FASS Diesel Fuel Systems

TITANIUM SIGNATURE SERIES

INSTALLATION MANUAL

ALL 1/2" FUEL PORTS



APPLICATION:

ND-TS-D07-250G
(250GPH @ 16-18PSI)
ND-TS-D07-290G
(290GPH @ 16-18PSI)

DESIGNED, MACHINED & ASSEMBLED * IN THE USA *

Cummins 5.9L/6.7L
24 Valve

Standard Pickup Truck
2005-2018
1998.5-2004
2021-2024 (CP3)
**with In-tank Lift Pump*

LIFETIME WARRANTY AVAILABLE

Note: Cab and Chassis may require modifications

RAM

FASS DIESEL FUEL SYSTEMS® / ENGINEERED EXCELLENCE

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

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

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

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

IMPORTANT:

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

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

**For more information,
contact Technical Support:
Diesel Performance Products, Inc.
16234 State Hwy O Marthasville,
MO 63357
636-433-5410**

www.fassride.com
(866) 769.3747



WARNING!

This product has NO WARRANTY unless:

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

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

Other conditions may apply. Please see full warranty information.

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

ATTENTION!

Before you begin installation

Register for your Warranty ONLINE at

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

No online access, call our TECH Support at

1-866-769-3747

www.fassride.com
(866) 769.3747

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

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

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

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

Your name, address and daytime phone number
Model(ND-TS-D07-250G) or (ND-TS-D07-290G)
Serial Number
Last 6 digits of vehicles' VIN

Date of purchase
Nature of Your Concern
Serial number



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INSTALLATION MANUAL

ND-TS-D07-250G or ND-TS-D07-290G

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

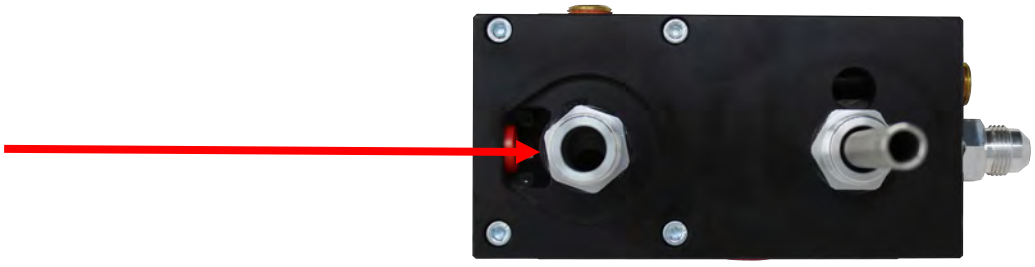
Recommended Application

ND-TS-D07-250G: *Cummins 2005-2018& 2021-2024 with 1,000 - 1,200 horsepower*

ND-TS-D07-290G: *Cummins 2005-2018& 2021-2024 with 1,200 - 1,500 horsepower*

NOTE: THIS KIT MAY ALSO BE USED ON 1998.5-2004 CUMMINS WITH IN TANK LIFT PUMP MODIFICATIONS

1. **Read all instructions before starting installation of this product!**
2. **Installing the improper FASS Pump can cause severe engine damage.**
3. **Secure vehicle from ROLLING!**
4. **Cab and Chassis may require modifications**
5. **Consult vehicle's manufacturers' instructions concerning the electrical system before attempting any electrical connections.**
6. **Be sure that the serial # on this installation manual matches that of the outside of the box.**
7. **Flush and clean all brass fittings and fuel line from debris.**
8. **Keep debris from entering the internals of the system during installation. Getting debris in the water separator nipple can lock up the motor. If the motor does lock up from debris call FASS for technical assistance.**



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

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

www.fassride.com
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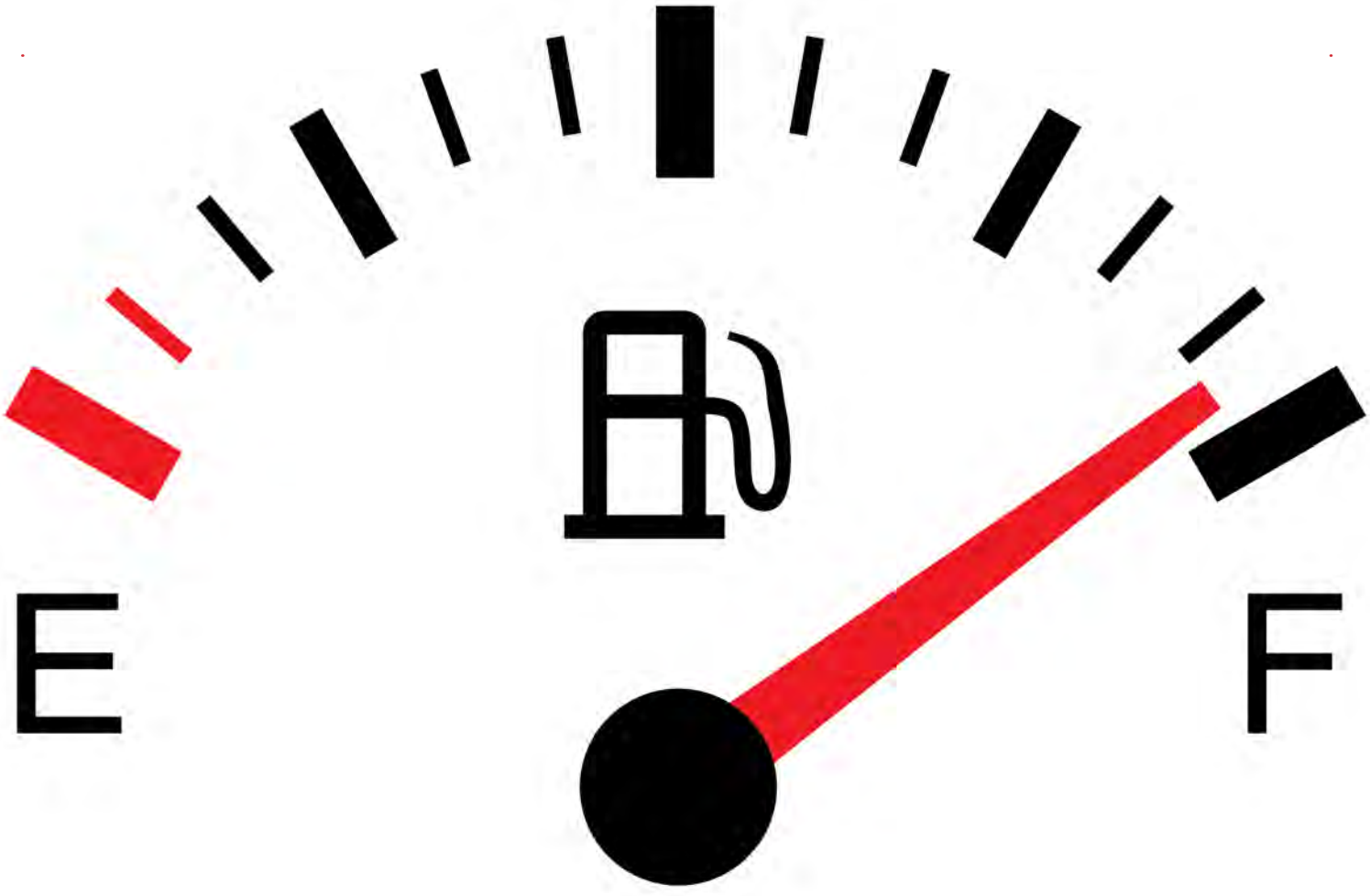
WARNING!

