INSTALLATION INSTRUCTIONS FOR SOLENOID KIT (PN 99 0132 0000)

Instructions P/N: 98 0000 0158

This is an optional Solenoid Switch kit for Titan In-Bed Transfer Tanks. This kit includes all parts to install a drop hose from your in-bed transfer tank to your main fuel tank via the vent line. The solenoid switch will prevent the fuel from transferring while the vehicle is off, preventing overfilling the main tank while the vehicle is not in use.

Important Notice: Please read these instructions carefully and completely before starting the installation. Be aware that the 3/8” NPT drain port in a Titan transfer tank is as low as possible to facilitate transfer of fuel. For this reason, the solenoid switch physically cannot thread into a tank that is already installed. You must be able to lift the driver’s side of the tank off the ground by several inches to install this product. We highly recommend installing this product before the transfer tank is installed in the vehicle.

Parts List:

#	Description	Part Number	Qty
1	Straight equal connector, SS 3/8" NPT	98 0000 0248	1
2	Solenoid valve switch, 3/8" NPT, 12V DC	98 0000 0189	1
3a	Straight adapter, 3/8" NPT to 3/8" hose barb	98 0000 0192	1
3b	Elbow adapter, 3/8" NPT to 3/8" hose barb	98 0000 0188	1
4	Elbow adapter, 1/2" NPT to 5/16" hose barb	02 0000 0451	1
5	3/8" ID hose, 4 ft	99 0000 0845	1
6	5/16" ID hose, 8 ft	99 0000 0760	1
7	Push-in grommet, 5/8" ID, 1.25" OD, 7/8" hole	98 0000 0157	1
8	Push-in grommet, 9/16" ID, 1" OD, 3/4" hole	99 0000 0167	1
	1/4" wire loom, 2'	99 0000 0191	1
9	Vent line adapter	99 0000 0409	1
10	5/16"-7/8" SS gear hose clamp	99 0000 0116	6

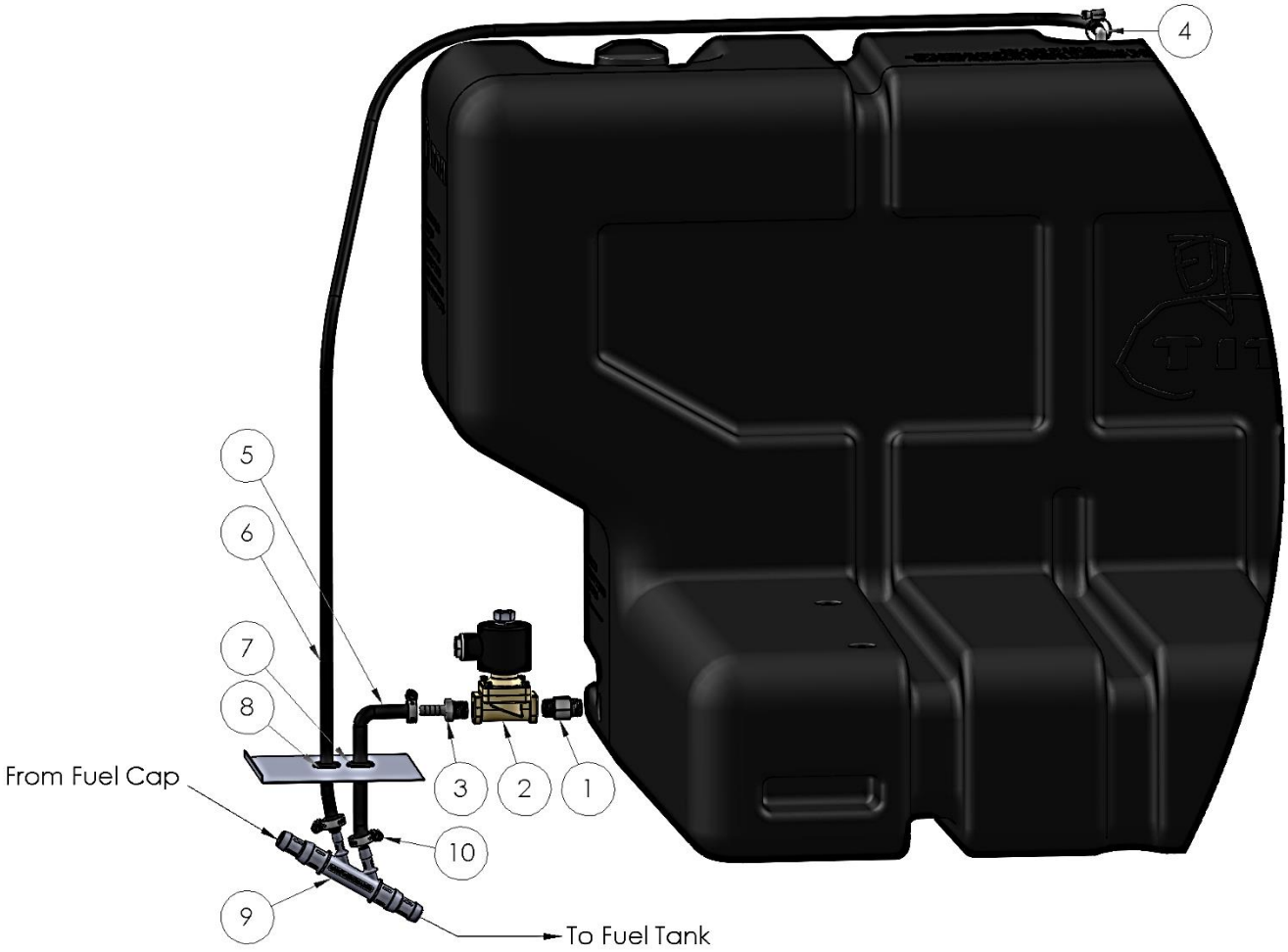

Figure 1. Plumbing Diagram

I. Plumbing and Tank Installation

Step Description

1 Take the 3/8” NPT straight connector and ensure that both threads are properly wrapped with PTFE tape. Thread this connector into the inlet side of the solenoid switch (as determined by the small arrow on the brass portion of the solenoid.)

2 The kit comes with two styles of 3/8” NPT to 3/8” hose barb adapters: a straight adapter and an elbow adapter. Choose which style you prefer. Ensure the threads are properly wrapped with PTFE tape, and thread the connector into the outlet side of the solenoid.

NOTE: If you choose the elbow adapter, make sure the elbow is level with the fuel path. If the hose barbs stick up into the air, it will severely decrease the amount of fuel that can be passed through the feed line.

3 Remove the drain plug from the transfer tank and thread the assembled solenoid valve into the drain port. As previously noted, the solenoid CANNOT be threaded into an installed tank because it’s too tall to rotate as needed. If the tank is already installed, it will need to be loosened or uninstalled to add this product.

4 Remove the silver grounding stud from the top of the transfer tank and replace it with the 1/2” NPT to 5/16” hose barb elbow adapter. Ensure the threads of the elbow adapter are properly wrapped with PTFE tape before installation. Set aside or discard the grounding stud and the grounding wire that came with the transfer tank because neither will be used.

5 Mark the locations for three holes to be drilled in the bed: a feed line, a vent line, and wiring. The kit includes grommets and a short length of wire loom to protect the hoses and wires as they pass through the bed. The hole sizes are 7/8” and 3/4” for the grommets and 3/8” for the wire loom. The grommets may be unnecessary if your truck has a section designed for auxiliary products to pass safely through the wall or floor of the bed. The outer diameters of the hoses are 5/8” and 9/16”. Drill holes and install grommets as needed.

6 Feed the 3/8” and 5/16” hoses up through the grommets into the bed. Do this as well with the red (20 ft) and black (12 ft) wires from the box with the solenoid valve (through the wire loom). Install the length of 3/8” hose onto the solenoid valve and the length of 5/16” hose onto the adapter elbow on top of the tank using the provided hose clamps.

7 Finish mounting the tank per the tank instructions.

Figure 2. Vent line adapter with 5/16" barb on the left and 3/8" barb on the right.

8 The black vent line adapter (PN 99 0000 0409) has two angled hose barbs, one 3/8” diameter and one 5/16” diameter. When properly installed, the angle of the barbs on the adapter should point toward the vehicle’s main tank with the 3/8” barb downstream from the 5/16” barb. Install this vent line adapter into the vehicle’s vent line that runs from the

vehicle's main fuel tank to the filler neck. Depending on the diameter of the vent line, this adapter may only slide over the first set of barbs, or it may slide over the second set as well. In either case, securely fasten with the provided hose clamp.

NOTE: Some vehicles come with a solid metal vent line in the best location to install the vent line adapter. In this case, use the Vent Line Modification Kit (PN 99 0185 0000) to install the fill neck adapter.

9 Carefully route the feed and vent lines from where they pass through the bed to the associated barbs on the vent line adapter. Ensure the hoses are routed so there are no sags or kinks in the lines. Trim the excess hose and secure both lines with hose clamps.

NOTE: Kinks in the fill line will limit or prevent the fuel from passing into your main tank. Sags or kinks in the vent line can trap fuel in the vent line, which could cause bloating or vacuum conditions in either the main tank or the transfer tank.

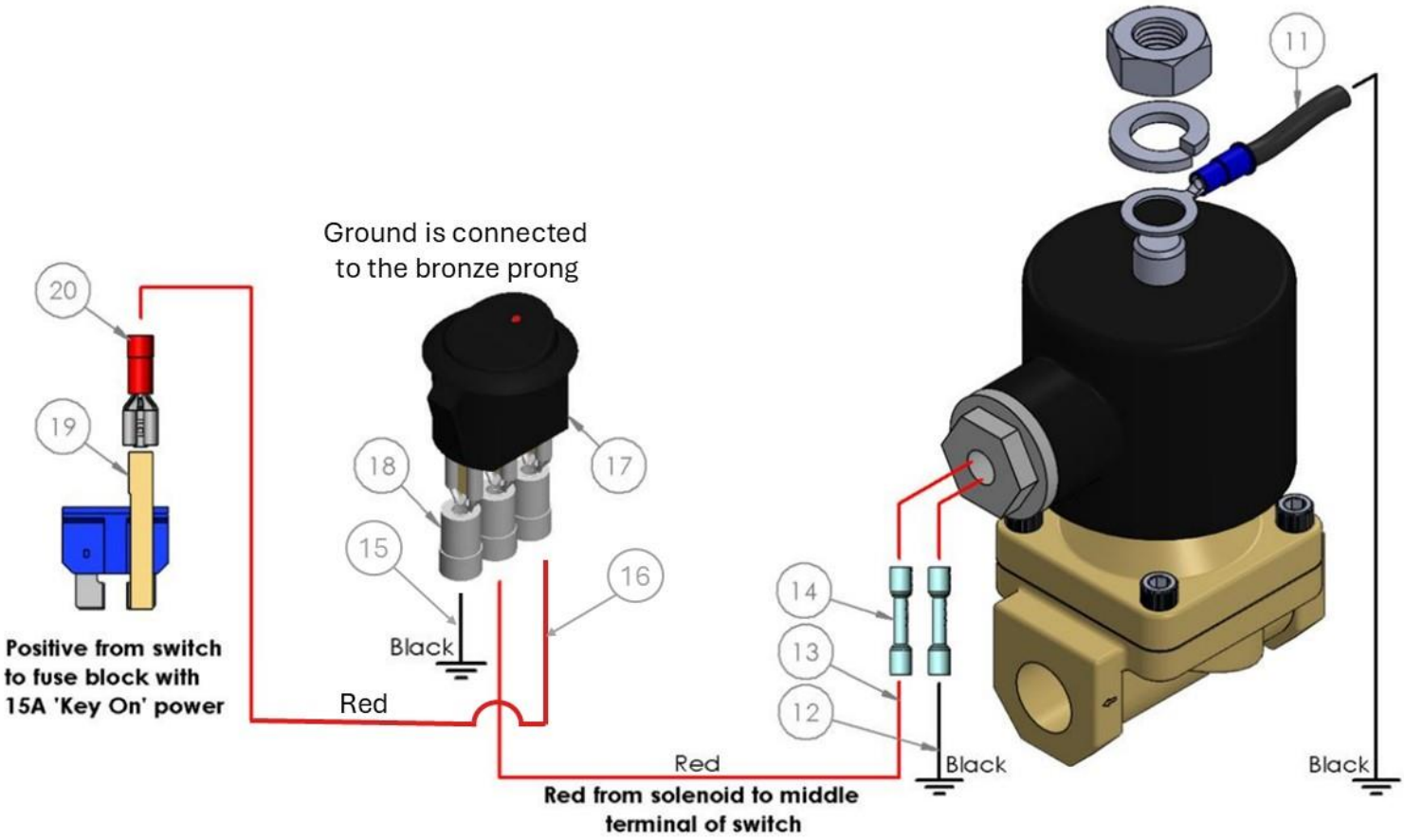

Figure 3. Electrical diagram. Wire loom and ring terminals not shown.

#	Description	Part Number	Qty
11	Solenoid grounding wire	99 0148 0000	1
12	16 AWG black grounding wire for Solenoid, 12 ft	99 0000 0192	1
13	16 AWG red power wire for Solenoid, 20 ft	99 0000 0193	1
14	16-14 butt splice connector	99 0000 0765	2
	16 AWG ring terminal for 3/8" stud, insulated	99 0000 0195	2
15	16 AWG black grounding wire, 4 ft	99 0000 0192	1
16	16 AWG red power wire, 4 ft	99 0000 0194	1
17	Round rocking switch, 12v, 16 Amp w/ LED	99 0000 0271	1
18	16 AWG rolled-edge blade terminal, female	99 0000 0196	3
19	Fuse tap	99 0000 0487	1
20	Quick disconnect for fuse tap	99 0000 0489	1

II. Electrical

Step Description

10 The grounding stud was removed from the tank to become the solenoid vent line, so the fuel will now be grounded through the solenoid itself. Take the replacement grounding wire (99 0148 0000) out of the solenoid kit. Remove the nut and lock washer off the top of the solenoid switch and connect the grounding wire onto the stud, then replace the lock washer and the nut. Run the grounding wire to a mounting point in contact with the frame.

