

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

TITAN™ Fuel Tanks

INSTALLATION INSTRUCTIONS Generation V



DODGE MEGA CAB SHORT BED

Extended Capacity Replacement Tank for DODGE Diesel Trucks

For Dodge truck models RAM 2500 and RAM 3500 with Mega Cab Short 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 or pneumatic transmission jack
- 1 ea. Vehicle hoist

Parts List:

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

Mega Cab, Short Bed

Tank Identification: "DODGE MCSB"

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. 99 0000 0102 8869 5/16" Flat Push-On Retainers.
 - 1 ea. 02 0000 0106 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. 02 0000 0112 1/2" NPT-M x 3/4" Hose Barb Elbow (installed in top of tank)
- 1 ea. 03 0000 0102 1/2" X 50" Vent Line Hose
- 1 ea. 03 0000 0112 3/4" x 22" Vent Line Hose
- 1 ea. 02 0000 0113 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 0103 0000 A Dodge Mega Cab Short Bed Strap SET (front & rear)
- 4 ea. 99 0000 0113 Universal Strap Shims (for straps marked "A" following part no.) Two required per strap bolt.
- 2 ea. 99 0000 0103 Extruded 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

One or the other of the following is required:

- 1 ea. 029901 DODGE, Mega Cab Short Bed Tank Adaption Kit. Required if the

vehicle has the factory skid plate beneath the transmission.

- 1 ea. 029903 DODGE, Mega Cab Short Bed Front "S" Support. Required if vehicle DOES NOT have the factory skid plate beneath the transmission. Supports the front of the tank.

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

2006+ models: Mega Cab Short Bed: "03 0103 0000"

Or alternatively: 2006+ models: Mega Cab Short Bed: "03 0103 0000 A"

IMPORTANT NOTICE: Before installation, be sure to thoroughly inspect inside of the tank for ANY foreign debris!

<u>Step</u>	<u>Description</u>
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|---|--|
| 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). |

Note: On some 2010+ models, it may be necessary to remove the driver's side rear wheel and the fender skirt to reach the fill hose and vent lines.



(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 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 and retainers assembled as they are.
- 12 CHECK THE ½ FLANGES INSIDE THE TANK TO BE SURE THEY ARE SEATED FLAT AND NOT OVERLAPPING. Make sure the flat gasket is in place between the ½ flanges and the top inside surface of the tank.
- 13 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).*

- 14 Replace the top flange on the studs, on top of the sending unit, so as to hold it down securely.
- 15 Use the 5/16” nylon locking nuts to tighten down the top flange. **Tighten to 20 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 ½ 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 20 ft. lbs of torque. Tighten in a “star” pattern.

- 16 Remove 1 ½” fill hose from the original equipment (OEM) tank.
Install the 1 ½” fill hose on the King Nipple of the new TITAN™ tank.
- 17 ¾” Vent line hose should already be installed on the elbow protruding from the top of the TITAN tank.
- 18 Measure 17” inches from the elbow end of the ¾” vent hose installed on the tank and cut the hose at this mark. Install the ¾” X ¾” X ½” Reducing Line Tee Connector in the ¾” vent hose with the ½” hose barb pointed forward toward the rollover vent valve. Secure the hose on the fitting with the Gear Hose Clamps provided.
- 19 Install the ½” Vent Line Hose provided with the new TITAN™ tank onto the tank’s Rollover vent valve (if not already installed) and secure with hose clamp provided.
- 20 Measure 43” along the ½” Vent Line Hose from the Rollover vent valve and cut it at this point. Install this end of the ½” Vent Line Hose onto the ½” barb of the Reducing Line Tee Connector which was installed in step number 18 and secure with hose clamp provided.
- 21 On the ½” Vent Line Hose, measure back 5” from the end installed in step 20 above, cut and install the ½” X ½” X ¼” Barbed Reducing Tee which is part of the ¼” Vent Kit Assembly. Install so that ¼” vent line, with elbow on the end, is pointed horizontally away from the tank. Secure the ½” hose with hose clamps provided with Vent Kit Assembly. **Note:** *When installing the Barbed Reducing Tee, securely install the side of the tee closest to the ¾” vent line. Leave the barb away from the ¾” vent line loose as it will need to be disconnected briefly when the tank is lifted into the truck (See Fig. 5).*
- 22 IF the optional TITAN™ Shield is NOT to be installed with the tank, you will need to install Rubber Strap Bushings now. Place the rubber bushing, channel 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)

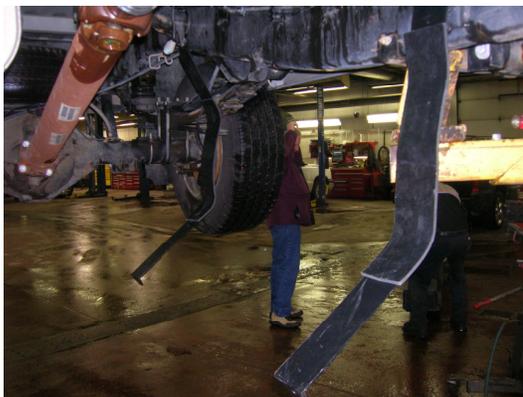


(Fig. 5) This shows final configuration for vent line system. Vent line on side of Vent Kit Assembly farthest from $\frac{3}{4}$ " vent line should be left loose as it will not be connected permanently until tank is lifted into place and $\frac{1}{2}$ " vent line hose is threaded over the top of the truck frame. Vent system and fill hose is seen as follows (starting at the photo's right side and working counter-clockwise): 1) Rollover Vent valve 2) $\frac{1}{2}$ " x 38" vent line hose 3) Vent Kit Assembly 4) $\frac{1}{2}$ " x 5" section of hose 5) $\frac{3}{4}$ " x $\frac{3}{4}$ " x $\frac{1}{2}$ " Reducing Line Tee Connector 6) $\frac{3}{4}$ " x 4" vent line hose at top of photo 7) $\frac{3}{4}$ " x 17" between $\frac{3}{4}$ " x $\frac{3}{4}$ " x $\frac{1}{2}$ " Reducing Line Tee Connector and elbow 8) Elbow for vent line on top of tank. Some year-to-year model differences may require additional trimming of hoses for the best fit.



(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.

- 23 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.
- 24 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 ¼" Vent Kit Assembly hose is securely fastened to the fill spout. The ¼" vent is necessary to prevent vacuum build-up in your TITAN™ fuel tank.

- 25 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. Check the shield; if it protrudes too far forward so that it is too open on the front end, you may need to trim a few inches off the front of the shield. This can be done simply with a wood saw or a hacksaw.
- 26 Now is the time to make provision for the support of the front of the tank. This will be done with one of two options: If the vehicle has a factory skid plate beneath the transmission, then the 029901 Mega Cab Short Bed Tank Adaption Kit is required. This includes a molded cushion mount, or alternately a steel support plate, (See Fig. 9) which bolts through the factory skid plate and supports the front of the tank. Remove the bolt that comes in the skid plate and place the cushion mount, facing up. It may be necessary to drill the hole out to a larger size to accommodate the mount.
- 27 If the vehicle does NOT have the factory skid plate, it will be necessary to install the optional "S" Support Bracket (no. 029903). This is done by removing the bolt from the cab mount which is located directly beneath the driver's door. Thread the bolt through the top center hole on the "S" Bracket and pass the bolt through and tighten into the mount (See Fig. 10). It will then be necessary to drill a ½" hole through the frame at the pre-drilled vertical center-hole of the bracket and fasten it with the cap screw and washers provided (See Fig. 11). For those who might be squeamish about drilling a hole through the frame, the "S" Support Bracket can alternatively be fastened by drilling through the gussets of the cab mount (lined up with the pre-drilled holes in the "S" Bracket gussets) and bolting through the mount gussets and the bracket gussets (See Fig. 11).



(Fig. 9) This photo shows the Cushion Mount installed on the factory skid plate below the tank.



(Fig. 10) This shows the "S" Bracket Support bolted to the cab mount below the driver's door. As shown, drill a hole through the vertical center-hole of the bracket and fasten with the bolt provided.



(Fig. 11) As an alternative to drilling the frame, the cab mount gussets can be drilled in-line with the "S" Bracket gussets and bolted into place. See the holes in the bracket gussets shown above.



(Fig. 12) Photo shows the "S" Bracket Support installed at the front of the tank.

- 28 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.
- 29 Once all connections are securely attached, lift the tank the rest of the way into place with the transmission jack.
- 30 Attach the inboard side of the rear strap by starting the OEM bolt about $\frac{1}{2}$ of the thread length. Zinc plated shims are included with the straps. Be sure to thread them onto the strap bolt before starting (See Fig. 13). Leave the bolt loose.
- 31 Attach the inboard side of the front strap by starting the OEM bolt about $\frac{1}{2}$ of the thread length. Once again, be sure to thread the shims onto the strap bolt before starting (See Fig. 13). Make sure everything is fitting properly and tighten both strap's bolts into place (See Fig. 14).



(Fig. 13) Thread two shims onto each strap bolt.



(Fig. 14) Tighten the bolt and bracket against the shims. If the strap does not hold the tank tightly

enough, remove one shim at a time until it is tight.

Note: The shims are included to make it easier for the installer to adjust the straps so they are good and tight. This is to compensate for slight differences from vehicle to vehicle and year to year. With two shims in place on each strap, tighten the mounting bolts. If the straps are not sufficiently tight, remove one shim at a time until the straps hold the tank tightly.

- 32 Route the 1/2" Vent Hose Line from the 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.
- 33 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.
- 34 Attach the 3/4" vent hose line on the vehicle fill spout.
- 35 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).
- 36 Double check all hose lines for kinking or crushing. If any of the hoses are kinked, crushed, or sagging the tank will not fill or perform properly.

Note: It is important that vent hoses not be kinked, crushed or allowed to sag anywhere. If a vent hose sags it will trap fuel and cease to vent the tank. This will result in venting problems and can cause the tank to "spit" back when filling.

- 37 Make sure ALL mounting hardware, clamps, bolts, etc. are properly installed and tight.
- 38 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 1/2 way up the driver's side towards the rear of the tank.



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