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 11-32.
Troubleshooting 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.

SYMPTOM	PROBABLE CAUSE
Engine will not start	4, 2, 3, 5, 21, 15, 1
Hard starting	2, 4, 12, 14, 20, 21
Cold fast idle too low	7, 8, 9, 6
Cold fast idle too high	7, 8, 9, 11, 10
Idle speed fluctuates	7, 8, 9, 11, 10
Misfire or rough running	Troubleshoot for misfire on pages 11-78, 79
Low power	2, 10, 11, 13, 18, 17, 19, 12
Engine stalls	2, 4, 7, 12, 21, 9, 5, 16

Other Probable Causes for an engine that will not start:

Engine will not start
- — Compression
- — Engine locked up
- — Timing belt
- — Starting system
- — Overheating
- — Battery

Probable Cause List (For the DTC chart, see page 11-42)

Probable Cause	Page	System
1	11-50	Engine Control Module (ECM)
2	11-118	Fuel pressure
3	11-124	PGM-FI main relay
4	Section 23	Ignition system
5	11-83	Crankshaft Position/Top Dead Center/Cylinder Position sensor circuit
6	11-58	Intake Air Temperature (IAT) sensor circuit
7	11-100	Idle Air Control (IAC) Valve
8	11-110	Fast idle thermo valve
9	11-111	Idle speed adjustment
10	11-132	Throttle body
11	11-130	Throttle cable
12	11-54	Manifold Absolute Pressure (MAP) sensor
13	11-63	Throttle Position (TP) sensor
14	11-86	Barometric pressure (BARO) sensor
15	11-106	A/T gear position signal (see section 23)
16	11-104	Brake switch signal
17	11-129	Air Cleaner
18	11-134	Intake Air Bypass (IAB) control system and intake air pipe
19	11-138	Three Way Catalytic Converter (TWC)
20	11-141	Evaporative emission (EVAP) control
21	——	Contaminated fuel

ECM Data

By connecting the OBD II scan tool or the Honda PGM Tester to the 16P data link connector (DLC), various data can be retrieved from the ECM. The items listed in the table below conform to the SAE recommended practice.
The Honda PGM Tester also reads data beyond that recommended by SAE.
Understanding this data will help to find the causes of intermittent failures or engine problems.

NOTE:

- The "operating values" given below are approximate values and may be different depending on the environment and the individual car.
- 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 ECM 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 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: B18B1, B18C1 engines: 750 ± 50 rpm B18C5 engine: 800 ± 50 rpm	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 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 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. 176 – 200°F (80 – 93°C)	YES
Heated Oxygen Sensor (HO2S) (sensor 1) (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 stoichiomeric ratio), the voltage signal is lower. When the oxygen content is low (that is, when the ratio is richer than the stoichiomeric ratio), the voltage signal is higher.	0.0 – 1.25 V At idle speed: about 0.1 – 0.9 V (sensor 1)	NO (sensor 1)

(cont'd)

Troubleshooting Procedures (cont'd)

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 stoichiomeric ratio when in closed loop status.	−30% – + 47%	YES
Long Term Fuel Trim	Long term fuel trim in 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.	−14% – + 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: Approx. 10% At full throttle: Approx. 90%	YES
Ignition Timing	The ignition advance angle is set by the ECM. The ECM matches ignition timing to the driving conditions.	At idle speed: 16 ± 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