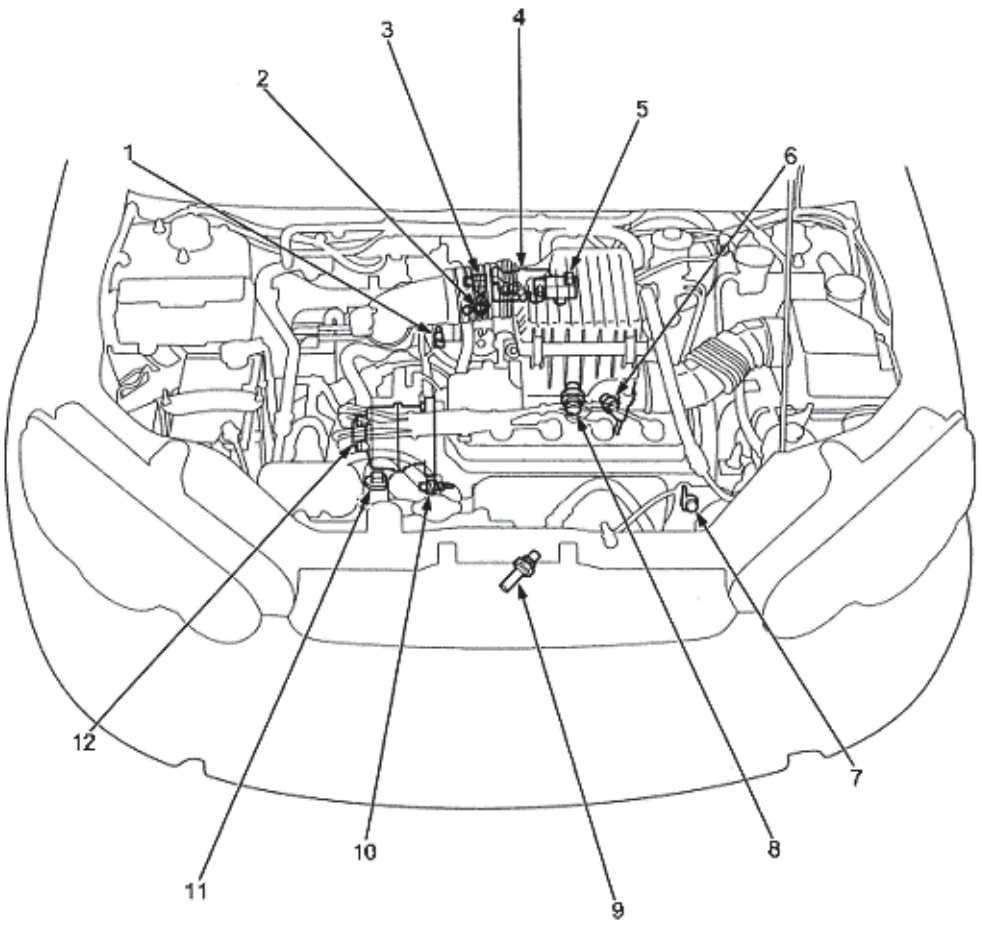


1. **ELECTRICAL LOAD DETECTOR (ELD) (A/T model)**
   Troubleshooting, (**See Page** 11-83)
2. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
   Troubleshooting, (**See Page** 11-117)
3. **THROTTLE POSITION (TP) SENSOR**
   Troubleshooting, (**See Page** 11-62)
4. **INTAKE AIR TEMPERATURE (IAT) SENSOR**
   Troubleshooting, (**See Page** 11-58)
5. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
   Troubleshooting, (**See Page** 11-56)
6. **IDLE AIR CONTROL (IAC) VALVE**
   Troubleshooting, (**See Page** 11-101)
7. **CRANKSHAFT SPEED FLUCTUATION (CKF) SENSOR**
   Troubleshooting, (**See Page** 11-87)
8. **POWER STEERING PRESSURE (PSP) SWITCH**
9. **PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)**
   Troubleshooting, (**See Page** 11-65)
10. **ENGINE COOLANT TEMPERATURE (ECT) SENSOR**
    Troubleshooting, (**See Page** 11-60)
11. **VEHICLE SPEED SENSOR (VSS)**
    Troubleshooting, (**See Page** 11-81)
12. **TOP DEAD CENTRE/CRANKSHAFT POSITION/CYLINDER POSITION (CKP/TDC/CYP) SENSOR**
    (Is built into distributor)
    Troubleshooting, (**See Page** 11-79)

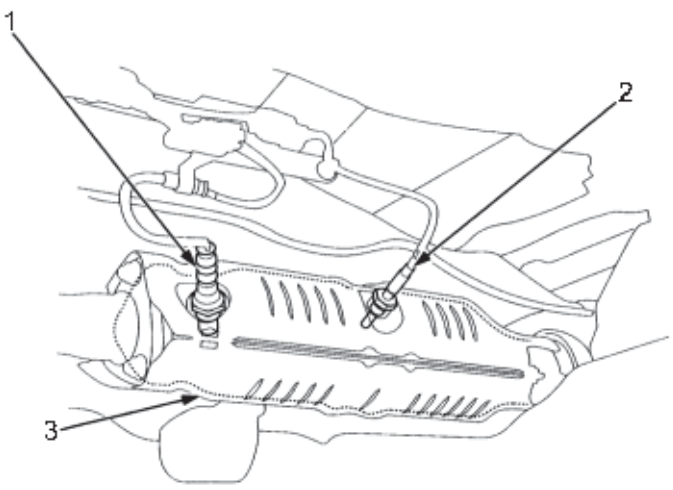


1. **SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)**
   Troubleshooting, (**See Page** 11-70)
2. **EXHAUST GAS TEMPERATURE (EGT) SENSOR**
   Troubleshooting, (**See Page** 11-90)
3. **THREE WAY CATALYTIC CONVERTER (TWC)**

D16W5 engine:

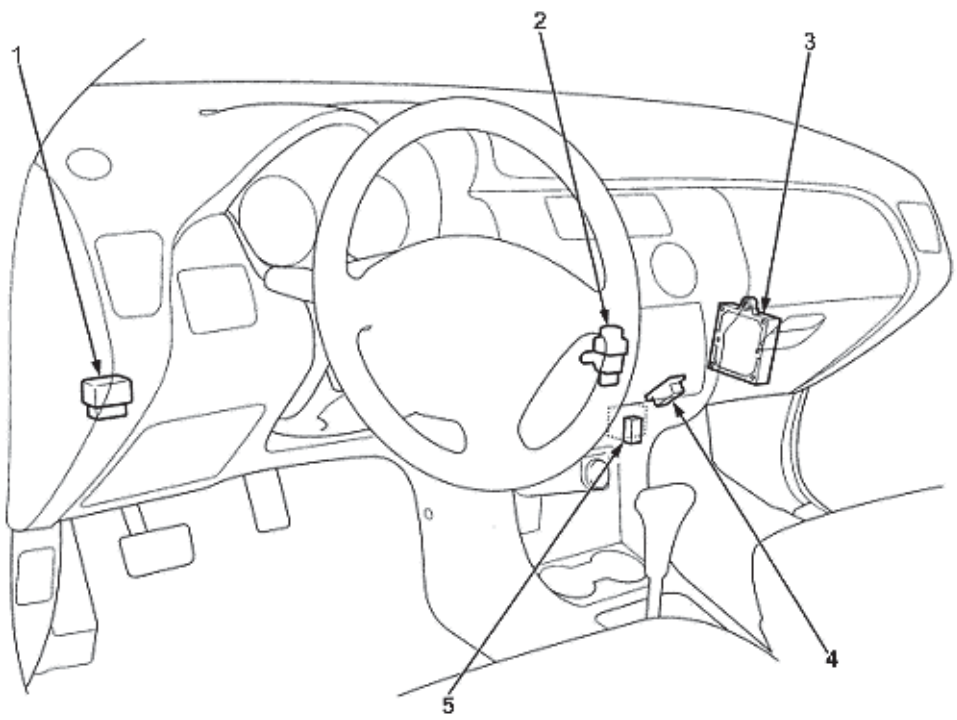


1. **INTAKE AIR TEMPERATURE (IAT) SENSOR**
   Troubleshooting, (**See Page** 11-58)
2. **THROTTLE POSITION (TP) SENSOR**
   Troubleshooting, (**See Page** 11-62)
3. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
   Troubleshooting, (**See Page** 11-56)
4. **IDLE AIR (IAC) VALVE**
   Troubleshooting, (**See Page** 11-100)
5. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
   Troubleshooting, (**See Page** 11-117)
6. **POWER STEERING PRESSURE (PSP) SWITCH**
7. **CRANKSHAFT SPEED FLUCTUATION (CKF) SENSOR**
   Troubleshooting, (**See Page** 11-87)
8. **KNOCK SENSOR (KS)**
   Troubleshooting, (**See Page** 11-78)
9. **PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)**
   Troubleshooting, (**See Page** 11-65)
10. **ENGINE COOLANT TEMPERATURE (ECT) SENSOR**
    Troubleshooting, (**See Page** 11-60)
11. **VEHICLE SPEED SENSOR (VSS)**
    Troubleshooting, (**See Page** 11-81)
12. **TOP DEAD CENTRE/CRANKSHAFT POSITION/CYLINDER POSITION (CKP/TDC/CYP) SENSOR**
    (Is built into the distributor)
    Troubleshooting, (**See Page** 11-79)



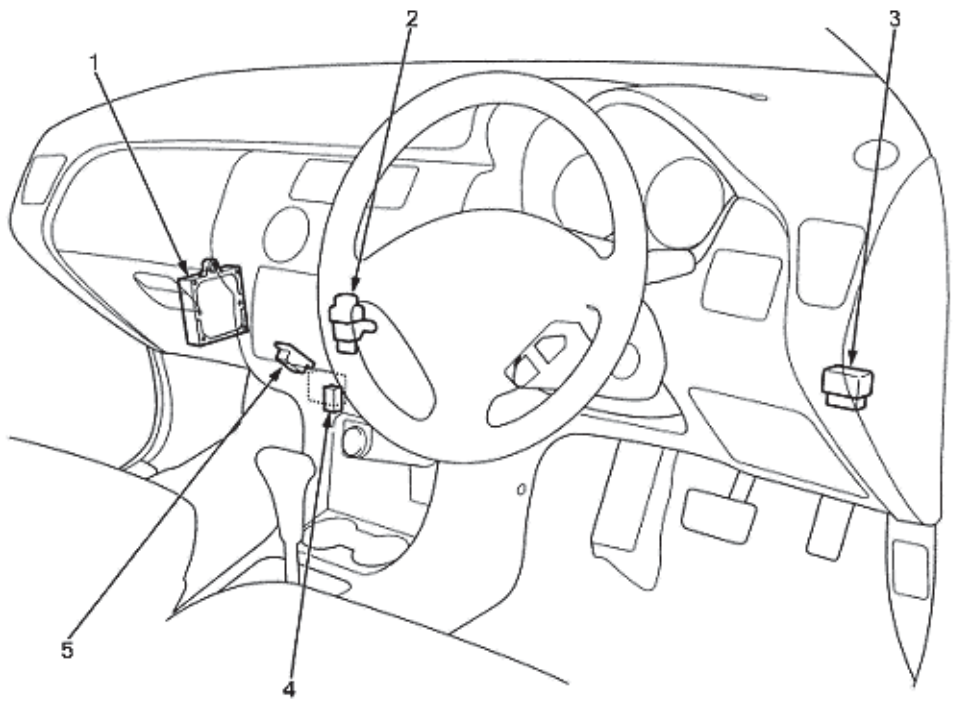
1. **SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)**
   Troubleshooting, (**See Page** 11-70)
2. **EXHAUST GAS TEMPERATURE (EGT) SENSOR**
   Troubleshooting, (**See Page** 11-90)
3. **THREE WAY CATALYTIC CONVERTER (TWC)**

LHD:

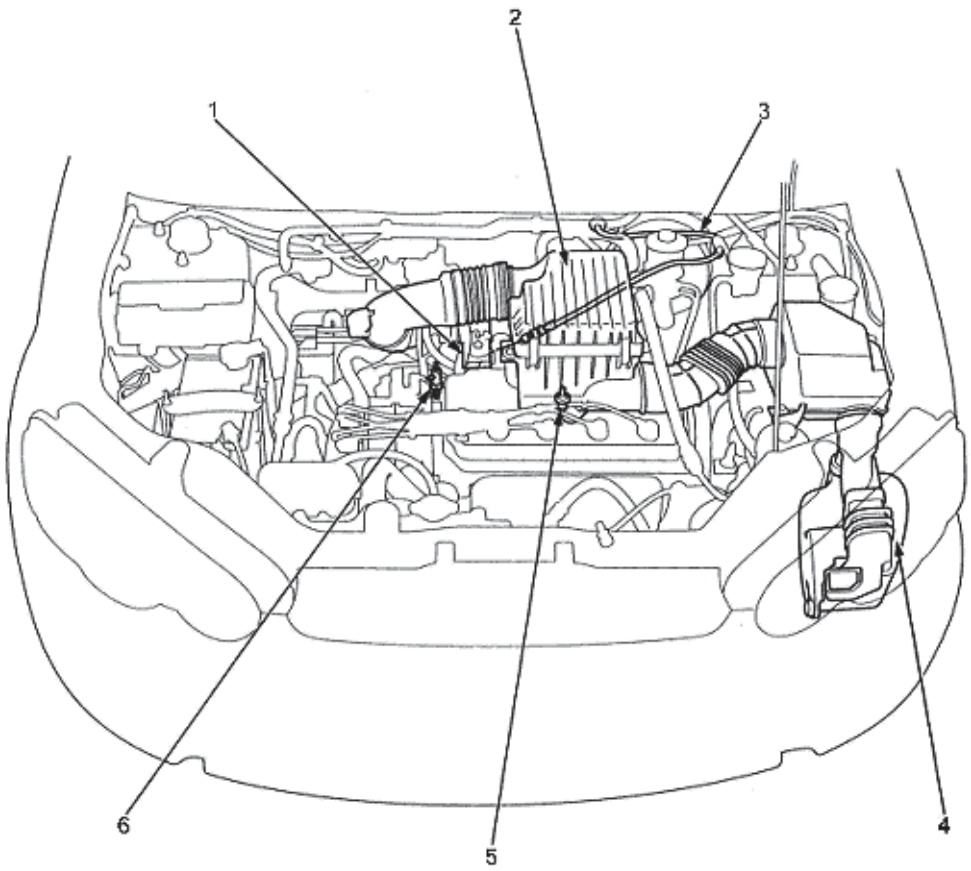


1. **PGM-FI MAIN RELAY**
2. **INERTIA SWITCH**
3. **ENGINE CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM)**
   Troubleshooting, (**See Page** 11-93)
4. **DATA LINK CONNECTOR (DLC) (16P)**
5. **SERVICE CHECK CONNECTOR**

RHD:

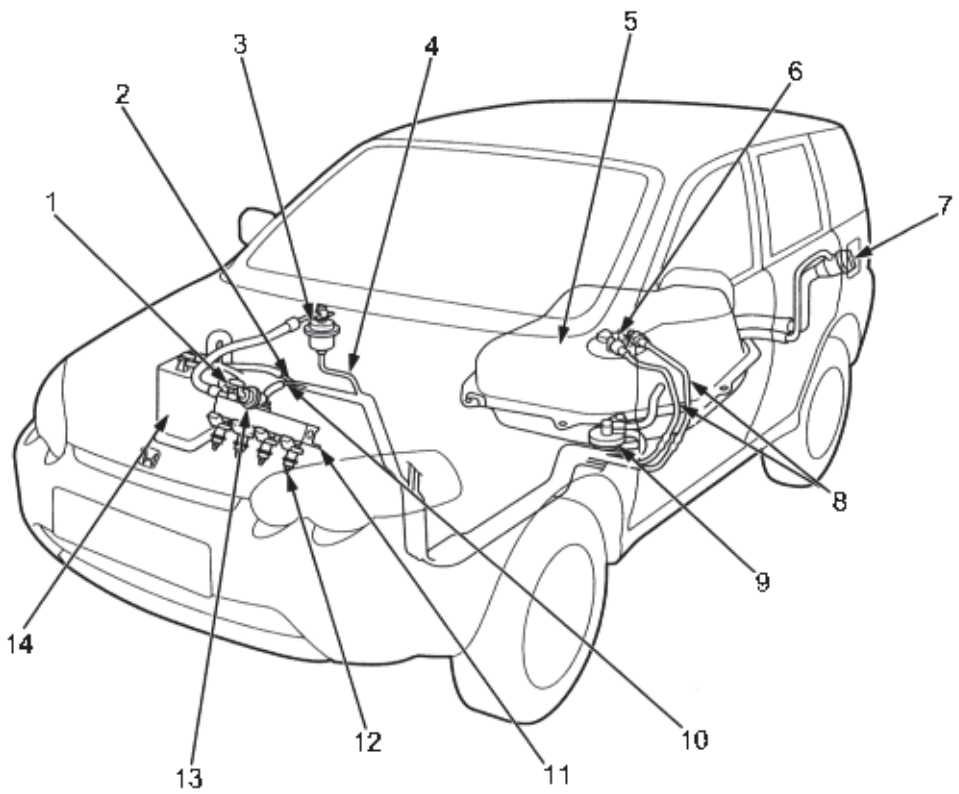


1. **ENGINE CONTROL MODULE (ECM)/ POWERTRAIN CONTROL MODULE (PCM)**
   Troubleshooting, (**See Page** 11-93)
2. **INERTIA SWITCH**
3. **PGM-FI MAIN RELAY**
4. **SERVICE CHECK CONNECTOR**
5. **DATA LINK CONNECTOR (DLC) (16P)**



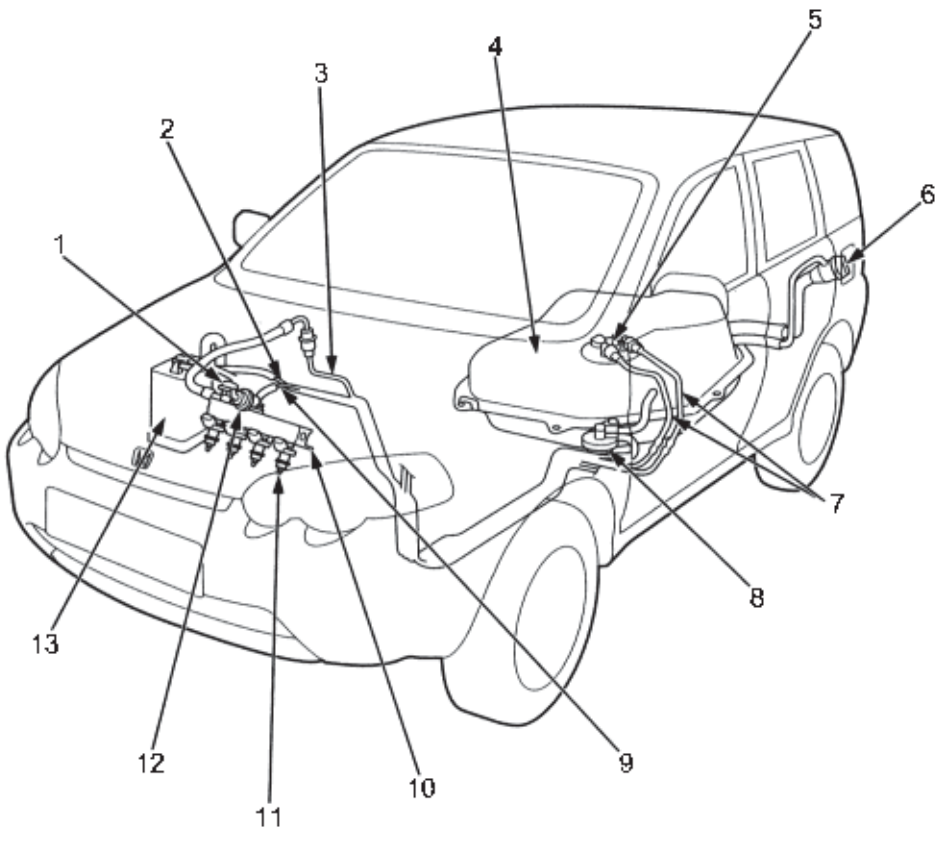
1. **THROTTLE BODY (TB)**
   Inspection, (**See Page** 11-109)
   Disassembly, (**See Page** 11-110)
2. **AIR CLEANER (ACL)**
3. **THROTTLE CABLE**
   Inspection/Adjustment, (**See Page** 11-108)
   Installation, (**See Page** 11-108)
4. **RESONATOR**
5. **POSITIVE CRANKCASE VENTILATION (PCV) VALVE**
   Inspection, (**See Page** 11-119)
6. **FUEL INJECTION AIR (FIA) CONTROL VALVE**
   Testing, (**See Page** 11-112)

D16W1 engine:



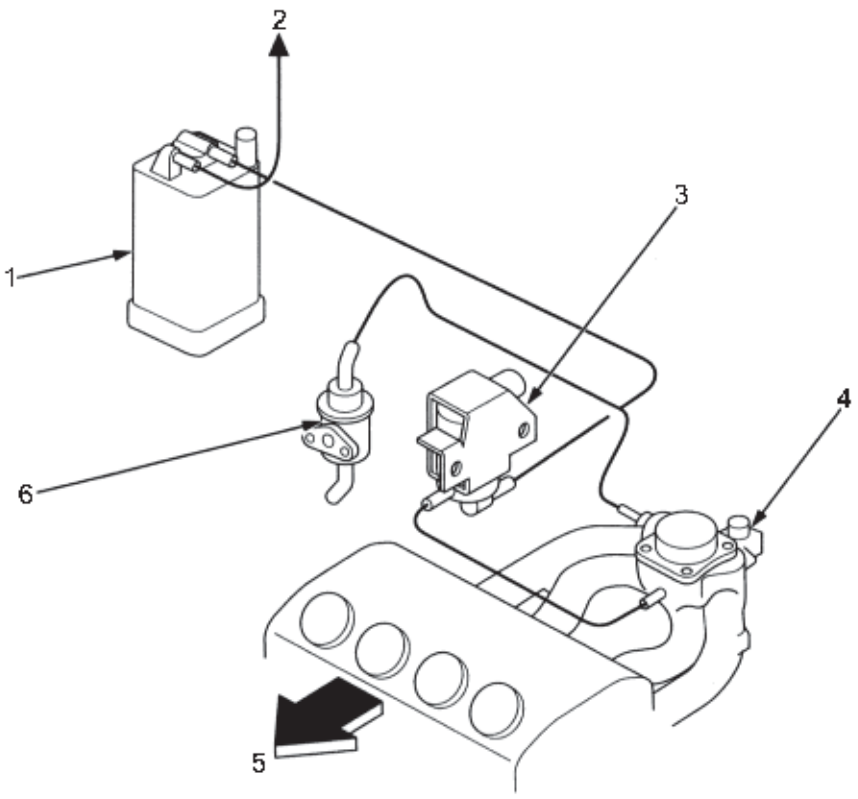
1. **FUEL PULSATION DAMPER**
2. **FUEL VAPOUR PIPE**
3. **FUEL FILTER**
4. **FUEL FEED PIPE**
5. **FUEL TANK**
6. **FUEL PUMP/FUEL GAUGE SENDING UNIT**
7. **FUEL FILL CAP**
8. **FUEL TUBE/QUICK-CONNECT FITTINGS**
9. **EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
   Testing, (**See Page** 11-121)
10. **FUEL RETURN PIPE**
11. **FUEL RAIL**
12. **FUEL INJECTORS**
13. **FUEL PRESSURE REGULATOR**
14. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
    Troubleshooting, (**See Page** 11-117)
    Testing, (**See Page** 11-120)

D16W5 engine:



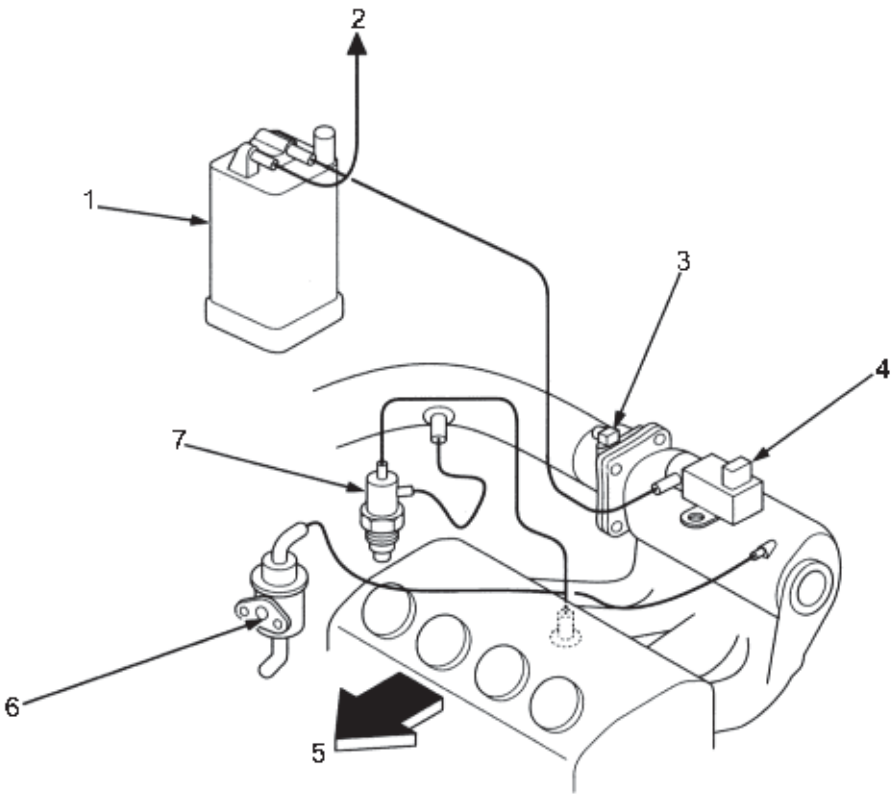
1. **FUEL PULSATION DAMPER**
2. **FUEL VAPOUR PIPE**
3. **FUEL FEED PIPE**
4. **FUEL TANK**
5. **FUEL PUMP/FUEL FILTER**
   Replacement, (**See Page** 11-107)
   FUEL GAUGE SENDING UNIT
6. **FUEL FILL CAP**
7. **FUEL TUBE/QUICK-CONNECT FITTINGS**
8. **EVAPORATIVE EMISSIONS (EVAP) TWO WAY VALVE**
   Testing, (**See Page** 11-121)
9. **FUEL RETURN PIPE**
10. **FUEL RAIL**
11. **FUEL INJECTORS**
12. **FUEL PRESSURE REGULATOR**
13. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
    Troubleshooting, (**See Page** 11-117)
    Testing, (**See Page** 11-120)

D16W1 engine:



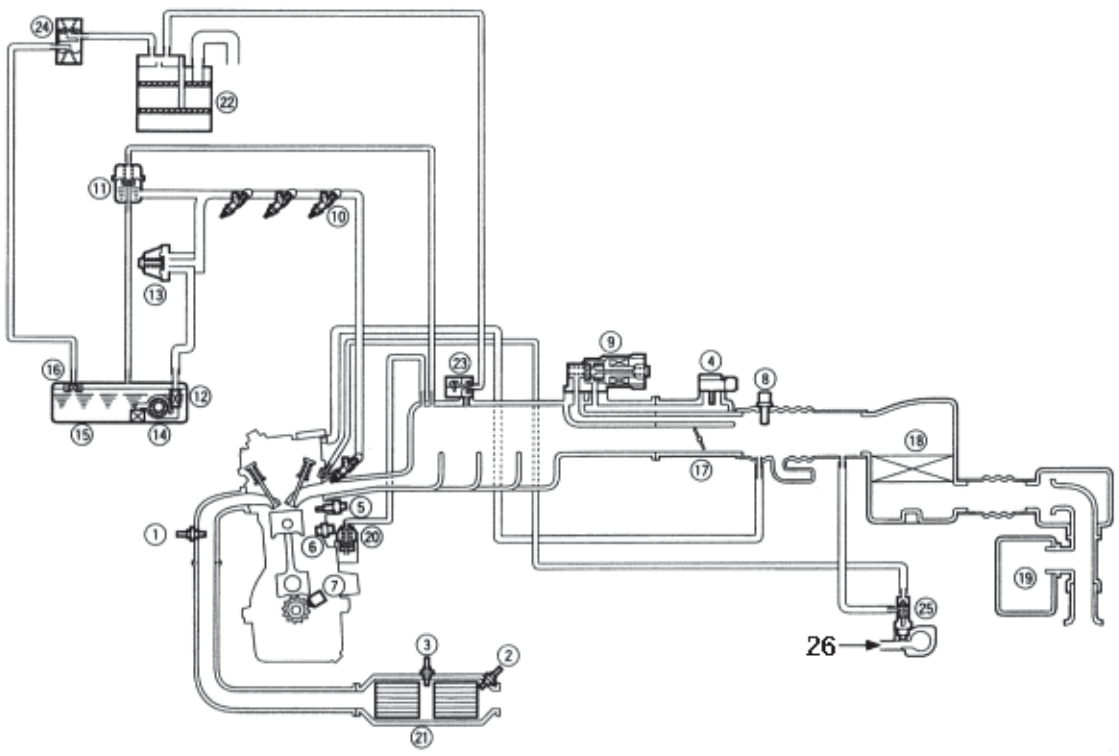
1. **EVAPORATIVE EMISSIONS (EVAP) CONTROL CANISTER**
2. **To EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
3. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
4. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
5. **FRONT OF VEHICLE**
6. **FUEL PRESSURE REGULATOR**

D16W5 engine:



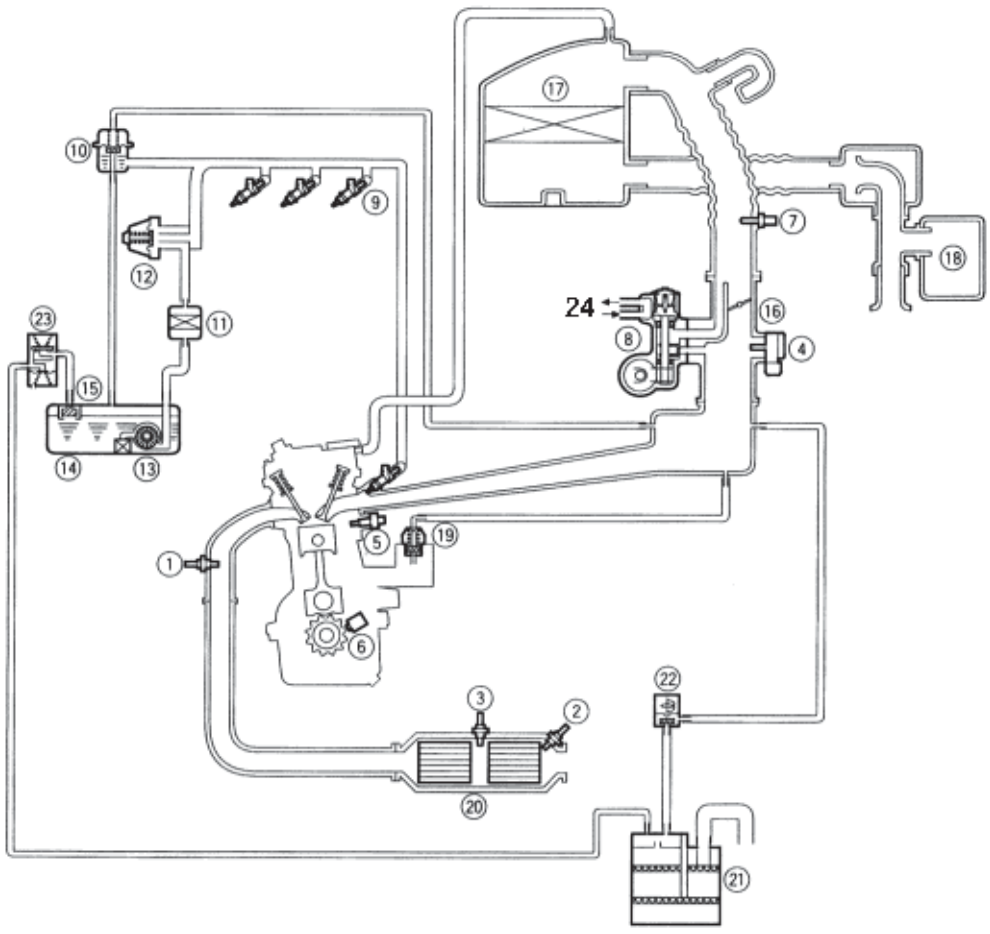
1. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
2. **To EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
3. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
4. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
5. **FRONT OF VEHICLE**
6. **FUEL PRESSURE REGULATOR**
7. **FUEL INJECTION AIR (FIA) CONTROL VALVE**

D16W5 engine:

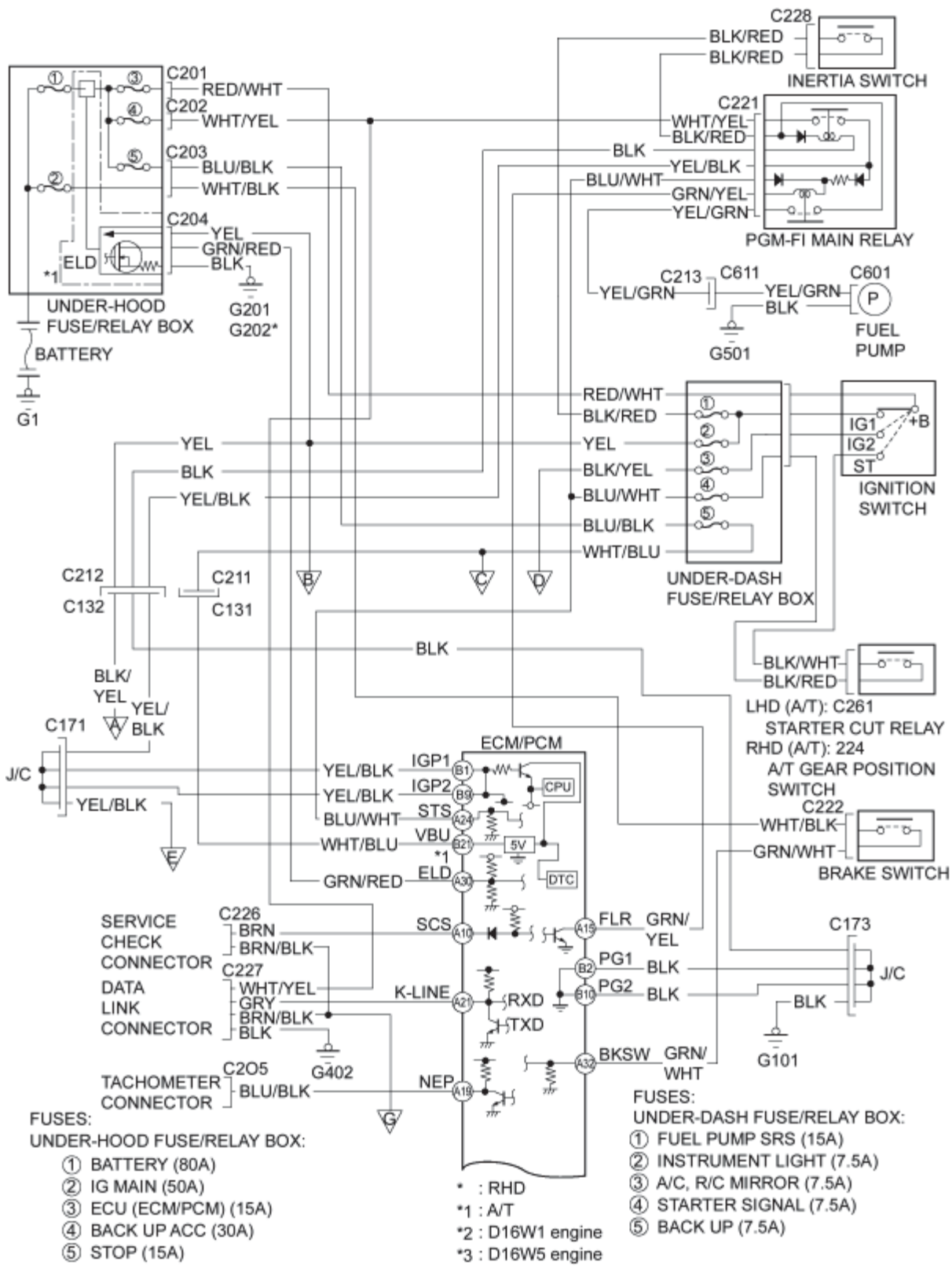


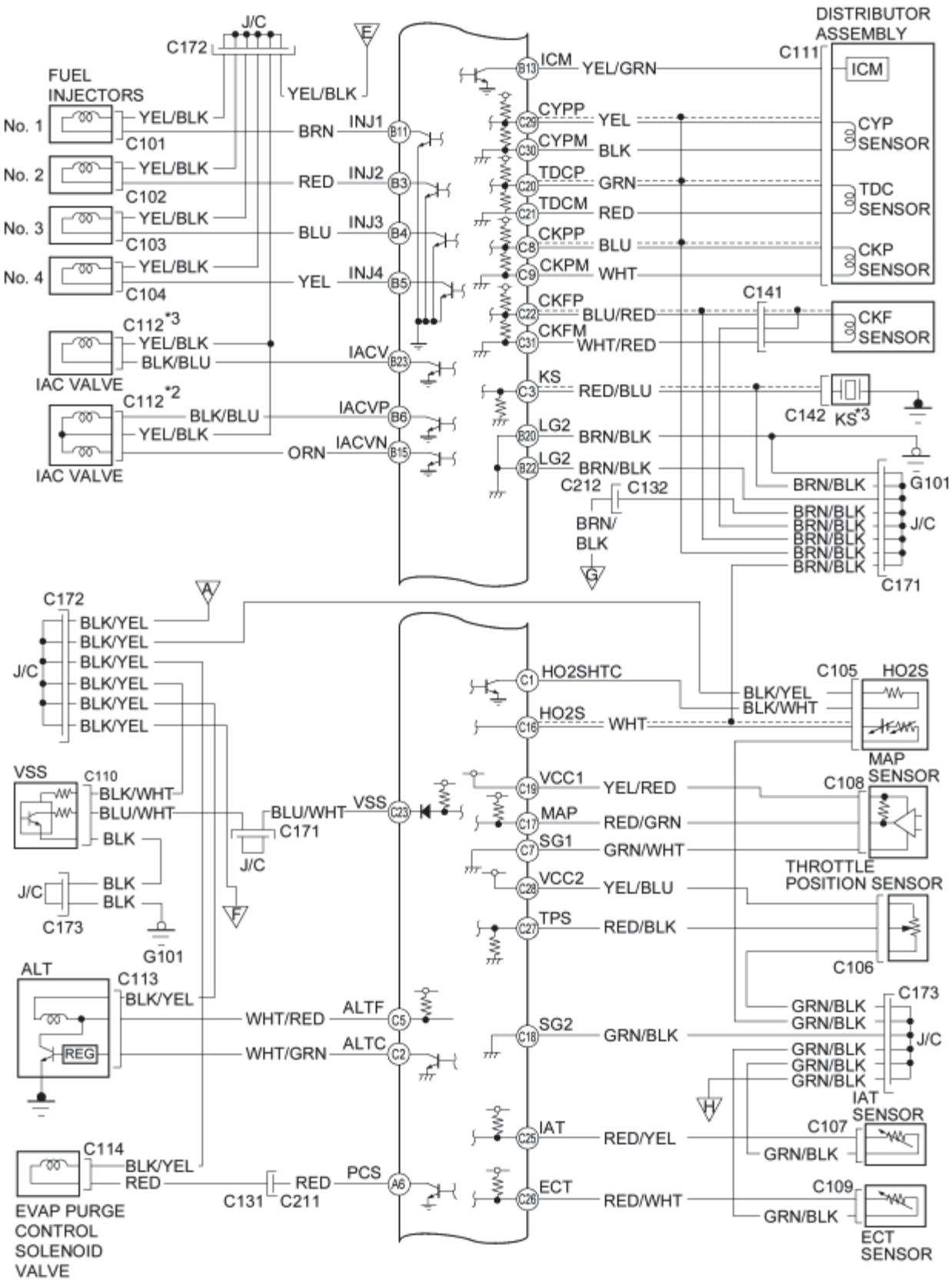
1. PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)
2. SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)
3. EXHAUST GAS TEMPERATURE (EGT) SENSOR
4. MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
5. ENGINE COOLANT TEMPERATURE (ECT) SENSOR
6. KNOCK SENSOR (KS)
7. CRANKSHAFT SPEED FLUCTUATION (CKF) SENSOR
8. INTAKE AIR TEMPERATURE (IAT) SENSOR
9. IDLE AIR CONTROL (IAC) VALVE
10. FUEL INJECTOR
11. FUEL PRESSURE REGULATOR
12. FUEL FILTER
13. FUEL PULSATION DAMPER
14. FUEL PUMP (FP)
15. FUEL TANK
16. FUEL TANK EVAPORATIVE EMISSION (EVAP) VALVE
17. THROTTLE BODY (TB)
18. AIR CLEANER
19. RESONATOR
20. POSITIVE CRANKCASE VENTILATION (PCV) VALVE
21. THREE WAY CATALYTIC CONVERTER
22. EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER
23. EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE
24. EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE
25. FUEL INJECTION AIR (FIA) CONTROL VALVE
26. ENGINE COOLANT

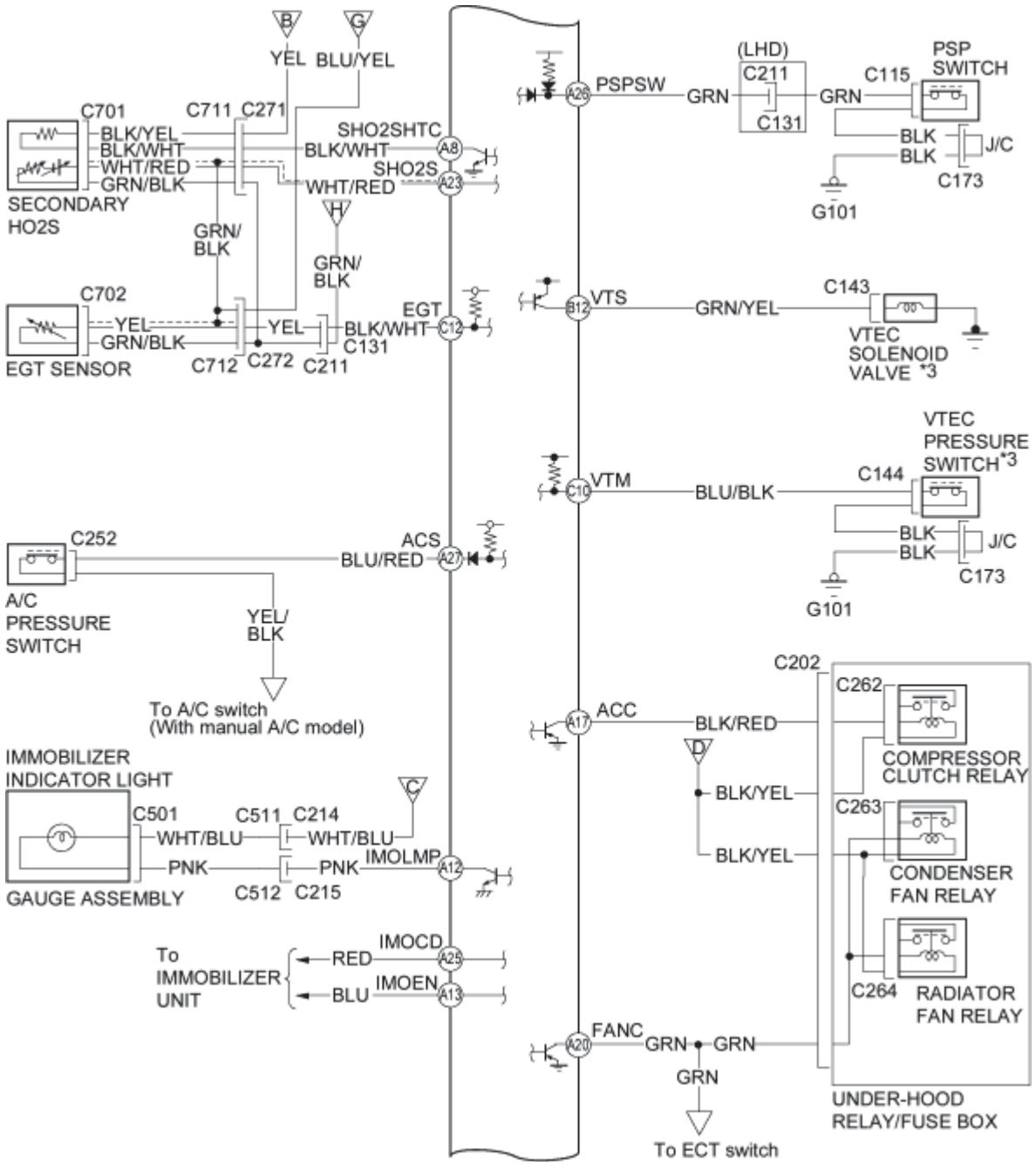
D16W1 engine:

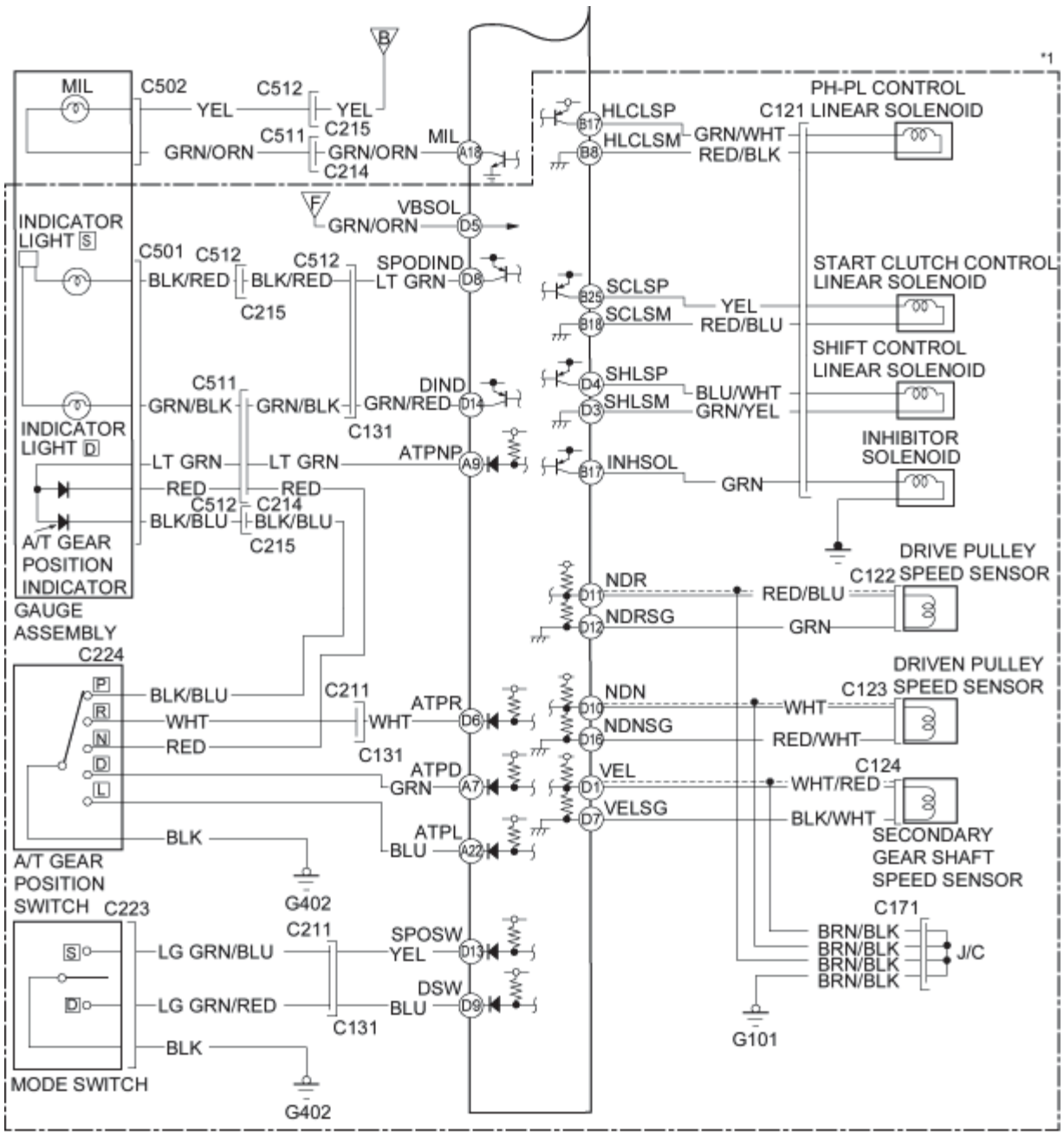


1. PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)
2. SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)
3. EXHAUST GAS TEMPERATURE (EGT) SENSOR
4. MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
5. ENGINE COOLANT TEMPERATURE (ECT) SENSOR
6. CRANKSHAFT SPEED FLUCTUATION (CKF) SENSOR
7. INTAKE AIR TEMPERATURE (IAT) SENSOR
8. IDLE AIR CONTROL (IAC) VALVE
9. FUEL INJECTOR
10. FUEL PRESSURE REGULATOR
11. FUEL FILTER
12. FUEL PULSATION DAMPER
13. FUEL PUMP (FP)
14. FUEL TANK
15. FUEL TANK EVAPORATIVE EMISSION (EVAP) VALVE
16. THROTTLE BODY (TB)
17. AIR CLEANER
18. RESONATOR
19. POSITIVE CRANKCASE VENTILATION (PCV) VALVE
20. THREE WAY CATALYTIC CONVERTER
21. EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER
22. EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE
23. EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE
24. ENGINE COOLANT


C228
BLK/RED
BLK/RED
INERTIA SWITCH
C221
WHT/YEL
BLK/RED
BLK
YEL/BLK
BLU/WHT
GRN/YEL
YEL/GRN
PGM-FI MAIN RELAY
C201
RED/WHT
C202
WHT/YEL
C203
BLU/BLK
WHT/BLK
C204
YEL
GRN/RED
BLK
ELD
*1
UNDER-HOOD
FUSE/RELAY BOX
BATTERY
G1
G201
G202*
C213
C611
C601
YEL/GRN
YEL/GRN
BLK
G501
FUEL
PUMP
RED/WHT
BLK/RED
YEL
BLK/YEL
BLU/WHT
BLU/BLK
WHT/BLU
UNDER-DASH
FUSE/RELAY BOX
IG1
IG2
ST
+B
IGNITION
SWITCH
YEL
BLK
YEL/BLK
C212
C132
C211
C131
B
C
D
BLK
BLK/WHT
BLK/RED
LHD (A/T): C261
STARTER CUT RELAY
RHD (A/T): 224
A/T GEAR POSITION
SWITCH
C222
WHT/BLK
GRN/WHT
BRAKE SWITCH
BLK/
YEL
YEL/
BLK
A
C171
J/C
YEL/BLK
E
ECM/PCM
IGP1
IGP2
STS
VBU
ELD
*1
YEL/BLK
YEL/BLK
BLU/WHT
WHT/BLU
GRN/RED
B1
B9
A24
B21
A30
CPU
5V
DTC
SERVICE
CHECK
CONNECTOR
C226
BRN
BRN/BLK
DATA
LINK
CONNECTOR
C227
WHT/YEL
GRY
BRN/BLK
BLK
SCS
K-LINE
A10
A21
RXD
TXD
FLR
GRN/
YEL
A15
PG1
PG2
B2
B10
BLK
BLK
C173
J/C
BLK
G101
G402
TACHOMETER
CONNECTOR
C2O5
BLU/BLK
NEP
A19
G
BKSW
GRN/
WHT
A32
FUSES:
UNDER-HOOD FUSE/RELAY BOX:
① BATTERY (80A)
② IG MAIN (50A)
③ ECU (ECM/PCM) (15A)
④ BACK UP ACC (30A)
⑤ STOP (15A)
* : RHD
*1 : A/T
*2 : D16W1 engine
*3 : D16W5 engine
FUSES:
UNDER-DASH FUSE/RELAY BOX:
① FUEL PUMP SRS (15A)
② INSTRUMENT LIGHT (7.5A)
③ A/C, R/C MIRROR (7.5A)
④ STARTER SIGNAL (7.5A)
⑤ BACK UP (7.5A)


J/C
C172
E
YEL/BLK
FUEL INJECTORS
No. 1
YEL/BLK
C101
BRN
INJ1
B11
No. 2
YEL/BLK
C102
RED
INJ2
B3
No. 3
YEL/BLK
C103
BLU
INJ3
B4
No. 4
YEL/BLK
C104
YEL
INJ4
B5
C112 *3
YEL/BLK
BLK/BLU
IACV
B23
IAC VALVE
C112 *2
BLK/BLU
IACVP
B6
YEL/BLK
ORN
IACVN
B15
IAC VALVE
ICM
B13
YEL/GRN
CYPP
C29
YEL
CYPM
C30
BLK
TDCP
C20
GRN
TDCM
C21
RED
CKPP
C8
BLU
CKPM
C9
WHT
CKFP
C22
BLU/RED
CKFM
C31
WHT/RED
KS
C3
RED/BLU
LG2
B20
BRN/BLK
LG2
B22
BRN/BLK
C212
C132
BRN/
BLK
G
DISTRIBUTOR ASSEMBLY
C111
ICM
CYP SENSOR
TDC SENSOR
CKP SENSOR
C141
CKF SENSOR
C142
KS *3
G101
BRN/BLK
BRN/BLK
BRN/BLK
BRN/BLK
BRN/BLK
J/C
C171
A
C172
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
BLK/YEL
J/C
HO2SHTC
C1
HO2S
C16
WHT
BLK/YEL
BLK/WHT
C105
HO2S
MAP SENSOR
C108
VSS
C110
BLK/WHT
BLU/WHT
BLK
VSS
C23
BLU/WHT
C171
J/C
F
VCC1
C19
YEL/RED
MAP
C17
RED/GRN
SG1
C7
GRN/WHT
VCC2
C28
YEL/BLU
TPS
C27
RED/BLK
THROTTLE POSITION SENSOR
C106
J/C
BLK
BLK
C173
G101
ALT
C113
BLK/YEL
REG
WHT/RED
ALTF
C5
WHT/GRN
ALTC
C2
SG2
C18
GRN/BLK
C173
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
J/C
H
IAT SENSOR
C107
IAT
C25
RED/YEL
GRN/BLK
C114
BLK/YEL
RED
RED
PCS
A6
C131
C211
ECT
C26
RED/WHT
C109
GRN/BLK
ECT SENSOR
EVAP PURGE CONTROL SOLENOID VALVE

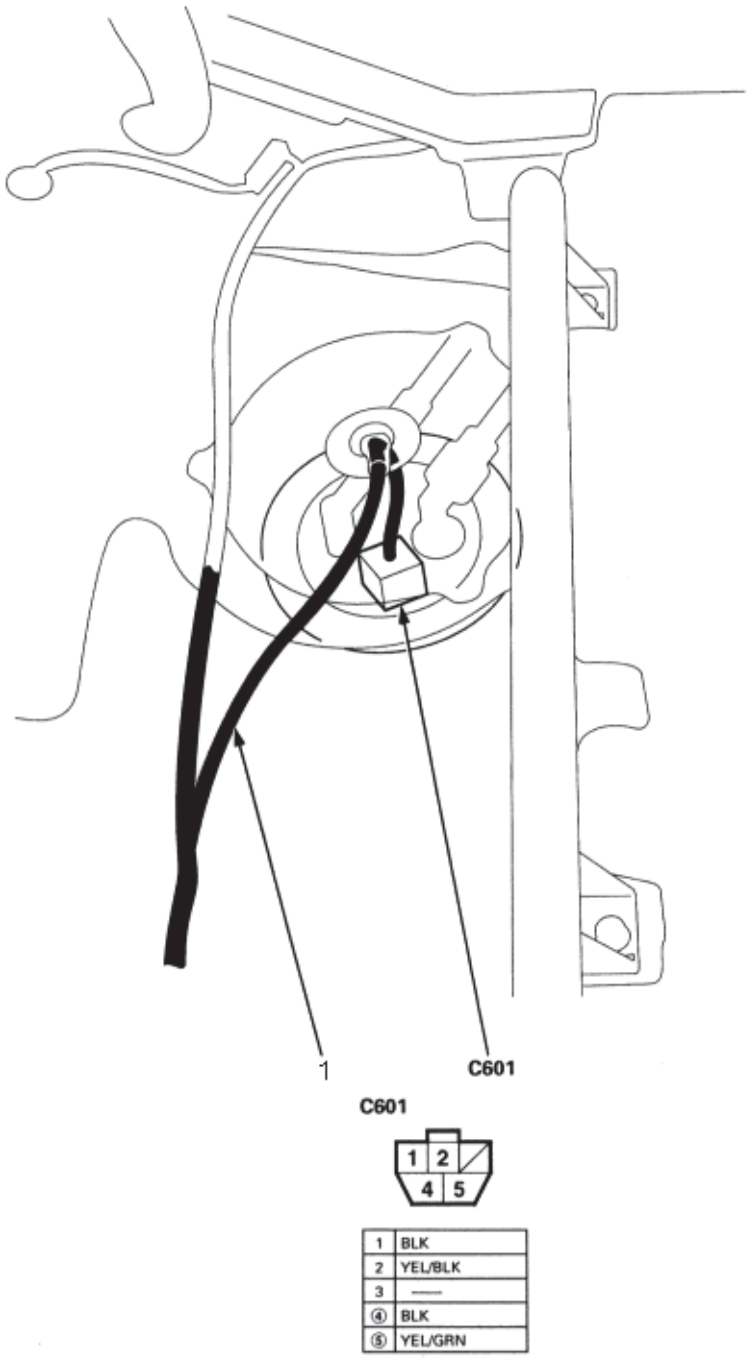

B
G
YEL
BLU/YEL
C701
C711
C271
BLK/YEL
BLK/WHT
WHT/RED
GRN/BLK
SECONDARY HO2S
SHO2SHTC
BLK/WHT
SHO2S
WHT/RED
A8
A23
H
GRN/BLK
GRN/BLK
C702
YEL
GRN/BLK
EGT SENSOR
C712
C272
YEL
C211
EGT
BLK/WHT
C131
C12
A26
PSPSW
GRN
(LHD)
C211
C131
GRN
C115
PSP SWITCH
BLK
BLK
J/C
C173
G101
B12
VTS
GRN/YEL
C143
VTEC SOLENOID VALVE *3
VTEC PRESSURE SWITCH*3
C10
VTM
BLU/BLK
C144
BLK
BLK
J/C
C173
G101
C252
ACS
BLU/RED
A27
A/C PRESSURE SWITCH
YEL/BLK
To A/C switch
(With manual A/C model)
C202
A17
ACC
BLK/RED
D
BLK/YEL
BLK/YEL
C262
COMPRESSOR CLUTCH RELAY
C263
CONDENSER FAN RELAY
C264
RADIATOR FAN RELAY
UNDER-HOOD RELAY/FUSE BOX
IMMOBILIZER INDICATOR LIGHT
C
C501
C511
C214
WHT/BLU
WHT/BLU
PNK
PNK
IMOLMP
A12
C512
C215
GAUGE ASSEMBLY
To IMMOBILIZER UNIT
IMOCD
RED
A25
IMOEN
BLU
A13
A20
FANC
GRN
GRN
GRN
To ECT switch



ECM/PCM TERMINAL LOCATIONS



Fuel Pump:

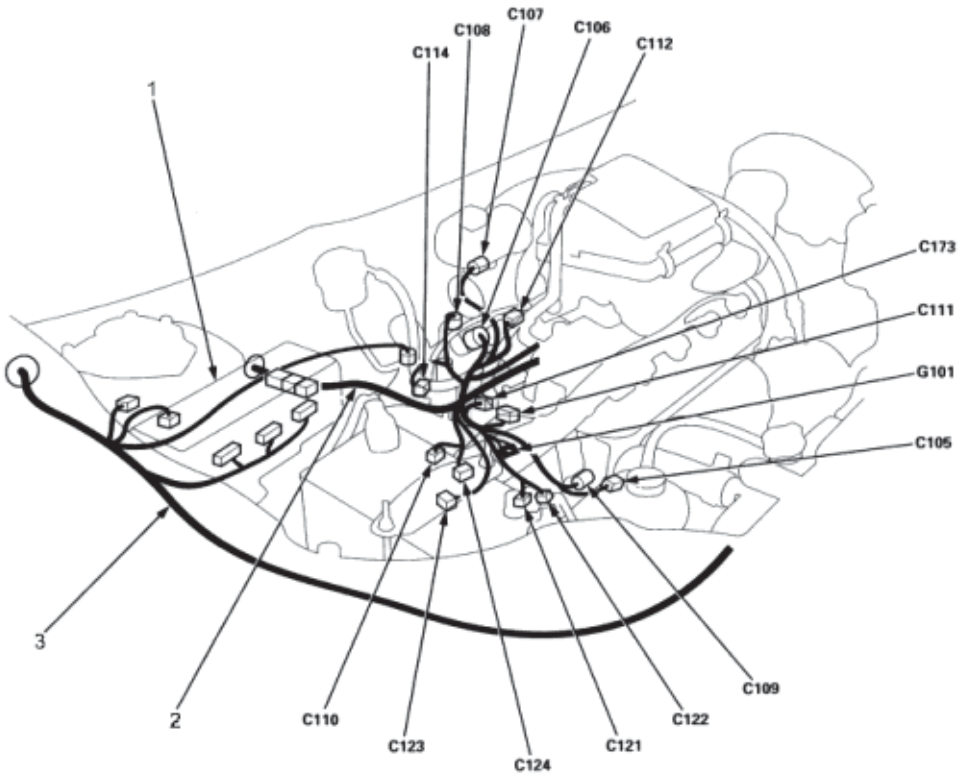


1	BLK
2	YEL/BLK
3	—
④	BLK
⑤	YEL/GRN

1. **REAR WIRE HARNESS**

NOTE:
- O: Related to Fuel and Emissions System.
- \- Connector with male terminals (double outline): View from terminal side
- \- Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W1 engine):



1. **UNDER-HOOD FUSE/RELAY BOX**
2. **ENGINE WIRE HARNESS**
3. **MAIN WIRE HARNESS**

C105



①	WHT
②	GRN/BLK
③	BLK/YEL
④	BLK/WHT

C106



①	GRN/BLK
②	RED/BLK
③	YEL/BLU

C107



①	GRN/BLK
②	RED/YEL

C108



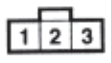
①	YEL/RED
②	GRN/WHT
③	RED/GRN

C109



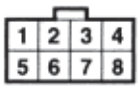
①	RED/WHT
②	GRN/BLK

C110



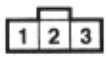
①	BLK
②	BLK/YEL
③	BLU/WHT

C111



①	YEL/GRN	5	BLK/YEL
②	BLU	⑥	WHT
③	GRN	⑦	RED
④	YEL	⑧	BLK

C112



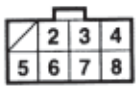
①	ORN
②	YEL/BLK
③	BLK/BLU

C114



①	BLK/YEL
②	RED/YEL

C121



1	—	⑤	GRN/BLK
②	GRN/WHT	⑥	RED/BLK
③	BLU/WHT	⑦	GRN/YEL
④	YEL	⑧	RED/BLU

C122



①	GRN
②	RED/BLU

C123



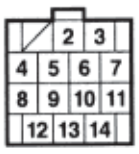
①	RED/WHT
②	WHT

C124



①	BLK/WHT
②	WHT/RED

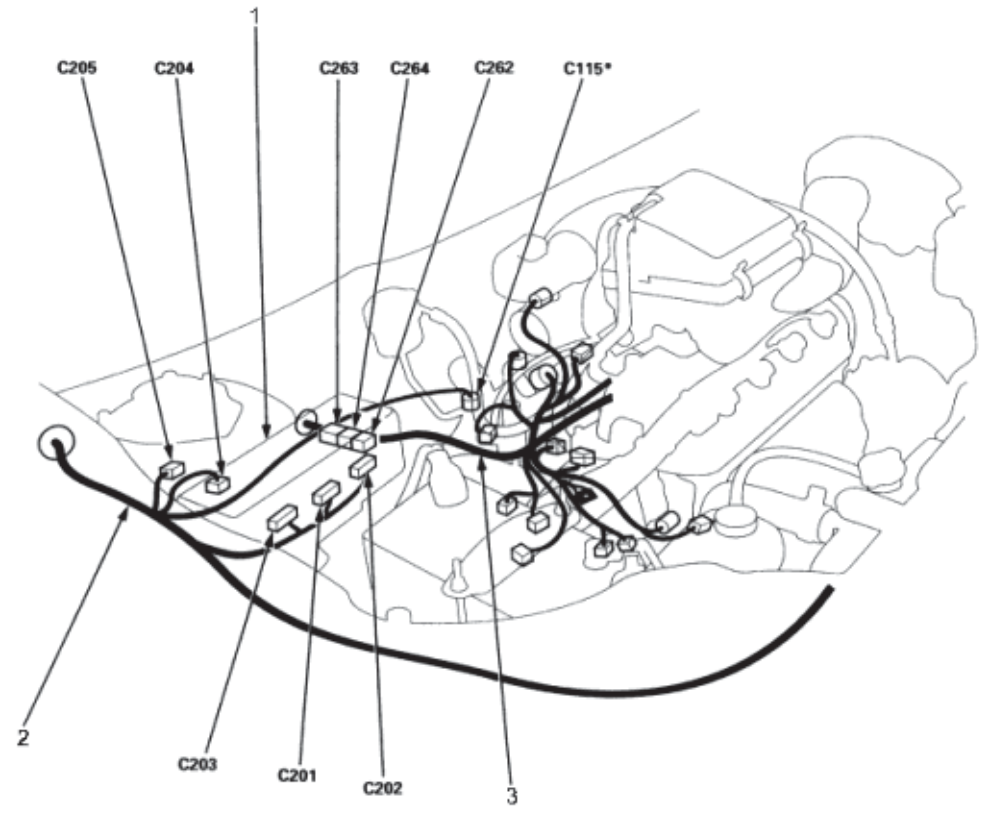
C173



1	—	⑧	GRN/BLK
②	BLK	⑨	GRN/BLK
③	BLK	⑩	GRN/BLK
4	BLK	⑪	GRN/BLK
⑤	BLK	12	GRN/BLK
⑥	BLK	⑬	GRN/BLK
⑦	BLK	⑭	GRN/BLK

NOTE:
- O: Related to Fuel and Emissions System.
- \- Connector with male terminals (double outline): View from terminal side
- \- Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W1 engine):



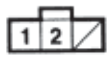
1. **UNDER-HOOD FUSE/RELAY BOX**
2. **MAIN WIRE HARNESS**
3. **ENGINE WIRE HARNESS**

C115



①	GRN
②	BLK

C201



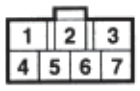
1	BLU/RED
②	RED/WHT
3	—

C202



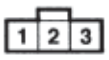
①	BLK/YEL	9	—
②	WHT/YEL	10	—
3	BLU/BLK	⑪	BLK/RED
4	BLU/BLK	⑫	BLK/YEL
5	—	13	—
6	—	14	BLK
7	RED	15	—
8	GRN	⑯	GRN

C203



1	WHT/GRN	⑤	WHT/BLK
2	WHT/GRN	6	BLK/WHT
3	BLU/BLK	⑦	BLU/BLK
4	WHT/RED		

C204



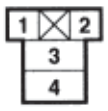
①	YEL
②	BLK
③	GRN/RED

C205

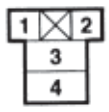


1	—
②	BLU/BLK

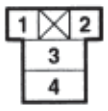
C262



C263

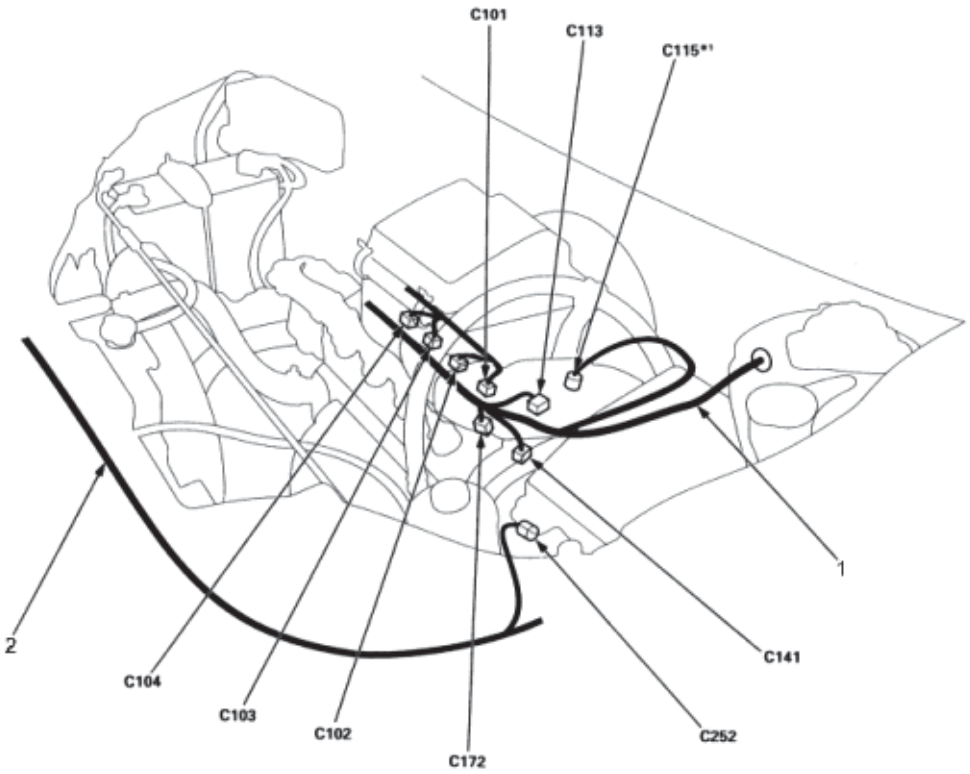


C264



NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W1 engine):



1. **ENGINE WIRE HARNESS**
2. **MAIN WIRE HARNESS**

***1: LHD**

C101



①	BRN
②	YEL/BLK

C102



①	RED
②	YEL/BLK

C103



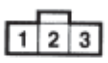
①	BLU
②	YEL/BLK

C104



①	YEL
②	YEL/BLK

C113



①	WHT/RED
2	BLK/YEL
3	WHT/BLU

C113*1



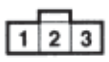
1	BLK/YEL
②	WHT/GRN
3	WHT/BLU
④	WHT/RED

C115



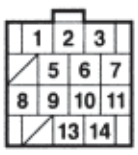
①	GRN
②	BLK

C141



①	WHT/RED
②	BRN/BLK
③	BLU/RED

C172



①	BLK/YEL	⑧	YEL/BLK
②	BLK/YEL	⑨	YEL/BLK
③	BLK/YEL	⑩	YEL/BLK
4	——	⑪	YEL/BLK
⑤	BLK/YEL	12	——
⑥	BLK/YEL	⑬	YEL/BLK
⑦	BLK/YEL	⑭	YEL/BLK

C252

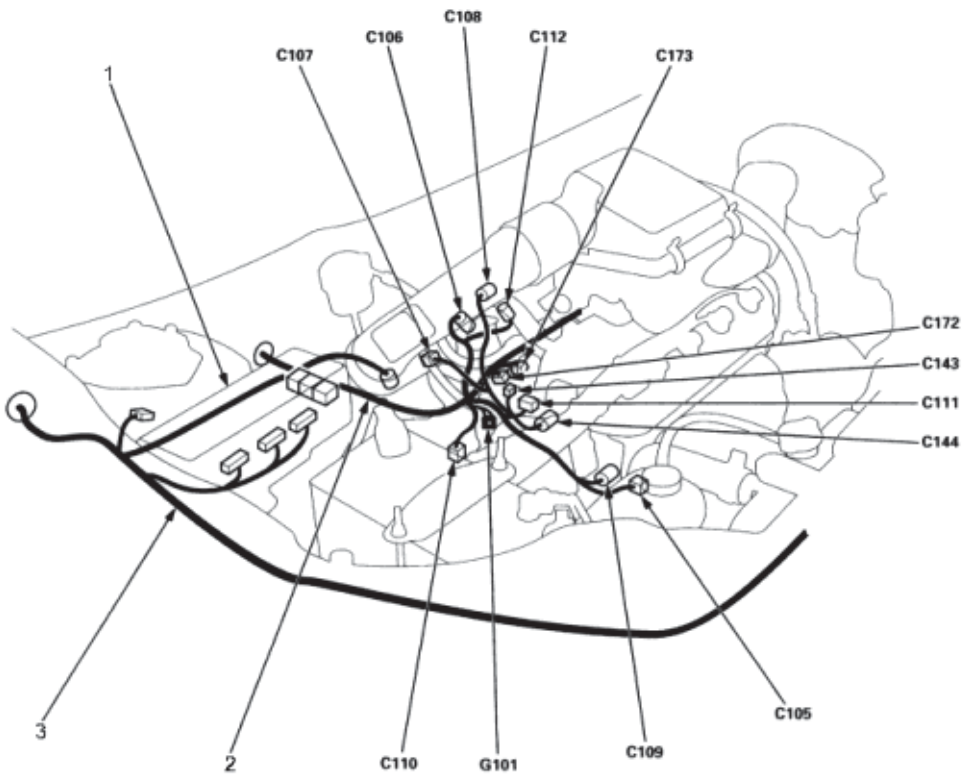


①	BLU/RED
②	YEL/BLK

*1: A/T

NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W5 engine):



1. **UNDER-HOOD FUSE/RELAY**
2. **ENGINE WIRE HARNESS**
3. **MAIN WIRE HARNESS**

C105



①	WHT
②	GRN/BLK
③	BLK/YEL
④	BLK/WHT

C106



①	GRN/BLK
②	RED/BLK
③	YEL/BLU

C107



①	GRN/BLK
②	RED/YEL

C108



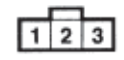
①	YEL/RED
②	GRN/WHT
③	RED/GRN

C109



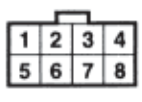
①	RED/WHT
②	GRN/BLK

C110



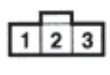
①	BLK
②	BLK/YEL
③	BLU/WHT

C111



①	YEL/GRN	5	BLK/YEL
②	BLU	⑥	WHT
③	GRN	⑦	RED
④	YEL	⑧	BLK

C112



①	ORN
②	YEL/BLK
③	BLK/BLU

C143



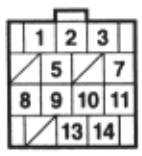
①	GRN/YEL

C144



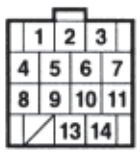
①	BLU/BLK
②	BLK

C172



①	BLK/YEL	⑧	YEL/BLK
②	BLK/YEL	⑨	YEL/BLK
③	BLK/YEL	⑩	YEL/BLK
4	—	⑪	YEL/BLK
⑤	BLK/YEL	12	—
6	—	⑬	YEL/BLK
⑦	BLK/YEL	⑭	YEL/BLK

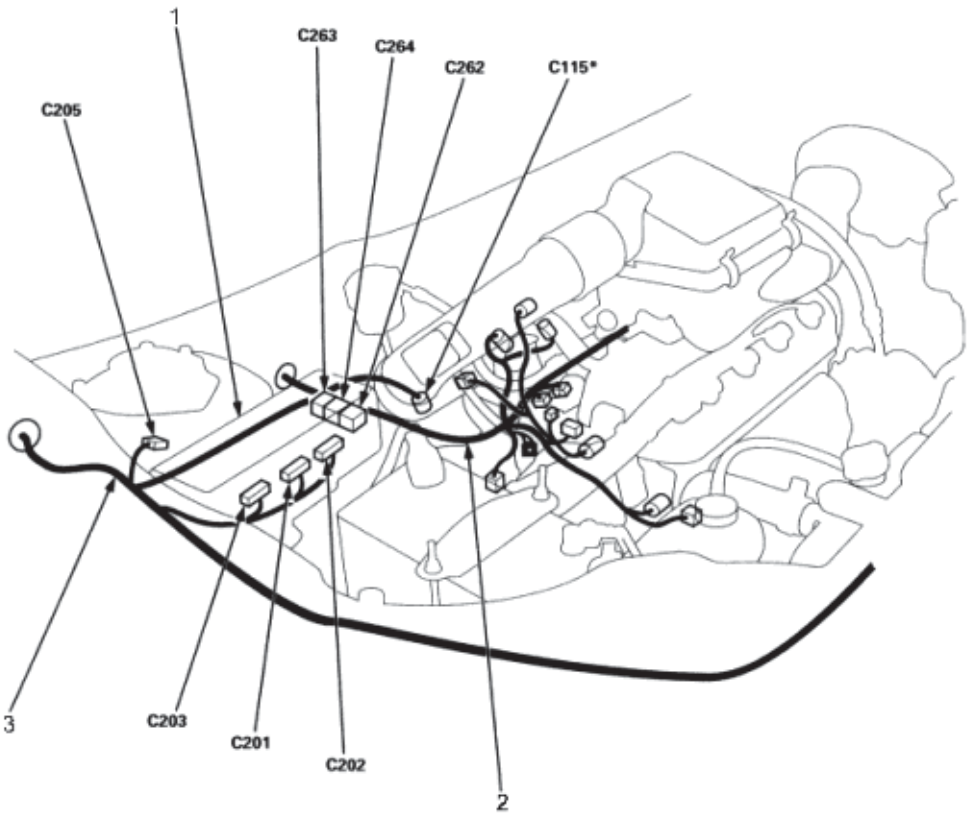
C173



①	BLK	⑧	GRN/BLK
②	BLK	⑨	GRN/BLK
③	BLK	⑩	GRN/BLK
4	BLK	⑪	GRN/BLK
⑤	BLK	12	—
⑥	BLK	⑬	GRN/BLK
⑦	BLK	⑭	GRN/BLK

NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W5 engine):



1. **UNDER-HOOD FUSE/RELAY BOX**
2. **ENGINE WIRE HARNESS**
3. **MAIN WIRE HARNESS**

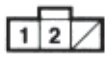
***: RHD**

C115



①	GRN
②	BLK

C201



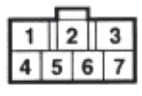
1	BLU/RED
②	RED/WHT
3	—

C202



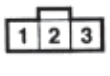
①	BLK/YEL	9	—
②	WHT/YEL	10	—
3	BLU/BLK	⑪	BLK/RED
4	BLU/BLK	⑬	BLK/YEL
5	—	13	—
6	—	14	BLK
7	RED	15	—
8	GRN	⑯	GRN

C203



1	WHT/GRN	⑤	WHT/BLK
2	WHT/GRN	6	BLK/WHT
3	BLU/BLK	⑦	BLU/BLK
4	WHT/RED		

C204



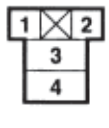
①	YEL
②	BLK
③	GRN/RED

C205

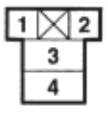


1	—
②	BLU/BLK

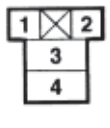
C262



C263

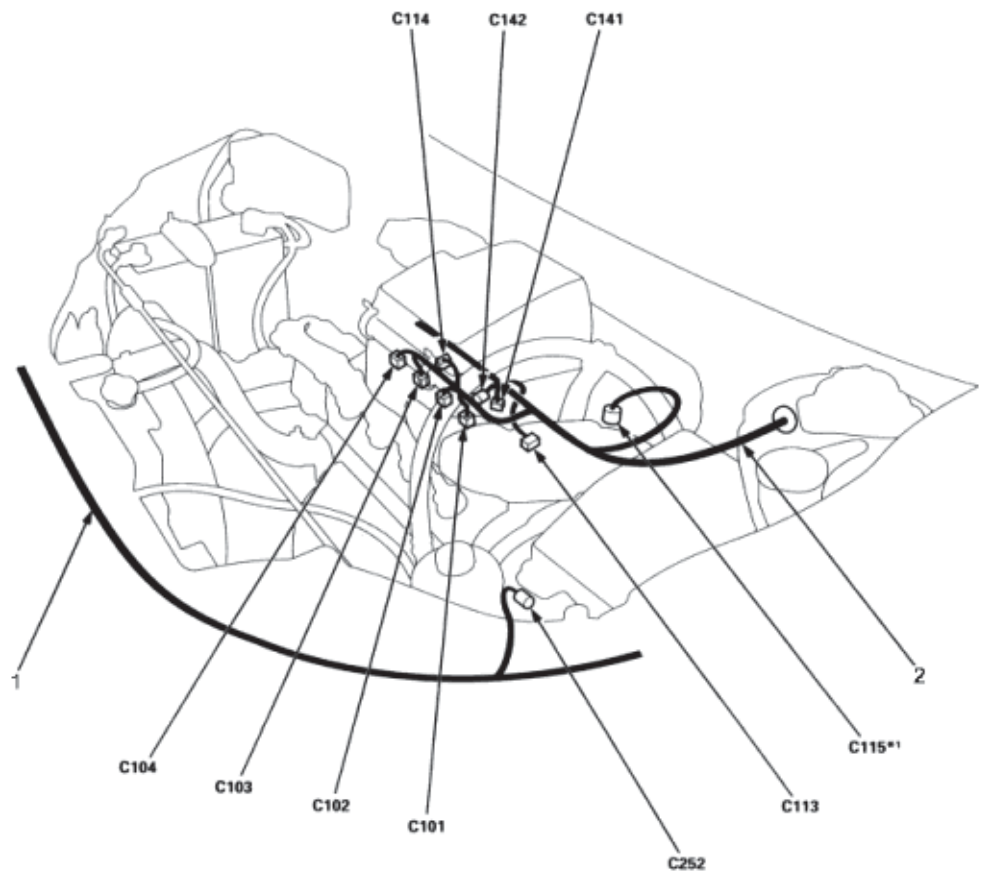


C264



NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Engine Compartment (D16W5 engine):



1. **MAIN WIRE HARNESS**
2. **ENGINE WIRE HARNESS**

***1: LHD**

C101



①	BRN
②	YEL/BLK

C102



①	RED
②	YEL/BLK

C103



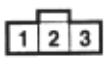
①	BLU
②	YEL/BLK

C104



①	YEL
②	YEL/BLK

C113



①	WHT/RED
2	BLK/YEL
3	WHT/BLU

C114



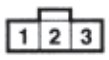
①	BLK/YEL
②	RED/YEL

C115



①	GRN
②	BLK

C141



①	WHT/RED
②	BRN/BLK
③	BLU/RED

C142



①	RED/BLU
2	——

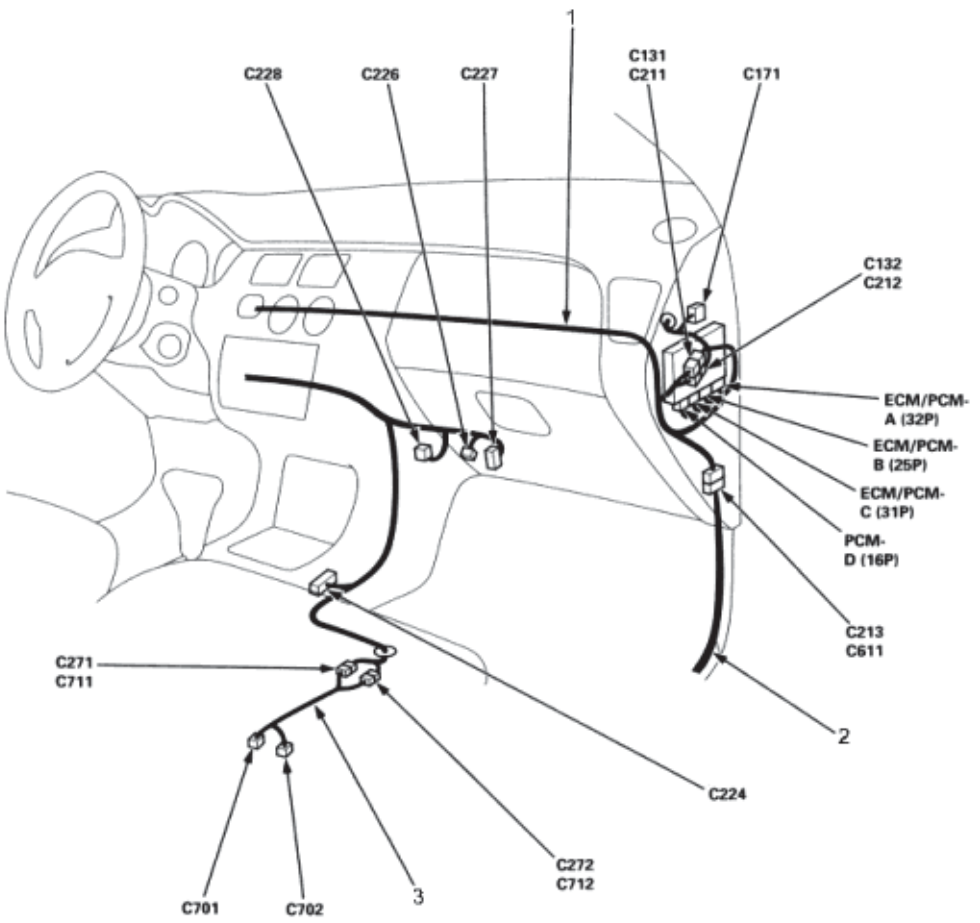
C252



①	BLU/RED
②	YEL/BLK

NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Dash and Floor (LHD):



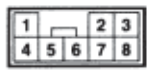
1. **MAIN WIRE HARNESS**
2. **REAR WIRE HARNESS**
3. **SENSOR SUB WIRE HARNESS**

C131



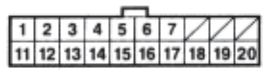
1	YEL	12	—
②	WHT/BLU	13	GRN
③	GRN	14	—
4	BLU/WHT	15	—
⑤	RED/YEL	⑯	LT GRN
⑥	BLK/WHT	⑰	BLU
7	—	⑱	GRN/BLK
8	—	⑲	GRN/RED
⑨	GRN	20	—
10	—	㉑	WHT
11	GRN/BLK	㉒	GRN/BLK

C132



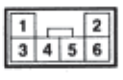
①	BLK/YEL	⑤	BLK
2	WHT/BLU	⑥	YEL/BLK
3	BLK/YEL	7	YEL/RED
4	YEL/GRN	⑧	BRN/BLK

C171



1	BLU/WHT	⑪	BRN/BLK
②	BLU/WHT	⑫	BRN/BLK
③	BLU/WHT	⑬	BRN/BLK
④	YEL/BLK	⑭	BRN/BLK
⑤	YEL/BLK	⑮	BRN/BLK
⑥	YEL/BLK	⑯	BRN/BLK
⑦	YEL/BLK	⑰	BRN/BLK
8	—	⑱	BRN/BLK
9	—	⑲	BRN/BLK
10	—	⑳	BRN/BLK

C213



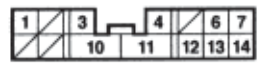
1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
③	YEL/GRN	6	BLK/BLU

C226



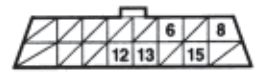
①	BRN
②	BRN/BLK

C224



①	BLK	8	—
2	—	9	—
3	GRN/WHT	10	WHT/RED
4	GRN/BLK	11	BLK
5	—	⑫	BLK/BLU
⑥	BLU	⑬	WHT
⑦	GRN	⑭	RED

C227



1	—	9	—
2	—	10	—
3	—	11	—
4	—	⑫	BLK
5	—	⑬	BRN/BLK
6	LT BLU	14	—
7	—	⑮	GRY
⑧	WHT/YEL	16	—

C228



①	BLK/RED
2	—
③	BLK/RED

C271



①	GRN/BLK
②	WHT/RED
③	BLK/WHT
④	YEL

C272



①	GRN/BLK
②	YEL
③	BRN/BLK

C701



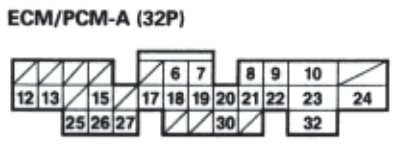
①	GRN/BLK
②	WHT/RED
③	BLK/WHT
④	BLK/YEL

C702



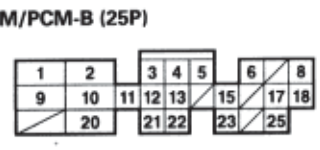
①	GRN/BLK
②	YEL

ECM/PCM-A (32P)



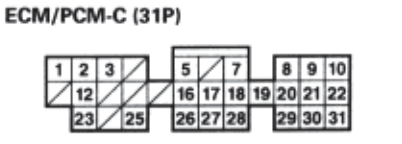
①	BLU	⑫	RED
2	—	14	—
③	GRN/YEL	⑮	BLU/RED
4	—	16	—
5	—	⑰	BLK/RED
⑥	RED	⑱	GRN/ORN
⑦	GRN	⑲	BLU/BLK
⑧	BLK/WHT	⑳	GRN
⑨	LT GRN	㉑	GRY
⑩	BRN	㉒	BLU
11	—	㉓	WHT/RED
⑬	PNK	㉔	BLU/WHT

ECM/PCM-B (25P)



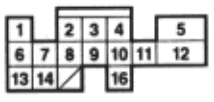
①	YEL/BLK	⑪	BRN
②	BLK	⑫	GRN/YEL*2
③	RED	⑬	YEL/GRN
④	BLU	14	—
⑤	YEL	⑮	ORN
⑥	BLK/BLU	16	—
7	—	⑰	GRN/WHT
⑧	RED/BLK	⑲	RED/BLU
⑨	YEL/BLK	19	—
⑩	BLK	⑳	BRN/BLK
㉑	WHT/BLU	㉒	BRN/BLK
㉓	BLK/BLU*2	24	—
㉕	YEL		

ECM/PCM-C (31P)



①	BLK/WHT	11	—
②	WHT/GRN	⑬	BLK/WHT
③	RED/BLU*2	13	—
4	—	14	—
⑤	WHT/RED	15	—
6	—	⑯	WHT
⑦	GRN/WHT	⑰	RED/GRN
⑧	BLU	⑱	GRN/BLK
⑨	WHT	⑲	YEL/RED
⑩	BLU/BLK*2	⑳	GRN
㉑	RED	㉒	BLU/WHT
㉓	RED/YEL	㉔	RED/WHT
㉕	RED/BLK	㉖	YEL/BLU
㉗	YEL	㉘	BLK
㉙	WHT/RED		

PCM-D (16P)

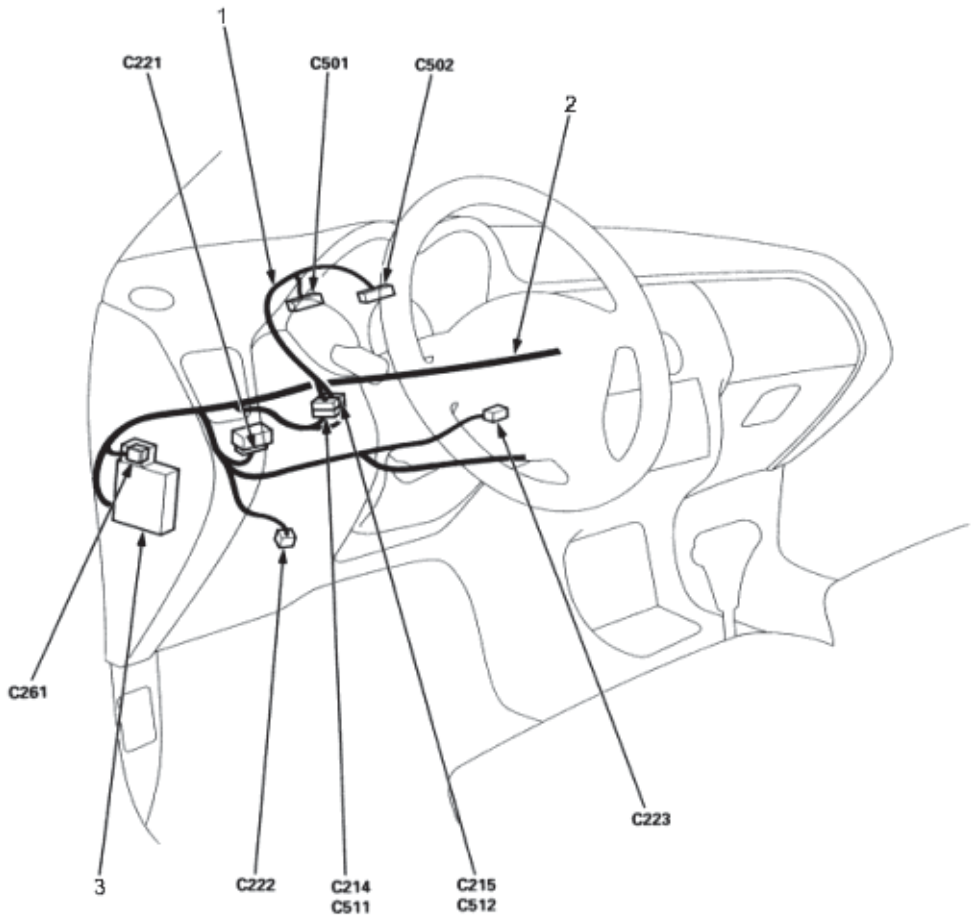


①	WHT/RED	⑨	BLU
②	GRN	⑩	WHT
③	GRN/YEL	⑪	RED/BLU
④	BLU/WHT	⑫	GRN
⑤	BLK/YEL	⑬	YEL
⑥	WHT	⑭	GRN/RED
⑦	BLK/WHT	15	—
⑧	LT GRN	⑯	RED/WHT

*2: D16W5 engine

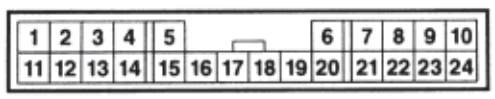
NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Dash and Floor (LHD):



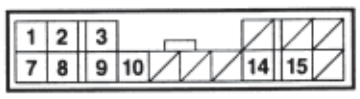
1. **GAUGE SUB WIRE HARNESS**
2. **MAIN WIRE HARNESS**
3. **UNDER-DASH FUSE/RELAY BOX**

C214



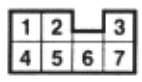
1	RED/BLK	⑬	WHT/BLU
②	GRN/ORN	14	BLU
3	BLU/BLK	15	BLU/WHT
4	GRY/BLK	16	BLK
5	YEL/RED	17	BLK
6	YEL/GRN	18	RED/GRN
⑦	LT GRN	19	BLK/YEL
8	BLU	20	GRN/RED
9	GRN/BLK	㉑	RED
⑩	GRN/BLK	22	WHT
11	YEL/BLK	23	RED/BLU
12	GRN/YEL	24	BLU/RED

C215



1	GRN/RED	⑨	BLK/RED
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	—	13	—
6	—	⑭	PNK
⑦	BLK/BLU	15	WHT/BLU
⑧	YEL	16	—

C221



①	GRN/YEL	⑤	BLK/RED
②	BLU/WHT	⑥	YEL/BLK
③	BLK	⑦	WHT/YEL
④	YEL/GRN		

C222



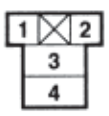
①	WHT/BLK
②	GRN/WHT

C223



①	LT GRN/RED
②	LT GRN/BLU
③	BLK
4	BLU/GRN

C261



1	BLK/WHT
2	WHT/RED
③	BLK/RED
④	BLK/WHT

C501



①	GRN/BLK[3]	12	WHT
②	BLK/RED	⑬	RED
3	BLU	14	GRN/RED
④	LT GRN[1]	15	BLK/YEL
5	YEL/GRN	16	RED/GRN
6	YEL/RED	⑰	WHT/BLU
7	—	18	—
8	WHT/BLU	⑲	PNK
⑨	GRN/ORN	20	—
10	RED/BLK	21	—
⑪	BLK/BLU	22	—

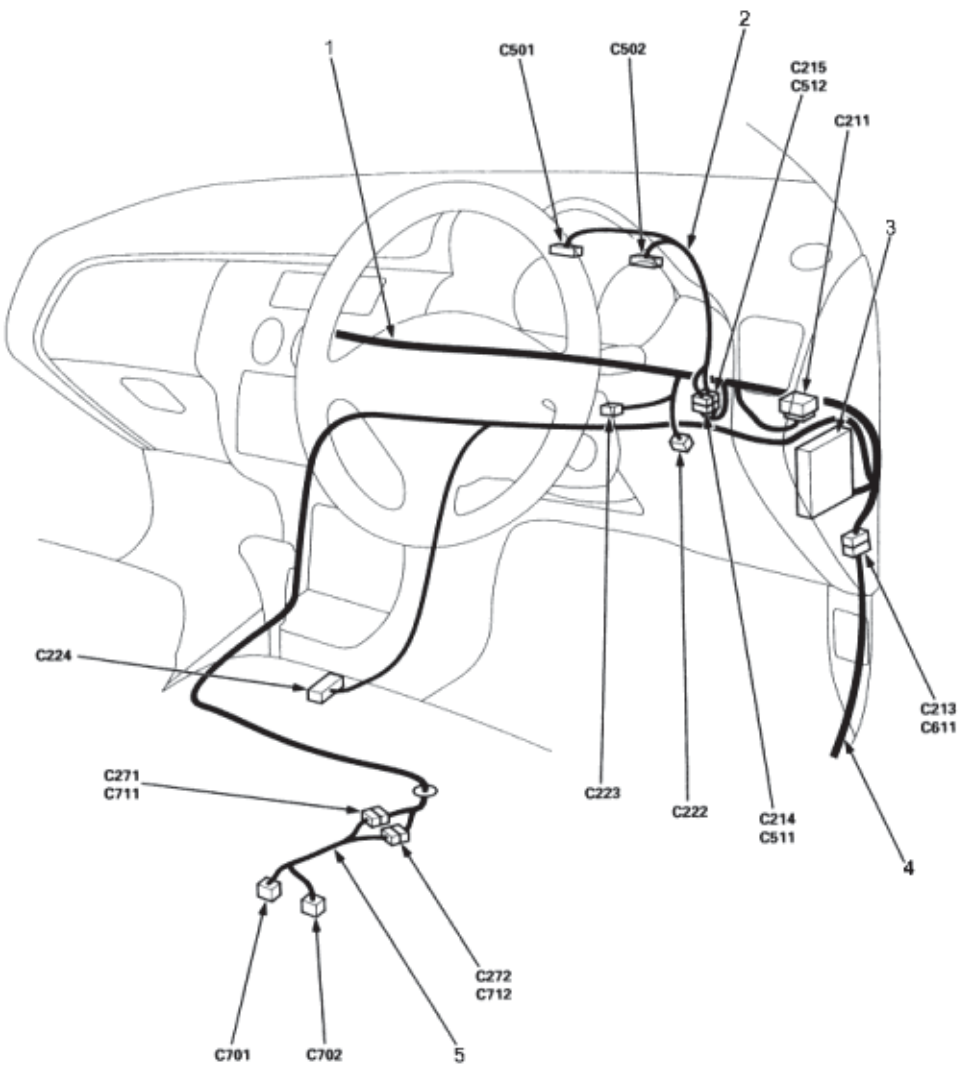
C502



1	GRN/RED	9	RED/BLU
2	BLU	10	GRY/BLK
3	LT GRN/RED	11	GRN/YEL
4	—	12	BLK
5	BLU/WHT	13	BLK
6	BLU/BLK	14	BLK
7	YEL/BLK	⑮	YEL
8	BLU/RED	16	WHT/BLU

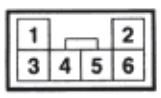
NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Dash and Floor (RHD):



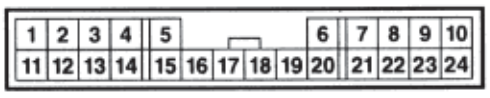
1. **MAIN WIRE HARNESS**
2. **GAUGE SUB WIRE HARNESS**
3. **UNDER-DASH FUSE/RELAY BOX**
4. **REAR WIRE HARNESS**
5. **SENSOR SUB WIRE HARNESS**

C213



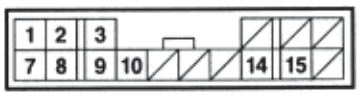
1	BLU/BLK	4	YEL/RED
2	LT GRN/RED	5	WHT/RED
③	YEL/GRN	6	BLK/BLU

C214



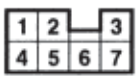
1	RED/BLK	⑬	WHT/BLU
②	GRN/ORN	14	BLU
3	BLU/BLK	15	BLU/WHT
4	GRY/BLK	16	BLK
5	YEL/RED	17	BLK
6	YEL/GRN	18	RED/GRN
⑦	LT GRN	19	BLK/YEL
8	BLU	20	GRN/RED
9	GRN/BLK	㉑	RED
⑩	GRN/BLK	22	WHT
11	YEL/BLK	23	RED/BLU
12	GRN/YEL	24	BLU/RED

C215



1	GRN/RED	⑨	BLK/RED
2	WHT/BLU	10	BLK
3	GRN/RED	11	—
4	—	12	—
5	—	13	—
6	—	⑭	PNK
⑦	BLK/BLU	15	WHT/BLU
⑧	YEL	16	—

C221



①	GRN/YEL	⑤	BLK/RED
②	BLU/WHT	⑥	YEL/BLK
③	BLK	⑦	WHT/YEL
④	YEL/GRN		

C222



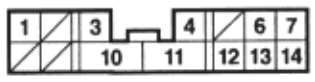
①	WHT/BLK
②	GRN/WHT

C223



①	LT GRN/RED
②	LT GRN/BLU
③	BLK
4	BLU/GRN

C224



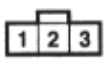
①	BLK	8	—
2	—	9	—
3	GRN/WHT	10	WHT/RED
4	GRN/BLK	11	BLK
5	—	⑫	BLK/BLU
⑥	BLU	⑬	WHT
⑦	GRN	⑭	RED

C271



①	GRN/BLK
②	WHT/RED
③	BLK/WHT
④	YEL

C272



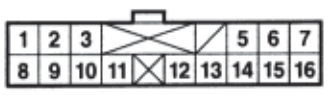
①	GRN/BLK
②	YEL
③	BRN/BLK

C501



①	GRN/BLK[3]	12	WHT
②	BLK/RED	⑬	RED
3	BLU	14	GRN/RED
④	LT GRN[1]	15	BLK/YEL
5	YEL/GRN	16	RED/GRN
6	YEL/RED	⑰	WHT/BLU
7	—	18	—
8	WHT/BLU	⑲	PNK
⑨	GRN/ORN	20	—
10	RED/BLK	21	—
⑪	BLK/BLU	22	—

C502



1	GRN/RED	9	RED/BLU
2	BLU	10	GRY/BLK
3	LT GRN/RED	11	GRN/YEL
4	—	12	BLK
5	BLU/WHT	13	BLK
6	BLU/BLK	14	BLK
7	YEL/BLK	⑮	YEL
8	BLU/RED	16	WHT/BLU

C701



①	GRN/BLK
②	WHT/RED
③	BLK/WHT
④	BLK/YEL

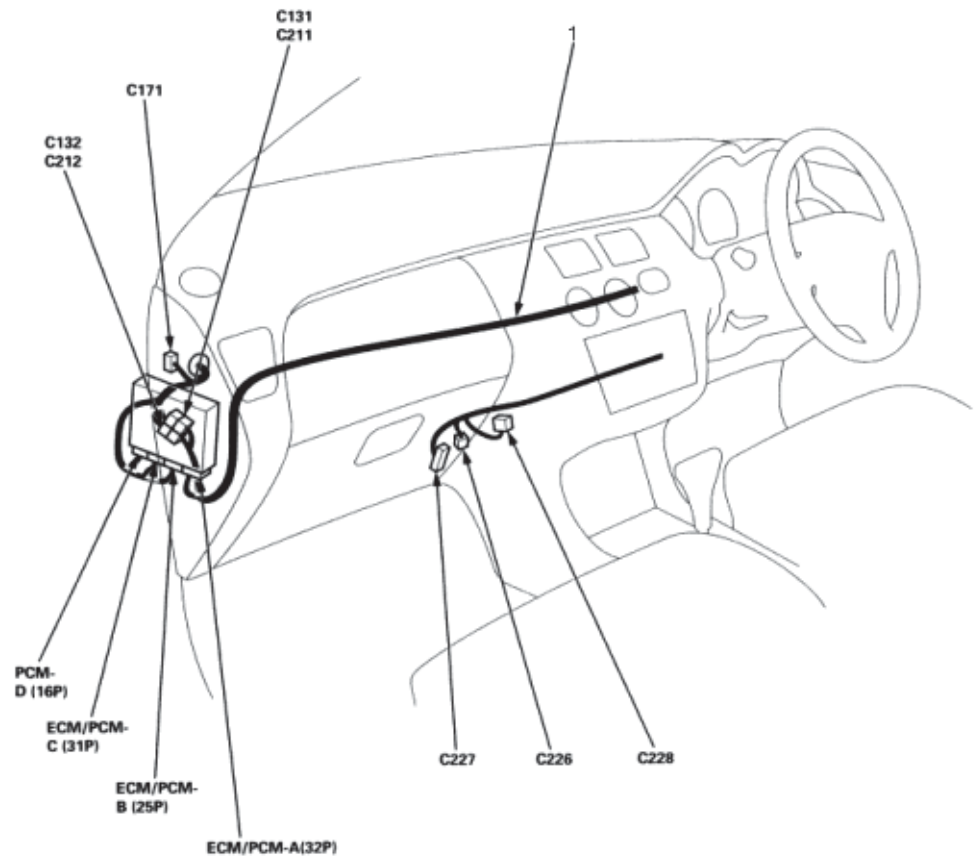
C702



①	GRN/BLK
②	YEL

NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

Dash and Floor (RHD):



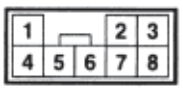
1. **MAIN WIRE HARNESS**

C131



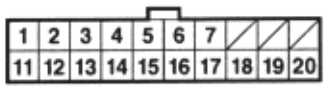
1	YEL	12	—
②	WHT/BLU	13	GRN
3	—	14	—
4	BLU/WHT	15	—
⑤	RED/YEL	⑯	LT GRN
⑥	BLK/WHT	⑰	BLU
7	—	⑱	GRN/BLK
8	—	⑲	GRN/RED
⑨	YEL	20	—
10	—	㉑	WHT
11	GRN/BLK	㉒	GRN/BLK

C132



①	BLK/YEL	⑤	BLK
2	WHT/BLU	⑥	YEL/BLK
3	BLK/YEL	7	YEL/RED
4	YEL/GRN	⑧	BRN/BLK

C171



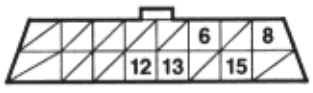
1	BLU/WHT	⑪	BRN/BLK
②	BLU/WHT	⑫	BRN/BLK
③	BLU/WHT	⑬	BRN/BLK
④	YEL/BLK	⑭	BRN/BLK
⑤	YEL/BLK	⑮	BRN/BLK
⑥	YEL/BLK	⑯	BRN/BLK
⑦	YEL/BLK	⑰	BRN/BLK
8	—	⑱	BRN/BLK
9	—	⑲	BRN/BLK
10	—	⑳	BRN/BLK

C226



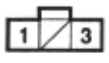
①	BRN
②	BRN/BLK

C227



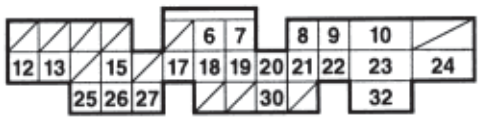
1	—	9	—
2	—	10	—
3	—	11	—
4	—	⑫	BLK
5	—	⑬	ORN/BLK
6	LT BLU	14	—
7	—	⑮	GRY
⑧	WHT/YEL	16	—

C228



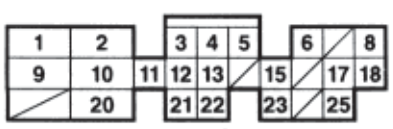
①	BLK/RED
2	—
③	BLK/RED

ECM/PCM-A (32P)



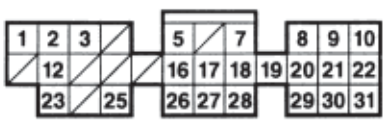
1	—	⑬	BLU	㉙	RED
2	—	14	—	㉚	GRN
3	—	⑮	GRN/YEL	㉗	BLU/RED
4	—	16	—	28	—
5	—	⑰	BLK/RED	29	—
⑥	RED	⑱	GRN/ORN	㉚	GRN/RED
⑦	GRN	⑲	BLU/BLK	31	—
⑧	BLK/WHT	⑳	GRN	㉜	GRN/WHT
⑨	LT GRN	㉑	GRY		
⑩	BRN	㉒	BLU		
11	—	㉓	WHT/RED		
⑫	PNK	㉔	BLU/WHT		

ECM/PCM-B (25P)



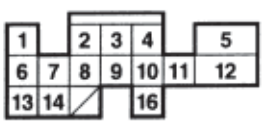
①	YEL/BLK	⑪	BRN	㉑	WHT/BLU
②	BLK	⑫	GRN/YEL*2	㉒	BRN/BLK
③	RED	⑬	YEL/GRN	㉓	BLK/BLU*2
④	BLU	14	—	24	—
⑤	YEL	⑮	ORN	㉕	YEL
⑥	BLK/BLU	16	—		
7	—	⑰	GRN/WHT		
⑧	RED/BLK	⑱	RED/BLU		
⑨	YEL/BLK	19	—		
⑩	BLK	⑳	BRN/BLK		

ECM/PCM-C (31P)



①	BLK/WHT	11	—	㉑	RED
②	WHT/GRN	⑫	BLK/WHT	㉒	BLU/RED
③	RED/BLU*2	13	—	㉓	BLU/WHT
4	—	14	—	24	—
⑤	WHT/RED	15	—	㉕	RED/YEL
6	—	⑯	WHT	㉖	RED/WHT
⑦	GRN/WHT	⑰	RED/GRN	㉗	RED/BLK
⑧	BLU	⑱	GRN/BLK	㉘	YEL/BLU
⑨	WHT	⑲	YEL/RED	㉙	YEL
⑩	BLU/BLK*2	⑳	GRN	㉚	BLK
				㉛	WHT/RED

PCM-D (16P)



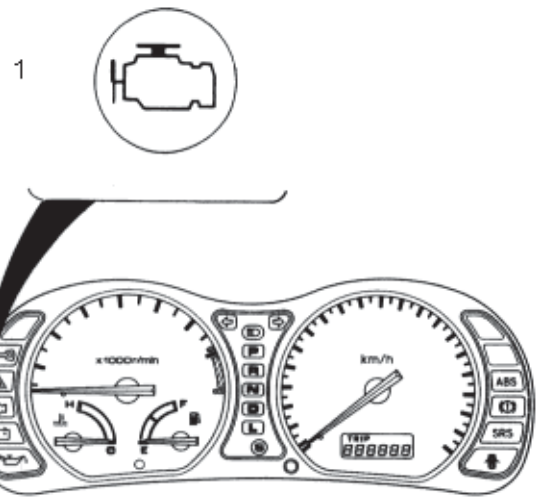
①	WHT/RED	⑨	BLU
②	GRN	⑩	WHT
③	GRN/YEL	⑪	RED/BLU
④	BLU/WHT	⑫	GRN
⑤	BLK/YEL	⑬	YEL
⑥	WHT	⑭	GRN/RED
⑦	BLK/WHT	15	—
⑧	LT GRN	⑯	RED/WHT

*2: D16W5 engine

NOTE: ♦ O: Related to Fuel and Emissions System.
♦ - Connector with male terminals (double outline): View from terminal side
♦ - Connector with female terminals (single outline): View from wire side

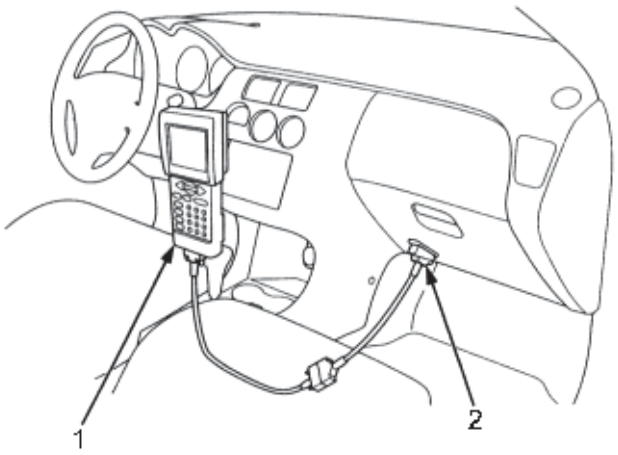
If the MIL (Malfunction Indicator Lamp) has come on

1. Start the engine and check the MIL.



1. MALFUNCTION INDICATOR LAMP (MIL)

2. If the MIL stays on, turn the ignition switch OFF and connect the Honda PGM Tester or a scan tool to the 16P Data Link Connector (DLC) located under the dash on the passenger's side of the car.



1. SCAN TOOL or HONDA PGM TESTER
2. DATA LINK CONNECTOR (16P)

The illustration shows LHD type.
RHD type is symmetrical.

3. Turn the ignition switch ON (II).
4. Check the Diagnostic Trouble Codes (DTC) and note it. Also check the freeze frame data. Refer to the DTC Troubleshooting Index and begin the appropriate troubleshooting procedure.

NOTE:

- Freeze frame data indicates the engine conditions when the first malfunction, misfire or fuel trim malfunction was detected.
- The scan tool and the Honda PGM Tester can read the DTC, freeze frame data, current data, and other ECM/PCM data.
- For specific operations, refer to the user's manual that came with the scan tool or Honda PGM Tester.

If the MIL did not come on

If the MIL did not come on but there is a driveability problem, refer to the Symptom Troubleshooting Index (**See Page** 11-42).

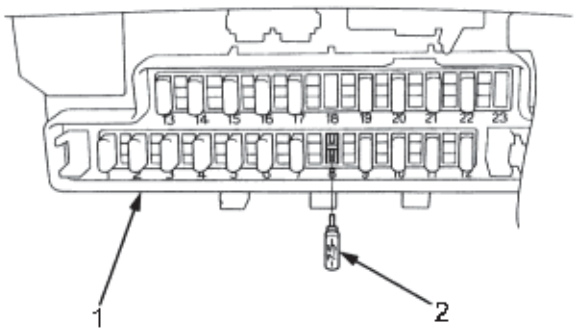
If you cannot duplicate the DTC

Some of the troubleshooting in this section requires you to reset the Engine Control Module (ECM) Powertrain Control Module (PCM) and try to duplicate the DTC. If the problem is intermittent and you cannot duplicate the code, do not continue through the procedure. To do so will only result in confusion and, possibly, a needlessly replaced ECM/PCM.

How to Reset the ECM/PCM

You can reset the ECM/PCM in either of two ways:

- Use the scan tool or Honda PGM Tester to clear the ECM's/PCM's memory. See the scan tool or Honda PGM Tester user's manuals for specific operating instructions.
- Turn the ignition switch OFF, and remove the BACK UP (7.5 A) fuse from the under-dash fuse/relay box for 10 seconds.



1. UNDER-DASH FUSE/RELAY BOX
2. BACK UP (7.5 A) FUSE

The illustration shows LHD type.
RHD is symmetrical.

How to End a Troubleshooting Session

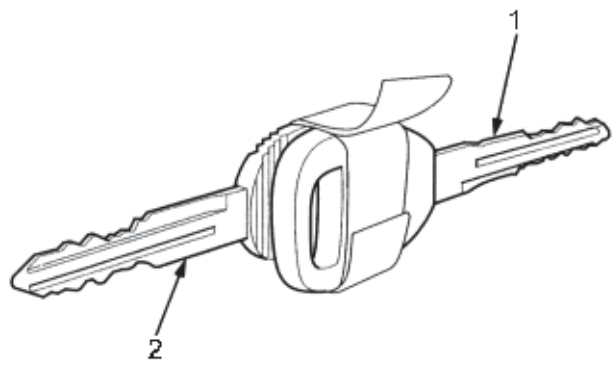
This procedure must be done after any troubleshooting.

1. Do the ECM/PCM Reset Procedure.
2. Turn the ignition switch OFF.
3. Disconnect the scan tool or Honda PGM Tester from the data link connector (16P).
   NOTE: The ECM/PCM is part of the immobiliser system. If you replace the ECM/PCM, the ECM/PCM will have a different immobiliser code. In order for the engine to start, you must rewrite the immobiliser code with the Honda PGM Tester.

How to Substitute the ECM/PCM for Testing Purposes

Use this procedure if you need a known-good ECM/PCM to test a vehicle. It allows you to swap a ECM/PCM from a "donor" vehicle without having to program it to the test vehicle's ignition key.

1. Cut a temporary ignition key for the test vehicle with a non-immobiliser key blank.
2. Remove the ECM/PCM from the test vehicle.
3. Write the test vehicle's VIN on the ECM/PCM you just removed to avoid confusing it with the donor vehicle's ECM/PCM.
4. Remove the known-good ECM/PCM from the donor vehicle, and install it in the test vehicle.
5. Tape the donor vehicle's ignition key. The ECM/PCM will recognise the code from the donor vehicle's key and allow you to start the engine with the temporary key.



1. VEHICLES KEY (DONOR)
2. TEMPORARY KEY

6. After completing your tests, reinstall both ECMs/PCMs and destroy the temporary key.

Scan tool DTC		Honda DTC			
DTC	Temporary DTC	DTC (MIL indication*)	Temporary DTC	Detection Item	Page
P0107	-	3-1 (3)	-	Manifold Absolute Pressure (MAP) Sensor Circuit Low Input	(**See Page** 11-56)
P0108	-	3-2 (3)	-	Manifold Absolute Pressure (MAP) Sensor Circuit High Input	(**See Page** 11-57)
P0112	-	10-1 (10)	-	Intake Air Temperature (IAT) Sensor Circuit Low Input	(**See Page** 11-58)
P0113	-	10-2 (10)	-	Intake Air Temperature (IAT) Sensor Circuit High Input	(**See Page** 11-59)
P0117	-	6-1 (6)	-	Engine Coolant Temperature (ECT) Sensor Circuit Low Input	(**See Page** 11-60)
P0118	-	6-2 (6)	-	Engine Coolant Temperature (ECT) Sensor Circuit High Input	(**See Page** 11-61)
P0122	-	7-1 (7)	-	Throttle Position (TP) Sensor Circuit Low Input	(**See Page** 11-62)
P0123	-	7-2 (7)	-	Throttle Position (TP) Sensor Circuit High Input	(**See Page** 11-64)
P0131	-	1-1 (1)	-	Primary Heated Oxygen Sensor (PH02S) Circuit Low Voltage (Sensor 1)	(**See Page** 11-65)
P0132	-	1-2 (1)	-	Primary Heated Oxygen Sensor (PH02S) Circuit High Voltage (Sensor 1)	(**See Page** 11-66)
P0133	P0133	61-1 (61)	61-1	Primary Heated Oxygen Sensor (PH02S) Slow Response (Sensor 1)	(**See Page** 11-67)
P0135	-	41-1 (41)	-	Primary Heated Oxygen Sensor (PH02S) Heater Circuit Malfunction (Sensor 1)	(**See Page** 11-68)
P0137	P0136	63-1 (63)	-	Secondary Heated Oxygen Sensor (PH02S) Circuit Low Voltage (Sensor 2)	(**See Page** 11-70)
P0138	P0136	63-2 (63)	-	Secondary Heated Oxygen Sensor (PH02S) Circuit High Voltage (Sensor 2)	(**See Page** 11-71)
P0139	P0136	63-3 (63)	-	Secondary Heated Oxygen Sensor (PH02S) Slow Response (Sensor 2)	(**See Page** 11-72)
P0141	-	65-2 (65)	-	Secondary Heated Oxygen Sensor (PH02S) Heater Circuit Malfunction (Sensor 2)	(**See Page** 11-68)
P0171	P0170	45-1 (45)	-	Fuel System Too Lean	(**See Page** 11-73)
P0172	P0170	45-2 (45)	-	Fuel System Too Rich	(**See Page** 11-73)

*: These DTCs will be indicated by the blinking of the Malfunction Indicator Lamp (MIL) when the SCS short connector is connected.

Scan tool DTC		Honda DTC			
DTC	Temporary DTC	DTC (MIL indication*)	Temporary DTC	Detection Item	Page
P0300 and some of P0301 P0302 P0303 P0304	P1399	(71) (72) (73) (74)	-	Random Misfire	(**See Page** 11-75)
P0301 P0302 P0303 P0304	P1399	(71) (72) (73) (74)	-	Cylinder 1 Cylinder 2 Cylinder 3 Cylinder 4 Misfire Detected	(**See Page** 11-76)
P0325	-	23-1 (23)	-	Knock Sensor (KS) Circuit Malfunction	(**See Page** 11-78)
P0335	-	4-1 (4)	-	Crankshaft Position (CKP) Sensor Circuit Malfunction	(**See Page** 11-79)
P0336	-	4-2 (4)	-	Crankshaft Position (CKP) Sensor Range/Performance	(**See Page** 11-79)
P0420	-	67-1 (67)	-	Catalyst System Efficiency Below Threshold	(**See Page** 11-116)
P0443	-	92-4 (92)	-	Evaporative Emission (EVAP) Purge Control Solenoid Valve Circuit Malfunction	(**See Page** 11-117)
P0500	-	17-1 (17)	-	Vehicle Speed Sensor (VSS) Malfunction (M/T)	(**See Page** 11-81)
P0501	-	17-2 (17)	-	Vehicle Speed Sensor (VSS) Malfunction (A/T)	(**See Page** 11-81)
P0700 and P1882	-	70-3 (70)*	-	Automatic Transaxle	Section 14

*: These DTCs will be indicated by the blinking of the Malfunction Indicator Lamp (MIL) with the SCS short connector connected.

*1: The D indicator light and the Malfunction Indicator Lamp (MIL) may come on simultaneously.

Scan tool DTC		Honda DTC			
DTC	Temporary DTC	DTC (MIL indication*)	Temporary DTC	Detection Item	Page
P1107	-	13-1 (13)	-	Barometric Pressure Circuit Low Input	(**See Page** 11-82)
P1108	-	13-2 (13)	-	Barometric Pressure Circuit High Input	(**See Page** 11-82)
P1259	-	22-4 (22)	-	VTEC System Malfunction	Section 6
P1297	-	20-1 (20)	-	Electric Load Detector (ELD) Circuit Low Input	(**See Page** 11-83)
P1298	-	20-2 (20)	-	Electric Load Detector (ELD) Circuit High Input	(**See Page** 11-85)
P1336	-	54-2 (54)	-	Crankshaft Speed Fluctuation (CKF) Sensor Intermittent Interruption	(**See Page** 11-87)
P1337	-	54-1 (54)	-	Crankshaft Speed Fluctuation (CKF) Sensor No Signal	(**See Page** 11-87)
P1359	-	8-3 (8)	-	Crankshaft Position/Top Dead Centre/Cylinder Position Sensor Connector Disconnection	(**See Page** 11-89)
P1361	-	8-2 (8)	-	Top Dead Centre (TDC) Sensor Intermittent Interruption	(**See Page** 11-79)
P1362	-	8-1 (8)	-	Top Dead Centre (TDC) Sensor No Signal	(**See Page** 11-79)
P1381	-	9-2 (9)	-	Cylinder Position (CYP) Sensor Intermittent Interruption	(**See Page** 11-79)
P1382	-	9-1 (9)	-	Cylinder Position (CYP) Sensor No Signal	(**See Page** 11-79)
P1472	-	55-1 (55)	-	Exhaust Gas Temperature (EGT) Sensor Circuit Low Input	(**See Page** 11-90)
P1473	-	55-2 (55)	-	Exhaust Gas Temperature (EGT) Sensor Circuit High Input	(**See Page** 11-90)
P1508*2	-	14-1 (14)	-	Idle Air Control Valve Circuit Failure	(**See Page** 11-100)
P1509*3	-	14-4 (14)	-	Idle Air Control Valve Circuit Failure	(**See Page** 11-101)

*: These DTCs will be indicated by the blinking of the Malfunction Indicator Lamp (MIL) when the SCS short connector is connected

*1: The D indicator light and the Malfunction Indicator Lamp (MIL) may come on simultaneously.

*2: D16W5 engine

*3: D16W1 engine

Scan tool DTC		Honda DTC			
DTC	Temporary DTC	DTC (MIL indication*)	Temporary DTC	Detection Item	Page
P1607	-	0-2	-	Engine Control Module (ECM)/Powertrain Control Module (PCM) Internal Circuit Failure	(**See Page** 11-92)
P1705 P1706 P1870 P1873 P1879 P1885 P1886 P1888 P1890 P1891	-	70-2 (70)*1	-	Automatic Transaxle	Section 14

*: These DTCs will be indicated by the blinking of the Malfunction Indicator Lamp (MIL) when the SCS short connector is connected.

*1: The D indicator light and the Malfunction indicator Lamp (MIL) may come on simultaneously.

Listed below are symptoms and probable causes for problems that DO NOT cause the Malfunction Indicator Lamp (MIL) to come on. If the MIL was reported on, go to DTC Troubleshooting Index (**See Page** 11-38).
NOTE: Across each row in the chart, the systems that could be sources of a symptom are ranked in the order they should be inspected starting with **1**. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next most likely system **2**, etc.

SYSTEM		PGM-FI MIL CIRCUIT	PGM-FI IMMOB SYSTEM	IDLE CONTROL IAC VALVE	IDLE CONTROL ACG FR SIGNAL	IDLE CONTROL STARTER SWITCH	IDLE CONTROL BRAKE SWITCH SIGNAL	IDLE CONTROL POWER STEERING PRESSURE SWITCH SIGNAL	IDLE CONTROL HOSES AND CONNECTIONS
PAGE		**11-93**	**-**	**11-100**	**-**	**-**	**-**	**-**	-
SYMPTOM									
ENGINE WON'T START	MIL COMES ON								**2**
ENGINE WON'T START	MIL DOESN'T COME ON OR STAYS ON AND NEVER GOES OFF	**1**							**2**
DIFFICULT TO START ENGINE				**3**		**1**			**1**
WHEN COLD FAST IDLE OUT OF SPEC				**3**					**1**
RPM TOO HIGH AFTER WARMING UP				**3**					**1**
RPM TOO LOW AFTER WARMING UP	IDLE SPEED IS BELOW SPECIFIED RPM (NO LOAD)			**1**					**3**
RPM TOO LOW AFTER WARMING UP	IDLE SPEED FLUCTUATES WITH ELECTRICAL LOAD			**2**	**1**		**2**		**3**
RPM TOO LOW AFTER WARMING UP	IDLE SPEED DROPS WHEN STEERING WHEEL IS TURNED			**2**	**1**			**1**	
ROUGH IDLE				**1**	**3**				
FREQUENT STALLING AFTER WARMING UP				**1**					**2**
POOR PERFORMANCE	MISFIRE OR ROUGH RUNNING								**3**
POOR PERFORMANCE	FAILS EMISSION TEST								**3**
POOR PERFORMANCE	LOSS OF POWER								

FUEL SUPPLY						INTAKE AIR			EMISSION CONTROL		
FUEL LINES, FUEL PRESSURE	FUEL INJECTOR	FUEL FILTER	FUEL PUMP	PGM-FI MAIN RELAY	FUEL	AIR CLEANER	THROTTLE CABLE	THROTTLE BODY	TWC	PCV SYSTEM	EVAP EMISSION CONTROL SYSTEM
11-106	-	11-107	-	-	-	-	11-108	11-109	11-116	11-119	11-120
1	**3**		**2**	**2**	**1**			**3**			
1	**3**	2	**2**		**1**			**3**			
							2	**2**			
							2	**2**			
								2			
								2			
								2			
2	**2**				**3**					**3**	
1	**2**		**2**		**2**						
2	**2**				**3**				**1**		**3**
1	**3**	**2**	**2**		**3**	**2**	2	**2**	**2**		

You can retrieve data from the ECM by connecting the scan tool or the Honda PGM Tester to the 16P data link connector (DLC). The items listed in the table below can be indicated by both the scan tool and Honda PGM Tester. The Honda PGM Tester also reads beyond these items. Understanding this data may help you find the causes of the intermittent problems.

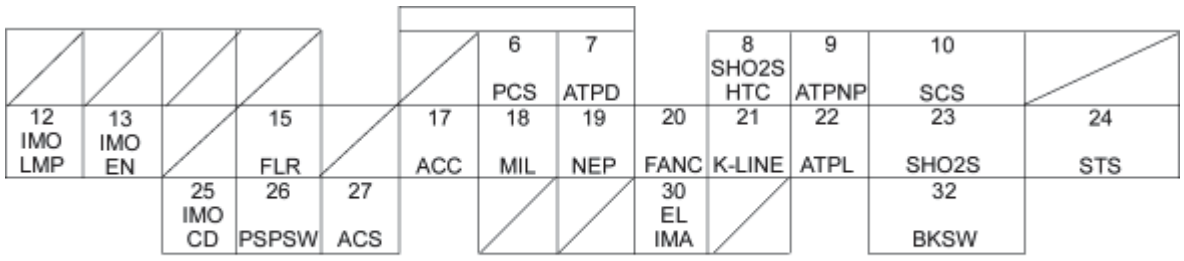
NOTE:

- The “operating values” listed are approximate and may vary depending on the environment and the individual vehicle.
- Unless noted otherwise, “at idle speed” means idling with the engine completely warmed up, in neutral position, and the A/C and all accessories turned off.

Data	Description	Operating Value	Freeze Data
Diagnostic Trouble Code (DTC)	If the ECM detects a problem, it will store it as a code consisting of one letter and four numbers.	If no problem is detected, there is no output.	YES
Engine Speed	The ECM computes engine speed from the signals sent from the Crankshaft Position sensor. This data is used for determining the time and amount of fuel injection.	Nearly the same as tachometer indication At idle speed: 750 ± 50 rpm (min $^{-1}$)	YES
Vehicle Speed	The ECM converts pulse signals from the Vehicle Speed Sensor (VSS) into speed data.	Nearly the same as speedometer indication	YES
Manifold Absolute Pressure (MAP)	The absolute pressure caused in the intake manifold by engine load and speed.	With engine stopped: Nearly the same as atmospheric pressure At idle speed: 28 - 44 kPa (210 - 310 mmHg, 8.3 - 12.2 inHg)	YES
Engine Coolant Temperature (ECT)	The ECT sensor converts coolant temperature into voltage and signals the ECM. The sensor is a thermistor whose internal resistance changes with coolant temperature. The ECM uses the voltage signals from the ECT sensor to determine the amount of injected fuel.	With cold engine: Same as ambient temperature and IAT With engine warmed up: approx. 78 - 100°C (172 - 212°F)	YES
Heated Oxygen Sensor (HO2S) (Primary Sensor 1) (Secondary Sensor 2)	The Heated Oxygen Sensor detects the oxygen content in the exhaust gas and sends voltage signals to the ECM. Based on these signals, the ECM controls the air/fuel ratio. When the oxygen content is high (that is, when the ratio is leaner than the stoichiometric ratio), the voltage signal is lower. When the oxygen content is low (that is, when the ratio is richer than the stoichiometric ratio), the voltage signal is higher	0.0 - 1.4 V At idle speed: about 0.1 - 0.9 V	YES (Primary Sensor 1 only)

Data	Description	Operating Value	Freeze Data
HO2S Feedback Loop Status	Loop status is indicated as "open" or "closed". Closed: Based on the HO2S output, the ECM determines the air/fuel ratio and controls the amount of injected fuel. Open: ignoring HO2S output, the ECM refers to signals from the TP, MAP and ECT sensors to control the amount of injected fuel.	At idle speed: closed	YES
Short Term Fuel Trim	The air/fuel ratio correction coefficient for correcting the amount of injected fuel when HO2S feedback is in the closed loop status. When the signal from the HO2S is weak, short term fuel trim gets higher, and the ECM increases the amount of injected fuel. The air/fuel ratio gradually gets richer, causing a higher HO2S output. Consequently, the short term fuel trim is lowered, and the ECM reduces the amount of injected fuel. This cycle keeps the air/fuel ratio close to the stoichiometric ratio when in closed loop status.	± 20%	YES
Long Term Fuel trim	Long term fuel trim is computed from short term fuel trim and indicates changes occurring in the fuel supply system over a long period. If long term fuel trim is higher than 1.00, the amount of injected fuel must be increased. If it is lower than 1.00, the amount of injected fuel must be reduced.	± 20%	YES
Intake Air Temperature (IAT)	The IAT sensor converts intake air temperature into voltage and signals the ECM. When intake air temperature is low, the internal resistance of the sensor increases, and the voltage signal is higher.	With cold engine: Same as ambient temperature and ECT	YES
Throttle Position	Based on the accelerator pedal position, the opening angle of the throttle valve is indicated.	At idle speed: approx. 10%	YES
Ignition Timing	Ignition timing is the ignition advance angle set by the ECM. The ECM matches ignition timing to the driving conditions.	At idle speed: 12° ± 2° BTDC with the SCS short connector connected	YES
Calculated Load Valve (CLV)	CLV is the engine load calculated from the MAP data.	At idle speed: 15 - 35% At 2,500 rpm with no load: 12 - 30%	YES

ECM/PCM Connector A (32P)



Wire side of female terminals

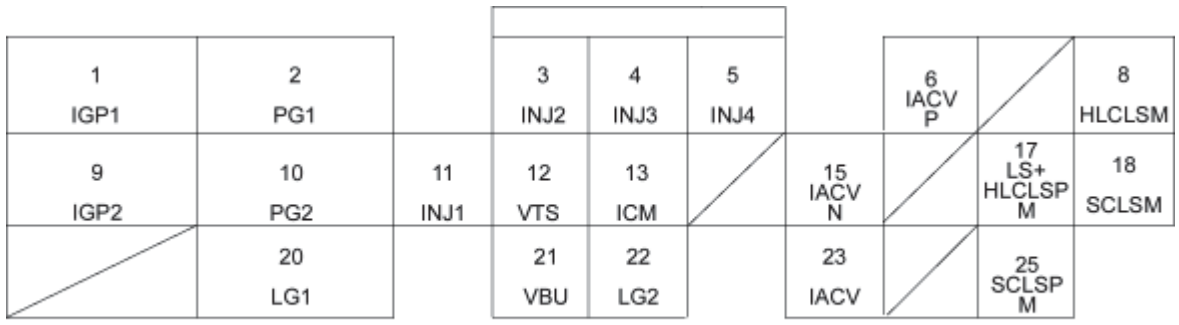
NOTE: Standard battery voltage is 12 V.

Terminal number	Wire colour	Terminal name	Description	Signal
6	RED	PCS (EVAP PURGE CONTROL SOLENOID VALVE)	Drives EVAP purge control solenoid valve.	With engine running, engine coolant below 68°C (154°F): battery voltage With engine running, engine coolant above 68°C (154°F): duty controlled
7*1	GRN	ATPD (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In D position: 0 V In any other position: about 5 V
8	BLK/WHT	SHO2SHTC (SECONDARY HEATED OXYGEN SENSOR HEATER CONTROL)	Drives secondary heated oxygen sensor heater.	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled.
9*1	LT GRN	ATPNP (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In N or P position: 0 V In any other position: battery voltage
10	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check connector signal (the signal causing a DTC indication)	With the terminal connected: 0 V With the terminal disconnected: about 5 V or battery voltage
12	PNK	IMOLMP (IMMOBILISER INDICATOR LIGHT)	Drives immobiliser indicator light.	With immobiliser indicator light turned ON: 0 V With immobiliser indicator light turned OFF: battery voltage
13	BLU	IMOEN (IMMOBILISER ENABLE SIGNAL)	Sends immobiliser enable signal.	
15	GRN/YEL	FLR (FUEL PUMP RELAY)	0 V for two seconds after turning ignition switch ON (II), then battery voltage	0 V for two seconds after turning ignition switch ON (II), then battery voltage
17	BLK/RED	ACC (A/C CLUTCH RELAY)	Drives A/C clutch relay.	With compressor ON: 0 V With compressor OFF: battery voltage
18	GRN/ORN	MIL (MALFUNCTION INDICATOR LIGHT)	Drives MIL.	With MIL turned ON: 0 V With MIL turned OFF: battery voltage
19	BLU/BLK	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse.	With engine running: pulses
20	GRN	FANC (RADIATOR FAN CONTROL)	Drives radiator fan relay.	With radiator fan running: 0 V With radiator fan stopped: battery voltage
21	LT BLU	K-LINE (DLC)	Sends and receives scan tool signal.	With ignition switch ON (II): battery voltage
22*1	BLU	ATPL (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In L position: 0 V In any other position: battery voltage
23*3	WHT/RED	SHO2S (SECONDARY HEATED OXYGEN SENSOR, SENSOR 2)	Detects secondary heated oxygen sensor (sensor 2) signal.	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
24	BLU/WHT	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal.	With starter switch ON (III): battery voltage With starter switch OFF: 0 V
25	RED	IMOCD (IMMOBILISER CODE)	Detects immobiliser signal.	
26	GRN	PSPSW (P/S PRESSURE SWITCH SIGNAL)	Detects PSP switch signal.	At idle with steering wheel in straight ahead position: 0 V At idle with steering wheel at full lock: battery voltage
27	BLU/RED	ACS (A/C SWITCH SIGNAL	Detects A/C switch signal.	With A/C switch ON: 0 V With A/C switch OFF: battery voltage
30*1	GRN/RED	ELD	Detects ELD signal.	With parking lights turned on at idle: about 2.5 - 3.5 V With low beam headlights turned on at idle: about 1.5 - 2.5 V
32	GRN/WHT	BKSW (BRAKE SWITCH)	Detects brake switch signal.	With brake pedal released: 0 V With brake pedal depressed: battery voltage

*1: A/T
*2: D16W5 engine
*3: D16W1 engine

ECM/PCM Terminal Arrangement (cont'd)

ECM/PCM Connector B (25P)



Wire side of female terminals

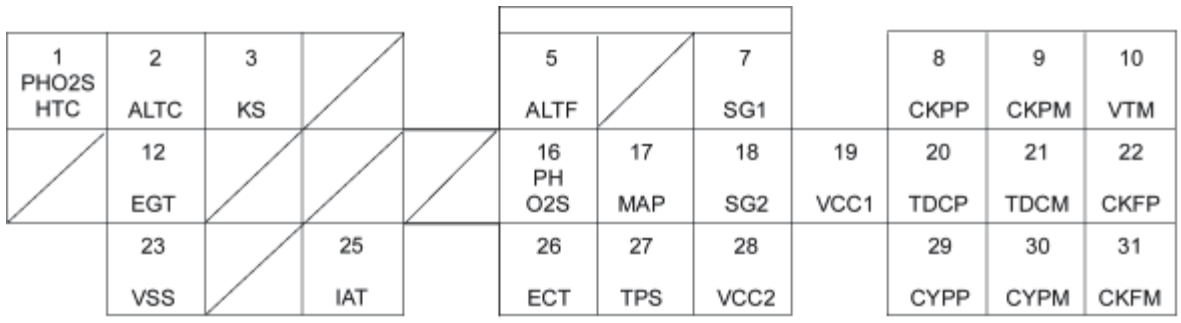
NOTE: Standard battery voltage is 12 V.

Terminal number	Wire colour	Terminal name	Description	Signal
1	YEL/BLK	IGP1 (POWER SOURCE)	Power source for the ECM/PCM control circuit.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
2	BLK	PG1 (POWER GROUND)	Ground for the ECM/PCM control circuit.	Less than 1.0 V at all times
3	RED	INJ2 (No. 2 FUEL INJECTOR)	Drives No. 2 fuel injector.	With engine running: duty controlled
4	BLU	INJ3 (No. 3 FUEL INJECTOR)	Drives No. 3 fuel injector.	With engine running: duty controlled
5	YEL	INJ4 (No. 4 FUEL INJECTOR)	Drives No. 4 fuel injector.	With engine running: duty controlled
6*3	BLK/BLU	IACVP (IDLE AIR CONTROL VALVE POSITIVE SIDE)	Drives IAC valve (positive side).	With engine running: duty controlled
8*1	RED/BLK	HLCLSM (PH-PL CONTROL LINEAR SOLENOID M SIDE)	PH-PL control linear solenoid power supply negative electrode	With ignition switch ON (II): duty controlled
9	YEL/BLK	IGP2 (POWER SOURCE)	Power source for the ECM/PCM control circuit.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
10	BLK	PG2 (POWER GROUND)	Ground for the ECM/PCM control circuit.	Less than 1.0 V at all times
11	BRN	INJ1 (No. 1 FUEL INJECTOR)	Drives No. 1 fuel injector.	With engine running: duty controlled
12	GRN/YEL	VTS (VTEC SOLENOID VALVE)	Drives VTEC solenoid valve.	With engine at low rpm: 0 V With engine at high rpm (vehicle running): battery voltage
13	YEL/GRN	ICM (IGNITION CONTROL MODULE)	Sends ignition pulse.	With ignition switch ON (II): battery voltage With engine running: pulses
15*3	ORN	IACVN (IDLE AIR CONTROL VALVE NEGATIVE SIDE	Drives IAC valve (negative side).	With engine running: duty controlled
17*1	GRN/WHT	HLCLSP (PH-PL CONTROL LINEAR SOLENOID P SIDE)	PH-PL control linear solenoid power supply positive electrode.	With ignition switch ON (II): duty controlled
18*1	RED/BLU	SCLSM (START CLUTCH CONTROL LINEAR SOLENOID M SIDE)	Start clutch control linear solenoid power supply negative electrode.	With ignition switch ON (II): duty controlled
20	BRN/BLK	LG1 (LOGIC GROUND)	Ground for the ECM/PCM control circuit.	Less than 1.0 V at all times
21	WHT/BLU	VBU (VOLTAGE BACK UP)	Power source for the ECM/PCM control circuit. Power source for the DTC memory.	Battery voltage at all times
22	BRN/BLK	LG2 (LOGIC GROUND)	Ground for the ECM/PCM control circuit.	Less than 1.0 V at all times
23*2	BLK/BLU	IACV (IDLE AIR CONTROL VALVE)	Drives IAC valve.	With engine running: pulses
25*1	YEL	SCLSP (START CLUTCH CONTROL LINEAR SOLENOID P SIDE)	Start clutch control linear solenoid power supply positive electrode.	With ignition switch ON (II): duty controlled

*1: A/T
*2: D16W5 engine
*3: D16W1 engine

ECM/PCM Terminal Arrangement (cont'd)

ECM/PCM Connector C (31P)



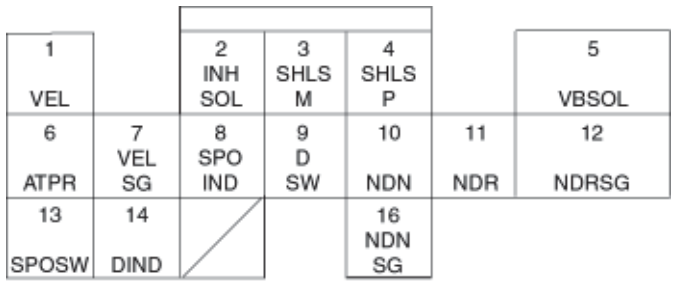
Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire colour	Terminal name	Description	Signal
1	BLK/WHT	PO2SHTC (PRIMARY HEATED OXYGEN SENSOR HEATER CONTROL)	Drives primary heated oxygen sensor heater.	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
2	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal.	With fully warmed-up engine running: battery voltage During driving with small electrical load: 0 V
3*2	RED/BLU	KS (KNOCK SENSOR)	Detects KS signal.	With engine knocking: pulses
5	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal.	With fully warmed-up engine running: 0 V - battery voltage (depending on electrical load)
7	GRN/WHT	SG1 (SENSOR GROUND)	Ground for MAP sensor.	Less than 1.0 V at all times
8	BLU	CKPP (CKP SENSOR P SIDE)	Detects CKP sensor.	With engine running: pulses
9	WHT	CKPM (CKP SENSOR M SIDE)	Ground for CKP sensor.	
10*2	BLU/BLK	VTM (VTEC PRESSURE SWITCH)	Detects VTEC pressure switch signal.	With engine at low engine speed: 0 V With engine at high engine speed: battery voltage.
12	BLK/WHT	EGT (EXHAUST GAS TEMPERATURE SENSOR)	Detects EGT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on exhaust gas temperature)
16	WHT	PHO2S (PRIMARY HEATED OXYGEN SENSOR, SENSOR 1)	Detects primary heated oxygen sensor (sensor 1) signal.	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
17	RED/GRN	MAP (MANIFOLD ABSOLUTE PRESSURE SENSOR)	Detects MAP sensor signal.	With ignition switch ON (II): about 3 V At idle: about 1.0 V (depending on engine speed)
18	GRN/BLK	SG2 (SENSOR GROUND)	Sensor ground.	Less than 1.0 V at all times
19	YEL/RED	VCC1 (SENSOR VOLTAGE)	Power source to MAP sensor.	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
20	GRN	TDCP (TDC SENSOR P SIDE)	Detects TDC sensor.	With engine running: pulses
21	RED	TDCM (TDC SENSOR M SIDE)	Ground for TDC sensor.	
22	BLU/RED	CKFP (CKF SENSOR P SIDE)	Detects CKF sensor.	With engine running: pulses
23	BLU/WHT	VSS (VEHICLE SPEED SENSOR)	Detects VSS signal.	With ignition switch ON (II) and front wheel rotating: cycles 0 V - 5 V
25	RED/YEL	IAT (INTAKE AIR TEMPERATURE SENSOR)	Detects IAT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on intake air temperature)
26	RED/WHT	ECT (ENGINE COOLANT TEMPERATURE SENSOR)	Detects ECT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on engine coolant temperature)
27	RED/BLK	TPS (THROTTLE POSITION SENSOR)	Detects TP sensor signal.	With throttle fully open: 4.8 V With throttle fully closed: about 0.5 V
28	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage.	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
29	YEL	CYPP (CYP SENSOR P SIDE)	Detects CYP sensor.	With engine running: pulses
30	BLK	CYPM (CYP SENSOR M SIDE)	Ground for CYP sensor.	
31	WHT/RED	CKFM (CKF SENSOR M SIDE)	Ground for CKF sensor signal.	

