

TITANIUM SIGNATURE SERIES

ALL 1/2" FUEL PORTS



Note: Cab and Chassis may require modifications

FASS DIESEL FUEL SYSTEMS® / ENGINEERED EXCELLENCE

Diesel Fuel Systems

www.fassride.com (866) 769.3747

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. 16234 State Hwy O. Marthasville, MO 63357 636-433-5410





WARNING!

This product has **NO WARRANTY** unless:

 It has been purchased from an Authorized or VIP FASS Dealer -if in doubt check http://fassride.com/locate.php. (If your purchase was made on Amazon.com or Jet.com, the warranty is void. Return the FASS product to the seller and get a refund).

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 <u>https://</u> <u>www.fassride.com/register-a-warranty/</u> No online access, call our TECH Support at 1-866-769-3747



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.

7 Pay close attention to ALL WARNINGS

- 2 Read all instructions before starting installation of this product.
- **3** Inventory the package components. Notify the place of purchase immediately of any parts missing or damaged.
- **4** The installation recommendations contained within are guidelines. Use good judgment and take into consideration your vehicle's accessories.
- **5** 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.
- **6** 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 (TS-F18-220G OR TS-F18-240G) Last 6 digits of vehicles' VIN Date of purchase Nature of Your Concern Serial number





(Installation Videos are available at www.fassride.com)

RECOMMENDED APPLICATION

TS-F18-220G: Powerstroke (6.7L) 2017-2021 with 700 - 900 horsepower **TS-F18-240G:** Powerstroke (6.7L) 2017-2021 with 900 - 1,200 horsepower

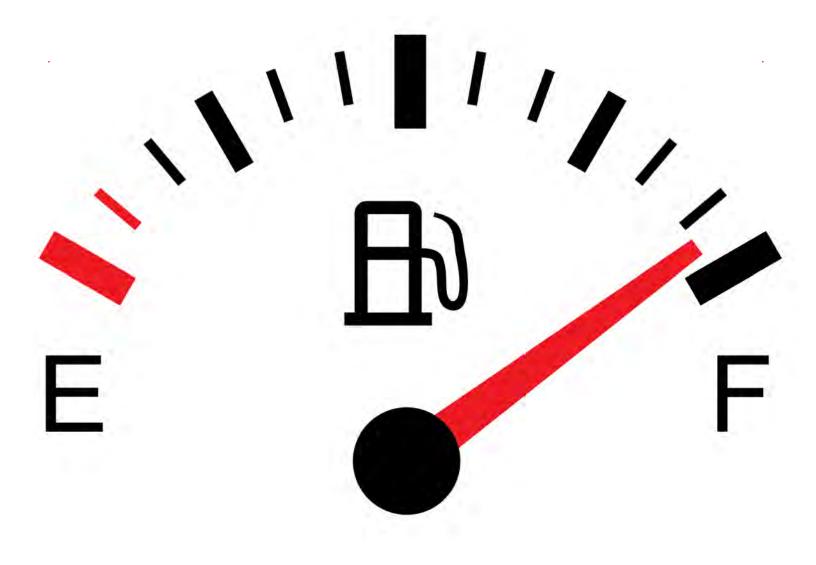
- 1. Read all instructions before starting installation of this product!
- 2. Installing the improper FASS Pump can cause severe engine damage.
- 3. Secure vehicle from ROLLING!
- 4. Cab and Chassis may require modifications
- 5. Consult vehicle's manufacturers' instructions concerning the electrical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

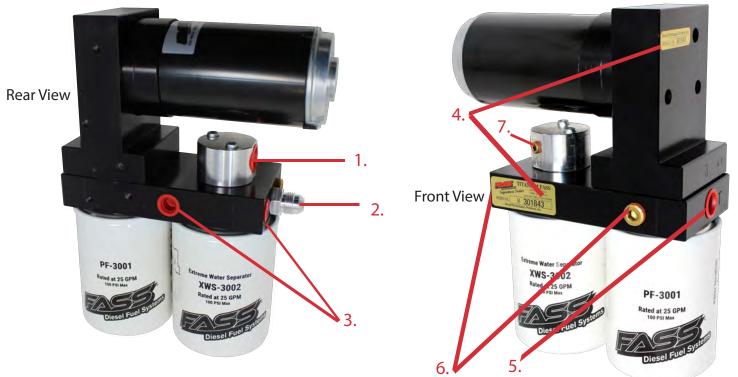


Always be sure to fill the fuel tank to full after a new FASS installation. Failure to do so can result in excessive sound output, or priming issues!





