

GENERAL TROUBLESHOOTING INFORMATION

INTERMITTENT FAILURES

The term "intermittent failure" means a system may have had a failure, but it checks OK now. If the malfunction indicator lamp (MIL) on the dash does not come on, check for poor connections or loose terminals at all connectors related to the circuit that you are troubleshooting. If the MIL was on but then went out, the original problem may have been intermittent.

OPENS AND SHORTS

"Open" and "short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as ECMs or PCMs) this can sometimes mean something works, but not the way it's supposed to.

HOW TO USE THE HDS (HONDA DIAGNOSTIC SYSTEM)

If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL (A).

NOTE: If the ignition switch is turned ON (II), and the engine is not started, the MIL stays on for 15-20 seconds (see MALFUNCTION INDICATOR LAMP (MIL) INDICATION (IN RELATION TO READINESS CODES)).

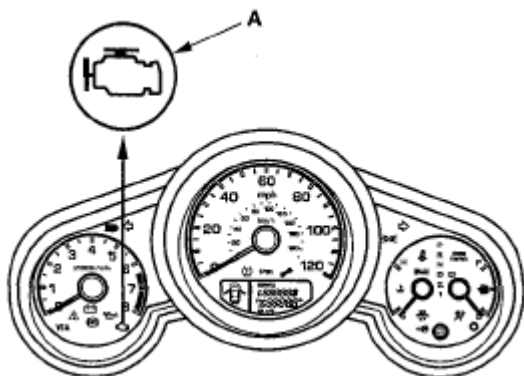


Fig. 2: Identifying MIL

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. If the MIL stays on, connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

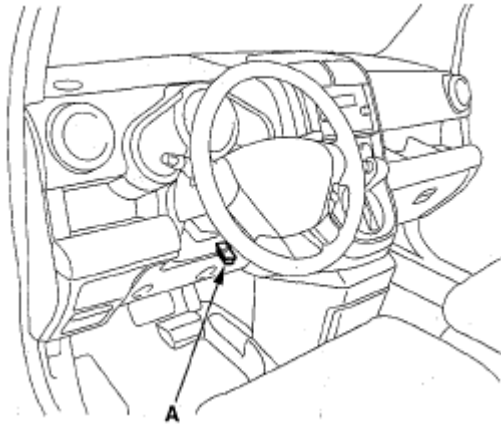


Fig. 3: Identifying Data Link Connector (DLC)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Turn the ignition switch ON (II).
4. Make sure the HDS communicates with the ECM/PCM and other vehicle system. If it doesn't go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
5. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data and/or on-board snapshot data, and download any data found. Then refer to the indicated **DTC'S TROUBLESHOOTING**, and begin the appropriate troubleshooting procedure.

NOTE:

- Freeze data indicates the engine conditions when the first malfunction, misfire, or fuel trim malfunction was detected.
- The HDS can read the DTC, freeze data, on-board snapshot, current data, and other engine control module (ECM) or powertrain control module (PCM) data.
- For specific operations, refer to the user's manual that came with the HDS.

6. If no DTCs are found, go to MIL troubleshooting (see **MIL CIRCUIT TROUBLESHOOTING**).

If the MIL did not stay on

If the MIL did not stay on but there is a driveability problem, do the symptom troubleshooting.

If you can't duplicate the DTC

Some of the troubleshooting requires you to reset the ECM/PCM and try to duplicate the DTC. If the problem is intermittent and you can't duplicate the code, do not continue through the procedure. To do so will only result in confusion and possibly, a needlessly replaced ECM/PCM.

HDS CLEAR COMMAND

The ECM/PCM stores various specific data to correct the system even if there is no electrical power such as

when the battery negative terminal or No. 6 FI ECU (15 A) fuse are disconnected. Stored data based on failed parts should be cleared by using the "CLEAR COMMAND" of the HDS, if parts are replaced.

