

Troubleshooting

Troubleshooting Procedures

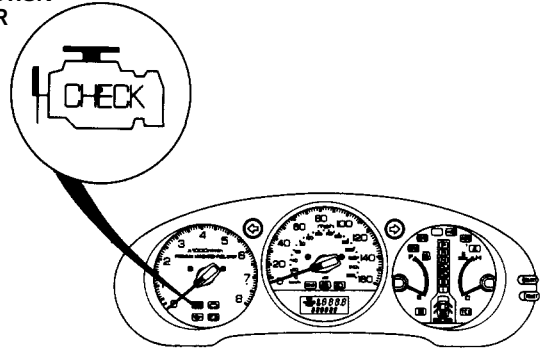
I. How To Begin Troubleshooting

When the Malfunction Indicator Lamp (MIL) has been reported on, or there is a driveability problem, use the appropriate procedure below to diagnose and repair the problem.

A. When the MIL has come on:

1. Connect the Honda PGM Tester or an OBD II scan tool to the Data Link Connector (DLC) located on the center console behind the ashtray.
2. Turn the ignition switch ON (II).
3. Check the Diagnostic Trouble Code (DTC) and note it. Also check and note the freeze frame data. Refer to the DTC Chart (see page [11-53](#)) and begin troubleshooting.

MALFUNCTION
INDICATOR
LAMP
(MIL)

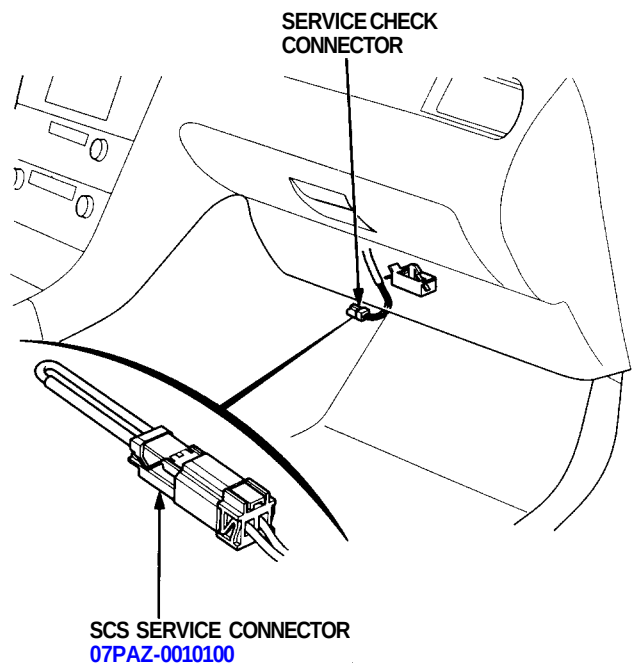
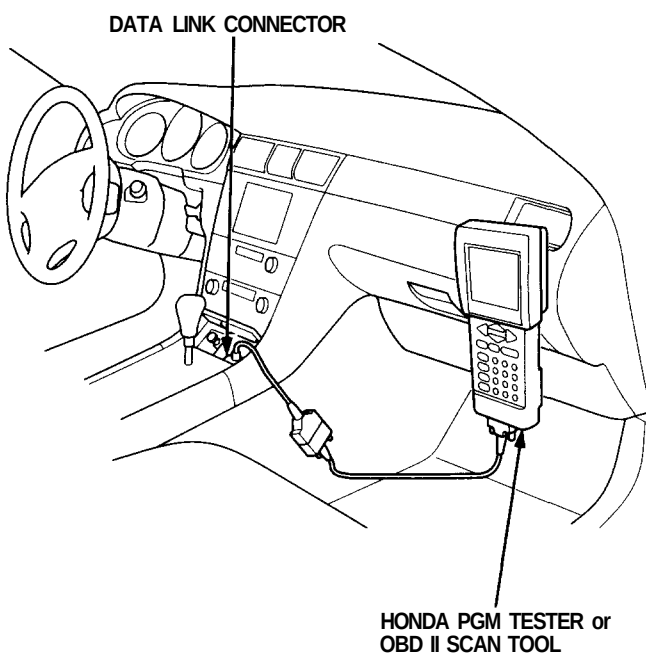


NOTE:

- See the OBD II scan tool or Honda PGM Tester user's manuals for specific operating instructions.
- The scan tool or tester can read the DTC, freeze frame data, current data, and other Powertrain Control Module (PCM) data.
- Freeze frame data indicates the engine conditions when the first malfunction, misfire or fuel trim malfunction was detected. It can be useful information when troubleshooting.

