



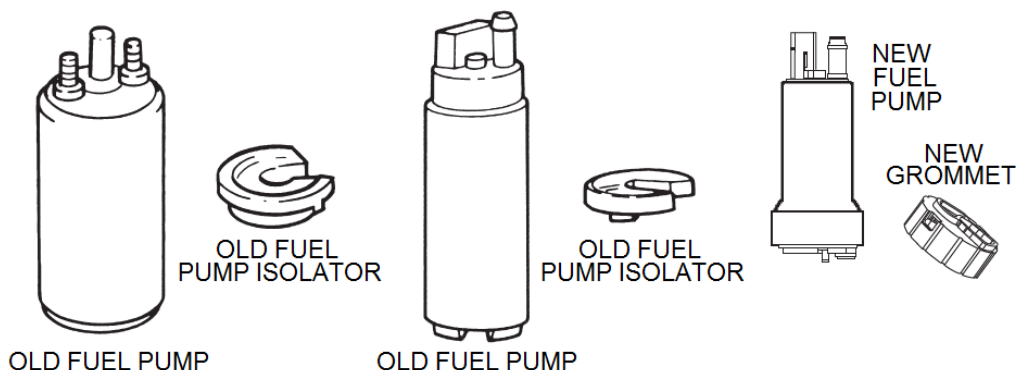
## FUEL INJECTION FUEL PUMP TANK UNIT 12-931 REPLACEMENT INSTRUCTIONS

### PRECAUTIONS FOR FUEL SYSTEM SERVICE:

To reduce the risk of fire and personal injury, it is necessary to observe the following precautions:

- Perform this repair ONLY in a properly equipped service facility
- Position the vehicle in a clear, level, well ventilated work area.
- Make sure there are no sources of spark or combustion near the work area.
- Perform work in a non-smoking area or post no-smoking signs in the area selected.
- Have a fully functional Class B fire extinguisher of adequate size (such as a 5 lb. CO-2 as a minimum) readily available.
- Disconnect the ground cable from the vehicle's battery before performing any operation involving gasoline, gasoline tanks, or gasoline lines.
- Allow the vehicle to cool before performing any operation which could possibly expose gasoline or gasoline vapors to hot parts, such as catalytic converters, hot light bulbs, or similar components.
- Avoid using extension cords or lights which might overheat or cause sparks.
- Avoid inhaling gasoline fumes and prolonged skin contact with gasoline. Promptly wash any skin/body areas that have been in contact with gasoline.
- Wear approved safety glasses while performing any repairs.
- When raising the vehicle to perform under-vehicle services, use proper hoisting or jacking equipment along with approved safety supports.
- When removing gasoline from a fuel tank, use an OSHA approved pump that is specifically designed for handling gasoline. DO NOT USE any other type of pump. Gasoline removed from a fuel tank must be stored in approved gasoline containers.

It is impossible to anticipate all possible risks and conditions under which repairs may be made to a fuel system. Therefore, in addition to the safety concerns listed, you are urged to carefully evaluate the hazards involved in such a service procedure and take whatever precautions that may be necessary.



**NOTE:** This replacement pump may be a different diameter than the pump in your vehicle. Be assured that it will operate your vehicle as well as the original pump. In order for the pump to fit in the fuel pump bracket correctly, use all the parts contained in the installation kit. Do not re-use fuel pump isolators unless the installation kit does not contain one.

**WARNING!** This rotary fuel injection pump **WILL NOT** work on carbureted fuel systems. It is for electronic fuel injection only.

**CAUTION:** Read these instructions thoroughly from start to finish before attempting to replace the fuel pump.

## MINIMUM TOOL REQUIREMENTS:

Hoist or end lift jack	OSHA approved safety stands	OSHA approved fuel transfer pump
OSHA approved fuel storage containers	Variety of mechanics hand tools	

## FUEL PUMP REPLACEMENT INSTRUCTIONS:

**NOTE:** The words “pump bracket” used throughout these instructions mean fuel pump mounting bracket and fuel lever sender assembly.

