FASS Diesel Fuel Systems

TITANIUM SERIES

INSTALLATION MANUAL

ALL 1/2" FUEL PORTS



APPLICATION:

GM 6.5L TURBO DIESEL

TSC08100G
(100GPH @ 5-7PSI)
TSC08165G
(165GPH @ 5-7 PSI)

Standard Pickup Truck
1992-2000

DESIGNED, MACHINED & ASSEMBLED IN THE USA

LIFETIME WARRANTY AVAILABLE

FASS DIESEL FUEL SYSTEMS® / ENGINEERED EXCELLENCE

Thank you for choosing FASS, from Diesel Performance Products, Inc.

FASS specializes in building extremely high-quality fuel products. We have earned an unsurpassed reputation for excellence in our industry by using only the highest-quality American-made components. In order to support our American workers and our American economy, more than 98+ percent of our products are manufactured completely in the United States.

Of course, that dedication to excellence comes at a price, but it is important to remember that price does not dictate quality-quality dictates price! We will never compromise by using cheaper, foreign-made components, like so many of our competitors do.

Customer satisfaction is our top priority and we strive always to provide outstanding customer service. Our Research and Development department, in conjunction with our Dealer Support Department, continually searches for ways to improve quality, expand our product line, and provide superb support. Our exclusive ViP Network ensures that customers receive the proper products and support at the local level. The extended lifetime warranty is only available on products purchased from the network. There is no warranty on products not purchased outside the network.

IMPORTANT:

In order to qualify for the lifetime extended warranty, your product registration form and proof of purchase from an authorized dealer must be submitted to FASS Fuel Systems within 30 days of purchase. Failure to comply will void the warranty. We have the right to deny any warranty believed to be false, altered or purchased through an unauthorized or terminated dealer. A current list of authorized dealers can be found on our website, FASSRide.com.

The complete conditions of the Limitation of Warranty can be found in the back of this manual, and FASSRide.com.

**For more information,
contact Technical Support:
Diesel Performance Products, Inc.
16240 State Hwy O. Suite B
Marthasville, MO 63357
636-433-5410**

www.fassride.com
(866) 769.3747



WARNING!

This product has NO WARRANTY unless:

1. It has been purchased from an Authorized or ViP FASS Dealer. If in doubt, check www.FASSRide.com.

2. It is registered within thirty (30) days of purchase.

Other conditions may apply. Please see full warranty information.

NOTE: **Warranty is void if product was purchased below FASS website advertised pricing.**

ATTENTION!

Before you begin installation

Register for your Warranty ONLINE at

https://www.fassride.com/register-a-warranty/

No online access, call our TECH Support at

1-866-769-3747

www.fassride.com
(866) 769.3747

FOLLOW THESE STEPS TO ENSURE A SIMPLE, CORRECT INSTALLATION OF YOUR NEW TITANIUM FUEL SYSTEM

ATTENTION:
Be sure to identify the proper FASS System and fuel line configuration. For help, our product finder can be found at www.FASSride.com. Follow the instructions to see fuel line detail.

1. Be sure the serial number on this installation manual matches that on the outside of the box.
2. Pay close attention to ALL WARNINGS
3. Read all instructions before starting installation of this product.
4. Inventory the package components. Notify the place of purchase immediately of any parts missing or damaged.
5. The installation recommendations contained herein are guidelines. Use good judgment and take into consideration your vehicles' accessories.
6. For best results in accuracy and efficiency (due to training, communication, and our relationship with our dealer network), we recommend a VIP FASS dealer for the installation. They are prepared to install the FASS fuel pumps with the most efficiency. If a situation or problem arises during the installation, the dealer is prepared to handle it. Diesel Performance Products, Inc. is not responsible for any installation mistakes.
7. If you have any questions or concerns that cannot be addressed with your dealer, email or call FASS.

If any installation procedure is uncertain, contact FASS technical support. Call customer service at 636-433-5410, or send us an e-mail: techsupport@FASSride.com with the following information:

Your name, address and daytime phone number
Model (TS08100G) or (TSC08165G)
Serial Number
Last 6 digits of vehicles' VIN

Date of purchase
Nature of Your Concern
Serial number



www.fassride.com
(866) 769.3747

INSTALLATION MANUAL

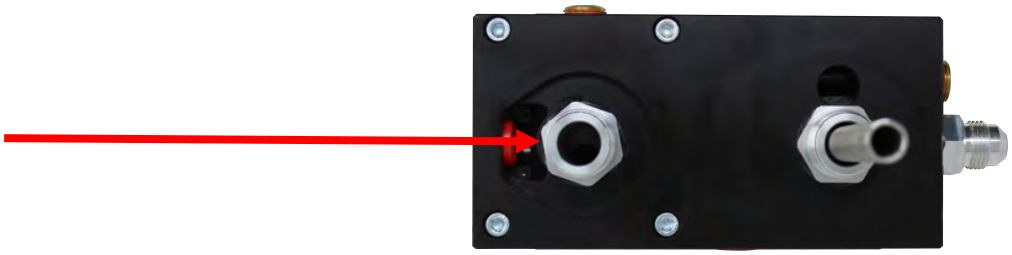
TSC08100G OR TSC08165G

Recommended Application

TSC08100G 6.5 Turbo Diesel 1992-2000 with stock-600 horsepower.

TSC08165G 6.5 Turbo Diesel 1992-2000 with 600-1,000 horsepower.

1. **Read all instructions before starting installation of this product!**
2. **Installing the improper FASS Pump can cause severe engine damage.**
3. **Secure vehicle from ROLLING!**
4. **Cab and Chassis may require modifications**
5. **Consult vehicle's manufacturers' instructions concerning the electrical system before attempting any electrical connections.**
6. **Be sure that the serial # on this installation manual matches that of the outside of the box.**
7. **Flush and clean all brass fittings and fuel line from debris.**
8. **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.**



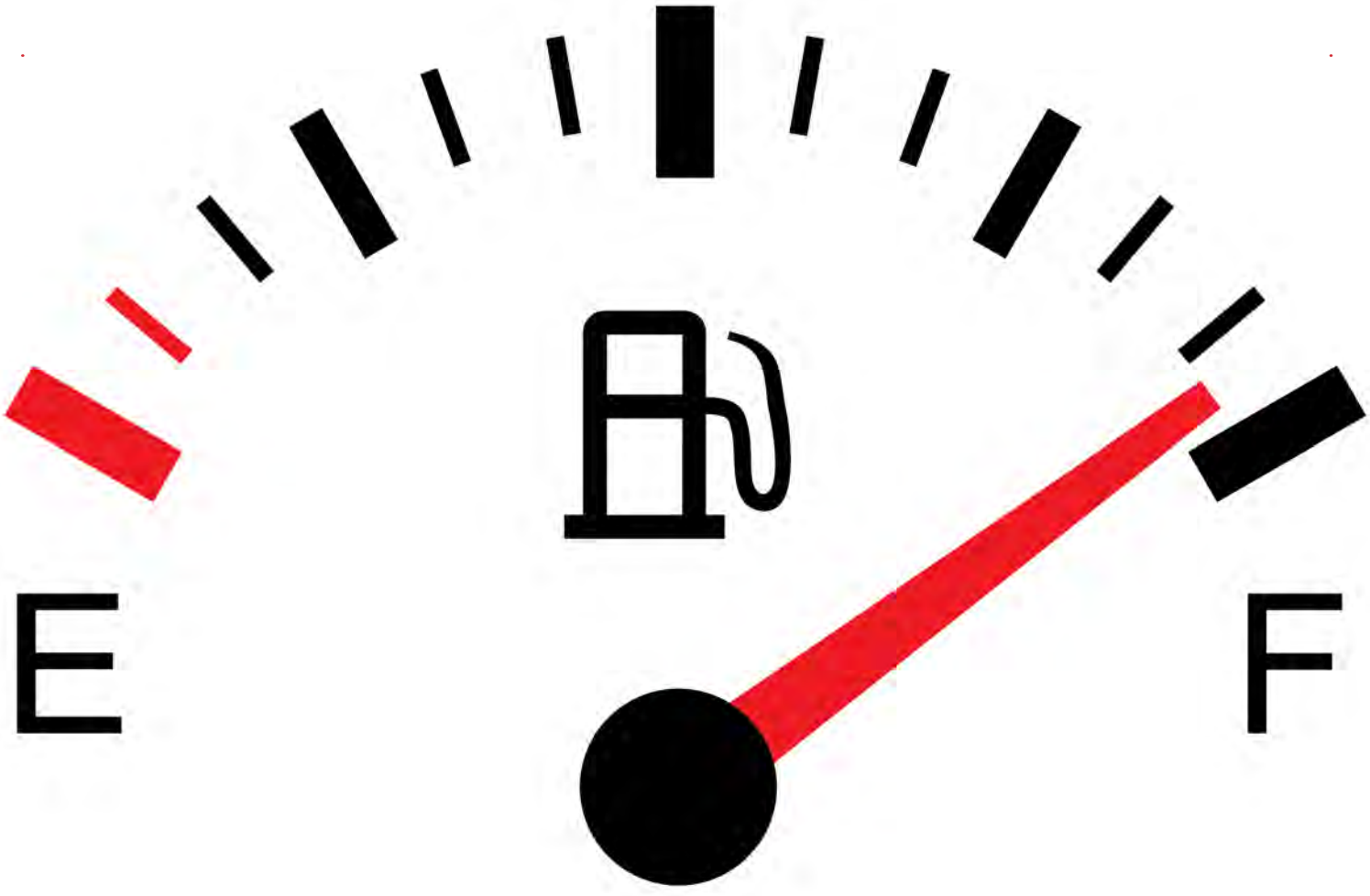
9. **Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.**
10. **Properly secure lines to prevent chaffing.**

www.fassride.com
(866) 769.3747



WARNING!