B. When the MIL has not come on, but there is a driveability problem, refer to the Symptom Chart on page [11-44](#).

- C. DTCs will be indicated by the blinking of the MIL with the SCS service connector connected. Connect the SCS service connector to Service Check Connector as shown. (The 2P Service Check Connector is located under the dash on the passenger's side of the vehicle.) Turn the ignition switch ON (II).





II. Powertrain Control Module (PCM) Reset Procedure

NOTE: The PCM memory setting is needed after resetting the PCM (see page [11-125](#)).

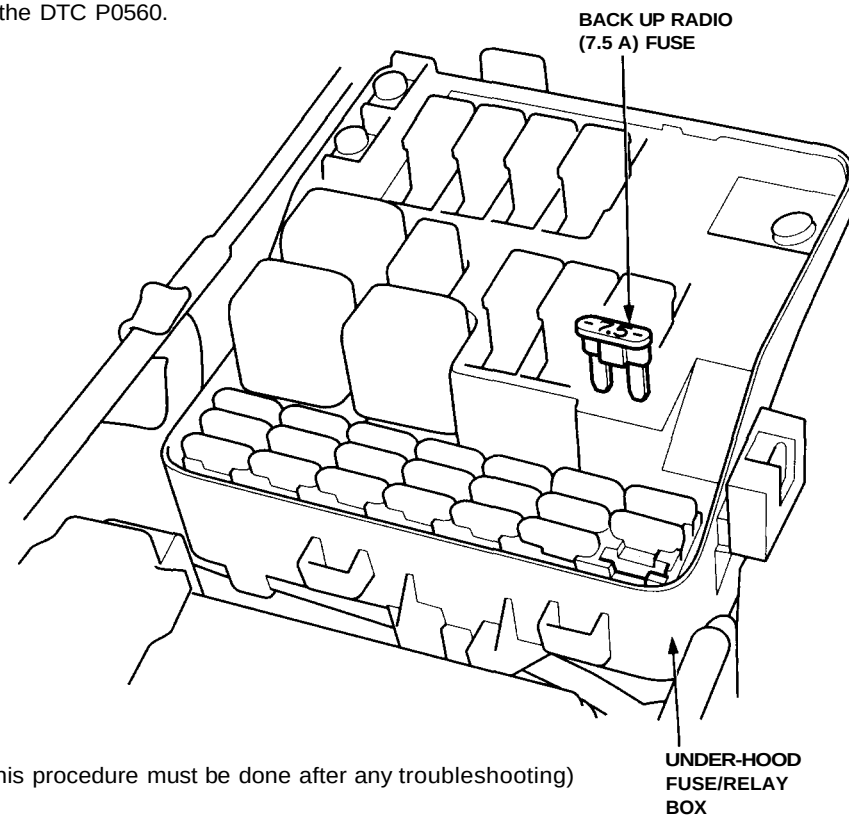
Either of the following actions will reset the PCM.

- Use the OBD II scan tool or Honda PGM Tester to clear the PCM's memory.

NOTE: See the OBD II scan tool or Honda PGM Tester user's manuals for specific operating instructions.

- Turn the ignition switch OFF. Remove the BACK UP RADIO (7.5 A) fuse from the under-hood fuse/relay box for 10 seconds.

NOTE: If the BACK UP RADIO (7.5 A) fuse is removed and the ignition switch ON (II), MIL will report on and PCM will store the DTC P0560.



III. Final Procedure (this procedure must be done after any troubleshooting)

1. Remove the SCS service connector if it is connected.

NOTE: If the SCS service connector is connected and there are no DTCs stored in the PCM, the MIL will stay on when the ignition switch is turned ON (II).

2. Do the PCM Reset Procedure.
3. Turn the ignition switch OFF.
4. Disconnect the OBD II scan tool or Honda PGM Tester from the Data Link Connector.

