

“HIGH PERFORMANCE FUEL DELIVERY SYSTEM”

FASS FUEL SYSTEMS

BY:



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WARNING!!

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

This installation manual applies to the FASS-150-DO-98-04 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-DO-98-04 applies to this application:

The Dodge Cummins Truck 1998.5-2004

SAFETY GUIDELINES AND WARNINGS!

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**. *A full color installation manual is available at our website www.dieselpdp.com.*

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

1. Inventory the package components completely. Notify *Diesel Performance Products, Inc.* 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. 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, first contact your authorized FASS Fuel Systems dealer. If your dealer cannot help you, contact Diesel Performance Products, Inc.

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.

For the 2 year warranty please fill out the "PRODUCT REGISTRATION FORM" and attach a copy of the sales receipt. This must be done within 30 days of the purchase or the 2 year warranty will not be valid.



Contents Include:

	Description				Quantity	Part #	
1.	Pump/Filtration Unit	--	--	--	1	FASS-150	
2.	Fuel Pump Bracket	--	--	--	1	BR-1001	
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, washers and nuts.	--	--	--	4 ea.	--	
7.	3/8" mounting bolts, washers and nuts.	--	--	--	6 ea.	--	
8.	1/2" "T" Block	--	--	--	1	--	
9.	3/8" x 1/2" (Push Lock x M PT)	--	--	--	3	PL-1001	
10.	3/8" x 1/2" (Push Lock x Female Flare)	--	--	--	1	PL-1002	
11.	3/4" x 1/2" (Hose Barb x M PT)	--	--	--	2	--	
12.	3/8" Quick Disconnect	--	--	--	1	QD-1001	
13.	3/8" x 3/8" (Push Lock x 90° Female Flare)	--	--	--	1	PL-1003	

