



CHART C-7B

EXHAUST GAS RECIRCULATION CHECK 5.0L & 5.7L "F" SERIES FUEL INJECTION (PORT)

Circuit Description:

The Exhaust Gas Recirculation (EGR) valve is controlled by a normally open pulse width modulated (PWM) solenoid. The ECM turns the solenoid "OFF" to allow vacuum to pass to the EGR and turns the solenoid "ON" to prohibit EGR operation. When EGR is commanded, the solenoid is turned "ON" and "OFF" many times per second (duty cycle).

The duty cycle is calculated by the ECM based on information from the coolant, MAT, TPS, and MAF sensors. Also, engine rpm's and the P/N switch input affect EGR. There should be no EGR when in park or neutral, TPS below a calibrated value or TPS indicating WOT.

With the ignition "ON" and engine stopped, the EGR solenoid is de-energized. The solenoid, however, should be energized if the diagnostic terminal is grounded with the ignition "ON" and engine not running.

Test Description: The step numbers refer to the step numbers on the diagnostic chart.

1. This will test the solenoid valve to determine if it is capable of closing off the manifold vacuum from the EGR valve. The vacuum may bleed off slowly but this should not be considered a faulty.

2. As soon as back pressure is available at the EGR valve, the bleed portion in the valve should open and cause the valve to go to its heated position.

3. The EGR will be inoperative if the P/N switch is misadjusted or faulty. Use "Scan" tool and check P/N switch. Refer to CHART C-1A.

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. THIS CHART ASSUMES THERE IS NO CODE 32.

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1

- IGNITION "ON" ENGINE STOPPED.
- GROUND DIAGNOSTIC TERMINAL.
- DISCONNECT EGR SOLENOID VACUUM HARNESS.
- APPLY 10" VACUUM TO MANIFOLD SIDE OF SOLENOID.
- SHOULD BE ABLE TO HOLD VACUUM.

OK

NOT OK

- UNGROUND DIAGNOSTIC TERMINAL
- VACUUM SHOULD DROP

- DISCONNECT EGR SOLENOID ELECTRICAL CONNECTOR.
- CONNECT A TEST LIGHT BETWEEN HARNESS TERMINALS

DROPS

NO DROP

LIGHT 'ON'

LIGHT 'OFF'

- IGN. 'OFF'
- CONNECT A VACUUM PUMP TO EGR VALVE.
- USING A MIRROR OBSERVE EGR DIAPHRAGM WHILE APPLYING VACUUM
- DIAPHRAGM SHOULD MOVE FREELY AND HOLD VACUUM FOR AT LEAST 20 SECONDS.

- DISCONNECT SOLENOID ELECTRICAL CONNECTOR
- NOTE VACUUM

NO DROP

DROPS

REPLACE SOLENOID

CKT 435 SHORTED TO GROUND OR FAULTY ECM

REPLACE SOLENOID.

PROBE EACH HARNESS CONNECTOR TERMINAL WITH A TEST LIGHT CONNECTED TO GROUND.

OK

NOT OK

REPLACE EGR VALVE.

2

- APPLY VACUUM TO EGR VALVE.
- START ENGINE AND IMMEDIATELY OBSERVE VACUUM
- VALVE IS GOOD IF VALVE MOVES TO SEATED POSITION (VALVE CLOSED) AND VACUUM DROPPED WHILE STARTING ENGINE.

NO LIGHT

LIGHT ON 'ONE' (CKT 39)

LIGHT ON BOTH

REPAIR OPEN CKT 39.

OPEN CKT 435, CKT 435 SHORTED TO VOLTAGE OR FAULTY ECM.

REPAIR SHORT TO VOLTAGE IN CKT 435

3

OK

NOT OK

AT CHECK P/W SWITCH

- REMOVE EGR VALVE CHECK PASSAGES FOR BEING PLUGGED.
- IF NOT PLUGGED REPLACE EGR VALVE.

OK THERE IS NO TROUBLE FOUND.

CLEAR CODES AND CONFIRM "CLOSED LOOP" OPERATION AND NO "SERVICE ENGINE SOON" LIGHT.