FUEL INJECTIONS FUEL PUMP TANK UNIT REPLACEMENT INSTRUCTIONS

Precautions For Fuel System Service

TO REDUCE THE RISK OF FIRE AND PERSONAL INJURY IT IS NECESSARY TO OBSERVE THE FOLLOWING PRECAUTIONS:

■Ensure that you are in a well ventilated and level work area.

■Be certain that you are near any source of spark or combustion in the area of your work.

■Work area should be clear of persons smoking or be done in a non-smoking area.

■This type of repair should be done in a properly equipped service facility.

■Always have a functional Class B fire extinguisher available and local fire, emergency and paramedic phone numbers readily at hand.

■The use of bare light bulb and/or extension cords that may break or cause sparks is not recommended.

■Always use approved safety glasses or goggles when working on any motor vehicle.

■Before beginning work on any part of a vehicles fuel system, disconnect the ground (negative) cable of the battery and ensure that it does not accidentally spark while working.

■Gasoline that comes in contact with skin for prolonged periods should be washed promptly after work is completed.

■Vapors should not be inhaled and should be avoided. Should you feel light headed or faint, stop working and proceed to a fresh air source.

■Always follow proper lift or hoist procedures when working underneath a vehicle. If jacking equipment is used to lift the vehicle, always use approved supports to maintain stability while working underneath the vehicle.

■Removing gasoline from a fuel tank must be done with an OSHA approved pump. It is strongly recommended that no other type of pump is used because of the possibility of explosion and/or fire.

■Gasoline that has been removed from a vehicle fuel tank must be stored in containers specific to gasoline only. Do not store gasoline in containers that have had any other type of liquid or combustible product.

■Contaminated gasoline should be disposed of properly. Follow your state and local ordinances for proper disposal of contaminated gasoline and/or other liquids. 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 further precautions that may be necessary.

FUEL PUMP REPLACEMENT INSTRUCITONS

I. Preparations

A. Fuel systems are under pressure. It is necessary to relieve the fuel system pressure before beginning work on the fuel system. Relieving the pressure can be done by removing the fuel cap.

1. Locate and remove the fuel pump fuse from the fuse block.
2. After the fuse is removed, start the engine and let the engine consume the remaining gasoline in the fuel lines. The engine will stop when remaining fuel is consumed.
3. Once the engine has stopped, crank the engine for three seconds to relieve any possible remaining fuel pressure.

B. Disconnect the vehicles negative/ground cable at the battery and secure it so that it will not accidentally make a connection while replacing the fuel pump.
C. Drain the gasoline from the vehicle's fuel tank.

1. Using only an OSHA approved gasoline transfer pump and approved fuel storage containers, remove as much gasoline as from the fuel tank through the filler neck.
2. Raise the vehicle with an automotive hoist or jack up the vehicle and support it with OSHA approved jack stands, which allow unobstructed clearance for the removal of the fuel tank.
3. Fuel tank gasoline levels will vary depending on the amount of gasoline removed through the filler neck. Once the vehicle is raised, additional gasoline can be removed through bracket connections.

II. Fuel Tank Removal

Fuel tanks vary from vehicle to vehicle; the following fuel tank removal instructions are for a typical fuel tank removal. For more specific instructions on fuel tank removal for your specific vehicle it may be necessary to obtain an approved Service Manual for the vehicle that you are replacing the fuel pump on.

1. Visually inspect the scope of work involved before beginning the fuel tank removal step. Be sure to have help readily available.
2. Disconnect all visible fuel hoses that connect to the fuel tank from the rest of the vehicle (be sure to mark or label all connections for reassembly).
3. Disconnect electrical connections at the fuel tank taking extra care not to damage pins or connectors.
4. If necessary, disconnect and remove the fuel filler neck from the vehicle.
5. Loosen the retaining straps of the fuel tank and support the fuel tank prior to removing the straps entirely. Take extra precautions to avoid a fuel spill.
6. Take note of the condition and location of any insulating pads. Worn or misaligned, wrongly installed pads should be replaced as they may affect the performance of the new fuel pump.

III. Bracket Removal

1. Before removing the bracket from the fuel tank, be sure to thoroughly clean any dirt or debris that may have accumulated at the top of the fuel tank or at the opening of the

locking ring area. This step must be done to prevent debris or foreign matter from entering the fuel tank which can cause problems later on.
2. Using the correct tools, remove the locking ring or retainer using care not to damage it.
3. Carefully lift out the bracket from the fuel tank. The old o-ring seal must be removed from using extra care not to let pieces fall into the tank as it may be brittle. Discard the old o-ring seal, it will be replaced with a new o-ring seal which is included in the kit.

IV. Replacement of the Pump

1. Replace the pump and filter as directed in the instructions that accompany the kit.
2. Ensure that all connections are secure before installation into the fuel tank.

V. Bracket Reinstallation

1. Before bracket reinstallation, carefully inspect the inside of the fuel tank for contamination, dirt or foreign matter. Clean out the fuel tank if necessary prior to bracket reinstallation.
2. Ensure the bracket is fully assembled and ready for installation.
3. Install the new o-ring in the groove at the bracket opening. Carefully lower the bracket assembly into the fuel tank taking extra care not to bend or damage the float or the float arm. Be sure not to disturb the o-ring when seating the bracket while keeping the filter free of kinks and fold as this may restrict fuel flow.

4. Reinstall the locking ring or retainer using the correct tools.

VI. Reinstalling the fuel tank

1. As mentioned in section II, worn insulation and mounting pads must be replaced. It is imperative that pads are installed in the same manor that they were removed as missing or wrongly installed pads will cause noise or vibration to the vehicle.
2. Prior to lifting the fuel tank into place, ensure that all fuel lines and hoses sound. Replace any inferior or defective fuel lines or hoses.

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3. Support the fuel tank in the correct installation position. Once the fuel tank is in the correct position install the support straps and bolt in the same manner that they were removed.
4. Reconnect all fuel lines and electrical connections securely ensuring the there are no kinks or perforations. Routing of fuel lines is especially important, be sure to route fuel lines in the same manner as before using all clips and securing devices provided by the manufacturer.

VII. Finishing the Process

1. Gasoline should only be reinstalled back into the vehicles fuel tank with an OSHA approved gasoline-dispensing device. Before moving to the next step, be sure to clean up any fuel that may have spilled during pump replacement or during the gasoline refilling process.
2. At this time a visual inspection for leaks is necessary. Correct any leaks at this time prior to proceeding to the next step.

3. Following the reverse order of the removal, reinstall the fuel pump fuse back into the fuse block and reconnect the negative/ground battery cable to the battery.
4. Start the vehicle's engine and inspect for any leaks. If leaks exist correct them immediately.
5. Some vehicles are equipped with OBD (On board diagnostic) systems which may have illuminated a light indicating a trouble code of malfunction. Clear trouble codes using a service manual specific to the vehicle.

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TROUBLE SHOOTING

Should the pump fail to operate:
Check the fuel pump fuse and fuel pump relay as outlined in the car service manual.
If the pump has power and proper polarity, check the remainder of the fuel system as outlined in the car service manual.

NOTE: This pump will not remedy malfunctions of the regulator, injectors or other fuel system components.

THE JUDGEMENT OF COMMON FAULTS

1).Not Pumping

Failure Judgement	Reason analysis	Repair methods
Engine Stalling	Fuel is not sufficient	Fill up the tank
	Wire is not well connected	Use the multimeter to check whether the wire circuit
	The positive and negative poles are connected mistakenly	Exchange the positive and negative poles connections.
	The carbon brush and commutator worn out, or pump are jammed.	Replace the fuel pump, clean the tank completely and use standard fuel.
	The relay of the pump failed	Replace the relay.

2) Fuel pump with low pressure

Failure Judgement	Reason analysis	Repair methods

Engine hard to coldstart	The clamps of junction on pumps' pipeline are loosen or gapped, which cause the fuel leaked into the tank and decrease of the pressure of the fuel system.	Check junctions of all the pipelines and fasten the clamp.
	The module connecting pipeline broke and causes fuel leakage.	Replace rubber pipes or corrugated pipes.
	The failure of safe valve cause the fuel system pressure decreased.	Replace the fuel pump
	The one-way valve failed and cause the fuel system pressure decreased.	Replace the fuel pump

3) **Fuel pump pressure and flow decrease**

Failure Judgement	**Reason analysis**	**Repair methods**
Acceleration and power are both getting down	The filter is jammed with foreign matters, which cause big resistance	Replace the gas filter.
	The strainer is jammed with foreign matters, which cause big resistance	Change the strainer.
	The pressure regulator of the pump failed.	Replace the pressure regulator.
	The entry of filth into the pump leads to the over-worn of the pump body and the impeller, causing the decrease of the pump's pumping function.	Change the pump or the module, clean the tank completely, and use standard fuel.
	Used incorrect fuel pump.	Use the multimeter to measure the pressure of the fuel system, and replace it with correct fuel pump.
	Fuel pump expired.	Change the fuel pump

4) Noise

Failure Judgement	**Reason analysis**	**Repair methods**
Fuel pump noisy	The strainer or filter is jammed	Change the strainer or filter
	Pump was not installed in a standard manner and have resonance vibration during pump working.	Recheck the installation position of the pump.
	The wrong type of pump is used, and pumps with much higher flow, which will cause noise easily.	Replace with the proper pump.
	The pump is worn out and its life comes to an end.	Replace with a new pump
	High temperature cause gas	Restart vehicles after a

	resistance, which make noise	period of time cooling down can solve trouble.

5) Oil level sensor failure

Failure Judgement	Reason analysis	Repair methods
Oil level display incorrect	Float and other parts of the fuel tank were stuck when installing, caused floating arm can not be moved up and down	Adjust and reinstall
	Different Circuit	Check with the multimeter
	Floating arm was distorted, failed or damaged during transportation or installing.	Replace of the oil level sensor
	Resistor or silver touch spot was vulcanized and corroded and cause poor connetion	Slide come-and-go 20 times before installing, it will clean up the corrosion point

6) System pipeline gas blocked

Failure Judgement	Reason analysis	Repair methods
Vehicles shaked during driving	Fuel tank inhaled air at low fuel level.	Fill up oil or inspect on flat road.
	High temperature in summer caused the oil vapor inside the tubes and form gas block.	Restart vehicles after a period of time cooling down can solve trouble.

CAUTION:

（1）Prohibit fuel pump free working in non-oil situation.

（2）Fuel pump in line should use standard fuel: alcohol pump can use alcohol fuel, diesel fuel pump use diesel fuel, methanol fuel pump use methanol

（3）You need replace the fuel pump and strainer/ filter at the same time

（4）It is not allowed to use falled off products;

（5）Replace fuel filter according to the stipulated time or mileage;

（6）Replacement pump should be kept in clean work environment

（7）Oil should be added timely if it is too low, it is recommended to add oil when the tank only have 1 / 3 of fuel

（8）Fuel pump should match with vehicles models.