### 1.0 PREPARATIONS

Relieve the fuel system pressure. This procedure is necessary since the fuel system can retain gasoline under pressure for a considerable period of time. Opening a pressurized line could spray fuel, creating a risk of fire and/or personal injury.

1. Start the engine.
2. Remove the fuel pump relay allowing the engine to run until it quits. When the engine quits, the fuel pressure has been relieved. Turn the ignition switch off.
3. Remove the battery ground (-) cable for safety.
4. Reinstall the fuel pump relay.

### 2.0 LOCATE FUEL PUMP BRACKET IN FUEL TANK

1. Some vehicles require raising the vehicle to remove the fuel tank. Some vehicles will require the removal of the rear seat, an access panel, and possibly the trunk liner in order to get to the fuel pump bracket. Refer to the vehicle’s service manuals for specific instructions.

### 3.0 DISCONNECT ELECTRICAL CONNECTIONS

1. If not done previously, disconnect the electrical components from the pump bracket.

### 4.0 DISCONNECT FUEL LINE CONNECTIONS

**CAUTION:** Fuel lines may still be under pressure. Place a rag or shop towel around the fuel line connection to avoid excess fuel spillage.

### 5.0 REMOVE PUMP BRACKET FROM FUEL TANK

1. Depending on the vehicle, either rotate a locking ring retainer (if metal, use a method which will not cause sparks and a possible explosion, such as a brass drift) or loosen the nuts or bolts, so that the bracket can be removed from the tank.

**NOTE:** Review markings on the pump in the bracket for (+) and (-) electrical connections. Mark the wires (+) or (-) at this time so that the proper polarity is maintained for the new pump.

### 6.0 DISCONNECT FUEL PUMP BRACKET ELECTRICAL CONNECTIONS FROM PUMP

1. This may be a snap fit plug type connector or it may be ring terminals attached to the pump with screws and nuts.

### 7.0 REMOVE PUMP FROM BRACKET

1. Many vehicles’ fuel pump brackets have an L-shaped bracket that is attached to the main bracket with a screw and lock washer. Loosening the screw and removing the L-shaped bracket allows an easier method of removing the hose from the pump and the pump from the bracket. If there is not an L-shaped bracket, cut the hose, remove the clamps, hose pieces, and fuel pump from the larger bracket and discard.

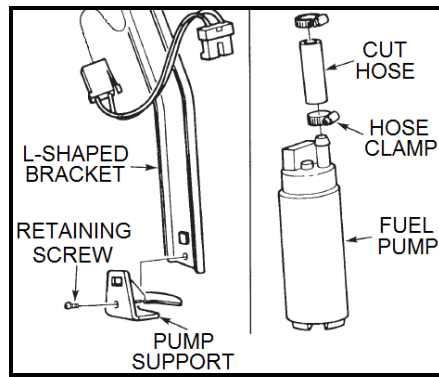


Figure 1

**NOTE:** Failure to use a new filter on the fuel pump inlet will likely result in premature pump failure and will void the pump warranty.

### 8.0 INSTALL RUBBER GROMMET

Prior to the pump installation, remove the protective caps from both ends of the fuel pump. Install the new rubber grommet to the inlet end of the pump. Position the opening in the rubber grommet to align with the filter post and the inlet of the pump.

### 9.0 FILTER INSTALLATION

1. Install the new filter on the new pump inlet. Secure the filter to the pump by pressing the retainer onto the center post of the pump (Fig. 2).
2. In some applications the filter will be secured to the pump after the pump is placed on the isolator in the fuel pump bracket.

