

INSTALLATION MANUAL

TITANIUM SERIES



**ALL 1/2" FUEL PORTS
AND FUEL LINE!**

APPLICATION:

T F14 125G (125GPH @ 55psi)

Powerstroke 7.3L

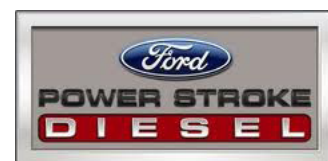
Bypassing the Factory Lift Pump
1999-2003

Powerstroke 6.0L

Bypassing the Factory Lift Pump
2003-2007

Standard Pickup Truck

****Note: Cab and Chassis
may require modifications****



PICKUP

FASS
Diesel Fuel Systems

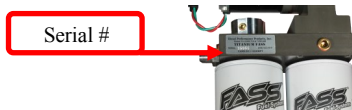
ENGINEERED EXCELLENCE

!WARNINGS!

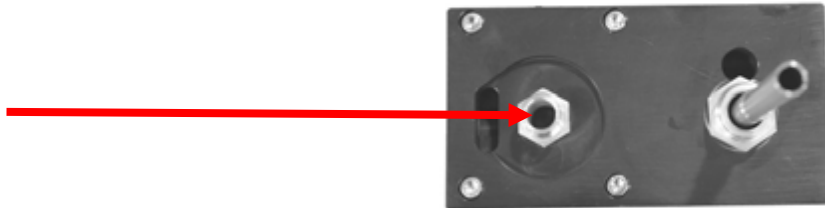
- Read all instructions before starting installation of this product!
- Installing the improper FASS Pump can cause *severe* engine damage.

| FASS | Recommended Application |
|--|---|
| T F14 125G | Powerstroke 1999-2007 with stock -moderate horsepower modifications |
| Note: Because of the higher fuel flow these systems have to offer, you may encounter problems with the stock fuel module. FASS can solve this with a Suction Tube Kit. | |

- Secure vehicle from **ROLLING!**
- Cab and Chassis may require modifications
- Consult vehicle's manufacturers' instructions concerning the electrical system before attempting any electrical connections.
- Be sure that the serial # on this installation manual matches that of the outside of the box.



- Flush and clean all brass fittings and fuel line from debris
- Keep debris from entering the internals of the system during installation. Getting debris in the water separator nipple can lock up the motor. If the motor does lock up from debris call FASS for technical assistance.



- Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.
- Properly secure lines to prevent chaffing.

**BEFORE STARTING THE INSTALLATION PROCESS LUBRICATE THE
BED BOLT WITH WD-40 TO HELP WITH INSTALLATION**

INSTALLATION MANUAL

Follow these steps to ensure a simple installation of your new
FASS TITANIUM FUEL SYSTEM

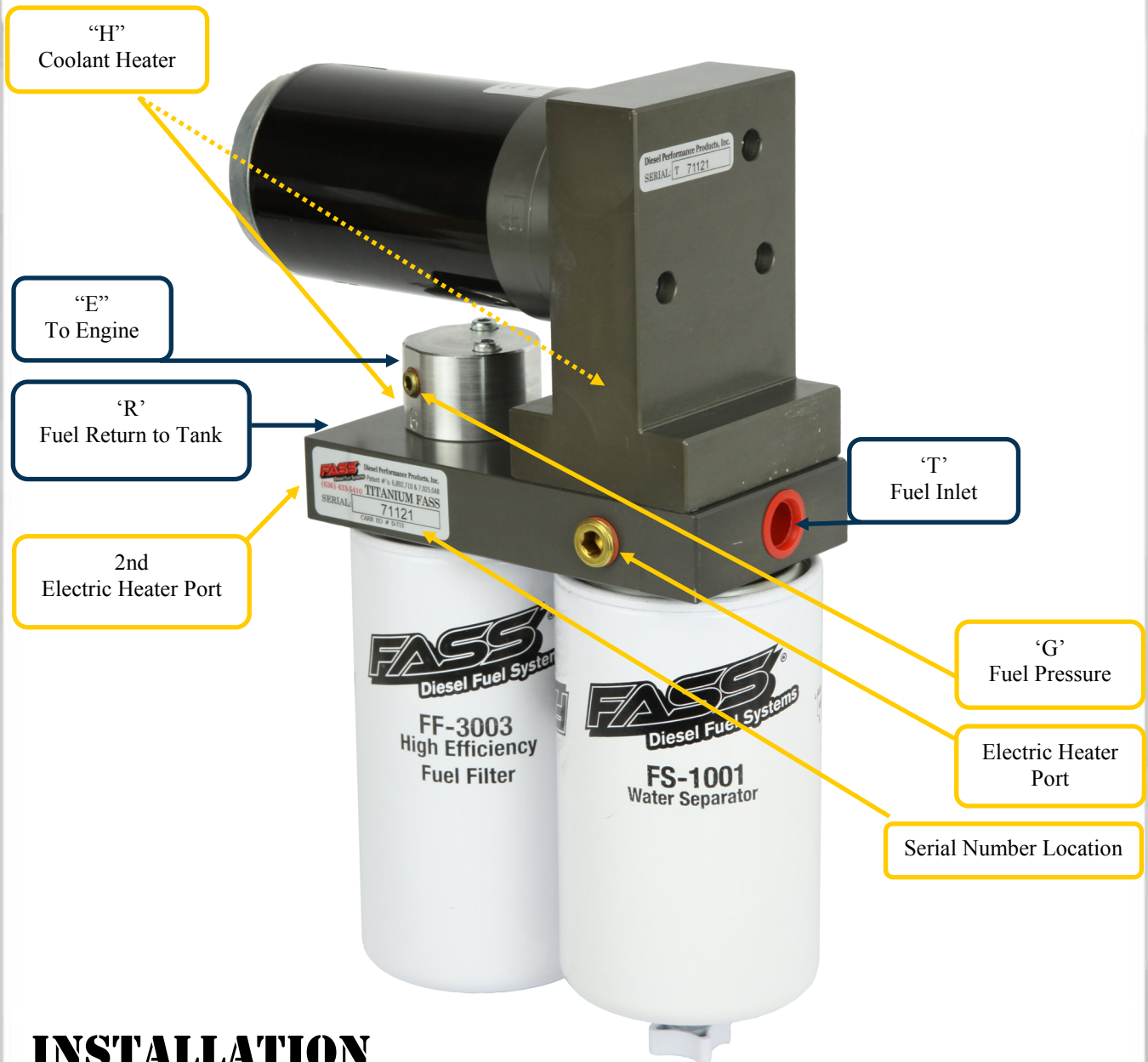
1. Inventory the package components completely. Notify the place of purchase immediately of any parts missing or damaged.
2. *Read the installation manual completely before attempting installation. Understand how the system operates and read installation recommendations before beginning installation.*
3. The installation recommendations contained herein are guidelines. Its important to understand your vehicles accessories and limitations. Use good judgment and take in to consideration your vehicles' accessories.
4. For best results in accuracy and efficiency (due to training, communication, and our relationship with our dealer network), we recommend an Authorized or ViP FASS Fuel Systems dealer for the installation. They are prepared to install the FASS fuel pumps with the most efficiency. If a situation/problem arises during the installation, they are the most prepared for that situation/problem. We are not responsible for any installation mistakes.