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 250 GPH or 290 GPH

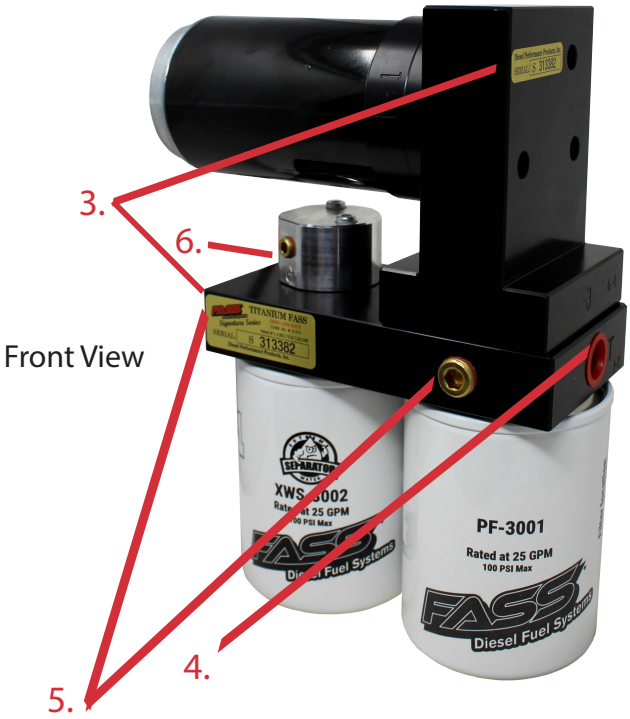
www.fassride.com
(866) 769.3747

16-18 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
Step 2. Mount the FASS
Step 3. Sump Installation
Step 4. Fuel Line Installation
Step 5. Review Installation

FASS Diesel Fuel Systems

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TITANIUM SIGNATURE SERIES 250 GPH or 290 GPH

16-18 PSI (Approximately)

Note: Going over 80 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.



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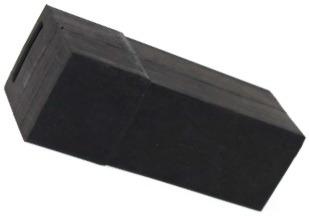
CONTENTS

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





RELAY COVER



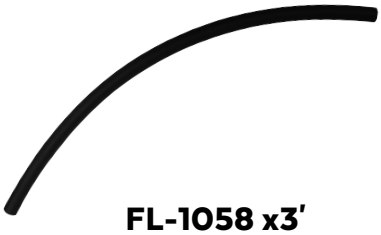
WH-1004-3



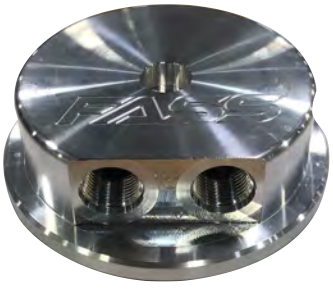
MP-9022-ND



FL-1002 x15"



FL-1058 x3'



SP-5501



SC-5501



PBR-2001



PFB-2002

FASS Diesel Fuel Systems

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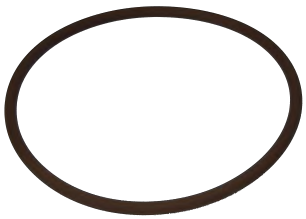
MOUNTING PACKAGE CONTENTS



OR-350VITON



0424860



SHCS 3/8"-16x2"



PL-8-ORB-10-BK



PL-2003



PL-1058



TWO (2) RING TERMINAL



10-300



DIPF-1003





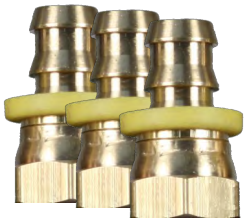
FOUR (4) LOCKING NUT 3/8"



1/2" WASHERS



THREE (3) WA-1001D



THREE (3) PL-1005



10-302



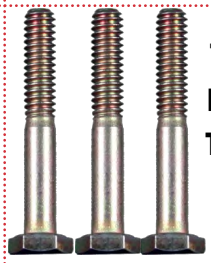
PL-10-ORB-10-BK



FOUR (4) 3/8" WASHERS



RS-2002



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

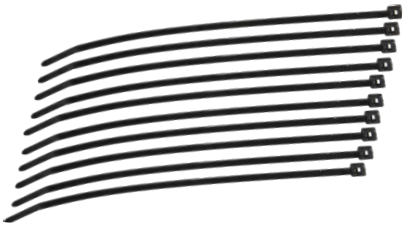


RS-2001

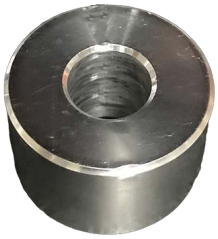


FOUR (4) HEX BOLT 3/8" -16x11/2"

MOUNTING PACKAGE CONTENTS



CABLE TIES



DS-1001



DIELECTRIC GREASE



TWO (2)
OR-017



OR-030

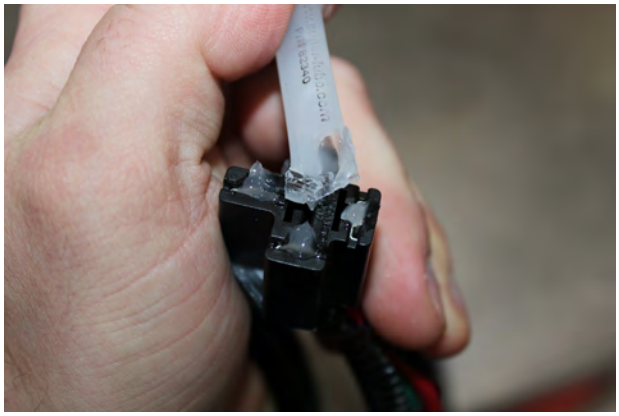
NOTE: THESE SPARE BASE O-RINGS ARE INCLUDED WITH THE KIT IN THE EVENT OF A PINCHED O-RING DURING ASSEMBLY

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!



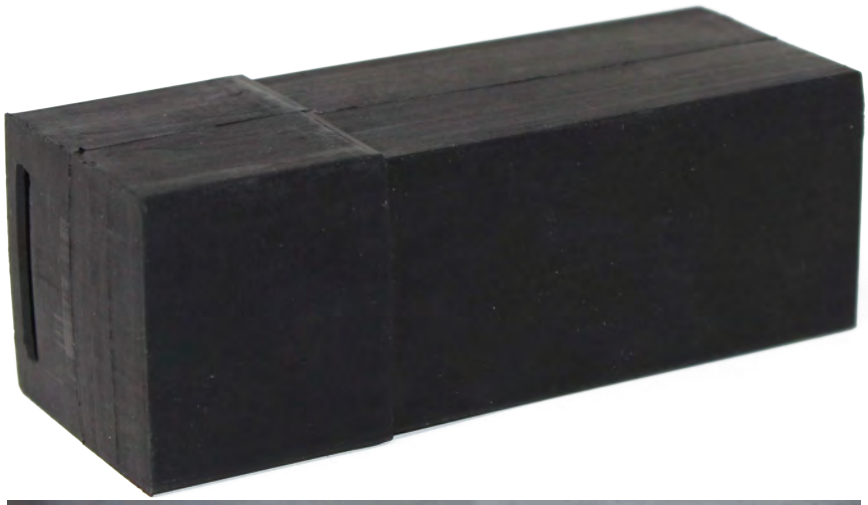


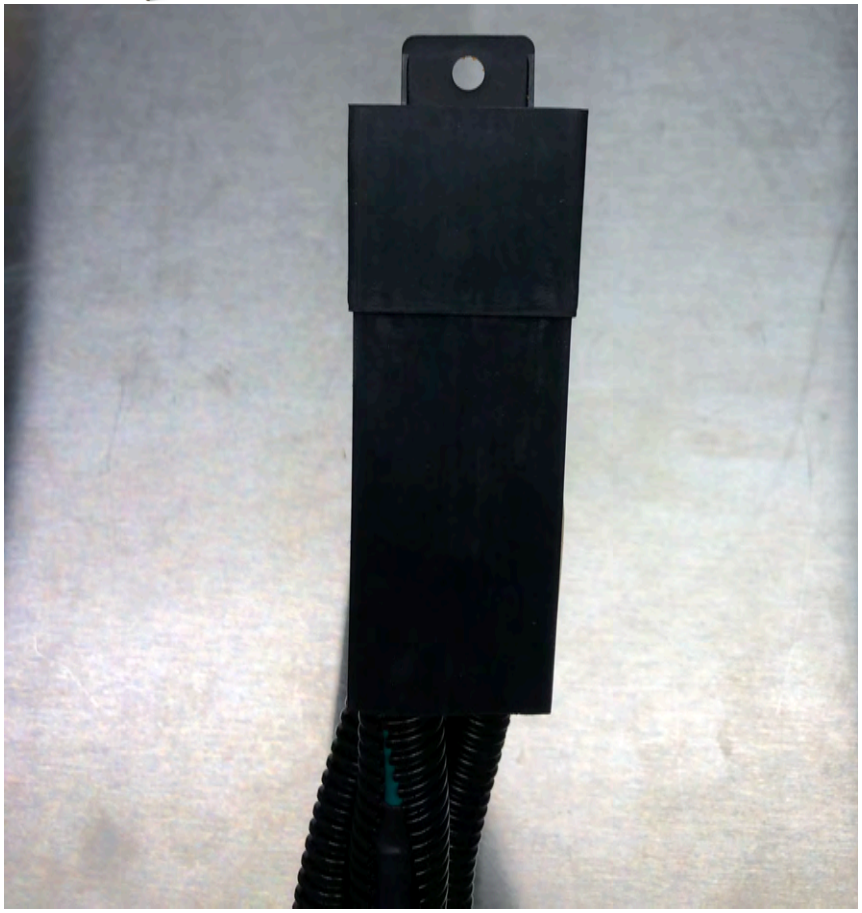


STEP 1:
INSTALL ELECTRICAL HARNESS

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.



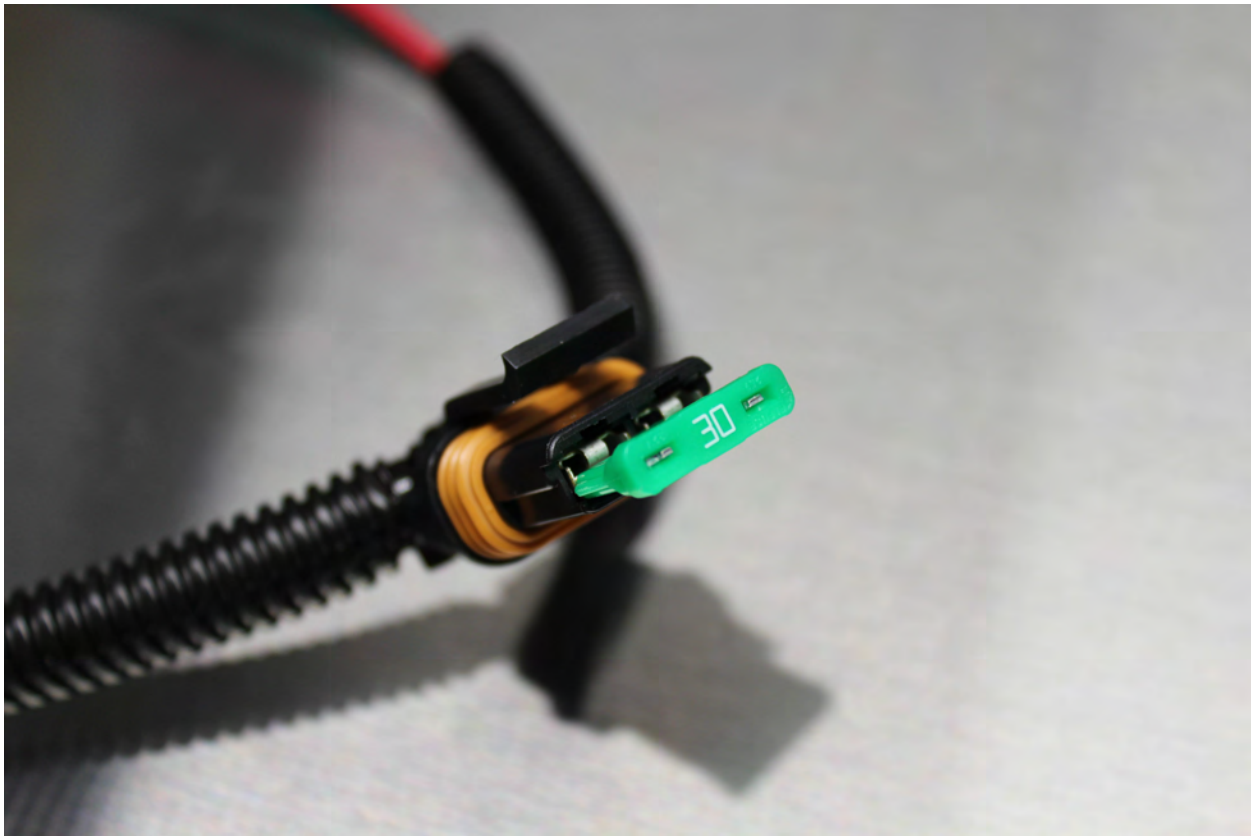


STEP 1:
INSTALL ELECTRICAL HARNESS

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!!

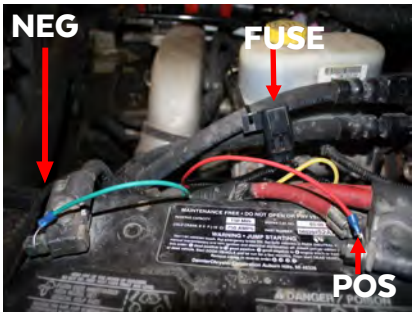




STEP 1:
INSTALL ELECTRICAL HARNESS

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

A. Using ring terminals, attach red wire of the WH-1004-3 to the positive battery terminal. Attach green wire to a clean ground, preferably the negative battery terminal. Secure fuse block in a location protected from outside elements. The use of corrosion preventative spray is recommended.



B. Secure Relay in an upright position, as shown, to prevent moisture from entering. Di-electric grease may be applied to prevent corrosion. Examples of locations to secure relay:





C. Route wire harness along frame to the approximate mounting location near the fuel tank.

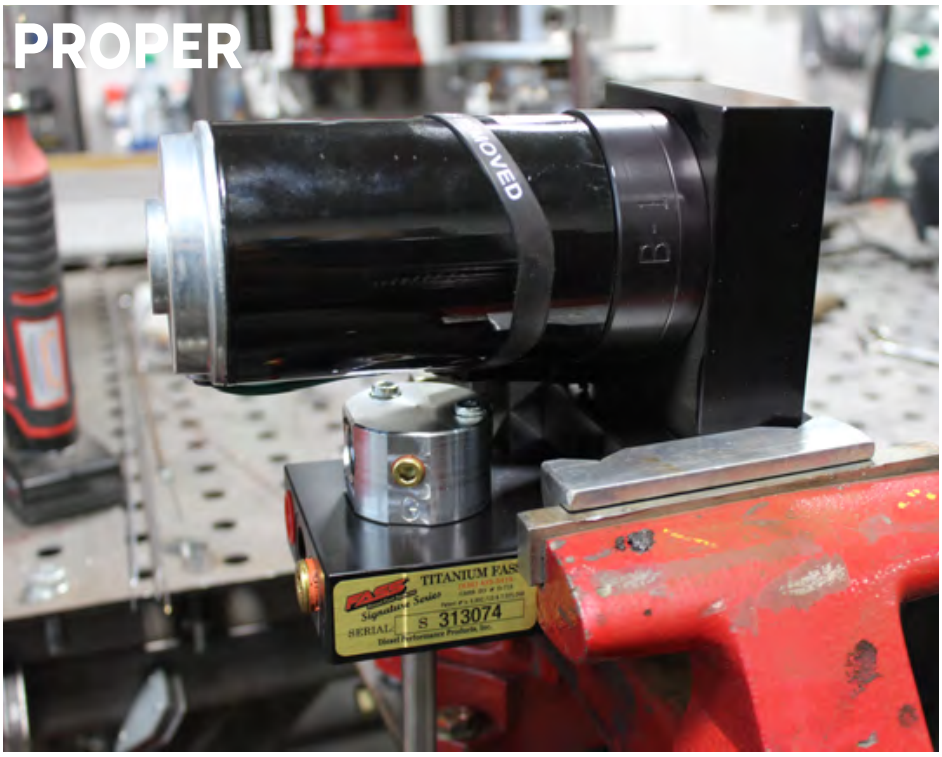
D. Connect WH-1004-3 to the fuel module along with the factory fuel lines

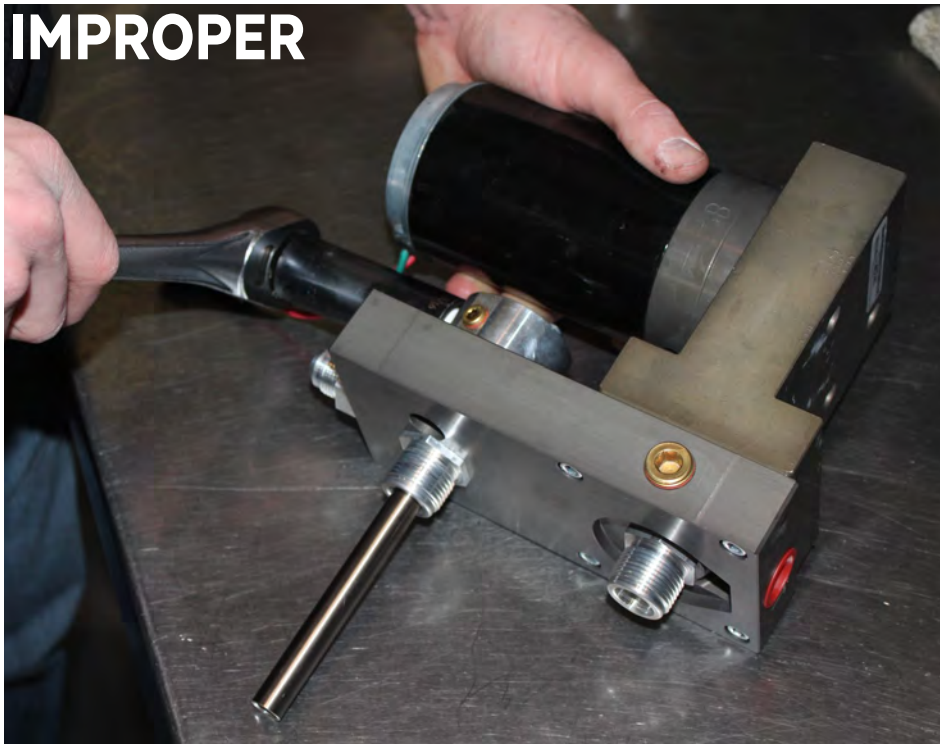
E. Connect factory wire harness to the WH-1004-3.



NOTE:

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



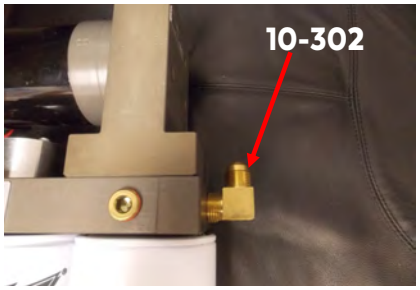


STEP 2:
MOUNT FUEL SYSTEM

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.

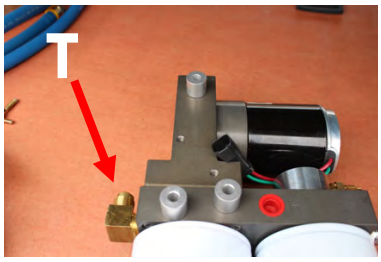
A. Install 10-300 into the "E" port and 10-302 into the "T" port of the FASS, torque to 20 ft./lbs. ***FITTINGS COME EQUIPPED WITH THREAD SEALANT, DO NOT USE THREAD TAPE***







B. For fitting purposes. Secure PBR-2001 to pump assembly lightly with (3) 1/4"-20x1 3/4 bolts and (3) WA-1001D. Assembly will be used in future steps for correct fitting of brackets. (Note: Bracket may-be flipped to accommodate your application.)





STEP 2:
MOUNT FUEL SYSTEM

ATTENTION

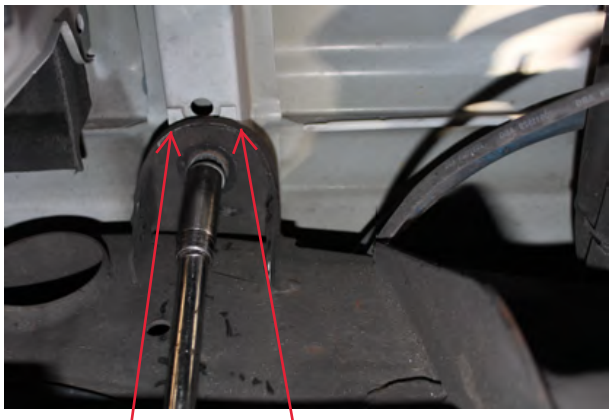
NOTE: SOME RAM MODELS MAY REQUIRE OUR DS-1001 ALUMINUM SPACER AND LONGER M12 1.75X60MM BOLT WHEN MOUNTING THE PFB-2002 AS SEEN BELOW!



DS-1001



M12 1.75X60MM

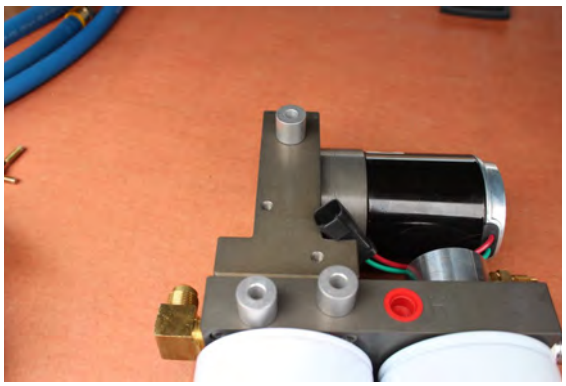




USING THIS SPACER ALLOWS FOR PROPER CLEARANCE ON THE BED MOUNTS THAT HAVE THE ROLLED LIP LIKE THIS.

STEP 2:
MOUNT FUEL SYSTEM
1998.5-2013 Dodge Installation

C. For fitting purposes. Secure PBR-2001 to pump assembly lightly with (3) 1/4"-20x1 3/4 bolts and (3) WA-1001D. This assembly will be used in future steps for correct fitting of brackets. (Note: Bracket maybe flipped to accommodate your application.)





D. Unbolt driver side front bed bolt from bed retain bolt for future use. Align RS-2001 with PFB-2002. .





E. Secure PFB-2002 and RS-2001 with bed bolt in previous step.





STEP 2:

MOUNT FUEL SYSTEM

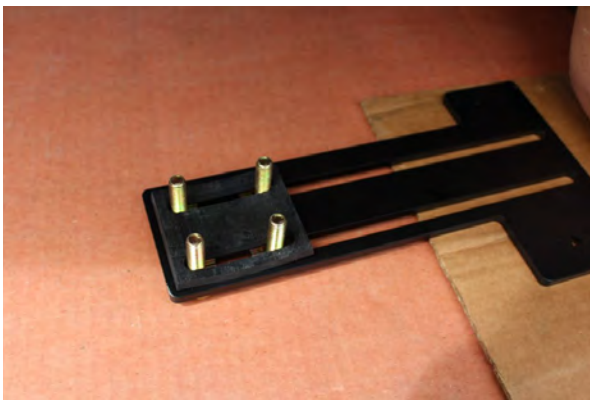
1998.5-2013 DODGE INSTALLATION

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-001 bracket with 4-3/8 bolts, nuts, and washers. Note: Torque bolts not flange nut.





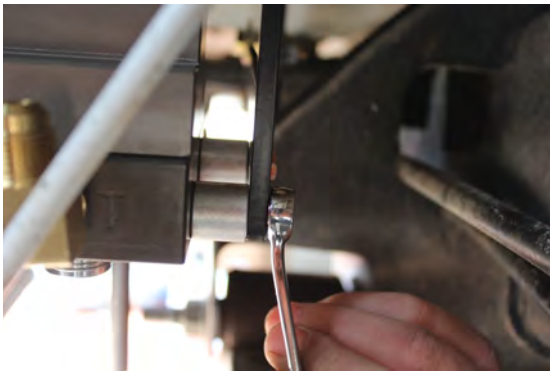




STEP 2:
MOUNT FUEL SYSTEM

H. Once secure use (3) 1-3/4 bolts and (3) WA-1001D spacers to mount the pump to the bracket.



I. Connect factory plug into the FASS harness. Plug FASS harness into the fuel module in tank. Make sure to lock red slide tab. 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 equiva-lent) into water separator nipple lubricating Gerotor.




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



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REPAIR PROCECURE FOR DAMAGED FUEL TANK

Using an orbital sander with roughly 600 grit sandpaper, gently sand the sump location on the fuel tank removing any deep scratches or gouges. Once the fuel tank has been smoothed, the sump can be installed per the installation instructions!





STEP 3:
SUMP INSTALLATION

A. Locate the lowest point of the fuel tank, which is typically below the factory fuel module. On some applications there is a dimple you can use for a center point reference and it has the flattest surface for sealing the sump.



STEP 3:
SUMP INSTALLATION

B. Using the center point, drill a small hole to drain the remaining fuel. Recommend having a container large enough to retain the remain fuel. Allow fuel to drain completely.



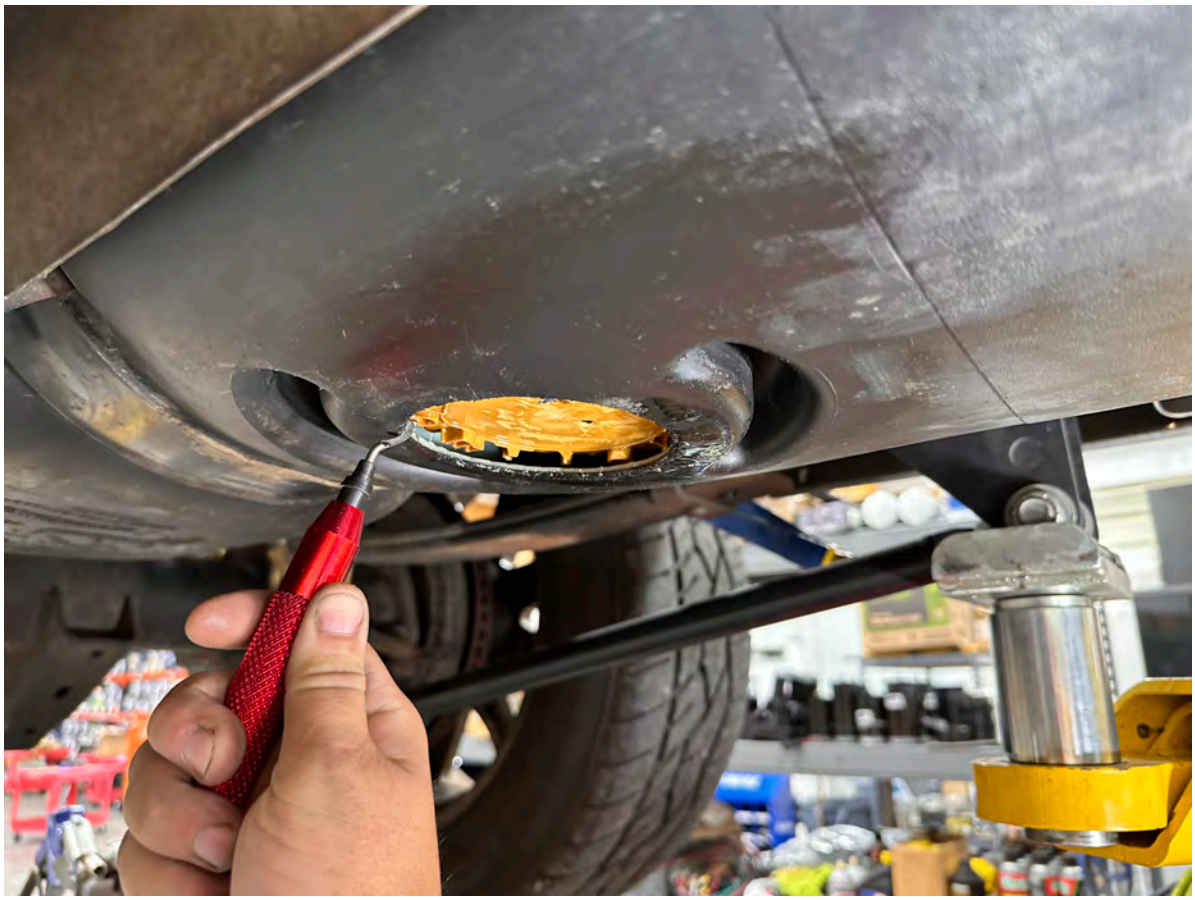
STEP 3:
SUMP INSTALLATION

C. Using a 3-3/4” hole saw drill the center point previously marked or notated.



STEP 3:
SUMP INSTALLATION

D. Deburr hole and remove all shavings.



STEP 3:
SUMP INSTALLATION

E. Install SC-5501 into fuel tank positioned as shown.

NOTE: THIS SIDE FACES SP-5501



NOTE: THIS SIDE FACES THE INSIDE OF TANK





STEP 3:
SUMP INSTALLATION

F. Using grease, install OR-350VITON into the groove of SP-5501



STEP 3:
SUMP INSTALLATION

G. Install the supplied 3/8-16x2” SHCS through 0424860 and hand tighten SP-5501 into place.



NOTE: 0424860 MUST BE INSTALLED BEFORE TIGHTENING SP-5501 INTO PLACE



STEP 3:
SUMP INSTALLATION

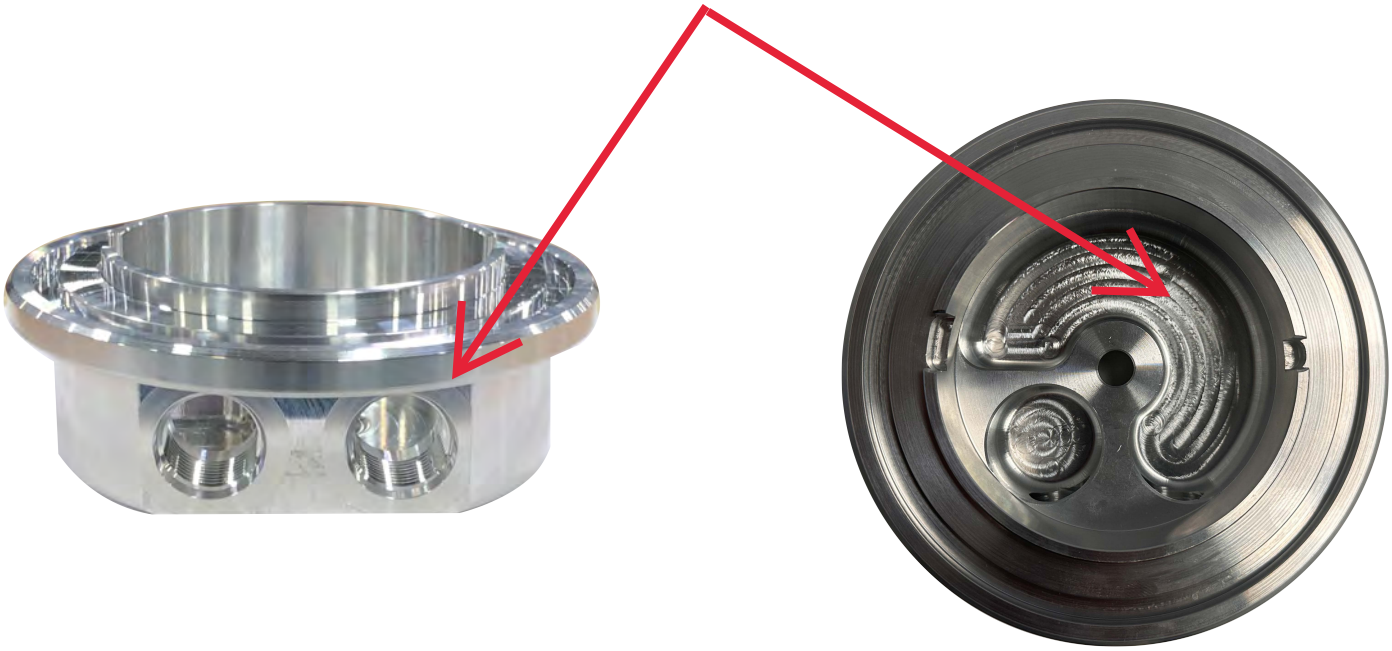
H. Rotate SP-5501 to your desired position and torque the 3/8-16x2" SHCS to 12 FT/ LBS .



NOTE: RETURN PORT AND POCKET



NOTE: SUPPLY PORT AND POCKET



STEP 3:
SUMP INSTALLATION

I. **Install PL-8-ORB-10-BK into the return port of SP-5501 and tighten accordingly.**





STEP 3:
SUMP INSTALLATION

J. Install PL-10-ORB-10-BK into the suction port of SP-5501 and tighten accordingly.





NOTE:

ATTENTION: IT MAY BE NECESSARY TO ADJUST THE PARKING BRAKE CABLE BRACKET ON SOME MODELS FOR PROPER CLEARANCE!!



STEP 3:
SUMP INSTALLATION

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.

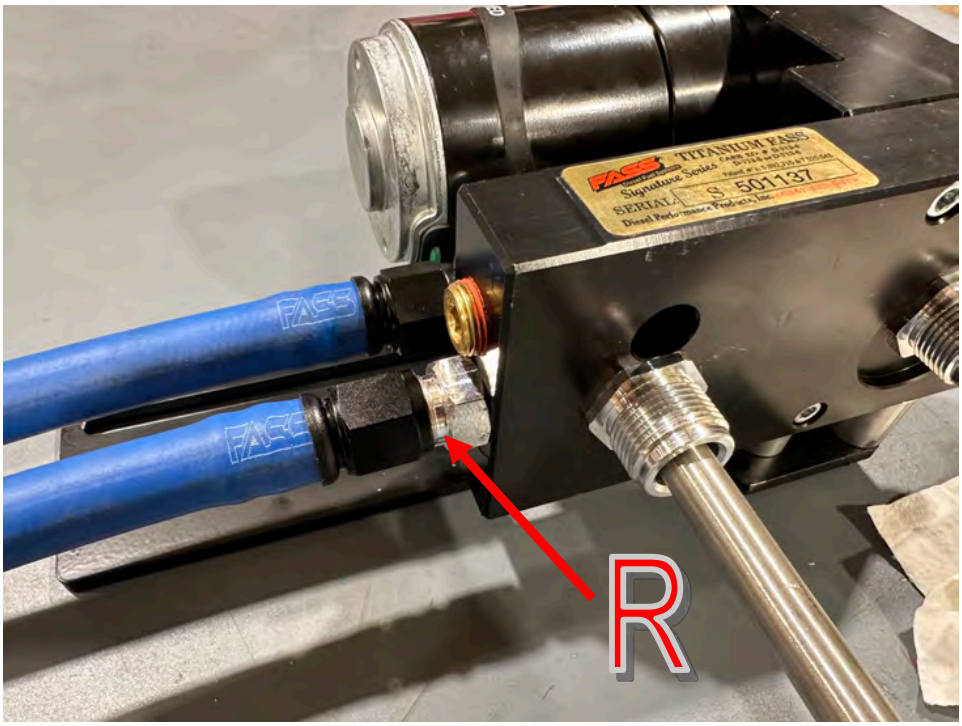


Note: O-Ring must be put back on suction side of pump. Failure to do so can result in priming issues, cavitation or pressure losses.

STEP 4:
INSTALL FUEL LINE

A. Using grease, press the fuel return line to the return port fitting of SP-5501. Route the fuel line to the "R" port on the FASS, then install PL-1002 into FL-1002 using grease. Install PL-1005 onto the FASS return fitting and tighten accordingly.

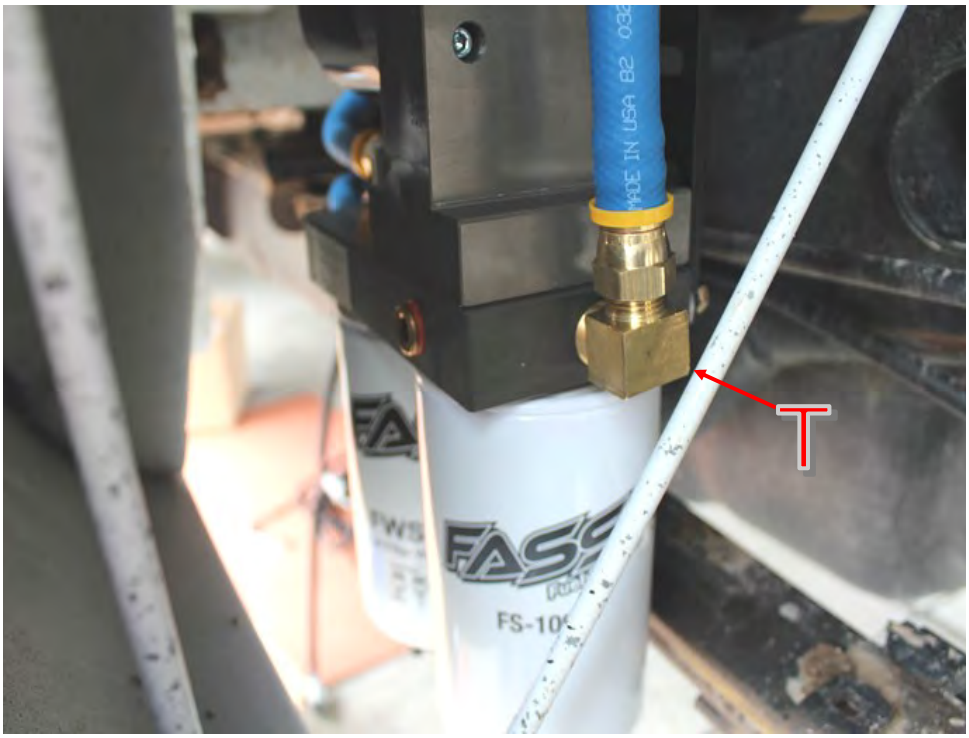




STEP 4:
INSTALL FUEL LINE

B. Using grease, press the suction line onto the PL-10-ORB-10-BK in the suction port of the sump. Route FL-1058 to the "T" port of the FASS and trim to length. Press PL-1058 into FL-1002 using grease, install onto 10-301 and tighten accordingly.





STEP 4:
INSTALL FUEL LINE

Caution: DO NOT use sealant on AN fittings

C. Insert PL-1005 in remaining fuel line. Connect to the 'E'' port of the FASS system. Use oil. Torque to 18 ft./lbs. Route this line up to the injection pump.



STEP 4:
INSTALL FUEL LINE

1998.5 – 2002 VP44 (Injection Pump)

D. Using grease, press PL-2003-BK into FL-1002-BK and install onto DIPF-1003. Tighten PL-2003 accordingly.



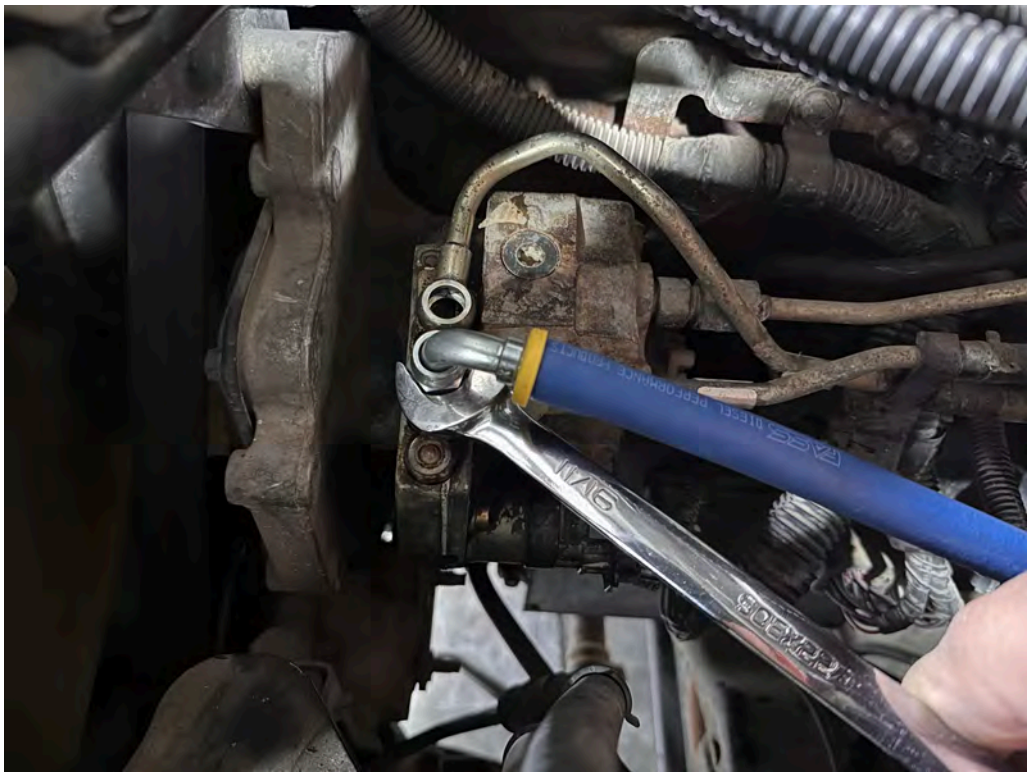


STEP 4:
INSTALL FUEL LINE

2003-2007 CP3 (Injection Pump)

D. Using grease, press PL-2003-BK into FL-1002 -BKand install onto DIPF-1003. Tighten PL-2003 accordingly.



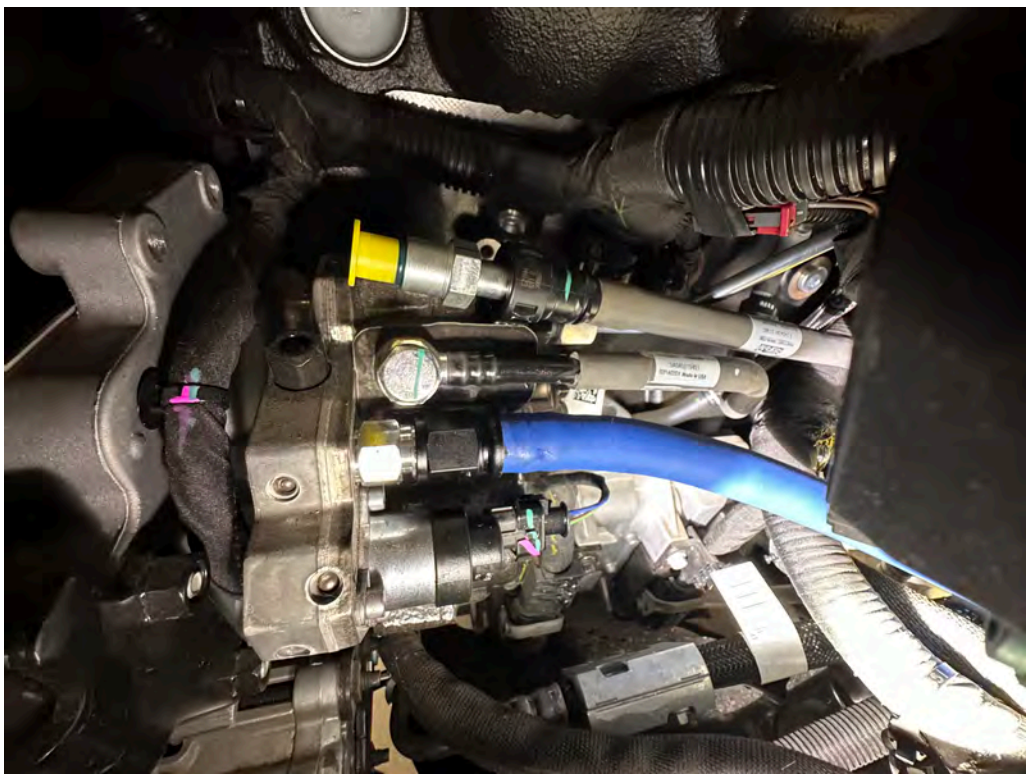


STEP 4:
INSTALL FUEL LINE

2007.5-2024 CP3 (Injection Pump)

D. Using grease, press PL-1005-BK into FL-1002-BK and tighten onto DIPF-1003. Tighten PL-1005 accordingly.





STEP 4:
INSTALL FUEL LINE

F. We recommend putting approximately 5 gallons of fuel in the tank prior to filling the tank to check for fuel leaks. Prime the FASS system and check for leaks. Once you confirm no fuel leaks, the tank can be filled to capacity.



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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!

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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 register your warrenty ONLINE at https://fassride.com/register-a-warranty/

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STEP 5:
REVIEW INSTALLATION

To assist with priming your FASS pump crack the XWS3002. 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.

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 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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NOTES: