

## My 2007 5.9 RAM Fuel Filtration Upgrade

Since owning an 07.5 w/6.7, I was always concerned about exceeding the 5% biodiesel limit recommendation unless additional filtration was added, specifically to deal with the potential of water associated with biodiesel. That truck was lemoned, and I found one of the last 07 5.9 Rams and proceeded to upgrade the filtration by adding the Severe Duty Filter Kit offered by Mopar.

In 2014 I bought the SDFK kit for about \$120, but Chrysler had swapped the first design for a non-standard filter head which almost forces you to buy from Mopar. After researching Fleetguard literature, I was able to find a filter head that with some fabrication, could replace the special head allowing me to use readily available filters and it still included the heater which is plug and play. The head is Fleetguard part number 3930335S. See Fig 1.



FIG 1

The bolt mounting pattern is the same but it meant cutting a hole in the rear face to gain access to a port as the side would not allow enough clearance for the new head's o-ring ports with fittings I would use. Rather than bore a hole, I chose to just offset the mount and shift it away from the frame far enough to allow accessing the port with my fittings. Either way works, this approach worked just fine for my install.

The following are pictures of what the finished modifications to the SDFK where I used a piece of 1/8" plate to create the offset mount.

View of top w/modifications



FIG 2

Rear view



FIG 3

Back right view



FIG 4

The following (FIG 5) shows where I tapped into the junction for the fuel supply line. I was not about to pull the fuel tank and wanted to tap into a spot where the fuel line was well supported which was just in front of



FIG 5

the tube supports by the transfer case. I used a Parker Ferulok 3/8" tube to JIC adapter on the tube. From this point on, the complete supply line is 3/8" ID Parker 3970X Super-Flex FL Fuel Line using Push Lok connectors.

**SDFK installation views:**



*FIG 6*



*FIG 7*

## Factory Fuel Filter Connections



FIG 8



FIG 9



### **Additional Secondary Filter**

For the final secondary filter I chose the Cat 195-1068 base as it offered o-ring ports and a steel thread bung in place of the all in one cast aluminum version. I wanted o-ring ports and the steel bung helps to avoid galling with filter threads, especially if using the Cat 1R-0750 filter which has aluminum threads in it. I made sure to swap the buna o-rings with Viton o-rings to make sure I didn't have trouble with biodiesel. I made my own bracket from  $\frac{1}{4}$ " mild steel plate and included a gusset to stiffen it – it vibrated without it. The extra ports on the filter head are convenient – I plan to add a fuel pressure sender in the future.

With a complete  $\frac{3}{8}$ " supply line, priming the system showed there was little restriction as the system had strong flow coming out of the final filter before I connected the line to the pump.

### **View of Fabricated Secondary Filter Bracket on Engine**



*FIG 10*

## Filter Base & Beta 75 (98.7%) at 4 micron 1R-0750 Element on Engine



FIG 11

After running 10K miles with fuel from various sources, I decided to change the filters and see how they looked.

Here's a snapshot:



FIG 12




The FS19732 primary filter helped clean up the fuel but the Baldwin PF7977 was still cleaning up the fuel as it had quite a bit of dark debris on it. The 1R-0750 only had some hints of gray and likely would have been good for quite a few more miles.

The following is bill of materials list I put together showing some of the parts used along with the sources. There are several resources for parts like these, just showing what worked for me.

	Sourced from:	
Quantity	<a href="https://www.nvrostop.com">https://www.nvrostop.com</a>	
1	6 XHBU-S Parker Union Adapter Steel Fitting Male 37° Flare	
8	33982-6-6 Parker Push-Lok Low Pressure Hose Fitting, 90 deg elbow hose adapter, steel, 3/8" hose barb x 9/16-18 female JIC 37 deg swivel	
2	6-10 F50X-S Parker # 6 Male JIC by # 10 Male SAE - Straight	
2	6-8 F50X-S Parker # 6 Male JIC by # 8 Male SAE - Straight	
2	6 HP5ON-S Parker #6 Hollow Hex SAE Plug	
2	8 HP5ON-S Parker #8 Hollow Hex SAE Plug	
	Sourced from:	
Quantity	<a href="http://www.vulcanperformance.com">http://www.vulcanperformance.com</a>	
3	PN M1206, Metric Adapter 06 JIC X 12mm	
15 ft.	3/8" Parker SuperFlex bio fuel compatible fuel line, up to and including B100. SuperFlex features a Nylon barrier liner, meets or exceeds SAE 30R7 specifications and is California Air Resourced Board (CARB) compliant.	



Bill of materials continued:

Sourced from: <a href="https://www.peterbiltparts.com/">https://www.peterbiltparts.com/</a>		
1	Fleetguard part number 39303355 - filter head	
1	Cat 1R-0750 filter	
1	Fleetguard F519732 filter	
Sourced from: <a href="https://parts.cat.com/en/catcorp/195-1068">https://parts.cat.com/en/catcorp/195-1068</a>		
1	Cat filter head with 1-14 threaded filter pilot (recent price early 2016 was under \$50)	