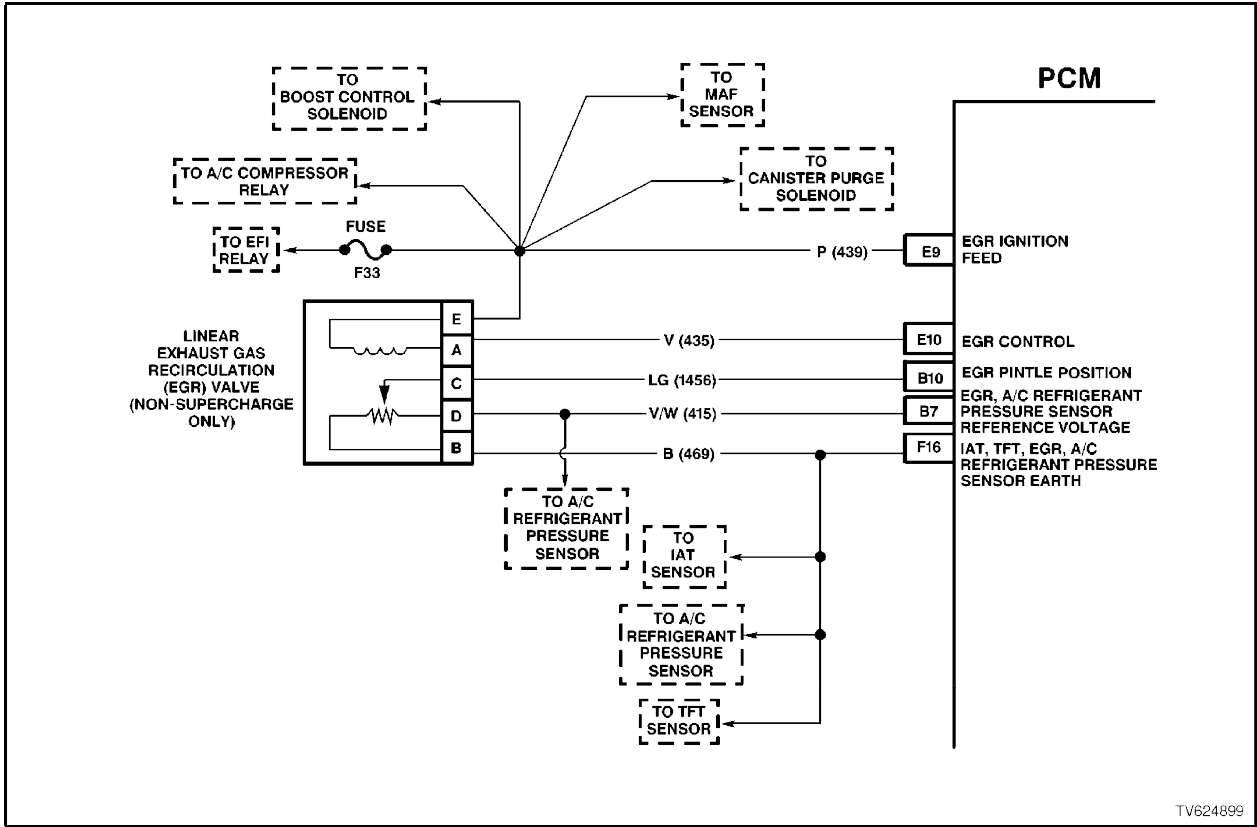


DTC 29 V6 PCM - EGR POSITION FAULT (NON-SUPERCHARGE ONLY)



CIRCUIT DESCRIPTION:

The PCM monitors the EGR valve pintle position input to ensure that the valve responds properly to commands from the PCM and to detect a fault if the pintle position sensor and control circuits are open or shorted. If the PCM detects a pintle position signal voltage outside the normal range of the pintle position sensor, or a signal voltage that is not within a tolerance considered acceptable for proper EGR system operation, the PCM will set a DTC 29.

DTC 29 WILL SET IF:

- The EGR POS FEEDBACK is less than 0.32 volts for greater than 1 second.
- OR -
- The EGR POS COMMANDED is 10% greater or less than the EGR POS FEEDBACK.
- Any of the above conditions are present for greater than 5 seconds.

TEST DESCRIPTION:

Number(s) below refer to step number(s) on the diagnostic chart.