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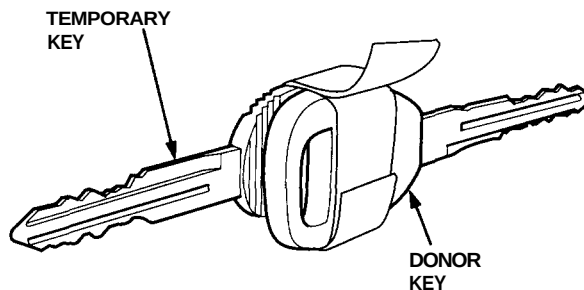
Troubleshooting

Troubleshooting Procedures (cont'd)

IV. Known-Good PCM Substitution

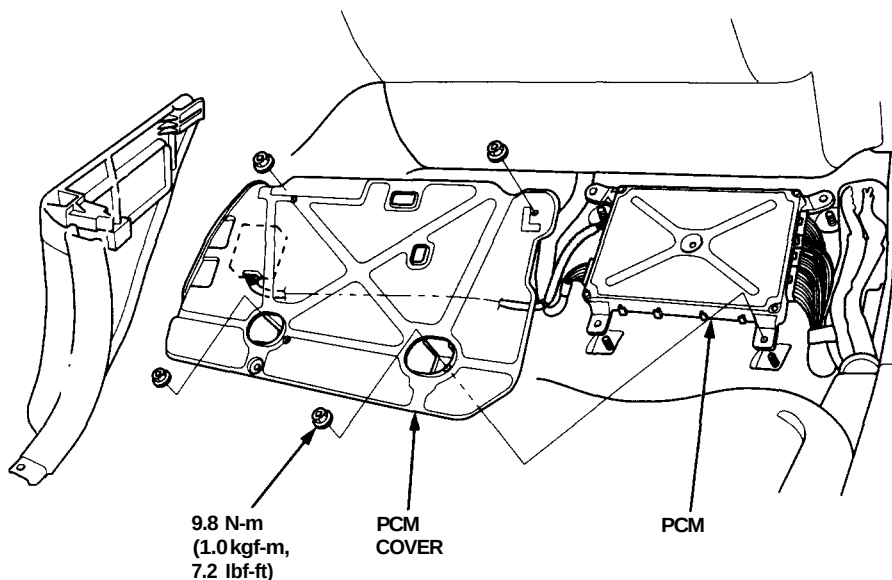
Use the following procedure if you need a known-good PCM to test a vehicle. It allows you to swap an PCM from a "donor" vehicle without having to program it to the test vehicle's ignition key.

1. Cut a temporary ignition key for the test vehicle with a non-immobilizer key blank.
2. Remove the PCM from the test vehicle.
3. Write the test vehicle's VIN on the PCM you just removed to avoid confusing it with the donor vehicle's PCM.
4. Remove the known-good 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 PCM will recognize the code from the donor vehicle's key and allow you to start the engine with the temporary key.



