INSTALLATION MANUAL

TITANIUM SERIES

APPLICATION:

T F17 220G (220gph @ 55psi)

Powerstroke 6.7L
bypassing the factory Lift Pump

2011-2012

Ford POWER STROKE DIESEL

LIFETIME WARRANTY AVAILABLE

PICKUP

FASS® Fuel Air Separation System

Dear Valued Customer,

"Made in the USA" is not just a slogan at FASS; it's what we live by! FASS is not only assembled in the USA but 98%+ of the FASS product is manufactured in the USA, helping to employ Americans and strengthen America. At FASS, we scrutinize our suppliers and demand the highest quality American-made components. However, this does come at a price, which is one of the main reasons FASS products are more expensive than the competition. Remember price does not dictate quality but quality does dictate price! Here at FASS, we believe it's worth the commitment and will continue this practice to support America! Our competition is doing exactly the opposite by using foreign-made components.

Building extremely "High-Quality" fuel products is our business. We concentrate all of our efforts in this arena. No one else is as specialized as FASS in what we do! This is one of the ingredients to insure you are running with the "Highest-Quality" fuel system in the world! We have implemented very rigorous testing procedures to provide the "Highest Quality" we have become known for. Not only is our product superior, but customer satisfaction is #1 at FASS. It is our goal to provide the best service possible. Our confidence is evident in the products we make as each product is backed by an industry leading warranty!

Our R & D department, in conjunction with our Dealer Support department, is continually searching for ways to improve quality, expand our product line, and provide superb support to our network of dealers so our customers' needs and expectations will be exceeded.

To help insure you receive the proper system and customer support at the local level, FASS has a VIP and Authorized Dealer network representing FASS products. This is one reason you must purchase through a dealer to comply with our warranty policies. If you do not, there is no warranty! We recommend you go to www.FASSride.com, click "Find A Dealer", put in their ZIP code, select the type of dealer, and see if the company you purchased from is listed. If they are not, put their phone number in the field below the ZIP code field to see if they are listed. Below these two fields is a list of "Terminated/Unauthorized" dealers. You may want to review this list. If the company is not listed or is on the "Terminated/Unauthorized" list, we suggest you return the product immediately to that dealer and call FASS. We'll recommend you to the nearest dealer.

VERY IMPORTANT: Make sure to fill out your product registration form and return the original form to FASS Fuel Systems within 30 days of purchase accompanied with a copy of the purchase receipt. Complying with these guidelines will qualify you for the Extended Warranty!

See the Owner's Manual for full Limitation of Warranty. In the event that the buyer does not agree with this agreement: the buyer may promptly return this product, in a new and unused condition, with a dated receipt, to the place of purchase within thirty (30) days from date of purchase for a full refund less shipping.

The installation of this product indicates that the buyer has read and understands the Limitation of Warranty agreement and accepts its terms and conditions.

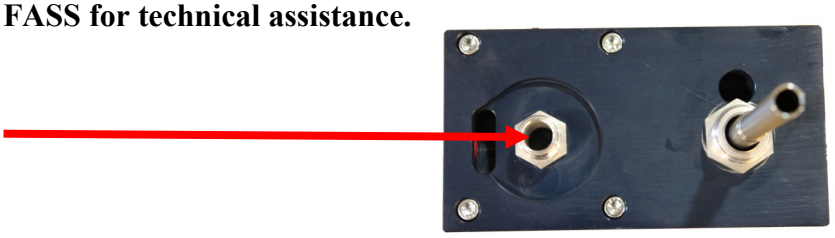
¡WARNINGS!

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

FASS	Recommended Application
T F17 220G	Powerstroke (6.7L) 2008-2010 with super extreme horsepower modifications

- **Secure vehicle from ROLLING!**
- **Use caution when drilling. Steer clear of any electrical wires , air lines or other damageable components.**
- **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.**

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.
5. Normally, technical issues can be resolved by your dealer's service department, as they can usually inspect the situation physically. If you have any questions or concerns email or call FASS.
6. If any installation procedure is uncertain, contact FASS technical support.