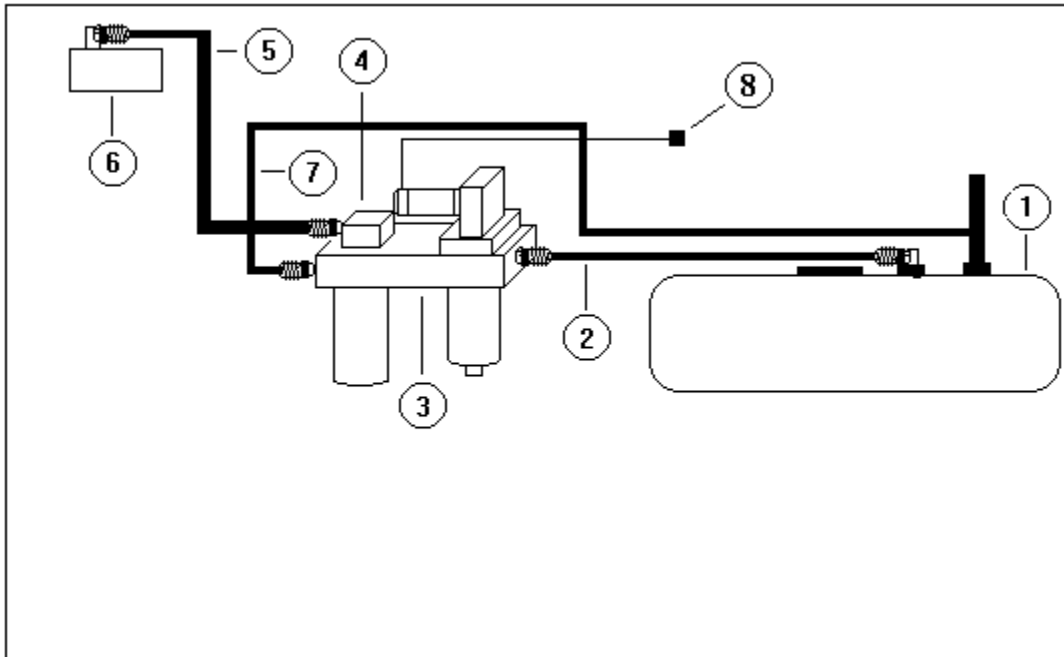
Installation Manual
 FASS FUEL SYSTEM

Contents Include: Continued

	Description					Quantity		Part #
14.	3/8" Line Hose Clamp	--	--	--	--	1	--	HC-1001
15.	3/4" Line Hose Clamp	--	--	--	--	2	--	HC-1002
16.	Injection Pump Fuel Line Fitting (O'ring)	--	--	--	--	1	--	DIPF-1001
17.	Frame Bracket ("L" Shaped)	--	--	--	--	1	--	FB-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 STOCK FUEL PUMP ELECTRICAL CONNECTION

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 2 – ½” allen head plugs have no function.

The 1/8” mpt allen head plug located on the block marked with the letter “E” can be used for a gauge reading.

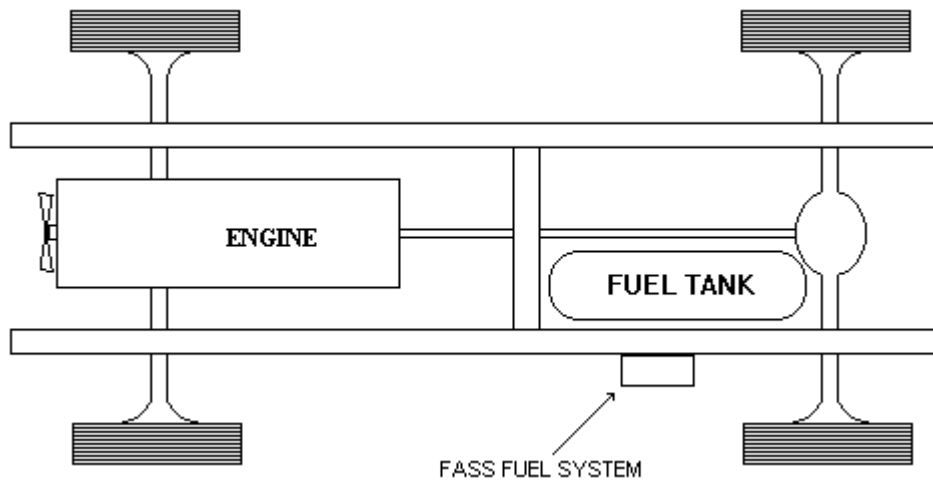
Location of the FASS FUEL SYSTEM PUMP/FILTRATION UNIT

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.)



BEGIN INSTALLATION

STEP 1: **Preparing Suction Line and Return Line:** Use the following photo's to complete this step.



Photo 1A



Photo 1B



Photo 1C



Photo 1D

NOTE: **IT IS NOT NECESSARY TO REMOVE THE BED OF THE TRUCK. REMOVED TRUCK BED FOR PHOTO.**

1. Attach fuel line to quick disconnect fitting using a 3/8" hose clamp as seen in photo 1A. Torque to proper specification.
2. Assemble the 1/2" "T": Use pipe tape on the male threads entering into the "T" and torque fittings to proper specifications.
 - a. The 2 – 3/4" x 1/2" (hose barb x mpt) fittings screw into the ends of the "T" to complete the straight through path.
 - b. The 3/8" x 1/2" (push lock x mpt) fitting screws into the side of the "T".
3. Disconnect the factory suction line and clip as seen in photo 1B. The factory line is removed by pressing in on the two tabs located in the connecting harness. These tabs are opposite of each other.

STEP 1: Preparing Suction Line and Return Line: Continued

4. Connect the quick disconnect fitting to the suction port on the fuel tank. As seen in photo 1B and 1C. Pull back on the black plastic in the quick disconnect as you slide it onto the fuel supply line. It will lock into place.
5. Using photo 1D as a guide remove factory overflow tube from the truck. This tube is next to the filler neck and is located between the fuel tank and the bed of the truck.
6. With the overflow tube removed from the truck cut away approximately 3” of the rubber tube from where the “T” is going to be located. Refer to photo 1D.
7. Assemble the “T” assembly into the overflow tube using the 3/4” hose clamps as seen in photo 1D. Torque to proper specifications.
8. Before connecting fuel line to push lock fitting lubricate the brass fitting and the inside of the fuel line with oil. Connect the opposite end of the 17’ fuel line addressed in step 4 of this section to the 3/8” push lock fitting of the “T” assembly as seen in photo 1D. **NOTE: Hose clamps are not recommended for push lock fittings they will hold up to 300psi!**
9. Reinstall overflow tube and torque hose clamps to proper specifications.