The HDS has three kinds of clear commands to meet this purpose. They are DTC clear, ECM/PCM reset, and crank (CKP) pattern clear. DTC clear command erases all stored DTC codes, freeze data, on-board snapshot, and readiness codes. This must be done with the HDS after reproducing the DTC during troubleshooting. The ECM/PCM reset command erases all stored DTC codes, freeze data, on-board snapshot, readiness codes, and all specific data to correct the system except crank (CKP) pattern. If the crank (CKP) pattern data in the ECM/PCM was cleared, you must do the crank (CKP) pattern learn procedure. The crank (CKP) pattern clear command erases only crank (CKP) pattern data. This command is for repair of a misfire or the CKP sensor.

SCAN TOOL CLEAR COMMAND

If you are using a generic scan tool to clear commands, be aware that there is only one setting for clearing the ECM/PCM, and it clears all commands at the same time crank (CKP) pattern learn, idle learn, readiness codes, freeze data, on-board snapshot, and DTCs. After you clear all commands, you then need to do these procedures, in this order: ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**); crank (CKP) pattern learn procedure; Test-drive to set readiness codes to complete (see **HOW TO SET READINESS CODES**).

DTC CLEAR

1. Clear the DTC with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.

ECM/PCM RESET

1. Reset the ECM/PCM with the HDS while the engine is stopped.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON (II), and wait 30 seconds.
4. Turn the ignition switch OFF, and disconnect the HDS from the DLC.
5. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

CRANK (CKP) PATTERN CLEAR/CRANK (CKP) PATTERN LEARN

Clear/Learn Procedure (with the HDS)

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

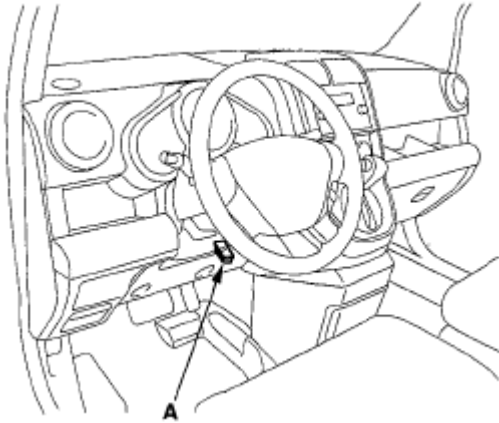


Fig. 4: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM and other vehicle system. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select CRANK PATTERN in the ADJUSTMENT MENU with the HDS.
5. Select CRANK PATTERN LEARNING with the HDS, and follow the screen prompts.

Learn Procedure (without the HDS)

1. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on.
2. Test-drive the vehicle on a level road: Decelerate (with the throttle fully closed) from an engine speed of 2,500 rpm down to 1,000 rpm with the A/T in 2 position, or M/T in 1st gear.
3. Repeat step 2 several times.
4. Turn the ignition switch OFF.
5. Turn the ignition switch ON (II), and wait 30 seconds. The crank (CKP) pattern learn procedure is complete.

How to End a Troubleshooting Session (required after any troubleshooting)

1. Reset the ECM/PCM with the HDS.
2. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
3. Turn the ignition switch OFF.
4. Disconnect the HDS from the DLC.

NOTE: The ECM/PCM is part of the immobilizer system. If you replace the ECM/PCM, it will have a different immobilizer code. In order for the engine to start, you must rewrite the immobilizer code with the HDS.

HOW TO TROUBLESHOOT CIRCUITS AT THE ECM/PCM CONNECTORS**Special Tools Required**

- Digital multimeter KS-AHM-32-003 (1) or a commercially available digital multimeter
 - Backprobe set 07SAZ-001000A (2)
1. Connect the backprobe adapters (A) to the stacking patch cords (B), and connect the cords to a digital multimeter (C).

