

Important: Please read these instructions carefully and completely before starting the installation.

TITAN™ Fuel Tanks

INSTALLATION INSTRUCTIONS Generation V

Extended Capacity Replacement Tank for DODGE Diesel Trucks

For Dodge truck models RAM 2500 and RAM 3500 Quad Cab Long Bed

Required Tools:

- 1 ea. Ratcheting socket driver
- 1 ea. 15 mm deep socket
- 1 ea. 13 mm socket
- 1 ea. 12 inch long socket driver extension
- 1 ea. 15 mm end wrench
- 1 ea. 13 mm end wrench
- 1 ea. Medium flat blade screw driver
- 1 ea. Medium Phillips head screw driver
- 1 ea. Needle nose pliers
- 1 ea. Torque wrench handle to fit 13 mm socket
- 1 ea. Mallet or small hammer
- 1 ea. Ruler or tape measure
- 1 ea. Sharp knife or box cutter

Recommended Optional Tools:

- 1 ea. Hydraulic transmission jack
- 1 ea. Vehicle hoist

Parts List:

- 1 ea. Extra heavy-duty cross link polyethylene fuel tank for the following Dodge diesel trucks:

Quad Cab, Long Bed

Tank Identification: "DODGE CCLB"

Note: *Each tank has one of the above identifications on its top. Please check to be sure the tank is properly identified as the one to fit your truck.*

The following parts (Sending Unit Mounting Assembly) should already be installed on the tank (top flange and 5/16" nylon locking nuts should be loosely installed).

- 1 ea. Sending Unit Assembly, consisting of:
 - 2 ea. 98 0000 0103 Ford/Dodge Sending Unit, 1/2 Flange w/studs

- 1 ea. 98 0000 0106 Ford/Dodge Bottom Flange Flat Gasket (mounted inside tank).
- 8 ea. 3/8" plated flat washers.
- 8 ea. 99 0000 0102 8869 5/16" Flat Push-On Retainers.
- 1 ea. 03 0000 0105 Dodge Viton "O" Ring Gasket
- 1 ea. 03 0000 0104 Dodge Sending Unit Top Flange
- 8 ea. 99 0000 0101 5/16" Nylon Locking Nut.

- 1 ea. 98 0101 0000 Rollover vent valve (installed in top of tank)
- 1 ea. 98 0000 0102 Rollover vent valve, mounting gasket
- 1 ea. 03 0000 0102 1/2" X 42" Vent Line Hose
- 1 ea. 03 0000 0109 3/4" M NPT X 3/4" Barb Fitting
- 1 ea. 03 0000 0108 1" M NPT X 3/4" F NPT Bushing
- 1 ea. 98 0000 0107 3/4" X 3/4" X 1/2" Reducing Line Tee Connector
- 2 ea. 99 0000 0104 1/2" to 1" Gear Hose Clamp
- 2 ea. 99 0000 0106 1/2" to 1 1/4" Gear Hose Clamp
- 1 ea. 03 0101 0000 Dodge Quad Cab Long Bed Strap Set (front & rear)
- 2 ea. 99 0000 0103 Rubber Strap Bushing

- 1 ea. 03 0102 0000 1/4" Vent Kit Assembly for 2003+ vehicles—complete
- 1 ea. 98 0000 0104 SMC PVDF Check Valve 695-4B4B-B
- 1 ea. 98 0000 0105 EJ RT8-4BN 1/2" X 1/2" X 1/4" Barbed Reducing Tee
- 1 ea. 03 0000 0106 EJ LO-4BN 1/4" X 1/4" X 90 deg. Barbed Elbow
- 1 ea. 03 0000 0107 12" Vent Hose 1/4"
- 2 ea. 99 0000 0104 1/2" to 1" Gear Hose Clamp

Optional Parts List:

