

**Transfer Flow, Inc.**  
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Chico, CA 95973

**Phone:** (530) 893-5209  
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Aftermarket & OEM Fuel Tanks  
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Refueling Tanks  
Retrofit Fillneck Kits  
Auxiliary Fuel Systems  
Replacement Fuel Systems

January 7, 2014

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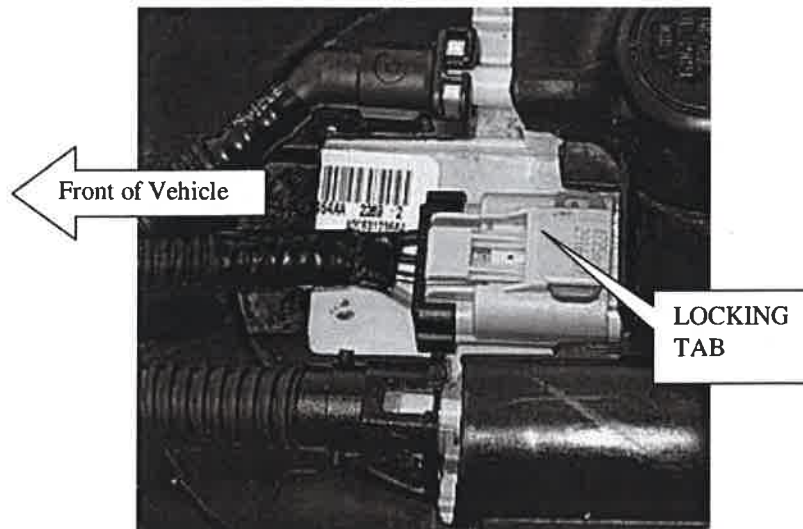
**THANK YOU FOR PURCHASING A TRANSFER FLOW 50.0-GALLON REPLACEMENT FUEL SYSTEM FOR YOUR 2007-2014 DODGE 108-120" CA DIESEL CAB CHASSIS. PLEASE READ THE FOLLOWING PROCEDURES CAREFULLY BEFORE STARTING THE INSTALLATION.**

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

1. Disconnect the battery cables.

**REMOVING THE OEM TANK:**

2. Loosen the clamps securing the filler hose and vent hose to the OEM tank. Remove the fill hose and vent hose from the OEM fillneck.
3. Disconnect the electrical connector from the sending unit. First slide the red locking tab out approximately 1/8" using either needle nose pliers or a small flat blade screwdriver. Compress the tab near the wire end of the connector and pull it away from the OEM sender.



4. Disconnect the fuel supply and return lines from the draw and return tubes on the OEM sending unit. It is necessary to compress the nylon clips in order to disconnect the supply and return female fittings from the OEM sender. These parts are delicate so care should be taken when removing the supply and return connectors.



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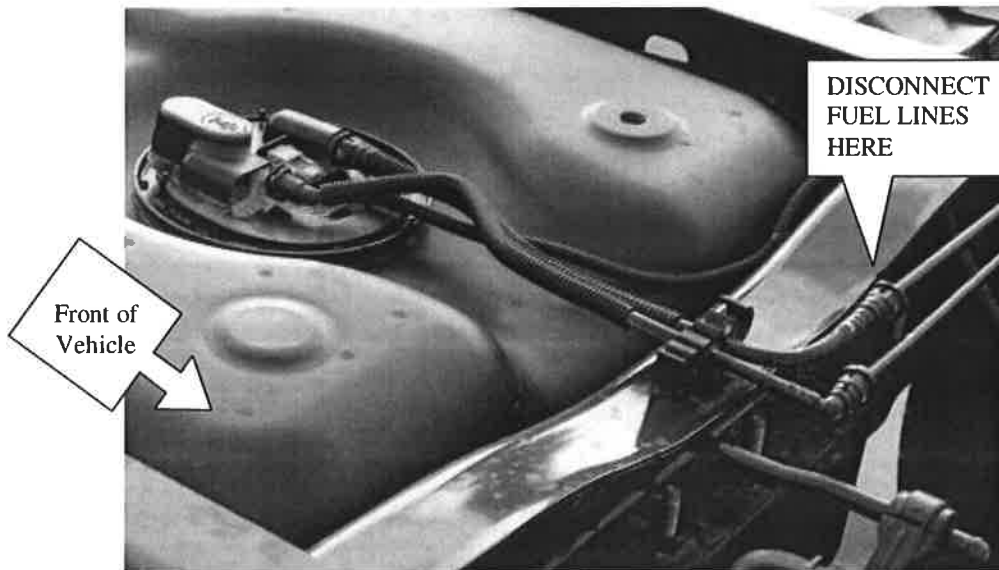
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**CAUTION: FUEL MAY BE UNDER PRESSURE AND MAY LEAK FROM THESE DISCONNECTED FUEL LINES. KEEP THE OPEN ENDS AWAY FROM ANY HEAT SOURCE, AND PLACE A DRIP PAN BENEATH THEM.**

