

# Technical Bulletin

Division: Automotive  
 Category: Technical

Section Title: Engine  
 TSB No. TS 27 07313

**SUBJECT:** SPECIAL COVERAGE EXTENSION - CAMPAIGN “ZC”; FUEL ODOR OR SPOTTING ON THE GROUND.  
**MODEL(S):** XL7 (JC636)  
**YEAR:** 2007 ~ 2009  
**VIN RANGE:** 2S3DB217676101940 – 2S3DA717876113877

**CONDITION:** The customer may notice a fuel odor while the vehicle is being driven or after it is parked. In more extreme cases, fuel may be observed dripping onto the ground in the area of the fuel tank at the rear of the vehicle. Vehicle performance may be affected.

**CAUSE:** Some vehicles have a condition in which the plastic supply or return port on the Fuel Pump Module may crack, and could cause a fuel leak.

**CORRECTION:** Suzuki dealers are required to confirm vehicle eligibility for Special Coverage Extension through the Vehicle Master Inquiry on Suzuki Connect, **prior to inspection, or any required repairs.** This special Coverage Extension is limited by VIN application with unlimited time and mileage.

**▲ WARNING**

**Handling a fuel tank with too much fuel can be hazardous and is not advised.**

**Advise each customer when scheduling this campaign to be sure the vehicle arrives at the dealer with ¼ or less of fuel in the fuel tank.**

**NOTE:**

*Vehicles not listed in the above affected VIN range may also exhibit this condition. If you have a vehicle exhibiting the condition described in this Technical Service Bulletin, and the vehicle is not listed within the affected VIN range, please see the Safety Recall Campaign bulletin, TS 26 03073 and SC-64 for potential coverage.*

Technical Service Department  
 Dealership Circulation – Initial and file:

Service Manager	Parts Manager	Service Advisor	Technicians						

Suzuki bulletins are intended for use by professional technicians, NOT a “do-it-yourselfer.” They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your authorized Suzuki dealer for information on whether your vehicle may benefit from the information. Suzuki reserves the right to change technical specifications at any time without prior notice.

<b>PART(S) INFORMATION</b>				
<b>Description</b>	<b>Year</b>	<b>Part Number</b>	<b>Qty.</b>	<b>Notes</b>
Fuel Pump Kit	2007	15100-78J31	1	To remove the primary fuel tank module, the secondary module must also be removed. This kit includes a second fuel tank module seal for the secondary module.
Fuel Pump Kit	2008 ~ 2009	15100-78J50	1	

<b>WARRANTY INFORMATION</b>				
<b>Campaign Code</b>	<b>Operation Code</b>	<b>Complaint Code</b>	<b>Defect Code</b>	<b>Labor Time</b>
Please refer to the Service Campaign Bulletin SC-66 for claim submission instructions and labor times.				

**NOTICE**

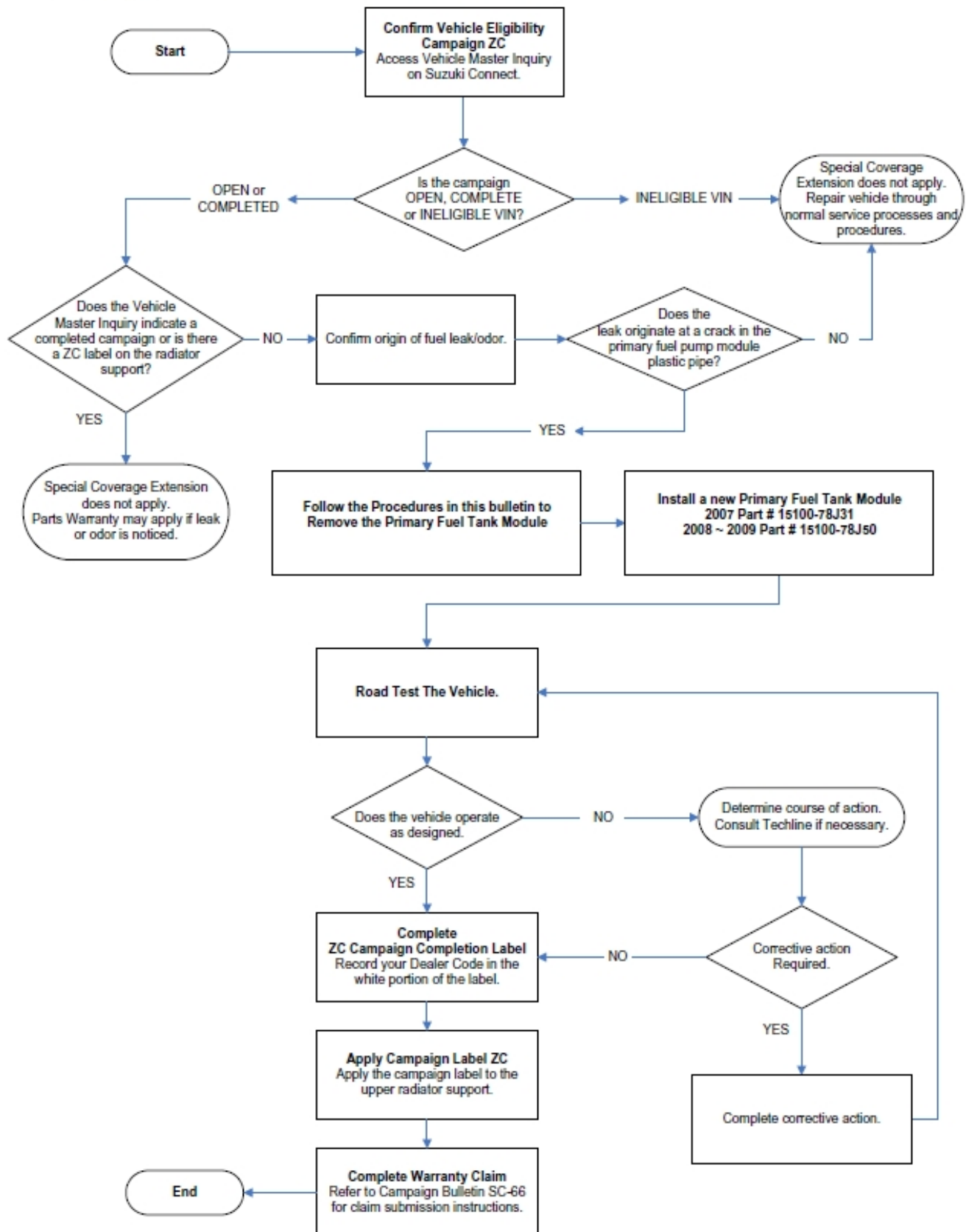
**Fuel system components become very dirty over time. Allowing dirt to enter the system while servicing the fuel system can cause damage.**