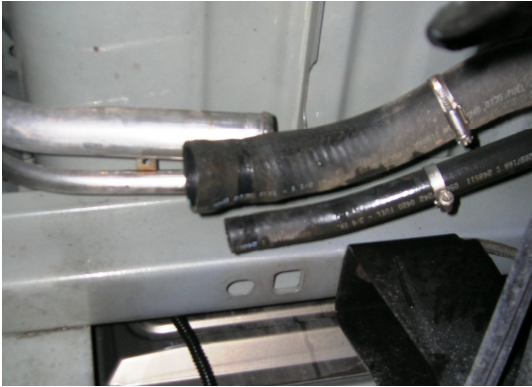
- 1 ea. 99 0101 0000 TITAN™ Shield

Note: The Dodge tank straps are identified by designations cut into the very bottom of the strap. These designations are:

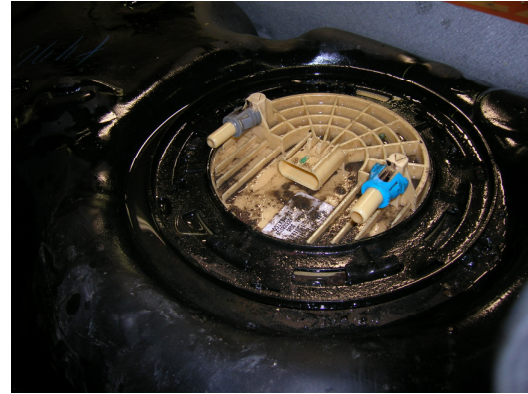
2003+ models: Quad Cab Long Bed: "QL"

Step Description

- 1 Place the vehicle on a hoist that leaves the entire underside of the frame *Unobstructed.*
- 2 Drain all the fuel from the original equipment tank using a pump or siphon. In some cases Dodge tanks have a screen at the tank inlet which won't allow a siphon hose to enter. In this case, it may be necessary to drive the vehicle until fuel is as low as possible in the tank.
- 3 Disconnect 1 1/2" fuel tank full hose and 3/4" vent line hose from fill spout, leaving them attached to the tank (See Fig. 1).



(Fig. 1) Disconnect 1 1/2" fill hose and 3/4" vent line from fill spout leaving them attached to OEM tank.



(Fig. 2) Be sure to clean the sending unit and surrounding area before removing sending unit.

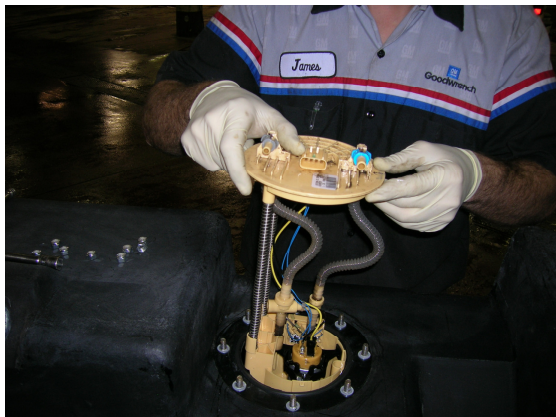
- 4 Disconnect electrical connection, feed line and return line from the sending unit. Press in the tabs on the connection fittings to release fuel lines.
- 5 Support the original equipment tank.
- 6 Loosen original equipment tank straps by undoing inside bolts first using 15 mm deep socket.
- 7 Remove original equipment tank with its straps from the vehicle.
- 8 Tuck any wiring harness, differential breather hose (if applicable), and brake lines up on top of the frame as the new tank will need to be positioned next to the frame for its entire length.

Note: Some truck models may be equipped with a wiring harness for gooseneck and 5th wheel trailers. This will need to be moved to a new location and secured once the new tank is installed—generally behind the tank is best.

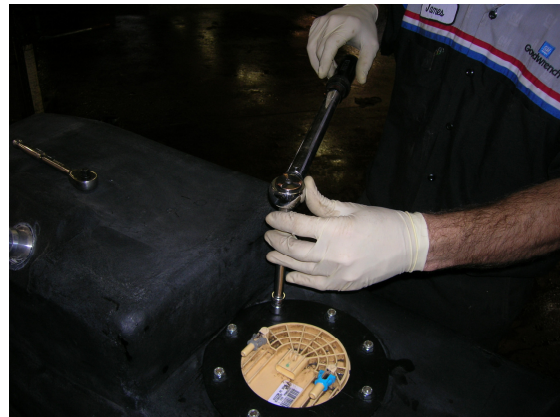
- 9 Remove the sending unit from the original equipment tank by rotating the hold-down ring counter-clockwise and carefully lifting the unit out. Be sure to clean the sending unit and the surrounding area thoroughly before removing the sending unit (See Fig. 2).
- 10 Remove the factory "O" ring gasket from the sending unit. Do not use on new tank.
- 11 Remove fill line hose and vent hose from original equipment tank.
- 12 The new TITAN™ fuel tank comes with sending unit mounting hardware assembled. Remove the 5/16" nylon locking nuts from the studs holding the top flange. Remove the top flange. You will see the "O" ring gasket in place under the flange. Leave the "O" ring gasket, studs, washers and retainers assembled as they are.

