



Better Pumps. Better Coverage.

BASIC FUEL SYSTEM Electrical Checks

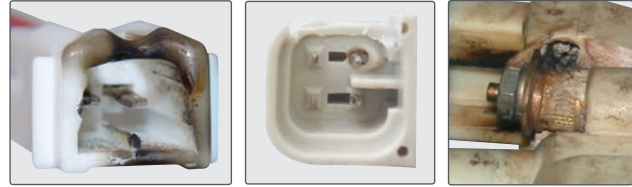
System Components to Check First

If the vehicle will not start, check the following:

- Fuel level in tank
- Power at the fuel pump fuse/relay

Fuel System Wiring and Connectors

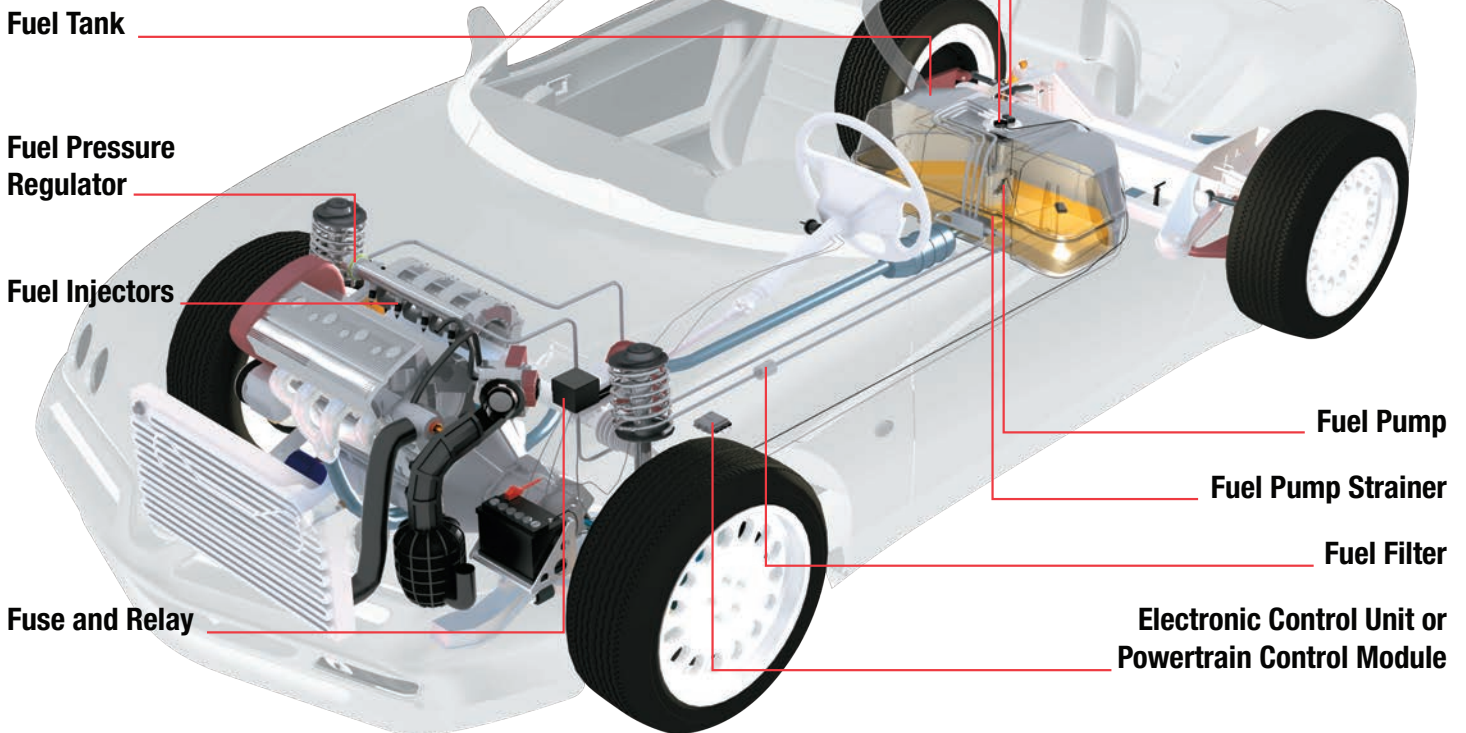
- Faulty vehicle fuel system wiring and fuel pump electrical connectors also contribute to fuel pump failure.
- Inspect all fuel system electrical connections for “bubbled” or burnt plastic and discolored terminals (they should be shiny).
- Melted or burnt vehicle wiring and connectors must be replaced prior to installing a new fuel pump.