*1: A/T
*2: D16W5 engine
*3: D16W1 engine

PCM Connector D (16P)*4

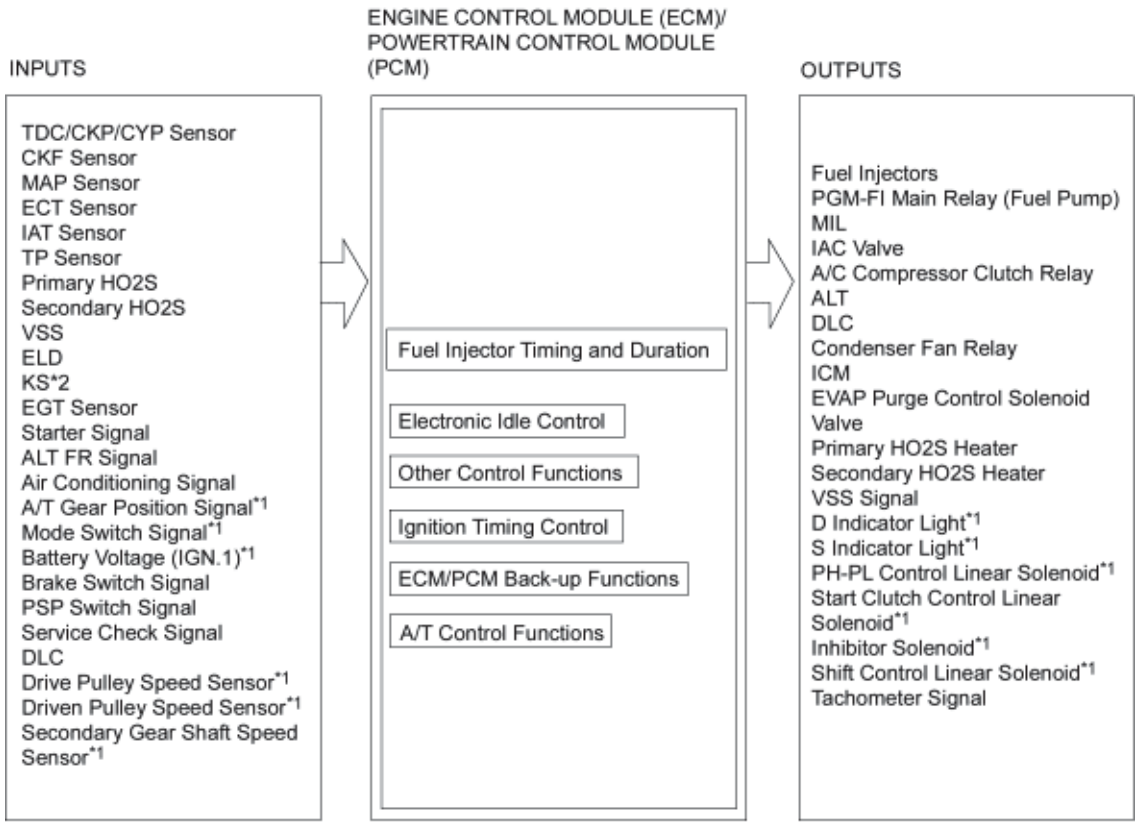


Wire side of female terminals

NOTE: Standard battery voltage is 12 V.

Terminal number	Wire colour	Terminal name	Description	Signal
1*1	WHT/RED	VEL (SECONDARY GEAR SHAFT SPEED SENSOR)	Secondary gear shaft speed sensor.	Depending on vehicle speed: pulses When vehicle is stopped: 0 V
2*1	GRN	INHSOL (INHIBITOR SOLENOID CONTROL)	Inhibitor solenoid control.	With inhibitor solenoid ON: battery voltage With inhibitor solenoid OFF: 0 V
3*1	GRN/YEL	SHLS M (SHIFT CONTROL LINEAR SOLENOID M SIDE)	Shift control linear solenoid power supply negative electrode.	With ignition switch ON (II): pulses
4*1	BLU/WHT	SHLS P (SHIFT CONTROL LINEAR SOLENOID P SIDE)	Shift control linear solenoid power supply positive electrode.	With ignition switch ON (II): pulses
5*1	BLK/YEL	VBSOL (BATTERY VOLTAGE FOR SOLENOID VALVE)	Power source of solenoid valve.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
6*1	WHT	ATPR (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In R position: 0 V In any other position: battery voltage
7*1	BLK/WHT	VELSG (SECONDARY GEAR SHAFT SPEED SENSOR GROUND)	Ground for secondary gear shaft speed sensor.	
8*1	LT GRN	SPOIND (S INDICATOR LIGHT)	Drives S indicator.	With S indicator turned ON: battery voltage With S indicator turned OFF: 0 V
9*1	BLU	DSW (D MODE SWITCH)	Detects D mode switch signal.	With D mode switch ON: 0 V With D mode switch OFF: battery voltage
10*1	WHT	NDN (DRIVEN PULLEY SPEED SENSOR)	Detects driven pulley speed sensor signal.	In other than N or P positions: pulses
11*1	RED/BLU	NDR (DRIVE PULLEY SPEED SENSOR)	Detects drive pulley speed sensor signal.	In other than N or P position: pulses
12*1	GRN	NDRSG (DRIVE PULLEY SPEED SENSOR GROUND)	Ground for drive pulley speed sensor.	
13*1	YEL	SPOSW (S MODE SWITCH)	Detects S mode switch signal.	With S mode switch ON: 0 V With S mode switch OFF: battery voltage
14*1	GRN/BLK	DIND (D INDICATOR LIGHT)	Drives D indicator.	With D indicator turned ON: battery voltage With D indicator turned OFF: 0 V
16*1	RED/WHT	NDNSG (DRIVEN PULLEY SPEED SENSOR GROUND)	Ground for driven pulley speed sensor.	

*1: A/T



*1: A/T
*2: D16W5 engine

PGM-FI System

The PGM-FI system on this model is a sequential multiport fuel injection system.

Fuel Injector Timing and Duration

The ECM/PCM contains memories for the basic discharge durations at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

Idle Air Control

When the engine is cold, the A/C compressor is on, the brake pedal is depressed, the P/S load is high, or the alternator is charging, the ECM/PCM controls current to the IAC Valve to maintain the correct idle speed.

Ignition Timing Control

- The ECM/PCM contains memories for basic ignition timing at various engine speeds and manifold air flow rates. Ignition timing is also adjusted for engine coolant temperature.
- A knock control system is also used. When detonation is detected by a knock sensor (KS)*2, the ignition timing is retarded.

Other Control Functions

1. Starting Control
   When the engine is started, the ECM/PCM provides a rich mixture by increasing the fuel injector duration.
2. Fuel Pump Control
   - When the ignition switch is initially turned ON (II), the ECM/PCM supplies ground to the PGM-FI main relay that supplies current to the fuel pump for two seconds to pressurise the fuel system.
   - When the engine is running, the ECM/PCM supplies ground to the PGM-FI main relay that supplies current to the fuel pump.
   - When the engine is not running and the ignition is ON (II), the ECM/PCM cuts ground to the PGM-FI main relay which cuts current to the fuel pump.
3. Fuel Cut-off Control
   - During deceleration with the throttle valve closed, current to the fuel injectors is cut off to improve fuel economy at speeds over 1,100 rpm (min^{-1}).
   - Fuel cut-off action also takes place when engine speed exceeds 6,900 (7,000)* rpm (min^{-1}), regardless of the position of the throttle valve, to protect the engine from over-revving.
     With A/T model, when the vehicle stops, the ECM/PCM cuts the fuel at engine speed over 5,000 rpm (min^{-1}).
     *: D16W5 engine
4. A/C Compressor Clutch Relay
   When the ECM/PCM receives a demand for cooling from the air conditioning system, it delays the compressor from being energised, and enriches the mixture to assure smooth transition to the A/C mode.
5. Evaporative Emission (EVAP) Purge Control Solenoid Valve
   When the engine coolant temperature is above 68°C (154°F), the ECM/PCM controls the EVAP purge control solenoid valve which controls vacuum to the EVAP purge control canister.
6. Alternator Control
   The system controls the voltage generated at the alternator in accordance with the electrical load and driving mode, which reduces the engine load to improve the fuel economy.

ECM/PCM Fail-safe/Back-up functions

1. Fail-safe Function
   When an abnormality occurs in a signal from a sensor, the ECM/PCM ignores that signal and assumes a pre-programmed value for that sensor that allows the engine to continue to run.
2. Back-up Function
   When an abnormality occurs in the ECM/PCM itself, the fuel injectors are controlled by a back-up circuit independent of the system in order to permit minimal driving.
3. Self-diagnosis Function [Malfunction Indicator Lamp (MIL)]
   When an abnormality occurs in a signal from a sensor, the ECM/PCM supplies ground for the MIL and stores the code in erasable memory. When the ignition is initially turned ON (II), the ECM/PCM supplies ground for the MIL for two seconds to check the MIL bulb condition.
4. Two Driving Cycle Detection Method
   To prevent false indications, the "two driving cycle detection method" is used for the TWC deterioration detection and other self-diagnostic functions. When an abnormality occurs, the ECM/PCM stores it in its memory. When the same abnormality recurs after the switch is turned OFF and ON (II) again, the ECM/PCM informs the driver by turning on the MIL.

The programmed Fuel Injection (PGM-FI) system is a sequential multiport fuel injection system.

Fuel 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 signals sent from various sensors to obtain the final discharge duration. By monitoring Long Term Fuel Trim, the ECM/PCM detects long term malfunctions in the fuel system, and will set a DTC if the malfunction occurs during two consecutive trips.

Ignition Timing Control
The ECM/PCM contains the memory for basic ignition timing at various engine speeds and manifold air flow rates. It also adjusts the timing according to engine coolant temperature. The ECM/PCM detects misfiring by using the CKP sensor to monitor fluctuations in crankshaft speed.
It will then set DTCs depending on how much misfiring occurs.

Starting Control
When the engine is started, the ECM/PCM provides a rich mixture by increasing fuel injector duration.

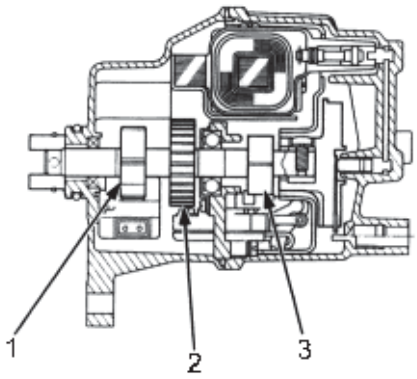
Alternator Control
The alternator signals the ECM/PCM during charging. The ECM/PCM then controls the voltage generated at the alternator according to the electrical load determined by the ELD (Electrical Load Detector) and driving mode. This reduces engine load to improve fuel economy.

A/C Switch
The A/C (air conditioning) switch signals the ECM/PCM whenever there is a demand for cooling.

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 energised, and enriches the mixture to assure smooth transition to the A/C mode.

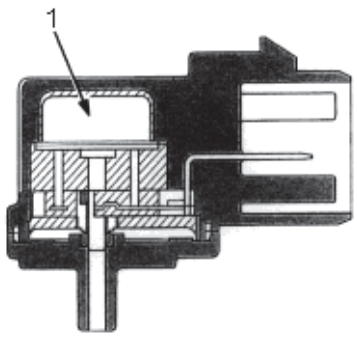
Vehicle Speed Sensor (VSS)
The speed sensor generates a pulsed signal from an input of 5 volts. The number of pulses per minutes increases/decreases with the speed of the vehicle.

Crankshaft Position (CKP)/Top Dead Centre (TDC)/Cylinder Position (CYP) Sensor
The CKP Sensor determines timing for fuel injection and ignition of each cylinder and also detects engine speed. The DTC Sensor determines ignition timing at start-up (cranking) and when crank angle is abnormal. The CYP Sensor detects the position of No. 1 cylinder for sequential fuel injection to each cylinder. The CKP/TDC/CYP Sensor is built into the distributor.



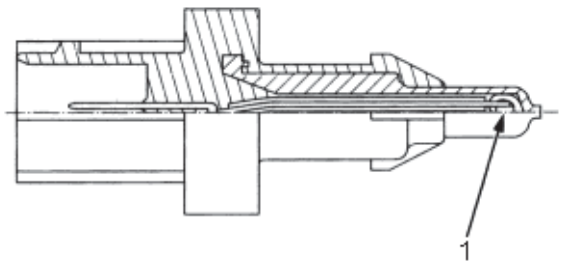
1. TDC SENSOR ROTOR
2. CKP SENSOR ROTOR
3. CYP SENSOR ROTOR

Manifold Absolute Pressure (MAP) Sensor
The MAP sensor converts manifold absolute pressure into electrical signals to the ECM/PCM.



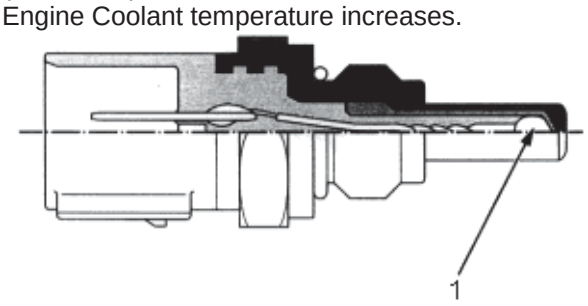
1. SENSOR UNIT

Intake Air Temperature (IAT) Sensor
The IAT sensor is a temperature dependant resistor (thermistor). The resistance of the thermistor decreases as the intake air temperature increases.



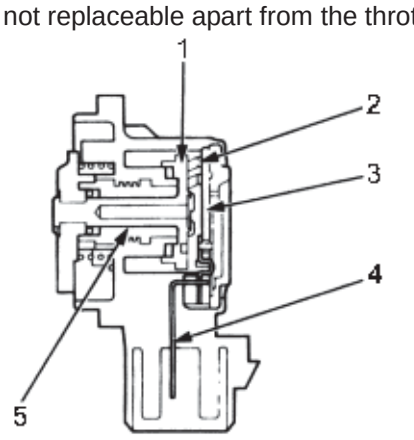
1. THERMISTOR

Engine Coolant Temperature (ECT) Sensor
The ECT sensor is a temperature dependant resistor (thermistor). The resistor of the thermistor decreases as the Engine Coolant temperature increases.



1. THERMISTOR

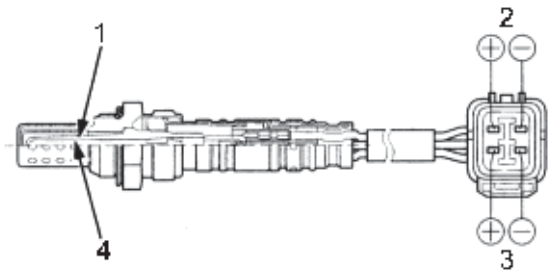
Throttle Position (TP) Sensor
The TP sensor is a potentiometer connected to the throttle valve shaft. As the throttle position changes, the sensor varies the signal voltage to the ECM/PCM. The TP sensor is not replaceable apart from the throttle body.



1. BRUSH HOLDER
2. BRUSH
3. RESISTOR
4. TERMINAL
5. INNER BUSHING

Barometric Pressure (BARO) Sensor
The barometric pressure sensor is inside the ECM/PCM. It converts atmospheric pressure into a voltage signal that modifies the basic duration of the fuel injection discharge.

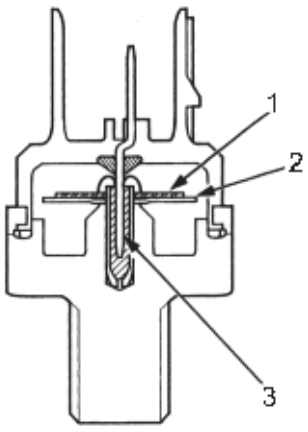
Primary Heated Oxygen Sensor (PHO2S) and Secondary Heated Oxygen Sensor (SHO2S)
The heated oxygen sensors detect the oxygen content in the exhaust gas, then send signals to the ECM/PCM which varies the duration of fuel injection accordingly. To stabilise its output, the sensors have an internal heater. The primary sensor is installed in the exhaust pipe. The secondary sensor is installed in the TWC.



1. ZIRCONIA ELEMENT
2. SENSOR TERMINALS
3. HEATER TERMINALS
4. HEATER

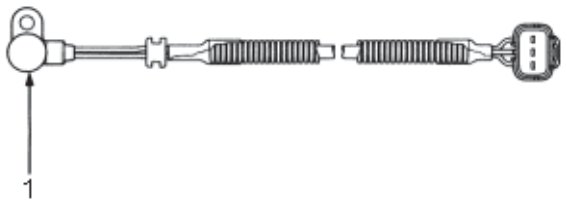
By controlling the air/fuel ratio with sensors, the deterioration of the primary sensor can be evaluated by its feedback period. When the feedback period exceeds a certain value during stable driving conditions, the sensor is considered deteriorated and the ECM/PCM sets a DTC.

Knock Sensor (KS)
The knock control system adjusts the ignition timing for the octane rating of the gasoline used.



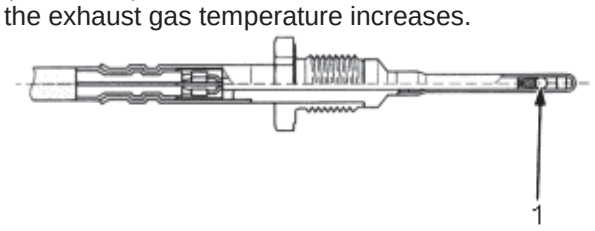
1. PIEZO CERAMIC
2. DIAPHRAGM
3. TERMINAL

Crankshaft Speed Fluctuation (CKF) Sensor
The diagnostic system has a pulser rotor on the crankshaft and a pulse pick-up sensor on the engine block. The ECM/PCM monitors the crankshaft speed fluctuation based on the CKF sensor signal, and judges the air/fuel ratio.



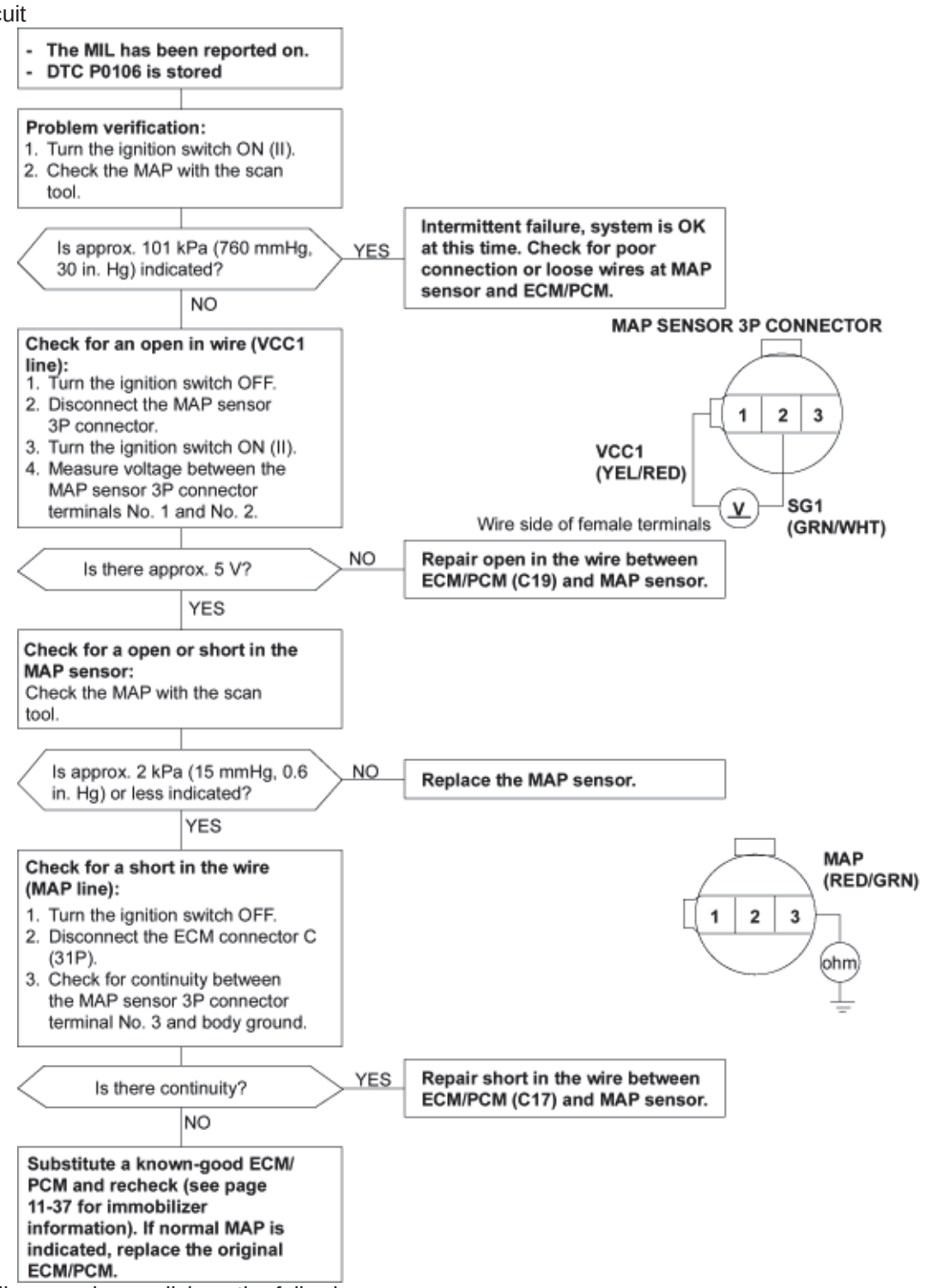
1. CKF SENSOR

Exhaust Gas Temperature (EGT) Sensor
The EGT sensor is a temperature dependant resistor (thermistor). The resistance of the thermistor decreases as the exhaust gas temperature increases.



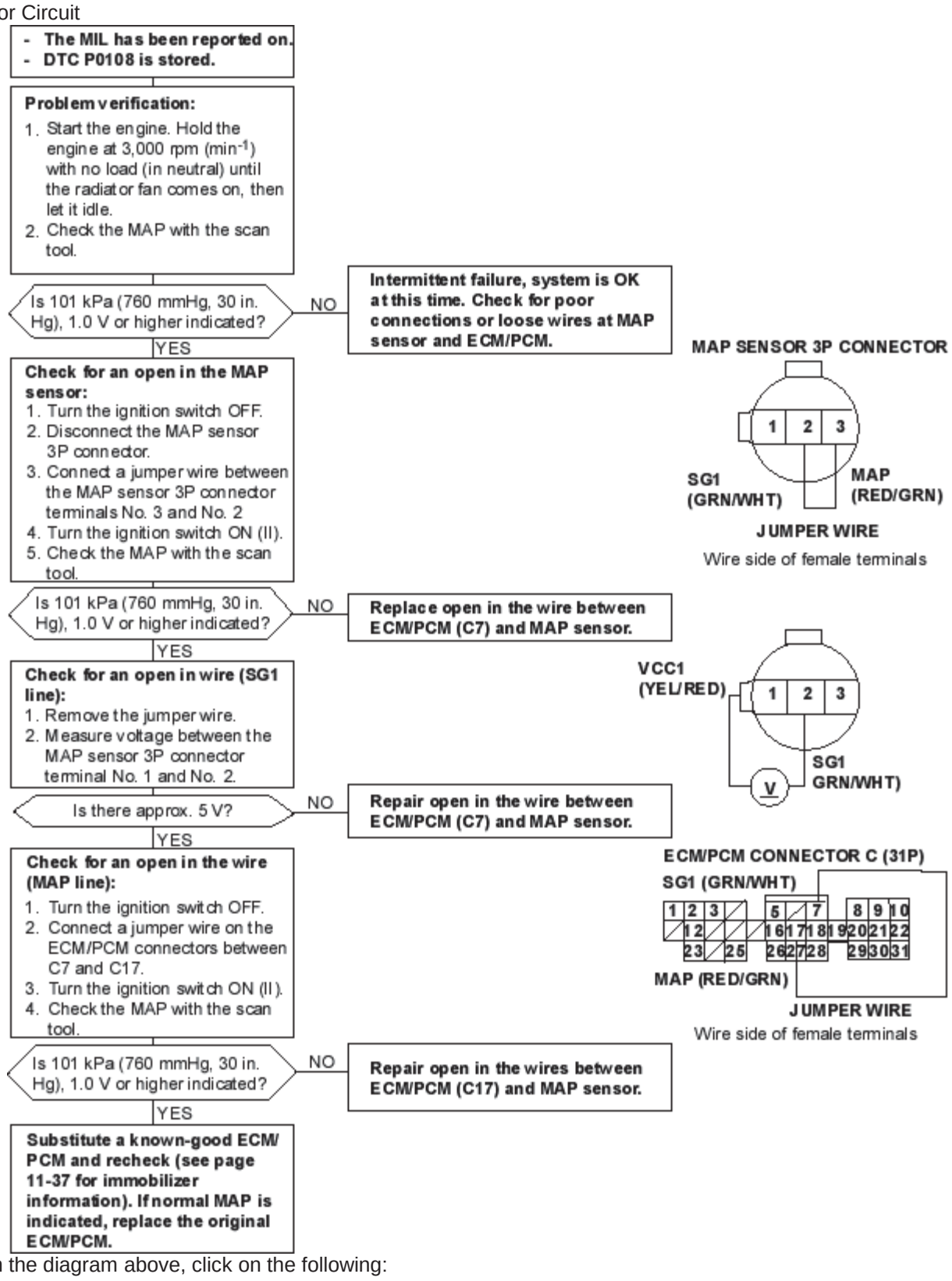
1. THERMISTOR

DTC P0107: Low Voltage in MAP Sensor Circuit



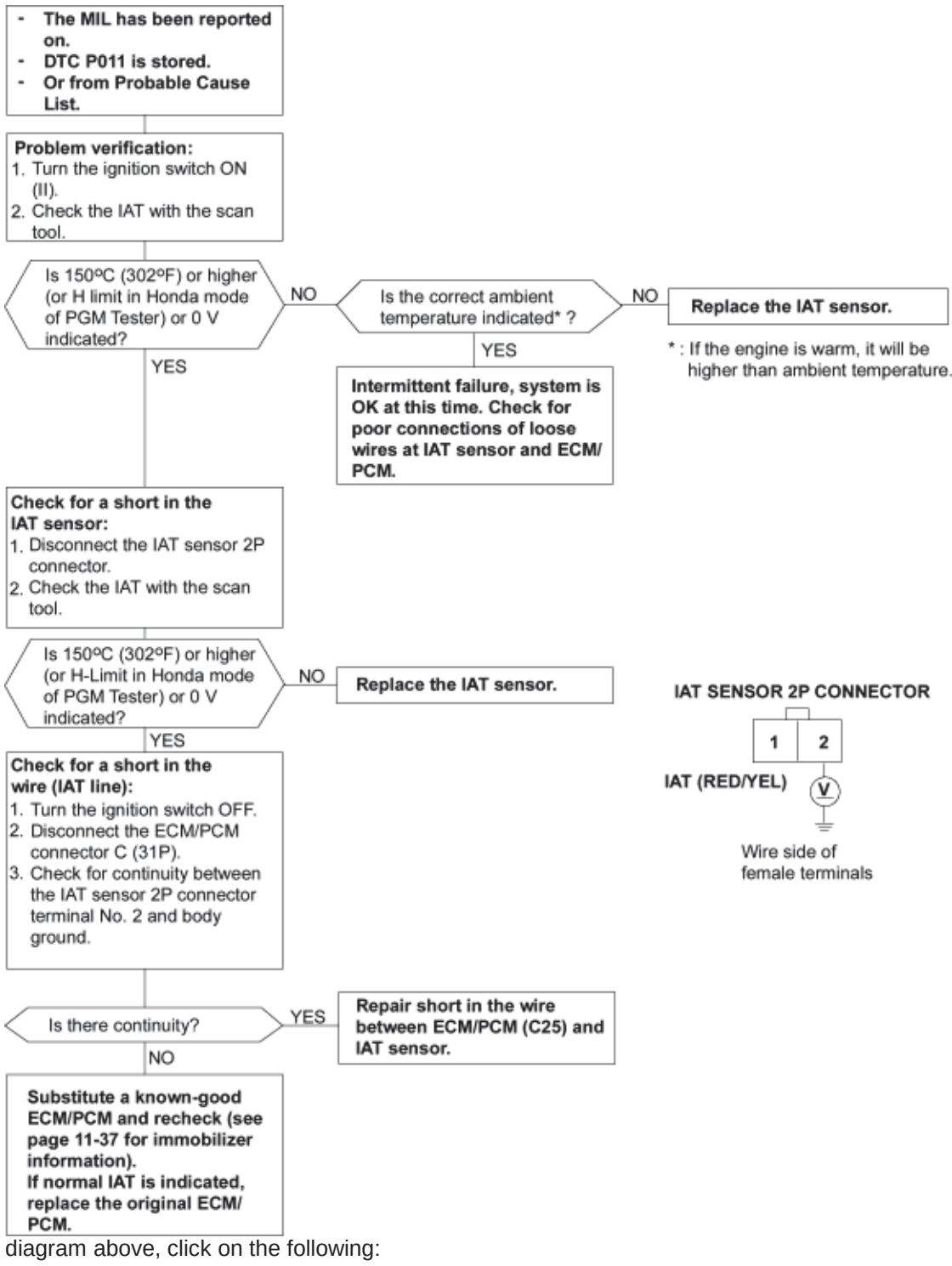
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0108: High Voltage in MAP Sensor Circuit



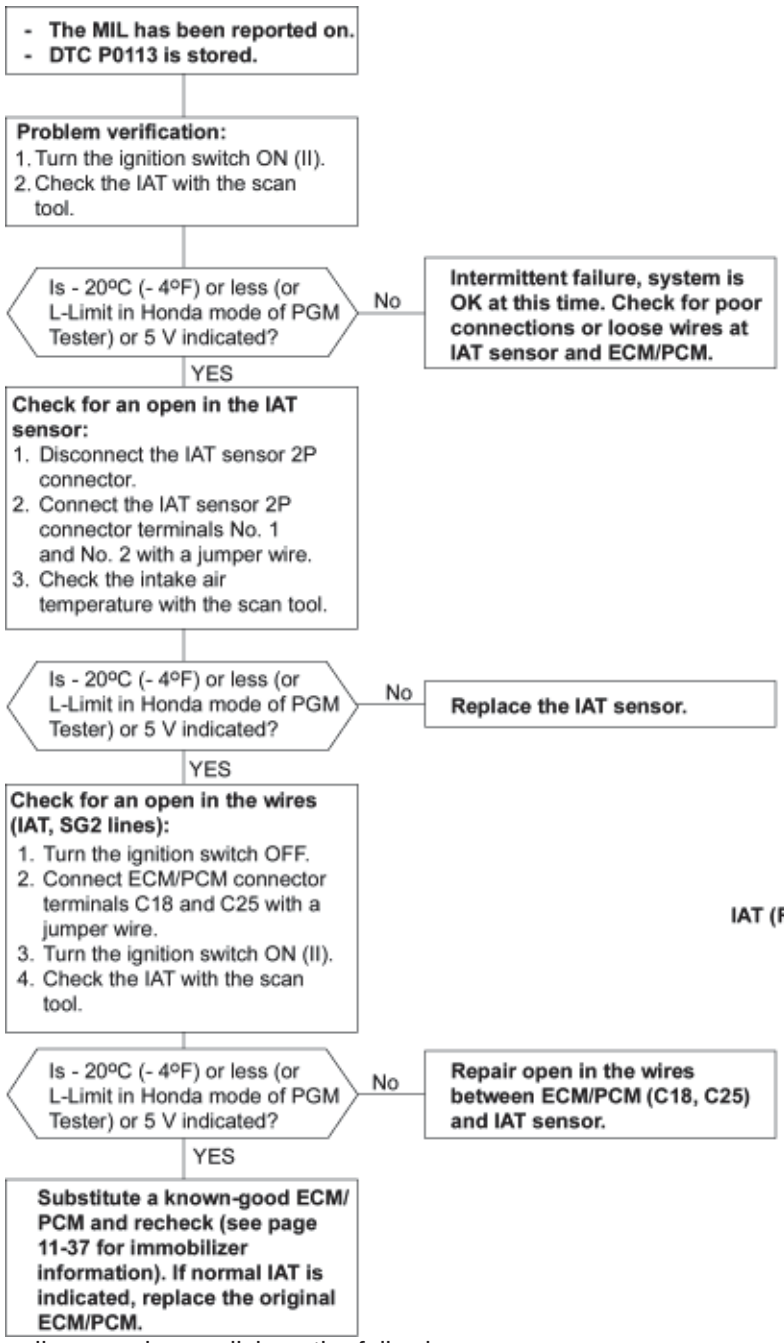
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0112: Low Voltage in IAT Sensor Circuit



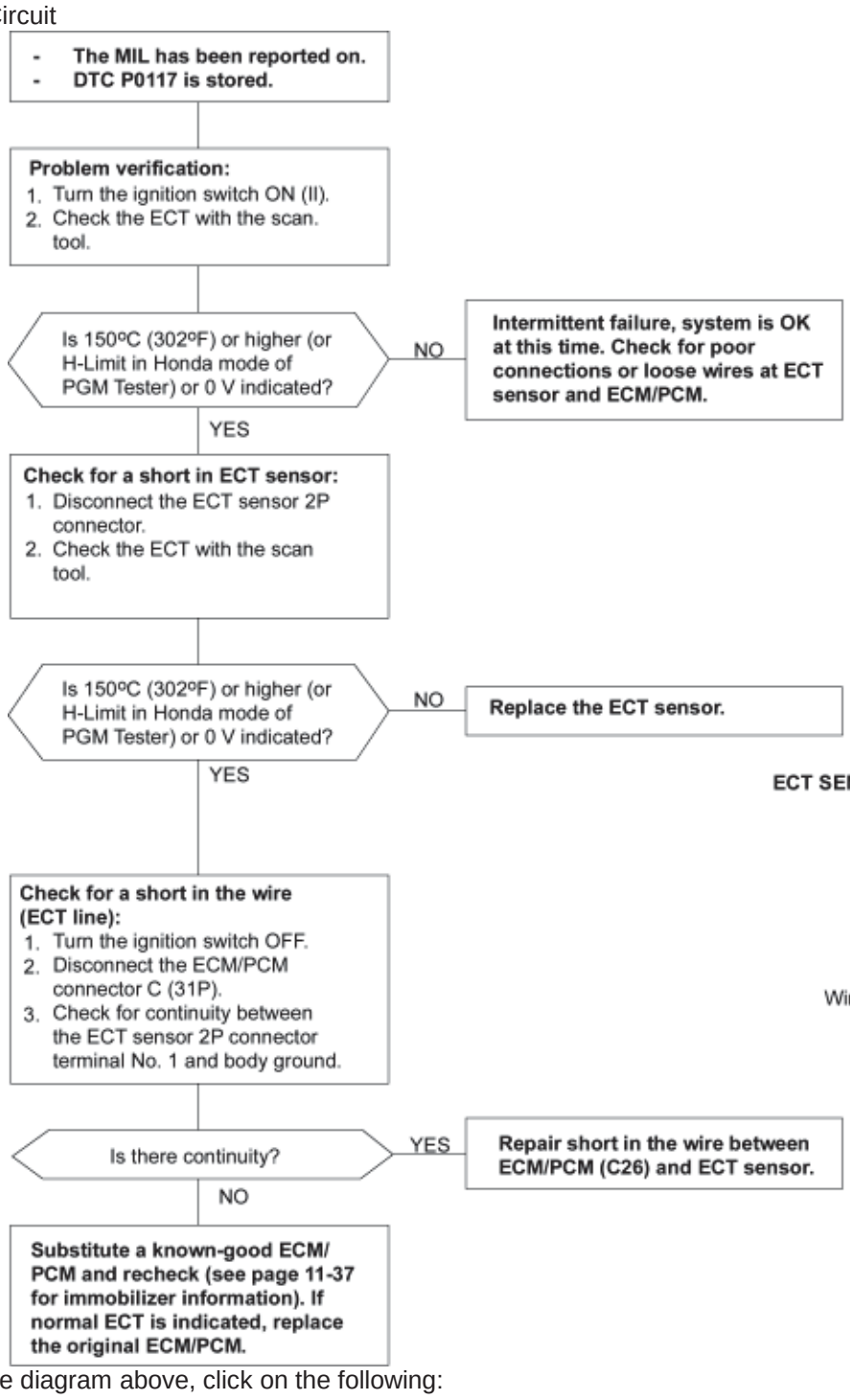
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0113: High Voltage in IAT Sensor Circuit



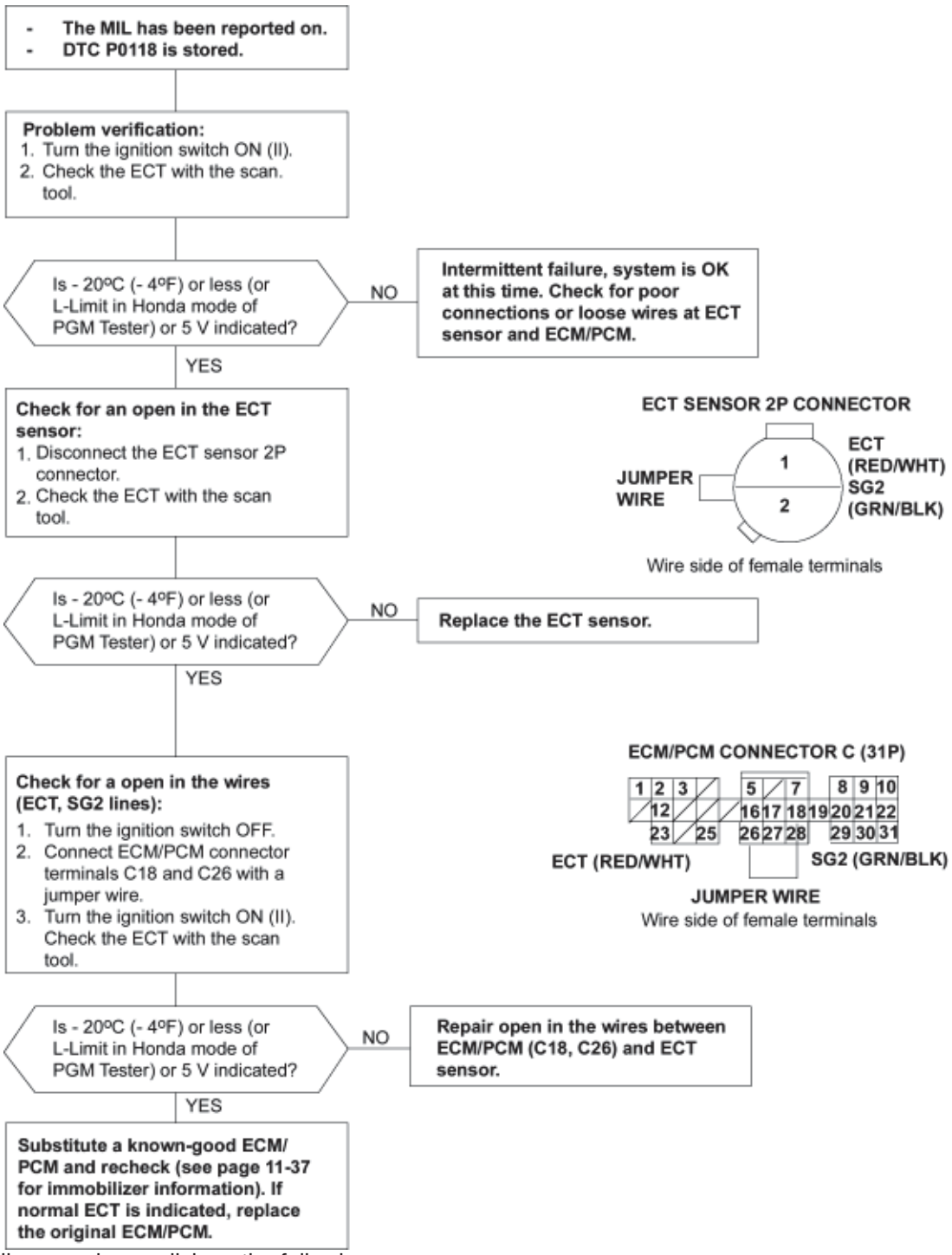
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0117: Low Voltage in ECT Sensor Circuit



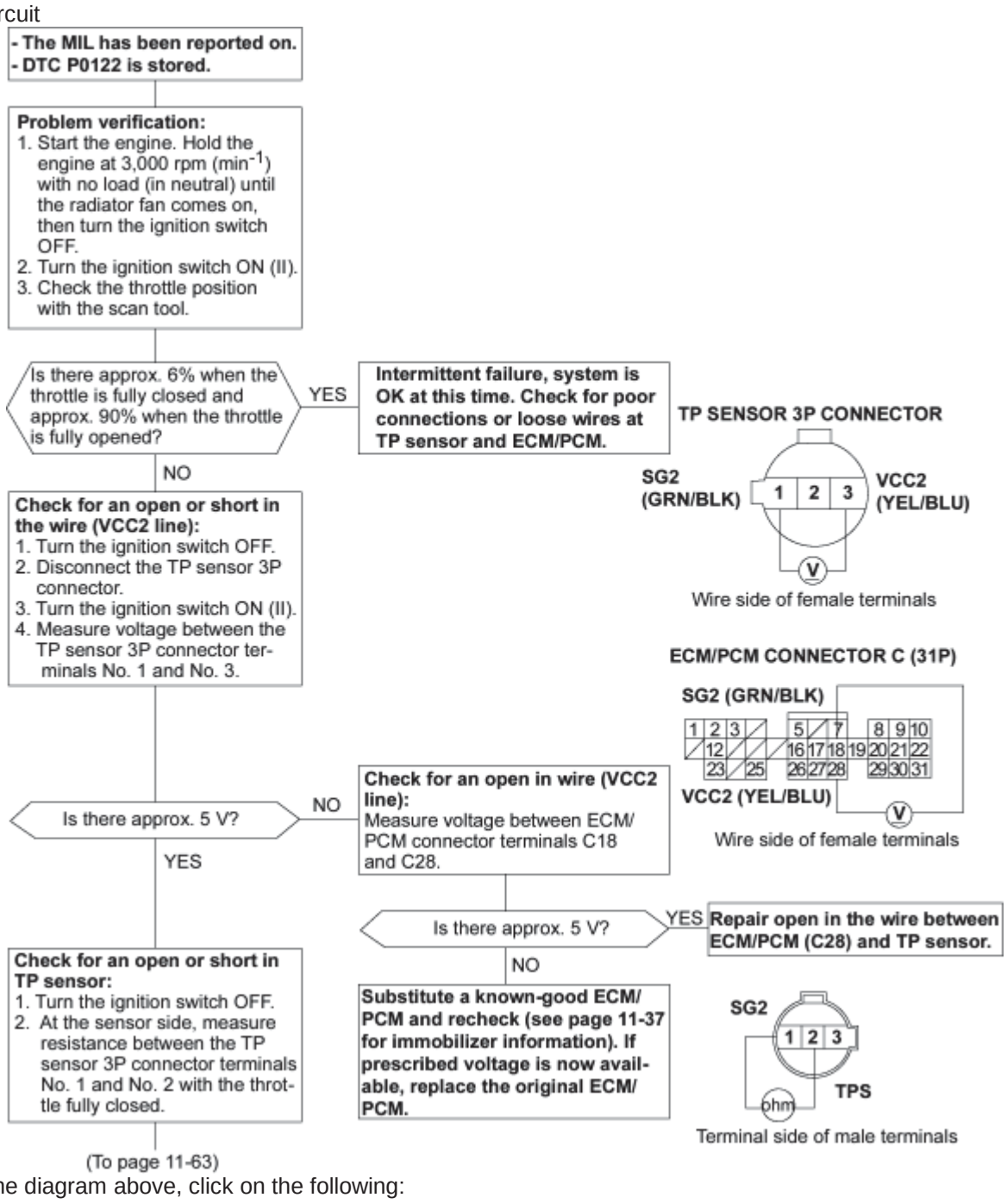
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0118: High Voltage in ECT Sensor Circuit

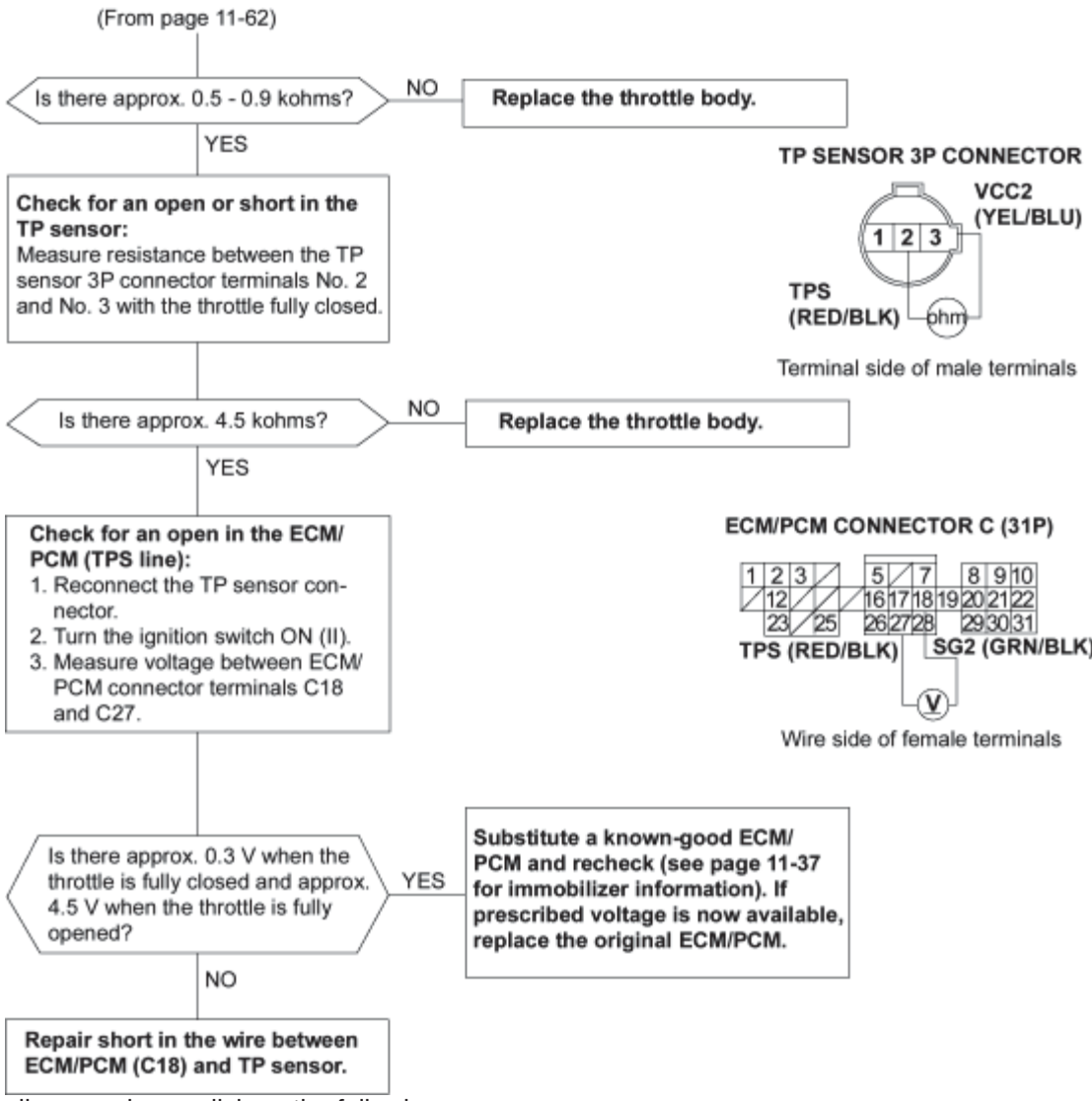


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0122: Low Voltage in TP Sensor Circuit

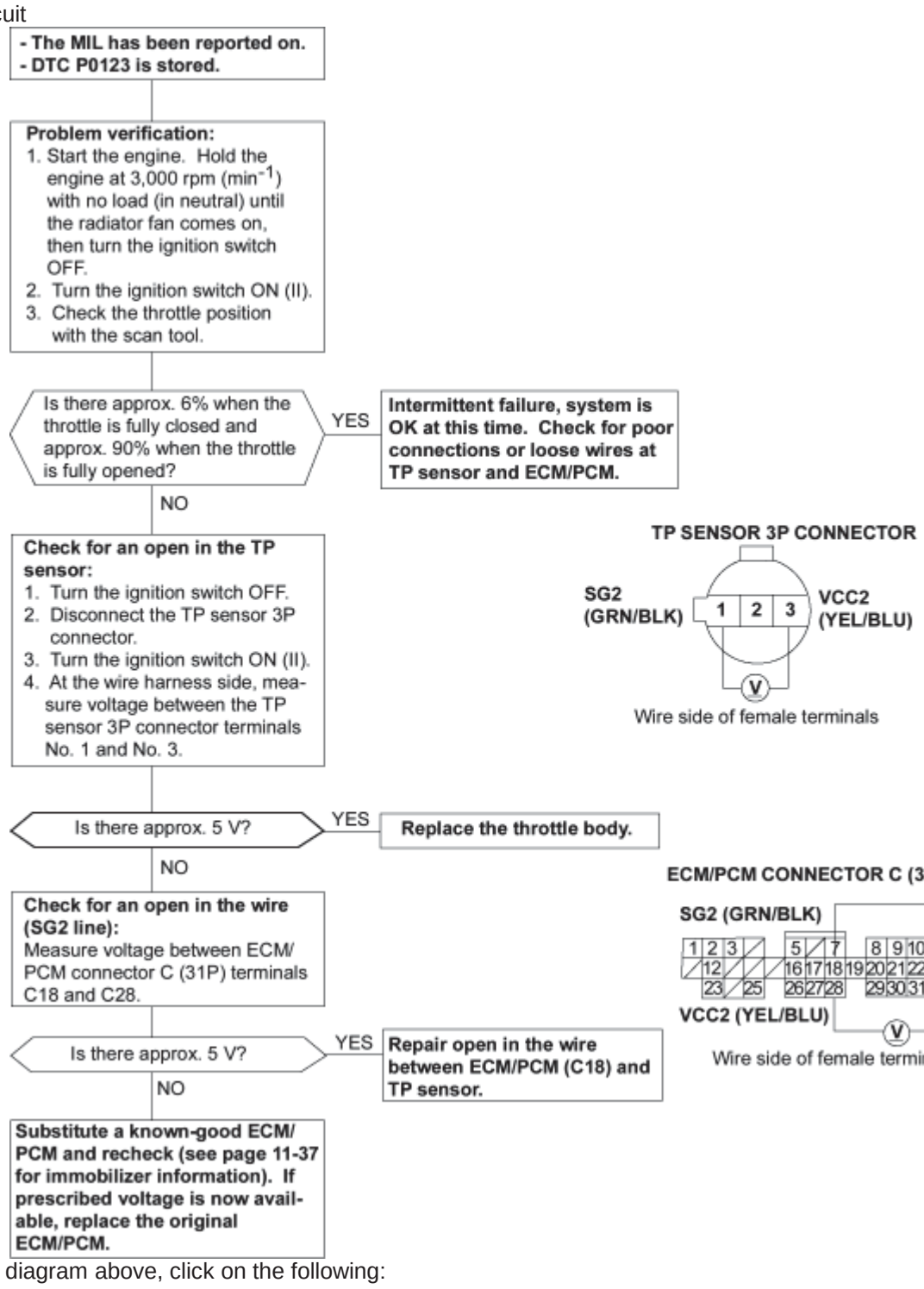


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



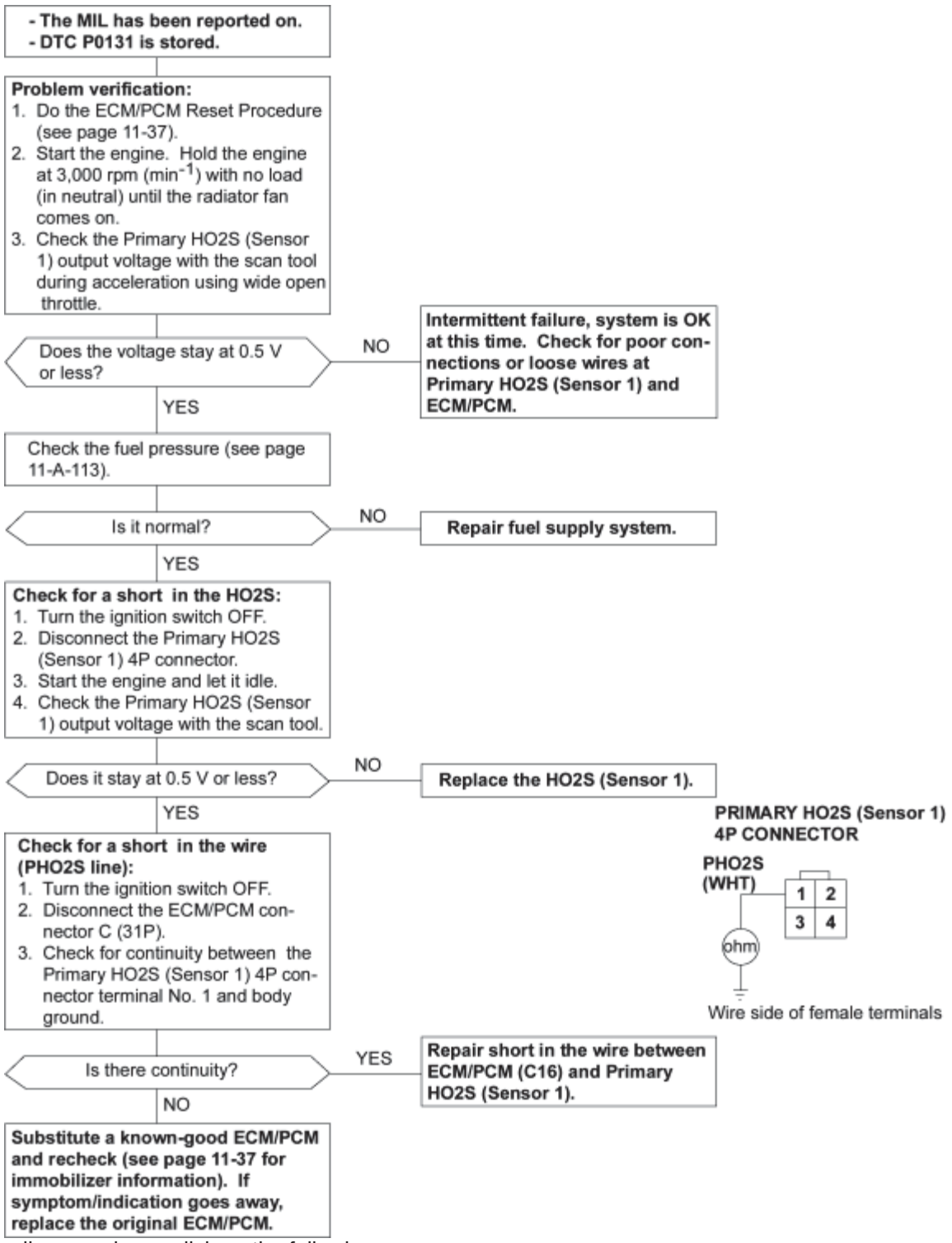
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0123: High Voltage in TP Sensor Circuit



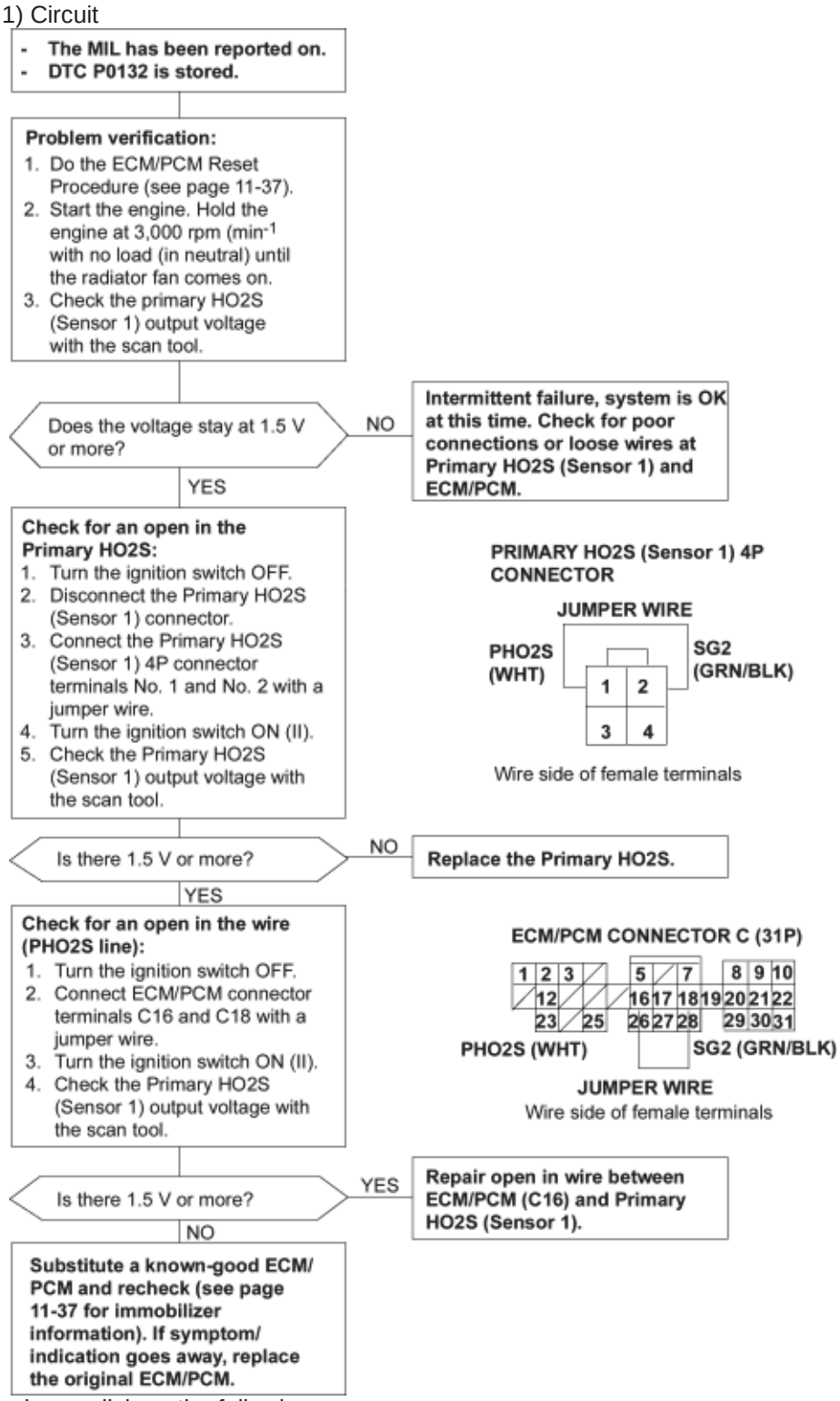
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0131: Low Voltage in Primary HO2S (Sensor 1) Circuit
NOTE: Lack of fuel may cause DTC P0131.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0132: High Voltage in Primary HO2S (Sensor 1) Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0133: Slow Response in Primary HO2S (Sensor 1) Circuit

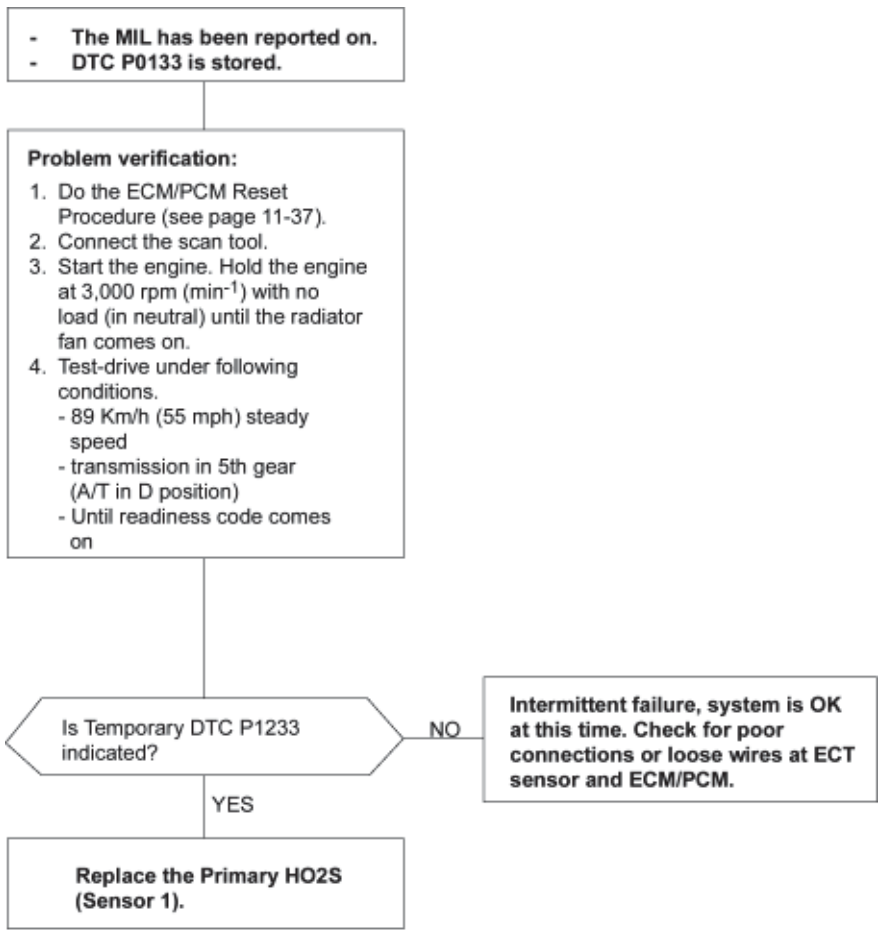
Description

By controlling the air/fuel ratio with a Primary HO2S (Sensor 1) and a Secondary HO2S (Sensor 2), the deterioration of the Primary HO2S (Sensor 1) can be evaluated by its feedback period. When the feedback period of the HO2S exceeds a certain value during stable driving conditions, the sensor will be judged as deteriorated.
When deterioration has been detected during two consecutive trips, the MIL comes on and DTC P0133 will be stored.
NOTE: If DTC P0131, P0132 and/or P0135 are stored at the same time as DTC P0133, troubleshoot those DTCs first, then troubleshoot DTC P0133.

Possible Cause

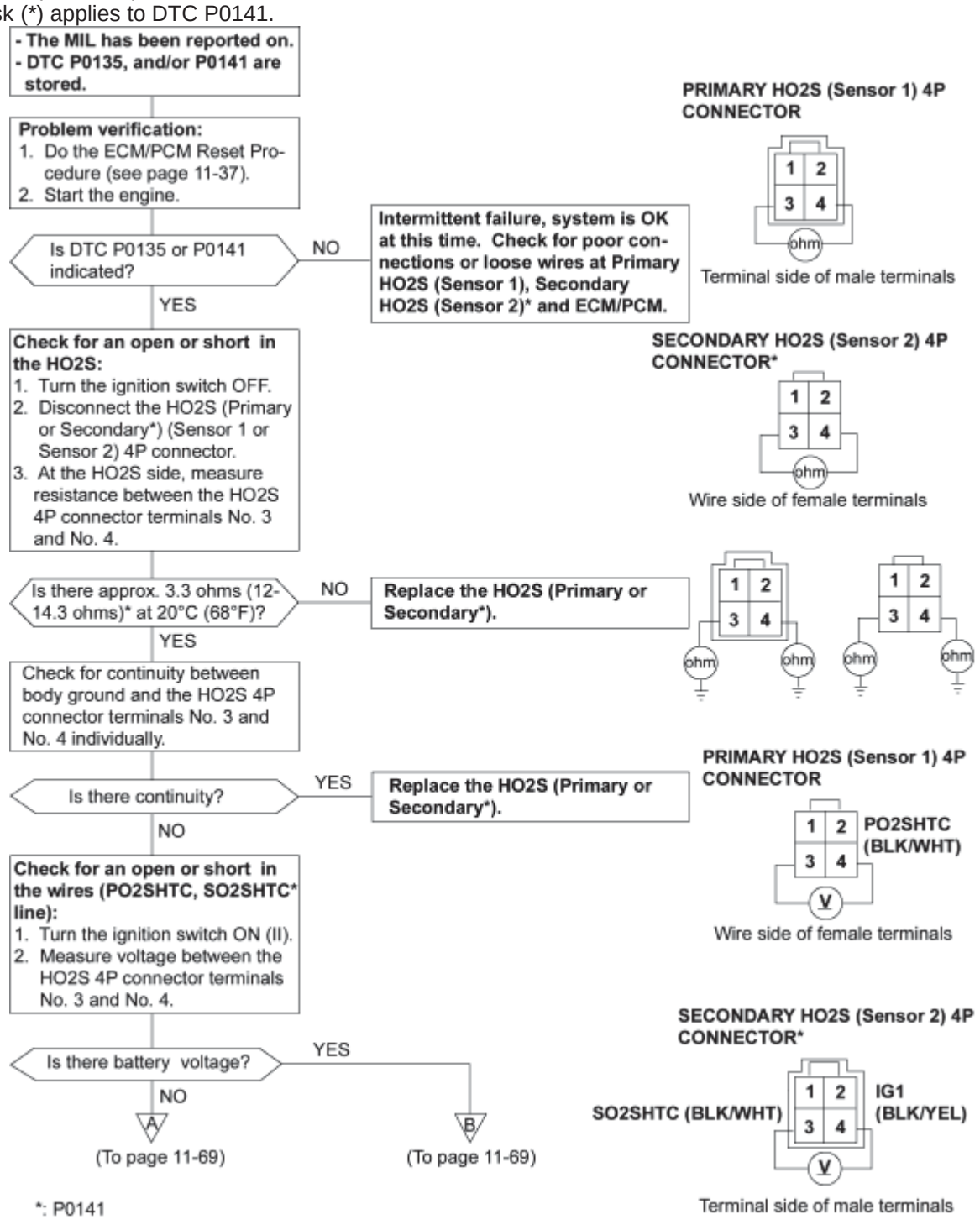
- Primary HO2S (Sensor 1) Deterioration
- Primary HO2S Heater (Sensor 1) Deterioration
- Exhaust System Leakage

Troubleshooting Flowchart



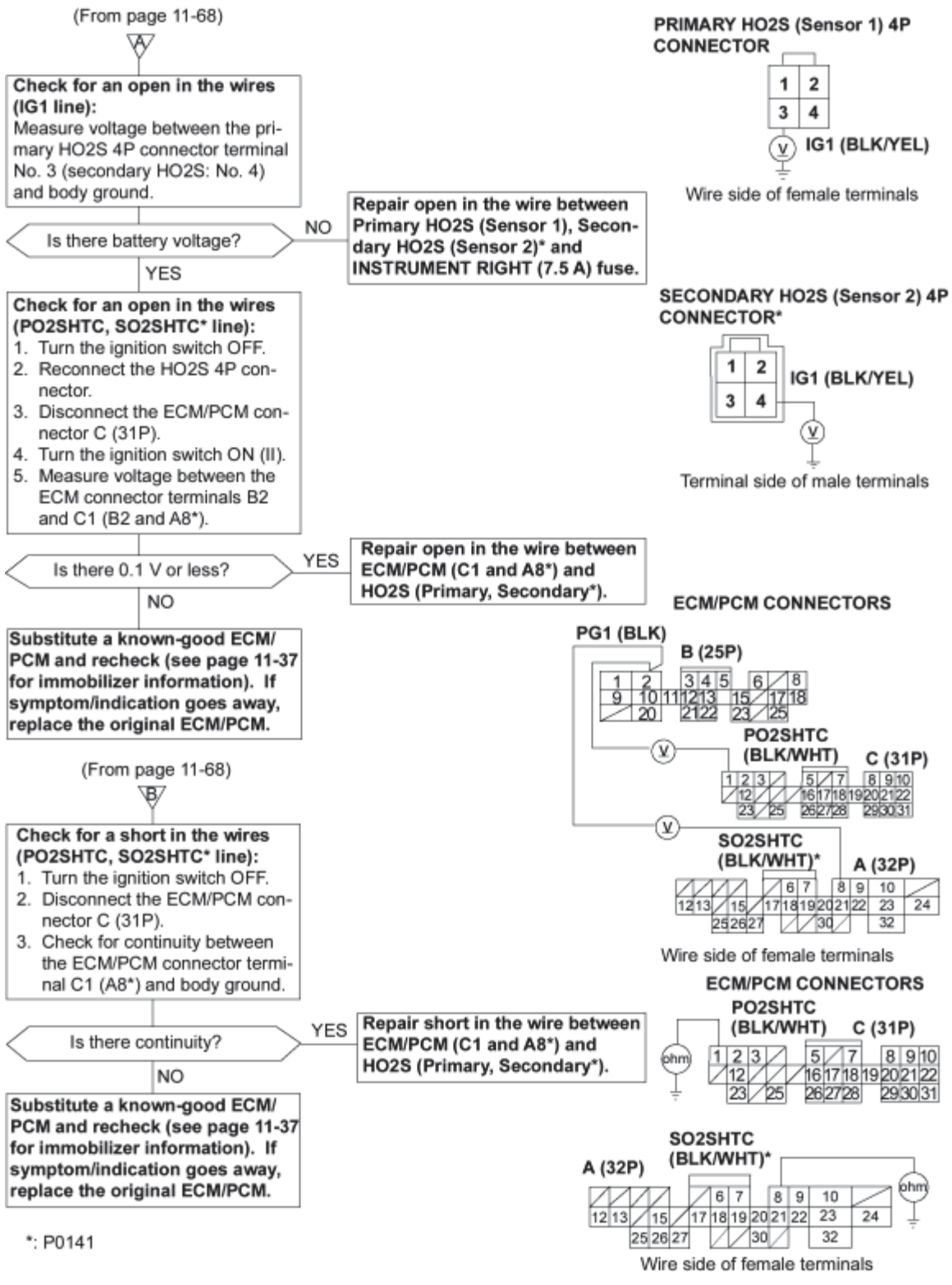
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0135: Malfunction in primary HO2S (Sensor 1) Heater Circuit
DTC P0141: Malfunction in Secondary HO2S (Sensor 2) Heater Circuit
NOTE: Information marked with an asterisk (*) applies to DTC P0141.



*: P0141

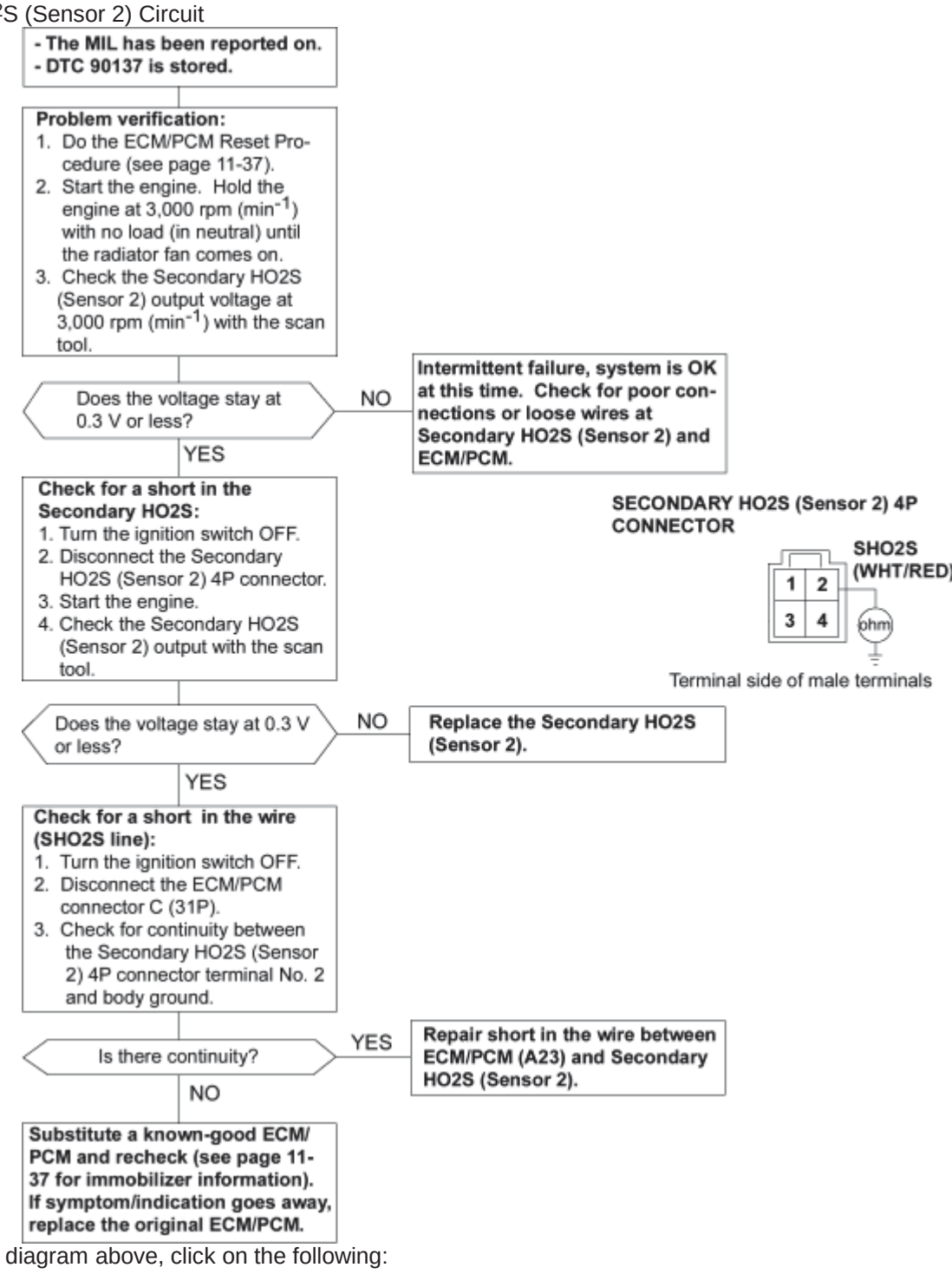
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



*: P0141

To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0137: Low Voltage in Secondary HO2S (Sensor 2) Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0138: High Voltage in Secondary HO^{2}S (Sensor 2) Circuit

- The MIL has been reported on.
- DTC P0138 is stored.

Problem verification:
1. Do the ECM/PCM Reset Procedure (see page 11-37).
2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load (in neutral) until the radiator fan comes on.
3. Check the Secondary HO2S (Sensor 2) output voltage at 3,000 rpm (min^{-1}) with the scan tool.

Does the voltage stay at 0.6 V or more?

NO → **Intermittent failure, system is OK at this time. Check for poor connections or loose wires at Secondary HO2S (Sensor 2) and ECM/PCM.**

YES

Check for an open in the Secondary HO2S:
1. Turn the ignition switch OFF.
2. Disconnect the Secondary HO2S (Sensor 2) 4P connector.
3. Connect the Secondary HO2S (Sensor 2) 4P connector terminals No. 1 and No. 2 with a jumper wire.
4. Turn the ignition switch ON (II).
5. Check the Secondary HO2S (Sensor 2) output voltage with the scan tool.

Is there 0.6 V or more?

NO → **Replace the Secondary HO2S (Sensor 2).**

YES

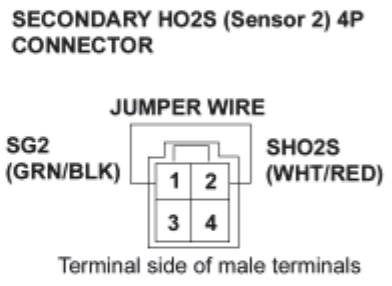
Check for an open in the wire (SHO2S line):
1. Turn the ignition switch OFF.
2. Connect ECM/PCM connector terminals A23 and C18 with a jumper wire.
3. Turn the ignition switch ON (II).
4. Check the Secondary HO2S (Sensor 2) output voltage with the scan tool.

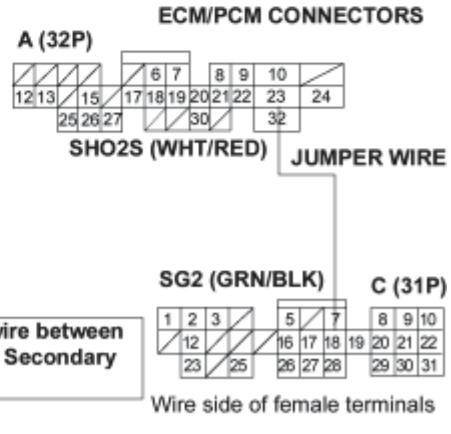
Is there 0.6 V or more?

NO → **Repair open in the wire between ECM/PCM (A23) and Secondary HO2S (Sensor 2).**

YES

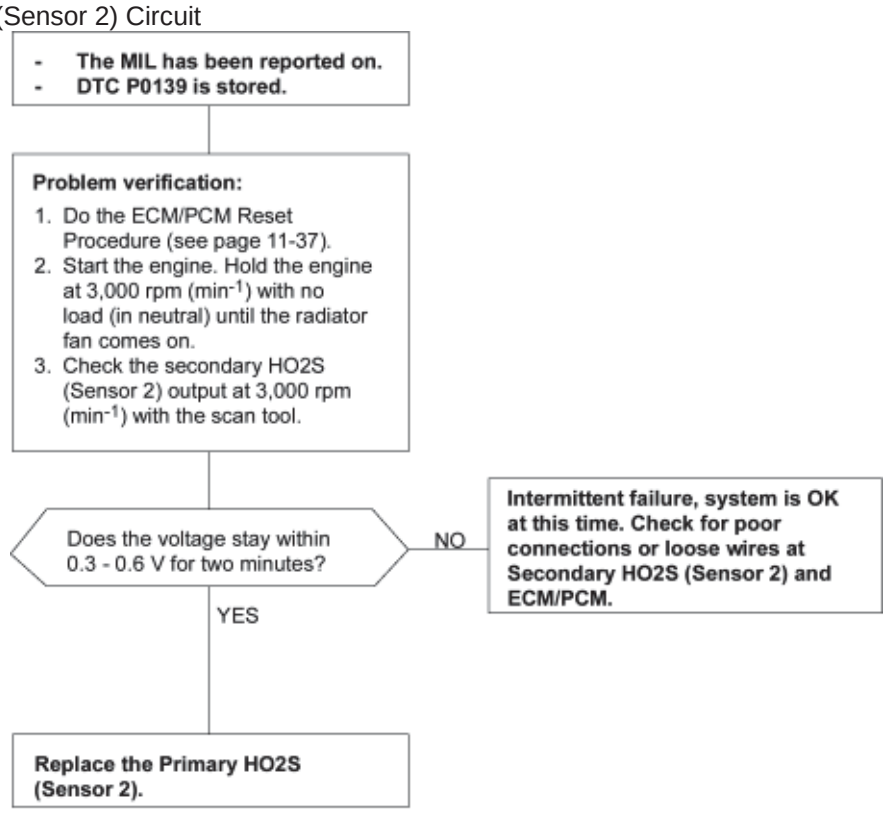
Substitute a known-good ECM/PCM and recheck (see page 11-37 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.





To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0139: Slow Response in the Secondary HO2S (Sensor 2) Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0171: Fuel System Too Lean
DTC P0172: Fuel System Too Rich
NOTE: If some of the DTCs listed below are stored at the same time as DTC P0171 and/or P0172, troubleshoot those DTCs first, then recheck the system.

- P0107, P0108: MAP sensor
- P0135: Primary HO2S (Sensor 1) Heater
- P0137, P0138: Secondary HO2S (Sensor 2)
- P0141: Secondary HO2S (Sensor 2) Heater
- P0443: EVAP Purge Control Solenoid Valve Circuit

Possible Cause

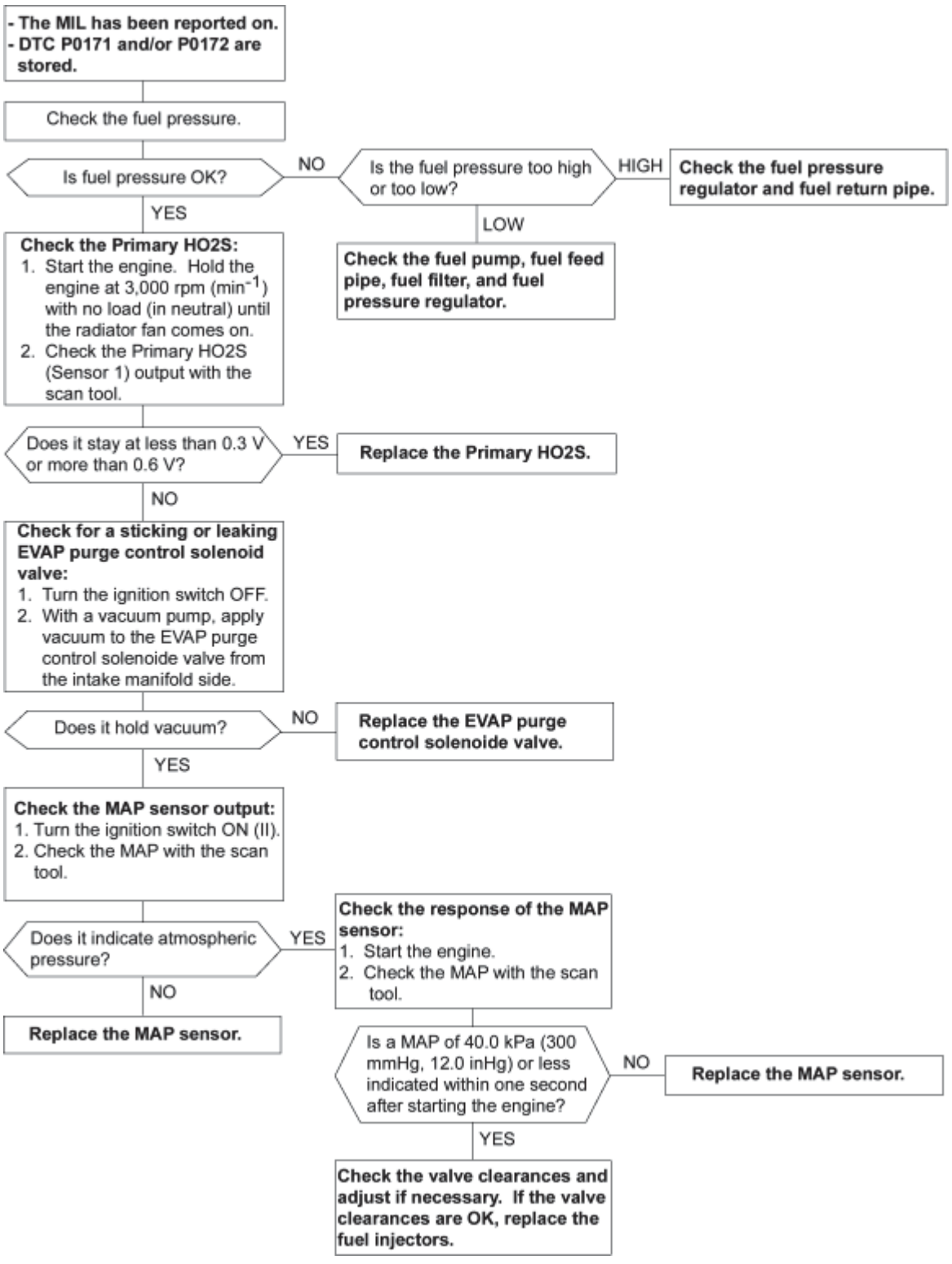
DTC P0171
System too lean

- Fuel Pump insufficient flow/pressure
- Fuel Feed Line clogged, leaking
- Fuel Pressure Regulator stuck open
- Fuel Filter clogged
- Fuel Injector clogged, air inclusion
- Gasoline doesn't meet Owner's Manual spec.
- Primary HO2S (Sensor 1) deteriorated
- MAP Sensor range/performance
- Valve Clearance
- Exhaust leak

DTC P0172
System too rich

- Fuel Pressure Regulator clogged, stuck closed
- Fuel Return Pipe clogged
- Fuel Injector leaking
- Gasoline doesn't meet Owner's Manual spec.
- Primary HO2S (Sensor 1) deteriorated
- MAP Sensor range/performance
- EVAP Purge Control Solenoid Valve leaking, stuck open
- Valve Clearance

Troubleshooting Flowchart



DTC P0300: Random misfire and any combination of the following:
DTC P0301: Cylinder 1 misfire
DTC P0302: Cylinder 2 misfire
DTC P0303: Cylinder 3 misfire
DTC P0304: Cylinder 4 misfire
NOTE:

- If the misfiring 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 misfiring is frequent enough to damage the catalyst, the MIL will blink whenever the misfiring occurs, and DTC P0300 (and some combination of P0301 through P0304) will be stored. When the misfiring stops, the MIL will remain on.

1. Troubleshoot the following DTCs first if any of them were stored along with the random misfire DTC (s):
   - P0107, P0108: MAP Sensor
   - P0131, P0132: Primary HO^2S
   - P0171, P0172: Fuel Metering
   - P1361, P1362: TDC Sensor
   - P1381, P1382: CYP Sensor
   - P1508: IAC valve (D16W5 engine)
   - P1519: IAC Valve (D16W1 engine)
2. Test-drive the vehicle to verify the symptom.
3. Find the symptom in the chart below, and do the related procedures in the order listed until you find the cause.

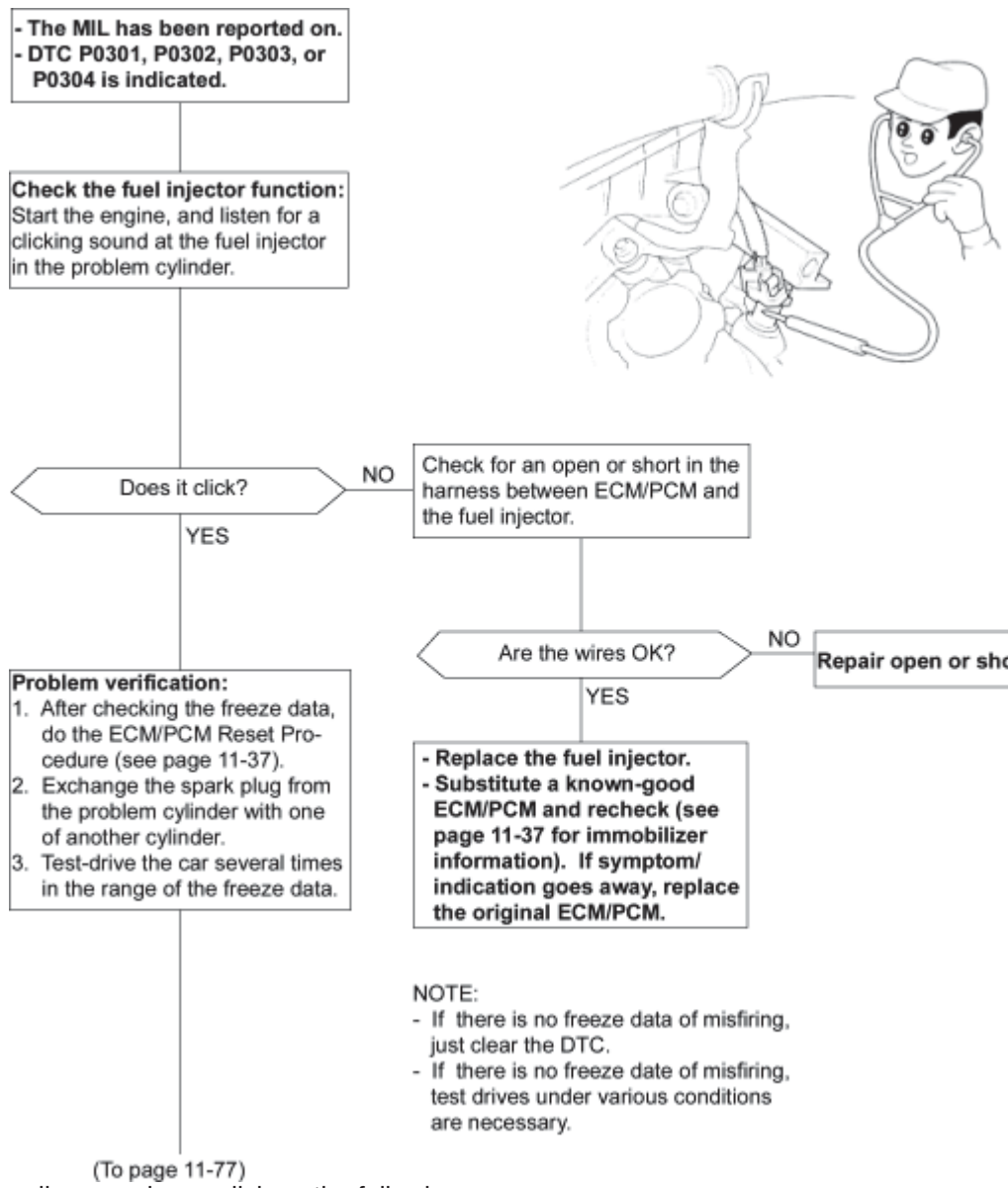
Symptom	Procedure (s)	Also check for:
Random misfire only at low RPM and load	Check fuel pressure (**See Page** 11-106).	• Low compression • Low quality fuel
Random misfire only during acceleration	1. Check fuel pressure (**See Page** 11-106). 2. Test the ignition coils (see section 4).	Malfunction in the VTEC system (see section6)*
Random misfire only at high RPM and load, or under random conditions	1. Check fuel pressure (**See Page** 11-106). 2. Test the ignition coils (see section 4).	Correct value clearance (see section 6)

*: D16W5 engine
NOTE: If misfire doesn't recur, some possible causes are that the fuel doesn't meet owner's manual spec, lack of fuel, carbon deposits on spark plug, etc.

DTC P0301: Cylinder 1 misfire detected
DTC P0302: Cylinder 2 misfire detected
DTC P0303: Cylinder 3 misfire detected
DTC P0304: Cylinder 4 misfire detected

NOTE: If some of the DTCs listed below are stored at the same time as a misfire DTC, troubleshoot those DTCs first, then recheck for the misfire DTC.

- P0131, P0132: Primary HO^2S
- P0171, P0172: Fuel Supply System
- P1361, P1362: TDC Sensor
- P1381, P1382: CYP Sensor



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

(From page 11-76)

Is DTC P0301, P0302, P0303, or P0304, or Temporary DTC P1399 indicated?

NO → **Intermittent misfire due to spark plug fouling, etc. (no misfire at this time).**

YES

Does the misfire occur in the other cylinder whose spark plug was exchanged?

YES → **Replace the faulty spark plug.**

NO

Check for fuel injector malfunction:
1. Exchange the fuel injector from the problem cylinder with one from another cylinder.
2. Let the engine idle for two minutes.
3. Test-drive the vehicle several times in the range of the freeze data.

NOTE: If there is no freeze data of misfiring, test drives under various conditions are necessary.

Is DTC P0301, P0302, P0303, or P0304, or Temporary DTC P1399 indicated?

NO → **Intermittent misfire due to bad contact in the fuel injector connector (no misfire at this time).**

YES

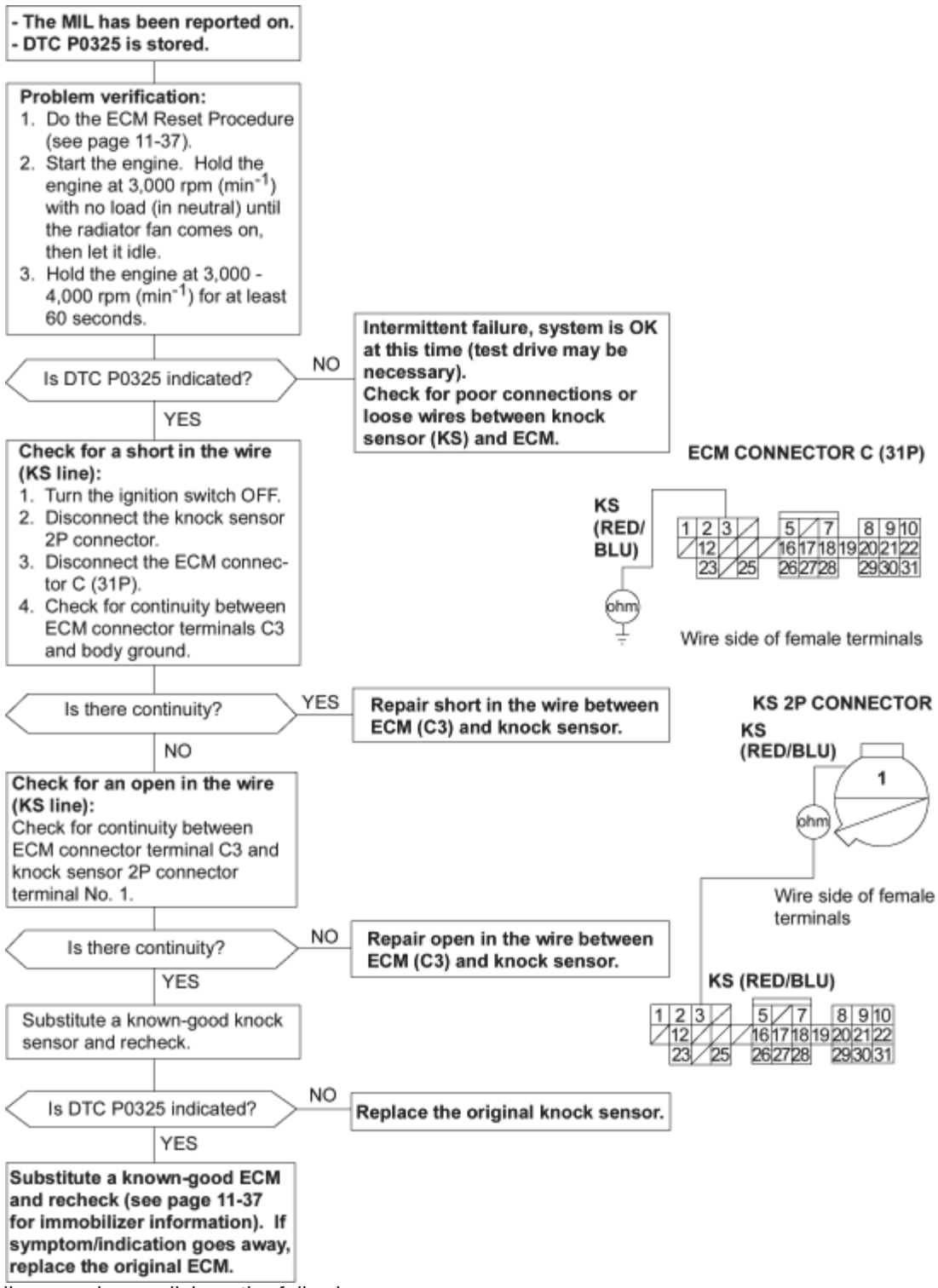
Does the misfire occur in the other cylinder whose fuel injector was exchange?

YES → **Replace the faulty fuel injector.**

NO

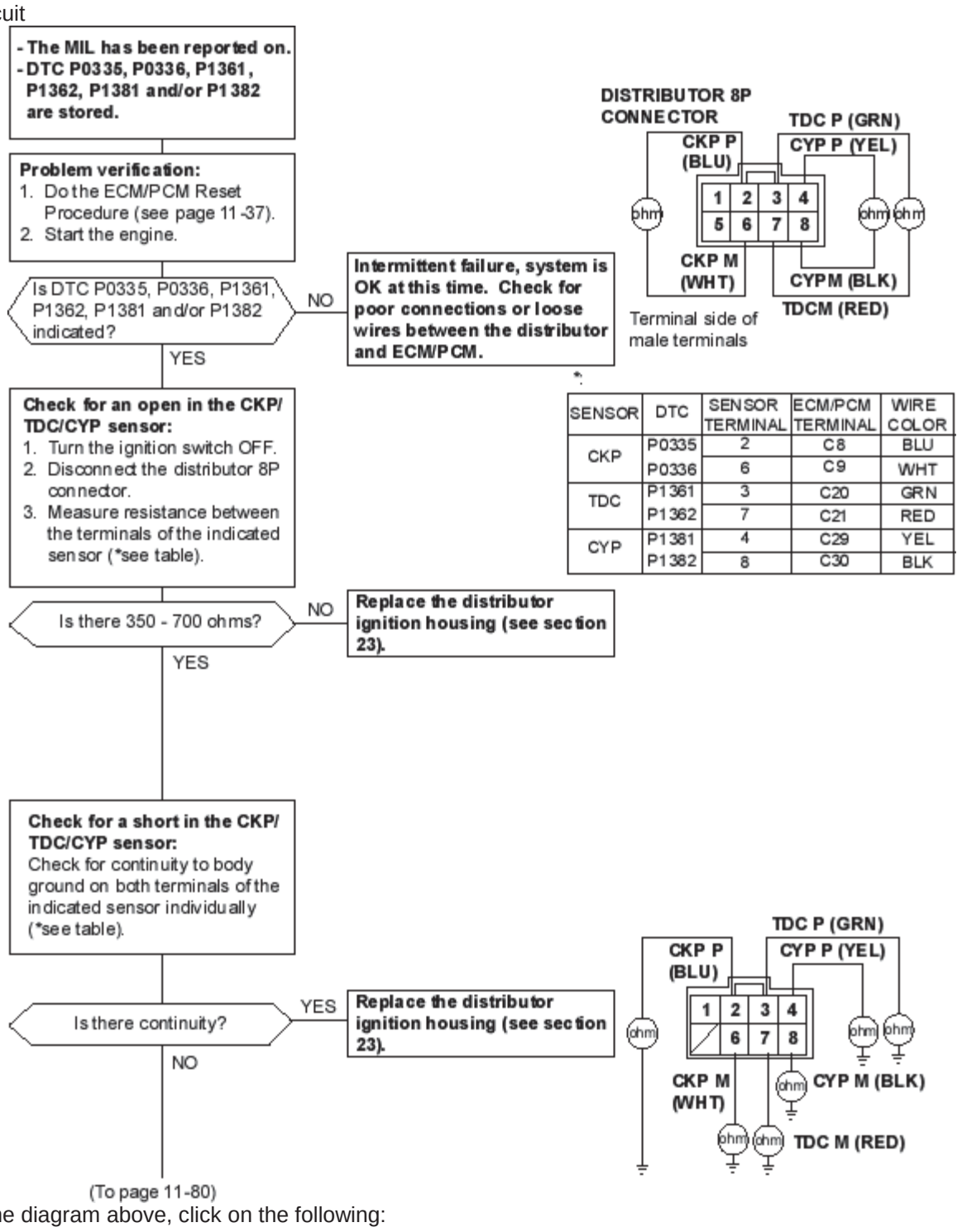
Check following items:
- **Valve clearance**
- **Cylinder leak-down**
- **Compression**
- **Crankshaft speed fluctuation (CKF) sensor.**

DTC P0325 (D16W5 engine): Malfunction in Knock Sensor Circuit

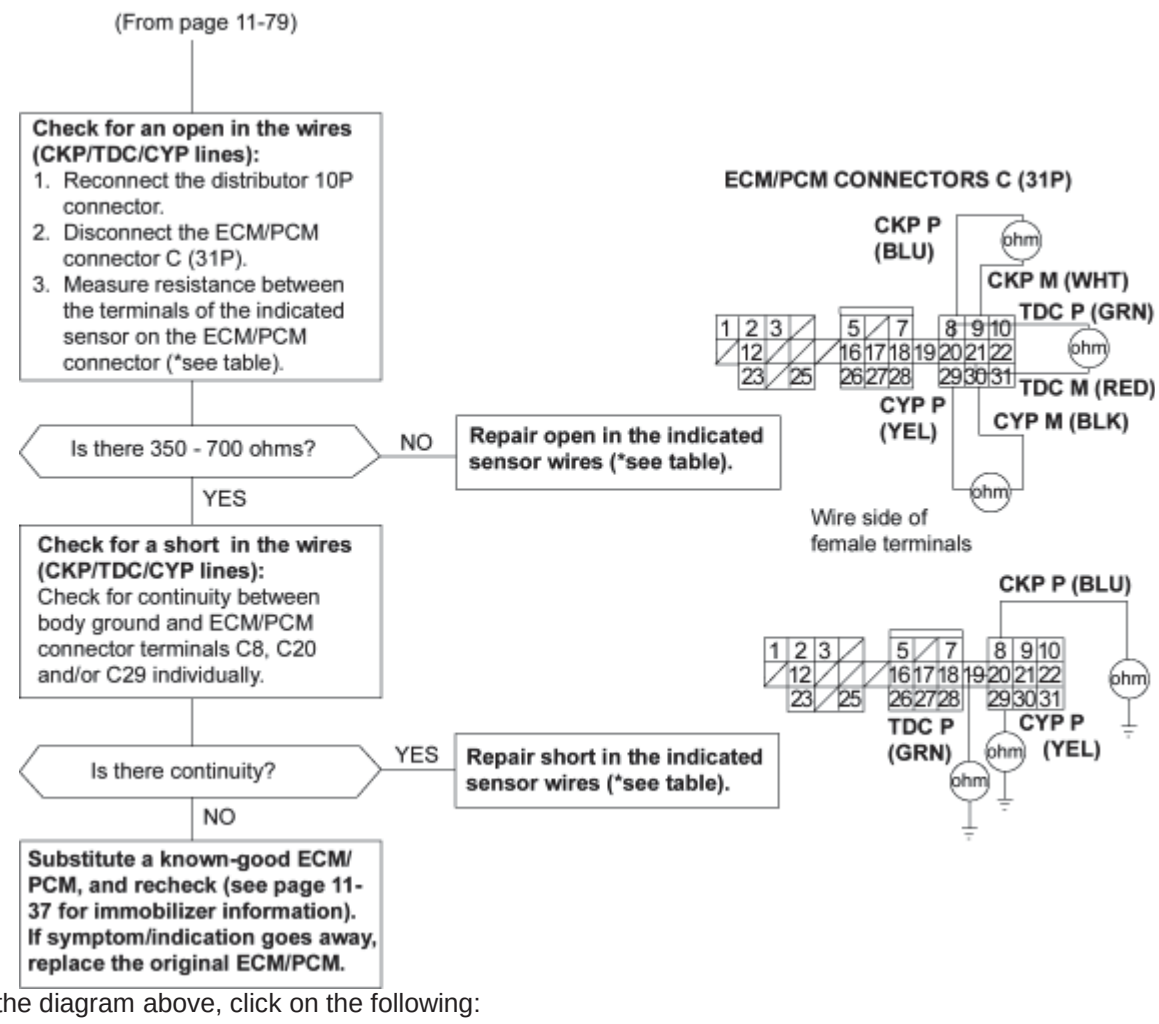


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0335: Malfunction in CKP Sensor Circuit
DTC P0336: Range/Performance Problem in CKP Sensor Circuit
DTC P1361: Intermittent interruption in TDC Sensor Circuit
DTC P1362: No signal in TDC Sensor Circuit
DTC P1381: Intermittent interruption in CYP Sensor Circuit
DTC P1382: No signal in CYP Sensor Circuit

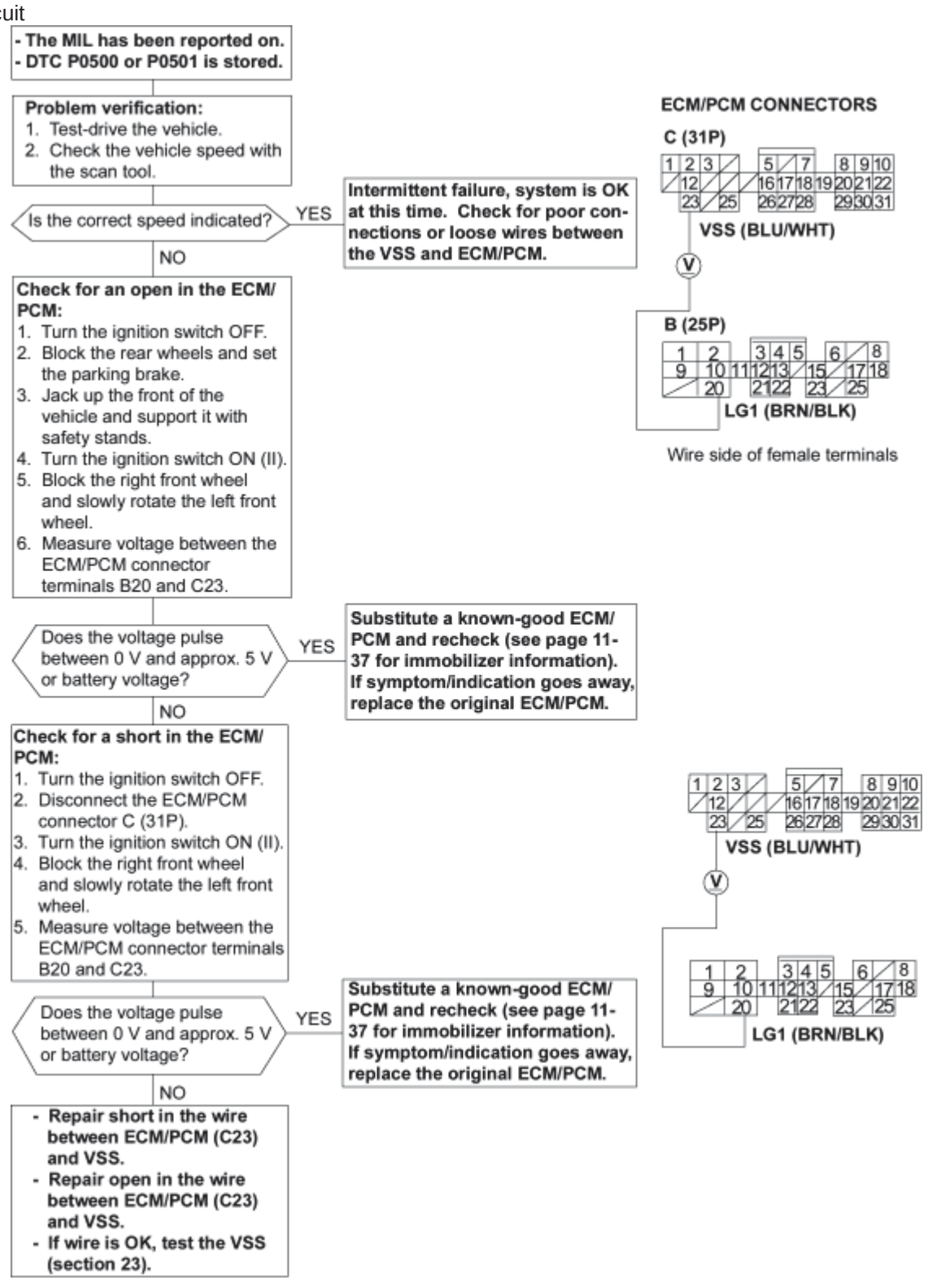


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



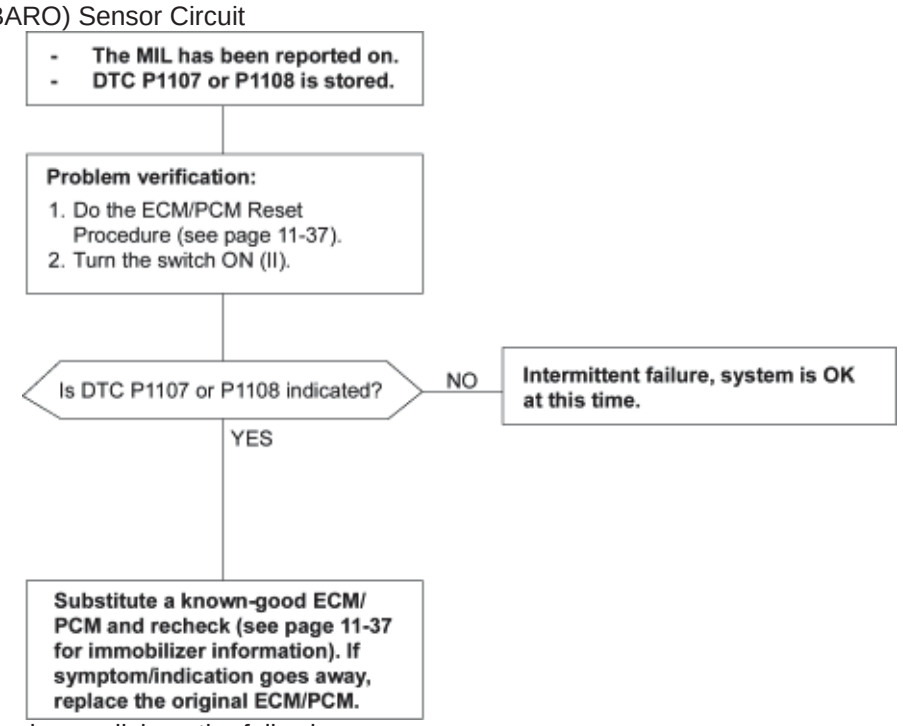
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0500 (M/T): Malfunction in VSS Circuit
DTC P0501 (A/T): Malfunction in VSS Circuit



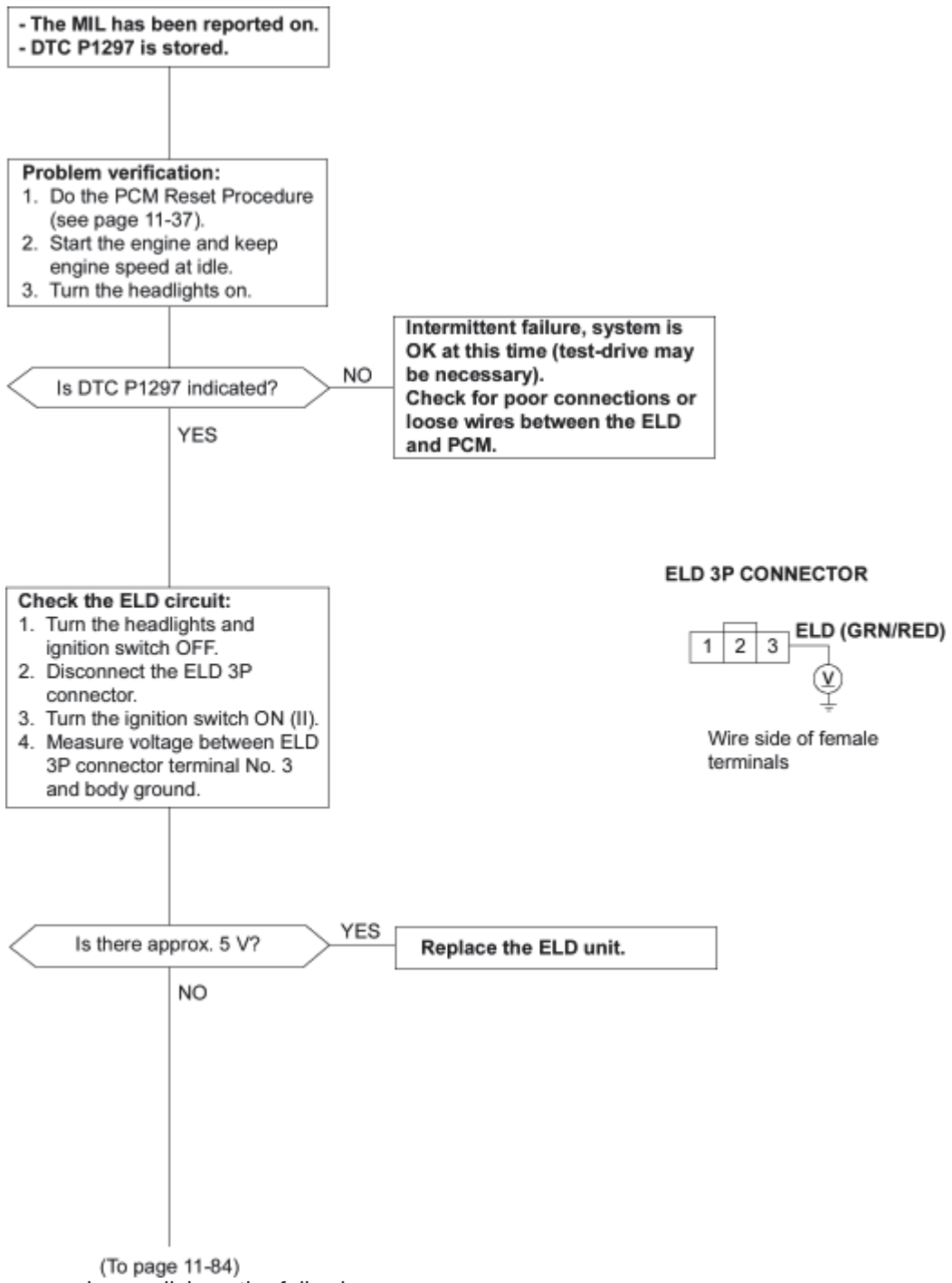
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1107: Low Voltage in Barometric Pressure (BARO) Sensor Circuit
DTC P1108: High Voltage in Barometric Pressure (BARO) Sensor Circuit



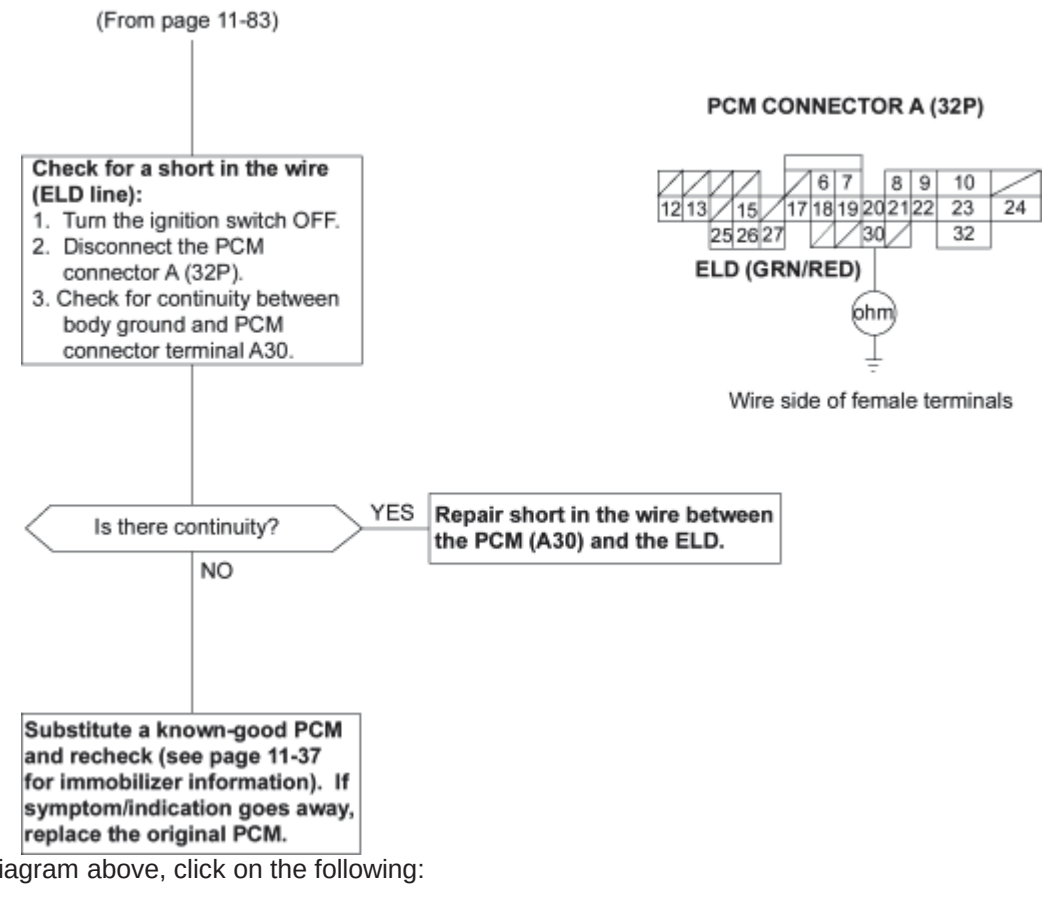
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1297: Low Voltage in ELD Circuit



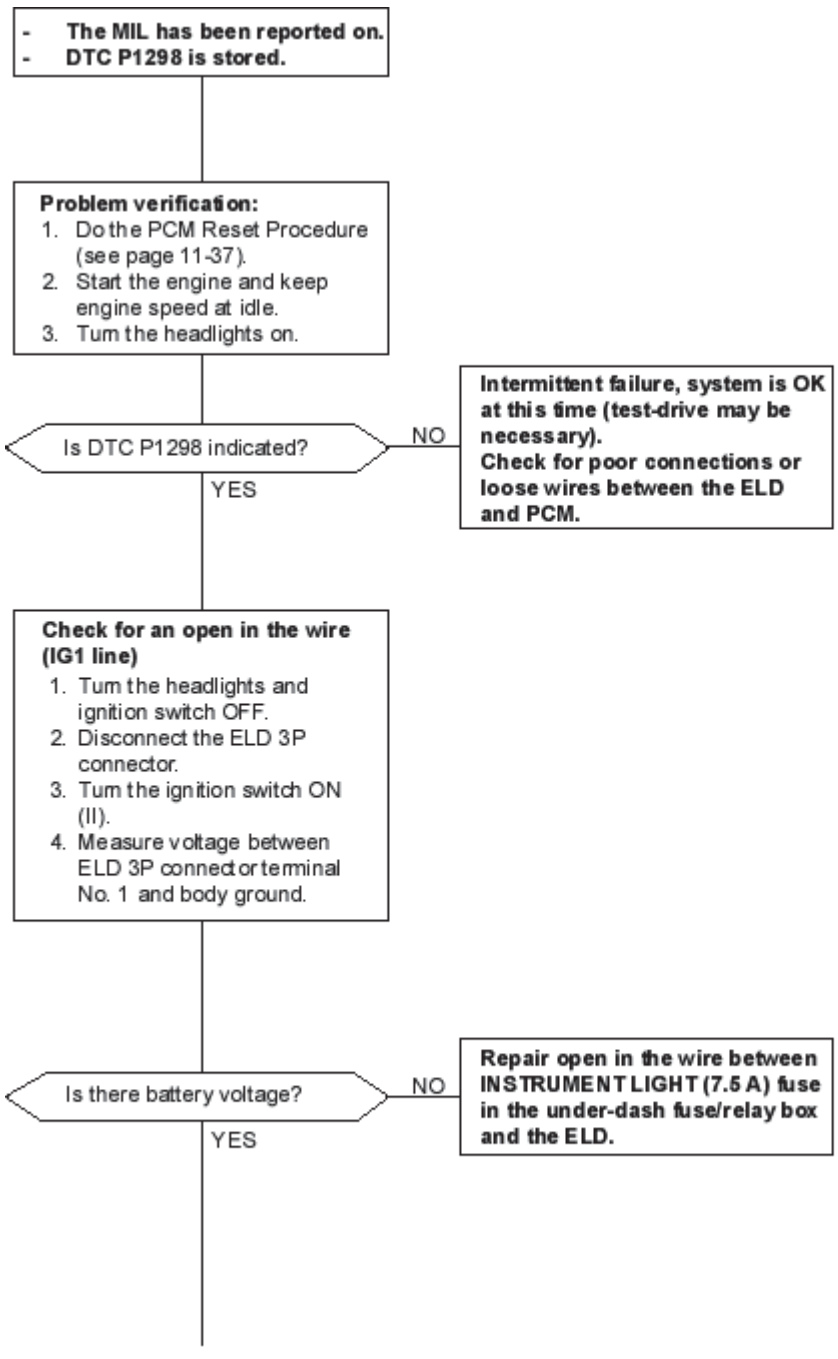
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

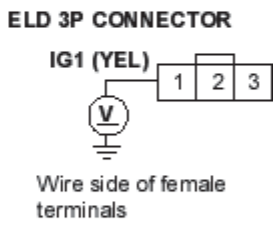
.



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1298: High Voltage in ELD Circuit





To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

(From page 11-85)

Check for an open in the wire (ELD line):
1. Turn the ignition switch OFF.
2. Check for continuity between the ELD 3P connector terminal No. 2 and body ground.

Is there continuity? NO → **Repair open in the wire between the ELD and G402.**

YES

Check for an open in the wire (ELD line):
1. Disconnect the PCM connector A (32P).
2. Check for continuity between the ELD 3P connector terminal No. 3 and PCM connector terminal A30.

Is there continuity? NO → **Repair open in the wire between the ELD and PCM (A30).**

YES

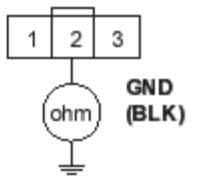
Check the PCM input signal:
1. Reconnect the ELD 3P connector and the PCM connector A (32P).
2. Start the engine and let it idle.
3. Measure voltage between PCM connector terminals A30 and B20.
4. While measuring voltage between PCM connector terminals A30 and B20, turn the headlights (high beam) on.

Does voltage drop when the headlights come on? NO → **Replace the ELD unit.**

YES

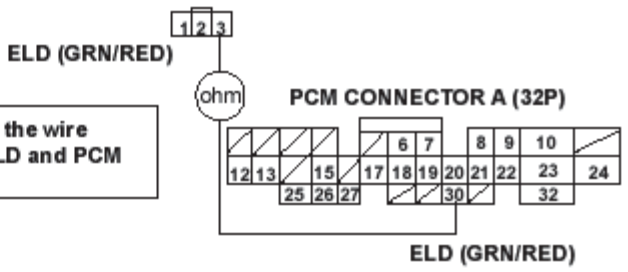
Substitute a known-good PCM and recheck (see page 11-37 for immobilizer information). If symptom/indication goes away, replace the original PCM.

ELD 3P CONNECTOR



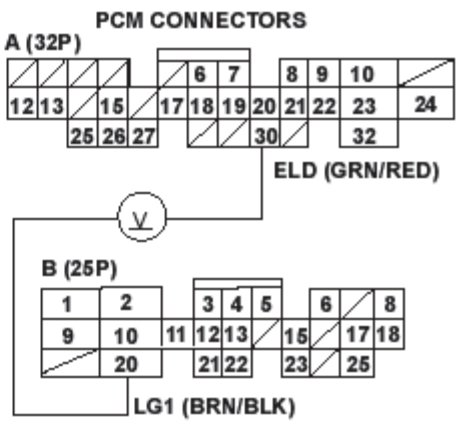
Wire side of female terminals

ELD 3P CONNECTOR
Wire side of female terminals



Wire side of female terminals

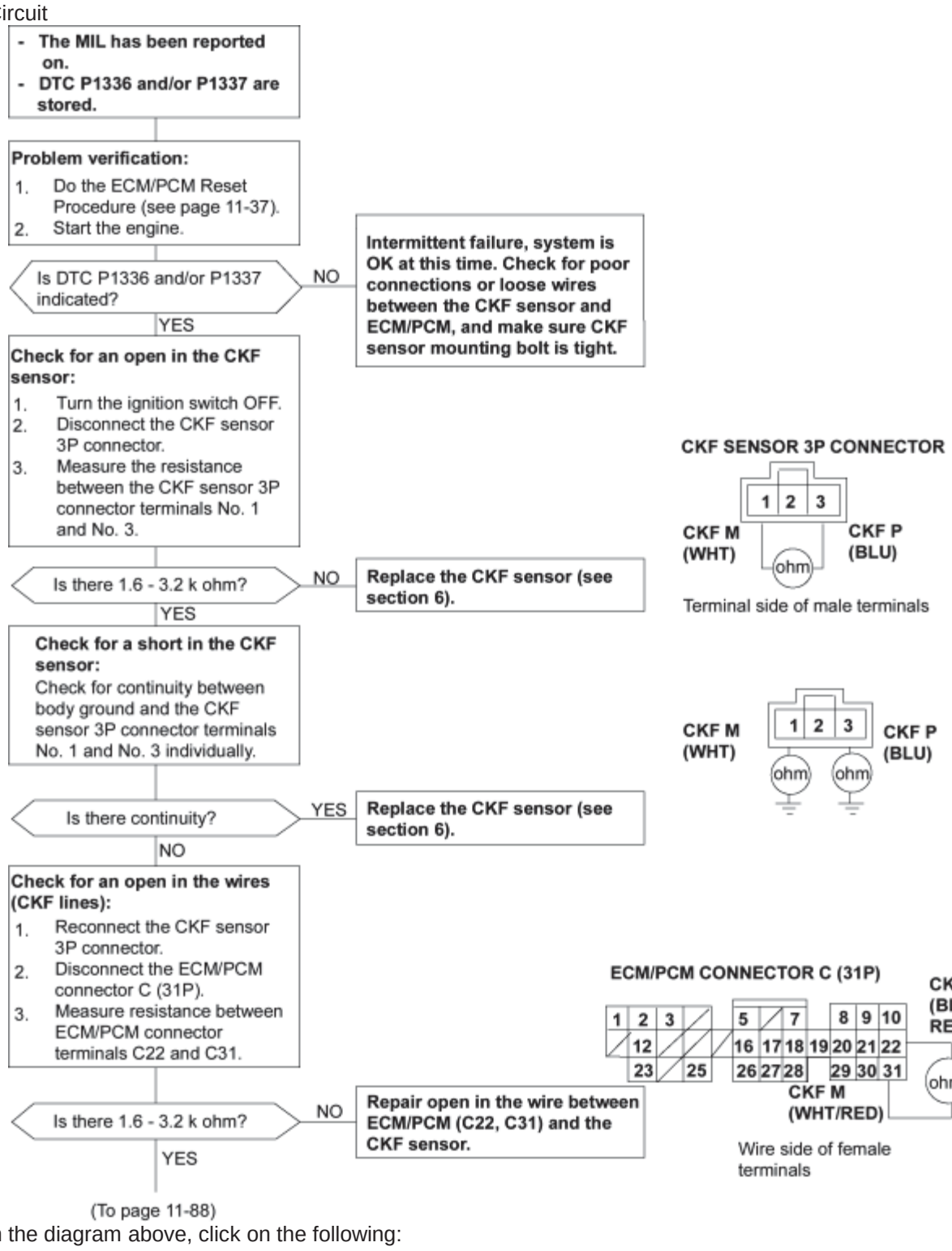
PCM CONNECTORS



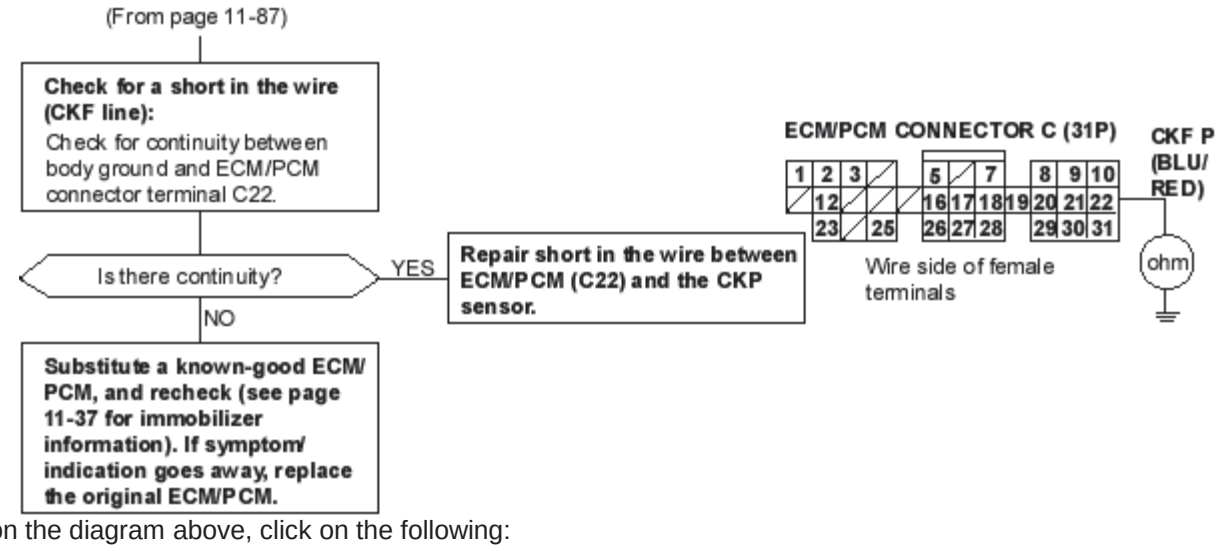
Wire side of female terminals

To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1336: Intermittent interruption in CKF Sensor Circuit
DTC P1337: No signal in CKF Sensor Circuit

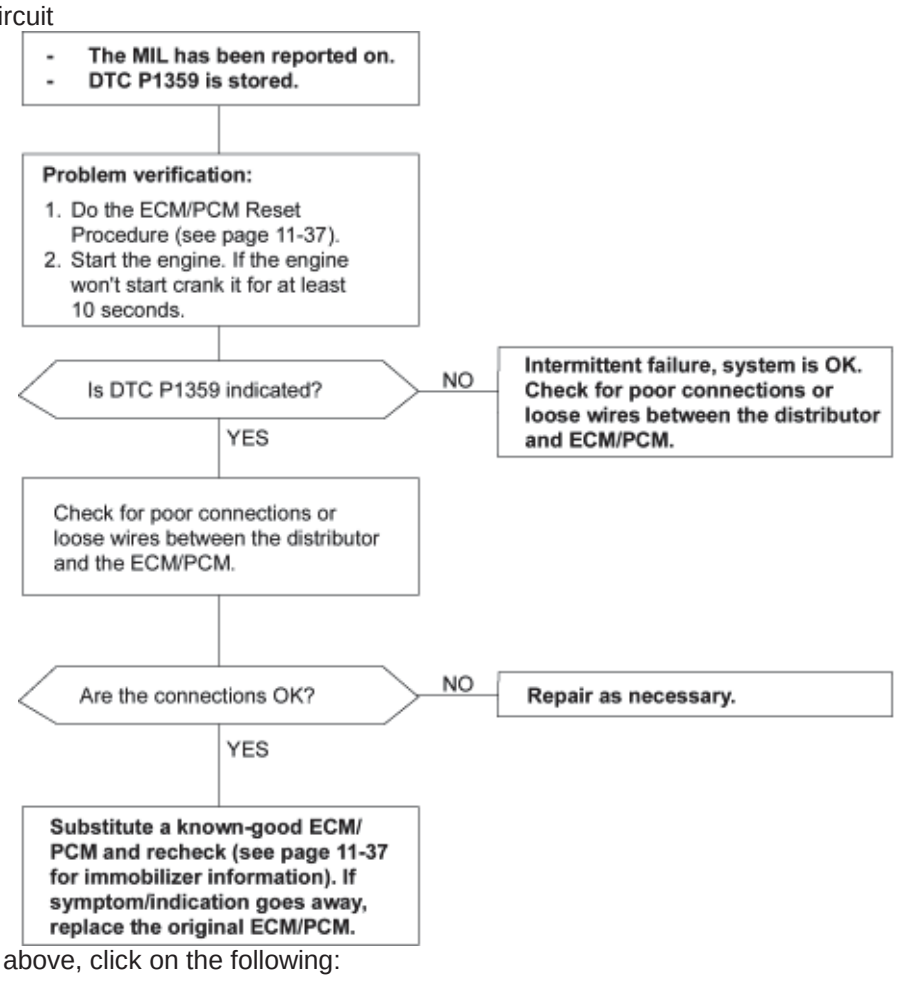


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



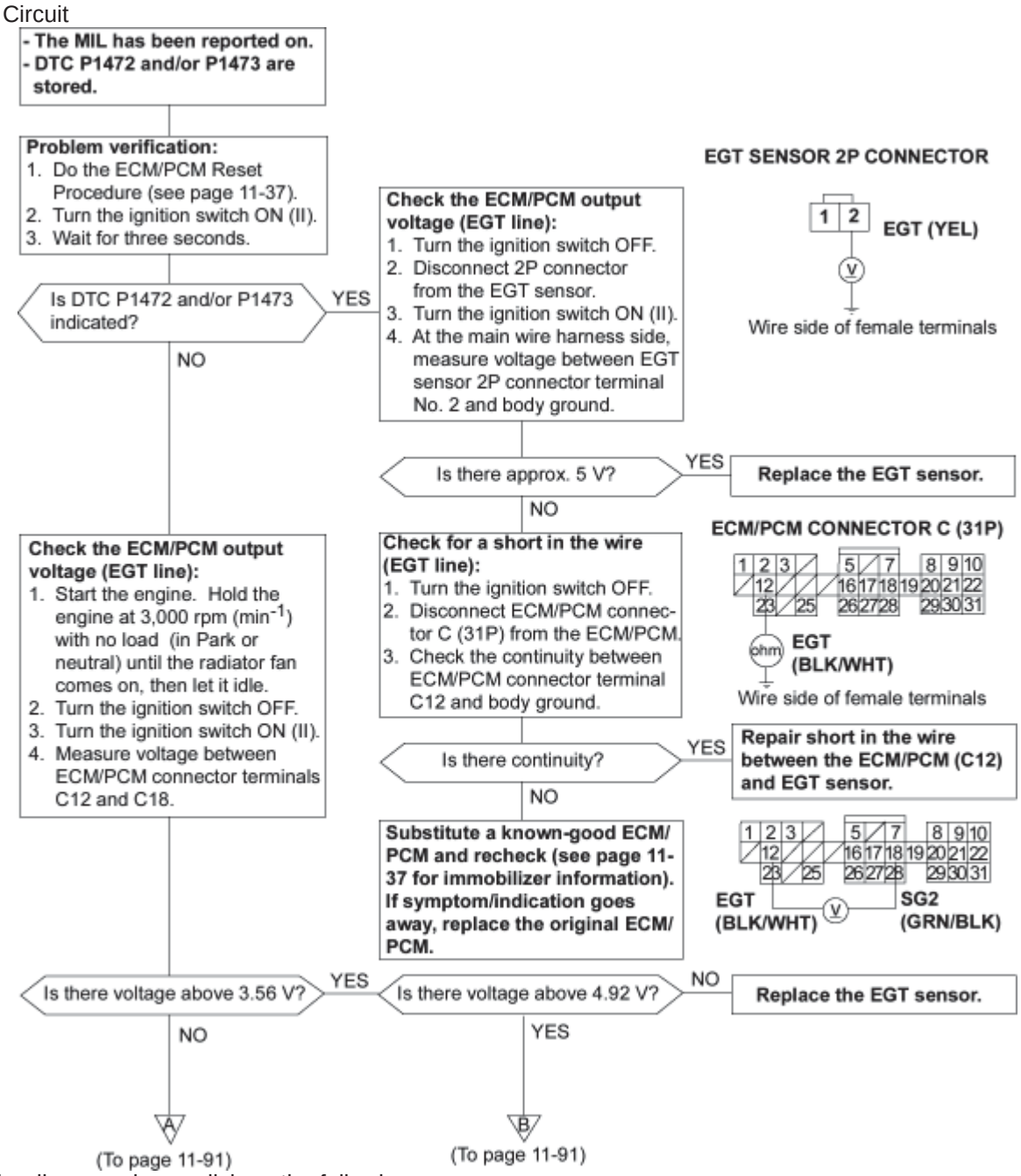
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1359: Malfunction in CKP/TDC/CYP Sensor Circuit

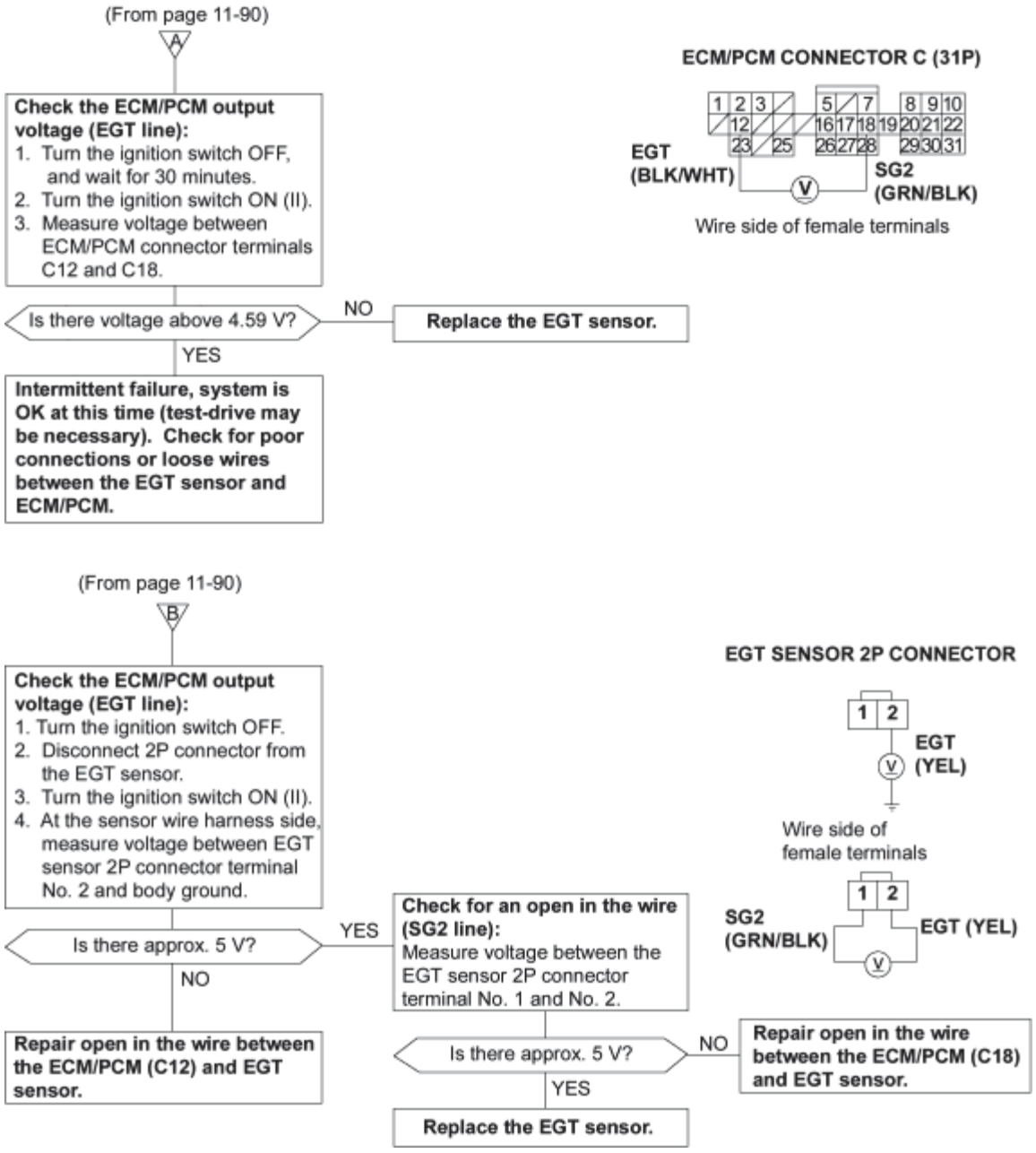


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

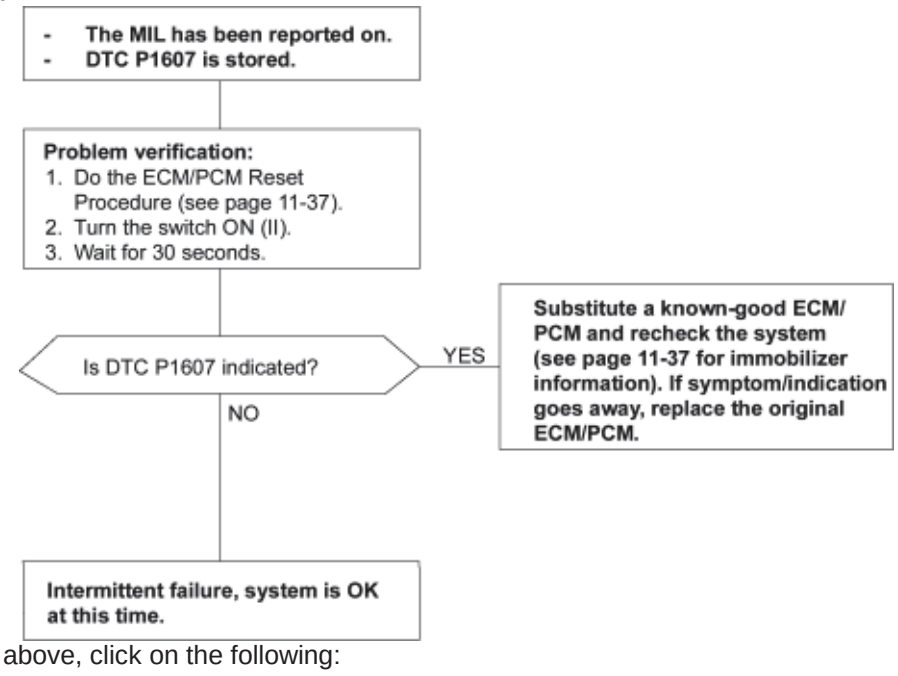
DTC P1472: Low Voltage in EGT Sensor Circuit
DTC P1473: High Voltage in EGT Sensor Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)


(From page 11-90)
A
Check the ECM/PCM output voltage (EGT line):
1. Turn the ignition switch OFF, and wait for 30 minutes.
2. Turn the ignition switch ON (II).
3. Measure voltage between ECM/PCM connector terminals C12 and C18.
Is there voltage above 4.59 V?
NO
Replace the EGT sensor.
YES
Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the EGT sensor and ECM/PCM.
ECM/PCM CONNECTOR C (31P)
1 2 3 5 7 8 9 10
12 16 17 18 19 20 21 22
23 25 26 27 28 29 30 31
EGT (BLK/WHT)
SG2 (GRN/BLK)
V
Wire side of female terminals
(From page 11-90)
B
Check the ECM/PCM output voltage (EGT line):
1. Turn the ignition switch OFF.
2. Disconnect 2P connector from the EGT sensor.
3. Turn the ignition switch ON (II).
4. At the sensor wire harness side, measure voltage between EGT sensor 2P connector terminal No. 2 and body ground.
Is there approx. 5 V?
YES
Check for an open in the wire (SG2 line):
Measure voltage between the EGT sensor 2P connector terminal No. 1 and No. 2.
NO
Repair open in the wire between the ECM/PCM (C12) and EGT sensor.
Is there approx. 5 V?
NO
Repair open in the wire between the ECM/PCM (C18) and EGT sensor.
YES
Replace the EGT sensor.
EGT SENSOR 2P CONNECTOR
1 2
EGT (YEL)
V
Wire side of female terminals
1 2
SG2 (GRN/BLK)
EGT (YEL)
V

DTC P1607: Malfunction in ECM/PCM Internal Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

Turn the ignition switch ON (II) and watch the Malfunction Indicator Lamp (MIL).

