**IMPORTANT:** Failure to clean the fuel tank and install a new strainer may allow contaminants to enter the pump and void warranty. Contamination is the leading cause of fuel pump failure.

The purpose for this guide is to provide instructions and procedures for cleaning and removing contaminants from the fuel tank.

A new fuel pump can't restore quick starting, smooth idling or provide exhilarating performance to an engine with a dirty fuel tank. Many vehicles with driveability complaints respond well to a clean fuel tank, a new strainer (filter) and new fuel pump.

**IMPORTANT SAFETY PRECAUTIONS**

**WARNING** GASOLINE IS EXTREMELY FLAMMABLE AND ITS VAPORS ARE POTENTIALLY EXPLOSIVE. WORK IN A WELL-VENTILATED AREA AWAY FROM SPARKS AND OPEN FLAMES. ALWAYS RELIEVE THE FUEL SYSTEM PRESSURE USING THE ORIGINAL EQUIPMENT MANUFACTURER'S RECOMMENDED PROCEDURE BEFORE SERVICING FUEL SYSTEM COMPONENTS. FAILURE TO TAKE THESE PRECAUTIONS CAN RESULT IN FIRE, DAMAGE TO PROPERTY AND SERIOUS INJURY OR DEATH.

HIGH-PRESSURE FUEL SYSTEMS SHOULD BE SERVICED BY QUALIFIED TECHNICIANS. LEAKING LIQUID FUEL MAY IGNITE AND FUEL VAPORS MAY EXPLODE, BOTH RESULTING IN PERSONAL INJURY AND / OR PROPERTY LOSS. READ VEHICLE REPAIR MANUAL FOR SAFETY PRECAUTIONS, AND FOLLOW THIS GUIDE FOR YOUR PROTECTION.

**WORK CLOTHING** Wear a long-sleeved shirt, long trousers, and safety shoes. Don't wear a ring or watch that might draw an electric spark. If fuel spills on your clothing, change it right away.

**EYE PROTECTION** Wear safety goggles or safety glasses. If fuel splashes into eyes, flush with water first, then go for emergency medical aid.

**FUEL HOSE** Never use standard low-pressure fuel hose in high-pressure fuel injection systems. Use high-pressure hose marked EFI/EFM, or equivalent.
Safety Precautions

- Keep a Class A/B/C fire extinguisher nearby.
- Don’t smoke when servicing fuel systems.
- Ventilate service area; duct exhaust outside.
- Avoid open flames from matches, lighters, and torches in or near the service area.
- Use a shielded fluorescent droplight instead of an incandescent bulb; turn off soldering irons.
- Clean up fuel spills right away; dispose of fuel-soaked rags and absorbent properly.
- Relieve fuel pressure before opening the systems. Otherwise, high-pressure spray might cause a fire or other personal injury.
- Check for cracked fuel lines and leaky fittings before and after fuel-system service.
- Never use a finger to check fuel injector pattern or pressure. High-pressure fuel can penetrate unbroken skin, causing illness.
- Never energize fuel injector with fuel line connected except when following a service manual for procedures and precautions.
- Always dispose of surplus fuel responsibly.

**KEEP EVERYTHING CLEAN!**

Fuel contaminants like dirt, rust and scale are a primary cause of in-tank fuel pump failure, and they can cause the replacement pump to fail prematurely. For a successful installation, you must keep everything totally clean - beginning to end.

1. Clean accumulated road dirt from top of fuel tank, taking special care around the pump access area. (Cover fuel inlet tubes first.) Also clean tank filler pipe.
2. Inspect the fuel strainer for stains from rust, clogging from dirt, and slime from water. (Some fuels contain up to 10% alcohol, which attracts water that accumulates in the tank.) If contaminated, the tank must be drained before installing the new pump. If the interior is rusted, the tank must be cleaned and inside surface sealed, or it must be replaced.
3. Keep the replacement pump in its package until you’re ready for it, and leave caps on inlet and outlet fittings while installing pump in hanger.
4. Place the replacement pump, or the pump to be reinstalled, on a clean worktable, or lintless shop towel. Electric fuel pumps are made to extremely close tolerances, so are easily damaged by the smallest contaminants. Keep your hands clean.
5. Install new strainer. Make sure its retaining clamp fits snugly on the pump Inlet to prevent contaminated fuel from bypassing the strainer.
6. Protect filler neck and inlet/outlet openings from dirt when reinstalling fuel tank in vehicle. Stuff clean shop towels in tank openings and tape over fittings until ready to reconnect lines or hoses.
REMOVING THE FUEL TANK

1. First, release tank pressure by removing the filler cap. Then relieve fuel system pressure by removing the pump fuse and running the engine until it quits from fuel starvation. Crank engine briefly to confirm pressure relief.

   NOTE: Some systems have two fuel pumps: low-pressure in-tank, and high-pressure in-line. Be sure to disable both fuel pumps when this applies.

   WARNING: Gasoline vapors are explosive! To reduce the possibility of sparking, disable the electrical system by disconnecting the negative (-) battery cable.

2. Clean accumulated road dirt from top of fuel tank, taking special care around the pump access area (Cover fuel inlet tubes first.) Also clean tank filler pipe.

3. Drain fuel to lighten the tank and avoid spilling when removing the pump hanger assembly. Use only an approved container, preferably one that filters the fuel for reuse in the vehicle.

4. Remove the fasteners for the fuel tank filler neck, noting there're different sizes and locations, then raise vehicle on hoist. (If working without a hoist, use an approved floor jack to raise the vehicle and approved jack stands to support it.)

5. Support the tank with a transmission stand or floor jack. Note location of fuel outlet, fuel return and vapor lines. Remove the lines, using a clean shop towel to absorb draining fuel, and inspect them for cracking or chafing. When replacing high-pressure lines, use only "EFM/EFI" hoses or equivalent. Disconnect pump wiring harness.

6. Remove tank straps, and filler neck tube if necessary. Lower tank enough to access fuel pump hanger assembly or completely remove tank. If tank is rusted inside, or seriously damaged, it must be repaired or replaced before proceeding. Also replace hangers that show excessive rust, wear or damage.

7. Once the tank has been removed, drain the fuel completely from the tank. Use only an approved container, preferably one that filters the fuel for reuse in the vehicle. Remove the fuel pump hanger assembly to a designated work area. Swish the fuel tank around in a circular motion to settle any debris remaining in the tank. Turn tank over, then tap bottom to remove debris. After debris has been removed, turn tank on its bottom. Take a lintless shop towel and wipe the inside of the tank until it is clean.

REINSTALLING PUMP HANGER ASSEMBLY AND FUEL TANK

1. Replace the hanger assembly, making sure it's positioned exactly as before. Take care not to allow dirt or water to enter the tank, because contaminates will cause premature pump failure.

2. Install the new tank seal in the tank channel or the hanger lip. Fasten with screws tightened to the manufacturer specifications. Or, hand-tighten the lock ring and snug it down by tapping with a non-ferrous punch. Don't use gasket sealant!!!

3. To run-test the pump, position the tank so you can connect fuel lines and electrical wiring. Make sure the tank holds enough fuel to prevent the pump from running dry! Reattach the negative battery cable and switch the ignition on. You'll hear the pump operate for a few seconds, then shut off. If not, disconnect the battery again and review the installation from here on back to the beginning.

4. Everything checks out okay. Great! Install the filler neck, if necessary; secure the tank straps; remove the jack stands and lower the vehicle. Refill tank with fresh fuel, or the filtered clean fuel you drained from the tank.