5. Place a hydraulic jack underneath the OEM fuel tank. Raise the jack until contact with the tank is made.
6. After making sure the tank is well supported, loosen the OEM mounting straps. Remove and discard each OEM strap.
7. Slowly lower the OEM fuel tank making sure that both the fill and vent hoses are not damaged while the tank is being lowered. Remove the OEM fuel tank from the vehicle.
8. **OEM AFT TANK ONLY:** If replacing an OEM aft axle tank, disconnect the OEM fuel lines just in front of the OEM crossmember. Fuel line extensions will be installed later.



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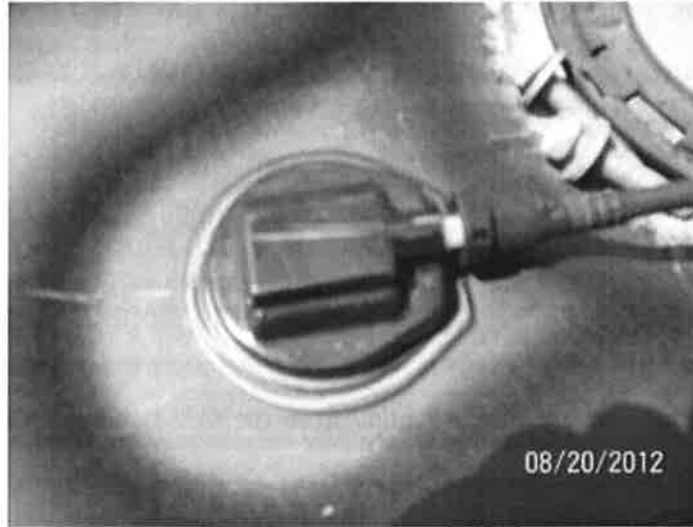
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9. **On 2013-2014 Model Years Vehicles:** Disconnect the vent hose from the aft tank, then remove the vent hose assembly from the truck and discard it as it will no longer be used.



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TFI TANK PREPARATION:

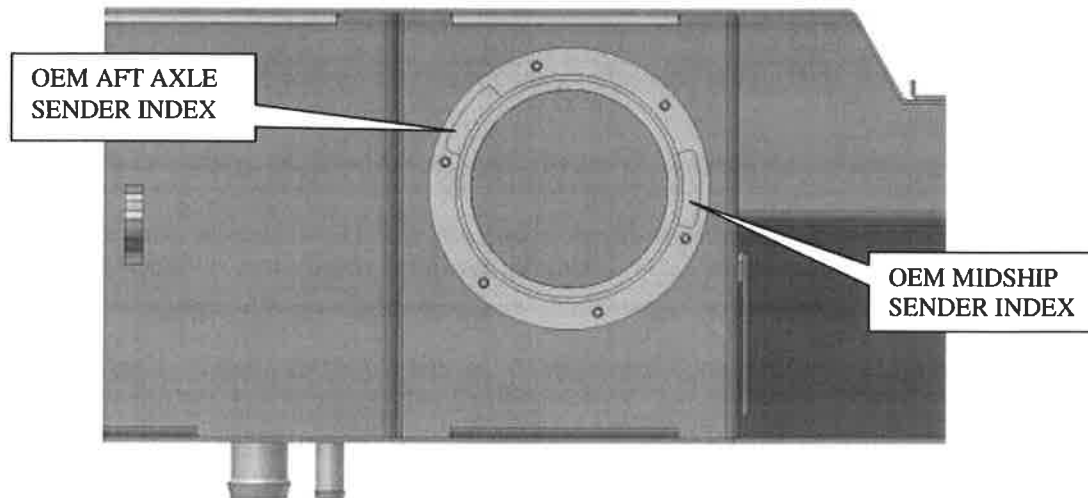
10. Using a flat blade screwdriver and hammer, remove the metal compression ring that secures the OEM sending unit to the OEM tank. Remove the OEM sender from the tank.