NOTE:
If this symptom is intermittent, check for the following problems.

- The MIL never comes on after the ignition switch is turned ON (II).
  - A loose ECU (ECM/PCM) (15 A) fuse in the under-hood fuse/relay box.
  - A loose FUEL PUMP SRS (15 A) fuse in the under-dash fuse/relay box.
  - A loose INSTRUMENT LIGHT (7.5 A) fuse in the under-dash fuse/relay box.
  - An intermittent short in the wire between the ECM/PCM (A18) and the gauge assembly.
  - An intermittent short in the wire between the ECM/PCM (C19) and the MAP sensor.
  - An intermittent short in the wire between the ECM/PCM (C28) and the TP sensor.
  - PGM-FI main relay.
- The MIL stays on or comes on after two second with the ignition switch turned ON (II).
  - An intermittent short in the wire between the ECM/PCM (A10) and the service check connector.
  - An intermittent short in the wire between the ECM/PCM (A18) and the gauge assembly.
- See the scan tool or Honda PGM Tester user's manuals for specific operating instructions.

Does the MIL come on and stay on?

YES → (To page 11-96)

NO

Check the inertia switch:
1. Turn the ignition switch OFF.
2. Press the inertia switch button.
3. Turn the ignition switch ON (II).

Does the MIL come on for two seconds after ignition switch turned ON (II)?

YES → **Intermittent failure, system is OK at this time.**

NO

Check the fuse:
1. Turn the ignition switch OFF.
2. Turn the ignition switch ON (II).

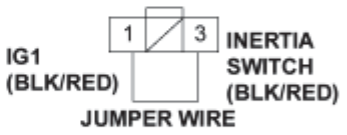
Does the low oil pressure indicator light come on?

NO → **- Repair short or open in the wire between INSTRUMENT LIGHT (7.5 A) fuse and gauge assembly.**
- Replace the INSTRUMENT LIGHT (7.5 A) fuse.

YES

(To page 11-94)

INERTIA SWITCH 3P CONNECTOR



Terminal side of male terminals

(From page 11-93)

Check the engine starting:
Try to start the engine.

Does the engine start?

YES → B
(To page 11-98)

NO

Check the fuse:
1. Turn the ignition switch OFF.
2. Inspect the ECU (ECM/PCM) (15 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

NO →
- **Repair short in the wire between ECU (ECM/PCM (15 A) fuse and PGM-FI main relay.**
- **Repair short in the wire between PGM-FI main relay and the ECM/PCM, fuel injectors, or IAC valve.**
- **Repair short in the wire between fuel injectors and IAC valve.**
- **Replace the ECU (ECM/PCM) (15 A) fuse.**

YES

Check the fuse:
Inspect the FUEL PUMP SRS (15 A) fuse in the under-dash fuse/relay box.

Is the fuse OK?

NO →
- **Repair short or open in the wire between FUEL PUMP SRS (15 A) fuse and gauge assembly.**
- **Replace the FUEL PUMP SRS (15 A) fuse.**

YES

Check for an open in the wires (IGP lines):
1. Disconnect the fuel injector and IAC valve connectors.
2. Turn the ignition switch ON (II).
3. Measure voltage between body ground and the ECM/PCM connector terminals B1 and B9 individually.

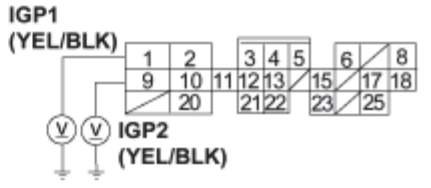
Is there battery voltage?

NO →
- **Repair open in the wire(s) between the ECM/PCM (B1, B9) and PGM-FI main relay.**
- **Check for a poor connection or loose wires at the PGM-FI main relay.**
- **Test the PGM-FI main relay.**
- **Repair short or open in the wire between the immobilizer unit and ECM/PCM.**

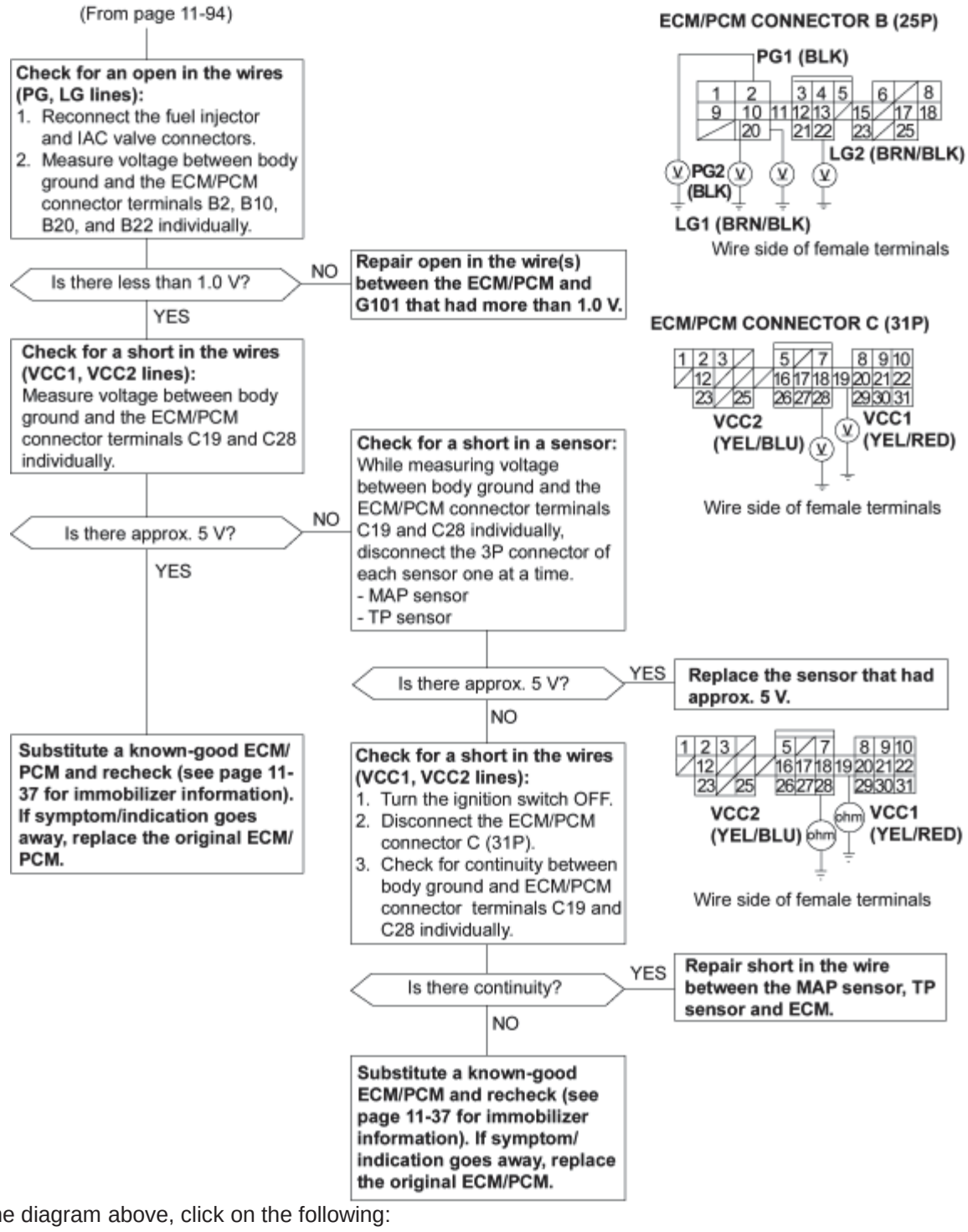
YES

(To page 11-95)

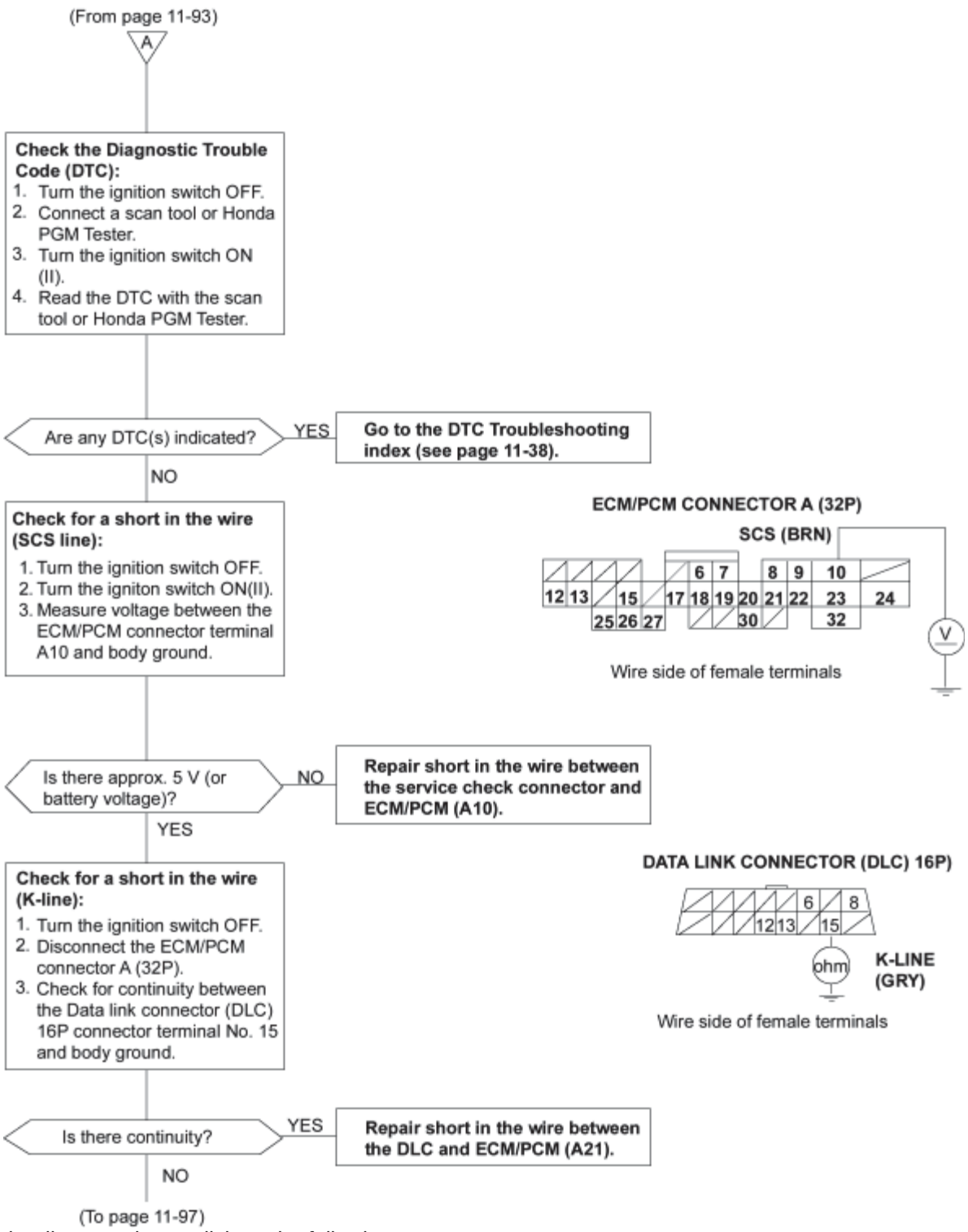
ECM/PCM CONNECTOR B (25P)



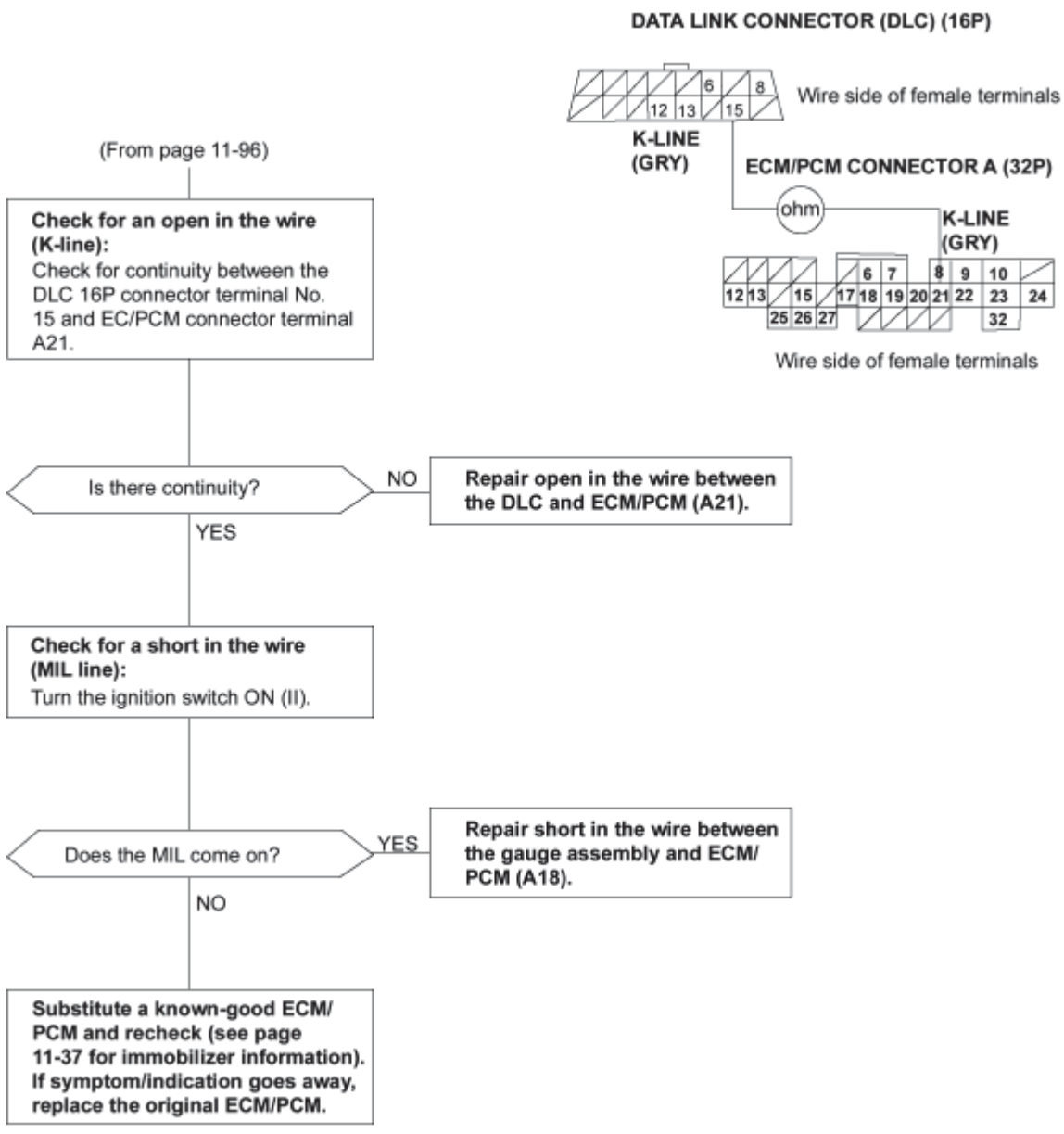
Wire side of female terminals



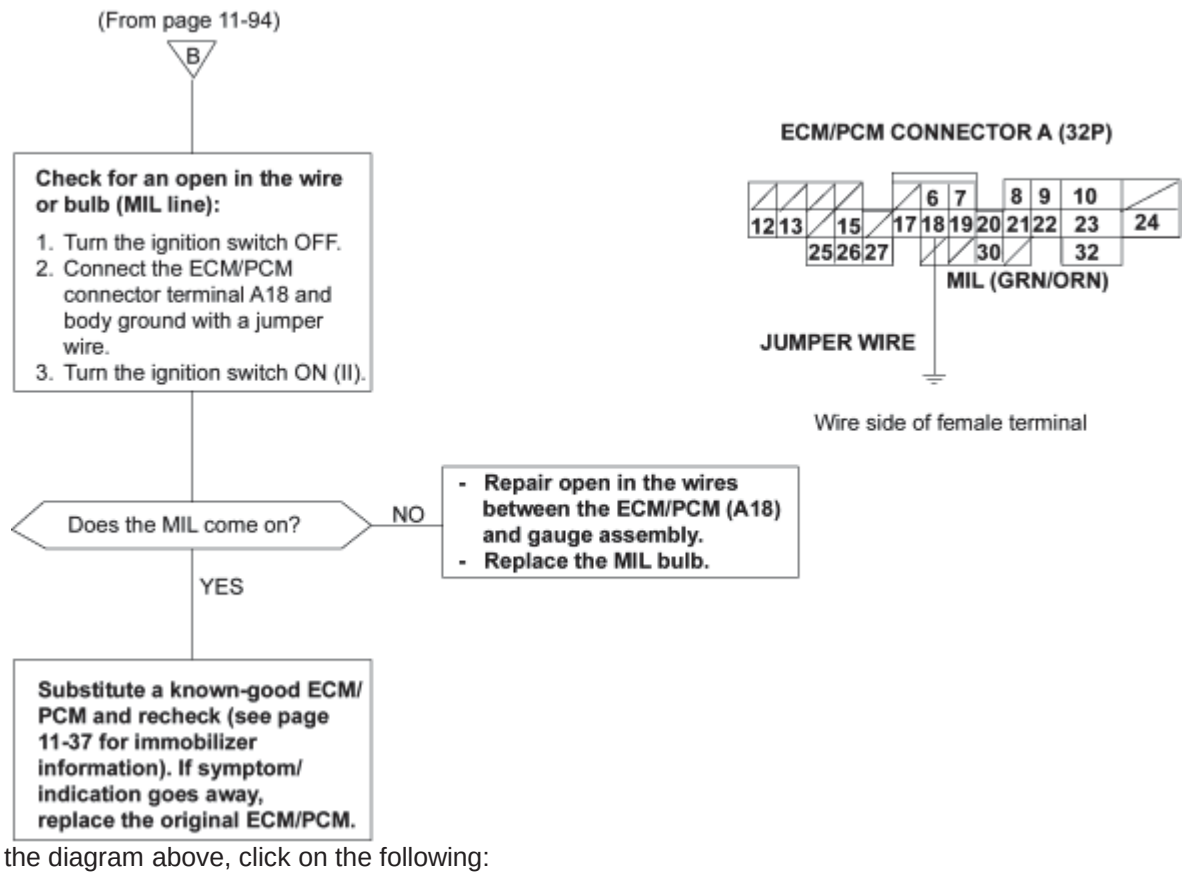
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-38)



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



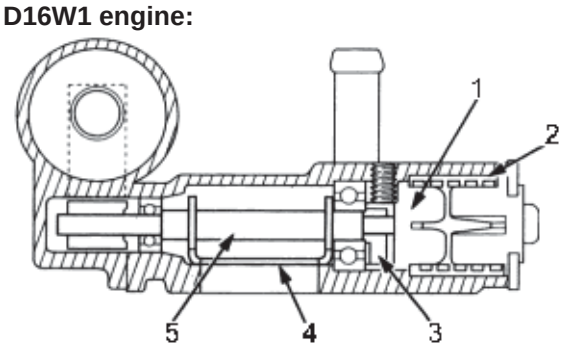
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is depressed, the P/S load is high, or the alternator is charging, the ECM/PCM controls current to the IAC valve to maintain the correct idle speed. Refer to the ECM/PCM Circuit Diagram to see the functional layout of the system.

Idle Air Control (IAC) Valve

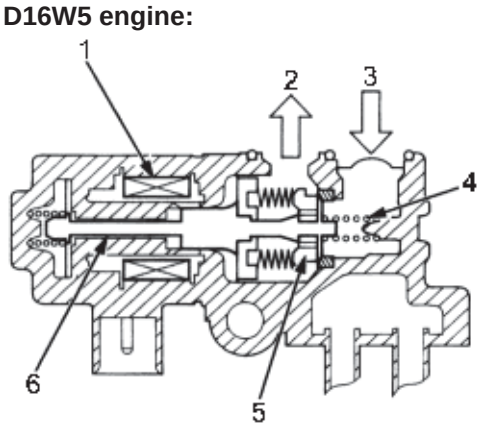
To maintain the proper idle speed, the IAC valve changes the amount of air bypassing the throttle body in response to an electrical signal from the ECM/PCM.

D16W1 engine:



1. BIMETAL HOLDER
2. BIMETAL
3. STOPPER
4. VALVE
5. SHAFT

D16W5 engine:



1. COIL
2. To INTAKE MANIFOLD
3. From AIR CLEANER
4. SPRING
5. VALVE
6. SHAFT

Power Steering Pressure Switch Signal

The P/S Pressure Switch signals the ECM/PCM when the power steering load is high.

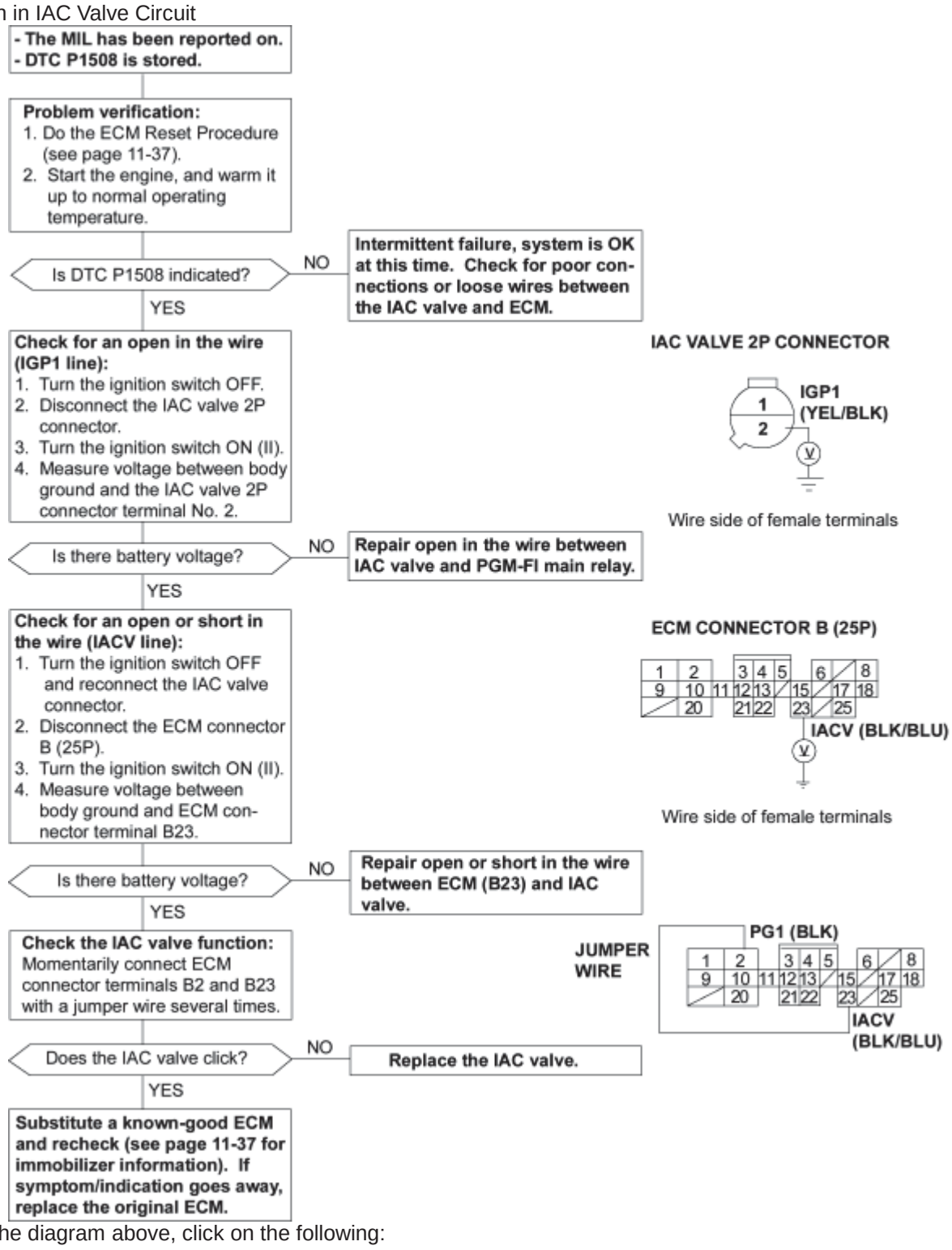
Starter (Ignition) Switch

The starter switch signals the ECM/PCM when the engine is cranking.

Brake Switch

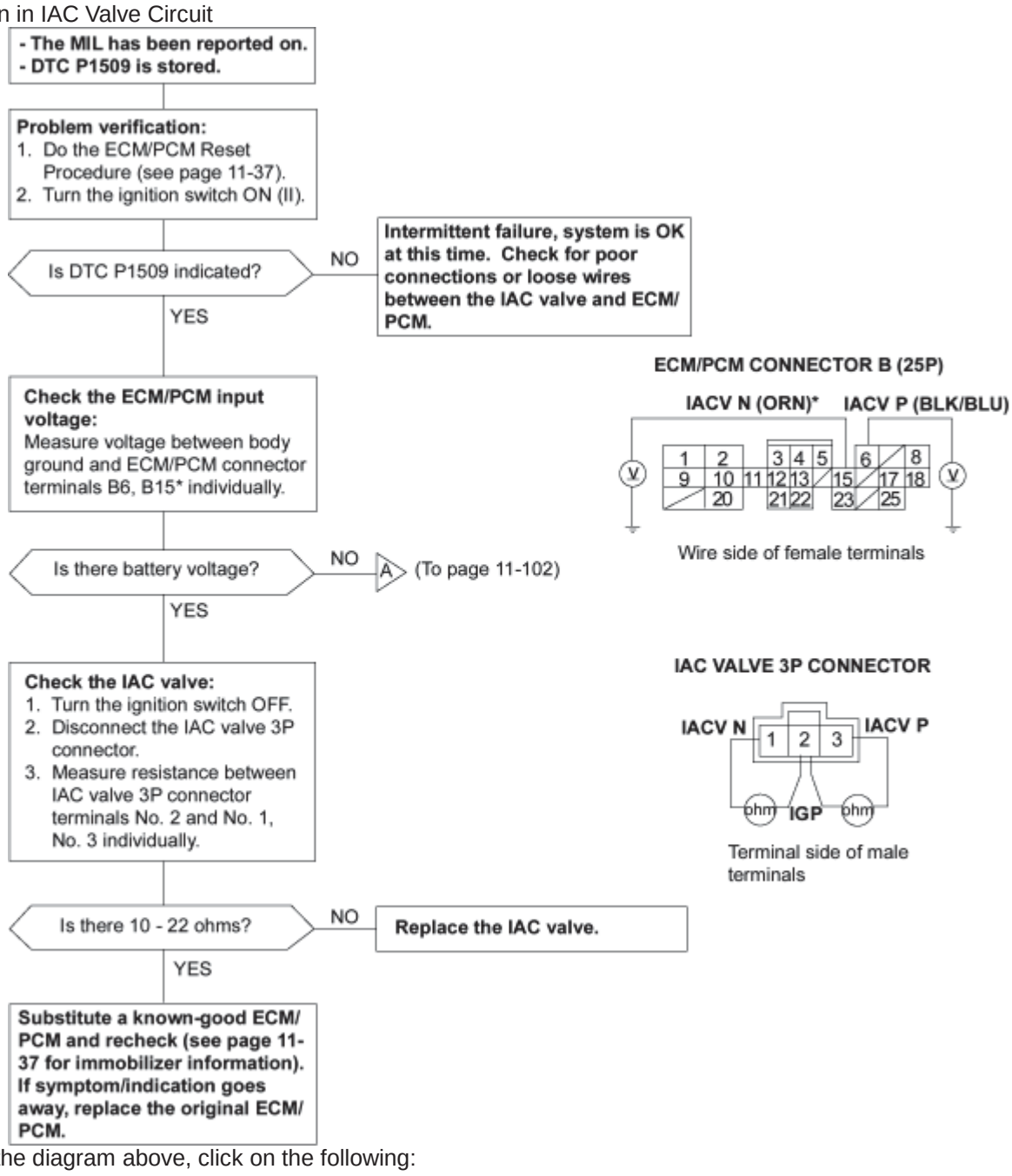
The brake switch signals the ECM/PCM when the brake pedal is depressed.

DTC P1508 (D16W5 engine): Malfunction in IAC Valve Circuit



To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P1509 (D16W1 engine): Malfunction in IAC Valve Circuit



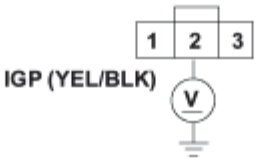
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

(From page 11-101)

A

Check for an open in the wire (IGP line):
1. Turn the ignition switch OFF.
2. Disconnect the IAC valve 3P connector.
3. Turn the ignition switch ON (II).
4. At the wire harness, measure voltage between IAC valve 3P connector terminal No. 2 and body ground.

IAC VALVE 3P CONNECTOR



Wire side of female terminals

Is there battery voltage?

NO → **Repair open in the wire between the IAC valve and PGM-FI main relay.**

YES

Check for an open in the wire (IACV P, IACV N* line:
1. Turn the ignition switch OFF.
2. Disconnect the ECM/PCM connector B (25P).
3. Check for continuity between IAC valve 3P connector terminal B6 (IAC valve 3P connector terminal No. 1 and ECM/PCM connector terminal B15)*.

*: IACV N line

Is there continuity?

NO → **Repair open in the wire between the IAC valve and ECM/PCM (B6 B15*).**

YES

Check for a short in the wire (IACV P, IACV N* line):
Check for continuity between body ground and ECM/PCM connector terminals B6, B15* individually.



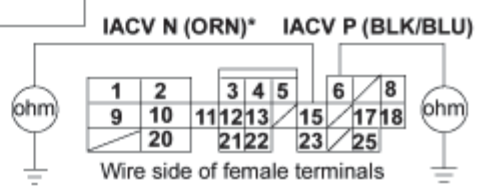
Wire side of female terminals

Is there continuity?

YES → **Repair short in the wire between the IAC valve and ECM/PCM (B6 B15*).**

NO

Check the IAC valve:
1. Disconnect the IAC valve 3P connector.
2. Measure resistance between IAC valve 3P connector terminal No. 2 and No. 1, No. 3 individually.



Wire side of female terminals

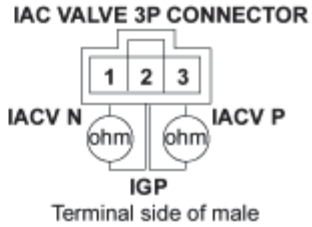
Is there 10 - 22 ohm?

NO → **Replace the IAC valve.**

YES

Substitute a known-good ECM/PCM and recheck (see page 11-37 for immobilizer information). If symptom/indication goes away, replace the original ECM/PCM.

IAC VALVE 3P CONNECTOR



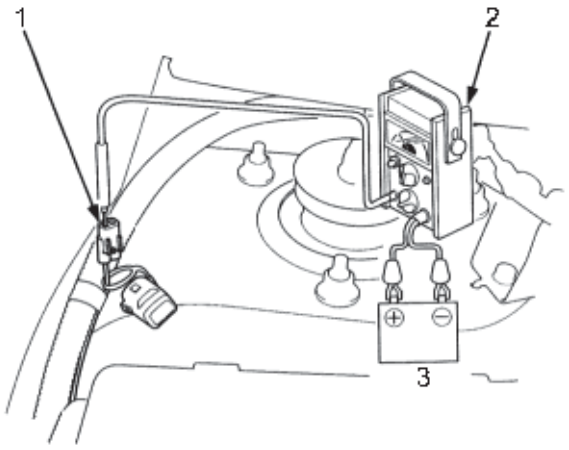
Terminal side of male terminals

To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

D16W1 engine:
Inspection/Adjustment
Adjust the idle speed by means of a Honda PGM-TESTER. If not, check the following:
NOTE: Before setting the idle speed, check the following items:

- The MIL has not been reported on.
- Ignition timing
- Spark plugs
- Air cleaner
- PCV System

1. Connect a tachometer.



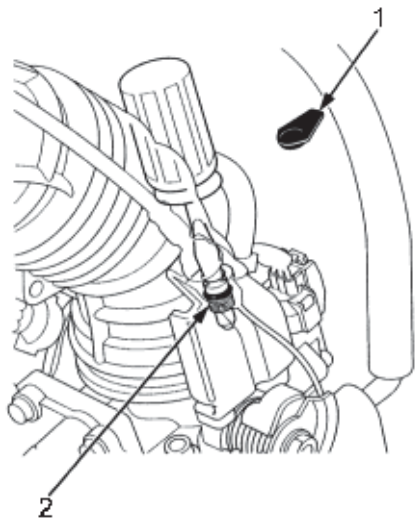
1. TEST TACHOMETER CONNECTOR
2. TACHOMETER
3. BATTERY

2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load until the radiator fan comes on, then let it idle.
3. Check the idle speed with no-load conditions: head-lights, blow fan, rear defogger, radiator fan, and air conditioner not operating.

Idle speed should be:

M/T	750 ± 50 rpm (min^{-1})
A/T	700 ± 50 rpm (min^{-1}) (in N or P position)

4. Adjust the idle speed, if necessary, by turning the idle adjusting screw ½-turn clockwise or counterclockwise.



1. CAP
2. IDLE ADJUSTING SCREW

5. After a ½-turn of the idle adjusting screw, check the idle speed again. If it is out of spec, turn the idle adjusting screw ½-turn again.
   NOTE: Do not turn the idle adjusting screw more than ½-turn without checking the idle speed.
6. Idle the engine for one minute with the heater fan switch at HI and air conditioner on, then check the idle speed.

Idle speed should be:

M/T	810 ± 50 rpm (min^{-1})
A/T	810 ± 50rpm (min^{-1}) (in N or P position)

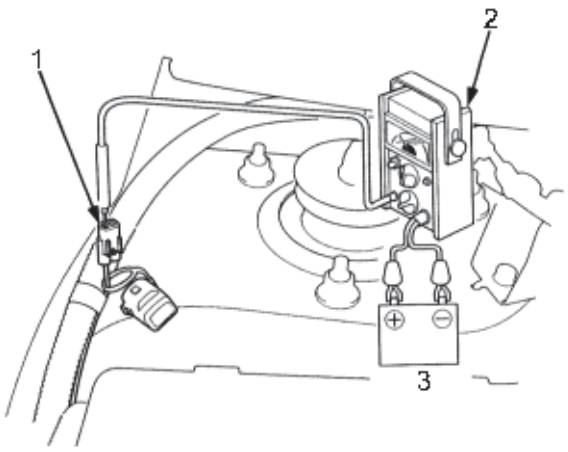
NOTE:

- Do not turn the idle adjusting screw when the air conditioner is on.
- (**See Page** 11-42) for System Troubleshooting Guide if the idle speed is not within specification.

D16W5 engine:
Inspection/Adjustment
NOTE: Before setting the idle speed, check the following items:

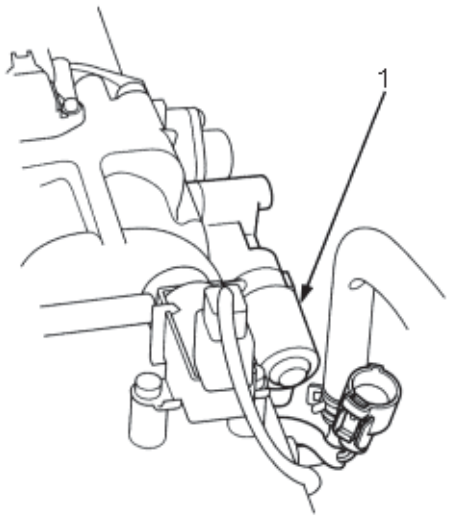
- The MIL has not been reported on.
- Ignition timing
- Spark plugs
- Air cleaner
- PCV System

1. Connect the tachometer.



1. TEST TACHOMETER CONNECTOR
2. TACHOMETER
3. BATTERY

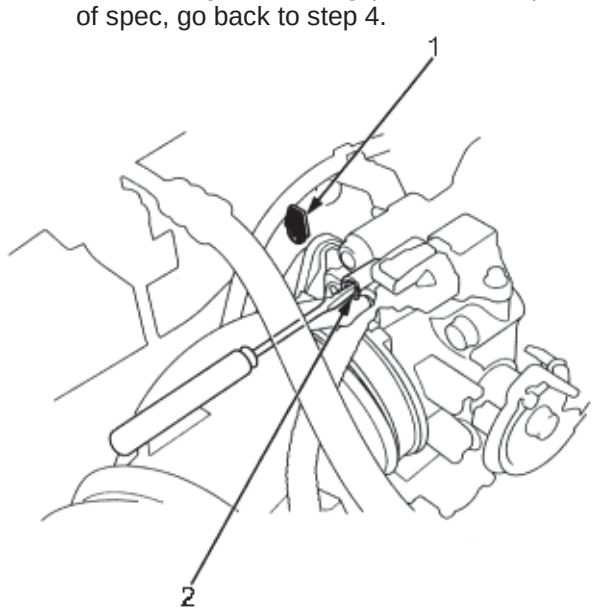
2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load (in neutral) until the radiator fan comes on, then let it idle.
3. Disconnect the 2P connector from the Idle Air Control (IAC) Valve.



1. IAC VALVE

4. Start the engine with the accelerator pedal slightly depressed. Stabilise the engine speed at 1,000 rpm (min^{-1}), then slowly release the pedal until the engine idles.
5. Check idling in no-load conditions: headlights, blower fan, rear defogger, radiator fan, and air conditioner are not operating.

Idle speed should be:
450 ± 50 rpm (min^{-1}) (in neutral)
Adjust the idle speed, if necessary, by turning the idle adjusting screw.
NOTE: After adjusting the idle speed in this step, check the ignition timing (see section 4). If it is out of spec, go back to step 4.



1. CAP
2. IDLE ADJUSTING SCREW

6. Turn the ignition switch OFF.
7. Reconnect the 2P connector on the IAC valve, then remove the BACK UP (7.5 A) fuse in the under-hood fuse/relay box for 10 seconds to reset the ECM.

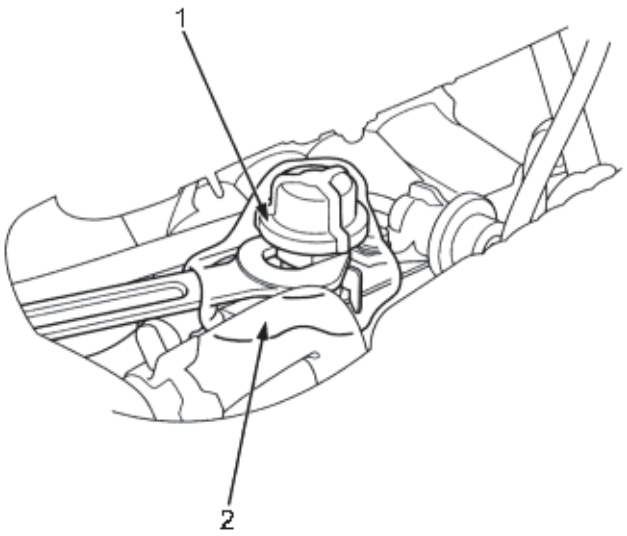
8. Restart and idle the engine with no-load conditions for one minute, then check the idle speed.
   Idle Speed should be:
   750 ± 50 rpm (min^{-1}) (in neutral)
9. Idle the engine for one minute with headlights (Low) ON and check the idle speed.
   Idle Speed should be:
   750 ± 50 rpm (min^{-1}) (in neutral)
10. Turn the headlights off.
    Idle the engine for one minute with the heater fan switch at HI and air conditioner on, then check the idle speed.
    Idle Speed should be:
    810 ± 50 rpm (min^{-1}) (in neutral)
    NOTE: (**See Page** 11-42) for System Troubleshooting Guide if the idle speed is not within specification.

Before disconnecting fuel pipes or hoses, release pressure from the system by loosening the fuel pulsation damper on top of the fuel rail.

⚠ WARNING

Do not smoke while working on the fuel system. Keep open flames or sparks away from the work area.
Be sure to relieve the fuel pressure while the ignition switch is off.

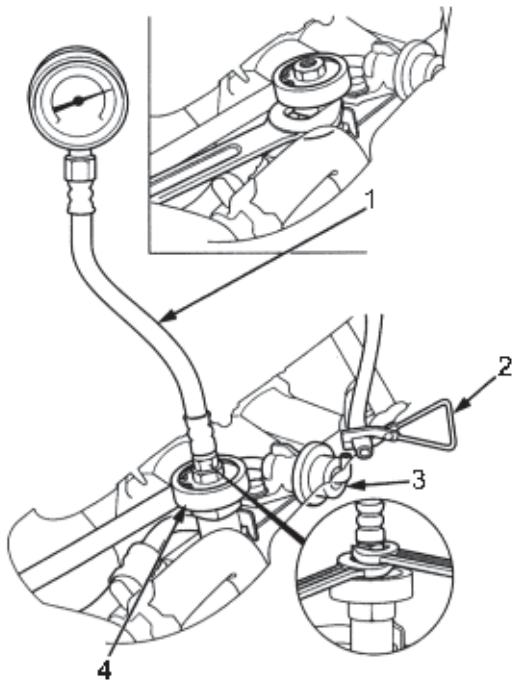
1. Disconnect the battery negative cable from the battery negative terminal.
2. Remove the fuel fill cap.
3. Use a wrench on the fuel pulsation damper at the fuel rail.
4. Place a rag or shop towel over the fuel pulsation damper.
5. Slowly loosen the fuel pulsation damper one complete turn.



1. FUEL PULSATION DAMPER 22 Nm (2.2 kgf/m, 16 lbf/ft)
2. SHOP TOWEL

NOTE: Replace the washers whenever the fuel pulsation damper is loosened or removed.

1. Relieve fuel pressure.
2. Remove the fuel pulsation damper from the fuel rail.
   Attach the fuel pressure gauge attachment and fuel pressure gauge.



1. FUEL PRESSURE GAUGE 07406 - 0040002
2. CLAMP
3. FUEL PRESSURE REGULATOR
4. FUEL PRESSURE GAUGE ATTACHMENT 07VAJ - 0090100

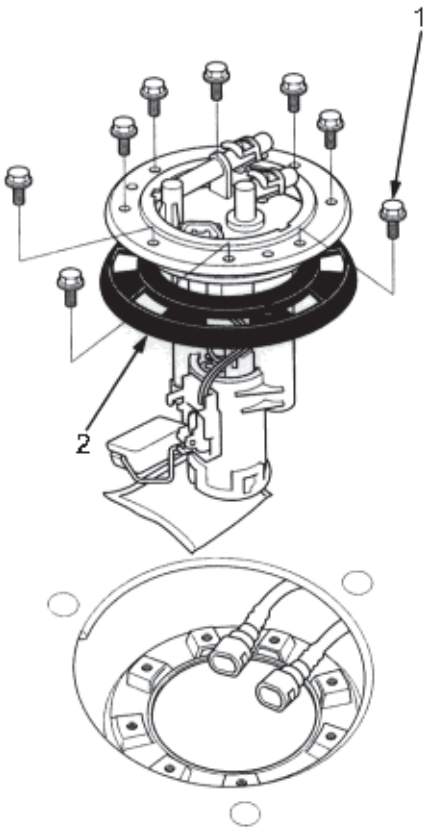
3. Start the engine. Measure the fuel pressure with the engine idling and the vacuum hose of the fuel pressure regulator disconnected from the fuel pressure regulator and pinched. If the engine will not start, turn the ignition switch ON (II), wait for two seconds, turn it off, then back on again and read the fuel pressure.
   Pressure should be:
   260 - 310 kPa (2.7 - 3.2 kgf/cm^2, 38 - 46 psi)
4. Reconnect the vacuum hose to the fuel pressure regulator.
   Pressure should be:
   200 - 250 kPa (2.0 - 2.5 kgf/cm^2, 28 - 36 psi)
   If the fuel pressure is not as specified, first check the fuel pump. If the fuel pump is OK, check the following:
   - If the fuel pressure is higher than specified, inspect for:
     - Pinched or clogged fuel return hose or line.C
     - Faulty fuel pressure regulator.
   - If the fuel pressure is lower than specified, inspect for:
     - Clogged fuel filter.
     - Faulty fuel pressure regulator.
     - Leakage in the fuel line.

⚠ WARNING

Do not smoke while working on the fuel system.
Keep open flames or sparks away from the work area.

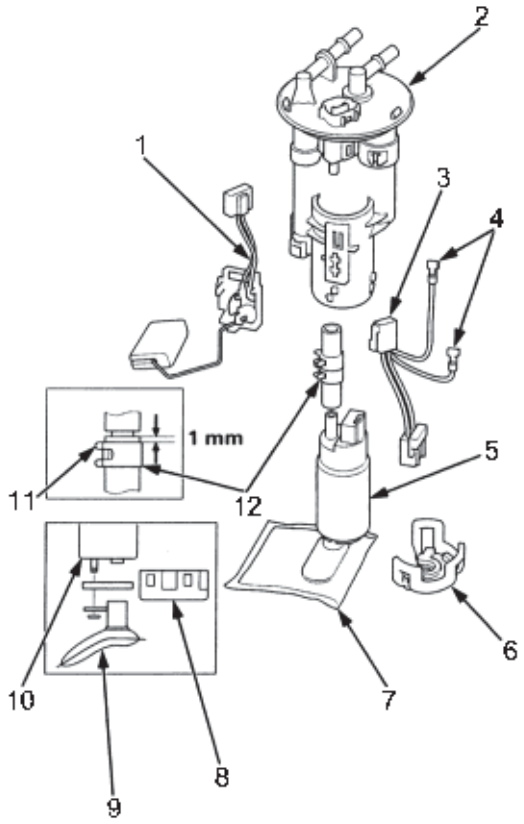
The fuel filter should be replaced whenever the fuel pressure drops below the specified value [260 - 310 kPa (2.7 - 3.2 kgf/cm^2, 38 - 46 psi) with the fuel pressure regulator vacuum hose disconnected and pinched] after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Relieve the pressure (**See Page** 11-106).
2. Remove the access panel from the floor.
3. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.
4. Disconnect the quick-connect fittings from the fuel pump.
5. Remove the bolts, and the fuel pump assembly.



1. 4 Nm (0.4 kgf/m, 3 lbf/ft)
2. BASE GASKET Replace.

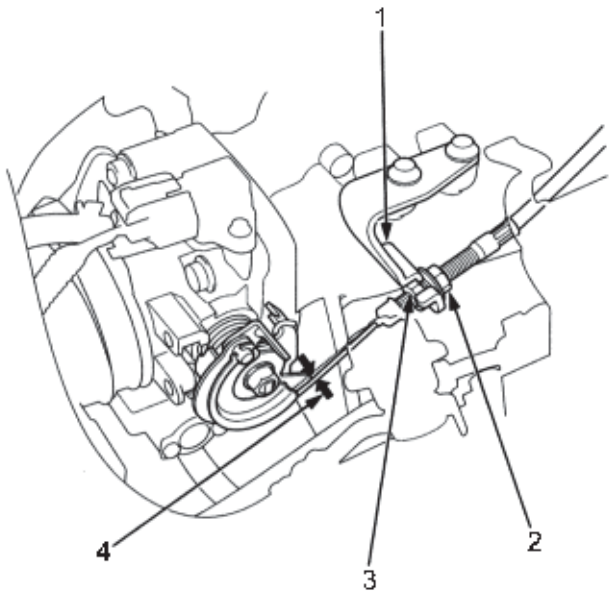
6. Remove the bracket, the fuel gauge sending unit, the hose, and the wire harness from the fuel filter.



1. FUEL SENDING UNIT
2. FUEL FILTER
3. WIRE HARNESS
4. TERMINAL
5. FUEL PUMP
6. BRACKET
7. SUCTION FILTER
8. BRACKET
9. SUCTION FILTER
10. FUEL PUMP
11. TAB
12. CLAMP

7. When connecting the fuel pump, make sure the connection is secure and the suction filter is firmly connected to the fuel pump.
8. Install the part in the reverse order of removal with a new base gasket, then checking, these items:
   - When connecting the wire harness, make sure the connection is secure and the terminal is firmly locked into place.
   - Check that the tab of the clamp does not interfere with the wire harness.
   - Do not push the lower part of the suction filter.
   - When installing the fuel gauge sending unit, make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.

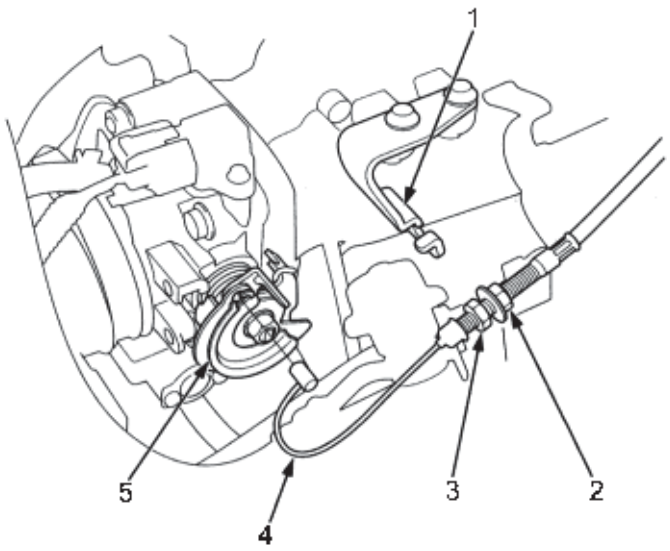
1. Check that the throttle cable operates smoothly with no binding or sticking. Repair as necessary.
2. Check cable free play at the throttle link. Cable deflection should be 10 - 12 mm (3/8 - 1/2 in.).



1. CABLE BRACKET
2. LOCKNUT
3. ADJUSTING NUT
4. DEFLECTION 10 - 12 mm (3/8 - 1/2 in)

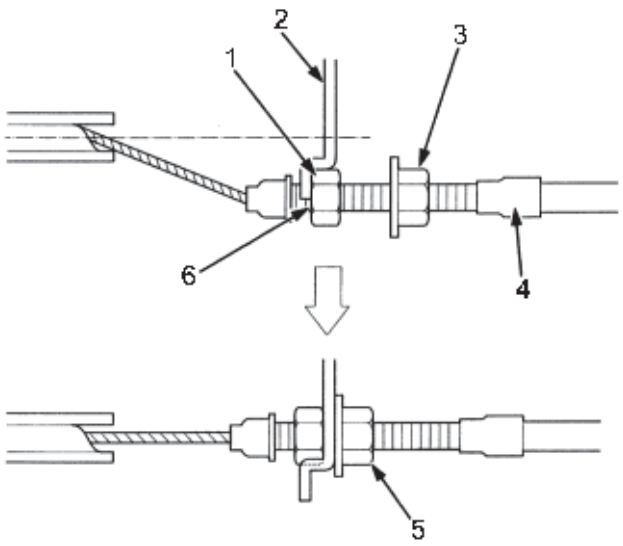
3. If deflection is not within specs, loosen the locknut, turn the adjusting nut until the deflection is as specified, then retighten the locknut.
4. With the cable properly adjusted, check the throttle valve to be sure it opens fully when you push the accelerator pedal to the floor. Also check the throttle valve to be sure it returns to the idle position whenever you release the accelerator pedal.

1. Open the throttle valve fully, then install the throttle cable in the throttle link, and install the cable housing in the cable bracket.



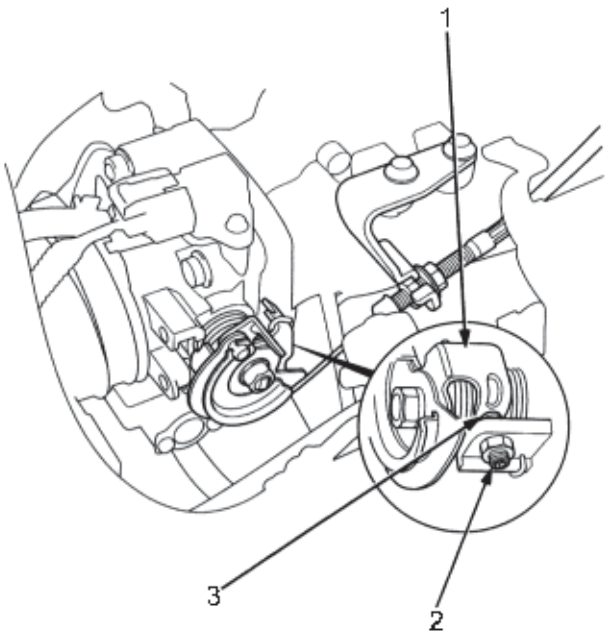
1. CABLE BRACKET
2. LOCKNUT
3. ADJUSTING NUT
4. INNER CABLE
5. THROTTLE LINK

2. Hold the cable sheath, removing all slack from the cable.
3. Set the locknut on the cable bracket. Adjust the adjusting nut so that its free play is 0 mm (0 in.).
4. Remove the cable sheath from the throttle bracket, reset the adjusting nut and tighten the locknut.



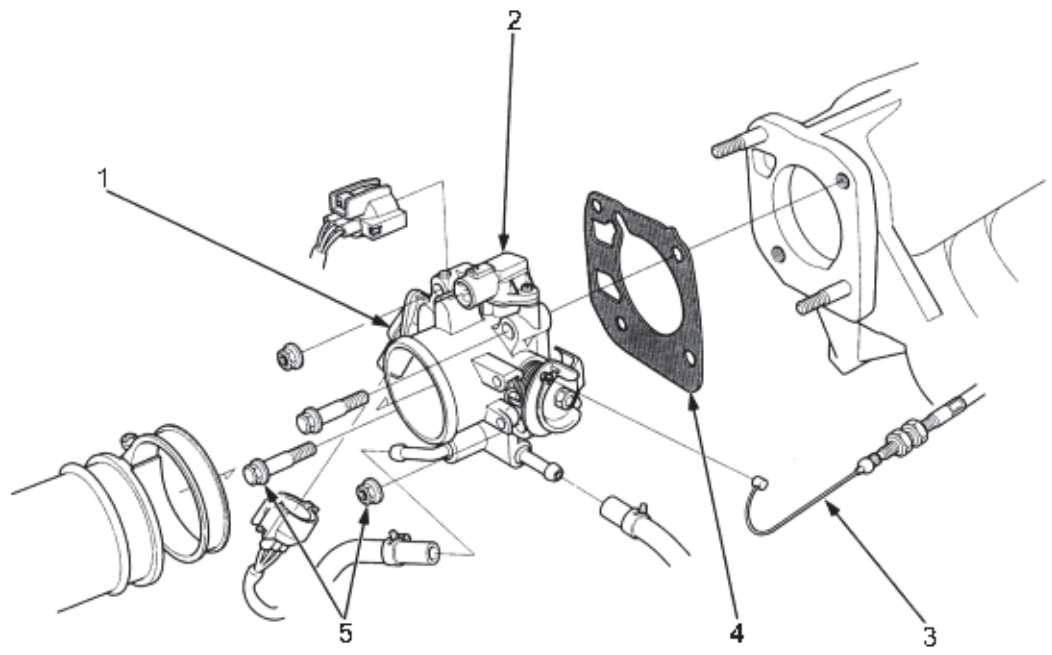
1. ADJUSTING NUT
2. CABLE BRACKET
3. LOCKNUT
4. CABLE SHEATH
5. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. There should be no clearance.

1. Check that the throttle cable operates smoothly without binding or sticking.
   If there are any abnormalities, check for:
   - Excessive wear or play in the throttle valve shaft.
   - Sticky or binding throttle lever at the fully closed position.
   - Clearance between throttle stop screw and throttle lever at the fully closed position.



1. THROTTLE LEVER
2. THROTTLE STOP SCREW (Do not adjust.)
3. There should be no clearance.

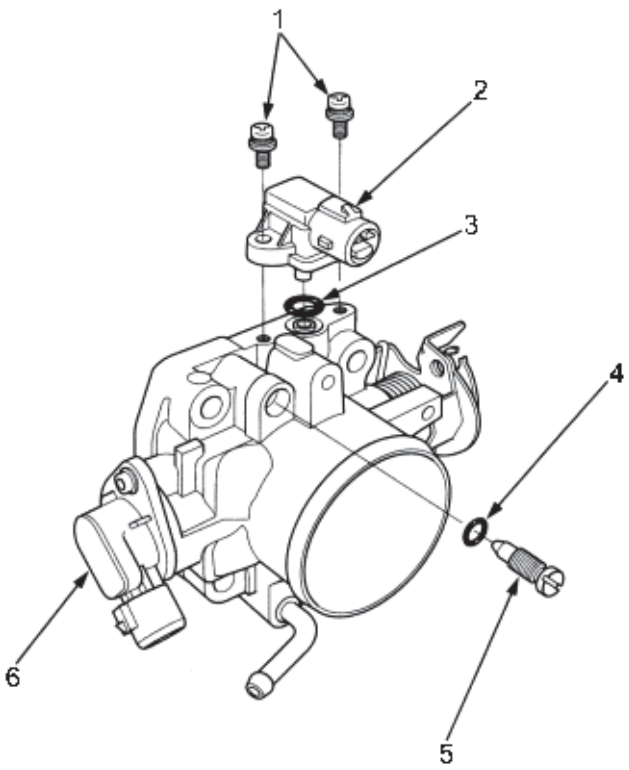
Replace the throttle body if there is excessive play in the throttle valve shaft or if the shaft is binding or sticking.



1. **TP SENSOR**
2. **MAP SENSOR**
3. **THROTTLE CABLE**
4. **GASKET** Replace.
5. **22 Nm (2.2 kgf/m, 16 lbf/ft)**

NOTE:
- Do not adjust the throttle cable screw.
- After reassembly, adjust the throttle cable (**See Page** 11-108).
- The TP sensor is not removable.

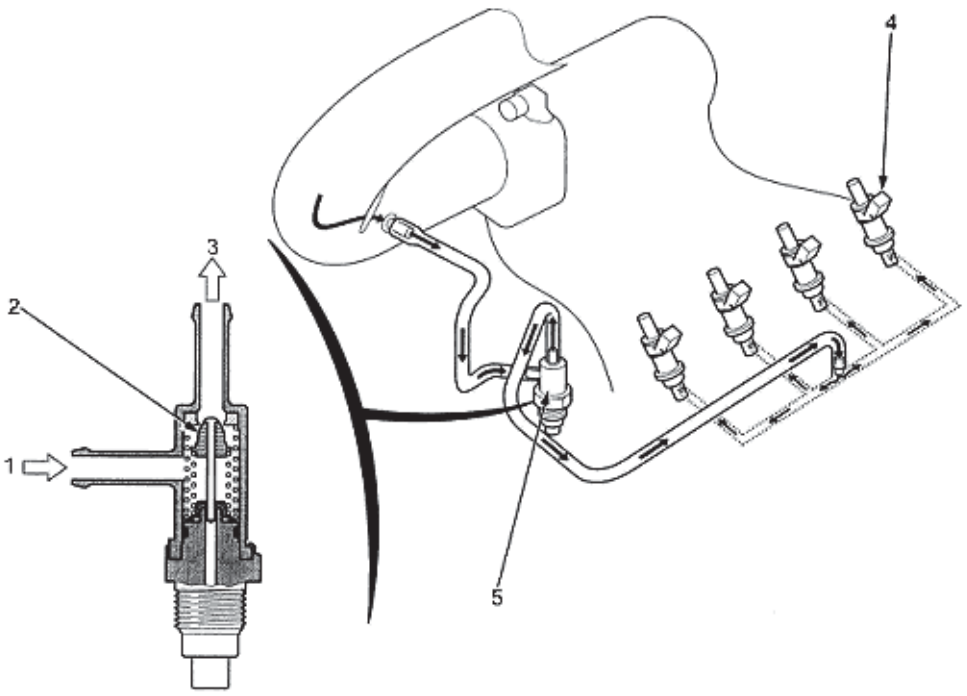
Throttle Body Disassembly



1. **2.1 Nm (0.21 kgf/m, 1.5 lbf/ft)**
2. **MAP SENSOR**
   Troubleshooting, (**See Page** 11-56)
3. **O-RING** Replace.
4. **O-RING**
5. **IDLE ADJUSTING SCREW**
6. **TP SENSOR**
   Troubleshooting, (**See Page** 11-62)

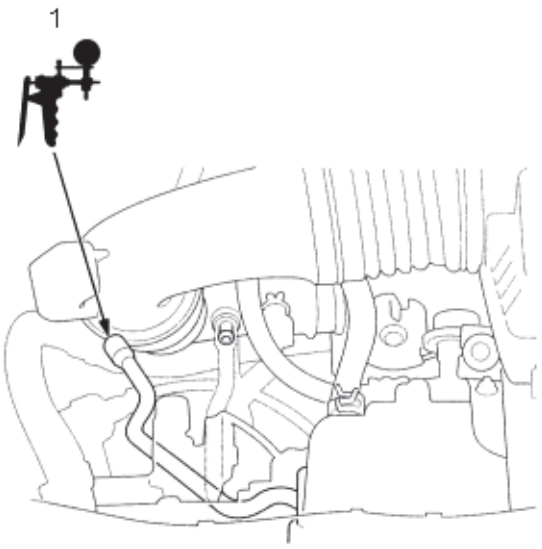
Description

When the engines running [engine coolant temperature below 65°C (149°F)], the Fuel Injection Air (FIA) Control Valve sends intake air to the fuel injectors.



1. **From AIR CLEANER**
2. **VALVE**
3. **To FUEL INJECTOR**
4. **FUEL INJECTOR**
5. **FIA CONTROL VALVE**
6. **INTAKE AIR**

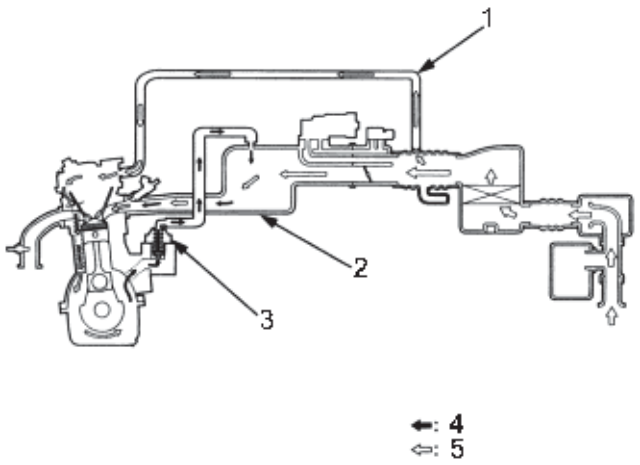
1. Start the engine.
2. Remove the vacuum hose from the install pipe, and connect a vacuum gauge to the hose.
   NOTE: Engine coolant temperature must be below 65°C (149°F).



1. VACUUM PUMP GAUGE, 0 - 30 in.Hg.

3. Raise and lower the engine speed, and make sure the vacuum gauge reading changes as the engine speed changes.
   If the vacuum reading does not change check;
   - the vacuum lines of FIA system for misrouting, leakage, breakage and clogging.
   - the FIA control valve for cracks or damage.
   - check the cooling system (see section 10).
4. Hold the engine at 3,000 rpm (min^{-1}) with no load (A/T in N or P position, M/T in neutral) until the radiator fan comes on, then let it idle and recheck.
   If vacuum reading changes check;
   - the FIA control valve for cracks or damage.
   - check the cooling system (see section 10).

Positive Crankcase Ventilation (PCV) System
The Positive Crankcase Ventilation (PCV) system is designed to prevent blow-by gas from escaping to the atmosphere. The PCV valve contains a spring-loaded plunger. When the engine starts, the plunger in the PCV valve is lifted in proportion to the intake manifold vacuum and the blow-by gas is drawn directly into the intake manifold.



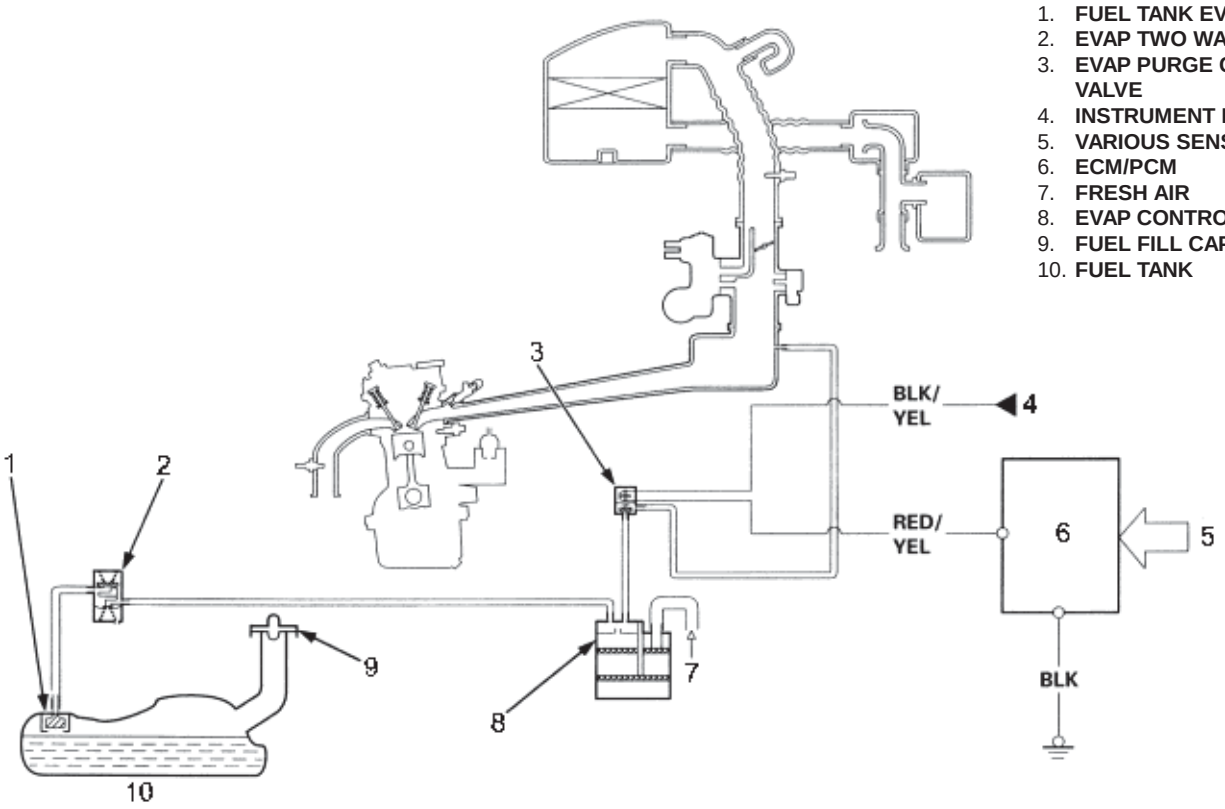
1. BREATHER PIPE
2. INTAKE MANIFOLD
3. PCV VALVE
4. BLOW-BY VAPOUR
5. FRESH AIR

Evaporative Emission (EVAP) Control System Diagram

The evaporative emission control minimises the amount of fuel vapour escaping to the atmosphere. Vapour from the fuel tank is temporarily stored in the EVAP control canister until it can be purged from the canister into the engine and burned.

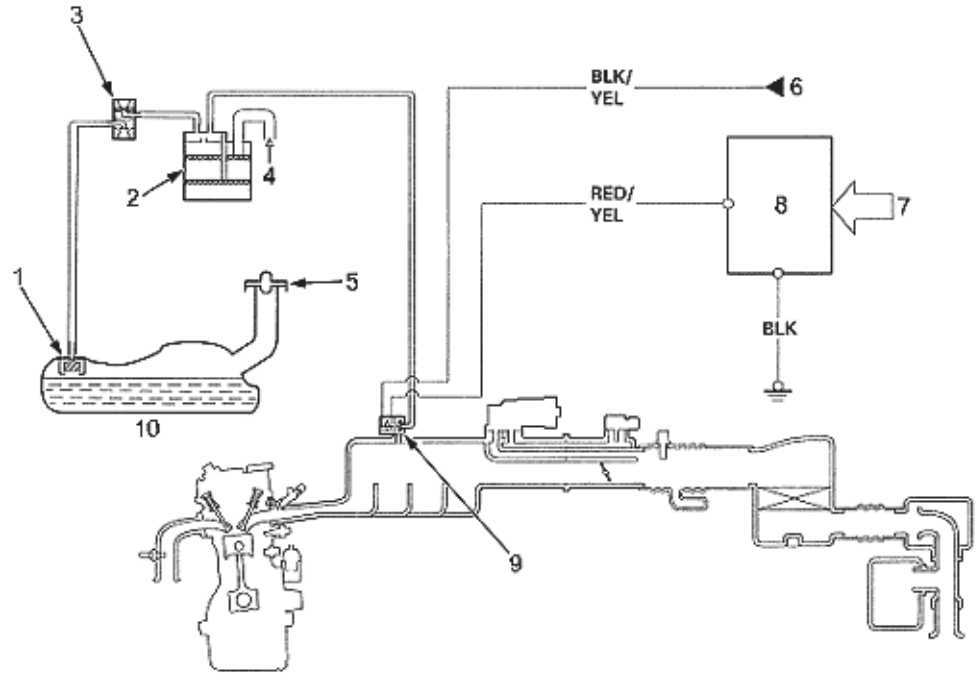
- The EVAP control canister is purged by drawing fresh air through it and into a port on the intake manifold. The purging vacuum is controlled by the EVAP purge control solenoid valve, which is open whenever engine coolant temperature is above 68°C (154°F).
- When vapour pressure in the fuel tank is higher then the set value of the EVAP two way valve, the valve opens and regulates the flow of fuel vapour to the EVAP control canister.

D16W1 engine:



1. **FUEL TANK EVAP VALVE**
2. **EVAP TWO WAY VALVE**
3. **EVAP PURGE CONTROL SOLENOID VALVE**
4. **INSTRUMENT LIGHT (7.5 A) FUSE**
5. **VARIOUS SENSORS**
6. **ECM/PCM**
7. **FRESH AIR**
8. **EVAP CONTROL CANISTER**
9. **FUEL FILL CAP**
10. **FUEL TANK**

D16W5 engine:



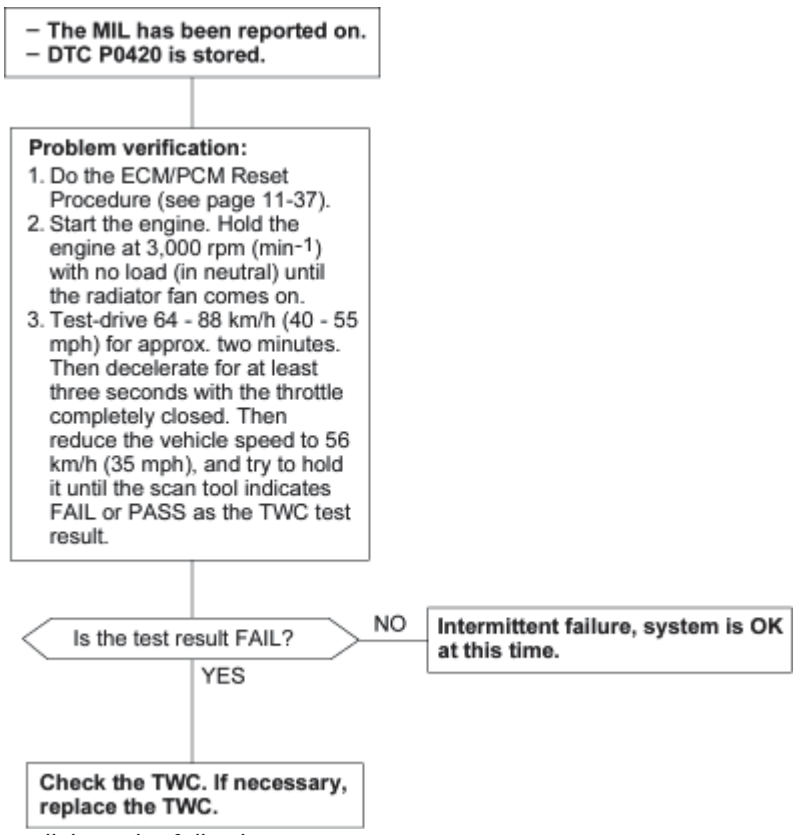
1. **FUEL TANK EVAP VALVE**
2. **EVAP CONTROL CANISTER**
3. **EVAP TWO WAY VALVE**
4. **FRESH AIR**
5. **FUEL FILL CAP**
6. **INSTRUMENT LIGHT (7.5 A) FUSE**
7. **VARIOUS SENSORS**
8. **ECM/PCM**
9. **EVAP PURGE CONTROL SOLENOID VALVE**

DTC P0420: Catalytic System Efficiency Below Threshold
NOTE: If some of the DTCs listed below are stored at the same time as the DTC P0420, troubleshoot those DTCs first, then troubleshoot DTC P0420.
P0137, P0138: Secondary HO^2S (Sensor 2)
P0141: Secondary HO^2S (Sensor 2) Heater

Possible Cause

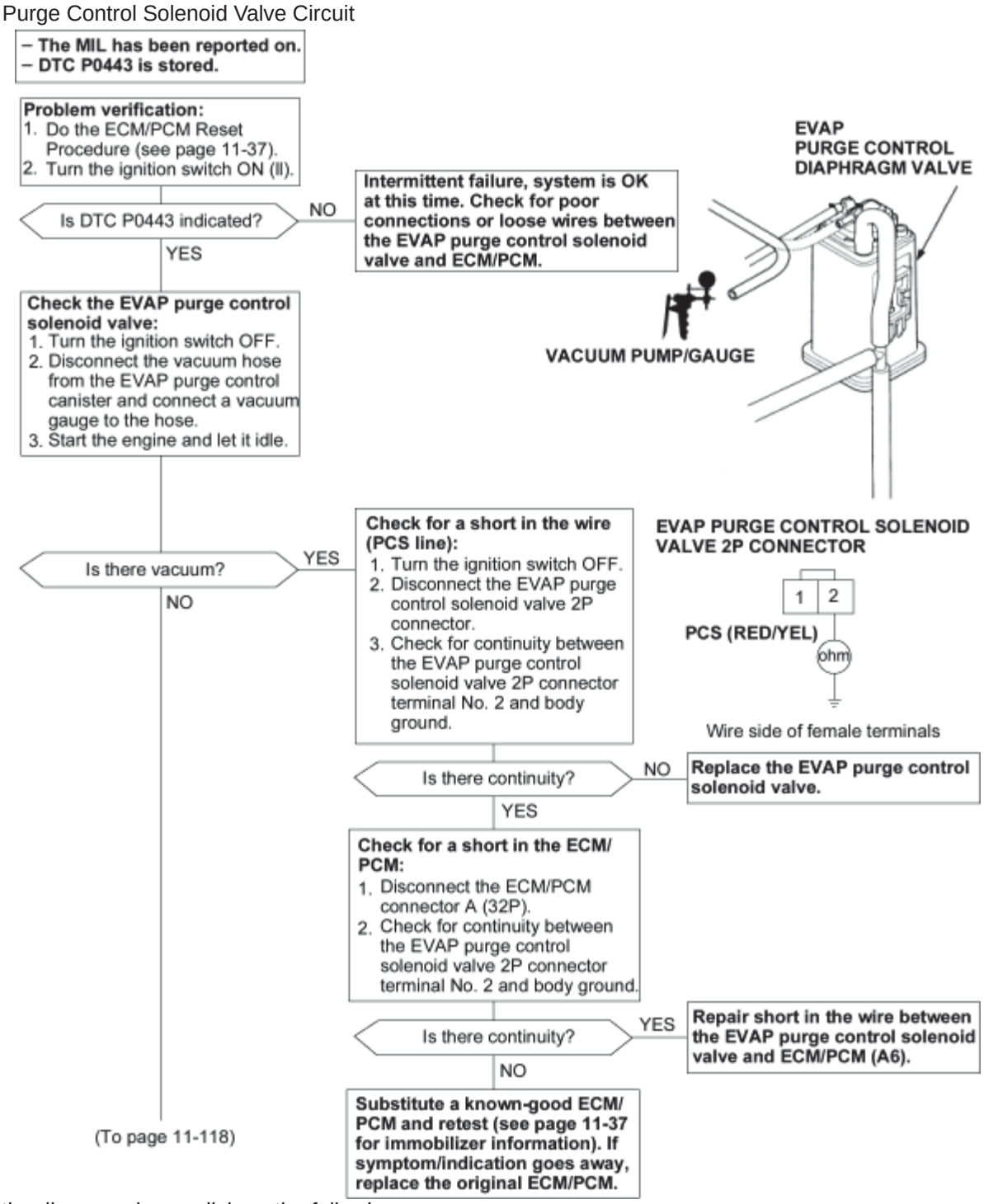
- TWC Deterioration
- Exhaust System Leakage

Troubleshooting Flowchart

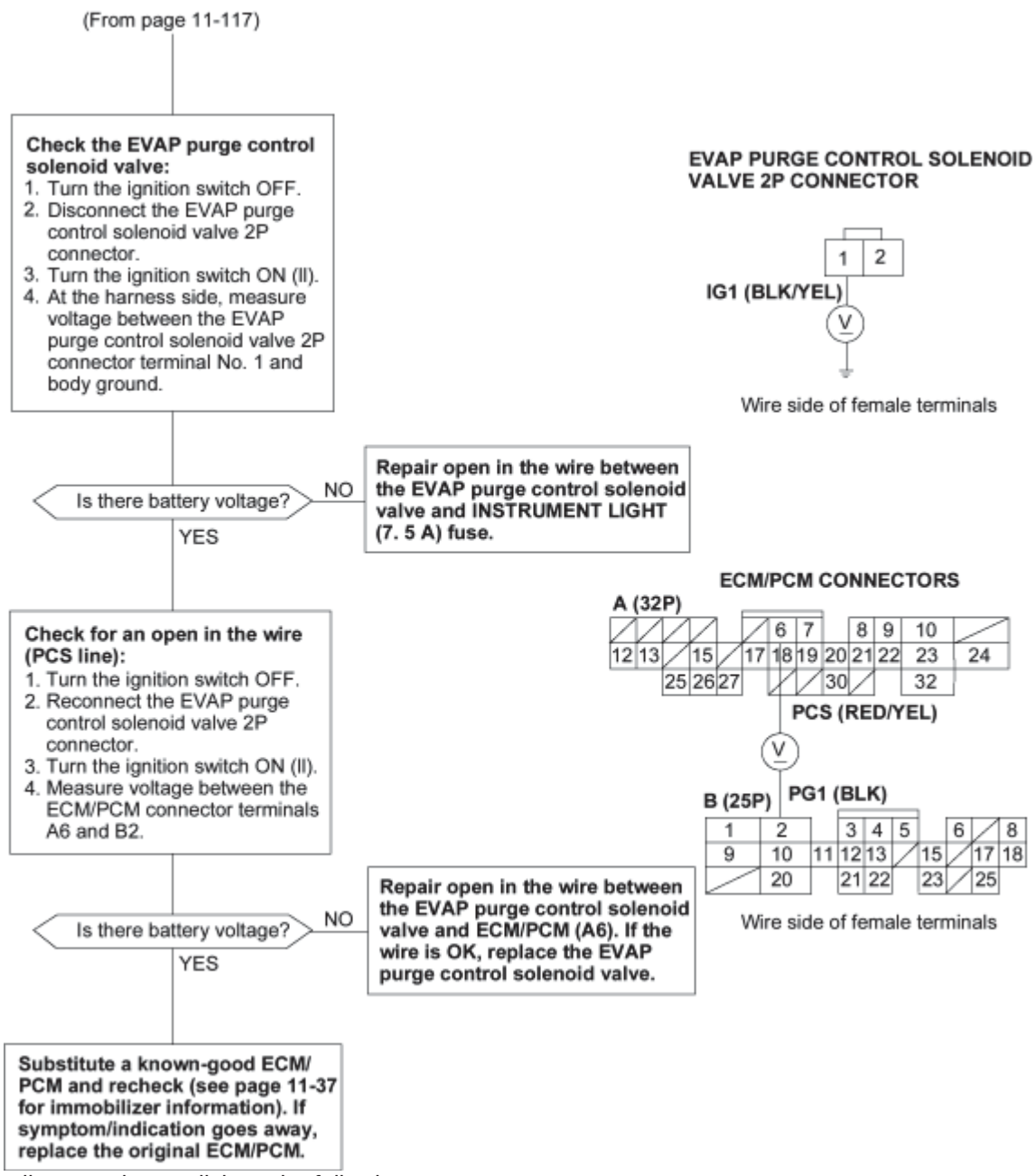


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

DTC P0443: Electrical Problem in EVAP Purge Control Solenoid Valve Circuit

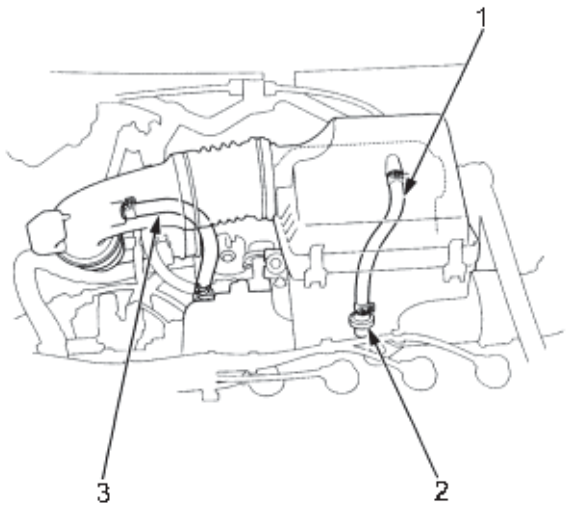


To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)



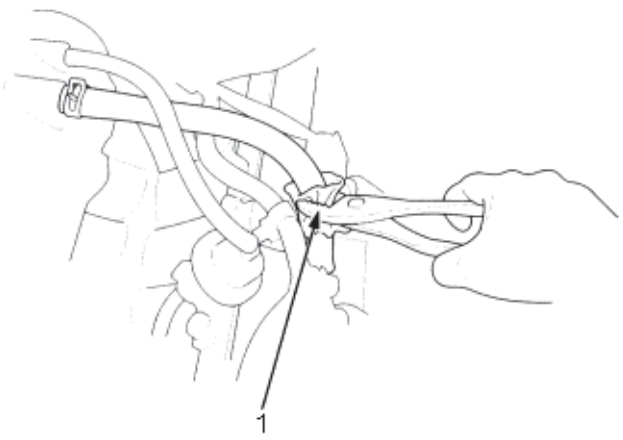
To go to the page referenced on the diagram above, click on the following:
(**See Page** 11-37)

1. Check the PCV hoses and connections for leaks and clogging.



1. PCV HOSE
2. PCV VALVE
3. BREATHER HOSE

2. At idle, make sure there is a clicking sound from the PCV valve when the hose between the PCV valve and intake manifold is lightly pinched with your fingers or pliers.
   If there is no clicking sound, check the PCV valve grommet for cracks or damage. If the grommet is OK, replace the PCV valve and recheck.



1. Gently pinch here.

Inspection of Evaporative Emission Controls

Check the vacuum when cold:
1. Disconnect the vacuum hose from the EVAP purge control canister and connect a vacuum gauge to the hose.
2. Start the engine and let it idle. NOTE: Engine coolant temperature must be below 68°C (154°F) with the scan tool.

Is there vacuum?

YES → **Inspect vacuum hose routing. If OK, replace the EVAP purge control solenoid valve.**

NO

Check the vacuum when hot:
1. Hold the engine at 3,000 rpm (min^{-1}) with no load (in neutral) until the radiator fan comes on, then let it idle for at least 2 minutes.
2. Check for vacuum at the vacuum hose.

Is there vacuum?

NO → **Inspect vacuum hose routing. If OK, replace the EVAP purge control solenoid valve.**

YES

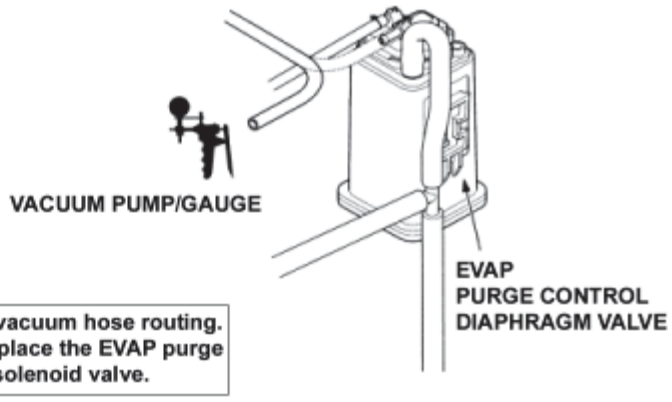
Check the EVAP control canister:
1. Turn the ignition switch OFF.
2. Reconnect the vacuum hose to the EVAP purge control canister.
3. Remove the fuel fill cap.
4. Connect a vacuum gauge to canister purge air hose.
5. Start the engine and let it idle for at least 2 minutes.

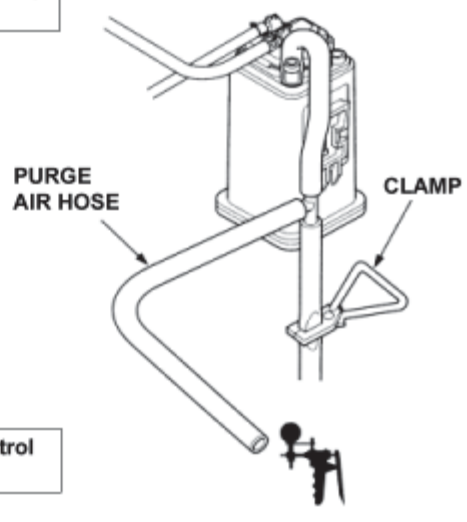
Is there vacuum?

NO → **Replace the EVAP control canister.**

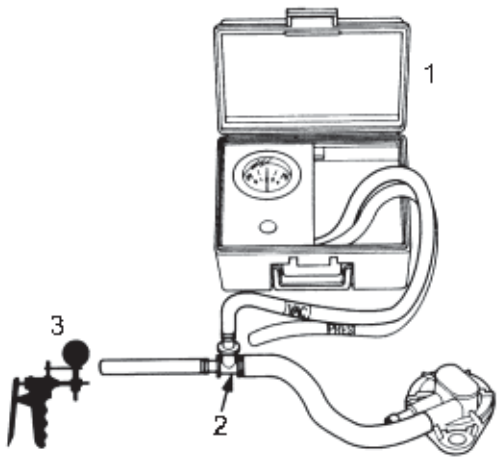
YES

See EVAP two way valve test to complete. Evaporative emission controls are OK.



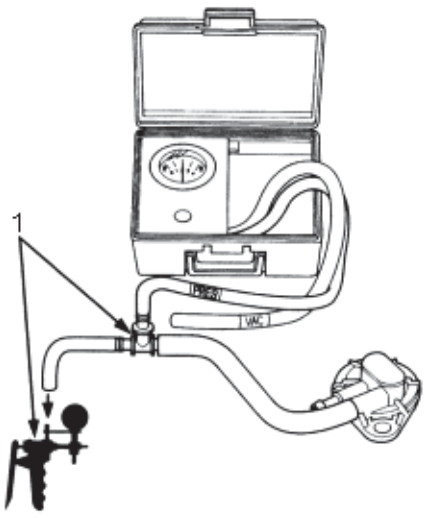


1. Remove the fuel fill cap.
2. Remove the vapour line from the two way valve on the fuel tank and connect to the T-fitting from the vacuum gauge and vacuum pump as shown.



1. VACUUM/PRESSURE GAUGE
2. T-FITTING
3. VACUUM PUMP/GAUGE

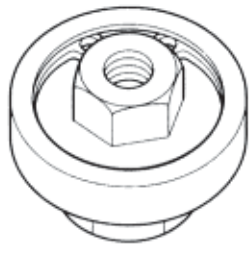
3. Apply vacuum slowly and continuously while watching the gauge.
   Vacuum should stabilise momentarily at 0.7 - 2.0 kPa (5 - 15mmHg, 0.2 - 0.6 in.Hg).
   - If vacuum stabilises (valve opens) below 0.7 kPa (5 mmHg, 0.2 in.Hg) or above 2.0 kPa (15 mmHg, 0.6 in.Hg), install a new valve and retest.
4. Move vacuum pump hose from vacuum to pressure fitting, and move vacuum gauge hose from vacuum to pressure side as shown.



1. PRESSURE SIDE

5. Slowly pressurise the vapour line while watching the gauge.
   Pressure should stabilise at 1.3 - 4.7 kPa (10 - 35 mmHg, 0.4 - 1.4 in.Hg).
   - If pressure momentarily stabilises (valve opens) at 1.3 - 4.7 kPa (10 - 35 mmHg, 0.4 - 1.4 in.Hg), the valve is OK.
   - If pressure stabilises below 1.3 kPa (10 mmHg, 0.4 in.Hg) or above 4.7 kPa (35 mmHg, 1.4 in.Hg), install a new valve and retest.

Ref No.	Tool Number	Description	Qty	Remark
(1)	07VAJ - 0040100	Fuel Pressure Gauge Attachment	1	
(2)	07406 - 0040002	Fuel Pressure Gauge Set	1	
(2)-1	07406 - 0040202	Fuel Pressure Hose Assembly	(1)	Component Tools



①

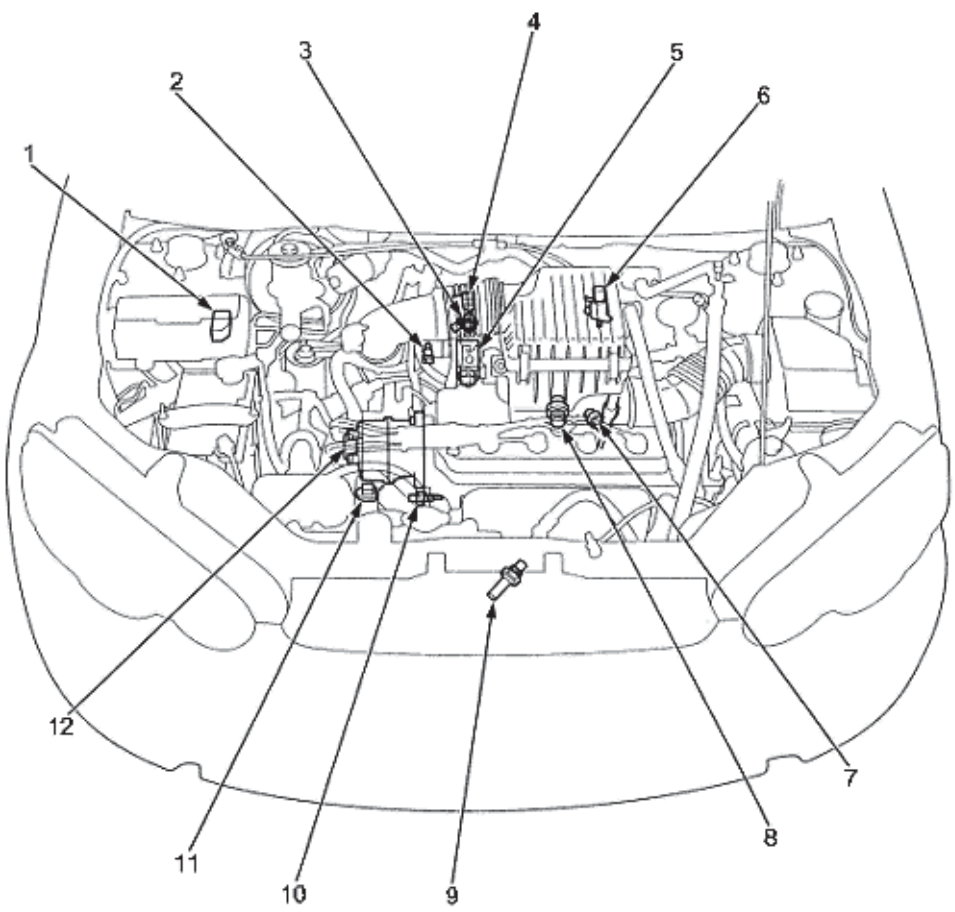


②

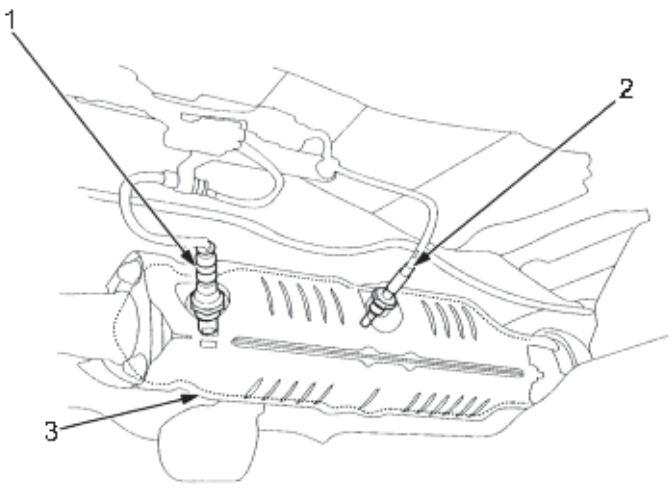


②-1

D16W5 engine:

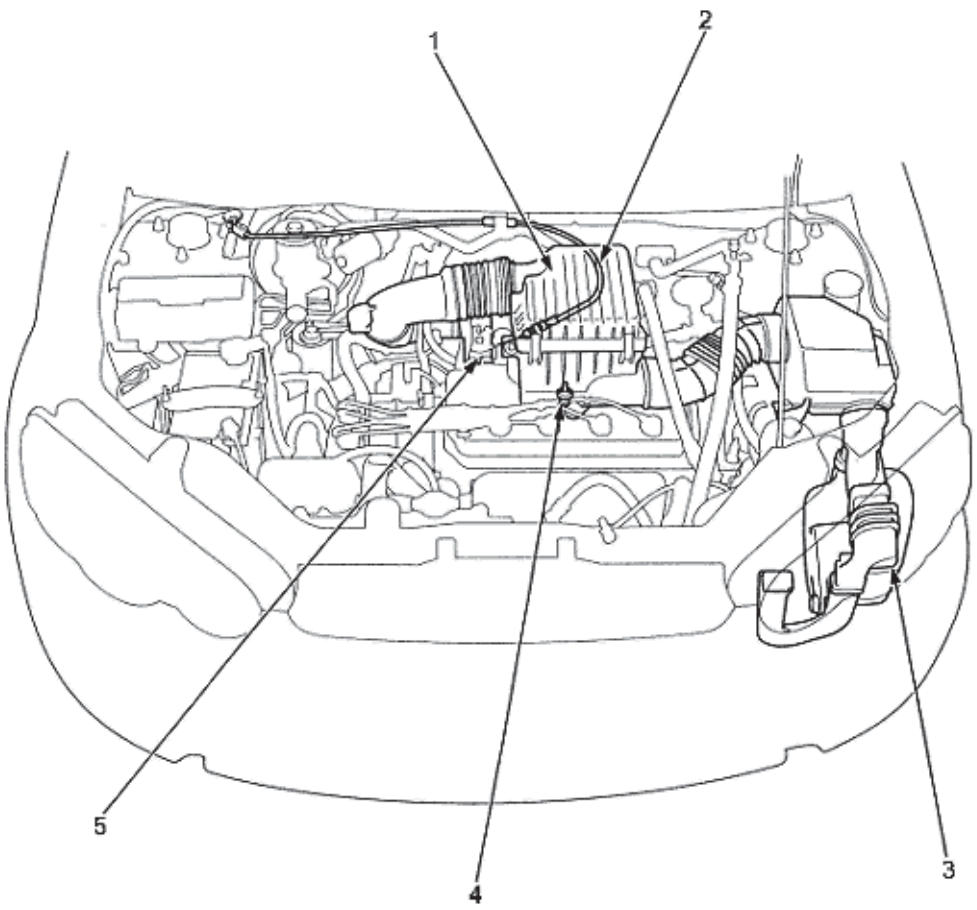


1. **ELECTRICAL LOAD DETECTOR (ELD)**
2. **INTAKE AIR TEMPERATURE (IAT) SENSOR**
3. **THROTTLE POSITION (TP) SENSOR**
4. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
5. **IDLE AIR CONTROL (IAC) VALVE**
6. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
   Description, (**See Page** 11-152)
7. **POWER STEERING PRESSURE (PSP) SWITCH**
8. **KNOCK SENSOR (KS) (KQ model)**
   Troubleshooting, (**See Page** 11-143)
9. **PRIMARY HEATED OXYGEN SENSOR (PRIMARY H0$_2$S)**
10. **ENGINE/COOLANT TEMPERATURE (ECT) SENSOR**
11. **VEHICLE SPEED SENSOR (VSS)**
12. **TOP DEAD CENTRE/CRANKSHAFT POSITION/CYLINDER POSITION (CKP/TDC/CYP) SENSOR**
    (Is built into the distributor)



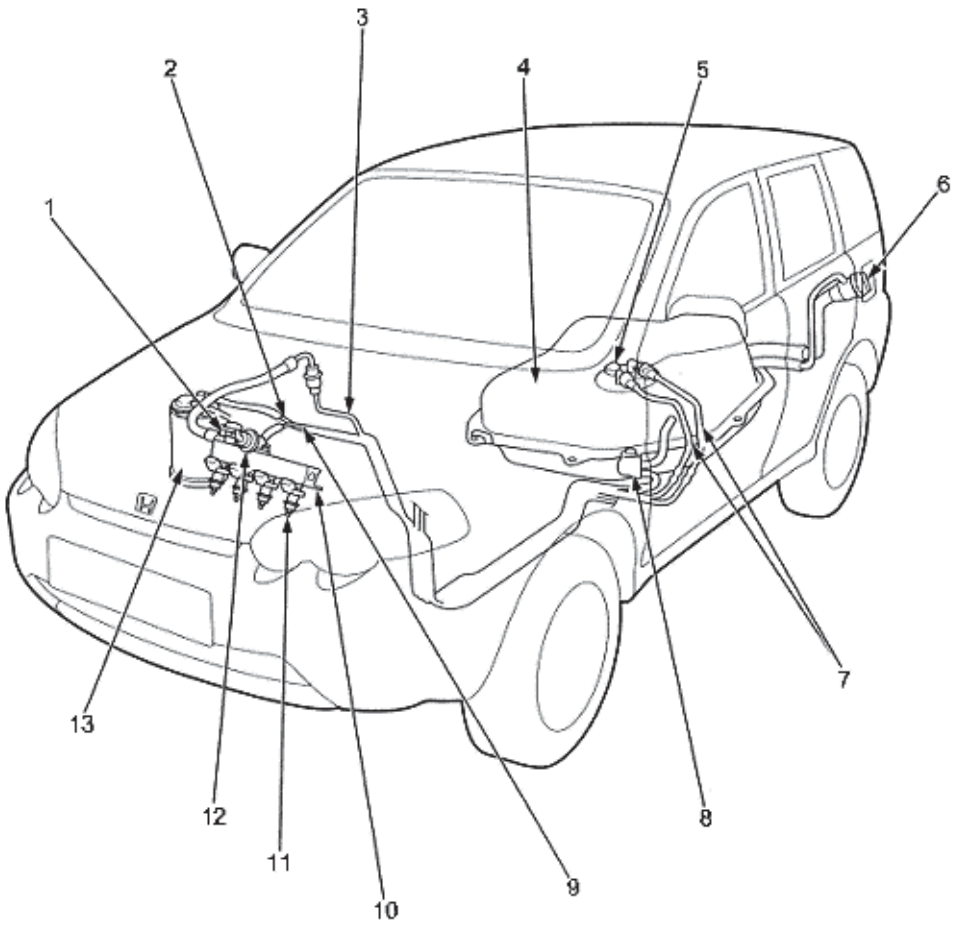
1. **SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO$_2$S)**
2. **EXHAUST GAS TEMPERATURE (EGT) SENSOR**
3. **THREE WAY CATALYTIC CONVERTER (TWC)**

D16W5 engine:



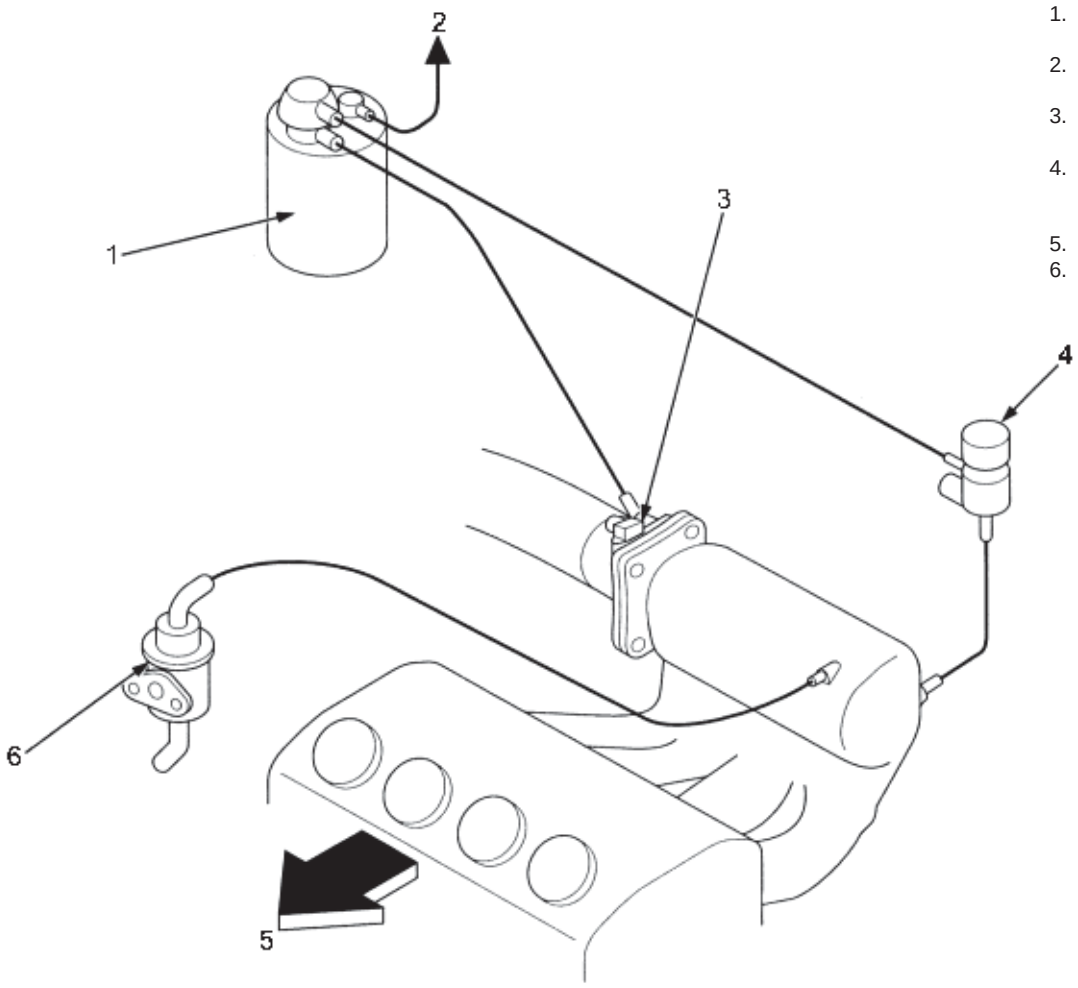
1. **AIR CLEANER (ACL)**
2. **THROTTLE CABLE**
   Inspection/Adjustment, (**See Page** 11-148)
   Installation, (**See Page** 11-148)
3. **RESONATOR**
4. **POSITIVE CRANKCASE VENTILATION (PCV) VALVE**
   Inspection, (**See Page** 11-151)
5. **THROTTLE BODY (TB)**
   Inspection, (**See Page** 11-149)
   Disassembly, (**See Page** 11-150)

D16W5 engine:



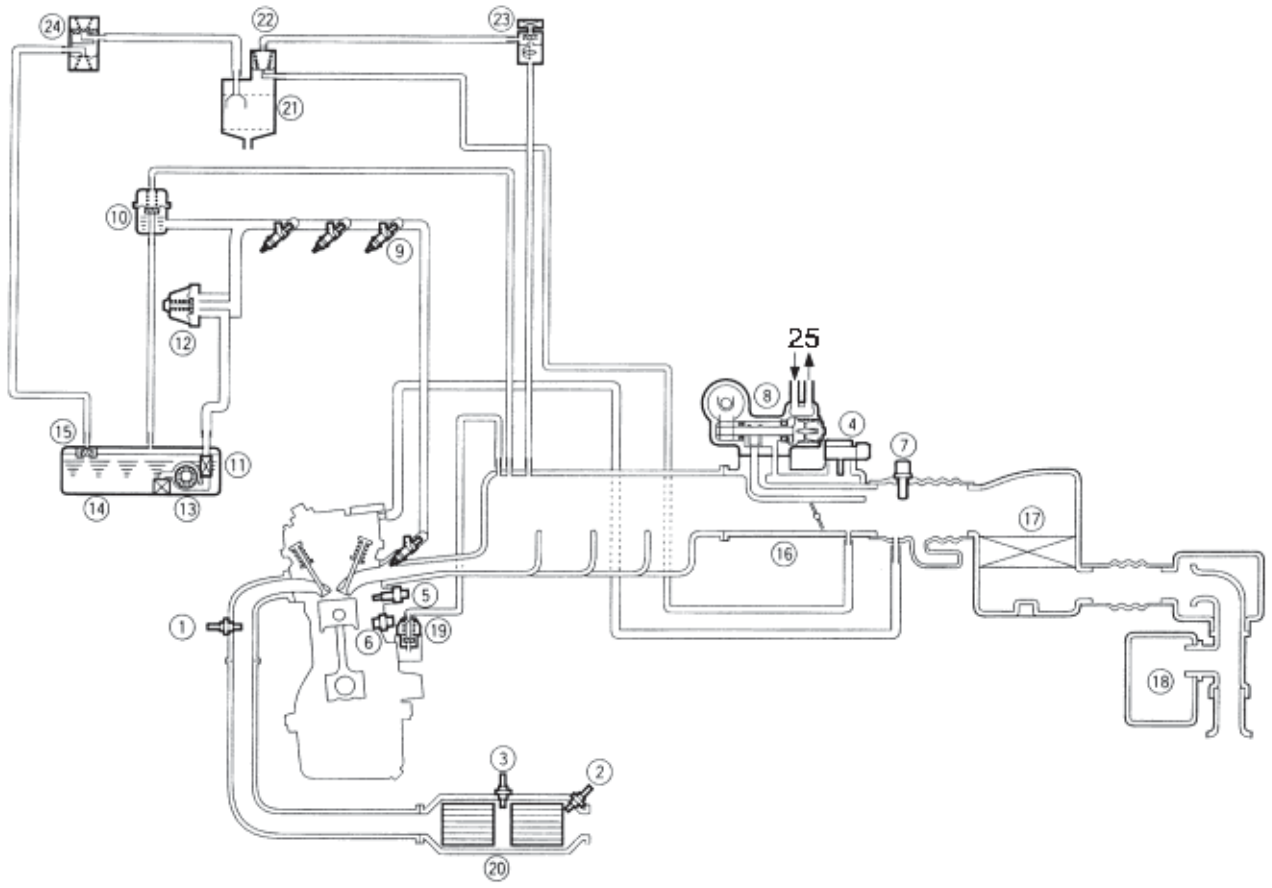
1. **FUEL PULSATION DAMPER**
2. **FUEL VAPOUR PIPE**
3. **FUEL FEED PIPE**
4. **FUEL TANK**
5. **FUEL PUMP/FUEL FILTER** Replacement, (**See Page** 11-147)/ **FUEL GAUGE SENDING UNIT**
6. **FUEL FILL CAP**
7. **FUEL TUBE/QUICK-CONNECT FITTINGS**
8. **EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
9. **FUEL RETURN PIPE**
10. **FUEL RAIL**
11. **FUEL INJECTORS**
12. **FUEL PRESSURE REGULATOR**
13. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**

D16W5 engine:



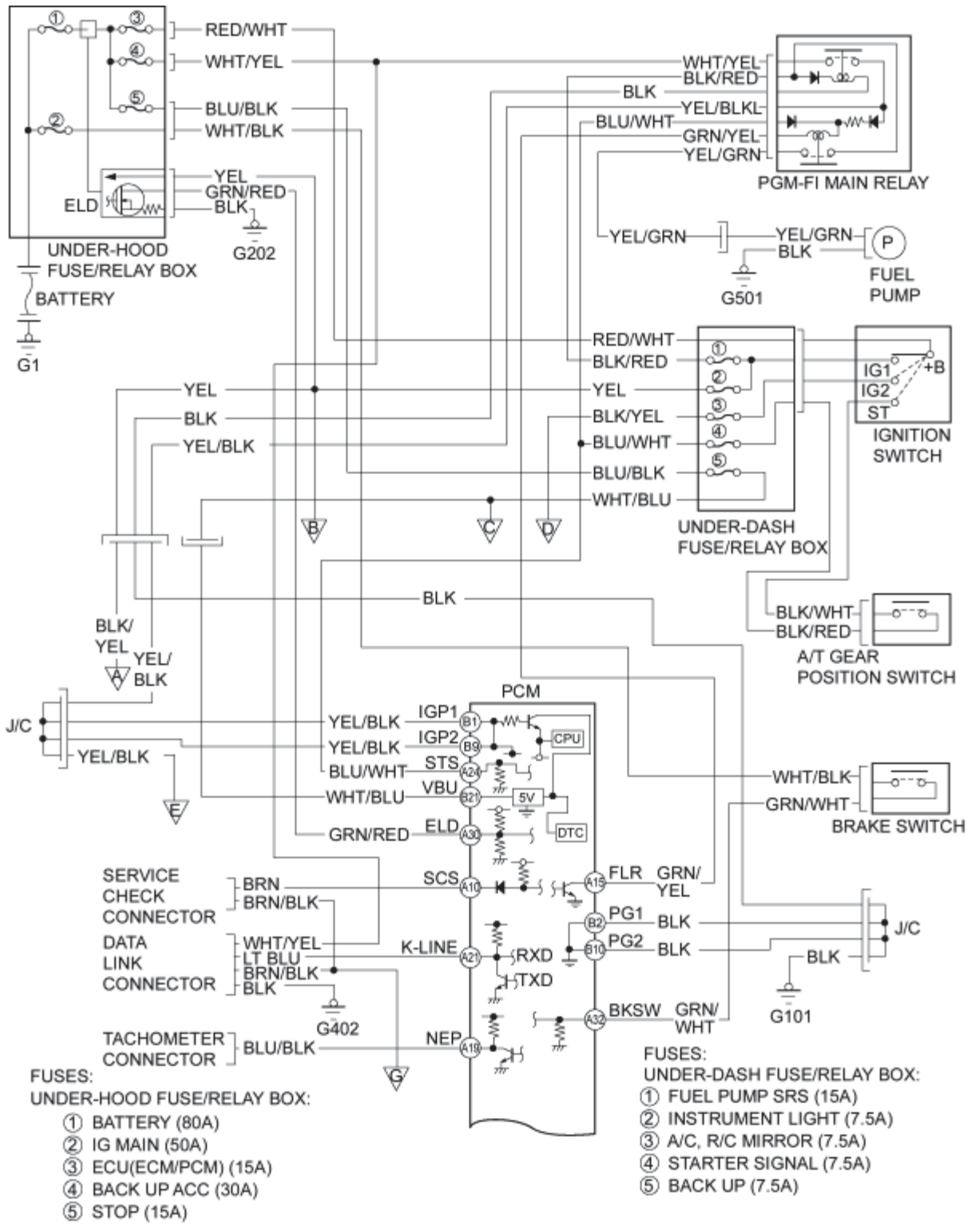
1. **EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER**
2. **To EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE**
3. **MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR**
4. **EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE**
5. **FRONT OF VEHICLE**
6. **FUEL PRESSURE REGULATOR**

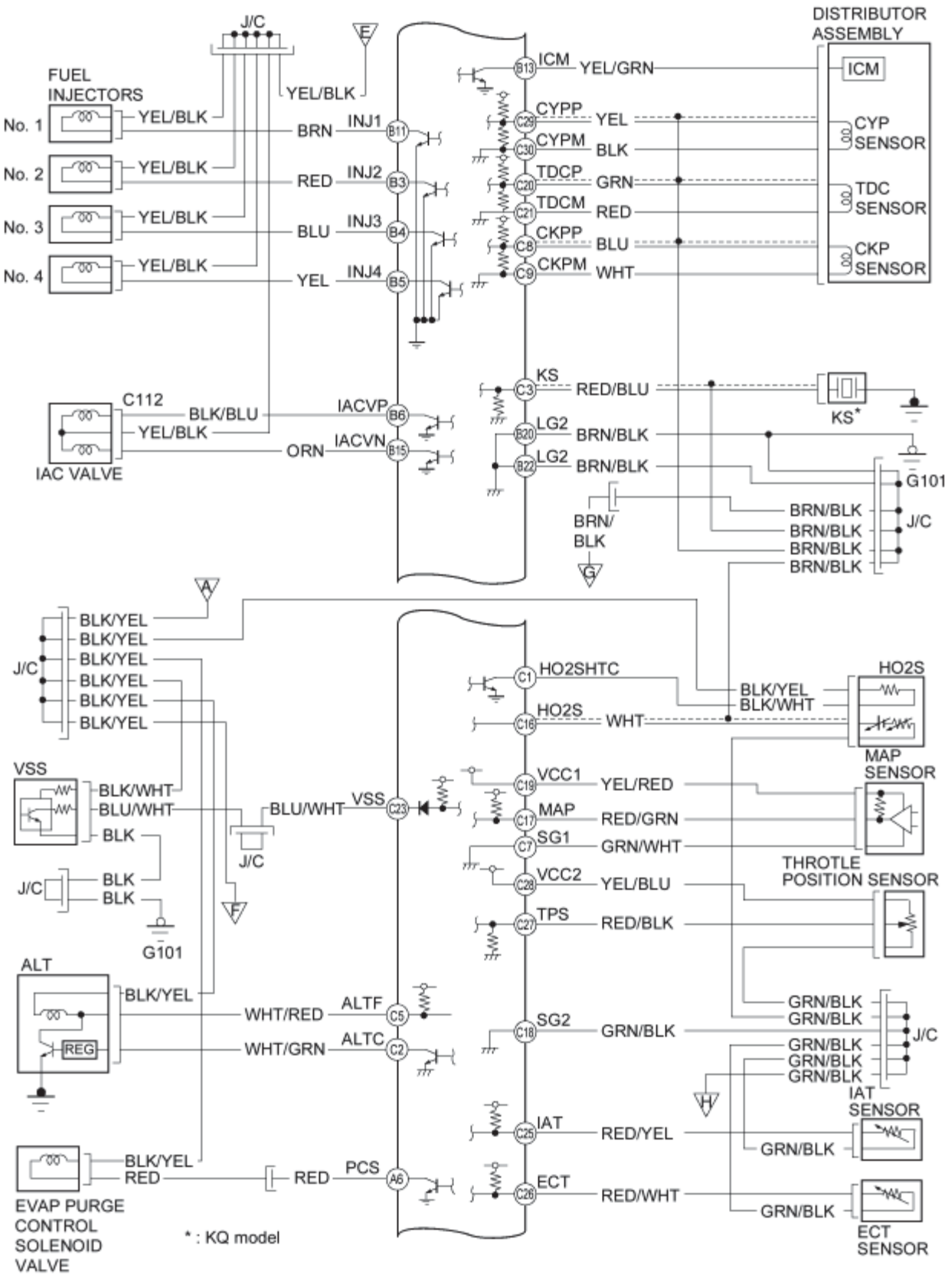
D16W5 engine:

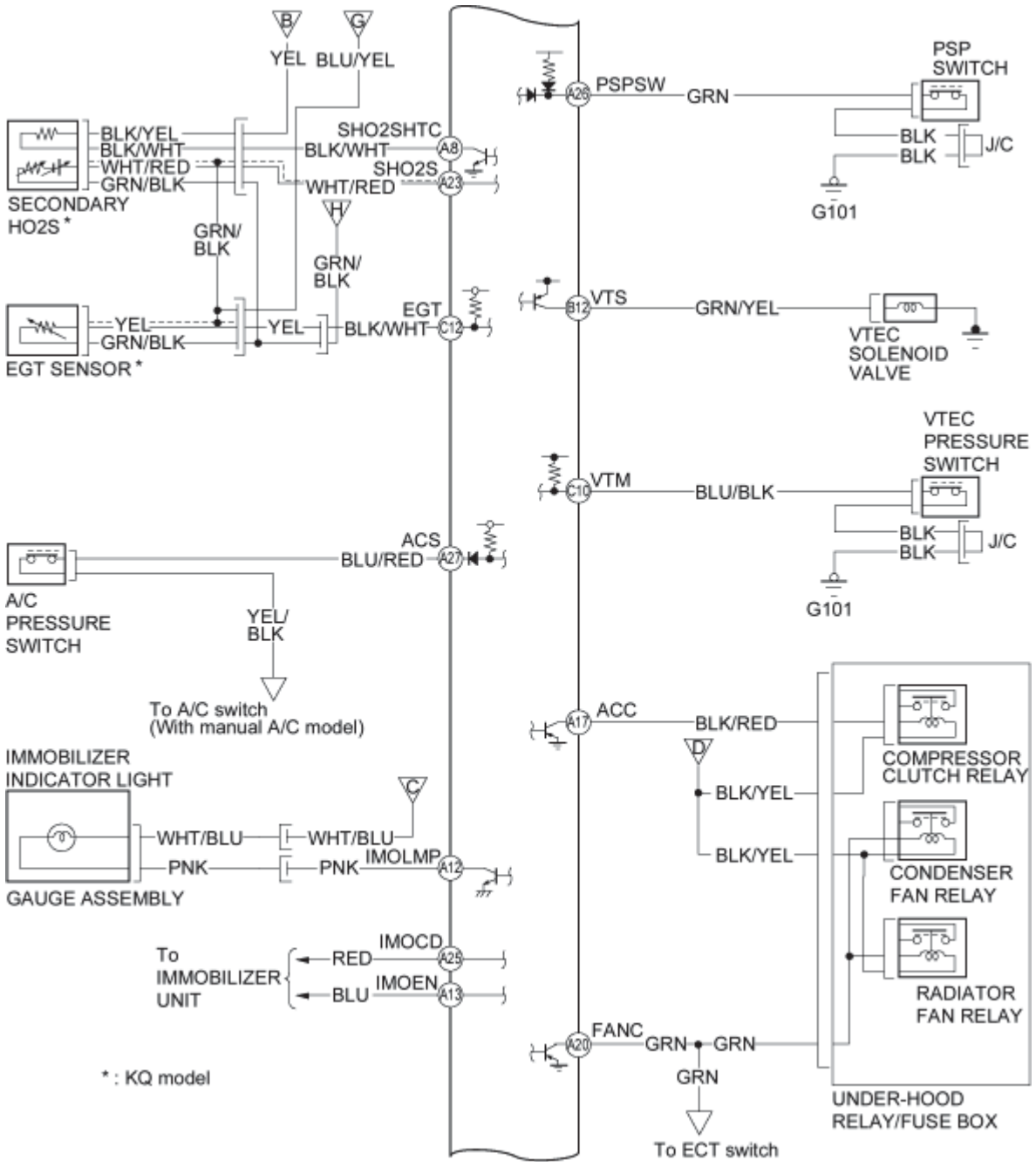


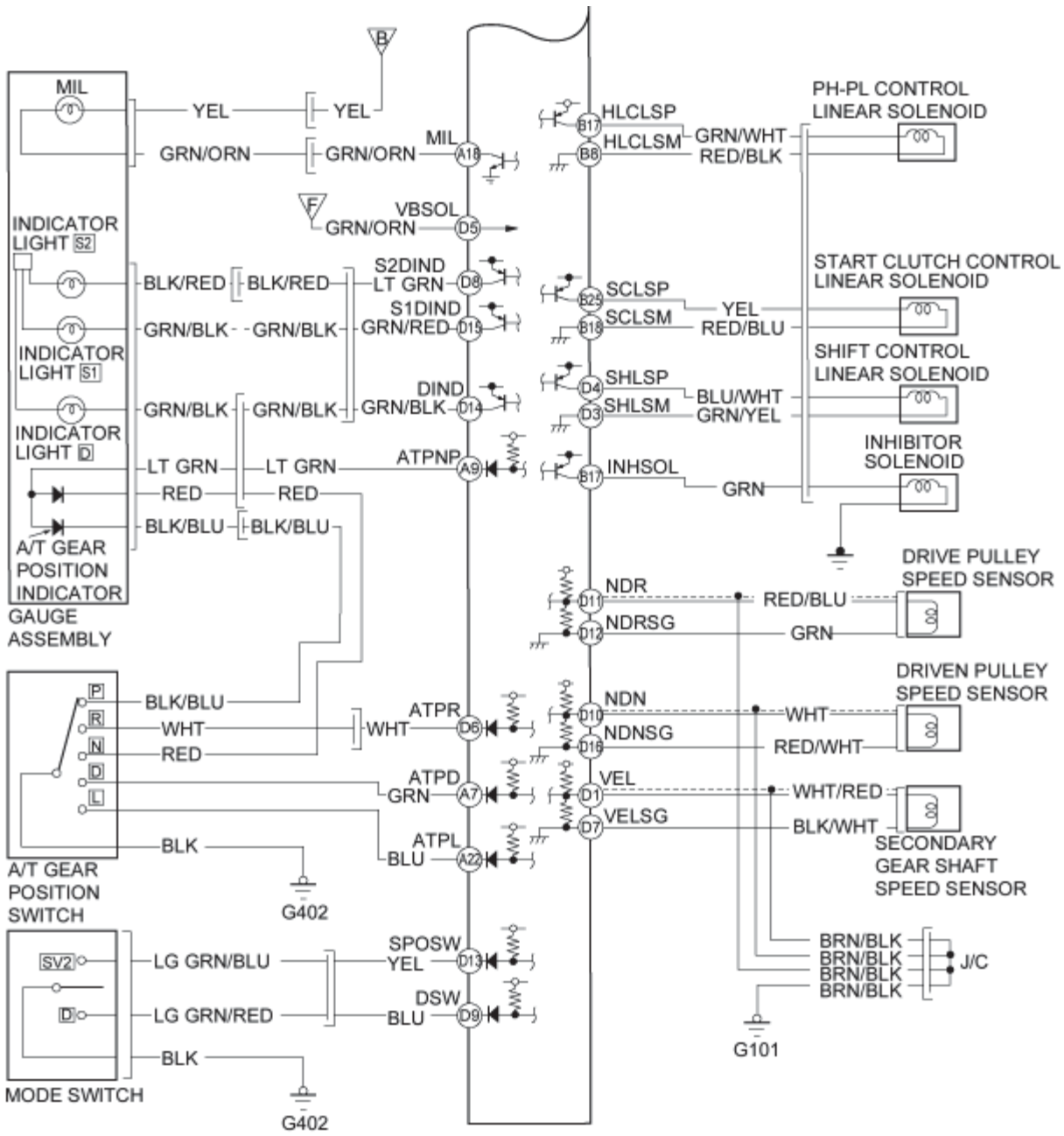
1. PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO2S)
2. SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO2S)*
3. EXHAUST GAS TEMPERATURE (EGT) SENSOR*
4. MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR
5. ENGINE COOLANT TEMPERATURE (ECT) SENSOR
6. KNOCK SENSOR (KS)*
7. INTAKE AIR TEMPERATURE (IAT) SENSOR
8. IDLE AIR CONTROL (IAC) VALVE
9. FUEL INJECTOR
10. FUEL PRESSURE REGULATOR
11. FUEL FILTER
12. FUEL PULSATION DAMPER
13. FUEL PUMP (FP)
14. FUEL TANK
15. FUEL TANK EVAPORATIVE EMISSION (EVAP) VALVE
16. THROTTLE BODY (TB)
17. AIR CLEANER
18. RESONATOR
19. POSITIVE CRANKCASE VENTILATION (PCV) VALVE
20. THREE WAY CATALYTIC CONVERTER
21. EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER
22. EVAPORATIVE EMISSION (EVAP) PURGE CONTROL DIAPHRAGM VALVE
23. EVAPORATIVE EMISSION (EVAP) PURGE CONTROL SOLENOID VALVE
24. EVAPORATIVE EMISSION (EVAP) TWO WAY VALVE
25. ENGINE COOLANT

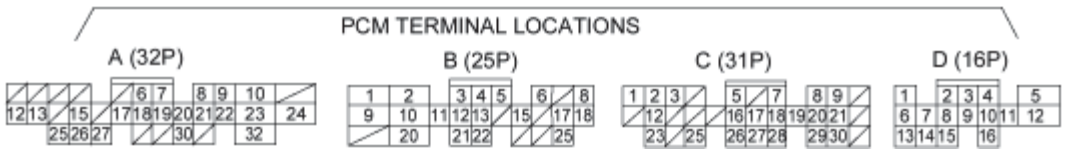
*: KQ model only


RED/WHT
WHT/YEL
BLU/BLK
WHT/BLK
YEL
GRN/RED
BLK
ELD
UNDER-HOOD
FUSE/RELAY BOX
G202
BATTERY
G1
WHT/YEL
BLK/RED
BLK
YEL/BLKL
BLU/WHT
GRN/YEL
YEL/GRN
PGM-FI MAIN RELAY
YEL/GRN
YEL/GRN
BLK
G501
FUEL
PUMP
YEL
BLK
YEL/BLK
RED/WHT
BLK/RED
YEL
BLK/YEL
BLU/WHT
BLU/BLK
WHT/BLU
IG1
IG2
ST
+B
IGNITION
SWITCH
UNDER-DASH
FUSE/RELAY BOX
BLK
BLK/
YEL
YEL/
BLK
BLK/WHT
BLK/RED
A/T GEAR
POSITION SWITCH
PCM
J/C
YEL/BLK
YEL/BLK
YEL/BLK
IGP1
IGP2
STS
VBU
ELD
CPU
5V
DTC
WHT/BLK
GRN/WHT
BRAKE SWITCH
GRN/RED
WHT/BLU
SERVICE
CHECK
CONNECTOR
BRN
BRN/BLK
SCS
FLR
GRN/
YEL
PG1
PG2
BLK
BLK
J/C
DATA
LINK
CONNECTOR
WHT/YEL
LT BLU
BRN/BLK
BLK
K-LINE
RXD
TXD
G402
G101
BKSW
GRN/
WHT
TACHOMETER
CONNECTOR
BLU/BLK
NEP
FUSES:
UNDER-HOOD FUSE/RELAY BOX:
① BATTERY (80A)
② IG MAIN (50A)
③ ECU(ECM/PCM) (15A)
④ BACK UP ACC (30A)
⑤ STOP (15A)
FUSES:
UNDER-DASH FUSE/RELAY BOX:
① FUEL PUMP SRS (15A)
② INSTRUMENT LIGHT (7.5A)
③ A/C, R/C MIRROR (7.5A)
④ STARTER SIGNAL (7.5A)
⑤ BACK UP (7.5A)


J/C
E
DISTRIBUTOR ASSEMBLY
FUEL INJECTORS
No. 1
No. 2
No. 3
No. 4
YEL/BLK
BRN
RED
BLU
YEL
INJ1
INJ2
INJ3
INJ4
B11
B3
B4
B5
ICM
YEL/GRN
B13
CYPP
CYPM
TDCP
TDCM
CKPP
CKPM
C29
C30
C20
C21
C8
C9
YEL
BLK
GRN
RED
BLU
WHT
ICM
CYP SENSOR
TDC SENSOR
CKP SENSOR
C112
IAC VALVE
BLK/BLU
YEL/BLK
ORN
IACVP
IACVN
B6
B15
KS
C3
RED/BLU
KS*
LG2
B20
B22
BRN/BLK
G101
BRN/BLK
BRN/BLK
BRN/BLK
BRN/BLK
J/C
A
BLK/YEL
J/C
VSS
BLK/WHT
BLU/WHT
BLK
BLU/WHT
VSS
C23
J/C
F
HO2SHTC
C1
HO2S
C16
WHT
BLK/YEL
BLK/WHT
HO2S
MAP SENSOR
VCC1
MAP
SG1
VCC2
TPS
C19
C17
C7
C28
C27
YEL/RED
RED/GRN
GRN/WHT
YEL/BLU
RED/BLK
THROTLE POSITION SENSOR
ALT
REG
BLK/YEL
WHT/RED
WHT/GRN
ALTF
ALTC
C5
C2
SG2
C18
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
GRN/BLK
J/C
H
IAT
C25
RED/YEL
IAT SENSOR
GRN/BLK
ECT
C26
RED/WHT
GRN/BLK
ECT SENSOR
EVAP PURGE CONTROL SOLENOID VALVE
RED
PCS
A6
* : KQ model


B
YEL
G
BLU/YEL
PSP SWITCH
A26
PSPSW
GRN
BLK
BLK
J/C
G101
BLK/YEL
BLK/WHT
WHT/RED
GRN/BLK
SECONDARY HO2S *
SHO2SHTC
A8
BLK/WHT
SHO2S
A23
WHT/RED
H
GRN/BLK
GRN/BLK
EGT
YEL
GRN/BLK
YEL
BLK/WHT
C12
EGT SENSOR *
B12
VTS
GRN/YEL
VTEC SOLENOID VALVE
VTEC PRESSURE SWITCH
C10
VTM
BLU/BLK
BLK
BLK
J/C
G101
ACS
BLU/RED
A27
A/C PRESSURE SWITCH
YEL/BLK
To A/C switch
(With manual A/C model)
IMMOBILIZER INDICATOR LIGHT
C
WHT/BLU
WHT/BLU
PNK
PNK
IMOLMP
A12
GAUGE ASSEMBLY
IMOCD
To IMMOBILIZER UNIT
RED
A25
BLU
IMOEN
A13
* : KQ model
A17
ACC
BLK/RED
D
BLK/YEL
BLK/YEL
COMPRESSOR CLUTCH RELAY
CONDENSER FAN RELAY
RADIATOR FAN RELAY
A20
FANC
GRN
GRN
GRN
To ECT switch
UNDER-HOOD RELAY/FUSE BOX


MIL
YEL
YEL
GRN/ORN
GRN/ORN
MIL
A19
B
F
VBSOL
GRN/ORN
D5
INDICATOR LIGHT S2
BLK/RED
BLK/RED
S2DIND
LT GRN
D8
GRN/BLK
GRN/BLK
S1DIND
GRN/RED
D15
INDICATOR LIGHT S1
GRN/BLK
GRN/BLK
DIND
GRN/BLK
D14
INDICATOR LIGHT D
LT GRN
LT GRN
ATPNP
A9
RED
RED
BLK/BLU
BLK/BLU
A/T GEAR POSITION INDICATOR
GAUGE ASSEMBLY
P
R
N
D
L
BLK/BLU
WHT
RED
BLK
ATPR
WHT
D6
ATPD
GRN
A7
ATPL
BLU
A22
A/T GEAR POSITION SWITCH
G402
SV2
D
LG GRN/BLU
LG GRN/RED
BLK
SPOSW
YEL
D13
DSW
BLU
D9
MODE SWITCH
G402
HLCLSP
B17
HLCLSM
B8
GRN/WHT
RED/BLK
PH-PL CONTROL LINEAR SOLENOID
SCLSP
B25
SCLSM
B18
YEL
RED/BLU
START CLUTCH CONTROL LINEAR SOLENOID
SHLSP
D4
SHLSM
D3
BLU/WHT
GRN/YEL
SHIFT CONTROL LINEAR SOLENOID
INHSOL
B17
GRN
INHIBITOR SOLENOID
NDR
D11
NDRSG
D12
RED/BLU
GRN
DRIVE PULLEY SPEED SENSOR
NDN
D10
NDNSG
D16
WHT
RED/WHT
DRIVEN PULLEY SPEED SENSOR
VEL
D1
VELSG
D7
WHT/RED
BLK/WHT
SECONDARY GEAR SHAFT SPEED SENSOR
BRN/BLK
BRN/BLK
BRN/BLK
BRN/BLK
J/C
G101


PCM TERMINAL LOCATIONS
A (32P)
B (25P)
C (31P)
D (16P)

NOTE: Across each row in the chart, the systems that could be sources of a symptom are ranked in the order they should be inspected starting with (**1**). Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next most likely system (**2**), etc.

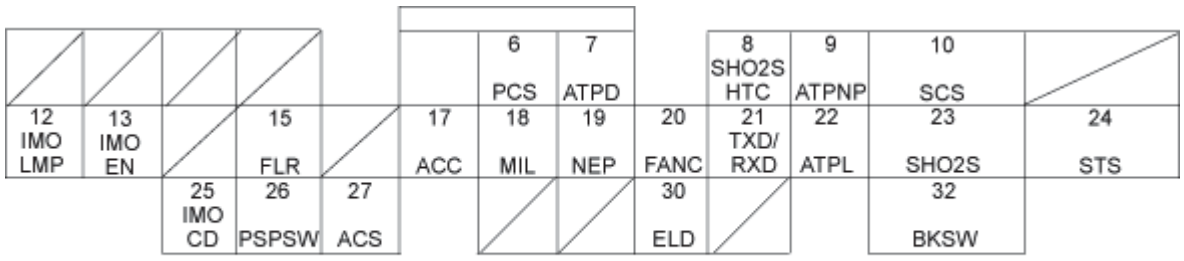
PAGE / SYSTEM / SYMPTOM		PGM-FI							
		POWERTRAIN CONTROL MODULE	HEATED OXYGEN SENSOR	MANIFOLD ABSOLUTE PRESSURE SENSOR	TOP DEAD CENTER/ CRANKSHAFT POSITION/ CYLINDER POSITION SENSOR	ENGINE COOLANT TEMPERATURE SENSOR	THROTTLE POSITION SENSOR	INTAKE AIR TEMPERATURE SENSOR	VEHICLE SPEED SENSOR
MALFUNCTION INDICATOR LAMP (MIL) TURNS ON		or							
MALFUNCTION INDICATOR LAMP (MIL) BLINKS		0 or *	1 or 41 or 53 or 55 *	3	4 or 8 or 9	6	7	10	17
ENGINE WON'T START		1			3				
DIFFICULT TO START ENGINE WHEN COLD		BU		3	3	1			
IRREGULAR IDLING	WHEN COLD FAST IDLE OUT OF SPEC	BU				3			
	ROUGH IDLE	BU		3					
	WHEN WARM ENGINE SPEED TOO HIGH	BU				3			
	WHEN WARM ENGINE SPEED TOO LOW	BU							
FREQUENT STALLING	WHILE WARMING UP	BU				3			
	AFTER WARMING UP	BU							
POOR PERFORM-ANCE	MISFIRE OR ROUGH RUNNING	BU		2	3				
	FAILS EMISSION TEST	BU	3	2					
	LOSS OF POWER	BU		3			2		

* If codes other than those listed above are indicated, count the number of blinks again. If the MIL is in fact blinking these codes, replace the PCM.