Always be sure to fill the fuel tank to full after a new FASS installation. Failure to do so can result in excessive sound output, or priming issues!



TITANIUM SIGNATURE SERIES 100 GPH or 165 GPH

www.fassride.com
(866) 769.3747

5-7psi (Approximately)

Rear View



Front View



PUMP GUIDE:

1. "E" To Engine
2. "R" Return to Tank
3. Serial Number
4. "T" Fuel Inlet
5. Electric Heater Ports
6. "G" Gauge Port

INSTALLATION GUIDE:

Step 1. Install Electrical Harness
Step 2. Remove the fuel tank
Step 3. Prepare the FASS
Step 4. Mount the FASS
Step 5. Install Fuel Line
Step 6. Review

FASS Diesel Fuel Systems

www.fassride.com
(866) 769.3747

TITANIUM SIGNATURE SERIES

100 GPH or 165 GPH

5-7 PSI (Approximately)

Note: Going over 30 PSI WILL void warranty.

NOTE: WARRANTY MAY BE VOID IF SILICONE BAND IS REMOVED FROM MOTOR!!

The silicone band is in place to retain motor wires, preventing damage to the electric motor.





CONTENTS

NOTE: ***Owner's Manual available for download on our website, www.FASSride.com***

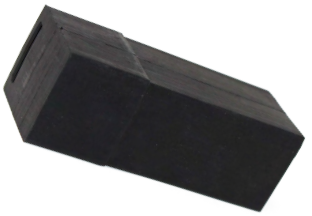




DIELECTRIC GREASE



TWO (2)
OR-017



RELAY COVER



OR-030

NOTE: THESE SPARE BASE O-RINGS ARE INCLUDED WITH THE KIT IN THE EVENT OF A PINCHED O-RING DURING ASSEMBLY



MP-9085



RS-2002



FL-1002x9'



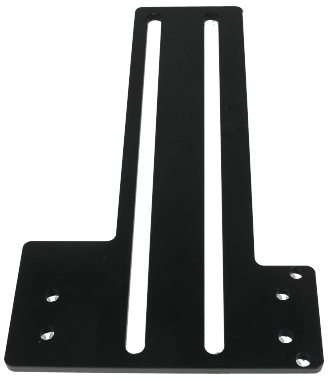
PFB-2001C-SHORT



WH-1006-3



FL-1001x14'



PBR-2001

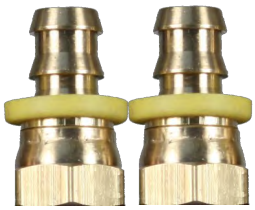


PBF-2002-SHORT

FASS Diesel Fuel Systems

www.fassride.com
(866) 769.3747

MOUNTING PACKAGE CONTENTS



TWO (2) PL-1005



TWO (2) PL-1004



(1)- BHF-1002



TWO (2) RING TERMINALS



(1)-10-300



(1) - 46405



(1)- 10-301



(3) WA-2001



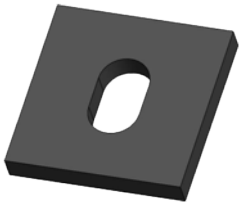
(1) FUEL SUCTION TUBE



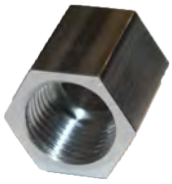
FOUR (4) LOCKING NUT 3/8""



(1)- 47003



(1) RS-2004



(1) CTMC-1001



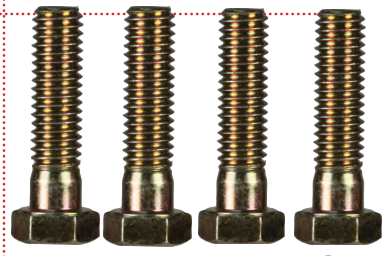
FOUR (4) 3/8" WASHERS



(2) 3/8 HOSE CLAMPS



(1) 0790750



FOUR (4) Hex Bolt 3/8" -16x11/2"



CABLE TIES



(1) PL-1002



(3) Hex Bolt .25-20x1



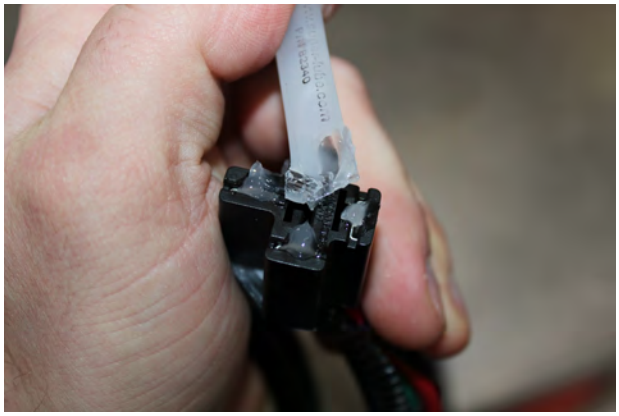
(1) RS-2001C-SHORT

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.

NOTE: USE SUPPLIED DIELECTRIC GREASE SPARINGLY ON ALL ELECTRICAL CONNECTIONS! BE SURE TO GREASE RELAY PIGTAIL!



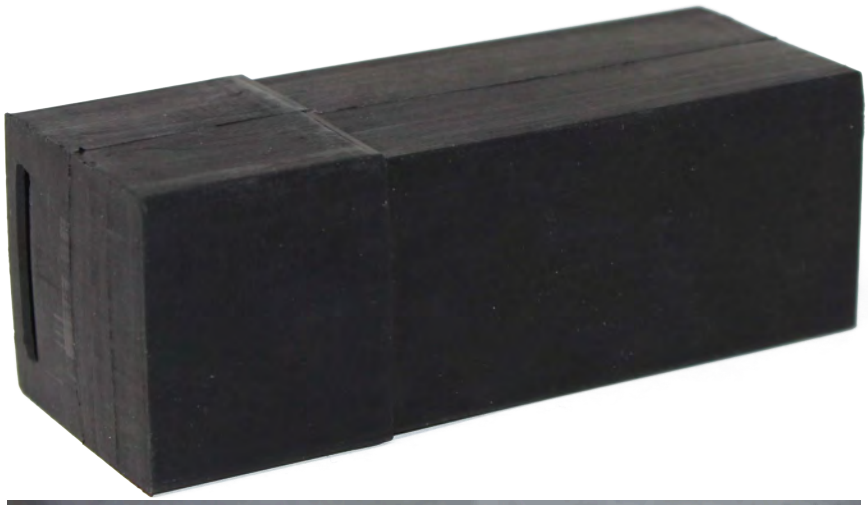


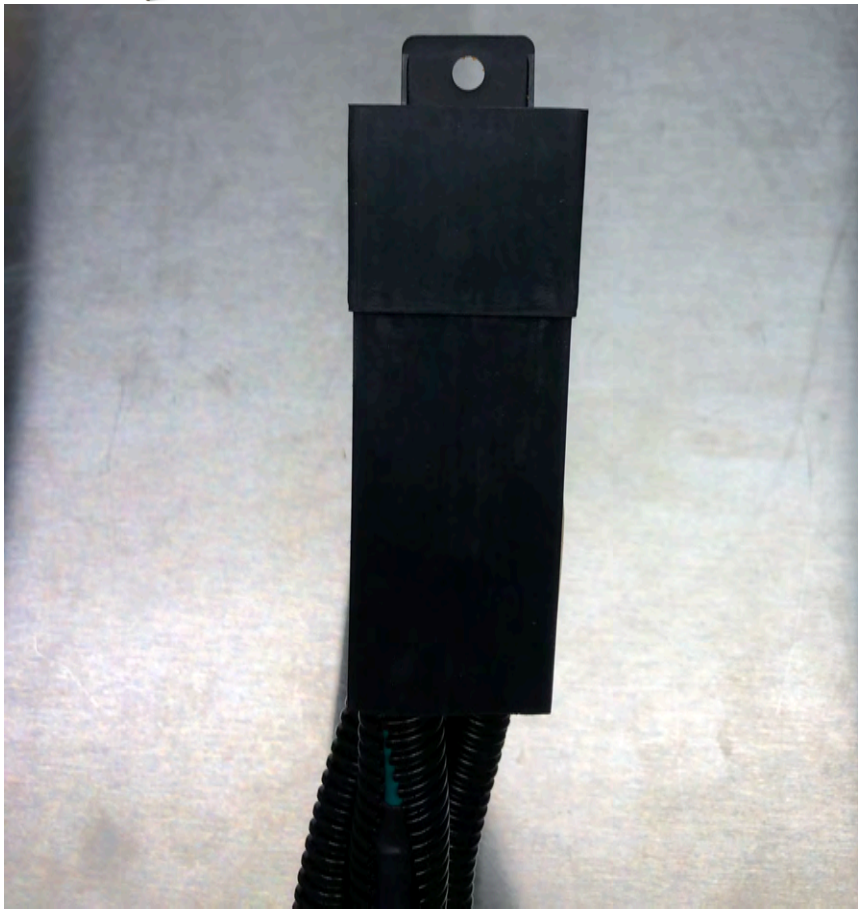


STEP 1:
INSTALL ELECTRICAL HARNESS

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

Install the Relay Cover onto the relay on the FASS harness.