**Clean all fuel pipe/hose connections, caps and their surrounding areas before disassembling to avoid possible contamination of the fuel system.**

**NOTE:**  
**NEW** fuel tank module seals are necessary each time the fuel tank module is serviced. Obtain **NEW** seals for both the primary and secondary modules any time they are removed.



Work Flow



**INSPECTION****NOTE:**

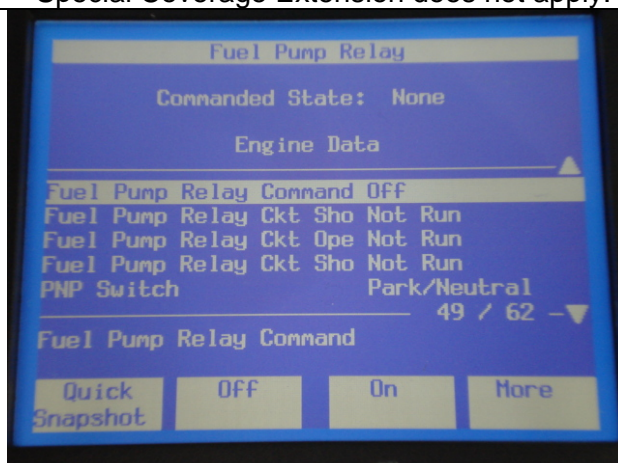
**During the inspection process, battery discharge may occur. It is recommended to connect a secondary power supply to the battery.**

1. Connect the Tech2 along with the CANdi Module, to the vehicle Data Link Connector (DLC) and turn the power on. **Select ENTER** to proceed to the Main Menu screen.
2. **Select function F0: Diagnostics**, to proceed to the Vehicle Identification screens.
3. **Select model year** for the vehicle being worked on.
4. **Select "LD Trk, MPV, Incomplete"** to proceed to the Diagnostics screen.
5. **Select function F0: Powertrain**, to proceed to the Vehicle Identification screens.



6. **Select the engine type "3.6L V6 LY7"**.
7. **Select the "With" or "Without" AWD option** to proceed to the Powertrain Screen.
8. **Select function F0: Engine Control Module**, to proceed to the Engine Control Module Screen.
9. **Select function F2: Special Functions**, to proceed to the Special Functions screens.
10. **Select function F0: Output Control**, to proceed to the Output Control screen.
11. **Select function F4: Fuel Pump**, to proceed to the Fuel Pump screen.

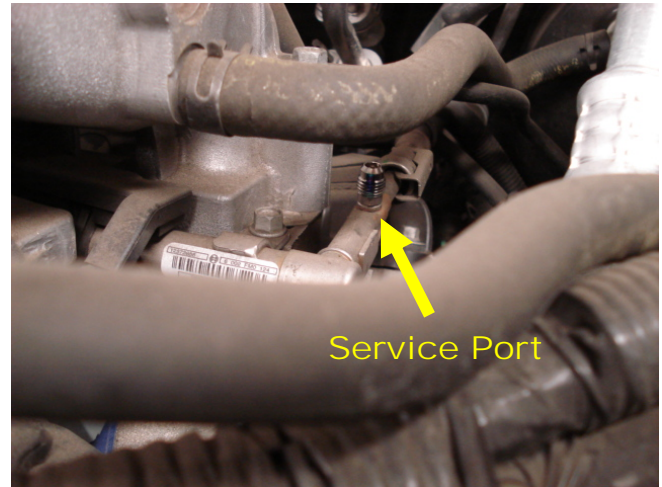
12. **Select function F0: Fuel Pump Relay**, and ensure that all fuel lines are connected. **Select ENTER to proceed to the Fuel Pump Relay screen.**
13. **Highlight "Fuel Pump Relay Command OFF" then select ON to actuate the fuel pump. Repeat this step no more than 5 times. Stop if a leak is noted.**
  - a. The fuel pump will run for 3 seconds.
  - b. Inspect the bottom and each side of the fuel tank for any fuel stain or run-off from the top of the tank. Inspect the general area of the fuel tank for fuel spray or the presence of fuel odor.
  - c. If a fuel leak is noted, diagnose the cause. Continue to Removal Procedure, page 5, step #1 to complete this campaign if it applies. If the cause does not apply, or no leak is found then this Special Coverage Extension does not apply.



**Inspect tank surfaces and general area around the tank.**

## REMOVAL PROCEDURE

1. Remove the engine cover.
2. Ensure that the fuel level in the fuel tank is less than 1/4 full. If necessary, drain the fuel level to no more than 1/4 full.
3. Relieve the fuel system pressure at the fuel rail service port with the following procedure.
  - a. Loosen the fuel fill cap in order to relieve the fuel tank vapor pressure.
  - b. Remove the fuel rail service port cap.
  - c. Wrap a shop towel around the fuel rail service port and using a small flat bladed tool, depress (open) the fuel rail test port valve, catching the fluid in the towel.
  - d. Remove the shop towel from around the fuel rail service port, and place in an approved gasoline container.
  - e. Install the fuel rail service port cap.
  - f. Tighten the fuel fill cap.



### ⚠ WARNING

Gasoline or gasoline vapors are highly flammable. A fire could occur if an ignition source is present.