(BU) If the MIL is on while the engine is running, connect the SCS short connector to the service check connector. If no code is displayed (MIL stays on steady), the back-up system is in operation.
Substitute a known-good PCM and recheck. If the indication goes away, replace the original PCM.
*: KQ model

PGM-FI			IDLE CONTROL		FUEL SUPPLY			
VTEC SOLENOID VALVE	KNOCK SENSOR*	EXHAUST GAS TEMPERATURE SENSOR	IDLE AIR CONTROL VALVE	OTHER IDLE CONTROLS	FUEL INJECTOR	OTHER FUEL SUPPLY	INTAKE AIR	EMISSION CONTROL
section 6	11 - 143	——	——	——	——	——	——	——
								
								
						②		
						②		
			①	②				
			①	②	②			
			①	②				
			①	②	②			
			①	②		③		
			②			①		
					①			
								①
					③	①	③	③

PCM Connector A (32 P)



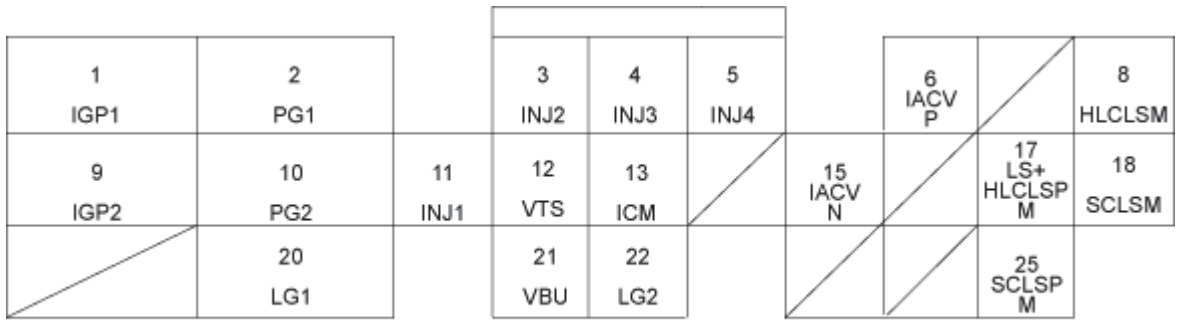
Wire side of female terminals

NOTE: Standard battery voltage is 12 V

Terminal number	Wire colour	Terminal name	Description	Signal
6	RED	PCS (EVAP PURGE CONTROL SOLENOID VALVE)	Drives EVAP purge control solenoid valve.	With engine running, engine coolant below 74°C (165°F): 0 V With engine running, engine coolant above 74°C (165°F): battery voltage
7	GRN	ATPD (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In D position: 0 V In any other position: about 5 V
8*	BLK/WHT	SHO2SHTC (SECONDARY HEATED OXYGEN SENSOR HEATER CONTROL)	Drives secondary heated oxygen sensor heater.	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled.
9	LT GRN	ATPNP (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In N or P position: 0 V In any other position: battery voltage
10	BRN	SCS (SERVICE CHECK SIGNAL)	Detects service check connector signal (the signal causing a DTC indication)	With the terminal connected: 0 V With the terminal disconnected: about 5 V or battery voltage
12	PNK	IMOLMP (IMMOBILISER INDICATOR LIGHT)	Drives immobiliser indicator light.	With immobiliser indicator light turned ON: 0 V With immobiliser indicator light turned OFF: battery voltage
13	BLU	IMOEN (IMMOBILISER ENABLE SIGNAL)	Sends immobiliser enable signal.	
15	GRN/YEL	FLR (FUEL PUMP RELAY)	0 V for two seconds after turning ignition switch ON (II), then battery voltage	0 V for two seconds after turning ignition switch ON (II), then battery voltage
17	BLK/RED	ACC (A/C CLUTCH RELAY)	Drives A/C clutch relay.	With compressor ON: 0 V With compressor OFF: battery voltage
18	GRN/ORN	MIL (MALFUNCTION INDICATOR LIGHT)	Drives MIL.	With MIL turned ON: 0 V With MIL turned OFF: battery voltage
19	BLU/BLK	NEP (ENGINE SPEED PULSE)	Outputs engine speed pulse.	With engine running: pulses
20	GRN	FANC (RADIATOR FAN CONTROL)	Drives radiator fan relay.	With radiator fan running: 0 V With radiator fan stopped: battery voltage
21	LT BLU	TXD/RXD (DLC)	Sends and receives Honda PGM-Tester signal.	With ignition switch ON (II): about 5 V
22	BLU	ATPL (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In L position: 0 V In any other position: battery voltage
23*	WHT/RED	SHO^{2}S (SECONDARY HEATED OXYGEN SENSOR, SENSOR 2)	Detects secondary heated oxygen sensor (sensor 2) signal.	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
24	BLU/WHT	STS (STARTER SWITCH SIGNAL)	Detects starter switch signal.	With starter switch ON (III): battery voltage With starter switch OFF: 0 V
25	RED	IMOCD (IMMOBILISER CODE)	Detects immobiliser signal.	
26	GRN	PSPSW (P/S PRESSURE SWITCH SIGNAL)	Detects PSP switch signal.	At idle with steering wheel in straight ahead position: 0 V At idle with steering wheel at full lock: battery voltage
27	BLU/RED	ACS (A/C SWITCH SIGNAL	Detects A/C switch signal.	With A/C switch ON: 0 V With A/C switch OFF: battery voltage
30	GRN/RED	ELD	Detects ELD signal.	With parking lights turned on at idle: about 2.5 - 3.5 V With low beam headlights turned on at idle: about 1.5 - 2.5 V
32	GRN/WHT	BKSW (BRAKE SWITCH)	Detects brake switch signal.	With brake pedal released: 0 V With brake pedal depressed: battery voltage

*: KQ model

PCM Connector B (25 P)

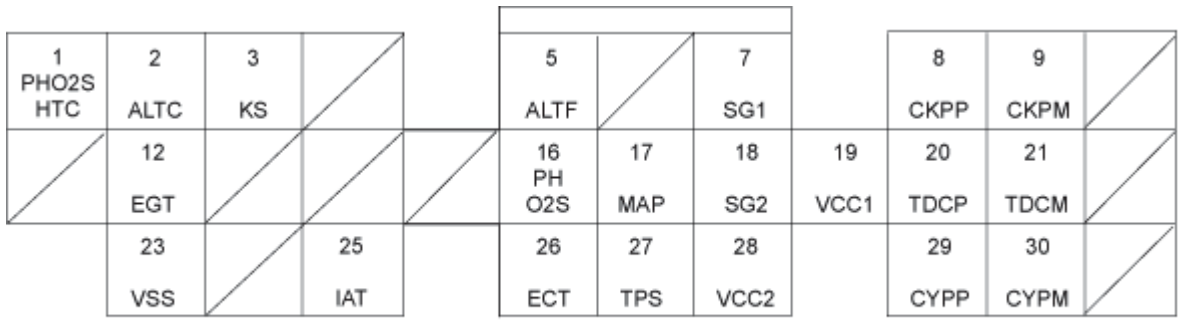


Wire side of female terminals

NOTE: Standard battery voltage is 12 V

Terminal number	Wire colour	Terminal name	Description	Signal
1	YEL/BLK	IGP1 (POWER SOURCE)	Power source for the PCM control circuit.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
2	BLK	PG1 (POWER GROUND)	Ground for the PCM control circuit.	Less than 1.0 V at all times
3	RED	INJ2 (No. 2 FUEL INJECTOR)	Drives No. 2 fuel injector.	With engine running: duty controlled
4	BLU	INJ3 (No. 3 FUEL INJECTOR)	Drives No. 3 fuel injector.	With engine running: duty controlled
5	YEL	INJ4 (No. 4 FUEL INJECTOR)	Drives No. 4 fuel injector.	With engine running: duty controlled
6	BLK/BLU	IACVP (IDLE AIR CONTROL VALVE POSITIVE SIDE)	Drives IAC valve (positive side).	With engine running: duty controlled
8	RED/BLK	HLCLSM (PH-PL CONTROL LINEAR SOLENOID M SIDE)	PH-PL control linear solenoid power supply negative electrode	With ignition switch ON (II): duty controlled
9	YEL/BLK	IGP2 (POWER SOURCE)	Power source for the PCM control circuit.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
10	BLK	PG2 (POWER GROUND)	Ground for the PCM control circuit.	Less than 1.0 V at all times
11	BRN	INJ1 (No. 1 FUEL INJECTOR)	Drives No. 1 fuel injector.	With engine running: duty controlled
12	GRN/YEL	VTS (VTEC SOLENOID VALVE)	Drives VTEC solenoid valve.	With engine at low rpm: 0 V With engine at high rpm (vehicle running): battery voltage
13	YEL/GRN	ICM (IGNITION CONTROL MODULE)	Sends ignition pulse.	With ignition switch ON (II): battery voltage With engine running: pulses
15	ORN	IACVN (IDLE AIR CONTROL VALVE NEGATIVE SIDE	Drives IAC valve (negative side).	With engine running: duty controlled
17	GRN/WHT	HLCLSP (PH-PL CONTROL LINEAR SOLENOID P SIDE)	PH-PL control linear solenoid power supply positive electrode.	With ignition switch ON (II): duty controlled
18	RED/BLU	SCLSM (START CLUTCH CONTROL LINEAR SOLENOID M SIDE)	Start clutch control linear solenoid power supply negative electrode.	With ignition switch ON (II): duty controlled
20	BRN/BLK	LG1 (LOGIC GROUND)	Ground for the PCM control circuit.	Less than 1.0 V at all times
21	WHT/BLU	VBU (VOLTAGE BACK UP)	Power source for the PCM control circuit. Power source for the DTC memory.	Battery voltage at all times
22	BRN/BLK	LG2 (LOGIC GROUND)	Ground for the PCM control circuit.	Less than 1.0 V at all times
25	YEL	SCLSP (START CLUTCH CONTROL LINEAR SOLENOID P SIDE)	Start clutch control linear solenoid power supply positive electrode.	With ignition switch ON (II): duty controlled

PCM Connector C (31 P)



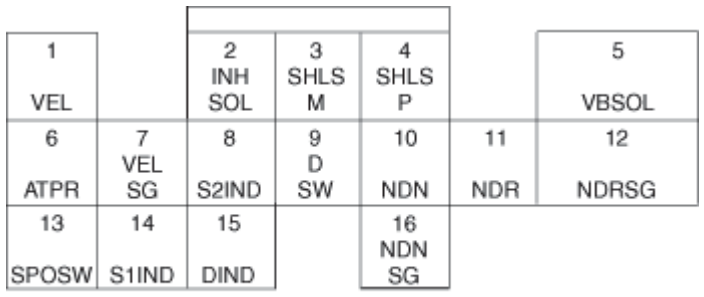
Wire side of female terminals

NOTE: Standard battery voltage is 12 V

Terminal number	Wire colour	Terminal name	Description	Signal
1	BLK/WHT	PO2SHTC (PRIMARY HEATED OXYGEN SENSOR HEATER CONTROL)	Drives primary heated oxygen sensor heater.	With ignition switch ON (II): battery voltage With fully warmed up engine running: duty controlled
2	WHT/GRN	ALTC (ALTERNATOR CONTROL)	Sends alternator control signal.	With fully warmed-up engine running: battery voltage During driving with small electrical load: 0 V
3*	RED/BLU	KS (KNOCK SENSOR)	Detects KS signal.	With engine knocking: pulses
5	WHT/RED	ALTF (ALTERNATOR FR SIGNAL)	Detects alternator FR signal.	With fully warmed-up engine running: 0 V - battery voltage (depending on electrical load)
7	GRN/WHT	SG1 (SENSOR GROUND)	Ground for MAP sensor.	Less than 1.0 V at all times
8	BLU	CKPP (CKP SENSOR P SIDE)	Detects CKP sensor.	With engine running: pulses
9	WHT	CKPM (CKP SENSOR M SIDE)	Ground for CKP sensor.	
12*	BLK/WHT	EGT (EXHAUST GAS TEMPERATURE SENSOR)	Detects EGT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on exhaust gas temperature)
16	WHT	PHO2S (PRIMARY HEATED OXYGEN SENSOR, SENSOR 1)	Detects primary heated oxygen sensor (sensor 1) signal.	With throttle fully opened from idle with fully warmed up engine: above 0.6 V With throttle quickly closed: below 0.4 V
17	RED/GRN	MAP (MANIFOLD ABSOLUTE PRESSURE SENSOR)	Detects MAP sensor signal.	With ignition switch ON (II): about 3 V At idle: about 1.0 V (depending on engine speed)
18	GRN/BLK	SG2 (SENSOR GROUND)	Sensor ground.	Less than 1.0 V at all times
19	YEL/RED	VCC1 (SENSOR VOLTAGE)	Power source to MAP sensor.	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
20	GRN	TDCP (TDC SENSOR P SIDE)	Detects TDC sensor.	With engine running: pulses
21	RED	TDCM (TDC SENSOR M SIDE)	Ground for TDC sensor.	
23	BLU/WHT	VSS (VEHICLE SPEED SENSOR)	Detects VSS signal.	With ignition switch ON (II) and front wheel rotating: cycles 0 V - 5 V
25	RED/YEL	IAT (INTAKE AIR TEMPERATURE SENSOR)	Detects IAT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on intake air temperature)
26	RED/WHT	ECT (ENGINE COOLANT TEMPERATURE SENSOR)	Detects ECT sensor signal.	With ignition switch ON (II): about 0.1 - 4.8 V (depending on engine coolant temperature)
27	RED/BLK	TPS (THROTTLE POSITION SENSOR)	Detects TP sensor signal.	With throttle fully open: 4.8 V With throttle fully closed: about 0.5 V
28	YEL/BLU	VCC2 (SENSOR VOLTAGE)	Provides sensor voltage.	With ignition switch ON (II): about 5 V With ignition switch OFF: 0 V
29	YEL	CYPP (CYP SENSOR P SIDE)	Detects CYP sensor.	With engine running: pulses
30	BLK	CYPM (CYP SENSOR M SIDE)	Ground for CYP sensor.	

*: KQ model

PCM Connector D (16 P)



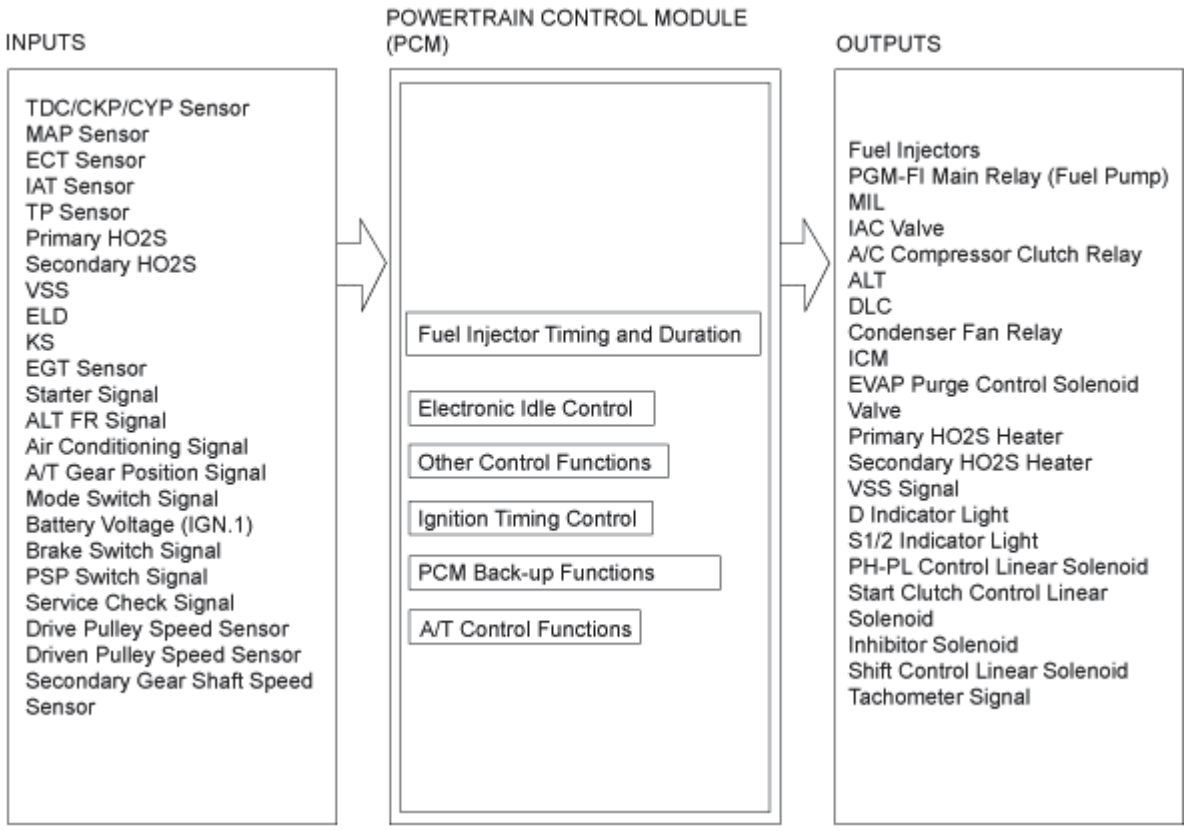
Wire side of female terminals

NOTE: Standard battery voltage is 12 V

Terminal number	Wire colour	Terminal name	Description	Signal
1	WHT/RED	VEL (SECONDARY GEAR SHAFT SPEED SENSOR)	Secondary gear shaft speed sensor.	Depending on vehicle speed: pulses When vehicle is stopped: 0 V
2	GRN	INHSOL (INHIBITOR SOLENOID CONTROL)	Inhibitor solenoid control.	With inhibitor solenoid ON: battery voltage With inhibitor solenoid OFF: 0 V
3	GRN/YEL	SHLS M (SHIFT CONTROL LINEAR SOLENOID M SIDE)	Shift control linear solenoid power supply negative electrode.	With ignition switch ON (II): pulses
4	BLU/WHT	SHLS P (SHIFT CONTROL LINEAR SOLENOID P SIDE)	Shift control linear solenoid power supply positive electrode.	With ignition switch ON (II): pulses
5	BLK/YEL	VBSOL (BATTERY VOLTAGE FOR SOLENOID VALVE)	Power source of solenoid valve.	With ignition switch ON (II): battery voltage With ignition switch OFF: 0 V
6	WHT	ATPR (AT GEAR POSITION SWITCH)	Detects A/T gear position switch signal.	In R position: 0 V In any other position: battery voltage
7	BLK/WHT	VELSG (SECONDARY GEAR SHAFT SPEED SENSOR GROUND)	Ground for secondary gear shaft speed sensor.	
8	LT GRN	S2IND (S2 INDICATOR LIGHT)	Drives S2 indicator.	With S2 indicator turned ON: battery voltage With S2 indicator turned OFF: 0 V
9	BLU	DSW (D MODE SWITCH)	Detects D mode switch signal.	With D mode switch ON: 0 V With D mode switch OFF: battery voltage
10	WHT	NDN (DRIVEN PULLEY SPEED SENSOR)	Detects driven pulley speed sensor signal.	In other than N or P positions: pulses
11	RED/BLU	NDR (DRIVE PULLEY SPEED SENSOR)	Detects drive pulley speed sensor signal.	In other than N or P position: pulses
12	GRN	NDRSG (DRIVE PULLEY SPEED SENSOR GROUND)	Ground for drive pulley speed sensor.	
13	YEL	SPOSW (S MODE SWITCH)	Detects mode switch signal.	With mode switch ON: 0 V With mode switch OFF: battery voltage
14	GRN/RED	S1IND (S1 INDICATOR LIGHT)	Drives S1 indicator.	With S1 indicator turned ON: battery voltage With S1 indicator turned OFF: 0 V
15	GRN/BLK	DIND (D INDICATOR LIGHT)	Drives D indicator.	With D indicator turned ON: battery voltage With D indicator turned OFF: 0 V
16	RED/WHT	NDNSG (DRIVEN PULLEY SPEED SENSOR GROUND)	Ground for driven pulley speed sensor.	

DIAGNOSTIC TROUBLE CODE (DTC)	SYSTEM INDICATED	Page
0	POWERTRAIN CONTROL MODULE (PCM)	-
1	PRIMARY HEATED OXYGEN SENSOR (PRIMARY HO^2S)	-
3	MANIFOLD ABSOLUTE PRESSURE (MAP) SENSOR	-
4	CRANKSHAFT POSITION (CKP) SENSOR	-
6	ENGINE COOLANT TEMPERATURE (ECT) SENSOR	-
7	THROTTLE POSITION (TP) SENSOR	-
8	TOP DEAD CENTRE POSITION (TDC) SENSOR	-
9	No. 1 CYLINDER POSITION (CYP) SENSOR	-
10	INTAKE AIR TEMPERATURE (IAT) SENSOR	-
14	IDLE AIR CONTROL (IAC) VALVE	-
17	VEHICLE SPEED SENSOR (VSS)	-
21	VTEC SOLENOID VALVE	see section 6
23	KNOCK SENSOR	(**See Page** 11-143)
41	PRIMARY HEATED OXYGEN SENSOR (PRIMARY $H0^2S$) HEATER	-
55	EXHAUST GAS TEMPERATURE (EGT) SENSOR	-
63	SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO^2S)	-
65	SECONDARY HEATED OXYGEN SENSOR (SECONDARY HO^2S) HEATER	-
70	AUTOMATIC TRANSMISSION	section 14

- If the codes other than those listed above are indicated, verify the code. If the code indicated is not listed above, replace the PCM (see immobiliser information).
- The MIL may come on, indicating a system problem when, in fact, there is a poor or intermittent electrical connection. First, check the electrical connections, clean or repair connections if necessary.



PGM-FI System

The PGM-FI system on this model is a sequential multiport fuel injection system.

Fuel Injector Timing and Duration

The PCM contains memories for the basic discharge durations at various engine speeds and manifold pressures. The basic discharge duration, after being read out from the memory, is further modified by signals sent from various sensors to obtain the final discharge duration.

Idle Air Control

When the engine is cold, the A/C compressor is on, the transmission is in gear, the brake pedal is depressed, the P/S load is high, or the alternator is charging, the PCM controls current to the IAC Valve to maintain the correct idle speed.

Ignition Timing Control

- The PCM contains memories for basic ignition timing at various engine speeds and manifold air flow rates. Ignition timing is also adjusted for engine coolant temperature.

Other Control Functions

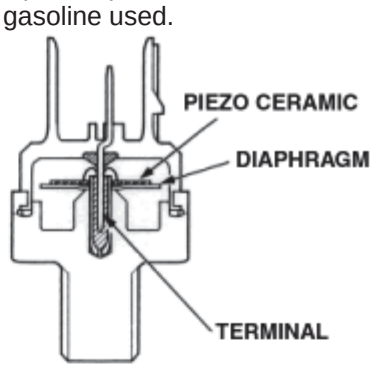
1. Starting Control
   When the engine is started, the PCM provides a rich mixture by increasing fuel injector duration.
2. Fuel Pump Control
   - When the ignition switch is initially turned ON (II), the PCM supplies ground to the PGM-FI main relay that supplies current to the fuel pump for two seconds to pressurise the fuel system.
   - When the engine is running, the PCM supplies ground to the PGM-FI main relay that supplies current to the fuel pump.
   - When the engine is not running and the ignition is ON (II), the PCM cuts ground to the PGM-FI main relay which cuts current to the fuel pump.
3. Fuel Cut-off Control
   - During Deceleration with the throttle valve closed, current to the fuel injectors is cut off to improve fuel economy at speeds over 1,100 rpm (min^{-1}).
   - Fuel cut-off action also takes place when the engine speed exceeds 7,000 rpm (min^{-1}), regardless of the position of the throttle valve, to protect the engine from over-revving. With A/T model, when the vehicle stops, the PCM cuts the fuel at engine speeds over 5,000 rpm (min^{-1}).
4. A/C Compressor Clutch Relay
   When the PCM receives a demand for cooling from the air conditioning system, it delays the compressor from being energised, and enriches the mixture to assure smooth transition to the A/C mode.
5. Alternator Control
   The system controls the voltage generated at the alternator in accordance with the electrical load and driving mode, which reduces the engine load to improve the fuel economy.
6. Evaporative Emission (EVAP) Purge Control Solenoid Valve
   When the engine coolant temperature is below 74°C (165°F), the PCM supplies a ground to the EVAP purge control solenoid valve which cuts vacuum to the EVAP purge control canister.

ECM/PCM Fail-safe/Back-up Functions

1. Fail-safe Function
   When an abnormality occurs in a signal from a sensor, the PCM ignores that signal and assumes a pre-programmed value for that sensor that allows the engine to continue to run.
2. Back-up Function
   When an abnormality occurs in the PCM itself, the fuel injectors are controlled by a back-up circuit independent of the system in order to permit minimal driving.
3. Self-diagnosis Function [Malfunction Indicator Lamp (MIL)]
   When an abnormality occurs in a signal from a sensor, the PCM supplies ground for the MIL and stores the code in erasable memory. When the ignition is initially turned ON (II), the PCM supplies ground for the MIL for two seconds to check the MIL bulb condition.

23

The Malfunction Indicator Lamp (MIL) indicates Diagnostic Trouble Code (DTC) 23: A problem in the Knock Sensor (KS) circuit.
A knock control system was adopted which sets the ideal ignition timing for the octane number of the gasoline used.



- **The MIL has been reported on.**
- **With the SCS short connector connected, code 23 is indicated**

Problem verification:
1. Do the PCM Reset Procedure.
2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load (in neutral) until the radiator fan comes on, then let it idle.
3. Hold engine at 3,000 - 4,000 rpm (min^{-1}) for 10 seconds transmission in neutral.

Is the MIL on and does it indicate code 23?

NO → **Intermittent failure, system is OK at this time (test-drive may be necessary). Check for poor connections or loose wires between the KS and the PCM.**

YES

Check for a short in the wire (KS line):
1. Turn the ignition switch OFF.
2. Disconnect the KS connector.
3. Disconnect the PCM connector C (31P).
4. Check for continuity between PCM connector terminal C3 and body ground.

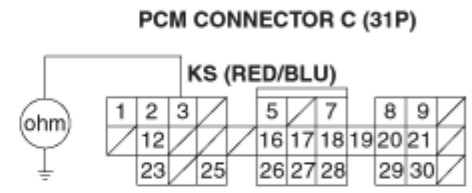
Is there continuity?

YES → **Repair short in the wire between PCM (C3) and KS.**

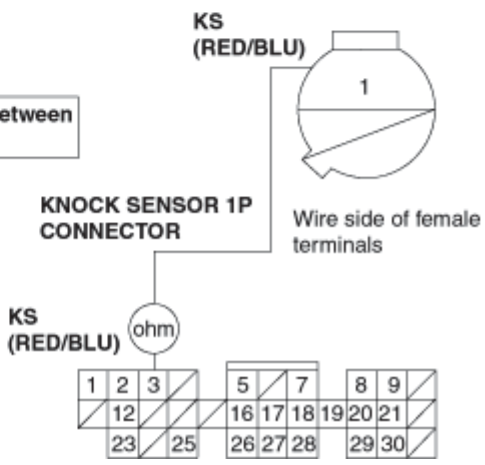
NO

Check for an open in the wire (KS line):
Check for continuity between PCM connector terminal C3 and the KS 1P connector terminal No. 1.

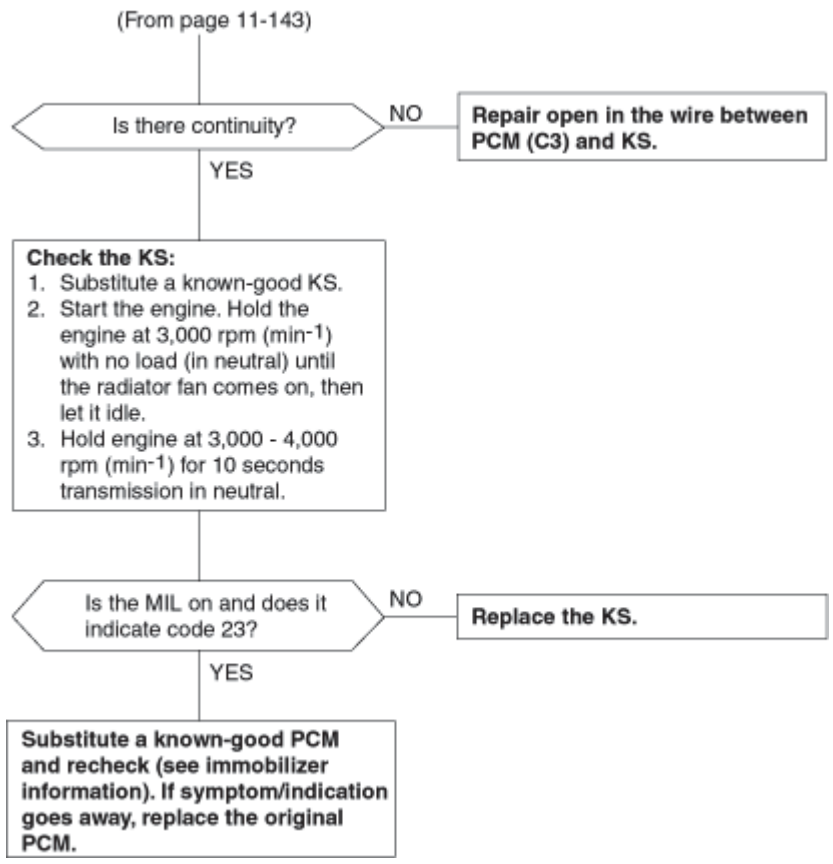
(To page 11-144)



Wire side of female terminals

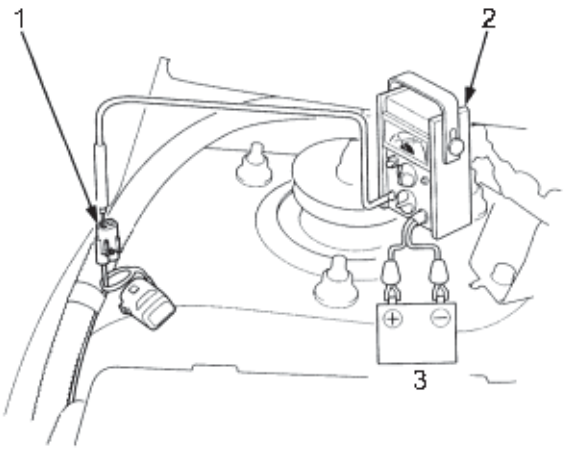


(From page 11-143)



Inspection/Adjustment
Adjust the idle speed by means of a Honda PGM-TESTER. If not check the following:
NOTE: Before setting the idle speed, check the following items:
- The **MIL** has not been reported on.
- Ignition timing
- Spark plugs
- Air cleaner
- PCV system

1. Connect a tachometer

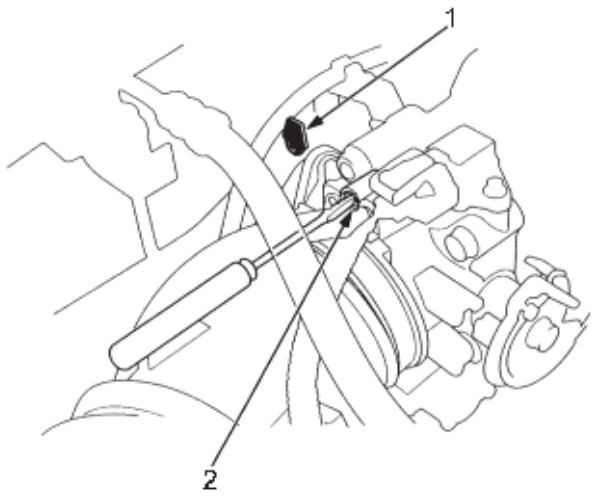


1. TEST TACHOMETER CONNECTOR
2. TACHOMETER
3. BATTERY

2. Start the engine. Hold the engine at 3,000 rpm (min^{-1}) with no load until the radiator fan comes on, then let it idle.
3. Check the idle speed with no-load conditions: head-lights, blow fan, rear defogger, radiator fan and air conditioning not operating.
   If there is no clicking sound, check the PCV valve grommet for cracks or damage. If the grommet is OK, replace the PCV valve and recheck.

Idle speed should be:
700 ± 50 rpm (min^{-1}) (in Park or neutral)

4. Adjust the idle speed, if necessary, by turning the idle adjusting screw 1/2 turn clockwise or counterclockwise.



1. CAP
2. IDLE ADJUSTING SCREW

5. After 1/2 turn the idle adjusting screw, check the idle speed again. If it is out of spec, turn the idle adjusting screw 1/2 turn again.
   NOTE: Do not turn the idle adjusting screw more than 1/2 without checking the idle speed.
6. Idle the engine for one minute with heater fan switch at HI and air conditioner on, then check the idle speed.
   Idle speed should be:
   810 ± 50 rpm (min^{-1}) (in Park or neutral)
   NOTE:
   - Do not turn the idle adjusting screw when the sir conditioner is on.
   - If the idle speed is not within specification, see System Troubleshooting Guide.

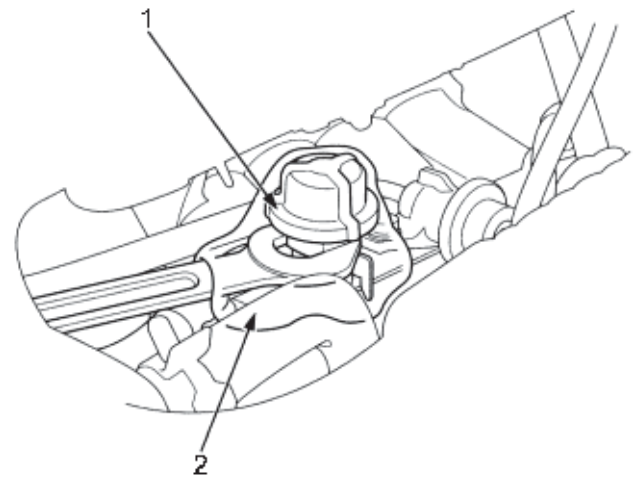
Relieving

Before disconnecting fuel pipes or hoses, release pressure from the system by loosening the fuel pulsation damper on top of the fuel rail.

⚠ WARNING

Do not smoke while working on the fuel system.
Keep open flames or sparks away from the work area.
Be sure to relieve the fuel pressure while the ignition switch is off.

1. Disconnect the battery negative cable from the battery negative terminal.
2. Remove the fuel fill cap.
3. Use a wrench on the fuel pulsation damper at the fuel rail.
4. Place a rag or shop towel over the fuel pulsation damper.
5. Slowly loosen the fuel pulsation damper one complete turn.

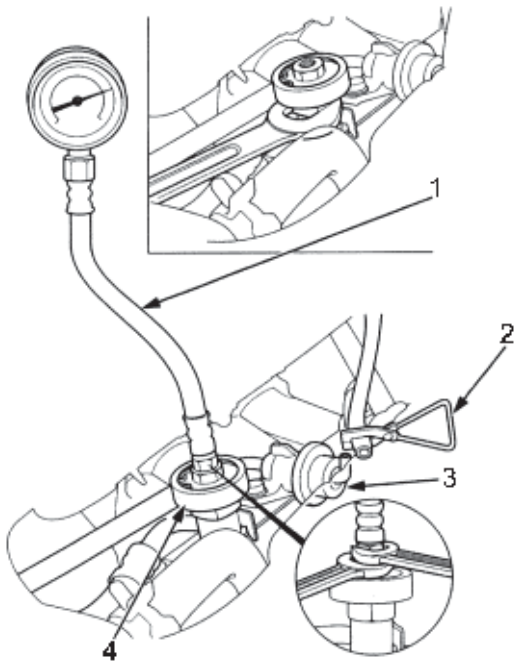


1. FUEL PULSATION DAMPER, 22 Nm (2.2 kgf/m, 16lbf/ft)
2. SHOP TOWEL

NOTE: Replace the washers whenever the fuel pulsation damper is loosened or removed.

Inspection

1. Relieve the fuel pressure.
2. Remove the fuel pulsation damper from the fuel rail. Attach the fuel pressure gauge attachment and fuel pressure gauge.



1. FUEL PRESSURE GAUGE, 07406-0040002
2. CLAMP
3. FUEL PRESSURE REGULATOR
4. FUEL PRESSURE GAUGE ATTACHMENT, 07VAJ-0090100

3. Start the engine. Measure the fuel pressure with the engine idling and the vacuum hose of the fuel pressure regulator disconnected from the fuel pressure regulator and pinched. If the engine will not start, turn the ignition switch ON (II), wait for two seconds, turn it off, then back on again and read the fuel pressure.
   Pressure should be:
   260 - 310 kPa (2.7 - 3.2 kgf/cm², 38 - 46psi)
4. Reconnect the vacuum hose to the fuel pressure regulator.
   Pressure should be:
   200 - 250 kPa (2.0 - 2.5 kgf/cm², 28 - 36psi)
   If the fuel pressure is not as specified, first check the fuel pump (**See Page** 11-147). If the fuel pump is OK, check the following:
   - If the fuel pressure is higher than specified, inspect for:
     - Pinched or clogged fuel return hose or line
     - Faulty fuel pressure regulator
   - If the fuel pressure is lower than specified, inspect for:
     - Clogged fuel filter
     - Faulty fuel pressure regulator
     - Leakage in the fuel line.

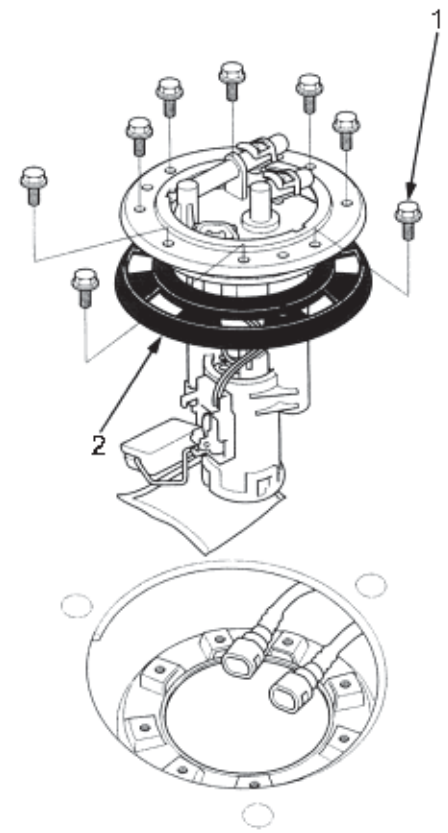
Replacement

WARNING

Do not smoke while working on the fuel system.
Keep open flames or sparks away from the work area.

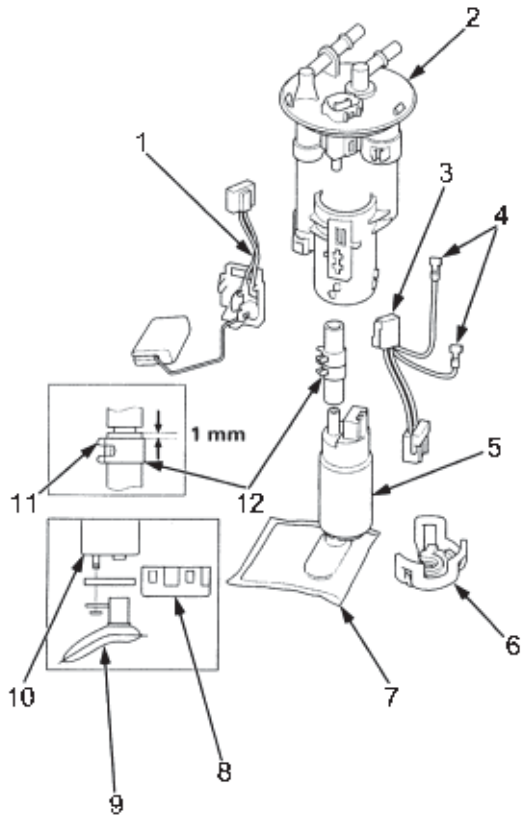
The fuel filter should be replaced whenever the fuel pressure drops below the specified value [260 - 310 kPa (2.7 -3.2 kgf/cm^2, 38 - 46 psi) with the fuel pressure regulator vacuum hose disconnected and pinched] after making sure that the fuel pump and the fuel pressure regulator are OK.

1. Relieve the fuel pressure (**See Page** 11-146).
2. Remove the access panel from the floor.
3. Turn the ignition switch OFF, then disconnect the fuel pump 5P connector.
4. Disconnect the quick-connect fittings from the fuel pump.
5. Remove the bolts and the fuel pump assembly.



1. 4 Nm (0.4 kgf/m, 3lbf/ft)
2. BASE GASKET, Replace

6. Remove the bracket, the fuel gauge sending unit, the hose and the wire harness from the fuel filter.

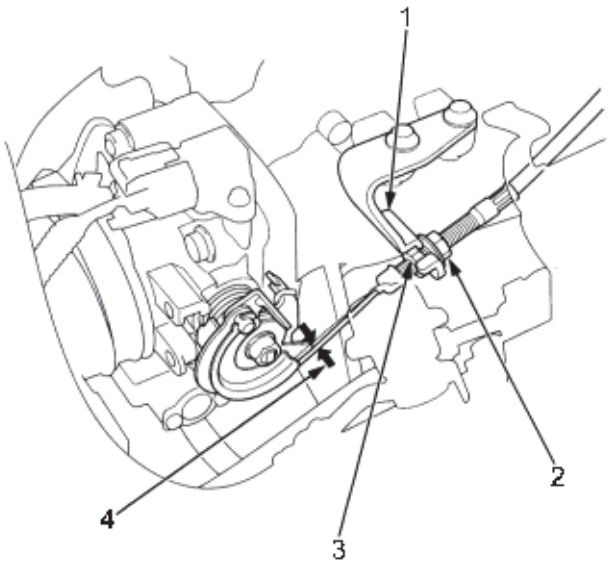


1. FUEL SENDING UNIT
2. FUEL FILTER
3. WIRE HARNESS
4. TERMINAL
5. FUEL PUMP
6. BRACKET
7. SUCTION FILTER
8. BRACKET
9. SUCTION FILTER
10. FUEL PUMP
11. TAB
12. CLAMP

7. When connecting the fuel pump, make sure the connection is secure and the suction filter is firmly connected to the fuel pump.
8. Install the part in the reverse order of removal with a new base gasket, then check the following items:
   - When connecting the wire harness, make sure the connection is secure and the terminal is firmly locked in place.
   - Check that the tab of the clamp does not interfere with the wire harness.
   - Do not push the lower part of the suction filter.
   - When installing the fuel gauge sending unit, make sure the connection is secure and the connector is firmly locked into place. Be careful not to bend or twist it excessively.

Inspection/Adjustment

1. Check that the throttle cable operates smoothly with no binding or sticking. Repair as necessary.
2. Check cable for free play at the throttle link. Cable deflection should be 10 -12 mm (3/8 - 1/2 in.).

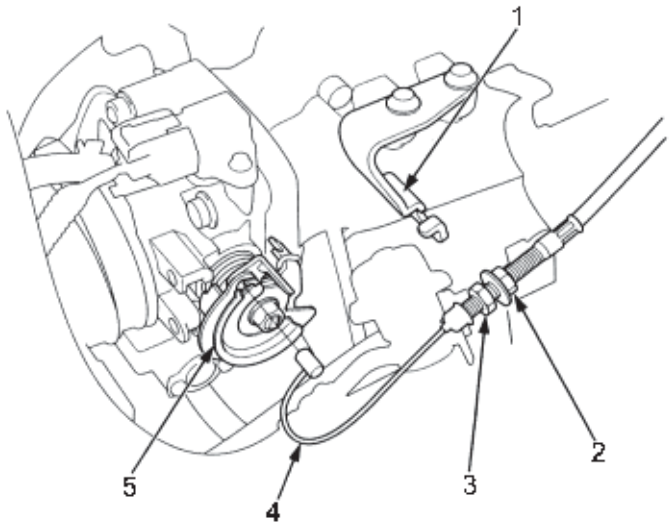


1. CABLE BRACKET
2. LOCKNUT
3. ADJUSTING NUT
4. DEFLECTION, 10 -12 mm (3/8 - 1/2 in)

3. If deflection is not within specification, loosen the locknut, turn the adjusting nut until the deflection is as specified, then retighten the locknut.
4. With the cable properly adjusted, check the throttle valve to be sure it opens fully when you push the accelerator pedal to the floor. Also check the throttle valve to make sure it returns to the idle position whenever you release the accelerator pedal.

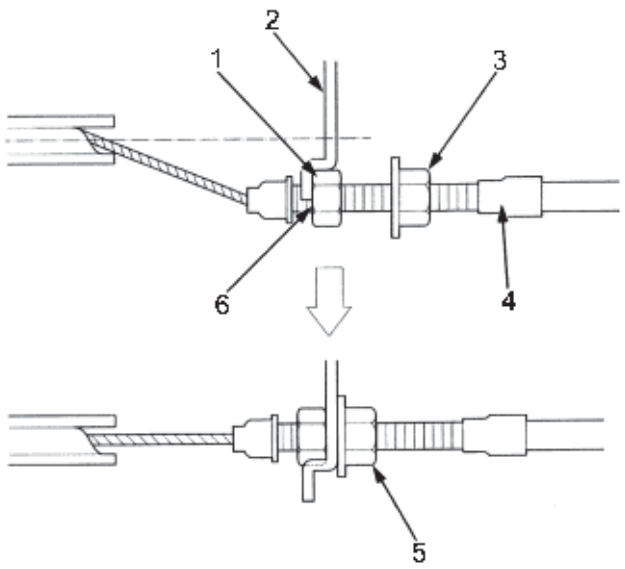
Installation

1. Open the throttle valve fully, then install the throttle cable in the throttle link and install the cable housing in the cable bracket.



1. CABLE BRACKET
2. LOCKNUT
3. ADJUSTING NUT
4. INNER CABLE
5. THROTTLE LINK

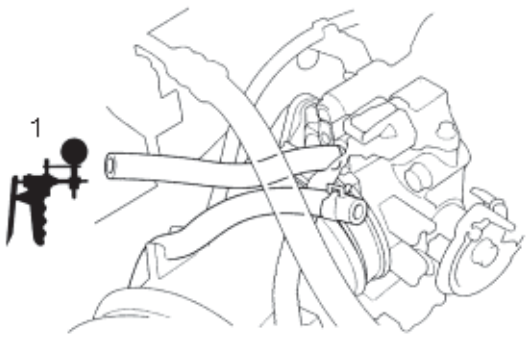
2. Hold the cable sheath, removing all slack from the cable.
3. Set the locknut on the cable bracket. Adjust the adjusting nut so that its free play is 0 mm (0 in.)
4. Remove the cable sheath from the throttle bracket, reset the adjusting nut and tighten the locknut.



1. ADJUSTING NUT
2. CABLE BRACKET
3. LOCKNUT
4. CABLE SHEATH
5. 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
6. There should be no clearance

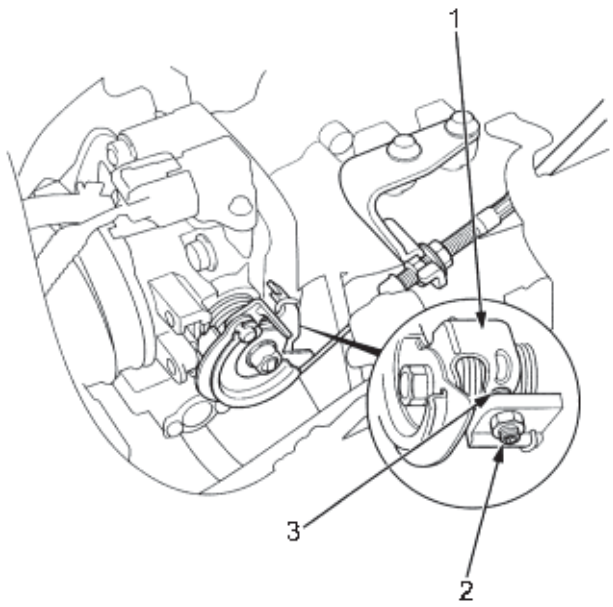
Inspection

1. Disconnect the vacuum hose (to the EVAP control canister) from the top of the throttle body; connect a vacuum gauge to the throttle body.



1. VACUUM PUMP/GAUGE

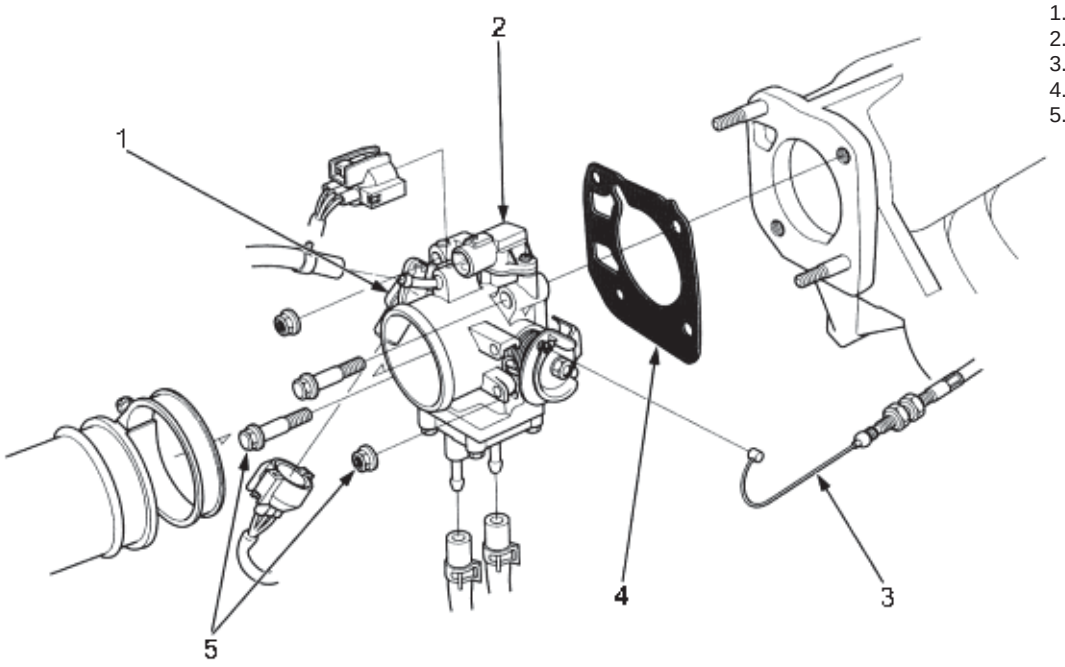
2. Allow the engine to idle and check that the gauge indicates no vacuum.
   If there is vacuum, check the throttle cable (**See Page** 11-148).
3. Check that vacuum is indicated on the gauge when the throttle is opened slightly from idle.
   If the gauge indicates no vacuum, check the throttle body port. If the throttle body port is clogged, clean it with carburetor cleaner.
4. Stop the engine and check that the throttle cable operates smoothly without binding or sticking.
   If there are any abnormalities in the above steps, check for:
   - Excessive wear or play in the throttle valve shaft.
   - Sticky or binding throttle link at the fully closed position.
   - Clearance between throttle stop screw and throttle lever at the fully closed position



1. THROTTLE LINK
2. THROTTLE SCREW STOP, (Do not adjust)
3. There should be no clearance

Replace the throttle body if there is excessive play in the throttle valve shaft or if the shaft is binding or sticking.

Removal

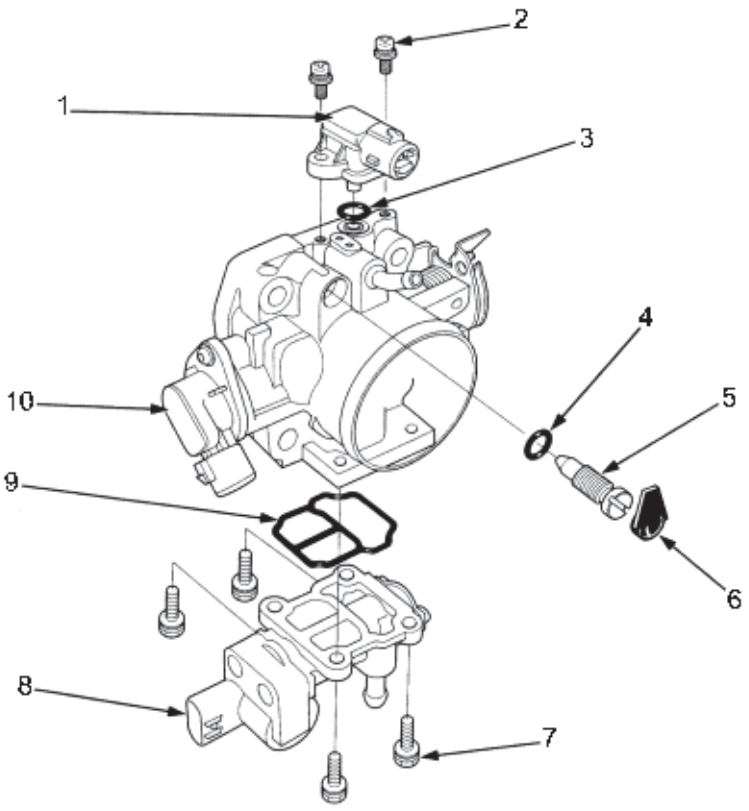


1. **TP SENSOR**
2. **MAP SENSOR**
3. **THROTTLE CABLE**
4. **GASKET,** Replace
5. **22 Nm (2.2 kgf/m, 16 lbf/ft)**

NOTE:

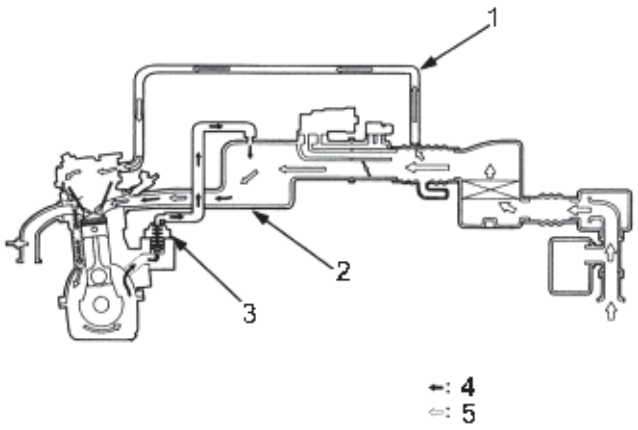
- Do not adjust the throttle stop screw.
- After reassembly, adjust the throttle cable (**See Page** 11-148).
- The TP sensor is not removeable.

Disassembly



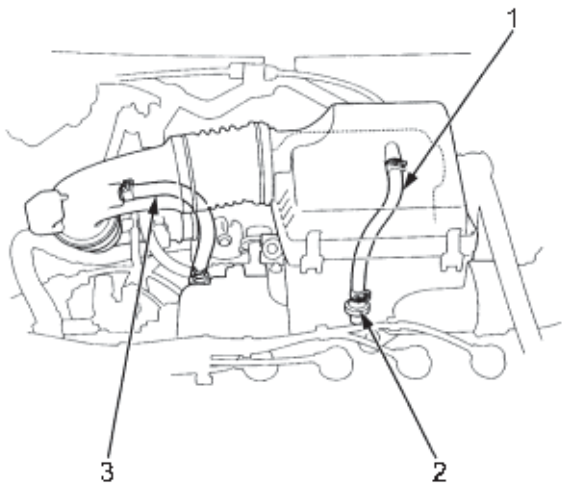
1. **MAP SENSOR**
2. **2.1 Nm (0.21 kgf/m, 1.5 lbf/ft)**
3. **O-RING,** Replace
4. **O-RING**
5. **IDLE ADJUSTING SCREW**
6. **CAP**
7. **3.5 Nm (0.35 kgf/m, 2.6 lbf/ft)**
8. **IAC VALVE**
9. **O-RING,** Replace
10. **TP SENSOR**

Positive Crankcase Ventilation (PCV) System)
The Positive Crankcase Ventilation (PCV) System is designed to prevent blow-by gas from escaping to the atmosphere. The PCV valve contains a spring-loaded plunger. When the engine starts, the plunger in the PCV valve is lifted in proportion to intake manifold vacuum and the blow-by gas is drawn directly into the intake manifold.



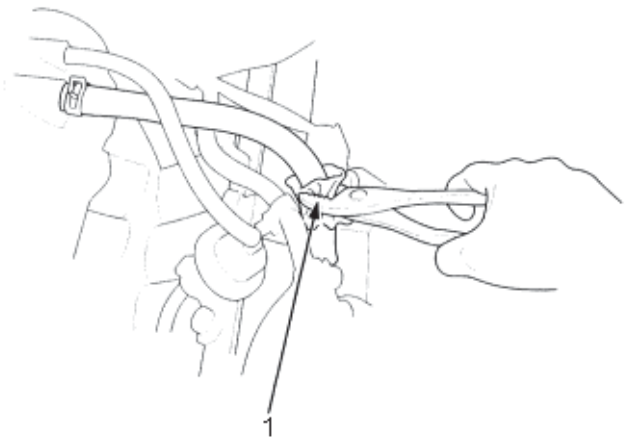
1. BREATHER PIPE
2. INTAKE MANIFOLD
3. PCV VALVE
4. BLOW-BY VAPOUR
5. FRESH AIR

1. Check the PCV hoses and connections for leaks and clogging.



1. PCV HOSE
2. PCV VALVE
3. BREATHER HOSE

2. At idle, make sure there is a clicking sound from the PCV valve when the hose between PCV valve and intake manifold is lightly pinched with your fingers or pliers.
   If there is no clicking sound, check the PCV valve grommet for cracks or damage. If the grommet is OK, replace the PCV valve and recheck.



1. Gently pinch here.

Description

The evaporative emission controls are designed to minimise the amount of fuel vapour escaping to the atmosphere. The system consists of the following components:

A. Evaporative Emission (EVAP) Control Canister

An EVAP control canister is used for the temporary storage of fuel vapour until the fuel vapour can be purges from the EVAP control canister into the engine and burned.

B. Vapour Purge Control System

EVAP control canister purging is accomplished by drawing fresh air through the EVAP control canister and into a port on the throttle body. The purging vacuum is controlled by the EVAP purge control diaphragm valve and the EVAP purge control solenoid valve.

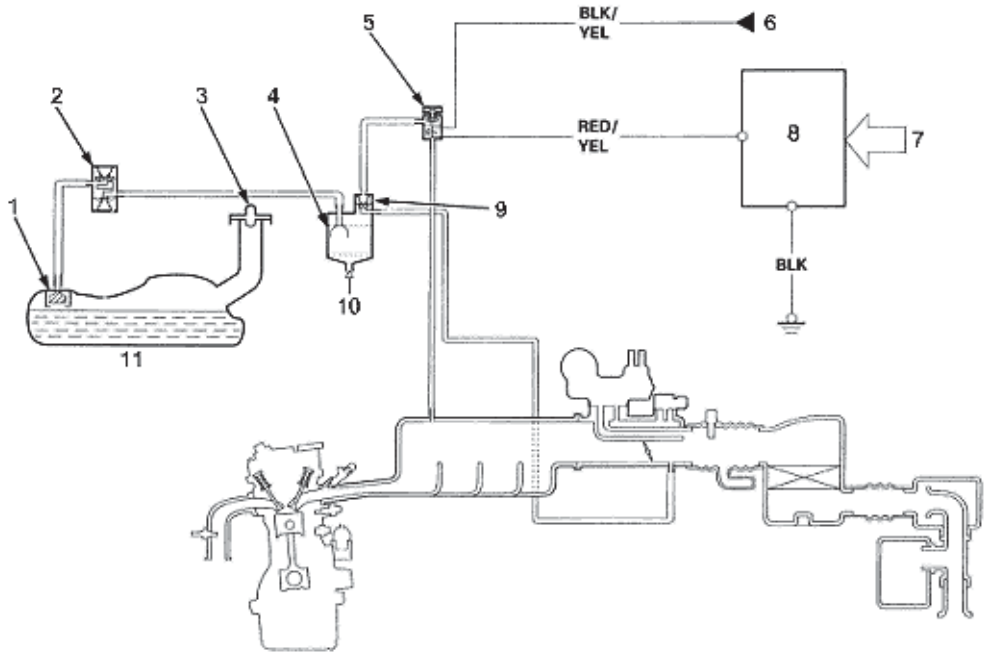
EVAP PURGE CONTROL DIAHRAGM VALVE OPEN AFTER STARTING ENGINE
EVAP PURGE CONTROL SOLENOID VALVE OFF

↑

ENGINE COOLANT TEMPERATURE ABOVE 74ºC (165ºF)

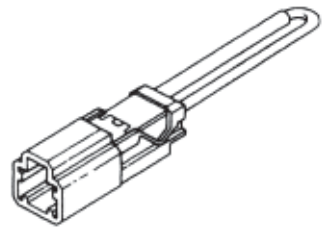
C. Fuel Tank Vapour Control System

When fuel vapour pressure in the fuel tank is higher than the set value of the EVA two way valve, the valve opens and regulates the flow of fuel vapour to the EVAP control canister.



1. **FUEL TANK EVAP VALVE**
2. **EVAP TWO WAY VALVE**
3. **FUEL FILL CAP**
4. **EVAP CONTROL CANISTER**
5. **EVAP PURGE CONTROL SOLENOID VALVE**
6. **INSTRUMENT LIGHT (7.5A) FUSE**
7. **VARIOUS SENSORS**
8. **PCM**
9. **EVAP PURGE CONTROL DIAPHRAGM VALVE**
10. **FRESH AIR**
11. **FUEL TANK**

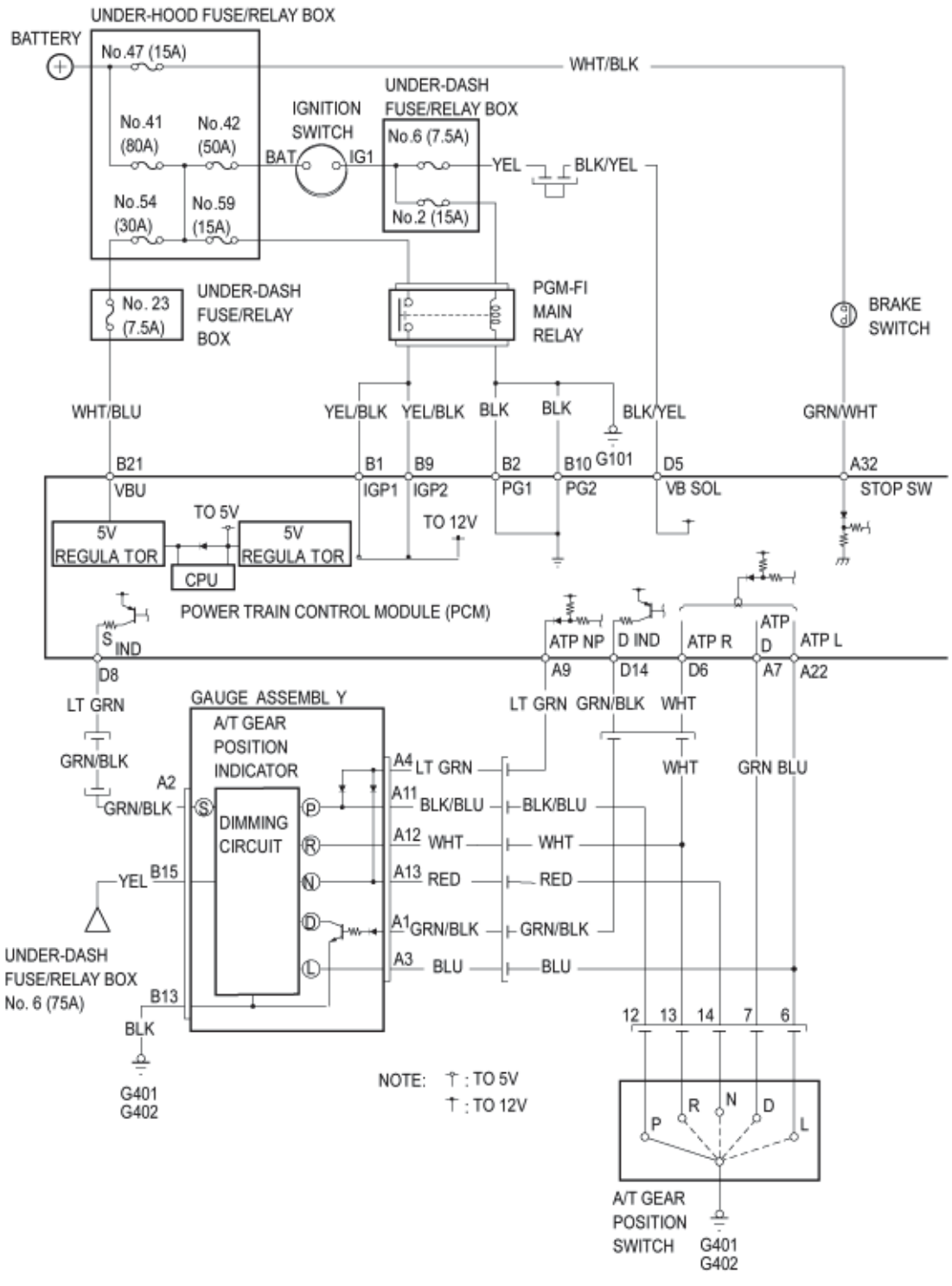
Ref No.	Tool Number	Description	Qty	Remark
1	07PAZ - 0010100	SCS Short Connector	1	

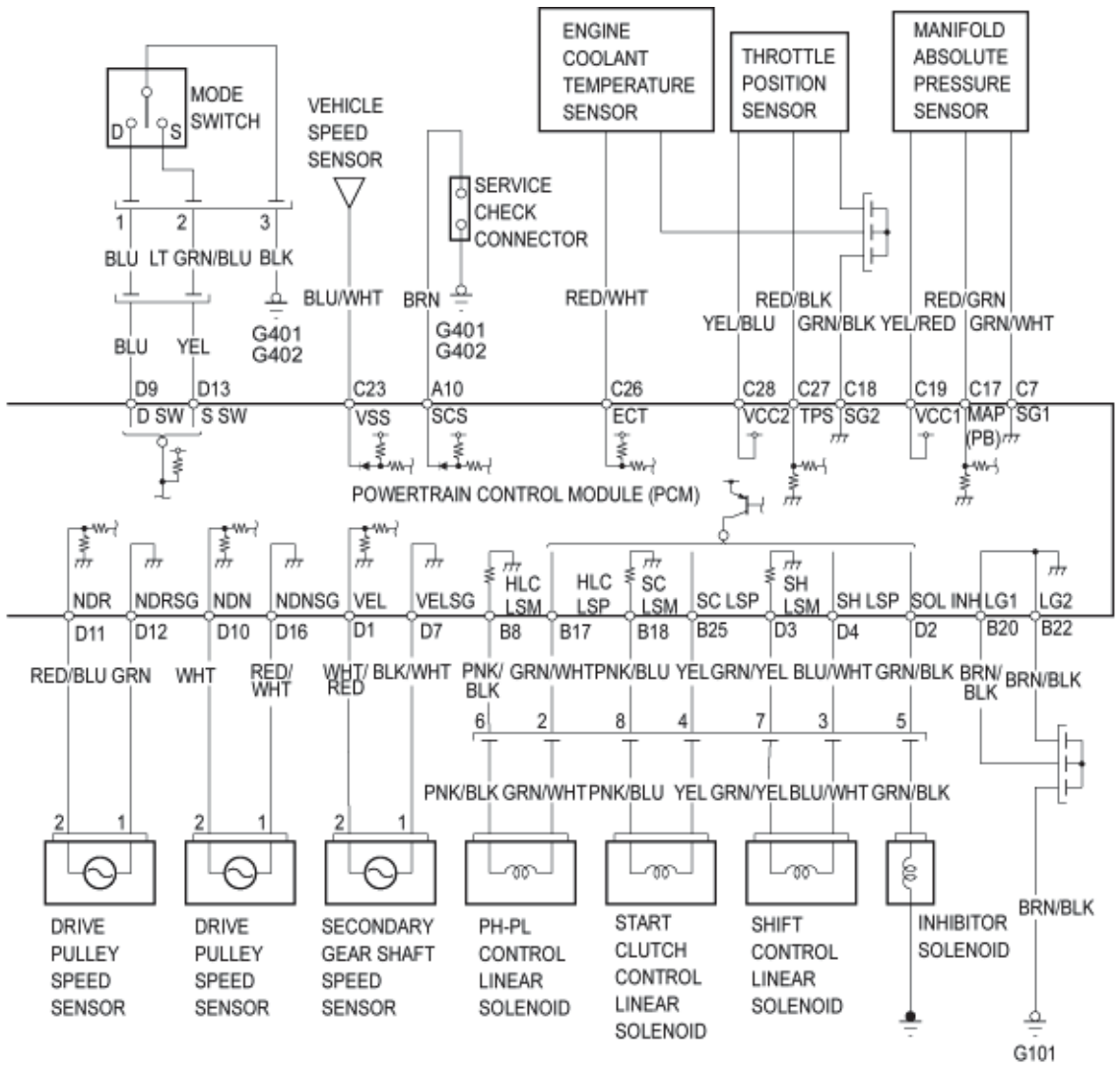


①

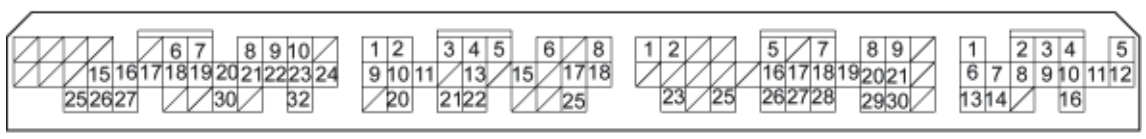
PCM Circuit Diagram (A/T Control System) 14-4

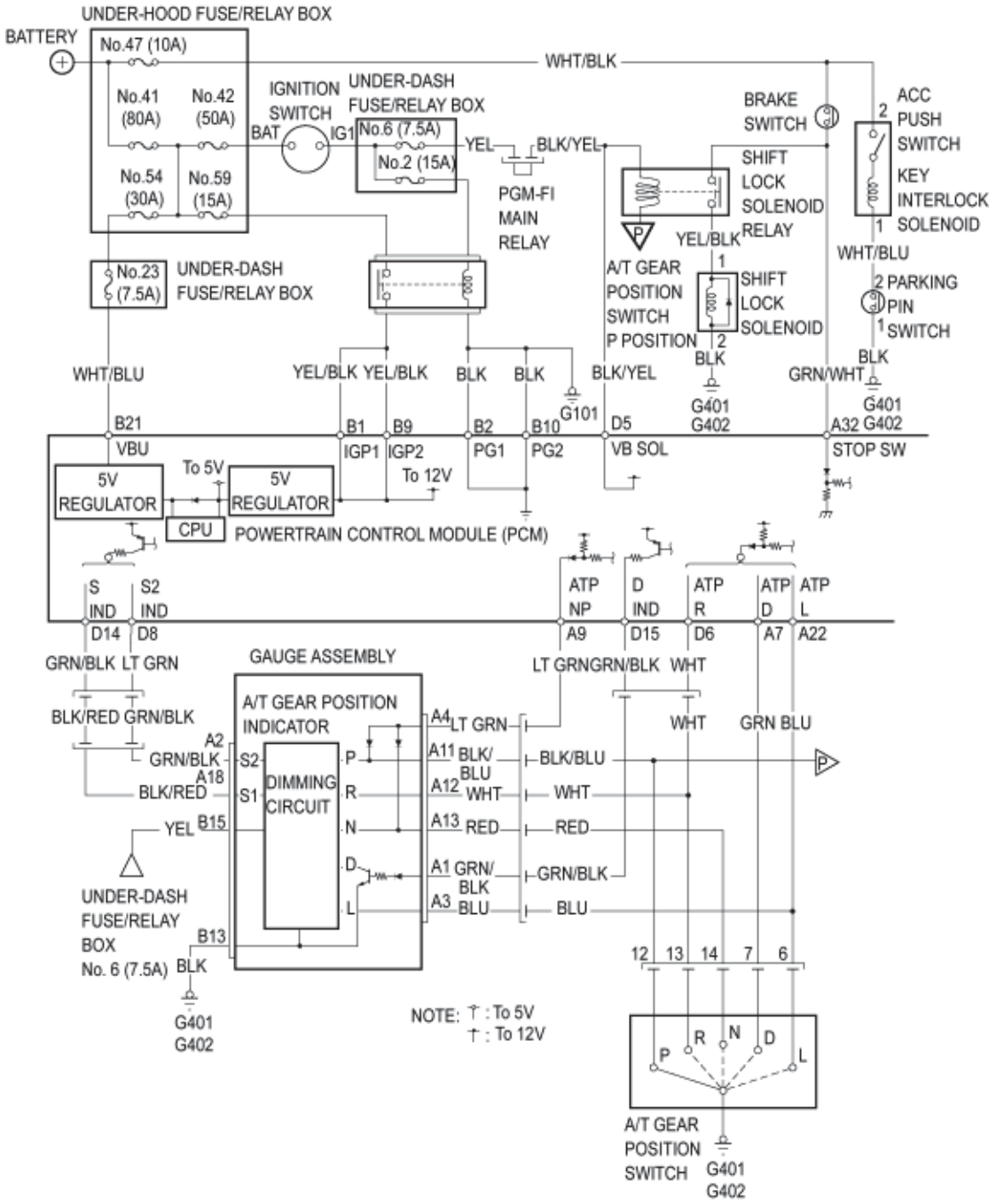
KE and KG Models

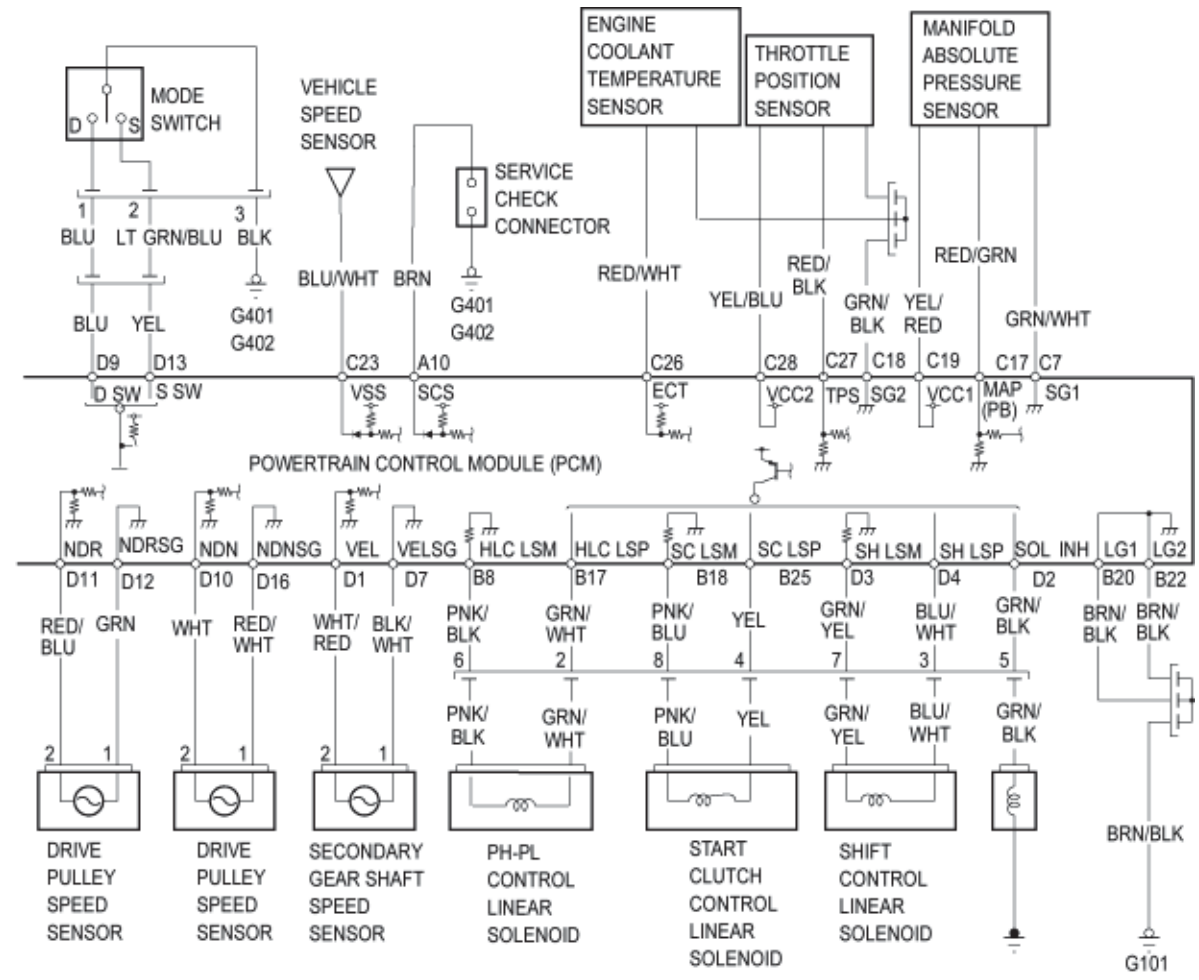




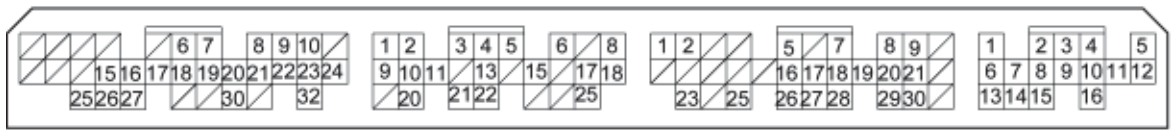
PCM Terminal Locations




UNDER-HOOD FUSE/RELAY BOX
BATTERY
No.47 (10A)
WHT/BLK
No.41 (80A)
No.42 (50A)
No.54 (30A)
No.59 (15A)
IGNITION SWITCH
BAT
IG1
UNDER-DASH FUSE/RELAY BOX
No.6 (7.5A)
No.2 (15A)
YEL
BLK/YEL
PGM-FI MAIN RELAY
BRAKE SWITCH
SHIFT LOCK SOLENOID RELAY
YEL/BLK
ACC PUSH SWITCH
KEY INTERLOCK SOLENOID
WHT/BLU
PARKING PIN SWITCH
No.23 (7.5A)
UNDER-DASH FUSE/RELAY BOX
A/T GEAR POSITION SWITCH P POSITION
SHIFT LOCK SOLENOID
BLK
G101
G401
G402
WHT/BLU
YEL/BLK
YEL/BLK
BLK
BLK
BLK/YEL
GRN/WHT
B21
VBU
B1
IGP1
B9
IGP2
B2
PG1
B10
PG2
D5
VB SOL
A32
STOP SW
5V REGULATOR
To 5V
To 12V
CPU
POWERTRAIN CONTROL MODULE (PCM)
S IND D14
S2 IND D8
ATP NP A9
D IND D15
ATP R D6
ATP D A7
ATP L A22
GRN/BLK
LT GRN
GAUGE ASSEMBLY
A/T GEAR POSITION INDICATOR
DIMMING CIRCUIT
BLK/RED
GRN/BLK
A2
A18
S2
S1
P
R
N
D
L
A4 LT GRN
A11 BLK/BLU
A12 WHT
A13 RED
A1 GRN/BLK
A3 BLU
LT GRN
GRN/BLK
WHT
BLK/BLU
WHT
RED
GRN/BLK
BLU
GRN BLU
YEL
B15
B13
BLK
UNDER-DASH FUSE/RELAY BOX No. 6 (7.5A)
G401
G402
NOTE: ↑ : To 5V
↑ : To 12V
12 13 14 7 6
P R N D L
A/T GEAR POSITION SWITCH
G401
G402



PCM Terminal Locations

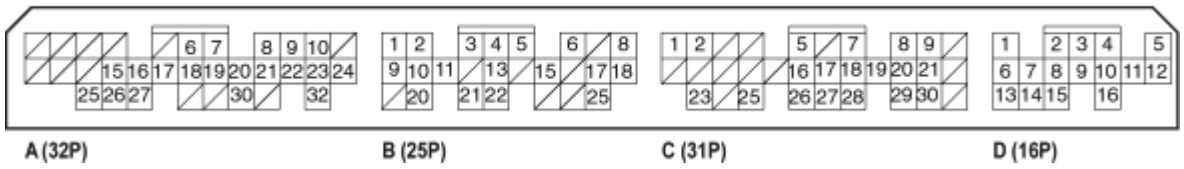


PCM Terminal Voltage/Measuring Conditions

A/T Control System - KQ and KU Models with D16W5 Engine

The PCM terminal voltage and measuring conditions are shown for the connector terminals that are related to the A/T control system. The other PCM terminal voltage and measuring conditions are described in section 11.

PCM Connector Terminal Locations



PCM CONNECTOR A (32P)

Terminal Number	Signal	Description	Measuring Conditions/Terminal Voltage
A7	ATP D	A/T gear position switch D position input	In D position: 0 V In other than D position: Approx. 10 V
A9	ATP NP	A/T gear position switch P and N positions input	In P and N positions: 0 V In other than P and N positions: Approx. 10 V
A10	SCS	Timing and adjustment service check signal	With ignition switch ON (II) and service check connector open: 5 V With ignition switch ON (II) and service check connector connected with special tool: 0 V
A22	ATP L	A/T gear position switch L position input	In L position: 0 V In other than L position: Approx. 10 V
A32	STOP SW	Brake switch signal output	Brake pedal depressed: Battery voltage Brake pedal released: 0 V

PCM CONNECTOR B (25P)

Terminal Number	Signal	Description	Measuring Conditions/Terminal Voltage
B1	IGP1	Power supply circuit from main relay	With ignition switch ON (II): Battery voltage With Ignition switch OFF: 0 V
B2	PG1	Ground	
B8	HLC LSM	PH-PL control linear solenoid power supply negative electrode	
B9	IGP2	Power supply circuit from main relay	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0 V
B10	PG2	Ground	
B17	HLC LSP	PH-PL control linear solenoid power supply positive electrode	With ignition switch ON (II): Pulsing signal
B18	SC LSM	Start clutch control linear solenoid power supply negative electrode	
B20	LG1	Ground	
B21	VBU	Back-up power supply	Always battery voltage
B22	LG2	Ground	
B25	SC LSP	Start clutch control linear solenoid power supply positive electrode	With ignition switch ON (II): Pulsing signal

PCM Terminal Voltage/ Measuring Conditions

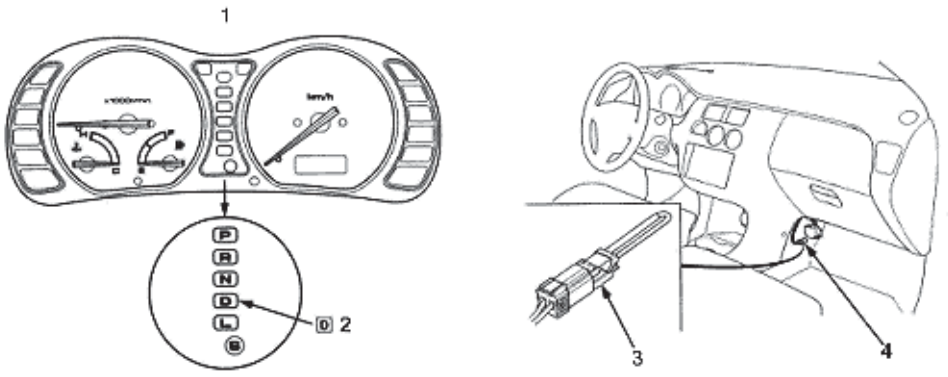
A/T Control System - KQ and KU Models with D16W5 Engine (cont'd)

PCM CONNECTOR D (16P)

Terminal Number	Signal	Description	Measuring Conditions/Terminal Voltage
D1	VEL	Secondary gear shaft speed sensor signal input	Depending on vehicle speed: Pulsing signal When vehicle is stopped: Approx. 0 V
D2	SOL INH	Inhibitor solenoid control	With inhibitor solenoid ON: Battery voltage With inhibitor solenoid OFF: 0 V
D3	SH LSM	Shift control linear solenoid power supply negative electrode	
D4	SH LSP	Shift control linear solenoid power supply positive electrode	With ignition switch ON (II): Pulsing signal
D5	VB SOL	Power supply for solenoid valves	With ignition switch ON (II): Battery voltage With ignition switch OFF: 0 V
D6	ATP R	A/T gear position switch R position input	In R position: 0 V In other than R position: Approx. 10 V
D7	VEL SG	Secondary gear shaft speed sensor ground	
D8	S2 IND	S2 indicator light control	With S2 mode switch ON and S2 indicator light comes on: Battery voltage S2 indicator light OFF: 0 V
D9	D SW	D mode switch signal input	With D mode switch ON: 0 V With D mode switch OFF: Approx. 5 V
D10	NDN	Driven pulley speed sensor signal input	In other than P and N position: Pulsing signal
D11	NDR	Drive pulley speed sensor signal input	In other than P and N position: Pulsing signal
D12	NDR SG	Drive pulley speed sensor ground	
D13	S SW	S1 or S2 mode switch signal input	With S mode switch ON: 0 V With S mode switch OFF: Approx. 5 V
D14	S IND	S1 indicator light control	With S1 mode switch ON and S1 indicator light comes on: Battery voltage S1 indicator light OFF: 0 V
D15	D IND	D Indicator light control	When ignition switch is first turned ON (II): Battery voltage for two seconds In D position: Battery voltage
D16	NDN SG	Driven pulley speed sensor ground	

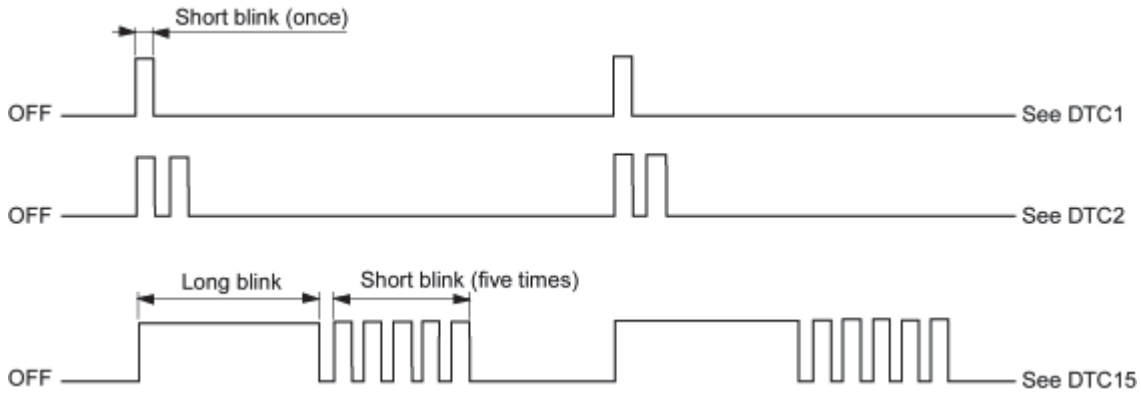
Checking the Diagnostic Trouble Code (DTC)
connecting with the Special Tool to the Service Check Connector

When the PCM senses an abnormality in the input or output systems, the D indicator light in the gauge assembly will blink. When the Service Check Connector (located under the dash on the passengers side) is connected with the special tool as shown, the D indicator light will blink the Diagnostic Trouble Code (DTC) when the ignition switch is turned ON (II). When the D indicator light has been reported on, connect the Service Check Connector with the special tool.
Then turn ON (II) the ignition switch and observe the D indicator light.



1. **GAUGE ASSEMBLY**
2. **INDICATOR LIGHT**
3. **SCS SHORT CONNECTOR, 07PAZ - 0010100**
4. **SERVICE CHECK CONNECTOR (2P)**

Codes 1 through 9 are indicated by individual short blinks. Codes 10 and above are indicated by a series of long and short blinks. One long blink equals 10 short blinks. Add the long and short blinks together to determine the code. After determining the code, refer to the electrical system Symptom-to-Component Chart, for this (**See Page** 14-13) and (**See Page** 14-14).



NOTE:

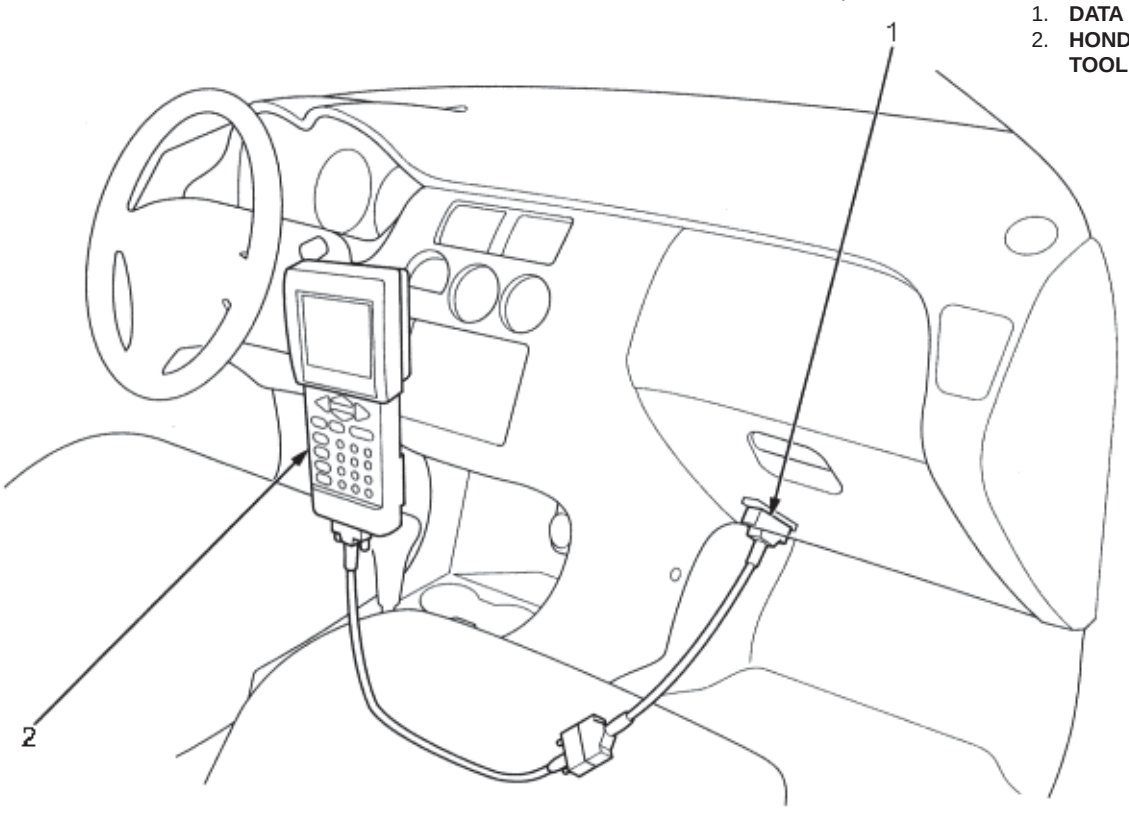
- If the D indicator light and the MIL (Malfunction Indicator Lamp) come on at the same time, follow this procedure:
  1. Record the DTCs for the fuel/emissions and A/T systems.
  2. Check the fuel and emission system indicated by the DTC.
  3. Write down the numbers of the customer's radio station presets.
  4. Reset the PCM memory by removing the BACK UP fuse in the passenger's under-dash fuse/relay box for more than 10 seconds.
  5. Drive the vehicle for several minutes at a speed over 30 mph (50km/h), and then recheck the DTCs.
- Disconnecting the BACK UP fuse also cancels the radio preset stations, clock setting and the feed back signal for the start clutch control. Make a note of the radio presets before removing the fuse so you can reset them, and to memorise the feedback signal for the start clutch control again follow the Memorising Feedback Signal procedures (**See Page** 14-71 in the '99 HR-V shop manual code No. 62S2H00).

Checking the Diagnostic Trouble Code (DTC)
with an OBD Scan Tool or the Honda PGM Tester

When the PCM senses an abnormality in the input or output systems, the D indicator light in the gauge assembly will blink. When the 16P Data Link Connector (DLC) (located under the dash on the passenger side) is connected to the OBD Scan Tool or Honda PGM Tester as shown, the scan tool or tester will indicate the Diagnostic Trouble Code (DTC) when the ignition switch is turned ON (II).

When the D indicator light has been reported on, connect the OBD Scan Tool or Honda PGM Tester to the DLC (16P). Turn the ignition switch ON (II), and observe the DTC on the screen of the Scan Tool or Honda PGM Tester. After determining the DTC, refer to the Symptom-to-Component Chart Electrical System, for this (**See Page** 14-13) and (**Page** 14-14).
NOTE: See the OBD Scan Tool or Honda PGM Tester user's manual for specific instructions.

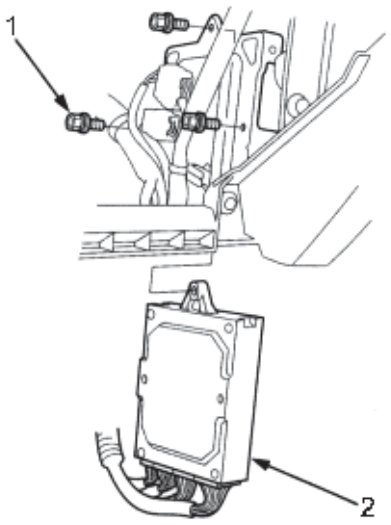
1. **DATA LINK CONNECTOR (16P)**
2. **HONDA PGM TESTER or OBD SCAN TOOL**



NOTE:

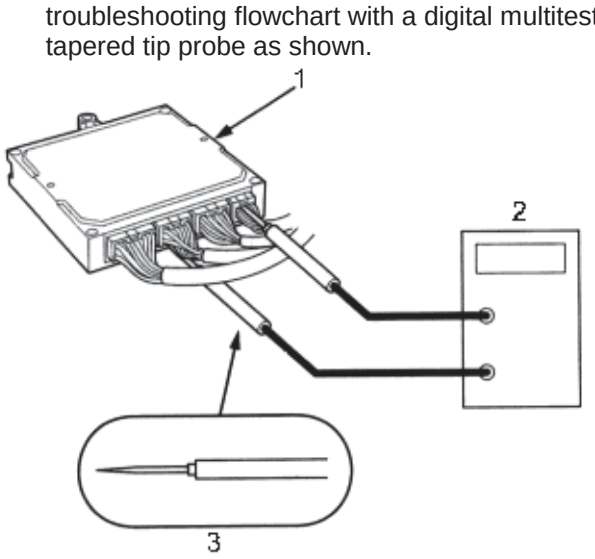
- If the D indicator light and the MIL (Malfunction Indicator Lamp) come on at the same time, follow this procedure:
  1. Record the DTCs for the fuel/emissions and A/T systems.
  2. Check the fuel and emission system indicated by the DTC.
  3. Write down the numbers of the customer's radio station presets.
  4. Reset the PCM memory by removing the BACK UP fuse in the passenger's under-dash fuse/relay box for more than 10 seconds.
  5. Drive the vehicle for several minutes at a speed over 30 mph (50 km/h), and then recheck the DTCs.
- Disconnecting the BACK UP fuse also cancels the radio preset stations, clock setting and the feed back signal for the start clutch control. Make a note of the radio presets before removing the fuse so you can reset them, and to memorise the feedback signal for the start clutch control again follow the Memorising Feedback Signal procedures (**See Page** 14-71 in the '99 HR-V shop manual code No. 62S2H00).

1. Remove the glove box (see section 20).
2. Remove the PCM.
   NOTE: RHD is shown; LHD is symmetrical.



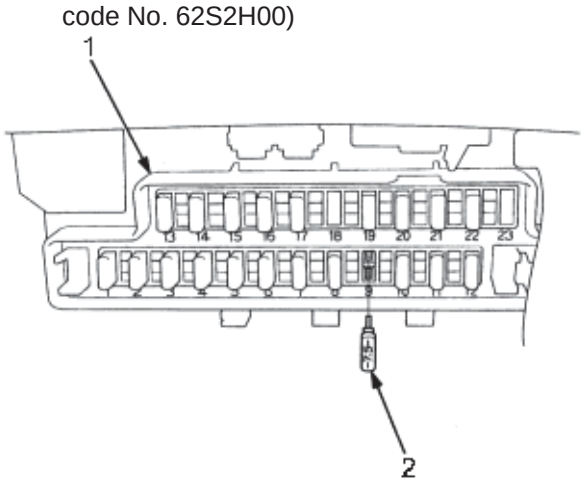
1. 6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
2. PCM

3. Inspect the circuit on the PCM according to the troubleshooting flowchart with a digital multitester and a tapered tip probe as shown.



1. PCM
2. DIGITAL MULTITESTER Commercially available or 07411-0020000
3. TAPERED TIP PROBE

♦ **PCM Reset Procedure**
1. Turn the ignition switch off.
2. Remove the BACK UP fuse (7.5 A) from the under-dash fuse/relay box for 10 seconds to reset the PCM.
   NOTE: Disconnecting the BACK UP fuse also cancels the radio preset stations, clock setting and the feed back signal for the start clutch control. Make note of the radio presets before removing the fuse so you can reset them, and to memorise the feedback signal for the start clutch control again follow the Start Clutch Calibration Procedure (**See Page** 14-71 in the '99 HR-V shop manual code No. 62S2H00)



1. UNDER-DASH FUSE/RELAY BOX
2. BACK UP FUSE (7.5 A)

♦ **Final Procedure**
   NOTE: This procedure must be done after any troubleshooting.
1. Remove the special tool from the Service Check Connector.
2. Reset the PCM.
3. Set the radio preset stations and clock setting.
4. Follow the Start Clutch Calibration Procedure to store in the PCM (**See Page** 14-71 in the '99 HR-V shop manual code No. 62S2H00)

When PCM senses abnormality, D indicator light:	Number of D Indicator Light indicates DTC on Honda PGM Tester DTC on OBD Scan Tool	Symptom	Possible Cause	Refer to Page in the '99 HR-V shop manual (62S2H00)
Blinks	5 5-1 P1705	• Transmission shifts same as D position in any positions.	• Short in A/T gear position switch wire • Faulty A/T gear position switch	(**See page** 14-40)
Does not blink	6 6-1 P1706	• Transmission shifts same as D position in any positions.	• Disconnected A/T gear position switch connector • Open in A/T gear position switch wire • Faulty A/T gear position switch	(**See page** 14-42)
Blinks	30 30-1 P1870	Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in shift control linear solenoid wire • Faulty shift control linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-44)
Blinks	31 31-1 P1873	Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in PH-PL control linear solenoid wire • Faulty PH-PL linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-46)
Blinks	32 32-1 P1879	Poor acceleration, flares on starting off.	• Disconnected solenoid harness connector • Short or open in start clutch control linear solenoid wire • Faulty start clutch control linear solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-48)
Blinks	33 33-1 P1882	No specific symptom appears.	• Disconnected solenoid harness connector • Short or open in inhibitor solenoid wire • Faulty inhibitor solenoid • Open in VB SOL line • Faulty PG line	(**See page** 14-50)

When PCM senses abnormality, D indicator light:	Number of D Indicator Light indicates DTC on Honda PGM Tester DTC on OBD Scan Tool	Symptom	Possible Cause	Refer to Page in the '99 HR-V shop manual (62S2H00)
Blinks	34 34-1 P1885	Poor acceleration, flares on starting off.	• Disconnected drive pulley speed sensor connector • Short or open in drive pulley speed sensor wire • Faulty drive pulley speed sensor	(**See page** 14-52)
Blinks	35 35-1 P1886	Poor acceleration, flares on starting off.	• Disconnected driven pulley speed sensor connector • Short or open in driven pulley speed sensor wire • Faulty driven pulley speed sensor	(**See page** 14-54)
Blinks	36 36-1 P1888	Poor acceleration, flares on starting off.	• Disconnected secondary gear shaft speed sensor connector • Short or open in secondary gear shaft speed sensor wire • Faulty secondary gear shaft speed sensor	(**See page** 14-56)
Blinks	42 42-1 P1890	Poor acceleration, flares on starting off.	• Faulty shift control system	(**See page** 14-58)
Blinks	43 43-1 P1891	Poor acceleration, flares on starting off.	• Faulty start clutch control system	(**See page** 14-59)

NOTE:

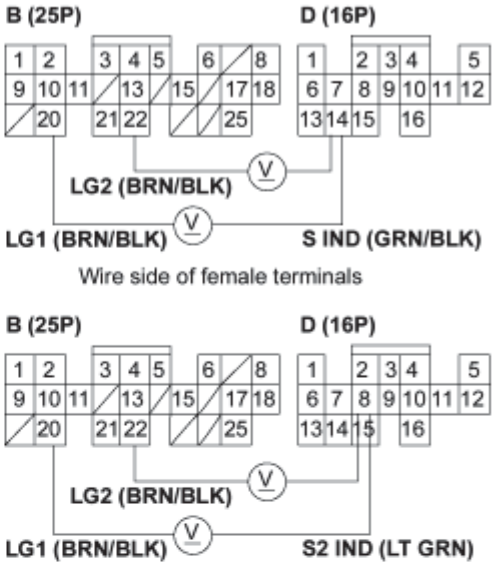
- If a customer described the symptom for code 6, 6-1, P1706, it will be necessary to recreate the symptom by test driving, then recheck the DTC.
- Sometimes the D indicator light and the Malfunction Indicator Lamp (MIL) may come on simultaneously. If so, repair the PGM-FI system according to the DTC, then reset the memory by removing the BACK UP fuse in the under-dash fuse/relay box for more than 10 seconds. Drive the vehicle for several minutes at a speed over 30 mph (50 km/h), then recheck the DTC.

The S1 or S2 mode indicator light does not come on when S1 or S2 mode selected in D position.

Measure S IND and S2 IND Voltage:
1. Turn the ignition switch ON (II).
2. Shift to D position.
3. Measure the voltage between the D14 and B20 or B22 terminals in S1 mode position.
4. Measure the voltage between the D8 and B20 or B22 terminals in S2 mode position.

Is there approx. 10 V?
- YES → To page 14-16
- NO

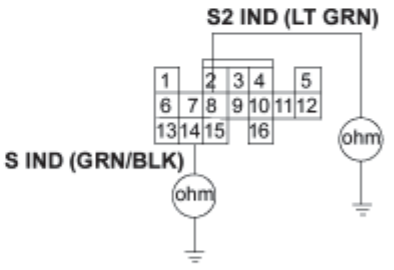
PCM CONNECTORS



Wire side of female terminals

Check S IND and S2 IND for a Short Circuit:
1. Turn the ignition switch OFF.
2. Disconnect the D (16P) connector from the PCM.
3. Disconnect the gauge assembly A (22P) connector.
4. Check for a continuity between the D8 terminal and body ground, and between the D14 terminal and body ground.

PCM CONNECTOR D (16P)



Wire side of female terminals

Is there continuity?
- NO → **Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.**
- YES

Repair short in the wire between the D8 and D14 terminals and the gauge assembly.

From page 14-15

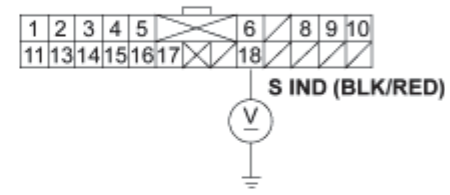
Measure S IND Voltage at Gauge Assembly Connector:
Measure the voltage between the No. 18 terminal of the gauge assembly A (22P) connector and body ground in S1 mode position.

Is there approx. 10 V?

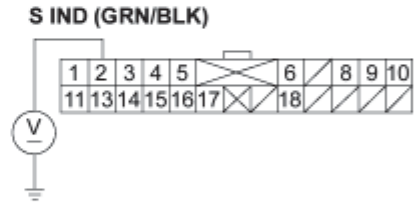
NO → **Check for open in the wire between the D14 terminal and the gauge assembly. If wire is OK, check the gauge assembly.**

YES

GAUGE ASSEMBLY CONNECTOR A (22P)



S IND (GRN/BLK)



Measure S2 IND Voltage at Gauge Assembly Connector:
Measure the voltage between the No. 2 terminal of the gauge assembly A (22P) connector and body ground in S2 mode position.

Is there approx. 10 V?

NO → **Check for open in the wire between the D8 terminal and the gauge assembly. If wire is OK, check the gauge assembly.**

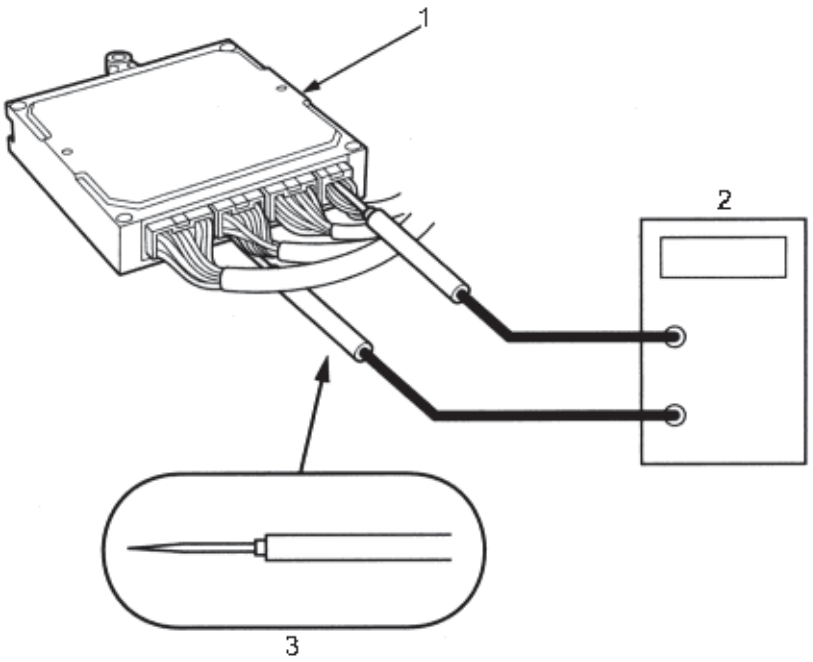
YES

Check for loose terminal fit in the PCM connectors. If necessary, substitute a known-good PCM and recheck.

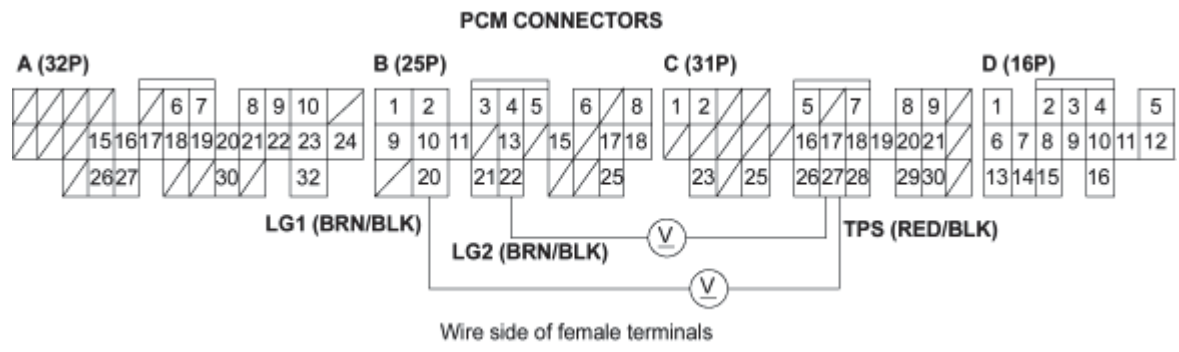
NOTE: Warm up the engine to normal operating temperature (the radiator fan comes on).

1. Apply the parking brake and block the wheels. Start the engine, then shift to the [D] position while depressing the brake pedal. Depress the accelerator pedal and release it suddenly. The engine should not stall.
2. Test in [P] position

   Park the car on a slope (approx. 16°), apply the parking brake, and shift into [P] position. Release the brake; the car should not move.
3. Test drive the car on a flat road in the position shown in the table. Check that the engine speeds meet the approximate vehicle speeds shown in the table.
   NOTE: Throttle position sensor voltage represents the throttle opening.
   1. Remove the kick panel to expose the PCM for road testing; (**See page** 14-37 in the '99 HR-V shop manual code No. 62S2H00).
   2. Set the digital multitester to check the voltage between the C27 (+) terminal and B20 (-) or B22 (-) terminal of the PCM for throttle position sensor.



1. **PCM**
2. **DIGITAL MULTITESTER**
   Commercially available or 07411 - 0020000
3. **TAPERED TIP PROBE**



♦ **D position: Engine Speed rpm (min^{-1})**

Throttle Opening	Vehicle Speed		
	25 mph (40 km/h)	37 mph (60 km/h)	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	1,150 - 1,550	----	----
Throttle position sensor voltage: 2.0 V	2,550 - 3,150	2,850 - 3,450	3,000 - 3,600
Throttle position sensor voltage: 4.5 V Fully-throttle position	4,350 - 4,900	5,200 - 5,800	5,900 - 6,500

♦ **D position S1 mode: Engine Speed rpm (min^{-1})**

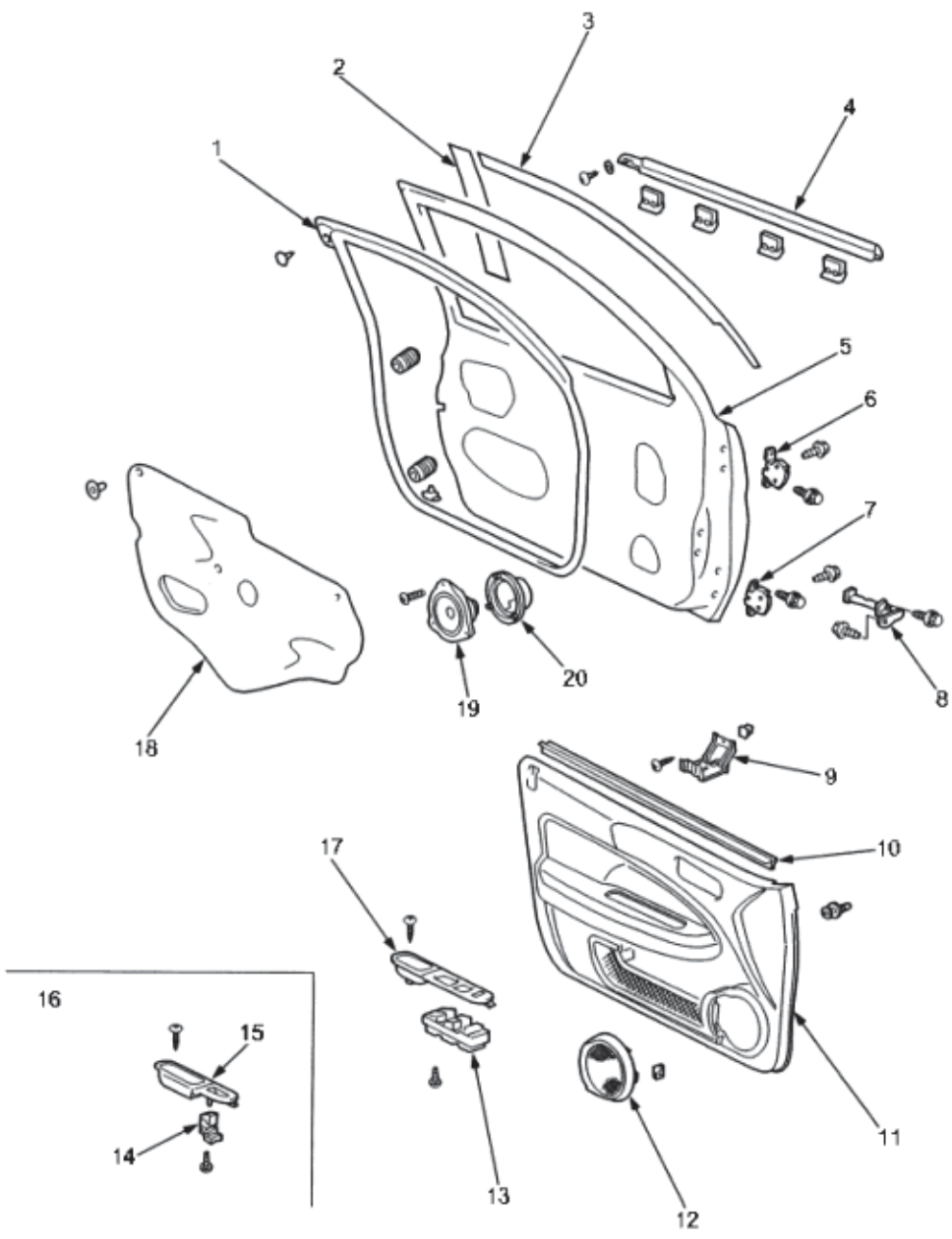
Throttle Opening	Vehicle Speed		
	25 mph (40 km/h)	37 mph (60 km/h)	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	1,800 - 2,200	2,050 - 2,650	3,300 - 3,900
Throttle position sensor voltage: 2.0 V	2,950 - 3,550	3,200 - 3,800	3,700 - 4,300
Throttle position sensor voltage: 4.5 V Fully-throttle position	4,450 - 5,050	5,450 - 6,050	6,200 - 6,800

♦ **D position S2 mode: Engine Speed rpm (min^{-1})**

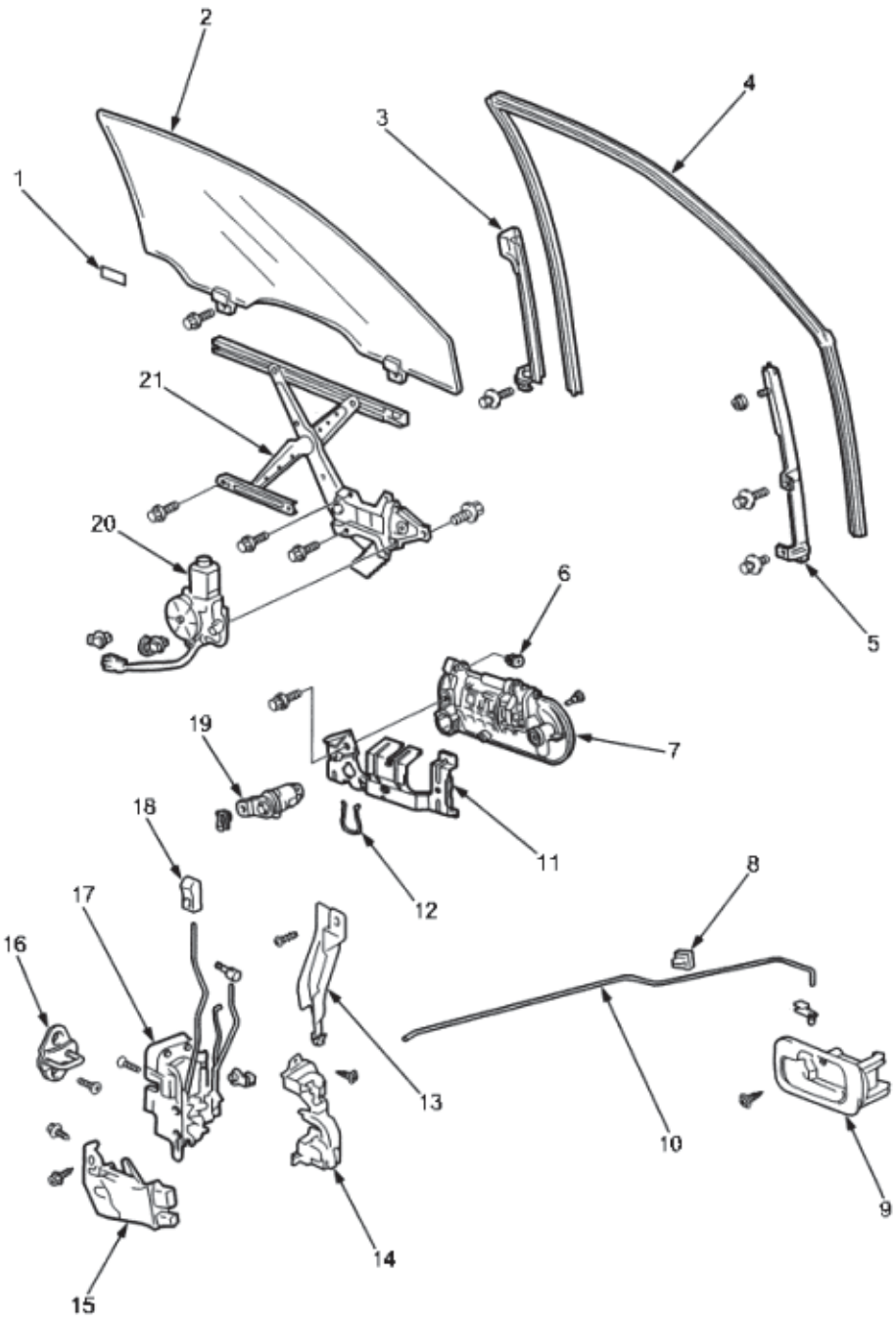
Throttle Opening	Vehicle Speed		
	25 mph (40 km/h)	37 mph (60 km/h)	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	2,500 - 3,100	3,250 - 3,850	4,150 - 4,750
Throttle position sensor voltage: 2.0 V	3,250 - 3,850	3,750 - 4,350	4,450 - 5,050
Throttle position sensor voltage: 4.5 V Fully-throttle position	4,900 - 5,500	5,900 - 6,500	6,200 - 6,800

♦ **L position: Engine Speed rpm (min^{-1})**

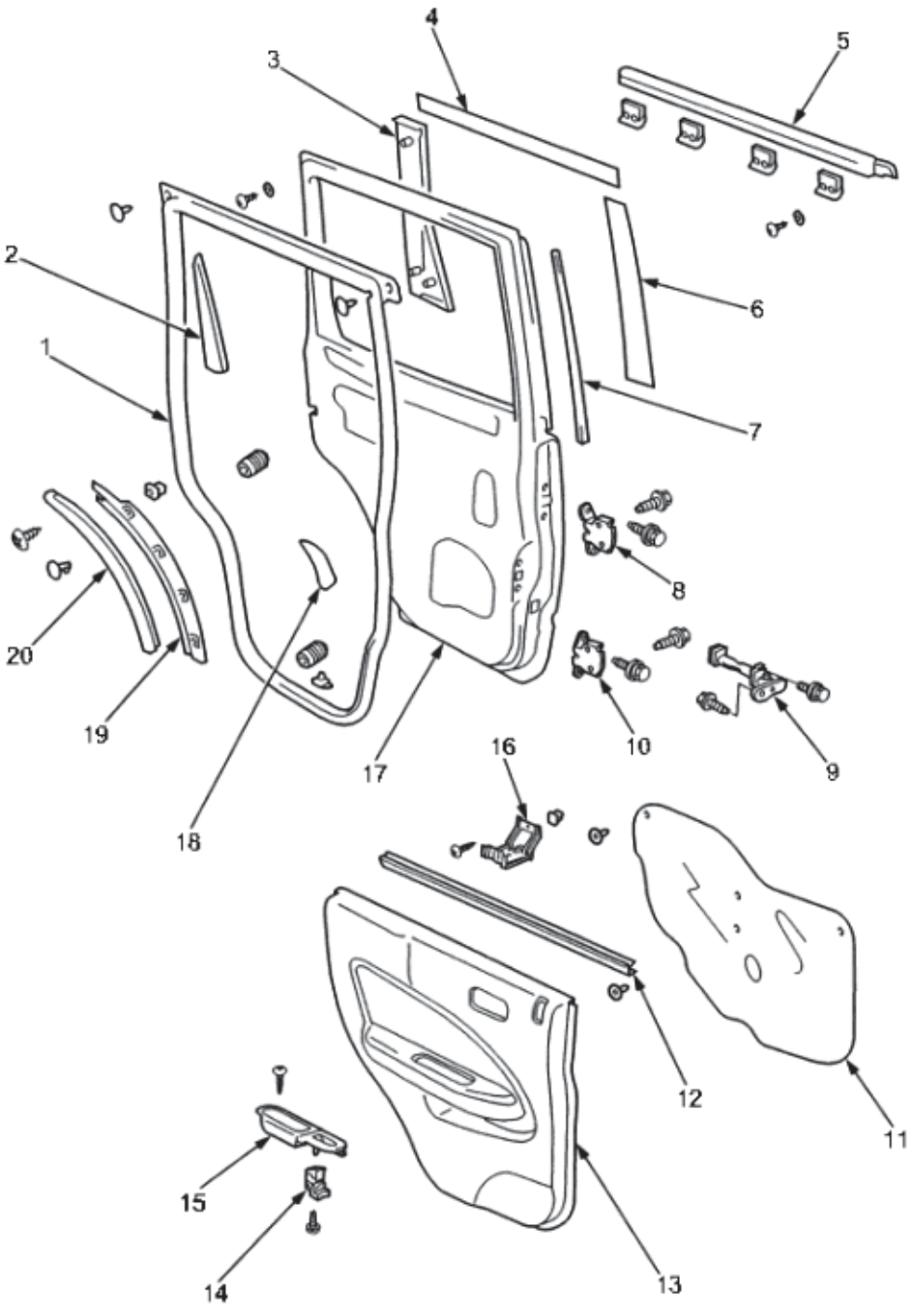
Throttle Opening	Vehicle Speed		
	25 mph (40 km/h)	37 mph (60 km/h)	62 mph (100 km/h)
Throttle position sensor voltage: 0.75 V	2,750 - 3,350	3,650 - 4,250	4,450 - 5,050
Throttle position sensor voltage: 2.0 V	3,400 - 4,000	3,900 - 4,500	4,700 - 5,300
Throttle position sensor voltage: 4.5 V Fully-throttle position	4,900 - 5,500	5,900 - 6,500	6,350 - 6,950



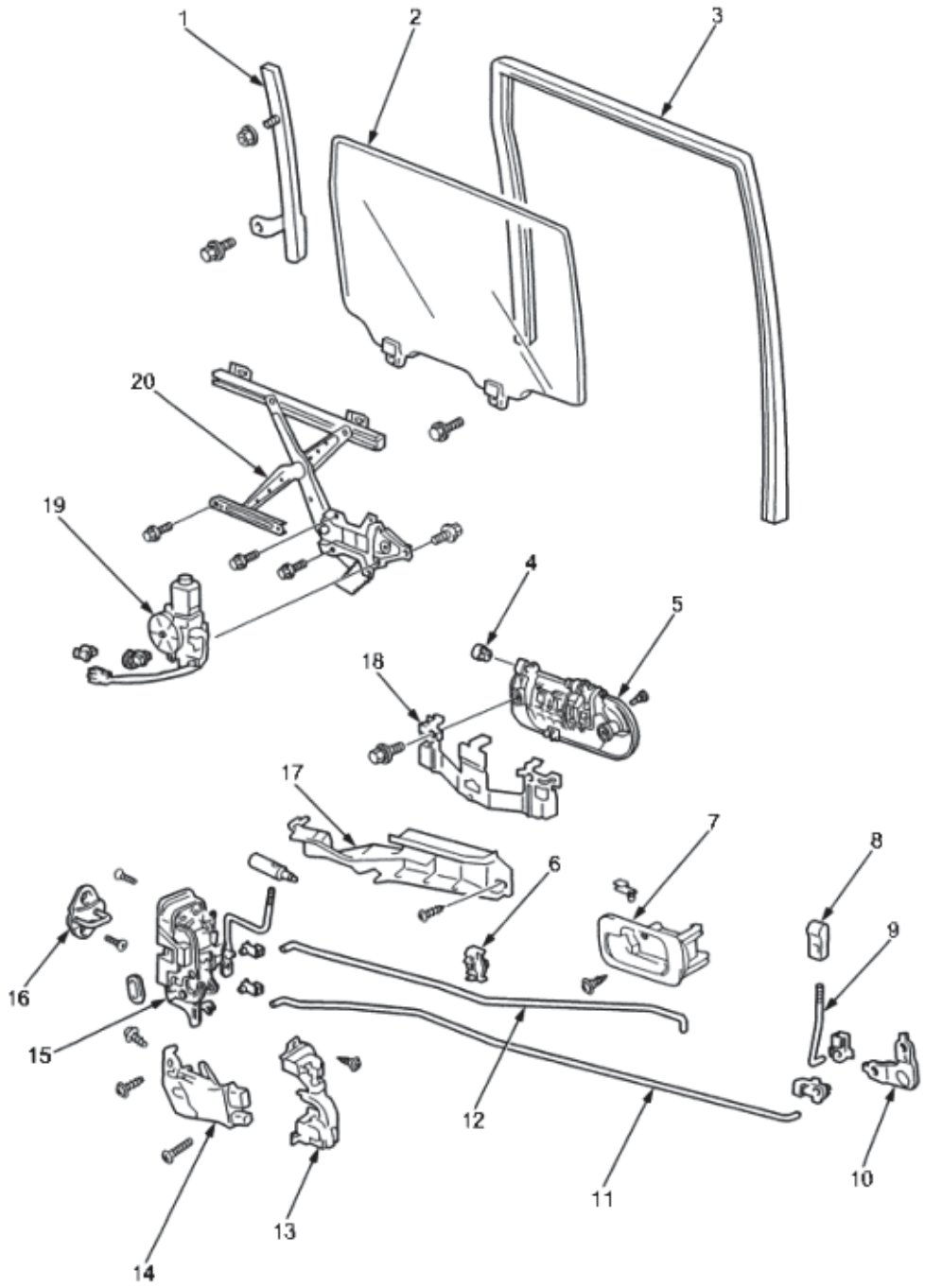
1. **DOOR WEATHERSTRIP**
2. **CENTRE CHANNEL TAPE**
   Replacement, (**See Page** 20-19)
3. **UPPER CHANNEL TAPE**
   Replacement, (**See Page** 20-19)
4. **DOOR MOULDING**
5. **FRONT DOOR**
6. **HINGE**
7. **HINGE**
8. **DETENT ROD**
9. **PULL POCKET BRACKET**
10. **INNER WEATHERSTRIP**
11. **FRONT DOOR PANEL**
    Removal and installation, (**See Page** 20-6)
12. **SPEAKER COVER**
13. **POWER WINDOW SWITCH**
14. **POWER WINDOW SWITCH**
15. **PULL POCKET PANEL**
16. **Passenger's:**
17. **PULL POCKET PANEL**
18. **PLASTIC COVER**
19. **SPEAKER**
20. **ADAPTER**



1. **IMMOBILIZER LABEL** (for some models)
2. **GLASS**
3. **CENTRE LOWER CHANNEL**
4. **GLASS RUN CHANNEL**
5. **FRONT LOWER CHANNEL**
6. **BUSHING**
7. **OUTER HANDLE**
   Replacement (**See Page** 20-7)
8. **ROD HOLDER**
9. **INNER HANDLE**
10. **INNER HANDLE ROD**
11. **OUTER HANDLE PROTECTOR**
12. **RETAINER CLIP**
13. **ROD PROTECTOR**
14. **LATCH PROTECTOR**
15. **POWER DOOR LOCK ACTUATOR**
16. **STRIKER**
17. **LATCH**
    Replacement (**See Page** 20-9)
18. **LOCK KNOB**
19. **LOCK CYLINDER**
20. **POWER WINDOW MOTOR**
21. **REGULATOR**



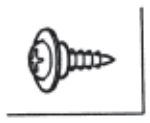
1. **DOOR WEATHERSTRIP**
2. **REAR DOOR QUARTER INNER TRIM**
3. **REAR DOOR REAR PILLAR TRIM**
4. **UPPER CHANNEL TAPE**
   Replacement, (**See Page** 20-19)
5. **DOOR MOULDING**
6. **CENTRE CHANNEL TAPE**
   Replacement, (**See Page** 20-19)
7. **DOOR CENTRE SEAL**
8. **HINGE**
9. **DETENT ROD**
10. **HINGE**
11. **PLASTIC COVER**
12. **INNER WEATHERSTRIP**
13. **REAR DOOR PANEL**
    Replacement, (**See Page** 20-10)
14. **POWER WINDOW SWITCH**
15. **PULL POCKET PANEL**
16. **PULL POCKET BRACKET**
17. **REAR DOOR**
18. **PROTECTION TAPE**
19. **REAR DOOR LOWER PROTECTOR**
    Replacement, (**See Page** 20-18)
20. **REAR DOOR WHEEL ARCH SEAL**

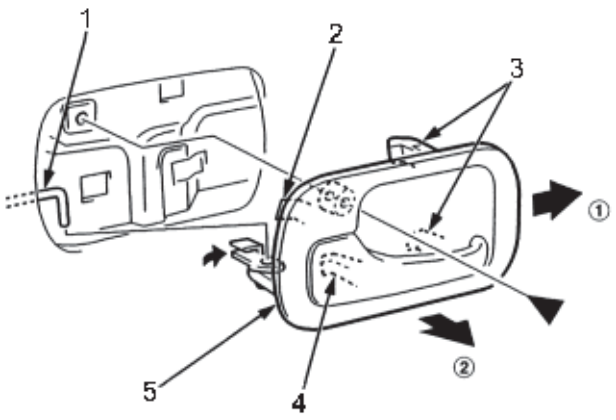


1. **REAR LOWER CHANNEL**
2. **GLASS**
   Replacement, (**See Page** 20-15)
3. **GLASS RUN CHANNEL**
4. **BUSHING**
5. **OUTER HANDLE**
   Replacement, (**See Page** 20-11)
6. **ROD HOLDER**
7. **INNER HANDLE**
8. **LOCK KNOB**
9. **LOCK KNOB ROD**
10. **LOCK CRANK**
11. **LOCK ROD**
12. **INNER HANDLE ROD**
13. **LATCH PROTECTOR**
14. **POWER DOOR LOCK ACTUATOR**
15. **LATCH**
    Replacement, (**See Page** 20-14)
16. **STRIKER**
17. **ROD PROTECTOR**
18. **OUTER HANDLE PROTECTOR**
19. **POWER WINDOW MOTOR**
20. **REGULATOR**
    Replacement, (**See Page** 20-15)

1. Remove the inner handle. Take care not to scratch the door panel.

▶ : Screw location, 1

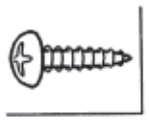


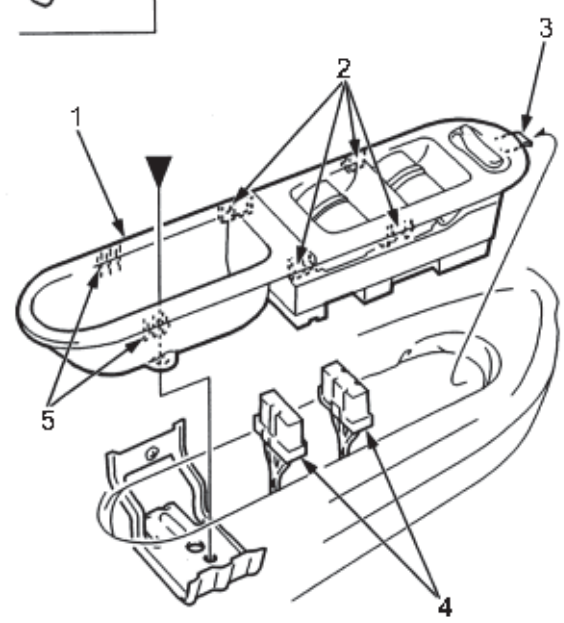


1. INNER HANDLE ROD
2. HOOK
3. HOOKS
4. HOOK
5. INNER HANDLE

2. Remove the pull pocket panel, then disconnect the power window switch connectors.

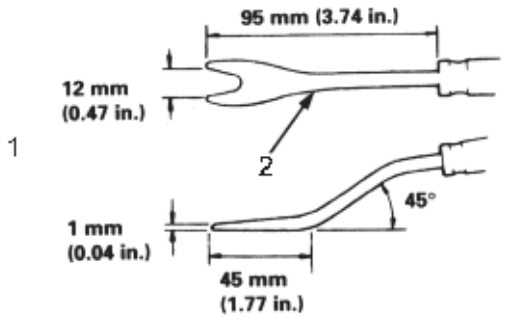
▶ : Screw location, 1





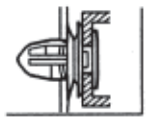
1. PULL POCKET PANEL
2. HOOKS
3. HOOK
4. POWER WINDOW SWITCH CONNECTORS
5. HOOKS

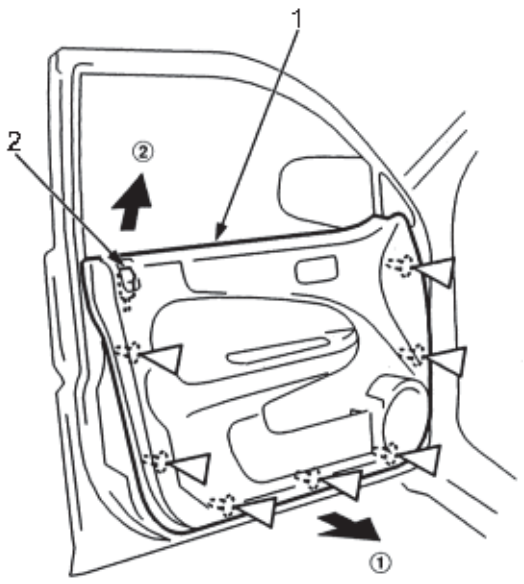
3. Release the clips that hold the door panel with a commercially available trim pad remover, then remove the door panel by pulling it upward. Remove the door panel with as little bending as possible to avoid creasing or breaking it.



1. Snap-on #A177, or equivalent
2. TRIM PAD REMOVER

▷ : Clip locations, 7





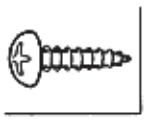
1. DOOR PANEL
2. LOCK KNOB

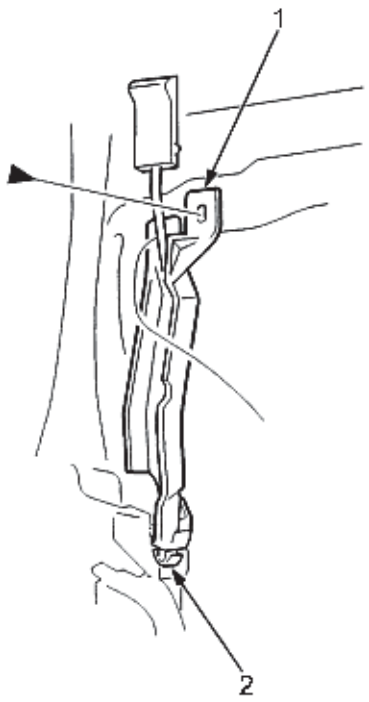
4. Install in the reverse order of removal, and note these items:
   - Replace any damaged clips.
   - Make sure the connectors are plugged in properly, and the rod is connected properly.
   - Slip the lock knob through the hole in the door panel.

NOTE: Put on gloves to protect your hands.

1. Remove:
   - Door panel
   - Plastic cover, as necessary (**See Page** 20-2)
2. Raise the glass fully.
3. Remove the rod protector.

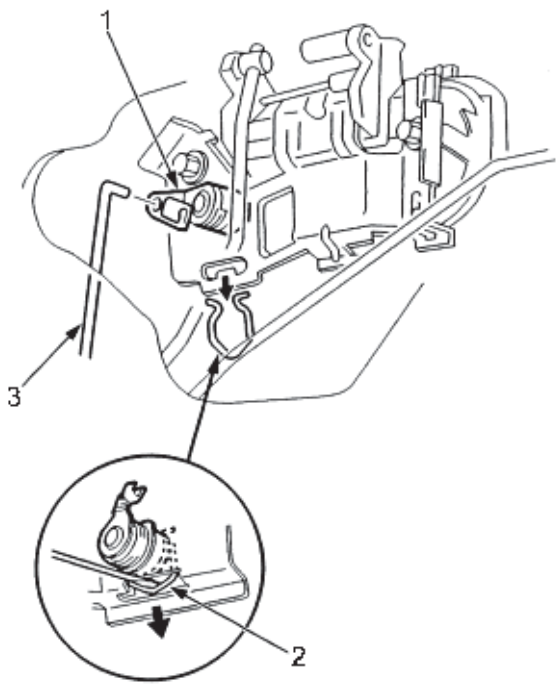
▶ : Screw location, 1





1. ROD PROTECTOR
2. Detach the rod protector from the latch protector.

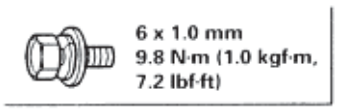
4. Disconnect the cylinder rod. Release the retainer clip, then remove the lock cylinder.

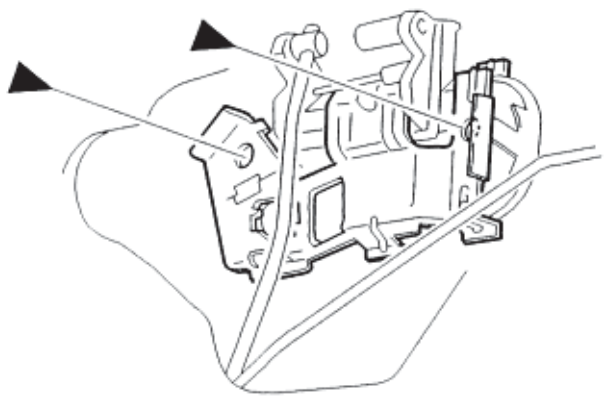


1. LOCK CYLINDER
2. RETAINER CLIP
3. CYLINDER ROD

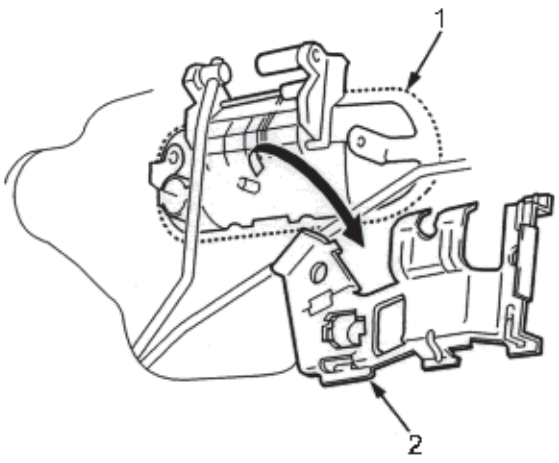
5. Remove the bolts securing the outer handle protector and outer handle.

▶ : Bolt locations, 2



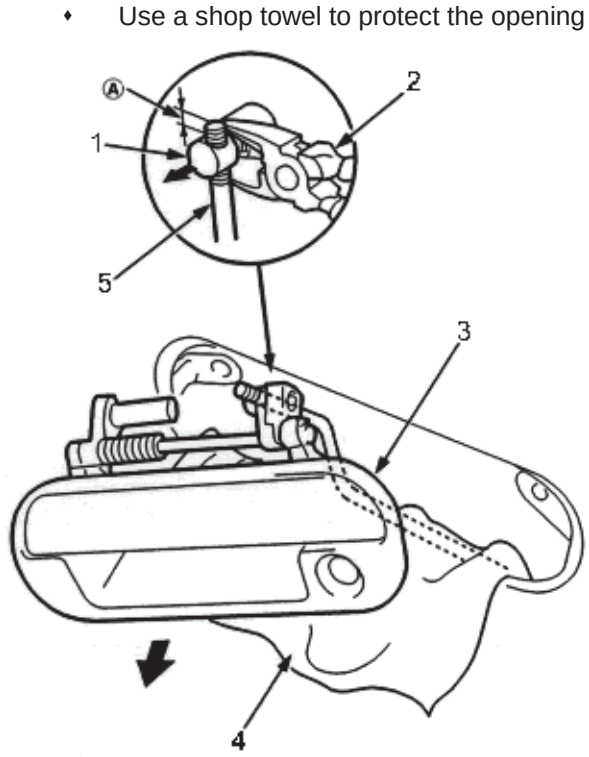


6. Remove the outer handle protector from the outer handle.



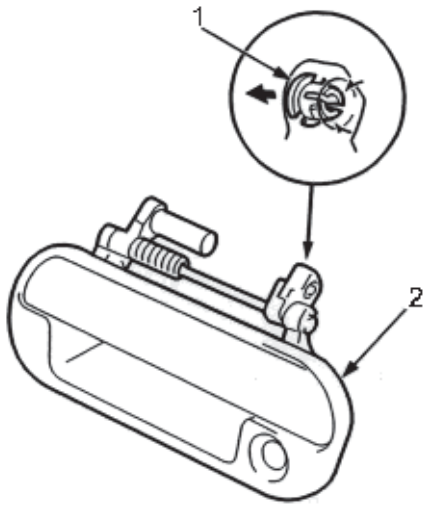
1. OUTER HANDLE
2. OUTER HANDLE PROTECTOR

7. Pull out the outer handle. Pry the outer handle rod out of its joint using diagonal cutters.
   NOTE:
   - To ease reassembly, note the distance (**A**) of the outer handle rod on the joint before disconnecting it.
   - Take care not to bend the outer handle rod.
   - Use a shop towel to protect the opening in the door.



1. JOINT
2. DIAGONAL CUTTERS
3. OUTER HANDLE
4. SHOP TOWEL
5. OUTER HANDLE ROD

8. Replace the bushing on the outer handle.

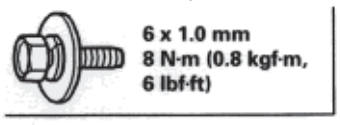


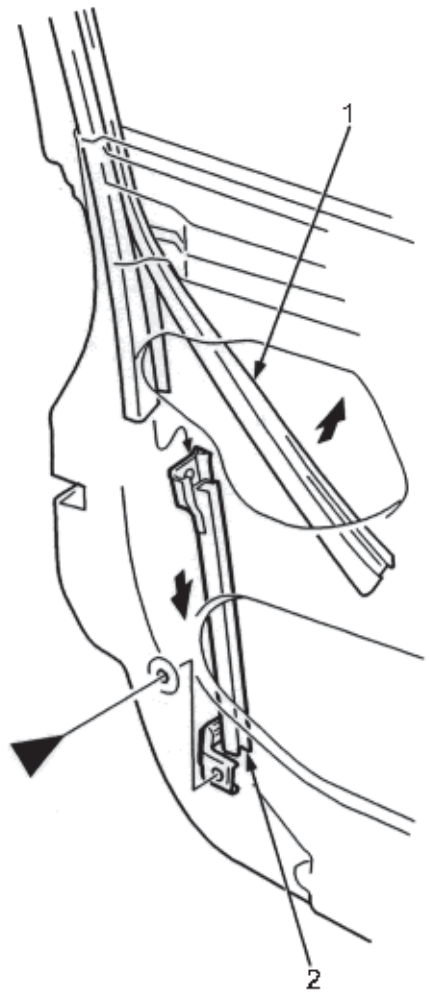
1. BUSHING
2. OUTER HANDLE

9. Install in the reverse order of removal, and note these items:
   - Make sure each rod is connected securely.
   - Make sure the door locks and opens properly.
   - When installing the lock cylinder, leave the outer handle bolts loose so the inner protector does not interfere with the lock cylinder.
   - Install the lock cylinder retaining clip on the handle, then install the lock cylinder. Be sure the clip is fully seated in the slot on the lock cylinder.

NOTE: Put on gloves to protect your hands.
1. Raise the glass fully.
2. Remove the outer handle (**See Page** 20-7).
3. Remove the glass run channel as needed from the centre lower channel. Remove the bolt, then remove the centre lower channel by pulling it downward.

▶ : Bolt location, 1

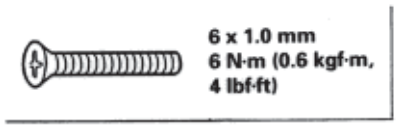


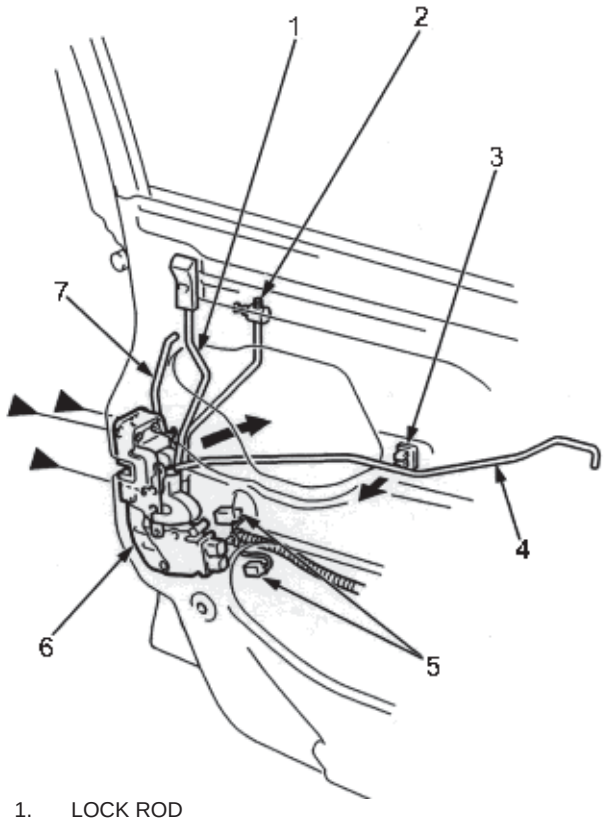


1. GLASS RUN CHANNEL
2. CENTRE LOWER CHANNEL

4. Detach the inner handle rod from the rod holder, and disconnect the actuator connector.

▶ : Screw locations, 3





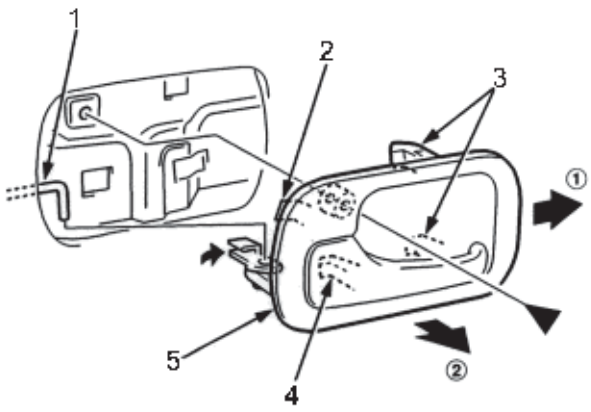
1. LOCK ROD
2. OUTER HANDLE ROD
3. ROD HOLDER
4. INNER HANDLE ROD
5. ACTUATOR CONNECTORS
6. LATCH
7. CYLINDER ROD

5. Remove the screws, then remove the latch through the hole in the door. Take care not to bend the outer handle rod, cylinder rod, lock rod and inner handle rod.
6. Install in the reverse order of removal, and note these items:
   - Make sure the actuator connectors are plugged in properly, and each rod is connected securely.
   - Make sure the door locks and opens properly.

1. Remove the inner handle. Take care not to scratch the door panel.

▶ : Screw location, 1

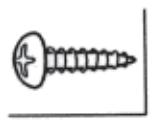


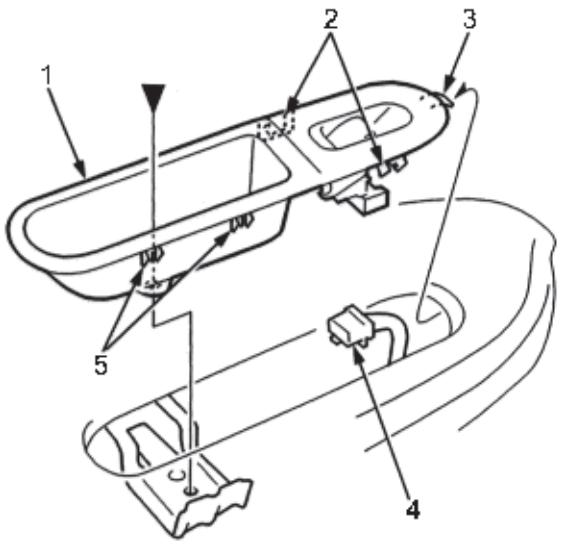


1. INNER HANDLE ROD
2. HOOK
3. HOOKS
4. HOOK
5. INNER HANDLE

2. Remove the pull pocket panel, then disconnect the power window switch connector.

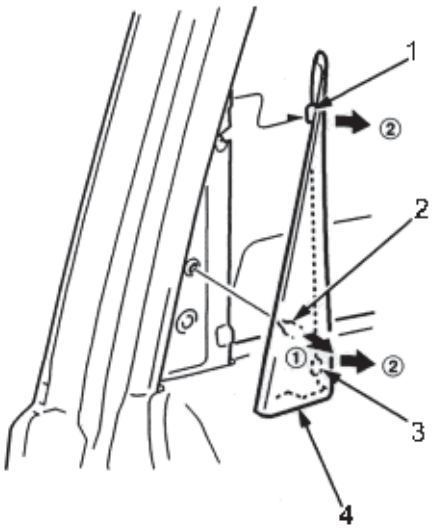
▶ : Screw location, 1





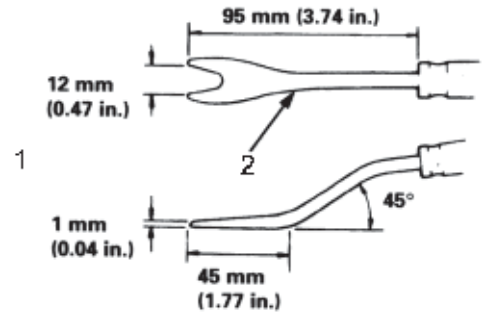
1. PULL POCKET PANEL
2. HOOKS
3. HOOK
4. POWER WINDOW SWITCH CONNECTOR
5. HOOKS

3. Lower the glass fully.
4. Remove the door quarter inner trim. Take care not to damage the hooks.



1. HOOK
2. PIN
3. HOOK
4. DOOR QUARTER INNER TRIM

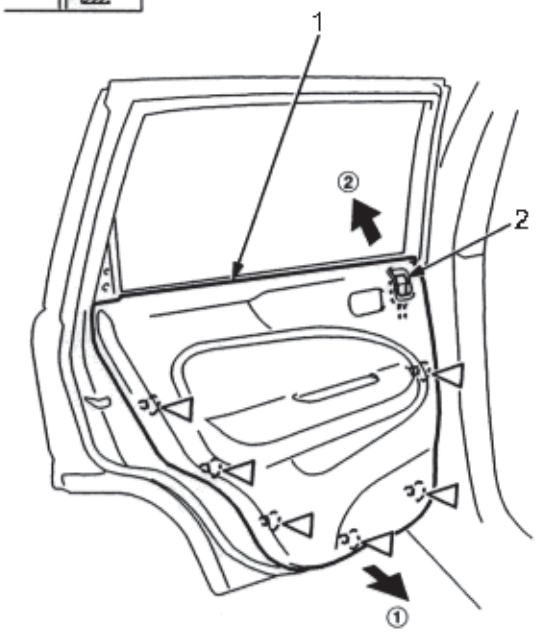
5. Release the clips that hold the door panel with a commercially available trim pad remover, then remove the door panel by pulling it upward. Remove the door panel with as little bending as possible to avoid creasing or breaking it.



