



CODE 32

EXHAUST GAS RECIRCULATION (EGR) CIRCUIT 2.8L "P" SERIES (PORT)

Circuit Description:

The EGR valve vacuum is controlled by an ECM operated solenoid. The ECM will turn the EGR "ON" and "OFF" (duty cycle) by grounding CKT 901. The duty cycle is calculated by the ECM based on information from the coolant sensor, MAP sensor, and engine rpm. There should be 0% (NO EGR) when in Park or Neutral, TPS input below a specified value, or TPS indicating wide open throttle (WOT).

With the ignition "ON", engine stopped, the EGR solenoid is de-energized, unless the diagnostic terminal is grounded.

Code 32 means that the EGR diagnostic switch was not detected closed under the following conditions:

- Coolant temperature greater than specified amount.
- EGR duty cycle commanded by the ECM is greater than 50%
- Manifold pressure less than 25 kPa, (7" vacuum)
- All conditions above must be met for about 8 seconds

Test Description: Numbers below refer to circled numbers on the diagnostic chart.

1. With the ignition on, the solenoid should not be energized and vacuum should not pass to the EGR valve.
2. To this point, the EGR solenoid and valve are OK and the following checks will diagnose the diagnostic vacuum switch portion of the system.
3. The diagnostic switch should close at about 2" of vacuum. With vacuum applied, the switch should close and resistance go to near zero ohms.

Diagnostic Aids:

A "Scan" tool can also be used to check the diagnostic switch circuit. The "Scan" should display "ON" when vacuum is applied to the diagnostic switch. The switch should also be indicated as being closed whenever the ECM is commanding an EGR duty cycle of greater than 50%. EGR duty cycle can also be monitored by a "Scan" tool.

001	001	002
004	01	001
006	02	001
008	03	001
010	04	001
012	05	001
014	06	001
016	07	001
018	08	001
020	09	001

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(EGR) CIRCUIT
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BEFORE USING THIS CHART, CHECK FOR PORTED VACUUM TO EGR SOLENOID, ALSO CHECK HOSES FOR LEAKS OR RESTRICTIONS. SHOULD BE AT LEAST 7" HG VACUUM AT 2000 RPM.

- 1
- DISCONNECT EGR SOLENOID VACUUM HARNESS.
 - ROTATE HARNESS AND REINSTALL ONLY THE EGR VALVE SIDE.
 - IGNITION "ON", ENGINE STOPPED.
 - INSTALL A HAND HELD VACUUM PUMP WITH GAGE TO MANIFOLD SIDE OF EGR SOLENOID.
 - APPLY VACUUM AND OBSERVE EGR VALVE.
 - VALVE SHOULD NOT MOVE.

VALVE DOES NOT MOVE

- GROUND DIAGNOSTIC TERMINAL.
- REPEAT TEST.

VALVE MOVES

- 2
- SEE "DIAGNOSTIC AIDS" ON FACING PAGE.
- DISCONNECT EGR 4-WAY CONNECTOR.
 - CONNECT VOLTMETER BETWEEN C & D.
 - IGNITION "ON"

VALVE DOES NOT MOVE

- DISCONNECT EGR 4-WAY CONNECTOR
- CONNECT TEST LIGHT BETWEEN HARNESS TERMINALS A & B.

LIGHT "ON"

- CONNECT VACUUM PUMP TO EGR VALVE.
- APPLY VACUUM AND OBSERVE VALVE.

VALVE MOVES

FAULTY HOSE OR CONNECTION BETWEEN EGR SOLENOID AND EGR VALVE OR FAULTY EGR SOLENOID.

VALVE DOES NOT MOVE

REPLACE EGR VALVE.

LIGHT "OFF"

- CONNECT TEST LIGHT BETWEEN TERMINAL "A" AND GROUND.

LIGHT "OFF"

REPAIR OPEN CKT 639

LIGHT "ON"

OPEN CKT 901, FAULTY CONNECTION OR FAULTY ECM OR FAULTY ECM SEE ECM QUAD DRIVER CHECK (CHART C-1).

VALVE MOVES

- DISCONNECT EGR SOLENOID ELECTRICAL CONNECTOR
- REPEAT TEST.

VALVE MOVES

FAULTY EGR SOLENOID

VALVE DOES NOT MOVE

CKT 901 SHORTED TO GROUND OR FAULTY ECM SEE ECM QUAD DRIVER CHECK (CHART C-1).

OVER 10 VOLTS

- 3
- CONNECT OHMMETER ACROSS TERMINALS C & D OF SOLENOID.
 - APPLY 24 KPa (7") VACUUM TO VACUUM DIAGNOSTIC SWITCH.
 - NOTE RESISTANCE

LOW RESISTANCE (SWITCH CLOSED)

PROBLEM IS INTERMITTENT, CHECK ALL CONNECTIONS AND TERMINALS.

HIGH RESISTANCE (SWITCH OPEN)

FAULTY SWITCH, WIRING OR CONNECTIONS.

UNDER 10 VOLTS

- CONNECT VOLTMETER BETWEEN TERMINAL "C" AND CHASSIS GROUND.

OVER 10 VOLTS

OPEN GROUND CKT 450.

UNDER 10 VOLTS

OPEN CKT 997, FAULTY CONNECTION OR FAULTY ECM OR FAULTY ECM SEE ECM QUAD DRIVER CHECK (CHART C-1).