TITANIUM SERIES

125 GPH

55 PSI (APPROXIMATELY)

A fuel pressure gauge is highly recommended to identify fuel filter life and to prevent engine damage!



INSTALLATION

- Step 1: Install Electrical Harness
- Step 2: Prepare Suction and Return Lines
- Step 3: Mount Fuel System
- Step 4: Install Fuel Line
- Step 5: Check Installation

CONTENTS



FL-1058 x3'



MP-9045

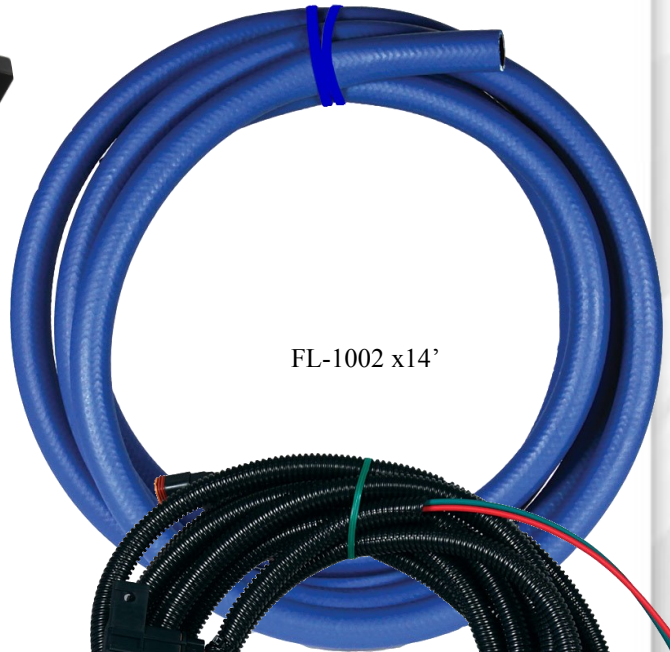


PBR-2001

PFB-2002



PFB-2001C



FL-1002 x14'



WH-1005

MOUNTING PACKAGE CONTENTS



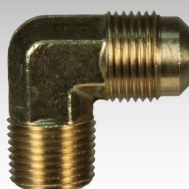
PL-1005



BHF-1002



Ring Terminal



10-302



10-300



PL-1004



PLB-12516



PLB-1238



ST-1005Px16"



