

Fuel System Diagnostics for Successful Fuel Pump Installation

Airtex fuel pumps are 100% tested before they leave the factory. That's why it's a good idea to check out everything else first before suspecting the fuel pump. In fact, 50% of all fuel pumps returned for warranty consideration meet all manufacturer's specifications when tested.

Nearly 75% of all aftermarket fuel pump failures are caused by:

- **Misdiagnosis**
- **Vehicle related electrical wiring or connector issues**
- **Contaminated vehicle fuel systems**

MISDIAGNOSIS

Misdiagnosis is the leading cause of fuel pump returns. If the engine runs but displays driveability symptoms that you suspect are fuel-related (hard starting, hesitation, misfiring, power loss), first attempt to eliminate other possible causes of the problem.

Make sure the engine is in good mechanical condition and...

1. Check the vehicle's on-board diagnostic (OBD) system
2. Check the ignition system
3. Check for vacuum leaks
4. Check the EGR and PCV systems
5. Run a power balance test

ELECTRICAL – Always check fuses, grounds and connections first. Test fuel pump relays, associated switches and sensors with a digital volt ohmmeter (DVOM) according to vehicle manufacturer's instructions.

FUEL PRESSURE – If the engine runs but exhibits driveability problems, check fuel pressure and flow and compare readings to the manufacturer's specs.

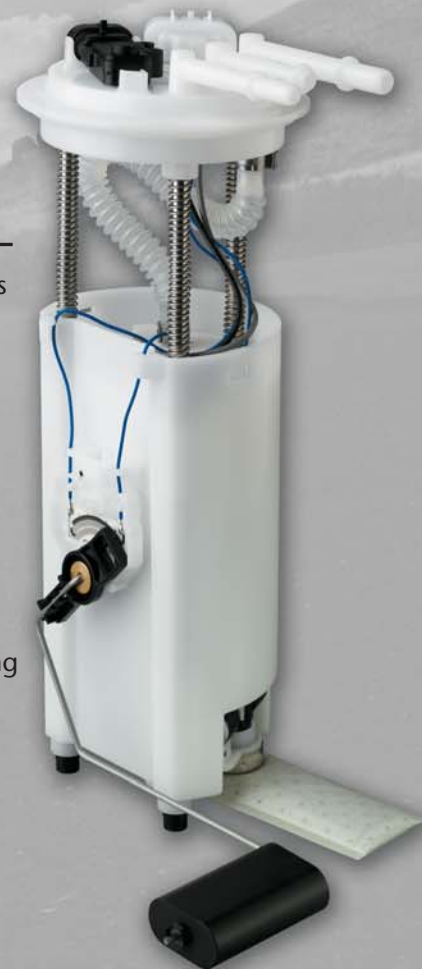
- **Too High** - The most likely cause is a faulty regulator or a clogged return line
- **Too Low** - Check for low voltage at the pump or filter and fuel line blockages

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



To become a certified **FUEL DELIVERY SYSTEM SPECIALIST**, visit airtexproducts.com/fdss



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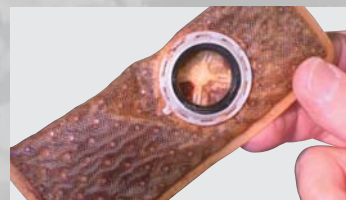
FUEL SYSTEM CONTAMINATION

A clean fuel tank is essential to successful fuel pump replacement!

- Rust, corrosion or other contamination in the vehicle's fuel tank can quickly cause a new fuel pump to fail
- Rusty, brown, or dark colored strainers and pumps are signs that contaminated fuel or a contaminated fuel tank contributed to pump failure
- The presence of rust, dirt, scale, or slime indicate that the fuel tank must be professionally cleaned or replaced before installing a new fuel pump



Contamination



Dirty Strainer

NEVER REUSE OLD STRAINERS OR FILTERS, especially when installing a new fuel pump!

- Fuel filters and strainers assure that the fuel sent to the pump and the injectors is clean
- The fuel pump, fuel injectors, and other fuel system components are highly susceptible to damage from minute particles of dirt and contaminants
- Restricted or "plugged" filters force fuel pumps to work harder, allow less fuel to circulate in the system, and contribute to pump overheating and premature failure



Rust



Corrosion

Typically, two filters are used on the fuel system to keep the fuel system clean:

- Strainer or sock type filter mounted to the fuel pump
 - In-tank strainer type filters must be replaced whenever the fuel pump is replaced or as required by the vehicle manufacturer
- External inline fuel filter
 - Change inline filters every 30,000 miles or as recommended by the vehicle manufacturer



In-Tank Strainer



Inline Fuel Filter

Fuel pump strainer and inline fuel filter replacement does not take the place of cleaning a dirty, contaminated fuel tank!

Remember, the Major Causes of Fuel Pump Failure Are:

- Misdiagnosis of the vehicle's problem
- Rust, corrosion or other contamination in the vehicle's fuel tank
- Clogged or plugged fuel filters and strainers
- Faulty on-vehicle fuel pump wiring or connectors

When Replacing a Fuel Pump, ALWAYS...

- Replace the filter or strainer with new
- Professionally flush or clean the fuel tank
- Inspect, repair, or replace suspect vehicle connectors and wiring
- Refer to the Diagnostic/Troubleshooting and Installation Guidelines document found in the fuel pump box

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