65 psi (Approximately)



PUMP GUIDE:

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

INSTALLATION GUIDE:

- **Step 1.** Install Electrical Harness
- **Step 2.** Prep the FASS
- **Step 3.** Mount the FASS
- Step 4. Fuel Line Supply
- Step 5. Review Installation



SIGNATURE SERIES 220 GPH OR 240 GPH

TITANIUM

65 PSI (Approximately) Note: Going over 100 PSI WILL void warranty.

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





CONTENTS

www.fassride.com (866) 769.3747

NOTE: Owner's Manual available for download on our website,

www.FASSride.com



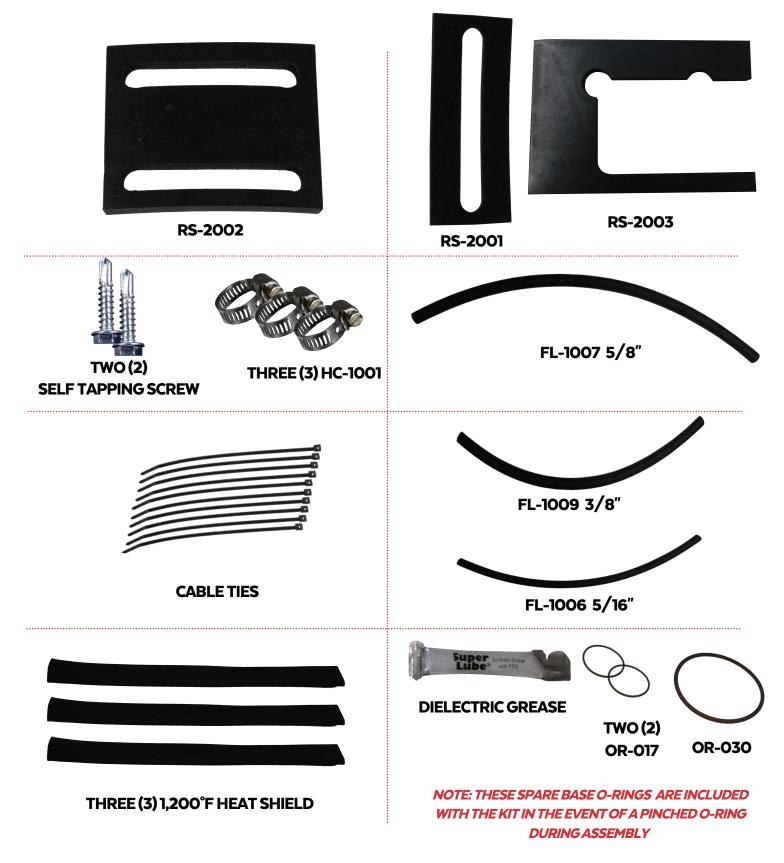


MOUNTING PACKAGE CONTENTS

BHF-1005	OR-212 BHN-1005	46116 ADD-A-CIRCUIT 46177	TWO (2) PL-2003
PLB-1212	TWO (2) QC-4600	TWO (2) RING TERMINAL	STF-1001
10-300 Two (2) PL-1058	ю 10-305	10-307	10-302 A624C56-55-05
(1/2") 1/2" WASHER TWO (2)HEX BOLT 1/2"-13x1-1/4"	TWO (2) 72478	FOUR(4) HEX BOLT 3/8" -16x 11/2"	THREE(3) HEX BOLT 1/4"-20x 13/4"
FOUR(4) LOCKING NUT 3/8"	EXAMPLE (3) WA-1001D	FOUR(4) 3/8" WASHERS	M14x28mm NUT Washer



MOUNTING PACKAGE CONTENTS







The supplied 1,200°F heat shielding must be installed where FASS fuel line routes above the exhaust system. Failure to install heat shielding can result in a possible fire hazard!