Butt Splice



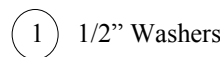
OR-223



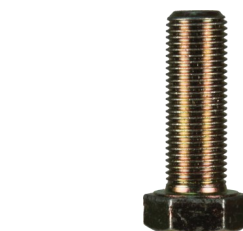
BHN-1001



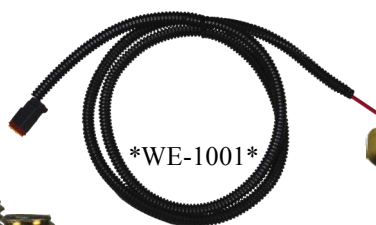
LW-1001



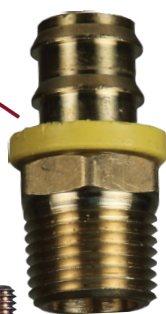
1 1/2" Washers



1 Hex Bolt 1/2" -20 x 1 1/2"



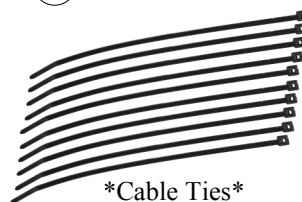
WE-1001



PL-1010



PL-1058



Cable Ties



4 Hex Bolt 3/8" -16x 1 1/2"



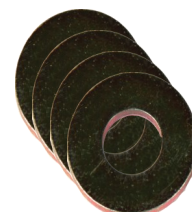
3 Hex Bolt 1/4"-20x1 3/4"



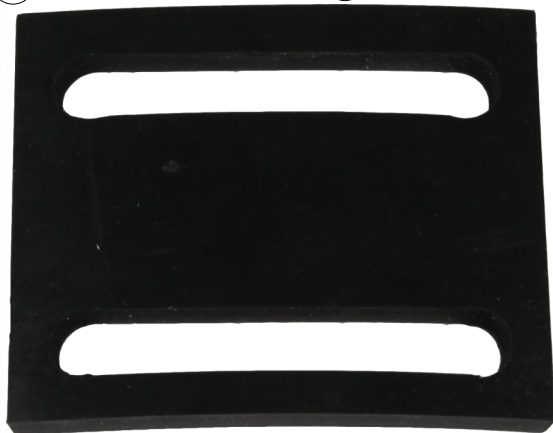
4 Locking Nut 3/8"



3 WA-1001D



4 3/8" Washers



RS-2002

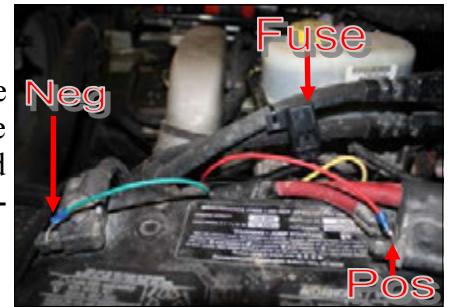


RS-2001

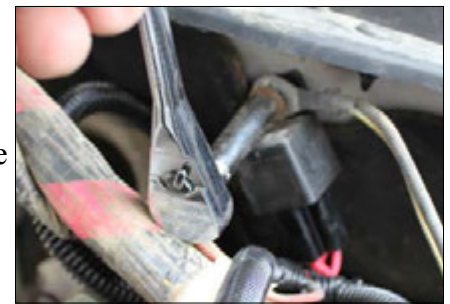
STEP 1: INSTALL ELECTRICAL HARNESS

The installation of the electrical harness is done first, allowing power to be applied to the pump for lubrication purposes later in the installation.

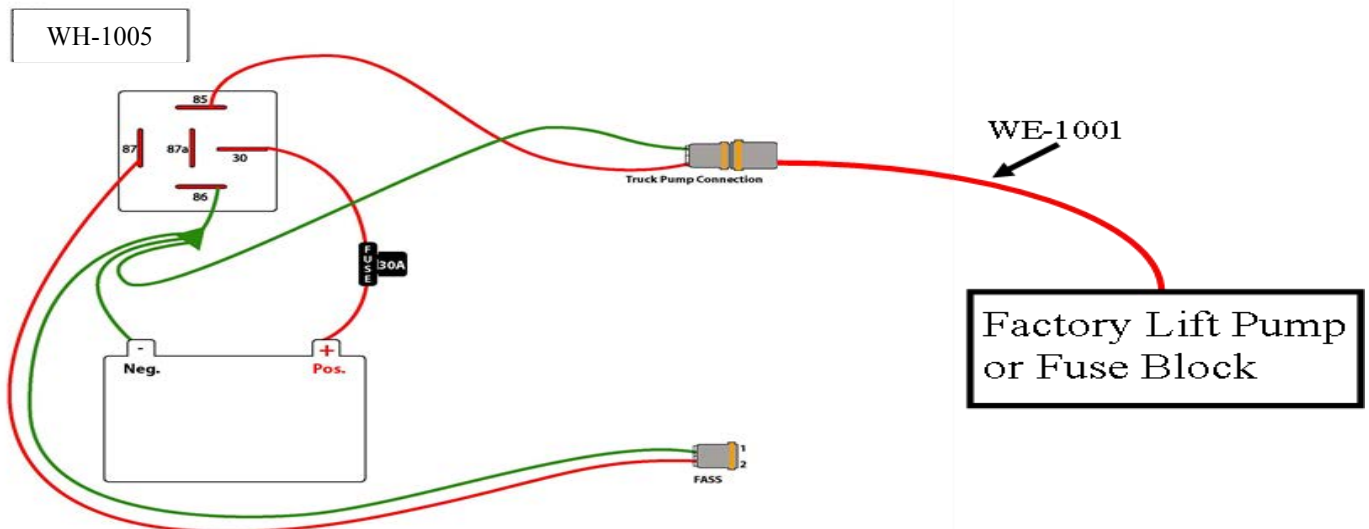
- A. Using ring terminals, attach red wire of the WH-1005 to the positive battery terminal. Attach green wire to a clean ground, preferably the negative battery terminal. Secure fuse block in a location protected from outside elements. **The use of a corrosion preventative on electrical connections is recommended.**



- B. Secure Relay in an upright position, as shown, to prevent moisture from entering. Di-electric grease may be applied to prevent corrosion.