1. Snap-on #A177, or equivalent
2. TRIM PAD REMOVER

▷ : Clip locations, 6





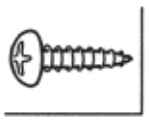
1. DOOR PANEL
2. LOCK KNOB

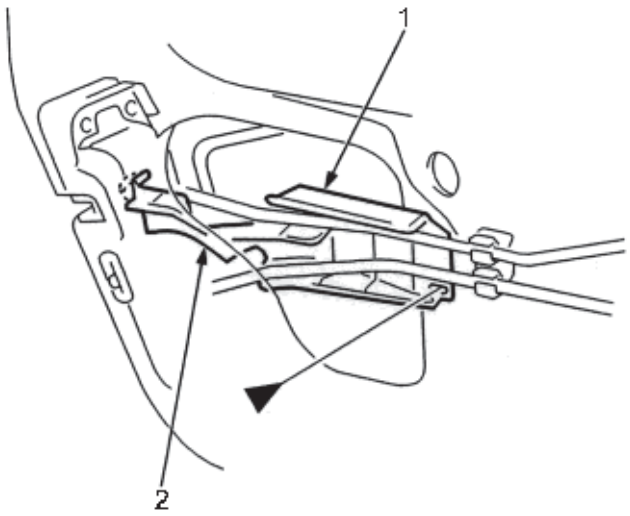
6. Install in the reverse order of removal, and note these items:
   - Replace any damaged clips
   - Make sure the connector is plugged in properly, and the rod is connected properly.
   - Slip the lock knob through the hole in the door panel.

NOTE: Put on gloves to protect your hands.

1. Remove:
   - Door panel
   - Plastic cover, as necessary (**See Page** 20-4)
2. Raise the glass fully.
3. Remove the rod protector

▶ : Screw location, 1





1. ROD PROTECTOR
2. Detach the rod protector from the latch protector.

4. Remove the bolt, and loosen the nut, then move the rear lower channel. Remove the bolts securing the outer handle protector and outer handle.

▶ : Bolt locations

A ▶, 1



6 x 1.0 mm
8 N·m
(0.8 kgf·m,
6 lbf·ft)

B ▶, 2

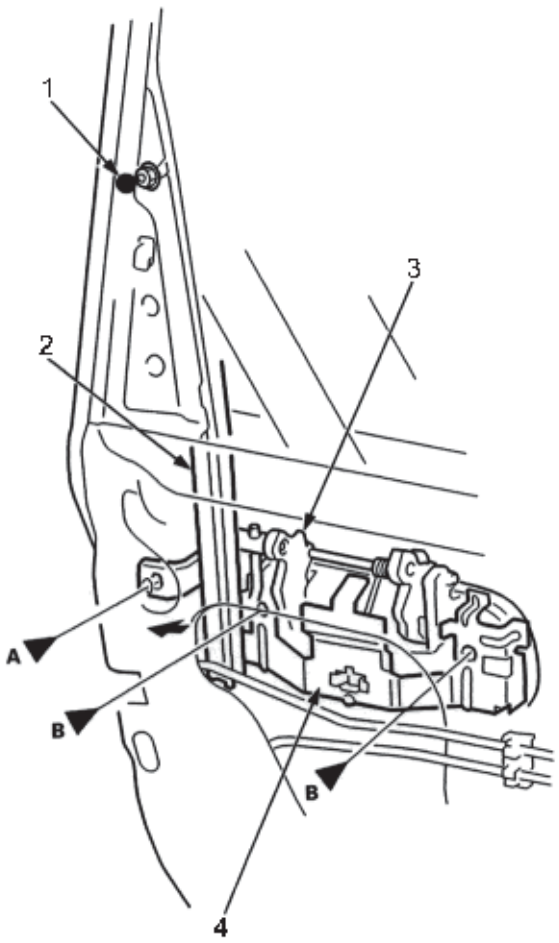


6 x 1.0 mm
9.8 N·m
(1.0 kgf·m,
7.2 lbf·ft)

● : Nut location, 1

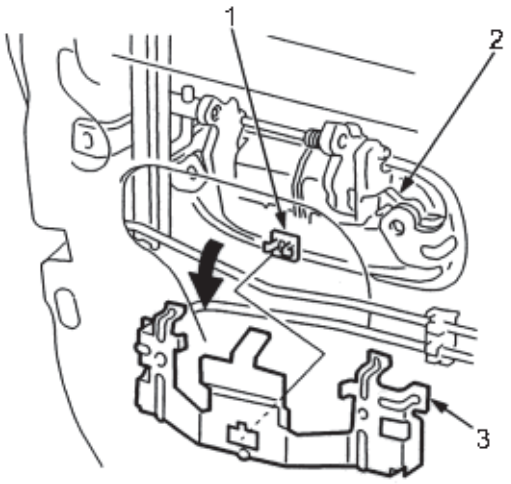


6 x 1.0 mm
8 N·m
(0.8 kgf·m,
6 lbf·ft)



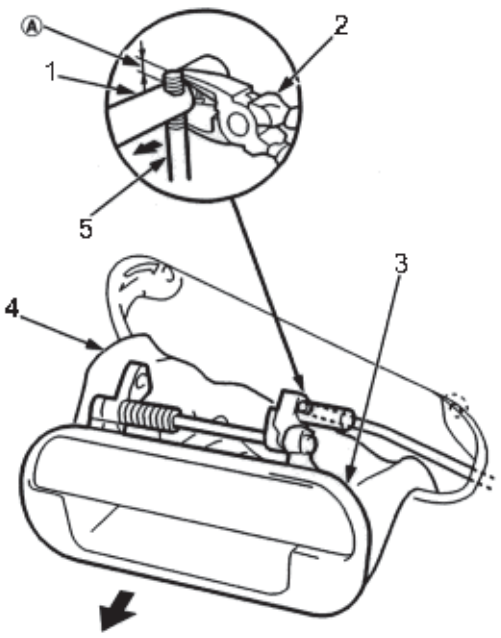
1. Loosen.
2. REAR LOWER CHANNEL
3. OUTER HANDLE
4. OUTER HANDLE PROTECTOR

5. Remove the outer handle protector from the outer handle.



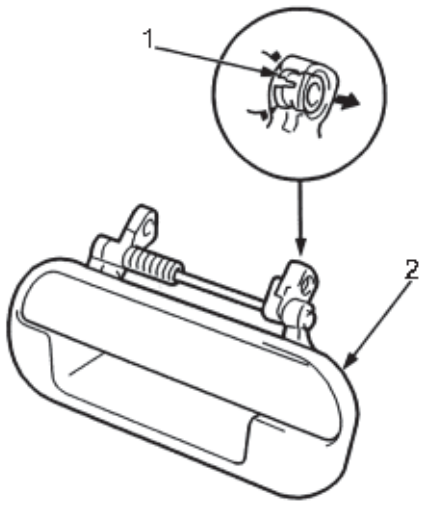
1. CLIP
2. OUTER HANDLE
3. OUTER HANDLE PROTECTOR Detach the clip.

6. Pull out the outer handle. Pry the outer handle rod out of its joint using diagonal cutters.
NOTE:
   - To ease reassembly, note the distance (**A**) of the outer handle rod on the joint before disconnecting it.
   - Take care not to bend the outer handle rod.
   - Use a shop towel to protect the opening in the door.



1. JOINT
2. DIAGONAL CUTTERS
3. OUTER HANDLE
4. SHOP TOWEL
5. OUTER HANDLE ROD

7. Replace the bushing on the outer handle.



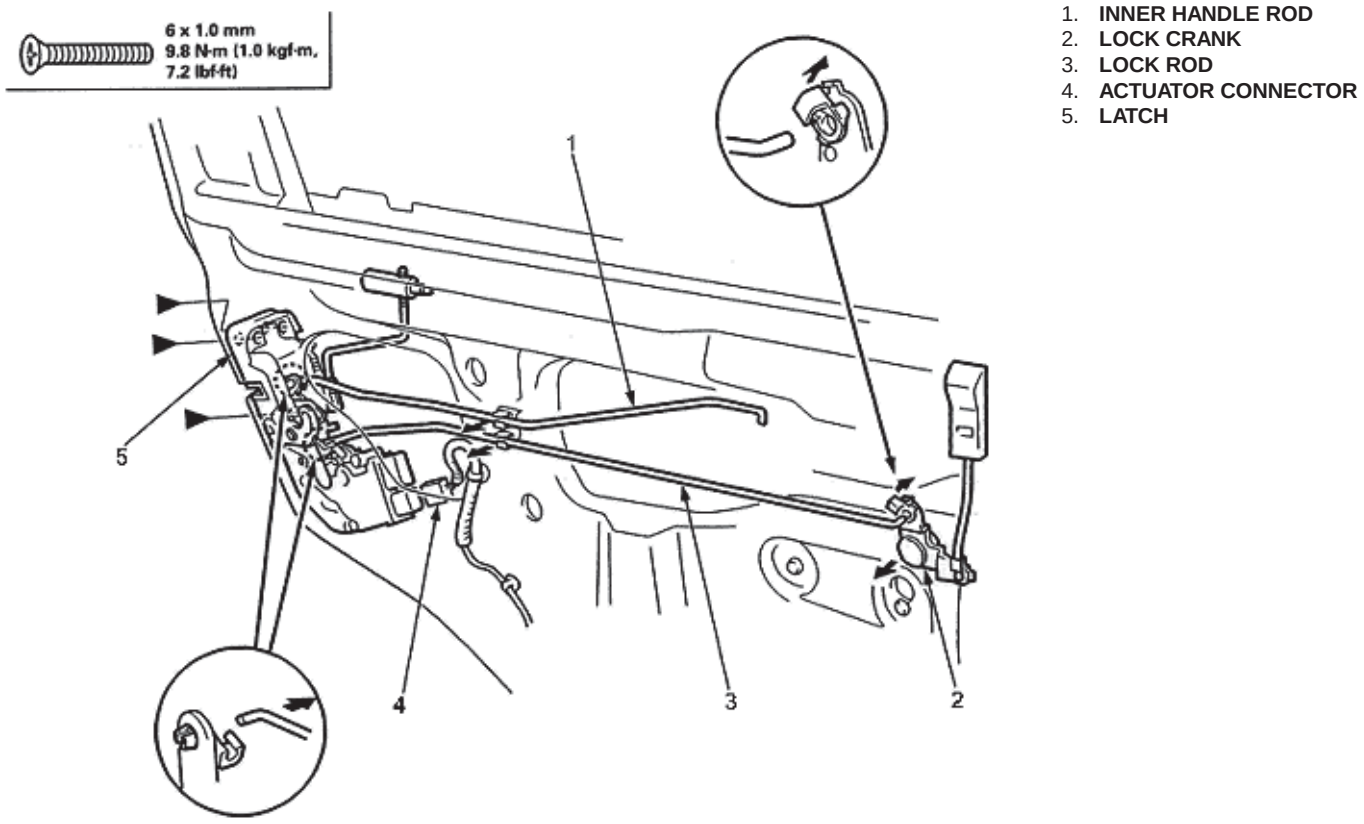
1. BUSHING
2. OUTER HANDLE

8. Install in the reverse order of removal, and note these items:
   - Make sure the outer handle rod is connected securely.
   - Make sure the door locks and opens properly.

NOTE: Put on gloves to protect your hands.

1. Remove:
   - Door panel (**See Page** 20-10)
   - Plastic cover (**See Page** 20-4)
   - Outer handle (**See Page** 20-11)
2. Disconnect the actuator connector.

▶ : Screw locations, 3



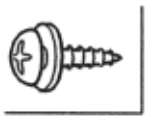
1. **INNER HANDLE ROD**
2. **LOCK CRANK**
3. **LOCK ROD**
4. **ACTUATOR CONNECTOR**
5. **LATCH**

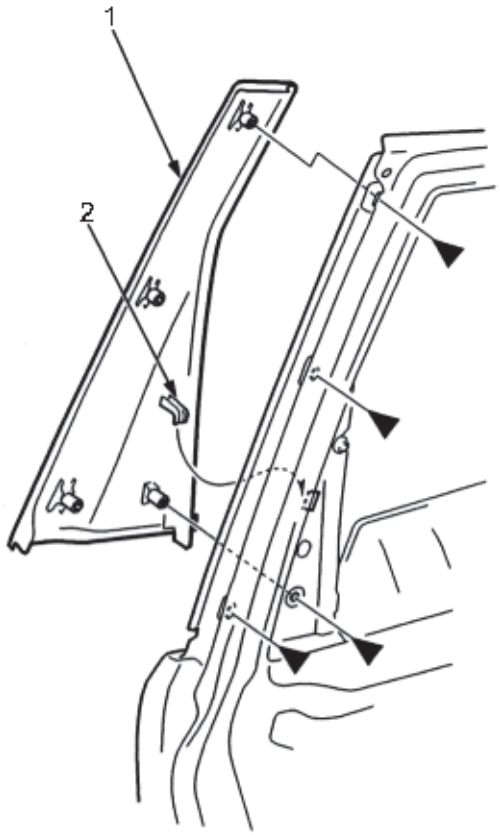
3. Disconnect the lock rod from the lock crank, and detach the inner handle rod and lock rod from the rod holder.
4. Remove the screws, then remove the latch. Take care not to bend any of the rods.
5. If necessary, disconnect the inner handle rod and lock rod from the latch, and detach the lock crank from the door.
6. Install in the reverse order of removal, and note these items:
   - Make sure the connector is plugged in properly, and each rod is connected securely.
   - Make sure the door locks and opens properly.

NOTE: Put on gloves to protect your hands.

1. Remove:
   - Door panel (**See Page** 20-10).
   - Plastic cover (**See Page** 20-4).
   - Rod protector (**See Page** 20-11)
   - Door moulding (**See Page** 20-4)
2. Remove the door rear pillar trim. Take care not to scratch the trim.

▶ : Screw locations, 4



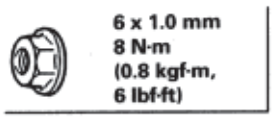


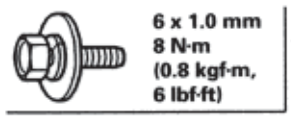
1. DOOR REAR PILLAR TRIM
2. HOOK

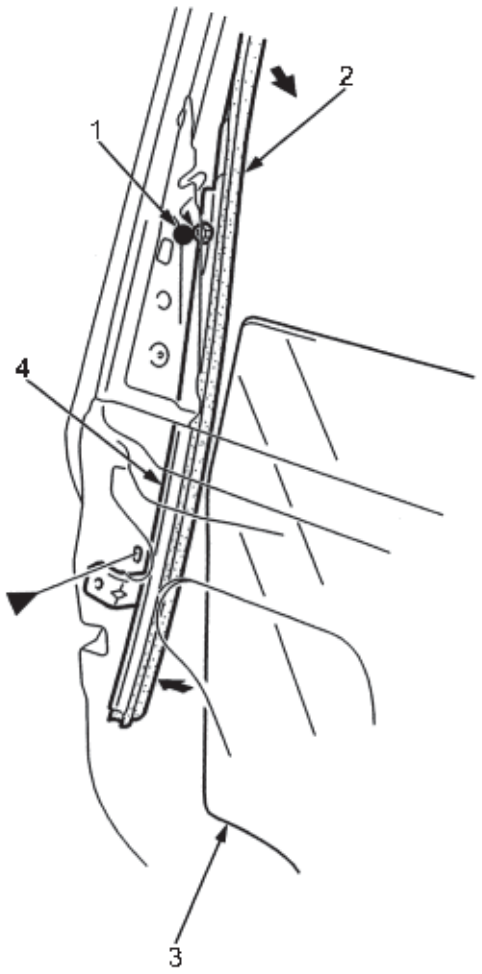
3. Carefully move the glass until you can see the glass mounting bolts.

4. Pull the glass run channel away as needed. Remove the bolt, and loosen the nut, and move the rear lower channel, then remove it from the glass.

● : Nut location, 1 ▶ : Bolt location, 1



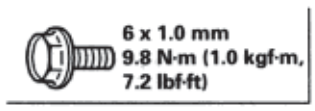


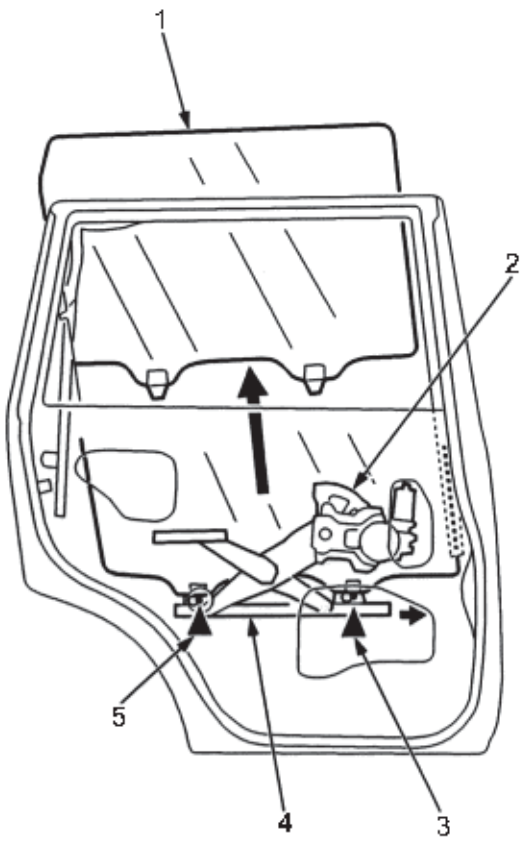


1. Loosen.
2. GLASS RUN CHANNEL
3. GLASS
4. REAR LOWER CHANNEL

5. Loosen the glass mounting bolts. Slide the guide to the front, then remove the glass from the guide. Carefully pull the glass out through the window slot. Take care not to drop the glass inside the door.

▶ : Bolt locations, 2

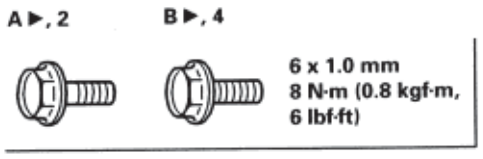


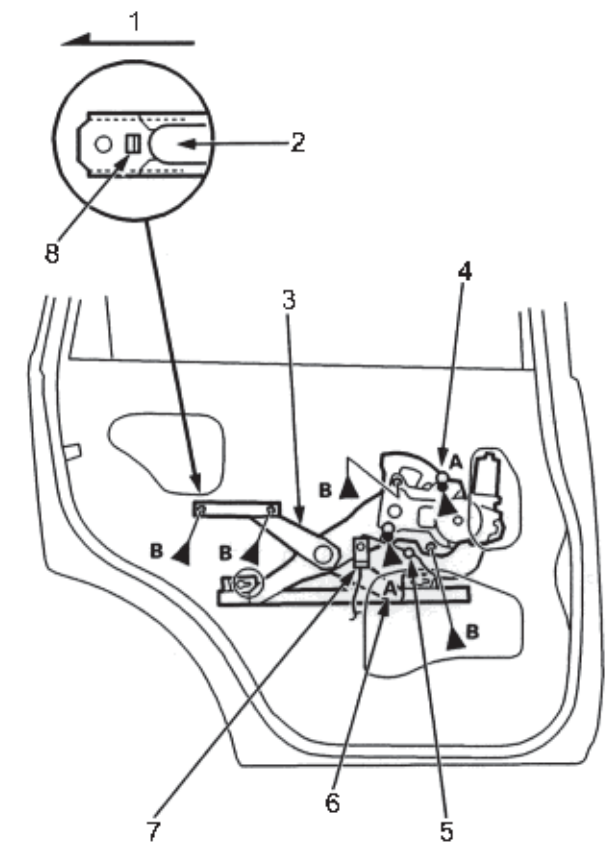


1. GLASS
2. REGULATOR
3. Loosen.
4. GUIDE
5. Loosen.

6. Disconnect and detach the connector and harness clip from the door. Remove the bolts, and loosen the bolts, then remove the regulator through the hole in the door.

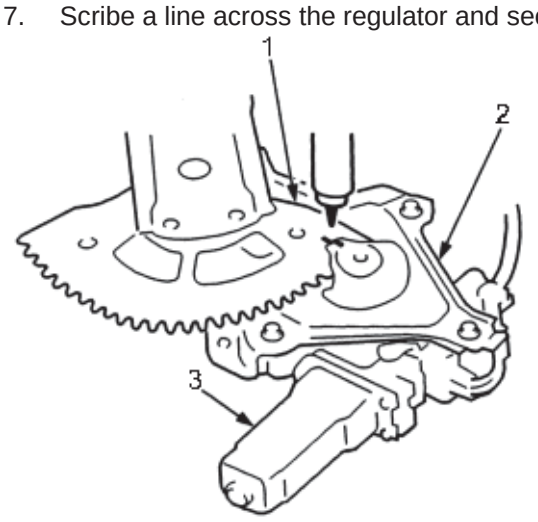
▶ : Bolt locations





1. Rearward
2. ROLLER GUIDE
3. REGULATOR
4. Loosen
5. HARNESS CLIP
6. Loosen
7. CONNECTOR
8. HOLE

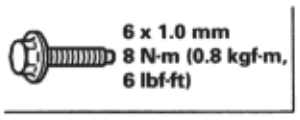
7. Scribe a line across the regulator and sector gear.

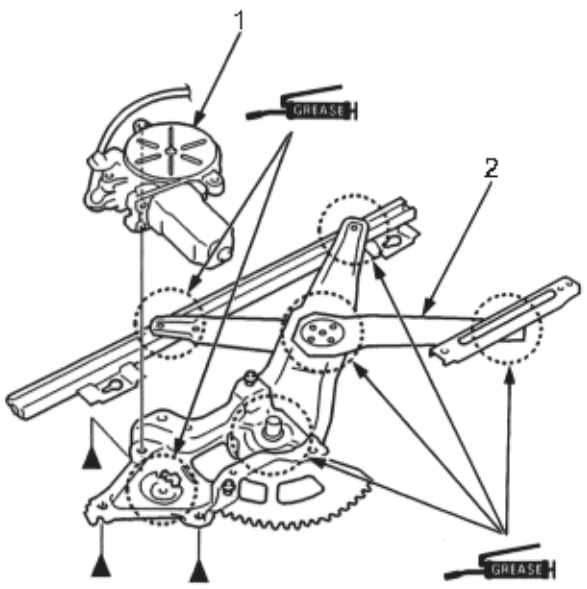


1. SECTOR GEAR
2. REGULATOR
3. POWER WINDOW MOTOR

8. Remove the bolts, then separate the power window motor and regulator. Grease the moving portions of the regulator indicated by the arrows.

▶ : Bolt locations, 3





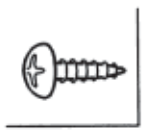
1. POWER WINDOW MOTOR
2. REGULATOR

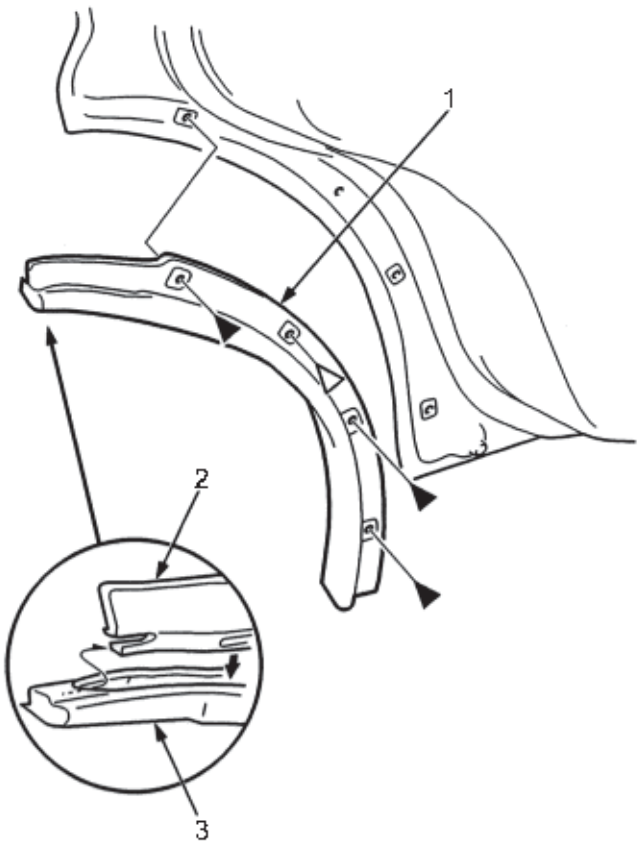
9. Install in the reverse order of removal, and note these items:
   - When installing the regulator, align the hole of the roller guide toward the rear.
   - Roll the glass up and down to see if it moves freely without binding.
   - Make sure that there is no clearance between the glass and glass run channel when the glass is closed.

1. Remove the clips and screws, then remove the door lower protector. Take care not to scratch the door. If necessary, remove the door wheel arch seal from the protector.

▷ : Clip location, 1 ▶ : Screw locations, 3



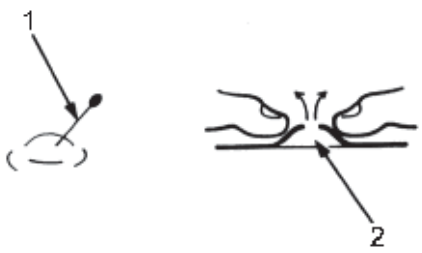




1. DOOR LOWER PROTECTOR
2. PROTECTOR
3. DOOR WHEEL ARCH SEAL

2. Set the door lower protector on the door, and install the clip.
3. Tighten the upper screw first, and tighten the remaining screws.

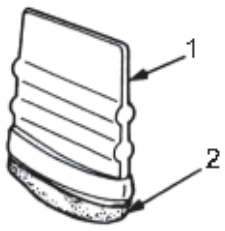
NOTE:
- Keep dust away from the working area.
- When working at lower temperatures, heat the door channel and door channel tape with a hair dryer.
  Door channel: about 15°C (59°F).
  Door channel tape: about 30ºC (86°F).
- When heating the door channel tape, heat it evenly and gradually to prevent deformation.
- 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, prick them with a pin, then release the air with your finger or a plastic squeegee.



1. PIN
2. TRAPPED AIR

- If the air bubble is more than 10 mm (0.4 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
   - Alcohol
   - Sponge or Shop towel
   - Hair dryer
   - Pin



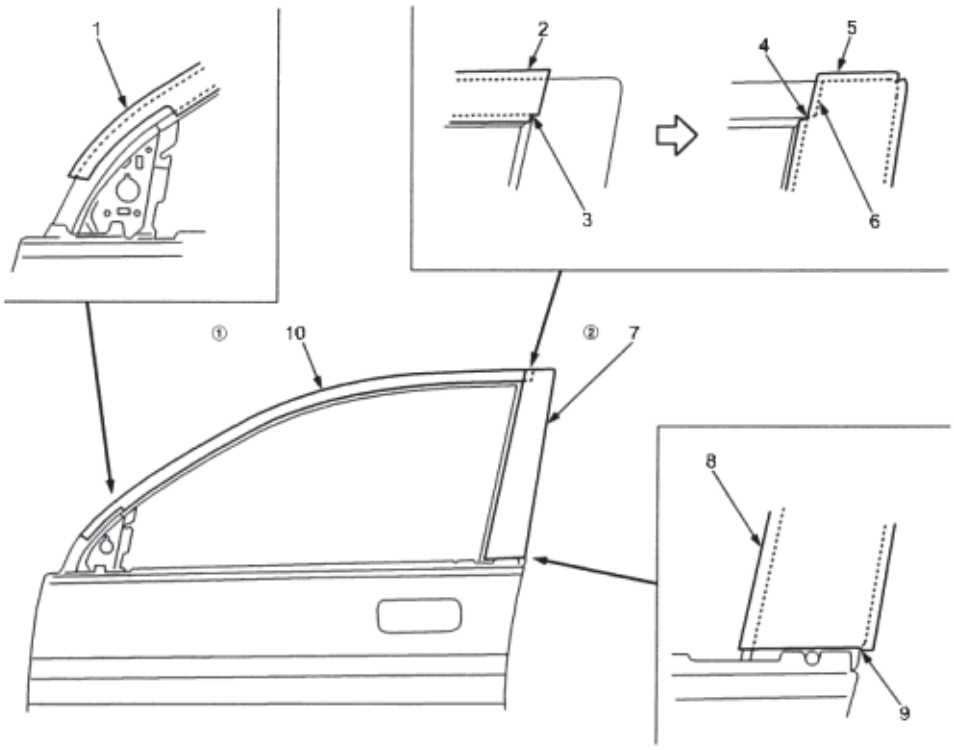
1. PLASTIC SQUEEGEE
2. FELT

2. Remove the following parts.
   Front door channel tape replacement:
   - Power Mirror
   - Door moulding (**See Page** 20-2)
   - Glass run channel, as necessary (**See Page** 20-3)
   - Door weatherstrip, as necessary (**See Page** 20-2)

   Rear door upper channel tape replacement:
   - Glass (**See Page** 20-15)
   - Glass run channel, as necessary (**See Page** 20-5)
   - Door moulding (**See Page** 20-4)
   - Door centre seal (**See Page** 20-4)
   - Door rear pillar trim (**See Page** 20-15)
   - Door weatherstrip, as necessary (**See Page** 20-4)

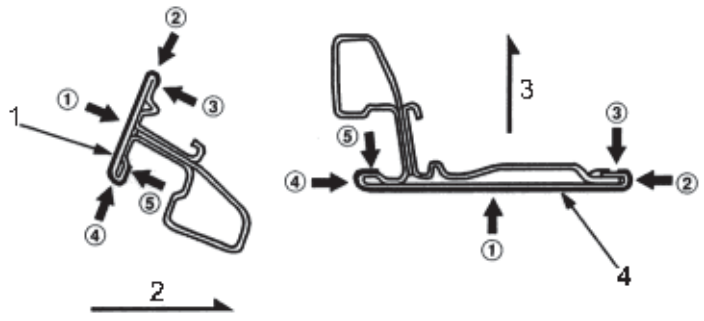
   Rear door centre channel tape replacement:
   - Glass (**See Page** 20-15)
   - Glass run channel, as necessary (**See Page** 20-5)
   - Door moulding (**See Page** 20-4)
   - Door centre seal (**See Page** 20-4)
3. Slowly peel up the old door channel tape while heating it with a hair dryer.
   NOTE: When replacing the door upper channel tape, replace the door centre channel tape at the same time.
4. Clean the door channel bonding surface with a sponge dampened in alcohol.
   NOTE: 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 colour on the door channel is covered by the door channel tape.
9. Check for water leaks. Do not squeeze the tip of the hose.

Front door upper channel tape and centre channel tape:
Apply the door channel tapes in numbered sequence.



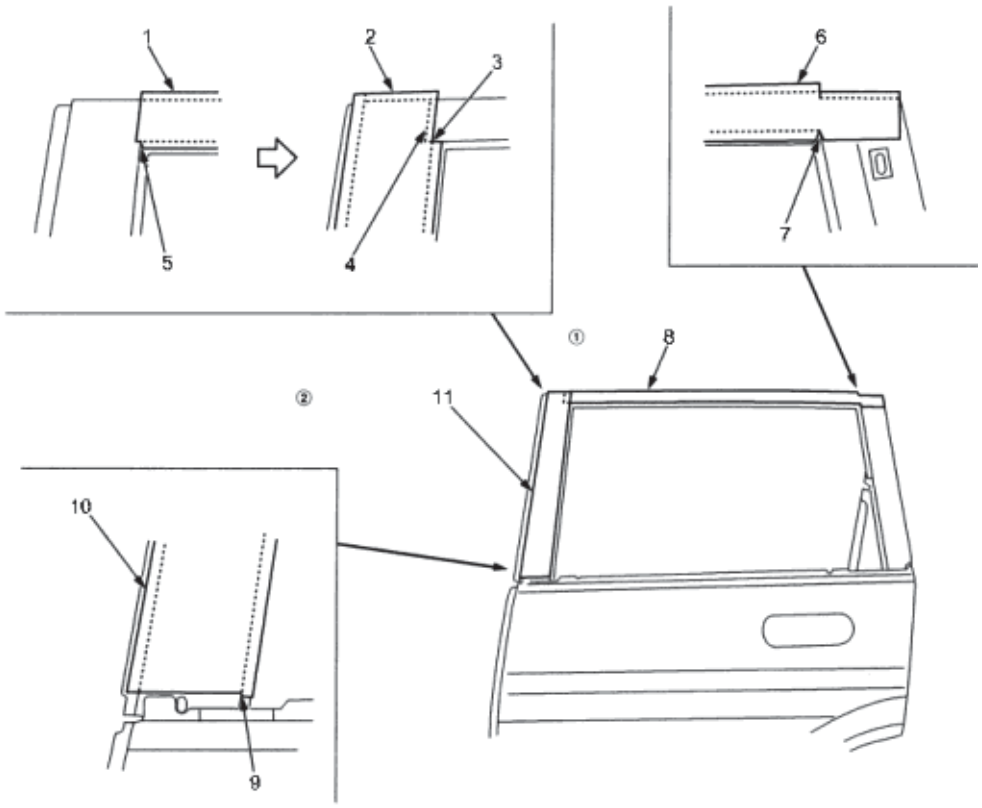
1. **UPPER CHANNEL TAPE**
2. **UPPER CHANNEL TAPE**
3. Align.
4. Align.
5. **CENTRE CHANNEL TAPE**
6. **UPPER CHANNEL TAPE**
7. **CENTRE CHANNEL TAPE**
8. **CENTRE CHANNEL TAPE**
9. Align.
10. **UPPER CHANNEL TAPE**

NOTE: Press in numbered sequence.



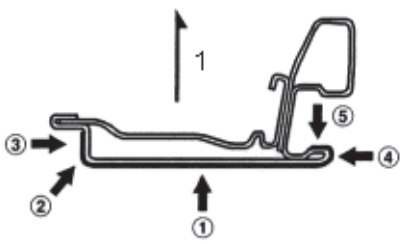
1. **UPPER CHANNEL TAPE**
2. **Inside**
3. **Inside**
4. **CENTRE CHANNEL TAPE**

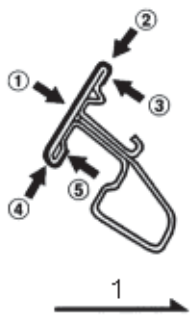
Rear door upper channel tape and centre channel tape:
Apply the door channel tapes in numbered sequence.



1. **UPPER CHANNEL TAPE**
2. **CENTRE CHANNEL TAPE**
3. Align.
4. **UPPER CHANNEL TAPE**
5. Align.
6. **UPPER CHANNEL TAPE**
7. Align.
8. **(1) UPPER CHANNEL TAPE**
9. Align.
10. **CENTRE CHANNEL TAPE**
11. **(2) CENTRE CHANNEL TAPE**

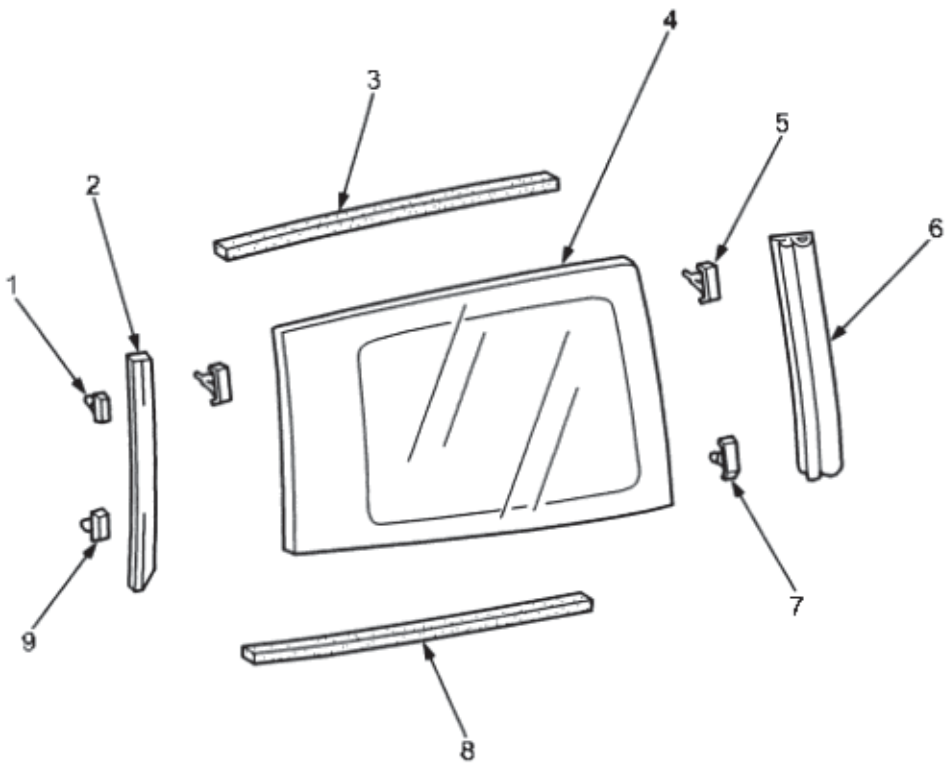
NOTE: Press in numbered sequence.





1. **Inside**
2. **Inside**

The numbers after the part names show the quantities of the part used.
5D:

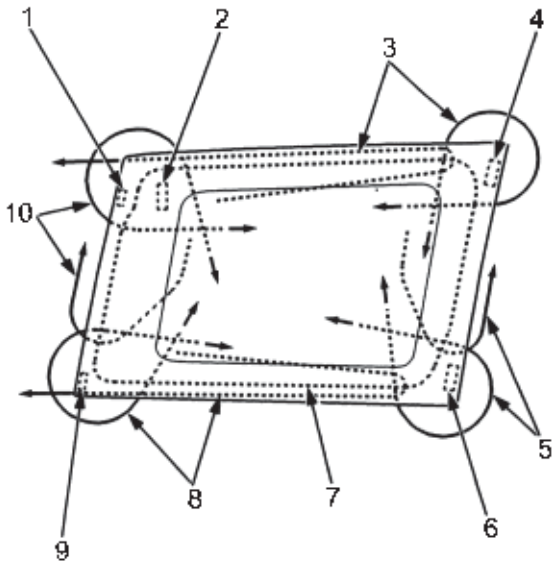


1. **TRIM UPPER CLIP**
2. **QUARTER GLASS REAR TRIM**
3. **UPPER RUBBER DAM**
4. **QUARTER GLASS**
   Replacement, (**See Page** 20-23)
5. **UPPER CLIP, 2** (Self-adhesive-type)
6. **QUARTER GLASS FRONT SEAL**
7. **LOWER CLIP, 1** (Self-adhesive-type)
8. **LOWER RUBBER DAM**
9. **TRIM LOWER CLIP**

5D:
NOTE:
- Put on gloves to protect your hands.
- When removing the glass with the piano wire, put on eye protection to protect your eyes.
- Use seat covers and plastic plate to avoid damaging any surfaces.
- Use glass adhesive set P/N. 08C73 - X0230N.

1. Remove:
   - Rear side shelf (**See Page** 20-29)
   - Trunk side trim panel (**See Page** 20-29)
   - Quarter pillar trim (**See Page** 20-30)
   - Rear pillar trim (**See Page** 20-30)
   - Taillight
2. Pull down the rear side portion of the headliner. Take care not to bend the headliner excessively, or you may crease or break it.
3. Remove the quarter glass front seal and quarter glass rear trim.
   NOTE: Replace the quarter glass front seal and quarter glass rear trim.
4. Apply protective tape along the edge of the body and the related parts.
5. Using an awl, make a hole through the adhesive from inside the vehicle at the corner portion of the quarter glass.
6. Push a piece of piano wire through the hole, and wrap each end around a piece of wood.
7. Carefully cut through the adhesive around the entire quarter glass as follows:
   - Straight portion: Hold a piece of wood inside the vehicle, and with a helper on the outside, pull back the piano wire.
   - Corner portion: Pull back each end of the piano wire.

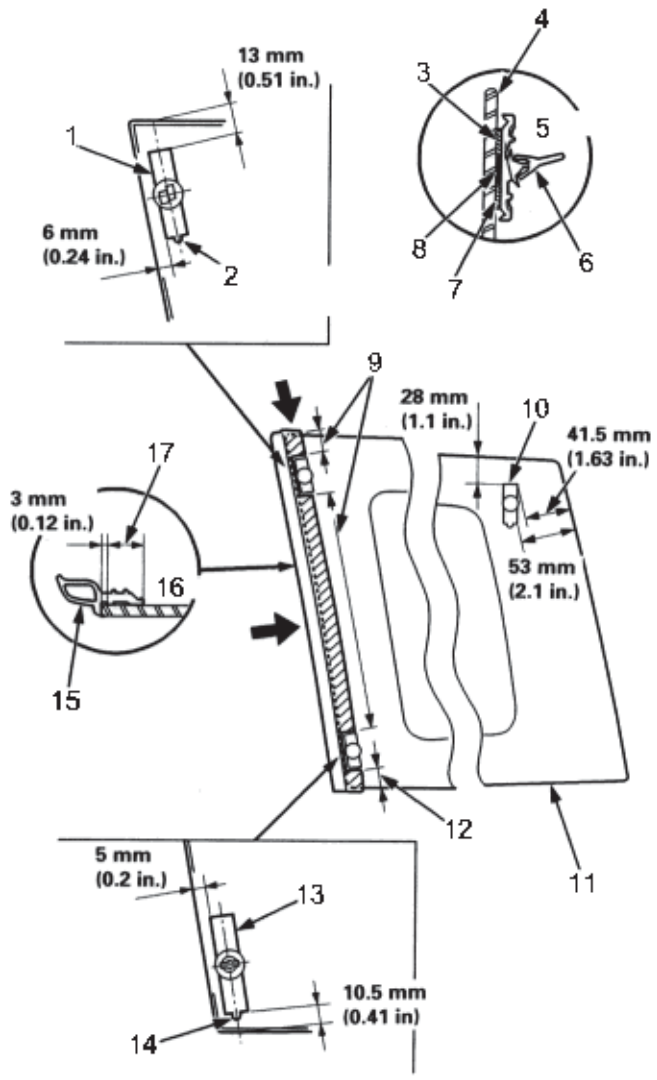
Cutting positions with the piano wire:



1. TRIM UPPER CLIP
2. UPPER CLIP
3. PIANO WIRE
4. UPPER CLIP
5. PIANO WIRE
6. LOWER CLIP
7. ADHESIVE
8. PIANO WIRE
9. TRIM LOWER CLIP
10. PIANO WIRE

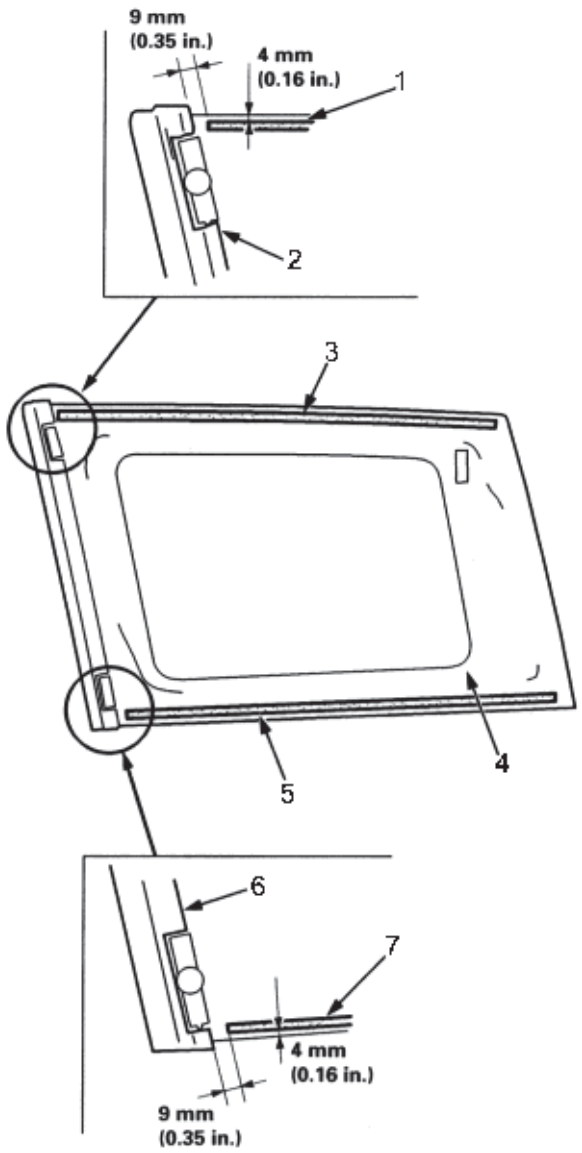
8. Carefully remove the quarter glass.
9. With a knife, scrape the old adhesive smooth to a thickness of about 2 mm (0.08 in.) on the bonding surface around the entire quarter glass opening flange:
   - Do not scrape down to the painted surface of the body; damaged paint will interfere with proper bonding.
   - Remove the remaining parts from the body.
   - Mask off surrounding surfaces before painting.
10. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
11. If the old quarter glass is to be reinstalled, use a putty knife to scrape off all of the old adhesive from the quarter glass. Clean the quarter glass with alcohol where new adhesive is to applied. Make sure the bonding surface is kept free of water, oil and grease.

12. Glue the upper and lower clips to the inside face of the quarter glass, and glue the quarter glass front seal:
    - Apply a light coat of primer (3M C-100, or equivalent), and glue the upper clips with urethane adhesive and adhesive tape, lower clip with adhesive tape, and seal with urethane adhesive.
    - Never touch the primed surfaces with your hands.
    - Be careful not to touch the quarter glass where adhesive will be applied.
    - Keep water, dust, and abrasive materials away from the primed surface.



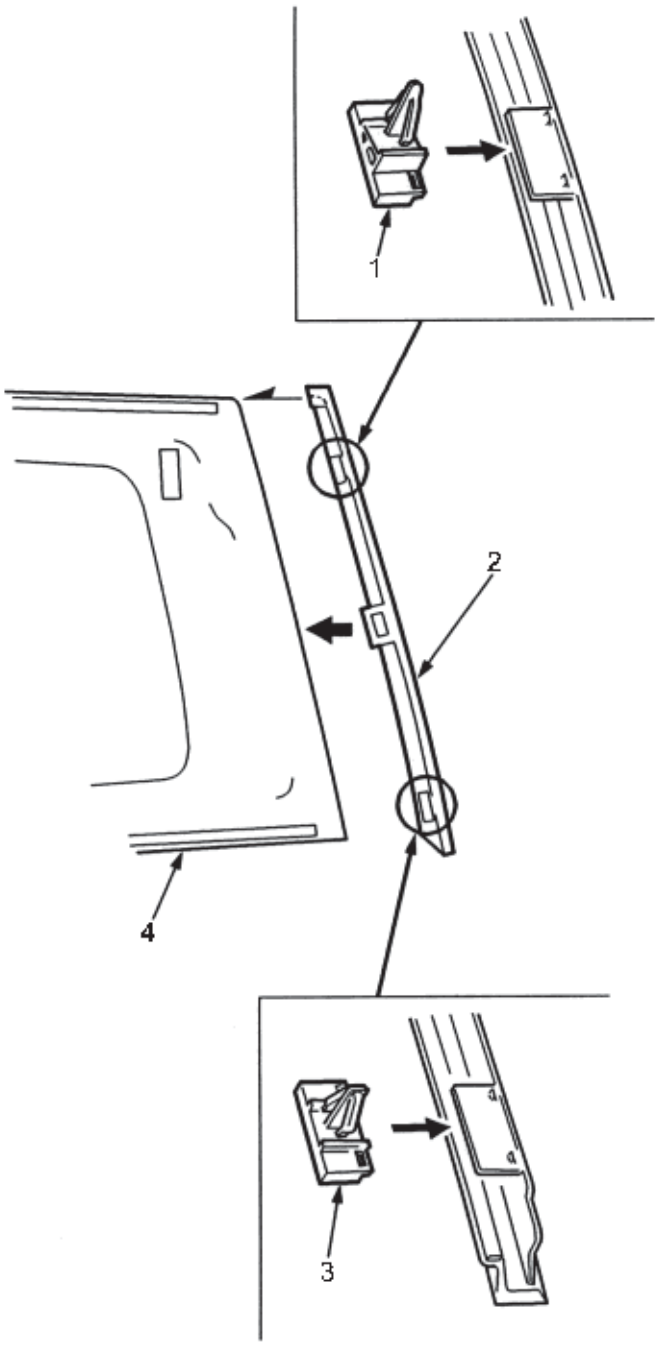
1. UPPER CLIP
2. Turn the alignment mark to the bottom.
3. ADHESIVE TAPE
4. GLASS
5. Inside
6. UPPER CLIP
7. ADHESIVE TAPE
8. ADHESIVE
9. Adhesive areas.
10. UPPER CLIP
11. GLASS
12. Adhesive area.
13. LOWER CLIP
14. Turn the alignment mark to the bottom
15. QUARTER GLASS FRONT SEAL
16. Inside
17. Adhesive area.

13. Glue the rubber dam to the inside face of the quarter glass. Be careful not to touch the quarter glass where adhesive will be applied.



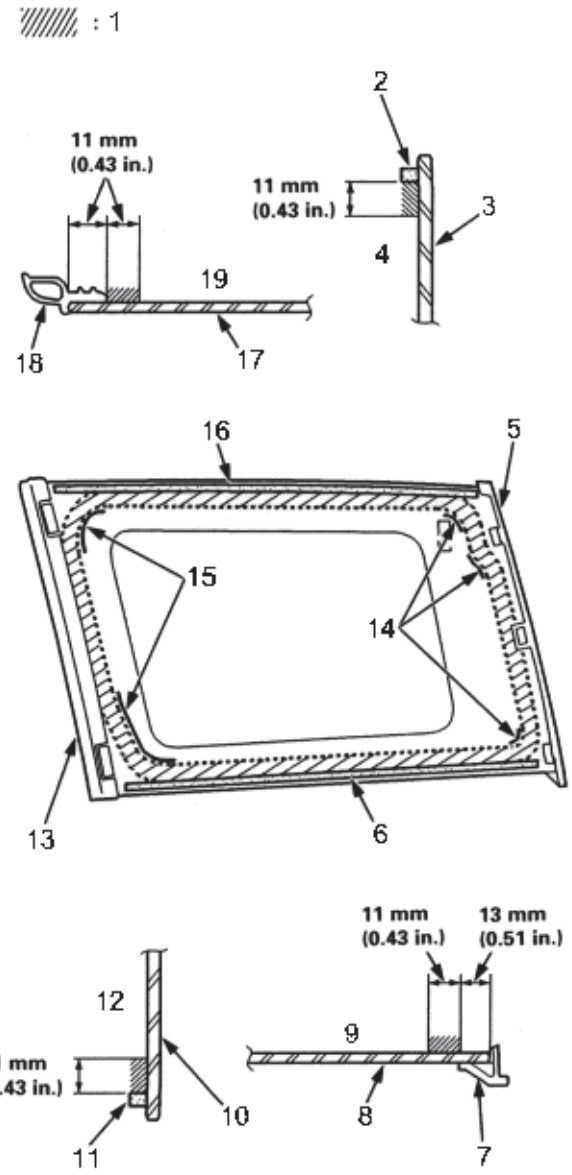
1. UPPER RUBBER DAM
2. QUARTER GLASS FRONT SEAL
3. UPPER RUBBER DAM
4. GLASS
5. LOWER RUBBER DAM
6. QUARTER GLASS FRONT SEAL
7. LOWER RUBBER DAM

14. Install the trim upper clip and trim lower clip to the quarter glass rear trim, and install the quarter glass rear trim to the quarter glass. Be careful not to touch the quarter glass where adhesive will be applied.



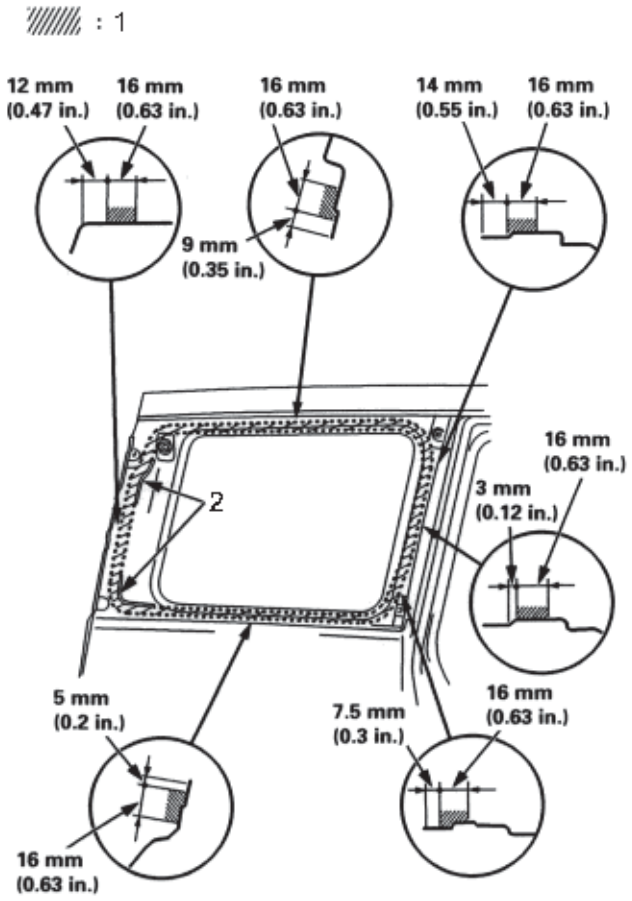
1. TRIM UPPER CLIP
2. QUARTER GLASS REAR TRIM
3. TRIM REAR CLIP
4. GLASS

15. With a sponge, apply a light coat of glass primer to the inside face of the quarter glass as shown, then lightly wipe it off with gauze or cheesecloth:
    - Do not apply body primer to the quarter glass, and do not get body and glass primer sponges mixed up.
    - 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 surface.



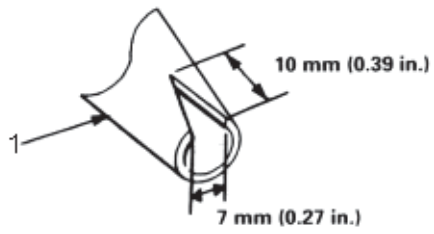
1. Apply glass primer here.
2. UPPER RUBBER DAM
3. GLASS
4. Inside
5. QUARTER GLASS REAR TRIM
6. LOWER RUBBER DAM
7. QUARTER GLASS REAR TRIM
8. GLASS
9. Inside
10. GLASS
11. LOWER RUBBER DAM
12. Inside
13. QUARTER GLASS FRONT SEAL
14. ALIGNMENT MARKS
15. ALIGNMENT MARKS
16. UPPER RUBBER DAM
17. GLASS
18. QUARTER GLASS FRONT SEAL
19. Inside

16. With a sponge, apply a light coat of body primer to the original adhesive remaining around the quarter glass opening flange. Let the body primer dry for at least 10 minutes:
    - Do not apply glass primer to the body, and be careful not to mix up glass and body primer sponges.
    - Never touch the primed surfaces with your hands.
    - Mask off the interior parts before painting the flange.



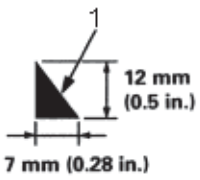
1. Apply body primer here.
2. Apply the adhesive along the bead.

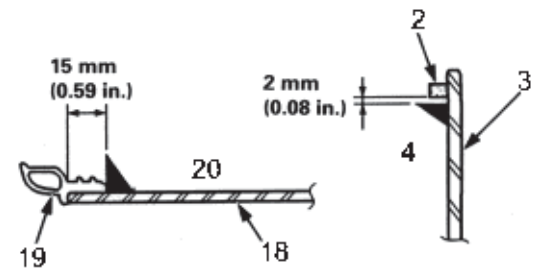
17. Thoroughly mix the adhesive and hardener together on a clean glass or metal plate with a putty knife. Follow the instructions that come with the adhesive.
18. Before filling a cartridge, cut a "V" in the end of the nozzle as shown.

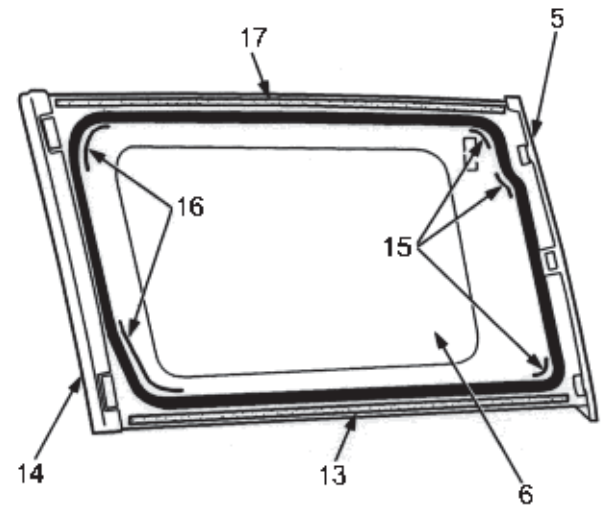


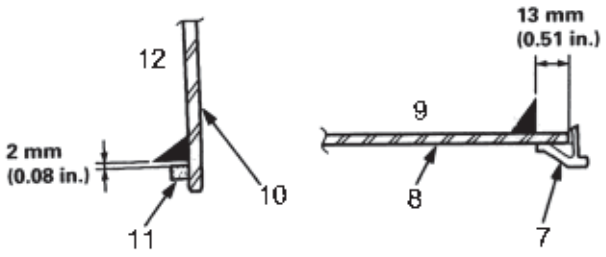
1. NOZZLE

19. Pack adhesive into the cartridge without air pockets to ensure continuous delivery. Put the cartridge in a chalking gun, and run a bead of adhesive around the edge of the glass as shown. Apply the adhesive within 30 minutes after applying the glass primer. Make a slightly thicker bead at each corner.









1. ADHESIVE
2. UPPER RUBBER DAM
3. GLASS
4. Inside
5. QUARTER GLASS REAR TRIM
6. GLASS
7. QUARTER GLASS REAR TRIM
8. GLASS
9. Inside
10. GLASS
11. LOWER RUBBER DAM
12. Inside
13. LOWER RUBBER DAM
14. QUARTER GLASS FRONT SEAL
15. ALIGNMENT MARKS
16. ALIGNMENT MARKS
17. UPPER RUBBER DAM
18. GLASS
19. QUARTER GLASS FRONT SEAL
20. Inside

20. Use suction cups to hold the glass over the opening, align the clips, and set it down on the adhesive. Lightly push on the glass until its edges are fully seated on the adhesive all the way around. Do not open or close the doors until the adhesive is dry.
21. Scrape or wipe the excess adhesive off with a putty knife or towel. To remove adhesive from a painted surface or the glass, wipe with a soft shop towel dampened with alcohol.
22. Let the adhesive dry for at least one hour, then spray water over the glass and check for leaks. Mark leaking areas, and let the glass dry, then seal with sealant:
    - Let the vehicle stand for at least four hours after glass installation. If the vehicle has to be used within the first four hours, it must be driven slowly.
    - Keep the glass dry for the first hour after installation.
23. Reinstall all remaining removed parts. Advise the customer not to do the following things for two to three 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).

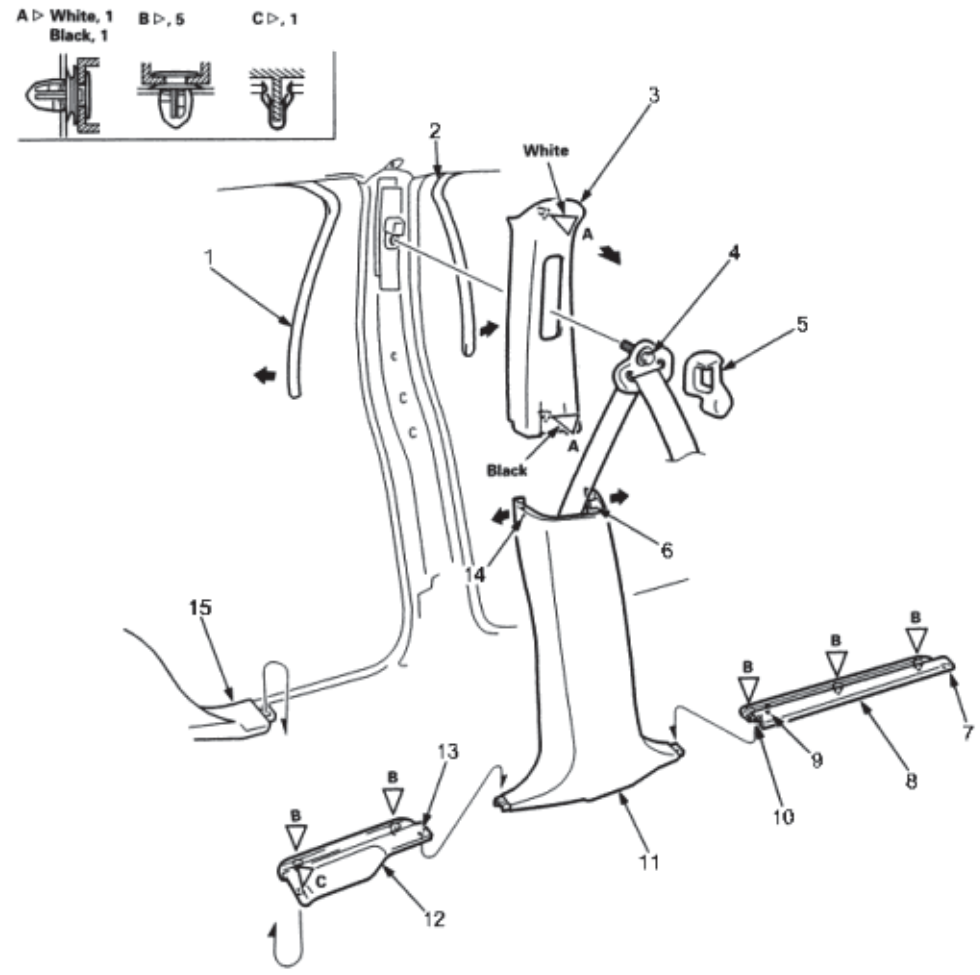
5D:

NOTE:

- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to bend or scratch the trim and panels.
- Put on gloves to protect your hands.

Centre pillar area:

▷ : Clip locations



1. **REAR DOOR TRIM**
   Pull back as necessary.
2. **FRONT DOOR TRIM**
   Pull back as necessary.
3. **CENTRE PILLAR TRIM**
4. **FRONT SEAT BELT UPPER ANCHOR BOLT 7/16-20 UNF 33 Nm (3.3 kgf/m, 24 lbf/ft)**
5. **UPPER ANCHOR COVER**
6. **HOOK**
7. **TAB**
8. **FRONT SIDE TRIM**
9. **PIN**
10. **HOOK**
11. **CENTRE PILLAR LOWER TRIM**
12. **REAR SIDE TRIM**
13. **HOOK**
14. **HOOK**
15. **TRUNK SIDE TRIM PANEL**

Install in the reverse order of removal, and note these items:

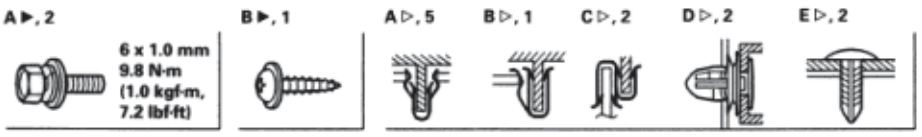
- Replace any damaged clips.
- Before installing the anchor bolt, make sure there are no twists or kinks in the seat belt.

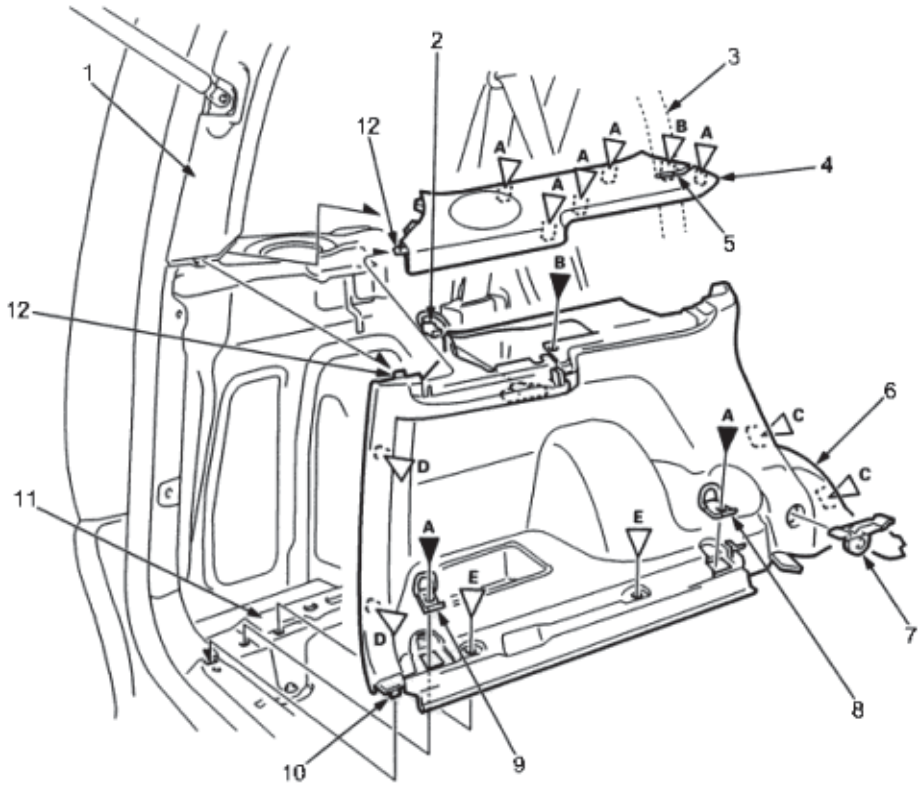
Rear side area:

Remove the following parts:

- Rear seat cushion and seat-back (**See Page** 20-34)
- Rear seat pivot bracket (**See Page** 20-34)
- Rear side trim
- Rear centre shelf
- Spare type lid
- Rear floor bucket
- Rear trim panel

▶ : Bolt, screw locations ▷ : Clip locations



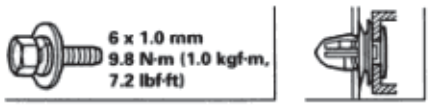


1. **REAR PILLAR TRIM**
2. **CARGO AREA LIGHT** (Left side only)
3. **REAR SEAT BELT**
   Slip the seat belt through the slit in the rear side shelf.
4. **REAR SIDE SHELF**
5. **SLIT**
6. **TRUNK SIDE TRIM PANEL**
7. **REAR SEAT PIVOT BRACKET**
8. **TIE DOWN HOOK**
9. **TIE DOWN HOOK**
10. **HOOK**
11. **CARGO FRAME**
12. **HOOK**

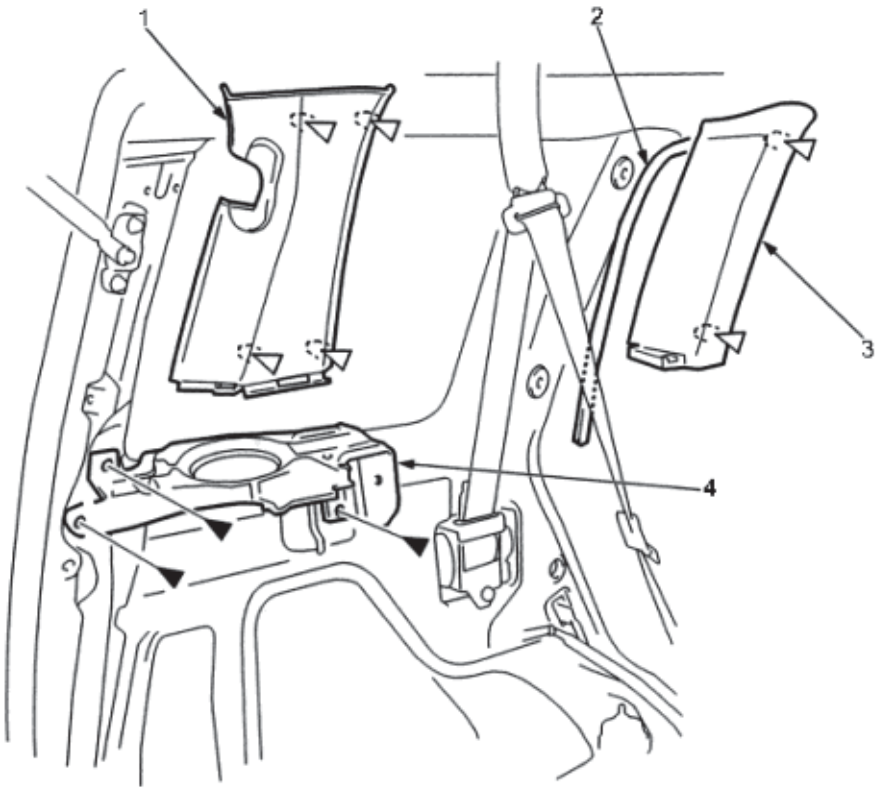
Install in the reverse order of removal, and note these items:

- Replace any damaged clips.
- Make sure the cargo area light connector is plugged in properly (left side).
- Make sure the wire harnesses are not pinched.

Quarter pillar and rear pillar area:
Remove the trunk side trim panel (**See Page** 20-29).
▶ : Bolt locations, 3 ▷ : Clip locations,6



1. **REAR PILLAR TRIM**
2. **REAR DOOR TRIM** Pull back as necessary.
3. **QUARTER PILLAR TRIM**
4. **REAR SPEAKER BRACKET**

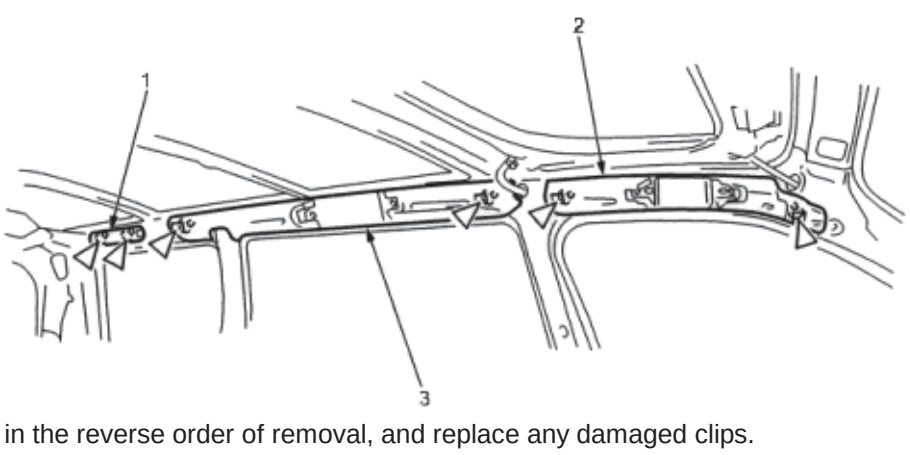


Install in the reverse order of removal, and replace any damaged clips.

5D:
NOTE:
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.
- Take care not to bend and scratch the headliner.
- Be careful not to damage the dashboard and other interior trim.

Remove the headliner.
▷ : Clip locations, 6





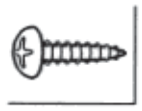
1. **ROOF SIDE ABSORBER**
2. **ROOF SIDE PAD**
3. **REAR ROOF SIDE PAD**

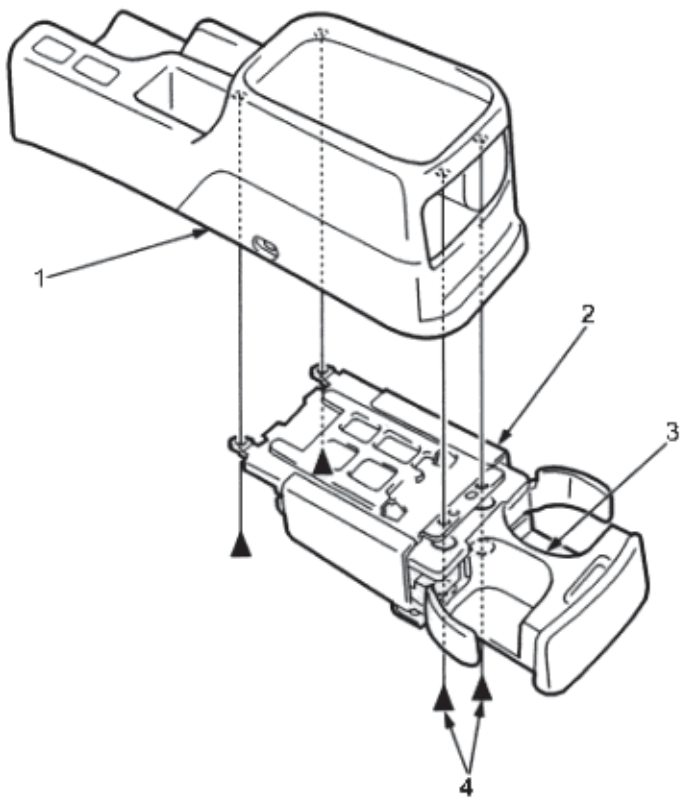
Install in the reverse order of removal, and replace any damaged clips.

5D:

NOTE: Take care not to scratch the rear console and beverage holder.

▶ : Screw locations, 4





1. **REAR CONSOLE**
2. **BEVERAGE HOLDER**
3. **HOLDER**
4. To remove, open the holder.

Reassemble in the reverse order of disassembly.

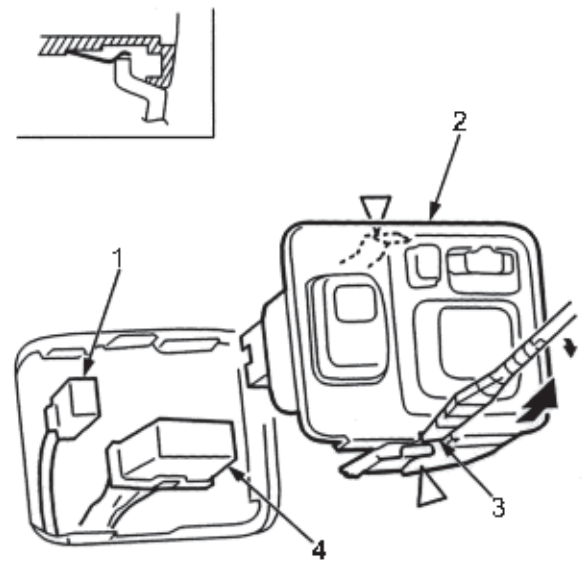
5D:

NOTE:

- When prying with a flat-tip screwdriver, wrap it with protective tape, and apply protective tape around the related parts, to prevent damage.
- Take care not to scratch the dashboard and related parts.
- LHD is shown, RHD is similar.

1. Carefully insert a flat-tip screwdriver to the notch of the switch trim, and gently pry the switch trim out to detach the lower clip.

▷ : Clip locations, 2



1. REAR FOG LIGHT SWITCH CONNECTOR (For some models)
2. SWITCH TRIM
3. NOTCH
4. POWER MIRROR SWITCH CONNECTOR

2. Detach the upper clip, and pull the switch trim out.
3. Disconnect the power mirror switch connector and rear fog light switch connector (for some models).
4. Install in the reverse order of removal, and note these items:
   - Make sure the connector(s) is plugged in properly.
   - Push the clip portions into place securely.

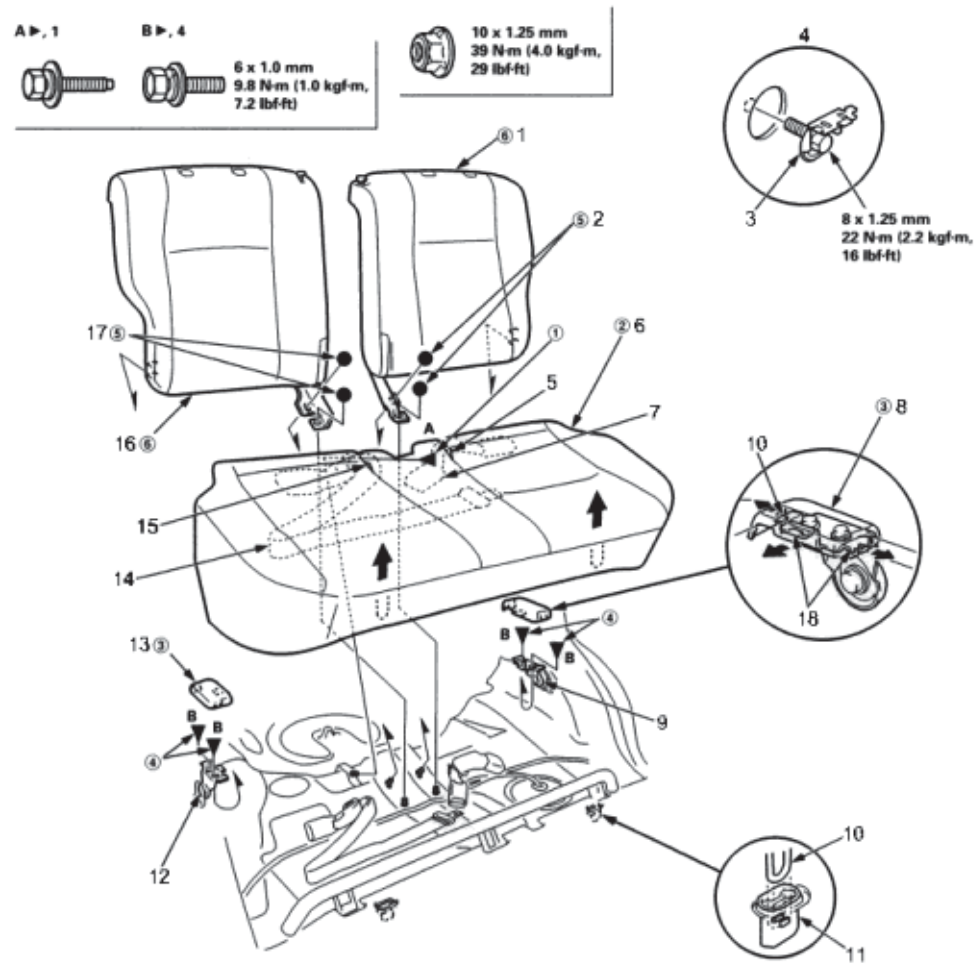
5D:

NOTE:

- Take care not to scratch the body or tear the seat covers.
- When removing the seat-back, release the rear centre shelf net and spare tyre lid mat from the seat-back.

Remove in numbered sequence.

▶ : Bolt locations ● : Nut locations, 4



1. **LEFT SEAT BACK**
2. **SELF LOCKNUTS**
3. **PIVOT BRACKET**
4. **Pivot bracket removal**
5. **SLIT**
6. **SEAT CUSHION**
7. **CENTRE BELT BUCKLE** (For some models)
8. **PIVOT BRACKET COVER**
9. **PIVOT BRACKET**
10. **HOOK**
11. **CLIP**
12. **PIVOT BRACKET**
13. **PIVOT BRACKET COVER**
14. **CENTRE BELT** (For some models)
15. **SLIT**
16. **RIGHT SEAT-BACK**
17. **SELF LOCKNUTS**
18. **HOOKS**

Install in the reverse order of removal, and note these items:

- Before attaching the rear seat-back and seat cushion, make sure there are no twists or kinks in the rear seat belts and centre belt.
- When installing the seat cushion, slip the seat belt buckles and centre belt (for some models) through the slits in the seat cushion.

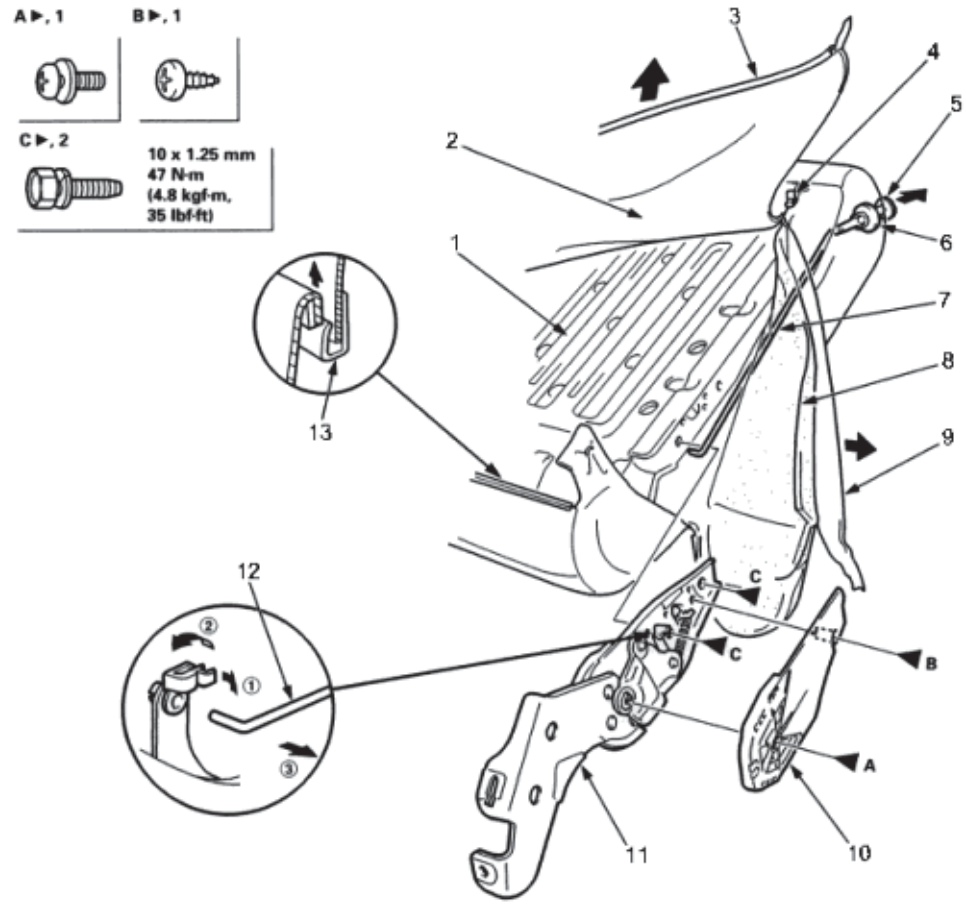
5D:

NOTE:

- Take care not to tear the seams or damage the seat covers.
- Put on gloves to protect your hands.

1. Remove the seat-back.
2. Remove the recline adjuster.
   - -1 Release the hook in the bottom of the seat-back, and unzip.
   - -2 Fold back the side edge of the seat-back cover and pad.
   - -3 Remove the screws, then remove the recline cover.
   - -4 Disconnect the recline rod from the recline adjuster. If necessary, remove the recline rod.
   - -5. Remove the bolts, then remove the recline adjuster.

▶ : Screw, Bolt locations



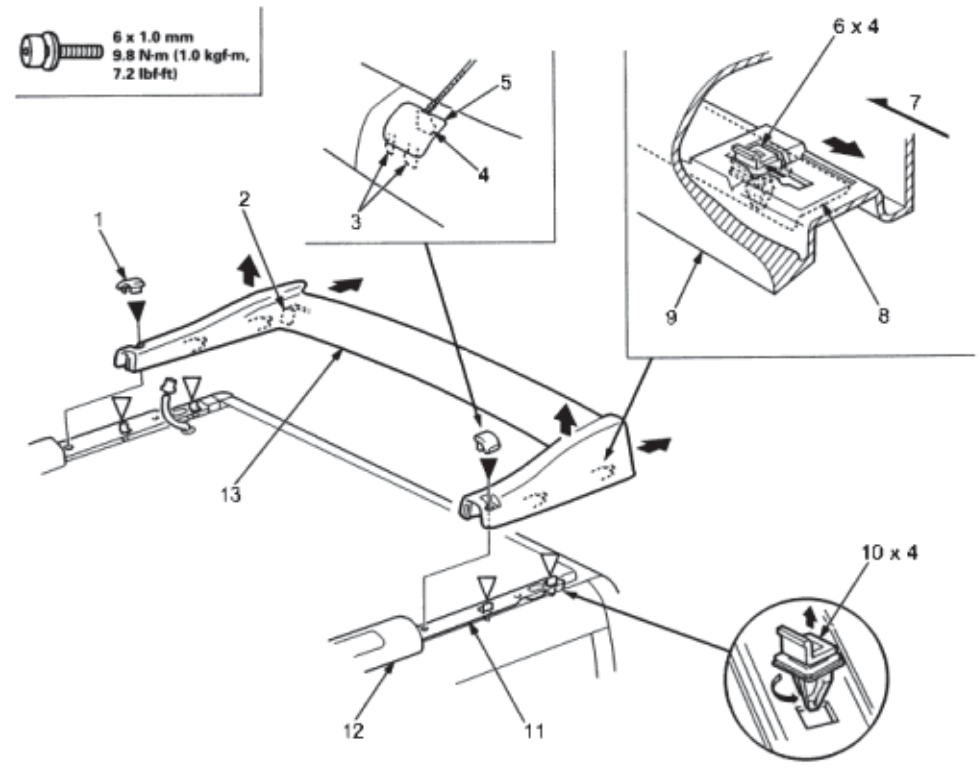
1. **SEAT-BACK FRAME**
2. **SEAT-BACK COVER**
3. **HOOK**
4. **ZIPPER**
5. **LOCK KNOB**
6. **LOCK COLLAR**
7. **RECLINE ROD**
8. **PAD**
9. **SEAT-BACK COVER**
10. **RECLINE COVER**
11. **RECLINE ADJUSTER**
12. **RECLINE ROD**
13. **HOOK**

3. Install 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 hook.
   - Make sure the recline rod is connected securely.

NOTE:
- Take care not to scratch the body and related parts.
- When prying with a flat-tip screwdriver, wrap it with protective tape to prevent damage.

1. Open the tailgate.
2. Remove the roof spoiler.
   -1 Remove the caps from the roof spoiler, then remove the bolts (use Torx T-30 bit).
   -2 Slide the roof spoiler rearward and remove it. The slide clips will stay on the roof side trim bracket.
   -3 Disconnect the high mount brake light connector.
   -4 Remove the slide clips from the roof side trim bracket.

▶ : Bolt locations, 2



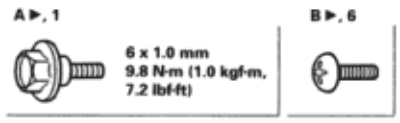
1. **CAP**
2. **HIGH MOUNT BRAKE LIGHT CONNECTOR**
3. **CLIPS**
4. **CLIP**
5. **CAP**
6. **SLIDE CLIP, 4**
7. **Forward**
8. **ROOF SIDE TRIM BRACKET**
9. **ROOF SPOILER**
10. **SLIDE CLIP, 4**
11. **ROOF SIDE TRIM BRACKET**
12. **ROOF SIDE TRIM**
13. **ROOF SPOILER**

3. Replace any damaged clips.
4. Install the slide clips on the roof spoiler.
5. Connect the high mount brake light connector. Make sure the connector is plugged in properly.
6. Fit all the slide clips into the holes in the roof side trim bracket.

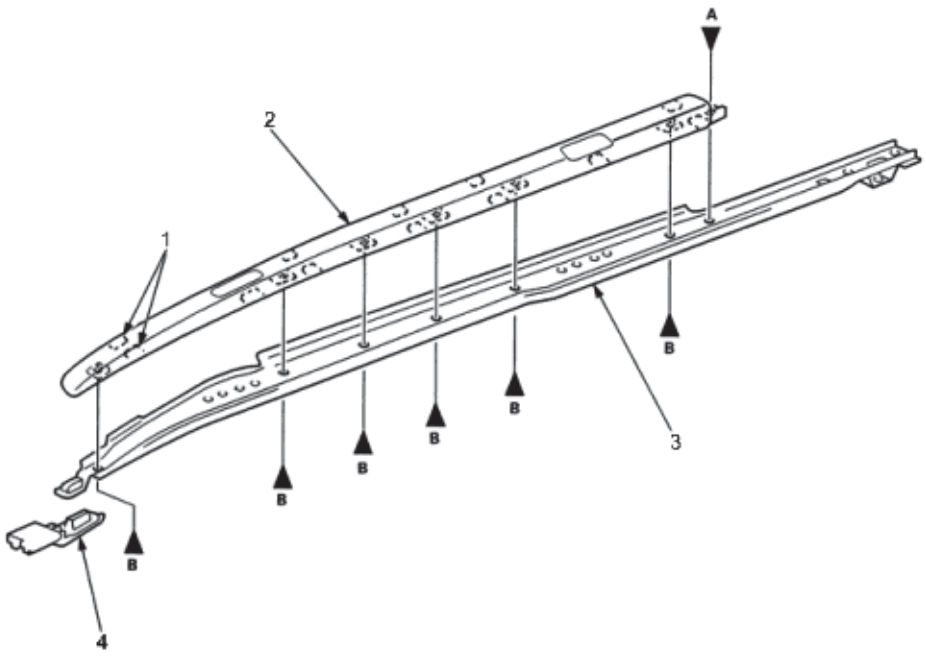
5D:

NOTE: Take care not to scratch the roof side trim.

▶ : Bolt locations



1. **HOOKS**
2. **ROOF SIDE TRIM**
3. **ROOF SIDE TRIM BRACKET**
4. **ROOF SIDE CLIP**



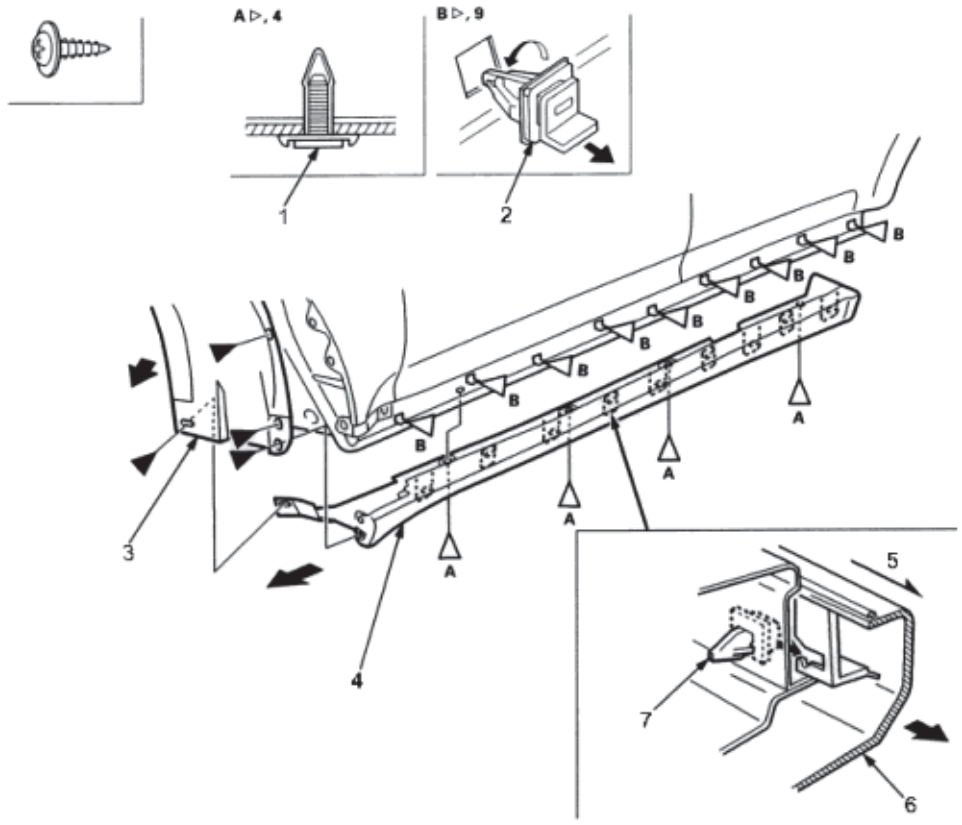
Reassemble in the reverse order of disassembly.

5D:

NOTE: Take care not to scratch the body.

1. Remove the side sill panel.
   - -1 Pull the inner fender back as necessary, and remove the expansion clips.
   - -2 Slide the side sill panel forward and remove it. The side clips will stay in the body.
   - -3 Remove the side clips from the body.

▶ : Screw locations, 4 ▷ : Clip locations



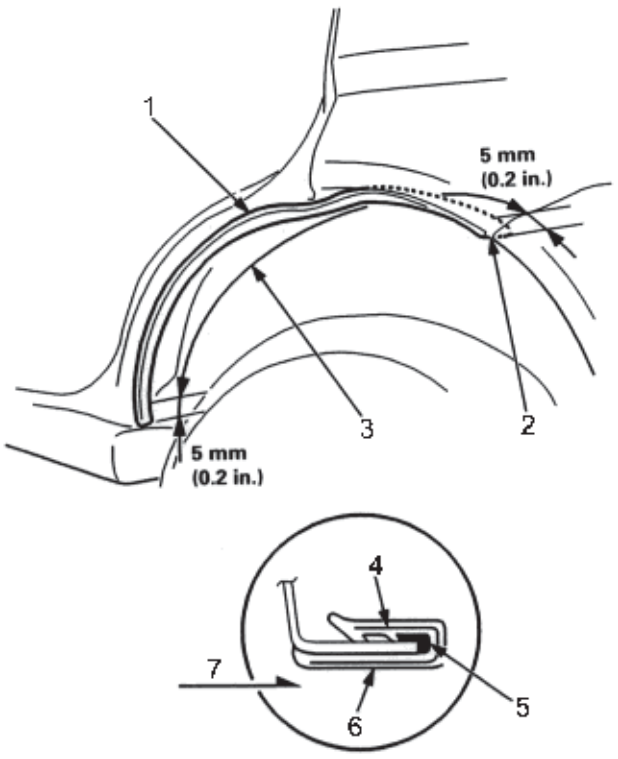
1. **EXPANSION CLIP**
2. **SIDE CLIP**
3. **INNER FENDER**
4. **SIDE SILL PANEL**
5. **Forward**
6. **SIDE SILL PANEL**
7. **SIDE CLIP**

2. Replace any damaged clips.
3. Install the side clips on the side sill panel.
4. 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.
5. Install all the expansion clips.
6. Reinstall the inner fender.

5D:

NOTE: The steel core in the fenderwell trim cannot be restored to its original shape once it is bent. Replace the fenderwell trim when the steel core is bent.

1. Remove the fenderwell trim by pulling it out.
2. Clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
3. Apply clear sealant in the groove of the trim at the area indicated by the arrow.
   Sealant: Cemedines P/N 08712 - 0004, or equivalent

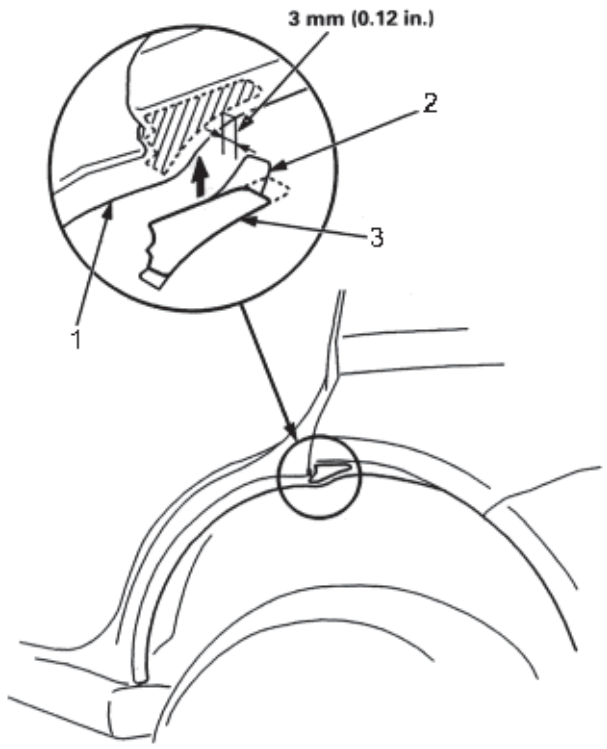


1. FENDERWELL TRIM
2. Align.
3. Sealant area.
4. STEEL CORE
5. SEALANT
6. TRIM
7. Inside

4. Install the fenderwell trim.
5. Scrape or wipe the excess sealant off with a towel. To remove sealant from a painted surface, wipe with a soft shop towel dampened in alcohol.

For some 5D models:

1. Remove the fenderwell trim as necessary.
2. Remove the fenderwell protection tape, and clean the body bonding surface with a sponge dampened in alcohol. After cleaning, keep oil, grease and water from getting on the clean surface.
3. Peel the adhesive backing off from the protection tape.
4. Align the protection tape with the edge of the body flange, as shown, then press the protection tape into place.



1. Edge of the body flange.
2. ADHESIVE BACKING
3. FENDERWELL PROTECTION TAPE

5. Reinstall the fenderwell trim.

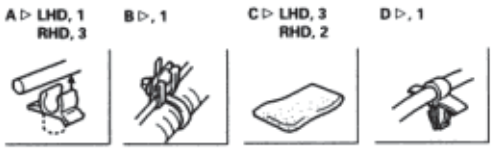
5D:

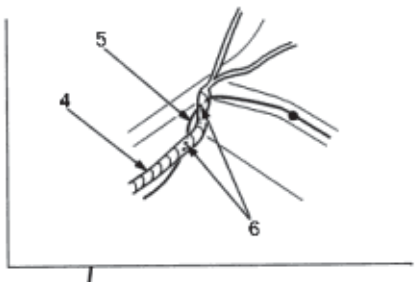
NOTE:

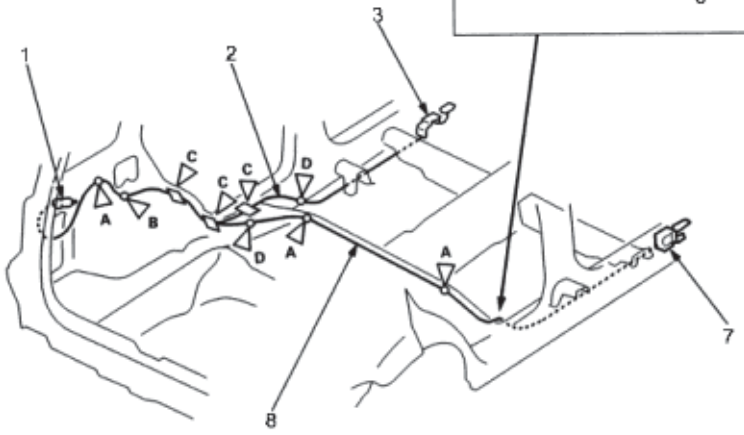
- Take care not to scratch the body and related parts.
- Take care not to bend the cable.

1. Remove these items:
   - Rear seat cushion (**See Page** 20-34)
   - Rear seat-back, left side (**See Page** 20-34)
   - Rear side trim, both sides (**See Page** 20-28)
   - Centre pillar lower trim (**See Page** 20-28)
   - Trunk side trim panel, left side (**See Page** 20-29)
   - Carpet, as necessary
2. Disconnect the fuel lid opener cable from the fuel lid opener.

▷ : Clip, cable cushion locations



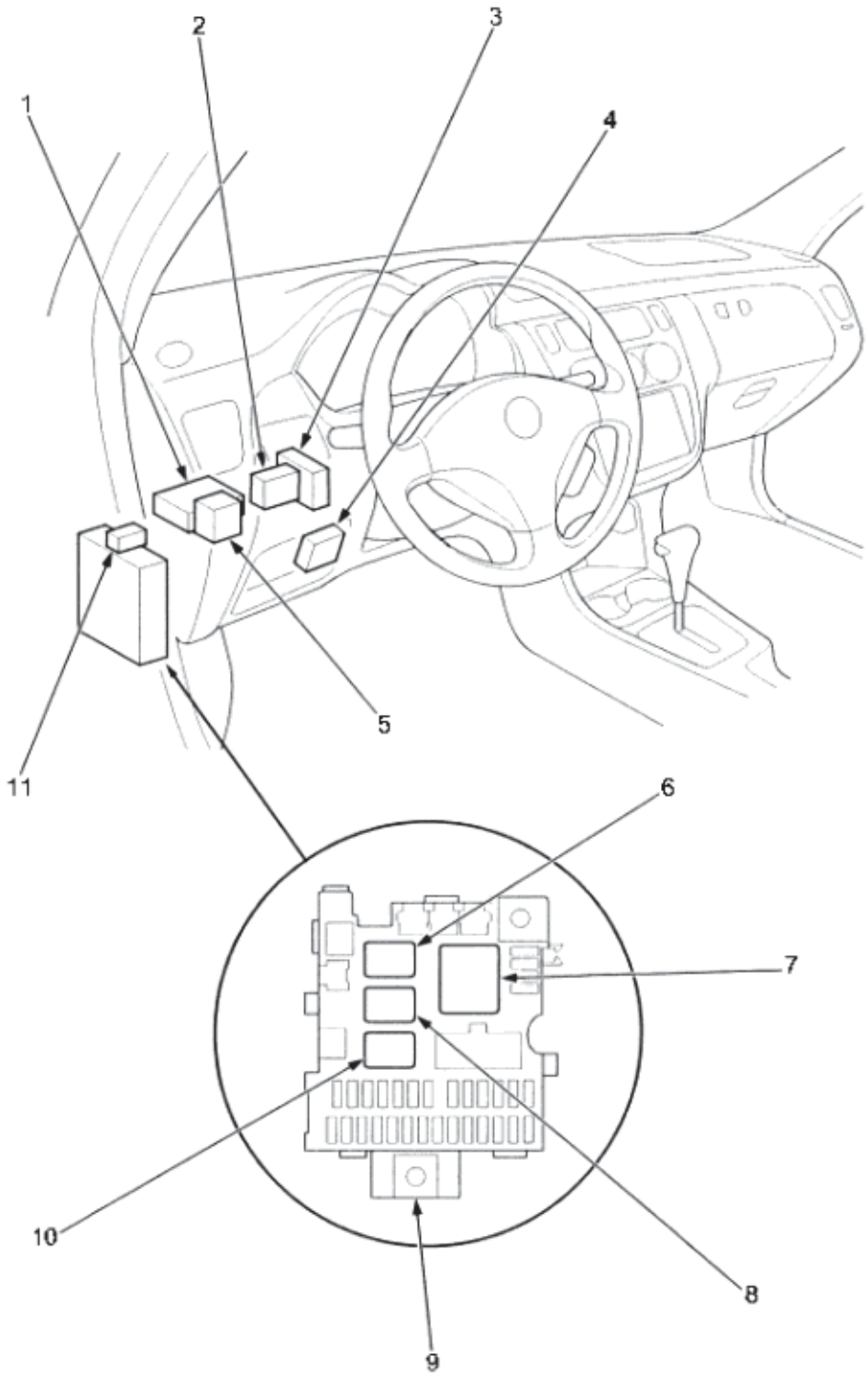




1. **FUEL LID LATCH**
2. **FUEL LID OPENER CABLE (LHD)**
3. **FUEL LID OPENER (LHD)**
4. **WIRE HARNESS**
5. **OPENER CABLE**
6. Route the opener cable under the wire harness.
7. **FUEL LID OPENER (RHD)**
8. **FUEL LID OPENER CABLE (RHD)**

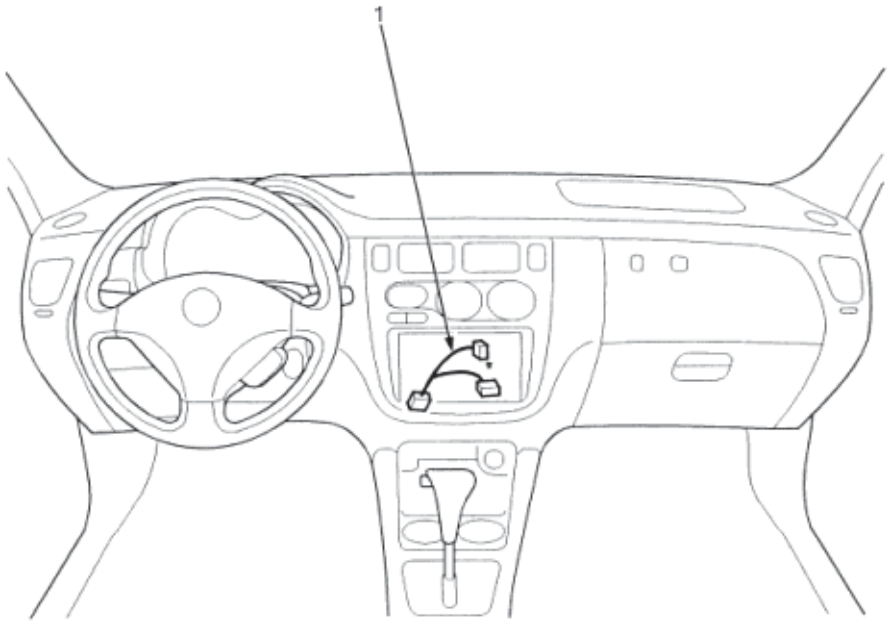
3. Release the opener cable from the clips. Using a clip remover, detach the clips, and remove the cable cushion.
4. Remove the fuel lid latch, then remove the fuel lid opener cable from the vehicle.
5. Install in the reverse order of removal, and replace any damaged clips and cable cushion.

NOTE: LHD type is shown, RHD type is similar.

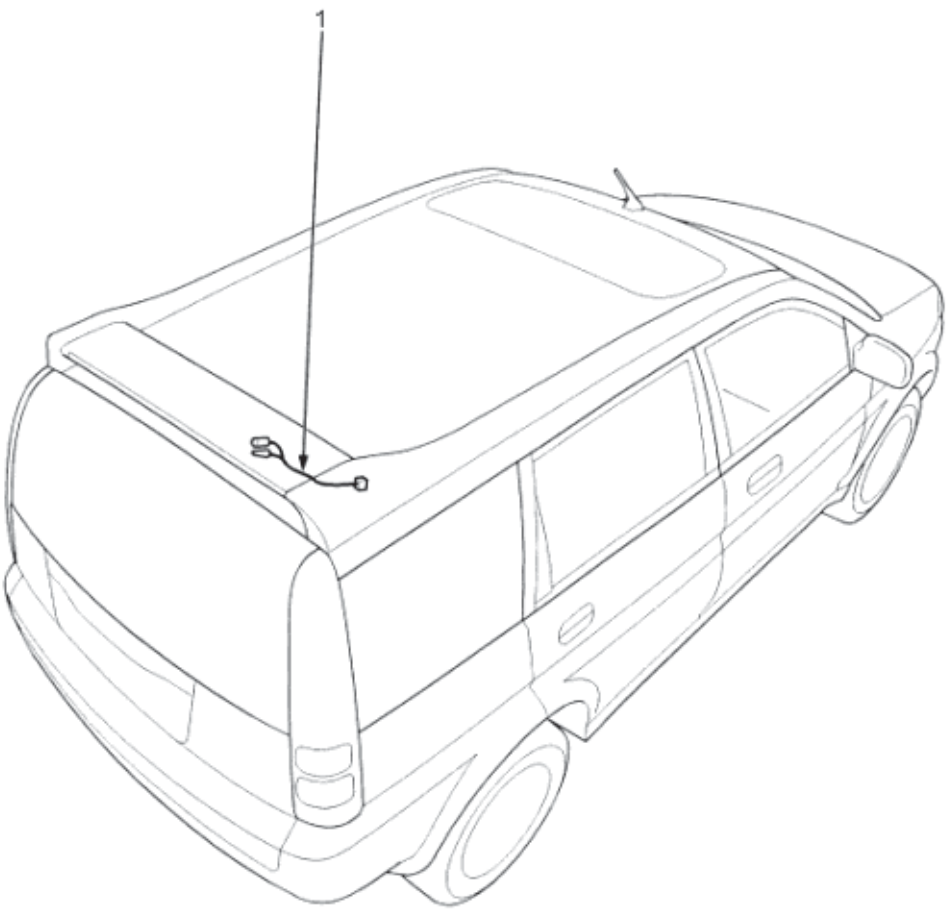


1. **INTEGRATED CONTROL UNIT**
2. **KEYLESS/POWER DOOR LOCK CONTROL UNIT**
3. **REAR WINDOW INTERMITTENT WIPER CONTROL UNIT (KG, KE models)**
4. ♦ **VEHICLE SPEED ALARM UNIT (KY model)**
   ♦ **DASH LIGHTS BRIGHTNESS CONTROL UNIT (KQ model: 4D)**
5. **PGM-FI MAIN RELAY**
6. **POWER WINDOW RELAY [Wire colours: YEL/BLK, BLK, BLK/WHT and GRN/BLK]**
7. **TURN SIGNAL/HAZARD RELAY [Wire colours: GRN/ORN, BLK and GRN/WHT]**
8. **TAILGATE RELAY [Wire colours: RED/YEL, YEL, RED/BLK and RED/YEL]**
9. **UNDER-DASH FUSE/RELAY BOX**
10. ♦ **SEAT HEATER MAIN RELAY (KG model) [Wire colours: BLK, BLK/YEL, BLK/ORN and WHT/GRN]**
    ♦ **SHIFT LOCK RELAY (KQ, KU models: CVT) [Wire colours: BLK/BLU, YEL, GRN/WHT and YEL/BLK]**
11. **STARTER CUT RELAY (LHD type: CVT) [Wire colours: BLK/WHT, WHT/RED, BLK/RED and BLK/WHT]**

NOTE: LHD type is shown, RHD type is similar.

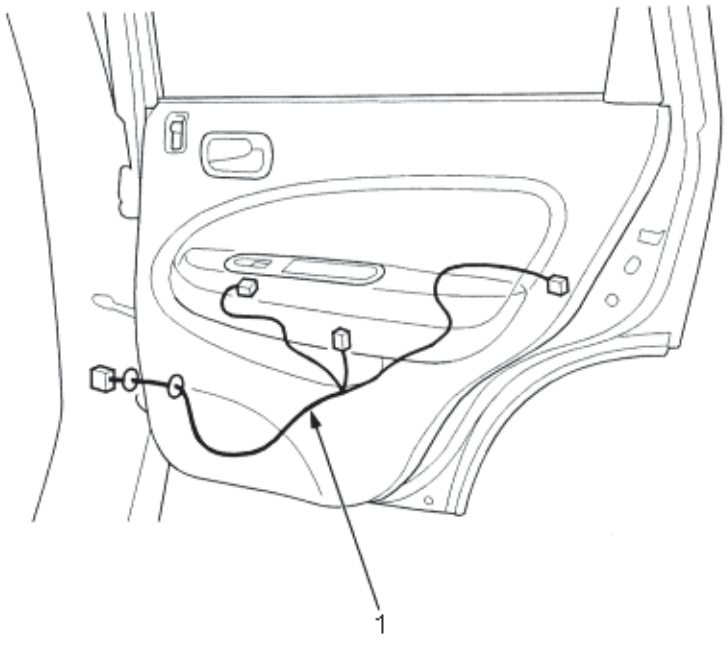


1. **RADIO SUB-HARNESS (KY, KT and KQ models)**

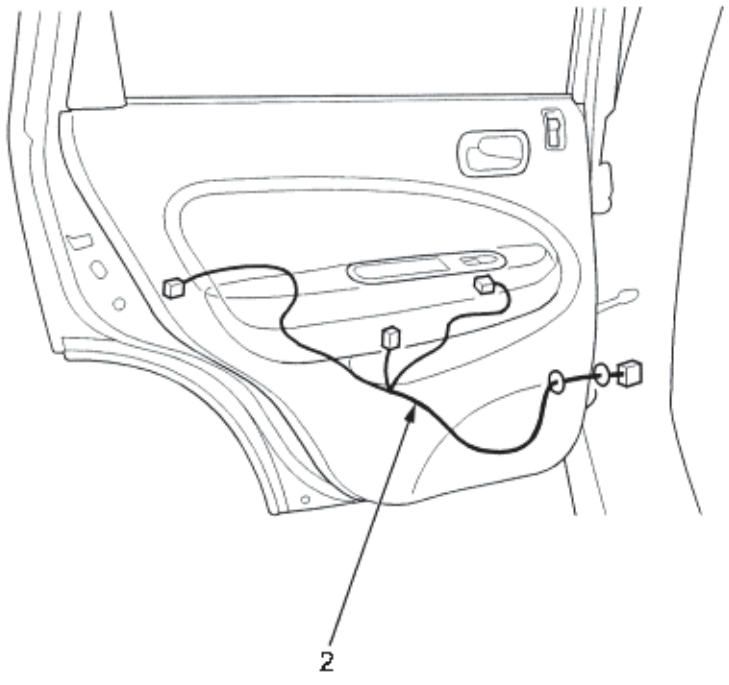


1. **HIGH MOUNT BRAKE LIGHT SUB-HARNESS (LED type)**

Rear Door:



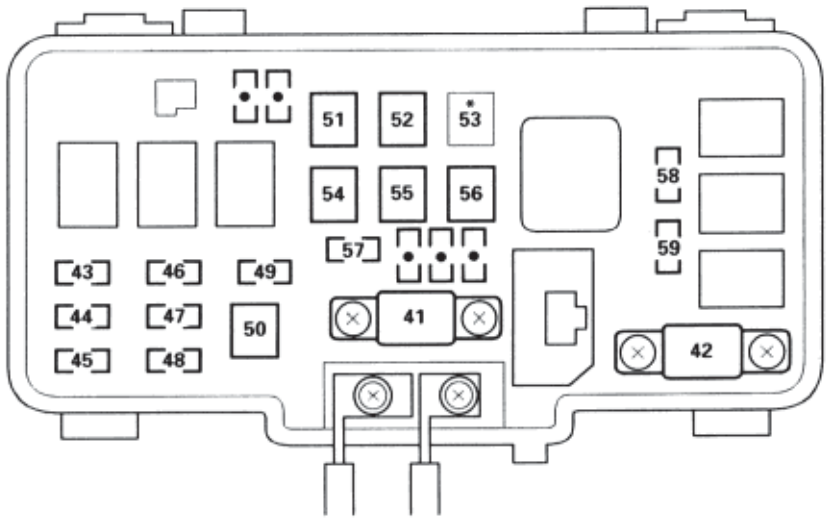
1. **RIGHT REAR DOOR WIRE HARNESS**
2. **LEFT REAR DOOR WIRE HARNESS**



Fuses
Under-hood Fuse/Relay Box

23-B-2

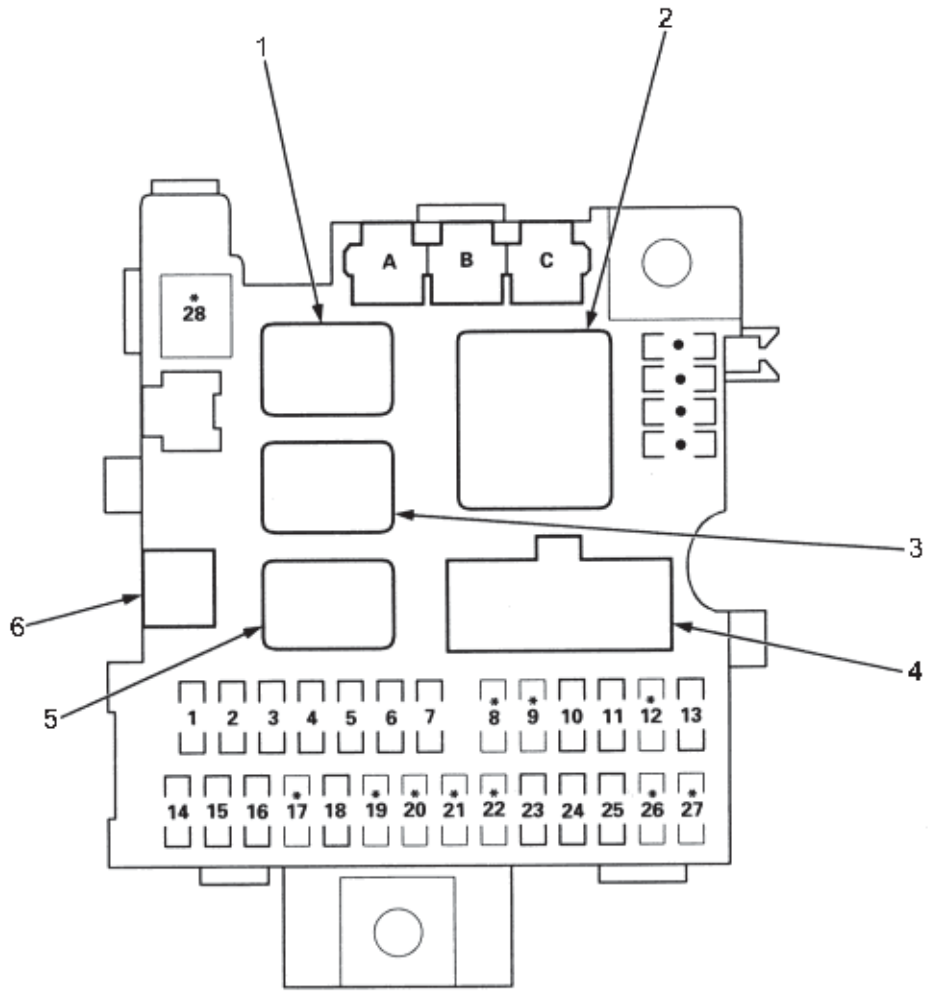
*: Not used
●: Spare fuse



Fuse Number	Amps	Wire Colour	Component(s) or Circuit(s) Protected
41	80 A	---	Battery, power distribution
42	50 A	RED/WHT	Ignition Switch (BAT)
43	20 A	RED/GRN	Right headlight, high beam indicator light
44	7.5 A	RED/BLU	Rear fog light control unit (KG, KE models)
45	20 A	RED/BLU	Left headlight
46	10 A	RED/YEL	Taillight relay, clock, switch lights, taillights, license plate lights, integrated control unit, gauge lights, A/T gear position console light, audio unit light, beverage holder light, heater control panel light, front parking lights, dashlights brightness controller (KQ model: 2D), dashlights brightness control unit (KQ model: 4D), option connector C
47	15 A	WHT/BLK	Brake lights, key interlock solenoid (KQ, KU models), ABS modulator assembly, ECM/PCM
48	20 A	GRN	ABS modulator assembly
49	15 A	WHT/RED	Turn signal/hazard relay
50	40 A	WHT/GRN	ABS modulator assembly
51	*120 A	BLK/WHT	Power window relay, passenger's window motor, left rear power window motor (4D), right rear power window motor (4D)
51	*240 A	BLK/WHT	Power window relay, passenger's window motor. left rear power window motor (4D), right rear power window motor (4D)
52	20 A	BLU/BLK	Power window master switch, driver's window motor
53	---	---	Not used
54	30 A	BLU/BLK	No. 23, 24 and 25 fuses (in the under-dash fuse/relay box), option connector B
55	20 A	WHT/GRN	Seat heaters (KG model)
56	40 A	BLU/RED	Blower motor
57	20 A	BLU/BLK	Radiator fan motor
58	20 A	BLU/BLK	Condenser fan motor
58	20 A	RED	A/C compressor clutch
59	15 A	WHT/YEL	PGM-FI main relay, data link connector

*1: 2D
*2: 4D

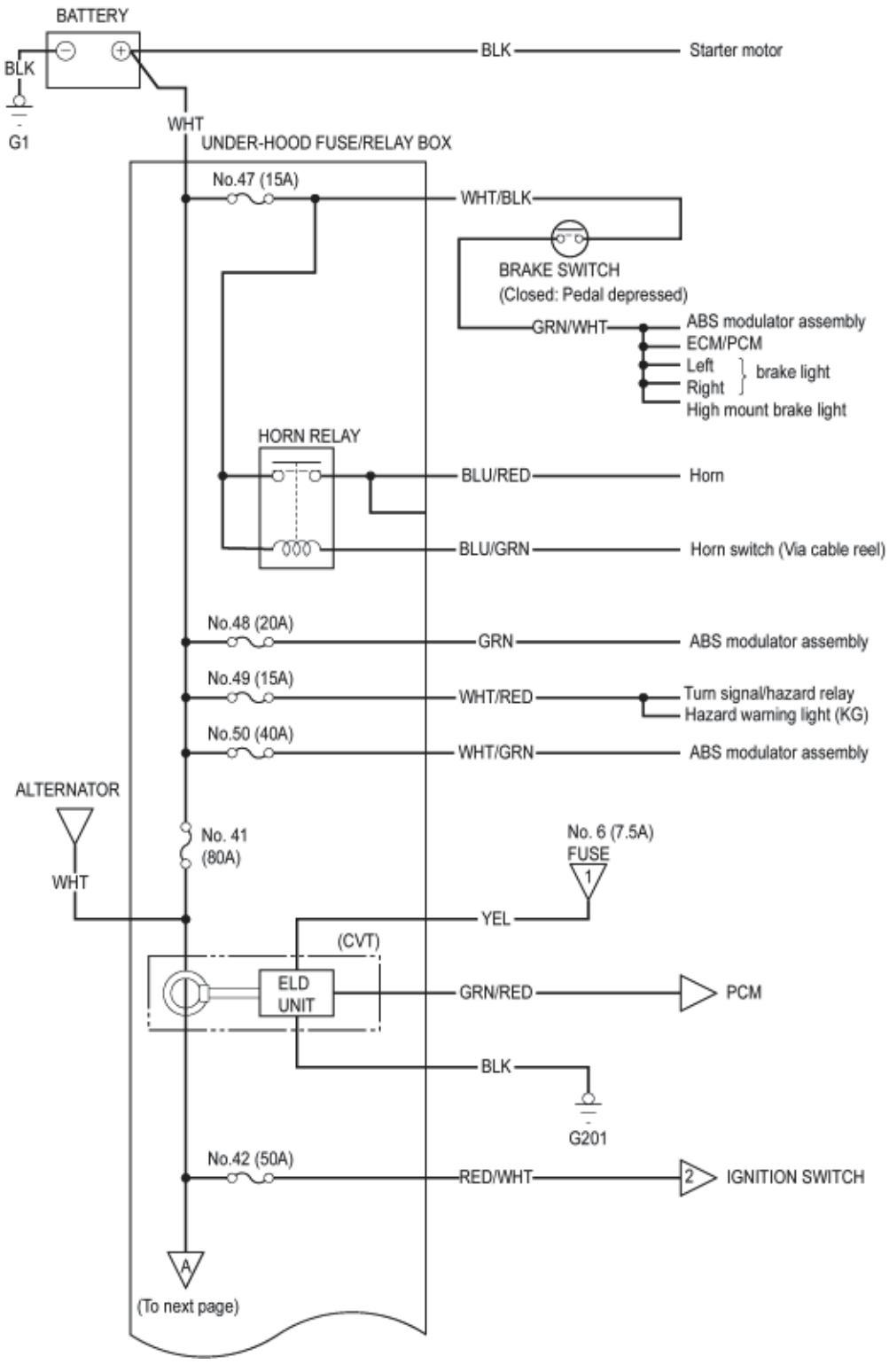
*: Not used
●: Spare fuse
A~C: Option connector

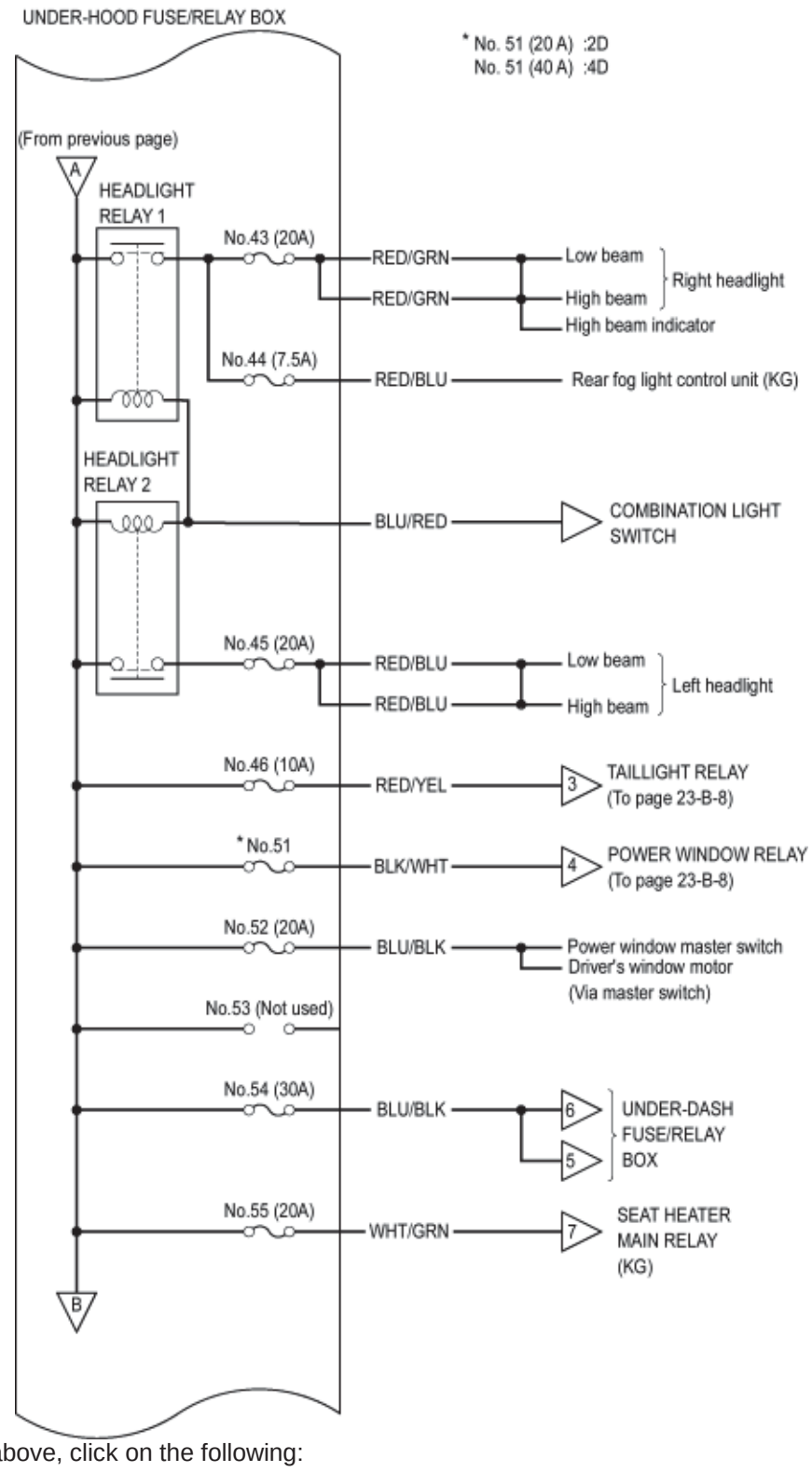


1. **To power window relay**
2. **To turn signal/hazard relay**
3. **To taillight relay**
4. **To ignition switch**
5. **To seat heater main relay (KG model)**
   To shift lock relay (KQ, KU models: CVT)
6. **To SRS main harness**

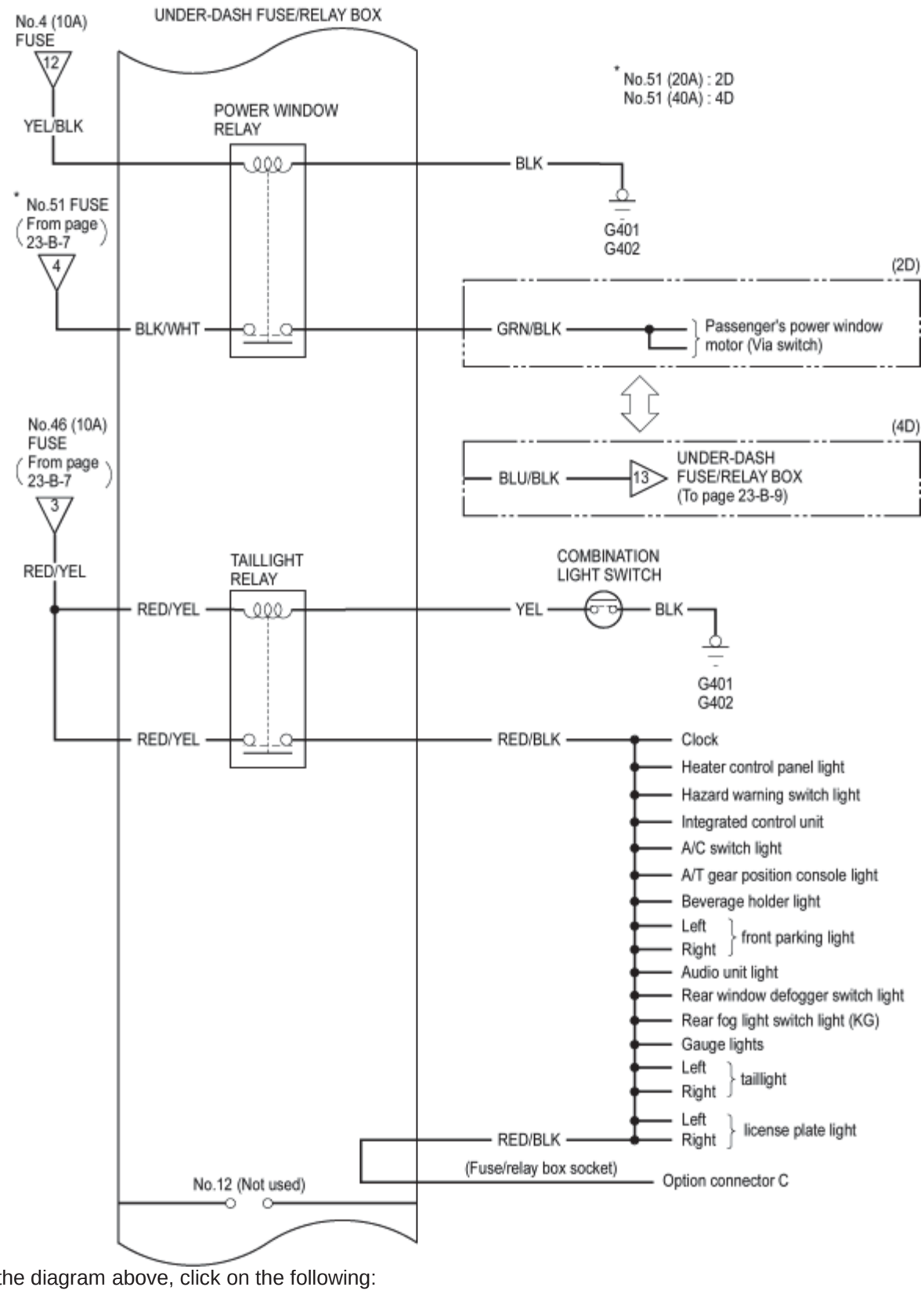
Fuse Number	Amps	Wire Colour	Component(s) or Circuit(s) Protected
1	10 A	GRN (or RED/WHT)	SRS unit (VB)
2	15 A	GRN (or BLK/RED)	SRS unit (VA)
2	15 A	BLK/RED	Inertia switch (KG, KE models), PGM-FI main relay (Except KG, KE models)
3	20 A	GRN/BLK	Windshield wiper motor, windshield washer motor
4	10 A	YEL/BLK	Headlight adjuster switch (KG, KE models), headlight adjuster unit (KG, KE models), rear window intermittent wiper control unit (KG, KE models), rear window washer motor, rear window wiper motor, power window master switch, power window relay
5	10 A	GRN/WHT	Integrated control unit, turn signal/hazard relay, back-up lights
6	7.5 A	YEL	Gauge assembly, clock, vehicle speed alarm unit (KY model), seat belt alarm unit (KY, KQ models), keyless door lock control unit, secondary HO2S (KG, KE, KN, KQ models), ELD unit (CVT), alternator, VSS, primary HO2S (KG, KE, KU models), PCM, EVAP purge control solenoid valve (KG, KY, KE, KU models)
7	15 A	BLK/YEL	Distributor
8	---	---	Not used
9	---	---	Not used
10	15 A	BLU	Rear window defogger
11	7.5 A	BLK/YEL	Blower motor relay, radiator fan relay, condenser fan relay, A/C switch, A/C compressor clutch relay, recirculation control motor, A/C thermostat, ABS modulator assembly, power mirror actuator, power mirror defogger (KG model), power mirror retract actuator (With keyless entry system), seat heater main relay (KG model)
12	---	---	Not used
13	7.5 A	BLU/WHT	ECM/PCM, PGM-FI main relay
*14	20 A	YEL/RED	Left rear power window motor
*15	20 A	YEL/BLK	Right rear power window motor
*16	20 A	GRN/BLK	Front passenger's power window motor
17	---	---	Not used
18	15 A	YEL/RED	Audio unit, cigarette lighter
19	---	---	Not used
20	---	---	Not used
21	---	---	Not used
22	---	---	Not used
23	7.5 A	WHT/BLU	Clock, seat belt alarm unit (KY, KQ models), integrated control unit, ceiling lights, immobiliser indicator light (KG, KE, KN, KQ, KU models), cargo area light, ECM/PCM
24	15 A	WHT	Audio unit
25	20 A	WHT/GRN	Keyless/power door lock control unit
26	---	---	Not used
27	---	---	Not used
28	---	---	Not used

*: Not used: 2D

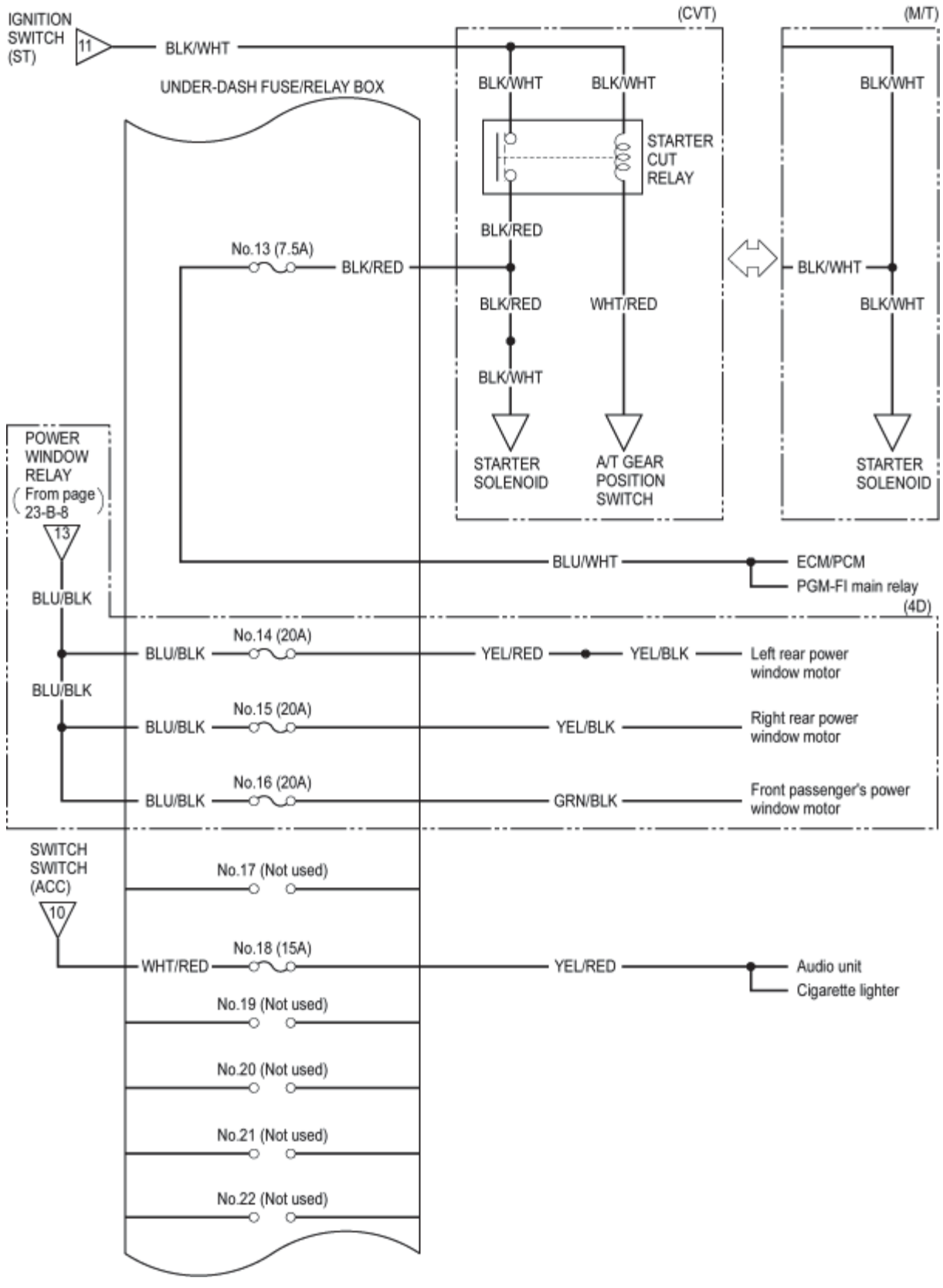

BATTERY
BLK
G1
BLK
Starter motor
WHT
UNDER-HOOD FUSE/RELAY BOX
No.47 (15A)
WHT/BLK
BRAKE SWITCH
(Closed: Pedal depressed)
GRN/WHT
ABS modulator assembly
ECM/PCM
Left
Right
brake light
High mount brake light
HORN RELAY
BLU/RED
Horn
BLU/GRN
Horn switch (Via cable reel)
No.48 (20A)
GRN
ABS modulator assembly
No.49 (15A)
WHT/RED
Turn signal/hazard relay
Hazard warning light (KG)
No.50 (40A)
WHT/GRN
ABS modulator assembly
ALTERNATOR
WHT
No. 41
(80A)
No. 6 (7.5A)
FUSE
1
YEL
(CVT)
ELD
UNIT
GRN/RED
PCM
BLK
G201
No.42 (50A)
RED/WHT
2
IGNITION SWITCH
A
(To next page)

