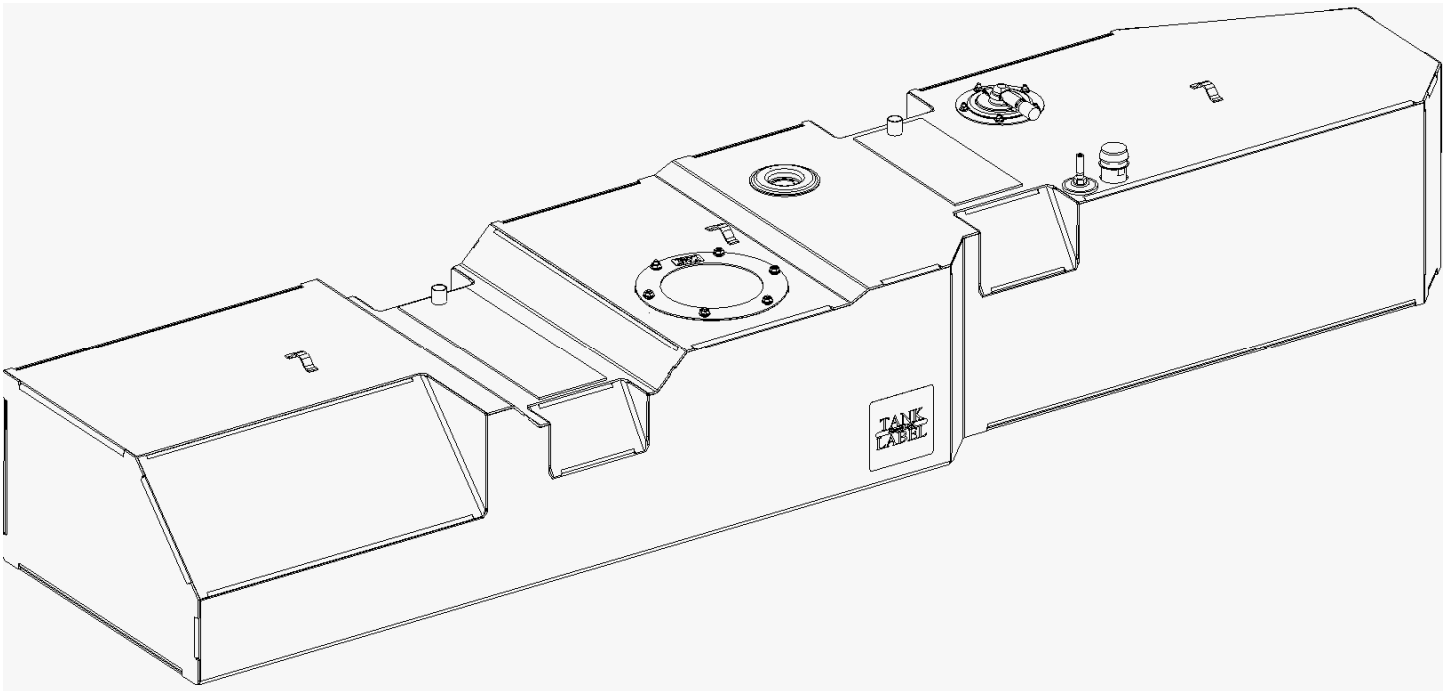
2007–21 TOYOTA TUNDRA
46-GALLON REPLACEMENT SYSTEM

Installation Sheet–750



PREMIER AMERICAN-MADE FUEL SYSTEMS
1444 Fortress Street, Chico CA 95973 ● (800) 442-0056 / (530) 893-5209 ● Fax (530) 893-0204
www.TransferFlow.com

FOREWORD

Thank you for purchasing a Transfer Flow 46-gallon Replacement Fuel Tank System for your 2007—21 Toyota Tundra Gasoline Pickup. Please read the following procedures carefully before starting the installation.

This manual provides the necessary information for the installation of the Transfer Flow fuel system onto your vehicle. All the information and instructions contained in this document are based on our annual model year signoff. We update our instruction sheets based on information obtained during this model year signoff and information provided by OEM companies and our customers. Changes to installation instructions may be made at any time without notice. If you find something we missed or require any additional information, please feel free to contact our Technical Support team at (800) 442-0056 x2.

Transfer Flow fuel systems and parts are intended to be used in conjunction with original manufacturer's equipment or Transfer Flow systems and components.

Our systems and components are not intended to be used in conjunction with other aftermarket fuel systems. Attempting to use our products inappropriately may lead to malfunction and voids the warranty.

NOTICE

Transfer Flow fuel systems and parts are intended to be used in conjunction with original manufacturer's equipment or Transfer Flow systems and components. Our systems and components are not intended to be used in conjunction with other aftermarket systems. Attempting to use our products inappropriately may lead to malfunction and voids the warranty. To ensure that your transfer flow products perform appropriately for many years to come, we ask that you follow these guidelines.

Supplemental Instruction:

- IS-484 (Torque Specifications)
- IS-642 (Weight List)
- IS-854 (Textured Coat Tank)

TABLE OF CONTENTS

SAFETY NOTES

Please read installation instructions before beginning the installation of the Transfer Flow fuel system.

If you would prefer your fuel system be professionally installed, please contact your local dealer or you can browse our list of dealers in your area on our website at www.TransferFlow.com/installation.

Transfer Flow fuel systems are designed for use on stock OEM vehicles. We do our best to foresee how our customers will use and modify their vehicles, but unfortunately, we cannot verify all aftermarket modifications. If your vehicle has had any modifications to the chassis, suspension, fuel system, truck bed, or wheel/tire size is different than stock, please call Transfer Flow before installing one of our fuel systems.

- **Work in a well-ventilated area.**
- **Always wear safety glasses.**
- **The Transfer Flow tank is heavy, please use proper lifting techniques when handling tank.**

CAUTION: DO NOT HAVE ANY OPEN FLAME OR HEAT SOURCE CLOSE TO THE INSTALLATION AREA.

CAUTION: DO NOT OVER FILL.

PLEASE READ THE FOLLOWING PROCEDURES CAREFULLY BEFORE STARTING THE INSTALLATION.

Due to the increased capacity of the Transfer Flow replacement fuel system, the vehicle's "Distance to Empty" (DTE) reading will no longer be accurate. Based on the original 26-gallon capacity and the Transfer Flow tank capacity of 46 gallons, the following are approximate gauge position/gallon readings for the 46-gallon replacement system (may vary depending on gauge and sender tolerances).

Gauge	*Gallons*
EMPTY	7
¼	15
½	27
¾	37
FULL	42

TOOLS & SUPPLIES REQUIREMENTS

Before starting the installation process, review the entire installation instructions. If you have any questions regarding the fuel system or the installation process, please contact Transfer Flow at (800) 442-0056.

Tool List:

- ☐ Safety glasses
- ☐ Air compressor
- ☐ Air nozzle
- ☐ Spray bottle with soapy water
- ☐ Catch pan or spill mats
- ☐ OEM Owner's Manual
- ☐ 13mm open end wrench
- ☐ 7mm socket
- ☐ 10 mm socket
- ☐ 13mm socket
- ☐ 14mm socket
- ☐ 15mm socket
- ☐ Impact gun
- ☐ Socket extensions
- ☐ Mallet
- ☐ Hydraulic jack
- ☐ 0-50 ft-lb torque wrench
- ☐ Ratchet
- ☐ Flat screwdriver
- ☐ Digital multimeter

PARTS LIST/DIAGRAM

Before beginning installation, verify all parts shown below are included in the installation kit. If there are any missing or damaged parts, please contact Transfer Flow at (800) 442-0056.

Parts List:

- 46-gallon Replacement Fuel Tank System (080-01-14225)
- Installation Instructions IS-484 (Torque Specification Sheet)

INSTALLATION INSTRUCTIONS

NOTICE: THIS PRODUCT IS NOT COMPATIBLE WITH VEHICLES THAT ORIGINALLY USE THE 38 GALLON OEM FUEL TANK AND THREE TANK MOUNTING STRAPS. THE TRANSFER FLOW FUEL LINES WILL NOT CONNECT TO THE OEM FUEL LINES IF THE VEHICLE ORIGINALLY USES THE 38 GALLON OEM FUEL TANK.

SECTION 1: Removing the OEM Tank

1. Turn off the key and disconnect the battery.
2. Disconnect the OEM fill hose from the tank using a 10mm socket, then disconnect the wire harness clip from the top of the tank near the rear (see Figure 1).

