FASS Diesel Fuel Systems

TITANIUM SIGNATURE SERIES

INSTALLATION MANUAL

ALL 1/2" FUEL PORTS



APPLICATION:

TSC15180F140G
(140GPH@ 70-75PSI)
TSC15250F220G
(220GPH @ 70-75PSI)
TSC15290F240G
(240GPH @ 60-65PSI)

***TUNED* DURAMAX L5P**
2020-2023

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 Four-year 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.

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**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



WARNING!

This system is designed for the 2020-2022 L5P Duramax *WITH AFTERMARKET TUNING!!* If the truck is not equipped with an aftermaket tune and the ability to delete specific codes, the vehicle will have a MIL after the FASS installation. Consult with your calibration supplier prior to the FASS installation to confirm they are able to delete specific diagnostic codes.

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 (TSC15180F140G) or (TSC15250F220G) or (TSC15290F240G) 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

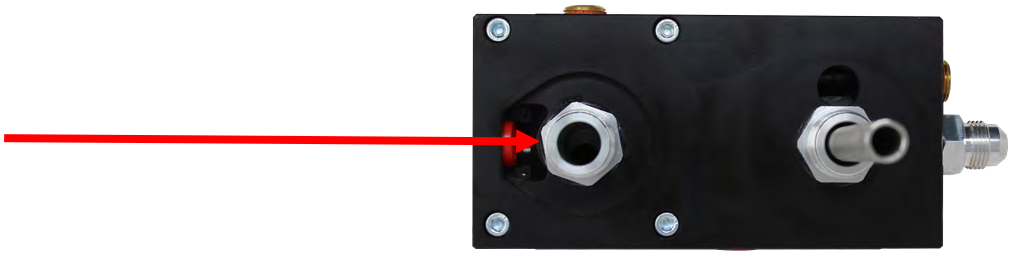
TSC15180F140G
TSC15250F220G
TSC15290F240G

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

Recommended Application

TSC15180F140G: Duramax 2020-2023 with stock to 700 horsepower
TSC15250F220G: Duramax 2020-2023 with 700 to 900 horsepower
TSC15290F240G: Duramax 2020-2023 with 900 to 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 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.**

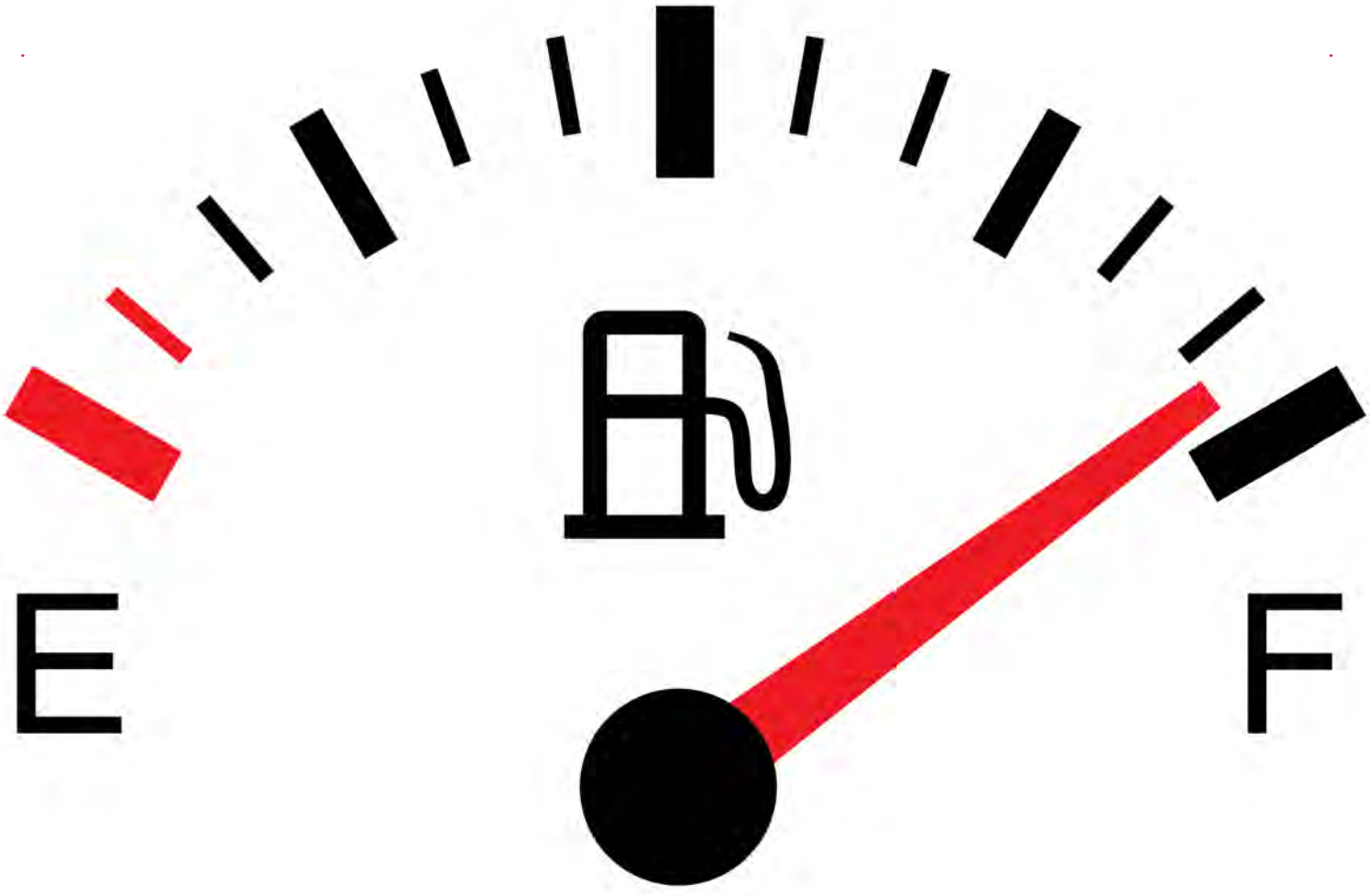
BEFORE STARTING THE INSTALLATION PROCESS LUBRICATE THE BED BOLT WITH WD-40 TO HELP WITH INSTALLATION

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 140 GPH - 220 GPH - 240 GPH

www.fassride.com
(866) 769.3747

70-75 psi (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. Prep the FASS
Step 3. Mount the FASS
Step 4. Fuel Line Supply
Step 5. Review Installation

FASS Diesel Fuel Systems

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(866) 769.3747

TITANIUM SIGNATURE SERIES 140 GPH - 220 GPH - 240 GPH

70-75 PSI (Approximately)

Note: Going over 100 PSI WILL void warranty.

