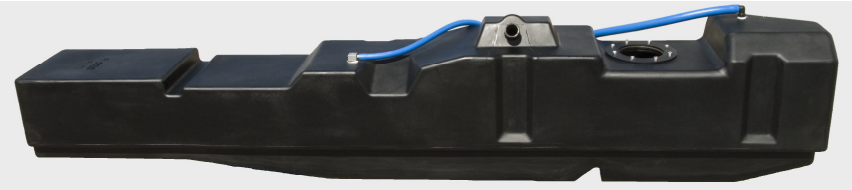
Important: Please read these instructions carefully and completely *before* starting the installation.

TITAN™ Fuel Tanks

INSTALLATION INSTRUCTIONS
G e n e r a t i o n V



Extended Capacity Replacement Tank for FORD Diesel Trucks

For Ford truck models F250 & F350 1999-2010: Crew Cab Short and Long Bed, and Extended Cab Long Bed
For Ford Extended Cab, Short Bed models 1999-2010
For Ford F450 Crew Cab Long Bed models 2008-2010

Required Tools:

1 ea. Ratcheting socket driver
1 ea. 13 mm socket
1 ea. 12 inch long socket driver extension
1 ea. 13 mm end wrench
1 ea. Medium flat blade screw driver
1 ea. Needle nose pliers
1 ea. Torque wrench handle to fit 13 mm socket

Recommended Optional Tools:

1 ea. Hydraulic transmission jack
1 ea. Vehicle hoist
1 ea. Mallet or small hammer

Parts List:

1ea. Extra heavy-duty cross link polyethylene fuel tank for one of the following Ford Motor Company diesel trucks:

Extended Cab, Short Bed	Tank Identification: “FORD EXSB”
Crew Cab, Short Bed “Super Series”	Tank Identification: “FORD CCSB”
Crew Cab & Extended Cab, Long Bed	Tank Identification: “FORD CCLB”
Crew Cab Long Bed “Super Series”	Tank Identification: “FORD CCLB” Also, low fuel trap baffle is visible in bottom of

tank--visible from the outside.

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 Mounting Assembly, made of:
- 2 ea. ½ flanges with 5/16" welded studs (mounted inside tank)
- 1 ea. Flat flange gasket (mounted inside tank)
- 8 ea. 5/16" flat retainers
- 1 ea. "O" Ring sending unit gasket (primary "O" ring gasket)
- 1 ea. Top sending unit flange
- 8 ea. 5/16" nylon locking nuts

1 ea. Roll-over vent valve (installed in top of tank)
1 ea. Roll-over vent valve gasket (under roll-over vent valve)
1 ea. ½" X 36" vent hose
1 ea. ¾" X 6" vent hose (short bed)
1 ea. ¾" X 50" vent hose (long bed)
5 ea. ½" to 1" gear hose clamps
1 ea. ¾" X ¾" X ½" Tee connector
1 ea. ¾" X 90 threaded elbow (installed in top of tank by fill hose king nipple)
1 ea. 1 ½" Fill hose king nipple.

1 ea. Fill hose extension (1.5" OD X 3.25" plated)---For Long Bed Tanks ONLY (not included with other tanks).
2 ea. 1.5" to 2" gear hose clamps---For Long Bed Tanks ONLY (not included with other tanks)

1 ea. FORD CCLB (only) High Strength Bolt Kit, consisting of:
- 2 ea. Grade 10.9 plated cap screws
- 2 ea. Flanged, plated lock nut
- 2 ea. High strength flat washer

1 ea. Rear tank strap
1 ea. Front tank strap
4 ea. 99 0000 0113 Universal Strap Shims (for straps marked "A" following the part no.) Two each required per inboard strap bolt.
2 ea. 99 0000 0103 Extruded Rubber Bushings (IF optional Titan Shield was ordered, the bushings are NOT included)

1 ea. Vent Kit, consisting of:
- 1 ea. ½" X ½" X ¼" Tee Connector, barbed

1 ea. ¼" Hose Plug, barbed
2 ea. ½" to 1" gear hose clamps
1 ea. ¼" X ¼" barbed Check Valve

1 ea. Hardware Kit For Reversing Fuel Level Sensor, consisting of:
1 ea. #10-32 X 1" L Phillips, pan-head machine screw
1 ea. #10-32 Machine Screw Nut
1 ea. Spacer. Either ¼" X 3/8" X ½" steel OR ¼" X ½" X ½" Nylon

1 ea. 02 0115 0000 FORD, Transmission Skid Plate, 67 Gal. Tank Support Assembly. For FORD Crew Cab, Long Bed "Super Series" 67 gallon Tanks ONLY. Model numbers: 7020399 and 7020308