- C. Attach WE-1001 to the WH-1005 Wiring Harness. Route WE-1001 red lead and the WH-1005 along the frame to the factory lift pump. **Completion of this step will be addressed in the Mounting Step.**



STEP 2: PREPARE SUCTION & RETURN LINES

Some of the photo's are of a different application, procedures are the same.

NOTE: Before installing fittings make sure to inspect for burrs or flare imperfections. When cutting fuel line make sure to blow out line to keep debris from moving forward.

- A. Before tank is removed or moved, identify ALL areas of clearance between the tank and the truck's bed for the best location to install the BHF assembly. With proper clearance, you want to install it as close to the Fuel sending unit as possible.

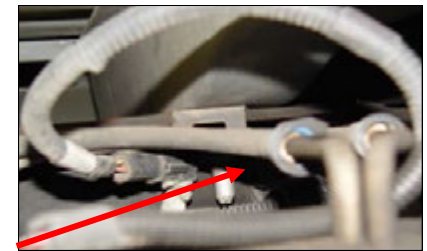


- B. Remove the filler neck and overflow tubes from the truck by loosening the clamps at both ends.



Helpful Hint: If more space is required to access the top of the fuel tank, loosen the strap nuts to the end of the stud. This will gain you about 3" more working room.

- C. Disconnect factory suction and return lines by pinching in side tabs.



- D. Disconnect factory wire harness.

- E. With the fuel tank empty of fuel, remove it from the vehicle.



- F. Clean the fuel module area then remove the lock ring on the top of the fuel tank.



- G. Once the lock ring is removed, carefully remove pick up module from fuel tank without bending fuel level arm.

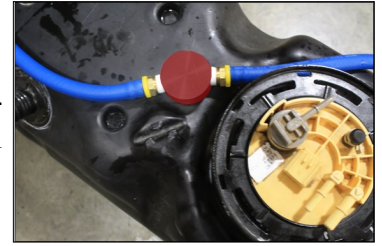
NOTE: Hose clamps are not recommended for push lock fittings. They will hold up to 300psi! Use oil on fittings and inside fuel line when installing Push-Lok fittings



- H. Assemble the BHF-1002 with the PL-1010 in port "S" & the PL-1004 in the "R" port using thread tape. Torque to 40 ft./lbs. Push the ST-1005P onto the barb portion of the BHF-1002. Insert O-ring into groove.

STEP 2: PREPARE SUCTION & RETURN LINES

- I. Before drilling marked location, clean area of debris. Using the photo double and check area selected for any interference including the fuel level arm.



- J. Drill a 1 3/8" hole, catching all debris. De-bur hole and remove any missed debris in the fuel tank.



- K. **VERY IMPORTANT:** Support fuel tank on both ends allowing the natural formation of the tank to take place. Failure to perform this step can and will create an issue with less usable fuel!



- L. Place the bulk head assembly into the drilled hole, take measurements so the bottom of the suction tube is only 1/8" (no more than 2 quarters stacked) from the bottom of the fuel tank. Using a razor knife, make multiple cuts to insure proper length, it is easy to shave the suction tube with the razor. **It is more efficient to cut the tube too long and then correct to proper length than it would be to cut too short.**



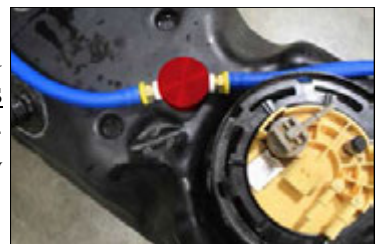
- M. With proper length being obtained, place the assembly into the drilled hole securing the assembly using the lock washer & nut. Tighten Nut. Loctite may be applied to the threads of the BHF-1002 for added insurance.



- N. Carefully reinstall install pick up module making sure the leveling arm is not obstructed by the suction tube. Reinstall factory lock ring.