NOTE: FASS Fuel System will be installed on the passenger's side of this vehicle! Install heat shielding where fuel lines route above the exhaust system!









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









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

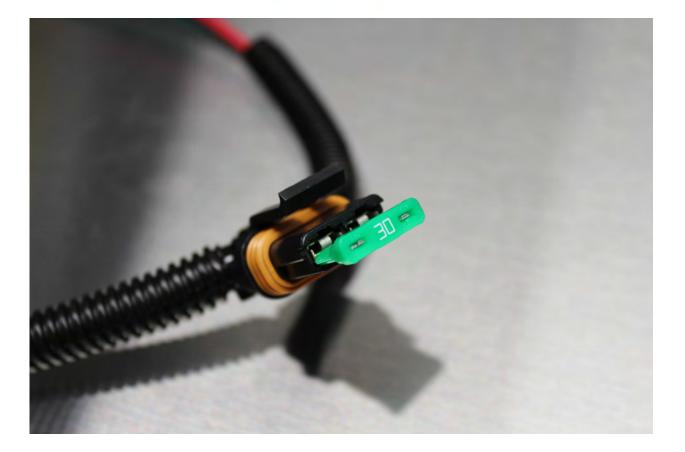






NOTE: BE SURE TO INSTALL THE SUPPLIED 30 AMP FUSE INTO THE FASS WIRING HARNESS!!







A. 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 wire to the negative terminal. Use supplied dielectric grease on all electrical connections.



B. Place wire from ADD-A-CIRCUIT 46177 and WH-1006-3 into butt connector. Using crimping tool connect ADD-A-CIRCUIT 46177 and WH-1006-3 with butt connector. Install 46116 to ADD-A-CIRCUIT 46117 top slot (near wire that feeds additional circuit.



C. Secure relay and fuse in an upright position, as shown, to prevent moisture from entering. Be sure to use supplied dielectric grease on relay pigtail.





STEP 1: INSTALL ELECTRICAL HARNESS

D. Route the single red wire of WH-1006-3 to the engine bay fuse panel. Remove a fuse (maximum of 10A) that is "hot" when the key is on. Use a test probe to locate the "hot side" of the circuit in the fuse block. Install the Add-A-Circuit into the open location. Install the pulled fuse into the open space on the fuse tap.



E. 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.





Some of the photos are of a different application, procedures are the same.

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.

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.



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.



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





STEP 2: PREPARE SUCTION & RETURN LINES

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



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



E. Remove and discard the fuel tank module shield, this will no longer be used. 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**.

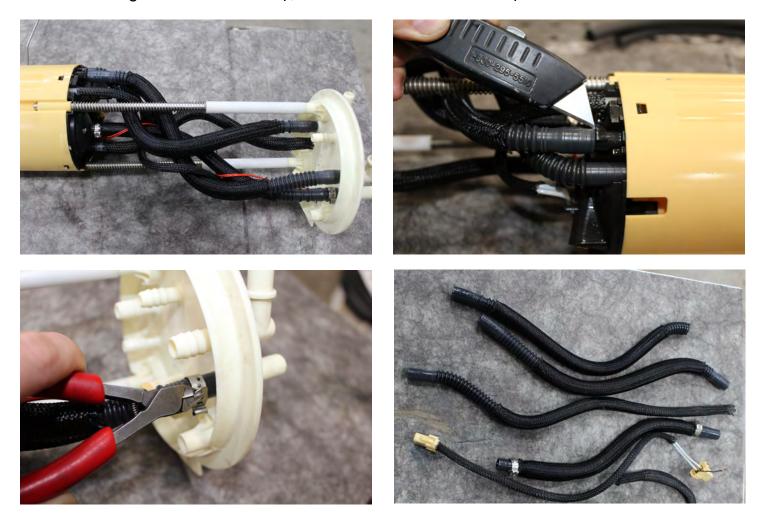


F. Note the location of the tab and arrow. Re-install the sending unit in the same location to prevent the fuel level arm from binding. Remove fuel tank module from fuel tank, be careful not to damage fuel level float.



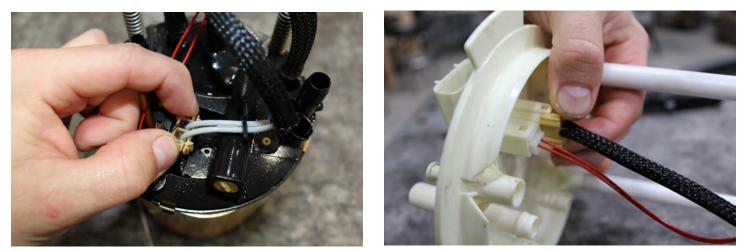


G. Carefully remove all sections of the OEM convoluted tubing from the fuel tank module using a utility knife. Be sure not to damage the hose barb beneath the convoluted tubing. One of the sections of tubing will have a metal clamp, this can be removed with a small pair of side-cutters.





H. Remove OEM fuel pump harness from fuel tank module by pressing clips on each side of the connector while pulling in an outward direction.



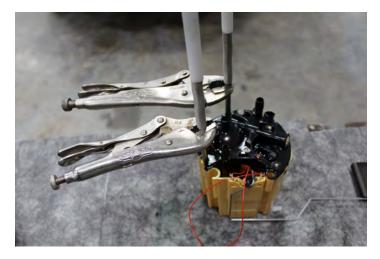
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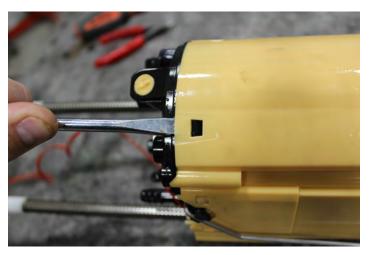
I. Disconnect the fuel level sending unit electrical connector and remove sending unit from the fuel tank module to prevent damage. THIS WILL BE REINSTALLED AT A LATER TIME, DO NOT DISCARD!!!!





J. Using a pair of Vice-Grips, lift and retain the fuel tank module springs. Press the 3 locking tabs on the fuel tank module's lower section and remove.







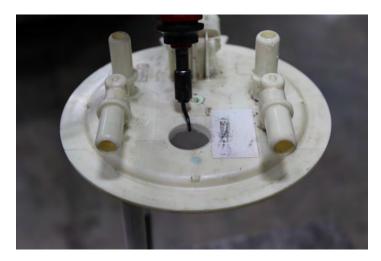


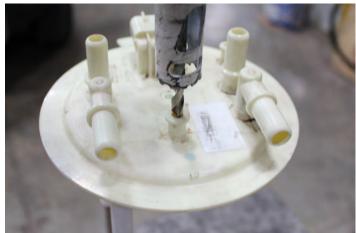
 ${\bf K}.~$ Remove the remaining lower section of the clear convoluted tubing from the fuel tank module with a pair of side-cutters.



Mark the location for BHF-1005 and drill with a 7/8" hole saw BESURE TO L. DEBURR THE HOLE!!!!









