

DESCRIPTION AND OPERATION (Continued)

DTC's until problems have been investigated and repairs have been performed.

Longer pauses separate individual two digit trouble codes.

OBTAINING DTC'S USING MIL LAMP

(1) Cycle the ignition key On - Off - On - Off - On within 5 seconds.

(2) Count the number of times the MIL (check engine lamp) on the instrument panel flashes on and off. The number of flashes represents the trouble code. There is a slight pause between the flashes representing the first and second digits of the code.

An example of a flashed DTC is as follows:

- Lamp flashes 4 times, pauses, and then flashes 6 more times. This indicates a DTC code number 46.
- Lamp flashes 5 times, pauses, and flashes 5 more times. This indicates a DTC code number 55. A DTC 55 will always be the last code to be displayed. This indicates the end of all stored codes.

DIAGNOSTIC TROUBLE CODE DESCRIPTIONS

HEX CODE	MIL CODE	GENERIC SCAN TOOL CODE	DRB SCAN TOOL DISPLAY	DESCRIPTION OF DIAGNOSTIC TROUBLE CODE
	12*		Battery Disconnect	Direct battery input to PCM was disconnected within the last 50 Key-on cycles.
	55*			Completion of fault code display on Check Engine lamp.
01	54**	P0340	No Cam Signal at PCM	No camshaft signal detected during engine cranking.
02	53**	P0601	Internal Controller Failure	PCM Internal fault condition detected.
05	47***		Charging System Voltage Too Low	Battery voltage sense input below target charging during engine operation. Also, no significant change detected in battery voltage during active test of generator output circuit.
06	46***		Charging System Voltage Too High	Battery voltage sense input above target charging voltage during engine operation.
0A	42*		Auto Shutdown Relay Control Circuit	An open or shorted condition detected in the auto shutdown relay circuit.
0B	41***		Generator Field Not Switching Properly	An open or shorted condition detected in the generator field control circuit.
0C	37**	P0743	Torque Converter Clutch Solenoid/Trans Relay Circuits	An open or shorted condition detected in the torque converter part throttle unlock solenoid control circuit (3 speed auto RH trans. only).
0E	35**	P1491	Rad Fan Control Relay Circuit	An open or shorted condition detected in the low speed radiator fan relay control circuit.
0F	34*		Speed Control Solenoid Circuits	An open or shorted condition detected in the Speed Control vacuum or vent solenoid circuits.
10	33*		A/C Clutch Relay Circuit	An open or shorted condition detected in the A/C clutch relay circuit.
11	32**	P0403	EGR Solenoid Circuit	An open or shorted condition detected in the EGR transducer solenoid circuit.
12	31**	P0443	EVAP Purge Solenoid Circuit	An open or shorted condition detected in the duty cycle purge solenoid circuit.
13	27**	P0203	Injector #3 Control Circuit	Injector #3 output driver does not respond properly to the control signal.

DESCRIPTION AND OPERATION (Continued)

HEX CODE	MIL CODE	GENERIC SCAN TOOL CODE	DRB SCAN TOOL DISPLAY	DESCRIPTION OF DIAGNOSTIC TROUBLE CODE
14		or P0202	Injector #2 Control Circuit	Injector #2 output driver does not respond properly to the control signal.
15		or P0201	Injector #1 Control Circuit	Injector #1 output driver does not respond properly to the control signal.
19	25**	P0505	Idle Air Control Motor Circuits	A shorted or open condition detected in one or more of the idle air control motor circuits.
1A	24**	P0122	Throttle Position Sensor Voltage Low	Throttle position sensor input below the minimum acceptable voltage.
1B		or P0123	Throttle Position Sensor Voltage High	Throttle position sensor input above the maximum acceptable voltage.
1E	22**	P0117	ECT Sensor Voltage Too Low	Engine coolant temperature sensor input below minimum acceptable voltage.
1F		or P0118	ECT Sensor Voltage Too High	Engine coolant temperature sensor input above maximum acceptable voltage.
20	21**	P0134	Right Rear (or just) Upstream O ₂ S Stays at Center	Neither rich or lean condition detected from the oxygen sensor.
21	17*		Engine Is Cold Too Long	Engine did not reach operating temperature within acceptable limits.
23	15**	P0500	No Vehicle Speed Sensor Signal	No vehicle speed sensor signal detected during road load conditions.
24	14**	P0107	MAP Sensor Voltage Too Low	MAP sensor input below minimum acceptable voltage.
25		or P0108	MAP Sensor Voltage Too High	MAP sensor input above maximum acceptable voltage.
27	13**	P1297	No Change in MAP From Start to Run	No difference recognized between the engine MAP reading and the barometric (atmospheric) pressure reading from start-up.
28	11*		No Crank Reference Signal at PCM	No crank reference signal detected during engine cranking.
2A		P0352	Ignition Coil #2 Primary Circuit	Peak primary circuit current not achieved with maximum dwell time.
2B		or P0351	Ignition Coil #1 Primary Circuit	Peak primary circuit current not achieved with maximum dwell time.
2C	42*		No ASD Relay Output Voltage at PCM	An Open condition Detected In The ASD Relay Output Circuit.
2E	32**	P0401	EGR System Failure	Required change in air/fuel ratio not detected during diagnostic test.

