



# TITANIUM SERIES INSTALLATION MANUAL

## ALL 1/2" FUEL PORTS

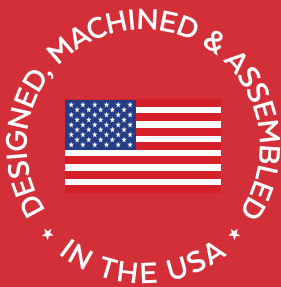


### APPLICATION:

**TS-C12-100G**  
**(100GPH @ 8-10PSI)**  
**TS-C12-165G**  
**(165GPH @ 8-10PSI)**

**GM DURAMAX**  
**2015-2016**

**\*NOTE: CAB AND CHASSIS MAY  
REQUIRE MODIFICATIONS**





[www.fassride.com](http://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](http://FASSRide.com).*

The complete conditions of the Limitation of Warranty can be found in the back of this manual, and [FASSRide.com](http://FASSRide.com).

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



**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](http://www.FASSRide.com). (If your purchase was made on Amazon.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.***

**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](tel: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](http://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.

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**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](mailto:techsupport@FASSride.com)  
with the following information:**

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Your name, address and daytime phone number

Model **(TS-C12-100G) or (TS-C12-165G)**

Serial Number

Last 6 digits of vehicles' VIN

Date of purchase

Nature of Your Concern

Serial number



# INSTALLATION MANUAL

## **TS-C12-100G or TS-C12-165G**

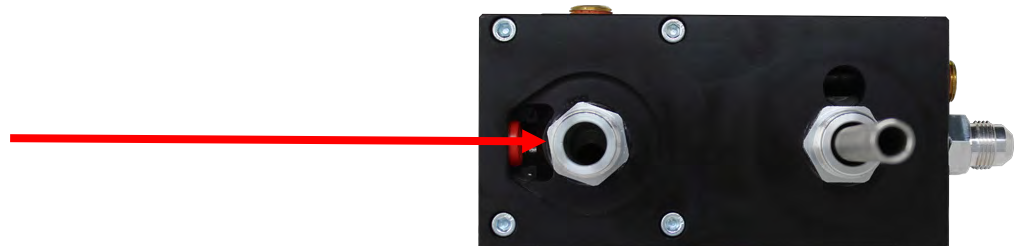
(Installation Videos are available at [www.fassride.com](http://www.fassride.com))

### **Recommended Application**

**TS - C12-100G:** Duramax 2015-2016 with stock - 600 horsepower

**TS - C12-165G:** Duramax 2015-2016 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 at-tempting 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.**