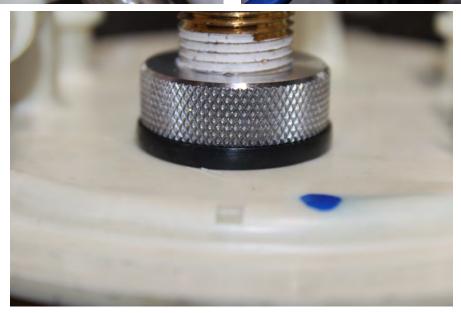
STEP 2: PREPARE SUCTION & RETURN LINES

M. Install 10-307 into BHF-1005, tighten accordingly. Install BHF-1005 onto fuel tank module with OR-212, apply Loc-Tite onto threads, install BHN-1005 onto fitting. Tighten BHF-1005/BHN-1005 with an appropriate pair of pliers. Be sure to check for proper









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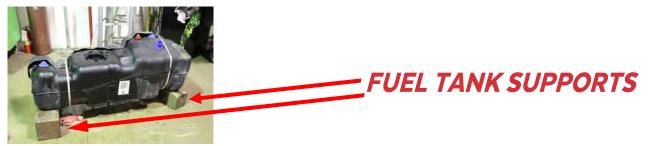
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N. Install STF-1001 into FL-1007 with HC-1001, tighten hose clamp accordingly. Install FL-1007 assembly into the lower section of the fuel tank module as pictured. Reassemble upper and lower section of fuel tank module, be sure to keep FL-1007 in place.



O. *VERY IMPORTANT:* Support fuel tank on both ends allowing the natural formation of the tank to take place. Failure to perform this step will hinder precision installation.





STEP 2: PREPARE SUCTION & RETURN LINES

P. Using a tape measure, measure from the bottom of the fuel tank to the top of the o-ring sealing surface where the fuel tank module makes contact and take note of the measurement. Compress fuel tank module to the exact height measurement taken in previous step, measure and mark FL-1007 with 1/4-1/2'' clearance from bottom of fuel tank module. Cut FL-1007 to length and install onto BHF-1004 with hose clamp HC-1001. *NOTE: ACTUAL MEASUREMENTS WILL VARY FROM IMAGES!*





Q. Install FL-1006 onto OEM engine return barb, this will connect to the metal tube on the lower section of the fuel tank module. FL-1006 may need to be trimmed to length.



R. Install FL-1009 onto OEM fuel tank module, this is where the FASS will return air/ excess fuel. Place bottom section of FL-1009 into an open area of the fuel tank module that will not obstruct the fuel level float. It may be necessary to drill a hole for the FL-1009 to return in the bottom of the module. Place FL-1008 onto the 2 open barbs in a loop. IT IS VERY IMPORTANT TO INSTALL THE FL-1009 FOR THE FASS RETURN. FAILURE TO DO SO WILL RESULT IN EXCESSIVE FASS PRESSURE.





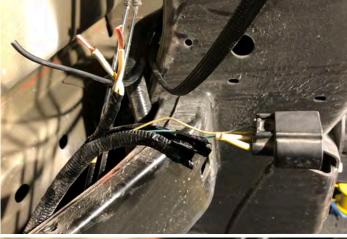


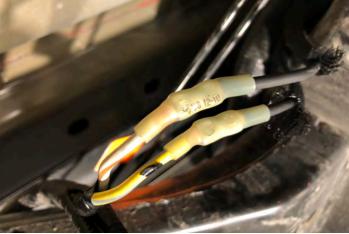
STEP 2: PREPARE SUCTION & RETURN LINES

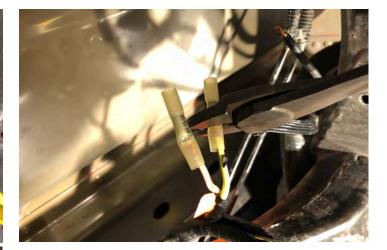
S. Carefully reinstall fuel tank module into fuel tank, reinstall locking ring. While tightening fitting nut, hold opposing end with a wrench to prevent damage to fuel module. Install PL-1058 onto 10-307 and torque with the same method used in previous step. Lubricate PL-1058 and push FL-1058 onto barb portion of fitting. Reinstall fuel tank into vehicle, reconnect electrical connector and factory fuel return line. Leave factory suction line disconnected as this is now the location for the FASS return, reconnect fill and vent tubes. Install A624C56-55-05 into one end of FL-1002 and connect to factory suction line on fuel tank module, opposing end of hose will later connect to FASS return.