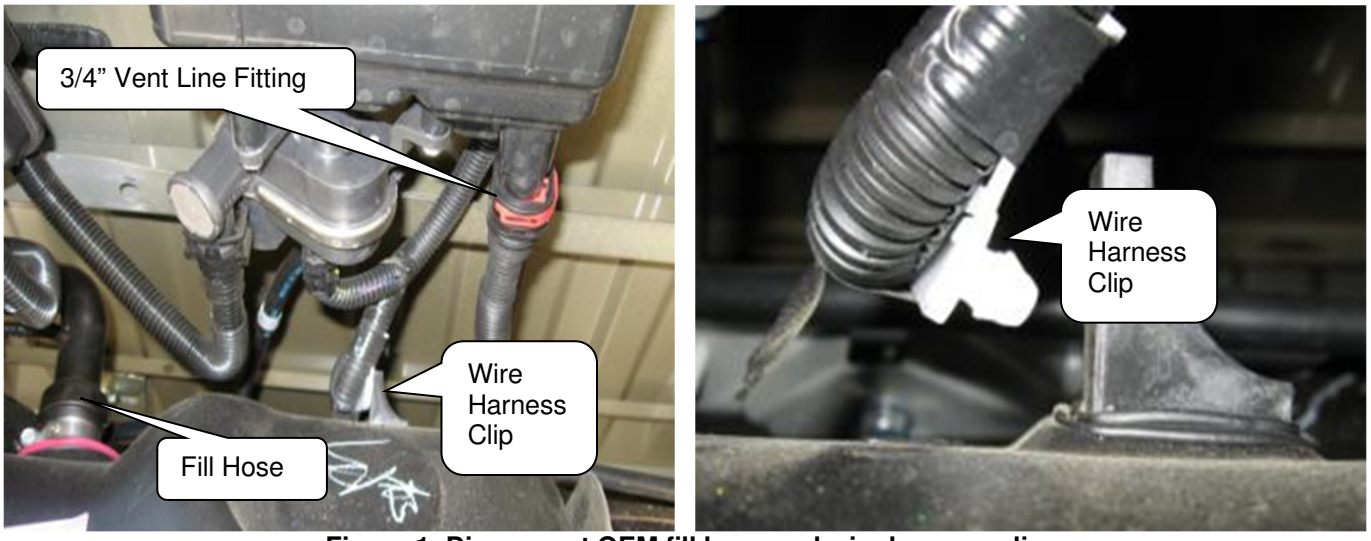


Figure 1: Disconnect OEM fill hose and wire harness clip

3. Disconnect the 3/4" vent line from the Toyota canister (see Figure 2).

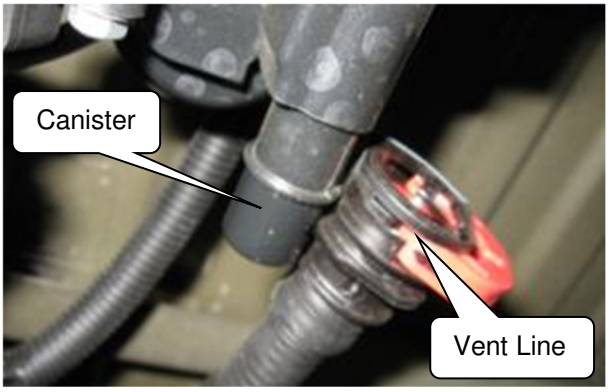


Figure 2: Disconnect vent line from canister

4. Disconnect the breather tube from the filler neck and remove it from the retainer on the top of the frame rail (see Figure 3).

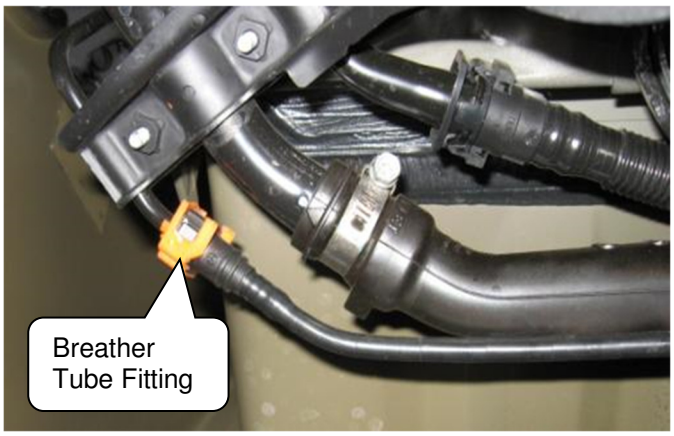


Figure 3: Disconnect breather tube fitting

5. Carefully disconnect both fuel lines from front of the tank (fuel may be under pressure). Take the necessary precautions to capture the fuel (see Figure 4).

CAUTION: THE FUEL LINES MAY BE UNDER PRESSURE. WEAR THE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. USE RAGS TO COVER THE SURROUNDING AREA AND A CATCH PAN TO CAPTURE THE GASOLINE THAT LEAKS FROM THE FUEL LINES.

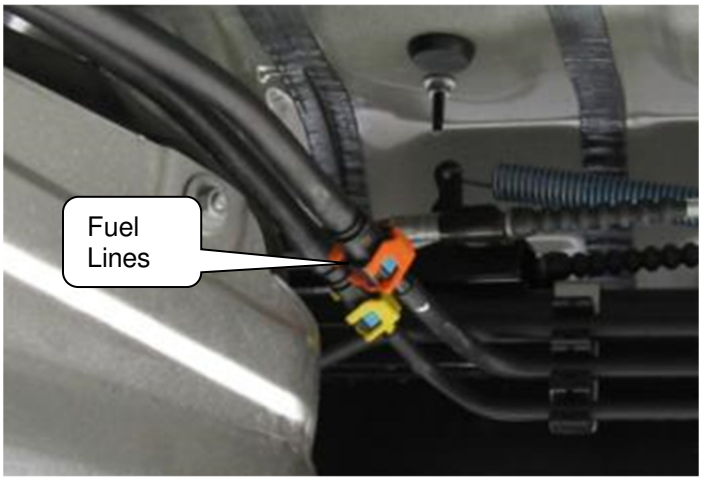


Figure 4: Disconnect fuel lines

6. Place hydraulic jack underneath the OEM fuel tank. Raise jack until it contacts the tank.

7. After the tank is well supported, remove the tank straps using a 14mm socket for the bolts on the frame rail side. The strap is secured using a pin on the driveshaft side. Keep all OEM hardware as it will be used to install the replacement tank.

8. Lower the tank approximately 6” and move towards the drive shaft. This will allow access to the top of the sending unit.

9. Disconnect the electrical connector from the top of the sending unit by depressing the tab on the top of the connector (see Figure 5).

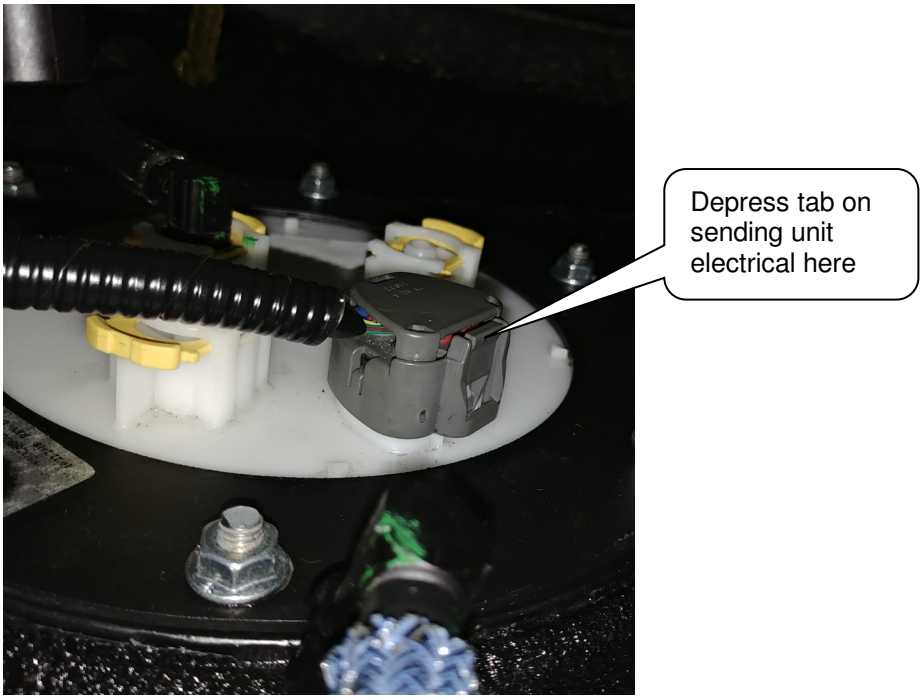


Figure 5: Disconnect electrical connector

Flex Fuel Vehicles Only:

10. Flex fuel vehicles have three fuel lines on the top of the sending unit, see Figure 6.
    - Remove the plastic sending unit cover to access the fuel lines.
    - Disconnect the blue fuel line from the top of the sending unit. Slide the yellow locking tab back to the open position then pull the fitting away from the sending unit.
    - Disconnect the red lines from the top of the sending unit. Slide the yellow locking tab back to the open position then pull the fitting away from the sending unit.
    - Do not disconnect the black fuel line from the sending unit as it will be removed with the entire fuel tank assembly.
    - Do not disconnect the yellow fuel line.