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



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(866) 769.3747

CONTENTS

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

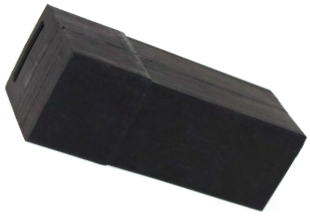




DIELECTRIC GREASE



TWO (2) OR-017



RELAY COVER

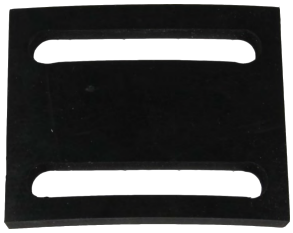


OR-030

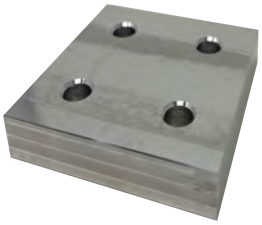
NOTE: THESE SPARE BASE O-RINGS ARE INCLUDED WITH THE KIT IN THE EVENT OF A PINCHED O-RING DURING ASSEMBLY



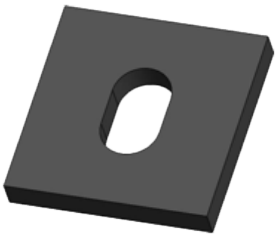
MP-9092



TWO (2) RS-2002



GMSPCR-1001



RS-2004



WH-1006-3



FL-1002 x9'



FL-1058x5'



PBR-2001



PFB-2002 SHORT

FASS Diesel Fuel Systems

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MOUNTING PACKAGE CONTENTS



TWO (2) BHF-1005



TWO (2) OR-212



TWO (2) BHN-1005



10-306



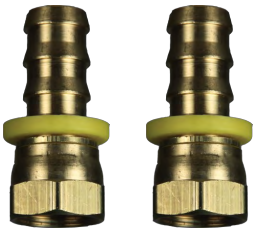
46177



46116



10-302



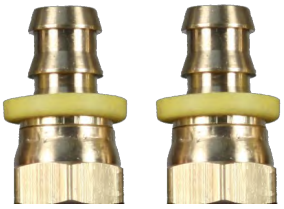
TWO (2) PL-1058



A624C56-55-05



10-300



TWO (2) PL-1005



10-307



PL-2003



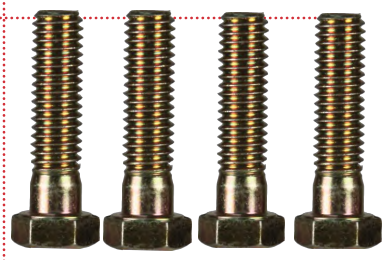
CABLE TIES



THREE (3) WA-1001D



FOUR (4) 3/8" WASHERS



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



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



FOUR (4) LOCKING NUT 3/8""



Hex Bolt M12-1.75 x 60mm



FLAT WASHER

www.fassride.com
(866) 769.3747

MOUNTING PACKAGE CONTENTS



HC-4001



TWO (2) RING TERMINAL



TWO (2) STF-1001



FIVE (5) HC-1001



TWO (2) FL-1007
5/8" VITON HOSE



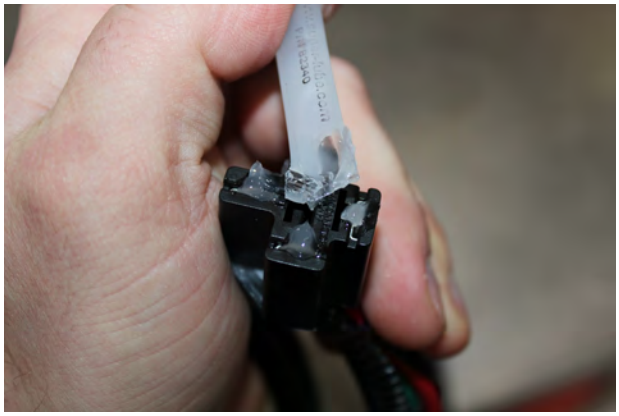
5/16" VITON HOSE
FL-1006

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!



