

CODE 20, FUEL PUMP RELAY CIRCUIT FAILED LOW

IMPORTANT: If "CHECK ENGINE" light is NOT

on with engine running (other than diagnostic display) - Do

Not Use The Following Diagnostic Procedure/Trouble

Tree. This is an intermittent failure and cannot be

diagnosed using this procedure/trouble tree. Check all

connectors in the appropriate circuit. Reset diagnostics and

road test (if possible).

When the ignition is first turned on, the fuel pump

circuit, circuit #12 in Figure 8D-24, should switch on to

12 volts and then switch back to 0 volts after 1 second. When

the engine is running, the fuel pump circuit will apply 12

volts to the fuel pump.

Trouble Code 20 (Figures 8D-24 and 8D-25) indicates

that the fuel pump relay circuit did not supply 12 volts to

the fuel pump. Possible causes of this condition are:

A. Faulty fuel pump relay.

B. Defective wiring, terminals, etc.

C. An ECM not processing the fuel pump signal or not

switching the fuel pump relay on.

D. A shorted fuel pump.

E. A shorted height sensor.

1. To begin the diagnosis of trouble code 20, determine

if the engine will start and run. If the engine will run then

the fuel pump system is working but the ECM is not

receiving the proper feedback signal. Check circuit 120

leading to the ECM for an open. If circuit 120 is OK check

for a faulty ECM connector or faulty ECM.

2. If the engine will not run, check the fuel pump fuse.

If the fuse is OK, the next step is to verify if the ECM is

supplying a signal to the fuel pump relay. Turn the ignition

off for 10 seconds and remove the fuel pump relay. While

probing the fuel pump relay cavity #2, turn the ignition on

and check to see if the test light turns on for 1 second (circuit

#465 goes to 12 volts for 1 second) and then turns off

(circuit #465 returns to 0 volts). If the test light does not

light, then check circuit #465 for an open or short to

ground. If circuit #465 is OK, check for a faulty ECM

connector or faulty ECM. A short to ground in circuit 465

will probably damage the ECM.

3. If the test light on fuel pump relay cavity #2

does light for 1 second, then the ECM is supplying the

proper signal to energize the fuel pump coil. Connect

the test light between fuel pump relay cavity #1 and

ground to determine if the relay is receiving battery vol-

tage. If there is no light with ignition on, repair an open

in circuits 120F or #3F.

4. If the test light does light, then the fuel pump

relay is receiving 12 volts and determine if the relay is

#497. Connect the test light between the fuel pump

and ground from the ECM through circuit

120F or #3F.

5. If the test light does not light, determine if the

fuel pump relay is the source of ground. Reinsert the

test light between injector relay cavity #2 and a

source. If the test light lights, the fuel pump relay

is shorted to ground and must be replaced. If the test

light does not light, no problem is present at this time.

6. If the fuel pump fuse is blown, it will be necessary

to determine the cause of the excessive current. Re-

move the fuel pump relay and connect a test light between

the fuel pump relay cavity #4 and a 12 volt source. When

voltage parameter #11 of the Code 90 engine data is

uses the fuel pump feedback signal as its source of voltage.

With voltage applied to circuit 120F through the relay,

a 0 voltage reading on the diagnostic display would indicate

a short to ground in the system. If the display reads

remove the injector relay. If the display now reads

than 0 volt, the injector relay was the source of ground.

7. If the display continues reading 0 volt, disconnect

the 6-way weatherpack connector at the fuel pump. The

display continues to read 0 volt, the short to ground is

circuit 120 and must be corrected.

8. If the display now reads more than 0 volt, disconnect

of ground has been isolated to the system beyond the

weatherpack connector. Reconnect the weatherpack

connector so that the display is again reading 0 volt. Re-

disconnect the connector at the height sensor. If the

now reads more than 0 volt, the height sensor is shorted

ground and must be replaced.

9. If the display continues to read 0 volt, disconnect

wiring between the 6-way weatherpack connector and

height sensor and the fuel pump for a short to ground.

If the wiring is OK, the fuel pump must be inspected.