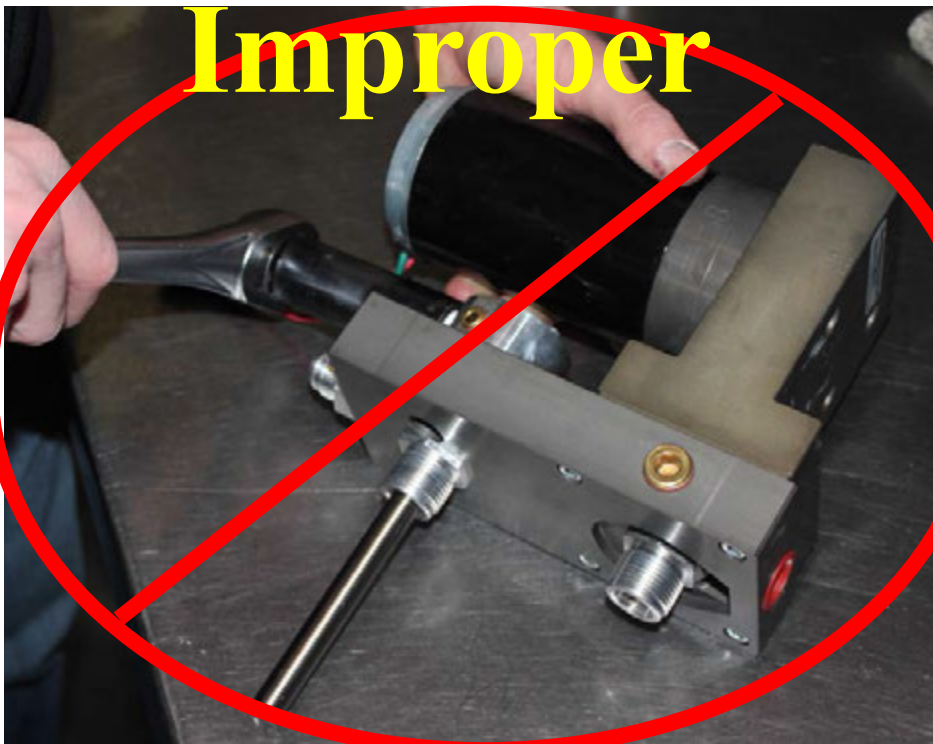
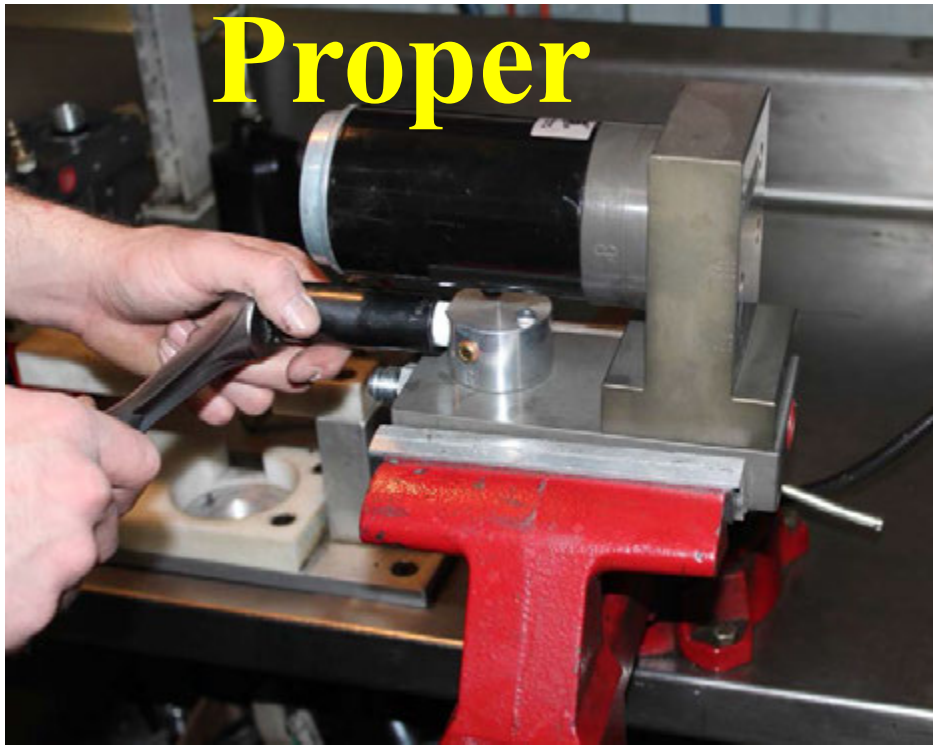


- O. Push one end of 1/2" fuel line onto 'R' port of suction tube assy. & one end of the 5/8" onto the 'S' port. Loop fuel line over frame. Do not cut at this time. Reinstall fuel tank making sure to reconnect factory suction line, factory return line, and electrical connections. Torque hanger bolts to factory specifications.