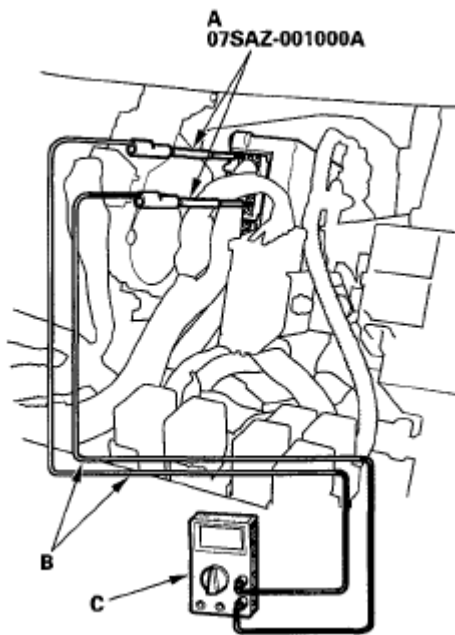


Fig. 5: Connecting Backprobe Adapters To Stacking Patch Cords
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. 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 touches the end of the wire terminal.
3. If you cannot get to the wire side of the connector or the wire side is sealed (A), disconnect the connector and probe the terminals (B) from the terminal side. Do not force the probe into the connector.

NOTE: Do not puncture the insulation on a wire. Punctures can cause poor or intermittent electrical connections.

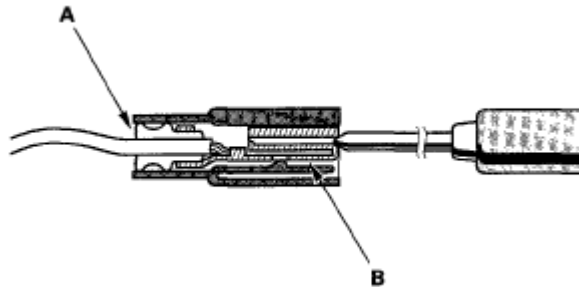


Fig. 6: Identifying Sealed And Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UPDATING THE ECM/PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA 600 and an iN workstation with HDS and CM update software

NOTE:

- Use this procedure when you need to update the ECM/PCM during troubleshooting procedures.
- Make sure the HDS/HIM has the latest software version down loaded from the iN (interactive network).
- Before you update the ECM/PCM, make sure the battery in the vehicle is fully charged, and connect a jumper battery (not a battery charger) to maintain system voltage.
- Never turn the ignition switch OFF during the update. If there is a problem with the update, leave the ignition switch ON.
- To prevent ECM/PCM damage, do not operate anything electrical (headlights, audio system, brakes, A/C, power windows, door locks, etc.) during the update.
- To ensure the latest program is installed, do an ECM/PCM update whenever the ECM/PCM is substituted or replaced.
- You cannot update an ECM/PCM with a program it already has. It will only accept a new program.
- If you need to diagnose the Honda interface module (HIM) because the HIM's red (# 3) light came on or was flashed during the update, leave the ignition switch in the ON (II) position when you disconnect the HIM from the data link connector (DLC). This will prevent ECM/PCM damage.

1. Turn the ignition switch ON (II), but do not start the engine.

2. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

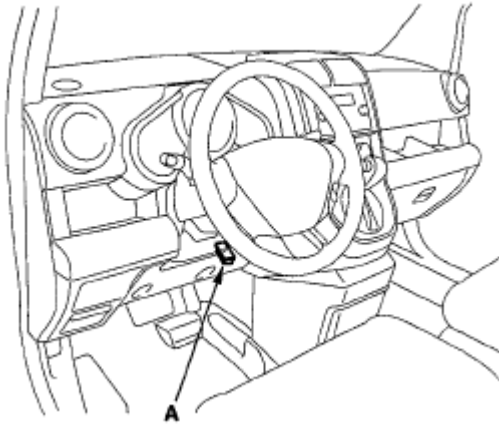


Fig. 7: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Make sure the HDS communicates with the ECM/PCM and other vehicle system. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from the DLC circuit troubleshooting, skip step 4 and 5, then clean the throttle body after updating the ECM/PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.
5. Select the ETCS TEST, then select the TP POSITION CHECK, and follow the screen prompts with the HDS.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Exit the HDS diagnostic system, then select the update mode, and follow the screen prompts to update the ECM/PCM.
7. If the software in the ECM/PCM is the latest, disconnect the HDS/HIM from the DLC, and go back to the procedure that you were doing. If the software in the ECM/PCM is not the latest, follow the instructions on the screen. If prompted to' choose the PGM-FI system or the A/T system, make sure you update both.