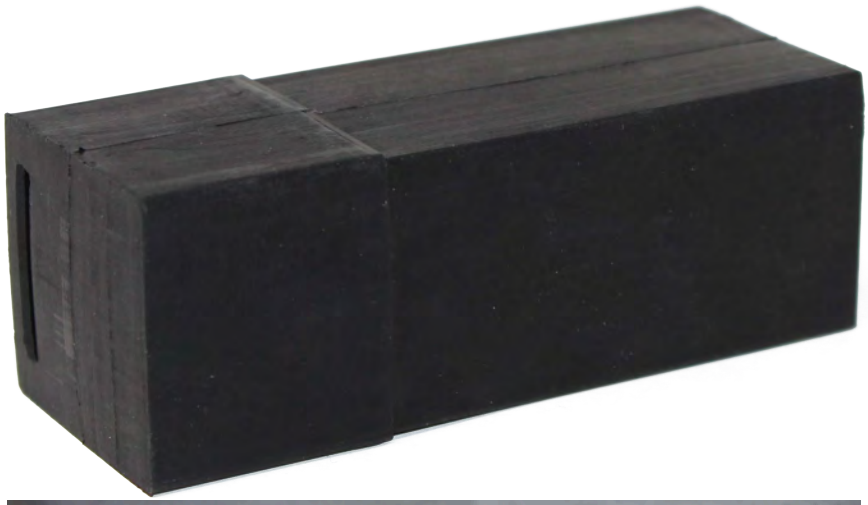


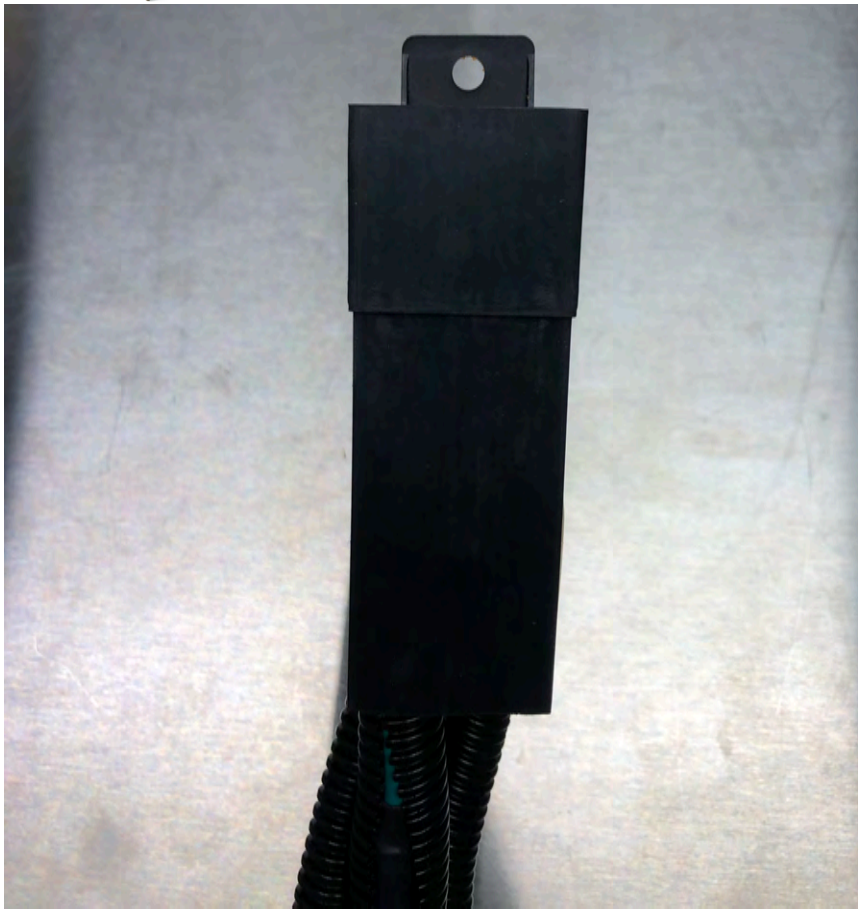


STEP 1:
INSTALL ELECTRICAL HARNESS

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.



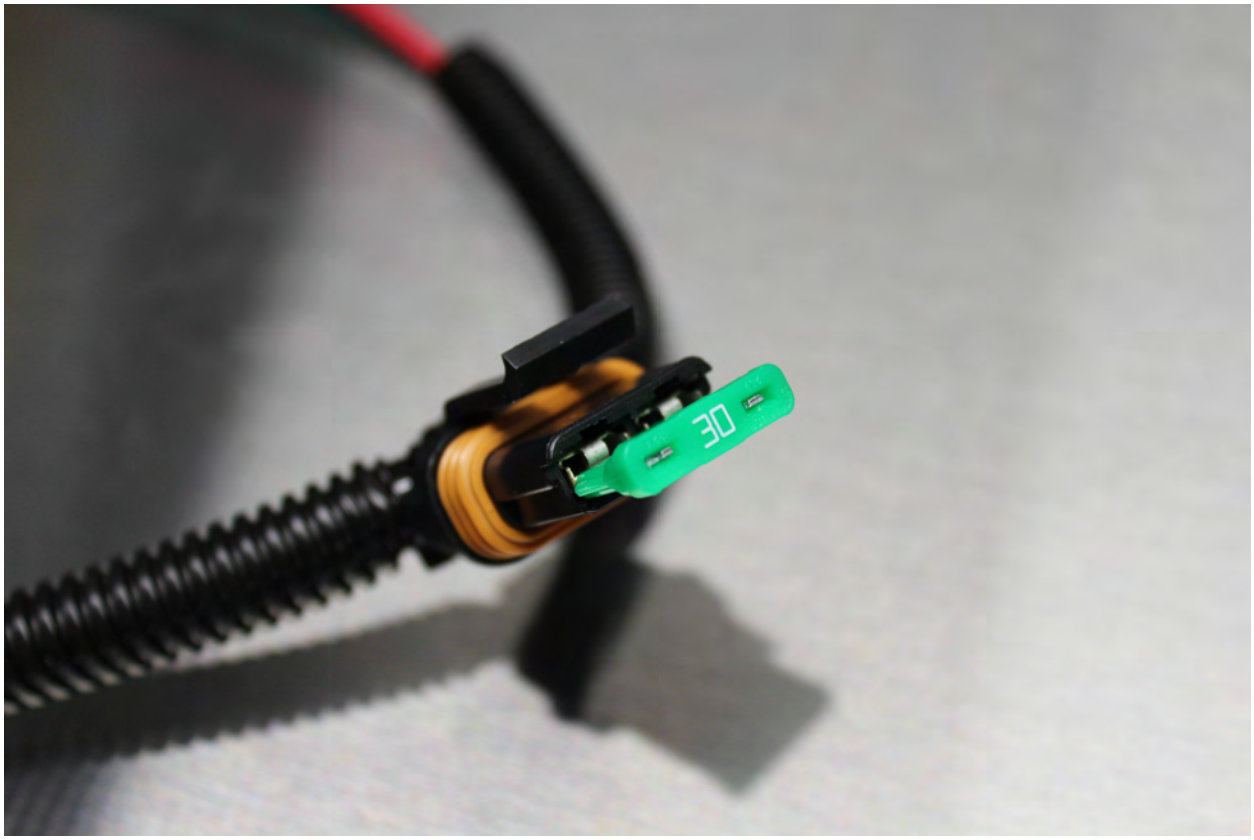


STEP 1:
INSTALL ELECTRICAL HARNESS

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 30 AMP FUSE INTO THE FASS WIRING HARNESS!!





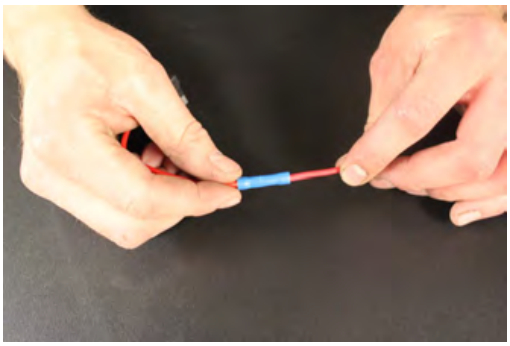
STEP 1:
INSTALL ELECTRICAL HARNESS

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

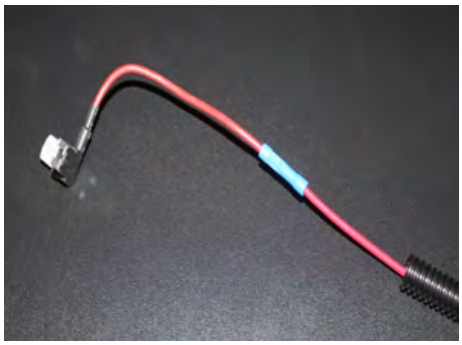
A. Using wire stripping tool remove excess insulation off the add-a-fuse and the WH-1006-3



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.