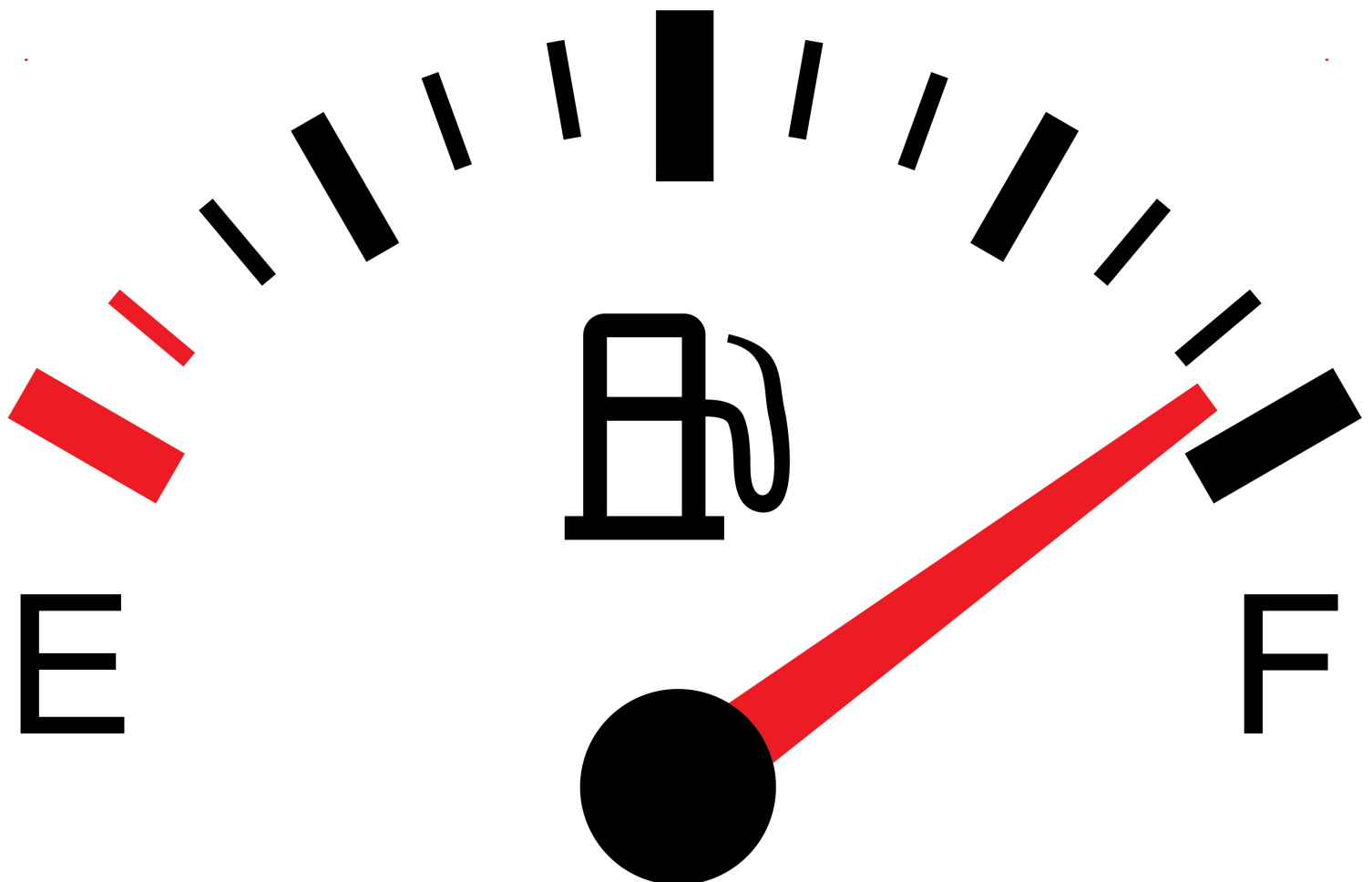
- 9. Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.**
- 10. Properly secure lines to prevent chaffing.**

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



**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!**

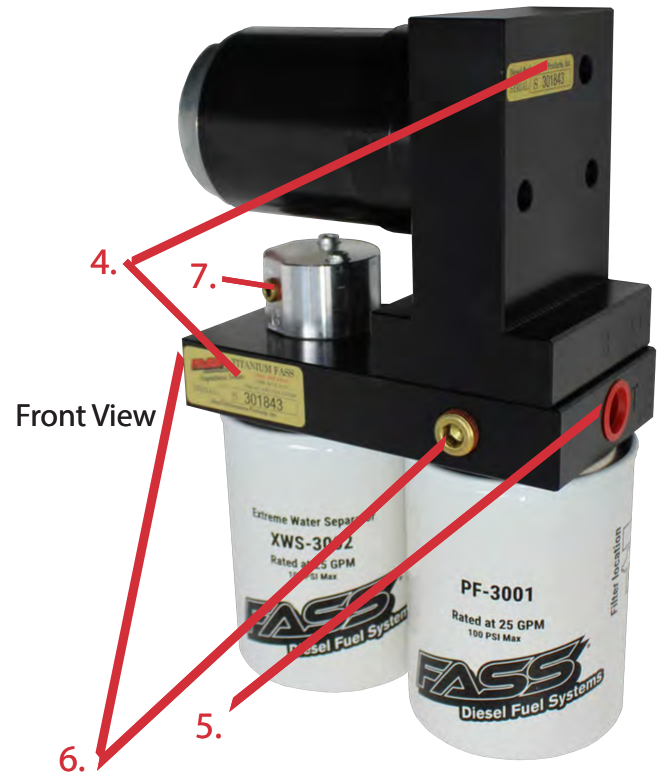


## **TITANIUM SIGNATURE SERIES 100 GPH or 165 GPH 8-10 psi (Approximately)**

Rear View



Front View



### **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**



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# TITANIUM SIGNATURE SERIES 100 GPH or 165 GPH

