

CHART A-7

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FUEL SYSTEM DIAGNOSIS 5.0L (VIN F) & 5.7L (VIN 8) "F" SERIES (PORT)

Circuit Description:

When the ignition switch is turned "ON", the electronic control module (ECM) will turn "ON" the in-tank fuel pump. It will remain "ON" as long as the engine is cranking or running, and the ECM is receiving reference pulses. If there are no reference pulses, the ECM will shut "OFF" the fuel pump within 2 seconds after ignition "ON" or engine stops.

The pump will deliver fuel to the fuel rail and injectors, then to the pressure regulator, where the system pressure is controlled at 234 to 325 kPa (34 to 47 psi). Excess fuel is then returned to the fuel tank.

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

1. Wrap a shop towel around the fuel pressure connector to absorb any small amount of fuel leakage that may occur when installing the gage. Ignition "ON", pump pressure should be 280-325 KPa (40.5-47 psi). This pressure is controlled by spring pressure within the regulator assembly.
2. When the engine is idling, the manifold pressure is low (high vacuum) and is applied to the fuel regulator diaphragm. This will offset the spring and result in a lower fuel pressure. This idle pressure will vary somewhat depending on barometric pressure; however, the pressure idling should be less, indicating pressure regulator control.
3. Pressure that continues to fall is caused by one of the following:
 - In-tank fuel pump check valve not holding.
 - Pump coupling hose or pulsator leaking.
 - Fuel pressure regulator valve leaking.

- Injector(s) sticking open.
4. An injector sticking open can best be determined by checking for a fouled or saturated spark plug(s). If a leaking injector cannot be determined by a fouled or saturated spark plug, the following procedure should be used:
 - Remove Plenum, and remove fuel rail bolts. Follow the procedures in the Fuel Control Section of this manual, but leave fuel lines connected.
 - Lift fuel rail out just enough to observe injector nozzles in the ports.

CAUTION: BE SURE INJECTOR(S) ARE NOT ALLOWED TO SPRAY ON ENGINE AND THAT INJECTOR RETAINING CLIPS ARE INTACT. THIS SHOULD BE CAREFULLY FOLLOWED TO PREVENT FUEL SPRAY ON ENGINE WHICH WOULD CAUSE A FIRE HAZARD.

- Pressurize the fuel system and observe injector nozzles.

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THIS CHART ASSUMES
THERE IS NO CODE 54

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FUEL SYSTEM DIAGNOSIS
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- 1
- INSTALL FUEL PRESSURE GAGE, J-34730-1 OR EQUIVALENT.
 - IGNITION "OFF" FOR 10 SECONDS. A/C "OFF".
 - IGNITION "ON". FUEL PUMP WILL RUN FOR ABOUT 2 SECONDS.
 - NOTE FUEL PRESSURE, WITH PUMP RUNNING SHOULD BE 280-325 kPa (40.5-47 psi) AND HOLD STEADY WHEN PUMP STOPS.

NOTE:
THE IGNITION MAY HAVE TO BE CYCLED "ON" MORE THAN ONCE TO OBTAIN MAXIMUM PRESSURE.
ALSO, IT IS NORMAL FOR THE PRESSURE TO DROP SLIGHTLY WHEN THE PUMP STOPS.

OK

NOT OK

- 2
- START AND IDLE ENGINE AT NORMAL OPERATING TEMPERATURE.
 - PRESSURE SHOULD BE LOWER BY 21-69 kPa (3-10 psi).

- 3
- PRESSURE BUT NOT HOLDING
 - PRESSURE BELOW 280 kPa (40.5 psi)
 - PRESSURE ABOVE 325 kPa (47 psi)
 - NO PRESSURE

OK

NOT OK

NO TROUBLE FOUND. REVIEW SYMPTOMS SECTION "B".

- IGNITION "OFF" FOR 10 SECONDS.
- IGNITION "ON"
- BLOCK FUEL PRESSURE LINE BY PINCHING FLEX HOSE. PRESSURE SHOULD HOLD.

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- IGNITION "OFF"
- APPLY 12 VOLTS TO FUEL PUMP TEST TERMINAL.
- LISTEN FOR FUEL PUMP RUNNING.

- USING AN EXTERNAL VACUUM SOURCE, APPLY 10 INCHES OF VACUUM TO FUEL PRESSURE REGULATOR.
- FUEL PRESSURE SHOULD DROP 21-69 kPa (3-10 psi).

NOT HOLDING

HOLDS

- IGNITION "OFF" FOR 10 SECONDS.
- IGNITION "ON".
- BLOCK FUEL RETURN LINE BY PINCHING HOSE.
- RECHECK PRESSURE.

- CHECK :
- LEAKING PUMP
 - COUPLING HOSE OR PULSATOR.
 - FAULTY IN-TANK PUMP.

OK

NOT OK

REPAIR VACUUM SOURCE TO REGULATOR.

REPLACE REGULATOR ASSEMBLY

HOLDS

NOT HOLDING

FAULTY FUEL PRESSURE REGULATOR.

- 4
- LOCATE AND CORRECT LEAKING INJECTOR(S).

PUMP RUNS

PUMP NOT RUNNING

- CHECK FOR :
- PLUGGED IN-LINE FILTER.
 - PLUGGED PUMP INLET FILTER.
 - RESTRICTED FUEL LINE.
 - DISCONNECTED COUPLING HOSE OR PULSATOR.

- CHECK FOR :
- OPEN WIRE IN CKT 120
 - OPEN PUMP. GROUND CKT 150

IF OK

IF OK

REPLACE IN-TANK FUEL PUMP

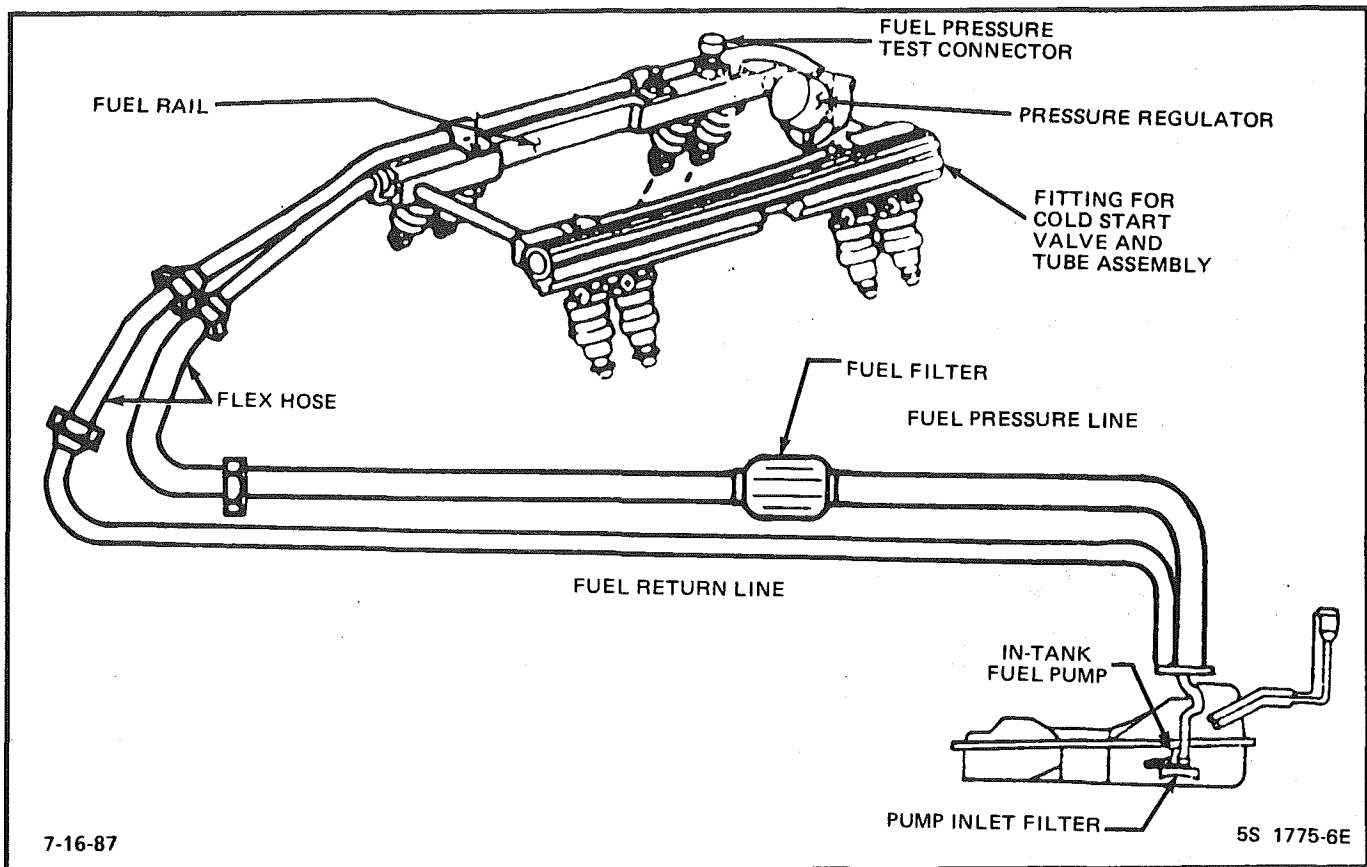


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FUEL SYSTEM DIAGNOSIS 5.0L (VIN F) & 5.7L (VIN 8) "F" SERIES (PORT)

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

1. Fuel pressure less than 280 kPa (40.5 psi) falls into two areas:
 - Regulated pressure less than 280 kPa (40.5 psi) - Amount of fuel to injectors OK but pressure is too low. System will be lean and may set Code 44. Also, hard starting cold and overall poor performance.
 - Restricted flow causing pressure drop - Normally, a vehicle with a fuel pressure of less than 165 kPa (24 psi) at idle will not be driveable. However, if the pressure drop occurs only while driving, the engine will normally surge then stop running as pressure begins to drop rapidly. This is most likely caused by a restricted fuel line or plugged filter.
2. Restricting the the fuel return line allows the fuel pump to develop its maximum pressure (dead head pressure). When battery voltage is applied to the pump test terminal, pressure should be above 414 kPa (60 psi).
3. This test determines if the high fuel pressure is due to a restricted fuel return line or a pressure regulator problem.

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NOTICE: THE FUEL SYSTEM IS UNDER PRESSURE. TO AVOID FUEL SPILLAGE, REFER TO FIELD SERVICE PROCEDURES IN SECTION "C2" FOR TESTING OR MAKING REPAIRS REQUIRING DISASSEMBLY OF FUEL LINES OR FITTINGS.

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