10. If the diagnostic display of parameter #11 is

read 0 volt at the beginning of the procedure. Then the

to ground is either in the fuel pump relay or the

proper signal to energize the fuel pump coil. Connect

the test light between fuel pump relay cavity #1 and

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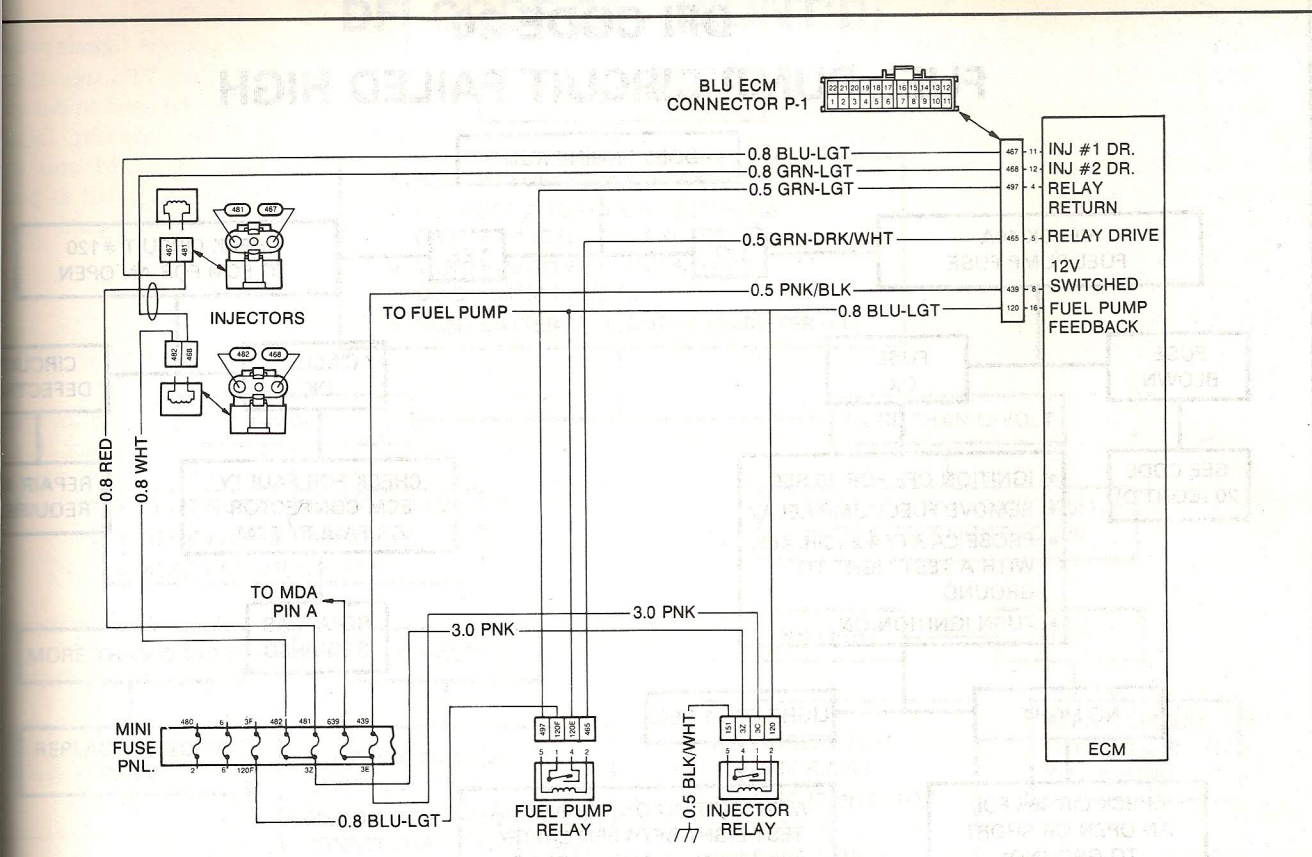
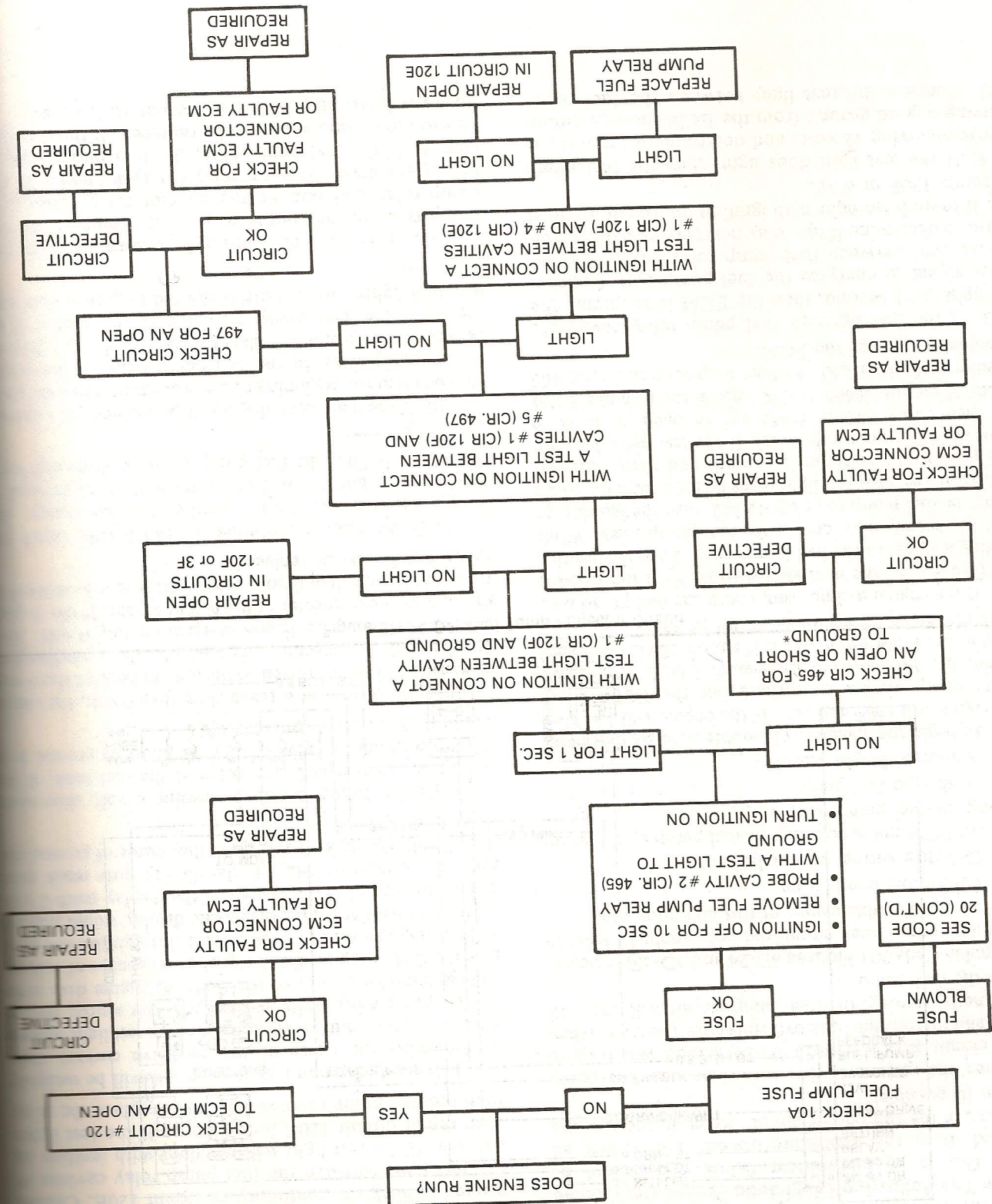


Figure 8D-24 DFI Fuel Pump - Injector Circuit

FUEL PUMP CIRCUIT FAILED HIGH



*A SHORT TO GROUND IN CIRCUIT 465 WILL PROBABLY DAMAGE ECM.

Figure 8D-25 DFI Code 20

DFI CODE 20 - (CONT'D)