**8-10 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.*



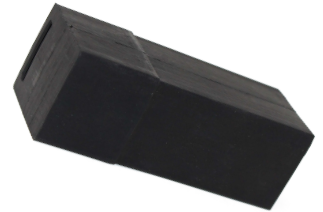


## CONTENTS

**NOTE:** Owner's Manual available for download on our website,  
[www.FASSride.com](http://www.FASSride.com)



**DIELECTRIC GREASE**



**RELAY COVER**



**TWO (2)  
OR-017**



**OR-030**

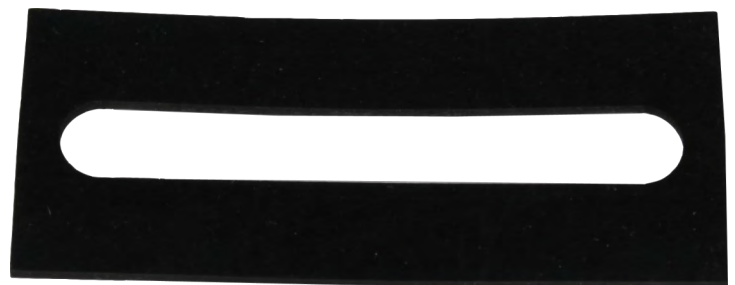
**NOTE: THESE SPARE BASE O-RINGS ARE INCLUDED WITH THE KIT IN THE EVENT OF A PINCHED O-RING DURING ASSEMBLY**



**MP-9015**



**RS-2002**



**RS-2001**



**WH-1006-3**



**FL-1002 x14'**



**PBR-2002**



**PFB-2002**

# MOUNTING PACKAGE CONTENTS



FOUR (4) PL-1005



A614C56-55-05



TWO (2) HC-1001



RING TERMINAL



46177



46116



10-301



PLB-1212



10-300



FOUR (4) LOCKING NUT 3/8"



FOUR (4) 3/8" WASHERS



THREE (3) WA-1001D



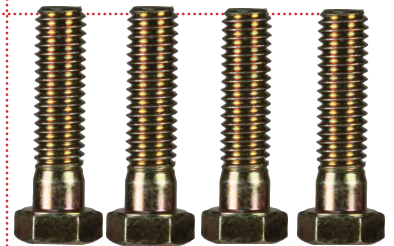
CABLE TIES



OR-212



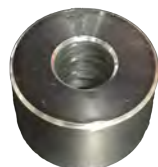
THREE (3) HEX BOLT 1/4"-20x1 3/4"



FOUR (4) Hex Bolt 3/8" -16x1 1/2"