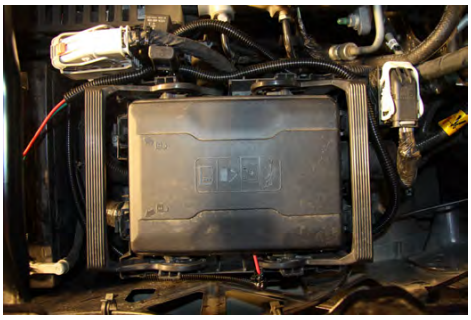
STEP 1:
INSTALL ELECTRICAL HARNESS

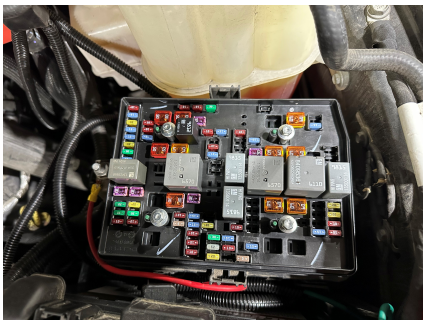
D. Secure relay and fuse in an upright position, as shown, to prevent moisture from entering. Use supplied dielectric grease on all electrical connections.





E. Locate a key-on 12v+ fuse, and put Add-A-Fuse in place. Install fuse previously removed into Add-A-Fuse. **NOTE: Fuse #40 is misc. ignition on the 2022 model year in the pictures below.**







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).





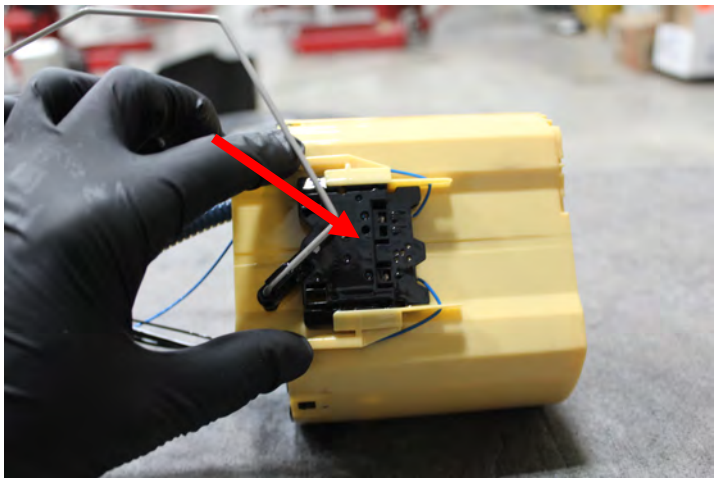
C. With the fuel tank empty of fuel, unbolt the tank straps and remove it from the vehicle. Disconnect the 2 fuel lines from the fuel tank module by releasing locking tabs. Clean the fuel module area then remove the lock ring on the top of the fuel tank. This is spring loaded, so, holding it down while removing the ring will prevent the sending unit from popping up and possibly causing damage.





STEP 2:
PREPARE SUCTION & RETURN LINES

D. Disconnect the fuel sending unit electrical connector and remove the fuel sending unit from the fuel tank module to prevent damage to the float. Please note that this will be reinstalled at a later time.



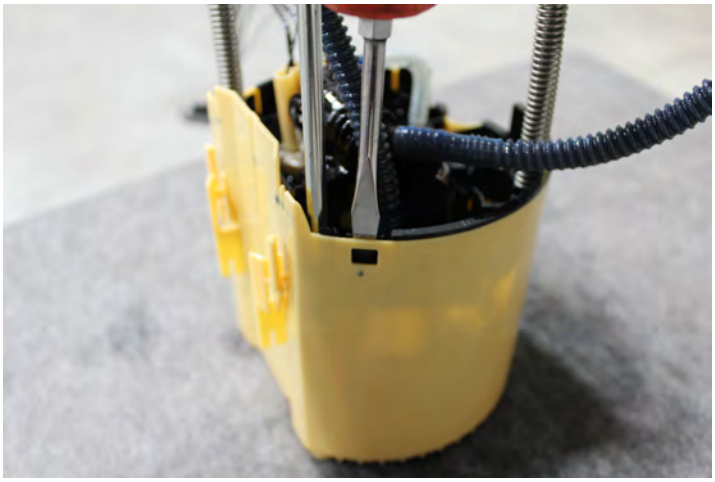
E. Carefully cut and remove the 2 sections of plastic convoluted tubing from the fuel tank module, do not damage the barbed fitting that secures the tubing.



STEP 2:
PREPARE SUCTION & RETURN LINES

F. Disconnect the fuel pump electrical connector. Release the locking tabs and separate the upper and lower section of the fuel tank module. Remove the fuel pump, fuel pump screen, and small plastic fuel pump housing. Cut the tabs from the black plastic fuel pump retainer and remove it from the lower section of the fuel tank module. Reassemble the upper and lower sections of the fuel tank module.









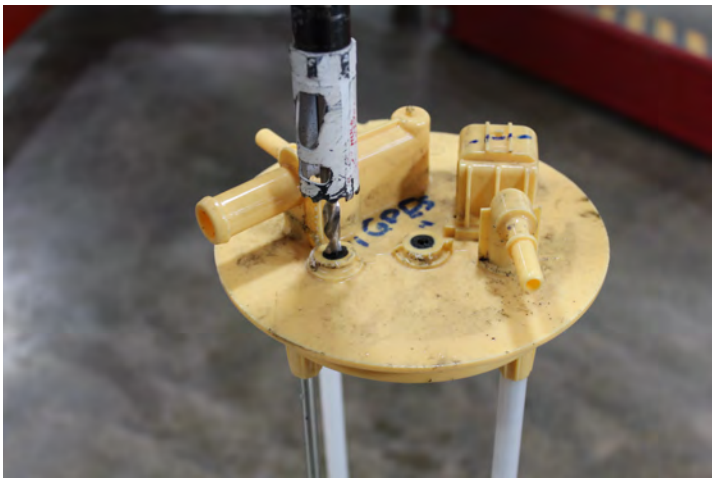
STEP 2:
PREPARE SUCTION & RETURN LINES

G. With an appropriate cutting tool, remove the spare fuel port and the OEM engine feed port from the fuel tank module. Using a 7/8" hole saw, drill the center of the 2 open fuel ports.









STEP 2:
PREPARE SUCTION & RETURN LINES

H. With an appropriate grinding tool, it may be necessary to add additional clearance for the BHF-1005. You must create a good smooth sealing surface for OR-212. Be sure to remove all plastic burrs.