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.

NOTE: BE SURE TO INSTALL THE SUPPLIED 10 AMP FUSE INTO THE FASS WIRING HARNESS!!

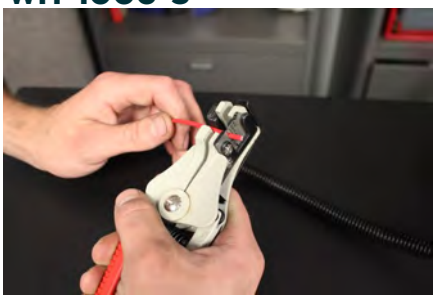




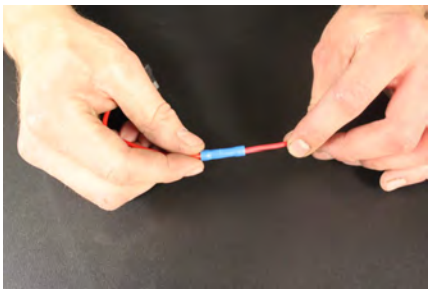
STEP 1:
INSTALL ELECTRICAL HARNESS

The installation of the electrical harness should be completed first. This will allow power to be applied to the pump during installation.

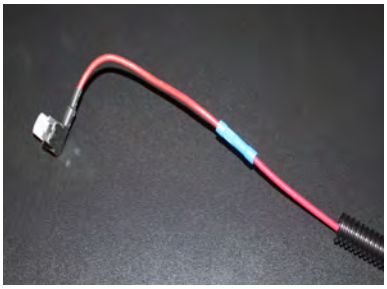
A. Using wire stripping tool remove excess insulation off the add-a-fuse and the WH-1006-3



B. Place wire from 46405 and single red bare wire from WH-1006-3 into butt connector. Using crimping tool connect 46405 and WH-1006-3 with butt connector. Install 47003 to 46405 top slot (opening that is near the spade).







C. Crimp the ring terminals to the red and green wires of the WH-1006-3 Wire Harness. Attach red wire to the positive terminal of the battery and the green terminal to the negative terminal. The use of a corrosion preventative on electrical connections is recommended.



STEP 1:
INSTALL ELECTRICAL HARNESS

D. Secure relay and fuse in an upright position, as shown, to prevent moisture from entering. Di-electric grease may be applied to prevent corrosion.



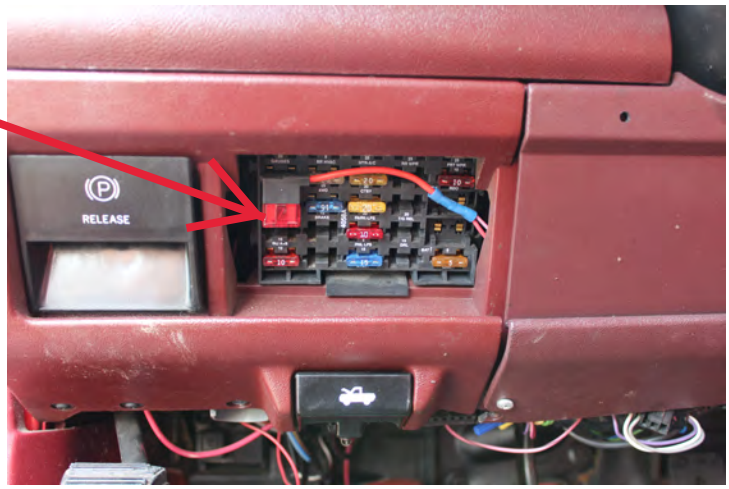
E. Locate the fuse panel on the kick panel of the dash. Route the single red wire of the FASS harness through the firewall and to the fuse panel.





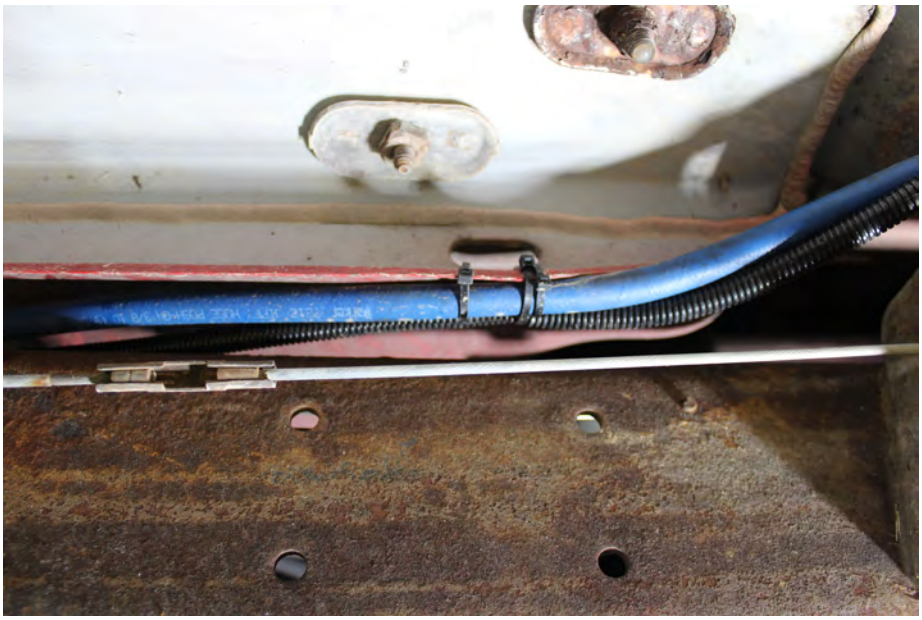
F. Using a test light, locate a key-on fuse in the fuse panel. Once you have located a key-on fuse cavity, install the existing fuse in the lower fuse location on the 46405 add-a-circuit. Install the 46405 into the selected cavity.

Note: The supplied 3amp fuse in the top fuse cavity! The OEM fuse is to go in the bottom cavity!



STEP 1:
INSTALL ELECTRICAL HARNESS

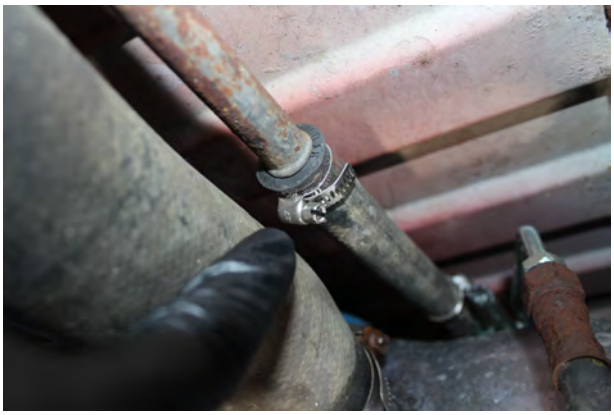
F. Route WH-1006-3 wire harness along frame rail to mounting location of pump. **Completion of this step will be addressed in the Mounting Step 3.**



STEP 2:
Remove Fuel Tank

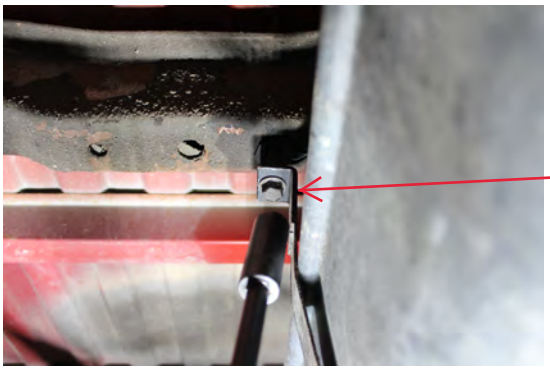
Some of the photo's are of a different application, procedures are the same..

A. Loosen both fuel tank fill and fuel tank vent clamps. (A small amount of penetrating oil can be helpful to remove these older dry connections) Remove both rubber hoses. (Save)

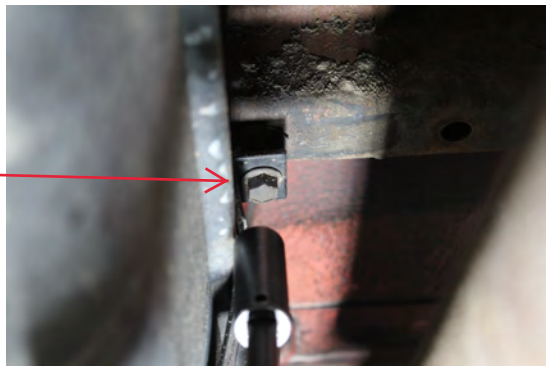




B. Disconnect the factory fuel pump supply line and the factory return line. Then unplug the fuel level sensor.



Fuel tank strap bolt.



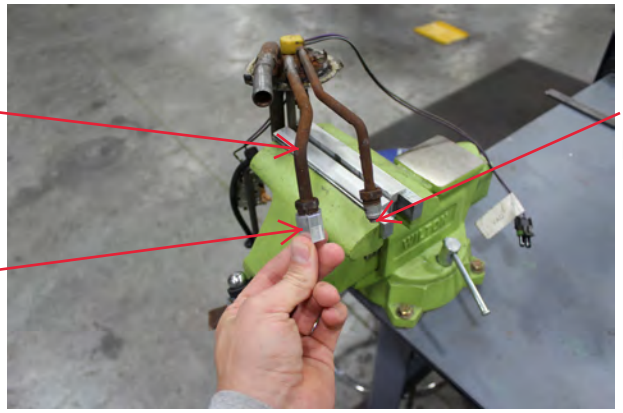
C. Using a transmission jack or other jack, securely remove the fuel tank. Once the tank is secure, remove the fuel tank straps and lower the tank.
(Near empty fuel tanks are simpler to remove, if your tank is full or near full a second hand is useful or the aid of small ratchet straps. Fuel will slosh back and forth making the tank unstable.)