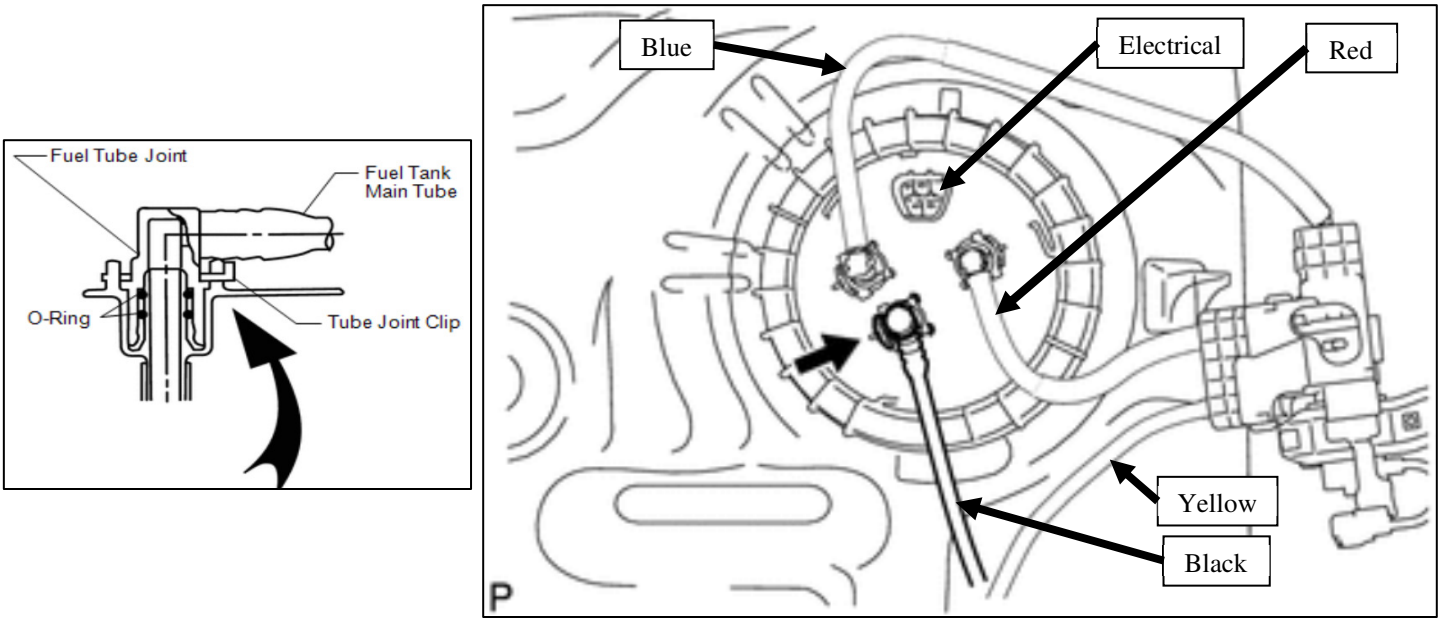


Figure 6: Flex fuel sending unit lines

11. Cut or remove the wire harness clip on the top of the tank on the driver's side of the OEM fuel tank.

12. Lower the tank out from the vehicle making sure nothing snags on the way down.

SECTION 2: Preparing the Vehicle

NOTE: For 2007–13 model year vehicles, the emission canister will resemble the pictures in steps 17 through 19. The port of the emission canister must be modified following those steps.

For 2014–21 model year vehicles, the emission canister will resemble the one shown in Figure 10. No modifications need to be made to this style of emission canister, proceed to step 20.

13. Disconnect the OEM purge hose line from the canister and the hard line (see Figure 7). Save the OEM spring clamp, it will be reused later in the installation.

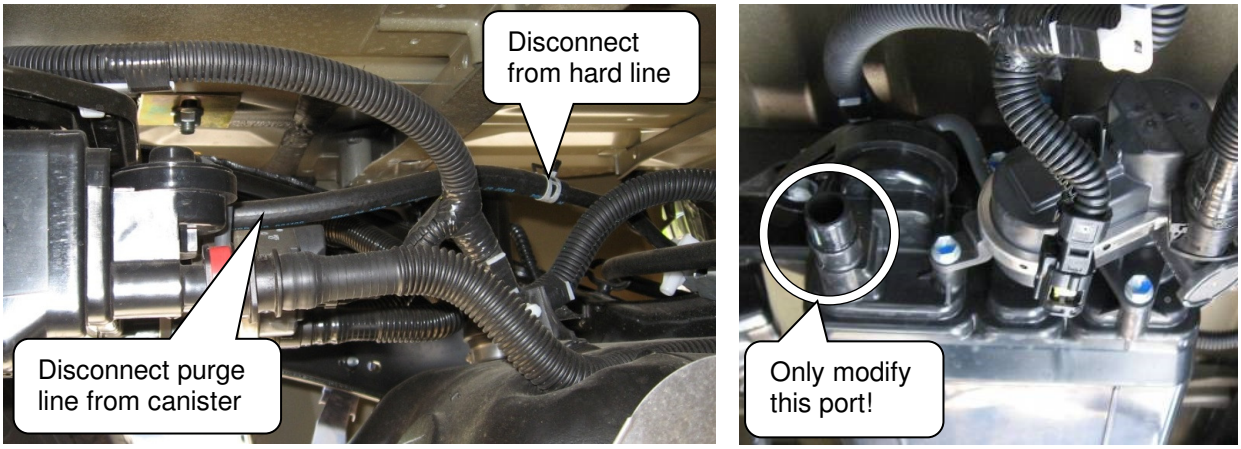


Figure 7: Disconnect OEM purge hose line

14. Locate the 3/4" port that was connected to the OEM tank vent line (see Figure 8).

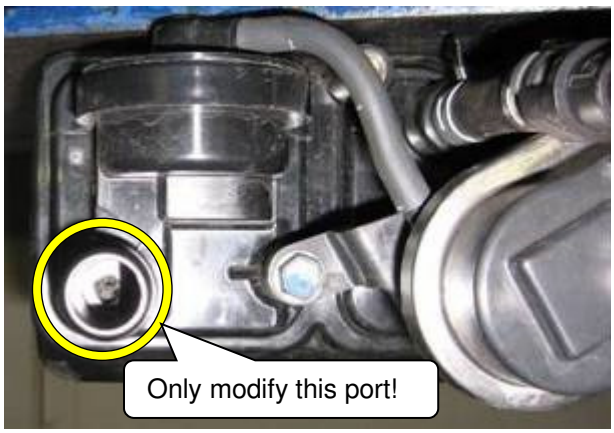


Figure 8: Locate 3/4" port

15. Using a 1/4" drill bit, drill to a depth of 2 1/4" ± 1/8" from the end of the port (see Figure 9). **It is critical that the depth of this hole meet the noted dimension.** Use a mechanical stop, such as a drill bit stop collar, if necessary.

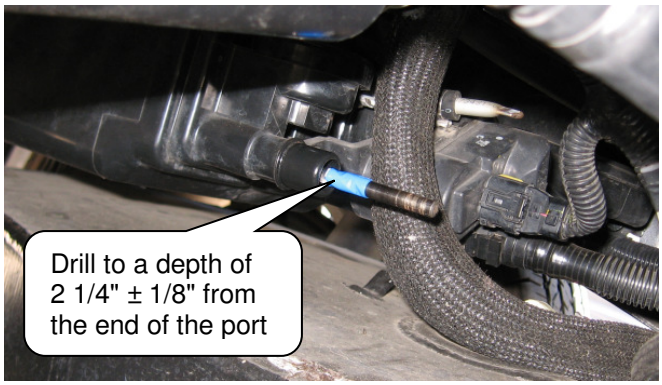


Figure 9: Drill into canister port

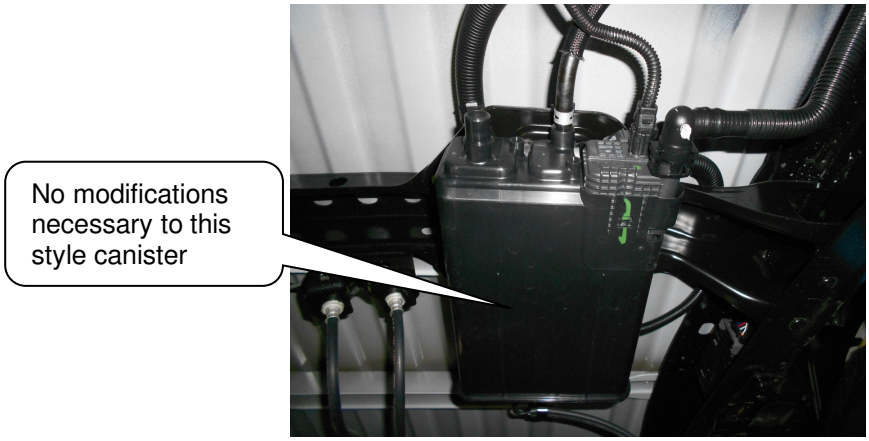


Figure 10: 2014–19 emission canister

SECTION 3: Installing the TFI Canister

16. Locate the emission canister and bracket provided in the Transfer Flow installation kit. The canister bracket is designed to align with one hole in the sheet metal of the vehicle pickup box and two holes in the cross member.

17. If no hole is present in the sheet metal of the vehicle pickup box, the sheet metal will have to be marked and drilled for the clip nut (see Figure 11). If the hole is present in the sheet metal, install one of the provided M-10 clip nuts in the hole in the sheet metal (see Figure 11).

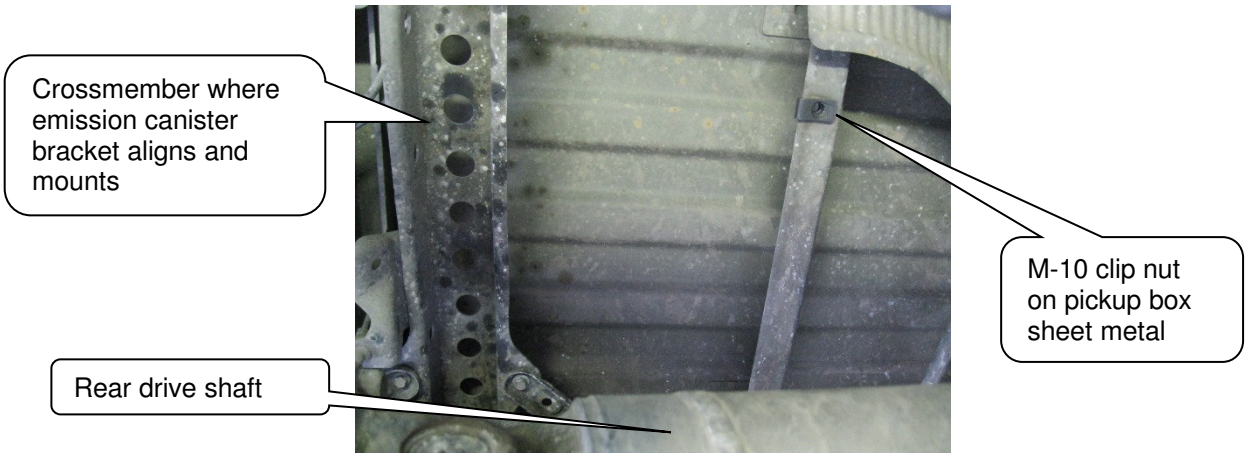


Figure 11: Install M-10 clip nut in sheet metal

18. Verify two M-10 clip nuts are installed on the crossmember side of the canister bracket. Align those two holes with two corresponding holes in the crossmember and align the canister bracket tab on the other side with the hole / M-10 clip in the sheet metal (see Figure 12).

Figure 12: Align bracket with crossmember and sheet metal holes

19. If no hole is present in the sheet metal, mark the sheet metal through the slot in the TFI emission canister bracket (see Figure 13).

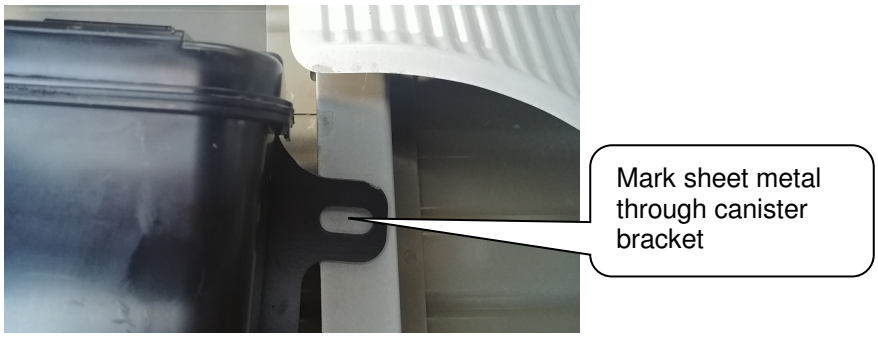


Figure 13: Mark the sheet metal through the canister bracket

20. If necessary, remove the emission canister bracket to facilitate drilling the hole. Mark with a center punch on the sheet metal. Drill a 1/2" hole through the sheet metal flange, taking care not to drill through the bottom of the pickup box.

21. Install one of the provided M10 clip nuts on the sheet metal and install the emission canister bracket.

22. Secure the TFI emission canister and bracket using three provided M-10 bolts and two shims as washers (see Figure 14). Refer to IS-484 for proper torque values.

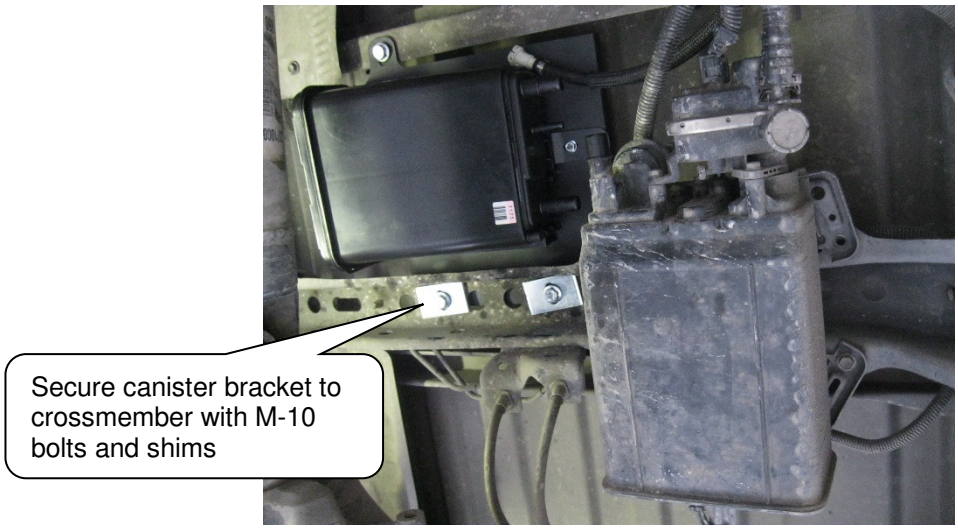


Figure 14: Use shims and M-10 bolts to secure bracket

23. Use the provided emission tube assembly to connect the two emission canisters.

24. Attach the 90° quick connect fitting on the emission tube assembly to the 5/8" vapor port of the additional emission canister (see Figure 15).

25. Attach the large straight quick connect fitting on the emission tube assembly to the 3/4" fresh air port on the Toyota emission canister (see Figure 15).

26. Attach the 5/16" rubber hose on the emission tube assembly to the purge port on the Toyota emission canister and secure with OEM purge line spring clamp (see Figure 15).

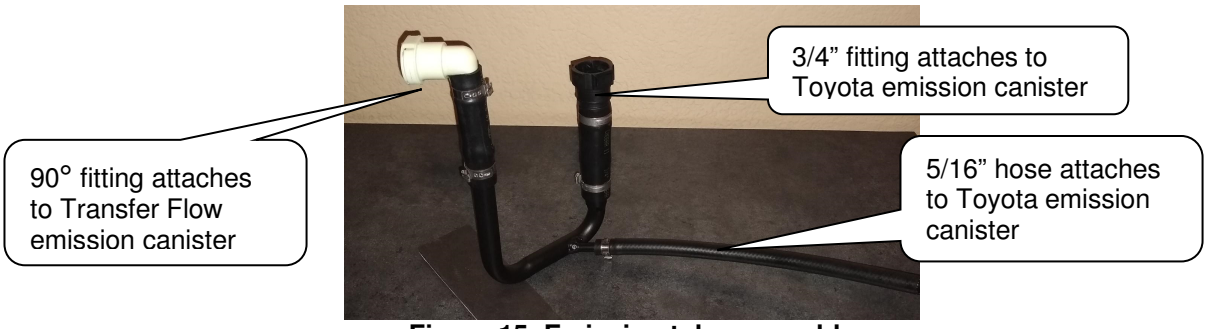


Figure 15: Emission tube assembly

27. Install the emission tube assembly between the two emission canisters (see Figure 16).

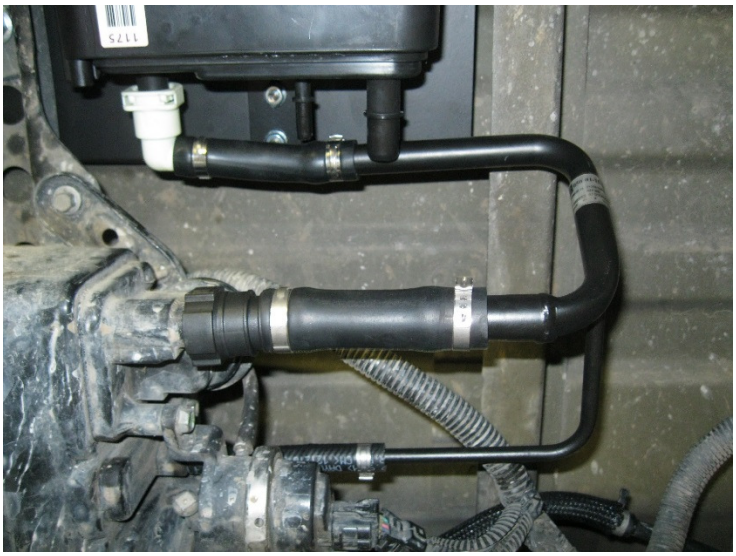


Figure 16: Installed emission tube assembly

28. Route the provided 5/16” rubber hose with quick connect fitting from the purge port on the Transfer Flow emission canister to the Toyota steel line (where the Toyota purge line previously attached) (see Figure 17).