Note: *The Ford tank straps are identified by designations cut into the very bottom of the strap or on one side. These designations are:*

Extended Cab Short Bed

Separate front and rear straps
1999-2007 (Known as 1999 model) *Front & Rear Strap = "X"*

Separate front and rear straps
1999-2007 (Known as 1999 model) same as above only marked differently
Front Strap = "FXS F"
Rear Strap = "FXS R"

Separate front and rear straps
1999-2007 (Known as 1999 model) same as above only marked differently
Front & Rear Strap = "02 0101 0000"

Separate front and rear straps
1999-2007 (Known as 1999 model) same application as above marked differently
Front & Rear Strap = "02 0101 0000 A"
(straps require universal shims)

2008-2010 (Known as 2008 model)
Front & Rear Strap = "02 0113 0000"

2008-2010 (Known as 2008 model) same application as above marked differently
Front & Rear Strap = "02 0113 0000 A"
(straps require universal shims)

Crew Cab Short Bed

Separate front and rear straps
1999-2007 (Known as 1999 model) *Front Strap = "S"*
Rear Strap = "S"

1999-2007 (Known as 1999 model) same as above only marked differently
Front Strap = "FCCS F"
Rear Strap = "FCCS R"

1999-2007 (Known as 1999 model) same as above only marked differently
Front Strap = "FCS F"
Rear Strap = FCS R"

1999-2007 (Known as 1999 model) same as above only marked differently
Front & Rear Strap = "02 0102 0000"

1999-2007 (Known as 1999 model) same application as above marked differently
Front & Rear Strap = "02 0102 0000 A"
(straps require universal shims)

2008-2010 (Known as 2008 model) Ford Crew Cab Short Bed
Front Strap = "S8"
Rear Strap = "S8"

2008-2010 (Known as 2008 model) same as above only marked differently
Front Strap = "8FS F"
Front Strap = "8FS R"

2008-2010 (Known as 2008 model) same as above only marked differently
Front & Rear Strap = "02 0103 0000"

2008-2010 (Known as 2008 model) same application as above marked differently
Front & Rear Strap = "02 0103 0000 A"
(straps require universal shims)

Crew Cab Long Bed & Extended Cab Long Bed

Separate front and rear straps
1999-2007 (Known as 1999 model) *Front Strap = "FL F"*
Rear Strap = "FL R"

Separate front and rear straps
1999-2007 (Known as 1999 model) same as above only marked differently
Front Strap = "FCL F"
Rear Strap = "FCL R"

1999-2007 (Known as 1999 model) same as above only marked differently
Front & Rear Strap = "02 0107 0000"

1999-2007 (Known as 1999 model) same application as above marked differently
Front & Rear Strap = "02 0107 0000 A"
(straps require universal shims)

2008-2010 Ford Crew Cab Long Bed *Front Strap = "8FCL F"*
Rear Strap = "8FCL R"

2008-2010 Ford Crew Cab Long Bed *Front & Rear Strap = "02 0108 0000"*

2008-2010 Ford Crew Cab Long Bed *Front & Rear Strap = "02 0108 0000 A"*
(straps require universal shims)

Please check to be sure the straps are identified as the proper parts for your truck.

Optional Parts List:

1 ea. Titan Shield, Cross-Linked Polyethylene

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

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.
3	Disconnect 1 ½" fuel tank fill hose and ¾" vent line hose from fill spout, leaving them attached to the tank.
4	Disconnect fuel gauge electrical connection, feed line and return line from the sending unit. Press in the blue tabs on the connection fittings to release fuel lines. Older truck models may have slightly different clips and some 1999 models may require fuel line release tool.
5	Remove vent lines on inside of the frame rail from tank by simply slipping them off. These vent lines will be used again later.
6	Support the original equipment tank.

7 Loosen original equipment tank straps by undoing inside bolts first with 13 mm wrench.
8 Remove original equipment tank with its straps from the vehicle.
9 Remove threaded clip from the original equipment tank's front strap; this clip is on the end closest to the driver's (or outboard) side of the vehicle. Place it on the corresponding end of the Titan Tank front strap (See Fig. 1).
10 Tuck the 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.