Do not allow smoking, the use of open flames or any ignition source in the area where work on the fuel or EVAP system is taking place. Anytime work is being done on the fuel system, disconnect the negative battery cable, except for those tests where battery voltage is required and have a dry chemical (Class B) fire extinguisher nearby.

### ⚠ WARNING

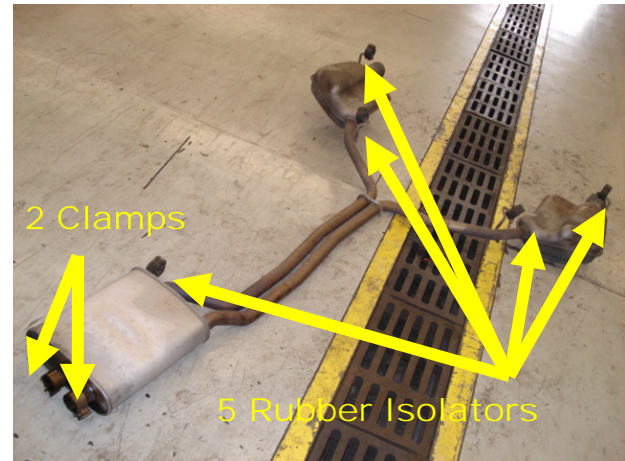
Fuel supply lines will remain pressurized for long periods of time after the engine is shut down. Fuel could spray out under pressure when you loosen or remove fuel lines. Opening a fuel system while it is under pressure may allow fuel to come in contact with an ignition source or with you causing personal injury.

Remove the fuel tank cap and relieve the fuel system pressure before servicing the fuel system.

#### NOTE:

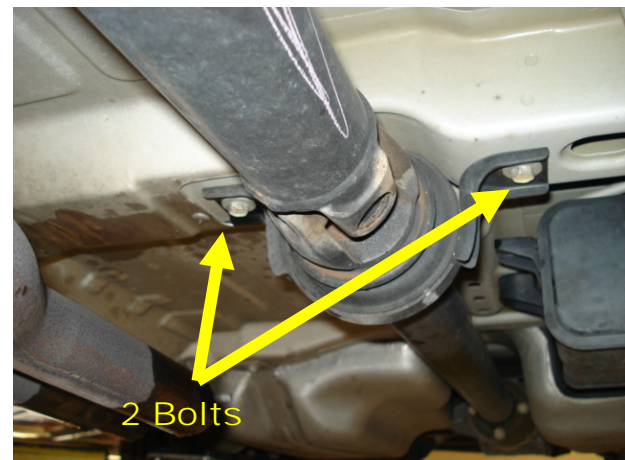
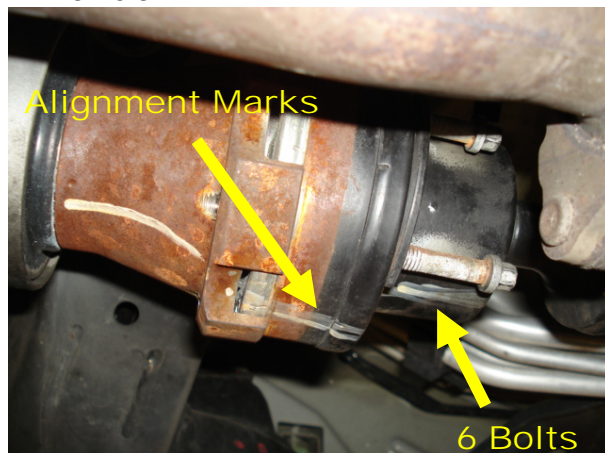
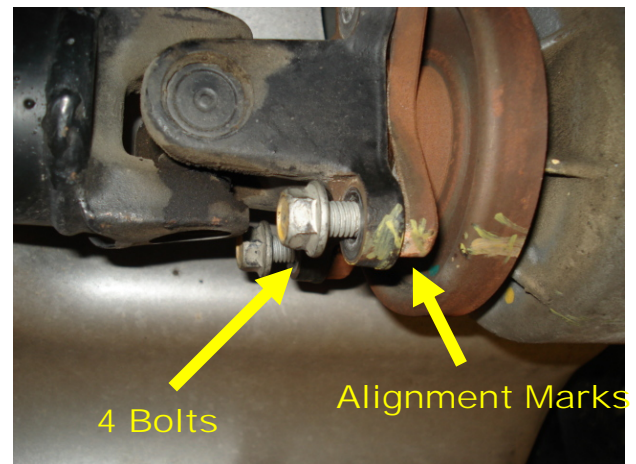
*Fuel will remain in the system after pressure is relieved. Whenever fuel line fittings are loosened or removed, wrap a shop cloth around the fitting and have an approved container available to collect any fuel. Container opening must be a minimum of 300 mm (12 in) diameter to adequately catch the fluid. Never store fuel in an open container, due to the possibility of fire or explosion. Have a dry chemical (Class B) fire extinguisher nearby. Dispose of or store fuel soaked rags in accordance with local regulations.*

4. Record the radio presets and disconnect the negative battery cable.
5. Remove the muffler assembly.
  - a. Loosen the 2 exhaust pipe muffler clamps.
  - b. Disconnect the 5 rubber isolators from the exhaust pipe hangers.
  - c. Slide the muffler assembly from the exhaust pipes, removing it from the vehicle.



**AWD Vehicles Proceed with step #6.**  
**FWD vehicles continue to step #7.**

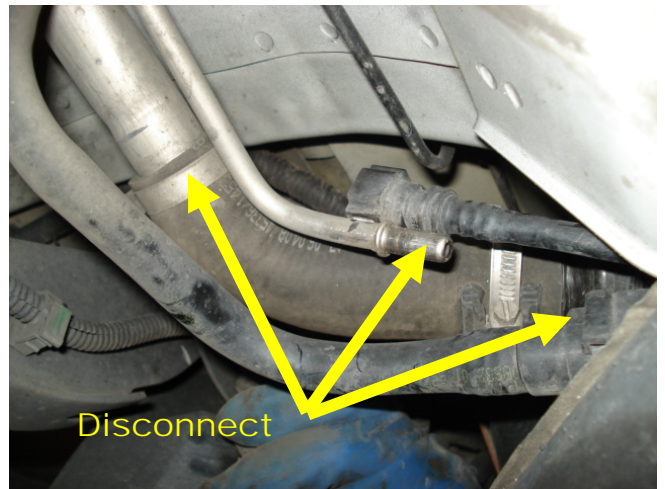
6. Remove the propeller shaft.
  - a. Place the transmission in neutral (N).
  - b. Mark the relationship of the propeller shaft to the rear differential drive flange and the transfer case flange.
  - c. Support the propeller shaft at the rear differential.
  - d. Remove the 4 mounting bolts for the propeller shaft at the rear differential drive flange.
  - e. Support propeller shaft at the transfer case.
  - f. Remove the 6 mounting bolts for the propeller shaft at the transfer case flange.
  - g. Support the propeller shaft at the center support bearing.
  - h. Remove the 2 mounting bolts for the center support bearing.
  - i. Remove the propeller shaft from the vehicle.



7. Disconnect the evaporative emission (EVAP) canister lines:
- Fresh air hose.
  - Vent hose.
  - Chassis fuel feed line.
  - Electrical connector.



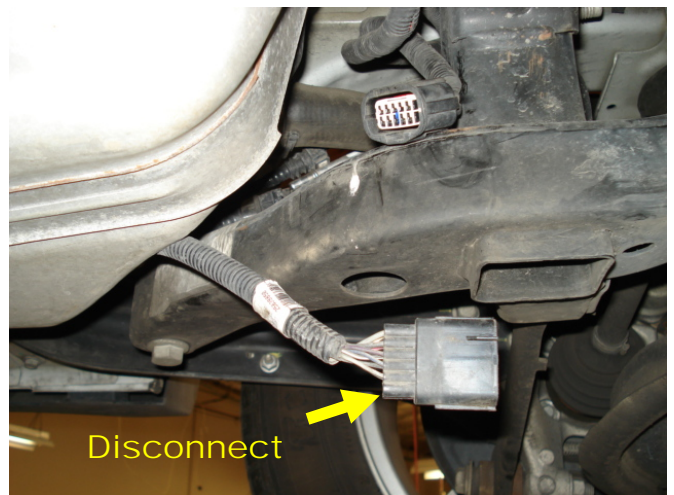
8. Disconnect connections at the fuel tank:
- Fuel fill tube.
  - EVAP vent hose.
  - Fresh air hose.



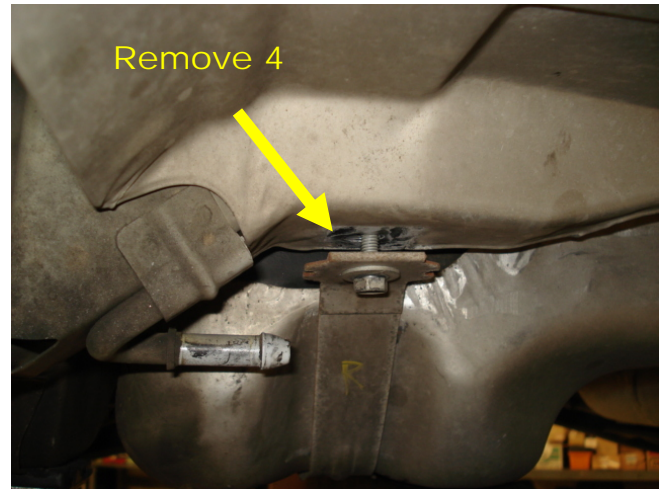
- d. Fuel tank electrical connector.

**NOTE:**

*If present, remove the electrical connector retainer from the rear frame to allow disconnection of the electrical connector.*



9. Support the fuel tank and remove the 4 fuel tank strap bolts (2 each strap), and the 2 fuel tank straps.



**NOTICE**

The fuel tank straps can be easily bent.

Be careful not to damage the straps so that proper installation of the fuel tank can be completed.



10. With the help of an assistant if needed, lower the fuel tank and heat shield from the underbody of the vehicle. Relocate it to an area that will allow proper ventilation and cleanliness for the primary and secondary fuel tank module removal and replacement.

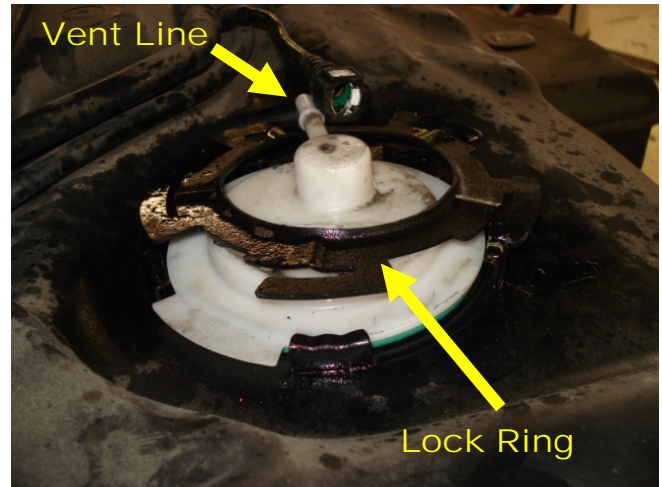




11. Remove the secondary fuel pump module.
  - a. Disconnect the EVAP vent line at the quick connect.
  - b. **Using service tool J 39765-A (Secondary Fuel Sender Lock Ring Tool) or equivalent, remove the secondary fuel pump module lock ring.**

