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5S 1775-6E

CHART A-7A

FUEL SYSTEM DIAGNOSIS

5.7L "Y" SERIES

FUEL INJECTION (PORT)

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 HEI distributor reference pulses.

If there are no reference pulses, the ECM will shut "OFF" the fuel pump within 2 seconds after key "ON" or engine stopped.

The pump will deliver fuel to the fuel rail and injectors, then to the pressure regulator, where the system pressure is controlled to about 234 to 317 KPa (34 to 46 psi). Excess fuel is then returned to the fuel tank.

- Use pressure gage J-34730-1. Wrap a shop towel around the fuel pressure tap 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.
- 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 was less indicating pressure regulator control.
- 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 sticking open.
- An injector sticking open can best be determined by checking for a fouled or saturated spark plug(s). If a leaking injector can not be determined by a fouled or saturated spark plug the following procedure should be used.
 - Remove Plenum, cold start valve and remove fuel rail bolts. Follow the procedures in the Fuel Control Section of this manual but leave fuel lines connected.
 - Reconnect cold start valve.
 - Connect a hose to valve nozzle and insert into a gasoline container.
 - Lift fuel rail out just enough to leave 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.
- Lift each side of rail up and observe for injector(s) leaking.

FROM
CHART
A-3A

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FUEL SYSTEM DIAGNOSIS

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5.7L "Y" SERIES FUEL INJECTION (PORT)

THIS CHART ASSUMES THERE IS NO
CODE 54

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.

- 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.

OK

NOT OK

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

OK

NOT OK

NO TROUBLE
FOUND.
REVIEW
SYMPTOMS
SECTION "B".

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

OK

NOT OK

REPAIR
VACUUM
SOURCE TO
REGULATOR.

REPLACE
REGULATOR
ASSEMBLY

3 PRESSURE BUT NOT
HOLDING

PRESSURE BUT LESS
THAN 280 kPa
(40.5 psi).

ABOVE 325
kPa (47 psi).

NO PRESSURE

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

SEE
CHART
A-7B

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

NOT HOLDING

HOLDS

- BLOCK FUEL RETURN LINE BY PINCHING HOSE.
- RECHECK PRESSURE.

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

HOLDS

NOT HOLDING

FAULTY FUEL
PRESSURE
REGULATOR.

4

LOCATE AND CORRECT
LEAKING INJECTOR., ALSO
CHECK COLD START VALVE .