**CAUTION: THE OEM SENDER AND RESERVOIR WILL BE FULL OF FUEL.  
USE A DEEP OIL PAN TO CAPTURE THE FUEL.**

11. Attach one lead of an ohmmeter to the sender wire male pin (third pin from left). Attach the other lead of the ohmmeter to the ground wire male pin (second pin from left). See OEM sender electrical connector detail on the isometric print. With the float at the bottom stop, as if the tank were empty, the meter should read between 198-222 ohms. Rotate the float wire to the top stop, as if the tank were full, and test to verify that the resistance is between 16-24 ohms.
12. Remove the OEM internal retaining clips from the OEM sender and the OEM fuel lines. These clips will not be needed.
13. Remove the compression ring and cover plate from the TFI tank. Discard the blank cover plate. The TFI tank comes with a new o-ring. Confirm that the surface for this o-ring is clean and free of dirt or other debris.
14. Place the TFI compression ring over the OEM draw and return tubes on the top of the OEM sending unit. Carefully position the OEM sender into the opening in the TFI tank.

**OEM MIDSHIP SENDER:** Orientate the OEM sender so the float rotates towards the front of the tank. Line up the index tab on the sending unit top plate with the index groove on the TFI tank. This will ensure proper alignment of the sending unit.

**OEM AFT AXLE SENDER:** Orientate the OEM sender so the float rotates towards the front of the tank. Line up the index tab on the sending unit top plate with the index groove on the TFI tank. This will ensure proper alignment of the sending unit.



**CAUTION: IMPROPER INSTALLATION OF THE SENDING UNIT WILL CAUSE PROBLEMS WITH THE FUEL GAUGE. CORRECT ORIENTATION IS ESSENTIAL FOR CORRECT FUEL GAUGE OPERATION.**

15. While pushing the OEM sender down against the TFI sender ring, position the compression ring over the studs. Secure the compression ring to the bolt ring with (6) 6mm flanged nuts. Set the torque at 50 in-lb  $\pm$  5 in-lb.

**CAUTION: DO NOT OVER TIGHTEN THE NUTS OR PERMANENT DAMAGE TO THE STUDS MAY OCCUR.**

16. Confirm that the cam hole in the TFI tank is clean and free of paint or score marks. If paint is on the inside side surface of the opening, use either a fine grit sand paper or solvent, and remove the paint. After applying a light coat of oil to the cam rollover valve o-ring, install the rollover vent valve into the cam hole on the TFI tank. Rotate the valve clockwise so the port will point towards the driver side frame rail.
17. Reattach the ohmmeter leads as described previously. With the tank resting on level ground, positioned as if it were in the vehicle, the resistance reading should again be between 198-222 ohms. Turn the tank upside down and measure the resistance again. The ohmmeter should read between 16-24 ohms. If this is not the case remove the sending unit and determine if there is a problem. If the sending unit is not installed correctly it may prevent the float arm from rotating.

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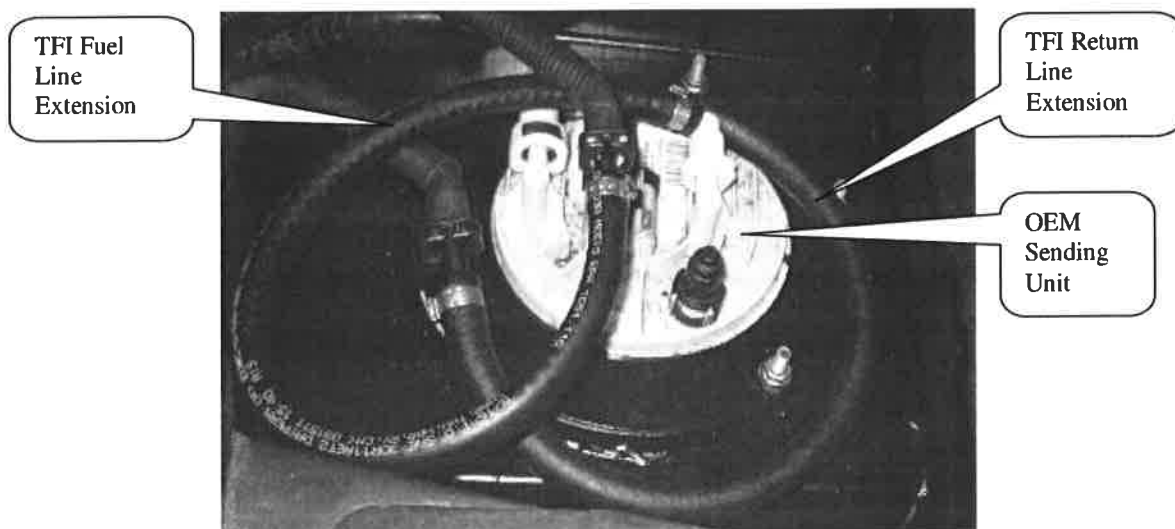
18. The tank must now be pressure tested. After all the openings are sealed, punch a small hole in the fillneck red plastic cap and pressurize the tank to a maximum of 5 psi. Using a soapy water solution, thoroughly check for leaks around all openings. If any are present, reseal the affected area and retest. Remove all of the plastic caps after testing is complete.

**FUEL LINE, RETURN LINE AND WIRE HARNESS EXTENSIONS (OEM AFT AXLE ONLY):**

19. Find the fuel line extensions in the kit. They are approximately 6 ft. long with plastic fittings on each end. Connect the 5/16" fitting to the OEM return line. Connect the 3/8" fitting to the OEM supply line.
20. Route the TFI fuel line extensions over to the driver side frame rail. Continue routing them toward the front of the vehicle. Make sure to route them through the openings on the side of the crossmembers. Do not route these lines underneath or over the OEM crossmembers.
21. Find the wire harness extension in the TFI kit. The harness extension has the mating connectors. Connect the TFI harness to the OEM harness and then run it along the same route as the fuel line extensions.

**FUEL LINE AND RETURN LINE EXTENSIONS (OEM MIDSHIP ONLY):**

22. Find the fuel line extensions in the kit. They are approximately 18" long with plastic fittings on each end. Connect the 5/16" fitting to the OEM return line. Connect the 3/8" fitting to the OEM supply line.



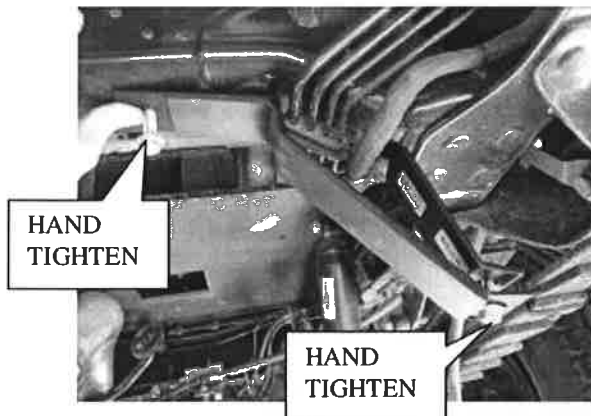
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TFI TANK INSTALLATION:

23. Install the rear key straps, part number 040-01-15768, into the "T"-slot on the rear crossmember.
24. Install the rear overhead strap, part number 040-01-15763. Be sure to install the provided shim as shown below. Use a 10mm nut to hold the drive shaft side in place. This nut will fasten to an OEM stud that is connected to the crossmember (On some vehicles the stud may not be present. For these applications, use the 10mm bolt that is provided). Hand-tighten this nut (or bolt). Use a 12mm bolt and nut to secure the other side (driver side frame rail). Again, only hand-tighten this nut and bolt. This will hold the overhead strap in place while the tank is installed.