**NOTE:**

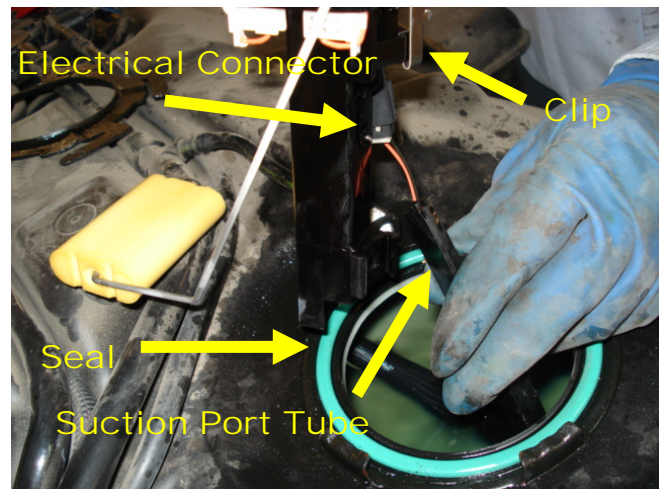
*Certain Driving Conditions will allow debris and dirt to accumulate on the Top of the Fuel Tank. Clean the area around the Primary and Secondary Fuel Pump Modules prior to removal)*

**NOTICE**

**Retainer rings can be easily damaged and rendered unfit for use or reuse.**

**To prevent Secondary module retainer ring damage, always use service tool J 39765-A (Secondary Fuel Sender Lock Ring Tool) or equivalent, and do not attempt to remove the retainer with a 12 in. or shorter ratchet/breaker bar or impact tools. Also, Spray the fuel pump module cam-lock ring tang with penetrating oil prior to attempting removal.**

- c. Disconnect the secondary level sensor electrical connector from the Secondary Fuel Pump Module
- d. Disconnect the suction port attaching tube from the secondary module by pressing on the clip.
- e. Remove the secondary fuel pump module.
- f. Discard the fuel pump module-to-tank seal.

**NOTICE**

**The sending unit float arm can be easily damaged during removal.**

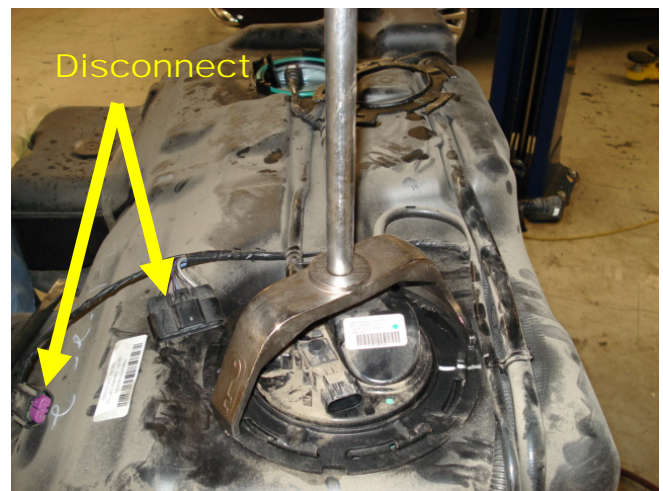
**To prevent bending of the sending unit float arm during removal, lift the module up slightly to disengage the orientation tabs in the tank and rotate the module 45 degrees.**

**NOTE:**

***Always replace the fuel pump module-to-tank seal when the fuel pump module is removed.***



12. Remove the primary fuel pump module.
  - a. Disconnect the electrical connectors from the primary fuel pump module and fuel tank pressure sensor.
  - b. **Use the Required Tool J 45722 (Primary Fuel Sender Lock Ring Tool) and a long breaker-bar in order to unlock the fuel sender lock ring. Turn the fuel sender lock ring in a counterclockwise direction.**

**NOTICE**

**Retainer rings can be easily damaged and rendered unfit for use.**

**To prevent primary retainer ring damage, always use the Required Tool J 45722 (Primary Fuel Sender Lock Ring Tool), and do not attempt to remove the retainer with a 12 in. or shorter ratchet/breaker bar or impact tools. Also, Spray the fuel pump module cam-lock ring tang with penetrating oil prior to attempting removal.**

- c. Disconnect the fuel feed and vent lines from the fuel tank.



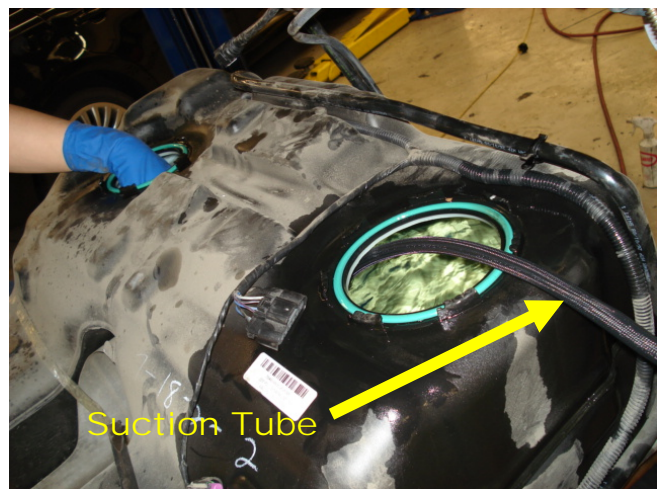
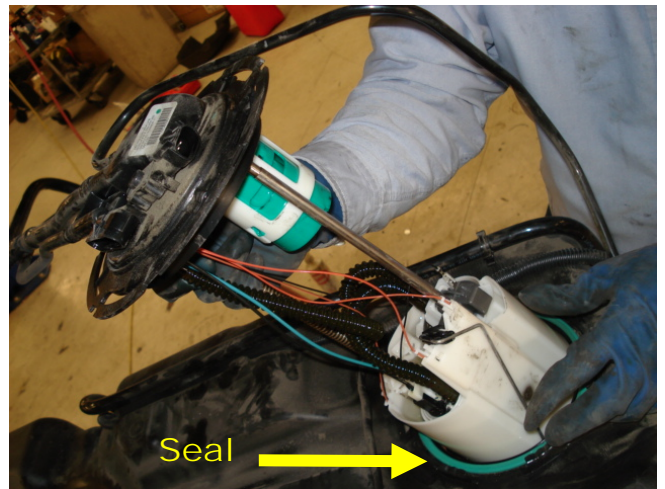
- d. Remove the primary fuel pump module assembly.  
e. Discard the fuel pump module-to-tank seal.

**NOTICE**

Retainer rings can be easily damaged and rendered unfit for use or reuse.

To prevent primary retainer ring damage, always use the Required Tool J 45722 (Primary Fuel Sender Lock Ring Tool), and do not attempt to remove the retainer with a 12 in. or shorter ratchet/breaker bar or impact tools. Also, Spray the fuel pump module cam-lock ring tang with penetrating oil prior to attempting removal.

- f. Take note of the suction port tube routing during the primary module removal and have a partner help route the tube to prevent damage.



## INSTALLATION PROCEDURE

1. Check the primary and secondary lock rings for flatness.
  - a. Place the lock ring on a flat surface. Measure the clearance between the lock ring and the flat surface using a feeler gage at 7 points.
  - b. If the warpage is less than 0.41 mm (0.016 in), the lock ring does not require replacement. If the warpage is greater than 0.41 mm (0.016 in), the lock ring must be replaced.



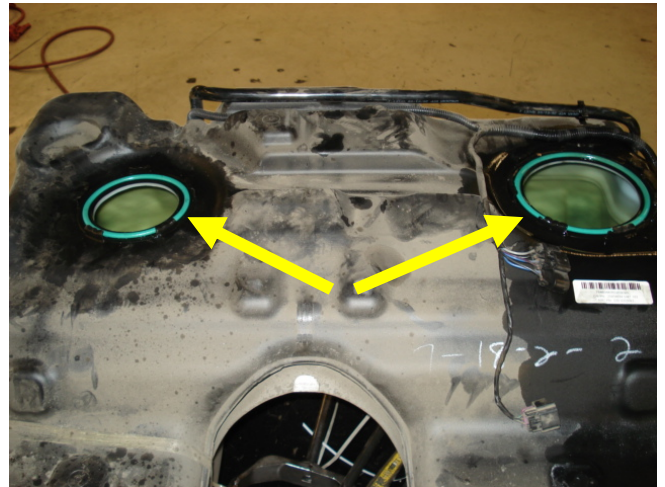
### NOTE:

- Some lock rings were manufactured with **DO NOT REUSE** stamped into them. These lock rings may be reused if they are not damaged or warped.
- Inspect the lock ring for damage due to improper removal or installation procedures. If damage is found, install a **NEW** lock ring.
- Check the lock ring for flatness.

2. Position the new primary and secondary module seals in place.

### NOTE:

*Always replace the fuel tank module seal when installing the assembly.*



3. Insert the new primary fuel pump module assembly with the level sender and suction tube attached. Route the suction tube through with the correct routing previously noted. Be careful not to damage or kink the tube.



**⚠ CAUTION**

If you handle the Fuel Pump Module by the fuel pipes, the amount of leverage generated could damage the joints.

Do Not handle the Fuel Pump Module by the fuel pipes.



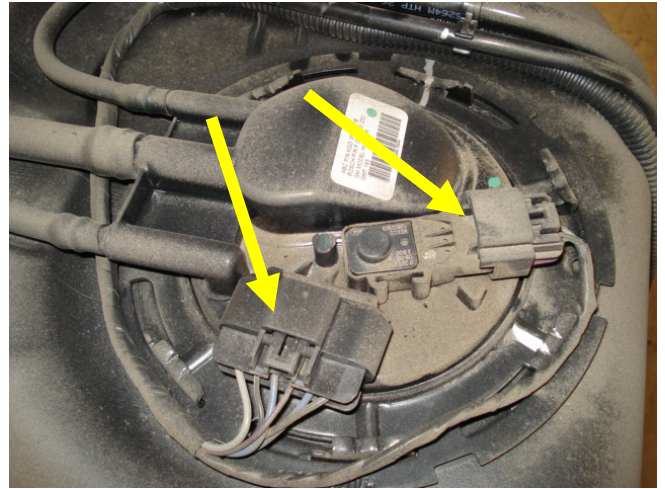
4. Use the Required Tool J 45722 (Primary Fuel Sender Lock Ring Tool), in order to install the fuel tank module lock ring. Turn the fuel sender lock ring in a clockwise direction.

**NOTE:**

Do not apply any type of lubrication in the seal groove. Ensure the lock ring is installed with the correct side facing upward. A correctly installed lock ring will only turn in a clockwise direction.



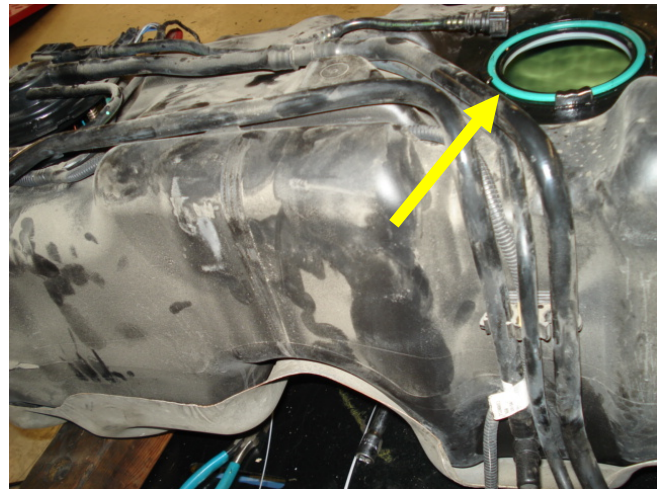
5. Connect the wiring harness to the primary fuel pump module and fuel tank pressure sensor.



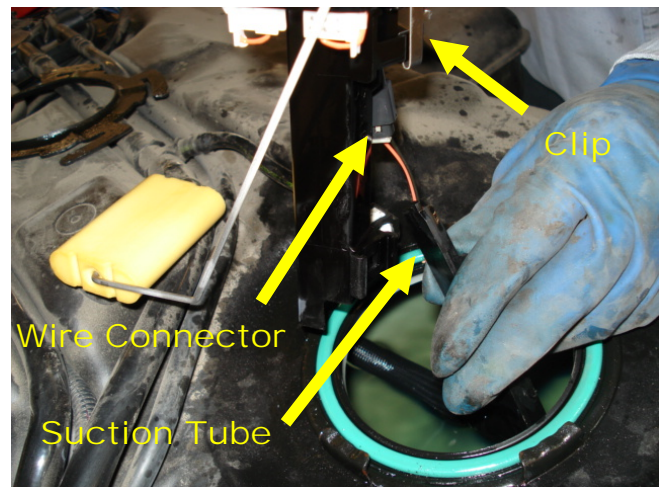
6. Position the new secondary seal in place.

**NOTE:**

Always replace the fuel tank module seal when installing the fuel sender assembly.



7. Connect the suction tube securing it with the clip.
8. Connect the wire harness to the fuel level sender.

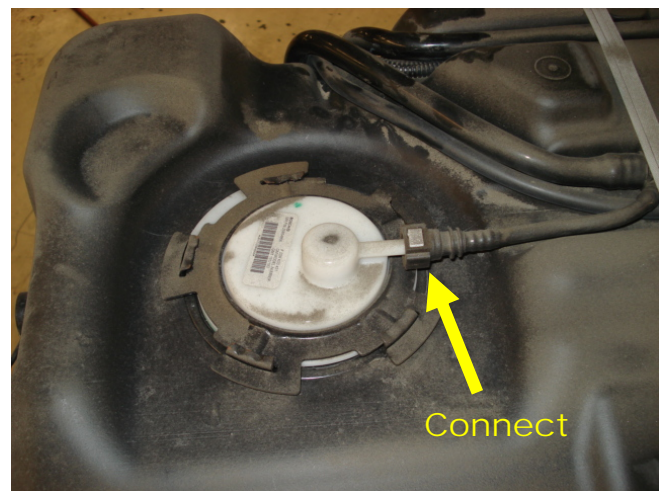


9. Insert the secondary fuel pump module.



10. Use service tool J 39765-A (Secondary Fuel Sender Lock Ring Tool) or equivalent, to install the secondary fuel tank module lock ring.

11. Connect the EVAP line quick connect.



12. Be sure to secure the external fuel tank lines to their connections.



13. With the help of an assistant if needed, install the fuel tank heat shield and fuel tank assembly to the vehicle.



***NOTICE***

**Use of unspecified fasteners or improper application of fasteners can cause fastener and or component failure leading to vehicle damage.**

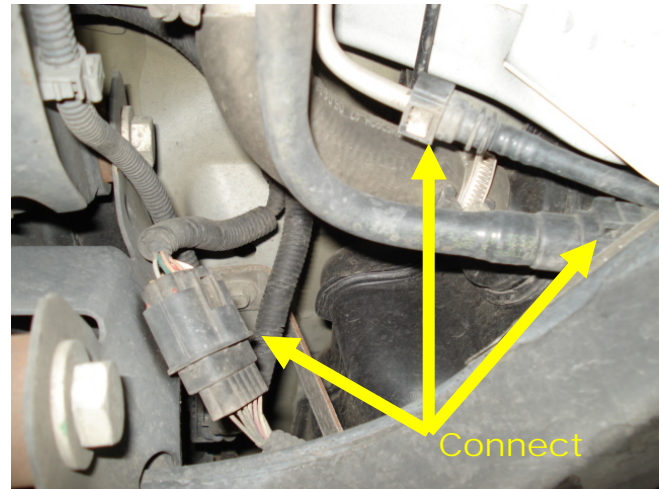
**Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.**

14. Install the 2 fuel tank straps and the 4 (2 each strap) fuel tank strap-to-body bolts.  
a. **Tighten the bolts to 25 N-m (18 lb ft).**

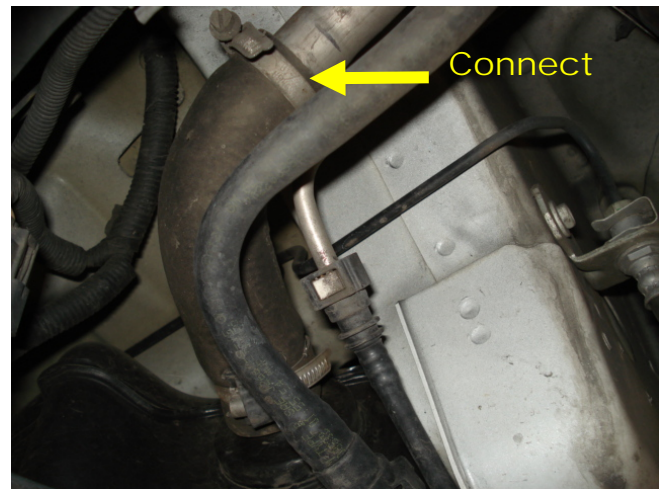




15. Connect the Electrical connector, EVAP vent, and fresh air hoses to the fuel tank.



16. Connect the fuel fill tube to the fuel tank.  
a. **Tighten the clamp to 5 N·m (44 lb in).**



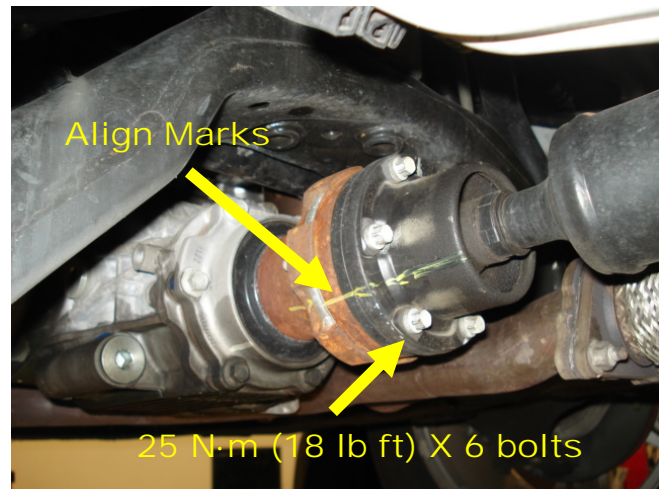
17. Connect the chassis fuel feed line quick connect fitting to the fuel tank.  
18. Connect the EVAP canister fresh air hose/pipe to the fuel tank fresh air hose/pipe.  
19. Connect the EVAP canister vent hose/pipe to the EVAP canister.  
20. Connect the electrical connector.