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

STEP 2: Mounting FASS System: Use the following photo's to complete this step:



Photo 2A



Photo 2B



Photo 2C



Photo 2D

1. Assemble the fuel pump bracket to the FASS System using the 4 - 1/4" bolts, nuts and lock washers. 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.
3. Assemble the FASS System with bracket to the frame bracket as seen in photo 2B using the 4 - 3/8" bolts, lock washers and nuts. (NOTE: This photo is from a different make of truck but the bracket assembly is the same.)

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 2C and 2D as a guide hold the FASS System (as high as possible) with both brackets attached into the mounting location. (Photo 2C & 2D is of a 2003 short bed.) (Note: on 2003 short bed trucks and newer it may be necessary to trim some sheet metal as seen in photo 2D.)

STEP 2: Mounting FASS System: Continued

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 2C to mount the frame bracket.
8. Using the 2 – 3/8” bolts, lock washers and 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 3: **Installing Fuel Line:** Use the following photo's to complete this step:



Photo 3A

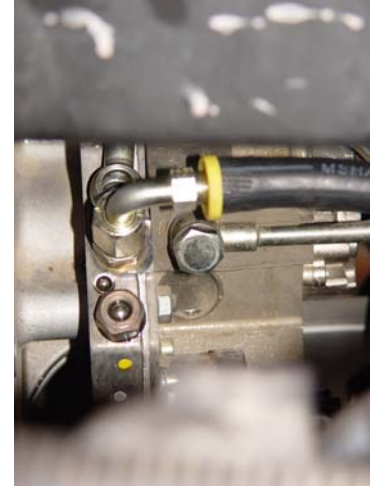
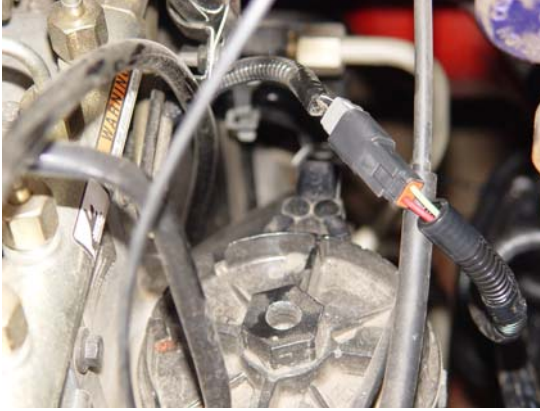


Photo 3B

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 "T" assembly in the overflow tube 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 factory injection pump and install the injection pump o'ring fuel fitting into this inlet port. (Note: This is where the suction fuel line from the fuel filter enters the injection pump.) Photo 3A & 3B shows the common rail system on the 2003 and newer trucks, on 1998.5 thru 2002 this port is about 4" back and up about 4". Torque to proper specifications.
5. Connect the remaining fuel line to the push lock fitting located in the port on the FASS System labeled "E". Remember to use oil.
6. Route this fuel line to the inlet side of the injection pump and insert the 3/8" x 3/8" (push lock x 90°female flare) fitting into the fuel line. Remember to use oil.
7. Attach 3/8" x 3/8" (push lock x 90°female flare) fitting to the injection pump fitting. Torque to proper specifications.

STEP 3: **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 to the location of the factory fuel pump.
3. Disconnect power source to the factory lift pump.
4. Connect the FASS Systems wire harness (WH-1002) to the factory power source. This was disconnected in the previous step
5. Properly secure the wire harness and fuel lines with wire ties.

STEP 5: 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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