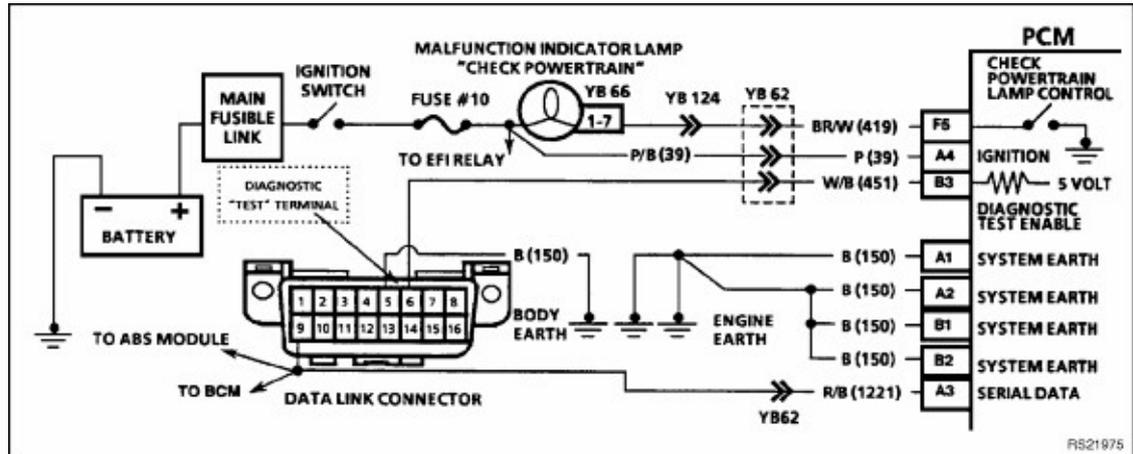


## CHART A V6 PCM



## ON-BOARD DIAGNOSTIC SYSTEM CHECK

### Circuit Description:

The On-Board Diagnostic System Check is an organised approach to identifying a problem created by a powertrain control system malfunction. It must be the starting point for any driveability complaint diagnosis, because it directs the service technician to the next logical step in diagnosing the complaint. Understanding the chart and using it correctly will reduce diagnostic time and prevent the unnecessary replacement of good parts.

**Test Description:** Number(s) below refer to step number(s) on the diagnostic chart.

1. This step is a check for the proper operation of the "Check Powertrain" lamp. The PCM should provide an earth path for the "Check Powertrain" lamp, this is a bulb check. The "Check Powertrain" lamp should be "ON." If it can do this, it confirms that the PCM has power, earth and is capable of some functions.  
If the "Check Powertrain" lamp is "OFF," this indicates a problem in the "Check Powertrain" lamp light power feed circuit or the PCM's control of the earth circuit. Chart A-1 will check for both ignition feed and constant battery power to the PCM and the PCM earth.
2. This check is done to see if the PCM has the capability of performing internal diagnostics. With the diagnostic "test" terminal earthed, the "Check Powertrain" lamp, should flash a DTC 12 three times, followed by any DTC(s) stored in memory. DTC 12 means there is no crankshaft reference signal coming to the PCM, this is normal because the engine is not running.
3. This check is used to see if the PCM can supply serial data for Tech 1 scan tool use. If a PROM error is present, the PCM may have been able to flash DTC 12 but not enable serial data.
4. This test is used to determine the cause of a "Crankes But Will Not Run," although the PCM is powered up, a "Crankes But Will Not Run" symptom could exist because of a PCM problem or the vehicle

because of a PCM problem or the vehicle electrical system.

5. This check is to see if the PCM has any diagnostic trouble codes stored in its memory to aid in diagnosing the customer complaint.
6. Look at all the parameters to determine if one is not in a normal state with just the ignition "ON" and engine stopped. Look at the ECT value to see if the value is shifted above or below where it should be. If so, refer "Diagnostic Aid Chart" on [DTC 14](#).
7. Look at all the parameters to determine that all values are within typical ranges for normal operating temperatures at idle. Keep in mind that a basic engine problem may alter sensor value.
8. Look at Short Term Fuel Trim and Long Term Fuel Trim values to determine if the cause of the customer driveability complaint is because of an overrich or overlean condition.

## CHART A V6 PCM ON-BOARD DIAGNOSTIC SYSTEM CHECK

STEP	ACTION	VALUE	YES	NO
1.	1. Ignition "ON" engine "STOPPED". 2. Observe the "CHECK POWERTRAIN" lamp. 3. Is the "CHECK POWERTRAIN" lamp "ON" steady?		Go to Step 2.	If No, "CHECK POWERTRAIN" lamp, Go to Chart A-1 in this Section  ----- If "CHECK POWERTRAIN" lamp is flashing DTC 12, Go to Step 8
2.	1. Jumper Data Link Connector terminal "6" To "5". 2. Does "CHECK POWERTRAIN" lamp flash DTC 12?		Go to Step 3	Go to Chart A-2 in this Section
3.	1. Disconnect Data Link Connector jumper. 2. Install Tech 1 "Scan" tool to Data Link Connector. 3. Select system F1: Engine. 4. Select F0: Data List. 5. Select F0: All. 6. Does Tech 1 "Scan" tool display PCM serial data.		Go to Step 4	Go to Chart A-2 in this Section
4.	Does engine start?		Go to Step 5	Go to Chart A-3.1 in this Section Go to Step 6
5.	1. Select F2: DTC 2. Select F0: DTC's. 3. Are any Diagnostic Trouble Codes displayed?		Refer To Applicable DTC Chart. Start with lowest DTC Go to Step 7	
6.	1. Ignition "ON", engine "STOPPED". 2. Compare Tech 1 "Scan" tool data with typical values shown on scan data page. 3. Are values normal or within typical ranges.		Go to Step 7	Refer to indicated "Component(s)-System" checks in this Section.
7.	1. Run engine until normal operating temperature is reached. 2. Run engine at 1500 revolutions per minute for 2		Refer to "Symptom" Diagnosis Charts" in	Refer to indicated "Component(s)-System" checks in this Volume

- minutes, then idle engine.
3. Compare Tech 1 scan data with typical values shown on "scan data" page in this Section.
  4. Are values normal or within typical ranges?
8. Check for earthed diagnostic "TEST" terminal circuit 451. Use wiring diagram on facing page.

Section [6C1-2B](#)  
in this Volume

Verify Repair