



Fuel System Diagnostics

Electronic Fuel Pump Failure

In-Line and In-Tank

- Loss of current or low voltage
- Corroded, loose or broken wiring
- Faulty relay and relay terminals, inertia switch, oil pressure sending unit, ground, or engine control module
- Dirt, sediment, rust or other debris in the tank can wear or lock up the pump, or cause the pump's check valve to stick open, causing hard starting due to loss of pressure when the engine is shut off. Rust is caused by condensation, which occurs during cool, humid weather when the fuel tank is low.
- Alcohol- or ethanol-enhanced gasoline or alcohol fuel additives can loosen deposits in the tank that can clog the strainer.
- Normal wear, or wear caused by consistently low fuel levels and non-lubrication, can lead to accelerated wear or even pump damage. Wear can also be caused by running the pump at excessive pressure caused by a faulty regulator or check valve, a crimped line or a clogged inline fuel filter.

Complaints of no fuel, rough idle or lack of performance should be investigated as follows:

1. **Ethanol** – Certain materials commonly used with gasoline are totally incompatible with alcohols. When these materials (such as aluminum) come in contact with ethanol, they may dissolve in the fuel. This may damage engine parts and result in poor vehicle driveability. Even if parts do not fail, running ethanol in a non-ethanol compliant vehicle may cause deposits that could eventually harm the engine.
2. **Contaminated Gasoline** – Water retention in contaminated gasoline can cause corrosion to fuel pump conductors.
3. **No Fuel Delivery** – Many vehicles equipped with fuel injection have two electric fuel pumps: a low-pressure feed pump located in the tank and a high-pressure frame-mounted delivery pump.

Check the following on no-fuel complaints:

- Blown fuse on one or both pumps. If a fuse is blown, determine the cause before replacing it.
- Tripped inertia switch located in trunk area (reset by pushing plunger)
- Shorted RFI filter on in-tank pump

4. **Poor Acceleration and/or Driveability** – On driveability complaints check for:
 - Defective fuel pressure regulator
 - Restricted fuel filters
 - Pinched or deteriorated fuel hoses

5. **Rough Idle** – Poor idle quality could be the result of:
 - Dirty injectors
 - Cracked or disconnected vacuum hoses
 - Ignition problems
 - Engine compression problems

Many times a rough idle condition can be cured by the use of high-detergent gasoline. Most stations now offer this grade of gasoline, which is recommended by vehicle manufacturers. Remember, for trouble-free fuel system operation, use only replacement parts manufactured to original equipment quality standards.