NOTE: The short red wires protruding from the Solenoid are insulated from the fuel. Neither of them functions as a ground wire for the tank.

11 Take the two butt splice connectors from the solenoid box and crimp them on the two short red wires from the solenoid. Next attach the butt splice connectors to the red and black wires running up into the bed through the wire loom. (The solenoid is a simple on/off switch, so it doesn't matter which wire becomes black.)

12 Run the black wire as a ground wire to a mounting point on the frame. Trim and strip the wire, then crimp on a 3/8" ring terminal to mount.

13 Find an appropriate location in the cab to drill the hole for the rocker switch. Check behind the panel for conflicts before drilling and adjust as needed. We recommend using a step bit and drilling slowly to make sure the hole doesn't become too large.

14 Run the long red wire from the solenoid up to the cab and feed it through the hole along with the additional short red and black wires. Trim the long red wire as needed, then strip and crimp the wires into the blade terminals on the rocker switch. The wire from the solenoid goes to the middle terminal. The short black wire goes to the terminal marked as ground and the short red wire goes to the terminal marked as power. Feed the excess wire back through the hole and push the rocker switch into place.

15 Run the black wire to a common ground location or to a point on the frame. Trim the wire as necessary, then strip the end and use the last 3/8" ring terminal to create the ground.

16 Run the short red wire into the fuse block. Trim as needed and strip the end. Using the fuse tap and the last blade terminal, tie the red wire to a fuse block with 15A or 20A key-on power.

NOTE: Do NOT use an essential fuse for this tap, such as a fuse for a control module or a system with high amp draw. The running solenoid draws 1.5 Amps. We recommend tapping into a key-on, engine-off (KOEO) fuse.

Go to TITAN's website to view video installation instructions and tips.

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 on the bottom of the tank.

Write your tank's Serial Number here:_____

A product must be registered within sixty (60) days of receipt for the warranty to be valid. Other conditions may apply. Consult TITAN's full warranty for details.

*All capacities are approximate.

Warranty is void if product is improperly installed.

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

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Document Revision Date: 10/2/25