Connector Damage

Fuel Delivery System Overview

Proper System Maintenance and Diagnosis are Essential to Successful Fuel Pump Replacement





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Fuel system repairs are often performed without proper diagnosis, leading to unneeded parts and the inconvenience of doing a complex repair that does not fix the vehicle problem.

Basic fuel system troubleshooting and diagnosis can be accomplished with a digital voltmeter and some knowledge of vehicle electrical systems.

Vehicle System Voltage Test

1. Connect digital voltmeter positive lead to positive battery terminal.
2. Connect digital voltmeter negative lead to negative battery terminal.
3. System voltage should read 12.4v DC or higher with no electrical loads on the system.

If voltage reads less, starting and charging system should be investigated before performing fuel system electrical testing.

Fuel Pump Voltage Test

1. Connect digital voltmeter to fuel pump wiring at fuel pump connector.
2. Turn key on (pump will only have voltage for a few seconds).
3. Measure voltage at pump. Reading should be within 0.5v DC of system voltage.

Fuel System Voltage Drop Test

1. Address the negative side of the circuit first, then the positive side.
2. Connect digital voltmeter negative lead to the negative battery terminal and the positive lead to the negative terminal at the fuel pump (see Figure 1).
3. The fuel pump circuit must be energized to properly test. Energize the fuel pump relay and power the fuel pump circuit (see NOTE).
4. If the negative circuit is in good condition, the voltage drop measured should be 0.5v DC or less. Larger voltage drop readings indicate a problem. Damaged or corroded vehicle wiring or harness connectors are likely sources of the problem.

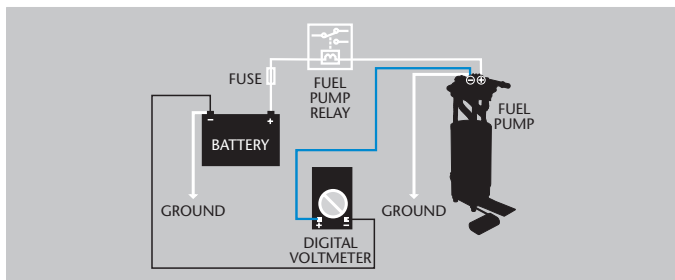


Figure 1. Voltage Drop Test – Negative Circuit (-)

5. Repeat the voltage drop test on the positive side of the circuit. Connect digital voltmeter positive lead to the positive terminal on the battery and the negative lead to the positive fuel pump terminal (see Figure 2).
6. Energize the fuel pump relay and power the fuel pump circuit (see NOTE).
7. As with the ground circuit, voltage drop readings larger than 0.5v DC indicate system wiring or connector issues.

NOTE: The majority of fuel pumps run for only a few seconds once the relay is energized (only long enough to prime the system) until an RPM signal is generated.

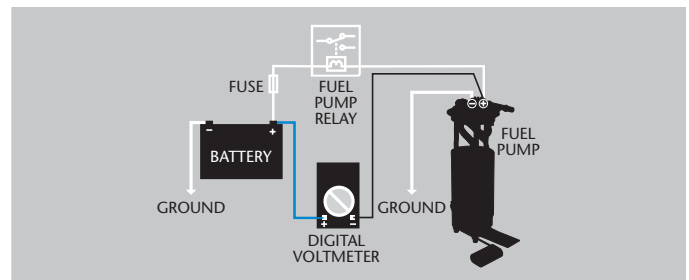
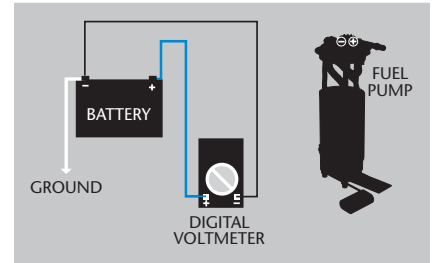
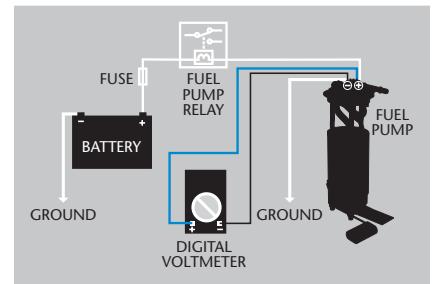


Figure 2. Voltage Drop Test – Positive Circuit (+)



Vehicle System Voltage Test



Fuel Pump Voltage Test