NOTE: If the ECM/PCM update system requires you to cool the ECM/PCM, follow the instructions on screen. If you run into a problem (programming takes over 15 minutes, status bar goes over 100 %, D or immobilizer indicator flashes, HDS tablet freezes, etc.) during the update procedure, follow these steps to minimize the chance of damaging the ECM/PCM:

- Leave the ignition switch in the "ON (II)" position.
- Connect a jumper battery (do not connect a battery charger).
- Shut down the HDS.
- Disconnect the HDS from the DLC.

- **Reboot the HDS.**
 - **Reconnect the HDS to the DLC, and try the update procedure again.**
8. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
 9. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).
 10. Do the crank (CKP) pattern learn procedure.

SUBSTITUTING THE ECM/PCM

Special Tools Required

- Honda diagnostic system (HDS) tablet tester
- Honda interface module (HIM) and an iN workstation with HDS and CM update software
- HDS pocket tester
- GNA 600 and an iN workstation with HDS and CM update software

NOTE: Use this procedure when you need to substitute a known-good ECM/PCM during troubleshooting procedures.

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

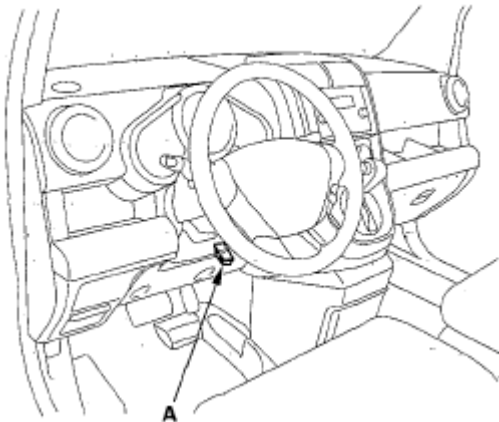


Fig. 8: Identifying Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**). If you are returning from DLC circuit troubleshooting, skip steps 4 thru 14, then clean the throttle body after substituting the ECM/PCM (see **THROTTLE BODY CLEANING**).
4. Select the INSPECTION MENU with the HDS.

5. Select the ETCS TEST, then select the TP POSITION CHECK and follow the screen prompts.

NOTE: If the TP POSITION CHECK indicates FAILED, continue this procedure.

6. Turn the ignition switch OFF.
7. Jump the SCS line with the HDS.
8. Remove the passenger's dashboard under cover (see **GLOVE BOX REMOVAL/INSTALLATION**), the passenger's kick panel (see **TRIM REMOVAL/INSTALLATION - DOOR AREAS**), and the glove box (see **GLOVE BOX REMOVAL/INSTALLATION**).
9. Cut the plastic cross brace in the glove box opening with diagonal cutters in the area shown, and discard it.

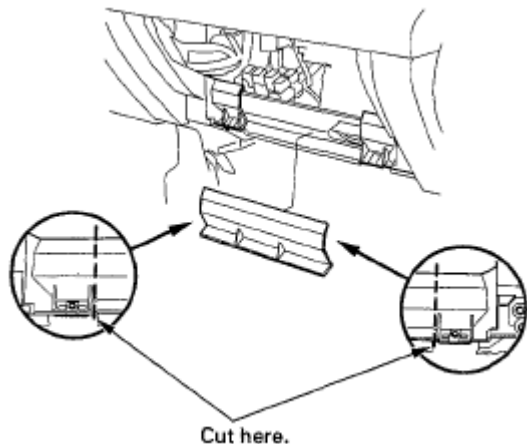


Fig. 9: Cutting Plastic Cross Brace In Glove Box Opening
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Remove the relays (A), then remove the bolts (B) and the glove box frame (C).