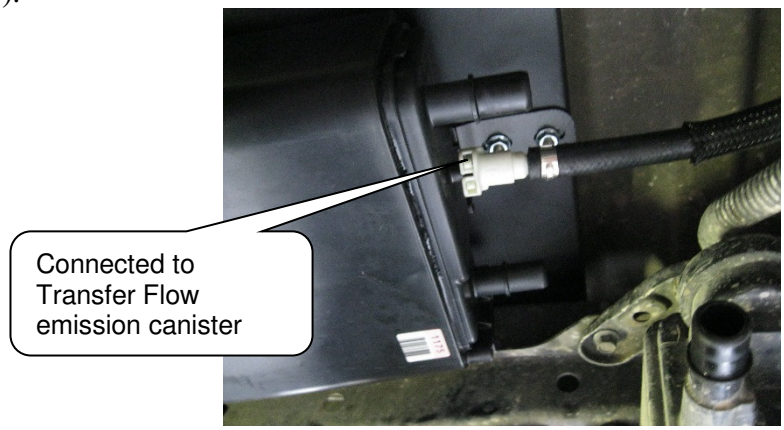


Figure 17: Quick connect to Transfer Flow canister purge port

29. Attach the open end of the Transfer Flow rubber hose to the Toyota steel line by reusing the Toyota spring clamp (see Figure 18).

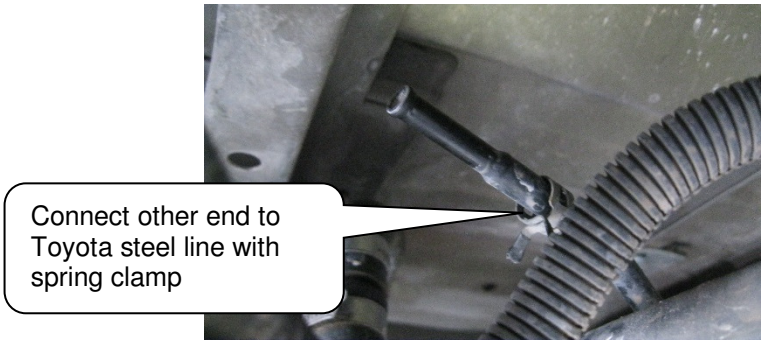


Figure 18: Reuse spring clamp to connect hose to steel line

SECTION 4: Preparing the Replacement Tank

30. Using a 10mm socket, remove the (6) flange nuts that are holding the compression ring and the tank plug in place. Save the flange nuts, compression ring, and the green O-ring. If you need to remove the supply and return lines from the sender, refer to the picture below for reinstallation (see Figure 19).

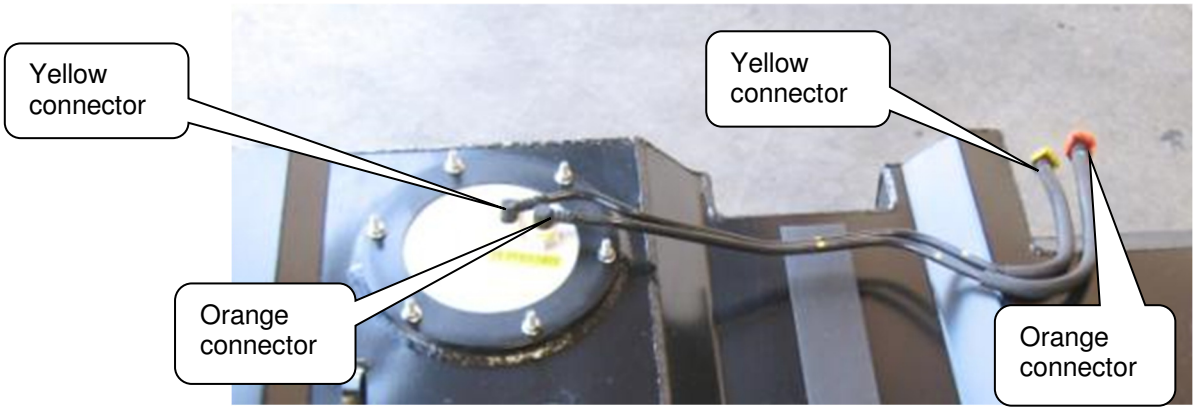


Figure 19: Reinstall location for supply and return lines

31. Using a flat screwdriver and a mallet, remove the mason jar cap securing the sending unit in the OEM tank. Slide the cap over the fuel lines and discard. Remove the sending unit from the OEM tank, leaving the gasket with the tank as it will not be reused.

32. Attach an ohm meter to the two terminals on the top of the sending unit (see Figure 20).

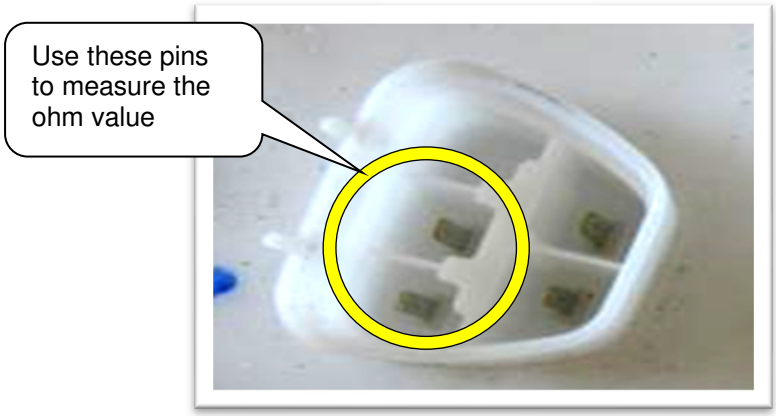


Figure 20: Terminal on sending unit

33. Position the float wire to the bottom stop as if the tank were empty, the meter should read between 402-422 ohms.

34. Rotate the float wire to the top stop as if the tank were full, the meter should read between 8-18 ohms.

35. Make sure the new green O-ring that came with the replacement tank is in place. Orientate the sending unit so the location tab on the sending unit is lined up with the smaller location slot in the new sending unit ring (see Figure 21). Use of the larger slot may cause the float wire to stick. The float should be facing the rear of the tank.

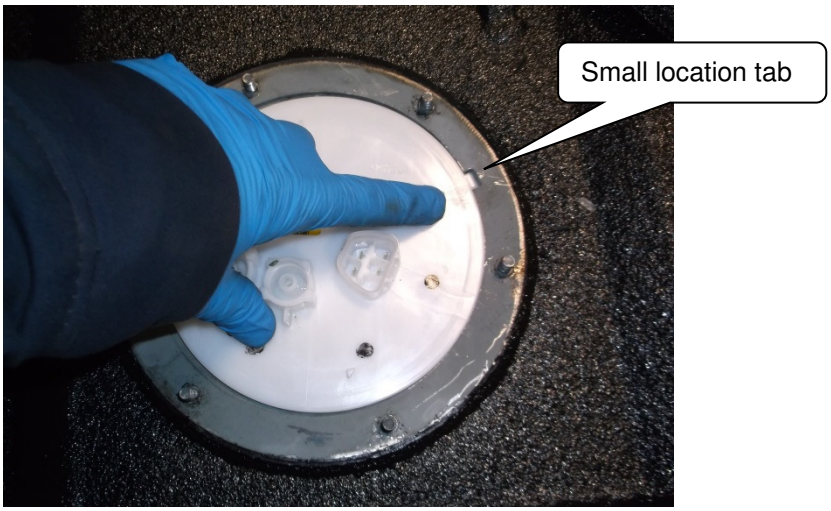


Figure 21: Smaller location slot in sending unit ring

36. Place the Transfer Flow compression ring over the studs and secure the ring to the tank with the (6) flange nuts. Torque to specification using IS-484.

37. Reattach the ohm meter to the sending unit and roll test the tank. Position the tank resting on level ground as if the tank were in the vehicle. The resistance should measure between 402-422 ohms. Turn the tank upside down so the float will be in the full position. The resistance should measure between 8-18 ohms.

38. Install the roll over valve into the replacement tank. Push down and turn the valve clockwise to lock it in place (a little soapy water on the O-ring may make it easier).

39. Install the emissions hose assembly onto the FLV valve on the tank. Remove the red cap from the FLV valve before installing the emissions tube. Install the metal tube assembly onto the FLV valve using the supplied gear clamp (see Figure 22).

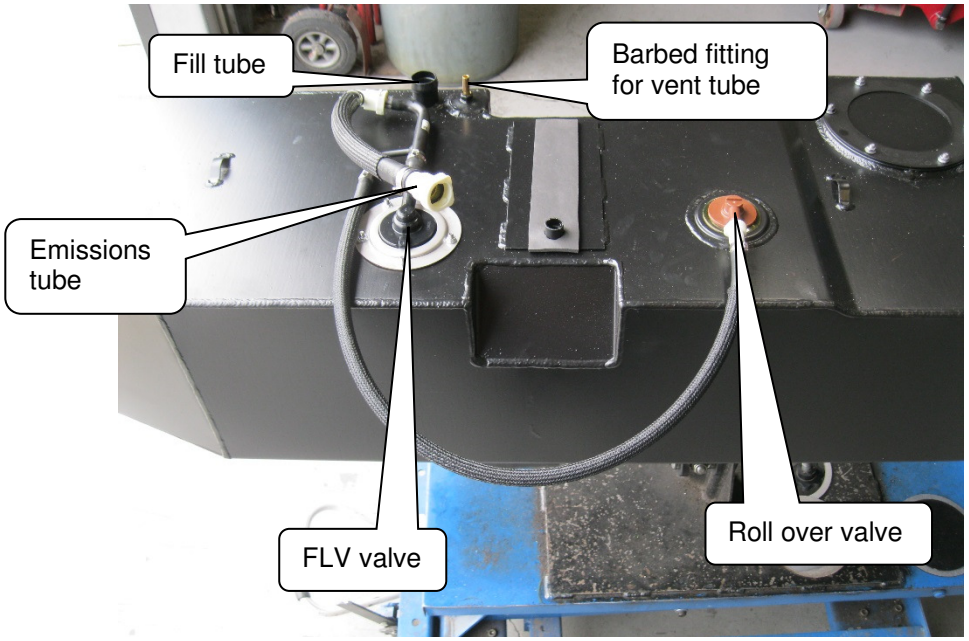


Figure 22: Install the emissions hose assembly

SECTION 5: Pressure Testing the Tank

40. Seal off the supply and return tubes on the sending unit, and the metal tube attached to the FLV valve.

41. Pressurize the tank to a maximum of 5 psi then use a soapy water solution to thoroughly check for leaks around all openings (see Figure 23). If any are present, reseal the affected area and retest.

