









ITEM	DESCRIPTION	ITEM	DESCRIPTION
1. INSTRUCTIONS		6. HOSE	 NOT USED IN ALL APPLICATIONS
2. FUEL PUMP		7. CLAMPS	
3. ADAPTER - FUEL PUMP TO BRACKET		8. FILTER	
4. POSITIVE (+) TERMINAL - LARGE		9. O-RING, FUEL TANK TO TANK BRACKET	
5. NEGATIVE (-) TERMINAL - SMALL		<b>NOTE: Read instructions thoroughly from start to finish before attempting to replace fuel pump.</b>	

## FUEL INJECTION IN-TANK FUEL PUMP REPLACEMENT INSTRUCTIONS

**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
- Electrical stripping and crimping tool (fig. 5)
- Sending unit lock ring removal tool (fig. 2)
- Variety of mechanics hand tools.

**NOTE:** The word **bracket** used throughout these instructions means pump mounting bracket and fuel level sender assembly.

### I. Preparations:

#### A) Relieve fuel system pressure.

- 1) Remove the fuel pump fuse from the fuse block.
- 2) Start the engine and let it run until it consumes any fuel in the lines and runs out of fuel.
- 3) After the engine stops, crank it again for at least 3 seconds to assure relief of remaining 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.)*

~~ier. Trace the return line back from the injector(s) and remove it from the bracket. Securely attach a hose to the exposed fuel return tube of the bracket and draw the remaining fuel out and into an approved gasoline storage container. The hose must be long enough to be put into the storage container to eliminate spillage. Be sure to constantly monitor the fuel level in the storage container as the fuel tank is draining to prevent it from running over. Do not leave it unattended~~

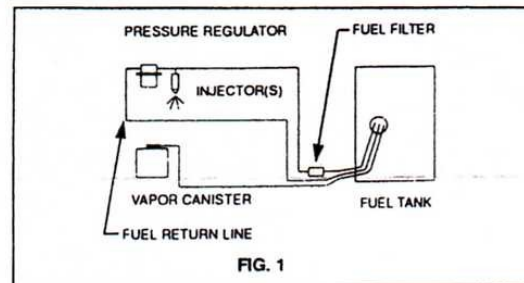


FIG. 1

**NOTE:** Regardless of the method used to drain fuel from the tank, it is important to remove as much fuel as possible from the tank before its removal. This is necessary to prevent fuel spillage from being too full or injury from excessive weight while removing the tank.

### II. Tank Removal

**WARNING:** It is necessary to obtain help in removing and installing the

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B) Remove the ground (-) cable from the battery and position it so that it cannot accidentally make a connection to the battery during the fuel pump replacement procedure.

C) Drain the vehicle fuel tank.

1) First make sure an appropriate fire extinguisher (Class B - flammable liquids designation, as a minimum) is at hand. Then using an OSHA approved gasoline transfer pump, remove as much fuel as possible through the fuel tank filler neck. Store the fuel in approved safety containers only.

2) Lift and safely support the vehicle with approved safety stands with enough height to gain adequate access and clearance to remove the fuel tank.

3) Once the vehicle is lifted and supported, an alternate method of fuel removal from the tank can be implemented. Determine which line is the fuel return line going back to the fuel tank. (See fig. 1) Three lines are attached to the bracket. The first one is the feed line which goes to the injector(s) and has the fuel filter in it. The second one is the return line from the injector(s). The last one is the vapor line which comes from the vapor canis-

NOTE: The following are general tank removal instructions and may not be specific enough for your application. It may be necessary for you to refer to the specific service manual for the vehicle you are working on for specific fuel tank removal instructions.

A) Disconnect the electrical connector at the fuel tank to main harness connector, supporting and partially lowering the tank if required.

B) Disconnect any hoses attached between the fuel tank and the vehicle. Be careful when disconnecting fuel lines to avoid fuel spillage. Note all hose connections to make certain hoses are properly reconnected upon installation.