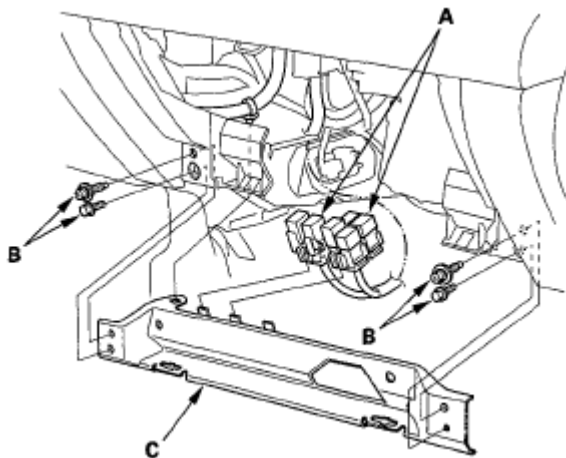


Fig. 10: Identifying Relays, Bolts And Glove Box Frame

Courtesy of AMERICAN HONDA MOTOR CO., INC.

11. Remove the gray 20P ECM/PCM wire harness connector (A) from the ECM/PCM mounting bracket.

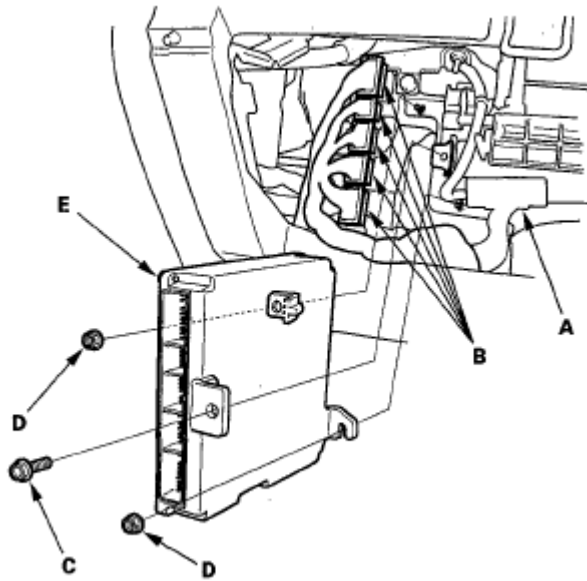


Fig. 11: Identifying ECM/PCM And Wire Harness Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

12. Disconnect the ECM/PCM connectors (B).
13. Remove the ECM/PCM mounting bolt (C) and the bracket.
14. Remove the nuts (D), then remove the ECM/PCM (E).
15. Install the parts in the reverse order of removal.
16. Open the SCS line with the HDS.
17. Turn the ignition switch ON (II).

NOTE: DTC P0630 "VIN Not Programmed or Mismatch" may be stored because the VIN has not been programmed into the ECM/PCM; ignore it, and continue this procedure.

18. Manually input the VIN to the ECM/PCM with the HDS.
19. Update the ECM/PCM if it does not have the latest software.
20. Select the IMMOBI SYSTEM with the HDS.
21. Enter the immobilizer code using the ECM/PCM replacement procedure in the HDS; it allows you to start the engine.
22. Reset the ECM/PCM with the HDS.
23. If the TP POSITION CHECK failed in step 5, clean the throttle body (see **THROTTLE BODY CLEANING**).
24. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

25. Do the crank (CKP) pattern learn procedure.

OBD STATUS

The OBD status shows the current system status of each DTC and all of the parameters. This function is used to see if the repair was successfully completed. The results of diagnostic tests for the DTC are displayed as:

- **PASSED:** The on board diagnosis is successfully finished.
- **FAILED:** The on board diagnosis has finished but failed.
- **EXECUTING:** The vehicle is in enable criteria conditions for the DTC and the on board diagnosis is running.
- **NOT COMPLETED:** The on board diagnosis was running but is out of the enable conditions of the DTC.
- **OUT OF CONDITION:** The vehicle has stayed out of the enable conditions for the DTC.