BHF-1005



DS-1001



Hex Bolt M12-1.75 x 60mm



FLAT WASHER

# MOUNTING PACKAGE CONTENTS



**BHN-1005**



**10-306**



**ST-1005P**



**5/16" VITON HOSE  
FL-1006**

**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.

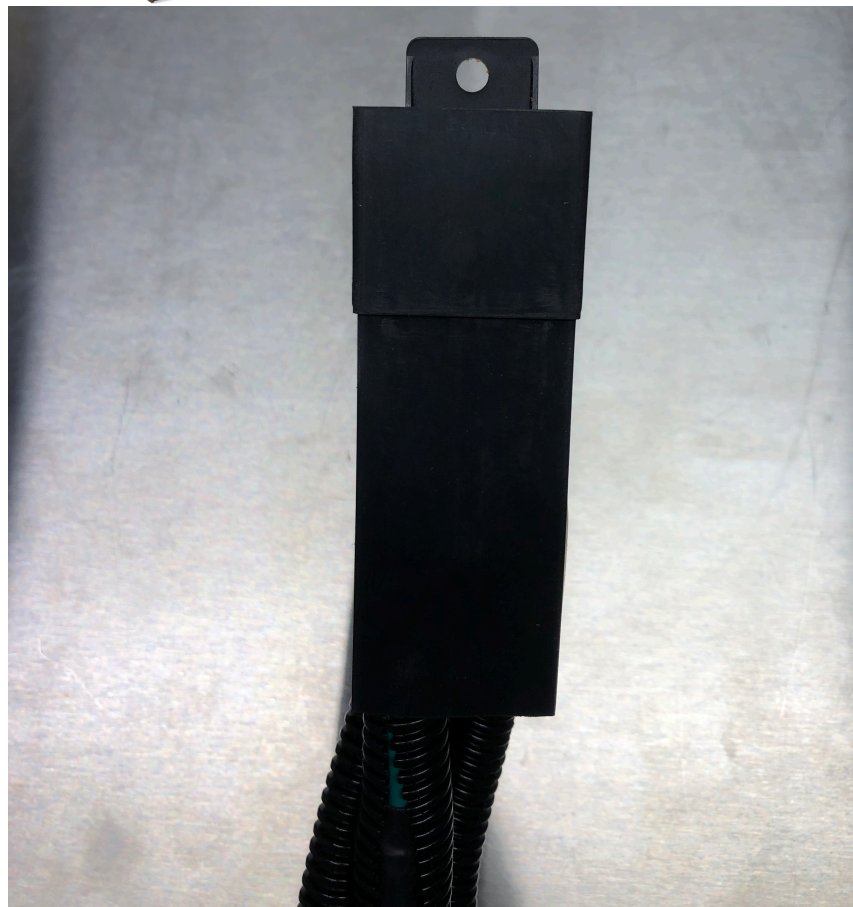
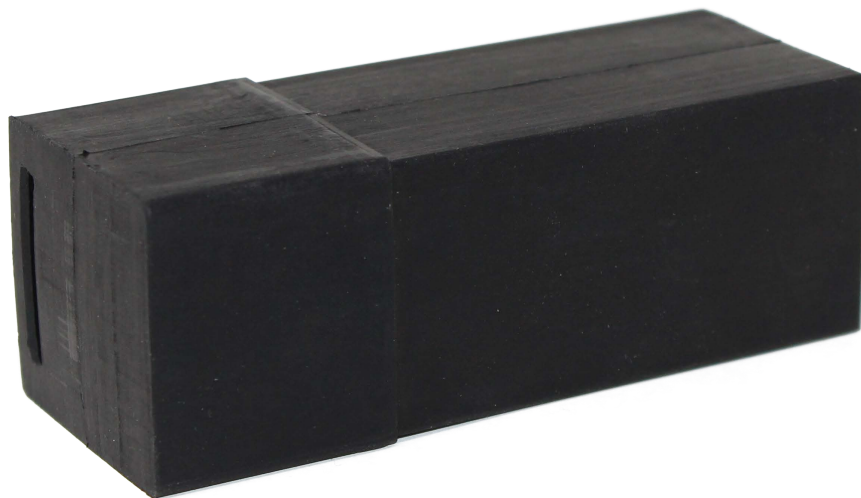
**NOTE: USE SUPPLIED DIELECTRIC GREASE  
SPARINGLY ON ALL ELECTRICAL  
CONNECTIONS! BE SURE TO GREASE RELAY  
PIGTAIL!**



**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!!**



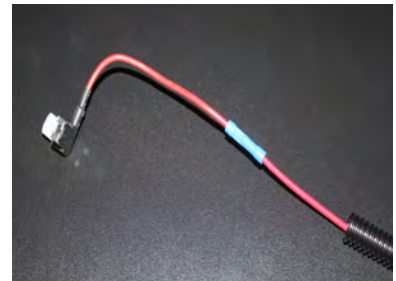
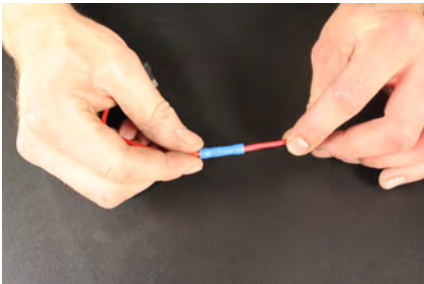
## **STEP 1:** **INSTALL ELECTRICAL HARNESS**

*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 46177 and WH-1006-3 into butt connector. Using crimping tool connect 46177 and WH-1006-3 with butt connector. Install 46116 to 46177 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.*