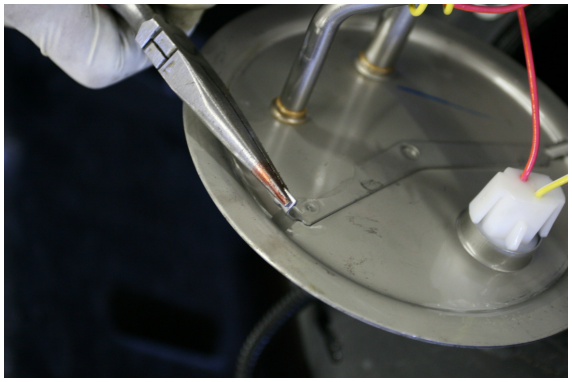
Note: *Some truck models may be equipped with a wiring harness for gooseneck and 5th wheel trailers. This will need to be moved to a new location and secured once the new tank is installed—generally behind the tank is best.*

(Fig. 1) Remove threaded clip from original equipment tank's front strap and install on the Titan tank's front strap.

(Fig. 2) Remove the sending unit from the original equipment tank by rotating the hold-down ring counter clockwise.

11 Remove the sending unit from the original equipment tank by rotating the hold-down ring counter-clockwise and lifting the unit out (See Fig. 2).
12 Remove the factory "O" ring gasket from the sending unit. Do not use on new tank.
13 Remove fill hose and vent line hose (if it is a short bed tank) from original equipment tank.

(Fig. 3) Leave the "O" ring gasket, studs and retainers assembled as they are (shown before sending unit, top flange, and 5/16" nylon locking nuts are installed).



(Fig.4) If tabs on the bottom of sending unit interfere with proper mounting in the Titan tank, bend them slightly out of the way using needle nose pliers.

14 The new Titan fuel tank comes with the 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 (See Fig. 3).

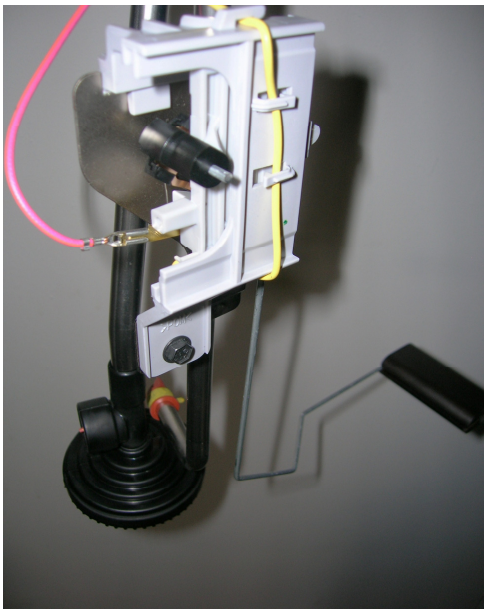
Note: *Check the two ½ flanges mounted inside the tank to be sure the flat gasket is in place between the flanges and the inside top of the tank. Also, be sure to check the ½ flanges to be sure they are seated properly and do not overlap.*

15 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.

16 Check the tabs on the bottom of the sending unit for clearance in the mounting opening of the new fuel tank. It is possible these tabs will interfere with the proper mounting in the new tank. Bend them slightly out of the way using needle nose pliers (See Fig. 4).

17 Carefully place the sending unit into the new tank. Make sure the "O" ring gasket is placed properly under the sending unit to seal correctly. The sending unit may need to "telescope" to fit into the tank. Before installing the sending unit into the TITAN Tank, BE SURE THE INSIDE OF THE TANK IS FREE OF DIRT OR DEBRIS OF ANY KIND.

Note: *On <u>some</u> Ford trucks the fuel level sensor and float arm (on the sending unit), when installed, will face forward (towards front of the truck) in the tank. The short baffle of the low fuel trap (in "Super Series" tanks) will interfere with the proper functioning of the float arm. In these cases, the fuel level sensor, with the attached float arm, will need to be reversed. Remove hex head screw and carefully lift the level sensor off its mount and turn it around so it is facing the opposite direction. Slide back onto its mount. Use the hardware kit with spacer to fasten the sensor, in place of the hex head screw. (See Figs. 5 & 6)*



(Fig. 5) Level sensor in original forward facing position. Loosen the small hex head screw at the bottom of the sensor, carefully lift the sensor assembly off its mounting bracket. Rotate the sensor 180 º and slide it carefully back onto its mounting bracket.

(Fig. 6) Level sensor has been removed and turned so as to face toward the rear of the truck when installed in the fuel tank. It is secured with pan-head screw, spacer (either steel or nylon) and nut. Pointer is indicating position of screw, nut and spacer.

What if the sending unit is too long to go into the new TITAN tank?

Try gently compressing the sending unit into the new TITAN. In most cases where the sending unit seems too long it is a matter of "telescoping" the sending unit into the tank as the sending unit is designed to do. For only some Ford vehicles, the sending unit may need to be shortened slightly. Before doing so, be sure the sending unit will not compress into the tank.