2. Commanding the EGR valve open determines whether the EGR system can control the EGR valve accurately.
3. When the EGR valve electrical connector is disconnected, the scan tool should display the *EGR POS FEEDBACK* as 0%. If it does not, go directly to step 11, as the fault lies either in the EGR signal circuit or the PCM. If the problem is in the EGR ignition feed circuit, other circuits that share this ignition feed will also experience a problem unless the circuit is open only on the EGR valve side of the spliced circuit.
4. A test light, when connected to B+, will glow dimly when the EGR valve is commanded to 25%, and brighter as the EGR valve is commanded to 100%. If the test light flashes, check the sensor earth for an open.
5. If the open condition was due to a blown fuse, locate and repair any shorts that may have caused the fuse to blow before replacement.
6. If the EGR valve 5 volt reference is shorted to voltage, the DVM will read battery voltage and an additional DTC will be set and engine performance will be poor. When this circuit is open, an additional DTC may also be set if the entire circuit is open. Only a DTC 29 set indicates that the circuit is open between the EGR valve electrical connector and the spliced circuit.
7. The test light will have glowed brightly in step 5 if the EGR control circuit was shorted to earth and the *EGR POS FEEDBACK* on the scan tool will display 100%. A test light that did not illuminate, indicates that the circuit may be open or shorted to voltage.
9. If the 5 volt reference circuit is shorted to earth, an additional DTC will also be set. If no other DTC's are set, then the fault must be between the EGR valve electrical connector and the 5 volt reference splice to the throttle position sensor.
10. The *EGR POS FEEDBACK* should read 0% before jumping the 5 volt reference circuit to the signal circuit. If any other reading is present, then either the signal circuit or the PCM is at fault.
11. An open or short in the EGR valve sensor earth circuit will also cause an additional DTC to be set. If no other DTC's are set, and the circuit is found to be open or shorted, the fault is on the EGR valve side of the spliced circuit.

DIAGNOSTIC AIDS:

Check for the following conditions:

Excessive deposits on the EGR valve pintle or seat. Check for deposits that may interfere with the EGR valve pintle extending completely or cause the pintle to stick.

Poor connection or damaged harness. Inspect the wiring harness for damage. If the harness appears to be OK, observe the EGR POS FEEDBACK display on the scan tool while moving connectors and wiring harnesses related to the EGR valve. A change in the display will indicate the location of the fault.

STEP	ACTION	VALUE	YES	NO
1	Was the "On-Board Diagnostic (OBD) System Check" performed?		Go to Step 2	Go to <i>OBD System Check</i>
2	1. Key "ON", engine "OFF". 2. Install a scan tool. 3. Command the EGR valve to the specified values. Does the <i>EGR POS COMMANDED</i> follow the <i>EGR POS FEEDBACK</i> ?	25%, 50%, 75%, 100%	Refer to "Diagnostic Aids"	Go to Step 3
3	1. Key "ON", engine "OFF". 2. Disconnect the EGR valve electrical connector. 3. With a test light connected to earth, probe the ignition feed circuit to the EGR valve. Does the test light illuminate?		Go to Step 4	Go to Step 5
4	1. Connect the test light to B+. 2. Probe the EGR control circuit to the EGR valve. 3. Command the EGR valve to the specified values. Does the test light glow dimly and then glow brighter or flash as the commanded percentage is raised?	25%, 50%, 75%, 100%	Go to Step 6	Go to Step 7
5	Check for an open in the EGR valve ignition feed circuit and repair as necessary. Was a repair necessary?		Verify Repair	Go to Step 14
6	Using a DVM connected to earth, probe the 5 volt reference circuit to the EGR valve. Does the DVM read the specified value?	5.0V	Go to Step 8	Go to Step 9
7	Check for an open or short in the EGR control circuit and repair as necessary. Was a repair necessary?		Verify Repair	Go to Step 14
8	Using a DVM connected to B+, probe the EGR valve sensor earth circuit. Does the DVM read the specified value?	B+	Go to Step 10	Go to Step 11

STEP	ACTION	VALUE	YES	NO
9	Check for an open or short in the EGR valve 5 volt reference circuit and repair as necessary. Was a repair necessary?		Verify Repair	Go to Step 14
10	Jumper the EGR valve 5 volt reference circuit to the signal circuit. Does the <i>EGR POS FEEDBACK</i> display the specified value?	100%	Go to Step 12	Go to Step 13
11	Check for an open in the EGR valve sensor earth circuit and repair as necessary. Was a repair necessary?		Verify Repair	Go to Step 14
12	Replace the EGR valve. Is the action complete?		Verify Repair	
13	Check for an open or short in the EGR valve signal circuit and repair as necessary. Was a repair necessary?		Verify Repair	Go to Step 14
14	Replace PCM. Refer to Section 6C1-3 Service Operations, for PCM Security Link procedure. Is action complete?		Verify Repair	