   Email techsupport@FASSride.com with the following information:

   - Your Name, address and daytime phone number
   - Model **(T F17 220G)**
   - Serial Number
   - Last 6 of vehicles' VIN
   - Date of purchase
   - Nature of Your Concern

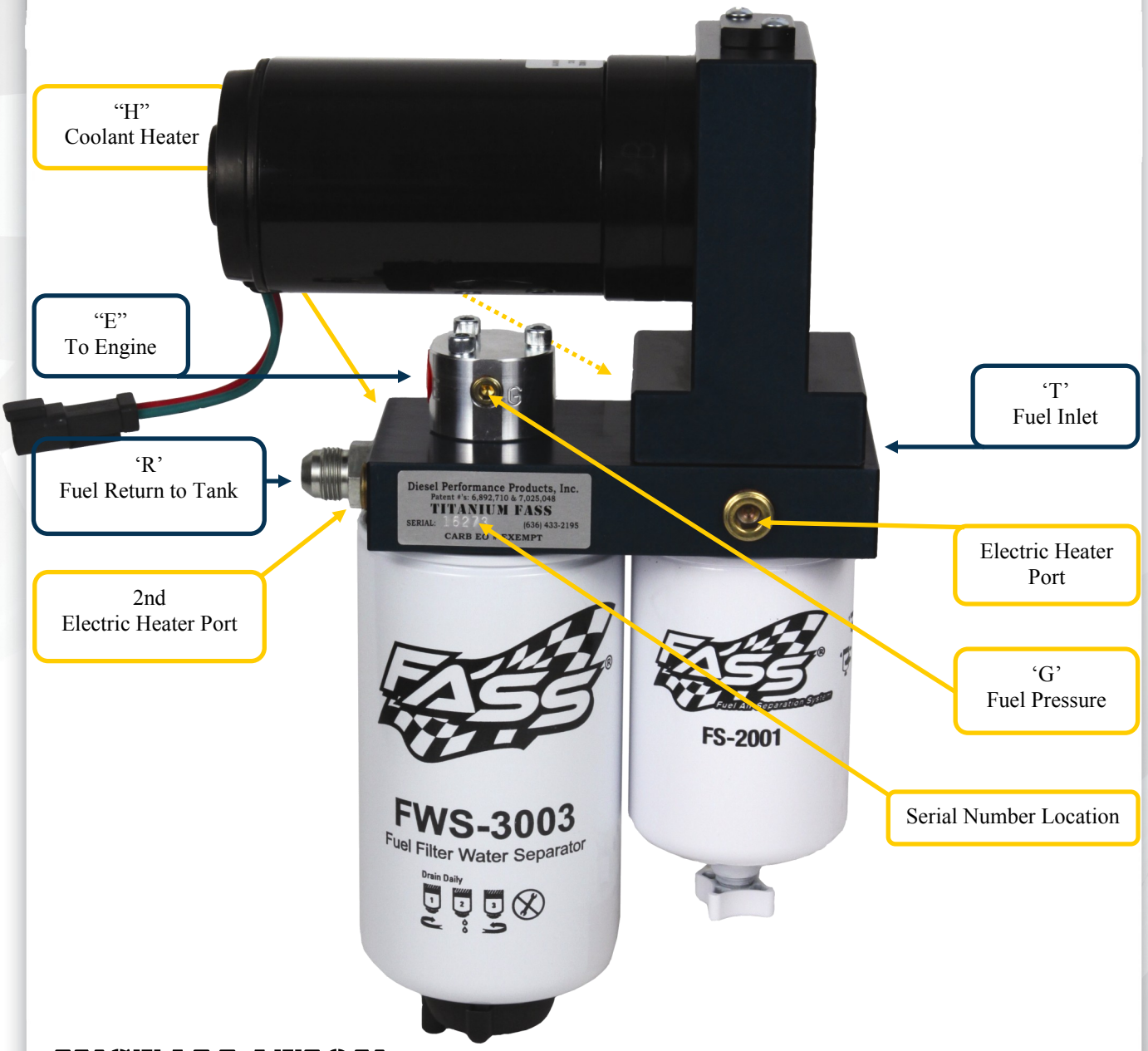
   Call customer service; 636-433-5410 with the following information:

   - Model **(T F17 220G)**
   - Serial Number
   - Last 6 of vehicles' VIN
   - Date of purchase