I. Install 10-306 into BHF-1005, install 10-307 into the remaining BHF-1005 and tighten both fittings accordingly.





STEP 2:
PREPARE SUCTION & RETURN LINES

J. Install a OR-212 gasket on each BHF-1005, place BHF-1005/10-306 assy. in the hole closest to the electrical connector.





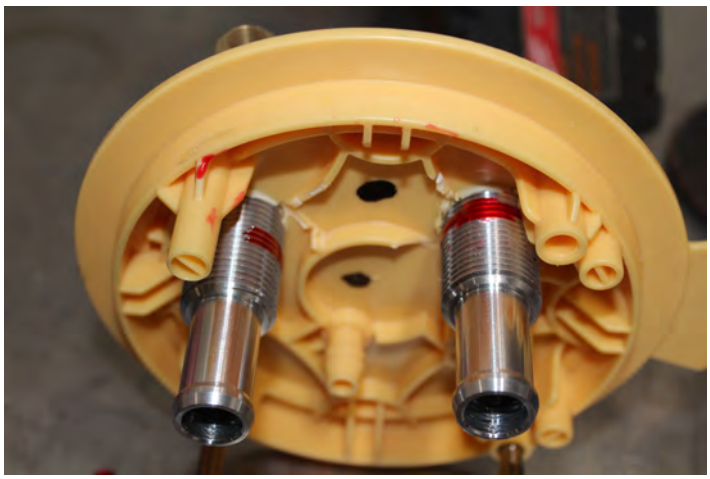
10-307

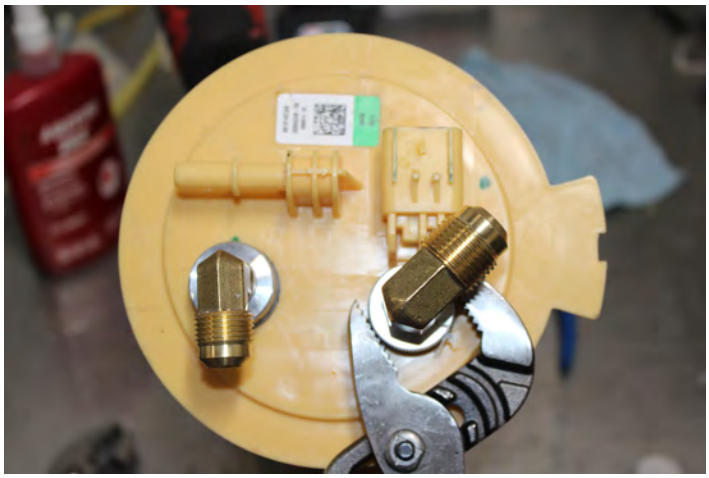
PLEASE NOTE THE DIRECTION OF THE 10-306/10-307.

STEP 2:
PREPARE SUCTION & RETURN LINES

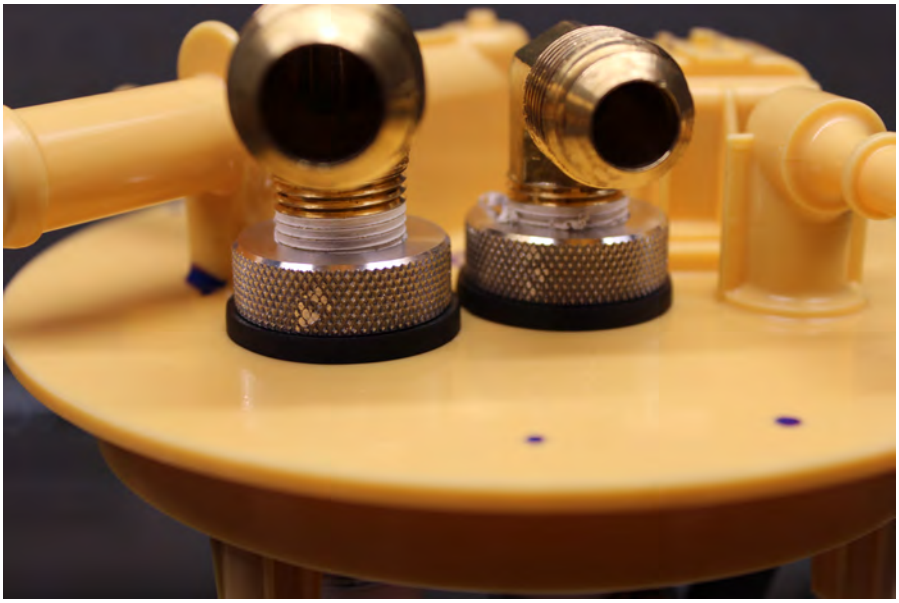
K. Apply red LocTite to BHF-1005 threads and install BHN-1005 onto each BHF-1005. Carefully tighten both BHF-1005 assemblies with a pair of pliers. *DO NOT OVER TIGHTEN, THIS WILL DAMAGE THE GASKET!*







BE SURE TO CHECK FOR PROPER GASKET COMPRESSION!



STEP 2:
PREPARE SUCTION & RETURN LINES

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.

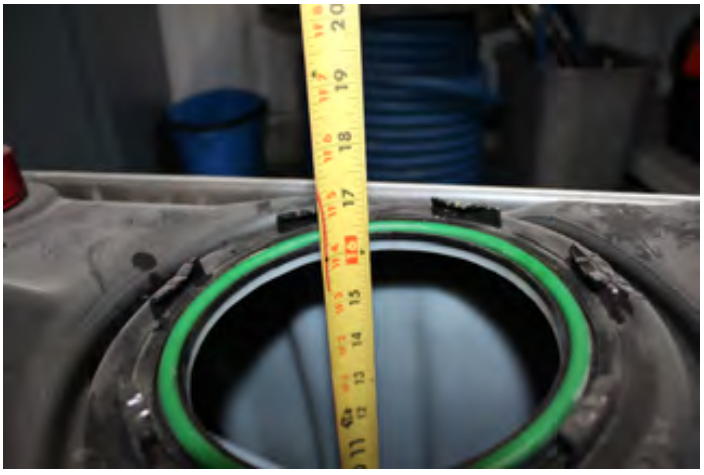


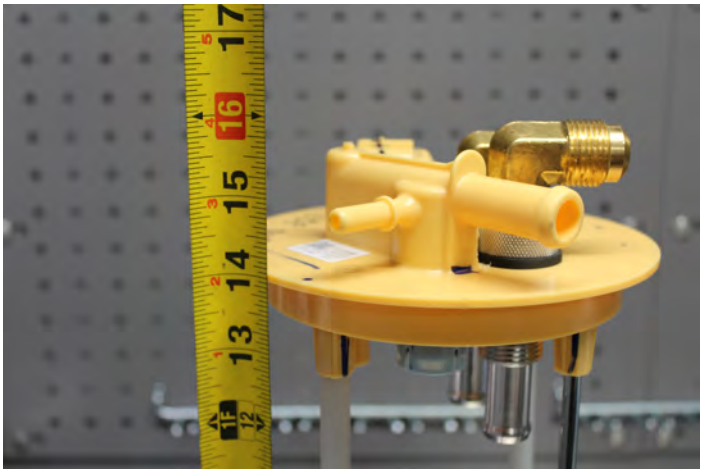
STEP 2:
PREPARE SUCTION & RETURN LINES

L. Install a STF-1001 in each FL-1007 with HC-1001 as shown, tighten the hose clamp accordingly.



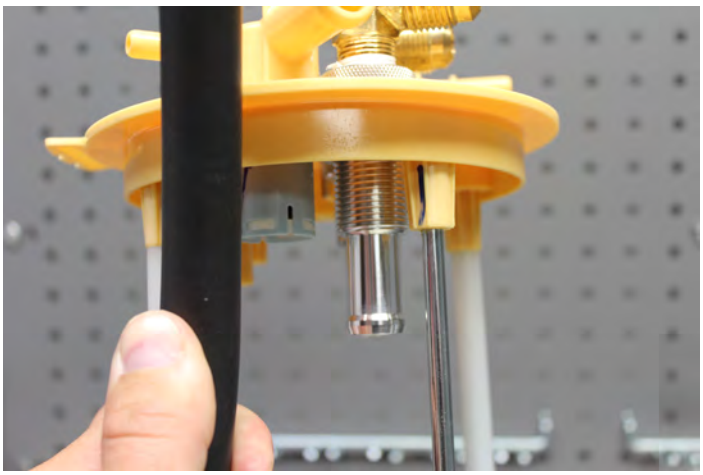
M. Using a tape measure, measure from the bottom of the fuel tank to the top of the o-ring sealing surface where the fuel tank module makes contact and take note of the measurement. Compress fuel tank module to the exact height measurement taken in previous step, measure and mark both FL-1007 with 1/2" clearance from bottom of fuel tank module. *NOTE: ACTUAL MEASUREMENTS WILL VARY FROM IMAGES!*



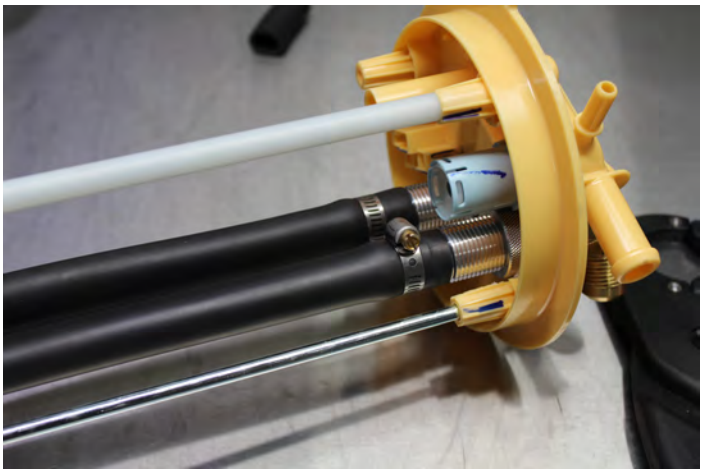


STEP 2:
PREPARE SUCTION & RETURN LINES

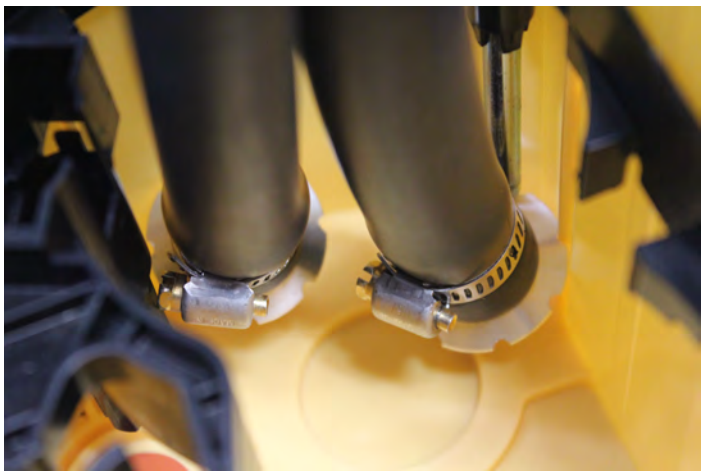
N. Cut each FL-1007 to the same length and install them onto each BHF-1005 with a HC-1001, tighten the hose clamp accordingly.





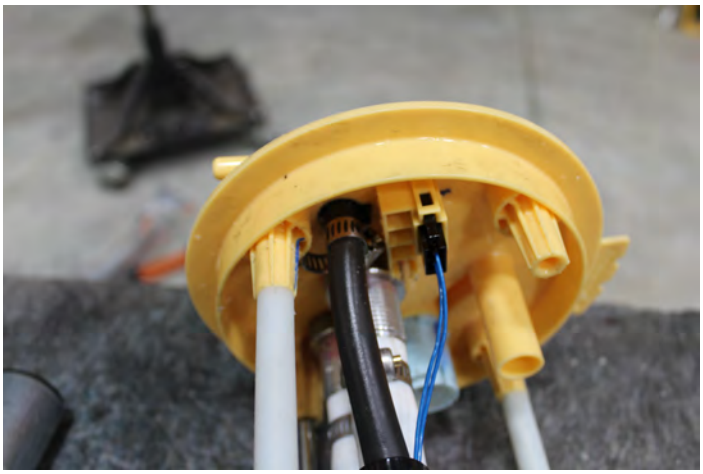


O. Once again compress the fuel tank module to the recorded measurement and verify that the STF-1001 has 1/2" of clearance from the bottom of the fuel tank module.



STEP 2:
PREPARE SUCTION & RETURN LINES

P. Install FL-1006 onto the factory fuel return barb with HC-1004 and tighten the hose clamp accordingly. Reinstall the fuel level float and reconnect the electrical connector. Gently secure all fuel lines and wires together with a supplied cable tie.





STEP 2:
PREPARE SUCTION & RETURN LINES

Q. Carefully reinstall install pick up module making sure the leveling arm is not obstructed by the suction tube. Reinstall factory lock ring. Reconnect factory wire harness and factory fuel lines



R. Install FL-1058 onto PL-1058, install PL-1058 onto 10-307. Install FL-1002 onto PL-1005, install PL-1005 onto 10-306. Tighten both fittings accordingly.