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

6-4-85

55 1626-6EA

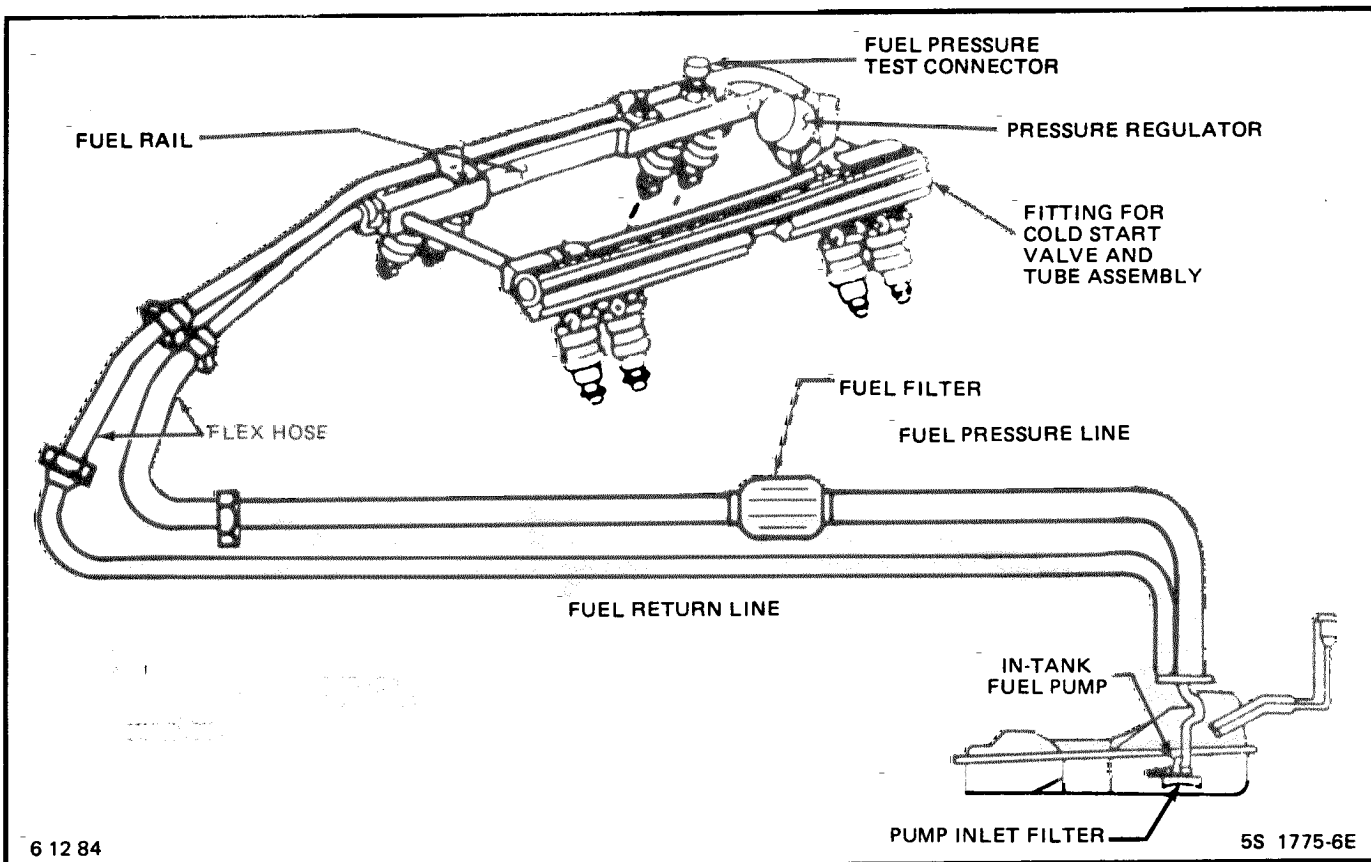


CHART A-7B
FUEL SYSTEM DIAGNOSIS
5.7L "Y" SERIES
FUEL INJECTION (PORT)

1. Pressure but less than 280 kPa (40.5 psi) falls into two areas:
 - Regulated pressure but less than 280 kPa (40.5 psi) Amount of fuel to injectors OK but pressure is too low. System will be lean running 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 as pressure begins to drop rapidly.
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.

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

CHART A-7B

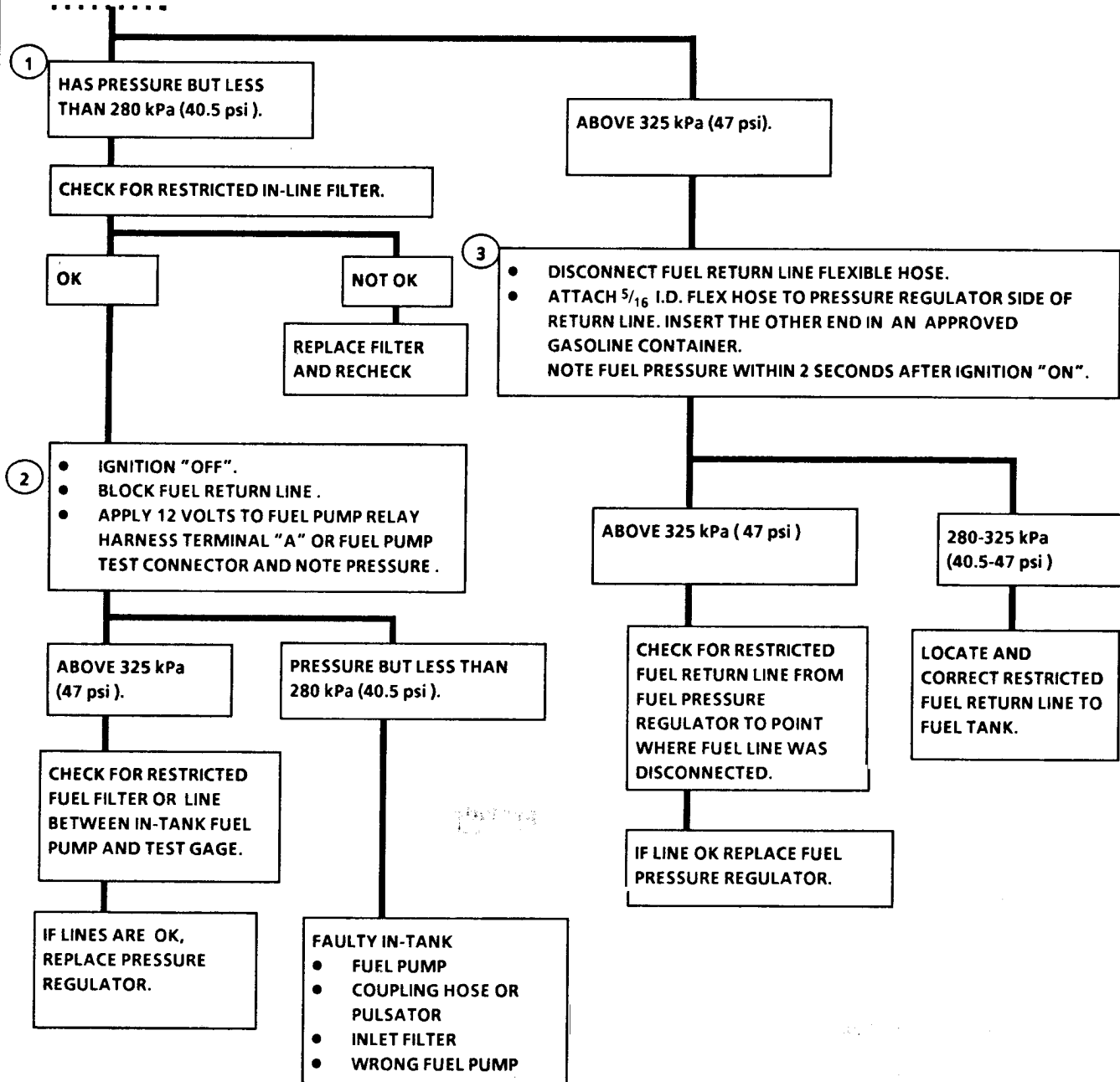
FUEL SYSTEM DIAGNOSIS

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5.7L "Y" SERIES

FUEL INJECTION (PORT)

FROM
CHART
A-7A



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

3-6-85

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