TITANIUM SERIES

220 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

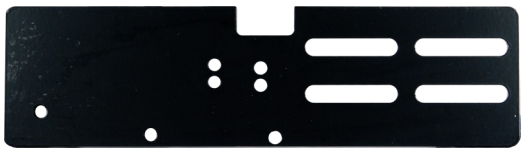
CONTENTS

Cable Ties

Owner's Manual
Titanium

MP-9074

FB-1010



BR-2001

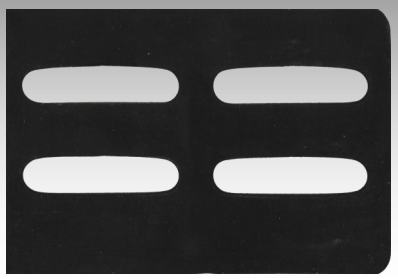
WE-1008

FL-1002 x11'

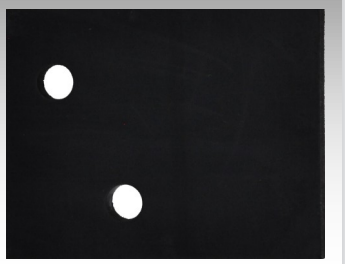
WH-1005

MOUNTING PACKAGE CONTENTS

BHF-1002



RS-1001



RS-1004

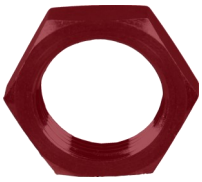
ST-1005Px14”

10-298

10-299

OR-223

LW-1001

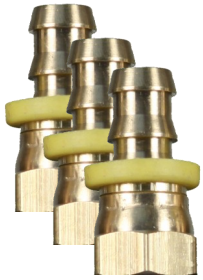


BHN-1001

Ring Terminal

DB-4646

PL-1004



PL-1005

PLB-1212

RVC-12

RVC-38

(5) Hex Bolt 1/4”-20x1.25”

(5) WA-2001

(6) Hex Bolt 3/8” -16x 1 1/2”

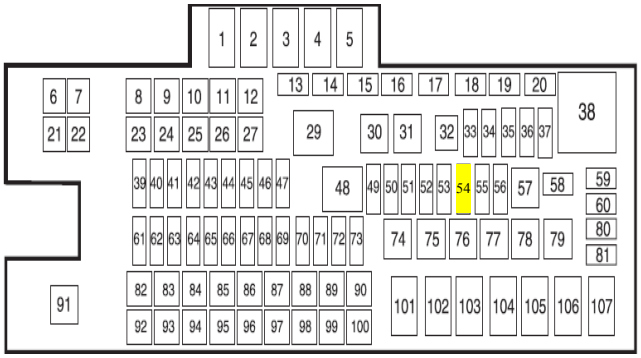
(6) Locking Nut 3/8”