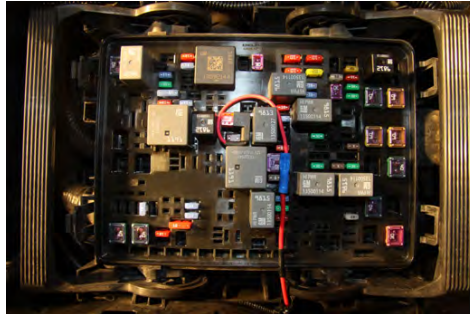
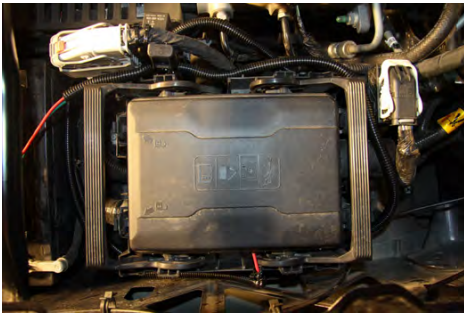


## **STEP 1:** **INSTALL ELECTRICAL HARNESS**

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



**E.** Locate fuse box under hood, locate a "key on hot" fuse. Remove the selected fuse, and install it into the Add-A-Fuse. Install the Add-A-Fuse into the fuse location in the fuse box.



**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: PREPARE SUCTION & RETURN LINES**

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

- A.** Remove the filler neck and overflow tubes from the truck by loosening the clamps at the fuel tank and fuel tank module. Disconnect electrical connector on top of fuel tank module.



- B.** Disconnect factory suction and return lines (located in front of fuel tank).

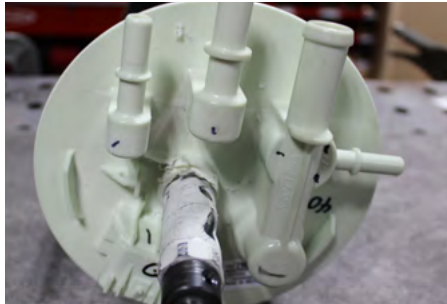


- C.** With the fuel tank empty of fuel, unbolt the tank straps and remove it from the vehicle. Clean the fuel module area then remove the lock ring on the top of the fuel tank. This is spring loaded, so, holding it down while removing the ring will prevent the sending unit from popping up and possibly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



## **STEP 2:** **PREPARE SUCTION & RETURN LINES**

**D.** Mark the location to mount the BHF-1004 assembly. Be sure there is adequate amount of clearance for the BHN-1004. Using a 7/8" hole saw, carefully drill marked location.



**E.** Using a Dremel, pencil grinder or similar precision grinding tool, carefully remove electrical connector webbing and raised collar (remains from hole saw location). **Be sure to create a smooth, burr-free sealing surface for OR-212.**



**F.** Install 10-306 into BHF-1005. Install BHF-1005 into the hole drilled in previous step, install OR-212 onto fitting along with BHN-1005. Be sure to apply red Loctite or equivalent onto threads of BHF-1005 as this will ensure a leak free seal. Use channellock pliers to tighten nut while verifying the OR-212 has proper compression and is not over-tightened.



## **STEP 2:** **PREPARE SUCTION & RETURN LINES**

**G.** Using a 7/8" hole saw, drill a hole on an open portion of the fuel tank module to allow ST-1005P to draw fuel from the bottom of the fuel tank module. Be sure to remove all debris from fuel tank module after drilling.



**H. 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.



**FUEL TANK SUPPORTS**

**I.** 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 ST-1005P with 1/2" clearance from bottom of fuel tank module. Cut ST-1005P to length and install onto BHF-1005 with hose clamp HC-1001.



**NOTE:**  
ACTUAL  
MEASUREMENTS  
WILL  
VARY  
FROM  
IMAGES!

## **STEP 2:** **PREPARE SUCTION & RETURN LINES**

**J.** Using a razor knife, remove and discard the OEM convoluted tubing from the factory suction line on fuel tank module. **BE SURE YOU DO NOT DAMAGE THE PLASTIC BARBED FITTING THAT SECURES TUBING!** Install the provided 5/16" Viton tubing in place of the factory convoluted tubing. Trim the Viton tubing to length as necessary.



