



## 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 an intermittent one.

### Opens and Shorts

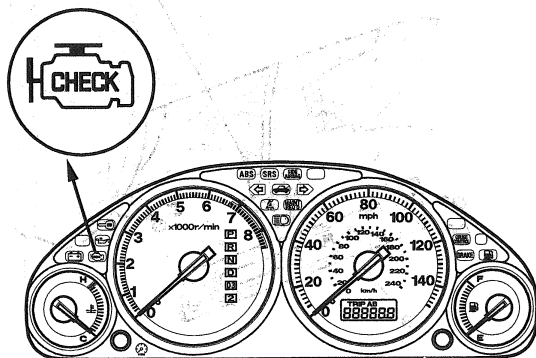
"Open" and "short" are common electrical terms. An open is a break in a wire or at a connection. A short is an accidental connection of a wire to ground or to another wire. In simple electronics, this usually means something won't work at all. With complex electronics (such as an ECM/PCM) this can sometimes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

### How to Use the HDS or a Scan Tool

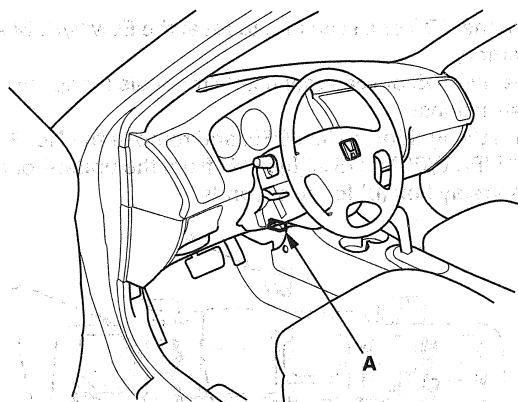
#### If the MIL (malfunction indicator lamp) has come on

1. Start the engine, and check the MIL.

**NOTE:** If the ignition switch is turned ON (II), and the engine is not started, the MIL will stay on for 15–20 seconds (see page 11-34).



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



3. Turn the ignition switch ON (II).
4. Check the diagnostic trouble code (DTC) and note it. Also check the freeze data. Refer to the indicated DTCs Troubleshooting and begin the appropriate troubleshooting procedure.
5. If you do not find any DTCs, go to MIL circuit troubleshooting (see page 11-131).

#### NOTE:

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

#### 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.

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