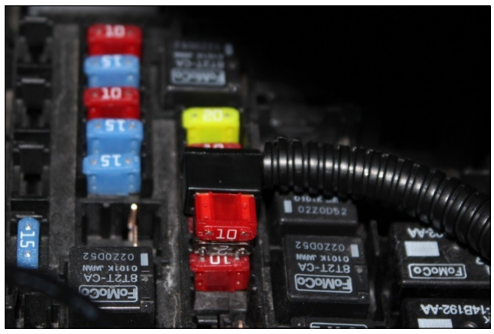
MOUNTING TEMPLATE

STEP 1: INSTALL ELECTRICAL HARNESS

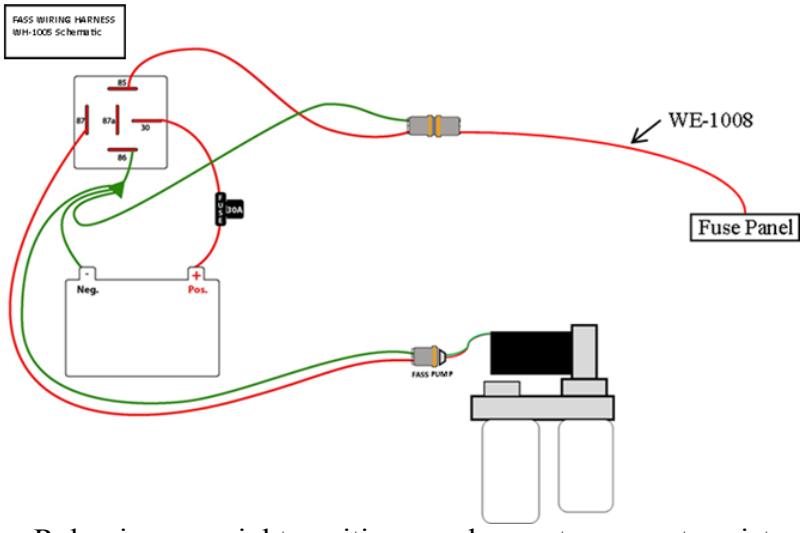
The installation of the electrical harness is done first, allowing power to be applied to the pump for lubrication purposes.

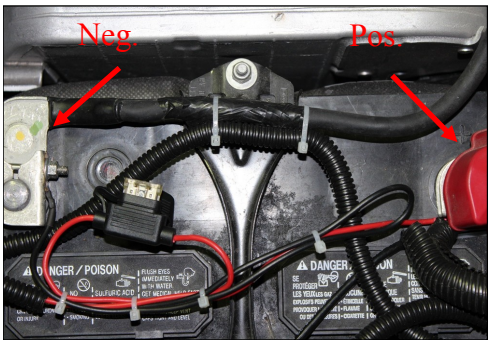
a. Connect the WE-1008 Fuse Tap Extension to the WH-1005's shorter relay branch. Route the extension to the engine bay fuse panel. Remove a fuse (maximum of 10A) that is "hot" when the key is on. Example: #54 or #55. **Use a test probe to locate the "hot side" of the circuit in the fuse block.** Install the fuse tap into the open location. Install the pulled fuse into the open space on the fuse tap. Disconnect the vehicle's battery and continue installation.





b. Using ring terminals, attach the two power wires of the WH-1005 to the battery. **The use of corrosion preventative spray is recommended.** Attach red to the positive and green to the negative. Secure fuse block in a location protected from outside elements.





c. Secure Relay in an upright position, as shown, to prevent moisture from entering. Di-electric grease may be applied to prevent corrosion. Picture shows using an existing bolt on firewall.

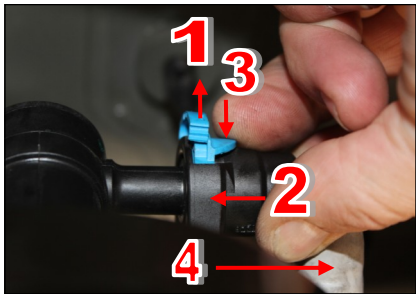
d. Route WH-1005 wire harness along frame rail to mounting location of pump. **Completion of this step will be addressed in the Step 3.**

STEP 2: PREPARE SUCTION & RETURN LINE

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

Helpful Hint: Directions for removing factory lines.

1. **Pull up on the locking tab (either blue or yellow),**
2. **Push in slightly on the connector,**
3. **Press down on the release tab,**
4. **Pull the connector straight off,**



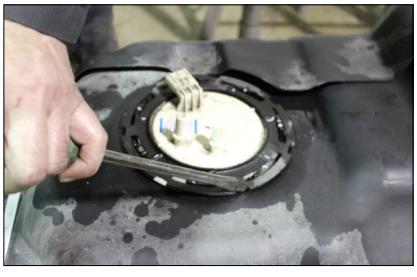
Very Important: Before removing the fuel tank identify "ALL" areas of clearance between the tank and bed to install the draw tube assembly. The closer the suction tube is placed to the fuel sending unit, front to back and left to right, the more usable fuel there will be!

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

Helpful Hints: 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.

b. Disconnect factory suction and return lines (refer to diagram at the beginning of step 2).

c. With the fuel tank empty of fuel, unbolt the tank straps and remove it from the vehicle.

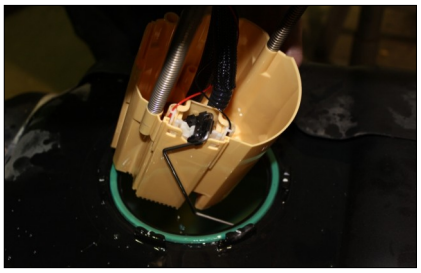


d. Clean the fuel module area then remove the lock ring on the top of the fuel tank. **This is spring loaded, so, holding it down while removing the ring will prevent the sending unit from popping up and possibly causing damage.**

STEP 2: PREPARE SUCTION & RETURN LINES

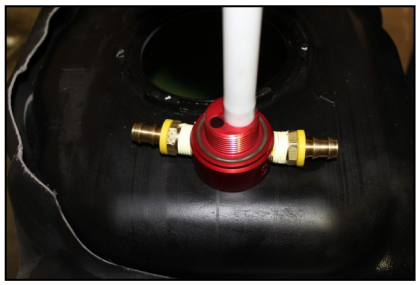
e. Note the location of the tab and arrow. Re-install the sending unit in the same location to prevent the fuel level arm from binding.

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



g. Place the tank on blocks to simulate the tank hanging. **Failure to do this step may result in the draw tube being cut too short.**

h. Assemble the BHF-1002 with two PL-1004's in ports 'R' & 'S' using thread tape. Torque to 40 lb./ft.² Push the ST-1005P onto the barb portion of the BHF-1002. Insert O-ring into groove.



i. Place the lock ring back on the tank and locate the BHF-1002 bulkhead fitting on the tank with enough clearance for the fuel line and fittings. **Keep in mind the bulkhead must also clear the bottom of the bed support structure.** The fiberglass protective shell will have to be trimmed as necessary for clearance .

STEP 3: MOUNT FUEL SYSTEM

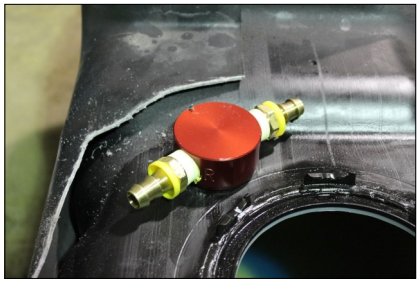
j. Once location has been established, **double check! Make sure the fuel line and fittings will clear the trimmed protective shell.** Mark location and drill 1 1/2" hole with hole saw. Hold a cup or catch can inside the tank while drilling to catch any debris. Place a rag over the opening to prevent tank contamination. Double check for debris around the ring and inside tank.

k. De-burr hole and check for fit.

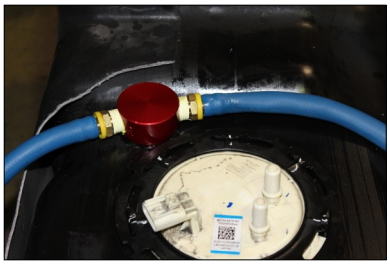
l. Place the bulk head assembly into the drilled hole, take measurements so the bottom of the suction tube is only 1/8" (no more than 2 quarters stacked) from the bottom of the fuel tank. **Measure twice and cut once!** Using a razor knife, cut to proper length. If unsure of correct length, make small cuts until proper length is achieved.

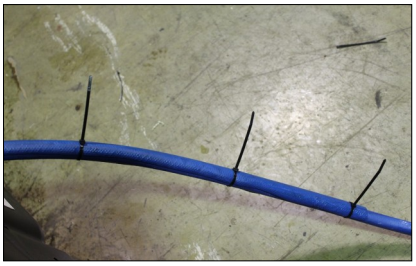
m. Install Bulkhead with lock washer and nut. Tighten nut securely with a 1-7/8" socket or wrench. Make sure the fittings are unobstructed.

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.



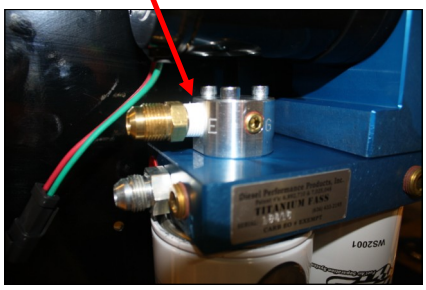
n. Carefully reinstall install pick up module making sure the leveling arm is not obstructed by the suction tube. Reinstall factory lock ring. Push one end of fuel line onto 'R' port of suction tube assy. & one end onto the 'S' port. Do not cut at this time. Cover the return line with spare tubing or similar to protect fuel line from the trimmed fiberglass shell. Reinstall fuel tank making sure to reconnect factory return/feed and electrical connections. Route FASS fuel line to prevent pinching. Torque hanger bolts to factory specifications.

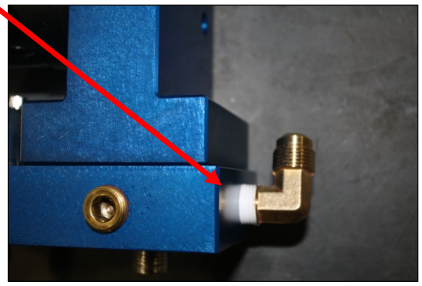




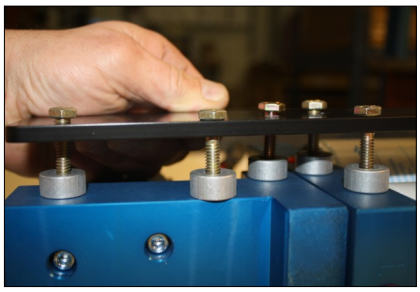
STEP 3: MOUNT FUEL SYSTEM

a. Using thread tape, install the 10-298 into "E" and the 10-299 into the "T" port (on opposite end). Torque to 40 lb./ft.²

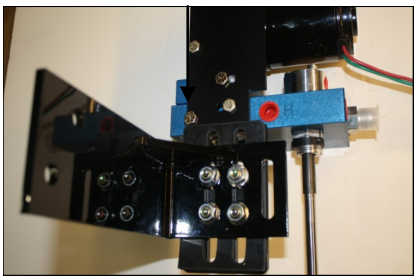




b. Attach BR-2001 to back of system using five 1 1/4" Hex bolts and WA-2001 spacers. Torque to 10 lb./ft.²

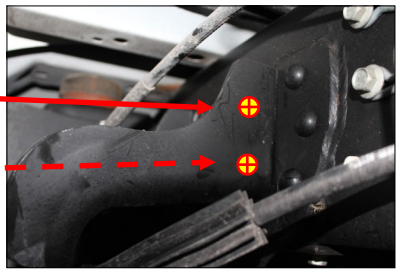


c. Assemble the FASS pump brackets FB-1010 to the BR-2001. Placing the RS-1001 spacer between the brackets, using the 3/8" hex bolts and lock nuts. Hold pump up to the mounting location for rough fitting.
Mounting to bed support, cab bracket or leaf hanger.



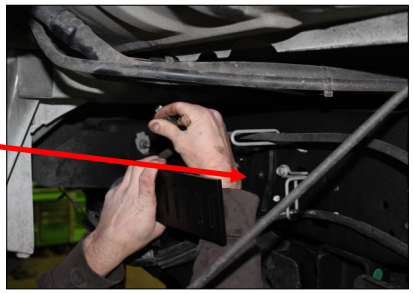
d. Hold pump up to the mounting location for rough fitting and mark the drill location. Mount to the front leaf spring hanger, ***inside*** the back support, above the inside radius. Disassemble brackets.

Note: Mount bracket on inside wall above the inside radius, but, mark and drill from the outside.



e. Once location is established, use the template located on the contents page or bracket to mark drill points. A clamp can be used to hold the bracket in place. Pre-drill holes. Final drill with 3/8" bit.

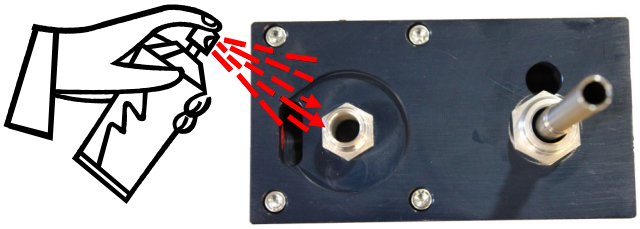
Remove this cable hanger for better drill access.



STEP 4: INSTALL FUEL LINE

Do Not use sealant on AN (male flare) fittings. Only use sealant on threads installed into pump assembly.