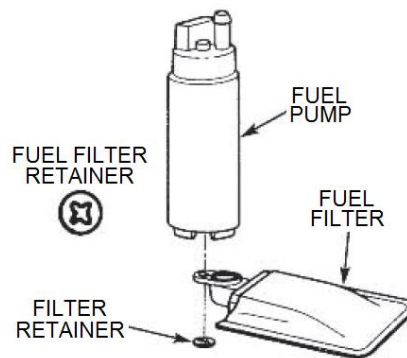


Figure 2

### 10.0 INSTALL PUMP IN BRACKET

1. Some installation kits will contain a foam sleeve and tie wrap (Fig. 3). Place the sleeve over the pump and using a new pump and new or existing fuel pump isolator. Test fit the pump in the bracket so that there is a minimum of 1/8" gap between the outlet tube of the pump and the bracket tube.
2. In some cases, it may be necessary to bend the flange supply steel tube. To line up the pump to the supply tube.
3. If needed, cut the hose to the proper length. Place the hose on the pump outlet tube. Place both clamps over the hose. Slide the hose onto the bracket tube and the pump and the isolator assembly into the bracket. Tighten one clamp over the pump outlet tube and one over the bracket tube.
4. Tighten the tie wrap around the pump as it sits in the bracket. It is preferred to place the tie wrap close to the bottom of the pump in order to successfully keep the pump secure in the bracket. Clamp around the metal flange assembly only. Do not clamp on the wires.

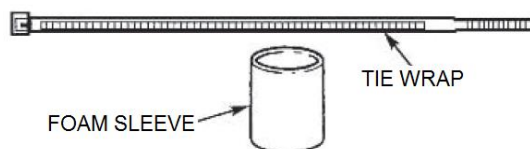


Figure 3

## 11.0 L-SHAPED BRACKET

- A. Using the new pump and new or existing isolator, test fit the pump and isolator assembly in the fuel pump bracket so that there is a minimum 1/8" gap between the outlet tube of the pump and the bracket tube. In some cases, it may be necessary to bend the flange supply steel tube to line up the pump to the supply tube. If needed, cut the hose to the proper length. Place the hose on the pump outlet tube. Place both clamps over the hose. Slide the hose onto the bracket tube. Attach the L-shaped bracket to the main bracket. Adjust the pump in the bracket so that the tab of the isolator matches the hole in the L-shaped bracket. Tighten one clamp over the pump outlet tube and one over the bracket tube. If required, tighten the tie wrap around the pump as it sits in the bracket. It is preferred to place the tie wrap close to the bottom of the pump in order to successfully keep the pump secure in the bracket (Fig. 4).
- B. For some vehicles, the pump outlet is sealed with an O-ring inside a tube welded to the pump bracket. Pull the pump out of the tube. Remove the cap, O-ring, and spacer from the pump (Fig. 5). **Keep the spacer.** Place the spacer on the outlet fitting of the new pump. Then place the new O-ring and cap from the installation kit. Slide the pump outlet into the bracket tube. Using the new or existing fuel pump isolator, slide the pump and isolator assembly into the bracket and securely tighten the screw that attaches the L-shaped bracket to the pump bracket, or fit the isolator tabs into the matching openings on the pump bracket.

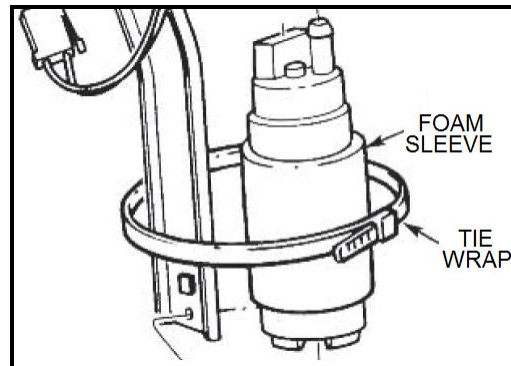


Figure 4

## 11.0 ELECTRICAL CONNECTIONS

1. **RE-USE EXISTING CONNECTOR** - Some pumps can use the existing electrical connections.
2. **CRIMP ON NEW TERMINALS** - Some pumps will require cutting the wires near the existing connector or terminals and stripping 1/4" of insulation from the wires. Then, crimp on new terminals using the recommended tool shown in Fig. 5. If there is a protective rubber boot over the terminals, it can be removed and discarded.