Note: Check the two 1/2 flanges mounted inside the tank to be sure the flat gasket is in place between the flanges and the inside top of the tank. Also, be sure to check the 1/2 flanges to be sure they are seated properly and do not overlap.

- 13 CHECK THE $\frac{1}{2}$ FLANGES INSIDE THE TANK TO BE SURE THEY ARE SEATED FLAT AND NOT OVERLAPPING. Make sure the flat gasket is in place between the $\frac{1}{2}$ flanges and the top inside surface of the tank.
- 14 Carefully place the sending unit into the tank on top of the "O" ring gasket, rotate it (carefully so as not to displace or roll the "O" ring gasket) so the fuel lines are positioned at the *same* angle as in the original equipment tank. If the fittings point too far either direction they will not hook up properly or the float will press against the side of the tank resulting in improper operation of the fuel gauge.
Note: Many of the Dodge sending units are spring-loaded to "telescope" into the tank. If your sending unit appears too long to go into your new TITAN™ fuel tank, you may find if you press down gently the unit will compress and fit perfectly into the tank (See Fig. 3).
- 15 Replace the top flange on the studs, on top of the sending unit, so as to hold it down securely.
- 16 Use the $\frac{5}{16}$ " nylon locking nuts to tighten down the top flange. **Tighten to 12 foot pounds (ft. lbs) of torque using torque wrench.** Be sure to tighten in a "star" pattern, starting with the four studs adjacent to where the $\frac{1}{2}$ flanges meet so as to prevent the flanges from overlapping, and to ensure all nuts are equally tightened and the "O" ring gasket is properly seated. Carefully "snug" the nuts equally before tightening to specification (See Fig. 4).



(Fig. 3) Carefully place sending unit into the TITAN™ fuel tank on top of "O" ring gasket.



(Fig. 4) Tighten nylon locking nuts on the top flange to 12 ft. lbs of torque. Tighten in a "star" pattern.

- 21 If not already installed; screw $\frac{3}{4}$ " Male NPT X $\frac{3}{4}$ " Hose Barb Fitting into 1" Male NPT X $\frac{3}{4}$ " Female NPT Bushing, and then install these assembled fittings into tapped 1" hole which is next to 1 $\frac{1}{2}$ " fill hose King Nipple.
- 22 Remove 1 $\frac{1}{2}$ " fill hose and $\frac{3}{4}$ " vent hose from original equipment (OEM) tank. Install the 1 $\frac{1}{2}$ " fill hose on the King Nipple on the new TITAN™ tank.
- 23 Install $\frac{3}{4}$ " OEM vent hose on the $\frac{3}{4}$ " Hose Barb Fitting on the new TITAN™ tank. Be sure the curved end of the vent hose is installed on the hose barb.
- 24 Measure 8" inches from the end of the $\frac{3}{4}$ " vent hose installed on the tank (the curved end) and cut the hose at this mark. Install the $\frac{3}{4}$ " X $\frac{3}{4}$ " X $\frac{1}{2}$ " Reducing Line Tee Connector in the $\frac{3}{4}$ " vent hose with the $\frac{1}{2}$ " hose barb pointed toward