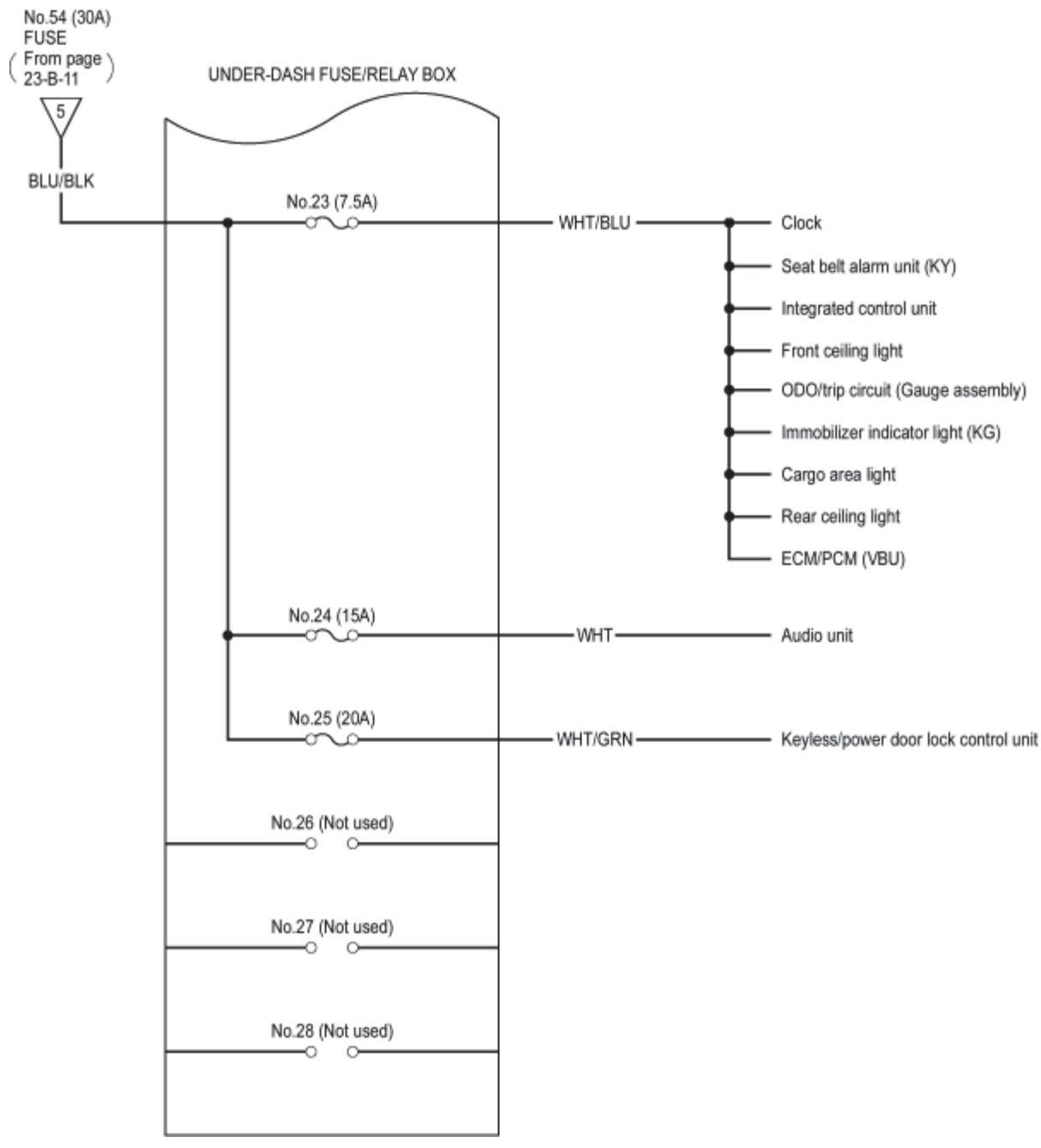


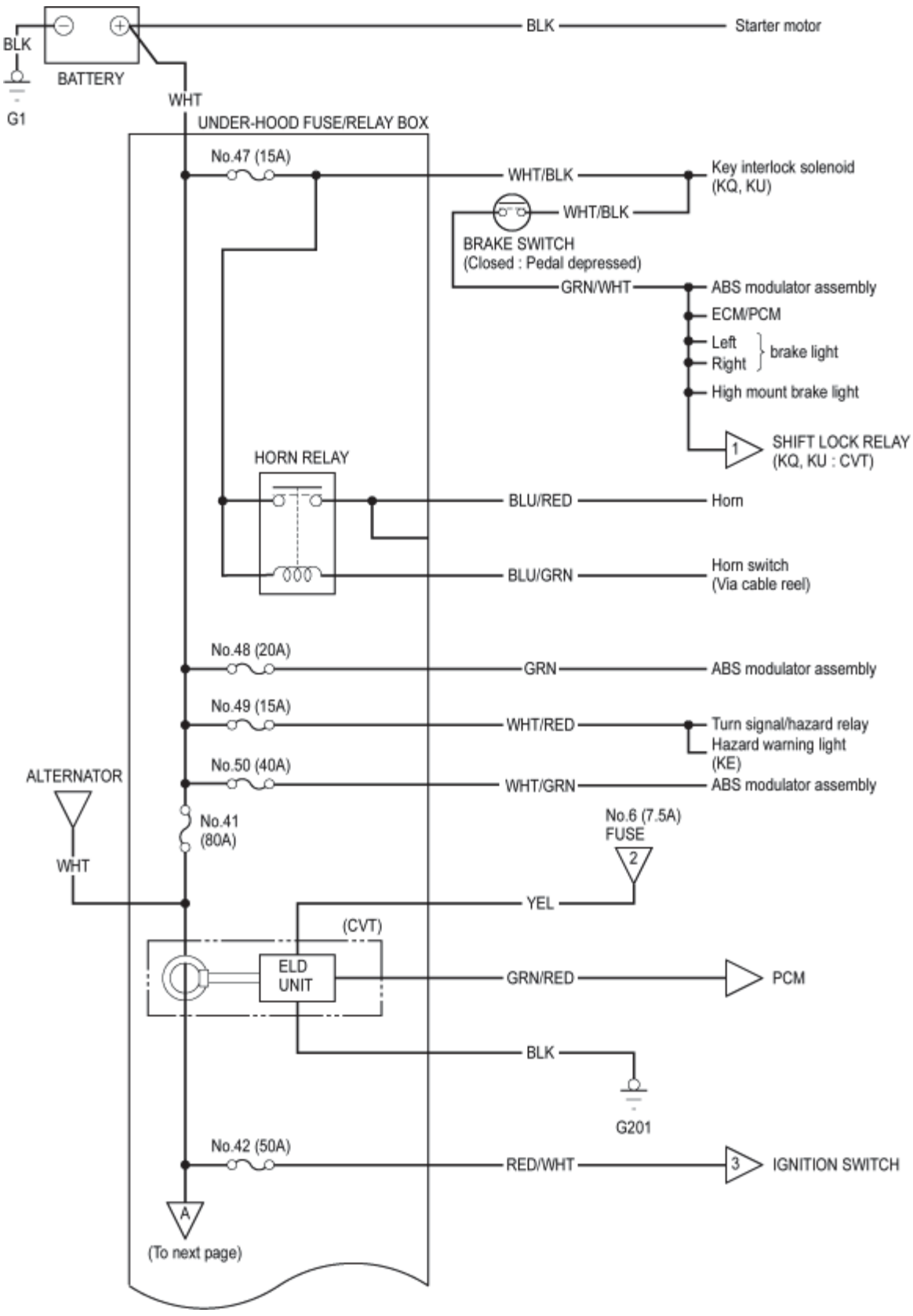
To go to the page referenced on the diagram above, click on the following:
(**See Page** 23-B-8)

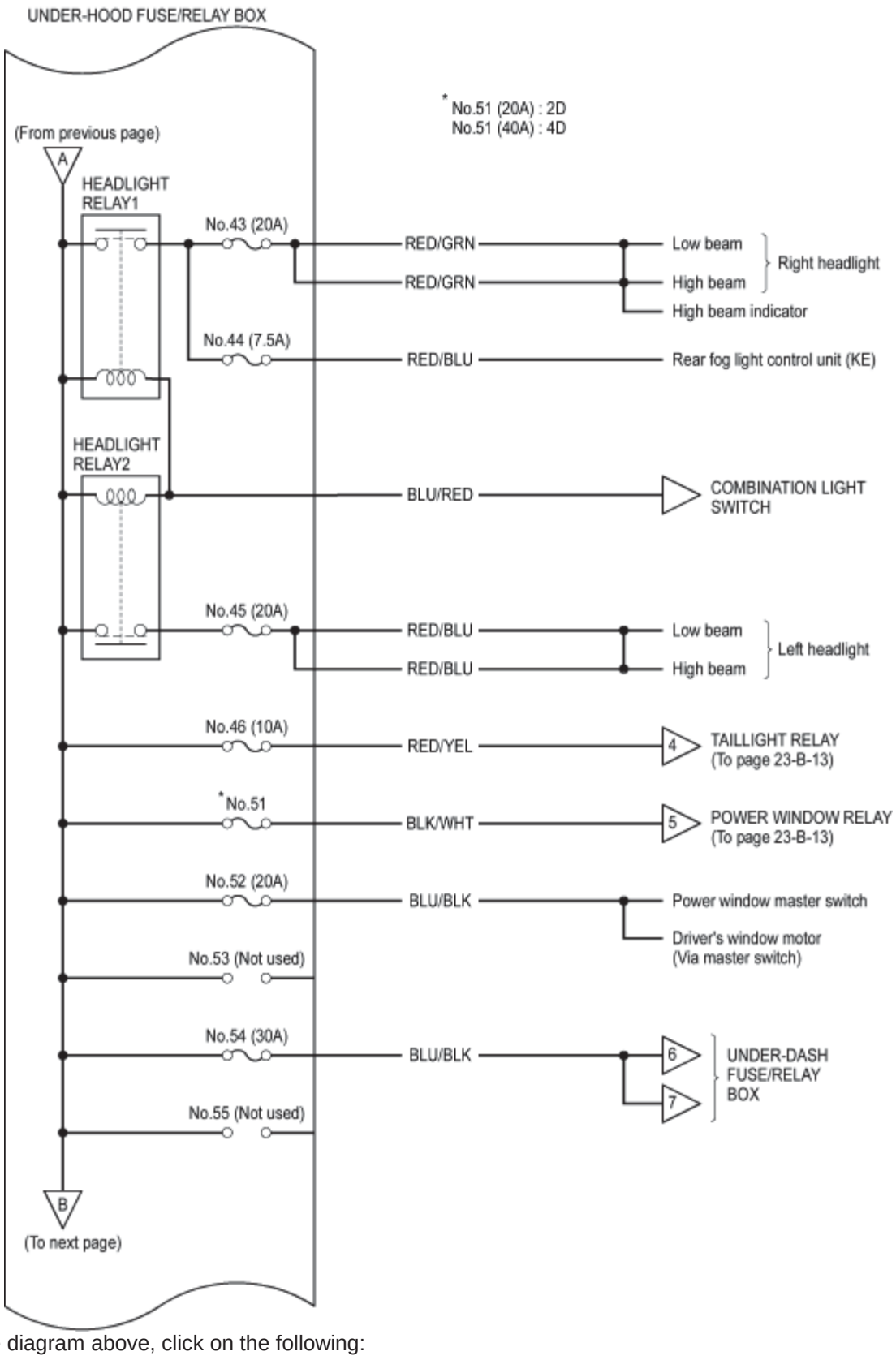


To go to the page referenced on the diagram above, click on the following:
(**See Page** 23-B-9)

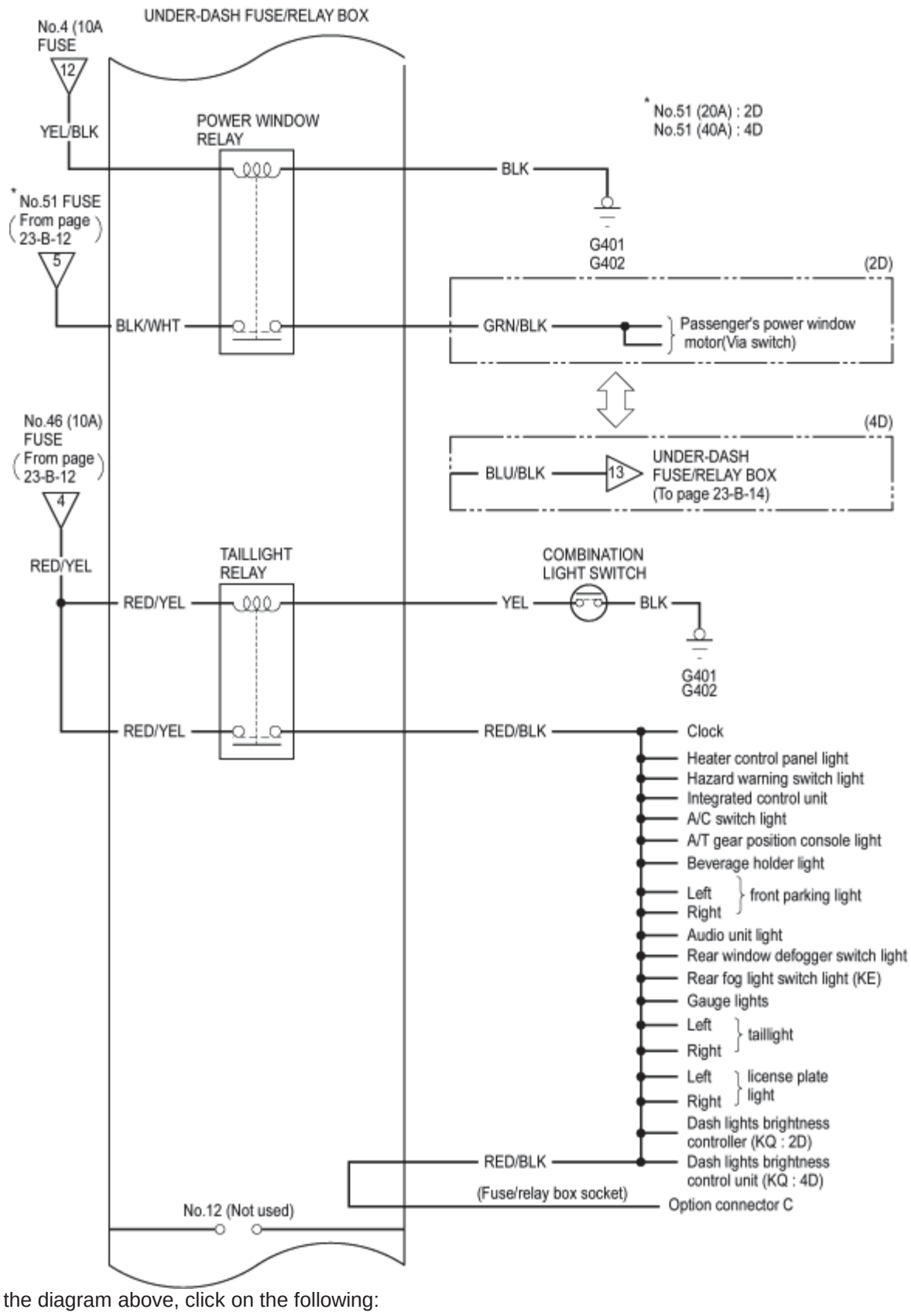

IGNITION SWITCH (ST)
11
BLK/WHT
UNDER-DASH FUSE/RELAY BOX
(CVT)
(M/T)
BLK/WHT
BLK/WHT
STARTER CUT RELAY
BLK/RED
No.13 (7.5A)
BLK/RED
BLK/RED
WHT/RED
BLK/WHT
STARTER SOLENOID
A/T GEAR POSITION SWITCH
BLK/WHT
BLK/WHT
STARTER SOLENOID
POWER WINDOW RELAY
(From page 23-B-8)
13
BLU/WHT
ECM/PCM
PGM-FI main relay
(4D)
BLU/BLK
No.14 (20A)
BLU/BLK
YEL/RED
YEL/BLK
Left rear power window motor
BLU/BLK
No.15 (20A)
BLU/BLK
YEL/BLK
Right rear power window motor
No.16 (20A)
BLU/BLK
GRN/BLK
Front passenger's power window motor
SWITCH SWITCH (ACC)
10
No.17 (Not used)
No.18 (15A)
WHT/RED
YEL/RED
Audio unit
Cigarette lighter
No.19 (Not used)
No.20 (Not used)
No.21 (Not used)
No.22 (Not used)


No.54 (30A)
FUSE
From page 23-B-11
5
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.23 (7.5A)
WHT/BLU
Clock
Seat belt alarm unit (KY)
Integrated control unit
Front ceiling light
ODO/trip circuit (Gauge assembly)
Immobilizer indicator light (KG)
Cargo area light
Rear ceiling light
ECM/PCM (VBU)
No.24 (15A)
WHT
Audio unit
No.25 (20A)
WHT/GRN
Keyless/power door lock control unit
No.26 (Not used)
No.27 (Not used)
No.28 (Not used)

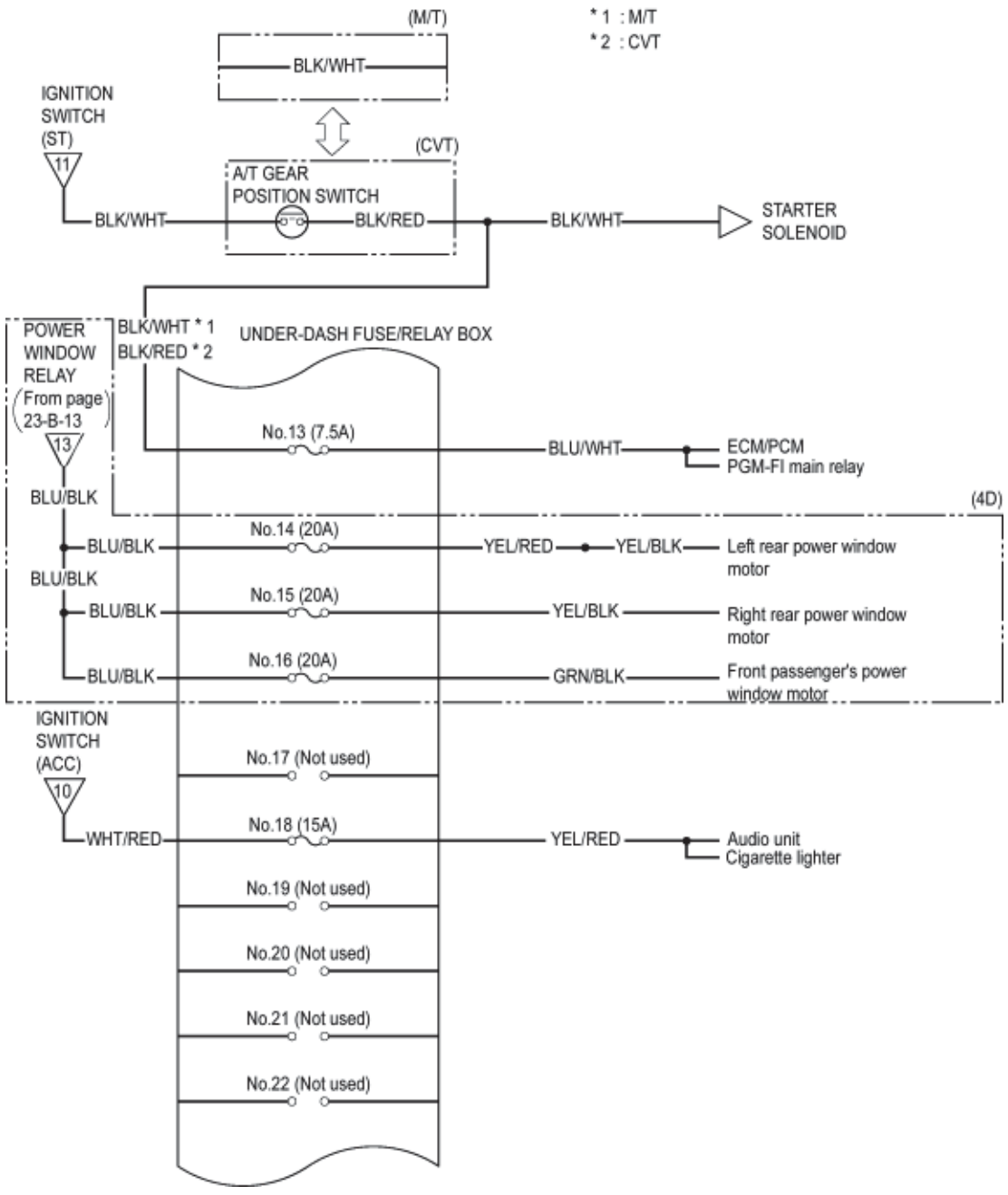

BLK
BATTERY
G1
BLK
Starter motor
WHT
UNDER-HOOD FUSE/RELAY BOX
No.47 (15A)
WHT/BLK
Key interlock solenoid
(KQ, KU)
WHT/BLK
BRAKE SWITCH
(Closed : Pedal depressed)
GRN/WHT
ABS modulator assembly
ECM/PCM
Left
Right
brake light
High mount brake light
1
SHIFT LOCK RELAY
(KQ, KU : CVT)
HORN RELAY
BLU/RED
Horn
BLU/GRN
Horn switch
(Via cable reel)
No.48 (20A)
GRN
ABS modulator assembly
No.49 (15A)
WHT/RED
Turn signal/hazard relay
Hazard warning light
(KE)
No.50 (40A)
WHT/GRN
ABS modulator assembly
ALTERNATOR
No.41
(80A)
WHT
No.6 (7.5A)
FUSE
2
YEL
(CVT)
ELD
UNIT
GRN/RED
PCM
BLK
G201
No.42 (50A)
RED/WHT
3
IGNITION SWITCH
A
(To next page)

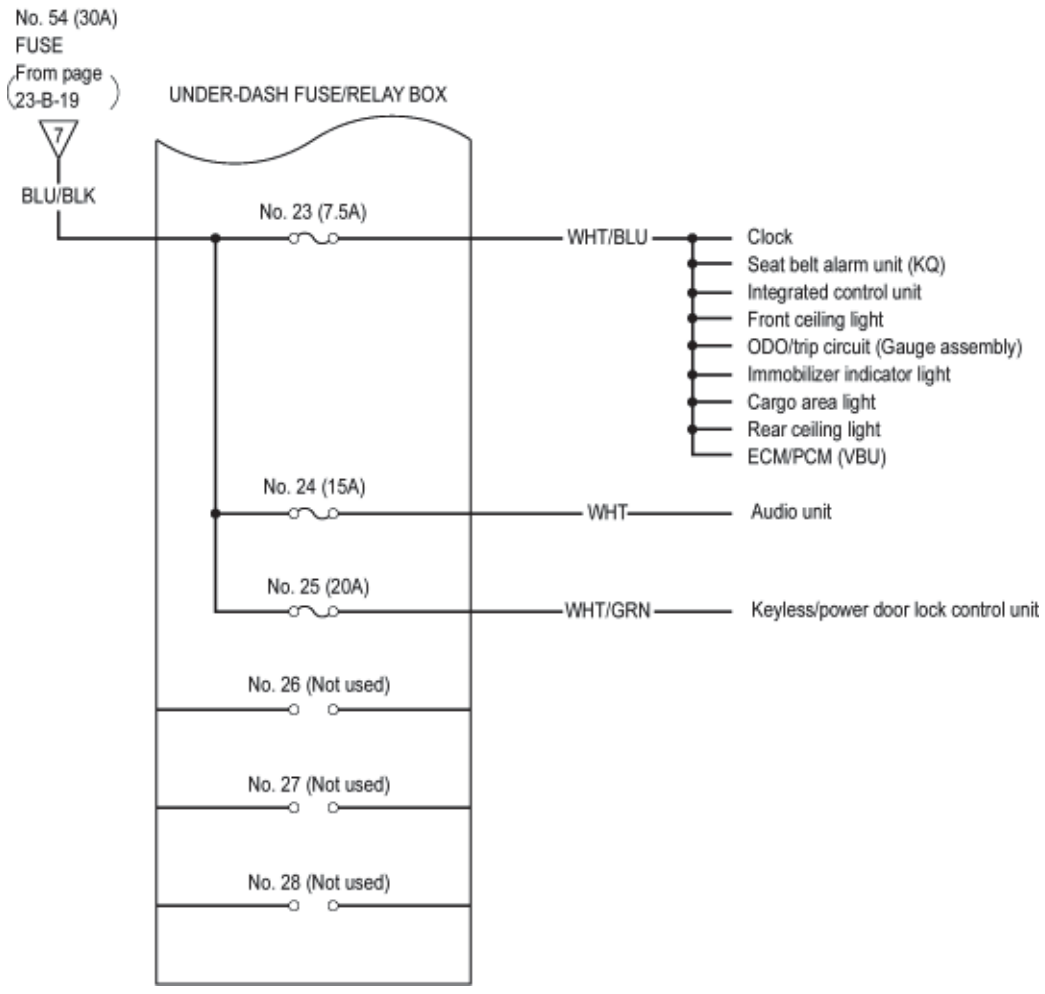


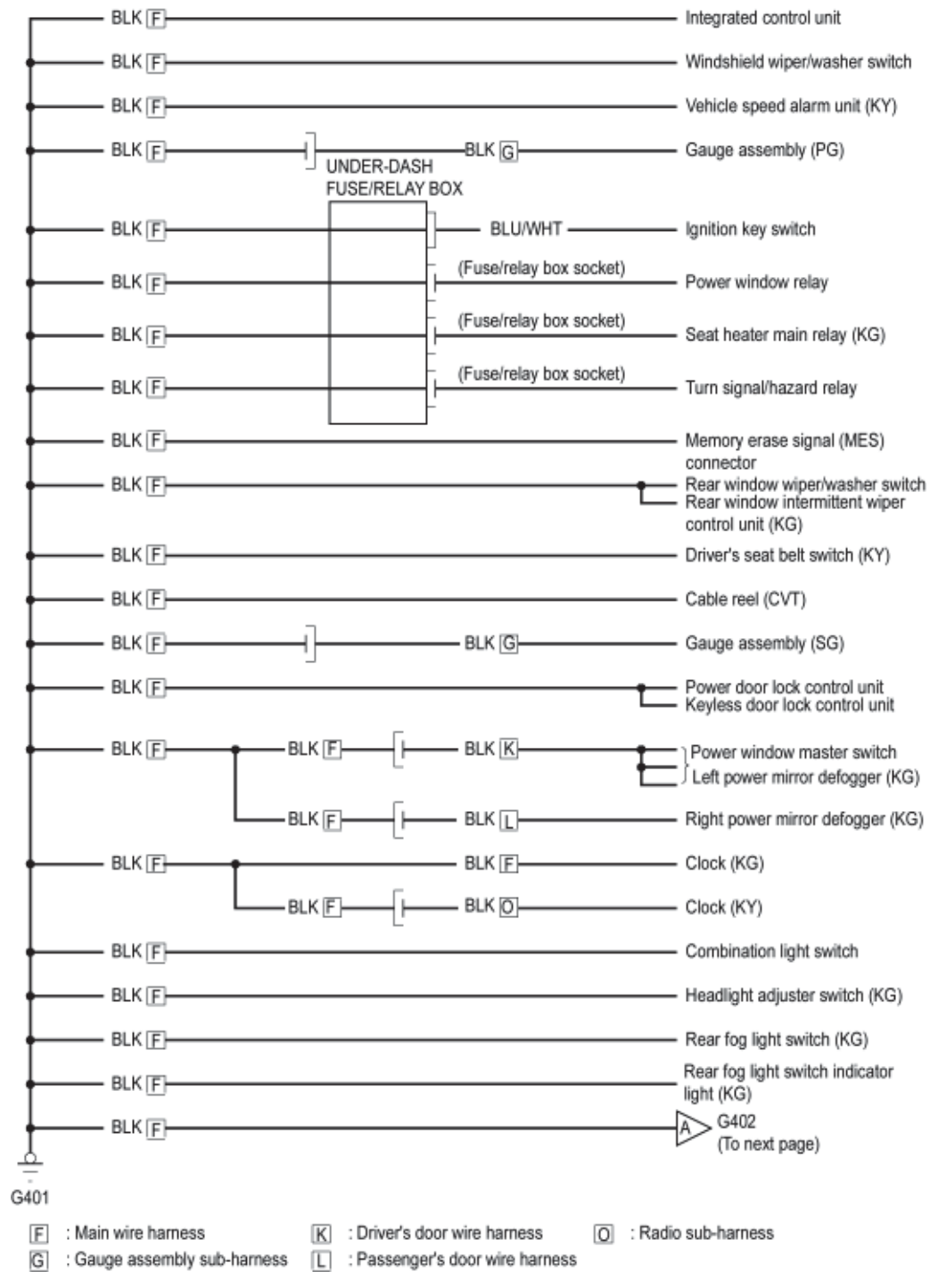
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-13)



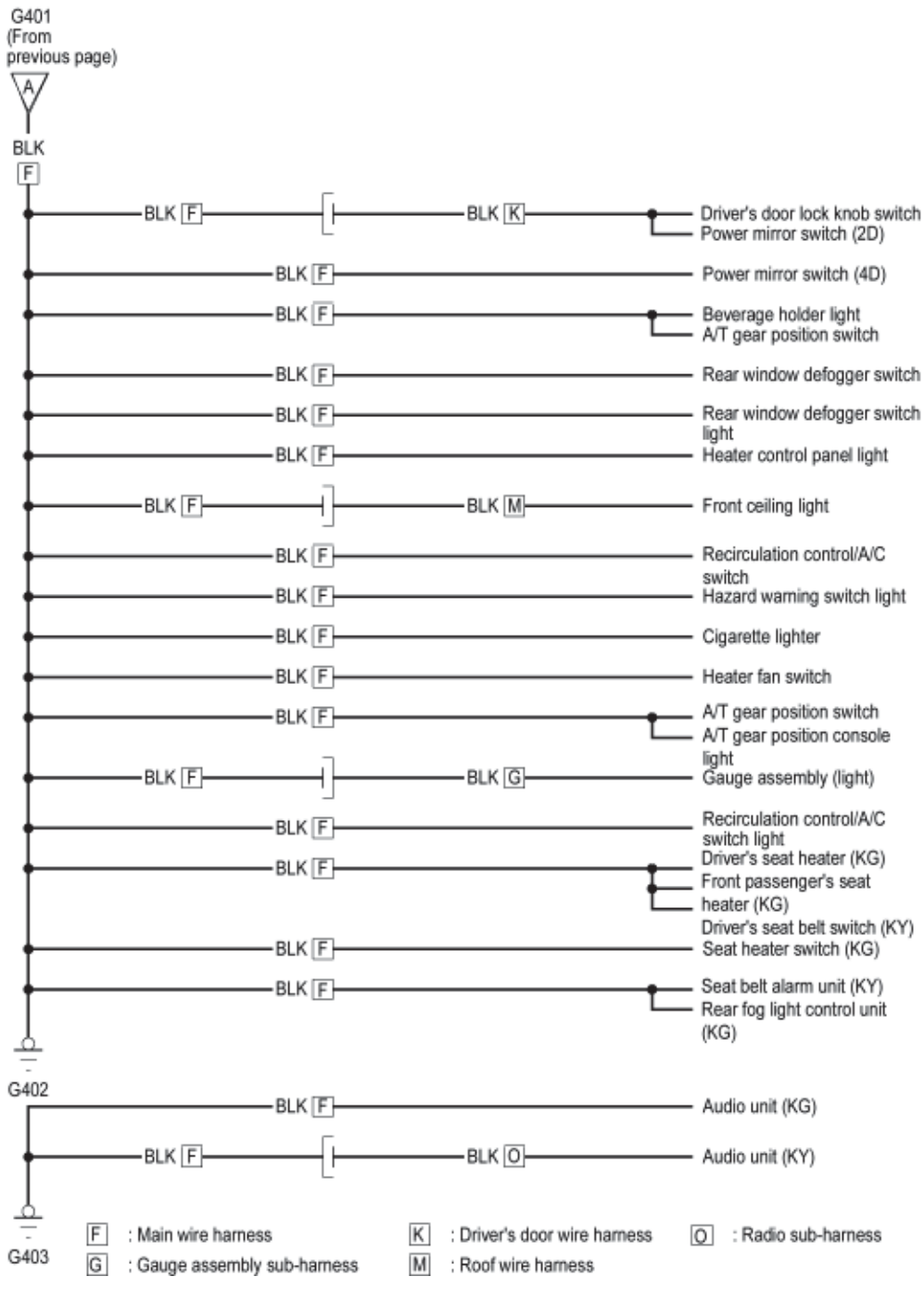
To go to the pages referenced on the diagram above, click on the following:
(**See Page** 23-B-14)

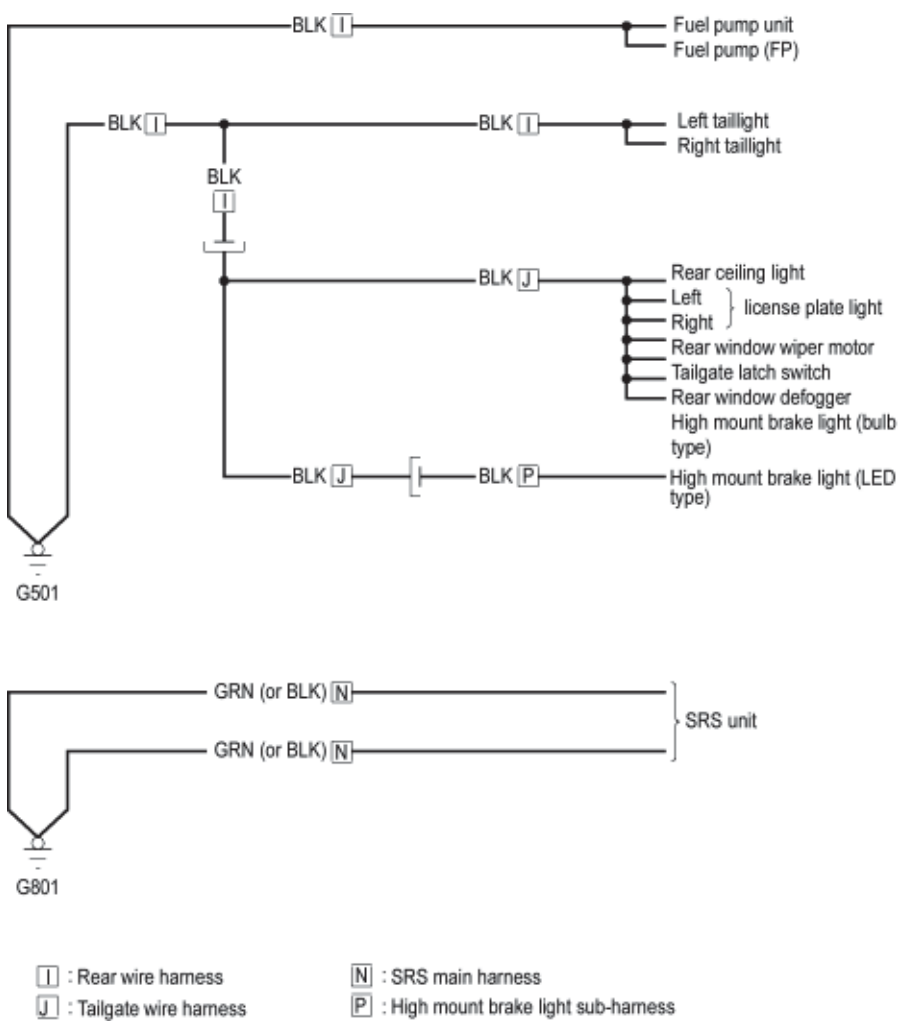

(M/T)
* 1 : M/T
* 2 : CVT
BLK/WHT
IGNITION SWITCH (ST)
11
(CVT)
A/T GEAR POSITION SWITCH
BLK/WHT
BLK/RED
BLK/WHT
STARTER SOLENOID
POWER WINDOW RELAY
(From page 23-B-13)
13
BLK/WHT * 1
BLK/RED * 2
UNDER-DASH FUSE/RELAY BOX
No.13 (7.5A)
BLU/WHT
ECM/PCM
PGM-FI main relay
(4D)
BLU/BLK
No.14 (20A)
BLU/BLK
YEL/RED
YEL/BLK
Left rear power window motor
BLU/BLK
No.15 (20A)
BLU/BLK
YEL/BLK
Right rear power window motor
No.16 (20A)
BLU/BLK
GRN/BLK
Front passenger's power window motor
IGNITION SWITCH (ACC)
10
No.17 (Not used)
No.18 (15A)
WHT/RED
YEL/RED
Audio unit
Cigarette lighter
No.19 (Not used)
No.20 (Not used)
No.21 (Not used)
No.22 (Not used)

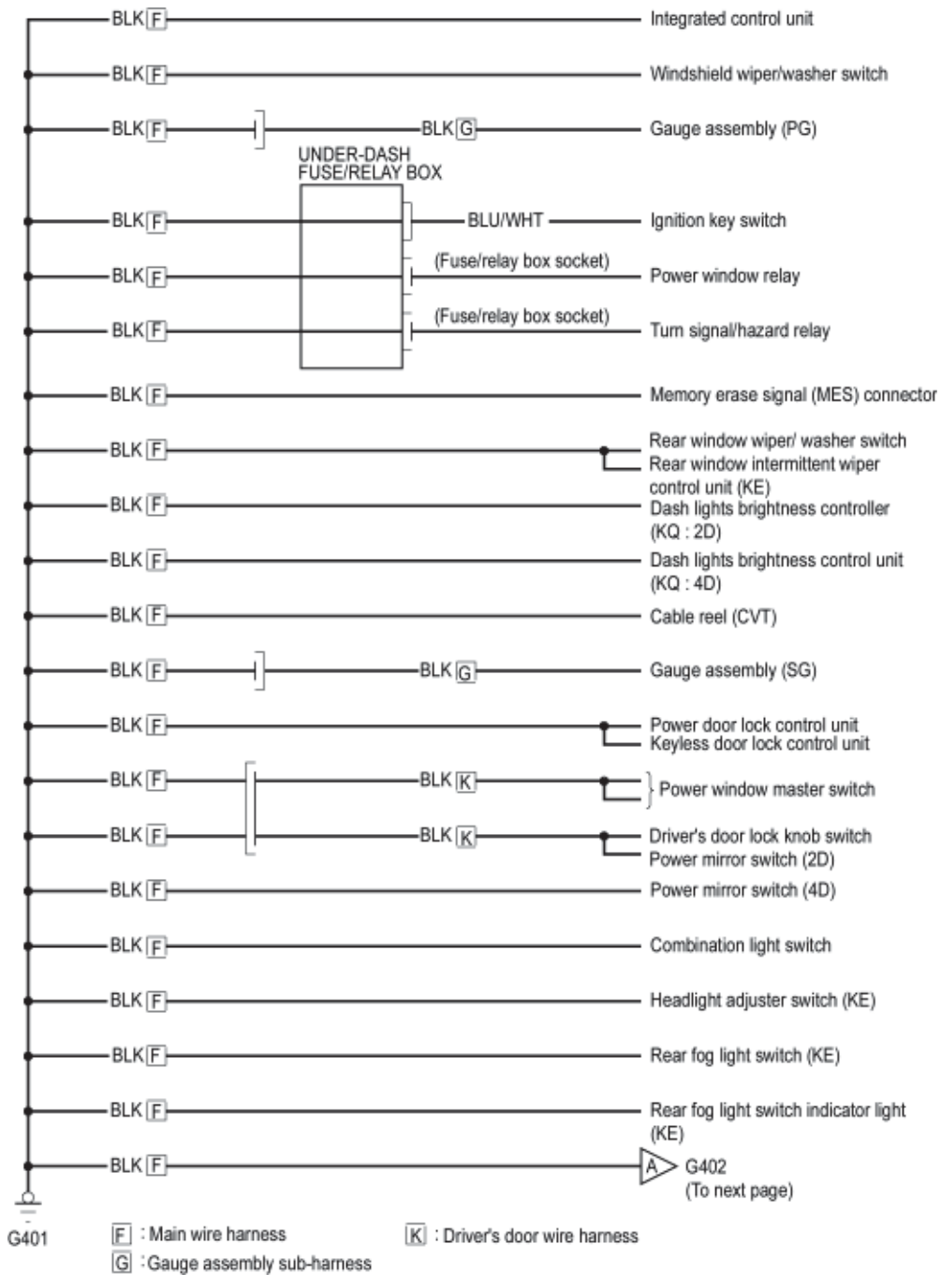

No. 54 (30A)
FUSE
From page 23-B-19
7
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No. 23 (7.5A)
WHT/BLU
Clock
Seat belt alarm unit (KQ)
Integrated control unit
Front ceiling light
ODO/trip circuit (Gauge assembly)
Immobilizer indicator light
Cargo area light
Rear ceiling light
ECM/PCM (VBU)
No. 24 (15A)
WHT
Audio unit
No. 25 (20A)
WHT/GRN
Keyless/power door lock control unit
No. 26 (Not used)
No. 27 (Not used)
No. 28 (Not used)

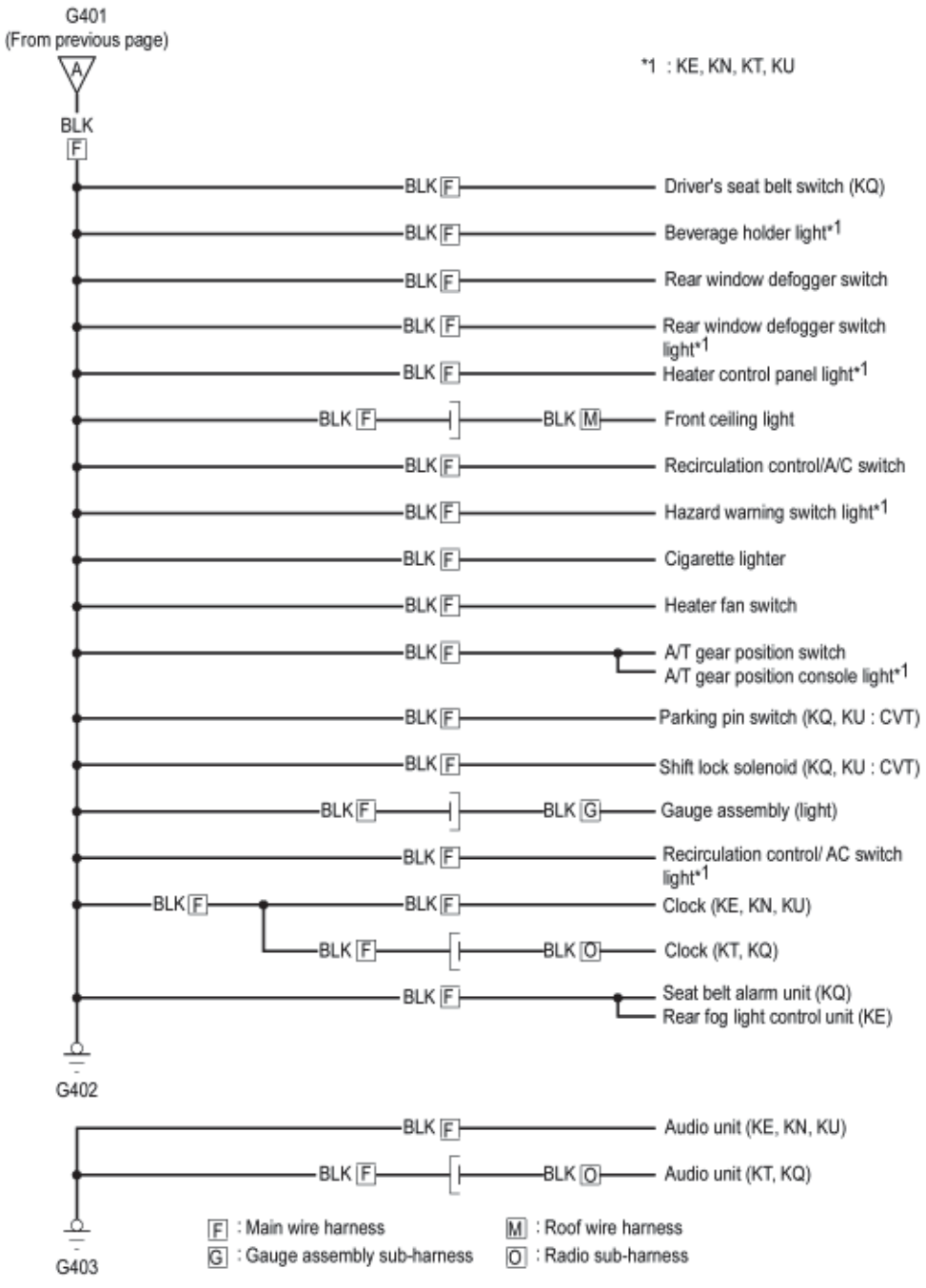


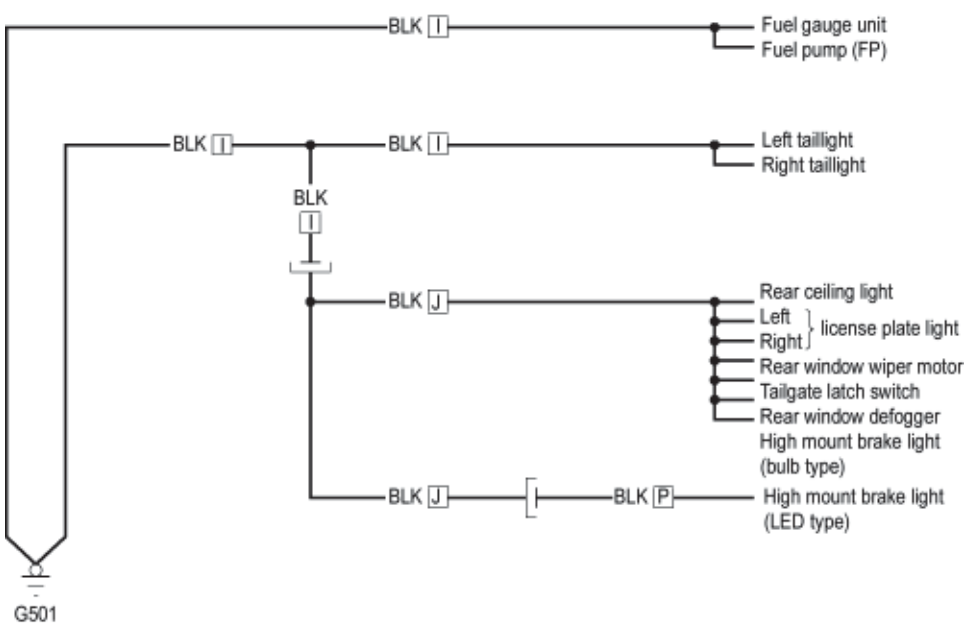
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness
L : Passenger's door wire harness
O : Radio sub-harness

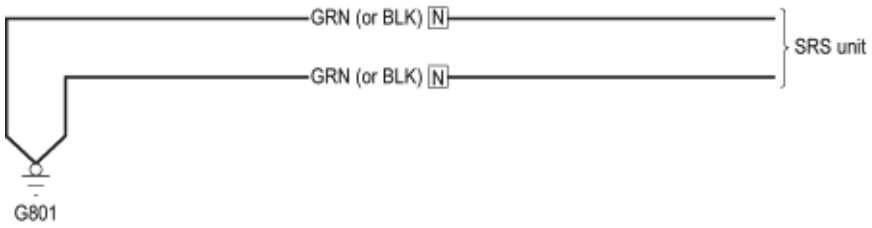

G401
(From previous page)
A
BLK F
BLK F
BLK K
Driver's door lock knob switch
Power mirror switch (2D)
BLK F
Power mirror switch (4D)
BLK F
Beverage holder light
A/T gear position switch
BLK F
Rear window defogger switch
BLK F
Rear window defogger switch light
BLK F
Heater control panel light
BLK F
BLK M
Front ceiling light
BLK F
Recirculation control/A/C switch
BLK F
Hazard warning switch light
BLK F
Cigarette lighter
BLK F
Heater fan switch
BLK F
A/T gear position switch
A/T gear position console light
BLK F
BLK G
Gauge assembly (light)
BLK F
Recirculation control/A/C switch light
BLK F
Driver's seat heater (KG)
Front passenger's seat heater (KG)
Driver's seat belt switch (KY)
BLK F
Seat heater switch (KG)
BLK F
Seat belt alarm unit (KY)
Rear fog light control unit (KG)
G402
BLK F
Audio unit (KG)
BLK F
BLK O
Audio unit (KY)
G403
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness
M : Roof wire harness
O : Radio sub-harness


BLK I
Fuel pump unit
Fuel pump (FP)
BLK I
BLK I
Left taillight
Right taillight
BLK I
BLK J
Rear ceiling light
Left
Right
license plate light
Rear window wiper motor
Tailgate latch switch
Rear window defogger
High mount brake light (bulb type)
BLK J
BLK P
High mount brake light (LED type)
G501
GRN (or BLK) N
GRN (or BLK) N
SRS unit
G801
I : Rear wire harness
J : Tailgate wire harness
N : SRS main harness
P : High mount brake light sub-harness


BLK F
Integrated control unit
Windshield wiper/washer switch
BLK G
Gauge assembly (PG)
UNDER-DASH FUSE/RELAY BOX
BLU/WHT
Ignition key switch
(Fuse/relay box socket)
Power window relay
Turn signal/hazard relay
Memory erase signal (MES) connector
Rear window wiper/ washer switch
Rear window intermittent wiper control unit (KE)
Dash lights brightness controller (KQ : 2D)
Dash lights brightness control unit (KQ : 4D)
Cable reel (CVT)
Gauge assembly (SG)
Power door lock control unit
Keyless door lock control unit
BLK K
Power window master switch
Driver's door lock knob switch
Power mirror switch (2D)
Power mirror switch (4D)
Combination light switch
Headlight adjuster switch (KE)
Rear fog light switch (KE)
Rear fog light switch indicator light (KE)
A
G402
(To next page)
G401
F : Main wire harness
G : Gauge assembly sub-harness
K : Driver's door wire harness

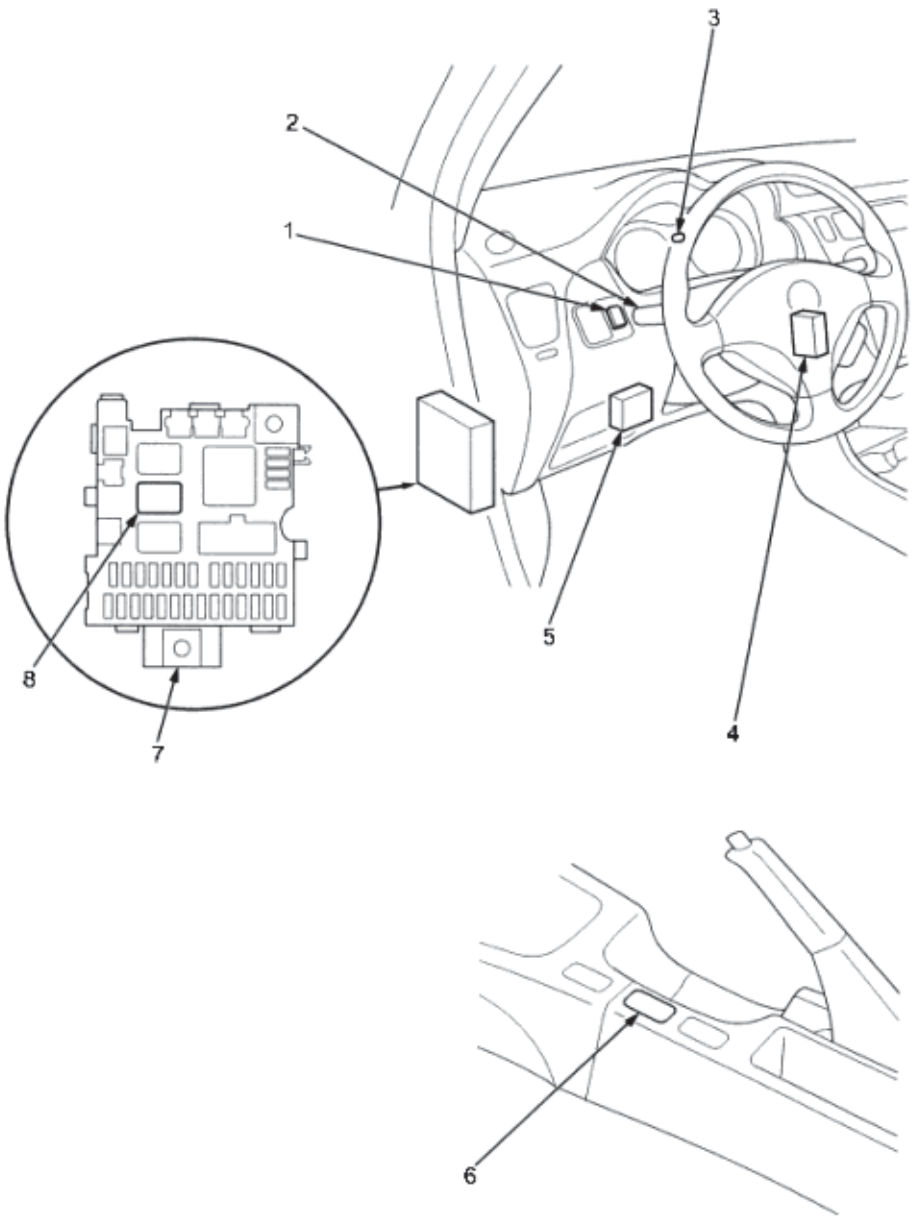

G401
(From previous page)
A
BLK
F
*1 : KE, KN, KT, KU
BLK F — Driver's seat belt switch (KQ)
BLK F — Beverage holder light*1
BLK F — Rear window defogger switch
BLK F — Rear window defogger switch light*1
BLK F — Heater control panel light*1
BLK F — BLK M — Front ceiling light
BLK F — Recirculation control/A/C switch
BLK F — Hazard warning switch light*1
BLK F — Cigarette lighter
BLK F — Heater fan switch
BLK F — A/T gear position switch
A/T gear position console light*1
BLK F — Parking pin switch (KQ, KU : CVT)
BLK F — Shift lock solenoid (KQ, KU : CVT)
BLK F — BLK G — Gauge assembly (light)
BLK F — Recirculation control/ AC switch light*1
BLK F — BLK F — Clock (KE, KN, KU)
BLK F — BLK O — Clock (KT, KQ)
BLK F — Seat belt alarm unit (KQ)
Rear fog light control unit (KE)
G402
BLK F — Audio unit (KE, KN, KU)
BLK F — BLK O — Audio unit (KT, KQ)
G403
F : Main wire harness
G : Gauge assembly sub-harness
M : Roof wire harness
O : Radio sub-harness





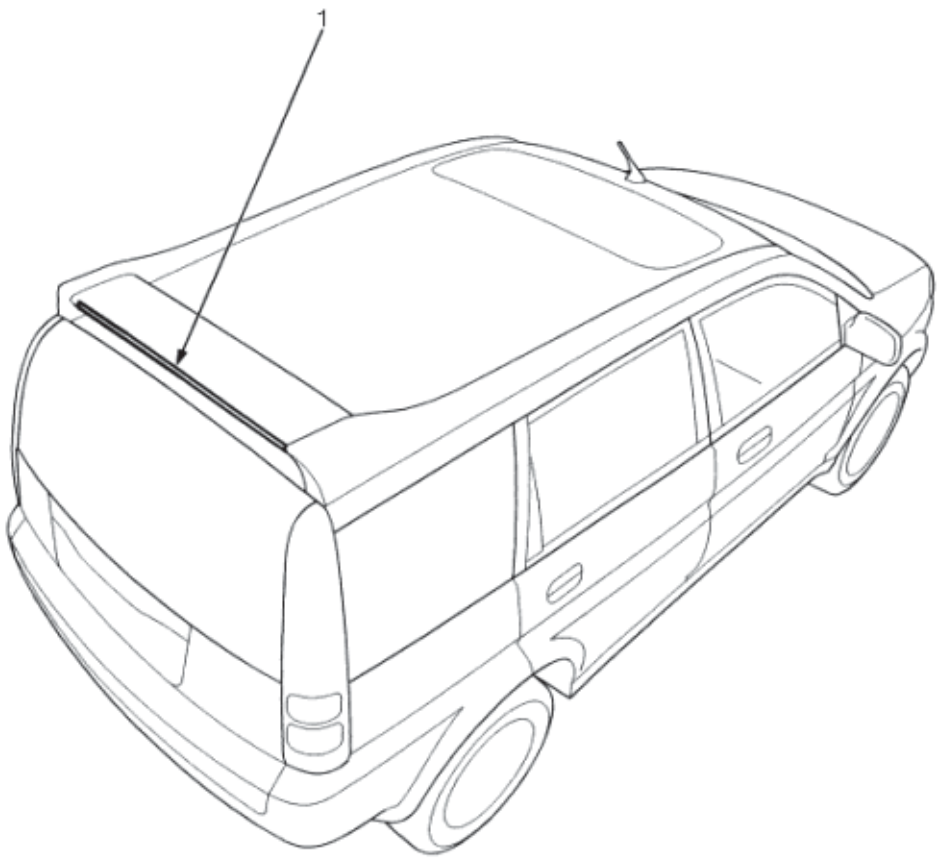
I : Rear wire harness
J : Tailgate wire harness
N : SRS main harness
P : High mount brake light sub-harness

4D:
NOTE: LHD type is shown, RHD type is similar.



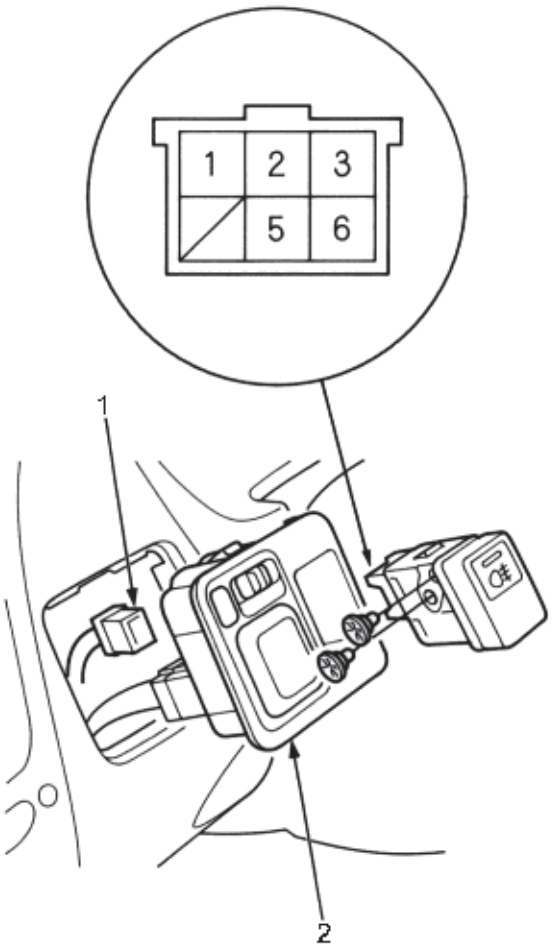
1. **REAR FOG LIGHT SWITCH (KG, KE models)**
   Test, (**See Page** 23-D-4)
2. **COMBINATION LIGHT SWITCH**
3. **HIGH BEAM INDICATOR LIGHT**
4. **REAR FOG LIGHT CONTROL UNIT (KG, KE models)**
5. **DASH LIGHTS BRIGHTNESS CONTROL UNIT (KQ model: 4D)**
   Input Test, (**See Page** 23-D-7)
6. **HEADLIGHT ADJUSTER SWITCH (KG, KE models)**
   Test, (**See Page** 23-D-5)
   DASH LIGHTS BRIGHTNESS CONTROLLER (KQ model: 4D)
   Controller Test, (**See Page** 23-D-8)
7. **UNDER-DASH FUSE/RELAY BOX**
8. **TAILLIGHT RELAY**

Common:



1. **HIGH MOUNT BRAKE LIGHT (LED type)**
   Replacement, (**See Page** 23-D-9)

1. Remove the switch panel from the dashboard.
2. Disconnect the 6P connector from the rear fog light switch.
3. Push the switch out from behind the switch panel.

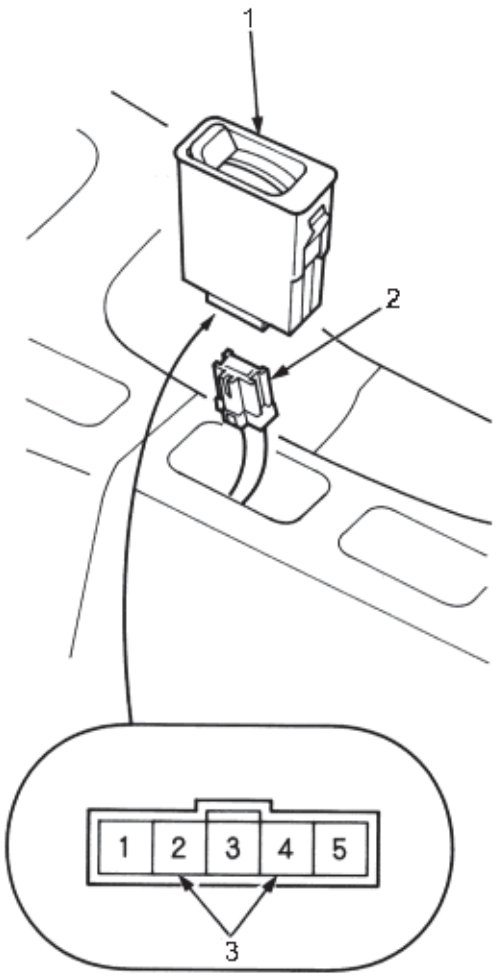


1. 6P CONNECTOR
2. SWITCH PANEL

4. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1		5	6	2		3
OFF	○	⌒	○		○	⌒	○
ON	○	⌒	○	○	○	⌒	○

1. Carefully pry the switch out of the rear console.
2. Disconnect the 5P connector from the switch.



1. HEADLIGHT ADJUSTER SWITCH
2. 5P CONNECTOR
3. Not used

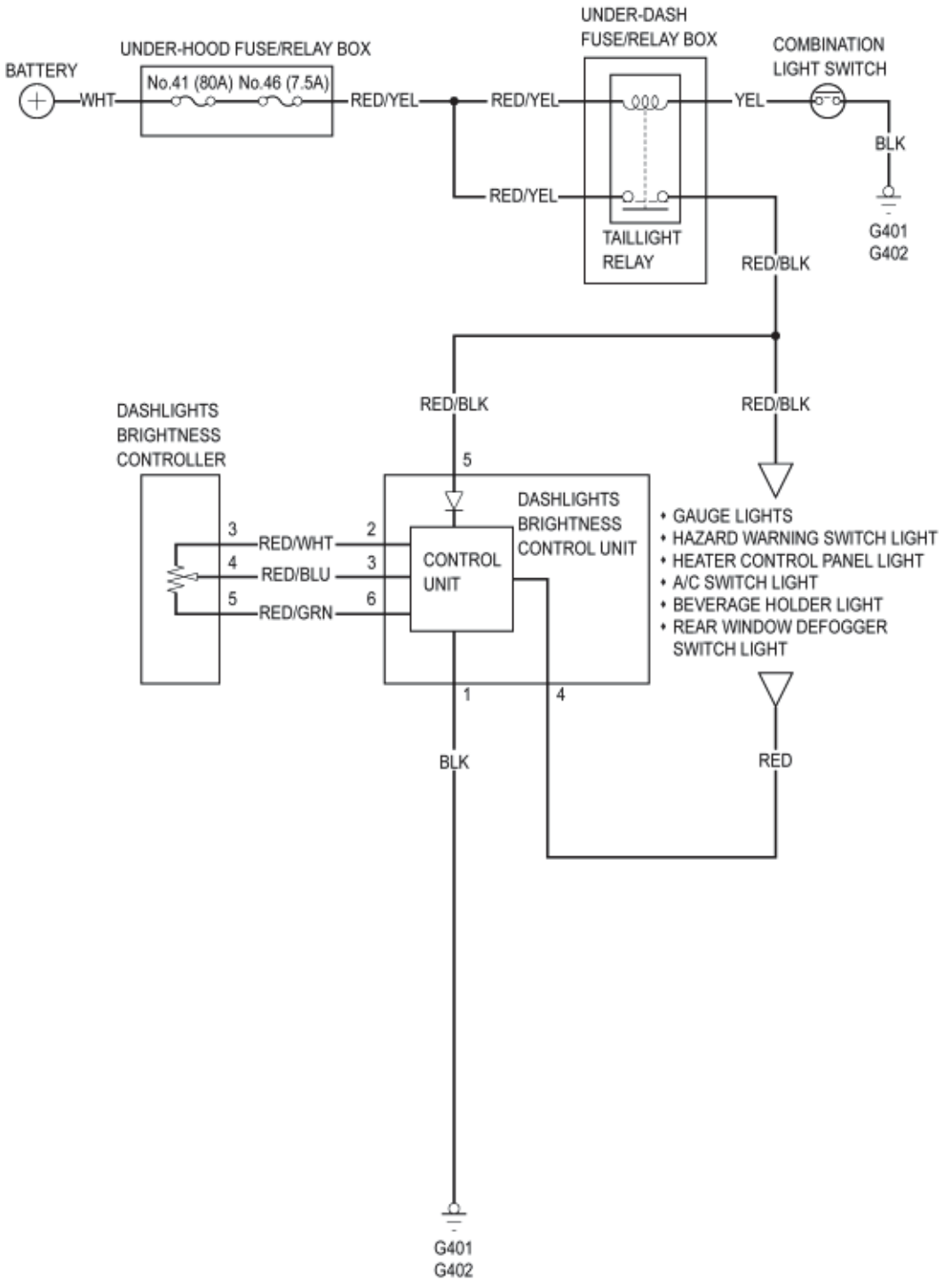
3. Measure the resistance between the No. 1 and No. 3 terminals, and then measure the resistance between the No. 3 and No. 5 terminals at positions 0, 1, 2, and 3 by moving the knob.
   Between No. 1 and No. 3 terminals: Approx. 4.7k ohms
   Between No. 3 and No. 5 terminals:

Knob position	0	1	2	3
Resistance [Approx. (k ohms)]	3.9	3.5	2.8	2.4

4. Replace the switch if the resistance is not within the specifications.

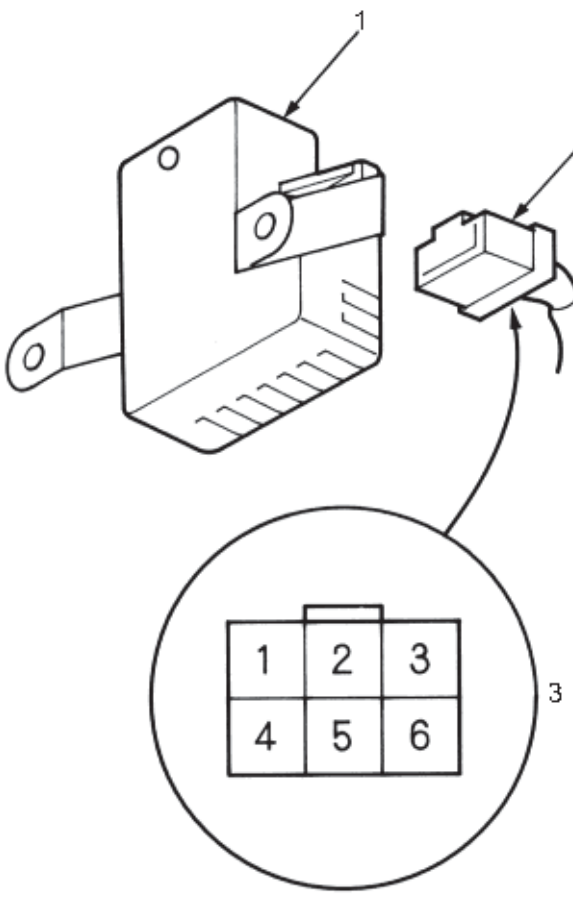
Dash Lights Brightness Controller (KQ model)

Circuit Diagram (4D)



Control Unit Input Test (4D)

1. Disconnect the 6P connector from the control unit.
2. 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, make the following 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, the control unit must be faulty, replace it.

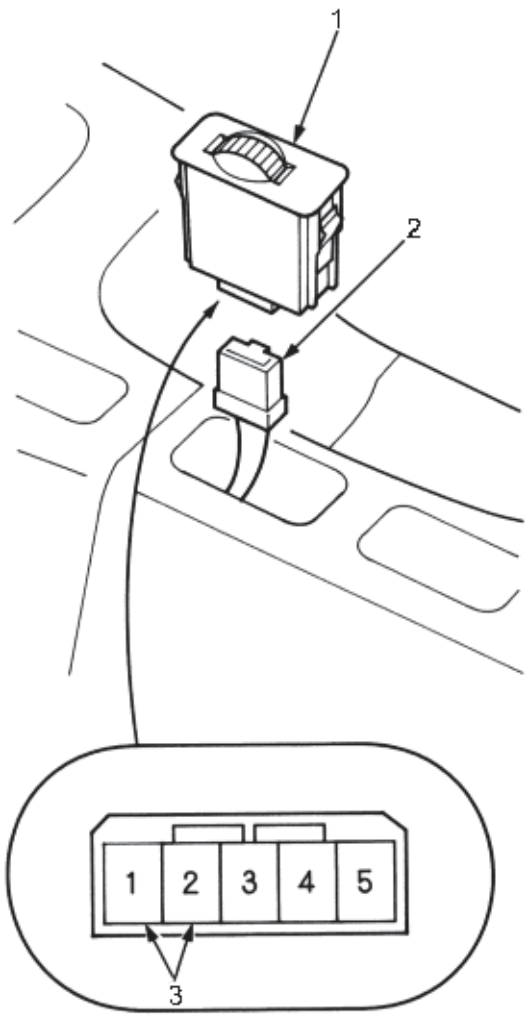


1. **DASH LIGHTS BRIGHTNESS CONTROL UNIT**
2. **6P CONNECTOR**
3. Wire side of female terminals

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
5	RED/BLK	Combination light switch ON	Check for voltage to ground: There should be battery voltage.	• Blown No. 46 (7.5 A) fuse in the under-dash fuse/relay box • Faulty combination light switch • Faulty taillight relay • An open in the wire
1	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G401, G402) • An open in the wire
4	RED	Combination light switch ON	Connect to ground: Dash lights should come on full bright.	• An open in the wire

Controller Test (4D)

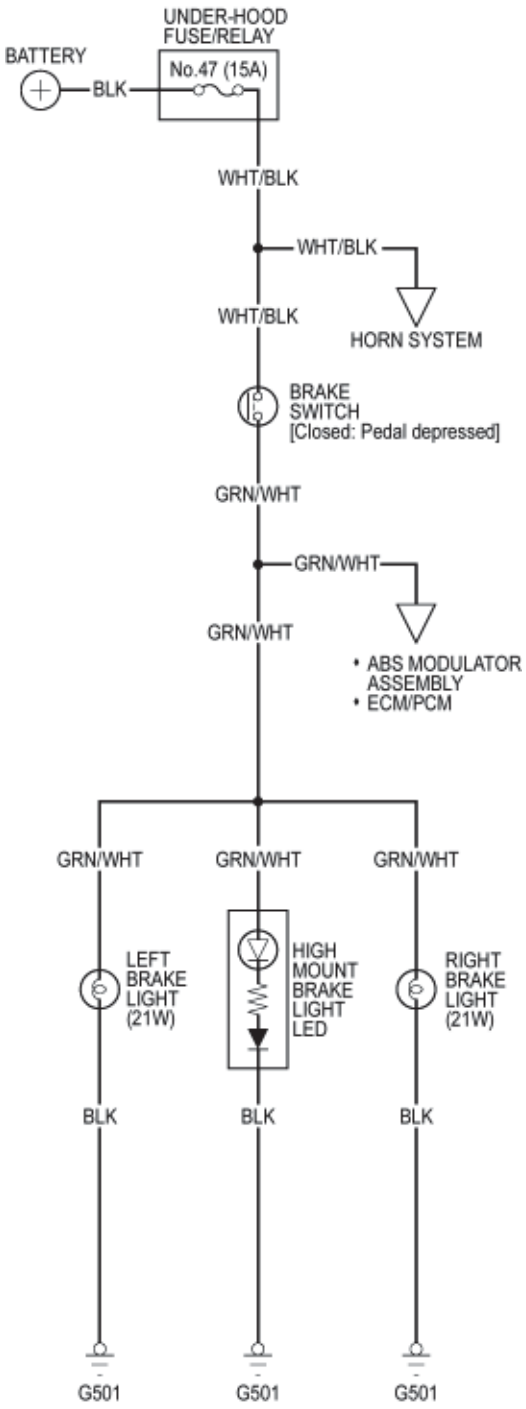
1. Carefully pry the switch out of the rear console.
2. Disconnect the 5P connector from the switch.



1. DASH LIGHTS BRIGHTNESS CONTROLLER
2. 5P CONNECTOR
3. Not used

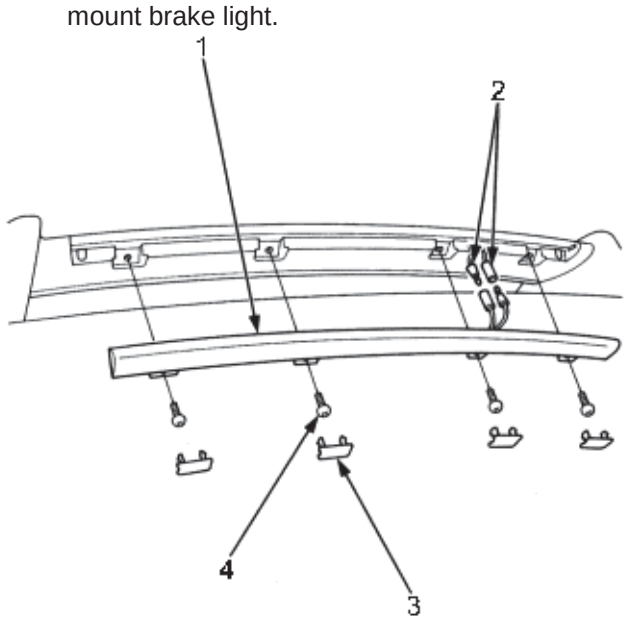
3. Measure resistance between the No. 3 and No. 5 terminals.
   Resistance: 8,000 - 12,000 ohms
   NOTE: Resistance will vary slightly with temperature.
4. Measure resistance between the No. 4 and No. 5 terminals while rotating the adjusting dial.
   Resistance should vary from 0 to 10,000 ohms as the dial is rotated.

Circuit Diagram (With LED type High Mount Brake Light)



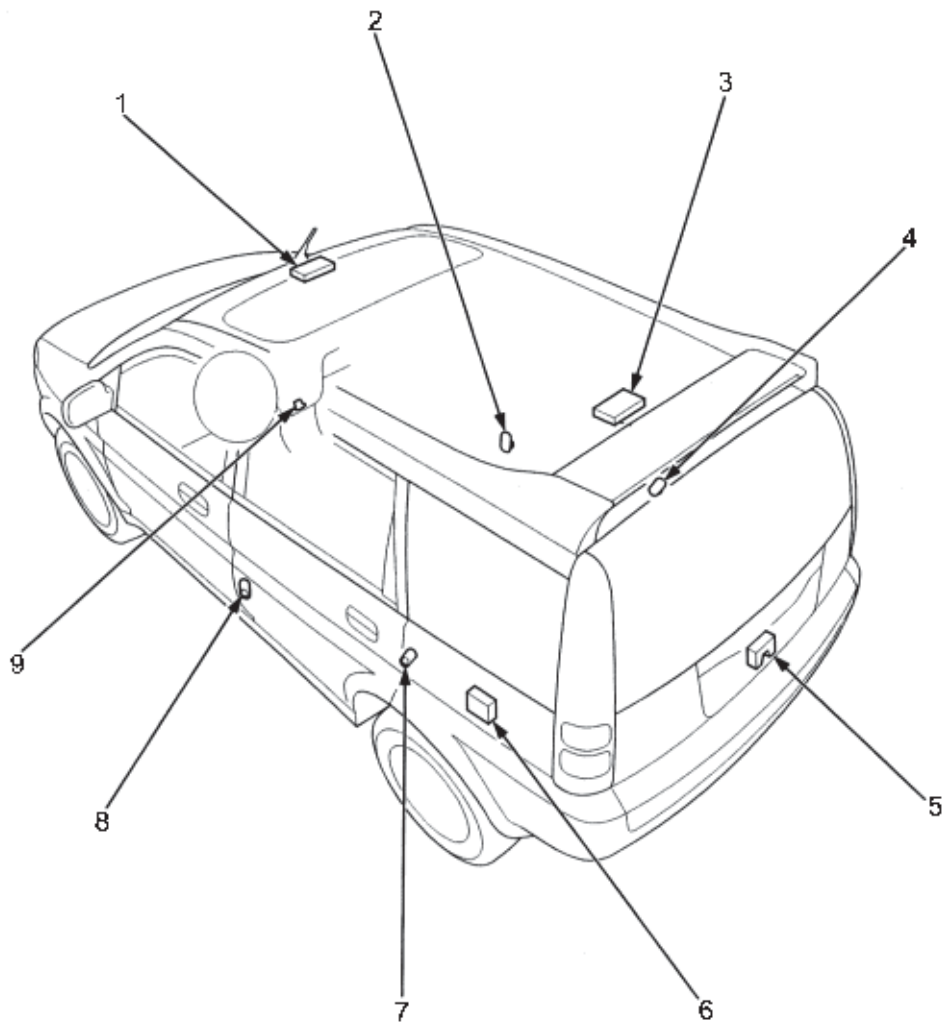
High Mount Brake Light Replacement (LED type)

1. Remove the four caps and screws.
2. Disconnect the connectors, then remove the high mount brake light.

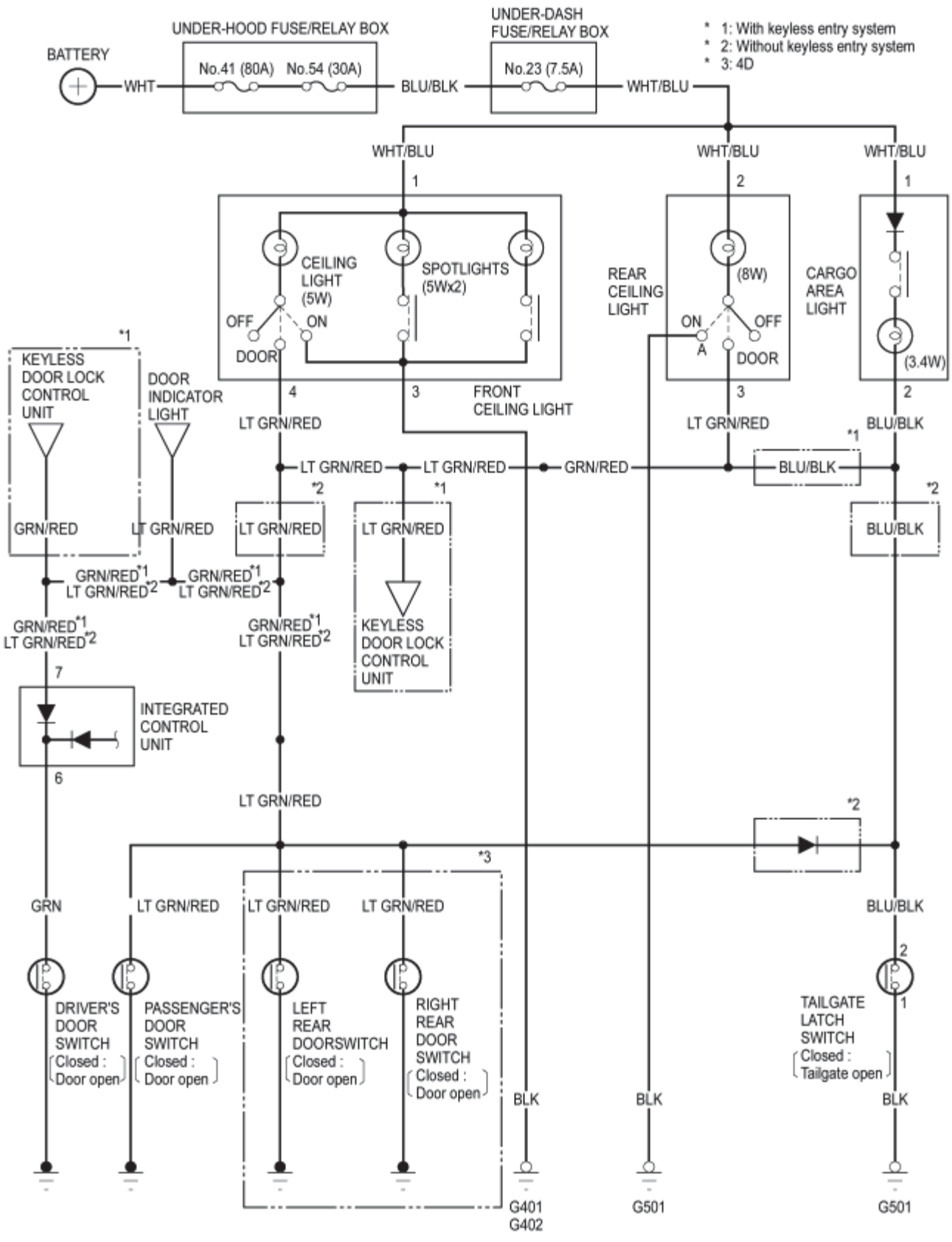


1. HIGH MOUNT BRAKE LIGHT
2. CONNECTORS
3. CAP
4. SCREW

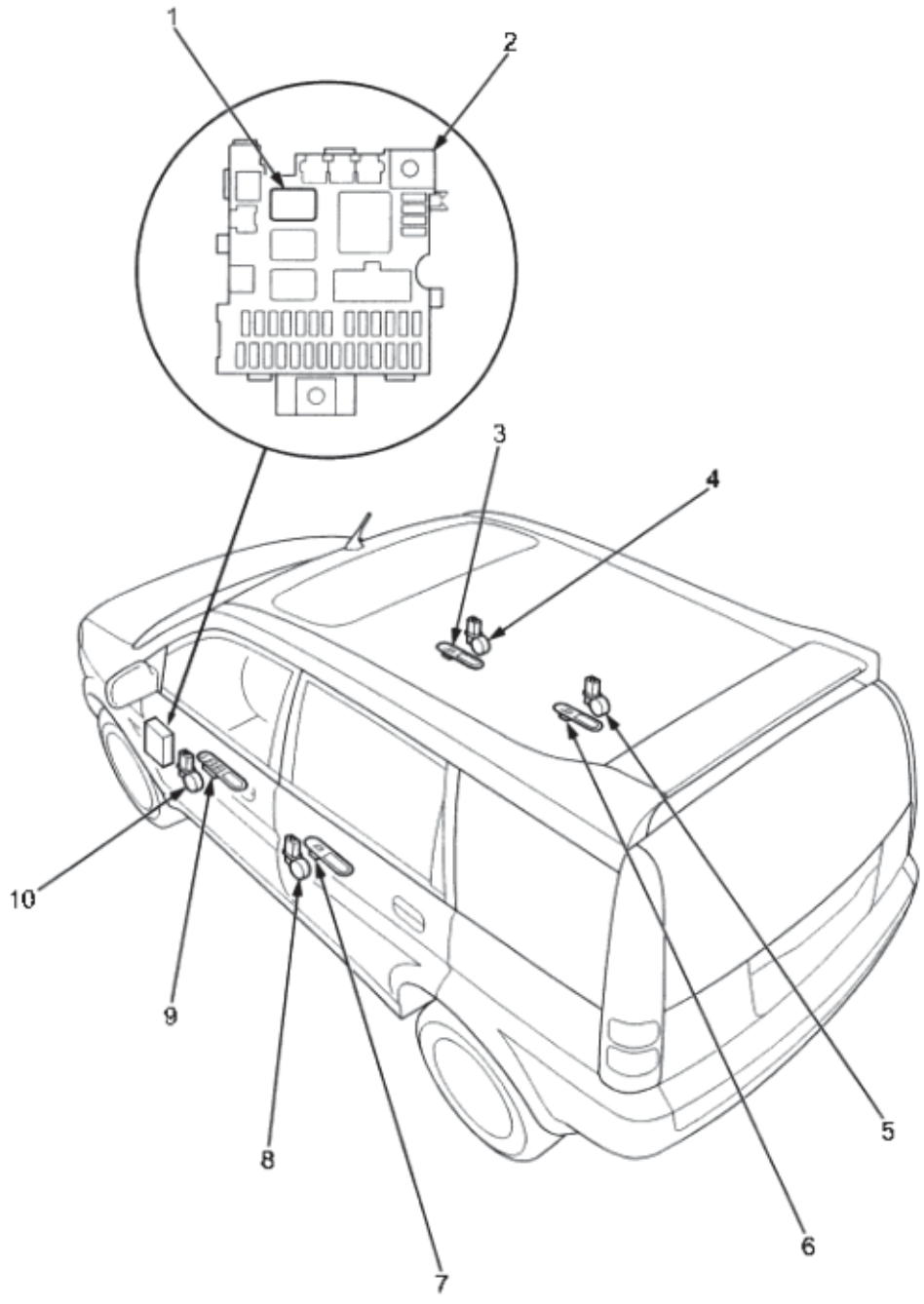
4D:
NOTE: LHD type is shown, RHD type is similar.



1. **FRONT CEILING LIGHT**
2. **PASSENGER'S DOOR SWITCH**
3. **REAR CEILING LIGHT**
4. **RIGHT REAR DOOR SWITCH**
5. **TAILGATE LATCH SWITCH**
6. **CARGO AREA LIGHT**
7. **LEFT REAR DOOR SWITCH**
8. **DRIVER'S DOOR SWITCH**
9. **BEVERAGE HOLDER LIGHT**

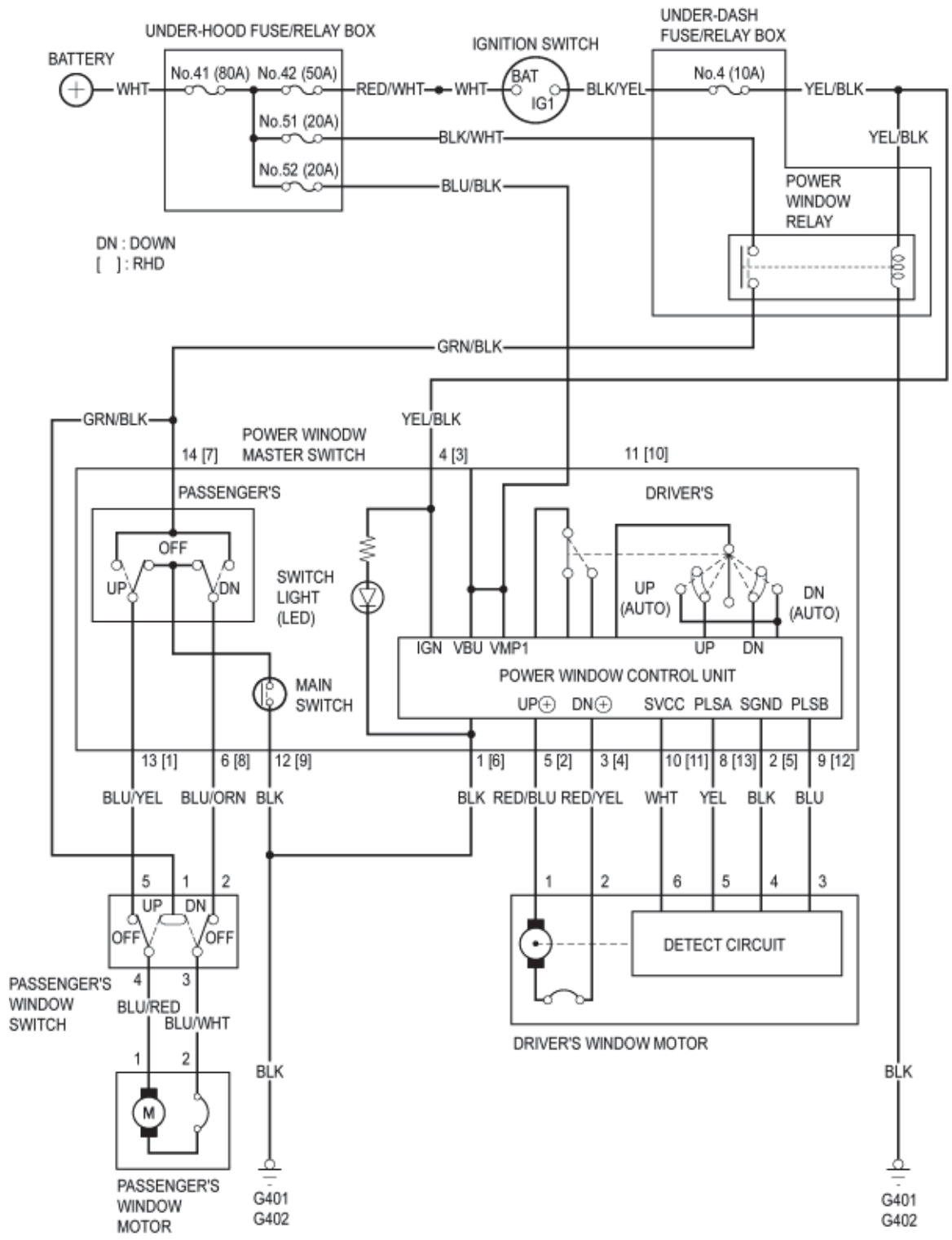

* 1: With keyless entry system
* 2: Without keyless entry system
* 3: 4D
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.54 (30A)
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.23 (7.5A)
WHT/BLU
CEILING LIGHT (5W)
SPOTLIGHTS (5Wx2)
OFF
ON
DOOR
FRONT CEILING LIGHT
REAR CEILING LIGHT
(8W)
CARGO AREA LIGHT
(3.4W)
A
*1
KEYLESS DOOR LOCK CONTROL UNIT
DOOR INDICATOR LIGHT
LT GRN/RED
GRN/RED
BLU/BLK
*2
GRN/RED*1 LT GRN/RED*2
INTEGRATED CONTROL UNIT
*3
GRN
DRIVER'S DOOR SWITCH
PASSENGER'S DOOR SWITCH
LEFT REAR DOORSWITCH
RIGHT REAR DOOR SWITCH
TAILGATE LATCH SWITCH
Closed : Door open
Closed : Tailgate open
BLK
G401
G402
G501

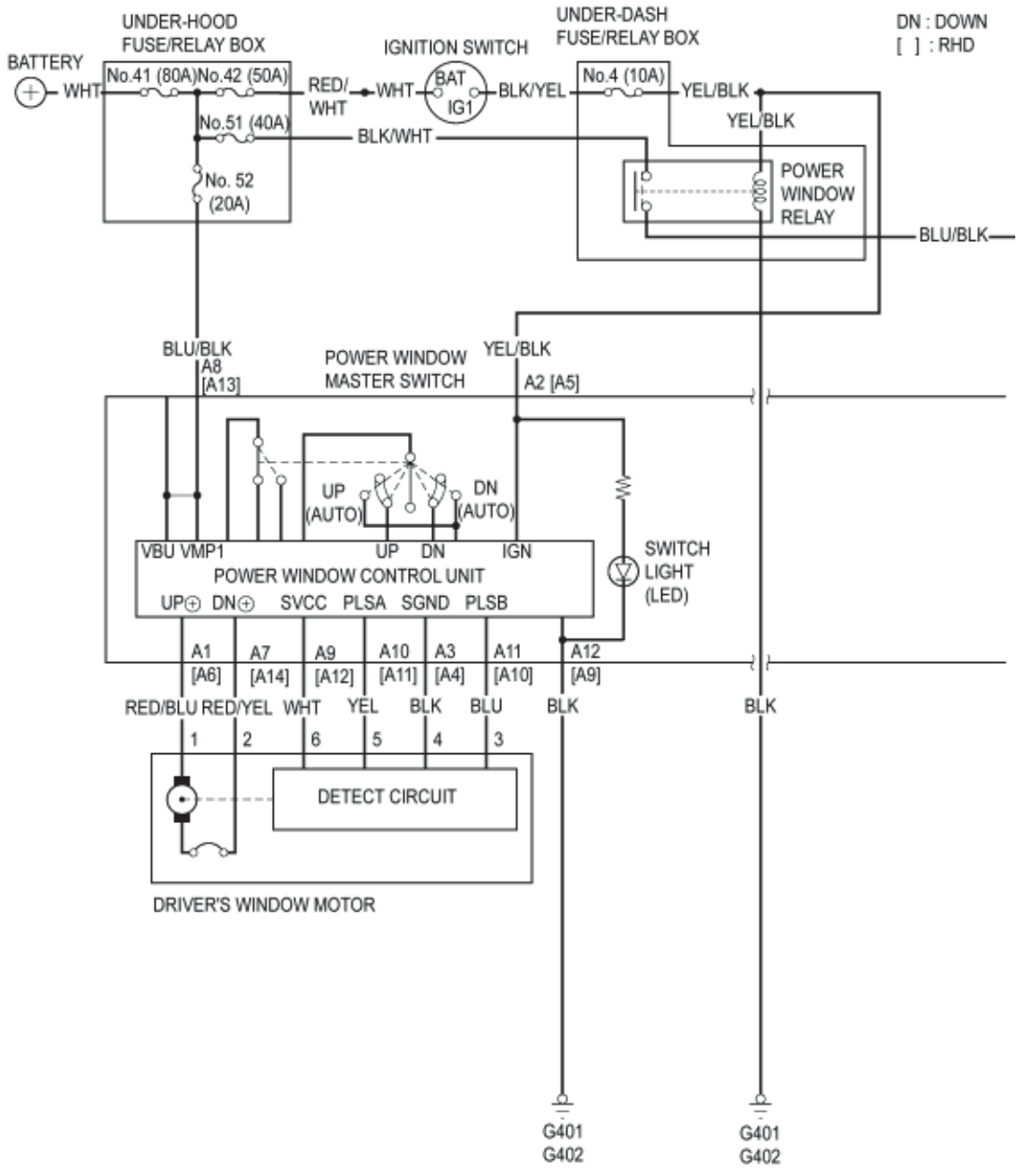
4D:
NOTE: LHD type is shown; RHD type is similar

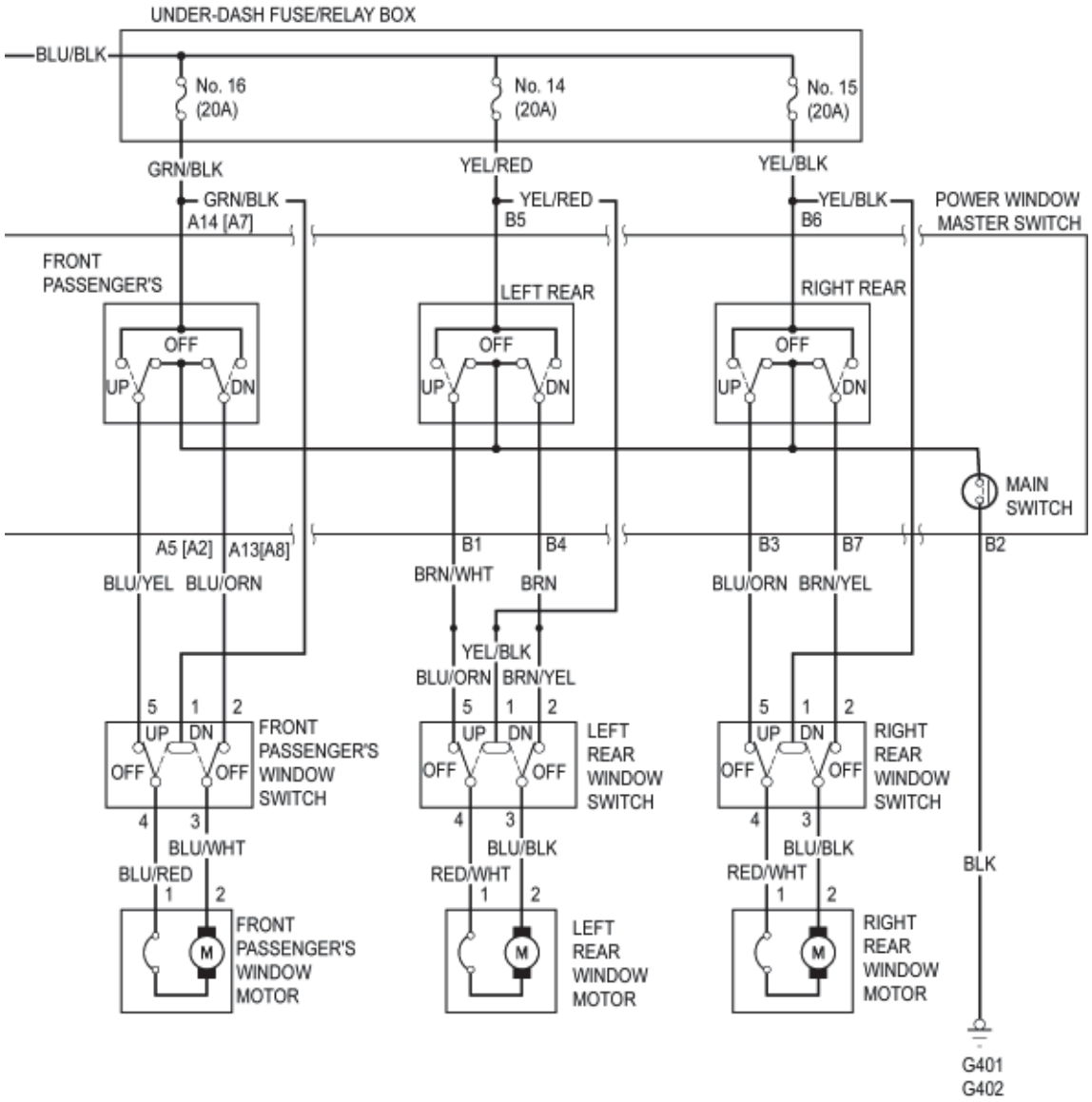


1. **POWER WINDOW RELAY**
2. **UNDER-DASH FUSE/RELAY BOX**
3. **PASSENGER'S WINDOW SWITCH**
4. **PASSENGER'S POWER WINDOW MOTOR**
5. **RIGHT REAR WINDOW MOTOR**
   Test, (**See Page** 23-E-11)
6. **RIGHT REAR WINDOW SWITCH**
   Test, (**See Page** 23-E-11)
7. **LEFT REAR WINDOW SWITCH**
   Test, (**See Page** 23-E-11)
8. **LEFT REAR WINDOW MOTOR**
   Test, (**See Page** 23-E-11)
9. **POWER WINDOW MASTER SWITCH**
   (Has built-in control unit)
   Input Test (**See Page** 23-E-6)
   Test, (**See Page** 23-E-10)
10. **DRIVER'S WINDOW MOTOR**

Driver's Window Motor Description
The driver's window will stop and automatically open if you pinch your hand or something during auto-up operation.

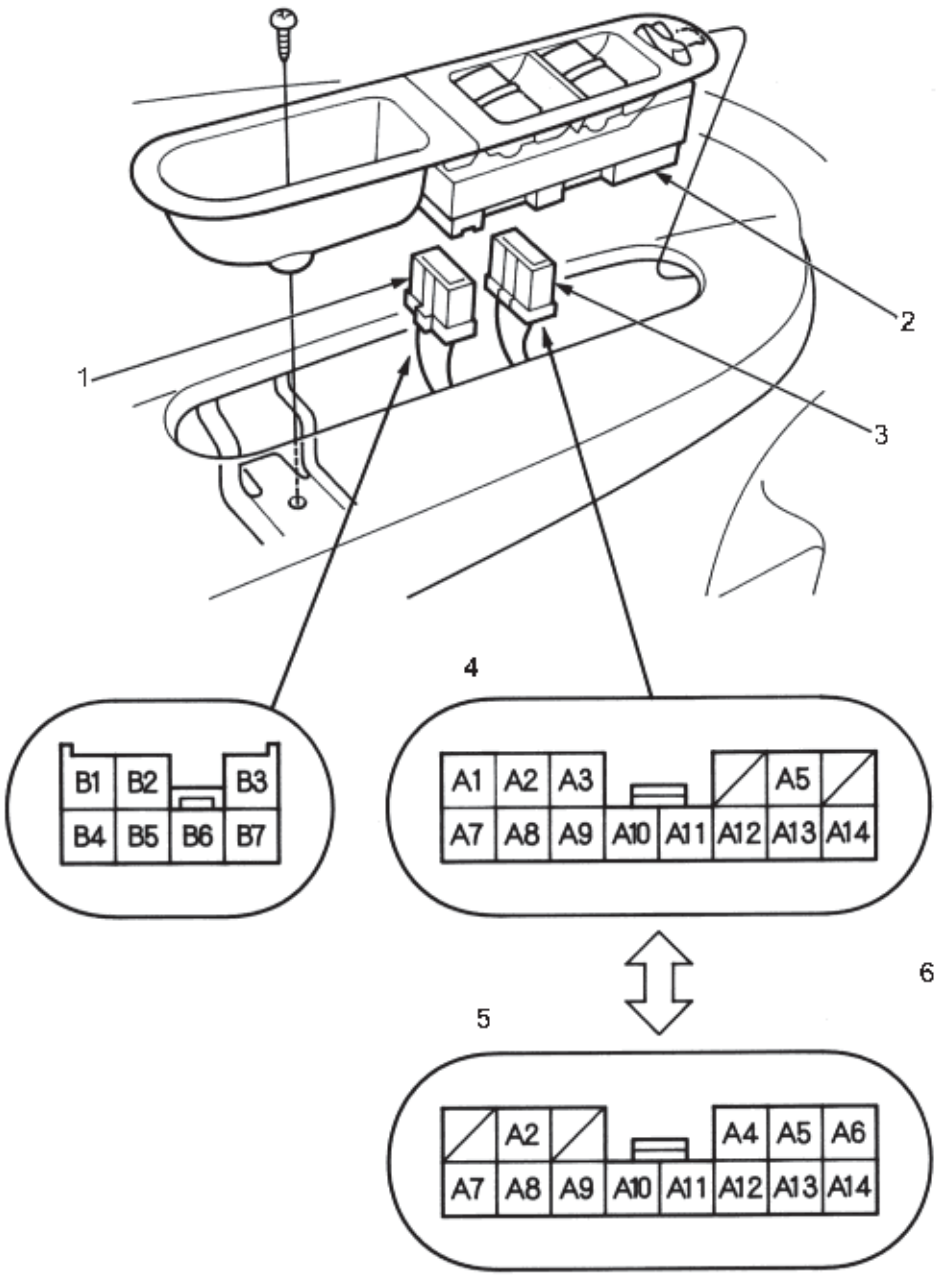

UNDER-HOOD FUSE/RELAY BOX
BATTERY
No.41 (80A)
No.42 (50A)
No.51 (20A)
No.52 (20A)
WHT
RED/WHT
IGNITION SWITCH
BAT
IG1
WHT
BLK/YEL
UNDER-DASH FUSE/RELAY BOX
No.4 (10A)
YEL/BLK
YEL/BLK
BLK/WHT
BLU/BLK
POWER WINDOW RELAY
DN : DOWN
[ ] : RHD
GRN/BLK
GRN/BLK
YEL/BLK
POWER WINODW MASTER SWITCH
14 [7]
4 [3]
11 [10]
PASSENGER'S
DRIVER'S
OFF
UP
DN
SWITCH LIGHT (LED)
UP (AUTO)
DN (AUTO)
IGN VBU VMP1
UP DN
POWER WINDOW CONTROL UNIT
UP⊕ DN⊕ SVCC PLSA SGND PLSB
MAIN SWITCH
13 [1] 6 [8] 12 [9]
1 [6] 5 [2] 3 [4] 10 [11] 8 [13] 2 [5] 9 [12]
BLU/YEL BLU/ORN BLK
BLK RED/BLU RED/YEL WHT YEL BLK BLU
5 1 2
UP DN
OFF OFF
PASSENGER'S WINDOW SWITCH
4 3
BLU/RED
BLU/WHT
1 2
M
PASSENGER'S WINDOW MOTOR
BLK
G401
G402
1 2 6 5 4 3
DETECT CIRCUIT
DRIVER'S WINDOW MOTOR
BLK
G401
G402


UNDER-HOOD
FUSE/RELAY BOX
BATTERY
WHT
No.41 (80A)
No.42 (50A)
No.51 (40A)
No. 52
(20A)
RED/
WHT
IGNITION SWITCH
BAT
IG1
WHT
BLK/YEL
BLK/WHT
UNDER-DASH
FUSE/RELAY BOX
No.4 (10A)
YEL/BLK
YEL/BLK
POWER
WINDOW
RELAY
BLU/BLK
DN : DOWN
[ ] : RHD
BLU/BLK
A8
[A13]
POWER WINDOW
MASTER SWITCH
YEL/BLK
A2 [A5]
UP
(AUTO)
DN
(AUTO)
VBU VMP1
UP DN IGN
POWER WINDOW CONTROL UNIT
UP⊕ DN⊕ SVCC PLSA SGND PLSB
SWITCH
LIGHT
(LED)
A1
[A6]
A7
[A14]
A9
[A12]
A10
[A11]
A3
[A4]
A11
[A10]
A12
[A9]
RED/BLU RED/YEL WHT YEL BLK BLU BLK
BLK
1 2 6 5 4 3
DETECT CIRCUIT
DRIVER'S WINDOW MOTOR
G401
G402
G401
G402


UNDER-DASH FUSE/RELAY BOX
BLU/BLK
No. 16 (20A)
No. 14 (20A)
No. 15 (20A)
GRN/BLK
YEL/RED
YEL/BLK
GRN/BLK A14 [A7]
YEL/RED B5
YEL/BLK B6
POWER WINDOW MASTER SWITCH
FRONT PASSENGER'S
LEFT REAR
RIGHT REAR
OFF
UP
DN
MAIN SWITCH
A5 [A2]
A13[A8]
B1
B4
B3
B7
B2
BLU/YEL
BLU/ORN
BRN/WHT
BRN
YEL/BLK
BLU/ORN
BRN/YEL
5
1
2
4
3
FRONT PASSENGER'S WINDOW SWITCH
LEFT REAR WINDOW SWITCH
RIGHT REAR WINDOW SWITCH
BLU/WHT
BLU/RED
BLU/BLK
RED/WHT
FRONT PASSENGER'S WINDOW MOTOR
LEFT REAR WINDOW MOTOR
RIGHT REAR WINDOW MOTOR
M
BLK
G401
G402

NOTE: The control unit is built into the power window master switch, and only controls driver's door window operations.

1. Remove the power window master switch and armrest pocket from the door panel.
2. Disconnect the 14P and 7P connectors from the power window master switch.
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, make the following input tests at the connector.
     - If a test indicates a problem, find and correct the cause, then recheck the system.
     - If all the input tests prove OK, the power window master switch must be faulty; replace it.

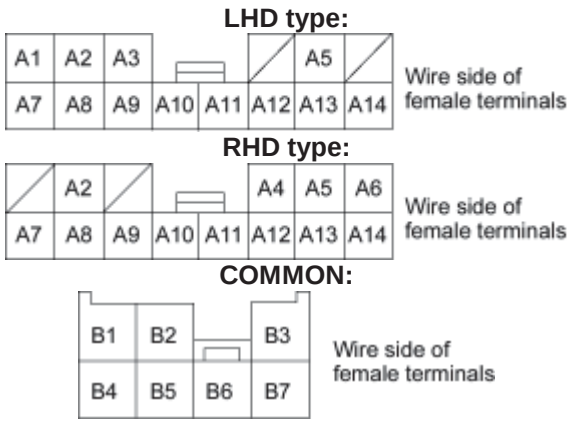


1. **7P CONNECTOR**
2. **POWER WINDOW MASTER SWITCH**
3. **14P CONNECTOR**
4. **LHD type**
5. **RHD type**
6. Wire side of female terminals

Disconnect the connector to the power window master switch.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
A38 [A13]	BLU/BLK	Under all conditions	Check for voltage to ground: There should be battery voltage.	♦ Blown No. 52 (20 A) fuse in the under-hood fuse/relay box ♦ An open in the wire
A2 [A5]	YEL/BLK	Ignition Switch ON (II)	Check for voltage to ground: There should be battery voltage.	♦ Blown No. 4 (10 A) fuse in the under-dash fuse/relay box ♦ An open in the wire
A14 [A7]	GRN/BLK	Ignition Switch ON (II)	Check for voltage to ground: There should be battery voltage.	♦ Blown No. 14, 15 and 16 (20 A) fuse in the under-dash fuse/relay box ♦ Faulty power window relay ♦ An open in the wire
B5	YEL/RED	Ignition Switch ON (II)	Check for voltage to ground: There should be battery voltage.	♦ Blown No. 14, 15 and 16 (20 A) fuse in the under-dash fuse/relay box ♦ Faulty power window relay ♦ An open in the wire
B6	YEL/BLK	Ignition Switch ON (II)	Check for voltage to ground: There should be battery voltage.	♦ Blown No. 14, 15 and 16 (20 A) fuse in the under-dash fuse/relay box ♦ Faulty power window relay ♦ An open in the wire
A12 [A9]	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	♦ Poor ground (G401, G402) ♦ An open in the wire
B2	BLK	Under all conditions	Check for continuity to ground: There should be continuity:	♦ Poor ground (G401, G402) ♦ An open in the wire
A5 [A2]	BLU/YEL	Connect the A13 [A8] terminal to the A14 [A7] terminal, and the A5 [A2] terminal to the A12 [A9] terminal.	Check for front passenger's window motor: It should run. (the window moves down)	♦ Faulty front passenger's window motor ♦ Faulty front passenger's window switch ♦ An open in the wire
A13 [A8]	BLU/ORN	Connect the A13 [A8} terminal to the A14 [A7] terminal, and the A5 [A2] terminal to the A12 [A9] terminal.	Check for front passenger's window motor: It should run. (the window moves down)	♦ Faulty front passenger's window motor ♦ Faulty front passenger's window switch ♦ An open in the wire
B1	BRN/WHT	Connect the B4 terminal to the B5 terminal, and the B1 terminal to the B2 terminal.	Check for left rear window motor. It should run. (the window moves down)	♦ Faulty left rear window motor ♦ Faulty left rear window switch ♦ An open in the wire
B4	BRN	Connect the B4 terminal to the B5 terminal, and the B1 terminal to the B2 terminal.	Check for left rear window motor. It should run. (the window moves down)	♦ Faulty left rear window motor ♦ Faulty left rear window switch ♦ An open in the wire
B3	BLU/ORN	Connect the B7 terminal to the B6 terminal, and the B3 terminal to the B2 terminal.	Check for right rear window motor. It should run. (the window moves down)	♦ Faulty right rear window motor ♦ Faulty right rear window switch ♦ An open in the wire
B7	BRN/YEL	Connect the B7 terminal to the B6 terminal, and the B3 terminal to the B2 terminal.	Check for right rear window motor. It should run. (the window moves down)	♦ Faulty right rear window motor ♦ Faulty right rear window switch ♦ An open in the wire
A1 [A6]	RED/BLU	Connect the A7 [A14] terminal to the A8 [A13] terminal, and the A1 [A6] terminal to the A12 [A9] terminal.	Check for driver's window motor. It should run. (the window moves down)	♦ Faulty driver's power window motor ♦ An open in the wire
A7 [A14]	RED/YEL	Connect the A7 [A14] terminal to the A8 [A13] terminal, and the A1 [A6] terminal to the A12 [A9] terminal.	Check for driver's window motor. It should run. (the window moves down)	♦ Faulty driver's power window motor ♦ An open in the wire

[ ]: RHD type

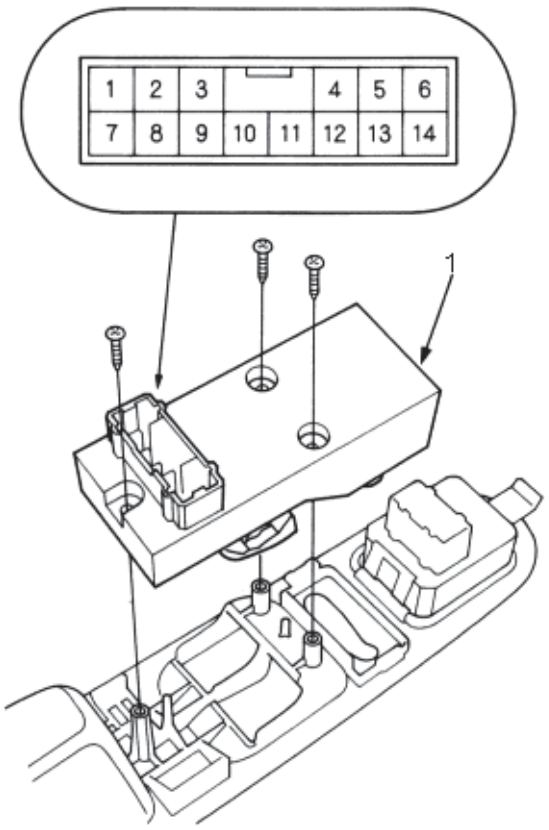


Reconnect the connector to the power window master switch.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
A9 [A12]	WHT	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Faulty power window master switch • An open in the wire
A3 [A4]	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Faulty power window master switch • An open in the wire
A11 [A10]	BLU	Ignition switch ON (II), and the driver's window switch AUTO UP.	Check for voltage between the A11 [A10] and A12 [A9] terminals: There should be 0 - 5 V or more repeatedly.	• Faulty driver's window motor • Faulty power window master switch • An open in the wire
A10 [A11]	YEL	Ignition switch ON (II), and the driver's window switch AUTO DOWN.	Check for voltage between the A10 [A11] and A12 [A9] terminals: There should be 0 - 5 V or more repeatedly.	• Faulty driver's window motor • Faulty power window master switch • An open in the wire

[ ]: RHD type

1. Remove the armrest pocket.
2. Disconnect the 14P connector from the power window master switch.
3. Check for continuity between the terminals in each switch position according to the tables.



1. POWER WINDOW MASTER SWITCH

Driver's Switch:
The driver's switch is combined with the control unit so you cannot isolate the switch to test it. Instead, run the master switch input test procedures.
If the tests are normal, the driver's switch must be faulty.

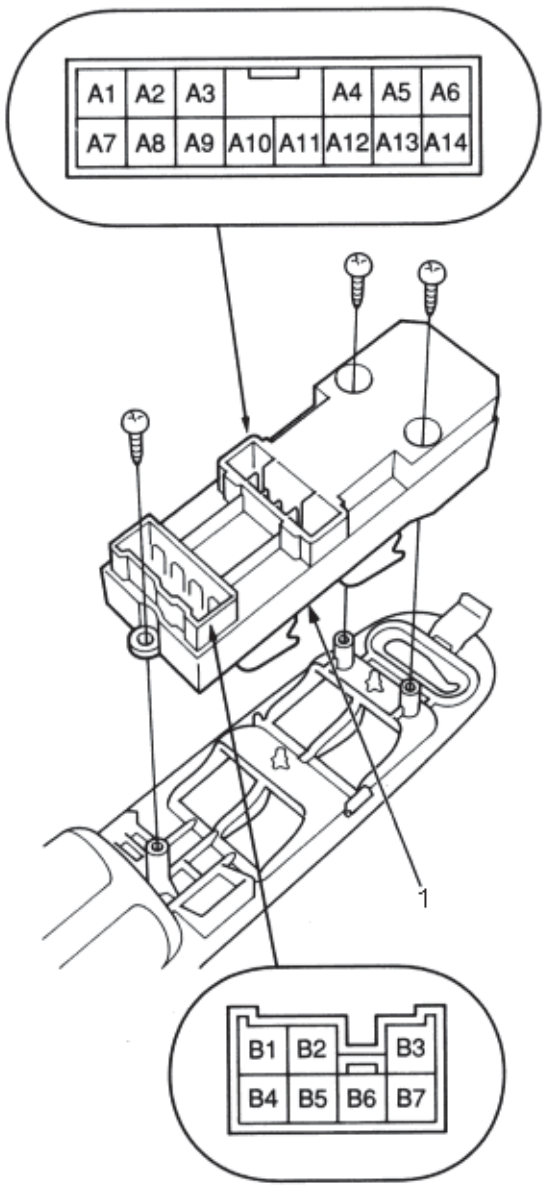
Passenger's Switch

Position	Main Switch	13 [1]	14 [7]	6 [8]	12 [9]
OFF	ON	○	—	○	○
	OFF	○	—	○	
UP	ON	○	○		
	OFF				
DOWN	ON	○			○
	OFF		○	○	

[ ]: RHD type

4. Check that the switch light comes on when connecting the battery power to the No. 4 [3] terminal and ground to the No. 1 [6] terminal.
   - If it does not come on, replace the master switch.

1. Remove the armrest pocket (**See Page** 23-E-6).
2. Remove the 14P and 7P connectors from the power window master switch.
3. Check for continuity between the terminals in each switch position according to the tables.



1. POWER WINDOW MASTER SWITCH

Driver's Switch:
The driver's switch is combined with the control unit so you cannot isolate the switch to test it. Instead, run the master switch input test procedures (**See Page** 23-E-6).
If the tests are normal, the driver's switch must be faulty.

Front passenger's Switch:

Position	Main Switch \ Terminal	A5 [A2]	A13 [A8]	A14 [A7]	B2
OFF	ON	○	○		○
	OFF	○	○		
UP	ON	○		○	○
	OFF	○		○	
DOWN	ON	○	○	○	○
	OFF		○	○	

[ ] : RHD type

Right Rear Switch:

Position	Main Switch \ Terminal	B3	B7	B6	B2
OFF	ON	○	○		○
	OFF	○	○		
UP	ON	○		○	○
	OFF	○		○	
DOWN	ON	○	○	○	○
	OFF		○	○	

[ ] : RHD type

Left Rear Switch:

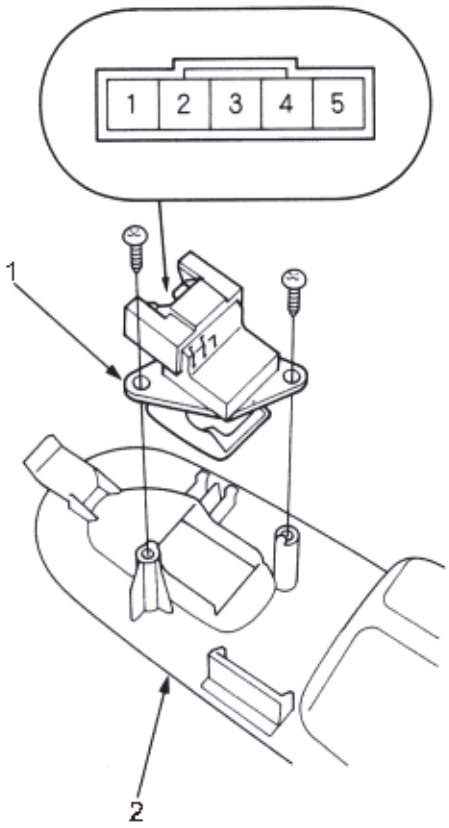
Position	Main Switch \ Terminal	B1	B4	B5	B2
OFF	ON	○	○		○
	OFF	○	○		
UP	ON	○		○	○
	OFF	○		○	
DOWN	ON	○	○	○	○
	OFF		○	○	

[ ] : RHD type

4. Check that the switch light comes on when connecting the battery power to the A2 [A5] terminal and ground to the A12 [A9] terminal.
   - If it does not come on, replace the master switch.

Rear Window Switch Test

1. Remove the armrest pocket (see section 20).
2. Disconnect the 5P connector then remove the mounting screws from the switch.



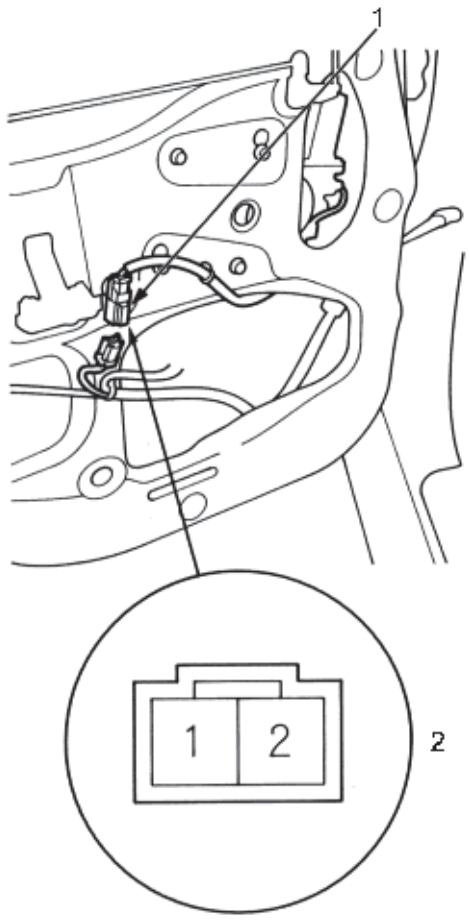
1. REAR WINDOW SWITCH
2. ARMREST POCKET

3. Check for continuity between the terminals in each switch position according to the table.

Terminal / Position	1	2	3	4	5
UP	○	○	○	○	
OFF		○	○	○	○
DOWN	○		○	○	○

Rear Window Motor Test

1. Remove the rear door panel (see section 20).
2. Disconnect the 2P connector from the window motor.



1. 2P CONNECTOR
2. Terminal side of male terminals

⚠ CAUTION

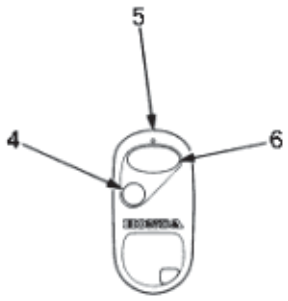
When the motor stops running, disconnect one lead immediately.

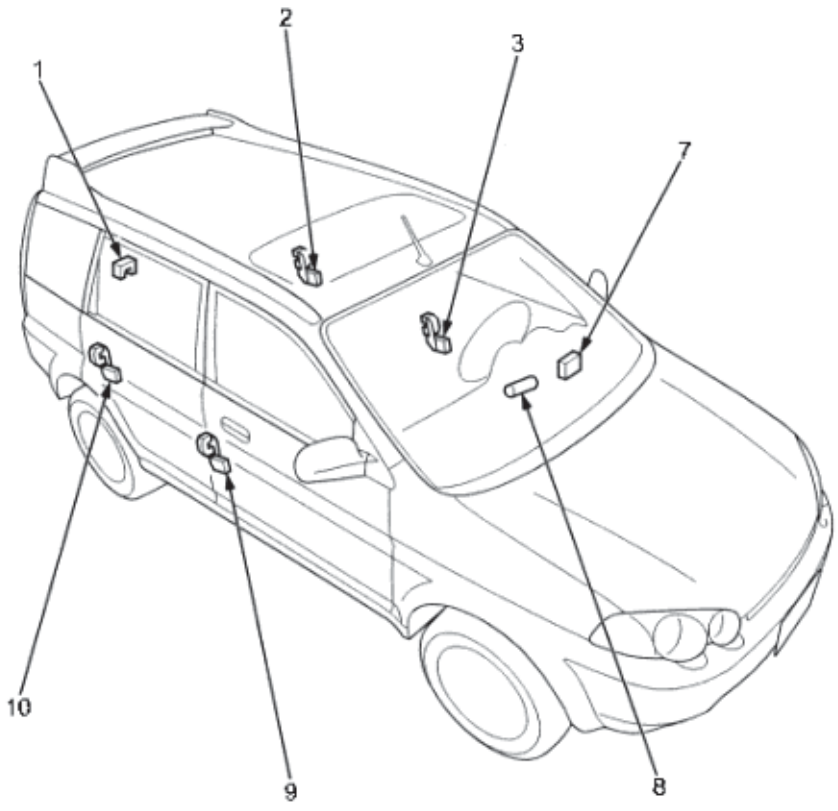
3. Test the motor in each direction by connecting battery power and ground according to the table.

Terminal / Direction	1	2
UP	⊕	⊖
DOWN	⊖	⊕

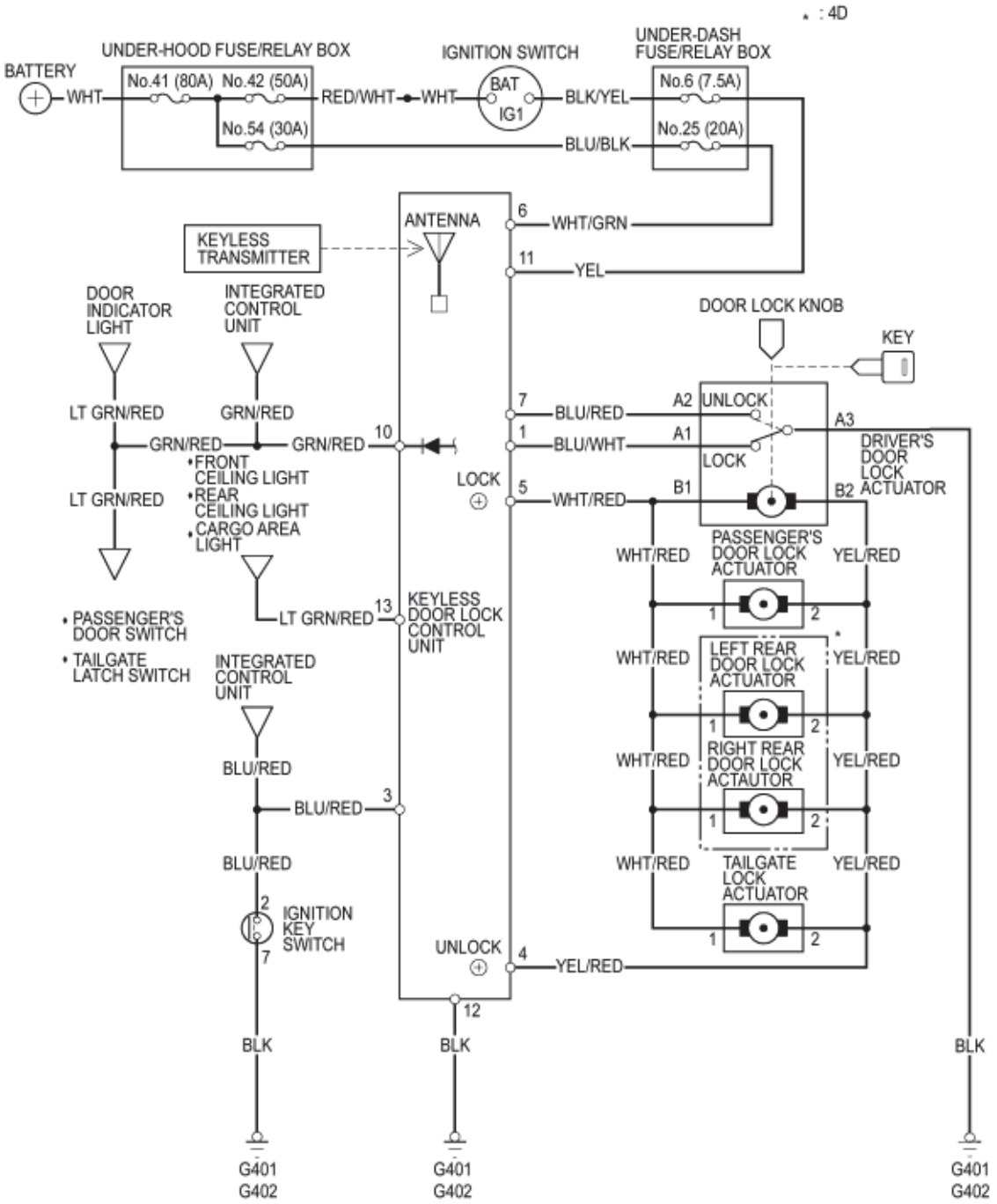
4. If the motor does not run or fails to run smoothly, replace it.

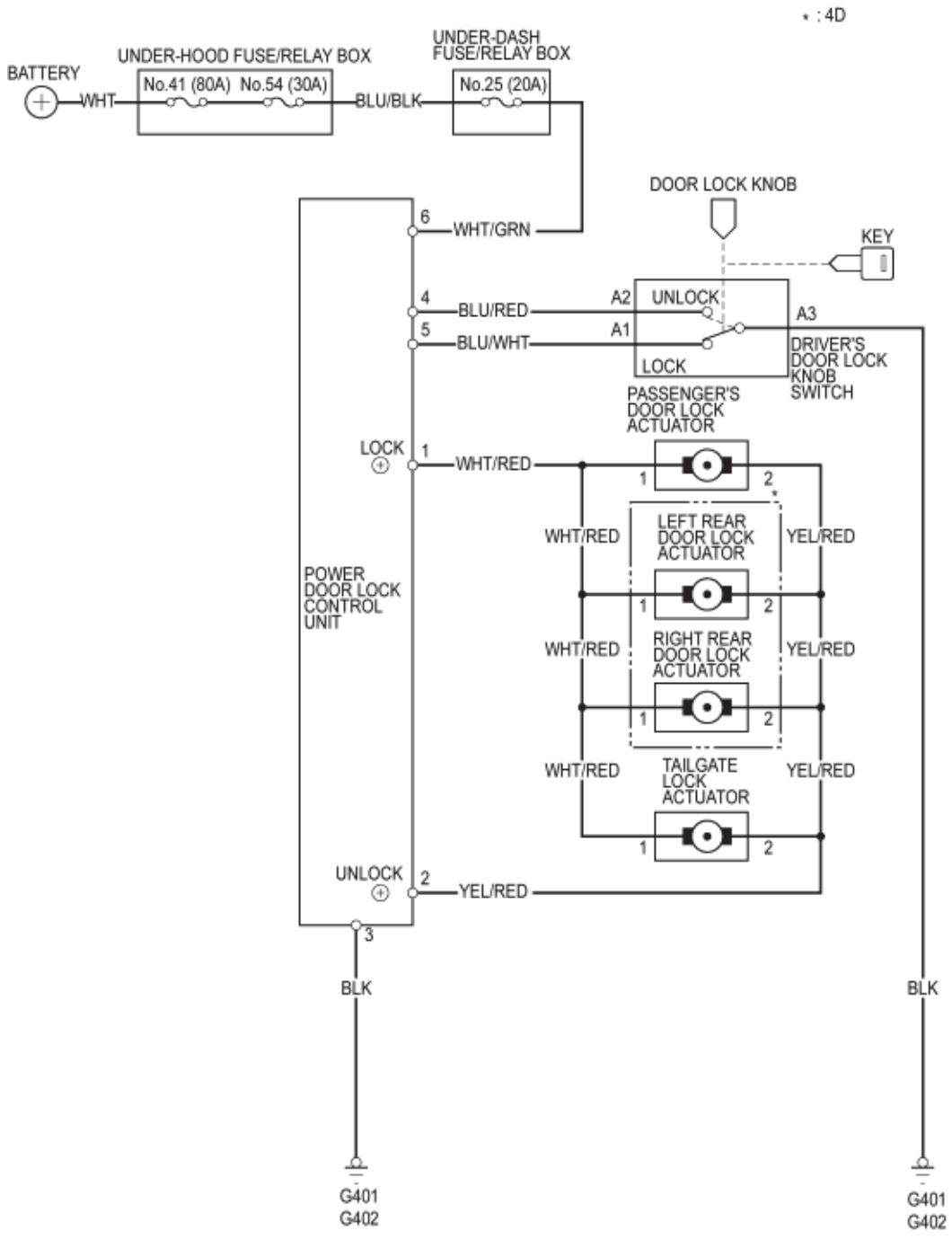
NOTE: LHD type is shown, RHD type is similar.



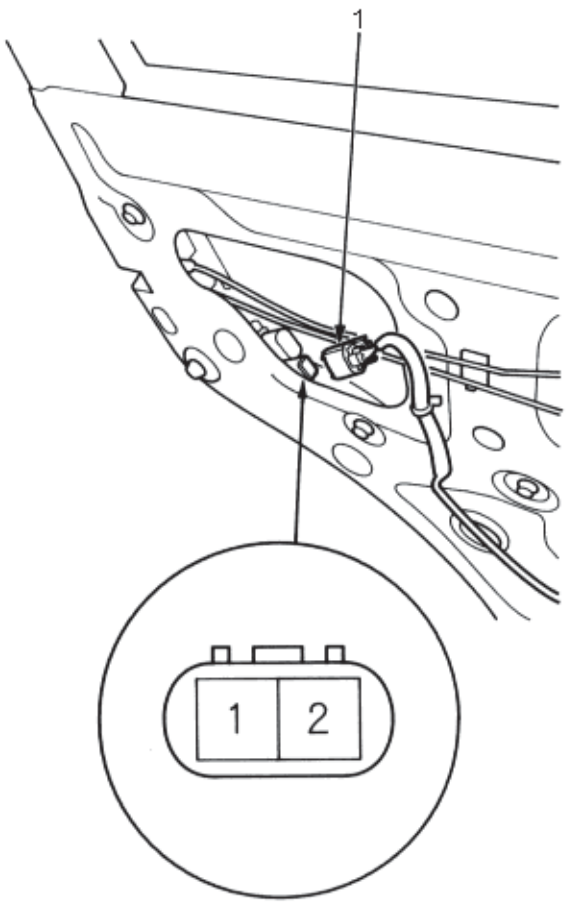


1. **TAILGATE LOCK ACTUATOR**
2. **RIGHT REAR DOOR LOCK ACTUATOR**
   Test, (**See Page** 23-E-15)
3. ♦ **DRIVER'S DOOR LOCK ACTUATOR (With keyless entry)**
   ♦ **DRIVER'S DOOR LOCK KNOB SWITCH (Without keyless entry)**
4. **UNLOCK BUTTON**
5. **TRANSMITTER**
6. **LOCK BUTTON**
7. ♦ **KEYLESS DOOR LOCK CONTROL UNIT**
   ♦ **POWER DOOR LOCK CONTROL UNIT**
8. **IGNITION KEY SWITCH**
9. **PASSENGER'S DOOR LOCK ACTUATOR**
10. **LEFT REAR DOOR LOCK ACTUATOR**
    Test, (**See Page** 23-E-15)


▲ : 4D
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG1
BLK/YEL
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.6 (7.5A)
No.25 (20A)
KEYLESS TRANSMITTER
ANTENNA
6
WHT/GRN
11
YEL
DOOR INDICATOR LIGHT
INTEGRATED CONTROL UNIT
LT GRN/RED
GRN/RED
GRN/RED
GRN/RED
10
• FRONT CEILING LIGHT
• REAR CEILING LIGHT
• CARGO AREA LIGHT
LT GRN/RED
LT GRN/RED
13
KEYLESS DOOR LOCK CONTROL UNIT
• PASSENGER'S DOOR SWITCH
• TAILGATE LATCH SWITCH
INTEGRATED CONTROL UNIT
BLU/RED
BLU/RED
3
BLU/RED
2
IGNITION KEY SWITCH
7
BLK
G401
G402
UNLOCK
4
YEL/RED
12
BLK
G401
G402
LOCK
5
WHT/RED
DOOR LOCK KNOB
KEY
7
BLU/RED
A2
UNLOCK
1
BLU/WHT
A1
LOCK
A3
DRIVER'S DOOR LOCK ACTUATOR
B1
B2
PASSENGER'S DOOR LOCK ACTUATOR
WHT/RED
YEL/RED
LEFT REAR DOOR LOCK ACTUATOR
WHT/RED
YEL/RED
RIGHT REAR DOOR LOCK ACTAUTOR
WHT/RED
YEL/RED
TAILGATE LOCK ACTUATOR
WHT/RED
YEL/RED
BLK
G401
G402


* : 4D
BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.54 (30A)
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No.25 (20A)
DOOR LOCK KNOB
KEY
6
WHT/GRN
4
BLU/RED
A2
UNLOCK
A3
5
BLU/WHT
A1
LOCK
DRIVER'S DOOR LOCK KNOB SWITCH
PASSENGER'S DOOR LOCK ACTUATOR
LOCK
1
WHT/RED
1
2*
WHT/RED
LEFT REAR DOOR LOCK ACTUATOR
YEL/RED
POWER DOOR LOCK CONTROL UNIT
1
2
WHT/RED
RIGHT REAR DOOR LOCK ACTUATOR
YEL/RED
1
2
WHT/RED
TAILGATE LOCK ACTUATOR
YEL/RED
1
2
UNLOCK
2
YEL/RED
3
BLK
G401
G402
BLK
G401
G402

1. Remove the rear door panel (see section 20).
2. Disconnect the 2P connector from the actuator.



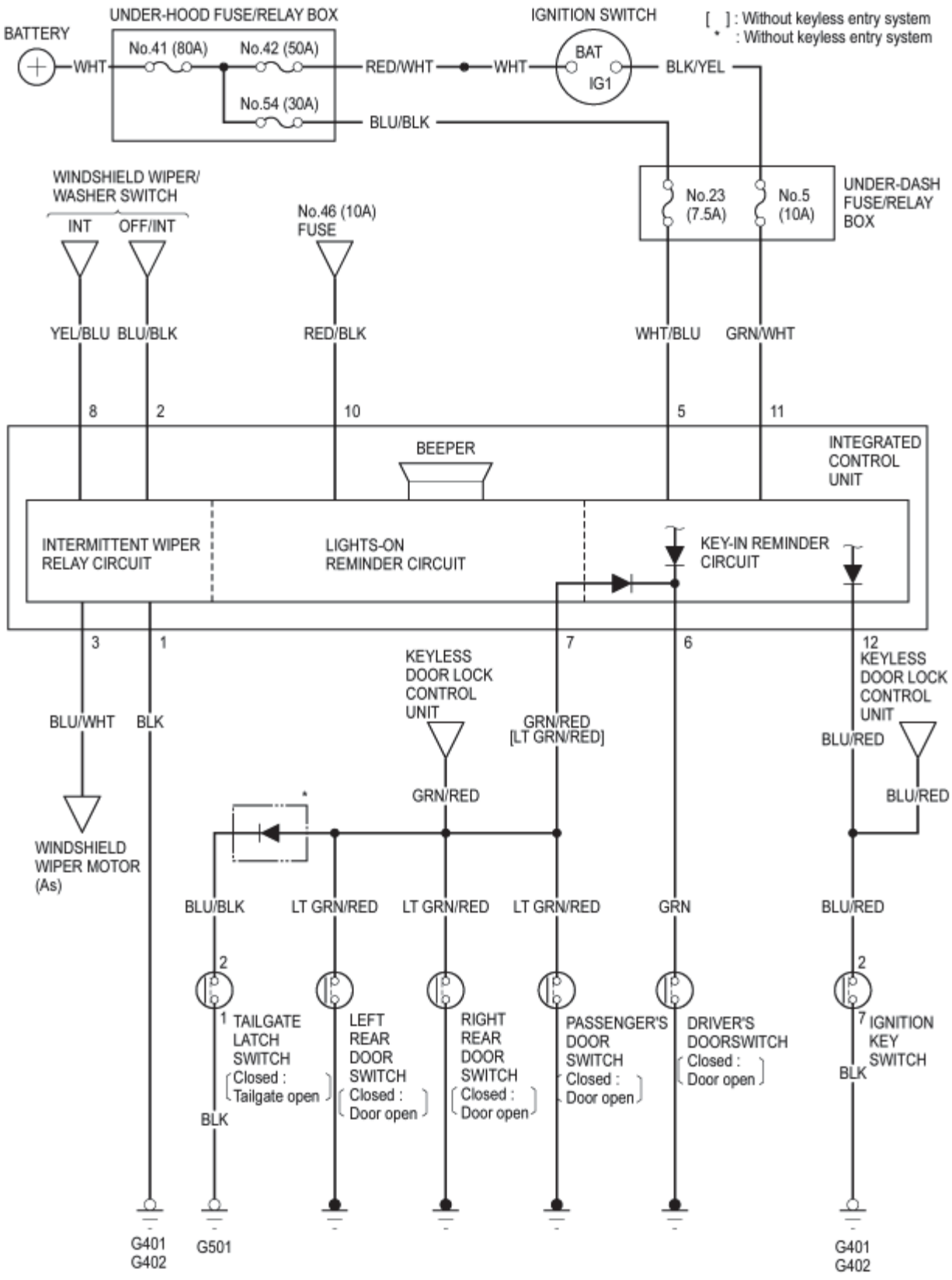
1. 2P CONNECTOR

⚠ CAUTION

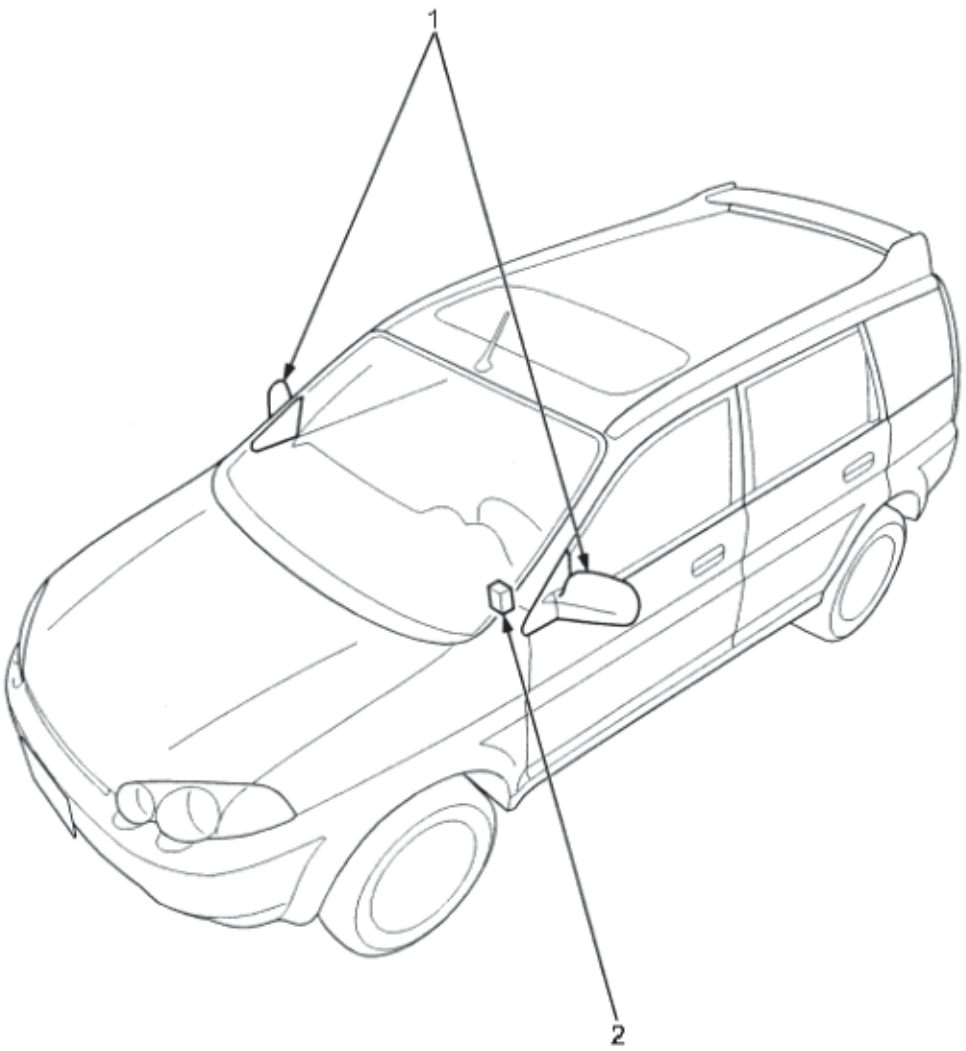
To prevent damage to the actuator, apply battery voltage only momentarily.