DESCRIPTION AND OPERATION (Continued)

HEX CODE	MIL CODE	GENERIC SCAN TOOL CODE	DRB SCAN TOOL DISPLAY	DESCRIPTION OF DIAGNOSTIC TROUBLE CODE
30	62*	P1697	PCM Failure SRI Miles Not Stored	Unsuccessful attempt to update EMR mileage in the PCM EEPROM
31	63**	P1696	PCM Failure EEPROM Write Denied	Unsuccessful attempt to write to an EEPROM location by the PCM.
39	23**	P0112	Intake Air Temp Sensor Voltage Low	Intake air temperature sensor input below the maximum acceptable voltage.
3A		or P0113	Intake Air Temp Sensor Voltage High	Intake air temperature sensor input above the minimum acceptable voltage.
3C	61	P0106	Baro Out of Range	
3D	27**	P0204	Injector #4 Control Circuit	Injector #4 output driver does not respond properly to the control signal.
3E	21**	P0132	Right Rear (or just) Upstream O2S Shorted to Voltage	Oxygen sensor input voltage maintained above the normal operating range.
44	53**	P0600	PCM Failure SPI Communications	PCM Internal fault condition detected.
52	77		S/C Power Relay Ckt	
65	42*		Fuel Pump Relay Control Circuit	An open or shorted condition detected in the fuel pump relay control circuit.
66	21**	P0133	Right Bank Upstream O2S Slow Response	Oxygen sensor response slower than minimum required switching frequency.
67		or P0135	Right Rear (or just) Upstream O2S Heater Failure	Upstream oxygen sensor heating element circuit malfunction.
69		or P0141	Right Rear (or just) Downstream O2S Heater Failure	Oxygen sensor heating element circuit malfunction.
6A	43**	P0300	Multiple Cylinder Mis-fire	Misfire detected in multiple cylinders.
6B		or P0301	Cylinder #1 Mis-fire	Misfire detected in cylinder #1.
6C		or P0302	Cylinder #2 Mis-fire	Misfire detected in cylinder #2.
6D		or P0303	Cylinder #3 Mis-fire	Misfire detected in cylinder #3.
6E		or P0304	Cylinder #4 Mis-fire	Misfire detected in cylinder #4.
70	72**	P0420	Right Rear (or just) Catalyst Efficiency Failure	Catalyst efficiency below required level.
71	31	P0441	Incorrect Pruge Flow	

DESCRIPTION AND OPERATION (Continued)

