

*“HIGH PERFORMANCE FUEL DELIVERY SYSTEM”*



FROM: Diesel Performance Products, Inc.  
SUBJECT: Welcome/Thank You  
TO: Valued Customer

We at Diesel Performance Products, Inc. (DPP) would like to thank you for your confidence in purchasing one of the FASS Products. Building a quality product and providing excellent customer service is # 1 at DPP. Behind each fuel system/fuel pump are many years of design experience. We have implemented very rigorous testing procedures before bringing any item to the market along with very strict manufacturing procedures to provide a superb product. Our confidence is evident in the products we make as each product is backed by an industry leading warranty.

*We, Diesel Performance Products, promote “ALL” retail business through our dealer network to provide better customer service! We are confident that everyone involved is best serviced in this manner. We have given our dealer network proper knowledge and support to promote and service our line of products.*

Dealers receive appropriate troubleshooting guides to refer to. These have proven to be excellent references for those who choose to use them. We provide excellent assistance to our dealers so they in turn can assist their customers. DPP has decided to place this information on our website to accommodate all of our customers needs.

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 they can support their customers.

**Please make sure to fill out your product registration form and return the original form to Diesel Performance Products, Inc. within 30 days of purchase accompanied with a copy of the purchase receipt. Doing so will qualify you for the Limited Lifetime Warranty!**

Steps to customer satisfaction can be found on the next page.

## STEPS TO CUSTOMER SATISFACTION

We want you to be happy with your FASS Fuel System. Customer satisfaction, your satisfaction, is the all-important ingredient for success in our business, as it is in any other.

Normally, warranty problems can be resolved by your Dealer's sales or service departments. That's why you should always talk to your Dealer's Service department first. If you're not satisfied with the dealership's response at this level, Diesel Performance Products, Inc. (DPP) recommends that you follow these steps, in order:

**STEP 1:** Discuss the problem with the owner or General Manager of the dealership.

**STEP 2:** If your dealership is unable to resolve the problem, contact Diesel Performance Products, Inc. Customer Care Center in writing; the address is located on page 14 of this manual or fax it to 636-433-5913. Be prepared to provide the Customer Center with the following information:

- Your Name, address and daytime phone number
- Model and Serial Number (Not Model Number)
- Dealer, contact name and phone number
- Date of purchase
- Nature of Problem

Once you have followed the two steps described, a DPP representative will review your situation. DPP will then follow up by contacting the dealer for more information. Depending on the situation a representative from the selling dealer or a representative of DPP may elect to contact you.

Thank you for your business, from the men and women of Diesel Performance Products, Inc.

# **FILTER CROSS REFERENCE SHEET**

## **Cross Reference List for the FASS 150 Series Fuel Filter**

Recommended Fuel Stratapore™ or Microglass  
Filter Media:

<u><b>BRAND</b></u>	<u><b>Part #</b></u>	<u><b>Micron Rating</b></u>	<u><b>Material</b></u>
FASS	FF-1010	10	Stratapore™
FASS	FF-1003	3	Stratapore™
CIM-TEK	70032	10	Microglass
CIM-TEK	70213	3	Microglass
Fleetguard	HF6601	8	Cellulose/Synthetic
Fleetguard	HF6610	16	Cellulose
Fleetguard	HF6613	12	Microglass
Fleetguard	HF6607	6	Microglass
Fleetguard	HF6604	3	Microglass
Caterpillar	3T8642		

## **Cross Reference List for the FASS 150 Series Water Separator**

Recommended Water Stainless Steel/Water Separator  
Filter Media:

<u><b>BRAND</b></u>	<u><b>Part #</b></u>	<u><b>Micron Rating</b></u>	<u><b>Material</b></u>
FASS	WS-1001	144	Stainless Steel/Water Separator
Fleetguard	FS1023	144	Stainless Steel/Water Separator

**NOTE:** The use of a hydraulic fuel filter is because the canister is much thicker and provides more durability than a fuel filter canister.

# **WARNING!!**

Installing the improper FASS Fuel System or installation kit can cause severe engine damage.

This installation manual applies to the FASS-150/180-1010@45psi contained in the same package. The serial number on the installation/owners manual package should match the serial number on the outside of the box. If it doesn't, call the factory.

**This FASS-150/180-1010@45psi (180gph):**

Recommendation: FASS-150/180-1010@45psi - the Dodge Cummins Truck 1994-1998, with extreme horsepower modifications.

