Some vehicles have a pigtail coming out of the wiring harness which can be connected to the positive battery terminal to energize the pump. If not, the fuel pump relay can be removed and a jumper wire can be installed across the switched side of the relay's circuit.

Make sure the pressure gauge you use is rated for the specified fuel system pressure of the vehicle. Most vehicles will have a Schrader valve on the fuel rail to hook a pressure gauge to. If it does not, refer to Figure 1A & 1B for correct gauge location.

Use these Diagnostic Charts to quickly and accurately determine the exact cause of electric fuel system malfunction. The fuel pump is only one of many possible factors that must be evaluated before the proper repairs can be performed.

**CHART 1**

- **Is there gas in the tank? (Add 2 gallons)**
  - Vehicle run
    - Vehicle was out of gas pump is good
  - Vehicle does not run
    - Energize pump circuit and listen for fuel pump
      - Can’t hear pump: Go to CHART 2
      - Can hear pump: Go to CHART 3

**CHART 2**

- Fuel pressure is below vehicle fuel system specifications
  - Check fuel filter
  - Replace if necessary

- Fuel pressure is above vehicle fuel system specifications
  - Return fuel system
  - Returnless fuel system
    - Fuel pressure remains within vehicle fuel system specifications
      - Return fuel system
      - See Figure 1A
      - Pinch off return fuel hose
      - Fuel pressure is above vehicle fuel system specifications
        - Check fuel filter
        - Replace if necessary

- Fuel pressure is below vehicle fuel system specifications
  - Fuel pressure remains within vehicle fuel system specifications
    - Return fuel system
    - Returnless fuel system
      - Fuel pressure remains within vehicle fuel system specifications
        - Return fuel system
        - Returnless fuel system
          - Pump is good

**Caution:** Gasoline is involved and repairs will settle in low areas, so work in a well ventilated space away from sparks or open flame such as a pilot light. Have a class B fire extinguisher close by. To eliminate the chance of fire or personal injury, the fuel system pressure must be released before servicing any fuel system component. Refer to the manufacturer’s service manual for specific steps.
Caution: Gasoline is involved and vapors will settle in low areas, so work in a well ventilated space away from sparks or open flame such as a pilot light. Have a class B fire extinguisher close by. To eliminate the chance of fire or personal injury, the fuel system pressure must be relieved before servicing any fuel system component. Refer to the manufacturer’s service manual for specific steps.

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CHART 3

Perform voltage drop test

- Voltage drop exceeds 1.5 volts
  - Repair faulty connection and repeat voltage drop test

- Voltage drop less than 1.5 volts
  - Remove fuel pump from vehicle and carefully inspect all connections that could not be reached during voltage drop test.
  - Bed connection
  - Repair bad connection and re-install pump
  - Go to CHART 2

- No bad connections
  - Replace fuel pump

*While performing the voltage drop test it is critical that the pump is still wired into the circuit. Failure to do so will make this test invalid. It is also critical that the test points are chosen to cover as much of the circuit as is possible to reach. (See Figure 2)
**Inspect for melted insulation on wiring close to connectors. Check for melted pellets or black soot where positive and negative terminals exit the connection. This indicates a bad connector. Check for loose connections where positive or negative wires attach to pump hanger bracket assembly.

Figure 2 Voltage Drop Test

- The sum of the voltage drops of positive and negative side of the circuit should not exceed 1.5 volts.
- If it does, check voltage drops across each connection, relay, fuse, ground, and across the wiring for bad connection.
- Pump must be wired into circuit and energized during this test.

CHART 4

Type of fuel system (See Figure 1A & 1B)
- Returnless
  - Replace fuel pump or assembly
  - Perform voltage drop test
    - Voltage drop exceeds 1.5 volts
      - Repair faulty connection and repeat voltage drop test
    - Voltage drop less than 1.5 volts
      - Remove fuel pump from vehicle and carefully inspect all connections that could not be reached during voltage drop test.
      - Bed connection
      - Repair bad connection and re-install pump
      - Go to CHART 2
      - No bad connections
        - Replace fuel pump

- Ford truck/van using P74107 or P74108 pump
  - Replace defective fuel pressure regulator or repair restrictions in return line
  - Fuel pressure still exceeds vehicle fuel system specifications
    - Replace fuel pump or assembly
  - Fuel pressure within vehicle fuel system specifications
    - Replace fuel pressure regulator

- All other return applications
  - Replace detection fuel pressure regulator or repair restrictions in return line

Caution: Gasoline is involved and vapors will settle in low areas. Do work in a well ventilated space away from sparks or open flame such as a pilot light. Have a class B fire extinguisher close by. To eliminate the chance of fire or personal injury, the fuel system pressure must be relieved before servicing any fuel system component. Refer to the manufacturer’s service manual for specific steps.