3. Check actuator operation by connecting power and ground according to the table.

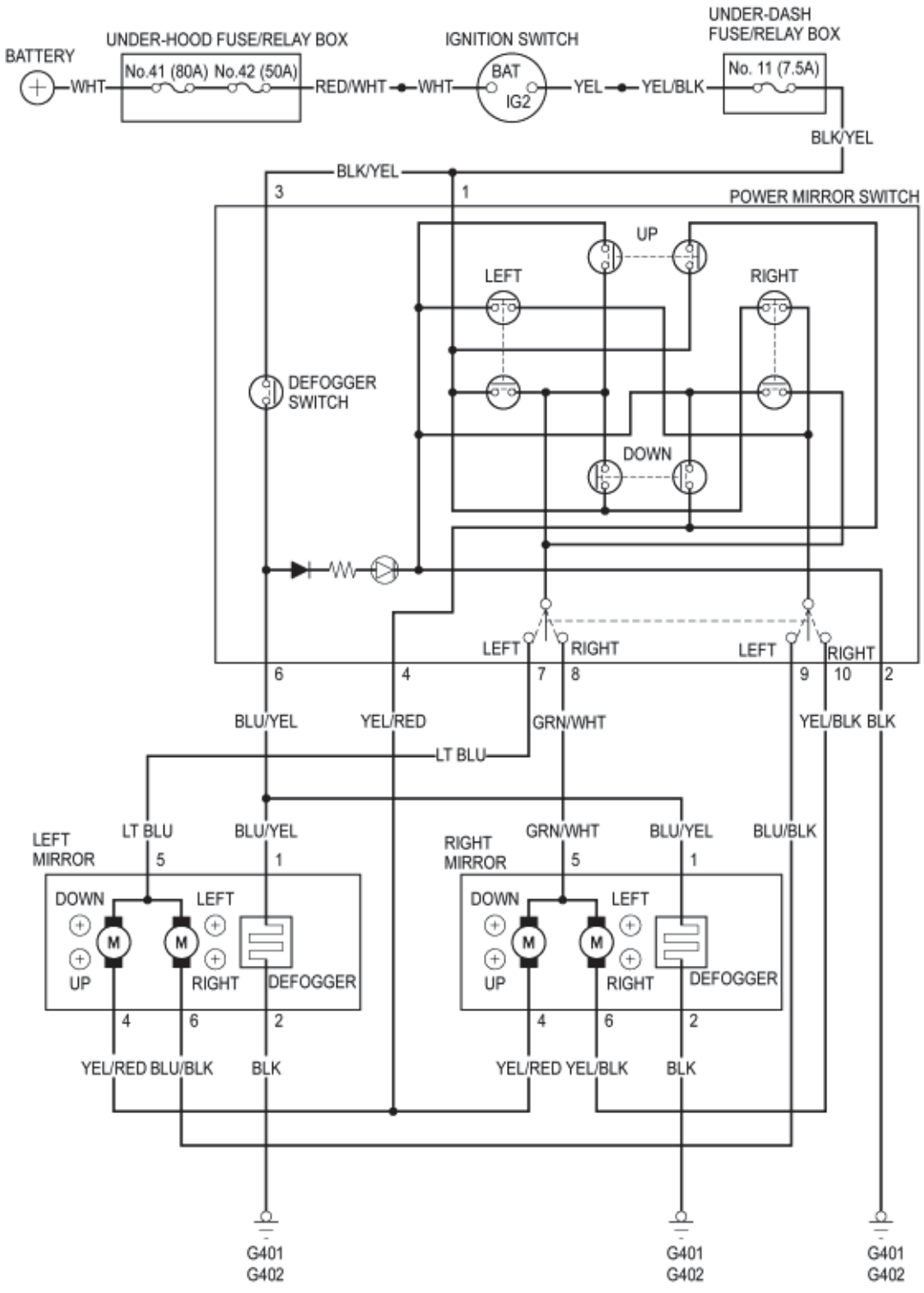
Terminal / Position	1	2
LOCK	⊕	⊖
UNLOCK	⊖	⊕

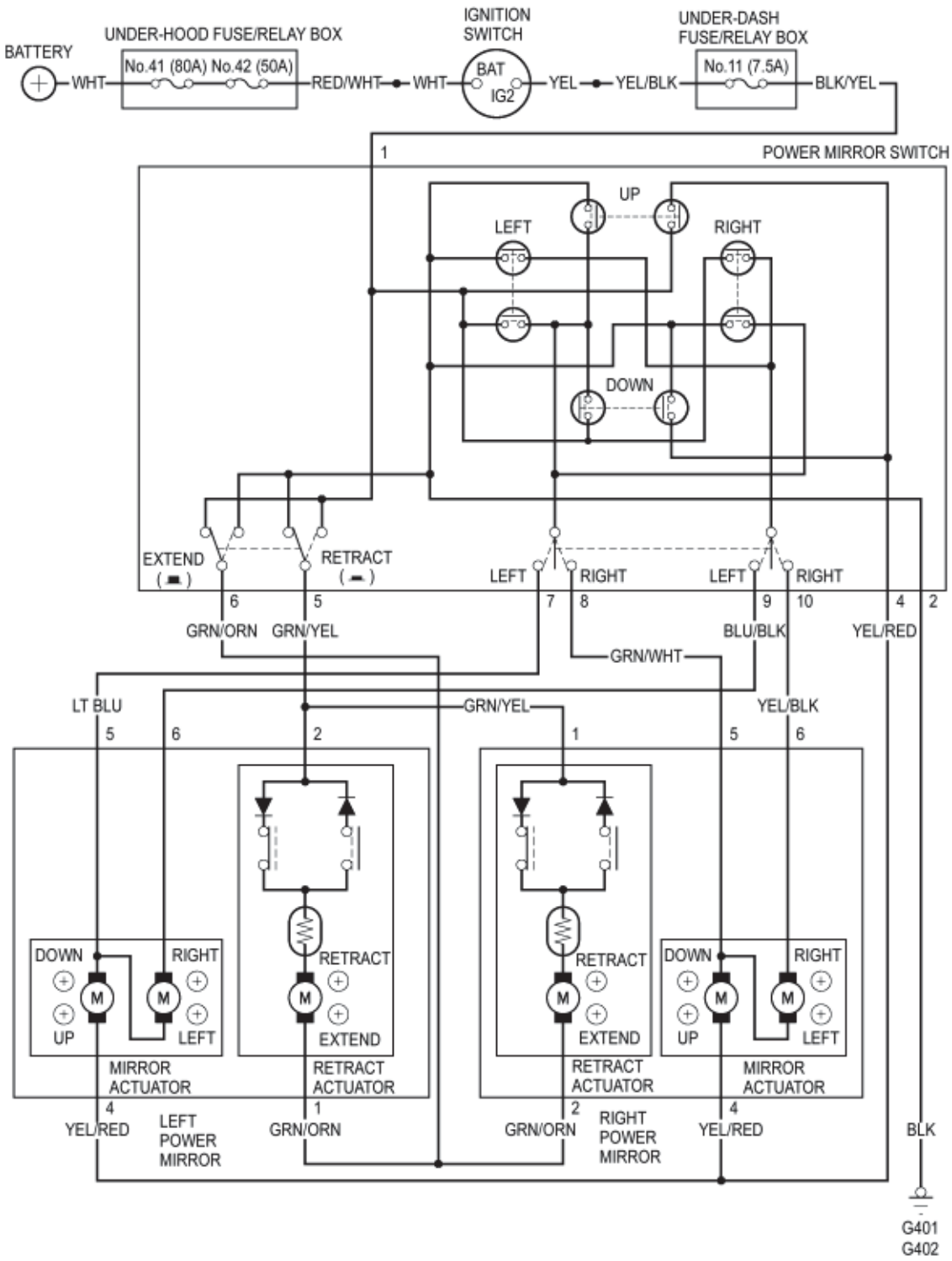

UNDER-HOOD FUSE/RELAY BOX
BATTERY
No.41 (80A)
No.42 (50A)
No.54 (30A)
WHT
RED/WHT
WHT
BLU/BLK
IGNITION SWITCH
BAT
IG1
BLK/YEL
[ ] : Without keyless entry system
* : Without keyless entry system
WINDSHIELD WIPER/ WASHER SWITCH
INT
OFF/INT
No.46 (10A) FUSE
No.23 (7.5A)
No.5 (10A)
UNDER-DASH FUSE/RELAY BOX
YEL/BLU
BLU/BLK
RED/BLK
WHT/BLU
GRN/WHT
8
2
10
5
11
BEEPER
INTEGRATED CONTROL UNIT
INTERMITTENT WIPER RELAY CIRCUIT
LIGHTS-ON REMINDER CIRCUIT
KEY-IN REMINDER CIRCUIT
3
1
7
6
12
KEYLESS DOOR LOCK CONTROL UNIT
GRN/RED [LT GRN/RED]
BLU/RED
BLU/WHT
BLK
WINDSHIELD WIPER MOTOR (As)
GRN/RED
BLU/BLK
LT GRN/RED
LT GRN/RED
LT GRN/RED
GRN
BLU/RED
2
1
TAILGATE LATCH SWITCH
Closed : Tailgate open
LEFT REAR DOOR SWITCH
Closed : Door open
RIGHT REAR DOOR SWITCH
Closed : Door open
PASSENGER'S DOOR SWITCH
Closed : Door open
DRIVER'S DOORSWITCH
Closed : Door open
7
IGNITION KEY SWITCH
BLK
G401
G402
G501
G401
G402

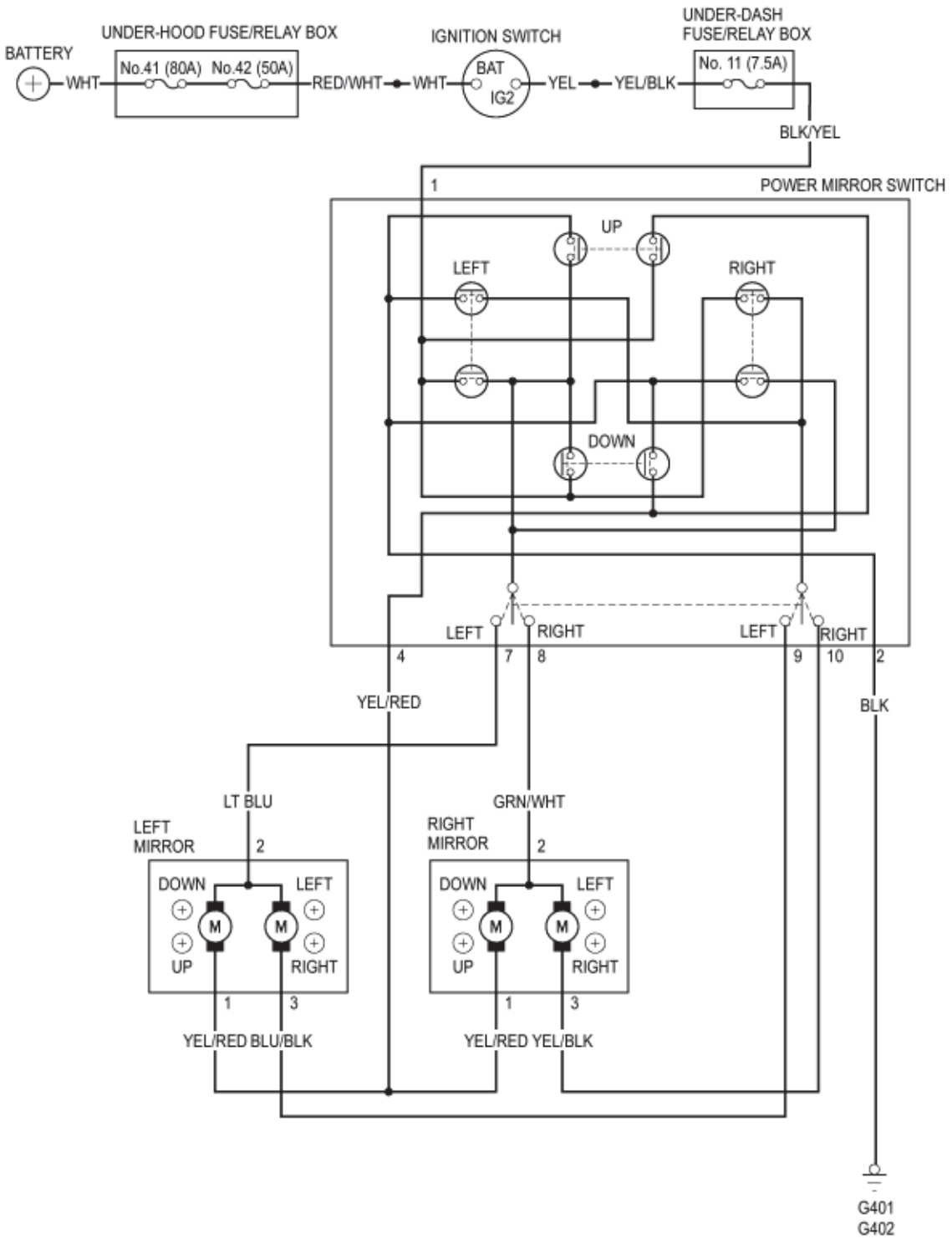
4D:
NOTE: LHD type is shown, RHD type is symmetrical.



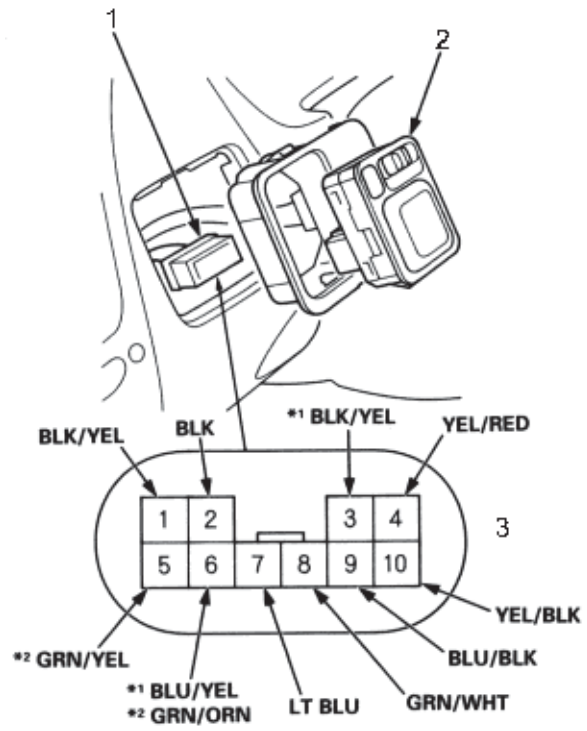
1. **POWER MIRROR**
   Function Test, (**See Page** 23-F-6)
2. **POWER MIRROR SWITCH**


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No. 11 (7.5A)
BLK/YEL
BLK/YEL
3
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DEFOGGER SWITCH
DOWN
LEFT
RIGHT
LEFT
RIGHT
6
4
7
8
9
10
2
BLU/YEL
YEL/RED
GRN/WHT
YEL/BLK
BLK
LT BLU
LEFT MIRROR
LT BLU
BLU/YEL
5
1
RIGHT MIRROR
GRN/WHT
BLU/YEL
BLU/BLK
5
1
DOWN
LEFT
UP
RIGHT
DEFOGGER
M
4
6
2
YEL/RED
BLU/BLK
BLK
YEL/RED
YEL/BLK
BLK
G401
G402
G401
G402
G401
G402


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A) No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No.11 (7.5A)
BLK/YEL
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
EXTEND
RETRACT
LEFT
RIGHT
LEFT
RIGHT
6
5
7
8
9
10
4
2
GRN/ORN
GRN/YEL
BLU/BLK
YEL/RED
GRN/WHT
LT BLU
GRN/YEL
YEL/BLK
5
6
2
1
5
6
DOWN
RIGHT
UP
LEFT
M
RETRACT
EXTEND
MIRROR ACTUATOR
RETRACT ACTUATOR
4
1
2
4
YEL/RED
LEFT POWER MIRROR
GRN/ORN
GRN/ORN
RIGHT POWER MIRROR
YEL/RED
BLK
G401
G402


BATTERY
WHT
UNDER-HOOD FUSE/RELAY BOX
No.41 (80A)
No.42 (50A)
RED/WHT
WHT
IGNITION SWITCH
BAT
IG2
YEL
YEL/BLK
UNDER-DASH FUSE/RELAY BOX
No. 11 (7.5A)
BLK/YEL
1
POWER MIRROR SWITCH
UP
LEFT
RIGHT
DOWN
LEFT
RIGHT
LEFT
RIGHT
4
7
8
9
10
2
YEL/RED
BLK
LT BLU
GRN/WHT
LEFT MIRROR
RIGHT MIRROR
2
2
DOWN
LEFT
UP
RIGHT
M
M
M
M
1
3
1
3
YEL/RED BLU/BLK
YEL/RED YEL/BLK
G401
G402

1. Remove the switch panel from the dashboard.
2. Disconnect the 10P connector from the power mirror switch.
3. Push the switch out from behind the switch panel.



1. 10P CONNECTOR
2. POWER MIRROR SWITCH
3. Wire side of female terminals

*1: With defogger
*2: With retractable power mirror

Mirror Test

Both inoperative:

1. Check for voltage between the No. 1 terminal and body ground with the ignition switch ON (II).
   There should be battery voltage.
   - If there is no battery voltage, check for:
     - blown No. 11 (7.5 A) fuse in the under-dash fuse/relay box.
     - an open in the BLK/YEL wire.
   - If there is battery voltage, go to step 2.
2. Check for continuity between the No. 2 terminal and body ground.
   There should be continuity.
   - If there is no continuity, check for:
     - an open in the BLK wire.
     - poor ground (G401, G402)
   - If there is continuity, check both mirrors individually as described in the next column.

Left mirror inoperative:

Connect the No. 1 terminal to the No. 7 terminal, and the No. 4 (or No. 9) terminal to body ground with jumper wires. The left mirror should tilt down (or swing left) with the ignition switch ON (II).

- If the mirror does not tilt down (or does not swing left), check for an open in the No. 4 (or No. 9) terminal wire between the left mirror and the 10P connector. If the wire is OK, check the left mirror actuator.
- If the mirror neither tilts down nor swings left, repair the No. 7 terminal wire.
- If the mirror works properly, check the mirror switch.

Right mirror inoperative:

Connect the No. 1 terminal to the No. 8 terminal, and the No. 4 (or No. 10) terminal to body ground with jumper wires. The right mirror should tilt down (or swing left) with the ignition switch ON (II).

- If the mirror does not tilt down (or does not swing left), check for an open in the No. 4 (or No. 10) terminal wire between the right mirror and the 10P connector. If the wire is OK, check the right mirror actuator.
- If the mirror neither tilts down nor swings left, repair the No. 8 terminal wire.
- If the mirror works properly, check the mirror switch.

Defogger test:

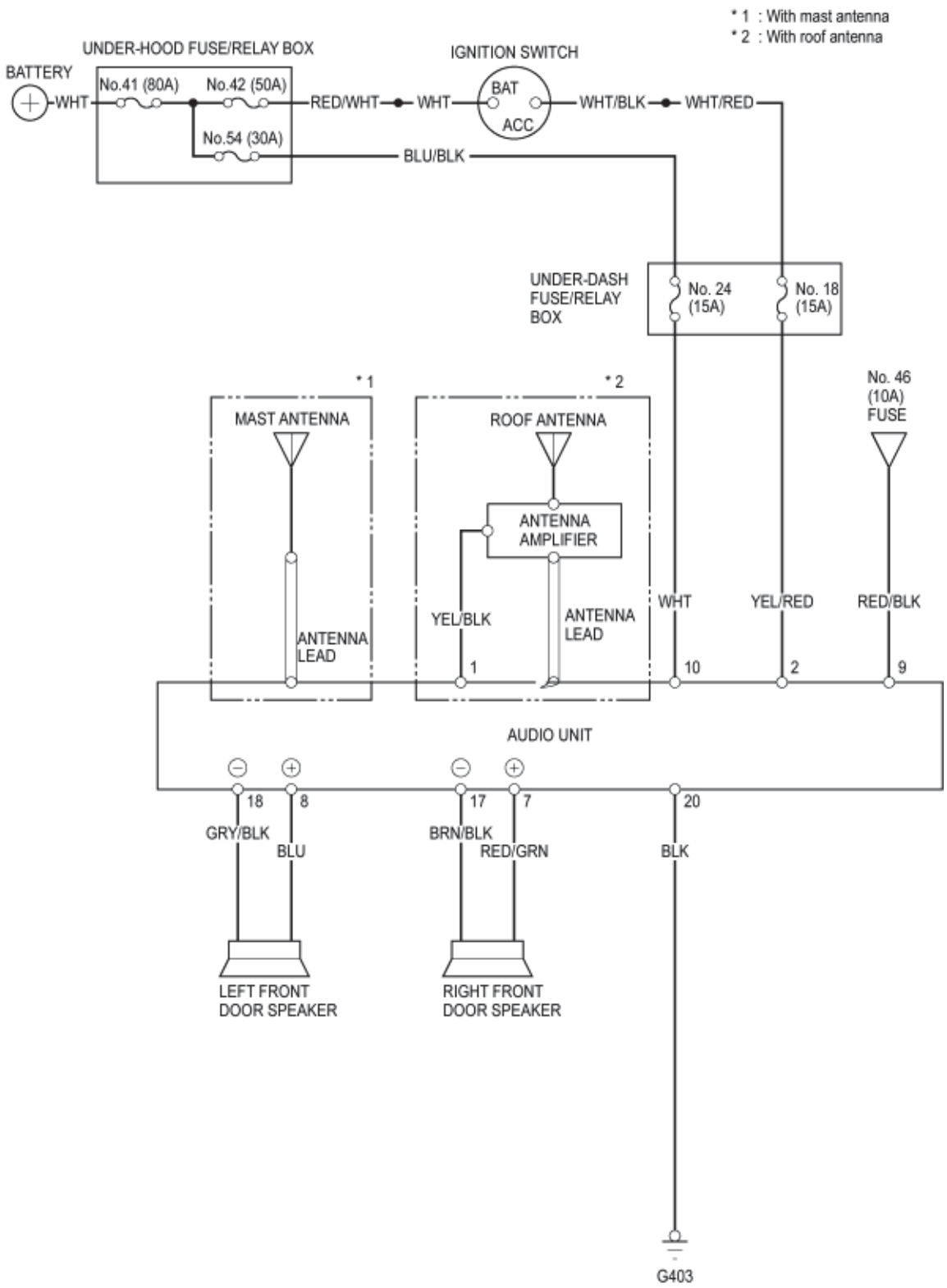
Connect the No. 3 and No. 6 terminals with a jumper wire, and check for voltage between the No. 3 terminal and body ground. There should be battery voltage and both mirrors should warm up with the ignition switch ON (II).

- If there is no voltage or neither warms up, check for:
  - an open in the BLK/YEL and BLU/YEL wires.
  - blown No. 11 (7.5 A) in the under-dash fuse/relay box.
  - poor ground (G401, G402)
- If only one fails to warm up, check its defogger.
- If both fail to warm up, check the defogger switch.

Retractable mirror inoperative:

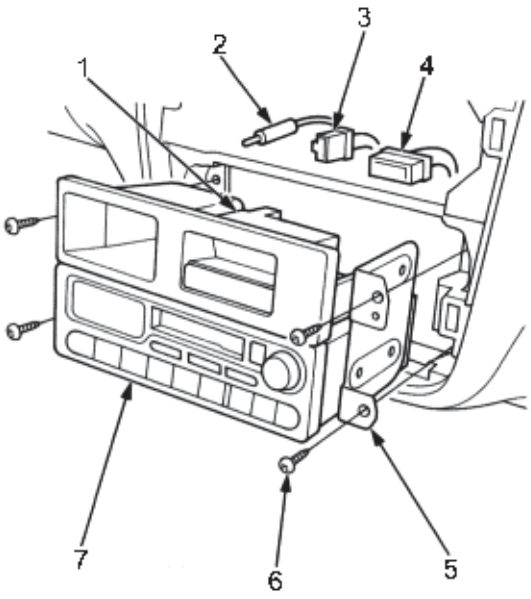
Connect the No. 1 (BLK/YEL) terminal of the 10P connector to the No. 6 (GRN/ORN) terminal and the No. 5 (GRN/YEL) terminal to body ground with jumper wires. The mirrors should extend when the ignition switch is turned ON (II).
Connect the No. 1 (BLK/YEL) terminal of the 10P connector to the No. 5 (GRN/YEL) terminal and the No. 6 (GRN/ORN) terminal to body ground with jumper wires. The mirrors should retract when the ignition switch is turned ON (II).

- If one of the mirrors does not retract or extend, check the retractable mirror actuator.
- If the mirrors operate properly, replace the switch.


* 1 : With mast antenna
* 2 : With roof antenna
UNDER-HOOD FUSE/RELAY BOX
BATTERY
WHT
No.41 (80A)
No.42 (50A)
No.54 (30A)
RED/WHT
WHT
IGNITION SWITCH
BAT
ACC
WHT/BLK
WHT/RED
BLU/BLK
UNDER-DASH FUSE/RELAY BOX
No. 24 (15A)
No. 18 (15A)
No. 46 (10A) FUSE
* 1
MAST ANTENNA
ANTENNA LEAD
* 2
ROOF ANTENNA
ANTENNA AMPLIFIER
YEL/BLK
ANTENNA LEAD
WHT
YEL/RED
RED/BLK
1
10
2
9
AUDIO UNIT
18
8
17
7
20
GRY/BLK
BLU
BRN/BLK
RED/GRN
BLK
LEFT FRONT DOOR SPEAKER
RIGHT FRONT DOOR SPEAKER
G403

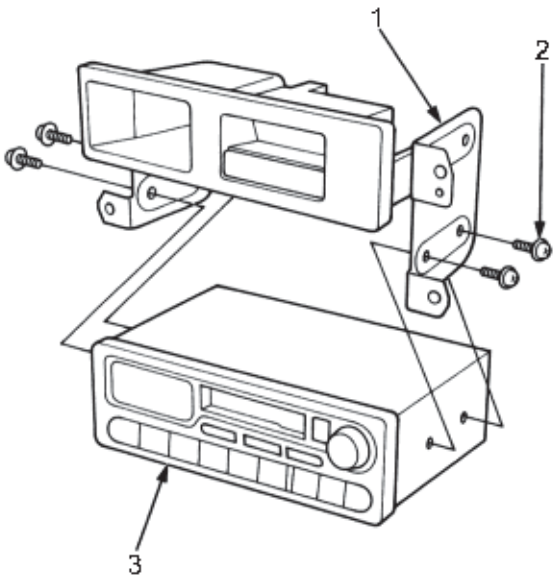
Audio Unit Removal (KY, KT and KQ models)

1. Remove the centre panel from the dashboard (see section 20).
2. Remove the four screws from the bracket.



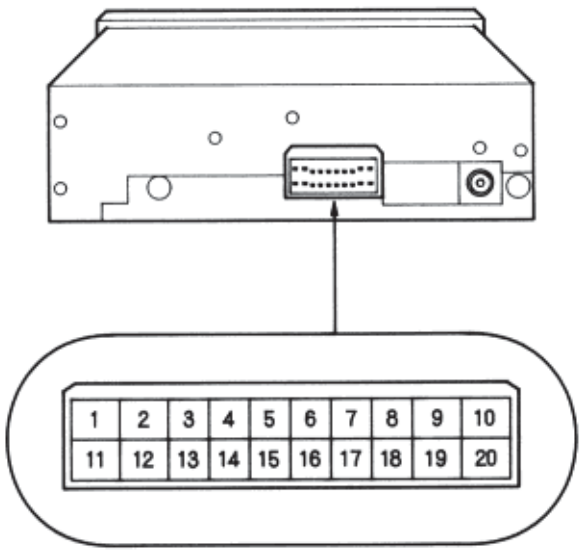
1. CLOCK
2. ANTENNA LEAD
3. 4P CONNECTOR
4. 20P CONNECTOR
5. BRACKET
6. SCREW
7. AUDIO UNIT

3. Disconnect the 20P connector and the antenna lead from the audio unit, and the 4P connector from the clock.
4. Remove the four screws, then remove the audio unit from the bracket.

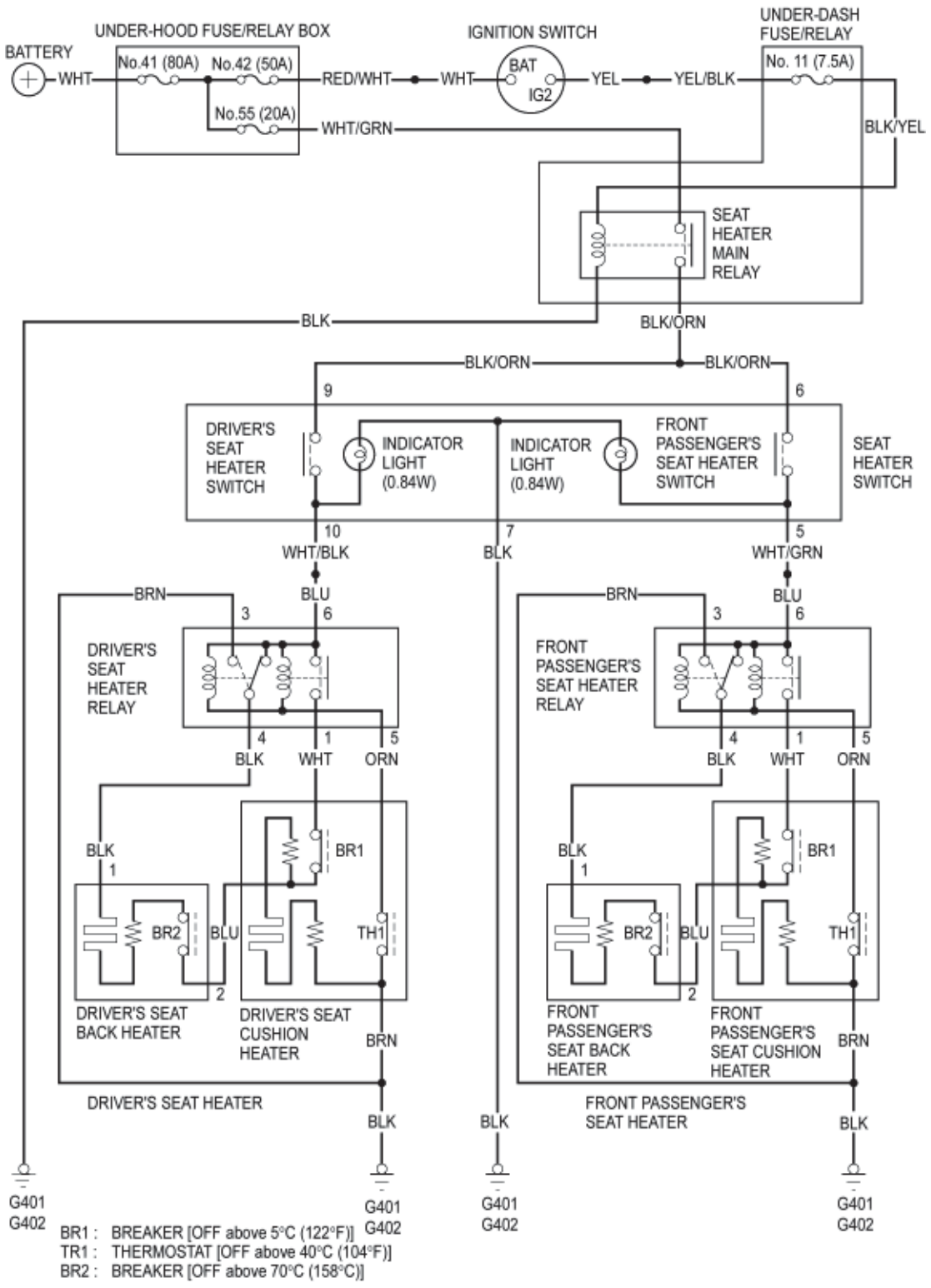


1. BRACKET
2. SCREW
3. AUDIO UNIT

Audio Unit Connector Terminals Identification (KY, KT and KQ models)

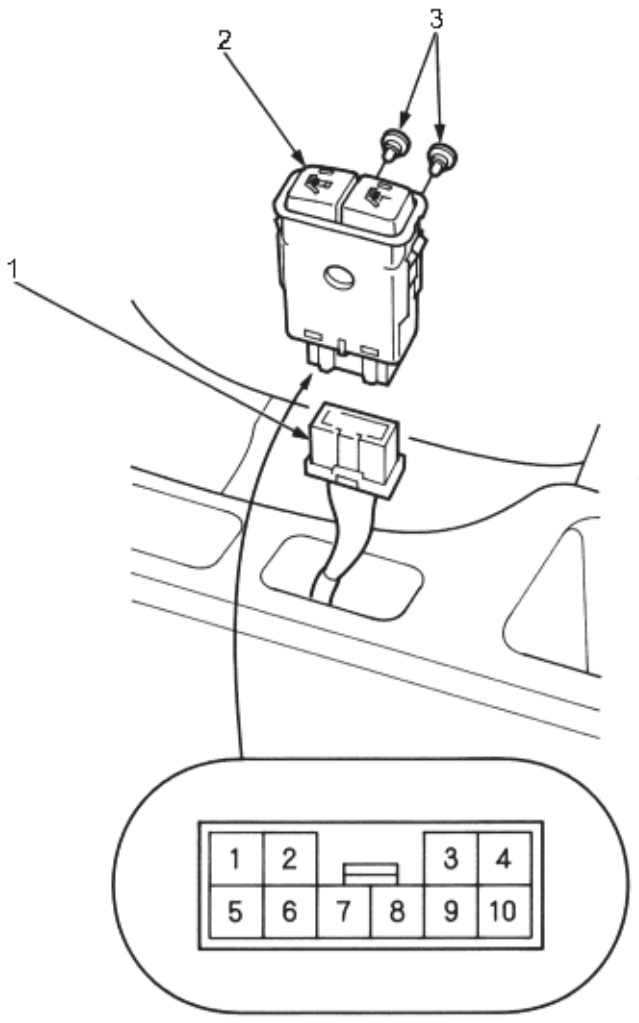


Cavity	Wire	Connects to
1	YEL/BLK	Roof Antenna
2	YEL/RED	ACC (main power supply)
3	----------	Not used
4	----------	Not used
5	----------	Not used
6	----------	Not used
7	RED/GRN	Right Front Door Speaker (+)
8	BLU	Left front door speaker (+)
9	RED/BLK	Lights-on signal
10	WHT	Constant power (tuning memory)
11	----------	Not used
12	----------	Not used
13	----------	Not used
14	----------	Not used
15	----------	Not used
16	----------	Not used
17	BRN/BLK	Right front door speaker (-)
18	GRN/BLK	Left front door speaker (-)
19	----------	Not used
20	BLK	Ground (G403)



BR1 : BREAKER [OFF above 5°C (122°F)]
TR1 : THERMOSTAT [OFF above 40°C (104°F)]
BR2 : BREAKER [OFF above 70°C (158°C)]

1. Carefully pry the switch out of the rear console.
2. Disconnect the 10P connector and remove the switch.



1. **10P CONNECTOR**
2. **SEAT HEATER SWITCH**
3. **BULBS**

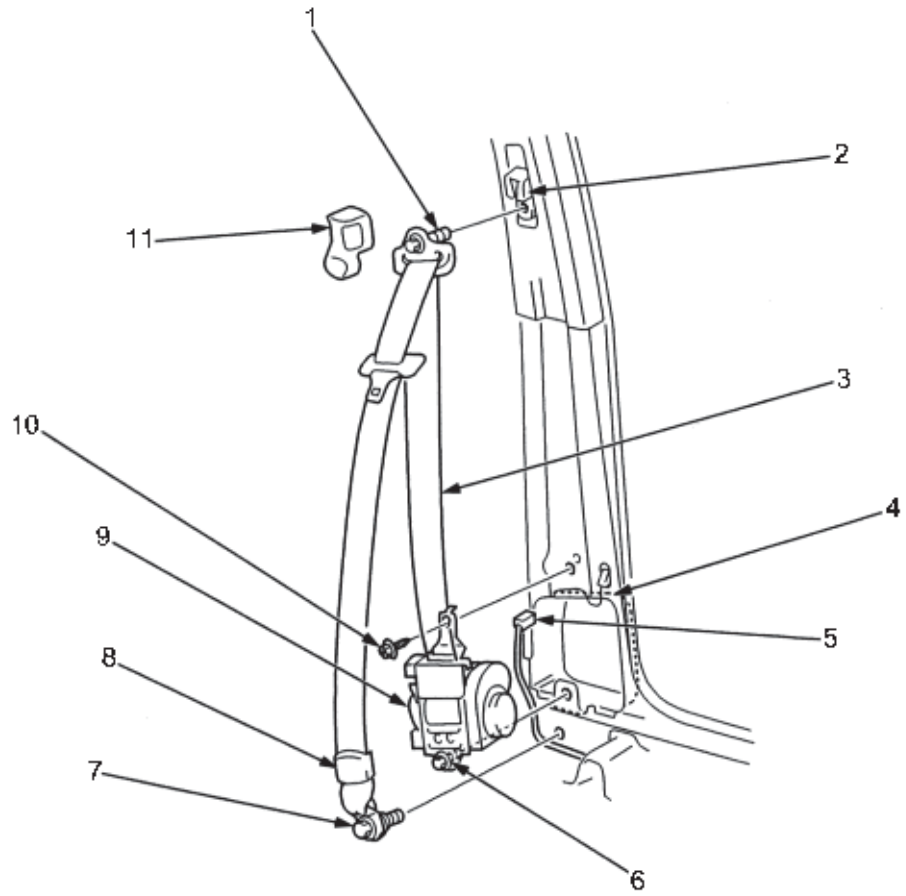
3. Check for continuity between the terminals in each switch position according to the table.

Position \ Terminal		5	6		7		9	10
Driver's Seat Heater Switch	ON	○		○	○	○	○	○
	OFF	○		○	○	○		○
Front Passenger's Seat Heater Switch	ON	○	○	○	○	○		○
	OFF	○		○	○	○		○

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the 1999 HR-V Shop Manual, P/N. 62S2H00, before performing repairs or service.
NOTE: Check the front seat belts for damage, and replace them if necessary. Be careful not to damage them during removal and installation.

Front seat belt (5D):

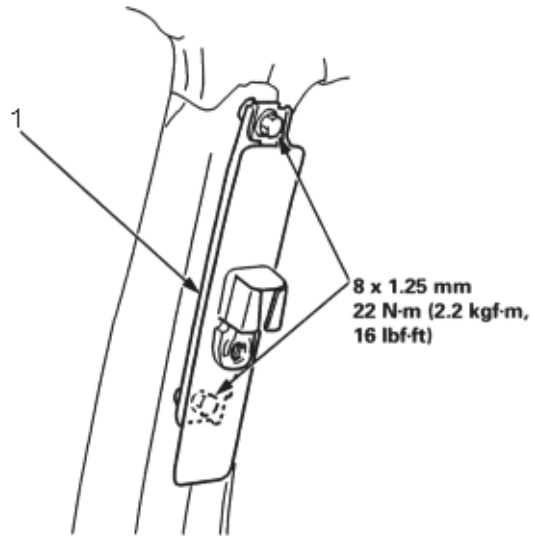
1. Disconnect the negative battery cable, and wait at least three minutes before beginning work.
2. Slide the front seat all the way around.
3. Remove (see section 20):
   - Front side trim
   - Rear side trim
   - Centre pillar lower trim
4. Remove the upper anchor cover, and pull the lower anchor cover back.



1. **UPPER ANCHOR BOLT 7/16-20UNF 32 Nm (3.3 kgf/m, 24 lbf/ft)**
2. **SHOULDER ANCHOR ADJUSTER**
3. **FRONT SEAT BELT**
4. **RETRACTOR PROTECTOR**
5. **SEAT BELT TENSIONER CONNECTOR**
6. **RETRACTOR BOLT 7/16-20UNF 32 Nm (3.3 kgf/m, 24 lbf/ft)**
7. **LOWER ANCHOR BOLT 7/16-20UNF 32 Nm (3.3 kgf/m, 24 lbf/ft)**
8. **LOWER ANCHOR COVER**
9. **RETRACTOR**
10. **RETRACTOR MOUNTING SCREW 6 x 1.0 mm 4Nm (0.4 kgf/m, 3 lbf/ft)**
11. **UPPER ANCHOR COVER**

5. Disconnect the seat belt tensioner connector.
6. Remove the upper anchor bolt and lower anchor bolt, the retractor mounting screw, and the retractor bolt, and remove the front seat belt and retractor.

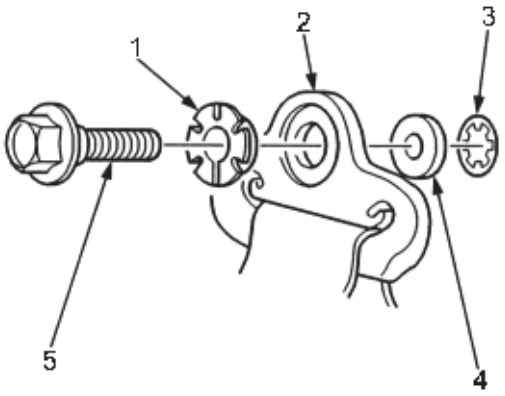
7. Remove the front and rear door trim as necessary (see section 20).
8. Remove the centre pillar upper trim (see section 20).
9. Remove the shoulder anchor adjuster.



1. SHOULDER ANCHOR ADJUSTER

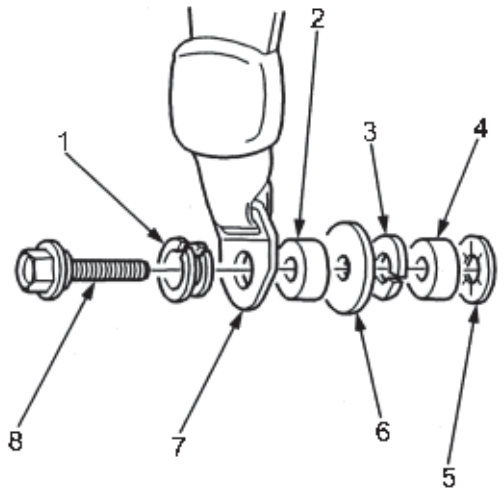
10. Install in the reverse order of removal, and note these items:
    - If the threads on the retractor mounting screw are worn out, use an oversized screw made specifically for this application.
    - Check that the retractor locking mechanism functions as described (**See Page** 24-6).
    - Assemble the washers, collar and bushing on the upper and lower anchor bolts as shown.
    - Before installing the anchor bolts, make sure there are no twists or kinks in the front seat belt.
    - Make sure the seat belt tensioner connector is plugged in properly.

Upper anchor bolt construction:



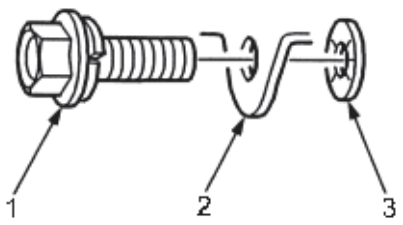
1. BUSHING
2. UPPER ANCHOR
3. TOOTHED LOCK WASHER
4. COLLAR
5. UPPER ANCHOR BOLT

Lower anchor bolt construction:



1. BUSHING
2. COLLAR
3. SPRING WASHER
4. COLLAR
5. TOOTHED LOCK WASHER
6. WASHER
7. LOWER ANCHOR
8. LOWER ANCHOR BOLT

Retractor bolt construction:

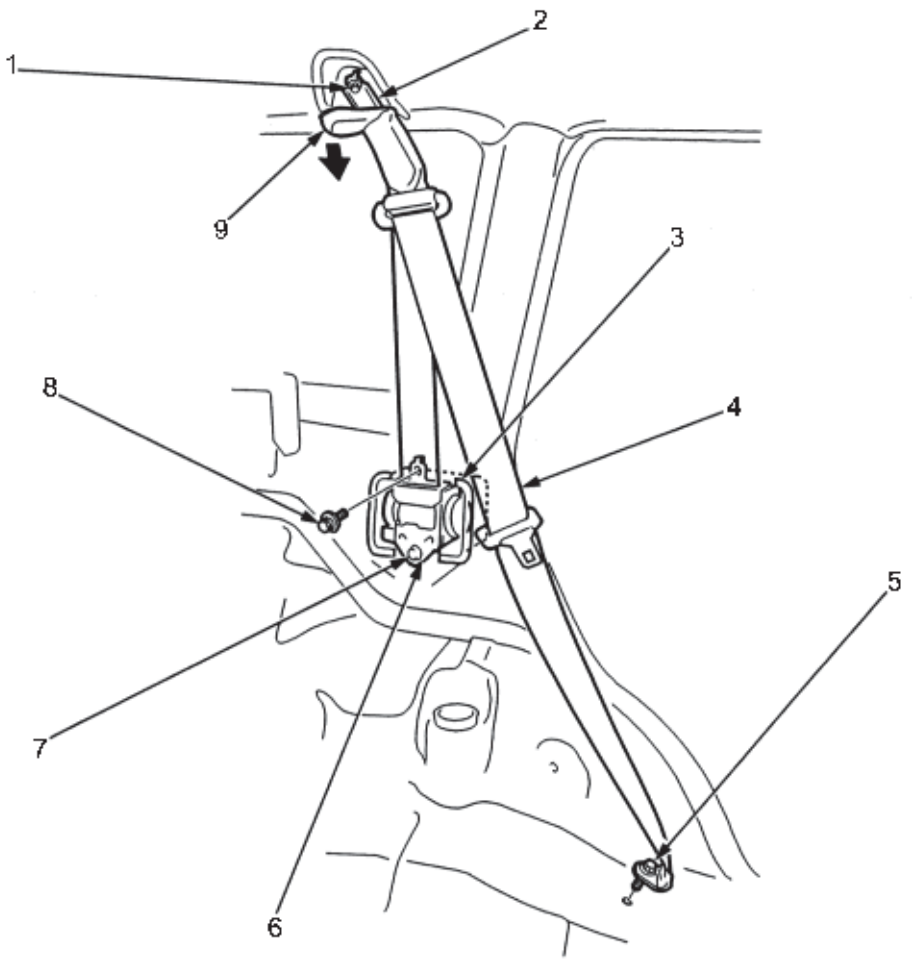


1. RETRACTOR BOLT
2. RETRACTOR
3. TOOTHED LOCK WASHER

Check the rear seat belts for damage, and replace them if necessary. Be careful not to damage them during removal and installation.

Rear seat belt (5D):

1. Remove:
   - Rear centre shelf
   - Spare tyre lid
   - Rear floor bucket
   - Rear trim panel
   - Rear seat cushion (see section 20)
   - Rear seat-back (see section 20)
   - Rear side trim (see section 20)
   - Rear side shelf (see section 20)
   - Trunk side trim panel (see section 20)
2. Remove the lower anchor bolt.

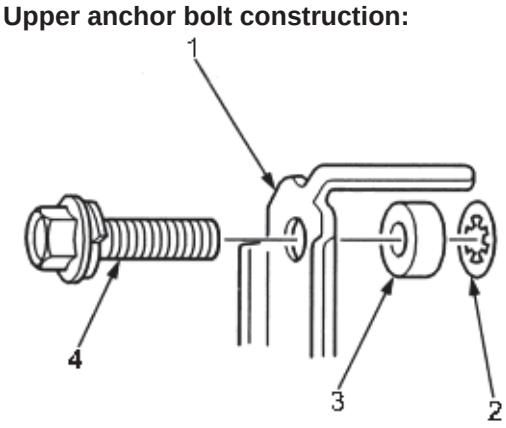


1. **UPPER ANCHOR BOLT 7/16-20UNF 32 Nm (3.3 kgf/m, 24 lbf/ft)**
2. **GUIDE STAY**
3. **RETRACTOR PROTECTOR**
4. **REAR SEAT BELT**
5. **LOWER ANCHOR BOLT 7/16-20UNF 32 Nm (3.3 kgf/m, 24 lbf/ft)**
6. **RETRACTOR**
7. **RETRACTOR BOLT 7/16-20UNF 32Nm (3.3 kgf/m, 24 lbf/ft)**
8. **RETRACTOR MOUNTING BOLT 6 x 1.0 mm 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)**
9. **UPPER ANCHOR COVER**

3. Pull the upper anchor cover back, then remove the upper anchor bolt. Take care not to damage the upper anchor cover.
4. Remove the retractor mounting bolt and the retractor bolt, and remove the rear seat belt retractor.

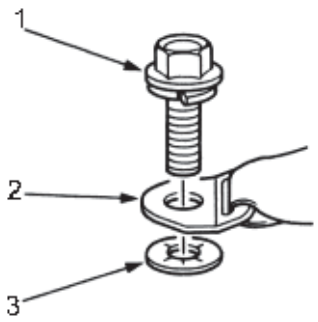
5. Install in the reverse order of removal, and note these items:
   - Apply liquid thread lock to the upper anchor bolt before installation.
   - Check that the retractor locking mechanism funtions as described (**See Page** 24-6).
   - Assemble the collar on the upper anchor bolt as shown.
   - Before installing the anchor bolts, make sure there are no twists or kinks in the rear seat belt.

Upper anchor bolt construction:



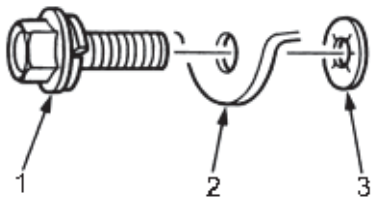
1. GUIDE STAY
2. TOOTHED LOCK WASHER
3. COLLAR
4. UPPER ANCHOR BOLT
   Apply liquid thread lock.

Lower anchor bolt construction:



1. LOWER ANCHOR BOLT
2. LOWER ANCHOR
3. TOOTHED LOCK WASHER

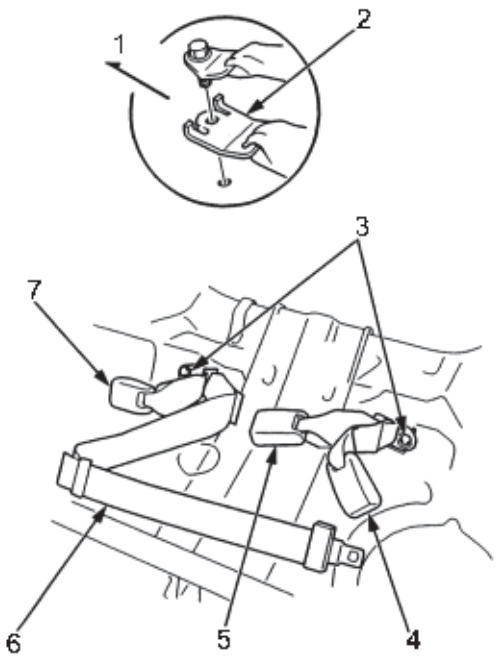
Retractor bolt construction:



1. RETRACTOR BOLT
2. RETRACTOR
3. TOOTHED LOCK WASHER

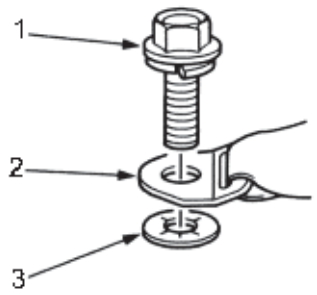
Centre belt and seat belt buckles (5D):

1. Slide the front seat forward fully.
2. Remove the rear seat cushion (see section 20).
3. Remove the centre anchor bolts, and remove the centre belt (for some models) and seat belt buckles.



1. Outside
2. For some models.
3. CENTRE ANCHOR BOLT 7/16-20UNF
   32 Nm (3.3 kgf/m, 24 lbf/ft)
4. SEAT BELT BUCKLE
5. CENTRE BELT BUCKLE (For some models)
6. CENTRE BELT (For some models)
7. SEAT BELT BUCKLE

Centre anchor bolt construction:



1. CENTRE ANCHOR BOLT
2. CENTRE ANCHOR
3. TOOTHED LOCK WASHER

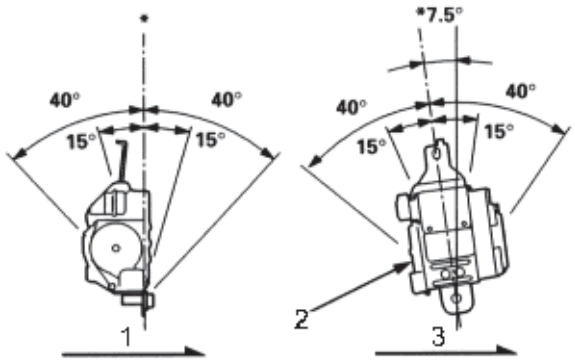
4. Install in the reverse order of removal, and before installing the centre anchor bolt, make sure there are no twists or kinks in the centre belt (for some models).

SRS components are located in this area. Review the SRS component locations, precautions and procedures in the 1999 HR-V Shop Manual, P/N. 62S2H00, before performing repairs or service.

Retractor:

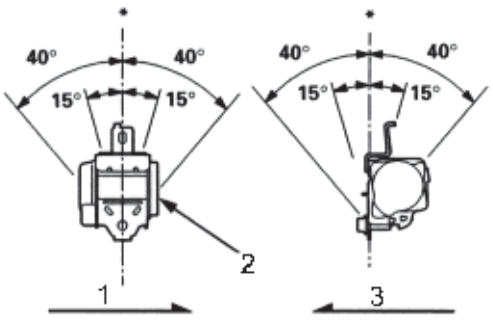
1. Before installing the retractor, check that the seat belt can be pulled out freely.
2. Make sure that the seat belt does not lock when the retractor is leaned slowly up to 15° from the mounted position. The seat belt should lock when the retractor is leaned over 40°. Do not attempt to disassemble the retractor.

Front (5D): ***: Mounted Position**



1. Inside
2. RETRACTOR
3. Forward

Rear (5D):



1. Forward
2. RETRACTOR
3. Inside

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:

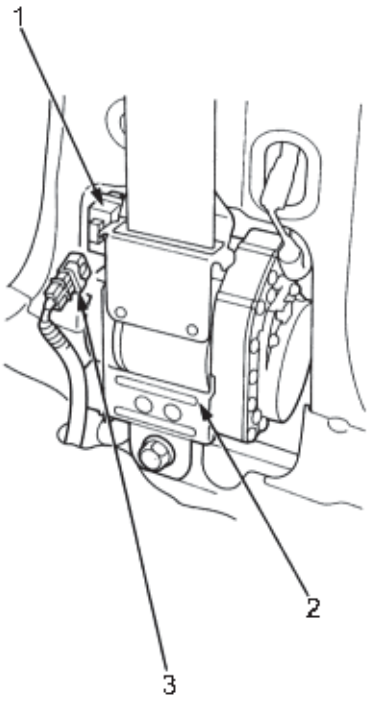
1. Check that the seat belt is not twisted or caught on anything.
2. After installing the anchors, check for free movement on the anchor bolts. If necessary, remove the anchor bolts and check that the washers and other parts are not damaged or improperly installed.
3. Check the seat belts for damage or discolouration. Clean with a shop towel if necessary. Use only soap and water to clean.
   NOTE: Dirt build-up in the metal 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.
4. Check that the seat belt does not lock when pulled out slowly. The seat belt is designed to lock only during a sudden impact.
5. Make sure that the seat belt will retract automatically when released.
6. On the rear shoulder seat belt, make sure that the locking mechanism in the seat belt retractor will engage when the seat belt is pulled all the way out.
7. 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.

CAUTION

Removal of the airbag must be performed according to the precautions/procedures described before (refer to the Shop Manual, P/N 62S2H00).

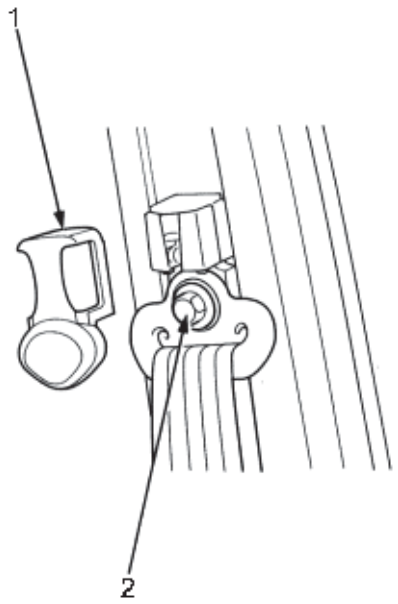
Removal

1. Disconnect the negative battery cable, and wait at least three minutes before beginning work.
2. Remove the centre pillar lower trim panel.
3. Disconnect the seat belt tensioner 2P connector from the SRS main harness 2P connector.
4. Remove the lower anchor bolt.



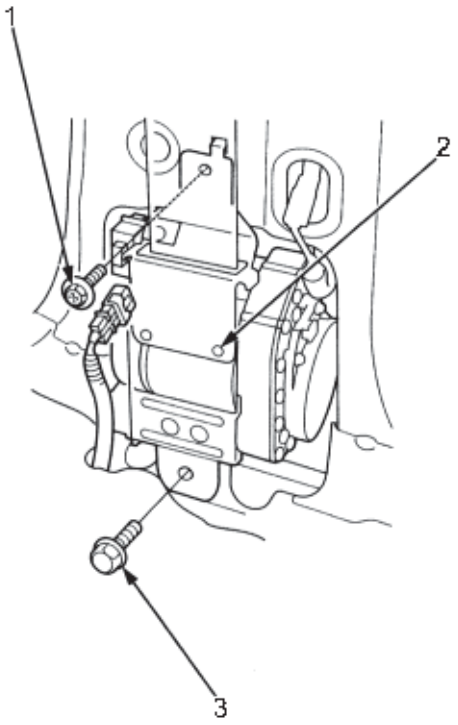
1. SEAT BELT TENSIONER 2P CONNECTOR
2. RETRACTOR
3. SRS MAIN HARNESS 2P CONNECTOR

5 Remove the upper anchor cover and upper anchor bolt.



1. UPPER ANCHOR COVER
2. UPPER ANCHOR BOLT

6 Remove the two retractor mounting bolts, then remove the retractor.



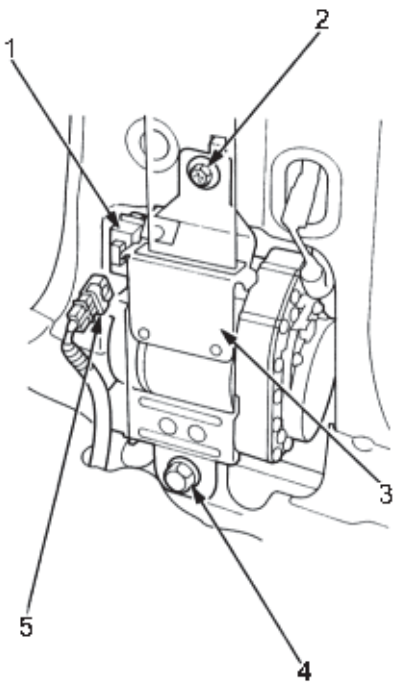
1. MOUNTING BOLT
2. RETRACTOR
3. MOUNTING BOLT

Installation

⚠ CAUTION

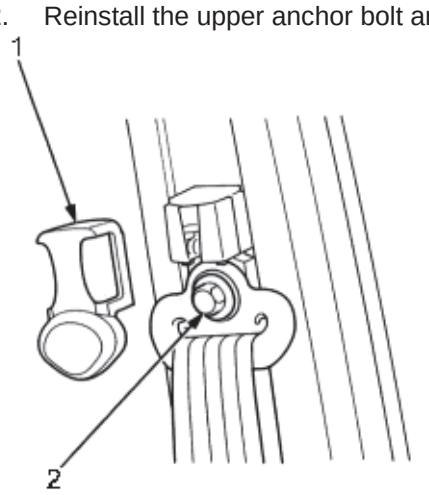
Be sure to install the harness wires so that they are not pinched or interfering with other parts.

1. Install the new seat belt.



1. SEAT BELT TENSIONER 2P CONNECTOR
2. MOUNTING BOLT 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
3. RETRACTOR
4. MOUNTING BOLT 32 Nm (3.3 kgf/m, 24 lbf/ft)
5. SRS MAIN HARNESS 2P CONNECTOR

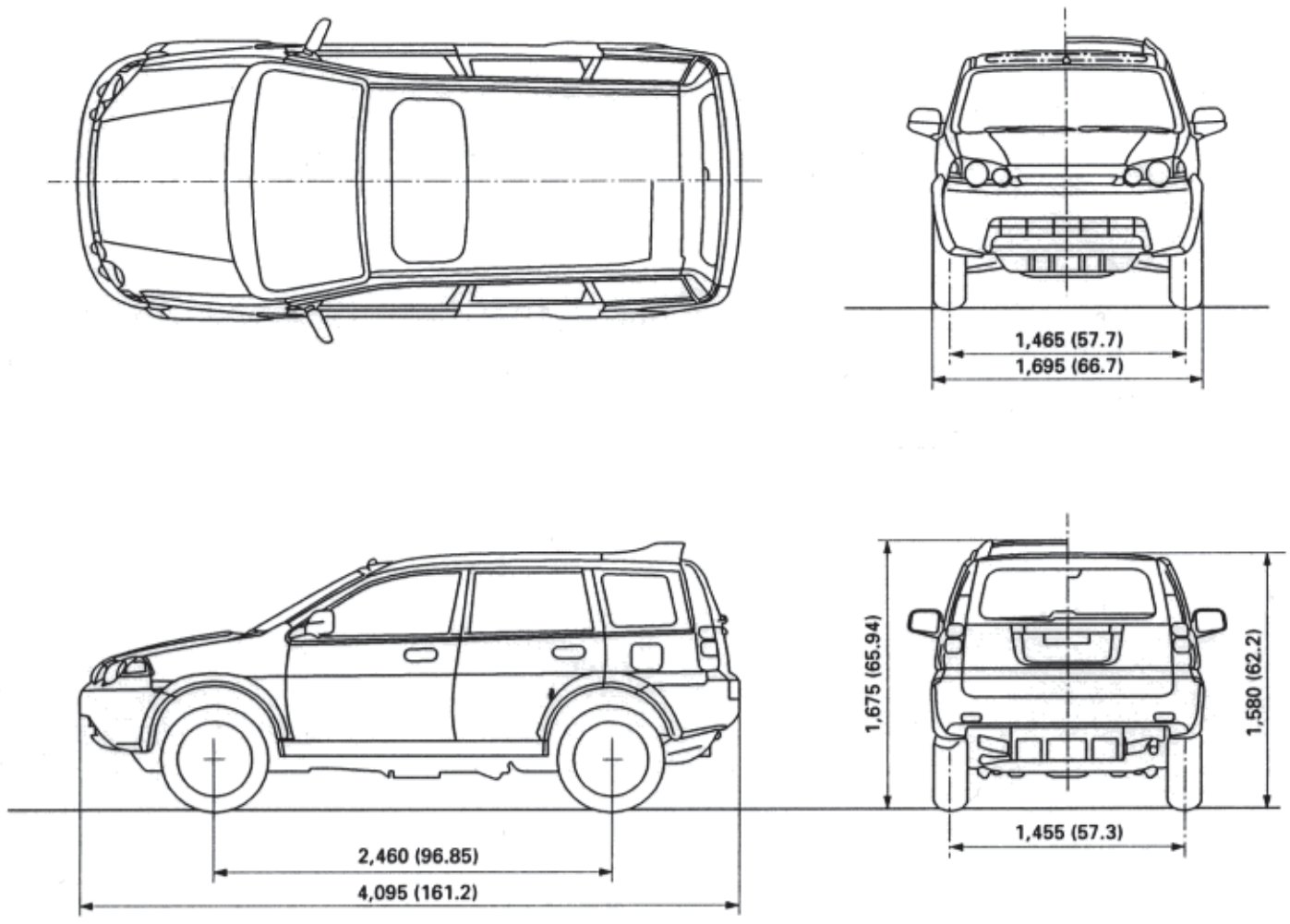
2. Reinstall the upper anchor bolt and upper anchor cover.



1. UPPER ANCHOR COVER
2. UPPER ANCHOR BOLT 32 Nm (3.3 kgf/m, 24 lbf/ft)

3. Reinstall the lower anchor bolt.
4. Reconnect the seat belt tensioner 2P connector to SRS main harness 2P connector.
5. Reinstall the centre pillar lower trim panel.
6. Reconnect the negative battery cable.
7. After installing the seat belt, confirm proper system operation: Turn the ignition switch ON (II); the SRS indicator light should come on for about six seconds and then go off.

Most monocoque bodies are composed as a single unit by welding together pressed parts made of steel plates which come in a variety of different shapes and sizes. Each part is responsible for displaying a certain strength and durability in order that it may play its role in meeting the functions of the body as a whole.
Damage to the exterior of the body can be inspected visually, but where there has been an external impact, it is necessary to inspect the extent of the damage. In some cases, the deformation may have spread beyond the actual areas that were in the collision so the deformation must be inspected closely.
Unit: mm (in)

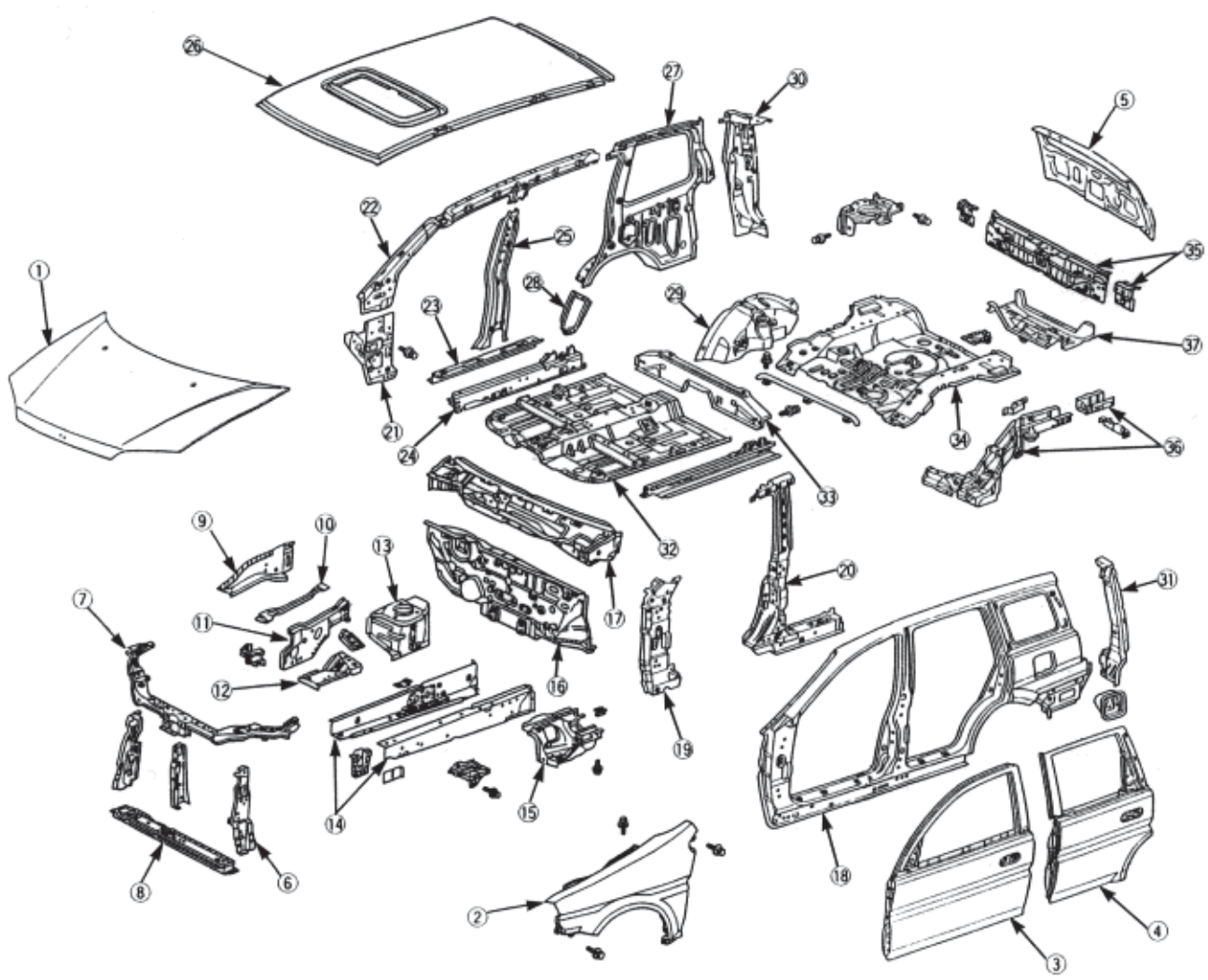


Front Wheel Alignment:

Camber:	0°00’ ±1°	
Caster	2°15’ ±1°	
Total Toe	0 ±3 (0 ±0.12)	
Wheel turning angle	in	38°00’ ±2°
Wheel turning angle	out	30°00’ (Reference)

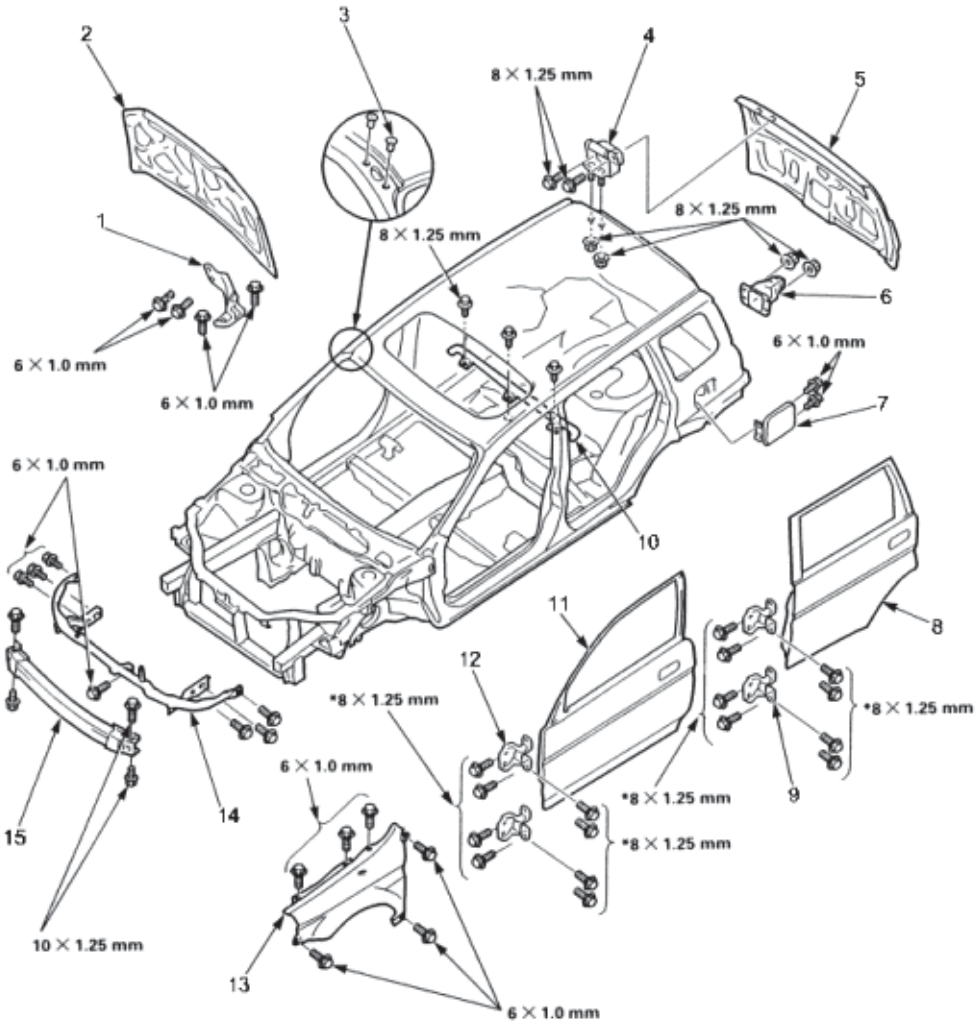
Rear Wheel Alignment:

Camber	-0°30’ ±1°
Total Toe	IN 2 ±5 (0.08 ±0.1)



No.	Part Name	Zinc-plated	No.	Part Name	Zinc-plated
1	Hood	O	20	Centre Pillar Stiffener	
2	Front Fender	O	21	Front Pillar Inner Lower	O
3	Front Door Panel/Door Skin	O	22	Front Pillar Inner Upper/Roof Side Panel	
4	Rear Door Panel/Door Skin	O	23	Side Sill Stiffener	O
5	Tailgate	O	24	Inside Sill	O
6	Bulkhead Side Stay	O	25	Roof Panel	
7	Bulkhead Upper Frame	O	26	Rear Inner Panel	O
8	Front Lower Cross-member	O	27	Wheel Arch Extension	
9	Wheelhouse Upper Member		28	Rear Wheelhouse	O
10	Front Fender Support		29	Rear Pillar Stiffener	O
11	Wheelhouse Extension		30	Rear Pillar Gutter	O
12	Front Wheelhouse	O	31	Front Floor	O
13	Damper Housing	O	32	Middle Floor Cross-member	O
14	Front Side Frame	O	33	Rear Floor	O
15	Front Side Outrigger/Lower Arm Support	O	34	Rear Panel	O
16	Dashboard Lower	O	35	Side Sill Extension	O
17	Dashboard Upper	O	36	Rear Frame	O
18	Outer Panel	O	37	Rear Floor Cross-member	O
19	Front Pillar Stiffener	O			

NOTE: To adjust the hood, door and tailgate alignment, refer to the HR-V Shop Manual.
Mounting bolts/nuts Torque:
6 x 1.0 mm: 9.8 Nm (1.0 kgf/m, 7.2 lbf/ft)
8 x 1.25 mm: 22 Nm (2.2 kgf/m, 16 lbf/ft)
*8 x 1.25 mm: 28 Nm (2.9 kgf/m, 21 lbf/ft)
10 x 1.25 mm: 38 Nm (3.9 kgf/m, 28 lbf/ft)
▶ : Sealing locations
NOTE: Seal the following areas to prevent water leak and rust.
Mastic sealer: 3M #08654 or equivalent.



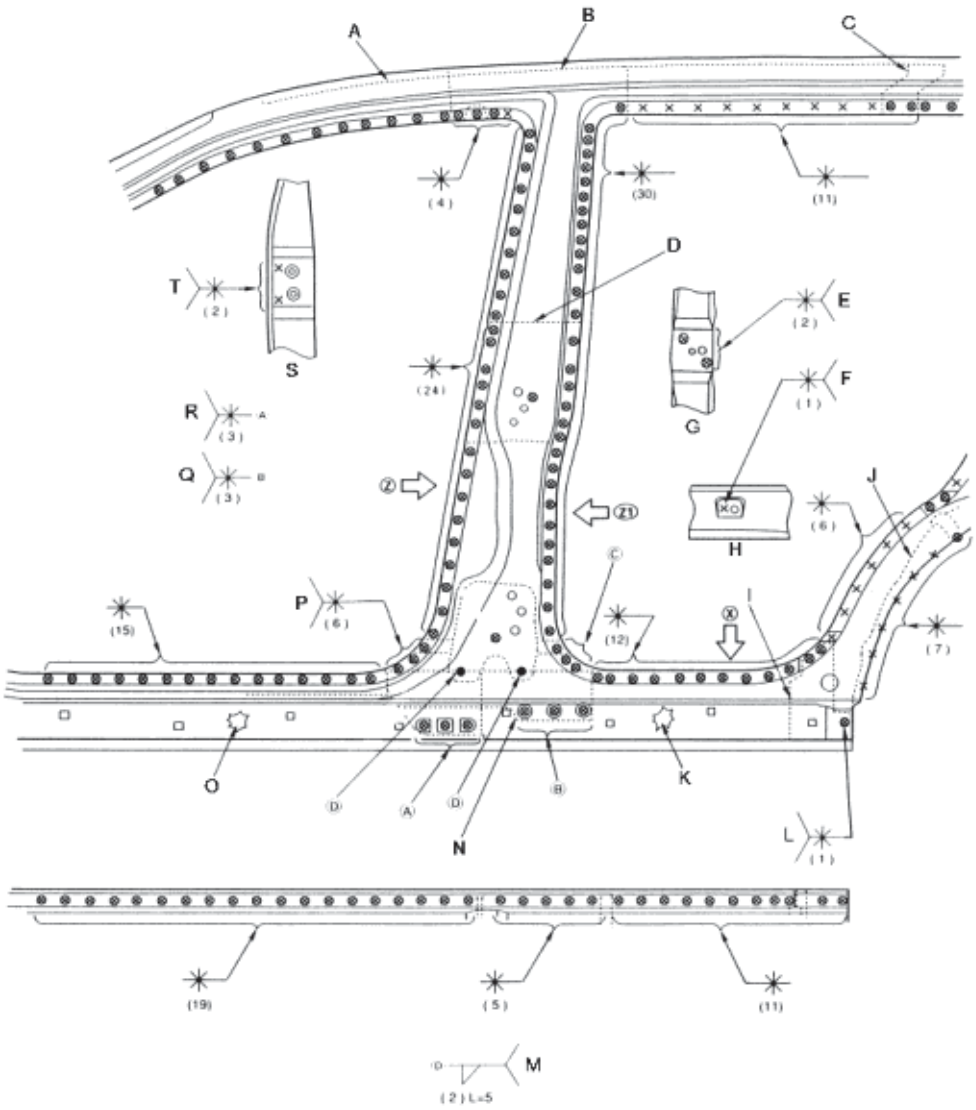
1. **HOOD HINGE**
2. **HOOD**
3. **POP NUT,** 4 mm (0.16 in), Staking stroke: 2.5 mm (0.1 in) (with mast antenna)
4. **TAILGATE HINGE**
5. **TAILGATE**
6. **REAR BUMPER EXTENSION**
7. **FUEL LID**
8. **REAR DOOR**
9. **DOOR HINGE**
10. **REAR FLOOR PIPE**
11. **FRONT DOOR**
12. **DOOR HINGE**
13. **FRONT FENDER**
14. **UPPER BEAM**
15. **FRONT BUMPER BEAM**

Side Sill (Outer Panel)

Mass Production Body Welding Diagram

4-4

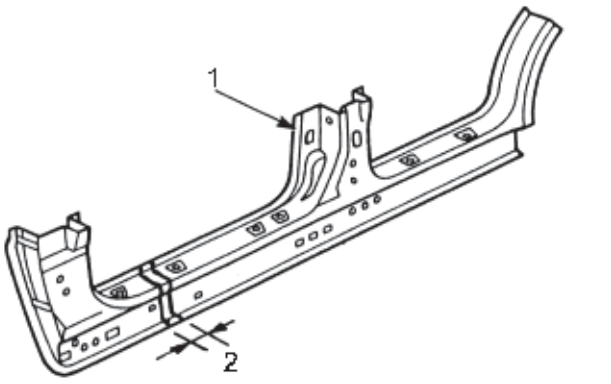
The side sill should, depending on the degree of damage, be repaired as much as possible rather than replaced (Repair by pulling out with slide hammer with pin and washer welded on).

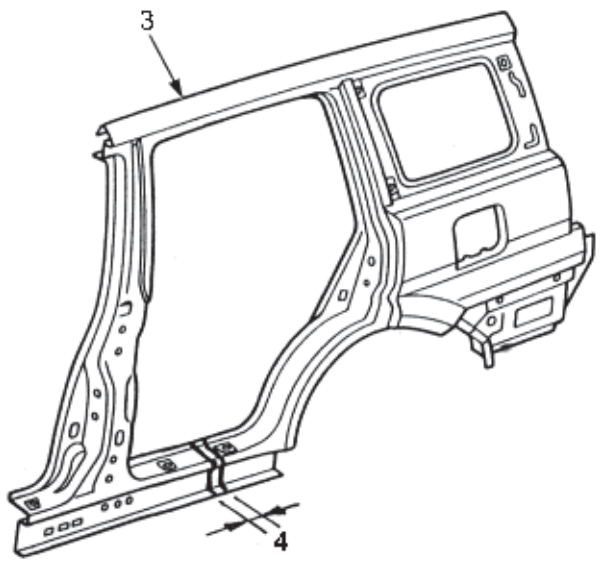


A. **Roof side rail**
B. **Centre pillar upper stiffener**
C. **Rear inner panel**
D. **Centre pillar stiffener**
E. **Outer panel and centre pillar stiffener**
F. **Outer panel and centre pillar stiffener**
G. **VIEW Z1**
H. **VIEW X**
I. **Centre pillar lower stiffener extension**
J. **Wheel arch extension**
K. **Centre pillar lower stiffener**
L. **Outer panel, side sill end bulkhead and centre pillar lower stiffener extension**
M. **Centre pillar lower stiffener, side sill stiffener and inside sill (passenger compartment)**
N. **Centre pillar stiffener**
O. **Side sill stiffener**
P. **Outer panel, centre inner panel, centre pillar lower stiffener and centre lower anchor (include C)**
Q. **Outer panel, centre pillar stiffener and centre pillar lower stiffener**
R. **Outer panel, centre pillar lower stiffener and side sill stiffener**
S. **VIEW Z**
T. **Outer panel and centre pillar stiffener**

1. Remove the related parts.
   - Doors (remove according to part damaged).
   - Side trim panel.
   - Door opening trim and door sill moldings.
   - Carpet.
   - Door switch.
   - Seat belt.
2. Pull out and straighten the damaged area.
   Damage may extend to the inside sill and floor.
   Determine the extent of the damage first, so that the frame can be pulled out properly.
3. Cut and pry off the side sill.
   - Check the damage on the outer side sill, then cut the repair outer side sill so it will overlap by 30 mm (1.2 in.) in the front and back.
   - Cut the side sill with a handsaw.

   NOTE: Be careful not to cut the inside sill, side sill stiffener, centre pillar stiffener and wheel arch extension. This could result in extensive repair.

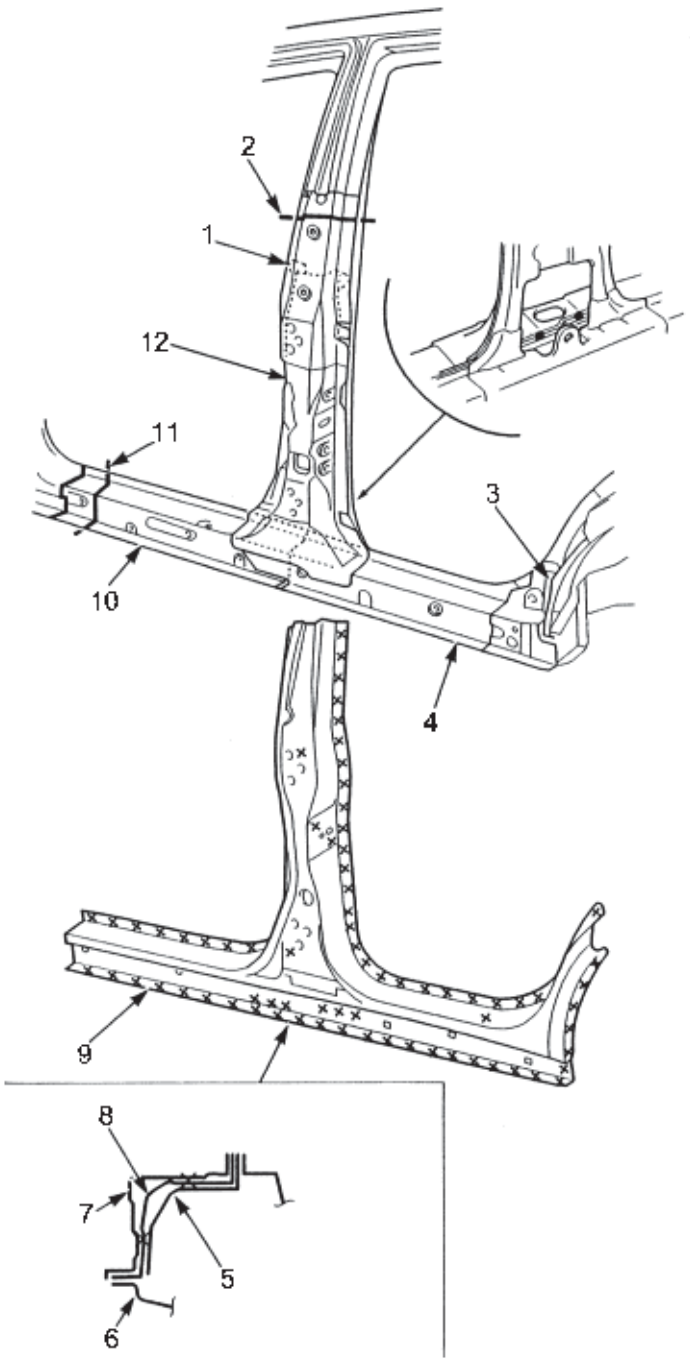




1. REPAIR PART
2. Overlap 30 mm (1.2 in)
3. REPAIR PART
4. Overlap 30 mm (1.2 in)

   - Centre punch around the spot weld imprints on the welded flange.
   - Drill holes using the spot cutter.
   - Pry of the welded flange with a chisel.

   NOTE: Be careful not to let the holes penetrate down to the inner section.
   - If the damage involves part of the centre pillar and rear wheel arch, cut them as shown with a handsaw.



1. CENTRE PILLAR UPPER STIFFENER
2. Cut line
3. WHEEL ARCH EXTENSION
4. CENTRE PILLAR LOWER STIFFENER
5. CENTRE PILLAR LOWER STIFFENER
6. INSIDE SILL
7. OUTER PANEL
8. SIDE SILL STIFFENER
9. OUTER PANEL
10. SIDE SILL STIFFENER
11. Cut line
12. CENTRE PILLAR STIFFENER

4. Check the side sill stiffener and centre pillar stiffener for position and damage. If necessary, replace them.

5. Straighten the related parts.
   - Fill any holed areas by MIG or gas welding.

⚠ WARNING

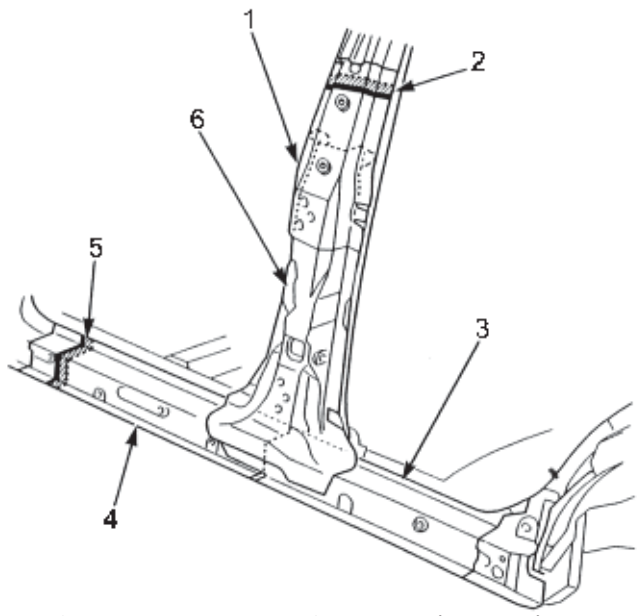
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Level and finish burrs at welded areas with a disc sander, then even them out with a hammer and dolly.
   - Sand off the undercoat from both sides of the flange to be welded.
6. Set the new side sill stiffener and centre pillar stiffener.
   - Cut the new stiffener so it overlaps the body side stiffener by approximately 20 mm (0.8 in).
   - Sand off the undercoat from both sides of the welded flange with a sander to expose the steel plate.

   NOTE: Apply the spot sealer to the welding surface when spot welding.
   - Clamp the new side sill stiffener, centre pillar stiffener and check the position of it using the body dimensional drawings (see section 6).
   - Tack weld the new side sill stiffener and centre pillar stiffener.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

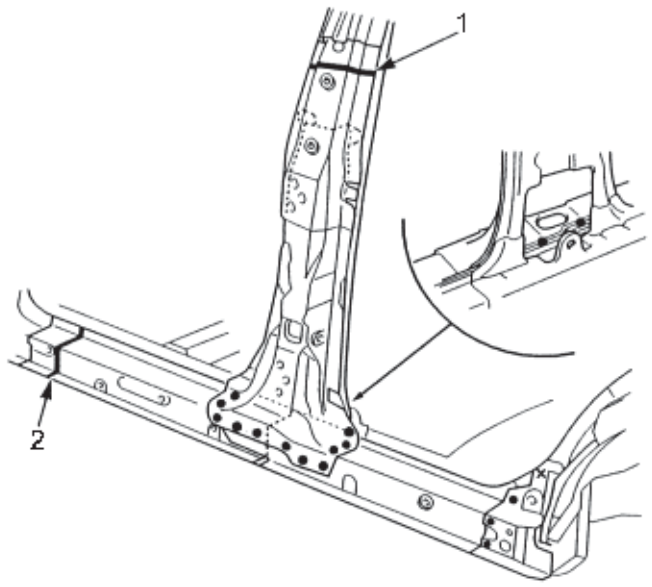


1. CENTRE PILLAR UPPER STIFFENER (New parts)
2. Overlap 20 mm (0.8 in)
3. CENTRE PILLAR LOWER STIFFENER (New parts)
4. SIDE SILL STIFFENER (New parts)
5. Overlap 30 mm (1.2 in)
6. CENTRE PILLAR STIFFENER (New parts)

   - Clamp the repair part and temporarily install the front and rear doors and check the door hinge mounting position.
   - Remove the repair parts.
7. Weld the new side sill stiffener and centre pillar stiffener.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



1. Fillet welding
2. Fillet welding

8. Set the repair part (outer panel).
   - Attach the patches at the cut sections of the centre pillar (body side) and wheel arch (body side) and plug weld them.
   - Sand off the undercoat from both sides of the welded flange on the repair part.
   - Clamp the repair part in place with vice-grips.

NOTE: Apply the spot sealer to the welding ssurface when spot welding.

   - Check the body dimensions.

9. Tack weld the repair part.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Remove the vice-grips and install the front fender and door. Check for differences in level and clearance.

10. Perform main welding.

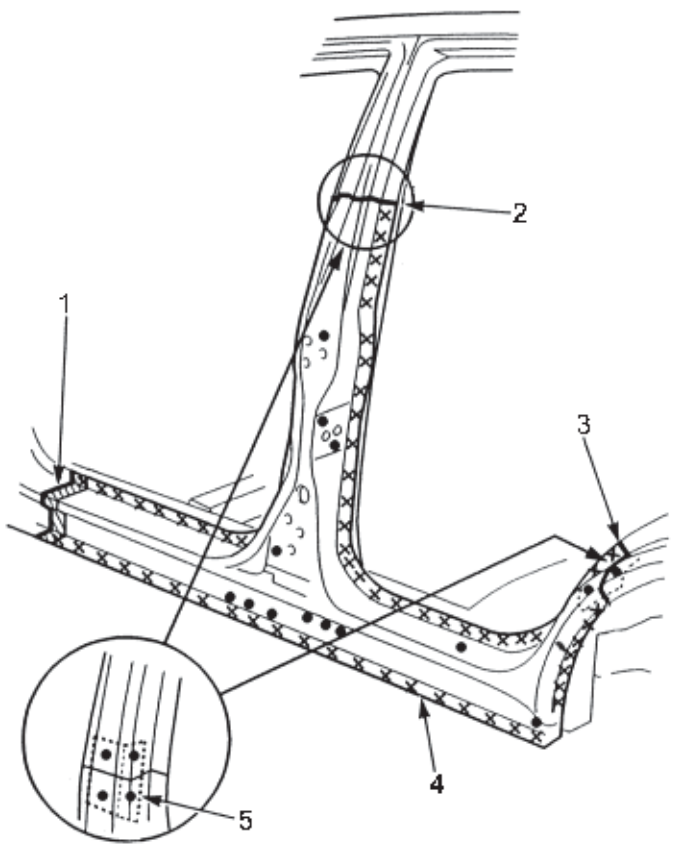
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

- Weld the side sill and rear side outer joints with a MIG welder.
- Spot weld the side sill flanges.
- Make 20% to 30% more spot welds than there were holes drilled.

NOTE: If there is no room for spot welds, compensate by using MIG welds.

- Make 5 mm (0.2 in.) holes in the MIG weld holes with the new outer panel, and weld the centre pillar lower stiffener and side sill stiffener with a MIG welder.



1. Fillet welding
2. Butt welding
3. Butt welding
4. OUTER PANEL (Repair part)
5. PATCH

- Level the weld beads at the front and rear with a disc sander. Hammer down the projections, then fill with solder or putty to finish it.

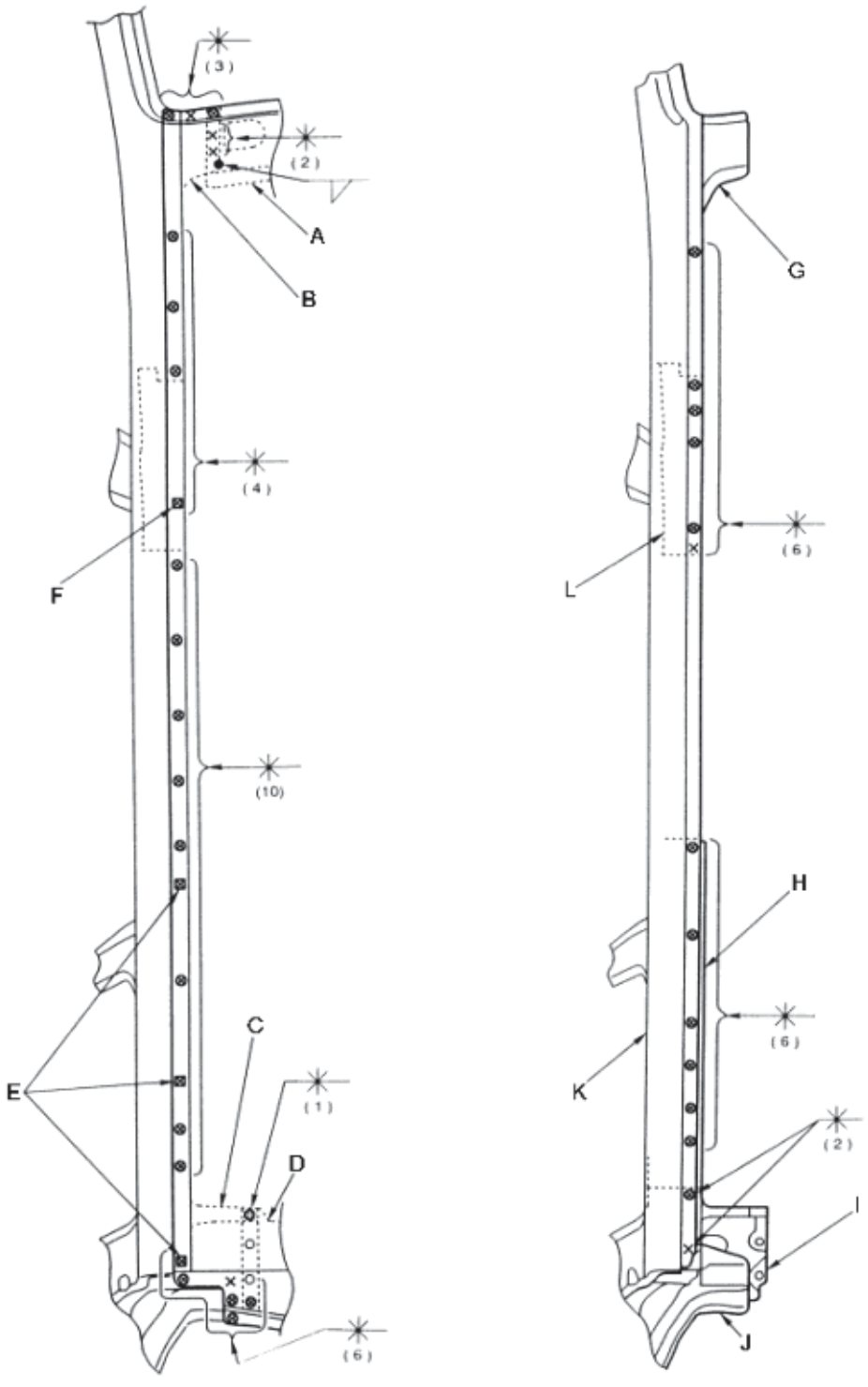
11. Apply sealer to the mating surfaces of the floor and inside sill.
12. Apply the paint. See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

13. Apply the undercoat.
    Undercoat the front floor, and apply an anti-rust agent to the inside of the side sill and centre pillar.
14. Install the related parts.
    - Install in the reverse order of removal.
    - Check the doors for proper installation and level differences from the fender.
15. Clean the passenger compartment and check for water leaks.

Deformation of the roof panel is highly noticeable in terms of the vehicle's outer appearance.
Before replacing the roof rail, make sure that the body is horizontal. Before welding the roof panel, adjust the roof rail flanges so that they contact the roof panel.
NOTE: When replacing the outer panel, drill holes at the areas where it joins to the roof side rail and rear inner panel as shown.

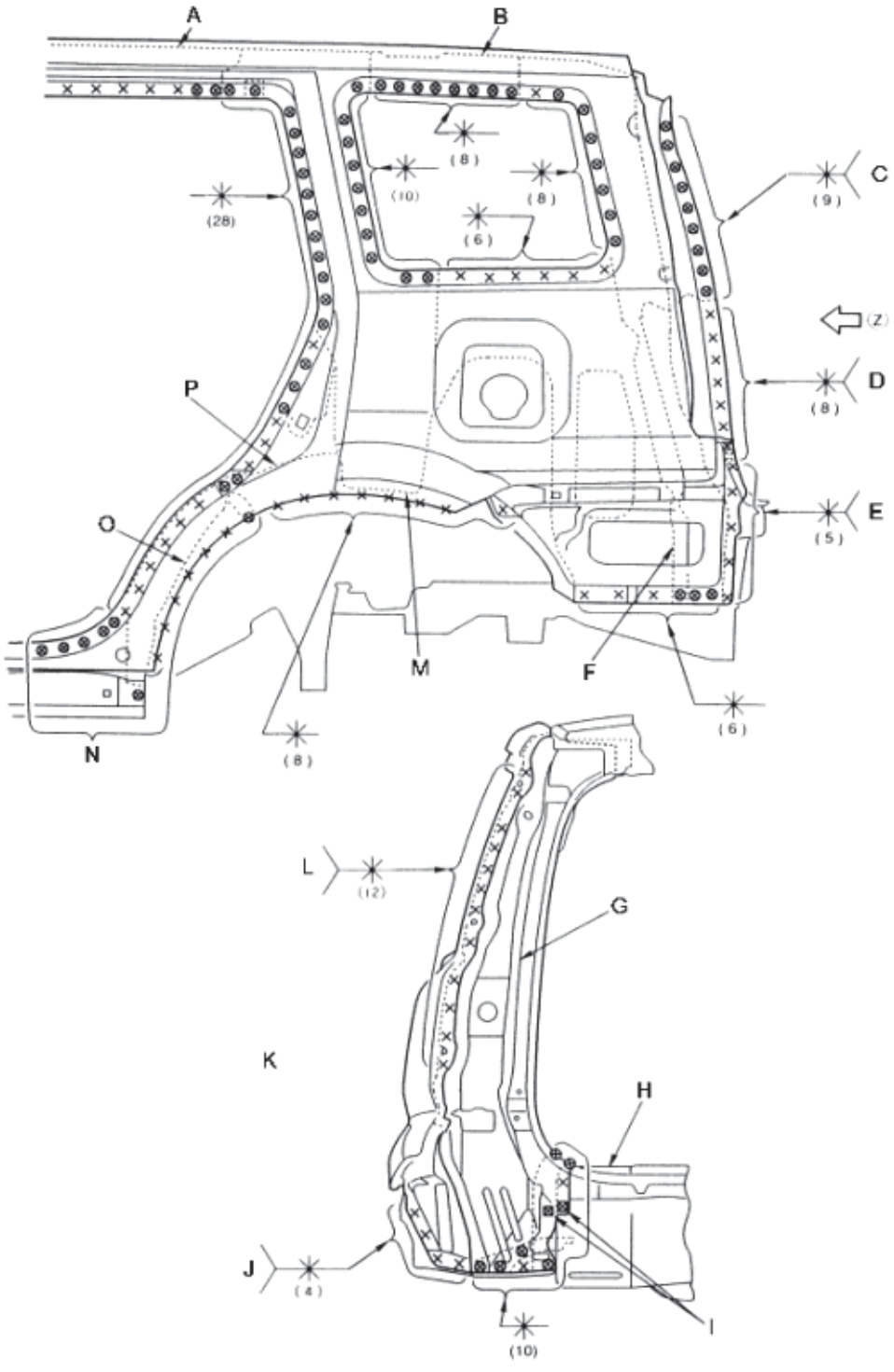


A. **Front roof rail**
B. **Roof side rail**
C. **Rear pillar stiffener**
D. **Rear roof rail**
E. **4-plate weldings**
F. **4-plate welding**
G. **Roof side rail**
H. **Rear inner panel**
I. **Rear pillar stiffener**
J. **Rear pillar gutter**
K. **Outer panel**
L. **Centre pillar upper stiffener**

Rear Side Outer Panel

Mass Production Body Welding Diagram

The rear side outer panel is a conspicuous part of the vehicle. It is especially important for the body line continuing from the door. Therefore, pay particular attention to it when conducting work. This part is also next to the trunk lid, door and rear window, and other parts and must be aligned with them.



A. Roof side rail
B. Rear inner panel
C. Rear pillar gutter, rear inner panel and rear pillar stiffener
D. Rear pillar gutter and rear pillar stiffener
E. Outer panel and rear pillar gutter
F. Rear pillar stiffener
G. Rear pillar gutter
H. Rear panel
I. 4-plate weldings
J. Outer panel and rear inner panel
K. VIEW Z
L. Outer panel and rear pillar gutter
M. Rear damper stiffener
N. Side sill (outer panel) (**see page** 4-5)
O. Rear wheel arch extension
P. Rear wheelhouse

1. Remove the related parts.
   - Rear bumper.
   - Tailgate.
   - Taillight.
   - Rear seat.
   - Rear seat belt.
   - Trim, trim panel and luggage compartment fitting.
   - Fuel fill pipe (left side only).

⚠ WARNING

Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.

2. Pull out and straighten the damaged area.
   NOTE: Carefully check the inner pillar and rear pillar gutter for position and damage. Pull out the inner panel by cutting the outer if necessary.
   - Jack-up the body and place safety stands at the four designated support points.
   - Pull out the damaged rear side outer panel with the frame straightener, then pull out and straighten the inner panel and rear wheelhouse.

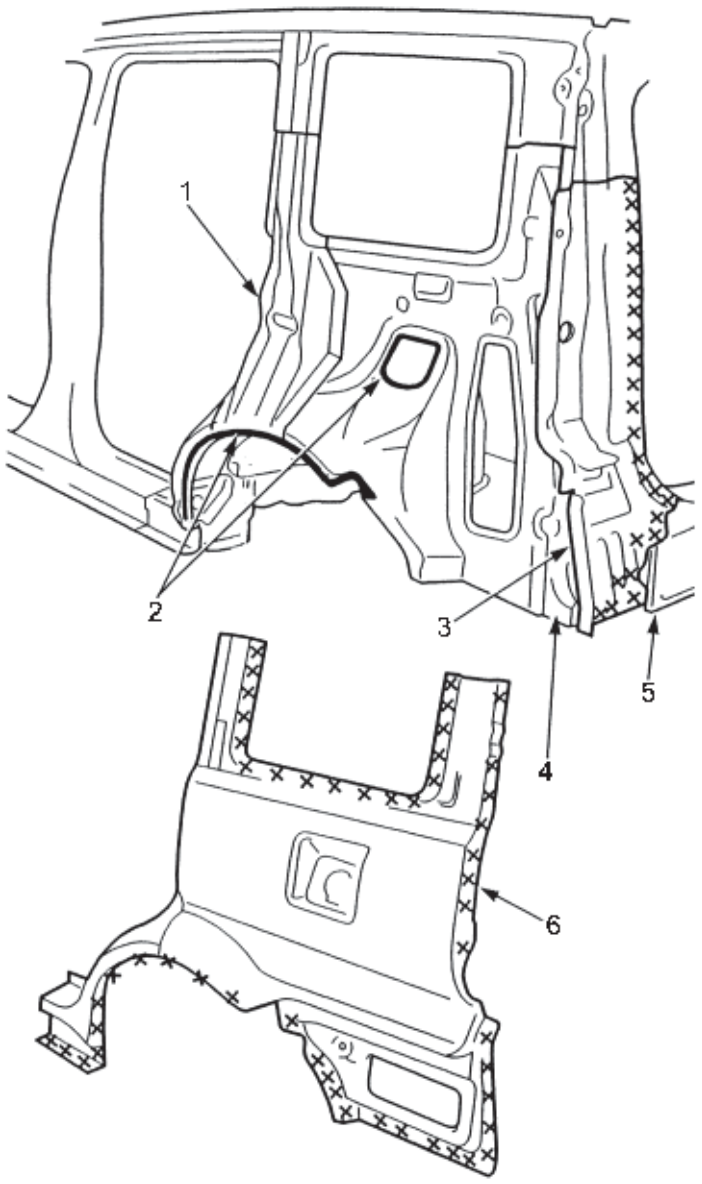
   NOTE: Be careful not to pull out more than necessary.
   - After pulling, check the inner pillar and rear panel gutter position using the body dimensional drawings (see section 6).
3. Peel off the undercoat.
   Heat the undercoat at the weld areas of the rear wheel house with a gas torch and peel off the undercoat with metal spatula.

⚠ WARNING

Do not smoke while working near the fuel system. Keep open flame away from the fuel system. If necessary, remove the fuel tank and/or lines before welding nearby. Drain fuel into an approved container.

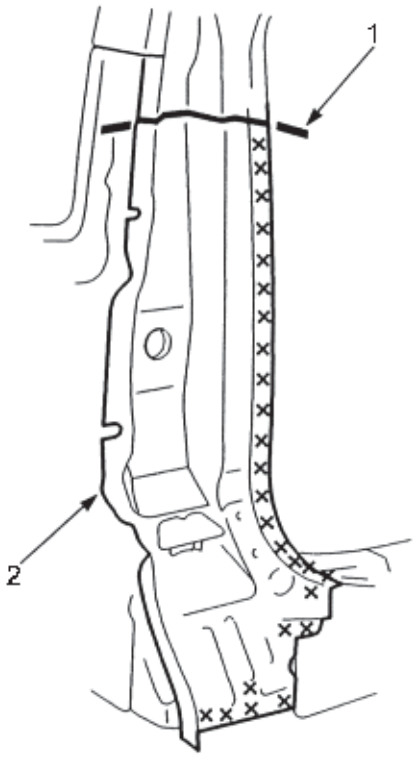
4. Cut and pry off the rear side outer panel.
   - Cut at the quarter pillar, rear pillar and side sill with a handsaw.
   - Cut the panel from the body with a chisel, leaving the weld flange at the inner panel intact.

   NOTE: Do not cut or damage the centre pillar lower stiffener, inner panel, rear damper stiffener and rear pillar gutter.
   - Cut at the side sill or wheel arch according to the extent of the damage.
   - Centre punch around the spot weld imprints on the remaining flange.
   - Drill out the spot welds with the spot cutter.
   - Pry off the welded flange sections using a chisel.



1. REAR DAMPER STIFFENER
2. MASTIC SEALERS
3. REAR PILLAR GUTTER
4. REAR PILLAR STIFFENER
5. REAR PANEL
6. OUTER PANEL

5. Check the rear pillar gutter for position and damage. Replace the rear pillar gutter if necessary.
6. Cut and drill out the spot welds and pry off the rear pillar gutter.
   - Cut the rear pillar gutter at under portion from the outer panel cut line.



1. Cut line
2. REAR PILLAR GUTTER

7. Straighten the inner panel and related parts.
   - Use a slide hammer to even out the damaged areas of the rear wheel arch.
   - Fill the holes drilled by MIG or gas welding.

⚠ WARNING

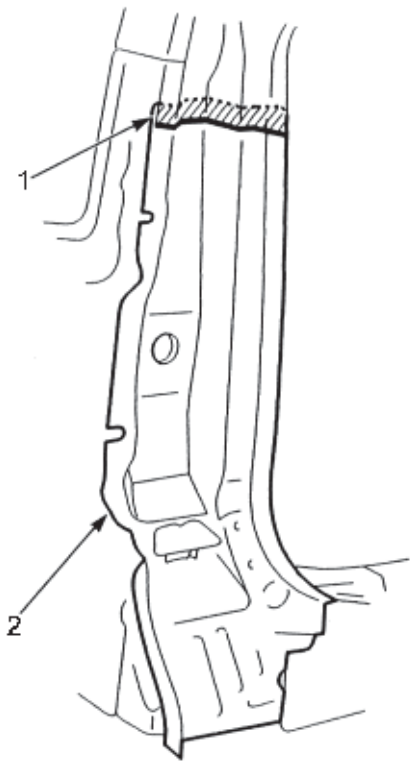
To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

   - Level and finish burrs, etc. with a disc sander.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

8. Cut the new rear pillar gutter so it overlaps the body side gutter by approximately 20 mm (0.8 in).
   - Cut the rear pillar gutter at under portion from the outer panel cut line.



1. Overlap 20 mm (0.8 in)
2. REAR PILLAR GUTTER (New part)

9. Clamp and check the rear pillar gutter in its correct position using the body dimensional drawings.
   - Remove the undercoat from both sides of the weld flange with a sander to expose the steel plates.

   NOTE: Apply the spot sealer to the weeelding surface and the clamped positions.
10. Temporarily spot weld the rear pillar gutter at he clamped positions.

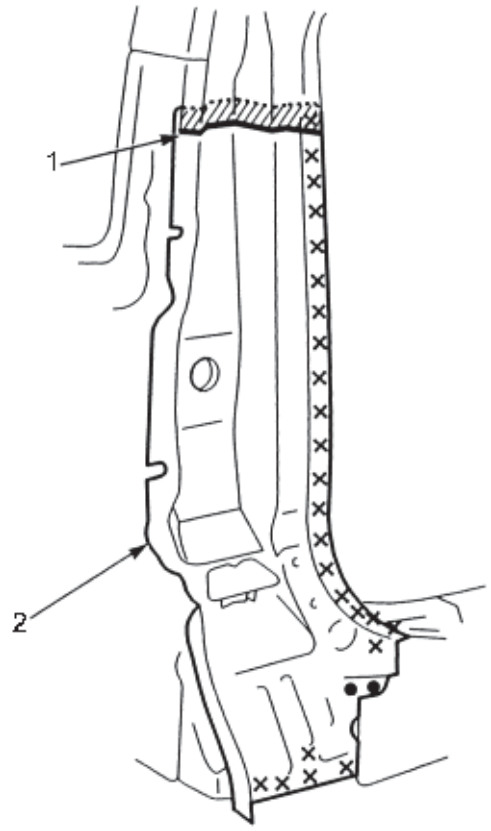
⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.

11. Cut and clamp the repair part.
    - Cut so that the repair part overlaps the side sill by 30 mm (1.2 in.).
    - Remove the undercoat from both sides of the weld flange with a sander to expose the steel plate.
12. Check the position of the repair part using the body dimensional drawings (see section 6).
13. Remove the repair part and weld the new centre pillar stiffener and the new rear pillar gutter.

⚠ WARNING

To prevent eye injury and burns when welding, wear an approved welding helmet, gloves and safety shoes.



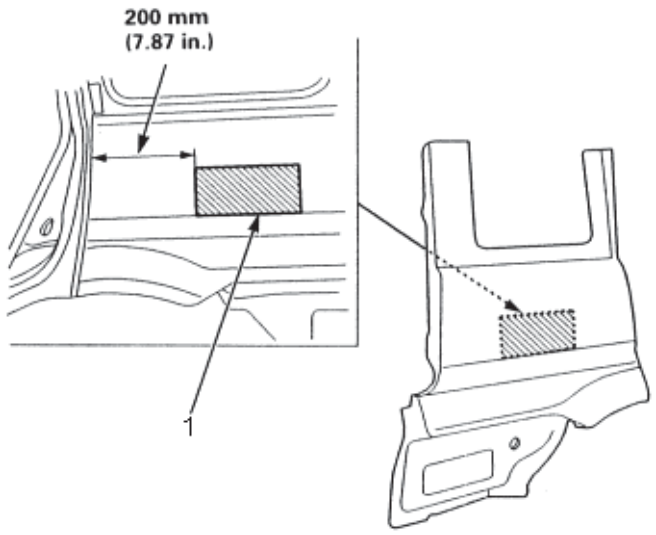
1. Fillet welding
2. REAR PILLAR GUTTER (New part)

14. Apply body paint to the back of the repair part.
    - See Paint Repair section.

⚠ WARNING

- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

15. Apply the reinforcement tape to the inside face of the repair part as shown (right side only).
    NOTE:
    - Before applying, clean the repair part surface with a sponge dampened in alcohol.
    - After applying, heat the reinforcement tape equally for about 30 minutes with a drier.



1. REINFORCEMENT TAPE (P/N 67112-S50-310)

16. Set and tack weld repair part.
    - Attach the patch at cut section of the quarter pillar and rear pillar (body side) and plug weld it.

⚠ WARNING

To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

NOTE: Apply the spot sealer to the welding surface when spot welding.

17. Remove the vice-grips and check the alignment of the taillight, door, rear bumper and tailgate.
    NOTE:
    - Check for flushness of the front fender, door and the rear fender, taillight, rear bumper and make sure that the body lines flow smoothly.
18. Perform the main welding.

⚠ WARNING

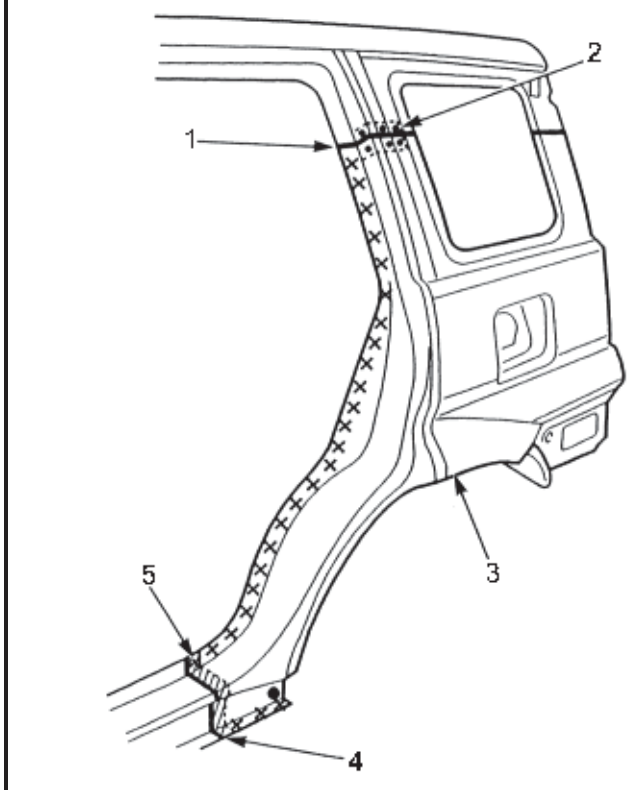
To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

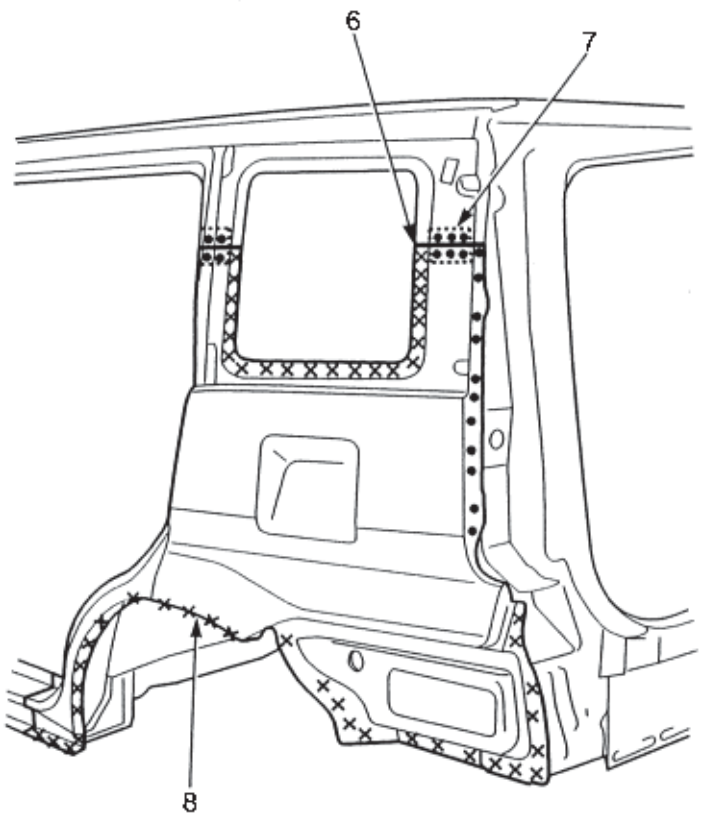
- Make 20% to 30% more spot welds than there were holes drilled.

NOTE: If there is not room for spot welds, compensate by using MIG welds.

- Make 5 mm (0.2 in.) holes in the MIG weld hole with the repair part and the rear pillar gutter with a MIG welder.

- Weld the outer panel at the quarter pillar, rear pillar and side sill with a MIG welder.





1. Butt welding
2. PATCH
3. OUTER PANEL (Repair part)
4. Fillet welding
5. Overlap 30 mm (1.2 in.)
6. Butt welding
7. PATCH
8. OUTER PANEL (Repair part)

19. Finish the welded areas.
    - Level the MIG welded areas with a disc sander.

⚠ WARNING

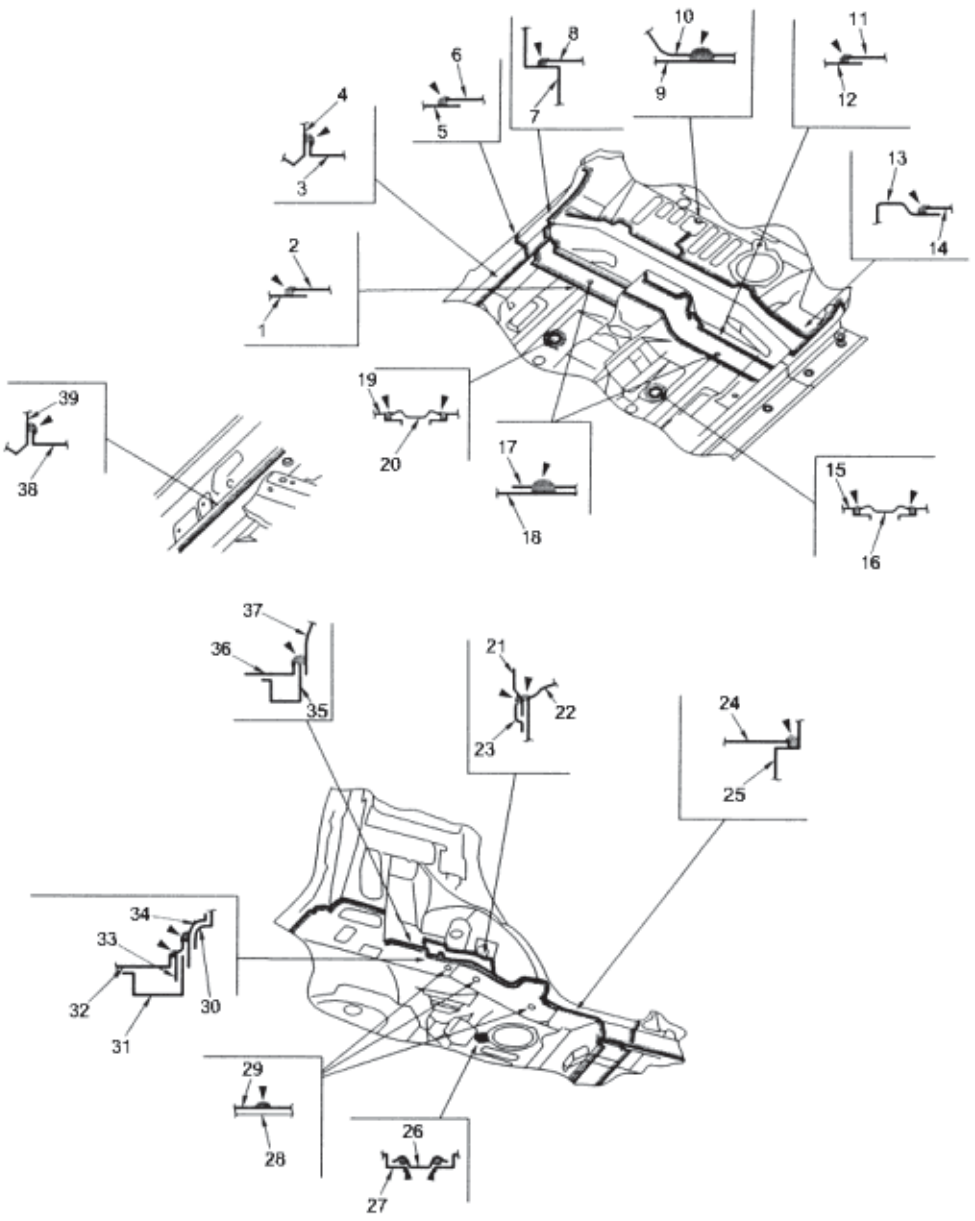
To prevent eye injury, wear goggles or safety glasses whenever sanding, cutting or grinding.

    - Even out high areas with a hammer. Be careful not to deform them.
    - Even out the spot welded flange areas with a hammer and dolly.
    - Fill in deformations and level differences of the welded areas with solder or putty, then finish.
20. Apply the sealer (see section 5).
    Apply sealer to the fuel filler sections, tailgate opening joint and around the taillight area of the rear pillar gutter.
21. Apply paint. See Paint Repair section.

⚠ WARNING

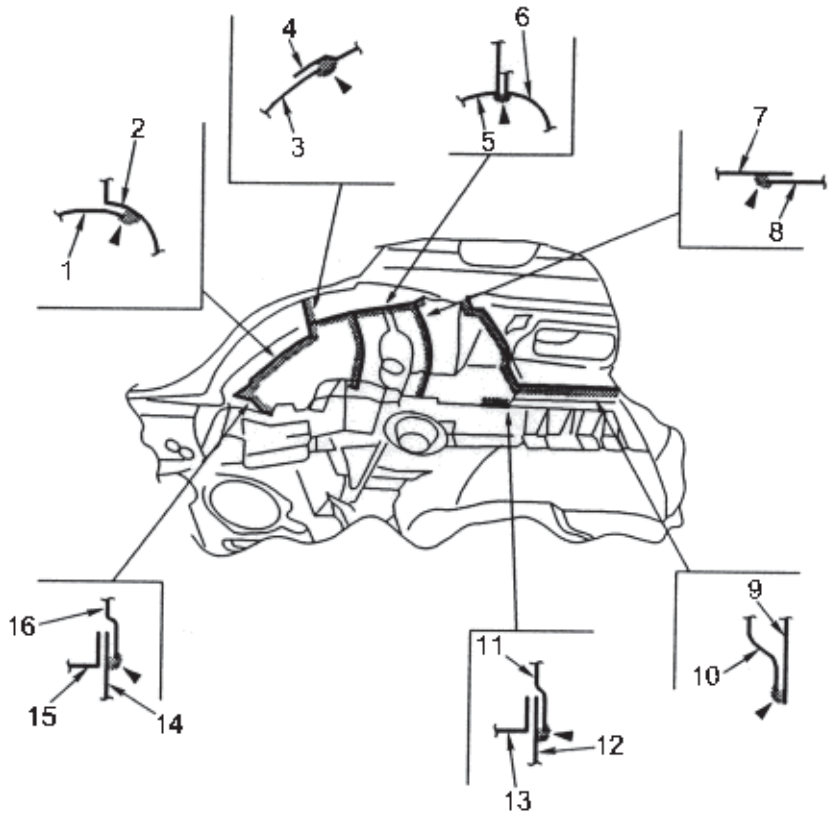
- Ventilate when spraying paint. Most paint contains substances that are harmful if inhaled or swallowed. Read the paint label before opening the paint container.
- Avoid contact with skin. Wear an approved respirator, gloves, eye protection and appropriate clothing when painting.
- Paint is flammable. Store it in a safe place and keep it away from sparks, flames or cigarettes.

22. Apply the undercoat.
    Apply undercoat to the wheelhouse and apply anti-rust agent to the inside of the outer panel and rear pillar gutter.
23. Install the related parts in the reverse order in which they were removed.
24. Inspect, check and clean.
    - Adjust the clearance with the door and tailgate then adjust the level differences and fit.
      Check operation.
    - Test for leaks in the trunk and passenger compartments.
    - Check the quarter glass for water leaks.
    - Clean the trunk floor.



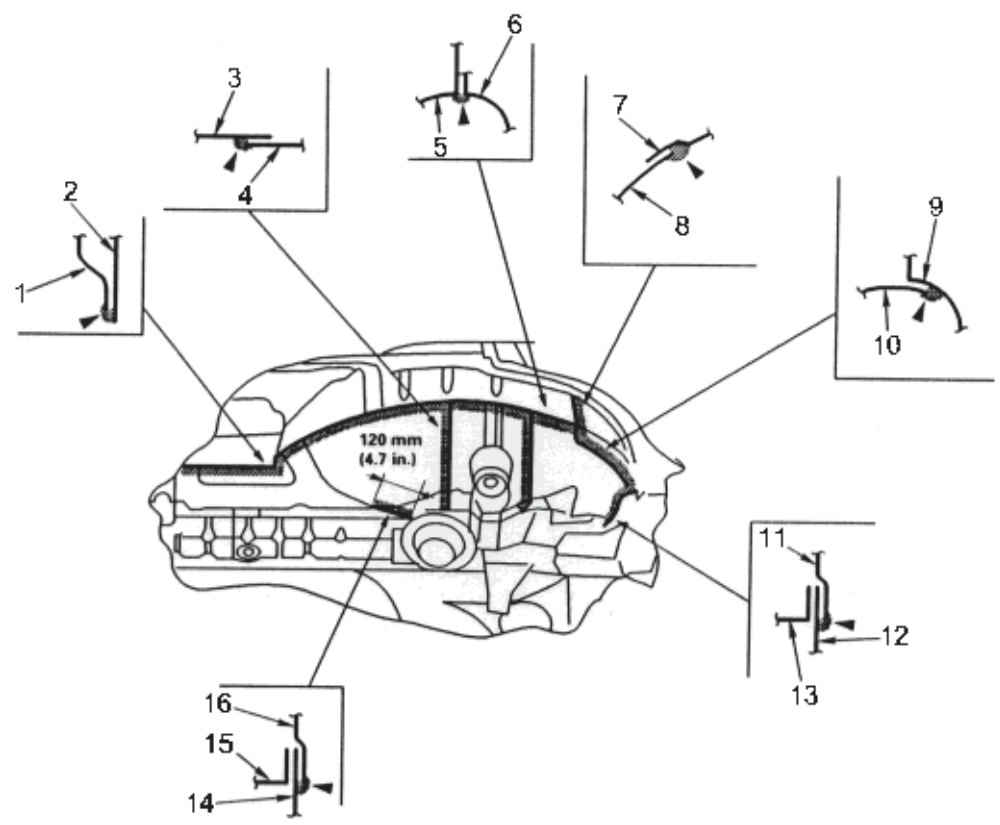
1. **Front floor**
2. **Middle floor extension**
3. **Front floor**
4. **Side sill**
5. **Side sill**
6. **Side sill extension**
7. **Side sill**
8. **Middle floor**
9. **Rear seta centre bracket**
10. **Rear floor**
11. **Middle floor**
12. **Middle floor extension**
13. **Middle floor**
14. **Rear floor**
15. **Front floor**
16. **Floor cap**
17. **Middle floor extension**
18. **Front floor**
19. **Front floor**
20. **Floor cap**
21. **Seat bracket**
22. **Rear wheelhouse**
23. **Stiffener extension**
24. **Rear floor**
25. **Side sill extension**
26. **Floor cap**
27. **Rear floor**
28. **Rear frame**
29. **Rear floor**
30. **Damper base**
31. **Rear frame**
32. **Rear floor**
33. **Stiffener extension**
34. **Rear wheelhouse**

Left side:



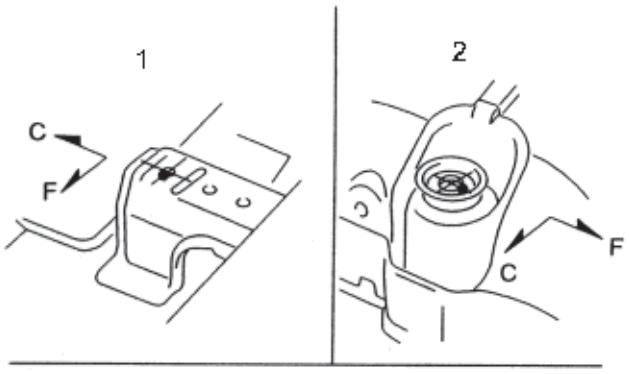
1. **Wheel arch extension**
2. **Wheelhouse**
3. **Wheel arch extension**
4. **Rear inner**
5. **Rear inner**
6. **Wheelhouse**
7. **Wheelhouse**
8. **Damper base**
9. **Inner panel**
10. **Outer**
11. **Wheelhouse**
12. **Rear frame**
13. **Rear floor**
14. **Rear frame**
15. **Rear floor**
16. **Wheelhouse**

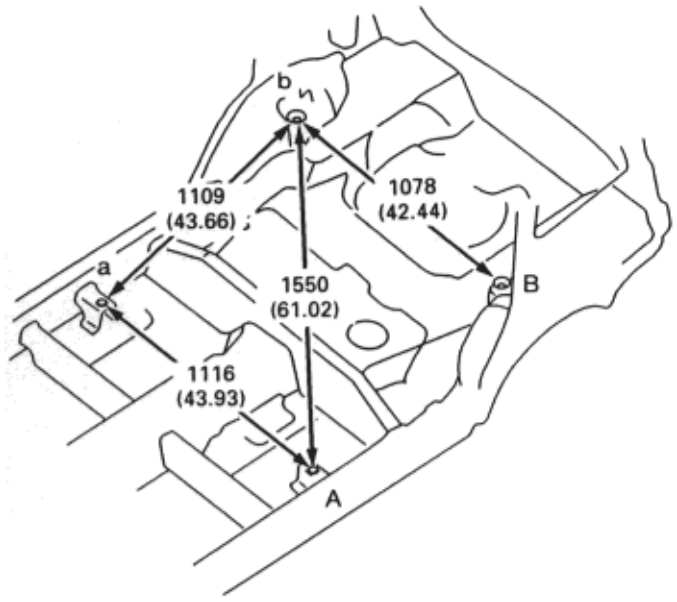
Right side:



1. **Outer**
2. **Inner**
3. **Wheelhouse**
4. **Damper base**
5. **Rear inner**
6. **Wheelhouse**
7. **Rear inner**
8. **Wheel arch extension**
9. **Wheelhouse**
10. **Wheel arch extension**
11. **Wheelhouse**
12. **Rear frame**
13. **Rear floor**
14. **Rear frame**
15. **Rear floor**
16. **Wheelhouse**

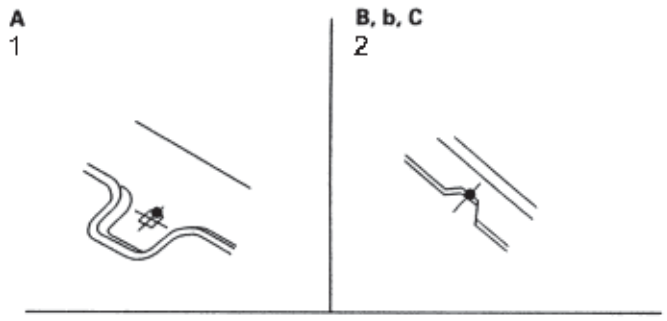
(Passenger Compartment)
Unit: mm (in.)

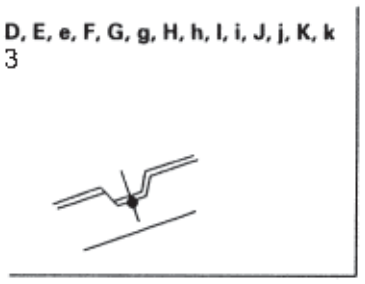


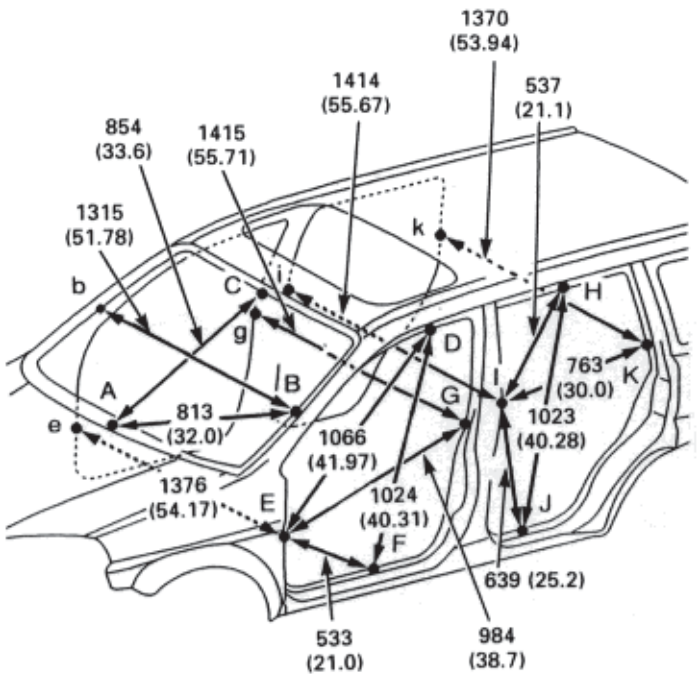


1. FRONT SEAT BRACKET POINT 8 (0.31)
2. REAR DAMPER MOUNTING HOLE 24 (0.94)

(Windshield/Door Opening)
Unit: mm (in.)

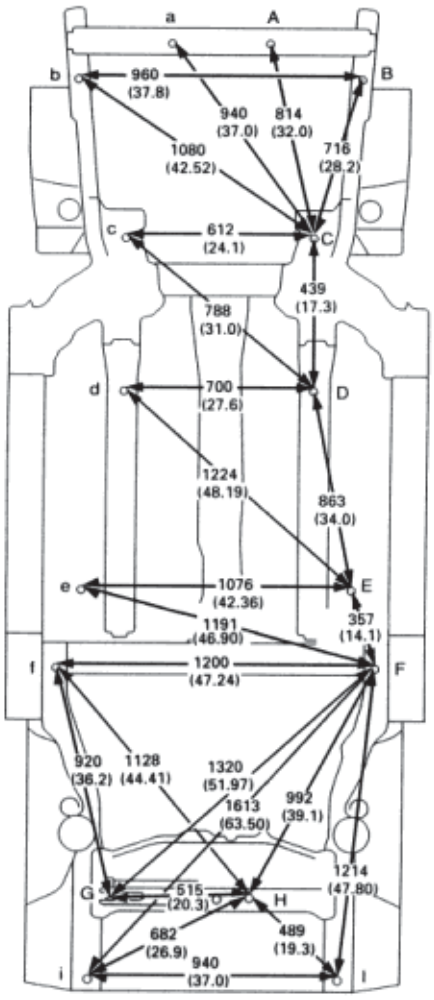


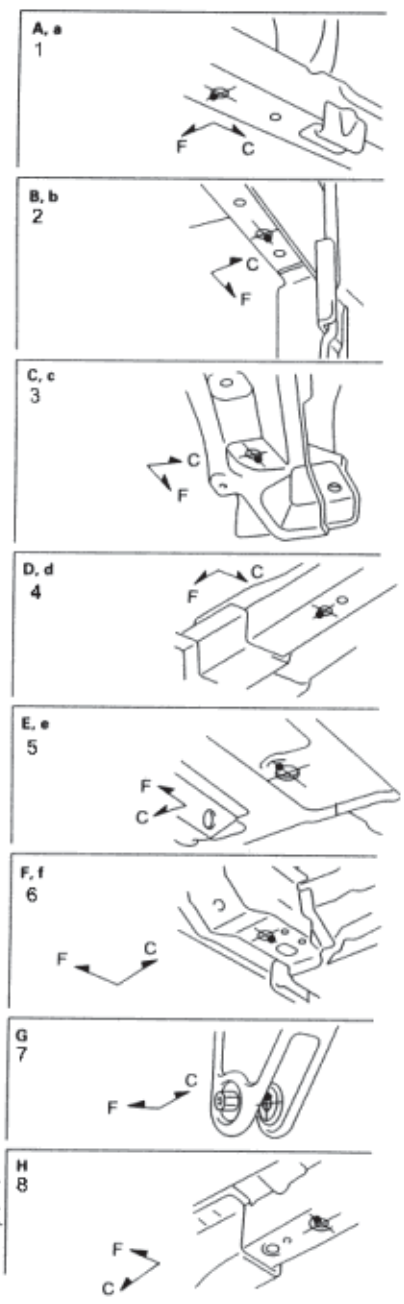




1. **A**
   Windshield lower cowl cover mounting hole
2. **B, b, C**
   Windshield opening flange notch
3. **D, E, e, F, G, g, H, h, I, i, J, j, K, k**
   Door opening flange notch

Unit: mm (in.)

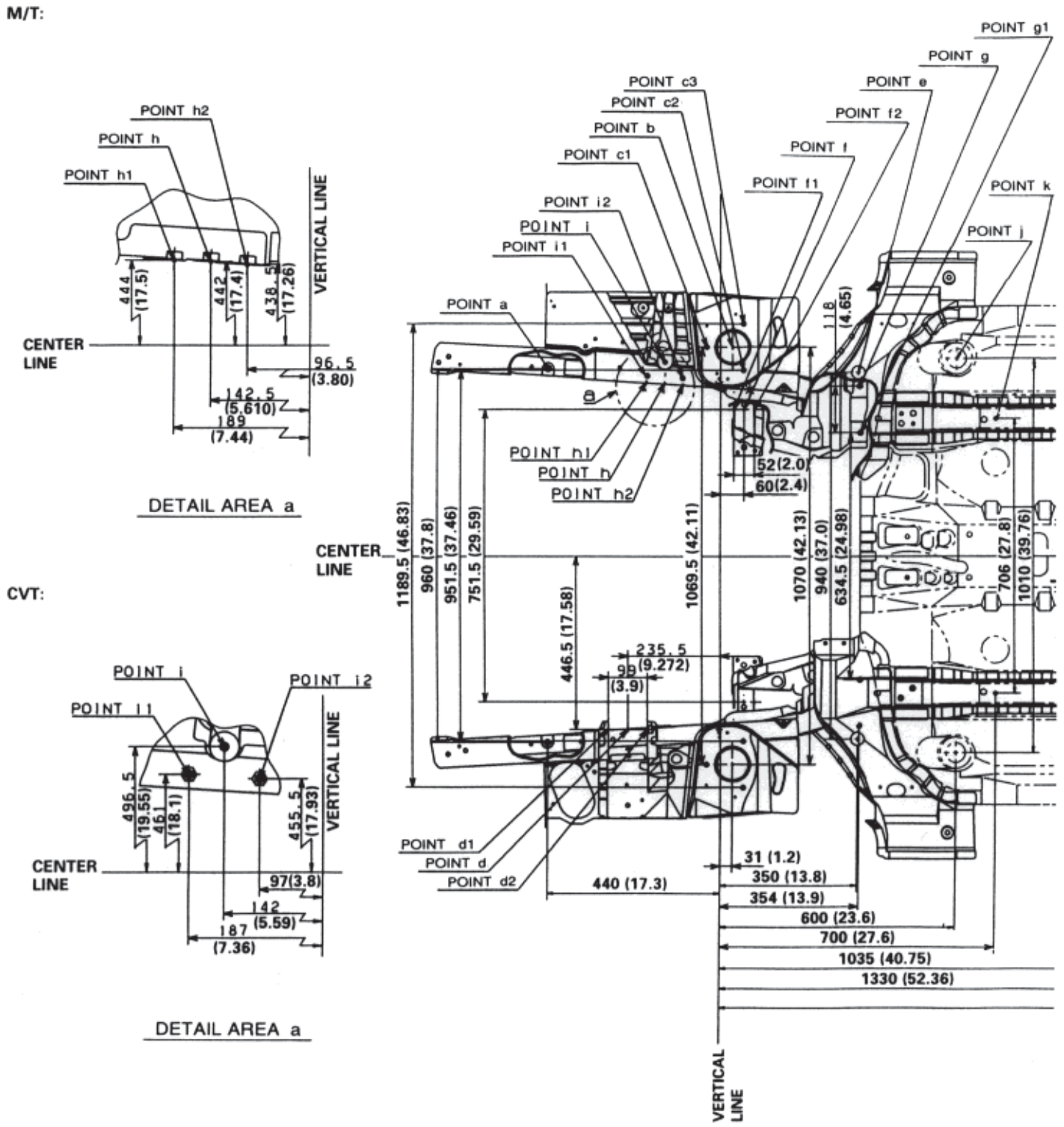




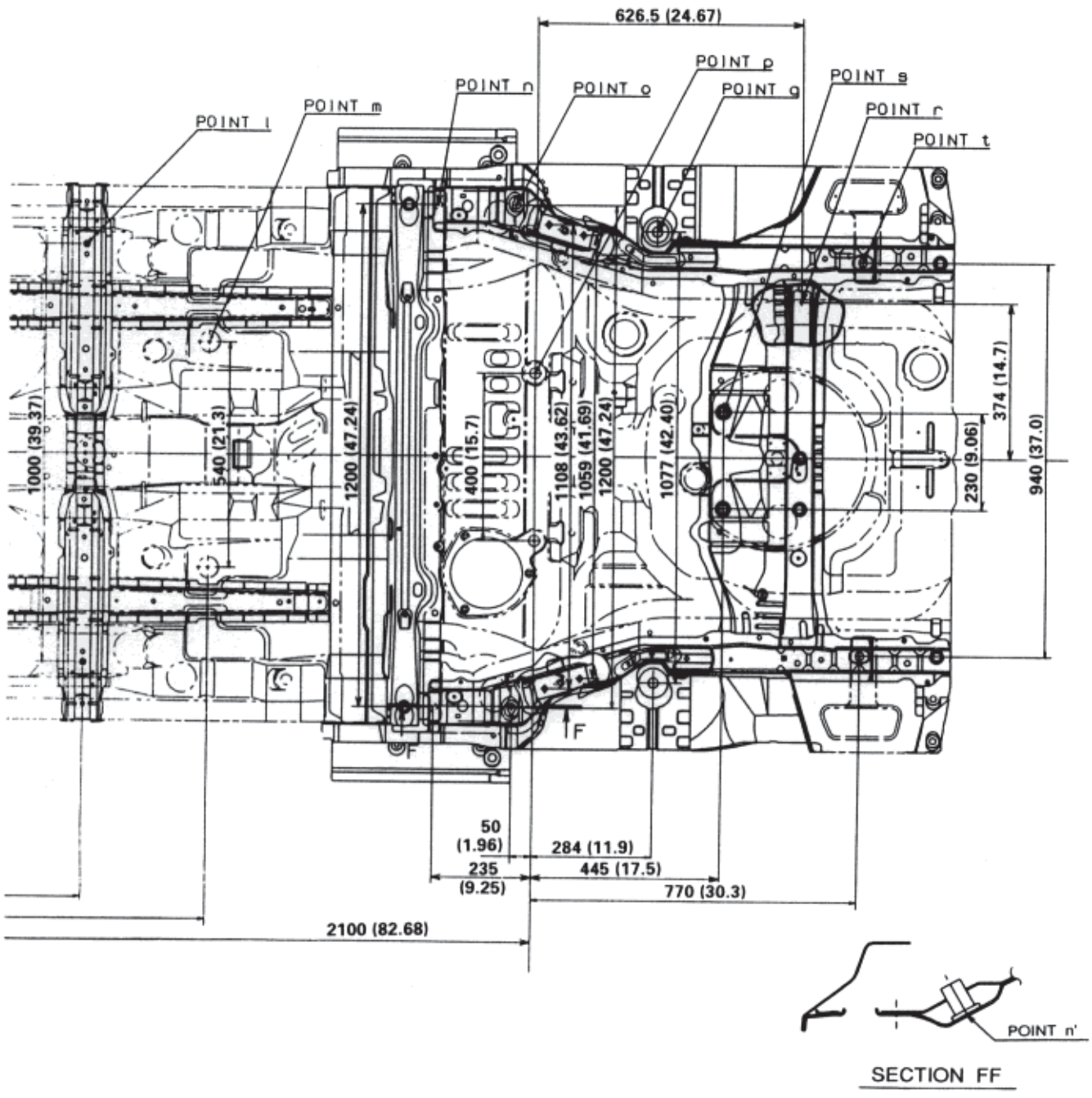
1. **A, a**
   FRONT LOWER CROSS-MEMBER POINT 14 (0.55)
2. **B, b**
   FRONT SIDE FRAME POINT 16 (0.63)
3. **C, c**
   REAR BEAM MOUNTING HOLE 16 (0.63)
4. **D, d**
   FLOOR FRAME POINT 14 (0.55)
5. **E, e**
   FRONT FLOOR POINT 15 (0.59)
6. **F, f**
   REAR FRAME POINT 20 (0.8)
7. **G**
   PANHARD ROD MOUNTING HOLE 12 (0.47)
8. **H**
   REAR FLOOR CROSS-MEMBER POINT 20 (0.8)
9. **I, i**
   REAR FRAME POINT 20 (0.8)
10. Left side
11. Right side

Top View:
Unit: mm (in.)