C) Disconnect and remove fuel filler neck if necessary

D) Support fuel tank and remove retaining straps to allow tank to be removed from vehicle. Remove the fuel tank being careful to avoid spilling fuel.

E) Note the position and condition of all fuel tank mounting pads and insulators used in isolating the fuel tank from the vehicle body. Mislocated.

END OF Pg. 1

GM 722-2



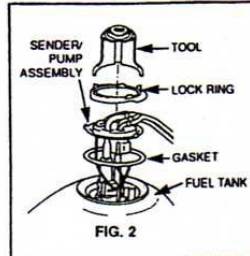
PG. 2

deteriorated, or incorrect pads and/or isolators can cause objectionable transmission of fuel pump noise into the vehicle.

### III. Bracket Removal

A) Thoroughly clean all dirt and debris from the top of the tank. Clean out any dirt from around the locking ring and retainer. This must be done to prevent dirt or foreign material from falling into the fuel tank while removing the bracket.

B) Lubricate the locking ring with penetrating oil to assist in its removal. Remove the locking ring by rotating in a counterclockwise direction. This can best safely be accomplished by use of the special service tool as illustrated. (See fig. 2) Such a tool is available through major tool suppliers. The special tool for this job is the best, although the locking ring can be removed by other methods. Whatever method you use, do not use any that can cause sparks and a resultant fire or explosion.



C) Once the locking ring is removed, carefully remove the bracket from the fuel tank. Take care not to bend the float arm or scratch the float when it is removed. Discard the fuel tank to bracket o-ring seal.

### IV. Remove And Replace Pump

A) Note the position of the fuel filter in relation to the bracket before removing the filter. Remove the filter by pulling on it while turning it in one direction. Discard the filter.

B) Disconnect the electrical connections at the pump noting polarity before removal. Note and record which wires are connected to the positive and negative terminals and the respective color of each wires insulation.

#### C) Pump Removal

NOTE: Your original pump will be mounted in one of two ways. (See figs. 3 and 4) If it is mounted like fig. 3 then use step C1 for pump removal. If it is mounted like fig. 4 then use step C2 for pump removal.

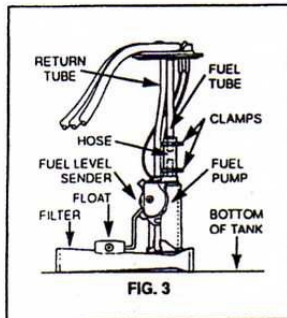


FIG. 3

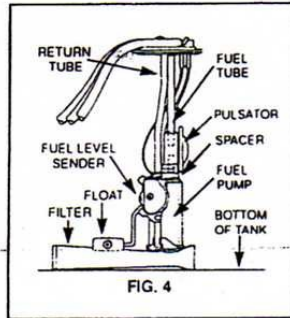


FIG. 4

C1) Remove the hose clamps, if so equipped, cut the rubber hose and remove the pump from the bracket. Remove the cut hose piece from the bracket tube and discard along with the used hose clamps.

C2) Remove the pump by inverting the bracket. Pull down on the fuel pump until the inlet end clears the pump support and swing it to the side and remove the pump and pulsator from the bracket fuel outlet tube. Save the pulsator and the pulsator to fuel pump rubber spacer for use in mounting the new pump.

D) Attach wire connectors to the following instructions:

1) Clip the GM pump connectors off the wires as close as possible. This will leave the wires as long as possible which is desired.

2) Strip the wire insulation back 1/4"

3) Obtain the electrical connectors supplied in the installation kit. Insert the stripped wire into the electrical connector. The large connector goes to the positive (+) pump power lead wire and the small connector goes on to the negative (-) pump ground lead wire.

4) Using the illustrated (fig. 5) preferred type of crimp tools, crimp the connector to the stripped wire making sure the wire is fully inserted in the connector before crimping it.