6. After completing your tests, reinstall both PCM's, and destroy the temporary key.

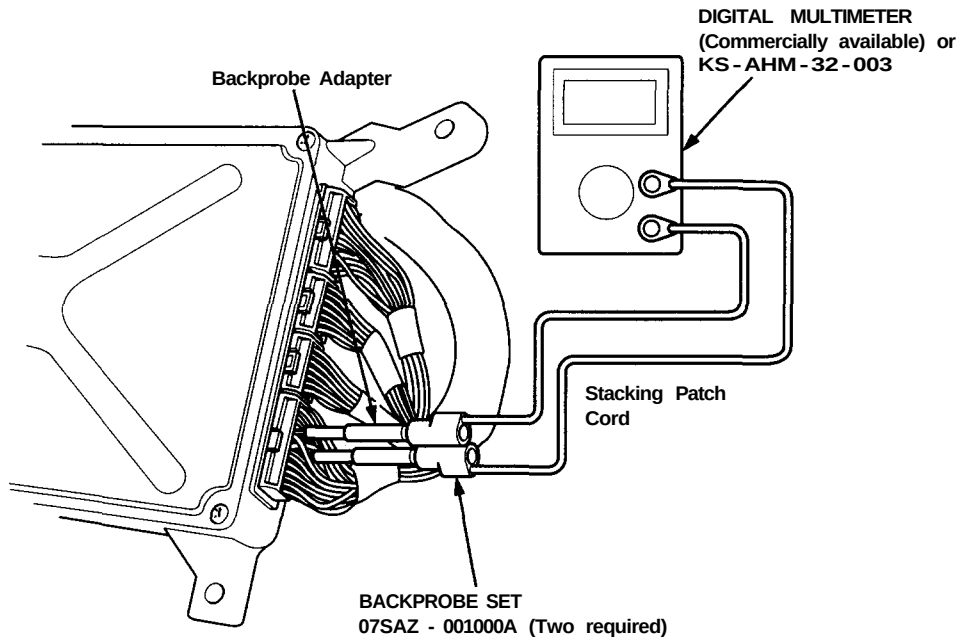
If the inspection for a particular code requires voltage or resistance checks at the PCM connectors, remove the right door sill molding. Pull the carpet back to expose the PCM. Unbolt the PCM cover, and connect the backprobe sets and a digital multimeter as described below. Check the system according to the procedure described for the appropriate code(s) listed on the following pages.





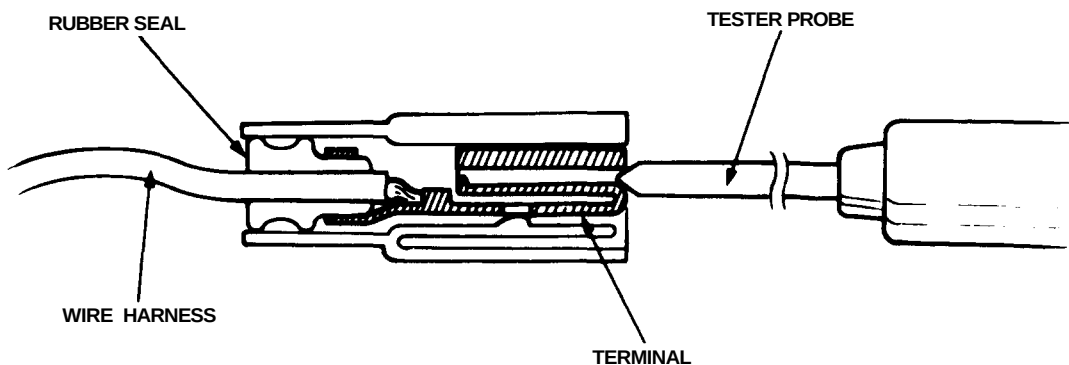
How to Use the Backprobe Sets

Connect the backprobe adapters to the stacking patch cords, and connect the cords to a multimeter. Using the wire insulation as a guide for the contoured tip of the backprobe adapter, gently slide the tip into the connector from the wire side until it comes in contact with terminal end of the wire.



CAUTION:

- Puncturing the insulation on a wire can cause poor or intermittent electrical connections.
- Bring the tester probe into contact with the terminal from the terminal 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.



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Troubleshooting Procedures (cont'd)

Symptom Chart

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 page [11-40](#).

Troubleshoot each probable cause in the order listed (from left to right) until the symptom is eliminated.

The probable cause and troubleshooting page reference can be found below.

*: '00 - 01 models

SYMPTOM	PROBABLE CAUSE
Engine will not start	2, 3, 21, 13, 1
Hard starting	2, 10, 12, 20, 21
Cold fast idle too low	5, 6, 7, 4
Cold fast idle too high	5, 6, 7, 9, 8
Idle speed fluctuates	5, 14, 15, 6, 7, 9, 8
Misfire or rough running	Troubleshoot for misfire on pages 11-96 , 11-100
Low power	2, 8, 9, 11, 18, 17, 19, 10
Engine stalls	2, 5, 10, 21, 7, 3, 16
Difficult to refuel*	20, 22
Fuel overflows during refueling*	20, 22

Other Probable Causes for an engine that will not start:

- Compression — Starting system
- PGM-FI main relay — Ignition system
- Engine locked up — Overheating
- Timing belt — Battery

Probable Cause List (For the DTC Chart, see page [11-53](#))

*: '00 - 01 models

Probable Cause	Page	System
1	11-63	Powertrain Control Module (PCM)
2	11-132	Fuel pressure
3	(see DTC chart)	Crankshaft Position/Cylinder Position sensor circuit
4	(see DTC chart)	Intake Air Temperature (IAT) sensor circuit
5	(see DTC chart)	Idle Air Control (IAC) valve
6	11-123	Idle Air Control (IAC) thermal valve
7	11-124	Idle speed adjustment
8	11-155	Throttle body
9	11-154	Throttle cable
10	(see DTC chart)	Manifold Absolute Pressure (MAP) sensor
11	(see DTC chart)	Throttle Position (TP) sensor
12	(see DTC chart)	Barometric pressure (BARO) sensor
13	Section 14	Transmission range switch signal
14	11-116	Air conditioning signal
15	11-118	Alternator FR Signal
16	11-122	Brake pedal position switch signal
17	11-155	Air cleaner
18	11-158	Intake Manifold Runner Control (IMRC) system and intake air duct
19	(see DTC chart)	Three Way Catalytic Converter (TWC)
20	(see DTC chart)	Evaporative emission (EVAP) control
21	—	Contaminated fuel
22*	11-203	Fuel tank vapor control valve



PCM Data

You can retrieve data from the PCM by connecting the OBD II scan tool or the Honda PGM Tester to the Data Link Connector (DLC). The items listed in the table below conform to SAE recommended practice. The Honda PGM Tester also reads data beyond that recommended by SAE so that this data may help you find the causes of 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, transmission in Park or neutral, and the A/C and all accessories turned off.

Data	Description	Operating Value	Freeze Data
Diagnostic Trouble Code (DTC)	If the PCM detects a problem, it will store it as a code consisting of one letter and four numbers. Depending on the problem, an SAE-defined code (P0xxx) or a Honda-defined code (P1xxx) will be output to the tester.	If no problem is detected, there is no output.	YES
Engine Speed	The PCM computes engine speed from the signals sent from the Crankshaft Position (CKP) sensor. This data is used for determining the time and amount of fuel injection.	Nearly the same as tachometer indication at idle speed: 650 ± 50 rpm	YES
VehicleSpeed	The PCM 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 created in the intake manifold by engine load and speed.	With engine stopped: Nearly the same as atmospheric pressure. At idle speed: 24 - 37 kPa (180 - 280 mmHg, 7.1 - 11.0 inHg)	YES
Engine Coolant Temperature (ECT)	The ECT sensor converts coolant temperature into voltage and signals the PCM. The sensor is a thermistor whose internal resistance changes with coolant temperature. The PCM 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. 158 - 212°F (70 - 100°C)	YES
Heated Oxygen Sensor (HO2S) (Bank 1, Sensor 1) (Bank 2, Sensor 1) (Sensor 2)	The HO2S detects the oxygen content in the exhaust gas and sends voltage signals to the PCM. Based on these signals, the PCM 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 - 1.25 V At idle speed: about 0.1 - 0.9 V	NO

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Troubleshooting

Troubleshooting Procedures (cont'd)

Data	Description	Operating Value	Freeze Data
Fuel System Loop Status (Bank 1: Right) (Bank 2: Left)	Loop status is indicated as "open" or "closed". Closed: Based on the HO2S output, the PCM determines the air/fuel ratio and controls the amount of injected fuel. Open: Ignoring HO2S output, the PCM 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 (Bank 1: Right) (Bank 2: Left)	The air/fuel ratio correction coefficient for correcting the amount of injected fuel when the Fuel System Status is "closed". When the signal from the HO2S is weak, short term fuel trim gets higher, and the PCM 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 PCM reduces the amount of injected fuel. This cycle keeps the air/fuel ratio close to the stoichiometric ratio when in closed loop status.	-30% - +43%	YES
Long Term Fuel Trim (Bank 1: Right) (Bank 2: Left)	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 PCM. 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: Approx. 10% At full throttle: Approx. 90%	YES
Ignition Timing	The ignition advance angle is set by the PCM. The PCM matches ignition timing to the driving conditions.	At idle speed: 15 + 2° BTDC with the SCS service connector connected.	NO
Calculated Load Value (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