Figure 23: Pressure test the tank

42. Install the 5/16” vent hose assembly (orange fitting on one end, open hose on the other) onto the brass barbed fitting next to the fill tube. This hose will route up to the OEM filler neck vent. Clamp the hose onto the brass fitting using the supplied gear clamp (see Figure 24).

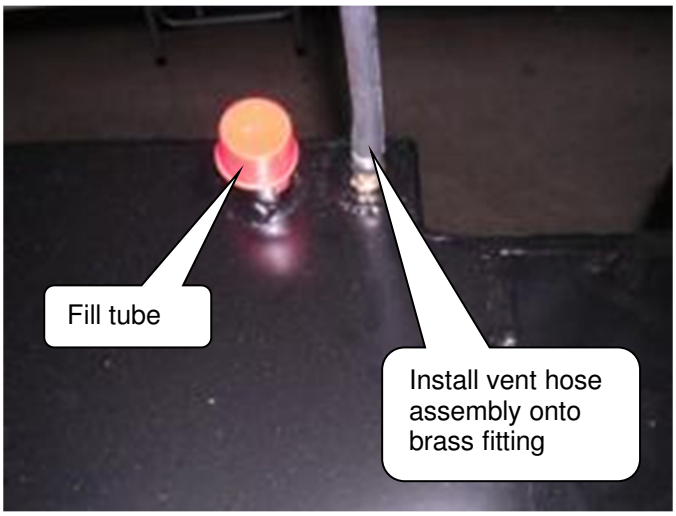


Figure 24: Install vent hose assembly

43. Install the 90° fitting of the 5/8” emission tube onto the 5/8” steel tube that of the emissions hose assembly. The straight connector on the other end of the 5/8” emission hose will be connected to the Transfer Flow canister once the tank is installed.

44. At this point the replacement tank should look like the photo below, it must be pressure tested with no leaks, and it should have been roll tested to make sure the float arm is not hitting anything inside the tank (see Figure 25).

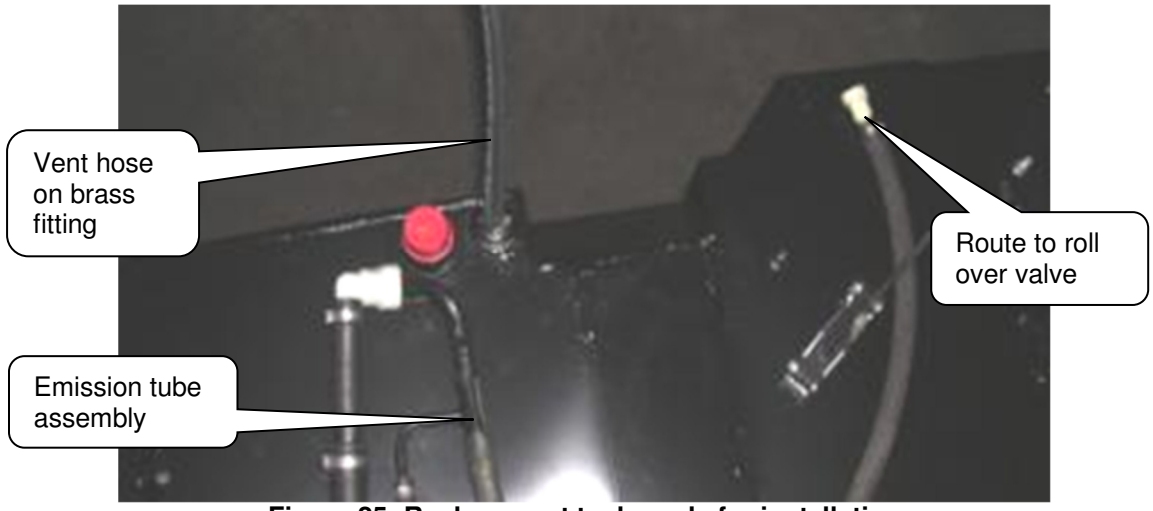


Figure 25: Replacement tank ready for installation

SECTION 6: Installing the Replacement Tank

45. Locate the upper legs for the front and rear strap. Install these using the OEM pins removed from the OEM straps (see Figure 26).

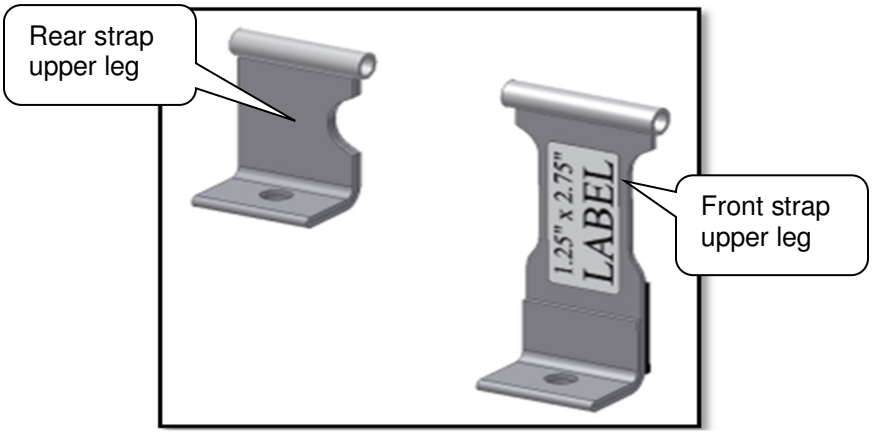


Figure 26: Upper legs for front and rear strap

46. Failure to reinstall the OEM cotter pins may cause the straps to come loose. The clevis pin must have the cotter pins reinstalled (see Figure 27).

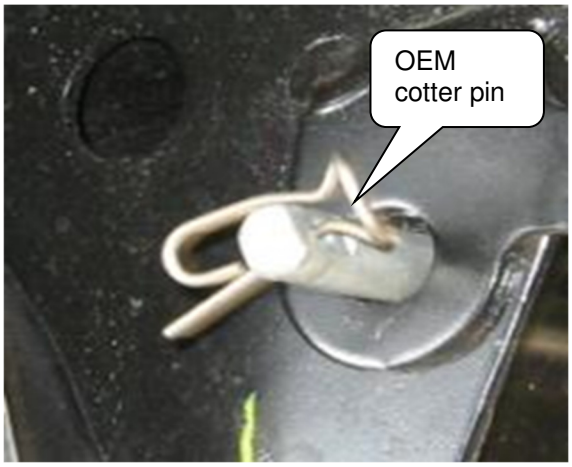


Figure 27: OEM cotter pins with clevis

47. Position the tank under the vehicle and slowly raise it until the tank is roughly 6-8 inches from the final position. Connect the sending unit electrical connector.

Flex Fuel Vehicles Only:

48. As shown in Figure 6 and Figure 28 (below), reconnect the fuel lines to the sending unit.
    - Connect the blue fuel hose to the port on the drive shaft side of the tank. Lock the yellow tube joint clip into place, ensuring that the fuel fitting is properly seated in the sending unit port.
    - Connect the red fuel hose to the port on the driver's side frame rail side of the tank. Lock the yellow tube joint clip into place, ensuring that the fuel fitting is properly seated in the sending unit port.

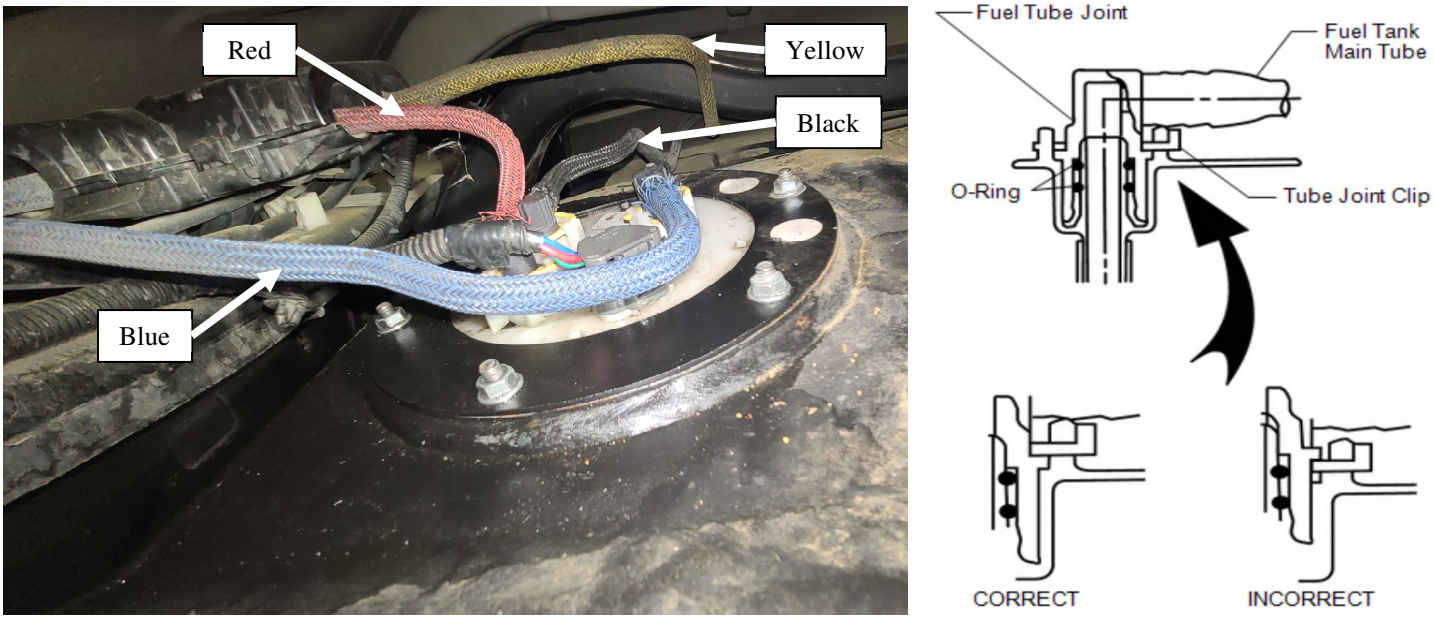


Figure 28: Flex fuel sending unit and fuel lines

49. Making sure everything is clear, guide the vent line to continue raising the tank into position.

50. Route the long hose with quick connect fitting over the crossmember and connect to roll over valve (see Figure 29).

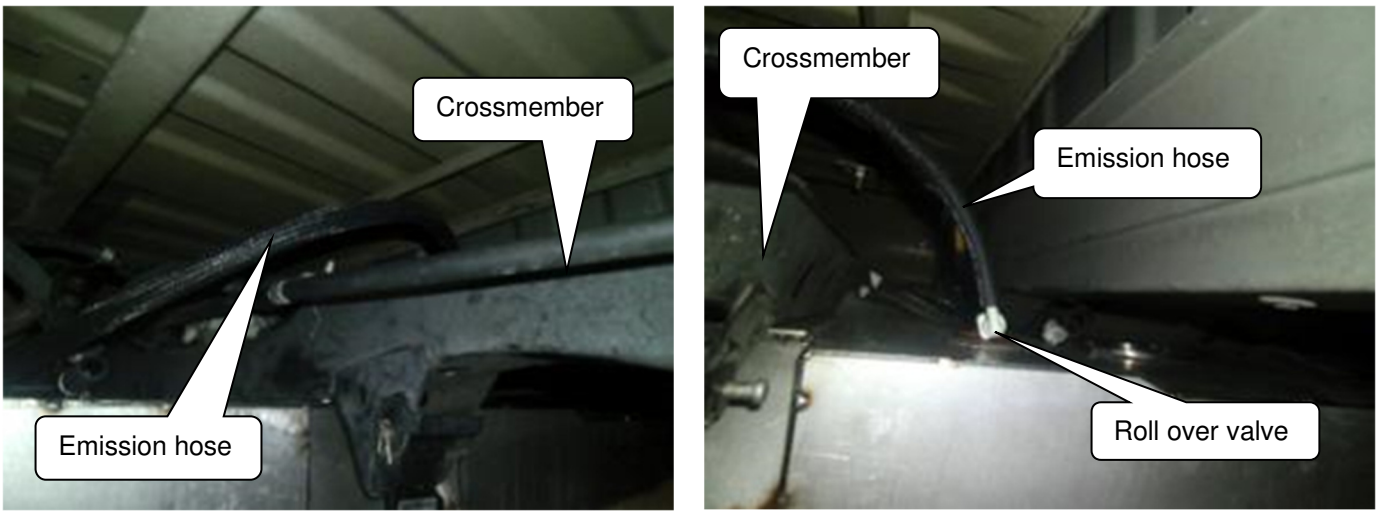


Figure 29: Route emission hose over crossmember and connect to roll over valve

51. Connect the fuel lines that run toward the front of the tank with the orange and yellow plastic connectors to the formed metal lines on the frame rail (see Figure 30). The yellow connector is smaller so it can only go on one tube.

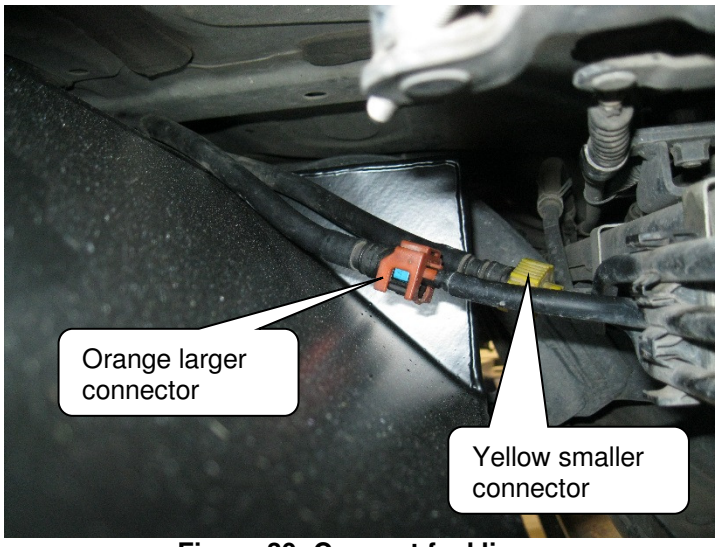


Figure 30: Connect fuel lines

52. Locate the 7/8” hole on each crossmember, fit the two 3/4” locating pins on the replacement tank into the holes on the crossmembers (see Figure 31).

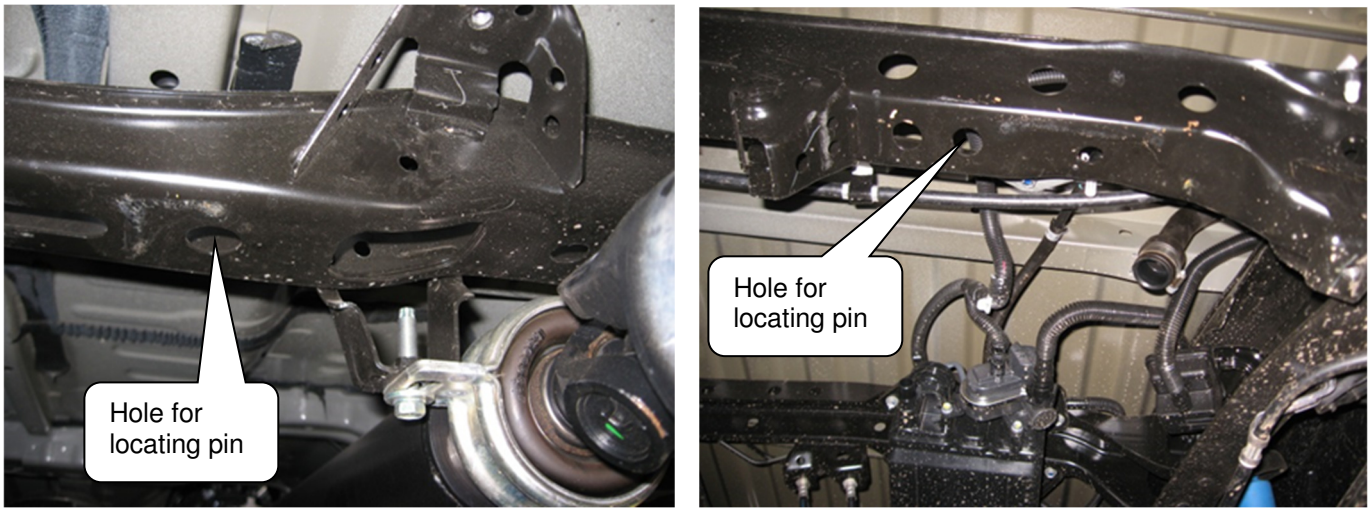


Figure 31: Holes on crossmembers for locating pins

53. If the tank has the textured coat, use IS-854 for the strap installation.

54. Loosely install the rear lower strap (040-OB-14285) using the OEM hardware on the frame rail side and the M10x35mm bolt and nut from the kit to secure the drive shaft side (see Figure 32).