M/T:

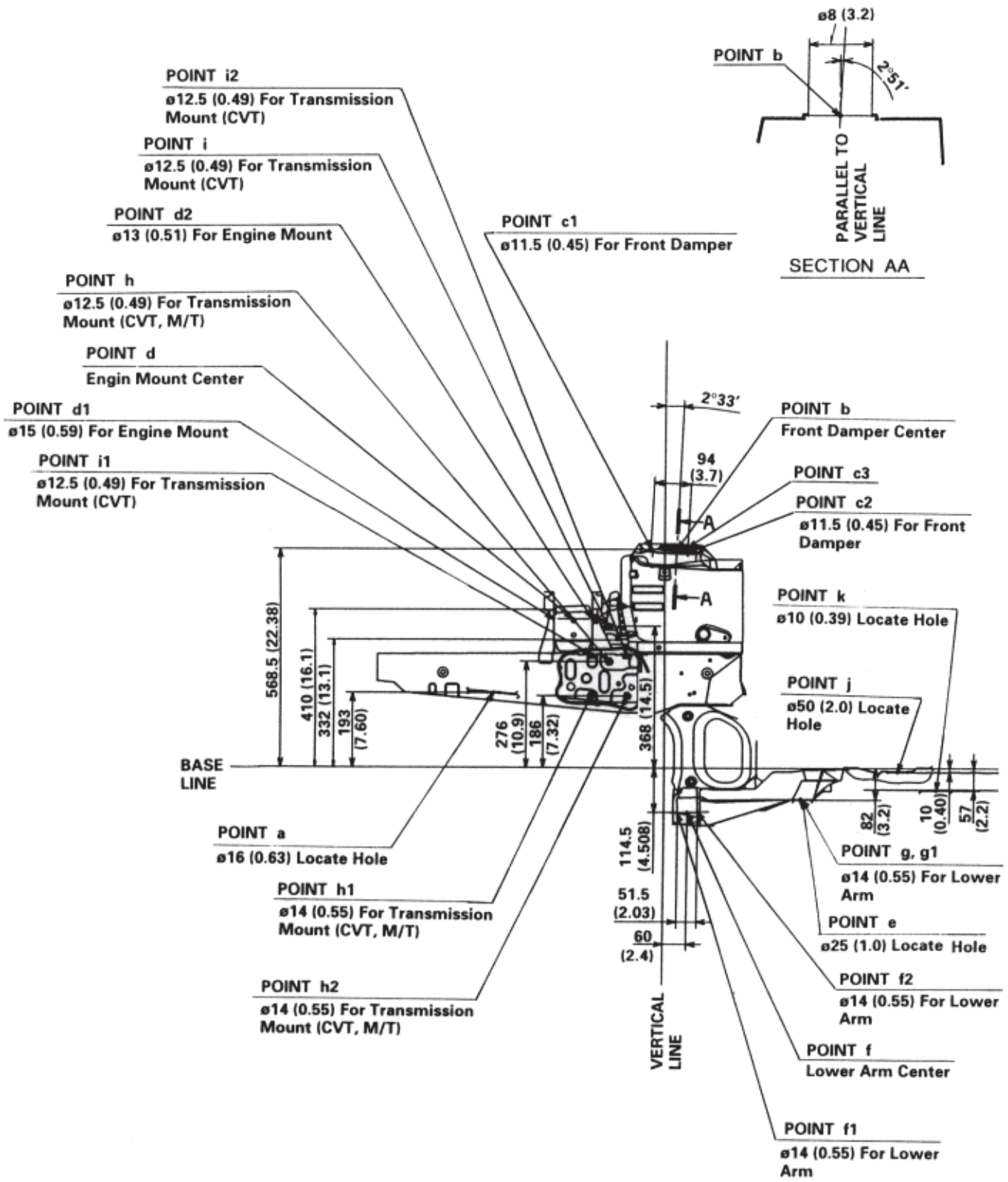


CVT:


626.5 (24.67)
POINT l
POINT m
POINT n
POINT o
POINT p
POINT q
POINT s
POINT r
POINT t
1000 (39.37)
540 (21.3)
1200 (47.24)
400 (15.7)
1108 (43.62)
1059 (41.69)
1200 (47.24)
1077 (42.40)
374 (14.7)
230 (9.06)
940 (37.0)
F
F
50
(1.96)
284 (11.9)
235
(9.25)
445 (17.5)
770 (30.3)
2100 (82.68)
POINT n'

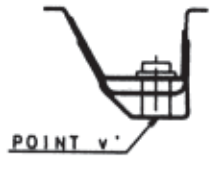
SECTION FF

Side View:
Unit: mm (in.)
Ø: Inner diameter

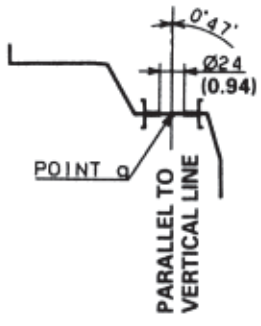




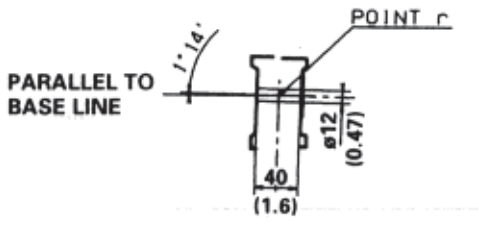
SECTION HH



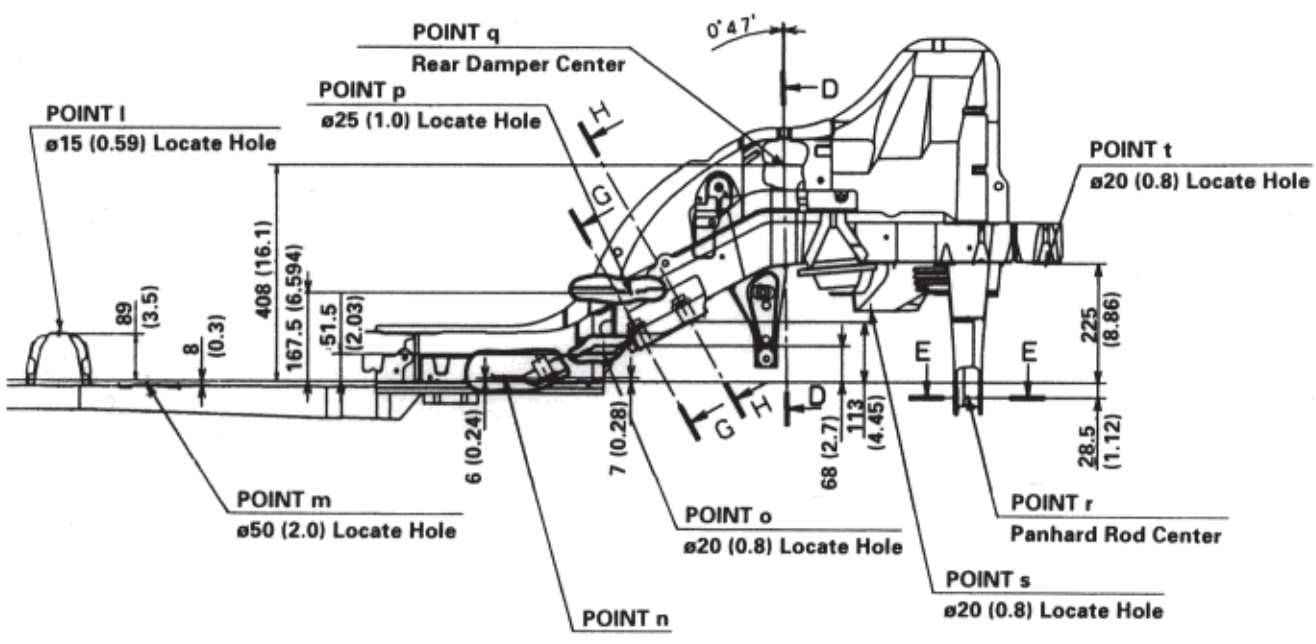
SECTION GG



SECTION DD

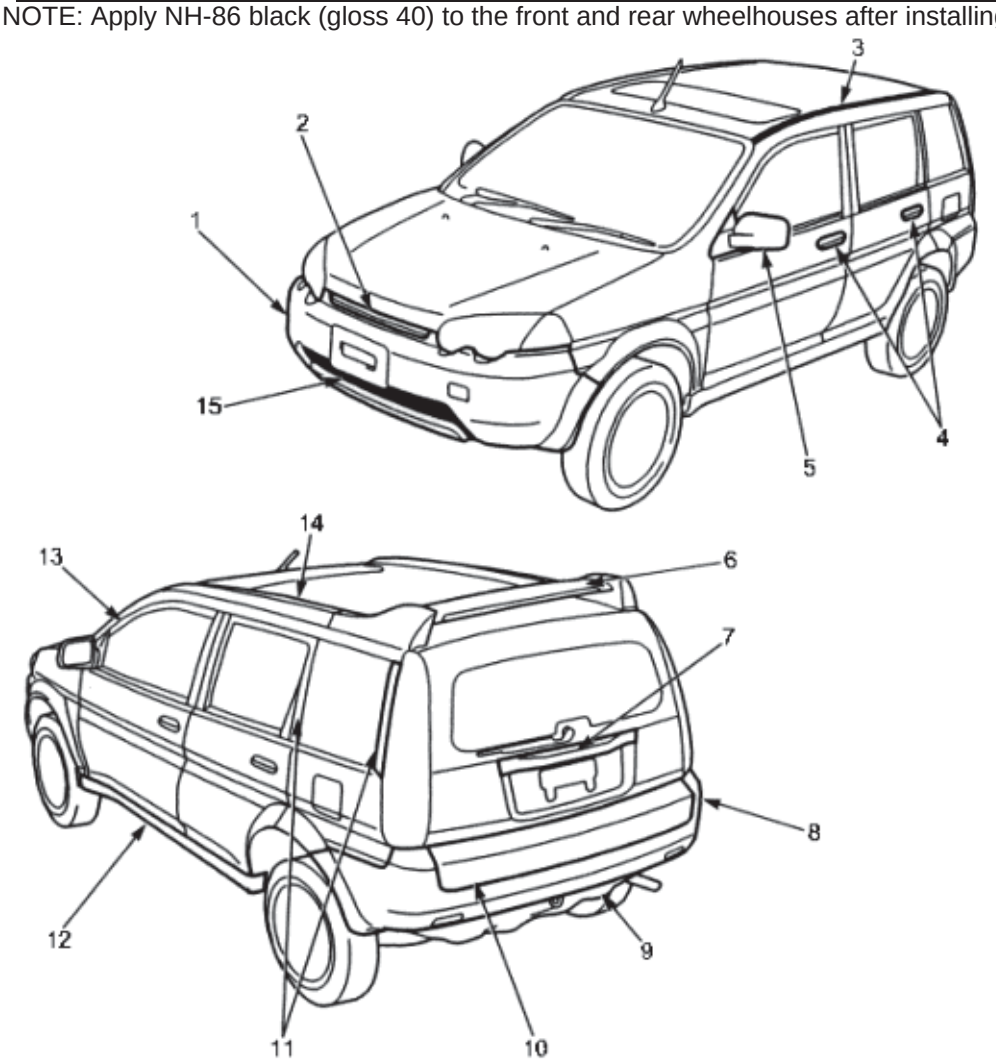


SECTION EE



Type	Body Colour Code Name
KG	New Vogue Silver Metallic, NH-583M Starlight Black Pearl, NH-592P Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P
KE	New Vogue Silver Metallic, NH-583M Starlight Black Pearl, NH-592P Mirano Red, R-81 Sunburst Yellow Metallic, Y-57M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P
KY	Taffeta White, NH-578 Lightening Silver Metallic, NH-617M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P Ruby Red Pearl, R-504P
KN	Taffeta White, NH-578 Lightening Silver Metallic, NH-617M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P Ruby Red Pearl, R-504P
KT	Taffeta White, NH-578 Lightening Silver Metallic, NH-617M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P Ruby Red Pearl, R-504P
KQ	Taffeta White, NH-578 Lightening Silver Metallic, NH-617M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P Ruby Red Pearl, R-504P
KU	Lightening Silver Metallic, NH-617M Super Sonic Blue Pearl, R-90P Fresh Copper Metallic, YR-532M Tropic Jade Pearl, R-504P Ruby Red Pearl, R-504P Eternal Blue Pearl, B-96P

NOTE: Apply NH-86 black (gloss 40) to the front and rear wheelhouses after installing equipment (except vehicle painted with NH592P, G-95P, B-90P, B-74P and B-96P).



1. **FRONT BUMPER**
   Body colour
2. **FRONT GRILLE**
   BP - Dark Grey, NH-533
3. **ROOF MOLDING**
   Black NH-72 (Gloss 30)
4. **DOOR OUTER HANDLE**
   Body colour
5. **DOOR MIRROR**
   Body colour
6. **ROOF SPOILER**
   Body colour (for some models)
7. **REAR LICENSE TRIM**
   Body colour
8. **REAR BUMPER**
   Body colour
9. **REAR UNDER COVER**
   BP. Medium dark grey NH-590
10. **TAILGATE LOWER TRIM**
    Body colour
11. **QUARTER GLASS MOLDING**
    Black NH-72 (Glass 30)
12. **SIDE SILL PANEL**
    BP. Medium dark grey NH-590
    Body colour (for some models)
13. **DOOR SASH**
    Black NH-86 (Gloss 40)
    Apply the door channel tape (refer to the HR-V Shop Manual)
14. **ROOF SIDE TRIM**
    Body colour (for some models)
15. **GRILLE**
    BP - Dark Grey, NH-533

General Information Index

General Information **1-1**
Chassis and Engine Numbers 1-2
Abbreviations 1-5

Specifications Index

Specifications	**2-1**
Standards and Service Limits	2-2
Design Specifications	2-13
Body Specifications	2-26

Maintenance Index

Maintenance	**3-1**
Lubrication Points	3-2
Maintenance Schedule	3-4

Cooling Index

Cooling **10-1**
Radiator
Engine Coolant Refilling and Bleeding 10-2

NOTE: Refer to the base shop manual on this CD for items not shown in this section.

Outline of Model Change
Engine coolant has been changed.

Transaxle Index

Differential (Rear Differential)
Maintenance **15-2**

Transaxle Index

Differential (Rear Differential)

Maintenance

Differential Fluid 15-2

Outline of Model Changes

- The rear differential fluid has been changed from Honda ATF PREMIUM Fluid to Dual Pump Fluid

Body Index

Body **20-1**

Emblem

Sticker Replacement 20-2

NOTE: Refer to this CD for the items not shown in this section.

Outline of Model Changes

- The VTEC sticker has been added.

INTRODUCTION

General Info
Specifications
Maintenance
Cooling
* Transaxle
* Body

How to Use This Manual

This CD covers the base Shop Manual plus all Subsequent Supplements

Description	Code No.
HONDA HR-V MAINTENANCE, REPAIR and CONSTRUCTION 99	62S2H00
HONDA HR-V SUPPLEMENT 2000	62S2H20

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.

Special Information

WARNING **: Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.**

CAUTION **: Indicates a possibility of personal injury or equipment damage if instructions are not followed.**

NOTICE **: The purpose of these messages is intended to help prevent damage to the vehicle, other property, or the environment.**

NOTE: Gives helpful information.

⚠ CAUTION

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual contains warnings and cautions against some specific service methods which could cause PERSONAL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommend by HONDA, might be done, or of the possible hazardous consequences of every conceivable way, nor could HONDA investigate all such ways. Anyone using service procedures or tools, whether or not recommended by HONDA, must satisfy themselves thoroughly that neither personal safety nor vehicle safety will be jeopardized.

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 any time without notice. No part of this publication may be reproduced, stored in 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, figures and tables.

Greyed out sections are not included in this manual.

First Edition 9/2000 64 pages **HONDA MOTOR CO., LTD.**

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

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

This model has an SRS which includes a driver's airbag located in the steering wheel hub and a passenger's airbag located in the dashboard above the glove box and seat belt tensioners located in the seat belt retractors.
Information necessary to safely service the SRS is included in the Shop Manual, P/N 62S2H00.
Items marked with an asterisk (*) on the contents page include, or are located near, SRS components. Servicing, disassembling or replacing these items will require special precautions and tools, and should therefore be done by an authorised Honda dealer.

⚠ WARNING

- To avoid rendering the SRS inoperative, which could lead to personal injury or death in the event of a severe frontal collision, all SRS service work must be performed by an authorised 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 and seat belt tensioners.
- SRS electrical wiring harnesses are indicated by yellow colour coding. Related components are located in the steering column, front console, dashboard, dashboard lower panel, and in the dashboard above the glove box. Do not use electrical test equipment on these circuits.

ITEM	DESCRIPTION	00 MODEL	01 MODEL	REFERENCE SECTION

General	5-door model added	O		-
Engine	D16W5 engine added for KG, KE, KQ and KU models	O		-
	Engine coolant changed		O	10
Fuel and Emission	For KE and KG models: ♦ D16W5 engine has been added and changed the following: - Vacuum Connections - Electrical Connections - The knock Sensor has been added - Idle Speed Setting - Fuel Pressure Relieving/Inspection - Fuel Filter - Throttle Body - Fuel Injector Air Control System ♦ The ECM/PCM has been changed ♦ The EVAP control canister has been changed ♦ The EVAP Two Way valve has been changed For KQ and KU models: ♦ D16W5 engine has been added and changed the following: - Vacuum Connections - Electrical Connections - The knock Sensor has been added - Idle Speed Setting - Fuel Pressure Relieving/Inspection - Fuel Filter - Throttle Body	O		-
Automatic Transmission	For KE and KG models: ♦ Electrical troubleshooting procedures changed ♦ Electrical system symptom-to-component chart modified For KQ and KU models: ♦ S1 and S2 mode position driving system added	O		-
Differential	Rear diffferential fluid changed	-	O	15
Body	♦ 5-door model added ♦ Roof spoiler with a built-in high mount brake light adopted	O		-
	VTEC sticker added	-	O	20
Body Electrical	♦ Some electrical circuits changed ♦ Power window master switch with light (LED) adopted ♦ A/T gear position console light added ♦ LED type high mount brake light added available as an option For KE and KG models: ♦ Rear fog light switch and headlight adjuster switch changed ♦ Hazard warning light removed For KG model: Seat heater switch changed	O		-
Restraints	Seat Belts Seat belts replacement procedure on 5-door model added Supplemental Restraint System (SRS) Front seat belt replacement on 5-door model added	O		-

Vehicle Identification Number

JHM GH2 3 5 0 1 S 200001

Manufacturer, Make and Type of Vehicle
- JHL: HONDA MOTOR CO., LTD HONDA passenger car
- JHM: HONDA MOTOR CO., LTD HONDA passenger car

Line, Body and Engine Type
- GH1: HR-V/D16W1, D16W2
- GH2: HR-V/D16W1, D16W2 D16W5
- GH3: HR-V/D16W1, D16W2
- GH4: HR-V/D16W1, D16W2 D16W5

Body and Transmission Type
- 3: Hatchback, 2-door Hatchback/ 5-speed Manual
- 4: Hatchback, 2-door Hatchback/ CVT, Honda Multi Matic
- 7: Hatchback, 4-door Hatchback/ 5-speed Manual
- 8: Hatchback,4-door Hatchback/ CVT, Honda Multi Matic

Vehicle Grade
- 5: KG, KE, KN, KQ, KU, KT and KY
- 6: KG
- 7: KG, KE, KQ, KU and KY
- 8: KG

Fixed Code/Check Digit

Model Year
- 1 :2001

Factory Code
- S : Suzuka Factory in Japan (Mie)

Serial Number

Engine Number

D16W1 - 1200001

Engine Type
- D16W1: 1.6l SOHC Sequential Multiport Fuel-injected engine with three way catalytic converter
- D16W2: 1.6l SOHC Sequential Multiport Fuel-injected engine without three way catalytic converter
- D16W5:1.6l SOHC VTEC Sequential Multiport Fuel-injected engine with three way catalytic converter

Serial Number
- D16W1, D16W2, 1200001~
- D16W5: 1100001~

Transmission Number

SEP - 2000001

Transmission Type
- SEP : 5-speed Manual (4WD)
- SEV : 5-speed Manual (2WD)
- MENA : CVT (2WD), Honda Multi Matic (2WD)
- META : CVT (4WD), Honda Multi Matic (4WD)

Serial Number
- SEP : 2000001~
- SEV : 2000001~
- MENA : 3000001~
- META : 3000001~

MODEL	APPLICABLE AREA CODE	DRIVE-TRAIN	TRANSMISSION TYPE	VEHICLE IDENTIFICATION NUMBER	ENGINE NUMBER	TRANSMISSION NUMBER
	KG		5MT	JHMGH23501S200001~	D16W1-1200001~	SEP-2000001~
			5MT	JHMGH23701S200001~	D16W5-1100001~	SEP-2000001~
		4WD	5MT	JHMGH23601S200001~	D16W1-1200001~	SEP-2000001~
			5MT	JHMGH23801S200001~	D16W5-1100001~	SEP-2000001~
			CVT	JHMGH24501S200001~	D16W1-1200001~	META-3000001~
			CVT	JHMGH24601S200001~	D16W1-1200001~	META-3000001~
	KG		5MT	JHMGH13501S200001~	D16W1-1200001~	SEV-2000001~
		2WD	5MT	JHMGH13601S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH14501S200001~	D16W1-1100001~	MENA-3000001~
			CVT	JHMGH14601S200001~	D16W1-1200001~	MENA-3000001~
HR-V 3-door	KE		5MT	JHMGH23501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	5MT	JHMGH23701S200001~	D16W5-1100001~	SEP-2000001~
			CVT	JHMGH24501S200001~	D16W1-1200001~	META-3000001~
	KE	2WD	5MT	JHMGH13501S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH14501S200001~	D16W1-1200001~	MENA-3000001~
	KN	4WD	5MT	JHLGH23501S200001~	D16W1-1200001~	SEP-2000001~
		2WD	5MT	JHMGH13501S200001~	D16W1-1100001~	SEV-2000001~
	KQ		5MT	JHLGH23501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	CVT	JHLGH24501S200001~	D16W1-1200001~	META-3000001~
			CVT	JHLGH24701S200001~	D16W5-1100001~	META-3000001~
	KQ	2WD	5MT	JHMGH13501S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH14501S200001~	D16W1-1200001~	MENA-3000001~
	KU		5MT	JHLGH23501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	Multi Matic	JHLGH24501S200001~	D16W1-1200001~	META-3000001~
			Multi Matic	JHLGH24701S200001~	D16W5-1100001~	META-3000001~
	KU	2WD	5MT	JHMGH13501S200001~	D16W1-1200001~	SEV-2000001~
			Multi Matic	JHMGH14501S200001~	D16W1-1200001~	MENA-3000001~
	KT	4WD	5MT	JHLGH23501S200001~	D16W2-1200001~	SEP-2000001~
		2WD	5MT	JHMGH13501S200001~	D16W2-1200001~	SEV-2000001~
	KY	4WD	5MT	JHLGH235*1S400001~	D16W2-1200001~	SEP-2000001~

MODEL	APPLICABLE AREA CODE	DRIVE-TRAIN	TRANSMISSION TYPE	VEHICLE IDENTIFICATION NUMBER	ENGINE NUMBER	TRANSMISSION NUMBER
	KG		5MT	JHMGH47501S200001~	D16W1-1200001~	SEP-2000001~
			5MT	JHMGH47701S200001~	D16W5-1100001~	SEP-2000001~
		4WD	5MT	JHMGH47601S200001~	D16W1-1200001~	SEP-2000001~
			5MT	JHMGH47801S200001~	D16W5-1100001~	SEP-2000001~
			CVT	JHMGH48501S200001~	D16W1-1200001~	META-3000001~
			CVT	JHMGH48601S200001~	D16W1-1200001~	META-3000001~
	KG		5MT	JHMGH37501S200001~	D16W1-1200001~	SEV-2000001~
		2WD	5MT	JHMGH37601S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH38501S200001~	D16W1-1200001~	MENA-3000001~
			CVT	JHMGH38601S200001~	D16W1-1200001~	MENA-3000001~
HR-V 5-door	KE		5MT	JHMGH47501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	5MT	JHMGH47701S200001~	D16W5-1100001~	SEP-2000001~
			CVT	JHMGH48501S200001~	D16W1-1200001~	META-3000001~
	KE	2WD	5MT	JHMGH37501S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH38501S200001~	D16W1-1200001~	MENA-2000001~
	KN	4WD	5MT	JHLGH47501S200001~	D16W1-1200001~	SEP-2000001~
		2WD	5MT	JHMGH37501S200001~	D16W1-1200001~	SEV-2000001~
	KQ		5MT	JHLGH47501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	CVT	JHLGH48501S200001~	D16W1-1200001~	META-3000001~
			CVT	JHLGH48701S200001~	D16W5-1100001~	META-3000001~
	KQ	2WD	5MT	JHMGH37501S200001~	D16W1-1200001~	SEV-2000001~
			CVT	JHMGH38501S200001~	D16W1-1200001~	MENA-3000001~
	KU		5MT	JHLGH47501S200001~	D16W1-1200001~	SEP-2000001~
		4WD	Multi Matic	JHLGH48501S200001~	D16W1-1200001~	META-3000001~
			Multi Matic	JHLGH48701S200001~	D16W5-1100001~	META-3000001~
	KU	2WD	5MT	JHMGH37501S200001~	D16W1-1200001~	SEV-2000001~
			Multi Matic	JHMGH38501S200001~	D16W1-1200001~	MENA-3000001~
	KT	4WD	5MT	JHLGH47501S200001~	D16W2-1200001~	SEP-2000001~
		2WD	5MT	JHMGH37501S200001~	D16W2-1200001~	SEV-2000001~
	KY	4WD	5MT	JHLGH475*1S400001~	D16W2-1200001~	SEP-2000001~

List of automotive abbreviations which may be used in shop manual.

ABS	Anti-lock Brake System
A/C	Air Conditioning, Air Conditioner
ACL	Air Cleaner
A/F	Air Fuel Ratio
ALR	Automatic Locking Retractor
ALT	Alternator
AMP	Ampere (s)
ANT	Antenna
API	American Petroleum Institute
APPROX.	Approximately
ASSY	Assembly
A/T	Automatic Transmission
ATDC	After Top Dead Centre
ATF	Automatic Transmission Fluid
ATT	Attachment
ATTS	Active Torque Transfer System
AUTO	Automatic
AUX	Auxiliary
BARO	Barometric
BAT	Battery
BDC	Bottom Dead Centre
BTDC	Before Top Dead Centre
CARB	Carburettor
CAT or CATA	Catalytic Converter
CHG	Charge
CKF	Crankshaft Speed Fluctuation
CKP	Crankshaft Position
CO	Carbon Monoxide
COMP	Complete
CPB	Clutch Pressure Back up
CPC	Clutch Pressure Control
CPU	Central Processing Unit
CVT	Continuously Variable Transmission
CYL	Cylinder
CYP	Cylinder Position
DI	Distributor Ignition
DIFF	Differential
DLC	Data Link Connector
DOHC	Double Overhead Camshaft
DPI	Dual Point Injection
DTC	Diagnostic Trouble Code
EBD	Electronic Brake Distribution
ECM	Engine Control Module
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
ELD	Electrical Load Detector
EPR	Evaporator Pressure Regulator
EPS	Electrical Power Steering
EVAP	Evaporative
EX	Exhaust
F	Front
FIA	Fuel Injection Air
FL	Front Left
FP	Fuel Pump
FR	Front Right
FSR	Fail Safe Relay
FWD	Front Wheel Drive
GAL	Gallon
GND	Ground
GPS	Global Positioning System
H/B	Hatchback
HC	Hydrocarbons
HID	High Intensity Discharge
HO2S	Heated Oxygen Sensor
IAB	Intake Air Bypass
IAC	Idle Air Control
IACV	Idle Air Control Valve
IAR	Intake Air Resonator
IAT	Intake Air Temperature
ICM	Ignition Control Module
ID	Identification
ID or I.D.	Inside Diameter
IG or IGN	Ignition
IMA	Idle Mixture Adjustment
IMMOBI.	Immobiliser
IN	Intake
INJ	Injection
INT	Intermittent
KS	Knock Sensor
L	Left
L/C	Lock-up Clutch
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LEV	Low Emission Vehicle
LF	Left Front
LH	Left Handle
LHD	Left Handle Drive
LR	Left Rear
LSD	Limited Slip Differential
L-4	In-line Four Cylinder (engine)

MAP	Manifold Absolute Pressure
MAX.	Maximum
MBS	Mainshaft Brake System
MCK	Motor Check
MCU	Moment Control Unit
MIL	Malfunction Indicator Lamp
MIN.	Minimum
MPI	Multi Point Injection
M/S	Manual Steering
M/T	Manual Transmission
N	Neutral
NOx	Oxides of Nitrogen
OBD	On-board Diagnostic
O2S	Oxygen Sensor
OD or O.D.	Outside Diameter
P	Park
PAIR	Pulsed Secondary Air Injection
PCM	Powertrain Control Module
PCV	Positive Crankcase Ventilation Proportioning Control Valve
PGM-FI	Programmed-fuel Injection
PGM-IG	Programmed Ignition
PH	Pressure High
PL	Pilot Light or Pressure Low
PMR	Pump Motor Relay
P/N	Part Number
PRI	Primary
P/S	Power Steering
PSF	Power Steering Fluid
PSP	Power Steering Pressure
PSW	Pressure Switch
Qty	Quantity
R	Right
REF	Reference
RGB	Red, Green, Black
RHD	Right Handle Drive
RL	Rear Left
RON	Research Octane Number
RR	Rear Right
SAE	Society of Automotive Engineers
SCS	Service Check Signal
SEC	Second Secondary
SOHC	Single Overhead Camshaft
SOL	Solenoid
SPEC	Specification
S/R	Sun Roof
SRS	Supplemental Restraint System
STD	Standard
SW	Switch
T	Torque
TB	Throttle Body
T/B	Timing Belt
TC	Torque Converter
TCM	Transmission Control Module
TCS	Traction Control System
TDC	Top Dead Centre
TFT	Thin Film Transistor
T/N	Tool Number
TP	Throttle Position
TWC	Three Way Catalytic Converter
VC	Viscous Coupling
VDP	Variable Displacement Pump
VFV	Variable Force Control Valve
VGR	Variable Gear Ratio
VIN	Vehicle Identification Number
VSC	Variable Speed Column
VSS	Vehicle Speed Sensor
VTEC	Variable Valve Timing & Valve Lift Electronic Control
VVIS	Variable Volume Intake System
W	With
W/O	Without
WOT	Wide Open Throttle
2WD	Two Wheel Drive
4WD	Four Wheel Drive
2WS	Two Wheel Steering
4WS	Four Wheel Steering
4AT	4-speed Automatic Transmission
5MT	5-speed Manual Transmission
6MT	6-speed Manual Transmission
P	Park
R	Reverse
N	Neutral
D4	Drive (1st through 4th gear)
D3	Drive (1st through 3rd gear)
2	Second
1	First
D	Drive
S	Second
L	Low
O/D	Over Drive
1ST	Low (gear)
2ND	Second (gear)
3RD	Third (gear)
4TH	Fourth (gear)
5TH	Fifth (gear)
6TH	Sixth (gear)

	MEASUREMENT		STANDARD (NEW)	
Ignition coil	Rated voltage V		12	
	Primary winding resistance at 20°C (68°F) ohms:		0.63 - 0.77	
	Secondary winding resistance at 20°C (68°F) k ohms		12.8 - 19.2	
Spark plug	Type		See section 4	
	Gap		1.1, 0,-0.1 (0.043, 0, -0.004)	
Ignition timing	At idle ° BTDC		12° ± 2° (Red) BTDC	
Alternator belt *1	Deflection with 98 Nm (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt 6.0-8.5 (0.24-0.33) with new belt	
Alternator belt *1	Tension measured with belt tension gauge N (kgf, lbf)			
	Used belt		340 - 490 (35 - 50, 77 - 110)	
	New belt		540 - 740 (55 - 75, 121 - 165)	
			Standard (New)	**Service Limit**
Alternator	MITSUBISHI			
	Output 13.5 V at hot	A	75	
	Coil resistance (rotor)	ohms	2.6- 2.9	-
	Slip ring O.D.		22.7 (0.89)	21.2 (0.83)
	Brush length		19 (0.75)	14. (0.55)
	Brush spring tension	g (oz)	340 - 420 (12.0 - 14.8)	-
			Standard (New)	**Service Limit**
Alternator	NIPPONDENSO			
	Output 13.5V at hot	A	75	
	Coil resistance (rotor)	ohms	2.9	-
	Slip ring O.D.		14.4 (0.567)	14.0 (0.551)
	Brush length		10.5 (0.41)	1.5 (0.06)
	Brush spring tension	g (oz)	330 (11.6)	-
			Standard (New)	**Service Limit**
Starter motor	MITSUBA: 1.0 kW			
	Type		Gear reduction	
	Mica depth		0.4-0.5 (0.016-0.020)	0.15 (0.006)
	Commutator runout		0-0.02 (0-0.001).	0.05 (0.002)
	Commutator O.D.		28.0-28.1 (1.102-1.106)	27.5 (1.083)
	Brush length		15.8-16.2 (0.62-0.64)	11.0 (0.43)
	Brush spring tension	N (kg, lbf)	16-18 (1.6-1.8, 3.5-4.0)	-

*1: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Compression	250 rpm (min^{-1}) and			
	wide open throttle	Minimum	930 (9.5, 135)	
	kPa (kgf/cm^2, psi)	Max. variation	200 (2.0, 28)	
Cylinder head	Warpage		-	0.05 (0.002)
	Height		92.95-93.05 (3.659-3.663)	-
Camshaft	End play		0.05-0.15 (0.002-0.006)	0.5 (0.02)
	Camshaft-to-holder oil clearance		0.060-0.099 (0.002-0.004)	0.15 (0.006)
	Total runout		0.03 (0.001) max.	0.04 (0.002)
	Cam lobe height		35.299 (1.3897)	-
	D16W1, D16W2	IN		
	EX		37.281 (1.4678)	-
	D16W5 IN	PRIMARY	37.065 (1,4593)	-
		Mid	38,285 (1,5073)	-
		Secondary	38,778 (1,4480)	-
	EX		38,008 (1,4964)	-
Valve	Valve clearance (cold)	IN	0.18-0.22 (0.007-0.009)	-
		EX	0.23-0.27 (0.009-0.011)	-
	Valve stem O.D.	IN	5.48-5.49 (0.2157-0.2161)	5.45 (0.2146)
		EX	5.45-5.46 (0.2146-0.2150)	5.42 (0.2134)
	Stem-to-guide clearance	IN	0.02-0.05 (0.001-0.002)	0.08 (0.003)
		EX	0.05-0.08 (0.002-0.003)	0.11 (0.004)
Valve seat	Width	IN	0.85-1.15 (0.033-0.045)	1.6 (0.063)
		EX	1.25-1.55 (0.049-0.061	2.0 (0.079)
	Stem installed height	IN	53.17-53.64 (2.093-2.112)	53.89 (2.122)
		EX	53.17-53.64 (2.093-2.112)	53.89 (2.122)
Valve spring	Free length D16W1, D16W2	IN and EX	58.7 (2.31)	-
	D16W5	IN	58.0 (2.28)	-
		EX	58.7 (2.31)	-
Valve guide	I.D.	IN	5.51-5.53 (0.217-0.218)	5.55 (0.219)
		EX	5.51-5.53 (0.217-0.218)	5.55 (0.219)
	Installed height	IN	17.85-18.35 (0.703-0.72)	-
		EX	18.65-19.15 (0.734-0.754)	-
Rocker arm	Arm-to-shaft clearance			
	D16W1, D16W2	IN	0.017-0.050 (0.0007-0.0020)	0.08 (0.003)
		EX	0.018-0.054 (0.0007-0.0021)	0.08 (0.003)
	D16W5	IN	0.026-0.055 (0.0010-0.0022)	0.08 (0.003)
		EX	0.025-0.059 (0.0010-0.0023)	0.08 (0.003)

Engine Block - Section 7

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface		0.07(0.003) max	0.10 (0.004)
	Bore diameter		75.00-75.02 (2.953-2.954)	75.07 (2.956)
	Bore taper		-	0.05 (0.002)
	Reboring limit		-	0.5 (0.02)
Piston	Skirt O.D at 5mm (0.2 in) from bottom of skirt		74.980-74.990 (2.9520-2.9524)	74.970 (2.9516)
	Clearance in cylinder		0.010-0.040 (0.0004-0.0016)	0.05 (0.002)
	Groove width (for ring)			
	Top	D16W1, D16W5	1.020-1.030 (0.0402-0.0406)	1.05 (0.041)
		D16W2	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
	Second	D16W1, D16W5	1.220-1.230 (0.0480-0.0484)	1.25 (0.049)
		D16W2	1.520-1.530 (0.0598-0.0602)	1.55 (0.061)
	Oil		2.805-2.820 (0.1104-0.1110)	2.85 (0.112)
Piston ring	Ring to groove clearance			
	Top	D16W1, D16W5	0.035-0.060 (0.0014-0.0024)	0.13 (0.005)
		D16W2	0.030-0.060 (0.0012-0.0024)	0.13 (0.005)
	Second		0.030-0.055 (0.0012-0.0022)	0.13 (0.005)
	Ring end gap	Top	0.15-0.030 (0.006-0.012)	0.60 (0.024)
		Second	0.30-0.45 (0.012-0.018)	0.70 (0.028)
		Oil D16W1, D16W5	0.20-0.70 (0.008-0.028)	0.80 (0.031)
		D16W2	0.20-0.80 (0.008-0.031)	0.90 (0.035)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Piston pin	O.D.	18.994-19.000 (0.7478-0.7480)	-
	Pin-to-piston clearance	0.010-0.022 (0.0004-0.0009)	-
Connecting rod	Pin-to-rod interference	0.014-0.040 (0.0006-0.0016)	-
	Small end bore diameter	18.96-18.98 (0.746-0.747)	-
	Large end bore diameter Nominal	48.0 (1.89)	-
	End play installed on crankshaft	0.15-0.30 (0.006-0.012)	0.40 (0.016)
Crankshaft	Main journal diameter	54.976-55.000 (2.1644-2.1654)	-
	Rod journal diameter	44.976-45.000 (1.7707-1.7717)	-
	Taper	0.0025 (0.00010) max.	0.005 (0.0002)
	Out of Round	0.0025 (0.00010) max.	0.005 (0.0002)
	End play	0.10-0.35 (0.004-0.014)	0.45 (0.018)
	Total runout	0.03 (0.001) max.	0.04 (0.002)
Bearing	Main bearing-to-journal oil clearance		
	No. 1 and 5 journals	0.018-0.036 (0.0007-0.0014)	0.05 (0.002)
	No. 2, 3 and 4 journals	0.024-0.042 (0.0009-0.0017)	0.05 (0.002)
	Rod bearing-to-journal oil clearance	0.020-0.038 (0.0008-0.0015)	0.05 (0.002)

Engine Lubrication - Section 8

	MAINTENANCE	STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity *l* (US qt, Imp qt)		
	KE, KG, KN, KQ models	3.7 (3.9, 3.3) for engine overhaul	
		3.3 (3.5, 2.9) for oil change, including filter	
		3.0 (3.2, 2.6) for oil change, without filter	
	KU, KT, KY models	4.3 (4.5, 3.8) for engine overhaul	
		3.6 (3.8, 3.2) for oil change, including filter	
		3.3 (3.5, 2.9) for oil change, without filter	
Oil pump	Inner-to-outer rotor radial clearance	0.02-0.14 (0.001-0.006)	0.20 (0.008)
	Pump body-to-outer rotor radial clearance	0.10-0.18 (0.004-0.007)	0.20 (0.008)
	Pump body-to-rotor axial clearance	0.03-0.08 (0.001-0.003)	0.15 (0.006)
Relief valve	Pressure setting 80°C (176°F) kPa (kgf/cm^2, psi)		
	at idle	70 (0.7, 10) min.	
	at 3,000 rpm (min^{-1})	340 (3.5, 50) min.	

Cooling - Section 10

	MAINTENANCE	STANDARD (NEW)
Radiator	Coolant capacity *l* (US qt. Imp qt.) (including engine, heater, cooling line and reservoir)	M/T: 3.9 (4.1, 3.4) for overhaul 2.8 (3.0, 2.5) for coolant change
	Reservoir capacity 0.4 *l* (0.42 US qt. 0.35 Imp qt.)	CVT: Honda Multi Matic 4.1 (4.3, 3.6) for overhaul 3.0 (3.2, 2.6) for coolant change
Radiator cap	Opening pressure kPa (kgf/cm^2, psi)	93-123 (0.95-1.25, 14-18)
Thermostat	Start to open °C (°F)	70-80 (169-176)
	Fully open °C (°F)	90 (194)
	Valve lift a fully open:	8.0 (0.31) min
Cooling fan	Thermostat "ON" temperature °C (°F)	91-95 (196-203)
	Thermostat "OFF" temperature °C (°F)	Subtract 3-8 (5-15) from actual "ON" temperature

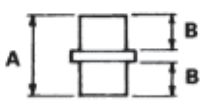
Fuel and Emissions - Section 11

	MEASUREMENT	STANDARD (NEW)
Pressure regulator	Pressure with regulator vacuum hose disconnected kPa (kgf/cm^2, psi)	260-310 (2.7-3.2, 38-46)
Fuel tank	Capacity *l* (US gal. Imp gal.)	55.0 (14.5, 12.1)
Engine	Idle speed with headlight and cooling fan off rpm (min^{-1})	M/T: Neutral — CVT/Honda Multi Matic **N** or **P** positions
		Except KU model: 750±50 — 700±50
		KU model: 670±50
	Idle CO %	With TWC model: 0.1 max.
		Without TWC model: 1.0 ±1.0

Unit of length: mm (in)

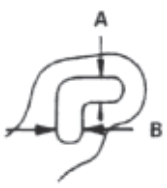
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Clutch pedal	Pedal height	to floor		
		LHD	179 (7.05)	-
		RHD	183 (7.20)	-
	Stroke		130-140 (5.12-5.51)	-
	Free play		8-18 (0.31-0.71)	-
	Disengagement height	to floor		
		LHD	87 (3.43) min.	-
		RHD	74 (2.91) min.	-
Flywheel	Clutch surface runout		0.05 (0.002) max.	0.15 (0.006)
Clutch disc	Rivet head depth		1.65-2.25 (0.06-0.09) min.	0.8 (0.03)
	Thickness		8.4-9.0 (0.33-0.35)	6.0 (0.24)
Pressure plate	Warpage		0.03 (0.001) max.	0.15 (0.006)
	Diaphragm spring finger alignment		0.6 (0.02) max.	0.8 (0.03)

Manual Transmission - Section 13

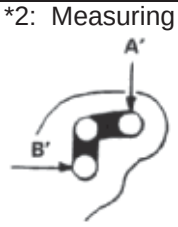
	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission oil	Capacity *l* (US qt. Imp qt.)	2WD	1.8 (1.9, 1.6) at oil change	
		2WD	2.0 (2.1, 1.8) at overhaul	
		4WD	1.65 (1.7, 1.5) at oil change	
		4WD	2.1 (2.2, 1.8) at overhaul	
Mainshaft	End play		0.11-0.18 (0.004-0.007)	Adjust
	Diameter of ball bearing contact area (clutch side)		27.977-27.990 (1.1015-1.1020)	27.94 (1.100)
	Diameter of needle bearing contact area		37.984-38.000 (1.4954-1.4961)	37.93 (1.493)
	Diameter of ball bearing contact area (transmission housing side)		27.987-28.000 (1.1018-1.1024)	27.94 (1.100)
	Runout		0.02 (0.001) max.	0.05 (0.002)
Mainshaft 3rd and 4th gears	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.30 (0.012)
	Thickness	3rd gear	34.92-34.97 (1.375-1.377)	34.8 (1.37)
		4th gear	31.42-31.47 (1.237-1.239)	31.3 (1.23)
Mainshaft 5th gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.080 (1.6961)
	End play		0.06-0.21 (0.002-0.008)	0.3 (0.01)
	Thickness		30.92-30.97 (1.217-1.219)	30.8 (1.21)
Countershaft	Diameter of needle bearing contact area		36.000-36.015 (1.4173-1.4179)	35.95 (1.415)
	Diameter of ball bearing and needle bearing contact area		24.987-25.000 (0.9837-0.9843)	24.94 (0.982)
	Diameter of 1st gear contact area		36.984-37.000 (1.4561-1.4567)	36.93 (1.454)
	Runout		0.02 (0.001) max	0.05 (0.002)
Countershaft 1st gear	I.D.		43.009-43.025 (1.6933-1.6939)	43.08 (1.696)
	End play		0.06-0.18 (0.002-0.007)	0.23 (0.009)
	Thickness		26.95-27.00 (1.061-1.063)	-
Countershaft 2nd gear	I.D.		47.009-47.025 (1.8507-1.8514)	47.08 (1.854)
	End play		0.07-0.14 (0.003-0.006)	0.18 (0.007)
	Thickness		28.92-28.97 (1.139-1.141)	-
Thrust washer (Countershaft 1st gear)	Thickness		1.95-1.97 (0.077-0.078)	-
Spacer collar (Countershaft 2nd gear)	I.D.		36.48-36.49 (1.43-1.44)	36.5 (1.44)
	O.D.		41.989-42.000 (1.653-1.654)	41.94 (1.65)
	Length		29.07-29.09 (1.14-1.15)	-
Spacer collar (Mainshaft 4th and 5th gears)	 I.D.		31.002-31.012 (1.2205-1.2209)	31.06 (1.223)
	O.D.		37.989-38.000 (1.4956-1.4961)	37.94 (1.494)
	Length			
		A	56.45-56.55 (2.222-2.226)	-
		B	26.03-26.08 (1.025-1.027)	26.01 (1.024)
Reverse idler gear	I.D.		20.016-20.043 (0.7880-0.7891)	20.09 (0.7909)
	Gear-to-reverse gear shaft clearance		0.036-0.084 (0.0014-0.0033)	0.16 (0.0063)
Synchro ring	Ring-to-gear clearance (ring pushed against gear)		0.85-1.10 (0.033-0.043)	0.4 (0.02)
Dual cone synchro	Clearance (ring pushed against synchro)			
	Outer synchro ring-to-synchro cone		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Synchro cone-to-gear		0.5-1.0 (0.02-0.04)	0.3 (0.01)
	Outer synchro ring-to-gear		0.95-1.68 (0.037-0.066)	0.6 (0.02)
Shift fork	Finger thickness	3rd/4th fork	7.4-7.6 (0.29-0.30	-
		Except above	6.2-6.4 (0.24-0.25)	-
	Fork-to-synchro sleeve clearance		0.35-0.65 (0.014-0.026)	1.0 (0.039)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Reverse Shift Fork	Pawl groove width		13.0-13.3 (0.51-0.52)	-
	Fork-to-reverse idle gear clearance		0.5-1.1 (0.02-0.04)	1.8 (0.07)
	Groove width *1	at A	7.05-7.25 (0.278-0.285)	-
		at B	7.4-7.7 (0.29-0.30)	-
	Fork-to-5th/reverse shift shaft clearance *2	at A'	0.05-0.35 (0.002-0.014)	0.5 (0.02)
		at B'	0.4-0.8 (0.02-0.03)	1.0 (0.04)
Shift arm A	Shift fork diameter at contact area		12.9-13.0 (0.508-0.512)	-
	Shift arm A-to-shift fork shaft clearance		0.2-0.5 (0.008-0.020)	0.6 (0.024)
Shift arm C	Shift arm C-to-shift arm B clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm B contact area		12.9-13.0 (0.508-0.512)	-
Select arm	Select arm-to-shift arm A clearance		0.05-0.25 (0.002-0.01)	-
	Diameter of shift arm A contact area		7.9-8.0 (0.311-0.315)	-
Select lever	O.D.		15.941-15.968 (0.6276-0.6287)	-
	Transmission housing clearance		0.032-0.086 (0.0013-0.0034)	-
Select lever	O.D.		15.941-15.968 (0.6276-0.6287)	-
	Transmission housing clearance		0.032-0.127 (0.0013-0.0050)	-
Differential carrier	Pinion shaft contact area I.D.			
		2WD	18.000-18.018 (0.7086-0.7093)	-
		4WD	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion shaft clearance			
		2WD	0.07-0.047 (0.0007-0.0081)	-
		4WD	0.027-0.057 (0.0011-0.0022)	0.1 (0.004)
	Driveshaft, intermediate shaft contact area I.D.		28.005-28.025 (1.1026-1.1033)	-
	Carrier-to-driveshaft clearance		0.025-0.066 (0.0010-0.0026)	0.12 (0.005)
	Carrier-to-intermediate shaft clearance		0.055-0.091 (0.0022-0.0036)	0.15 (0.006)
Differential pinion gear	Backlash		0.05-0.15 (0.002-0.006)	-
	I.D.		18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance		0.059-0.095 (0.0023-0.0037)	0.15 (0.006)
Differential tapered roller bearing preload Starting torque Nm (kgf/cm, lbf/in)			1.4-2.5 (14-26, 12-23)	Adjust
Transfer	Diameter of roller bearing contact area			
	Transfer shaft (driven gear side)		33.984-34.000 (1.337-1.339)	33.93 (1.336)
	Transfer shaft (middle gear side)		27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear		40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear shaft (driven gear side)		35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (spline side)		26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash		0.06-0.16 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)		2.68-3.47 (27.3-35.4, 23.7-30.7)	Adjust

*1: Measuring points



*2: Measuring points



Unit of length: mm (in)

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Transmission fluid	Capacity *l* (US qt, Imp qt)			
	KE, KG models	2WD	6.7 (7.1, 5.9) for overhaul	
			4.0 (4.2, 3.5) for fluid change	
		4WD	7.1 (7.5, 6.2) for overhaul	
			3.9 (4.1, 3.4) for fluid change	
	KQ, KU models	2WD	6.5 (6.9, 5.7) for overhaul	
			3.8 (4.0, 3.3) for fluid change	
		4WD	6.9 (7.3, 6.1) for overhaul	
			3.7 (3.9, 3.3) for fluid change	
Hydraulic pressure MPa (kgf/cm^2, psi)	Forward clutch pressure at 1,500 rpm (min^{-1}) in D position		1.4-17. (14.3-17.8, 203-253)	
Hydraulic pressure MPa (kgf/cm^2, psi)	Reverse brake pressure at 1,500 rpm (min^{-1}) in R position		1.4-17. (14.3-17.8, 203-253)	
	Drive pulley pressure at 1,500 rpm (min^{-1}) in N position		0.2-0.7 (2.0-7.1, 28-101)	
	Driven pulley pressure at 1,500 rpm (min^{-1}) in N position		1.5-2.3 (15.3-23.5, 218-334)	
	Lubrication pressure at 3,000 rpm (min-1) in N position		Above 0.2 (2, 30)	
Stall speed rpm (min^{-1}) (Check with vehicle on level ground				
	D position		2,500	2,350-2,650
	D position S mode, L and R positions		3,000	2,800-3,100
Clutch	Clutch initial clearance			
	Forward clutch		0.6-0.8 (0.024-0.031)	-
	Start clutch		0.5-0.7 (0.020-0.028)	-
	Reverse brake		0.45-0.75 (0.018-0.030)	-
	Clutch return spring free length			
	Forward clutch		30.5 (1.201)	28.5 (1.122)
	Start clutch		40.9 (1.610)	38.9 (1.531)
	Reverse brake		29.4 (1.157)	27.4 (1.079)
	Clutch disc thickness			
	Forward clutch		1.88-2.00 (0.074-0.079)	Until grooves worn out
	Start clutch		1.88-2.00 (0.074-0.079)	-
	Reverse brake		1.94-2.06 (0.076-0.081)	Until grooves worn out
	Clutch plate thickness			
	Forward clutch		1.95-2.05 (0.077-0.081)	Discolouration
	Start clutch		2.25-2.35 (0.089-0.093)	-
	Reverse Brake		1.90-2.00 (0.075-0.079)	Discolouration

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Clutch (cont'd)	Forward clutch end plate thickness		
	Mark 1 or 15	3.4-3.5 (0.134-0.138)	Discolouration
	Mark 2 or 16	3.5-3.6 (0.138-0.142)	Discolouration
	Mark 3 or 17	3.6-3.7 (0.142-0.146)	Discolouration
	Mark 4 or 18	3.7-3.8 (0.146-0.150)	Discolouration
	Mark 5 or 19	3.8-3.9 (0.150-0.154)	Discolouration
	Mark 6 or 20	3.9-4.0 (0.154-0.157)	Discolouration
	Mark 7 or 21	4.0-4.1 (0.157-0.161)	Discolouration
	Mark 8 or 22	4.1-4.2 (0.161-0.165)	Discolouration
	Mark 9 or 23	4.2-4.3 (0.165-0.169)	Discolouration
	Mark 10 or 24	4.3-4.4 (0.169-0.173)	Discolouration
	Mark 11 or 25	4.4-4.5 (0.173-0.177)	Discolouration
	Mark 12 or 26	4.5-4.6 (0.177-0.181)	Discolouration
	Mark 13 or 27	4.6-4.7 (0.181-0.185)	Discolouration
	Reverse brake end plate thickness		
	Mark 1	3.55-3.65 (0.140-0.144)	Discolouration
	Mark 2	3.75-3.85 (0.148-0.152)	Discolouration
	Mark 3	3.95-4.05 (0.156-0.159)	Discolouration
	Mark 4	4.15-4.25 (0.163-0.167)	Discolouration
	Mark 5	4.35-4.45 (0.171-0.175)	Discolouration
	Mark 6	4.55-4.65 (0.179-0.183)	Discolouration
	Mark 7	4.75-4.85 (0.187-0.191)	Discolouration
	Mark 8	4.95-5.05 (0.195-0.199)	Discolouration
ATF pump	ATF pump drive gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump driven gear shaft O.D.	9.98-9.99 (0.3929-0.3933)	Wear or damage
	ATF pump body bushing I.D.		
	Drive gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	Driven gear shaft	10.000-10.015 (0.3937-0.3944)	Wear or damage
	ATF pump gear side clearance	0.015-0.035 (0.0006-0.0014)	Wear or damage
	ATF pump gear-to-body clearance		
	Drive gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
	Driven gear shaft	0.035-0.0505 (0.0014-0.0020)	Wear or damage
Transmission	Diameter of needle bearing contact area		
	Input shaft - flywheel side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Input shaft - forward clutch side	19.987-20.000 (0.7869-0.7874)	Wear or damage
	Drive pulley shaft - start clutch side	43.981-43.991 (1.7315-1.7319)	Wear or damage
	Drive pulley shaft - fly wheel side	24.007-24.020 (0.945-0.0043)	Wear or damage
	Drive pulley shaft - forward clutch side	24.007-24.020 (0.945-0.946)	Wear or damage
	Thrust clearance		
	Carrier and ring gear	0.050-0.110 (0.0020-0.0043)	-
	Driven pulley shaft and start clutch hub	0.000-0.130 (0.000-0.005)	-
	Input shaft and ATF pump driven sprocket	0.370-0.650 (0.015-0.026)	-
	Secondary gear shaft and fly wheel ball bearing	0.00-0.15 (0.00-0.006)	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Transmission (cont'd)	Thrust shim, 25 x 31 mm thickness	1.02-1.05 (0.040-0.041)	Wear or damage
		1.09-1.12 (0.043-0.044)	Wear or damage
		1.16-1.19 (0.046-0.047)	Wear or damage
		1.23-1.26 (0.048- 0.050)	Wear or damage
		1.30-1.33 (0.051-0.052)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.44-1.47 (0.057-0.058)	Wear or damage
		1.51-1.54 (0.059-0.061)	Wear or damage
		1.58-1.61 (0.062-0.063)	Wear or damage
		1.65-1.68 (0.065-0.066)	Wear or damage
		1.72-1.75 (0.068-0.069)	Wear or damage
		1.79-1.82 (0.070-0.072)	Wear or damage
		1.055-1.085 (0.0415-0.0427)	Wear or damage
		1.125-1.155 (0.0443-0.0454)	Wear or damage
		1.195-1.225 (0.0470-0.0482)	Wear or damage
		1.265-1.295 (0.0498-0.510)	Wear or damage
		1.335-1.365 (0.0526-0.0537)	Wear or damage
		1.405-1.435 (0.0553-0.0565)	Wear or damage
		1.475-1.505 (0.0580-0.0593)	Wear or damage
		1.545-1.575 (0.0608-0.0620)	Wear or damage
		1.615-1.645 (0.0636-0.0648)	Wear or damage
		1.685-1.715 (0.0663-0.0675)	Wear or damage
		1.755-1.785 (0.0691-0.0703)	Wear or damage
	Cotters thickness	2.87-2.90 (0.113-0.114)	Wear or damage
		2.97-3.00 (0.117-0.118)	Wear or damage
		3.07-3.10 (0.121-0.122)	Wear or damage
		3.17-3.20 (0.125-0.126)	Wear or damage
	ATF pump drive sprocket thrust shim, 22 x 28 mm thickness	1.12-1.15 (0.044-0.045)	Wear or damage
		1.37-1.40 (0.054-0.055)	Wear or damage
		1.62-1.65 (0.064-0.065)	Wear or damage
		1.87-1.90 (0.074-0.075)	Wear or damage
		2.12-2.15 (0.083-0.085)	Wear or damage
		2.37-2.40 (0.093-0.094)	Wear or damage
	Secondary gear shaft thrust shim, 25 x 35 mm thickness	2.80-2.85 (0.110-0.112)	Wear or damage
		2.90-2.95 (0.114-0.116)	Wear or damage
		3.00-3.05 (0.118-0.120)	Wear or damage
		3.10-3.15 (0.122-0.124)	Wear or damage
		3.20-3.25 (0.126-0.128)	Wear or damage
		3.30-3.35 (0.130-0.132)	Wear or damage
		3.40-3.45 (0.134-0.136)	Wear or damage
		3.50-3.55 (0.138-0.140)	Wear or damage
		3.60-3.65 (0.142-0.144)	Wear or damage
		3.70-3.75 (0.146-0.148)	Wear or damage
		3.80-3.85 (0.150-0.152)	Wear or damage
Transmission (cont'd)	Input shaft feed pipe O.D.		
	Drive pulley feed pipe	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Forward clutch feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Input shaft bushing I.D.		
	Drive pulley feed pipe bushing	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Forward clutch feed pipe bushing	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Driven shaft feed pipe O.D.		
	Start clutch feed pipe (right side cover side)	6.97-6.98 (0.274-0.275)	6.95 (0.274)
	Driven pulley feed pipe	11.47-11.48 (0.4516-0.4520)	11.45 (0.451)
	Start clutch feed pipe (fly wheel housing side)	8.97-8.98 (0.353-0.354)	8.95 (0.352)
	Driven pulley shaft bushing I.D.		
	Start clutch feed pipe (right side cover side)	7.000-7.015 (0.2756-0.2762)	7.030 (0.277)
	Driven pulley feed pipe	11.500-11.518 (0.4528-0.4535)	11.533 (0.454)
	Start clutch feed pipe (fly wheel housing side)	9.000-9.015 (0.354-0.355)	9.03 (0.356)
	Secondary driven gear sealing ring groove width	2.50-2.65 (0.098-0.104)	2.655 (0.105)
	Start clutch end plate I.D.	88.900-88.935 (3.500-3.501)	Wear or damaged
	Input shaft sealing ring groove width	2.00-2.10 (0.079-0.083)	2.105 (0.083)
	Drive pulley shaft I.D. at sealing ring	24.007-24.020 (0.945-0.946)	Wear or damage
Shifting device and parking brake control	Parking brake cone	-	Wear or other defect
	Parking brake pawl	-	Wear or other defect
	Parking gear	-	Wear or other defect

	MEASUREMENT	STANDARD (NEW)	
Differential carrier	Pinion shaft contact area I.D.	18.010-18.028 (0.7091-0.7098)	-
	Carrier-to-pinion clearance	0.023-0.057 (0.0009-0.0022)	0.1 (0.004)
	Drive shaft contact area I.D.	26.025-26.045 (1.0246-1.0254)	-
	Carrier-to-driveshaft clearance	0.045-0.086 (0.0018-0.0034)	0.12 (0.005)
Differential pinion gear	Backlash	0.05-0.15 (0.002-0.006)	-
	I.D.	18.042-18.066 (0.7103-0.7113)	-
	Pinion gear-to-pinion shaft clearance	0.055-0.095 (0.0022-0.0037)	0.15 (0.006)
Set ring-to-bearing outer race clearance		0-0.15 (0-0.006)	Adjust
Transfer	Diameter of roller bearing contact area		
	Transfer shaft (transfer gear side)	38-485-38-500 (1.515-1.516)	38.43 (1.513)
	Transfer shaft (middle of shaft)	27.977-27.990 (1.101-1.102)	27.92 (1.099)
	Transfer drive gear	40.002-40.018 (1.575-1.576)	39.95 (1.573)
	Transfer driven gear (driven gear side)	35.002-35.018 (1.378-1.379)	34.95 (1.376)
	Transfer driven gear shaft (splined side)	26.975-26.988 (1.062-1.063)	26.92 (1.060)
	Transfer gear backlash	0.060-0.160 (0.002-0.006)	Adjust
	Total starting torque Nm (kgf/cm, lbf/in)	2.68-3.47 (27.3,35.4, 23.7-30.7)	Adjust

	MEASUREMENT	Wire Dia.	O.D.	Free length	No of Coils
Springs	PH regulator valve spring	1.2 (0.047)	9.0 (0.354)	26.7 (1.051)	10.0
	PH control valve spring	1.7 (0.067)	13.4 (0.528)	39.4 (1.551)	8.7
	PL regulator valve spring	0.9 (0.035)	7.2 (0.283)	14.6 (0.575)	7.2
	PH-PL control valve spring	1.0 (0.039)	10.0 (0.394)	31.4 (1.236)	8.6
	Clutch reducing valve spring	1.9 (0.075)	16.8 (0.661)	44.4 (1.748)	8.0
	Lubrication valve spring	1.6 (0.063)	13.4 (0.528)	51.6 (2.031)	11.6
	Shift valve spring	1.4 (0.055)	8.2 (0.323)	34.1 (1.343)	13.0
	Shift control valve spring	1.0 (0.039)	7.4 (0.291)	19.3 (0.760)	7.5
	Start clutch control valve spring	0.4 (0.016)	4.1 (0.161)	12.1 (0.476)	6.8
	Pitot regulator valve spring	0.6 (0.024)	5.7 (0.224)	9.5 (0.374)	5.0
	Start clutch valve accumulator spring	1.2 (0.047)	8.3 (0.327)	29.8 (1.173)	12.3
	Reverse control valve spring	1.2 (0.047)	9.4 (0.370)	31.4 (1.236)	11.0
	Shift inhibitor valve spring	1.3 (0.051)	13.2 (0.520)	48.3 (1.902)	10.6

Differential (4WD) - Section 15

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Differential fluid	Capacity L (US qt. Imp qt)	1.2 (1.3, 1.1) at overhaul	-
		1.0 (1.1, 0.9) at fluid change	-

Unit of length: mm (in)

	MEASUREMENT	STANDARD (NEW)
Steering wheel	Rotation play at steering wheel circumference	0-10 (0-0.39)
	Starting load at steering wheel circumference N (kgf, lbf) Engine running	34 (3.5, 7.7)
Gearbox	Angle of rack-guide-screw loosened from locked position	10°-15°
Pump	Pump pressure with shut-off valve closed kPa (kgf/cm^2, psi)	7,200-7,800 (73-80, 1,040-1,140)
Power steering fluid	Recommended fluid	Honda power steering fluid (V, II or S)
	Fluid capacity / (US qt. lmp qt) For overhaul RHD	0.65 (0.70, 0.57)
	LHD	0.61 (0.64, 0.54)
Power steering belt*	Deflection with 98 N (10 kgf. 22lbf) between pulleys	10.5-14.0 (0.41-0.55) with used belt 7.5-10.0 (0.30-0.39) with new belt
Power steering belt*	Belt tension N (kgf, lbf) Measured with belt tension gauge	340-490 (35-50, 80-110) with used belt 640-780 (65-80, 140-180) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

Suspension - Section 18

	MEASUREMENT			STANDARD (NEW)	
Wheel alignment	Camber	Front	3 Door	-0°00' ± 1°	
		Rear	5 Door	-0°15' ± 1°	
		Rear		-0°30' ± 1'	
	Caster	Front		2°15' ±1°	
	Total toe	Front		0 ± 3 (0 ± 0.12)	
		Rear		IN 2 ± 5 (0.08 ± 0.02)	
	Front wheel turning angle				
	Inward wheel		3 Door	38°00' ± 2°	
			5 Door	35°00' ± 2°	
	Outward wheel			30°00' (Reference)	
Wheel bearing	End play		Front	0-0.05 (0-0.002)	
			Rear	0-0.05 (0-0.002)	
				STANDARD (NEW)	**SERVICE LIMIT**
Wheel	Rim runout	Aluminium wheel	Axial	0-0.7 (0-0.03)	2.0 (0.08)
			Radial	0-0.7 (0-0.03)	1.5 (0.06)
		Steel wheel	Axial	0-1.0 (0-0.04)	2.0 (0.08)
			Radial	0-1.0 (0-0.04)	1.5 (0.06)

	MEASUREMENT		STANDARD (NEW)	
Parking brake lever	Play on stroke at 196 N (20 kgf, 44 lbf) lever force		To be locked when pulled 7-10 notches	
Foot brake pedal	Pedal height (With floor mat removed)			
		M/T	192	
		A/T	197	
	Free play		1-5 (0.04-0.20)	
Master cylinder	Piston-to-pushrod clearance		0-0.4 (0-0.02)	
			STANDARD (NEW)	**SERVICE LIMIT**
Disc brake	Disc thickness	Front	22.9-23.1 (0.902-0.909)	21.0 (0.83)
	Disc runout	Rear	-	0.10 (0.004)
	Disc parallelism	Front	-	0.015 (0.0006)
	Pad thickness	Front	10.5-11.5 (0.4-0.45)	1.6 (0.06)
Rear Drum brake	I.D.	3 Door	199.9-200.0 (7.870-7.874)	201.0 (7.913)
		5 Door	219.9-220.0 (8.657-8.861)	221.0 (6.701)
	Lining thickness	3 Door	4.0 (0.157)	2.0 (0.08)
		5 Door	4.5 (0.18)	2.0 (0.08)
Brake booster	Characteristics at 98 N (20 kgf, 44 lbf) pedal force			
	Vacuum kPa (mmHg. inHg)		N (kgf, lbf)	kPa (kgf/cm^2, psi)
	0 (0.0)		98 (10, 22)	0 (0, 0)
			294 (30, 66)	1,400 (14, 199)
	66.7 (500, 19.7)		98 (10, 22)	3,600 (37, 526)
			294 (30, 66)	9,000 (92, 1,308)

Air Conditioning - Section 22

	MEASUREMENT		STANDARD (NEW)
Air conditioning system	Lubricant type: SP-10 (P/N 38897-P13-003, 38898-P13-003 or 368899-P13-A01).		
	Lubricant capacity m/ (fl oz, lmp oz)	Condenser	20 (2/3, 0.7)
		Evaporator	35 (1 1/16, 1.2)
		Line or hose	10 (1/3, 0.4)
		Receiver	10 (1/3,0.4)
Compressor	Lubricant type: SP-10 (P/N 38899-003 or 38899-P13-A01)		
	Lubricant capacity m/ (fl oz, lmp oz)		130-150 (4.4-5.1, 4.6-5.3)
	Field coil resistance at 20°C (68°F) ohms		3.05-3.35
	Pulley-to-pressure plate clearance		0.5 $\pm$ 0.15 (0.02 $\pm$ 0.006)
Compressor belt	Deflection with 98 N (10 kgf, 22 lbf) between pulleys		8.0-10.5 (0.31-0.41) with used belt
			5.0-7.0 (0.20-0.28) with new belt
	Belt tension N (kgf, lbf)		330-480 (34-49, 75-108) with used belt
	Measured with belt tension gauge		680-810 (69-83, 152-183) with new belt

*: When using a new belt, adjust deflection or tension to new values. Run the engine for 5 minutes then turn it off. Readjust deflection or tension to used belt values.

	ITEM		METRIC	ENGLISH	NOTES
Dimensions	3 Door model				
	Overall Length	KE, KG models	4,010 mm	157.9 in	
		KQ model	4,005 mm	157.7 in	
		KY, KU models	3,995 mm	157.3 in	
	Overall Width		1,695 mm	66.7 in	
	Overall Height				
	Models without roof spoiler				
	All models except KG (Portugal)		1,575 mm	62.0 in	
	KG (Portugal) model		1,590 mm	62.6 in	
	Models with roof spoiler				
	All models except KG (Portugal) and KY		1,670 mm	65.7 in	
	KG (Portugal) model		1,685 mm	68.3 in	
	KY model		1,680 mm	66.1 in	
	Wheelbase		2,360 mm	92.9 in	
	Track	Front	1,470 mm	57.9 in	
		Rear	1,455 mm	57.3 in	
	Wheel Arch (EU)				
	Front	Except KG (Portugal) model	728 mm	28.6 in	
		KG (Portugal) model	741 mm	29.2 in	
	Rear	Except KG (Portugal) model	743 mm	29.3 in	
		KG (Portugal) model	758 mm	29.8 in	
	Seating capacity	Except KU model	Four (4)		
		KU model	Five (5)		
Dimensions	5 Door model				
	Overall Length	KE, KG models	4,110 mm	161.8 in	
		KQ model	4,105 mm	157.7 in	
		KY, KU models	4,095 mm	157.3 in	
	Overall Width		1,695 mm	66.7 in	
	Overall Height				
	Models without roof spoiler				
	All models except KG (Portugal)		1,580 mm	62.2 in	
	KG (Portugal) model		1,595 mm	62.8 in	
	Models with roof spoiler				
	All models except KG (Portugal) and KY		1,670 mm	65.7 in	
	KG (Portugal) and KY models		1,685 mm	66.3 in	
	Wheel Base		2,460 mm	96.9 in	
	Track	Front	1,470 mm	57.9 in	
		Rear	1,455 mm	57.3 in	
	Wheel Arch (EU)				
	Front	Except KG (Portugal) model	726 mm	28.6 in	
		KG (Portugal) model	741 mm	29.2 in	
	Rear	Except KG (Portugal) model	743 mm	29.3 in	
		KG (Portugal) model	758 mm	29.8 in	
	Seating Capacity	Except KU model	Four (4)		
		KU model	Five (5)		

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KE and KG
KE, KG 3-door	D16W1 engine model			models are
Models	2WD 5MT	1,137 kgs	2,507 lbs	equipped with
	5MT with roof spoiler	1,147 kgs	2,529 lbs	power steering,
	5MT with sunroof	1,149 kgs	2,533 lbs	ABS and SRS
	5MT with sunroof and roof spoiler	1,159 kgs	2,555 lbs	system.
	CVT	1,162 kgs	2,562 lbs	
	CVT with roof spoiler	1,172 kgs	2,584 lbs	
	CVT with sunroof	1,174 kgs	2,588 lbs	
	CVT with sunroof and roof spoiler	1,184 kgs	2,610 lbs	
	4WD 5MT	1,192 kgs	2,628 lbs	
	5MT with roof spoiler	1,202 kgs	2,650 lbs	
	5MT with sunroof	1,204 kgs	2,654 lbs	
	5MT with sunroof and roof spoiler	1,214 kgs	2,676 lbs	
	CVT	1,217 kgs	2,683 lbs	
	CVT with roof spoiler	1,227 kgs	2,705 lbs	
	CVT with sunroof	1,229 kgs	2,709 lbs	
	CVT with sunroof and roof spoiler	1,239 kgs	2,732 lbs	
	D16W5 engine model (4DW)			
	5MT	1,212 kgs	2,672 lbs	
	5MT with roof spoiler	1,222 kgs	2,694 lbs	
	5MT with sunroof	1,224 kgs	2,698 lbs	
	5MT with sunroof and roof spoiler	1,234 kgs	2,721 lbs	
WEIGHT	Weight Distribution (Front/Rear)			
KE, KG 3-door	D16W1 engine model			
Models	2WD 5MT	683/454 kgs	1,506/1,001 lbs	
	5MT with roof spoiler	683/464 kgs	1,506/1,023 lbs	
	5MT with sunroof	690/459 kgs	1,521/1,012 lbs	
	5MT with sunroof and roof spoiler	690/469 kgs	1,521/1,034 lbs	
	CVT	710/452 kgs	1,565/997 lbs	
	CVT with roof spoiler	710/462 kgs	1,565/1,019 lbs	
	CVT with sunroof	717/457 kgs	1,581/1,007 lbs	
	CVT with sunroof and roof spoiler	717/467 kgs	1,581/1,029 lbs	
	4WD 5MT	705/487 kgs	1,554/1,074 lbs	
	5MT with roof spoiler	705/497 kgs	1,554/1,096 lbs	
	5MT with sunroof	712/492 kgs	1,570/1,084 lbs	
	5MT with sunroof and roof spoiler	712/502 kgs	1,570/1,106 lbs	
	CVT	732/485 kgs	1,614/1,069 lbs	
	CVT with roof spoiler	732/495 kgs	1,614/1,091 lbs	
	CVT with sunroof	739/490 kgs	1,629/1,080 lbs	
	CVT with sunroof and roof spoiler	739/500 kgs	1,629/1,103 lbs	
	D16W5 engine model (4WD)			
	5MT	716/496 kgs	1,579/1,093 lbs	
	5MT with roof spoiler	716/506 kgs	1,579/1,115 lbs	
	5MT with sunroof	723/501 kgs	1,594/1,104 lbs	
	5MT with sunroof and roof spoiler	723/511 kgs	1,594/1,127 lbs	
	Max Permissable weight (EU) 2WD	1,530 kgs	3,373 lbs	
	4WD	1,580 kgs	3,483 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KE and KG
KE,	D16W1 engine model			models are
KG 5-Models	2WD 5MT	1,209 kgs	2,665 lbs	equipped with
	5MT with roof spoiler	1,219 kgs	2,687 lbs	power steering,
	5MT with sunroof	1,221 kgs	2,692 lbs	ABS and SRS
	5MT with sunroof and roof spoiler	1,231 kgs	2,714 lbs	system.
	CVT	1,234 kgs	2,721 lbs	
	CVT with roof spoiler	1,244 kgs	2,743 lbs	
	CVT with sunroof	1,246 kgs	2,747 lbs	
	CVT with sunroof and roof spoiler	1,256 kgs	2,769 lbs	
	4WD 5MT	1,261 kgs	2,780 lbs	
	5MT with roof spoiler	1,271 kgs	2,802 lbs	
	5MT with sunroof	1,273 kgs	2,806 lbs	
	5MT with sunroof and roof spoiler	1,383 kgs	2,829 lbs	
	CVT	1,286 kgs	2,835 lbs	
	CVT with roof spoiler	1,296 kgs	2,857 lbs	
	CVT with sunroof	1,298 kgs	2,862 lbs	
	CVT with sunroof and roof spoiler	1,308 kgs	2,884 lbs	
	D16W5 engine model (4WD)			
	5MT	1,269 kgs	2,798 lbs	
	5MT with roof spoiler	1,279 kgs	2,820 lbs	
	5MT with sunroof	1,281 kgs	2,824 lbs	
	5MT with sunroof and roof spoiler	1,291 kgs	2,846 lbs	
	Weight Distribution (Front/Rear)			
	D16W1 engine model			
	2WD 5MT	710/499 kgs	1,565/1,100 lbs	
	5MT with roof spoiler	710/509 kgs	1,565/1,122 lbs	
	5MT with sunroof	717/504 kgs	1,581/1,111 lbs	
	5MT with sunroof and roof spoiler	717/514 kgs	1,581/1,133 lbs	
	CVT	736/498 kgs	1,623/1,098 lbs	
	CVT with roof spoiler	736/508 kgs	1,623/1,120 lbs	
	CVT with sunroof	743/503 kgs	1,638/1,109 lbs	
	CVT with sunroof and roof spoiler	743/513 kgs	1,638/1,131 lbs	
	4WD 5MT	726/535 kgs	1,601/1,179 lbs	
	5MT with roof spoiler	726/545 kgs	1,601/1,201 lbs	
	5MT with sunroof	733/540 kgs	1,616/1,190 lbs	
	5MT with sunroof and roof spoiler	733/550 kgs	1,616/1,213 lbs	
	CVT	749/537 kgs	1,651/1,184 lbs	
	CVT with roof spoiler	749/547 kgs	1,651/1,206 lbs	
	CVT with sunroof	756/542 kgs	1,667/1,195 lbs	
	CVT with sunroof and roof spoiler	756/552 kgs	1,667/1,217 lbs	
Weight	D16W5 engine model (4WD)			
KY Model	5MT	733/536 kgs	1,616/1,182 lbs	
	5MT with roof spoiler	733/546 kgs	1,616/1,204lbs	
	5MT with sunroof	740/541 kgs	1,631/1,193 lbs	
	5MT with sunroof and roof spoiler	740/551 kgs	1,631/1,215 lbs	
	Max. Permissable Weight (EU) 2WD	1,610 kgs	3,549 lbs	
	4WD	1,640 kgs	3,615 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KG model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	1,135 kgs	2,502 lbs	power steering,
	5MT with ABS and roof spoiler	1,145 kgs	2,524 lbs	and SRS
	5MT with ABS and sunroof	1,145 kgs	2,524 lbs	system.
	5MT with ABS, sunroof and roof spoiler	1,155 kgs	2,546 lbs	
	CVT with ABS	1,160 kgs	2,557 lbs	
	CVT with ABS and roof spoiler	1,170 kgs	2,579 lbs	
	CVT with ABS and sunroof	1,170 kgs	2,579 lbs	
	CVT with ABS, sunroof and roof spoiler	1,180 kgs	2,601 lbs	
	4WD 5MT	1,185 kgs	2,612 lbs	
	5MT with roof spoiler	1,195 kgs	2,634 lbs	
	5MT with ABS	1,190 kgs	2,623 lbs	
	5MT with ABS and roof spoiler	1,200 kgs	2,645 lbs	
	5MT with sunroof	1,195 kgs	2,634 lbs	
	5MT with sunroof and roof spoiler	1,205 kgs	2,656 lbs	
	5MT with ABS and sunroof	1,200 kgs	2,645 lbs	
	5MT with ABS, sunroof and roof spoiler	1,210 kgs	2,667 lbs	
	CVT	1,210 kgs	2,667 lbs	
	CVT with roof spoiler	1,220 kgs	2,689 lbs	
	CVT with ABS	1,215 kgs	2,678 lbs	
	CVT with ABS and roof spoiler	1,225 kgs	2,700 lbs	
	CVT with sunroof	1,220 kgs	2,689 lbs	
	CVT with sunroof and roof spoiler	1,230 kgs	2,711 lbs	
	CVT with ABS and sunroof	1,223 kgs	2,696 lbs	
	CVT with ABS, sunroof and roof spoiler	1,233 kgs	2,718 lbs	
	D16W5 engine model (4WD)			
	CVT	1,215 kgs	2,678 lbs	
	CVT with roof spoiler	1,225 kgs	2,700 lbs	
	CVT with ABS	1,220 kgs	2,689 lbs	
	CVT with ABS and roof spoiler	1,230 kgs	2,711 lbs	
	CVT with sunroof	1,225 kgs	2,700 lbs	
	CVT with sunroof and roof spoiler	1,235 kgs	2,722 lbs	
	CVT with ABS and sunroof	1,228 kgs	2,707 lbs	
	CVT with ABS, sunroof and roof spoiler	1,238 kgs	2,729 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Weight Distribution (Front/Rear)			KG model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	680/456 kgs	1,499/1,003 lbs	power steering,
(cont'd)	5MT with ABS and roof spoiler	680/465 kgs	1,499/1,025 lbs	SRS system.
	5MT with ABS and sunroof	685/460 kgs	1,510/1,014 lbs	
	5MT with sunroof and roof spoiler	685/470 kgs	1,510/1,036 lbs	
	CVT with ABS	705/455 kgs	1,554/1,003 lbs	
	CVT with roof spoiler	705/465 kgs	1,554/1,025 lbs	
	CVT with ABS and sunroof	710/460 kgs	1,565/1,014 lbs	
	CVT with ABS, sunroof and roof spoiler	710/470 kgs	1,565/1,036 lbs	
	4WD 5MT	690/495 kgs	1,521/1,091 lbs	
	5MT with roof spoiler	690/505 kgs	1,521/1,113 lbs	
	5MT with ABS	695/495 kgs	1,532/1,091 lbs	
	5MT with ABS sunroof and roof spoiler	695/505 kgs	1,532/1,113 lbs	
	5MT with sunroof	695/500 kgs	1,532/1,102 lbs	
	5MT with sunroof and roof spoiler	695/510 kgs	1,532/1,124 lbs	
	5MT with ABS and sunroof	700/500 kgs	1,543/1,102 lbs	
	5MT with ABS, sunroof and roof spoiler	700/510 kgs	1,543/1,124 lbs	
	CVT	715/495 kgs	1,576/1,091 lbs	
	CVT with roof spoiler	715/505 kgs	1,576/1,113 lbs	
	CVT with ABS	720/495 kgs	1,587/1,091 lbs	
	CVT with ABS and roof spoiler	720/505 kgs	1,554/1,113 lbs	
	CVT with sunroof	720/500 kgs	1,587/1,103 lbs	
	CVT with sunroof and roof spoiler	720/510 kgs	1,587/1,124 lbs	
	CVT with ABS and sunroof	723/500 kgs	1,594/1,102 lbs	
	CVT with ABS, sunroof and roof spoiler	733/500 kgs	1,616/1,102 lbs	
	D16W5 engine model (4DW)			
	CVT	720/495 kgs	1,587/1,091 lbs	
	CVT with roof spoiler	720/505 kgs	1,587/1,113 lbs	
	CVT with ABS	725/495 kgs	1,598/1,091 lbs	
	CVT with ABS and roof spoiler	725/505 kgs	1,598/1,113 lbs	
	CVT with sunroof	725/500 kgs	1,598/1,102 lbs	
	CVT with sunroof and roof spoiler	725/510 kgs	1,598/1,124 lbs	
	CVT with ABS and sunroof	728/500 kgs	1,6051,102 lbs	
	CVT with ABS, sunroof and roof spoiler	728/510 kgs	1,605/1,124 lbs	
	Max Loaded Vehicle Weight (ADR)	1,580 kgs	3,483 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KQ model is
KQ 5-door	D16W1 engine model			equipped with
Model	2WD 5MT with ABS	1,200 kgs	2,646 lbs	power steering
(cont'd)	5MT with ABS and roof spoiler	1,210 kgs	2,668 lbs	and SRS
	5MT with ABS and sunroof	1,210 kgs	2,668 lbs	system.
	5MT with ABS, sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	CVT with ABS	1,225 kgs	2,701 lbs	
	CVT with ABS and roof spoiler	1,235 kgs	2,723 lbs	
	CVT with ABS and sunroof	1,235 kgs	2,723 lbs	
	CVT with ABS, sunroof and roof spoiler	1,245 kgs	2,745 lbs	
	4WD 5MT	1,250 kgs	2,756 lbs	
	5MT with roof spoiler	1,260 kgs	2,778 lbs	
	5MT with ABS	1,255 kgs	2,767 lbs	
	5MT with ABS and roof spoiler	1,265 kgs	2,789 lbs	
	5MT with sunroof	1,260 kgs	2,778 lbs	
	5MT with sunroof and roof spoiler	1,270 kgs	2,800 lbs	
	5MT with ABS and sunroof	1,265 kgs	2,789 lbs	
	5MT with ABS, sunroof and roof spoiler	1,275 kgs	2,811 lbs	
	CVT	1,275 kgs	2,811 lbs	
	CVT with roof spoiler	1,285 kgs	2,833 lbs	
	CVT with ABS	1,280 kgs	2,822 lbs	
	CVT with ABS and roof spoiler	1,290 kgs	2,844 lbs	
	CVT with sunroof	1,285 kgs	2,833 lbs	
	CVT with sunroof and roof spoiler	1,295 kgs	2,855 lbs	
	CVT with ABS and sunroof	1,290 kgs	2,844 lbs	
	CVT with ABS, sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	D16W5 engine model (4WD)			
	CVT	1,280 kgs	2,822 lbs	
	CVT with roof spoiler	1,290 kgs	2,844 lbs	
	CVT with ABS	1,285 kgs	2,833 lbs	
	CVT with ABS and roof spoiler	1,295 kgs	2,855 lbs	
	CVT with sunroof	1,290 kgs	2,844 lbs	
	CVT with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	CVT with ABS and sunroof	1,295 kgs	2,855 lbs	
	CVT with ABS, sunroof and roof spoiler	1,305 kgs	2,877 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KQ model is
KQ 5-Model	D16W1 engine model			equipped with
(cont'd)	2WD 5MT with ABS	700/500 kgs	1,543/1,103 lbs	power steering,
	5MT with ABS and roof spoiler	700/510 kgs	1,543/1,125 lbs	and SRS
	5MT with ABS and sunroof	705/505 kgs	1,554/1,114 lbs	system.
	5MT with ABS, sunroof and roof spoiler	705/515 kgs	1,554/1,136 lbs	
	CVT with ABS	725/500 kgs	1,598/1,103 lbs	
	CVT with ABS and roof spoiler	725/510 kgs	1,598/1,125 lbs	
	CVT with ABS and sunroof	730/505 kgs	1,609/1,114 lbs	
	CVT with ABS, sunroof and roof spoiler	730/515 kgs	1,609/1,136 lbs	
	4WD 5MT	715/535 kgs	1,576/1,180 lbs	
	5MT with roof spoiler	715/545 kgs	1,576/1,202 lbs	
	5MT with ABS	720/535 kgs	1,587/1,180 lbs	
	5MT with ABS and roof spoiler	720/545 kgs	1,587/1,202 lbs	
	5MT with sunroof	720/540 kgs	1,587/1,191 lbs	
	5MT with sunroof and roof spoiler	720/550 kgs	1,587/1,213 lbs	
	5MT with ABS and sunroof	725/540 kgs	1,598/1,191 lbs	
	5MT with ABS, sunroof and roof spoiler	725/550 kgs	1,598/1,213 lbs	
	CVT	740/535 kgs	1,631/1,180 lbs	
	CVT with roof spoiler	740/545 kgs	1,631/1,202 lbs	
	CVT with ABS	745/535 kgs	1,642/1,180 lbs	
	CVT with ABS and roof spoiler	745/545 kgs	1,642/1,202 lbs	
	CVT with sunroof	745/540 kgs	1,642/1,191 lbs	
	CVT with sunroof and roof spoiler	745,550 kgs	1,642/1,213lbs	
	CVT with ABS and sunroof	750/540 kgs	1,653/1,191 lbs	
	CVT with ABS, sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	D16W5 engine model (4WD)			
	CVT	745/535 kgs	1,642/1,180 lbs	
	CVT with roof spoiler	745/545 kgs	1,642/1,202 lbs	
	CVT with ABS	750/535 kgs	1,653/1,180 lbs	
	CVT with ABS and roof spoiler	750/545 kgs	1,653/1,202 lbs	
	CVT with sunroof	750/540 kgs	1,653/1,191 lbs	
	CVT with sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	CVT with ABS and sunroof	755/540 kgs	1,664/1,191 lbs	
	CVT with ABS, sunroof and roof spoiler	755/550 kgs	1,664/1,213 lbs	
	Max. Loaded Vehicle Weight (ADR)	1,660 kgs	3,659 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KU model is
KU 3-door	D16W1 engine model			equipped with
Model	2WD 5MT	1,135 kgs	2,502 lbs	power steering,
	5MT with roof spoiler	1,145 kgs	2,524 lbs	ABS and SRS
	5MT with sunroof	1,145 kgs	2,524 lbs	system.
	5MT with sunroof and roof spoiler	1,155 kgs	2,546 lbs	
	Multi Matic	1,160 kgs	2,557 lbs	
	Multi Matic with roof spoiler	1,170 kgs	2,579 lbs	
	Multi Matic with sunroof	1,170 kgs	2,579 lbs	
	Multi Matic sunroof and roof spoiler	1,180 kgs	2,601 lbs	
	4WD 5MT	1,190 kgs	2,623 lbs	
	5MT with roof spoiler	1,200 kgs	2,646 lbs	
	5MT with sunroof	1,200 kgs	2,646 lbs	
	5MT with roof spoiler and roof spoiler	1,210 kgs	2,668 lbs	
	Multi Matic	1,215 kgs	2,679 lbs	
	Multi Matic with roof spoiler	1,225 kgs	2,701 lbs	
	Multi Matic with sunroof	1,223 kgs	2,697 lbs	
	Multi Matic with sunroof and roof spoiler	1,233 kgs	2,719 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	1,220 kgs	2,690 lbs	
	Multi Matic with roof spoiler	1,230 kgs	2,712 lbs	
	Multi Matic with sunroof	1,228 kgs	2,708 lbs	
	Multi Matic with sunroof and roof spoiler	1,238 kgs	2,730 lbs	
Weight	Weight Distribution (Front/Rear)			KU model is
KG 3-door	D16W1 engine model			equipped with
Model	2WD 5MT	680/455 kgs	1,499/1,003 lbs	power steering,
	5MT with roof spoiler	680/465 kgs	1,499/1,025 lbs	ABS and SRS
	5MT with sunroof	685/460 kgs	1,510/1,014 lbs	system.
	5MT with sunroof and roof spoiler	685/470 kgs	1,510/1,036 lbs	
	Multi Matic	705/455 kgs	1,554/1,003 lbs	
	Multi Matic with roof spoiler	705/465 kgs	1,554/1,025 lbs	
	Multi Matic with sunroof	710/460 kgs	1,565/1,014 lbs	
	Multi Matic with sunroof and roof spoiler	710/470 kgs	1,565/1,036 lbs	
	4WD 5MT	695/495 kgs	1,532/1,091 lbs	
	5MT with roof spoiler	695/505 kgs	1,532/1,114 lbs	
	5MT with Sunroof	700/500 kgs	1,543/1,103 lbs	
	5MT with sunroof and roof spoiler	700/510 kgs	1,543/1,125 lbs	
	Multi Matic	720/495 kgs	1,587/1,092 lbs	
	Multi Matic with roof spoiler	720/505 kgs	1,587/1,114 lbs	
	Multi Matic with sunroof	723/500 kgs	1,594/1,103 lbs	
	Multi Matic with sunroof and roof spoiler	723/510 kgs	1,594/1,125 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	725/495 kgs	1,588/1,092 lbs	
	Multi Matic with roof spoiler	725/505 kgs	1,588/1,114 lbs	
	Multi Matic with sunroof	728/500 kgs	1,605/1,103 lbs	
	Multi Matic with sunroof and roof spoiler	728/510 kgs	1,6051,125 lbs	

	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KU model is
KU 5-door	D16W1 engine model			equipped with
Model	2WD 5MT	1,200 kgs	2,646 lbs	power steering,
	5MT with roof spoiler	1,210 kgs	2,668 lbs	ABS and SRS
	5MT with sunroof	1,210 kgs	2,668 lbs	system.
	5MT with sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	Multi Matic	1,225 kgs	2,701 lbs	
	Multi Matic with roof spoiler	1,235 kgs	2,723 lbs	
	Multi Matic with sunroof	1,235 kgs	2,723 lbs	
	Multi Matic with sunroof and roof spoiler	1,245 kgs	2,745 lbs	
	4WD 5MT	1,255 kgs	2,767 lbs	
	5MT with roof spoiler	1,265 kgs	2,789 lbs	
	5MT with sunroof	1,265 kgs	2,789 lbs	
	5MT with sunroof and roof spoiler	1,275 kgs	2,811 lbs	
	Multi Matic	1,280 kgs	2,822 lbs	
	Multi Matic with roof spoiler	1,290 kgs	2,844 lbs	
	Multi Matic with sunroof	1,290 kgs	2,844 lbs	
	Multi Matic with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	1,285 kgs	2,833 lbs	
	Multi Matic with roof spoiler	1,295 kgs	2,855 lbs	
	Multi Matic with sunroof	1,295 kgs	2,855 lbs	
	Multi Matic with sunroof and roof spoiler	1,305 kgs	2,866 lbs	
Weight	Weight Distribution (Front/Rear)			KU model is
KU 5-door	D16W1 engine model			equipped with
Model	2WD 5MT	700/500 kgs	1,543/1,103 lbs	power steering,
	5MT with roof spoiler	700/510 kgs	1,543/1,125 lbs	ABS and SRS
	5MT with sunroof	705/505 kgs	1,554/1,114 lbs	system.
	5MT with sunroof and roof spoiler	705/515 kgs	1,554/1,136 lbs	
	Multi Matic	725/500 kgs	1,598/1,103 lbs	
	Multi Matic with roof spoiler	725/510 kgs	1,598/1,125 lbs	
	Multi Matic with sunroof	730/505 kgs	1,609/1,114 lbs	
	Multi Matic with sunroof and roof spoiler	730/515 kgs	1,609/1,136 lbs	
	4WD 5MT	720/535 kgs	1,587/1,180 lbs	
	5MT with roof spoiler	720/545 kgs	1,587/1,202 lbs	
	5MT with Sunroof	725/540 kgs	1,598/1,191lbs	
	5MT with sunroof and roof spoiler	725/550 kgs	1,598/1,213 lbs	
	Multi Matic	745/535 kgs	1,642/1,180 lbs	
	Multi Matic with roof spoiler	745/545 kgs	1,642/1,202 lbs	
	Multi Matic with sunroof	750/540 kgs	1,593/1,191 lbs	
	Multi Matic with sunroof and roof spoiler	750/550 kgs	1,653/1,213 lbs	
	D16W5 engine model (4WD)			
	Multi Matic	750/535 kgs	1,653/1,080 lbs	
	Multi Matic with roof spoiler	750/545 kgs	1,653/1,202 lbs	
	Multi Matic with sunroof	755/540 kgs	1,664/1,191 lbs	
	Multi Matic with sunroof and roof spoiler	755/550 kgs	1,664/1,213 lbs	

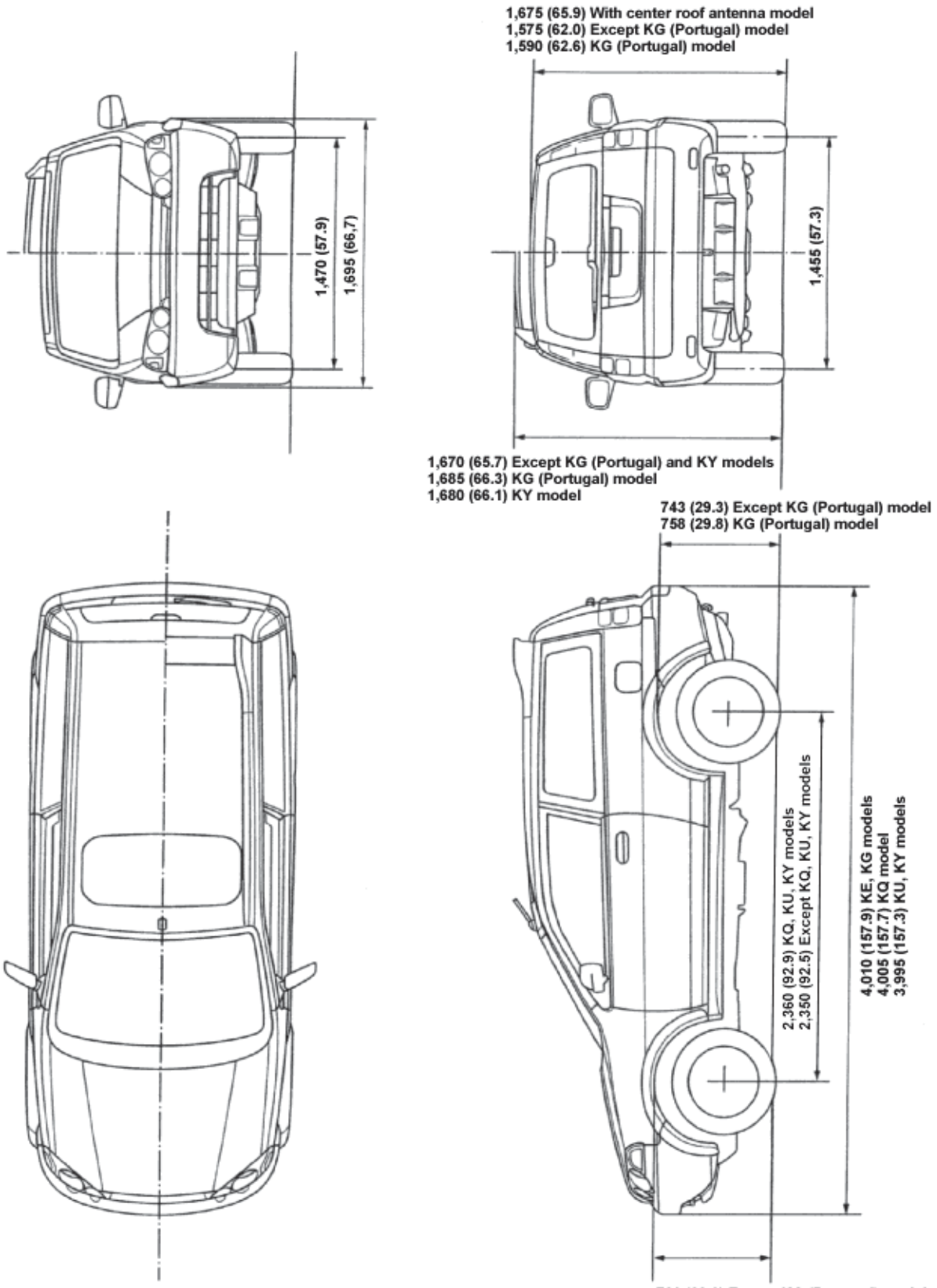
	ITEM	METRIC	ENGLISH	NOTES
Weight	Curb Weight			KY model is
KG 3-door	5MT	1,195 kgs	2,635 lbs	equipped with
Model	5MT with roof spoiler	1,205 kgs	2,657 lbs	power steering
	5MT with ABS	1,200 kgs	2,646 lbs	and SRS
	5MT with ABS and roof spoiler	1,210 kgs	2,668 lbs	system
	5MT with sunroof	1,210 kgs	2,668 lbs	
	5MT with sunroof and roof spoiler	1,220 kgs	2,690 lbs	
	5MT with ABS and sunroof	1,215 kgs	2,679 lbs	
	5MT with ABS, sunroof and roof spoiler	1,225 kgs	2,701 lbs	
	Weight Distribution (Front/Rear)			
	5MT	700/495 kgs	1,543/1,092 lbs	
	5MT with roof spoiler	700/505 kgs	1,543/1,114 lbs	
	5MT with ABS	705/495 kgs	1,554/1,092 lbs	
	5MT with ABS and roof spoiler	705/505 kgs	1,554/1,114 lbs	
	5MT with sunroof	710/500 kgs	1,565/1,103 lbs	
	5MT with sunroof and roof spoiler	710/510 kgs	1,565/1,125 lbs	
	5MT with ABS and sunroof	715/500 kgs	1,576/1,103 lbs	
	5MT with ABS, sunroof and roof spoiler	715/510 kgs	1,576/1,125 lbs	
WEIGHT	Curb Weight			KY model is
KY 5-door	5MT	1,280 kgs	2,822 lbs	equipped with
Model	5MT with roof spoiler	1,290 kgs	2,844 lbs	power steering,
	5MT with ABS	1,285 kgs	2,833 lbs	and SRS
	5MT with ABS and roof spoiler	1,295 kgs	2,855 lbs	system.
	5MT with sunroof	1,290 kgs	2,844 lbs	
	5MT with sunroof and roof spoiler	1,300 kgs	2,866 lbs	
	5MT with ABS and sunroof	1,295 kgs	2,855 lbs	
	5MT with ABS, sunroof and roof spoiler	1,305 kgs	2,877 lbs	
	Weight Distribution (Front/Rear)			
	5MT	715/565 kgs	1,576/1,246 lbs	
	5MT with roof spoiler	715/575 kgs	1,576/1,268 lbs	
	5MT with ABS	720/565 kgs	1,587/1,246 lbs	
	5MT with ABS and roof spoiler	720/575 kgs	1,587/1,268 lbs	
	5MT with sunroof	720/570 kgs	1,587/1,257 lbs	
	5MT with sunroof and roof spoiler	720/580 kgs	1,587/1,279 lbs	
	5MT with ABS and sunroof	725/570 kgs	1,598/1,257 lbs	
	5MT with ABS, sunroof and roof spoiler	725/580 kgs	1,598/1,279 lbs	

	ITEM		DESCRIPTION		NOTES
ENGINE	Type D16W1, D16W2 engines		Water-cooled, 4-stroke SOHC		
	D16W5 engine		gasoline engine		
	Cylinder Arrangement		Water-cooled, 4-stroke SOHC		
			VTEC gasoline engine		
			Inline 4-cylinder, transverse		
			METRIC	**ENGLISH**	
	Bore and Stroke		75 x 90 mm	3.0 x 3.5 in	
	Displacement		1,590 cm^3	97 cu-in	
	Compression Ratio				
	D16W1, D16W5 engines		9.6		
	D16W1 engine		9.2		
	Valve Train		Belt Driven, SOHC		
	D16W1,D16W2 engines		4 valves per cylinder		
	D16W5 engine		Belt Driven, SOHC VTEC		
			4 valves per cylinder		
	Lubrication System		Forced and wet sump, trochoid pump		
	Oil pump Discharge rate		7.11 cm^3/rev	0.433 cu-in/rev	
	Water Pump Discharge rate at 6,000 rpm		125 *l* (132 US qt, 110 Imp qt/minute		
	Fuel Required				
	D16W1, D16W5 engine				
	European models		Premium UNLEADED gasoline with a Research Octane Number (RON) of 95 or higher		
	Except European models		UNLEADED gasoline with a Research Octane number (RON) of 91 or higher		
	D16W2 engine		LEADED gasoline with a Research Octane Number (RON) of 91 or higher		Unleaded gasoline with RON of 91 or higher may also be used
Starter	Type		Gear reduction		
	Normal Output		1.0kW		
	Normal Voltage		12V		
	Hour Rating		30 seconds		
	Direction of Rotation		Clockwise as viewed from gear end		
	Weight		3.1 kg	6.8 lbs	
Clutch	Type	M/T	Single plate dry diaphragm spring		
		A/T	Torque converter		
	Clutch facing area M/T		176 cm^2	27 sq in	
Transmission	Type M/T		Synchronised 5-speed forward, 1 reverse		
	CVT/Honda Multi Matic		Electronically controlled continuously variable transmission		
	Primary Gear Reduction	Type Ratio	Direct/1:1		
	Manual transmission				
	Gear Ratio	1st	3.500		
		2nd	1.956		
		3rd	1.344		
		4th	1.071		
		5th	0.870		
		Reverse	3.000		
	Final Reduction	Gear type	Single helical gear		
		Gear ratio	4.562		
	Transfer		0.434		
	Rear Differential		2.533		
	CVT/Honda Multi Matic				
	Gear Ratio	Low-High	2.466-0.449		
		Reverse	2.466		
	Final Reduction	Gear type	Single helical gear		
		Gear ratio	4.714		
	Transfer		0.433		
	Rear Differential		2.533		

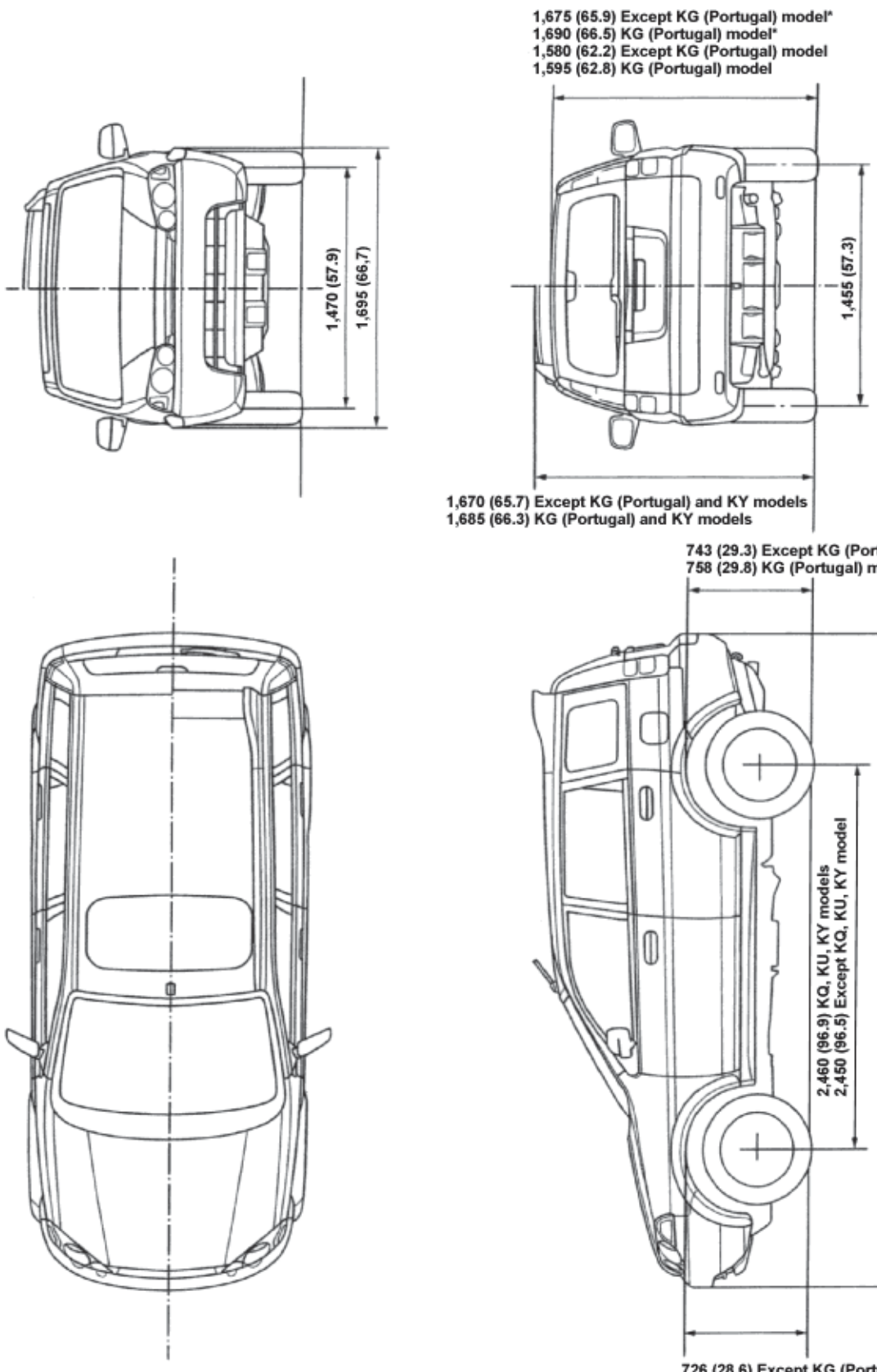
	ITEM			DESCRIPTION		NOTES
Air Conditioning	Cooling Capacity					
	Except KY models			3,172 Kcal/h	12,580 BTU/h	
	KY model			3,529 Kcal/h	14,000 BTU/h	
Air Conditioning	Compressor					
	Type/Manufacturer			Scroll/KEIHIN		
	Capacity			85.7 cm^3/rev	5.23 cu-in/rev	
	Max. Speed			10,000 rpm (min^{-1})		
	Lubricant Capacity			130 cm^3	4 1/3 fl oz,	
	Lubricant Type			SP-10 (P/N 38899-P13-003 or 38899-P13-A01		
	Condenser	Type		Corrugated fin		
	Evaporator	Type		Corrugated fin		
Air Conditioning	Blower	Type		Sirocco fan		
		Motor Input		190 W/12 V		
		Speed Control		4-speed		
		Max. Capacity		380 m^3/h	23 cu-ft/h	With A/C filter
				410 m^3/h	25 cu-ft/h	Without A/C filter
	Temp. Control	Type		Air Mix type		
	Compressor Clutch	Type		Dry, single plate, poly-V belt drive		
		Power Consumption		42 W max/12 V		
	Refrigerant	Type		HFC - 134a (R - 134a)		
		Quantity		600 + 0, -50 g	21.1 + 0 -1.8 oz	Except KY model
				650 + 0 -50 g	22.9 + 0 -1.8 oz	KY model
Steering System	Type			Power assisted, rack and pinion		
	Overall Ratio			15.1		
	Turns, Lock-to-Lock			2.75		
	Steering Wheel Dia.			375 mm	14.8 in	
Suspension	Type	Front		Independent double wishbone, coil spring with stabiliser		
		Rear		Independent double wishbone, coil spring with stabiliser		
	Shock Absorber	Front and Rear		Telescopic, hydraulic nitrogen gas-filled		
Wheel Alignment	Camber	Front	3-door	0°		
			5-door	-0°15'		
		Rear		-0°30'		
	Caster	Front		2°15'		
	Total Toe	Front		0 mm	0 in	
		Rear		In 2 mm	In 0.08 in	
Brake System	Type	Front		Power-assisted self-adjusting ventilated disc		
		Rear		Power-assisted self-adjusting drum		
	Pad Surface Area	Front		51 cm^2 x 4	7.9 sq-in x 4	
	Lining Surface Area	Rear	3-door	67.2 cm^2 x 4	10.4 sq-in x 4	
			5-door	73 cm^2 x 4	11.2 sq-in x 4	
	Parking brake	Type		Mechanical actuating, rear two wheel brakes		
Tyre	Size and pressure			See tyre label		
Washer Reservoir	Capacity			4.5 l (4.8 US qt, 4.0 Imp qt)		KE, KG models
				2.5 l (2.6 US qt, 2.2 Imp qt)		Except KE, KG models

	ITEM	DESCRIPTION	NOTES
Electrical	Battery	12 V, 36 AH, 5 HR	
	Starter	12V - 1.0 kW	
	Alternator	12V - 75A	
	Fuses		
	In the Under-dash Fuse Box	7.5A, 10A, 15A, 20A	
	In the Under-hood Fuse/Relay box	7.5A, 10A, 15A, 20A, 30A, 40A, 50A, 80A	
	Headlights High/Low	12V - 55/55 W	
	Front Turn Signal Lights	12V - 21 W	
	Front Position Lights	12V - 5 W	
	Side Turn Signal Lights	12V - 5 W	
	Rear Turn Signal Lights	12V - 21 W	
	Brake/Taillights	12V - 21/5 W	
	High Mount Brake Light	12V - 21 W	
	Back-up Lights	12V - 21 W	
	License Plate Lights	12V - 5 W	
	Ceiling Lights Front	12V - 5 W	
	Rear	12V - 8 W	
	Cargo Area Lights	12V - 3.4 W	
	Gauge Lights	12V - 1.4 W, 3.0 W	
	Indicator Lights	12V - 0.84 W, 1.12 W, 1.4 W, 0.91 W	
	Illumination and Pilot Lights	12V - 0.84 W, 0.91 W, 1.4 W	
	Rear Fog Light	12V - 21 W	European model
	Spot Lights	12V - 5 W	

mm (in)


1,675 (65.9) With center roof antenna model
1,575 (62.0) Except KG (Portugal) model
1,590 (62.6) KG (Portugal) model
1,470 (57.9)
1,695 (66.7)
1,455 (57.3)
1,670 (65.7) Except KG (Portugal) and KY models
1,685 (66.3) KG (Portugal) model
1,680 (66.1) KY model
743 (29.3) Except KG (Portugal) model
758 (29.8) KG (Portugal) model
2,360 (92.9) KQ, KU, KY models
2,350 (92.5) Except KQ, KU, KY models
4,010 (157.9) KE, KG models
4,005 (157.7) KQ model
3,995 (157.3) KU, KY models
726 (28.6) Except KG (Portugal) model
741 (29.2) KG (Portugal) model

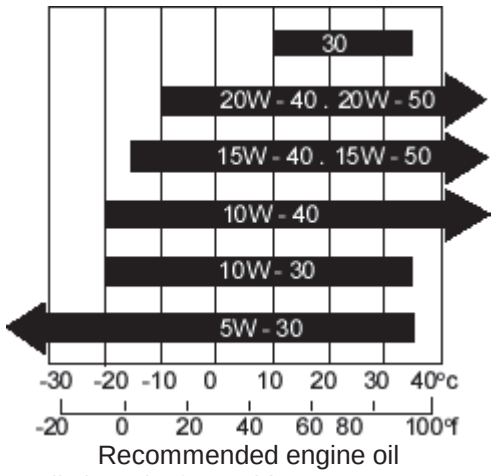
mm (in)



*With center roof antenna

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

No.	LUBRICATION POINTS		LUBRICANT
1	Engine		Always use a fuel-efficient oil that says “API Service SG, SH or SJ.” SAE Viscosity: See chart below.
2	Transmission	Manual	Genuine Honda MTF*1
		CVT/Honda Multimatic	Genuine Honda ATF-Z1 (ATF)
3	Brake line (includes Anti-lock brake line)		Brake fluid DOT3 or DOT4*2
4	Clutch line		Brake fluid DOT3 or DOT4*2
5	Power steering gearbox		Steering grease P/N 08733 - B070E
6	Release fork (Manual transmission)		Urea Grease UM264 (P/N 41211 - PY5 - 305)
7	Shift and select cable ends (Manual transmission)		Urea Grease UM 264 (P/N 41211 - PY5 - 305)
8	Throttle cable end (Dashboard lower panel hole)		Silicone Grease
9	Throttle cable end (Throttle link)		Multi-purpose grease
10	Brake master cylinder pushrod		Multi-purpose grease
11	Clutch master cylinder pushrod		Multi-purpose grease
12	Hood hinges and hood latch		Multi-purpose grease
13	Battery terminals		Multi-purpose grease
14	Fuel fill lid		Multi-purpose grease
15	Tailgate hinges and latch		Multi-purpose grease
16	Door hinges, upper and lower		Multi-purpose grease
17	Door open detent		Multi-purpose grease
18	Rear brake shoe linkages		Multi-purpose grease
19	Brake calipers		Silicone grease
20	Power steering system		Genuine Honda Power Steering Fluid (V, II or S)
21	Air conditioning compressor		Compressor oil: SP-10 (P/N 38899 - P13 - 003 or 38899 - P13 - A01) (For Refrigerant: HFC - 134a (R-134a)
22	Rear Differential		Use only DPSF (Dual Pump System Fluid)



Recommended engine oil

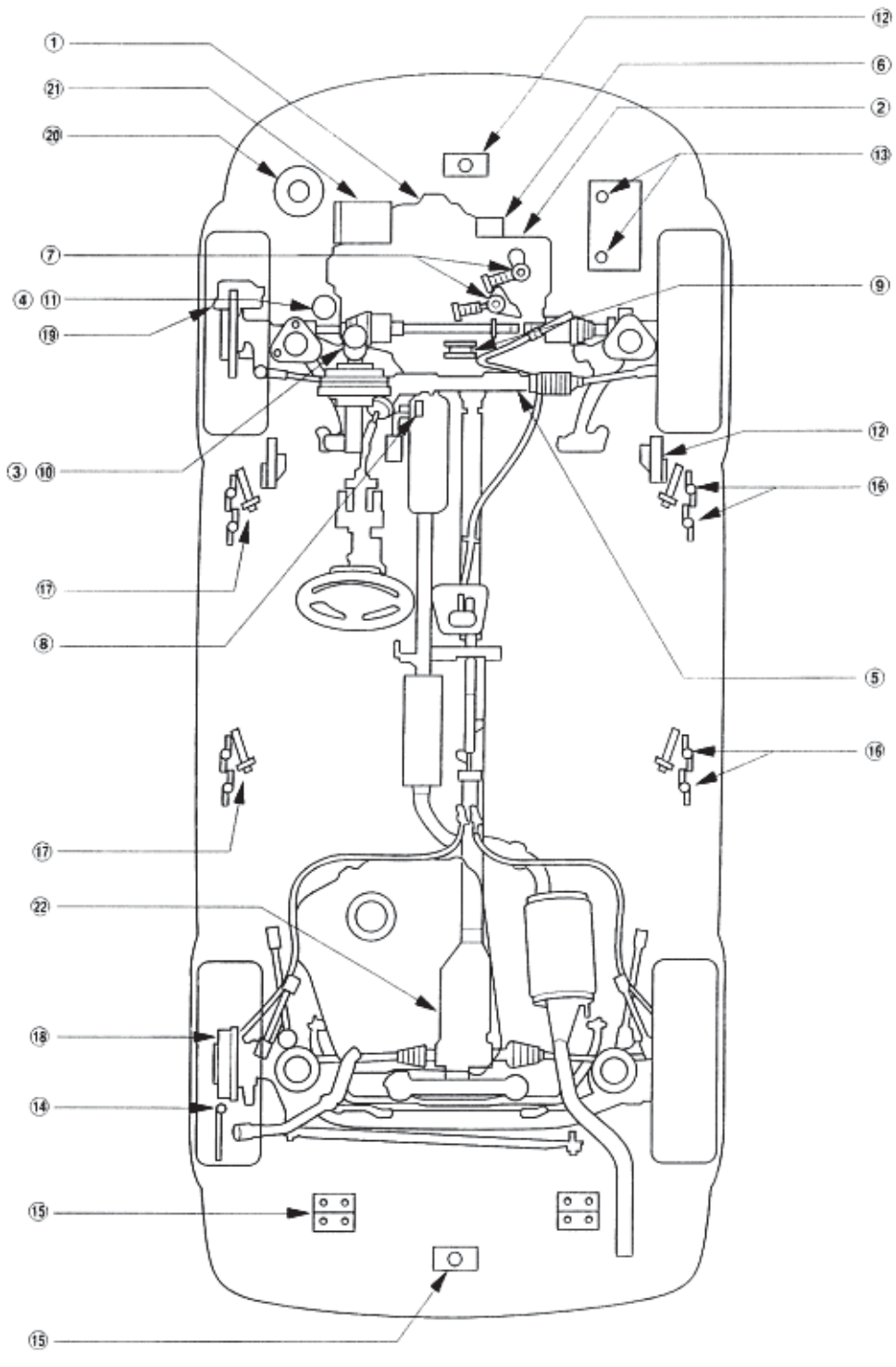
Engine oil viscosity for ambient temperature ranges

⚠ CAUTION

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

*1: If Honda MTF is not available, you may use an API service SG, SH or SJ - rated motor oil with a viscosity of SAE 10 W - 30 or 10 W - 40 temporarily. Motor oil can cause increased transmission wear and higher shifting effort.

*2: We recommend Genuine Honda Brake Fluid.


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Follow the Normal Maintenance Schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-6 and 3-7 do not apply.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Replace engine oil and oil filter		●	●	●	●	●	●	●	●	●	●	●		*3 **8-5** to **8-7**
Replace air cleaner element				●			●			●				*3 **11-99**
Inspect valve clearance				●			●			●			Check the valve clearance	*3 **6-3**, **6-4**
Replace fuel filter								●						*3 **11-86**
Replace spark plugs				●			●			●				*3 **4-21**, *3 **4-22**
Replace timing belt and inspect water pump									●				Check water pump for signs of seal leakage.	*3 **6-8**, *3 **10-11**
Inspect and adjust drive belts				●			●			●			♦ Check for cracks and damage. ♦ Check deflection and tension.	*3 **4-39**, *3 **17-16**, *3 **22-35**
Inspect idle speed								●						*3 **11-73**
Replace engine coolant		200,000 km (120,000 miles) or 120 months, thereafter every 100,000 km (60,000 miles) or 60 months											Check specific gravity for freezing point.	**10-2**
Replace transmission fluid (O: Inspect)	MT				O*1				●				Genuine Honda MTF	*3 **13-4**
	CVT			●			●			●			Genuine Honda ATF-Z1 (ATF)	*3 **14-84**
Replace rear differential fluid									●*2				Use only DPSF (Dual Pump System Fluid)	*3 **15-14**
Inspect front and rear brakes		●	●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. ♦ Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*3 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid		Every 3 years											Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*3 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●		Check the parking brake operation.	*3 **19-A-6**
Check lights alignment		●	●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*3 **23-D-7**
Test drive (noise, stability, dashboard operation)		●	●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Replace at 75,000 km (45,000 miles)/60 months, and every 45,000 km (27,000 miles)/36 months after replacement.
*2: Replace at 120,000 km (72,000 miles)/96 months, thereafter 60,000 km (36,000 miles)/48 months.
*3: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	15 9 12	30 18 24	45 27 36	60 36 48	75 45 60	90 54 72	105 63 84	120 72 96	135 81 108	150 90 120	165 99 132	NOTES	SECTION and PAGE
Visually inspect the following items:													♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts, and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox, and boots		●	●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear	-

*1 : Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first — km x 1,000 / miles x 1,000 / months	7.5 / 4.5 / 6	15 / 9 / 12	22.5 / 13.5 / 18	30 / 18 / 24	37.5 / 22.5 / 30	45 / 27 / 36	52.5 / 31.5 / 42	60 / 36 / 48	67.5 / 40.5 / 54	75 / 45 / 60	82.5 / 49.5 / 66	90 / 54 / 72	97.5 / 58.5 / 78	105 / 63 / 84	113 / 67.5 / 90	120 / 72 / 96	NOTES	SECTION and PAGE
Replace engine oil and oil filter	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		*4 **8-5** to **8-7**
Replace air cleaner element - Use normal schedule except in dusty conditions			●			●			●			●			●			*4 **11-99**
Inspect valve clearance						●						●					Check the valve clearance	*4 **6-3**, **6-4**
Replace fuel filter														●				*4 **11-86**
Replace spark plugs						●						●						*4 **4-21**, **4-22**
Replace timing belt and inspect water pump																*1●	Check water pump for signs of seal leakage.	*4 **6-8**, *4 **10-11**
Inspect and adjust drive belts						●						●					♦ Check for cracks and damage. ♦ Check deflection and tension.	*4 **4-39**, *4 **17-16**, *4 **22-35**
Inspect idle speed														●				*4 **11-73**
Replace engine coolant	200,000 km (120,000 miles) or 120 months, thereafter every 100,000 km (60,000 miles) or 60 months																Check specific gravity for freezing point.	**10-2**
Replace transmission fluid MT								●								●	Genuine Honda MTF	*4 **13-4**
Replace transmission fluid CVT						*2●						●					Genuine Honda ATF - Z1 (ATF)	*4 **14-84**
Replace rear differential fluid												*3●					Use only DPSF (Dual Pump System Fluid)	*4 **15-14**
Inspect front and rear brakes	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*4 **19-A-4**, **19-A-9** **19-A-11** **19-A-12**, **19-A-20** **19-A-21**, **19-A-25**
Replace brake fluid	Every 3 years																Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*4 **19-A-7**
Check parking brake adjustment		●		●				●				●				●	Check the parking brake operation.	*4 **19-A-6**
Check lights alignment		●		●		●		●		●		●		●		●	Check the position of the headlights.	*4 **23-D-7**
Test drive (noise, stability, dashboard operations)		●		●		●		●		●		●		●		●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: The timing belt should normally be replaced at the intervals shown in the maintenance schedule. (Normal Conditions).
Replace the timing belt at 75,000 km or 45,000 miles if you regularly drive your vehicle in one or more of these conditions.
- ♦ In very high temperatures [43°C (110°F) above]
- ♦ In very low temperatures [-29°C (-20°F) under]

*2: Replace CVT fluid every 45,000 km (27,000 miles)/36 months, if the vehicle is driven mainly at high speed in extremely hot (over 32°C, 90°F) condition.

*3: Replace at 90,000 km (54,000 miles)/72 months, thereafter 45,000 km (27,000 miles)/36 months.

*4: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	7.5 4.5 6	15 9 12	22.5 13.5 18	30 18 24	37.5 22.5 30	45 27 36	52.5 31.5 42	60 36 48	67.5 40.5 54	75 45 60	82.5 49.5 66	90 54 72	97.5 58.5 78	105 63 84	113 67.5 90	120 72 96	NOTES	SECTION and PAGE
Visually inspect the following items:																		♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)			●		●		●		●		●		●		●		●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system			●		●		●		●		●		●		●		●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections			●		●		●		●		●		●		●		●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition			●		●		●		●		●		●		●		●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to base shop manual on this CD.

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
Driving in extremely hot [over 32°C, (90°F)] conditions.
Extensive idling or long periods of stop-and-go driving.
Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
Driving on muddy, dusty or de-iced roads.

NOTE: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-4 and 3-5.

Follow the Maintenance Schedule if the severe driving conditions specified in the Severe Conditions Maintenance Schedule on pages 3-10 and 3-11 do not apply.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil		Every 10,000 km (6,000 miles) or 12 months											*2 **8-5**, **8-6**
Replace engine oil filter		●	●	●	●	●	●	●	●	●	●		*2 **8-6**, **8-7**
Replace air cleaner element			●		●		●		●		●		*2 **11-99**
Inspect valve clearance			●		●		●		●		●	Check the valve clearance.	*2 **6-3**, **6-4**
Replace fuel filter			●		●		●		●		●		*2 **11-86**
Replace spark plugs			●		●		●		●		●		*2 **4-21**, **4-22**
Replace timing belt and inspect water pump						●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts			●		●		●		●		●	♦ Check for cracks and damage. ♦ Check deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed						●					●		*2 **11-73**
Replace engine coolant		200,000 km (120,000 miles) or 120 months, thereafter every 100,000 km (60,000 miles) or 60 months										Check specific gravity for freezing point.	**10-2**
Replace transmission fluid MT (O: Inspect)			O		●		O		●		O	Honda Genuine MTF	*2 **13-4**
Replace transmission fluid CVT			●	●	●	●	●	●	●	●	●	Genuine Honda ATF - Z1 (ATF)	*2 **14-84**
Replace rear differential fluid							*1●			●		Use only DPSF (Dual Pump System Fluid)	*2 **15-14**
Inspect front and rear brakes		●	●	●	●	●	●	●	●	●	●	♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, ,**19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid				●			●			●		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*2 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●	Check the parking brake operation.	*2 **19-A-6**
Check lights alignment		●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*2 **23-D-7**
Test drive (noise, stability, dashboard operations)		●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Replace at 120,000 km (72,000 miles)/72 months, thereafter 60,000 km (36,000 miles)/36 months.
*2: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		●	●	●	●	●	●	●	●	●	●	♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		●	●	●	●	●	●	●	●	●	●	♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		●	●	●	●	●	●	●	●	●	●	♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first. km x 1,000 / miles x 1,000 / months	20 / 12 / 12	40 / 24 / 24	60 / 36 / 36	80 / 48 / 48	100 / 60 / 60	120 / 72 / 72	140 / 84 / 84	160 / 96 / 96	180 / 108 / 108	200 / 120 / 120	NOTES	SECTION and PAGE
Replace engine oil and oil filter	Every 5,000 km (3,000 miles) or 6 months											*2 **8-5** to **8-7**
Clean (O) or replace (●) air cleaner element - Use normal schedule except in dusty conditions	O	●	O	●	O	●	O	●	O	●		*2 **11-99**
Inspect valve clearance		●		●		●		●		●	Check the valve clearance	*2 **6-3**, **6-4**
Replace fuel filter		●		●		●		●		●		*2 **11-86**
Replace spark plugs		●		●		●		●		●		*2 **4-21**, **4-22**
Replace timing belt and inspect water pump					●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts		●		●		●		●		●	♦ Check for cracks and damage. ♦ Check deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed					●					●		*2 **11-73**
Replace engine coolant	200,000 km (120,000 miles) or 120 months. thereafter every 100,000 km (60,000 miles) or 60 months										Check specific gravity for freezing point.	**10-2**
Replace transmission fluid MT		●		●		●		●		●	Honda Genuine MTF	*2 **13-4**
Replace transmission fluid CVT		●	●	●	●	●	●	●	●	●	Genuine Honda ATF - Z1 (ATF)	*2 **14-84**
Replace rear differential fluid				*1●		●		●		●	Use only DPSF (Dual Pump System Fluid)	*2 **15-14**
Inspect front and rear brakes	Every 10,000 km (6,000 miles) or 6 months										♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**
Replace brake fluid			●			●			●		Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*2 **19-A-7**
Check parking brake adjustment	●	●		●		●		●		●	Check the parking brake operation.	*2 **19-A-6**
Check lights alignment	●	●	●	●	●	●	●	●	●	●	Check the position of the headlights.	*2 **23-D-7**
Test drive (noise, stability, dashboard operations)	●	●	●	●	●	●	●	●	●	●	Check for road stability, noise, vibrations and dashboard operation.	-

*1: Replace CVT fluid every 40,000 km (24,000 miles) or 24 months, if the vehicle is driven mainly at high speed in extremely hot (over 32°C, 90°F) condition.
*2: Replace at 80,000 km (48,000 miles)/48 months, thereafter 40,000 km (24,000 miles)/24 months.
*3: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots	Every 10,000 km (6,000 miles) or 6 months											♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components	Every 10,000 km (6,000 miles) or 6 months											♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots	Every 10,000 km (6,000 miles) or 6 months											♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check the master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**
Tyre condition		●	●	●	●	●	●	●	●	●	●	Check for pressure, puncture or cuts and irregular tread wear.	-

*1: Refer to base shop manual on this CD.

Follow the Severe Maintenance Schedule if the customer's vehicle is driven MAINLY under one or more of the following conditions:

- Driving less than 8 km (5 miles) per trip or, in freezing temperatures, driving less than 16 km (10 miles) per trip.
- Driving in extremely hot [over 32°C, (90°F)] conditions.
- Extensive idling or long periods of stop-and-go driving.
- Trailer towing, driving with a car-top carrier, or driving in mountainous conditions.
- Driving on muddy, dusty or de-iced roads.

NOTE: If the customer's vehicle is driven OCCASIONALLY under severe conditions, you should follow the Normal Conditions Maintenance Schedule on pages 3-8 and 3-9.

This Maintenance Schedule outlines the minimum required maintenance that you should perform to ensure the trouble-free operation of the customer's vehicle. Due to regional and climatic differences, some additional servicing maybe required.

Service at the indicated distance or time whichever comes first		km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace engine oil			Every 5,000 km (3,000 miles) or 6 months											*2 **8-5**, **8-6**
Replace engine oil filter			Every 5,000 km (3,000 miles) or 6 months											*2 **8-6**, **8-7**
Clean or replace air cleaner element	Dry type		Clean every 10,000 km (6,000 miles) or 6 months and replace every 20,000 km (12,000 miles) or 12 months.											*2 **11-99**
	Wet type		●	●	●	●	●	●	●	●	●	●		
Inspect valve clearance	KN, KU models			●		●		●		●		●	Check the valve clearance.	*2 **6-3**, **6-4**
	KT, KY models		●	●	●	●	●	●	●	●	●	●		
Replace fuel filter				●		●		●		●		●		*2 **11-86**
Replace spark plugs	KN, KU models			●		●		●		●		●		*2 **4-21**, **4-22**
	KT, KY models		●	●	●	●	●	●	●	●	●	●		
Inspect distributor cap, rotor and ignition wiring				●		●		●		●		●		*2 **4-19**
Replace timing belt and inspect water pump							●					●	Check water pump for signs of seal leakage.	*2 **6-8**, *2 **10-11**
Inspect and adjust drive belts				●		●		●		●		●	♦ Check for cracks and damage. ♦ Check for deflection and tension.	*2 **4-39**, *2 **17-16**, *2 **22-35**
Inspect idle speed and idle CO			●	●	●	●	●	●	●	●	●	●		*2 **11-73**
Replace engine coolant			200,000 km (120,000 miles) or 120 months, thereafter every 100,000 (60,000 miles) or 60 months										Check specific gravity for freezing point	**10-2**
Inspect PCV valve				●		●		●		●		●	Check the clicking sound of motion from the PCV valve of idling.	*2 **11-105**
Inspect ignition timing				●		●		●		●		●		*2 **4-17**
Inspect evaporative emission control system							●					●	♦ Check the EVAPO control canister operation. ♦ Check the hose for blockage, cracks or disconnection.	*2 **11-106**
Replace transmission fluid	MT			●		●		●		●		●	Genuine Honda MTF	*2 **13-4**
	CVT/Honda Multi Matic			●	●	●	●	●	●	●	●	●	Genuine Honda ATF - Z1 (ATF)	*2 **14-84**
Replace rear differential fluid						*1●		●		●		●	Use only DPSF (Dual Pump System Fluid)	*2 **15-14**
Inspect front and rear brakes			Every 10,000 km (6,000 miles) or 6 months										♦ Check the brake pad and disc thickness. Check for damage or cracks. ♦ Check the calipers for damage, leaks and tightness. ♦ Check the wheel cylinder for leaks. ♦ Check the brake linings for cracking, glazing, wear or contamination.	*2 **19-A-4**, **19-A-9**, **19-A-11**, **19-A-12**, **19-A-20**, **19-A-21**, **19-A-25**

*1: Replace at 80,000 km (48,000 miles)/48 months, thereafter 40,000 km (24,000 miles)/24 months.
*2: Refer to base shop manual on this CD.

Service at the indicated distance or time whichever comes first.	km x 1,000 miles x 1,000 months	20 12 12	40 24 24	60 36 36	80 48 48	100 60 60	120 72 72	140 84 84	160 96 96	180 108 108	200 120 120	NOTES	SECTION and PAGE
Replace brake fluid (including ABS)			●		●		●		●		●	Use only DOT3 or DOT4 fluid (We recommend Genuine Honda Brake Fluid). Check that brake fluid level is between the upper and lower marks on the reservoir.	*1 **19-A-7**
Check parking brake adjustment		●	●		●		●		●		●	Check the parking brake operation.	*1 **19-A-6**
Rotate tyres (Check tyre inflation and condition at least once per month)		Rotate tyres every 10,000 km (6,000 miles)										The suggested rotation method is shown in the diagram of the Owner's Manual.	-
Visually inspect the following items:												♦ Check for correct installation and position, check for cracks, deterioration, rust and leaks. ♦ Check tightness of screws, nuts and joints. If necessary, retighten.	-
Tie rod ends, steering gearbox and boots		Every 10,000 km (6,000 miles) or 6 months										♦ Check rack grease and steering linkage. ♦ Check the boot for damage and leaking grease. ♦ Check the fluid line for damage and leaks.	*1 **17-27**, **17-28**
Suspension components		Every 10,000 km (6,000 miles) or 6 months										♦ Check the bolts for tightness. ♦ Check all the dust covers for deterioration and damage.	*1 **18-8**, **18-9**, **18-18**, **18-19**
Driveshaft boots		Every 10,000 km (6,000 miles) or 6 months										♦ Check boots and boot band for cracks. ♦ Check rack grease.	*1 **16-3**
Brake hoses and lines (including ABS)		●	●	●	●	●	●	●	●	●	●	Check master cylinder, proportioning control valve and ABS modulator for damage and leakage.	*1 **19-A-4**, **19-A-25**
Cooling system hoses and connection		●	●	●	●	●	●	●	●	●	●	♦ Check all hoses for damage, leaks or deterioration. ♦ Check all hose clamps. Retighten if necessary.	*1 **10-2**
Exhaust system		●	●	●	●	●	●	●	●	●	●	Check the catalytic converter heat shield, exhaust pipe and muffler for damage, leaks and tightness.	*1 **9-4**
Fuel lines and connections		●	●	●	●	●	●	●	●	●	●	Check fuel lines for loose connections, cracks and deterioration. Retighten loose connections and replace any damaged parts.	*1 **11-75**

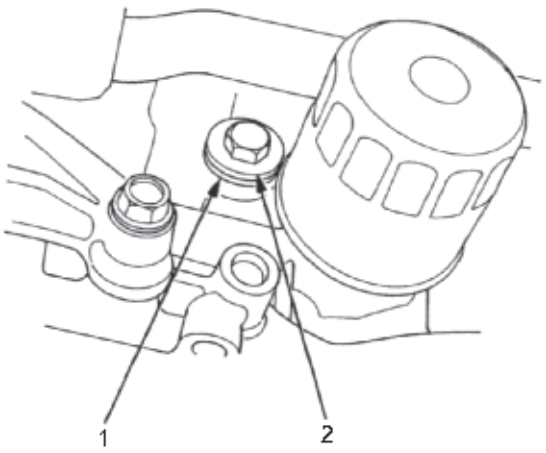
*1: Refer to base shop manual on this CD.

1. Start the engine. Set the heater temperature control dial to maximum heat, then turn off the engine. Make sure the engine and radiator are cool to the touch.
2. Remove the radiator cap.
3. Loosen the drain plug and drain the coolant.



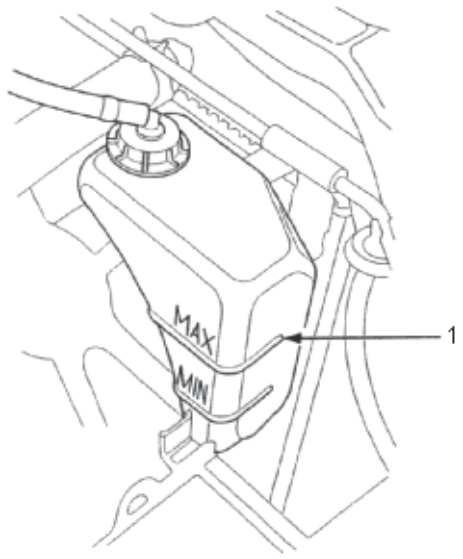
1. DRAIN PLUG

4. Remove the drain bolt from the rear side of the cylinder block.



1. WASHER, Replace
2. DRAIN BOLT, 83 Nm (8.5 kgf/m, 61 lbf/ft)

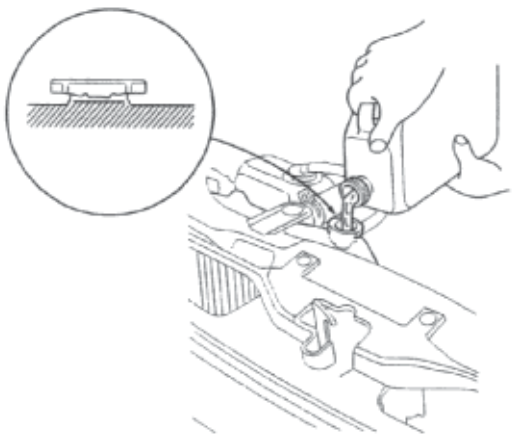
5. Apply liquid gasket to the drain bolt threads, then reinstall the bolt with a new washer and tighten it securely.
6. Tighten the radiator drain plug securely.
7. Remove, drain and reinstall the coolant reservoir. Fill the tank halfway to the MAX mark with genuine Honda All Season Antifreeze/Coolant Type 2.



1. MAX MARK

8. Pour genuine Honda All Season Antifreeze/Coolant Type 2 into the radiator up to the base of the filler neck.
   NOTE:
   - Always use genuine Honda All Season Antifreeze/Coolant Type 2. Using a non-Honda coolant can result in corrosion, causing the coolant system to malfunction or fail.
   - Genuine Honda All Season Antifreeze/Coolant Type 2 is a mixture of 50% antifreeze and 50% water. Pre-mixing is not required.

   Engine Coolant Refill Capacity [including reservoir (0.4 *l* (0.42 US qt, 0.35 Imp. qt))]
   M/T: 2.8 *l* (3.0 US qt, 2.5 Imp qt)
   CVT: 3.0 *l* (3.2 US qt, 2,6 Imp qt)



9. Install the radiator cap loosely.

10. Start the engine and let it run until it warms up (the radiator fan comes on at least twice).

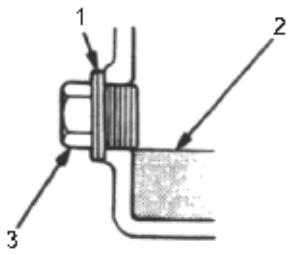
11. Turn off the engine. Check the level in the radiator and add genuine Honda All Season Antifreeze/Coolant Type 2 if needed.

12. Put the radiator cap on tightly, then run the engine again and check for leaks.

⚠ WARNING

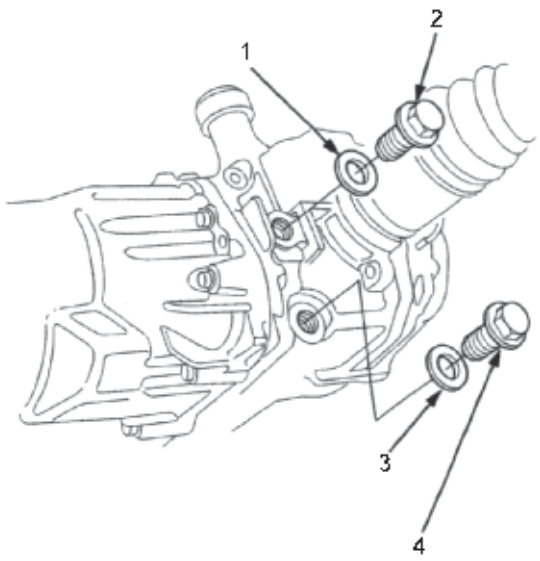
Make sure lifts are placed properly (see section1).

1. With the vehicle on level ground, inspect the differential fluid with the engine OFF.
2. Remove the oil filler plug, then check the level and condition of the fluid.



1. WASHER, Replace
2. Proper level
3. OIL FILLER PLUG, 47Nm (4.8 kgf/m, 35 lbf/ft)

3. The fluid level must be up to the fill hole. If it is below the hole, add the recommended fluid until it runs out, then reinstall the oil filler plug with a new washer.
4. If the differential fluid is dirty, remove the drain plug and drain the fluid.

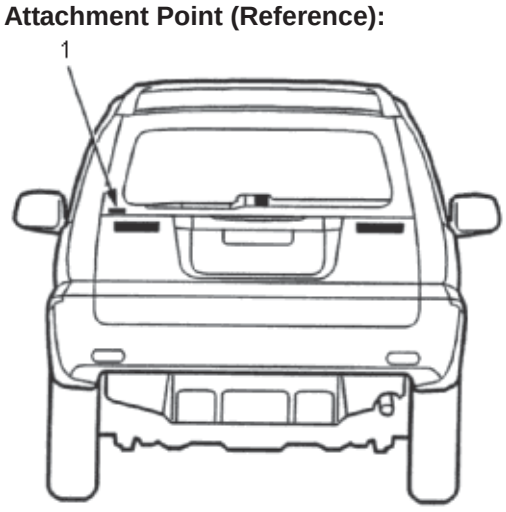


1. WASHER, Replace
2. OIL FILLER PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)
3. WASHER, Replace
4. DRAIN PLUG, 47 Nm (4.8 kgf/m, 35 lbf/ft)

5. Clean the drain plug, the fit it with a new washer and refill the differential with the recommended fluid to the proper level.
   NOTE: If you disassemble the differential, check the fluid level again after the 4WD system check is finished. Add fluid if necessary.
6. Reinstall the oil filler plug with a new washer.
   Fluid Capacity
   1.0 / (1.1 US qt, 0.9 Imp qt) at fluid change
   1.2 / (1.3 US qt, 1.1 Imp qt) at overhaul
   Recommended fluid:
   Dual Pump Fluid

Apply the VTEC sticker where shown.
NOTE:
- Before applying, clean the rear window surface with a sponge dampened in alcohol.
- After cleaning, keep oil, grease and water from getting on the surface.

Attachment Point (Reference):



1. VTEC STICKER

Unit: mm (in.)