**CAUTION:** Note in the above picture that a shim is located between the overhead bracket and rear crossmember. It is critical that the shim be located in this position.

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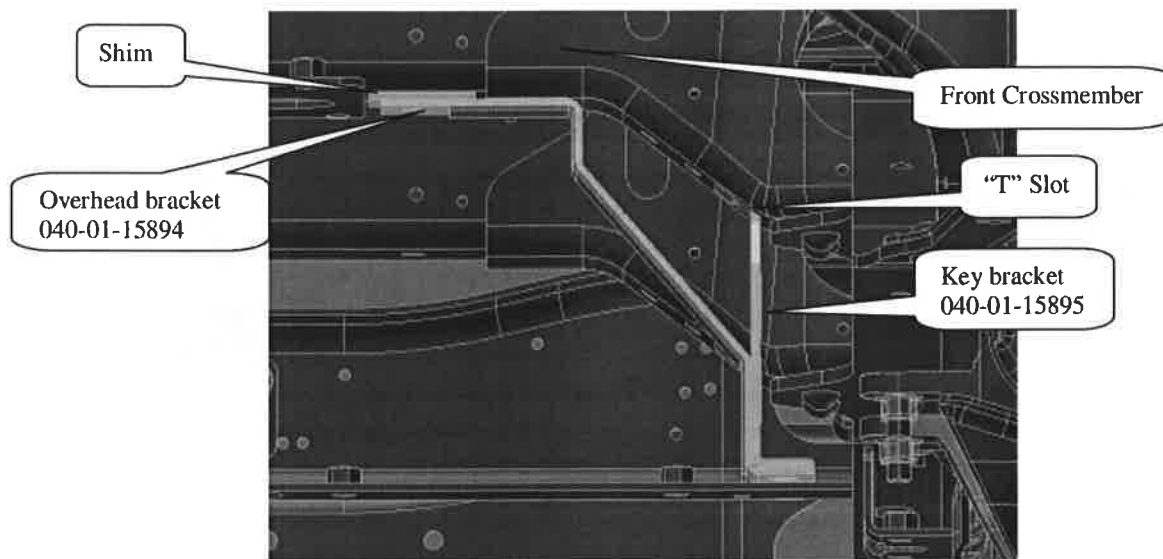
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25. Install the front key strap, part number 040-01-15895, into the "T"- slot on the front crossmember.
26. Install the front overhead strap, part number 040-01-15894. Be sure to install the provided shim between the rear crossmember and overhead strap as shown below. Use a 10mm nut to hold the drive shaft side in place. This nut will fasten to an OEM stud that is connected to the crossmember (On some vehicles the stud may unthread itself or may not be present at all. For these applications, use the 10mm bolt that is provided). Hand-tighten this nut (or bolt). Use a 12mm bolt and nut to secure the other side (driver side frame rail). Again, only hand-tighten this nut and bolt. This will hold the overhead strap in place while the tank is installed.



27. Position the TFI fuel tank underneath the vehicle in the midship mounting location. The fill and vent tubes must be facing toward the driver's side frame rail. As the tank is being raised into position, connect the wire harness to the OEM sending unit. Make sure to "lock" the OEM electrical connector in place by sliding the red tab back into place. Connect the female side of the fuel line extensions installed above to the TFI tank. Coil the line extensions around the sending unit as shown in the picture above to prevent kinking.
28. Raise the tank within ½" of it's final position. Note that the rear strap notch on the drive shaft side should be centered on the rear crossmember. Once aligned raise tank to final position.