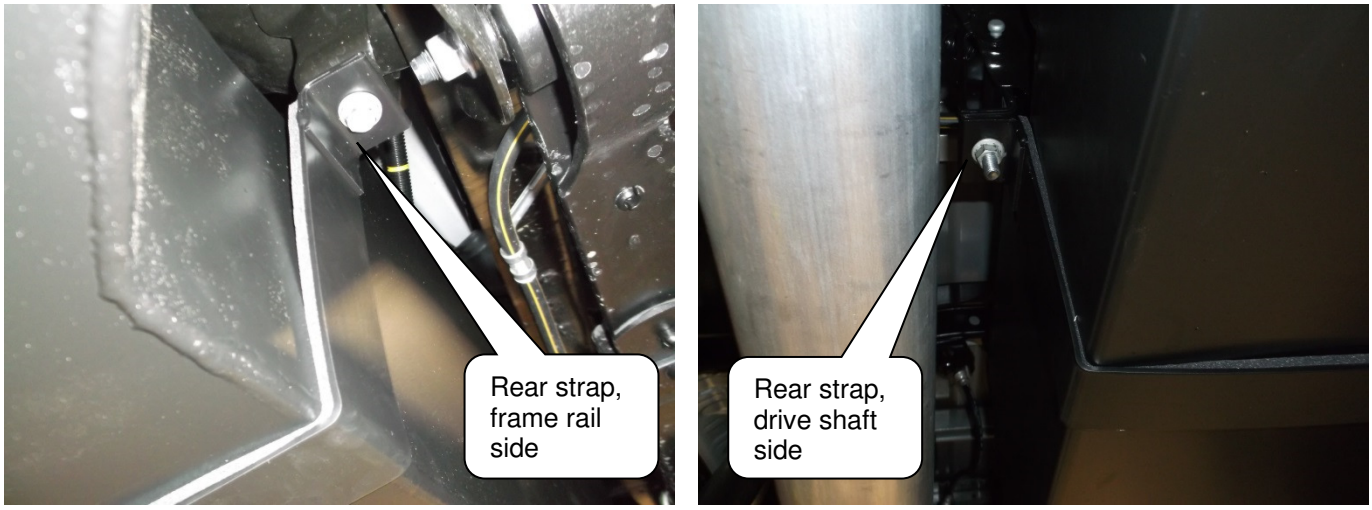


Figure 32: Rear strap, frame rail and drive shaft

55. Loosely install the front lower strap (040-01-14506) using the OEM hardware on the frame rail side and the M10x35mm on the drive shaft side (see Figure 33).

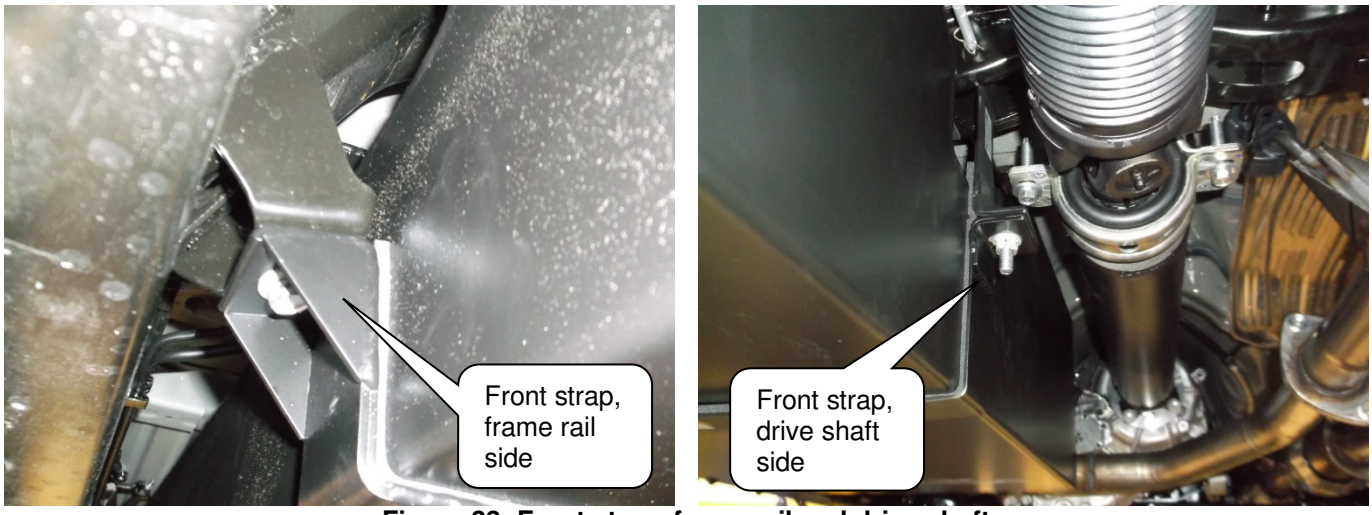


Figure 33: Front strap, frame rail and drive shaft

56. Confirm the tank straps are hanging straight down and there is roughly 1 1/4” of clearance between tank, differential, and drive shaft.

57. Secure and torque the hardware, drive shaft side first (15mm socket and 13mm open end wrench). After the inside hardware is secure, torque the OEM frame bolts.

58. Connect the fill hose onto the fill tube on the replacement tank and secure using the OEM gear clamp.

59. Connect the 3/4” quick connect fitting from the emissions tube on top of the fuel tank to the open port on the Transfer Flow emission canister (see Figure 34).

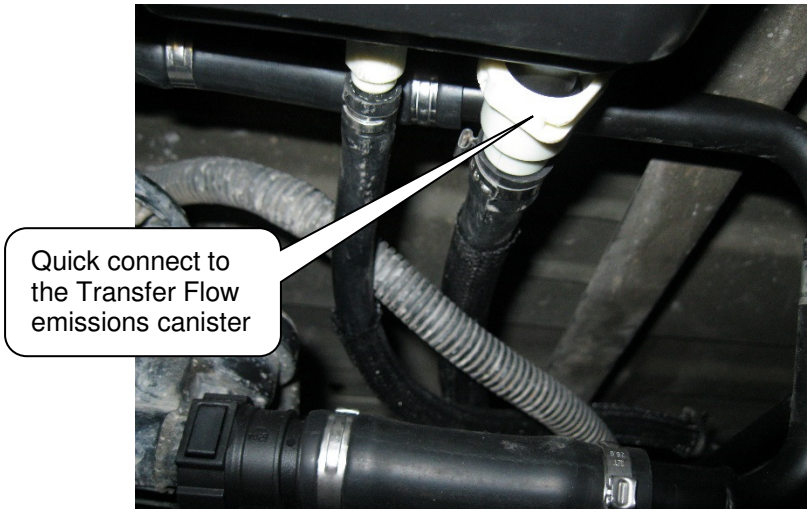


Figure 34: Connect emissions tube to Transfer Flow canister

60. Connect the 5/16” quick connect fitting (orange) from the brass vent to the vent tube on the OEM filler neck and push in on the lock (see Figure 35).

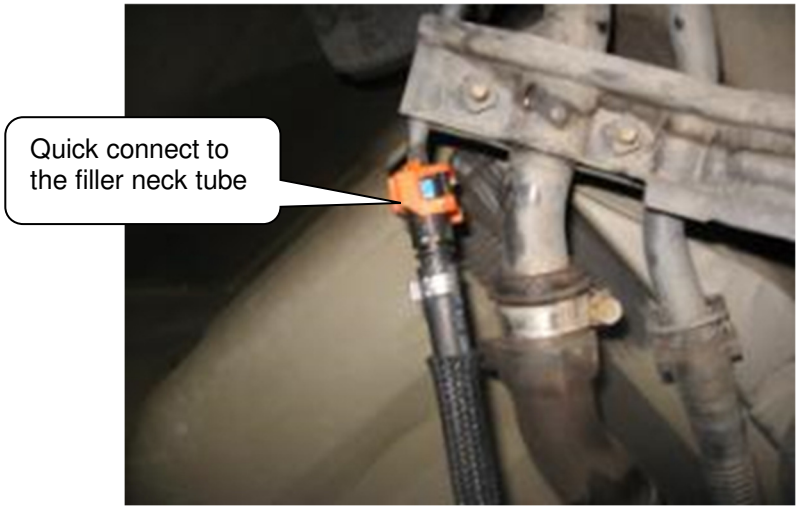


Figure 35: Connect vent tube on the OEM filler neck tube

SECTION 7: Finalizing the Installation

61. Make sure all the fuel, fill, vent lines, and electrical wires are not kinked or pinched, close to any heat source, or in contact with any sharp or moving objects. Confirm that the vent line has a continuous downwards slope from the filler neck to the tank.

62. Reconnect the battery cables.

63. Reconnect both the electrical connectors on the fuel pump control module.

64. Fill the vehicle with fuel. Start the engine and check for normal engine and fuel gauge operation. If any problem is detected, shut the engine off and troubleshoot the issue.

65. Affix the Door Post Label and Tire & Loading Labels (see Figure 36). If your specific fuel tank is not on the IS-642 weight list, then disregard the tire and loading label.

Figure 36: Affix Door Post and Tire and Loading Labels

66. Complete Final Installation Checklist below.

- ☐ All hose clamps are tight and secure
- ☐ All nuts and bolts are torque to spec (See IS-484)
- ☐ Mounting brackets and straps are secure
- ☐ Sending unit bolts are secure and torque to spec
- ☐ All fuel lines are secure with no kinks
- ☐ Tank does not interfere or rub with other vehicle components
- ☐ Tank calibration is accurate

Congratulations on a successful installation!

Please refer to the supplied Owner's Manual if you have any questions on the operation of this system.