STEP 3:
PREPARE SUCTION AND RETURN LINES

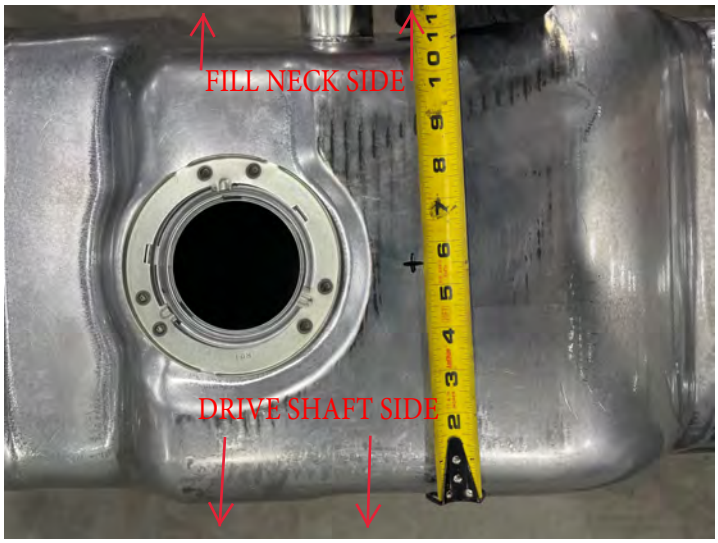
A. Once the fuel tank is removed, remove the factory fuel tank sending unit. Rotate the locking ring that fastens the fuel tank sending unit to the fuel tank, counter clockwise. This will allow you to remove the fuel tank sending unit. (Take note as to how the fuel lines are routed in the factory location.)With the fuel tank sending unit removed, install the CTMC-1001 on the factory fuel supply line. Then set the sending unit aside at this time. DO NOT MODIFY THE SENDING UNIT.



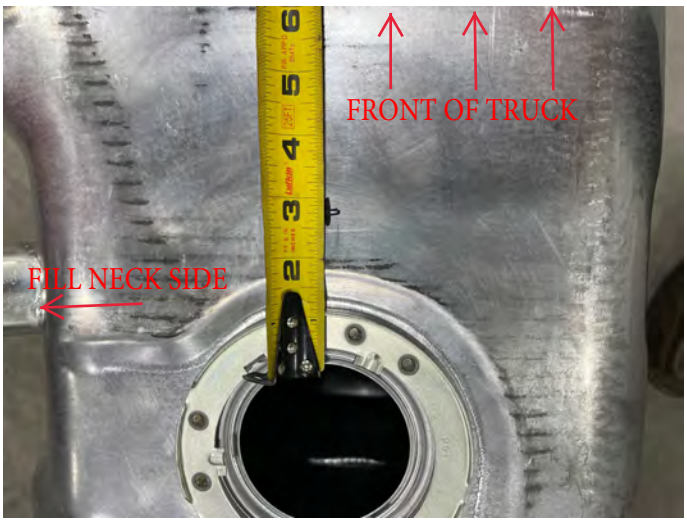


NOTE! Insure the o-ring on the factory fuel supply line is in good condition, this may need replaced to acquire a good seal.

2-A



2-B



C. Locate the measuring point at the tank, this will be the side of the tank closest to the drive shaft. (Opposite side of the fuel filler neck) Measure over 5 1/2 inches and make a mark. (As seen in figure 2-A)

D. Locate the front side of the tank, this will be the side facing the front of the truck. Measure out 2 3/4 inches from the fuel tank sending unit hole. (As seen in figure 2-B)

STEP 3 : PREPARE SUCTION AND RETURN LINES

E. Once you have marked the location of the suction bulk head (BHF-1002) use a center punch and make a mark in the fuel tank. Then proceed to drill a 1 3/8" hole, using a hole saw.





F. Now that the hole has been established, using a de-buring tool clean the edges of the new hole to insure a quality sealing surface.(Note the fuel tank is steel and may have sharp edges, gloves may be necessary.)

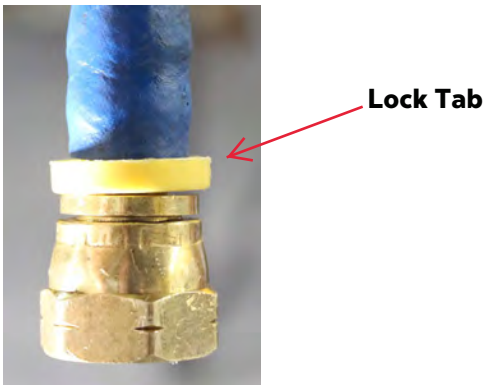


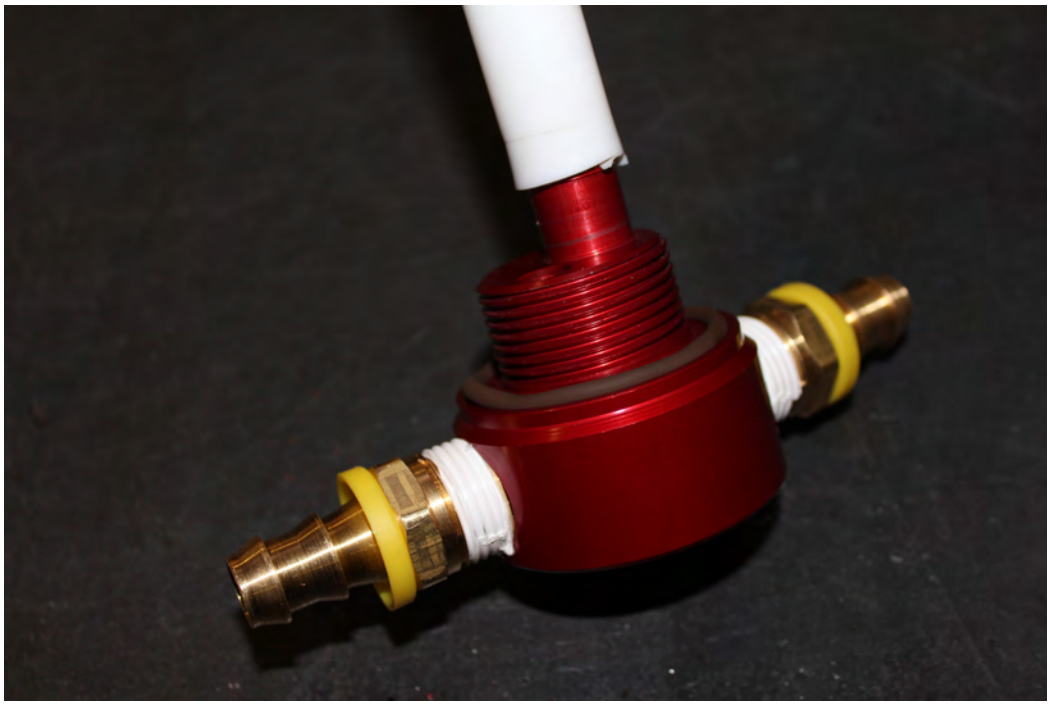
STEP 3:
PREPARE SUCTION AND RETURN LINES

G. Prepare the BHF-1002 by installing the PL-1004 fittings to both sides of the BHF-1002. Then install the ST-1005XP to the suction nipple of the BHF-1002. Fasten the 3/8's hose clamp around the suction nipple and the ST-1005P. (See section 3-A and 3-B for further instruction)

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



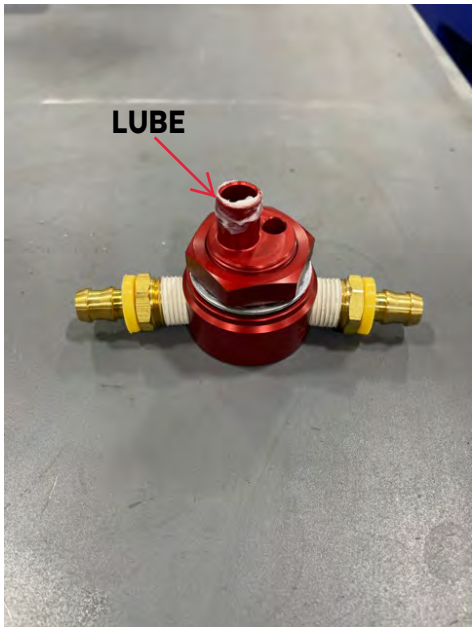




STEP 3:
PREPARE SUCTION AND RETURN LINES

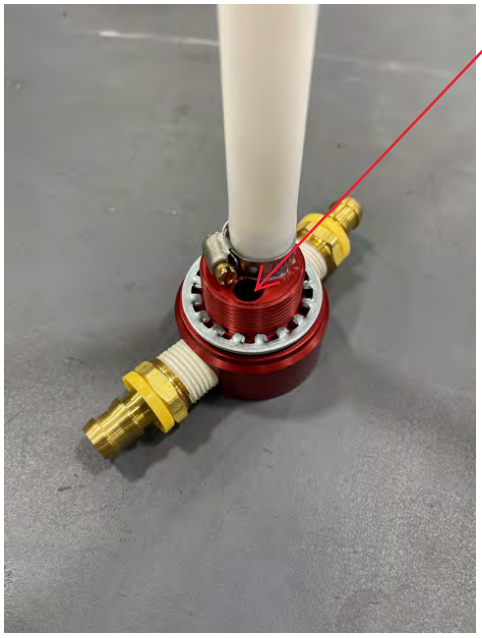
Section 3-A

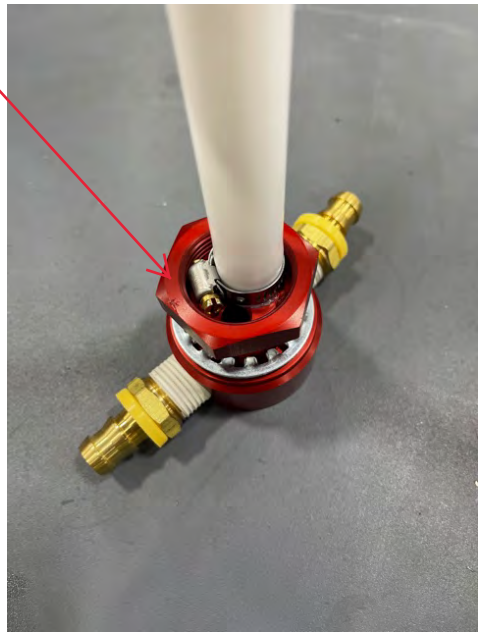
****IMPORTANT** BELOW IS A EXAMPLE OF PROPER ASSEMBLY FOR A BHF-1002!**





NOTE: WHEN INSTALLING THE 3/8's HOSE CLAMP YOU MUST ENSURE THAT THE ALINGMENT OF THE CLAMP IS NOT COVERING THE RETURN "R" PORT!! THIS IS VERY IMPORTANT FOR PROPER FUEL RETURN FROM THE FASS. YOU ALSO NEED TO ENSURE PROPER ALINGMENT OF THE 3/8's CLAMP FOR THE BHF-1002 NUT TO BE INSTALLED.

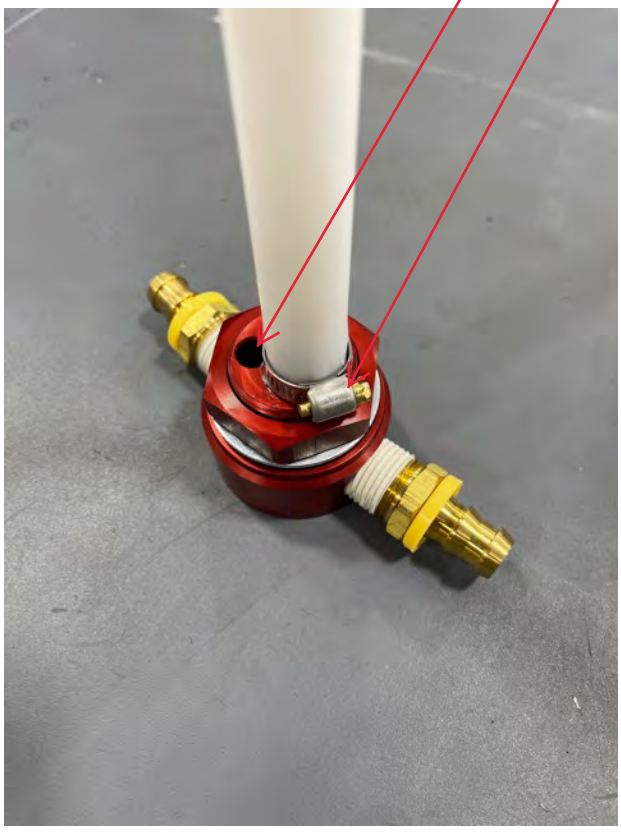




STEP 3:
PREPARE SUCTION AND RETURN LINES

Section 3-B

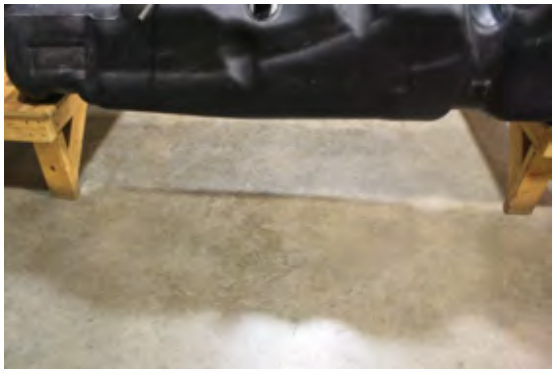
INCORRECT





STEP 3:
PREPARE SUCTION & RETURN LINES

H. 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!



I. 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.

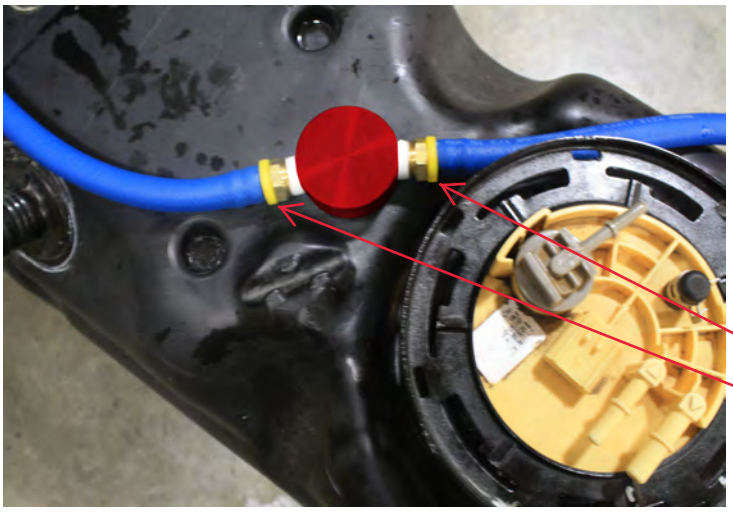


J. With proper length being obtained, place the assembly into the drilled hole securing the assembly using the lock washer & nut. Tighten Nut. Loctite may be applied to the threads of the BHF-1002 for added insurance.



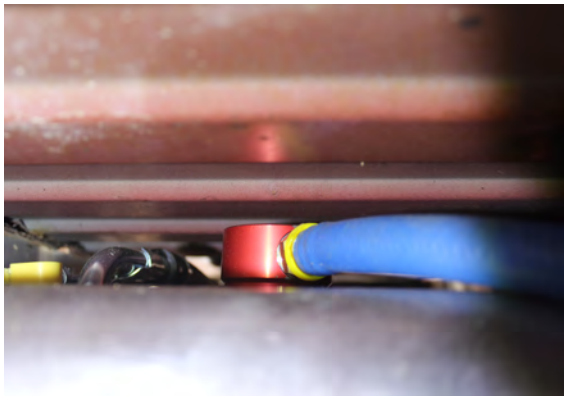
STEP 3: PREPARE SUCTION AND RETURN LINES

K. With the BHF-1002 tightly fastened to the fuel tank, using grease install one end of the FL-1002 (1/2" line) onto the "S" port PL-1004 fitting at the bulk head (BHF-1002). Simply take the other end of the FL-1002 and install it to the "R" port on at the bulk head fitting, creating a loop. Loop this over the frame rail and reinstall the fuel tank under the truck.



Note: When installing fuel line onto push lock fittings, the line should reach the yellow lock tab for a proper seal.

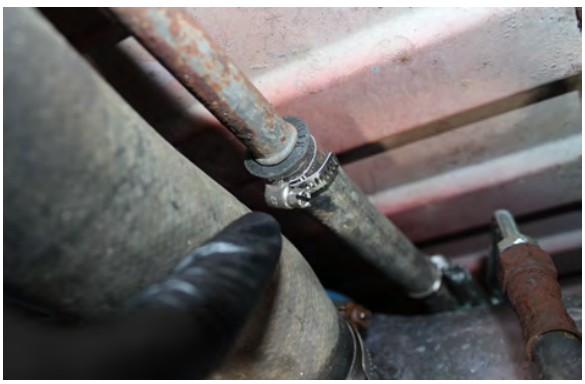
L. With the fuel tank installed, reconnect the factory return line to the fuel tank sending unit. Plug the fuel level sensor back in.





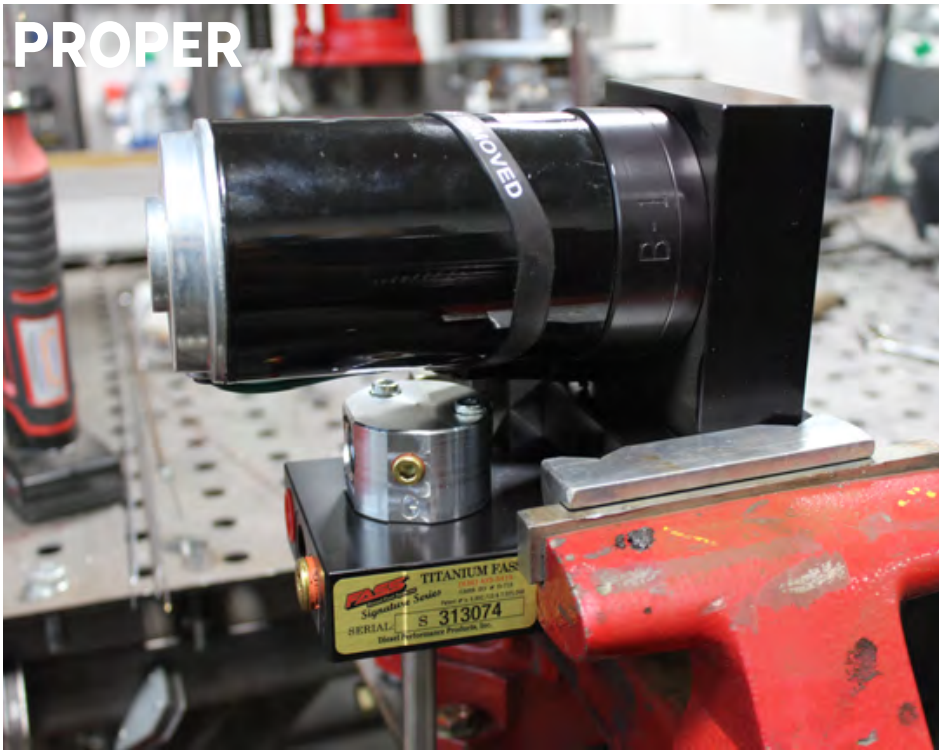
M. Reinstall fuel tank fill hose and fuel tank vent hose using factory hose clamps.

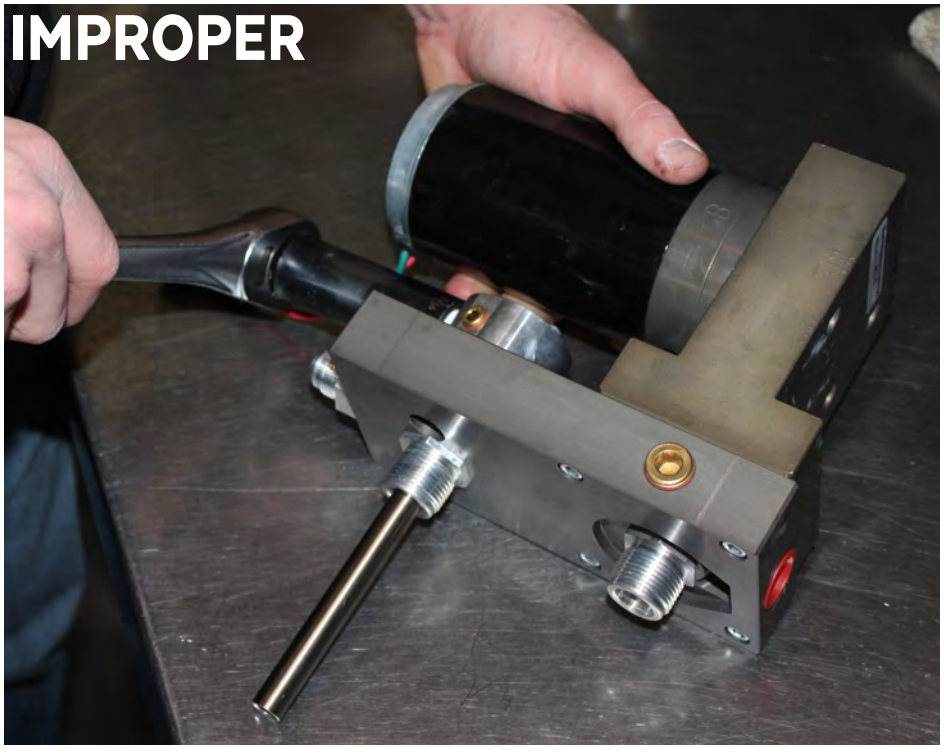




NOTE:

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





STEP 4:
MOUNT FUEL SYSTEM

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

NOTE: Always use our dimension O-Ring for water separator, not doing this could lead to priming issues.

A. Install 10-300 into the "E" port and 10-302 into the "T" port of the FASS, torque to 20 ft./lbs. ***FITTINGS COME EQUIPPED WITH THREAD SEALANT, DO NOT USE THREAD TAPE***





Note: Ensure the 10-302 pointed towards the BHF-1002 with the "S" line on it. This will allow for best fitting fuel supply line.

STEP 4:
MOUNT FUEL SYSTEM

B. Locate the drivers side front bed mount, once this is done you will have a preexisting hole next to the factory bed bolt. Using a 1/2 inch drill bit, drill out the preexisting hole.





C. This hole punctures through the bed cross member. At the outside of the bed cross member there is an opening, slide in the PFB-2001C with the RS-2001C as shown in figure 4-A.



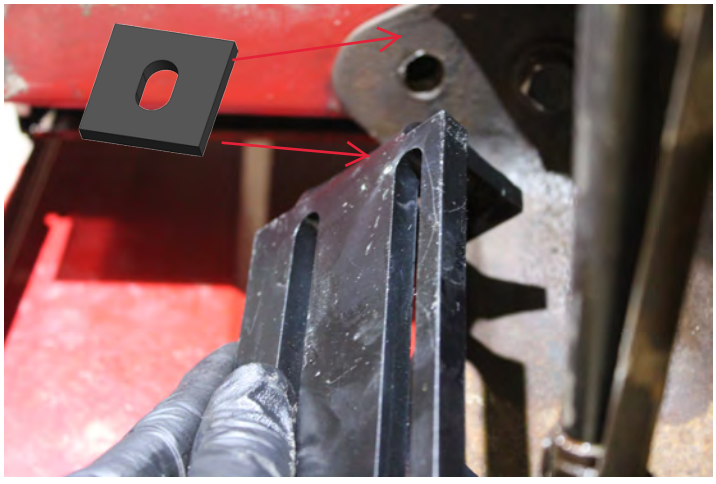
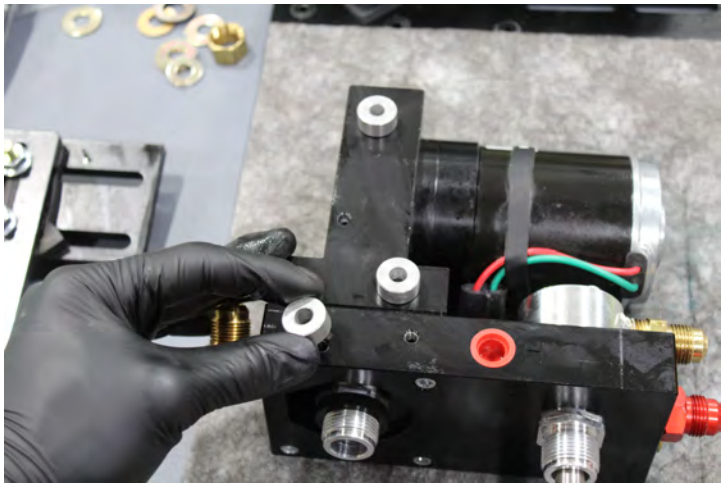


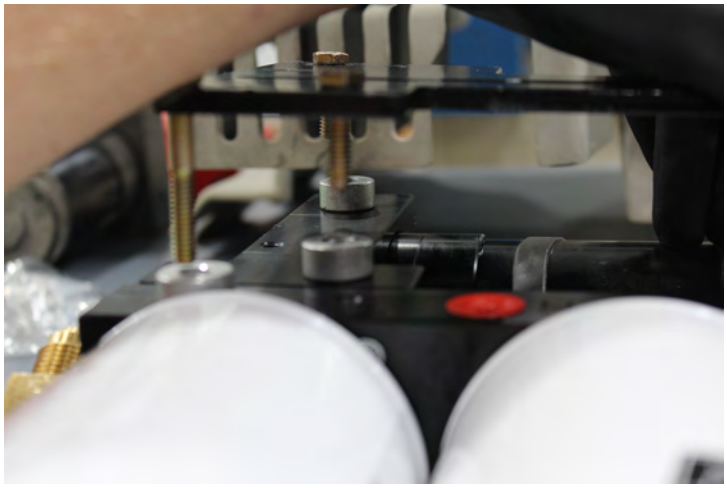
Figure 4-A

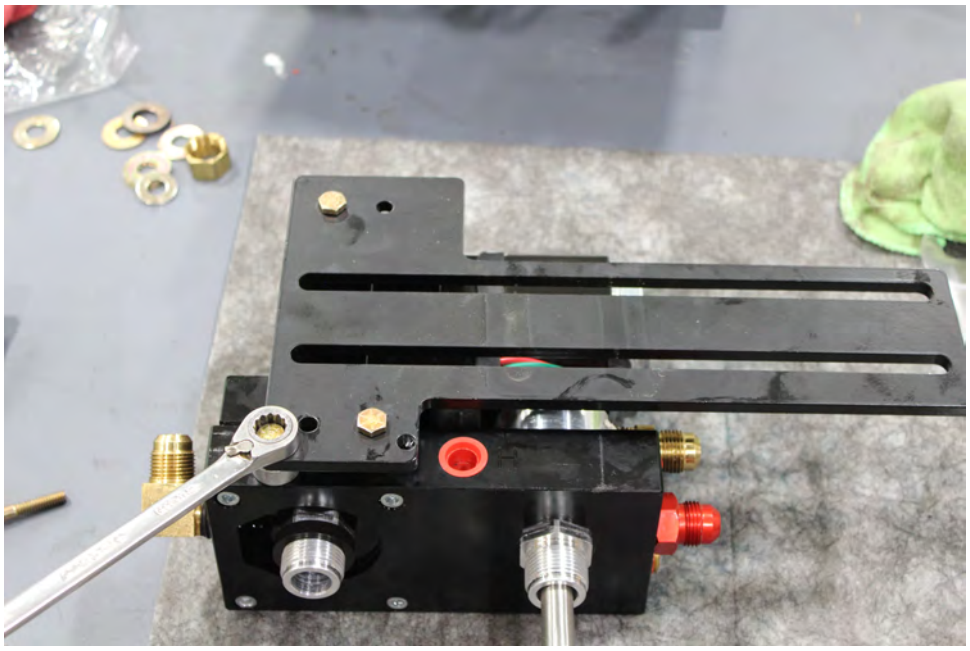
D. Using the HEX Bolt 1/2-20x13/4"and the PFB-2002-S start the bolt into the hole threading into PFB-2001C. Rubber isolator RS-2004 will be placed between the truck frame and the FASS bracket.

STEP 4:
MOUNT FUEL SYSTEM

E. Assemble the FASS pump bracket PBR-2001 using the WA-2001 spacer between the FASS and PBR-2001 bracket with the 3-1/4-20x1.

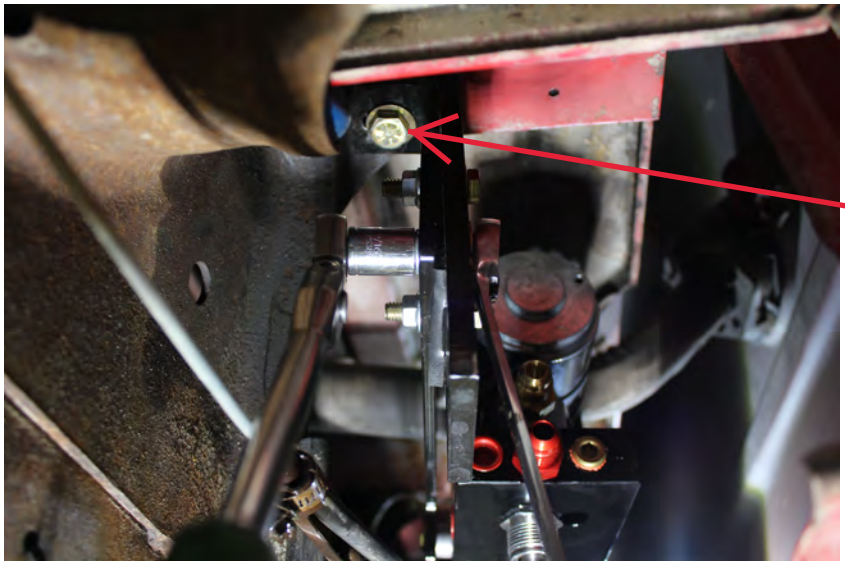






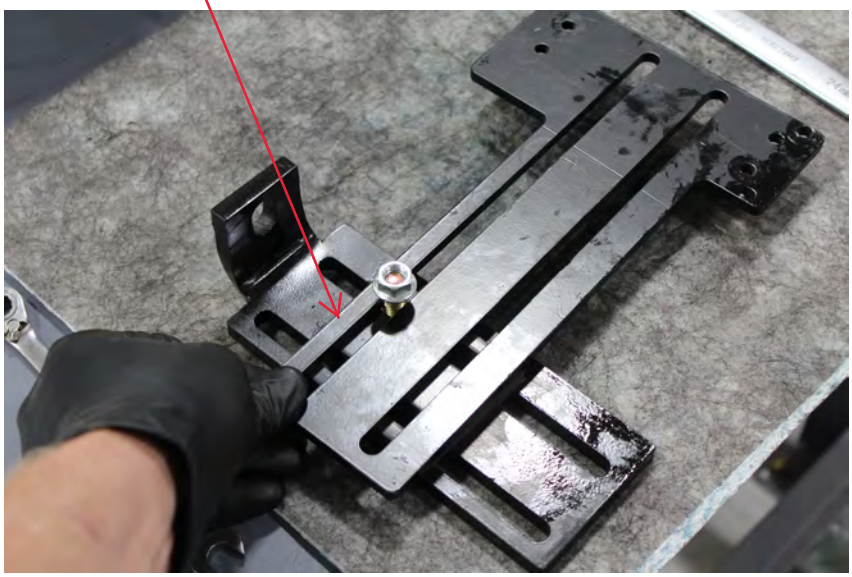
STEP 4:
MOUNT FUEL SYSTEM

F. Using the (4) 3/8-16x11/2" Hex Bolts, (4) 3/8's washers and (4) 3/8's Locking nuts. Mount the PFB-2002-S to the PBR-2001 using the RS-2002 between the two.



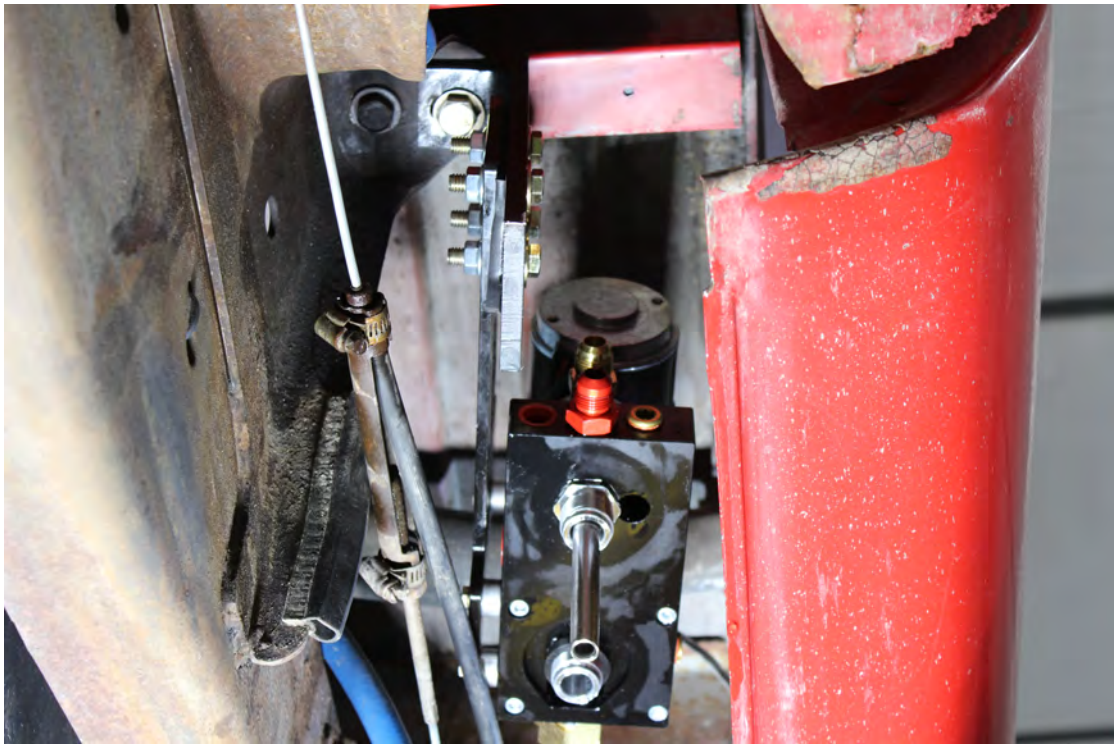
Provided Bed Cross Member Bolt & nut plate.

G. Take note on the alignment of the brackets in the image, this is key for clearance purposes. The T shaped bracket is on top of the bed cross member mounted bracket. On the truck the T shaped bracket will be facing towards the inside of the truck.
"towards the fuel tank"



STEP 4:
MOUNT FUEL SYSTEM

H. With the FASS in place and all the hardware started, adjust and fit the system watching for clearance to the truck frame and body. Once this is completed you can tighten all hardware.



I. Now that the FASS is mounted and secure, remove the lowest bolt on the T bracket, install the 3/4" cushion clamp (P/N#0790750) around the emergency brake cable and reinstall the bolt that was removed. This is used to prevent damage to the FASS and the emergency brake cable.



STEP 4:
MOUNT FUEL SYSTEM

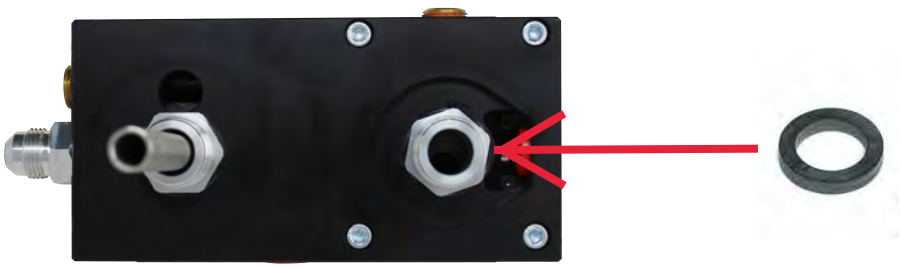
J. Apply motor oil to gasket located on filters. Attach to system and hand tighten.





Extreme Water Separator - Install XWS-3002 on side of pump with draw tube in the middle of the filter nipple.

Particulate Filter -Install PF-3001 on filter 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 losses.

STEP 5:
INSTALL FUEL LINE

Caution: DO NOT use sealant on AN fittings

A. Route suction line from the suction port from the (BHF-1002) to the 'T' port of the FASS pump. Cut FL-1002 to length. (measure twice cut once) Insert PL-1005 using oil. Attach to 10-301. Torque to 18 ft./lbs.



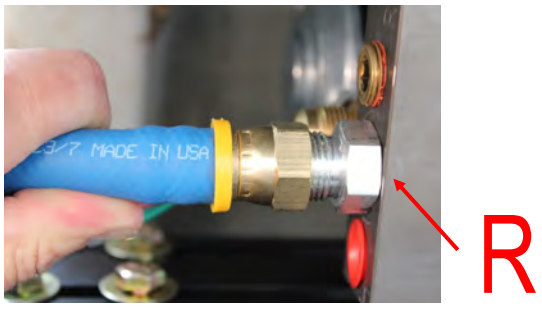
B. Measure from the factory feed connection in the engine bay to the 'E' port of the FASS system. Cut and insert PL-1002. Install the 10-300 in the 'E' port of the FASS system. Torque to 18 ft./lbs.

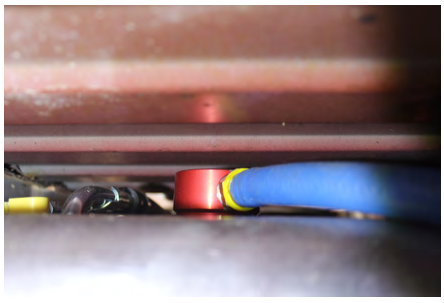


Factory fuel supply line behind the factory fuel filter.



C. Using oil, insert a PL-1005 into the remaining fuel line. This will connect to the 'R' port fitting on the FASS system. Torque to 18 ft./lbs. Route this line in a gentle bend from the BHF-1002 return port with the PL-1004. Insure there are no kinks in this line.



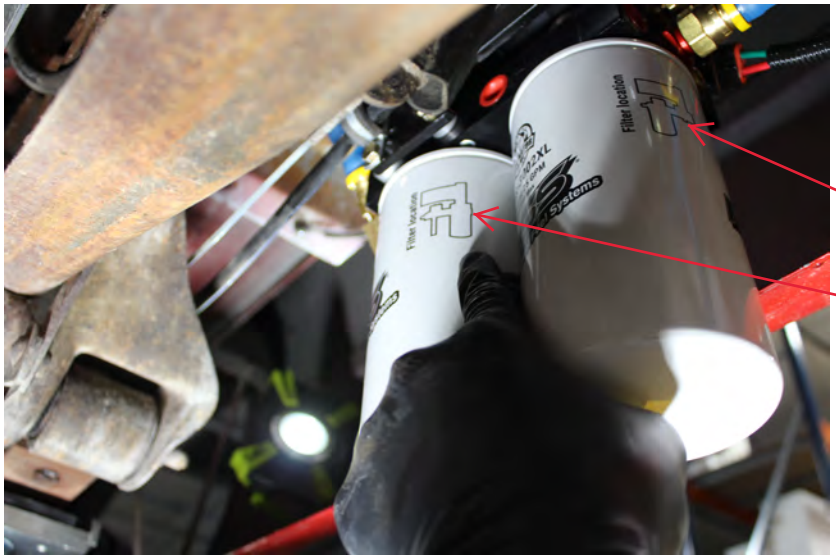


NOTE: It is very important to recognize the suction (S) side of the BHF-1002 and the return side (R). Failure to do this will cause the FASS to not prime!

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

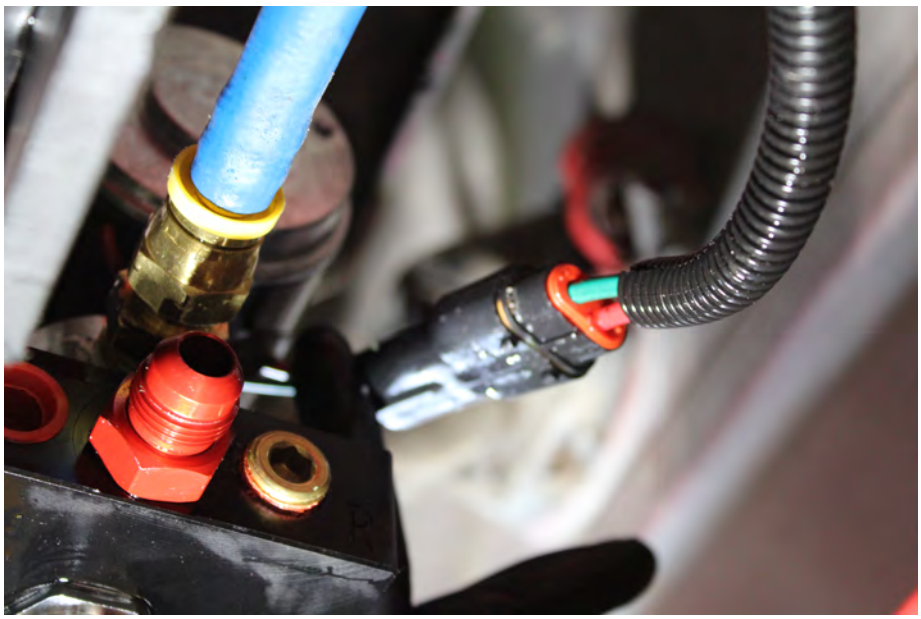
STEP: 5
INSTALL FUEL LINE

D. With the fuel lines installed and tight at this time now tighten the fuel tank straps. The FASS filters are labeled with filter location images. Install the PF-3001 and tighten the filter. Next install XWS-3002 do not tighten at this time.



Filter location images.

E. Plug in the WH-1006-3 harness to the FASS pump and fasten with supplied zip ties.



F. The FASS system is ready to be primed. Turn the key forward to the run position with out cranking the engine so that the FASS pump can begin pumping fuel. Leaving the XWS-3002 loose listen for a change of sound in the FASS motor, this will indicate the system is primed. Quickly tighten the XWS-3002. Next start the vehicle, check all lines and fittings for leaks.

www.fassride.com
(866) 769.3747



Fuel System Must Be Flushed!

To ensure no foreign debris has entered the fuel system, you must remove the engine feed line at the engine connection, power the FASS on and allow fuel to flush all fuel lines into a bucket.

FAILURE TO PERFORM THIS FLUSH CAN RESULT IN DAMAGED FUEL INJECTION SYSTEM COMPONENTS!

STEP 6:
REVIEW INSTALLATION

1. *Blow out any open lines/cover any open ports*
2. *Bolts and fasteners properly tightened?*
3. *Electrical harness and fuel lines secured and properly tightened? Reconnect the battery.*
4. *Has the system been primed?*
    a. *Turn key to the ignition position, turning on the FASS pump for 15 sec..*
    b. *Crank engine and allow to run for at least 1 minute.*
5. *Check for leaks.*
6. *Start the engine*
7. *Recheck all fluid and filter connections for leaks*
8. *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*

To assist with priming your FASS pump crack the XWS-3002. Put power to the FASS pump to activate the pump. When the tone of the pump changes you can tighten up the fuel filter. If you need a video of the priming process go to www.FASSride.com.



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.

www.fassride.com
(866) 769.3747

LIMITATION OF LIFETIME WARRANTY

Disclaimer: 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.

Diesel Performance Products, Inc. (hereafter "SELLER") gives Limited Warranty as to description, quality, merchantability, fitness for any product's purpose, productiveness, or any other matter of SELLER'S product sold herewith. The SELLER shall be in no way responsible for the product's open use and service and the BUYER hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by SELLER and BUYER.

When MANUFACTURER receives the "ORIGINAL" PRODUCT REGISTRATION form with a copy of the "BILL OF SALE/SALES RECEIPT" within 30 days of the sale, then the following applies! The Warranty will then and only then be validated to that of which typically accompanies your unit for your specific application from the date of sale or for recommended service life and limited solely to the original purchaser and/or vehicle and parts contained within the product's kit. This warranty does not cover normal wear on consumable items such as but not limited to filters, fuel line, wire harness & etc. The warranty does not cover seized gears due to lack of filtration. Warranty is voided if used with other than diesel fuel. Returned items will arrive prepaid to the place of purchase. Diesel Performance Products, Inc. will repair, without cost, any product found to be defective during the warranty period; parts only, or at its option, will replace such products in exchange for the product. Repair or replacements are warranted for the remainder of the original warranty period. All Warranty claims are subject to approval by Diesel Performance Products, Inc.

A Return Material Authorization (RMA) number must be obtained before any product is to be returned to Diesel Performance Products, Inc. for warranty consideration, repair or product return. Requests for product returns must be offset by an equal value order. Return parts must be completed and in resalable condition. No returns after 30 days.

Your Name, Address, and Phone Number's
Model and Serial Number (Not Motor Number) Example: Model HD Series, Serial: 00125966 VIN Number of Vehicle
Date of Purchase
Nature of Problem

RMA and Product Serial Number must be on all paperwork and correspondence. Failure to obtain the required information or paperwork will result in $25.00/item penalty and delay or denial of any warranty claim.
Under no circumstances shall the SELLER and/or MANUFACTURER be liable for any labor charged or travel time incurred in diagnosis for defects, removal, or reinstallation of this product, or any other contingent expenses.
Under no circumstances shall the SELLER and/or MANUFACTURER be liable for any damage or expenses insured by reason of the use or sale of any such equipment. This warranty does not apply to products which Diesel Performance Products, Inc. has determined to have been misused or abused, improperly maintained by the user, or where the malfunction or defect can be attributed to the use of non-genuine Diesel Performance Products, Inc. parts.

IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT: THE BUYER MAY PROMPLY RETURN THIS PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, 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 THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

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