

INSTALLATION MANUAL

TITANIUM SERIES



APPLICATION:

T C10 220G (220gph @ 10psi)

Duramax 2500 & 3500

2006-2012



PICKUP



Dear Valued Customer,

“Made in the USA” is not just a slogan at FASS; it’s what we live by! FASS is not only assembled in the USA but 98%+ of the FASS product is manufactured in the USA, helping to employ Americans and strengthen America. At FASS, we scrutinize our suppliers and demand the highest quality American-made components. However, this does come at a price, which is one of the main reasons FASS products are more expensive than the competition. Remember price does not dictate quality but quality does dictate price! Here at FASS, we believe it’s worth the commitment and will continue this practice to support America! Our competition is doing exactly the opposite by using foreign-made components.

Building extremely “High-Quality” fuel products is our business. We concentrate all of our efforts in this arena. No one else is as specialized as FASS in what we do! This is one of the ingredients to insure you are running with the “Highest-Quality” fuel system in the world! We have implemented very rigorous testing procedures to provide the “Highest Quality” we have become known for. Not only is our product superior, but customer satisfaction is #1 at FASS. It is our goal to provide the best service possible. Our confidence is evident in the products we make as each product is backed by an industry leading warranty!

Our R & D department, in conjunction with our Dealer Support department, is continually searching for ways to improve quality, expand our product line, and provide superb support to our network of dealers so our customers’ needs and expectations will be exceeded.

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.

VERY IMPORTANT: Make sure to fill out your product registration form and return the original form to FASS Fuel Systems within 30 days of purchase accompanied with a copy of the purchase receipt. Complying with these guidelines will qualify you for the Extended Warranty!

See the Owner’s Manual for full Limitation of Warranty. 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 receipt, 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 the Limitation of Warranty agreement and accepts its terms and conditions.

!WARNINGS!

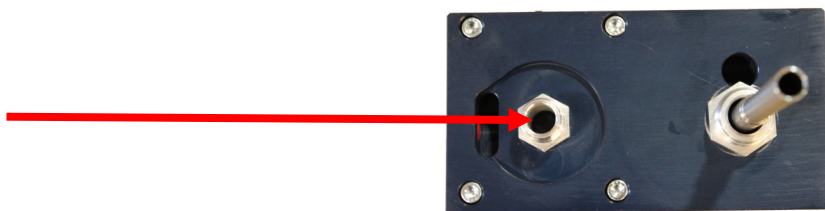
- Read all instructions before starting installation of this product!
- Installing the improper FASS Pump can cause *severe* engine damage.

FASS	Recommended Application
T D10 220G	Cummins 1994-1998 with super extreme horsepower modifications

- Secure vehicle from ROLLING!
- Use caution when drilling. Steer clear of any electrical wires , air lines or other damageable components.
- Consult vehicle's manufacturers' instructions concerning the electrical system before attempting any electrical connections.
- Be sure that the serial # on this installation manual matches that of the outside of the box.



- Flush and clean all brass fittings and fuel line from debris
- 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.



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

INSTALLATION MANUAL

Follow these steps to ensure a simple installation of your new FASS TITANIUM FUEL SYSTEM

1. Inventory the package components completely. Notify the place of purchase immediately of any parts missing or damaged.
2. *Read the installation manual completely before attempting installation. Understand how the system operates and read installation recommendations before beginning installation.*
3. The installation recommendations contained herein are guidelines. Its important to understand your vehicles accessories and limitations. Use good judgment and take in to consideration your vehicles' accessories.
4. For best results in accuracy and efficiency (due to training, communication, and our relationship with our dealer network), we recommend an Authorized or ViP FASS Fuel Systems dealer for the installation. They are prepared to install the FASS fuel pumps with the most efficiency. If a situation/problem arises during the installation, they are the most prepared for that situation/problem. We are not responsible for any installation mistakes.
5. Normally, technical issues can be resolved by your dealer's service department, as they can usually inspect the situation physically. If you have any questions or concerns email or call FASS.
6. If any installation procedure is uncertain, contact FASS technical support.

Email techsupport@FASSride.com with the following information:

- Your Name, address and daytime phone number
- Model **(T D10 220G)**
- Serial Number
- Last 6 of vehicles' VIN
- Date of purchase
- Nature of Your Concern

Serial # Found Here....



Call customer service; [636-433-5410](tel:636-433-5410) with the following information:

- Model **(T D10 220G)**
- Serial Number
- Last 6 of vehicles' VIN
- Date of purchase

TITANIUM SERIES

220 GPH

45 PSI (APPROXIMATELY)

A fuel pressure gauge is highly recommended to identify fuel filter life and to prevent engine damage!



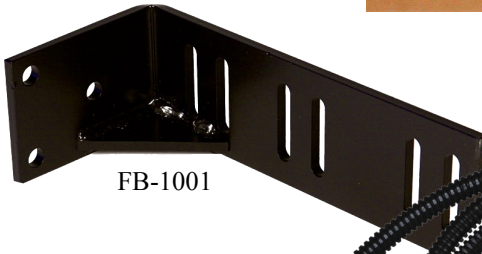
INSTALLATION

- Step 1: Install Electrical Harness
- Step 2: Prepare Suction and Return Lines
- Step 3: Mount Fuel System
- Step 4: Install Fuel Line
- Step 5: Check Installation

CONTENTS



FL-1056 x3'



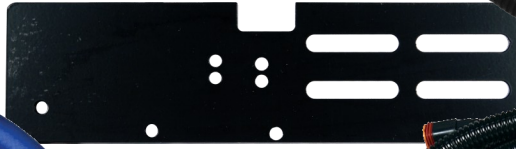
FB-1001



WE-1001



FL-1002 x17'



BR-2001



WH-1005

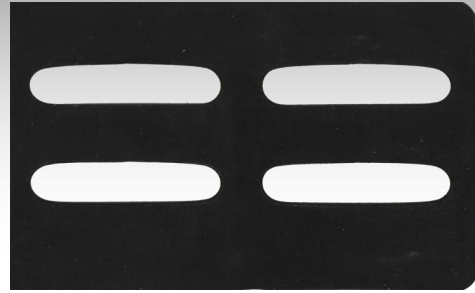
MOUNTING PACKAGE CONTENTS



OR-223



BHF-1002



RS-1001



ST-1005Px14"



PL-1005



10-299



10-298



PL-2003



PL-1004



CP-1003



DIPF-1004



7 Hex Bolt 3/8" -16x 1 1/4"



7 Locking Nut 3/8"



Flag Terminal



HB-14516



Fuse Tap



BT-14x03



PB-14316



LW-1001



BHN-1001



Ring Terminal



5 WA-2001



5 Hex Bolt 1/4"-20x1.25"



HC-4001

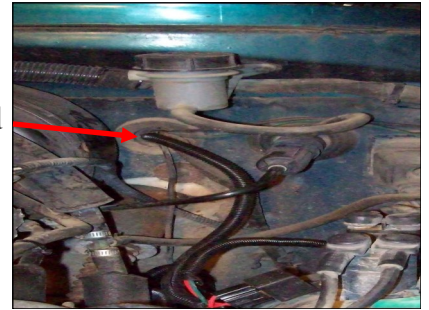
MOUNTING TEMPLATE



STEP 1: INSTALLING ELECTRICAL HARNESS

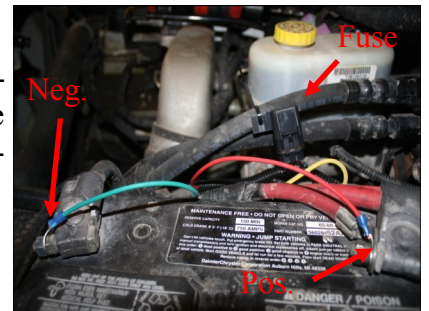
Note: The electrical harness is installed first to provide power to the pump during installation.

- a. Attach WE-1001 to the WH-1005 Wiring Harness. Route WE-1001 red lead through the fire wall using existing grommet.



Note: Use of corrosion preventative spray is recommended.

- b. Using ring terminals, attach red wire of the WH-1005 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.



- c. Secure Relay in an upright position, as shown, to prevent moisture from entering. Di-electric grease may be applied to prevent corrosion.

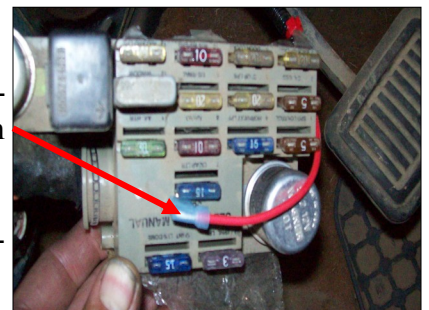


- d. Connect the fuse tap to the hot leg of the fuse.



Note: Completion of this step will be addressed in the Mounting Step.

- e. Using the flag terminal and fuse tap, connect the “Red” lead, of the WE-1001, to the “hot side” of a terminal in the fuse box which is “hot” when the key is in the on position.
- f. Route the WH-1002 wire harness along the frame rail to the mounting location of the FASS fuel pump.



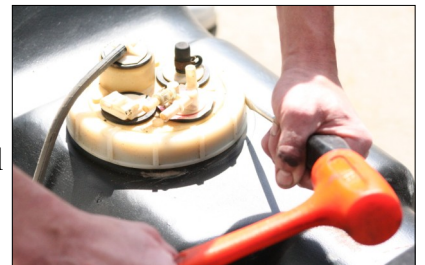
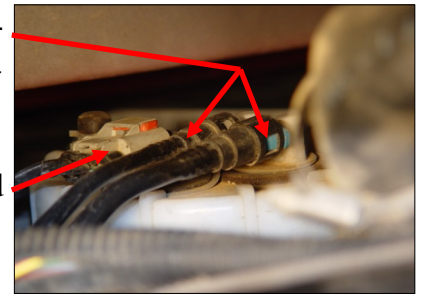
STEP 2: PREPARE SUCTION AND RETURN LINE

Very Important: Before removing the fuel tank identify “ALL” areas of clearance between the tank and bed to install the draw tube assembly. The closer the suction tube is placed to the center of the fuel tank, front to back and left to right, the more usable fuel there will be!

Helpful Hints: If more space is required to access the top of the fuel tank, loosen the strap nuts to the end of the stud. This will gain you about 3” more working room.

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 both ends.
- b. Disconnect the factory suction and return line. The factory lines are removed by pressing in on the two tabs located in the connecting harness. These tabs are opposite of each other.
- c. Disconnect the factory electrical harness located between the suction and return lines on top of the fuel tank.
- d. With the fuel tank empty of fuel, remove it from the vehicle.
- e. Clean the fuel module area then remove the lock ring on the top of the fuel tank.
- f. Once the lock ring is removed, carefully remove pick up module from fuel tank while making note of fuel level arm.
- g. Assemble the BHF-1002 with the PL-1004 in ports “S” and “R” using thread tape, along with pushing the ST-1005P onto the barb portion of the BHF-1002. Insert O-ring into groove. Torque to 40 ft./lbs.



STEP 2: PREPARE SUCTION & RETURN LINES, CONTINUED

- h. Before drilling marked location, clean area of debris. Using the photo, double check area selected for any interference including the fuel level arm.



- i. Drill a 1 1/2" hole, catching all debris. De-bur hole and remove any missed debris in the fuel tank.



- j. **VERY IMPORTANT:** Support fuel tank on both ends allowing the natural formation of the tank to take place. Failure to perform this step can and will create an issue with less usable fuel!

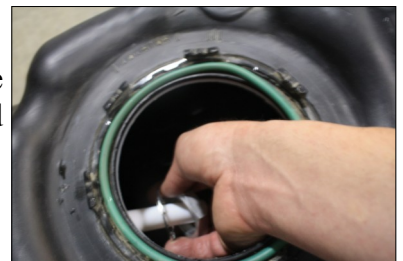


- k. Place the bulk head assembly into the drilled hole, take measurements so the bottom of the suction tube is only 1/8" (no more than 2 quarters stacked) from the bottom of the fuel tank. Using a razor knife make multiple cuts to insure proper length, it is easy to shave the suction tube with the razor.



It is more efficient to cut the tube too long and then correct to proper length than it would be to cut too short.

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

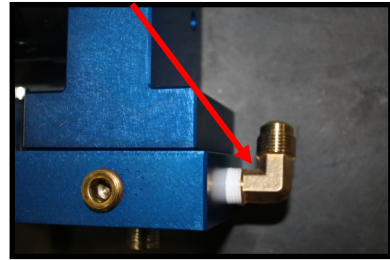
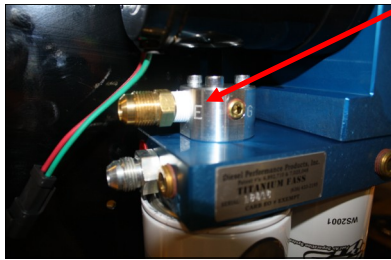


- m. Carefully reinstall install pick up module making sure the leveling arm is not obstructed by the suction tube. Reinstall factory lock ring.

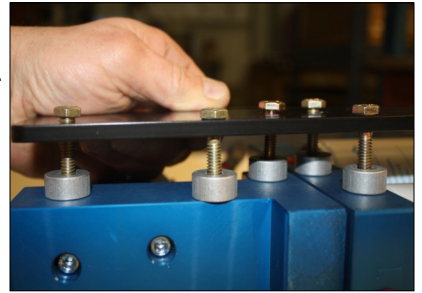


STEP 3: MOUNTING FUEL SYSTEM

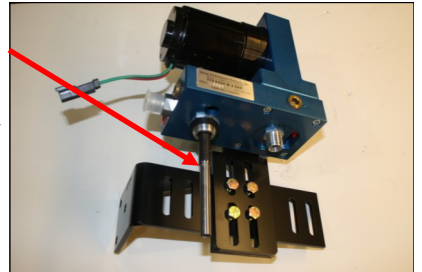
- a. Using thread tape, install the 10-298 into “E” and the 10-299 into the “T” port (on opposite end).



- b. Attach BR-2001 to back of system using five 1 1/4” Hex bolts and WA-2001 spacers. Torque to 110 in./lbs.



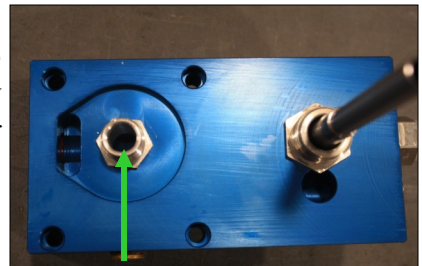
- c. Assemble the FASS pump brackets using the RS-1001 spacer between. Hold pump up to the mounting location for rough fitting. Once location is established, **use template located on the contents page to accurately mark drill points.**



- d. Drill required pilot holes then drill those holes out with a 3/8” bit. Mounting to bed support



- e. Route wire harness along frame rail to mounting location connecting to FASS. Turn key to the “on” position. With pump operating, liberally spray WD-40 (or equivalent) into “T” port lubricating Gerotor. This allows for better priming.



- f. Using the 3/8” bolts, secure FASS with brackets to previously drilled mounting holes.



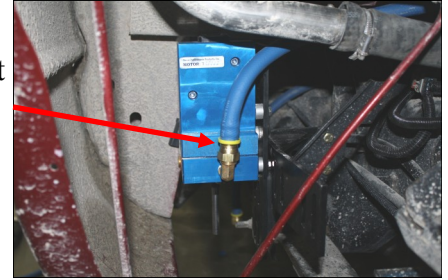
- g. Apply motor oil to the gasket located on filters. Attach to system and hand tighten.



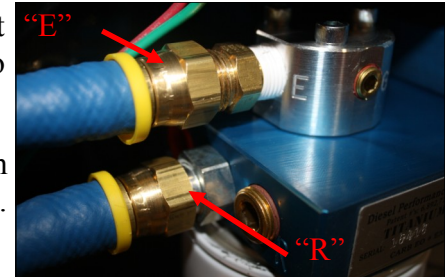
STEP 4: INSTALLING FUEL LINE

Caution: Do not use sealant on AN fittings. Only use sealant on threads going into the FASS pump.

- a. Route suction line to port 'T'. Cut FL-1002 to needed length and insert PL-1005 using oil. Attach to 10-299 in 'T' port. Torque to 18 ft./lbs.



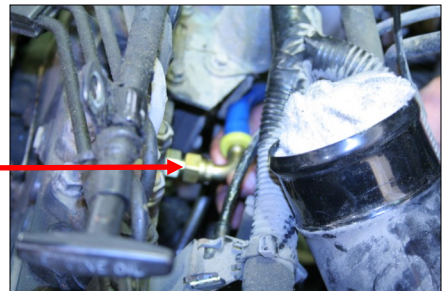
- b. Route fuel line from the Return Manifold in the filler neck to the 'R' port on the FASS system with a gentle bend. Cut and insert PL-1005 fitting to the hose. Use oil. Attach to 10-298 in 'R' port. Torque to 18 ft./lbs.
- c. Connect remaining fuel line to the 10-298 in 'E' port of the FASS system using a PL-1005. Use oil. Route this line up to the P7100 Injection pump. Do not cut at this time.



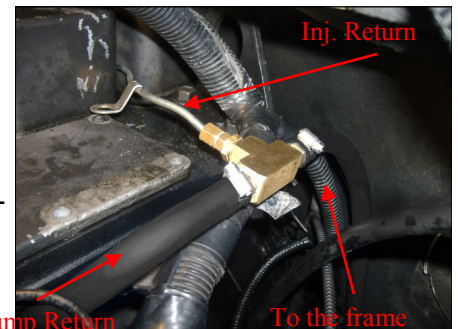
- d. Disconnect factory fuel line from inlet side of the injection pump. Install the DIPF-1004 into this port.



- e. Insert the PL-2003 fitting into the fuel line. Remember to use oil. Connect the PL-1005 to the DIPF-1004. Torque to 18 ft./lbs.



- f. The return line from the injectors must be T'd into the return line of the injection pump. Assemble the T-fitting with 2 HB-14516 and the CP-1003 compression fitting/ PB-14316 bushing using thread tape. Remove the rubber hoses attached to the Injector Pump Return line and Injector Return lines. Reuse clamps. Install FL-1056 fuel line from steel inj. return line to the T fitting, secure with HC-4001 clamp provided in kit and factory clamp. Install the rest of the fuel line from the T fitting to the factory steel line at the frame. Cut Injector Return line (measure twice, cut once), slip on compression nut, ferrule; hold line tight to T fitting and tighten nut to 18 ft./lbs. Secure hoses.



STEP 5: REVIEW INSTALLATION

- Blow out any open lines/cover any open ports
- Bolts and fasteners properly tightened?
- Electrical harness and fuel lines secured and properly tightened?
- Has the system been primed?
 1. Turn key to the ignition position, turning on the FASS pump.
 2. While the pump is running, loosen the fuel filter just enough to break the gasket seal. Once the tone of the pump changes, quickly retighten filter.
- Check for leaks.
- Start the engine (you will hear the system running)
- Recheck all fluid and filter connections for leaks
- Fill out product registration, attach receipt of purchase and mail to:

FASS Fuel Systems
16240 State Hwy O, Suite B
Marthasville, MO 63357