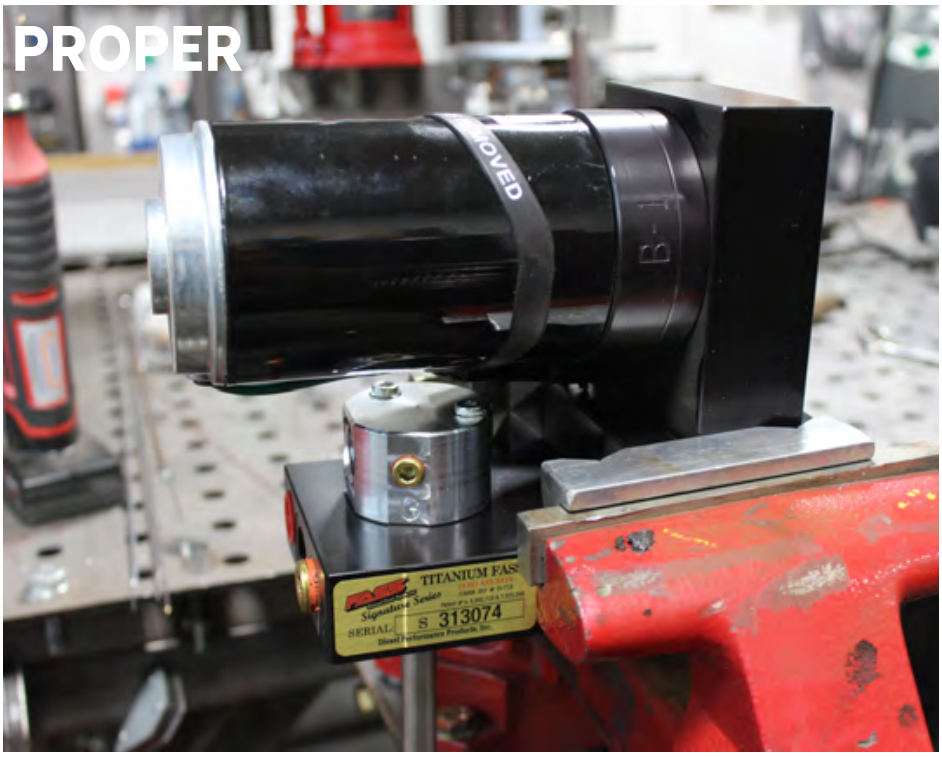


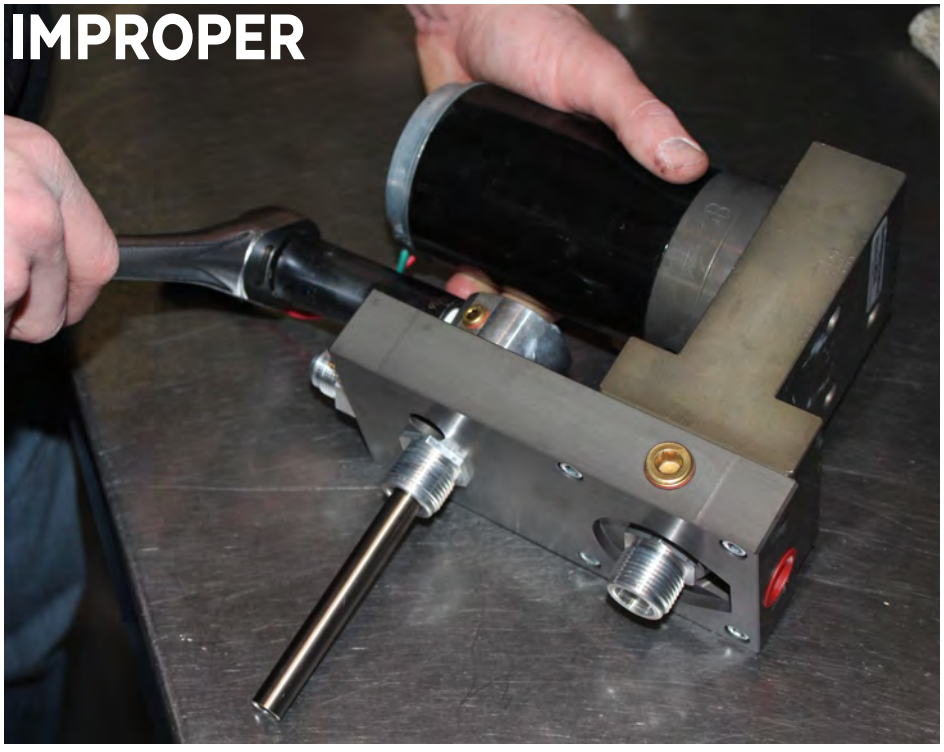
S. Reinstall fuel tank into vehicle by reversing steps taken for removal.



NOTE:

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





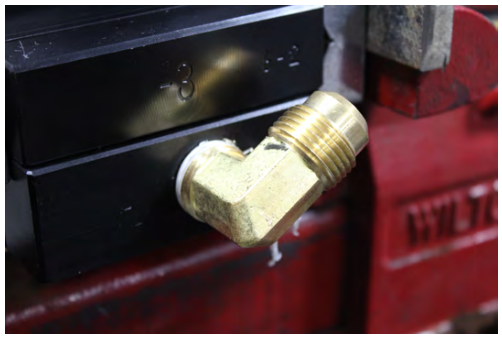
STEP 3:
MOUNT FUEL SYSTEM

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..

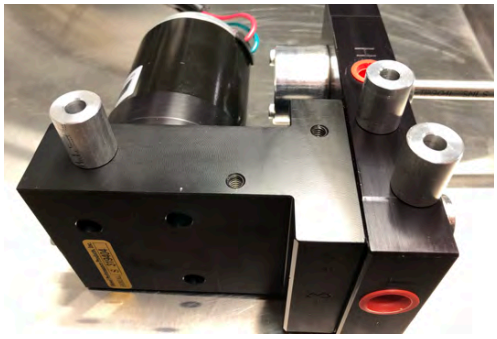
A. Install 10-300 into the "E" port and 10-302 into the "T" port of the FASS, torque to 20 ft./lbs.

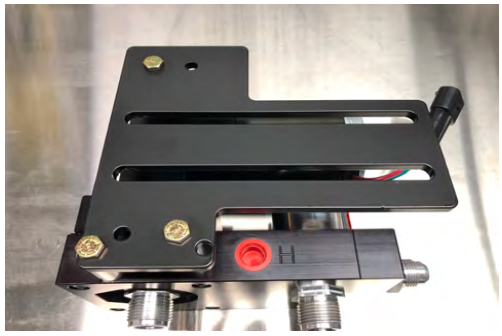
FITTINGS COME EQUIPPED WITH THREAD SEALANT, DO NOT USE THREAD TAPE





B. For fitting purposes. Secure PBR-2001 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 bold directly in front of the drivers side fender well, this bolt can be discarded. Align RS-2001 with PFB-2002.