Procedure for shortening Ford sending unit: Place the sending unit upright on a flat surface with the suction funnel flat on the surface. With the sending unit held perfectly straight upright, take a measurement and note the distance from the bottom of the fuel level float to the top of the surface. Slide the suction funnel off the stainless steel suction tube and shorten the tube by cutting no more than ½" off the end using a saw, cutting tool, or grinder. After cutting, be sure to dress the end of the tube and make sure the inside of the tube is absolutely clean of any dirt or debris. Slide the suction funnel all the way back onto the tube. Place the sending unit on the flat surface again and carefully bend the float arm until the bottom of the fuel level float is at the same level from the surface as your first measurement.

Before installing the sending unit into the TITAN Tank, BE SURE THE INSIDE OF THE TANK IS FREE OF DIRT OR DEBRIS OF ANY KIND. Install the sending unit into the tank as per instructions.

18 After placing the sending unit into the tank on top of the "O" ring gasket, rotate it (carefully so as not to displace "O" ring gasket) so the fuel line fittings 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.

19 Replace the top flange on the studs, on top of the sending unit, so as to hold it down securely.

20 Use the 5/16" nylon locking nuts to tighten down the top flange. **Tighten to 20 foot pounds (ft. lbs) of torque using a 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.

21 On 2008+ only: Push brake line bracket that is holding the brake line over the rear axle up about 1 inch out of the way.

22 On short bed tanks, if not already installed, install ¾" X 6" long vent line hose on 90 degree elbow which is located in the top of the tank near the fill hose king nipple. Be sure it is pointing the same direction as the king nipple. <u>On long bed tanks</u>, both the 90 degree elbow and the front rollover valve must point at about a 45º angle toward each other in the direction opposite the king nipple (See Fig. 7).

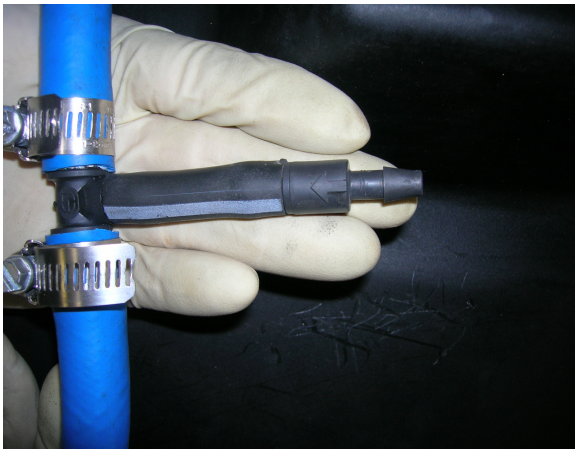
23 Slip ¾" X ¾" X ½" Tee into the ¾" vent line hose. On LONG BED tanks this will require cutting the ¾" hose approximately 28" from the 90º elbow and inserting the tee.

24 Install ½" vent hose line, provided with the Titan tank, from the ½" barb on the ¾" X ¾" X ½" Tee to the rollover vent valve on the far (toward the front end of the tank) side of the sending unit.

Note for all Ford Trucks: *On the ½" vent hose line which is installed on the TITAN tank's rollover vent valve, measure back 2" on the SHORT BED tank OR 22" on the LONG BED tank, from the rollover vent valve end of the hose; cut the hose and install the furnished ½" X ½" X ¼" Tee Connector in the line with the exposed ¼" barb in the vertical position. Secure the ½" hose with the two ½" to 1" gear hose clamps provided.*

Go to the original equipment ¼" vent line disconnected previously (See Step 5) and cut off three (3) inches of the line on the end closest to the truck's rear axle; then fully insert the ¼" barbed Hose Plug provided into this new end on the remaining attached line. Insert the discharge end of the ¼" barbed Check Valve (provided) into one end of the three inch piece of vent line which was just cut off. The discharge end of the valve is the barb being pointed to by the arrow on the side of the valve. Then insert the other end of the ¼" barbed Check Valve into the remaining open end (closest to the truck's front axle) of the original equipment vent line. When the tank is lifted into place, slip the open end of the three inch piece onto the ¼" barb on the Tee Connector. Note: The direction arrow on the side of the Check Valve in the vent line must point TOWARD the tank (See Fig. 8). There is no need to secure the ¼" vent line with hose clamps. This step is required to prevent vacuum build-up in tank.

(Fig. 7) LONG BED tank vent hose arrangement. This photo shows how the 90º x ¾" elbow and the front rollover valve are pointed at 45º angles toward each other and the inboard side of the tank. This is different than short bed plumbing. The technician's hand is holding the ½" x ½" x ¼" tee with the check valve for the truck's ¼" vent system (See Fig. 8). There is approximately 22" of ½" hose between the rollover valve and



(Fig. 8) The arrow on the ¼" Check Valve MUST point towards the tank vent hose system. When the tank is lifted into the truck the open end of this check valve will be inserted into the end of the existing vent system mounted to the frame of the truck. This prevents vacuum build-up. This is required on all Ford trucks.

the tee. When the tank is lifted into the truck, the vent hoses may have to curve around and through the vehicle's cross members. Be sure there are no sagging hoses to trap fuel.

25 On short bed tanks, install ¾" original equipment vent line hose onto the remaining, exposed ¾" barb on the ¾" X ¾" X ½" Tee. For long bed tanks the original equipment ¾" vent line hose is replaced by new vent hose as supplied (See Fig. 7).

26 Install the 1 ½" fuel tank fill hose on the 1 ½" king nipple on the Titan tank. Be sure all hose clamps are installed and tightened (See Fig. 11).

Note: *On long bed tanks only: On <u>some</u> tanks the 3.25" long (see parts list above) fill hose extension may be required to reach the vehicle's fill spout. IF you know for sure it is required on this vehicle, you may want to cut the fuel tank fill hose and fit the fill hose extension before mounting the tank. Cut the original equipment fuel tank fill hose in the center of its middle straight section and fit the fill hose extension into the tank side's hose. Install this hose on the Titan tank.*

IF you are not sure the fill hose extension is required, you can wait to install it when the tank is installed.

27 The Titan tank straps will reuse the original equipment mounting bolts (except in the case of crew cab, long bed tanks) and bolt holes. Hang the outboard side of the front strap first; it should hang on the same side of the vehicle frame as the original equipment strap. Start the stock bolt and make sure at least ½ of the thread is through. Leave the bolt loose. Carefully grasp the strap and bend it down out of your way for the moment.

Note on Crew Cab, Long Bed Tanks: *If you are installing a Crew Cab, Long Bed "Super Series" Tank you will find a "FORD CCLB High Strength Bolt Kit-COMPLETE" (PN. 02 0110 0000) included with the tank. Please use included bolts, nuts, and washers in place of the factory fasteners on the INBOARD side of the tank. Remove the threaded factory fastener and place the flanged, plated lock nut on top of the frame cross members. Place the high strength washers on the high strength cap screw (bolt) and thread the cap screw vertically up through the strap from below. Tighten all mounting fasteners securely.*

28 If the optional Titan Shield was ordered with the tank, place it under the tank with the open end toward the front of the tank.

29 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 both the return, and feed line hoses.

30 Once all connections are securely attached, lift the tank the rest of the way into place with the transmission jack.

31 Attach the rear strap in a manner similar to the front strap on the same side of the vehicle frame as the original equipment strap. Once again leave it loose

for the moment.

32 IF the optional Titan Shield is NOT to be installed, you will need to install the rubber bushings now. 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.

33 Attach the inboard side of the rear strap and tighten into place. Then tighten the other side also. Sometime in 2010, zinc plated shims will be integrated into the strap design. In those cases, zinc plated shims are included with the straps. If applicable, be sure to thread the shims onto the strap bolt before starting (See Fig.9).

34 Attach the inboard side of the front strap and tighten into place. Then tighten the other side also. Once again, if applicable, be sure to thread the shims onto the strap bolt before starting (See Fig.9). Make sure everything is fitting properly and tighten both strap's bolts into place (See Fig.10).

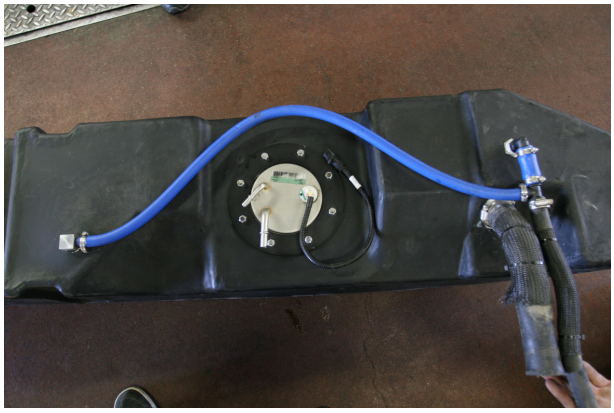
(Fig. 9) If included, thread two shims onto each strap bolt.

(Fig. 10) 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, if included, 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.*

35 Attach the vehicle's fuel lines and electrical connection to the sending unit. You may find the angle of the fuel lines do not allow them to connect to the male couplings on the top of the sending unit. Carefully, insert a round steel rod or a Phillips head screw driver into the couplings and very gently bend them up so the ends are about ¼" higher than before. This should allow the fuel lines to attach more easily. In a few cases, the existing fuel lines are too short. In these cases, it is recommended that a TITAN "FORD, Fuel Line Extension Kit" (029902) be purchased from your dealer or at TITAN's web site at: www.titanfueltanks.com

36 Attach the 1 ½" fuel tank fill hose to the vehicle's fill spout. If installing a long bed tank, and if the fill hose extension is required but not already installed, install it now as described in the "Note", below Step 26, above.



(Fig. 11) Top view of SHORT BED tank showing sending unit, tank vent hose plumbing, and original equipment fill hose and vent hose installation. The ½" x ½" x ¼" tee is not shown installed in the ½" vent line hose. It will be installed approximately 2" from the rollover vent valve.

(Fig. 12) Attach fuel tank 1 ½" fill hose and ¾" vent hose to vehicle fill spout. Vent hose may have to be shortened about 6 inches to fit properly. On some long bed tanks, 1 ½" fill hose may have to be extended with 3.35" hose extension.

37 Attach the ¾" vent hose line on the vehicle fill spout. You may have to cut approximately 6" off the outside end of the line for it to fit properly (See Fig. 12).

38 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.

39 Make sure ALL mounting hardware, clamps, bolts, etc. are properly installed and tight.

40 On FORD, Crew Cab Long Bed, "Super Series" tanks (7020399 & 7020308) Install the 02 0115 0000 FORD, Transmission Skid Plate, 67 Gal. Tank Support as per the "Supplemental Installation Instructions" for 02 0115 0000 below.

41 Lower vehicle, fill tank completely with diesel fuel and check for leaks.

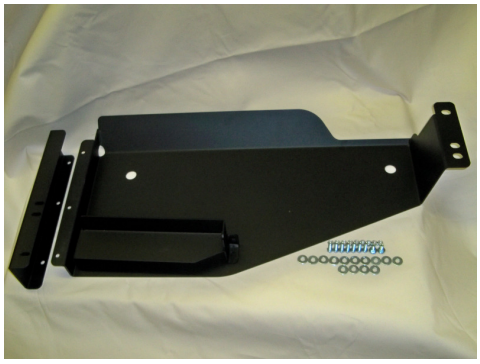
Important: *Be sure that all vent lines are free of any sagging areas. Sags can fill with and trap fuel and prevent the vent lines from venting the tank. Slow filling, "spitting" and surging can result. Shorten vent lines and/or tie them to the body and chassis as needed to be sure they drain and do not trap liquid fuel.*

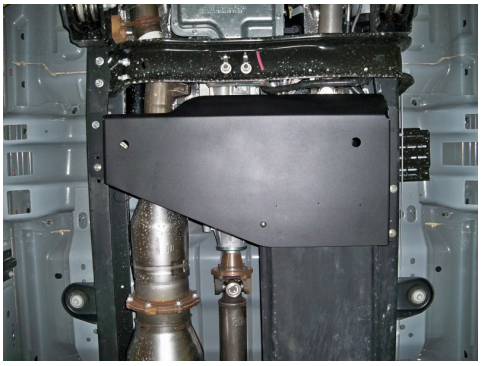
TITAN™ Fuel Tanks

SUPPLEMENTAL INSTALLATION INSTRUCTIONS

For
FORD Crew Cab, Long Bed – Super Series (7020399 & 7020308)

02 0115 0000 FORD, Transmission Skid Plate, 67 Gal. Tank Support

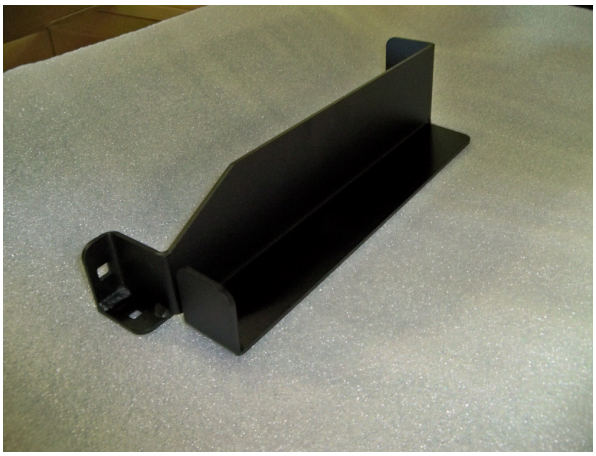




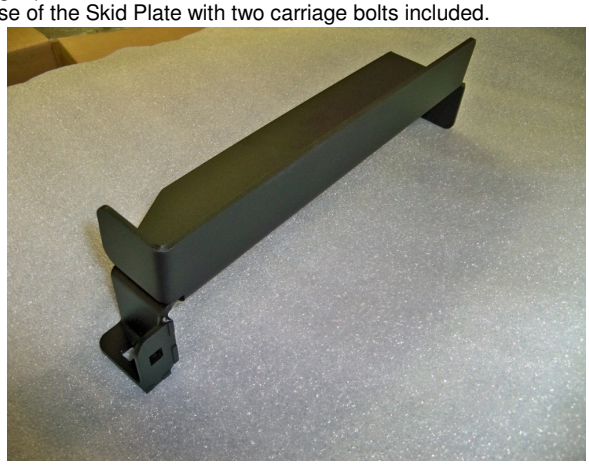
Note: *Most late model Heavy Duty Ford truck models already have the frame drilled to accept the skid plate. If you come across a vehicle which does not, follow the placement instructions, clamp the skid plate into position and drill the bottom flanges of the frame to accept it. If your vehicle already has a factory skid plate, simply remove it and replace it with this one.*

Step	Description
1	Assemble the skid plate assembly as shown in Fig. 1. First attach the Skid Plate Nose Cradle Bracket using the two 5/16" carriage bolts included. The Nose Cradle Bracket can be installed in a low position (Fig. 2) or a high position (Fig. 3) in relation to the Skid Plate. This allows the installer to adapt the Bracket to hold the tank tightly, taking into account variations from vehicle to vehicle. The installer may have to determine which way fits a particular vehicle the best through trial and error.

(Fig. 1) The Skid Plate Nose Cradle Bracket attaches to the base of the Skid Plate with two carriage bolts included.



(Fig. 2) Skid Plate Nose Bracket in “low” position.



(Fig. 3) Skid Plate Nose Bracket in “high” position.

(Fig. 4) Attach the Skid Plate to the bottom of the passenger side of the frame first, leaving the bolts loose. Make sure the Nose Bracket is on the edge of the Skid Plate closest the rear of the vehicle.

2 Using the 5/16” cap screws, washers, and nylon locking nuts, attach the Skid Plate to the passenger side of the frame first, leaving the bolts loose (Fig. 4).

(Fig. 5) Formed channel is bolted to the inside of the frame on the driver's side.

(Fig. 6) Skid plate bolted into place on bottom of formed channel. Note Nose Bracket is in "high" position.

3 Attach the Formed Channel part of the assembly to the inside of the frame on the driver's side of the vehicle using 5/16" cap screws, washers, and nylon locking nuts (Fig. 5).

4 Lift the Skid Plate (which was previously attached to the passenger side) and bolt it securely into place (Fig. 6) on the bottom of the formed channel. Make sure the Nose Bracket is set to securely hold the tank. Double-check all bolts to make sure they are tight. Installation is complete.

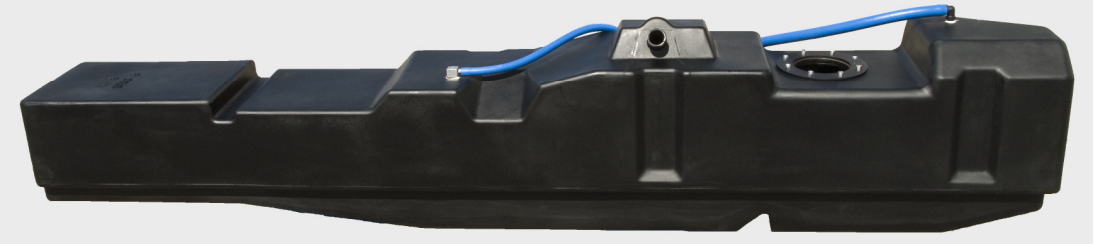
Be sure to return the completed warranty registration for your new Titan fuel tank; or you can register on-line at www.titanfueltanks.com
You will find your tank's serial number located approximately ½ way up the driver's side located towards the rear of the tank; adjacent to the sending unit.
A tank must be registered within sixty (60) days of receipt for the warranty to be valid.

TITAN™ Fuel Tanks, P.O. Box 2225, Idaho Falls, ID 83403, USA
Telephone (208) 522-1325, Fax (208) 529-2162
www.titanfueltanks.com Revised 6.16.10

Important: Please read these supplemental instructions, as well as the installation instructions that were sent with the tank, carefully and completely *before* attempting the installation.

TITAN™ Fuel Tanks

SUPPLEMENTAL INSTALLATION INSTRUCTIONS
For FORD F450, Crew Cab, Long Bed Diesel Trucks
Generation V



Extended Capacity Replacement Tank for FORD Diesel Trucks

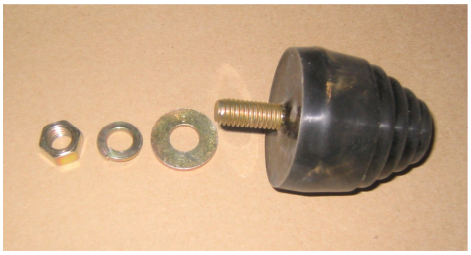
*For Ford truck model **F450,** 2008-2010*

Required Tools and Recommended Optional Tools:

See “Installation Instructions, Generation V”

Parts List:

FORD, F450, Long Bed Tank Adaption Kit. Part Number: 02 0112 0000
Whole Good Number: 029901



Consisting of:

1 ea.	02 0000 0119	TITAN, Fuel Tank Cushion Mount
1 ea.	99 0000 0112	Flat Washer
1 ea.	99 0000 0111	Lock Washer
1 ea.	99 0000 0110	Nut

Note: *These supplemental instructions are to be used in conjunction with TITAN's latest Ford installation instruction set designated: "INSTALLATION INSTRUCTIONS, Generation V for Ford Diesel Trucks" which is shipped with the tank. They shall be referred to hereafter as "the instructions". BE SURE TO READ THE INSTRUCTIONS BEFORE READING THIS SUPPLEMENT. Read and understand both before installation is attempted.*

This supplement only applies to installation of TITAN's Ford Crew Cab, Long Bed fuel tank on **Ford F450** model trucks. The steps discussed here are specific to the F450.

There are basically three variances from the instructions:

A) After Step 8, install the F450 Long Bed Tank Adaption Kit. The "Fuel Tank Cushion Mount" bolts into the existing hole in the frame cross member ahead of the truck's rear axle, and over the rear section of the tank (See Fig. S1). You should be able to reach the top inside of the cross member from outside the driver's (truck's left-hand) side of the truck's frame by reaching over the top of the frame. Be sure to use both the flat washer and the lock washer and tighten securely.

(Fig. S1) The "Fuel Tank Cushion Mount" is shown fastened in place on the cross member.

B) The long bed plumbing is discussed in steps 22-25 of the instructions (See also Fig. 7 of the instructions). It has been discovered it is easiest on the F450 to do the bulk of the hose plumbing after the tank is bolted into the vehicle with its straps. There are frame members on the F450 which require vent hoses to be routed over them. The basic configuration will turn out to be the same, but is easiest to do under the vehicle.

When routing the hoses, find the most logical route around or over frame obstacles. Make sure there are no sags in any of the hoses. If there is a sag, which can fill with fuel and not drain, it will not allow the tank to vent properly which will make it difficult to fill and may even restrict capacity. Shorten the hoses and/or snap tie them as needed to be sure they drain and don't sag.

Under "Note for all Ford Trucks:", located under step 24 of the instructions, you will find a procedure for hooking the TITAN Tank's vent system up to the vehicle's ¼" factory vent system. The procedure basically remains the same as in the instructions. However, it is easiest to install the ¼" barbed Check Valve into the factory hose and then attach the short piece of ¼" hose (cut from the end of the factory line) onto it and then insert the ¼" barb of the ½" x ½" x ¼" Tee Connector into that hose. Leave the assembled pieces hanging on the vent line of the truck and actually cut the tank's ½" vent line and install the tee into it after the tank is lifted into the truck.

C) The sending unit on some Ford trucks will need to be shortened slightly. This is only needed IF the sending unit will not "telescope" down enough to fit when pressed into the tank. *Here is the procedure:* Place the sending unit upright on a flat surface with the suction funnel flat on the surface. With the sending unit held perfectly straight upright, take a measurement and note the distance from the bottom of the fuel level float to the top of the surface. Slide the suction funnel off the stainless steel suction tube and shorten the tube by cutting no more than ½" off the end using a saw, cutting tool, or grinder. After cutting, be sure to dress the end of the tube and make sure the inside of the tube is absolutely clean of any dirt or debris. Slide the suction funnel all the way back onto the tube. Place the sending unit on the flat surface again and carefully bend the float arm until the bottom of the fuel level float is at the same level from the surface as your first measurement.

Before installing the sending unit into the TITAN Tank, BE SURE THE INSIDE OF THE TANK IS FREE OF DIRT OR DEBRIS OF ANY KIND. Install the sending unit into the tank as per the instructions. **Be sure to tighten the 5/16" nuts to 20 ft. lbs of torque using a torque wrench as specified in the instructions.**

Fill the tank completely and check for leaks.

For questions or customer service call (800) 728-4982

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