HEX CODE	MIL CODE	GENERIC SCAN TOOL CODE	DRB SCAN TOOL DISPLAY	DESCRIPTION OF DIAGNOSTIC TROUBLE CODE
72	37**	P1899	P/N Switch Stuck in Park or in Gear	Incorrect input state detected for the Park/Neutral switch, auto. trans. only.
73	65*	P0551	Power Steering Switch Failure	Power steering high pressure seen at high speed (2.5L only).
76	52**	P0172	Right Rear (or just) Fuel System Rich	A rich air/fuel mixture has been indicated by an abnormally lean correction factor.
77	51**	P0171	Right Rear (or just) Fuel System Lean	A lean air/fuel mixture has been indicated by an abnormally rich correction factor.
7E	21**	P0138	Right Rear (or just) Downstream O2S Shorted to Voltage	Oxygen sensor input voltage maintained above the normal operating range.
80	17**	P0125	Closed Loop Temp Not Reached	Engine does not reach 20°F within 5 minutes with a vehicle speed signal.
81	21**	P0140	Right Rear (or just) Downstream O2S Stays at Center	Neither rich or lean condition detected from the downstream oxygen sensor.
84	24**	P0121	TPS Voltage Does Not Agree With MAP	TPS signal does not correlate to MAP sensor.
8A	25**	P1294	Target Idle Not Reached	Actual idle speed does not equal target idle speed.
91	25**	P1299	Vacuum Leak Found (IAC Fully Seated)	MAP sensor signal does not correlate to throttle position sensor signal. Possible vacuum leak.
92	71**	P1496	5 Volt Supply Output Too Low	5 volt output from regulator does not meet minimum requirement.
94	37*	P0740	Torq Conv Clu, No RPM Drop At Lockup	Relationship between engine speed and vehicle speed indicates no torque converter clutch engagement (auto. trans. only).
95	42*	or or	Fuel Level Sending Unit Volts Too Low	Open circuit between PCM and fuel gauge sending unit.
96	Fuel Level Sending Unit Volts Too High		Circuit shorted to voltage between PCM and fuel gauge sending unit.	
97	Fuel Level Unit No Change Over Miles		No movement of fuel level sender detected.	
98	65**	P0703	Brake Switch Stuck Pressed or Released	No release of brake switch seen after too many accelerations.
99	44**	P1493	Ambient/Batt Temp Sen Volts Too Low	Battery temperature sensor input voltage below an acceptable range.
9A		or P1492	Ambient/Batt Temp Sensor Volts Too High	Battery temperature sensor input voltage above an acceptable range.
9B	21**	P0131	Right Rear (or just) Upstream O2S Shorted to Ground	O2 sensor voltage too low, tested after cold start.

DESCRIPTION AND OPERATION (Continued)

HEX CODE	MIL CODE	GENERIC SCAN TOOL CODE	DRB SCAN TOOL DISPLAY	DESCRIPTION OF DIAGNOSTIC TROUBLE CODE
9C		or P0137	Right Rear (or just) Downstream O2S Shorted to Ground	O2 sensor voltage too low, tested after cold start.
9D	11**	P1391	Intermittent Loss of CMP or CKP	Intermittent loss of either camshaft or crankshaft position sensor.
AO	31**	PO442	Evap Leak Monitor Small Leak detected	A small leak has been detected by the leak detection monitor.
A1		or PO455	Evap Leak Monitor Large Leak Detected	The leak detection monitor is unable to pressurize Evap system, indicating a large leak.
B7	31**	P1495	Leak Detection Pump Solenoid Circuit	Leak detection pump solenoid circuit fault (open or Short).
B8		or P1494	Leak detect Pump Sw or Mechanical Fault	Leak detection pump switch does not respond to input.
BA	11**	P1398	Mis-fire Adaptive Numerator at Limit	CKP sensor target windows have too much variation.
BB	31	P1486	Evap Hose Pinched	A pinched or bent Evap hose.
CO	21	PO133	Cat Mon Slow O2 Upstream	Oxygen sensor response slower than minimum required switching frequency.

* Check Engine Lamp (MIL) will not illuminate if this Diagnostic Trouble Code was recorded. Cycle Ignition key as described in manual and observe code flashed by Check Engine lamp.

** Check Engine Lamp (MIL) will illuminate during engine operation if this Diagnostic Trouble Code was recorded.

*** Generator Lamp illuminated

MONITORED SYSTEMS

There are new electronic circuit monitors that check fuel, emission, engine and ignition performance. These monitors use information from various sensor circuits to indicate the overall operation of the fuel, engine, ignition and emission systems and thus the emissions performance of the vehicle.

The fuel, engine, ignition and emission systems monitors do not indicate a specific component problem. They do indicate that there is an implied problem within one of the systems and that a specific problem must be diagnosed.

If any of these monitors detect a problem affecting vehicle emissions, the Malfunction Indicator (Check Engine) Lamp will be illuminated. These monitors generate Diagnostic Trouble Codes that can be displayed with the check engine lamp or a scan tool.

The following is a list of the system monitors:

- EGR Monitor
- Misfire Monitor

- Fuel System Monitor
- Oxygen Sensor Monitor
- Oxygen Sensor Heater Monitor
- Catalyst Monitor
- Evaporative System Leak Detection Monitor

Following is a description of each system monitor, and its DTC.

Refer to the appropriate Powertrain Diagnostics Procedures manual for diagnostic procedures.

DTC 21—HEX 66, and 7A—OXYGEN SENSOR (O2S) MONITOR

Effective control of exhaust emissions is achieved by an oxygen feedback system. The most important element of the feedback system is the O2S. The O2S is located in the exhaust path. Once it reaches operating temperature 300° to 350°C (572° to 662°F), the sensor generates a voltage that is inversely proportional to the amount of oxygen in the exhaust. The information obtained by the sensor is used to calcu-