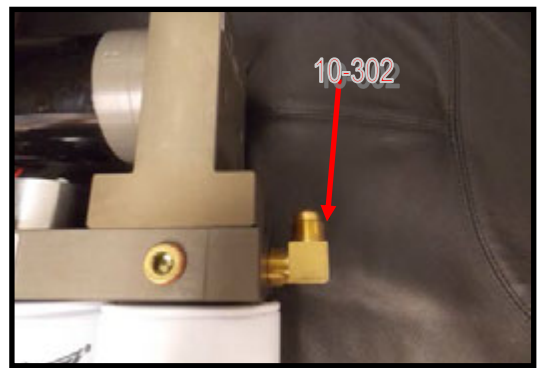
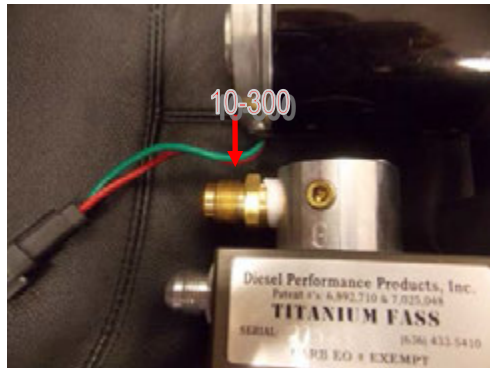
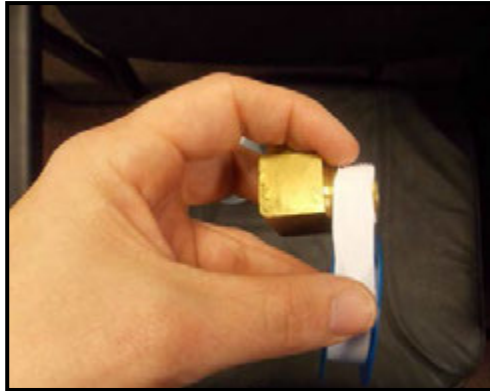
NOTE

ATTENTION: While installing fittings into Titanium pump
DO NOT Apply side pressure to draw
tube of pump

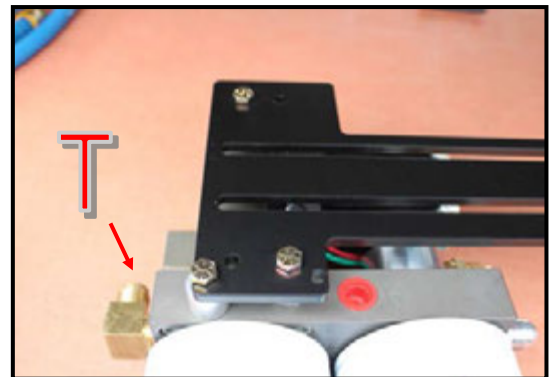
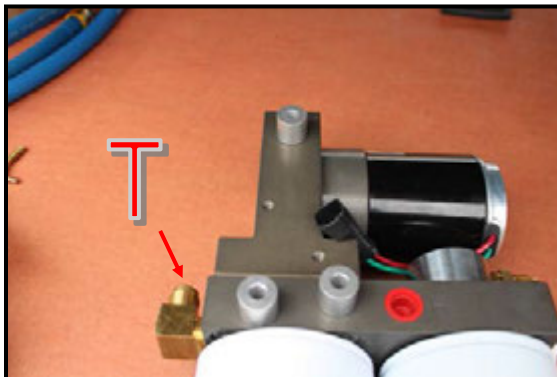


STEP 3: MOUNT FUEL SYSTEM

- A. Using thread tape, install the 10-300 into “E” and the 10-302 into the “T” port (on opposite end). Torque to 40 lb./ft.² **Note: Do Not Put Thread Tape on Flare of Fitting** *****The use of thread sealant is not recommended*****



- B. For fitting purposes. Secure PBR-2001 to pump assembly lightly with (3) 1/4"-20x1 3/4 bolts and (3) WA-1001D. Assembly will be used in future steps for correct fitting of brackets. (Note: Bracket may be flipped to accommodate your application.)



STEP 3: MOUNT FUEL SYSTEM

- C. Insert PFB-2002C in to bed channel align the nut with the opening on the channel.



- D. Secure PFB-2002 and RS-2001 with (1) hex bolt 1/2" -20 x 1 1/2" and (1) 1/2" washer to PFB-2002C



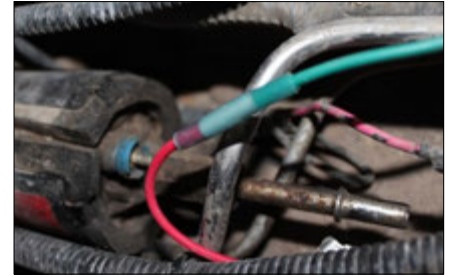
1999-2003 WITH 7.3L POWERSTROKE

- E. Route FASS wire harness/wire extension along the frame rail to factory lift pump. Remove the power lead from the factory lift pump. **Be sure to finish connecting wire harness before mounting into position.**



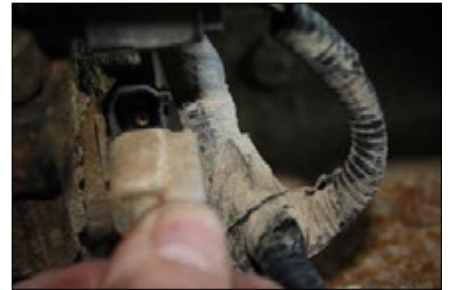
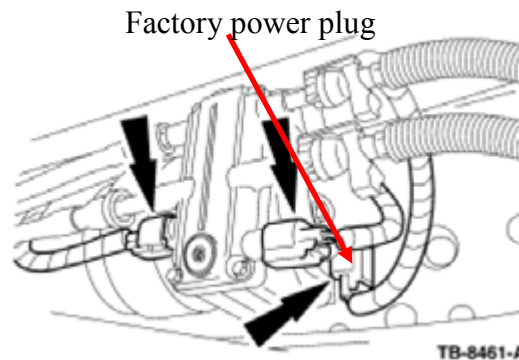
STEP 3: MOUNT FUEL SYSTEM

- F. Cut off the power lead terminal. Using appropriate tools, crimp the Butt Splice to the factory power lead and the WE-1001. Shrink blue cover with an appropriate heat source.