- the rear rollover vent valve. Secure the hose on the fitting with the Gear Hose Clamps provided.
- 25 Install the 1/2" Vent Line Hose provided with the new TITAN™ tank onto the tank's rear Rollover vent valve (if not already installed) and secure with hose clamp provided.
 - 26 Install the other end of the 1/2" Vent Line Hose onto the 1/2" barb of the Reducing Line Tee Connector which was installed in step number 24 and secure with hose clamp provided.
 - 27 On the 1/2" Vent Line Hose, measure back 4" from the end installed in step 26 above, cut and install the 1/2" X 1/2" X 1/4" Barbed Reducing Tee which is part of the 1/4" Vent Kit Assembly. Install so that 1/4" vent line, with elbow on the end, is pointed horizontally away from the tank. **Note:** *When installing the Barbed Reducing Tee, securely install the side of the tee closest to the 3/4" vent line. Leave the barb away from the 3/4" vent line loose as it will need to be disconnected briefly when the tank is lifted into the truck (See Fig. 5).*
 - 28 IF the optional TITAN™ Shield is NOT to be installed with the tank, you will need to install Rubber Strap Bushings now. Remove the adhesive backing from one of the rubber bushings supplied. Place the rubber bushing, adhesive side down, on the inside bottom of the front tank mounting strap. Place it so it is centered in the bottom of the strap and press it securely into place. Install the second rubber bushing supplied in a similar fashion into the rear strap (See Fig. 6)



(Fig. 5) This shows final configuration for vent line system. Vent line on side of Vent Kit Assembly farthest from 3/4" OEM vent line should be left loose as it will not be connected permanently until tank is lifted into place and 1/2" vent line hose is threaded over the top of the truck frame.



(Fig. 6) If TITAN™ Shield is NOT to be installed with the tank, then install Rubber Strap Bushings in tank mounting strap. Center the bushings in the bottom of the straps.

- 29 The TITAN™ tank straps will reuse the original equipment mounting bolts, bolt holes and hanger brackets. Hang the outboard side of the front strap first; it will clip into the hanger bracket and should hang on the inside of the vehicle frame. Carefully grasp the strap and bend it down out of your way for the moment.
- 30 Attach the rear strap in similar fashion to the front. Once again carefully bend it

out of your way and leave it loose for the moment (See Fig. 7).



(Fig. 7) Carefully bend straps down out of the way in preparation for lifting tank into place.



(Fig. 8) Photo shows final installation of fill hose and vent line hoses on vehicle's fill spout. Note the 1/4" Vent Kit Assembly hose is securely fastened to the fill spout. The 1/4" vent is necessary to prevent vacuum build-up in your TITAN™ fuel tank.

- 31 If the optional TITAN™ Shield was ordered, place it under the tank with the open end toward the front of the tank. When installing the TITAN™ Shield, do not install the rubber strap bushings.
- 32 Place tank (and shield if included) on a hydraulic transmission jack. Lift the tank high enough to reconnect the sending unit electrical connection, as well as the fuel lines.
- 33 Once all connections are securely attached, lift the tank the rest of the way into place with the transmission jack.
- 34 Attach the inboard side of the rear strap by starting the OEM bolt about 1/2 of the thread length. Leave the bolt loose.
- 35 Attach the inboard side of the front strap by starting the OEM bolt about 1/2 of the thread length. Make sure everything is fitting properly and tighten both strap's bolts into place.
- 36 Route the 1/2" Vent Hose Line from the rear Rollover vent valve over the vehicle frame to the 1/2" barb on the reducing tee. The 1/2" line will pass above the 1 1/2" fill hose.
- 37 Attach the 1 1/2" fuel tank fill hose to the vehicle's fill spout. If the hose kinks you may have to shorten it slightly so that it fits straight.
- 38 Attach the 3/4" vent hose line on the vehicle fill spout.
- 39 Run the 1/4" vent line up the fill spout and attach securely with a nylon tie. Point the vent's 90 degree elbow downward (See Fig. 8).
- 40 Double check all hose lines for kinking or crushing. If any of the hoses are kinked or crushed, the tank will not fill or perform properly.
- 41 Make sure ALL mounting hardware, clamps, bolts, etc. are properly installed and tight.
- 42 Lower vehicle, fill tank completely with diesel fuel and check for leaks.

Be sure to return the completed warranty registration for your new TITAN™ fuel tank; or you can register on-line at www.titanfueltanks.com
You will find your tank's serial number located approximately ½ way up the driver's side towards the rear of the tank.



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