PREFERRED TYPE OF CRIMPING TOOL



### G) Pump Installation

NOTE: Your original pump was mounted in one of two ways. (See figs 3 and 4) If it was mounted like fig. 3 then use step G1 to mount the new pump. If it was mounted like fig. 4 then use step G2 to mount the new pump.

G1) Using petroleum jelly, sparingly lubricate the fuel pump outlet tube on the bracket and the pump outlet fitting. Obtain the rubber hose and clamps from the installation kit. Place the rubber hose and one clamp over the fuel outlet fitting on the pump. Invert the sending unit and place the remaining clamp over the fuel outlet tube. Install the rubber hose and pump onto the fuel outlet tube of the bracket. Guide the pump adapter grommet into the pump support on the bracket. When the pump and adapter grommet assembly are firmly seated in the pump support verify that the rubber hose is seated against the fuel pump and then position and tighten the hose clamps.

G2) Using petroleum jelly, sparingly lubricate the fuel outlet tube on the bracket and the pump outlet fitting. Install the rubber spacer and pulsator onto the fuel pump. The spacer and pulsator are to be fully seated against the pump when properly installed. Invert the bracket assembly and install the pump and pulsator assembly to the fuel outlet tube on the bracket. Guide the pump adapter grommet into the pump support on the bracket. Firmly seat the pump and adapter grommet in the pump support. Then verify that the pulsator and spacer are still fully seated against the pump as well.

H) Install the electrical connectors to the pump making sure that proper polarity is observed. (If polarity is reversed the pump will run backwards and will not pump.)

I) Install the new filter on the fuel pump in the same position or orientation as the original filter. To avoid damage to the filter, place it on a clean, flat surface and push the pump straight down into the filter cup until it is fully seated on the pump. (See fig. 7) (It is important that the filter alignment is done correctly the first time, because if you have to remove it, the filter will either become contaminated or be destroyed by removing it. This will require you to replace it with another one.)

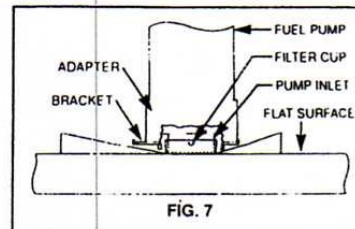


FIG. 7

### V. Installation Of Bracket Back Into The Fuel Tank

1) Inspect the inside of the fuel tank for dirt and debris. If excessive, clean out the fuel tank before installing the bracket.

2) Inspect the bracket to see that it is clean and ready for installation.

3) Obtain the new fuel tank seal o-ring from the installation kit and place it in the groove at the fuel tank opening. Place the bracket assembly into the tank using care not to disturb the o-ring seal or to hang the float assembly on any protrusions in the tank. Also use care not to fold or twist the filter as this could cause restricted fuel flow. Install the locking ring and rotate it clockwise until it is properly seated against the stops.

### VI. Install Fuel Tank Into Vehicle

1) Inspect the condition and location of all tank mounting pads, insulators, and brackets. Defective, missing, or mislocated pads and insulators will cause the transmission of excessive noise to the vehicle.

2) Inspect and correct any defects in the fuel hoses, filler neck connections or similar components related to the fuel tank installation.

3) Install the fuel tank in the vehicle and tighten the tank support strap bolts. Reconnect all lines and hoses and tighten securely. Connect the electrical connections.

4) Make certain that all hoses, fittings, and electrical connections are correctly and securely attached.

5) Make sure that all fuel lines are correctly routed and secured in any mounting brackets. Make sure that the electrical harness is installed in the original position and all wire clips and mounting devices are present.

### VI. Wrap Up

1) Using only equipment designed for use with gasoline, refuel the fuel tank with gasoline. (NOTE: Be sure to clean up any fuel spills before proceeding)

2) Inspect the system for fuel leaks and correct them, if required.