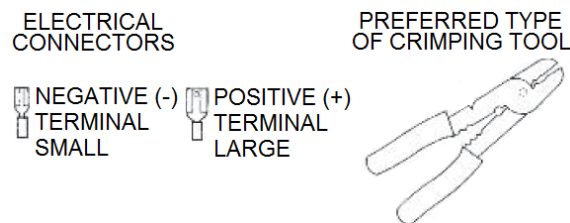


Figure 5

3. **NEW WIRE ASSEMBLIES** - Some pumps have new wire assemblies provided in the installation kit. **Note the terminals on these assemblies and on the new pump to determine the (+) and (-) polarity connections to the bracket.** Some pumps will have protective rubber boots over the terminals. Remove the rubber boot, the nuts, and/or screws that attach the existing wires to the bracket. Discard the rubber boots and wire assemblies. Use the screws or nuts to attach the new wire assemblies to the bracket.

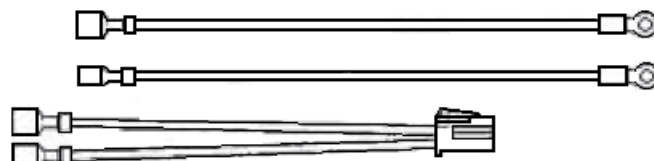


Figure 6

4. **BUTT SPLICE NEW WIRING ASSEMBLY** - Some pumps will require the removal of a protective rubber boot over the terminals, cutting the wires near the existing connector or terminals, and stripping  $\frac{1}{4}$ " of insulation from the wires. Using the recommended tool shown in Fig. 5, crimp the butt splices to the bracket wires and to the new wiring assembly, making sure proper polarity is maintained (Fig. 7). Snap the electrical connector into the pump.

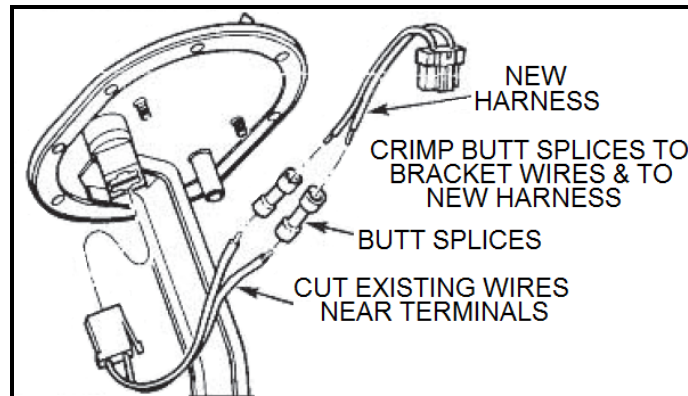


Figure 7

**IMPORTANT! Make sure proper polarity is maintained. If polarity is reversed the pump will run backwards and will not pump.**

1. Some pumps will require the removal of a protective rubber boot over the terminals, cutting the wires near the existing connector or terminals, and stripping  $\frac{1}{4}$ " of insulation from the wires. Using the recommended tool shown in Fig. 6, crimp the butt splices to the bracket wires and to the new wiring assembly, making sure proper polarity is maintained. Snap the electrical connector into the pump.

## 12.0 REINSTALL FUEL PUMP BRACKET IN TANK

1. Using the new or existing tank seal, place the pump and bracket assembly into the fuel tank. Tighten the lock ring or tighten the existing nuts to seal the bracket into the tank.

## 13.0 INSTALL FUEL TANK IN VEHICLE

1. Install the fuel tank in the vehicle. Connect the electrical connections and the fuel lines to the proper locations on the fuel pump bracket.

## 14.0 CHECK INSTALLATION

1. Start the vehicle and check for leaks. Refer to the vehicle service manuals for information on clearing any resulting error codes.

## TROUBLESHOOTING:

If the fuel pump fails to operate:

- Check the fuel pump fuse and fuel pump relay as outlined in the service manual.
- If the pump has power and proper polarity, check the remainder of the fuel system as outlined in the service manual.

**NOTE:** This fuel pump will not remedy malfunctions of the fuel pressure regulator, fuel injector(s), or other fuel system components.

**12-931**  
**Date: 4-8-15**