

Vehicle » A L L Diagnostic Trouble Codes (DTC) » Testing and Inspection » P Code Charts » P0401

 **Zoom and Print Options**

TEST	ACTION	APPLICABILITY
1	Turn the ignition on. With the DRBIII®, read DTCs and record the related Freeze Frame data. Is the Good Trip displayed and equal to zero? Yes → Go To 2 No → Refer to the INTERMITTENT CONDITION symptom in the Driveability category. Perform POWERTRAIN VERIFICATION TEST VER - 5	All

Test 1

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	<p>Turn the ignition on. Turn all accessories off. Start the engine. Allow the engine to reach normal operating temperature. With the DRBIII®, enter Engine System Test, then EGR System Test. Monitor the MAP Sensor voltage on the DRBIII® while actuating the FLOW function in the EGR System Test.</p> <p>NOTE: When the EGR valve is commanded open the MAP sensor voltage will shift with the induced vacuum leak.</p> <p>Was there a MAP sensor voltage shift when the EGR valve was opened?</p> <p>Yes → Go To 3 No → Go To 7</p>	
3	<p>Turn the ignition off. Disconnect the EGR Solenoid Assembly harness connector. Start engine. Attempt to allow the engine to idle. Does the engine run rough or stall?</p> <p>Yes → Inspect the EGR tube assembly. If OK, replace the EGR valve. Perform POWERTRAIN VERIFICATION TEST VER - 5</p> <p>No → Go To 4</p>	All
4	<p>Inspect the EGR Assembly for the following. Gasket(s) for leaking Damage and/or holes in the EGR tube(s) Carbon build up on or near the EGR pintle and passage ways. Obstruction in the EGR tubes Were any problem found?</p> <p>Yes → Repair or replace the EGR Assembly as necessary. Perform POWERTRAIN VERIFICATION TEST VER - 5</p> <p>No → Go To 5</p>	All
5	<p>Turn the ignition off. Disconnect the EGR Solenoid harness connector. Turn the ignition on. Measure the voltage on the EGR Solenoid Control circuit in the EGR Solenoid connector. Is the voltage above 1.0 volt?</p> <p>Yes → Repair the short to voltage in the EGR solenoid control circuit. Perform POWERTRAIN VERIFICATION TEST VER - 5</p> <p>No → Go To 6</p>	All
6	<p>NOTE: Before continuing, check the PCM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary. If there are no possible causes remaining, view repair.</p> <p>Repair Replace and program the Powertrain Control Module. Perform POWERTRAIN VERIFICATION TEST VER - 5</p>	All

Test 2 - Test 6

 **Zoom and Print Options**

	<p>Disconnect the EGR Solenoid harness connector. Using a 12-volt Test Light, jumper across the EGR Solenoid harness connector. With the DRB, actuate the EGR solenoid. Does the 12-volt test light flash on and off?</p> <p>Yes → Inspect the tube(s) for obstructions and damage, repair as necessary. If OK, replace the EGR Solenoid Assembly. Perform POWERTRAIN VERIFICATION TEST VER - 3.</p> <p>No → Go To 8</p>	
8	<p>Turn the ignition off. Disconnect the EGR Solenoid harness connector. Using a 12-volt test light connected to battery voltage, probe the EGR Solenoid ground circuit in the EGR Solenoid harness connector. Does the 12-volt test light illuminate brightly?</p> <p>Yes → Go To 9</p> <p>No → Repair the open in the EGR Solenoid ground circuit. Perform POWERTRAIN VERIFICATION TEST VER - 3.</p>	All
9	<p>Turn the ignition off. Disconnect the PCM harness connector. Disconnect the EGR Solenoid harness connector. Measure the resistance between ground and the EGR Solenoid Control circuit at the EGR Solenoid harness connector. Is the resistance below 100 ohms?</p> <p>Yes → Repair the short to ground in the EGR Solenoid Control circuit. Perform POWERTRAIN VERIFICATION TEST VER - 3.</p> <p>No → Go To 10</p>	All
10	<p>Turn the ignition off. Disconnect the PCM harness connector. Disconnect the EGR Solenoid harness connector. CAUTION: DO NOT PROBE THE PCM HARNESS CONNECTORS. PROBING THE PCM HARNESS CONNECTORS WILL DAMAGE THE PCM TERMINALS RESULTING IN POOR TERMINAL TO PIN CONNECTION. INSTALL MILLER SPECIAL TOOL #8815 TO PERFORM DIAGNOSIS. Measure the resistance of the EGR Solenoid Control circuit from the EGR Solenoid harness connector to the appropriate terminal of special tool # 8815. Is the resistance below 5.0 ohms?</p> <p>Yes → Go To 11</p> <p>No → Repair the open in the EGR solenoid control circuit. Perform POWERTRAIN VERIFICATION TEST VER - 3.</p>	All
11	<p>NOTE: Before continuing, check the PCM harness connector terminals for corrosion, damage, or terminal push out. Repair as necessary. If there are no possible causes remaining, view repair.</p> <p>Repair Replace and program the Powertrain Control Module. Perform POWERTRAIN VERIFICATION TEST VER - 3</p>	All
Test 7 - Test 11		

SYMPTOM

P0401 - EGR SYSTEM PERFORMANCE

WHEN MONITORED

Engine running for **greater than two minutes** with the Engine Coolant TEMP **greater than 70° C (158° F)**. EGR active. **Less than 8500 feet**. Ambient temperature **greater than 20° F (-6° C)**

SET CONDITION

The PCM closes the EGR valve while monitoring the O2 Sensor signal. Once a closed EGR fueling sample has been established the PCM then ramps in EGR and additional fueling while monitoring the O2 Sensor signal in the open state. A fueling sample is again established. The PCM then compares the two different O2 Sensor signal

POSSIBLE CAUSES

- Good trip equal to zero
- EGR valve open at idle
- EGR valve assembly inspection
- EGR solenoid assembly
- EGR solenoid ground circuit open
- EGR solenoid control CKT short to GND
- EGR solenoid control CKT shorted to voltage
- EGR solenoid control CKT open
- PCM - EGR open
- PCM - EGR closed