**K.** Carefully reinstall fuel tank module into fuel tank, reinstall locking ring. Install 10-306 into BHF-1005, fitting must be oriented facing FASS mounting location and free from obstruction. While tightening fitting nut, hold opposing end with a wrench to prevent damage to fuel module. Install PL-1005 onto 10-306 and torque with the same method used in previous step. Lubricate PL-1005 and push FL-1002 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.



**L.** Using oil, insert PLB-1212 into one end of the provided FL-1002 fuel line. Feed line over frame to the stock fuel connection.



**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**

## **STEP 2:** **PREPARE SUCTION & RETURN LINES**

**M.** Push the PLB-1212 into the stock suction line until you hear a click and the tabs are locked in place.

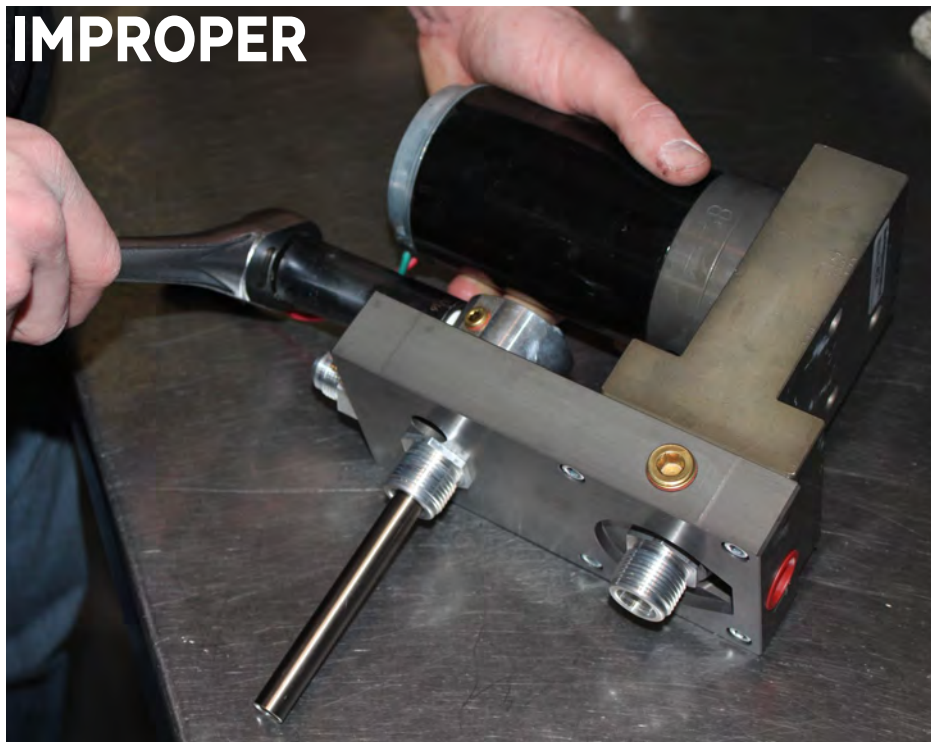
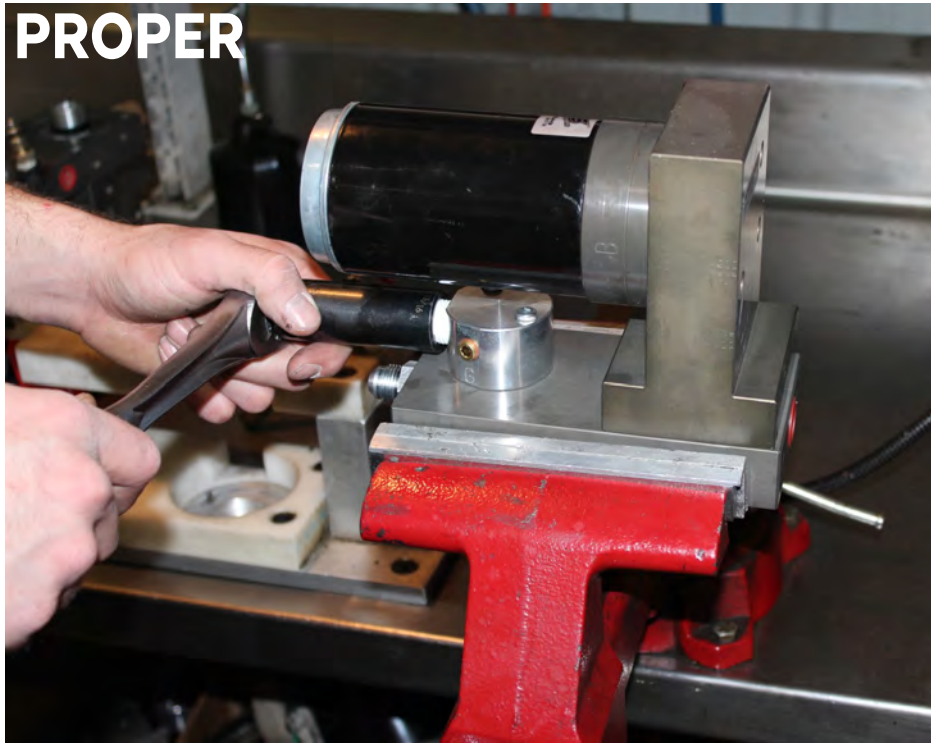


**N.** Using a HC-1001 hose clamp, insert the A614C56-55-05 into the other end of the provided FL-1002 fuel line and secure. Loop this end over the frame to the factory steel fuel line disconnected in Step 2b. Oil the rings inside the A614C56-55-05 and slide over the line until you hear a click. Press the locking tab of A614C56-55-05.



**NOTE:**

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

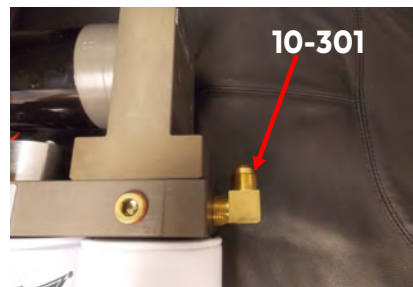


## **STEP 3:** **MOUNT FUEL SYSTEM**

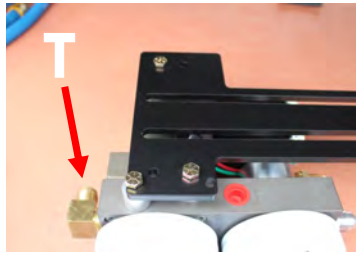
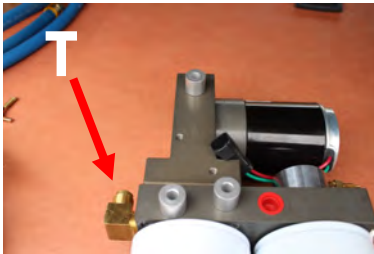
**NOTE: Before installing fittings make sure to inspect for burs or flare imperfections. When cutting fuel line make sure to blow out line to keep debris from moving forward..**

- A.** Install 10-300 into the "E" port and 10-301 into the "T" port of the FASS, torque to 20 ft./lbs.

**\*\*\*FITTINGS COME EQUIPPED WITH THREAD SEALANT, DO NOT USE THREAD TAPE\*\*\***



- B.** For fitting purposes. Secure PBR-2002 to pump assembly lightly with (3) 1/4"-20x1 3/4 bolts and (3) WA-1001D. This will assembly will be used in future steps for correct fitting of brackets. (Note: Bracket maybe flipped to accommodate your application.)



- C.** Connect female plug of the FASS harness into pump. 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**

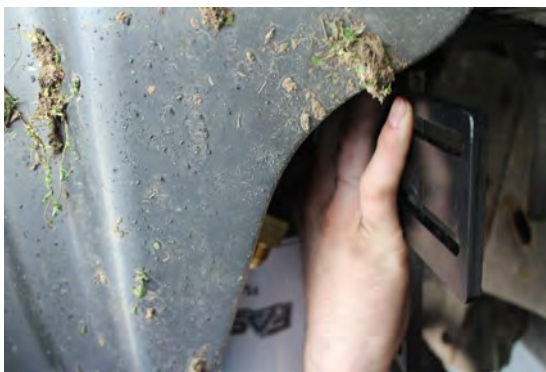
**D.** Remove the bed bolt directly in front of the drivers side fender well, this bolt can be discarded. Align RS-2001 with PFB-2002 and DS-1001.



**E.** Secure PFB-2002 and RS-2001 with 12mm bolt and flat washer supplied in the kit.



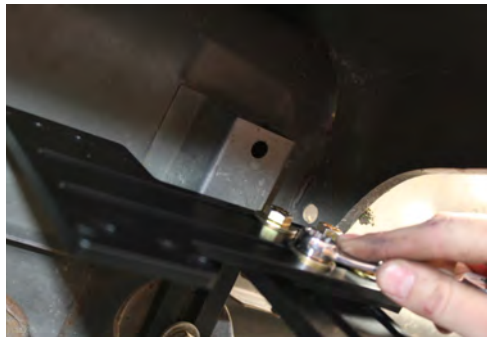
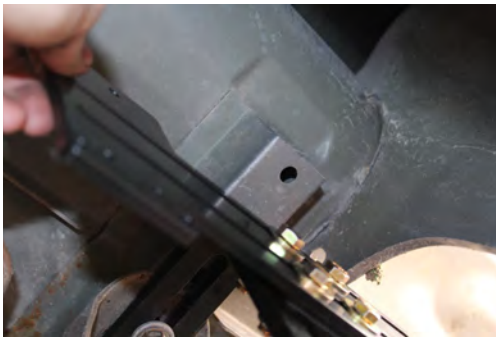
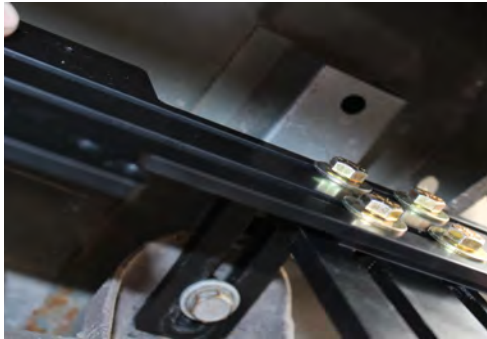
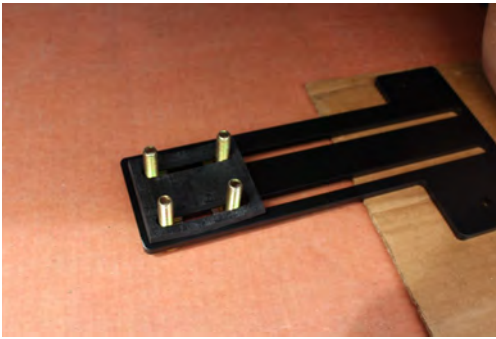
**F.** Position the PBR-2002 to the PFB-2002 pump assembly at the mounting location and check for fit. Once location is established mark location for mounting in next step.





## **STEP 3:** **MOUNT FUEL SYSTEM**

**G.** Assemble the FASS pump bracket PBR-2002 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 3-1/2 bolts and 3-WA-1001D spacers to mount the pump to the bracket.



## 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.



**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 4: INSTALL FUEL LINE

**Caution: DO NOT use sealant on AN fittings**

- A.** Route suction line from BHF-1005/10-306/PL-1005 assembly to the 'T' port of the FASS. Cut FL-1002 to length. (measure twice cut once) Insert PL-1005 using oil and attach to 10-301. Torque to 18 ft./lbs.



- B.** Measure from the factory feed connection from Step 2N to the 'E' port of the FASS system. Cut and insert PL-1005. Connect to the 10-300 in the 'E' port of the FASS system. Torque to 18 ft./lbs.



- C.** Using oil, insert a PL-1005 into the remaining fuel line from step 2L. Connect to the 'R' port fitting on the FASS system, and torque to 18 ft./lbs. The FASS will now be utilizing the factory feed line on top of fuel tank for the FASS return line. **If necessary, re-bend sheet metal that allowed access to fuel tank.**



**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**

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](http://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.**



## 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](http://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 PROMPTLY 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.