2003-2007 WITH 6.0L POWERSTROKE

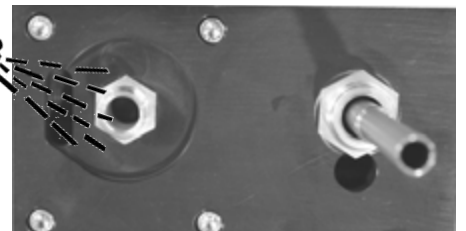
- E. Route FASS wire harness/wire extension along the frame rail to factory lift pump. Remove the power plug from the factory lift pump. **Be sure to finish connecting wire harness before mounting into position.**



- F. Cut off the power lead from the factory plug. Using appropriate tools, crimp the Butt Splice to the factory power lead and the WE-1001. Shrink blue cover with an appropriate heat source.



- G. Turn key to "on". With pump operating (you may have to bump the starter), turn pump over, liberally spray WD-40 (or equivalent) into water separator nipple lubricating Gerotor.

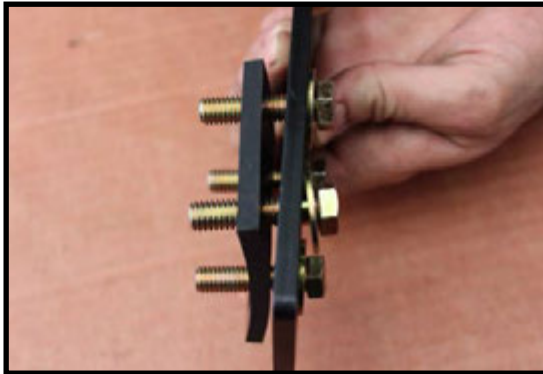


STEP 3: MOUNT FUEL SYSTEM

- H. Position the PBR-2001 to the PFB-2002 pump assembly at the mounting location and check for fit. Once location is established mark location for mounting in next step.



- I. Assemble the FASS pump bracket PBR-2001 using the RS-2002 spacer between PFB-2002 and PBR-2001 bracket with 4-3/8 bolts, nuts, and washers. **Note: Torque bolts not flange nut.**



- J. Once secure use 3-1 3/4 bolts and 3-WA-1001D spacers to mount the pump to the bracket.



STEP 3: MOUNT FUEL SYSTEM

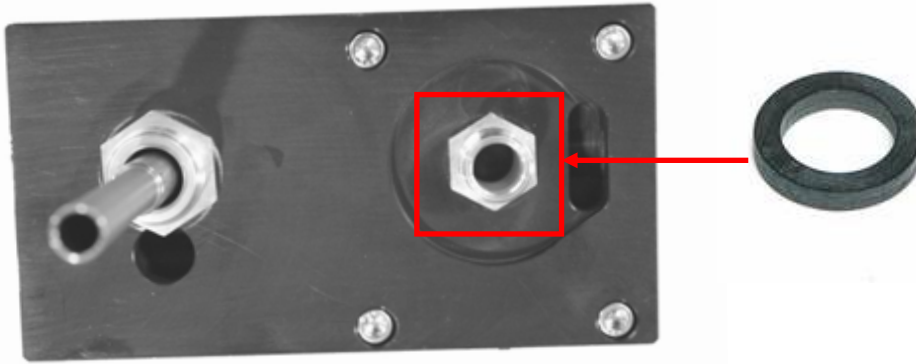
- K. Apply motor oil to gasket located on filters. Attach to system and hand tighten.



Fuel Filter –Install FF-3003 on side of pump with draw tube in the middle of the filter nipple.



Water Separator Filter –Install FS-1001 on water separator nipple without the draw tube. Make sure to insert O-Ring provided on nipple.



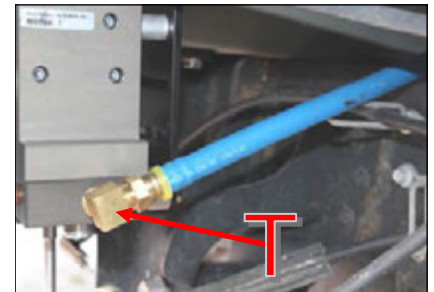
Note: O-Ring must be put back on suction side of pump. Failure to do so can result in priming issues, cavitation, or pressure loses.

STEP 4: INSTALL FUEL LINE

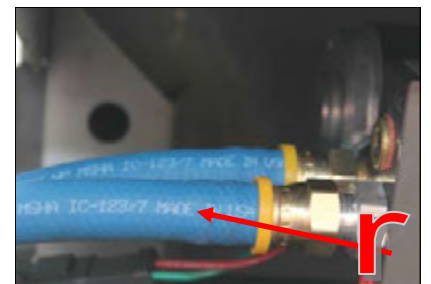
Caution: Do Not use sealant on AN fittings. Only use sealant on threads installed into pump assembly.