## **SAFETY GUIDELINES AND WARNINGS!**

- TIP!** Flush and clean all brass fittings and fuel line free from debris.
- WARNING!** **SECURE VEHICLE FROM ROLLING!**
- WARNING!** Use care not to drill into any electrical wires, air lines or other damageable components when drilling.
- WARNING!** Consult vehicle manufacturer's instructions concerning the electrical system before attempting any electrical connections.
- CAUTION:** Wear safety glasses when operating power tools such as drills and grinders or when using a punch or chisel.
- CAUTION:** Properly secure lines to prevent chaffing.

**VERY IMPORTANT: THE RETURN FUEL FITTING LOCATED IN THE BASE OF THE FASS FUEL SYSTEM SHOULD NOT BE REMOVED. THERE IS A SPECIAL CUT IN THIS FITTING THAT ASSISTS IN REGULATING PRESSURE. ALSO, DO NOT REMOVE ANY STEEL ALLEN HEAD FITTINGS. THESE PORTS WERE USED IN THE MACHINING PROCESS.**

# INSTALLATION MANUAL

Welcome to the **FASS Fuel/Air Separation System**.

The installation of the **FASS FUEL SYSTEM** can be relatively simple when the following steps are followed.

1. Inventory the package components completely. Notify place of purchase immediately of any parts missing or damaged.
2. *We have invested many hours into the development of the installation and owner's manual's to simplify the installation and operation of the **FASS Fuel System**. Please read the owner's manual and the installation manual completely before attempting installation. Understand how the system operates and installation recommendations before beginning installation. Most of the questions that you will have will be answered in one of these manuals. If you have a question please review the installation or owner's manual.*
3. The installation recommendations contained herein are suggested installation guidelines only. Each installation can and may vary considerably because of the many options and accessories available to the truck market.

**Installation personnel should use good judgment and common sense when installing the FASS Fuel System.**

If any installation procedure is uncertain, contact place of purchase.

Due to training, communication and our relationship we have with our authorized dealers we recommend an authorized FASS Fuel Systems dealer for the installation of the FASS System. They are prepared to install the FASS System with the most efficiency. If a situation/problem arises during the installation they are most prepared for that situation/problem. It may take more time for an unauthorized shop to address the situation/problem. We will not be responsible.

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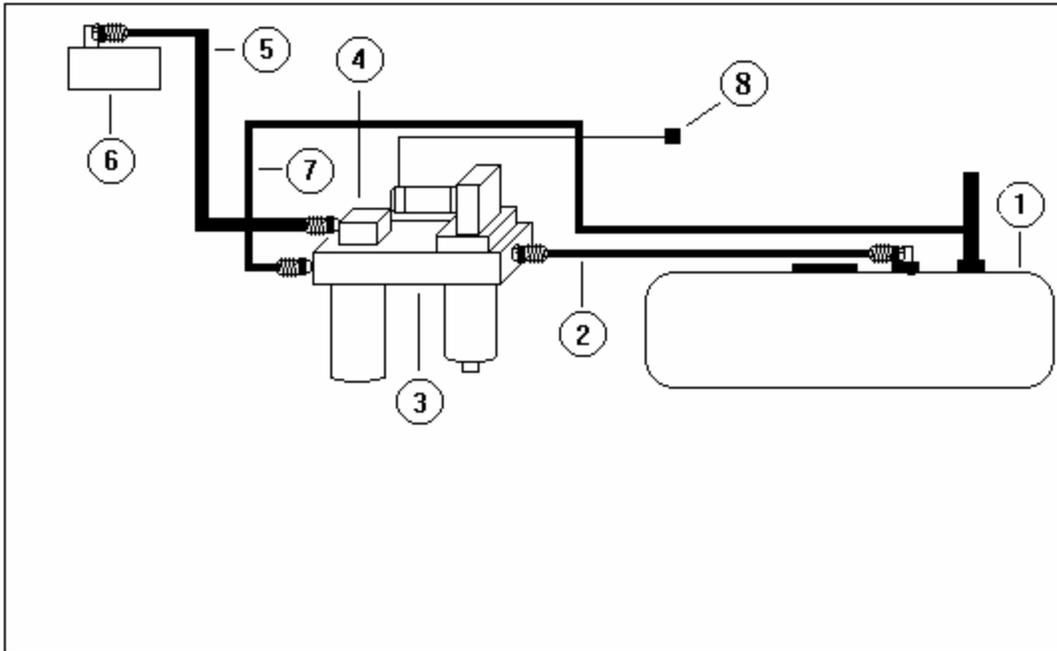
Contents Include:

	Description					Quantity		Part #	
1.	Pump/Filtration Unit	--	--	--	--	1	--	FASS-150	
2.	Fuel Pump Bracket	--	--	--	--	1	--	BR-2001	
3.	Owners Manual	--	--	--	--	1	--	OM-1001	
4.	Electrical Harness	--	--	--	--	1	--	WH-1002	
5.	3/8" Fuel Line	--	--	--	--	17'	--	FL-1001	
6.	1/4 "mounting bolts	--	--	--		(2 – 1" & 3 – 1 1/2")	--	--	
7.	3/8" mounting bolt and flanged nut	--	--	--		6 ea.	--	--	
8.	Return Manifold	--	--	--	--	1	--	RM-1003	
9.	3/8" x 1/2" (Push Lock x M PT)	--	--	--	--	2	--	PL-1001	
10.	3/8" x 1/2" (Push Lock x Female Flare)	--	--	--	--	1	--	PL-1002	
11.	3/8" x 3/8" (Push Lock x 90° Female Flare)	--	--	--	--	1	--	PL-1003	
12.	Injection Pump Fuel Line Fitting (O-ring)	--	--	--	--	1	--	DIPF-1002	
13.	3/8" Line Hose Clamp	--	--	--	--	1	--	HC-1001	
14.	1 3/4" Line Hose Clamp	--	--	--	--	2	--	HC-1004	
15.	Frame Bracket ("L" Shaped)	--	--	--	--	1	--	FB-1001	
16.	Fuse Tap	--	--	--	--	1	--	MBFT	
17.	Flag Terminal Female	--	--	--	--	1	--	187F1AG	
18.	Ring Terminal	--	--	--	--	2	--	NRB516-K	
19.	1/2" x 1/2" (mpt x flared 90°)	--	--	--	--	1	--	28-159	
20.	Bulkhead (3/8 x 3/8)	--	--	--	--	1	--	BHF-1001	

Contents Include: Continued

Description		Quantity		Part #			
21.	Bulkhead O-ring	--	--	1	--	RS2770	
22.	3/8"mpt Suction Tube (11 1/2" length)	--	--	1	--	ST-1002	
23.	Washer (Thickness 3/16")	--	--	2	--	WA-1001A & WA-1001B	
	Washer (Thickness 11/16")	--	--	3	--		
24.	Wire Extension	--	--	1	--	WE-1001	

## SYSTEM DIAGRAM



1. FUEL TANK
2. FUEL SUPPLY LINE TO PUMP UNIT
3. PUMP/FILTRATION UNIT
4. FUEL TO ENGINE MANIFOLD
5. FUEL SUPPLY LINE TO INJECTION PUMP
6. INJECTION PUMP
7. RETURN LINE (NOTE: LINE WILL “T” INTO OVER FLOW TUBE NEXT TO FILLER NECK.)
8. WIRE HARNESS FROM FASS FUEL PUMP TO POWER SOURCE

### **INLET/OUTLET PORTS USED FOR PLUMBING ARE MARKED AS FOLLOWED:**

- “T” – the fuel line from the fuel tank enters this port.  
“R” – this is the return port back to the fuel tank.  
“E” – this is the port leading to the engine’s lift pump.  
“H” – these are the heater ports for coolant, unidirectional. The heater DOES NOT HAVE TO BE USED and the read plugs can be left in place.  
“G” – this is the gauge port. A 0 – 75psi gauge is recommended if any gauge is being used.

**The 2 – 1/2” allen head plugs have no function.**

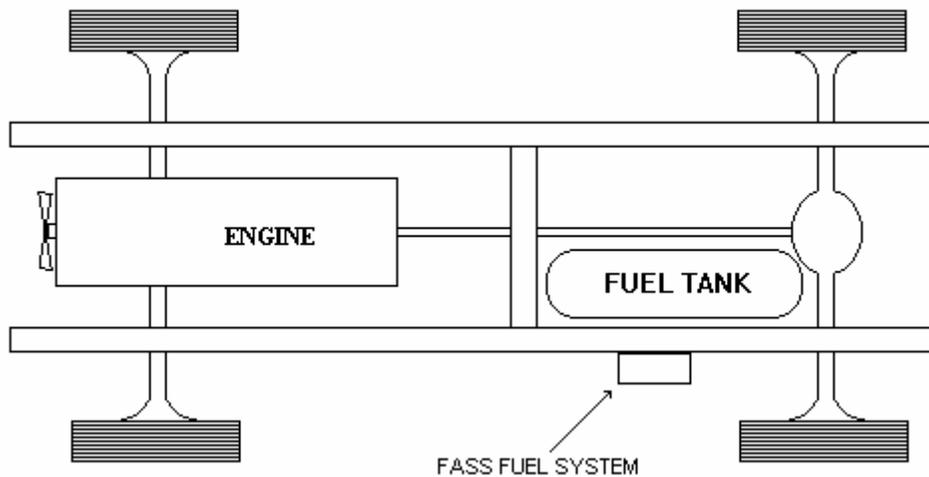
## Location of the FASS FUEL SYSTEM PUMP/FILTRATION UNIT

The proper location of the **FASS Fuel System** on the vehicle is most important.

- Best performance
- Protection from the elements and road debris
- Ease of service

### Suggested location:

(Hint: The best place we have found on the Dodge  $\frac{3}{4}$  and 1 ton trucks is on the driver's side frame rail up underneath the bed of the truck and in front of the rear tire.)



**NOTE:** Throughout this manual there are photos of the FASS 150 with the previous mounting bracket (part # BR-1001). The instructions for mounting the new bracket are the same throughout this manual except for the mounting of this bracket to the FASS, for which there are pictures.



## **BEGIN INSTALLATION**

**STEP 1:**     **Removing & Preparing Fuel Tank:**     Use the following photo's to complete this step.

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



**Photo 1A**



**Photo 1B**



**Photo 1C**



**Photo 1D**



**Photo 1E**



**Photo 1F**

*Very Important:*     *Before removing the fuel tank identify "ALL" areas of clearance between the tank and bed to install the draw tube assembly.*

1. Remove the filler neck tube from the truck by loosening the clamps at both ends.

**STEP 1:     Removing & Preparing Fuel Tank: Continued**

2.     Disconnect overflow tube from the fuel tank.
3.     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.
4.     Disconnect the factory electrical harness located between the suction and return lines on top of the fuel tank.
5.     Before completing the next step review photos 1B, 1C & 1E, 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!
6.     With the fuel tank empty of fuel now remove it from the vehicle.
7.     As seen in photo 1A remove the lock ring on the top of the fuel tank.
8.     Once the lock ring is removed, remove pick up module from fuel tank.
9.     Reviewing photo's 1B and 1C, place the lock ring back into place for measurement reasons. Lay the grommet into proper location and use a punch to mark the center. Drill a 1 ¼" hole, catch all debris, example cup.
10.    Using photo 1D assembly the pick up assembly. Use pipe tape on the pipe threads.
11.    Insert the grommet into the 1 ¼" hole. Place the pick up assembly into grommet, 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.
12.    Before cutting the suction tube triple check the measurements, it is much more efficient to cut the tube to long and then correct to proper length than it would be to cut to short.
13.    With proper length being obtained with the suction tube kit, debur and flush assembly. Place the assembly into the grommet as seen in photo 1E.
14.    Reinstall install pick up module.

**STEP 1:     Removing & Preparing Fuel Tank:** Continued

15.    Cap factory suction line.
16.    Reinstall fuel tank. Remember to connect both factory fuel lines, wire harness and torque tank hanger bolts to proper specifications.
17.    Review photo 1F and the location of the return manifold before completing this step. Cut the rubber tube to allow the return manifold to junction with the filler tube. When assembling the return manifold into the filler tube position it to where the 3/8" junction pipe aims to the outside of the bed. It may be necessary to remove approximately 1/2" – 3/4" of the rubber where the 3/8" junction tube exits the manifold.
18.    Assemble the return manifold using the 2 – 1 3/4" hose clamps. Do not tighten at this time.

**STEP 2:**     **Preparing Suction Line and Return Line:**     Use the following photo's to complete this step.



**Photo 2A**



**Photo 2B**

1. Insert the 3/8" x 1/2" (push lock x female flare) fitting into the fuel line. Remember to oil the fitting and fuel line.
2. As seen in photo 2A attach the fitting discussed in the previous step. Torque to proper specifications.
3. Connect the opposite end of the 17' fuel line addressed in step 2 of this section to the 3/8" junction pipe of the return manifold using a 3/8" hose clamp. As seen in photo 2B
2. Now torque all hose clamps to proper specifications.

**NOTE:**     **YES THE FUEL LINE MAKES A LOOP FROM THE TANK TO THE FILLER TUBE. THIS WILL BE ADDRESSED LATER.**

**STEP 3: Mounting FASS System:** Use the following photo's to complete this step:



**Photo 3A**



**Photo 3B**



**Photo 3C**



**Photo 3D**

1. Assemble the fuel pump bracket to the FASS System using the 5 washers & bolts. The 2 - 3/16 washers & 1/4" x 1" bolts will be used to space the bracket away from the main base of the FASS. The 3 - 11/16" washers & 1/4" x 1 1/2" bolts will be used to space the bracket away from the pump assembly of the FASS. Refer to photo 2A. Torque to proper specifications.
2. Assemble 3/8" x 1/2" (push lock x mpt) fittings into ports label with the letters "T" and "E" **using tread tape**. Refer to photo 2A. Torque to proper specifications.

Note: The FB-1001 (frame bracket) now has multiple slots, use the slots at the end of the bracket.

3. Assemble the FASS System with bracket to the frame bracket as seen in photo 3B using the 4 - 3/8" bolts and flanged nuts. (NOTE: This photo is from a different make of truck but the bracket assembly is the same.)

**STEP 3:     Mounting FASS System: Continued**

**NOTE:**     **The “L” shaped bracket attaches to the cab support on the short beds and to the bed support on the long beds.**

4.     Using photo's 3C and 3D as a guide hold the FASS System (as high as possible) with both brackets attached into the mounting location.
5.     While holding to the mounting location mark the mounting points.
6.     Using a center punch, mark the center of each bolt location.
7.     Drill 2 – 13/32 holes as seen in photo 3C to mount the frame bracket.
8.     Using the 2 – 3/8” bolts and flanged nuts mount the frame bracket to the proper support. Torque to proper specifications.
9.     Torque the 3/8” bolts attaching the frame bracket to the fuel pump bracket to proper specifications.
10.    Located on the filters, apply motor oil to the o-rings. Attach fuel filter and water separator. Torque to proper specifications.

**STEP 4:**     **Installing Fuel Line:**     Use the following photo to complete this step:



**Photo 4A**



**Photo 4B**



**Photo 4C**

1. Route fuel line from the suction port of the fuel tank to the port of the FASS System labeled with the letter "T". Cut and attach to the push lock fitting. Remember to oil the fitting and fuel line before connecting.
2. Route the fuel line from the return manifold to the port on the FASS System labeled with the letter "R". Cut fuel line and insert the 3/8" x 1/2" (push lock x female flare) fitting. Remember to oil the fitting and fuel line.
3. Connect the female flare to the male flared fitting marked with the letter "R". Torque to proper specifications.
4. Disconnect factory fuel line from inlet side of the P7100 Injection Pump and install the DIPF-1002, as seen in photo 4A & 4B.
5. Install the PL-1003 3/8" x 3/8" (push lock x 90° female flare) fitting into the fuel line. Remember to use oil.
6. Attach 3/8" x 3/8" (push lock x 90° female flare) fitting to the injection pump fitting. Torque to 18ft lbs. As seen in photo 4C.
7. Connect the remaining fuel line to the push lock fitting located in the port labeled "E" on the FASS System. Remember to use oil.
8. The return line from the injectors must be "T" into the return line of the P7100 injection pump.

**STEP 5:**     **Installing Electrical Harness:**     Use the following photo to complete this step.



1. Connect the male end of the wire harness to the female electrical connector on the FASS System.
2. Route the wire harness along the frame rail and into the engine compartment and connect the wire extension (part #WE-1001) to the female end of the WH-1002.cab.
3. Rout the red wire of the wire extension through rubber grommet located in the fire wall.
4. Using the fuse tap & flag terminal connect the “Red” lead from the wire extension to a terminal on the circuit breaker board that is “hot” when the key is on. **Note: Connect the fuse tap to the hot side of the fuse.**
5. Using the ring terminals connect the green wire, of the WH-1002 wire harness, to the negative post and the red wire to the positive post of the battery.
6. Secure the relay in an upright position.
7. Properly secure the wire harness and fuel lines with wire ties.

**STEP 6:      FINAL CHECK:**

1.      Bolts and fasteners properly tightened?
2.      Electrical Harness and Fuel Lines secured or properly tightened?
3.      Prime the fuel system! (Refer to owner's manual)!
4.      Check for leaks.
5.      Start the engine!
6.      Recheck all fluid connections and filters for leaks.

**NOTE: The electric fuel pump runs continuously while the engine is running. The fuel pump on the FASS System will feel warm or hot to the touch.**

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