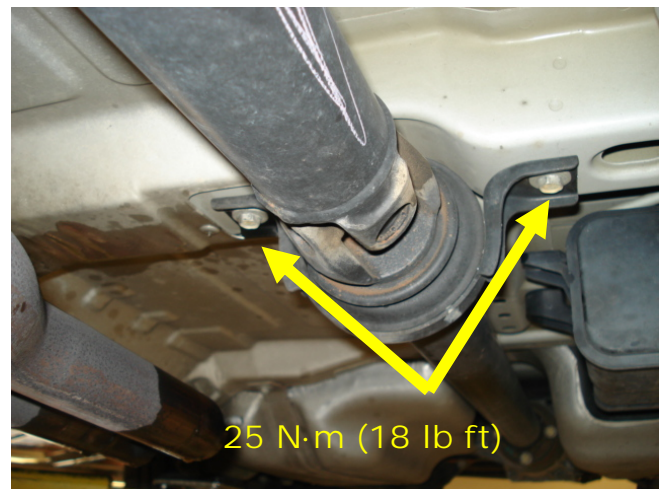
**PROPELLER SHAFT INSTALLATION**

21. Thoroughly clean the mounting bolts for the center bearing and the front and rear propeller shaft flanges. **Apply thread lock, Suzuki part number 99000-32020 or equivalent.**

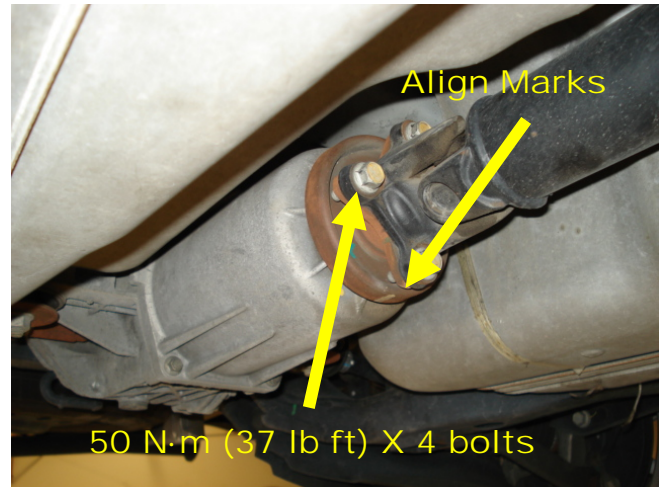
22. With the aid of an assistant, position the propeller shaft on supports.
23. Align the reference marks on the front and rear of the propeller shaft to the transfer case and rear differential.
24. Position the propeller shaft on the transfer case output flange.
25. **Finger tighten** the 6 mounting bolts for the propeller shaft at the transfer case output flange.



26. Position the center support bearing of the propeller shaft on the vehicle.
27. **Finger tighten** the 2 mounting bolts for the center support bearing.



28. Position the propeller shaft on the rear differential drive flange.
29. **Finger tighten** the 4 rear mounting bolts for the propeller shaft.

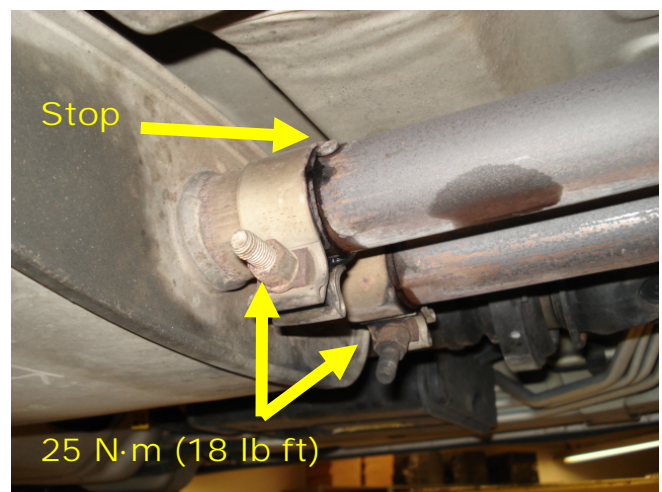


30. **Tighten** the propeller shaft to transfer case output flange mounting bolts.
  - a. **Tighten to 25 N·m (18 lb ft).**
31. **Tighten** the center support bearing mounting bolts.
  - a. **Tighten to 25 N·m (18 lb ft)**
32. **Tighten** the propeller shaft to differential drive flange mounting bolts.
  - a. **Tighten to 50 N·m (37 lb ft).**
33. Remove the supports.

34. Slide the exhaust assembly onto the exhaust pipes.

**NOTE:**

*Be sure the muffler slides onto the exhaust pipes up to the stop.*



35. Install the 5 rubber isolators of the exhaust pipe hangers.
36. Tighten the 2 exhaust muffler clamps.
  - a. **Tighten to 5 N·m (44 lb in).**



37. Replace the fuel that was drained out and tighten the fuel cap.
38. Connect the negative battery cable.
39. Prime the fuel system.
  - a. Cycle the ignition ON for 5 seconds and then OFF for 10 seconds.
  - b. Repeat the previous step twice.
  - c. Crank the engine until it starts. The maximum continuous starter motor cranking time is 20 seconds.
  - d. Verify there are no fuel leaks.
  - e. If the engine does not start, repeat steps a thru c. If the vehicle will not prime and start, contact Suzuki Techline at (800) 934-1616 if necessary.
40. Install the engine cover.

41. Reset the radio presets.
42. Road test the vehicle.
43. **Apply the proper campaign label to the upper radiator support in an area where it will be easily seen and identified, and write your dealer code in the white portion of the label.**