- A. Route suction line from the suction tube assy. to port 'T' on the FASS system. Cut FL-1058 to needed length. Insert PL-1058 using oil. Connect to 10-302 in port 'T'. Torque to 18 ft./lbs.

NOTE: Hose clamps are not recommended for push lock fittings. They will hold up to 300psi! Use oil on fittings and inside fuel line when installing Push-Lok fittings



- B. Route fuel line from the 'R' port of the suction tube assy. to the 'R' port on the FASS system with a gentle bend. Cut and insert PL-1005 using oil. Attach fitting to the 'R' port. Do not use any sealant. Torque to 18 ft./lbs.



- C. Insert PL-1005 into remaining fuel line using oil. Attach fuel line to the 'E' port of the FASS system. Torque to 18 ft./lbs. Route this line to the engine side of the factory lift pump. Do not cut at this time.

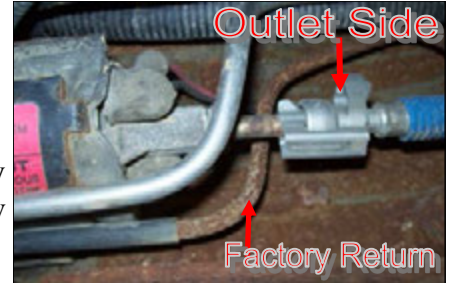


STEP 4: INSTALL FUEL LINE

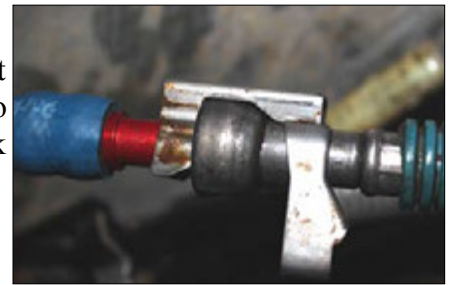
1999-2003 WITH 7.3L POWERSTROKE

F. Bypass factory fuel pump.

G. Using a quick disconnect tool, remove the outlet side of the factory fuel pump. **The factory return line on the 7.3L does not require any modification.**



H. Route the fuel line from the “E” port of the FASS to the factory lift pump’s quick disconnect and cut to length. Insert the PLB-12516 into FASS fuel line using oil. Slide the PLB-12516 into the factory quick disconnect until you hear a click. Lock down factory retainer clip.



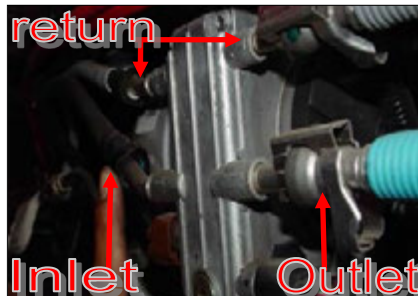
2003-2007 WITH 6.0L POWERSTROKE

F. Bypass factory fuel pump.

G. Drain fuel from factory pump/filter using a 6mm hex drive, turning it counterclockwise.



H. Using quick disconnect tools, remove the fuel lines from the front of the factory fuel pump. Remove the fuel lines attached to the rear of the factory fuel pump by pressing in on the tabs.



Note: Secure all fuel lines with cable ties. Cable ties are an economical way to prevent the possibility of problems occurring!

STEP 4: INSTALL FUEL LINE

- G. Route the fuel line from the “E” port of the FASS to the factory lift pump’s outlet quick disconnect and cut to length. Insert the PLB-1238 into FASS fuel line using oil. Slide the PLB-1238 into the factory quick disconnect until you hear a click. Lock down factory retainer clip.



- H. Measure between the two factory return fittings. Insert two PLB-12516 fittings into the provided FL-1002 fuel line using oil. Insert fuel line into factory quick disconnects until you hear a click. Lock down retainer clip. Secure fuel line.



Note: Secure all fuel lines with cable ties. Cable ties are an economical way to prevent the possibility of problems occurring!

STEP 5: REVIEW INSTALLATION

- Blow out any open lines/cover any open ports
- Bolts and fasteners properly tightened?
- Electrical harness and fuel lines secured and properly tightened? Reconnect the battery.
- Has the system been primed?
 1. Turn key to the ignition position, turning on the FASS pump for 15 sec..
 2. Crank engine and allow to run for at least 1 minute.
- Check for leaks.
- Start the engine
- Recheck all fluid and filter connections for leaks

STEP 5: REVIEW INSTALLATION

The factory suction line can be capped off or removed from the truck. The openings on the filter and tank will need to be capped off to keep debris from getting into lines or canister.

To assist with priming your FASS pump crack the FF-3003. Put power to the FASS pump to activate the pump. When the tone of the pump changes you can tighten up the fuel filter.



Note: The Red Plastic Plugs located in the “H” ports can stay in place fuel will not flow through these ports. Coolant can be plumbed into these ports to heat the fuel in the Winter months.