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



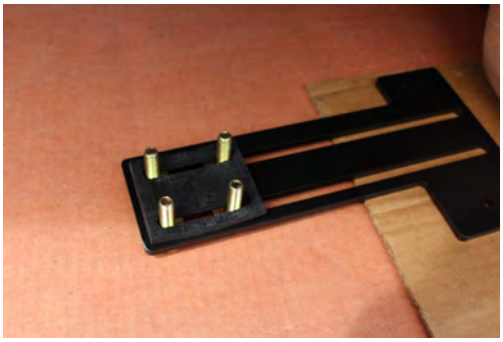
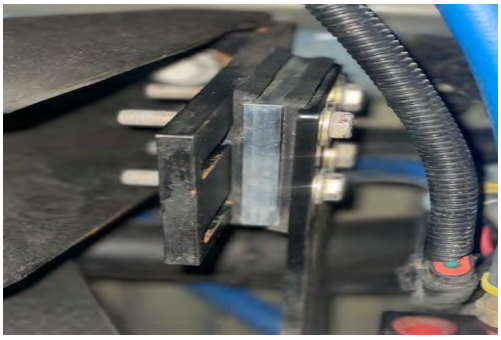
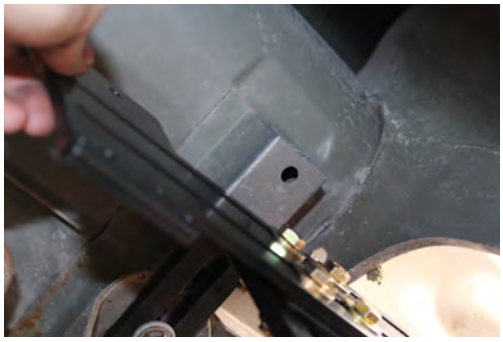
F. Position the PBR-2001 to the PFB-2002 pump assembly at the mounting location and check for fit. Once location is established mark location for mounting in next step.



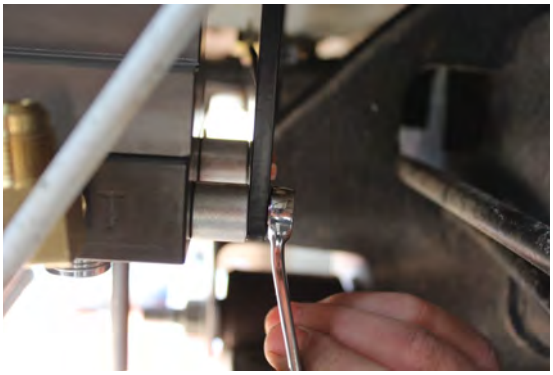


STEP 3:
MOUNT FUEL SYSTEM

G. Assemble the FASS pump bracket PBR-2001 using the RS-2002 spacer's. One between GMCSPCR-1001 & PFB-2002 and one between GMSCR-1001 & PBR-2001 bracket with 4-3/8 bolts, nuts, and washers. Note: Torque bolts not flange nut.


H. Once secure use 3-1 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)

1. 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-1005/10-307/PL-1058assembly to the 'T' port of the FASS. Cut FL-1058 to length. (measure twice cut once) Insert PL-1058 using oil and attach to 10-301. Torque to 18 ft./lbs.



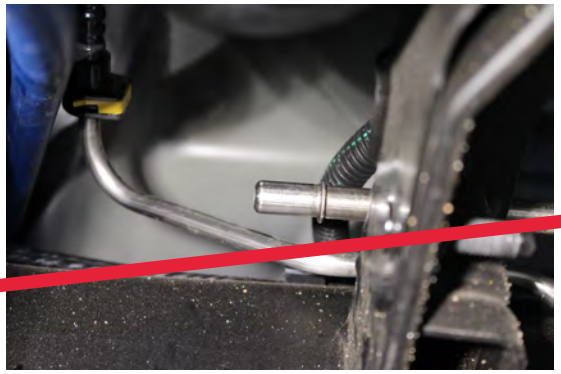
B. Route the FASS return line from BHF-1005/10-306/PL-1005 assembly to the 'R' port of the FASS. Cut FL-1002 to length, insert PL-1005 using oil and attach to the 'R' port of the FASS. Torque to 18 ft./lbs.



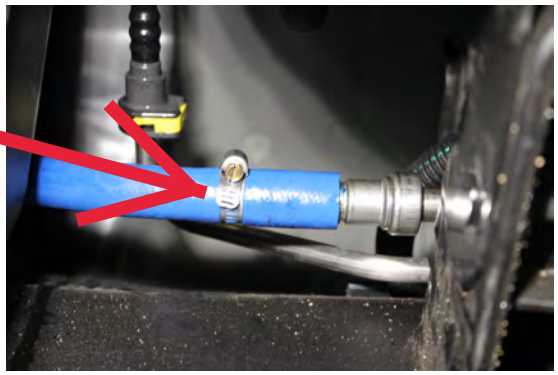
Note: Secure all fuel lines with cable ties. Cable ties are an economical way to prevent the possibility of problems occurring!

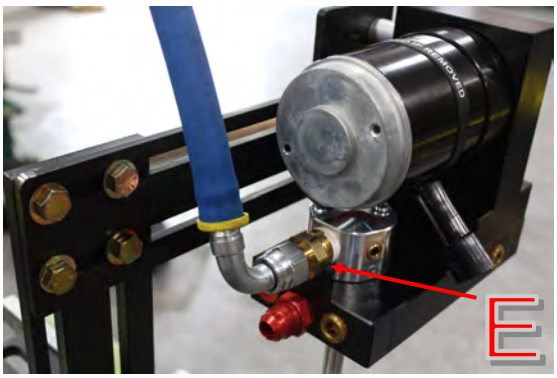
C. Using oil, insert a PL-1005 into the remaining fuel line, install PL-2003 onto the 'E' port of the FASS. Route FL-1002 to the O.E.M. fuel supply line in front of the fuel tank. Install A624C56-55-05 nto the O.E.M. fuel supply line, install FL-1002 onto A624C56-55-05 with HC-1001 and tighten accordingly. Press the locking tab of A624C56-55-05.











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 5:
REVIEW INSTALLATION

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

To assist with priming your FASS pump crack the 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.

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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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