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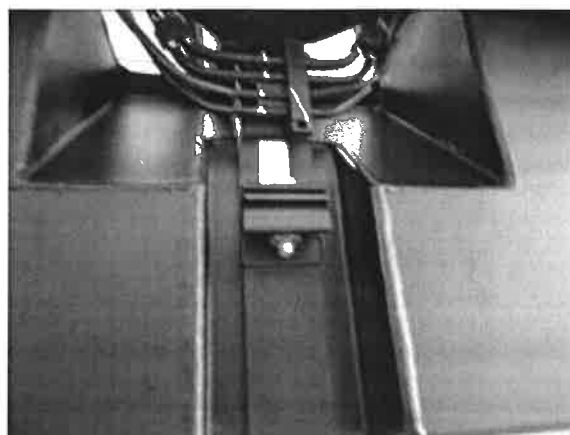
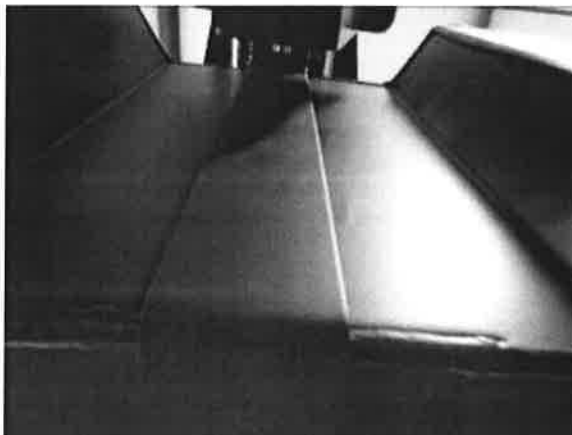
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29. Remove the nuts and bolts that were holding the rear upper strap in place and install the rear lower strap. The rear strap is 040-AN-10142. Reinstall the hardware on the drive shaft side of the strap first then install the hardware on the frame rail side of the strap. Leave the nuts and bolts hand tight.



30. Install the front lower strap. The front strap is 040-AP-10142. Reinstall the hardware on the drive shaft side of the strap first then install the hardware on the frame rail side of the strap. Leave the nuts and bolts hand tight.



31. Make sure that the tank is not touching the frame rail, if it is you will need to push the tank to the driveshaft side as much as possible. Torque the frame rail nuts to 32 ft-lb  $\pm$  2 ft-lb then torque the driveshaft side bolts to 32 ft-lb  $\pm$  2 ft-lb.

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FILLNECK AND VENT HOSE INSTALLATION

32. This tank was provided with dual fillneck and vent locations. This allows this tank to be used in multiple applications. Connect the OEM fillneck to the TFI tank. Use the OEM clamps to secure both the fill and vent hose to the tank. Set the torque at 25 in-lb  $\pm$  2 in-lb.
33. Use the fillneck and vent plug assemblies that are provided in the TFI kit to seal the unused fillneck and vent tube. Use the provided gear clamps to secure these assemblies. Set the torque at 25 in-lb  $\pm$  2 in-lb.

FINALIZE THE INSTALLATION

34. Make sure all fuel and vent lines and electrical wires are not kinked or pinched, close to any heat source, or in contact with any sharp edges. Use the provided large and small nylon ties to secure loose hoses and wire harness to each other. Confirm that the vent line has a continuous downward slope from the fillneck to the fuel tank.
35. Reconnect the battery cables.
36. Fill the replacement tank with fuel. Start the engine and check for normal engine and fuel gauge operation. If any problem is detected, shut off the engine and repair the connection. The following are approximate gallon readings versus gauge position for the 48-gallon diesel replacement system. Your system may vary depending on gauge and sender tolerances.

EMPTY	13 Gallons
¼ FULL	21 Gallons
½ FULL	29 Gallons
¾ FULL	35 Gallons
FULL	45 Gallons*

\*Maximum Capacity = 48 Gallons

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ISOMETRIC DRAWING IS

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REFER TO DRAWING FOR MORE INFORMATION