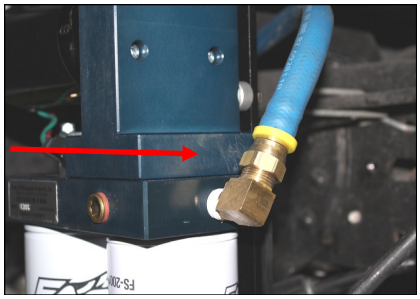
f. Disconnect the factory power plug to the factory lift pump. Plug female plug of the WH-1005 harness into the FASS pump. Reconnect the vehicles battery. Turn key on. With pump operating, liberally spray WD-40 (or equivalent) into Water Separator nipple. This process helps lubricate the gear for easier initial priming.



g. Using 3/8’ bolts and lock nuts, mount the FB-1010 to the leaf spring support with the RS-1004 spacer between. Using the RS-1001 spacer between the BR-2001 and the FB-1010, mount pump so it does not rub, level pump, and tighten all bolts. **On short bed models, protect the Urea fill tube with spare fuel line or similar.** Re-attach cable hanger.

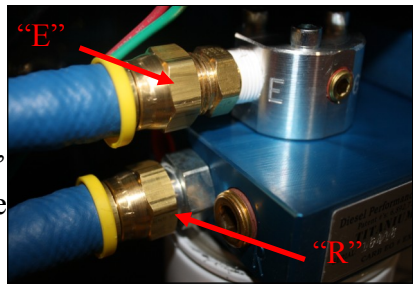
h. Apply motor oil to gasket located on filters. Attach to system and hand tighten.

STEP 4: INSTALL FUEL LINE



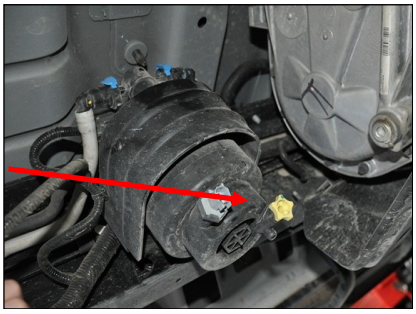
a. Route suction line from the suction tube assy. to port ‘T’ on the FASS system. Cut FL-1002 to needed length. Insert PL-1005 using oil. Connect to 10-299 in port ‘T’. Torque to 18 ft./lbs.

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.

BYPASSING FACTORY FUEL PUMP



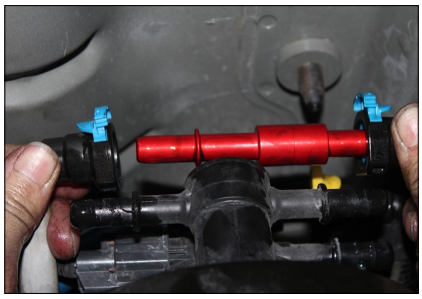
d. Disconnect factory power to the lift pump. Drain fuel from factory lift pump.

e. Disconnect the yellow-clipped factory feed at the factory lift pump (refer to diagram at the beginning of step 2).

STEP 4: INSTALL FUEL LINE

f. Measure fuel line from the FASS to the factory **feed** fitting. Cut and insert a PLB-1212 using oil. Oil the PLB and slide into the yellow-clipped factory **feed** fitting until you hear a click. Push down the locking tab.

g. Disconnect both factory return lines from the factory lift pump (refer to diagram at the beginning of step 2). Insert DB-4646 into each return line fitting until you hear a click and tabs lock.



h. Clean and cap off the factory return ports with the two RVC-38 caps. Clean and cap off the factory feed port with the RVC-12 cap. Seal factory electrical connection with di-electric grease or similar to prevent corrosion.

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?
- Has the system been primed?
    1. Crack the **fuel** filter. Turn key to the ignition position, turning on the FASS pump.
    2. When the tone of the FASS motor changes, quickly tighten fuel filter.
- Recheck all fluid and filter connections for leaks (with engine running)
- This pump comes with a 1 Year Manufacturer's Warranty based on the date it has been manufactured. To receive your extended Lifetime Warranty, you have 30 days from date of purchase to send the completed warranty information along with a copy of the purchase receipt in to: Diesel Performance Products, Inc. Attn: Warranty, 16240 State Hwy O, Suite B, Marthasville, MO 63357