T. On the fuel tank module electrical connector, cut the 10ga wires and remove 1/4" of insulation. Install LR-1001 onto the the exposed wires and crimp the butt-connectors with a pair of crimpers.







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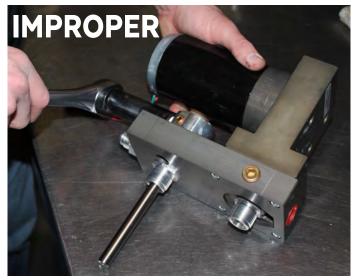
U. Reinstall fuel tank into the truck by reversing the steps taken for removal.



NOTE:

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









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***







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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. Install RS-2003 onto OB-1001 by removing the adhesive backing and sticking it onto the OB-1001. Apply firm pressure for 30 seconds to ensure a secure bond.



D. Install OB-1001 on to the PASSENGER'S SIDE bed mount with the supplied 14mm nut and washer.



E. Install PFB-2002 and RS-2001 onto OB-1001 using the 2 supplied 1/2''-13x1-1/4'' bolts and washers.





STEP 3: MOUNT FUEL SYSTEM

F. 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.



G. 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.**



H. Once secure use 3-13/4 bolts and 3-WA-1001D spacers to mount the pump to the bracket.





I. Secure LRB-1001 to DRIVER'S Side frame rail with supplied self-tapping screws. Secure LR-1001 to LRB-1001 with supplied #4 bolts.







STEP 3: MOUNT FUEL SYSTEM

NOTE: If fuel pressure gauge is pulsating after FASS installation, use snubber valve (Cat Part # 7S-3795)

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



Particulate Filter -Install PF-3001 on filter nipple without the draw tube. Make sure to insert O-Ring provided on nipple.



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A. Install the fuel line heat shield on all 3 fuel lines that will be routed over the exhaust system. Be very sure the shielding is perfectly centered above the exhaust!



B. Secure the fuel line high above the exhaust system with the supplied cable ties. Failure to secure the fuel lines can result in a possible fire hazard!



C. Route suction line from the BHF-1005 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.



D. Route fuel line from the A624C56-55-05 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.







Caution: DO NOT use sealant on AN fittings E. 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 feed line on top of the fuel tank, connect to OEM fuel line with PLB-1212.



F. Drain the OEM water separator housing of fuel.

G. Bypass factory fuel filter housing with 10-305/QC-4600 assembly. Be sure to install thread tape onto both QC-4600's.



TO SENDING UNIT

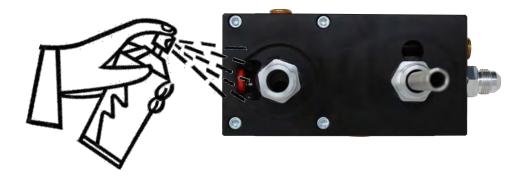
FUEL RETURN LINE FROM THE ENGINE

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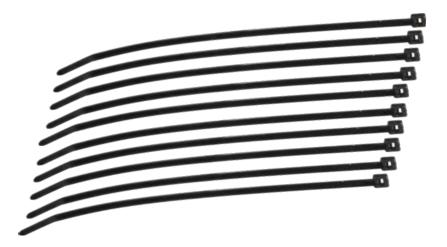


Connect electrical connector on the FASS to the WH-1006-3, turn the key to the "RUN" position and spray Η. WD-40 into the suction side of the FASS. This will allow easier priming of the FASS System.

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I. Secure all fuel lines and electrical components away from any moving parts using supplied cable ties.





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.*****

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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.



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.

- 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

esel Fue 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 recom-mend you to the nearest dealer.

Diesel Performance Products, Inc. (hereafter "SELLER") gives Limited Warranty as to description, quality, merchantabil-ity, fitness for any product's purpose, productiveness, or any other matter of SELLER'S product sold herewith. The SELL-ER 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 peri-od. 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.

The following information is required to obtain a RMA number before returning product:

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 in-curred 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 Prod-ucts, 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.



NOTES: