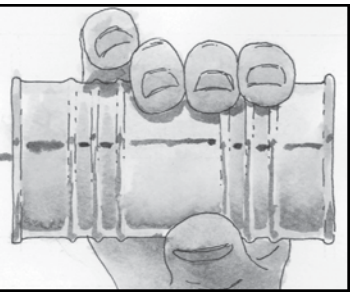
Member 2 Member



I think you will agree with me when I categorize Turbo Diesel owners as independent people who are not afraid to try something new. You are an ingenious membership who reinvents and improves a product to make it better serve your needs. You show a strong willingness to share your shadetree solutions. With your input each quarter, we publish the "Member2Member" exchange to give you a forum to tell other members how you solved a problem.

In this issue we revisit the topic of fuel filtration in the 2003-up trucks with an article by Robert Patton.

FOOL TRANSFER PUMP – PART TWO, EXTRA FILTRATION
by Robert Patton

In the previous issue of the TDR we devoted six pages to the subject of fuel transfer pumps for all years of Turbo Diesel trucks. As a recap, we gave the '89-'04.5 owners the sage and time-worn advice from the Geno's Garage staff on how to be prepared if you have a fuel transfer pump give you a problem. In this issue we revisit the topic of fuel filtration on 2003-up trucks with an article by Robert Patton

The balance of the article chronicled my attempt to be prepared by installing a dual transfer pump setup on my 2010 truck. Since the fuel delivery system in all '05-'12 trucks is the same with the fuel transfer pump located in the fuel tank, the article was applicable to all '05-'12 trucks.

What is new for this issue?

For an '89-'02 owner—nothing. For advice reference Issue 76, page 16.

However, for a Third Generation owner [these trucks have the Bosch high pressure, common rail (HPCR) fuel injection system] there is an update that comes to us in the form of an overlooked(?) factory technical service bulletin (TSB) number 14-004-11, April 2011. This bulletin gave the service network the part numbers of Mopar kits that could be added to the truck to provide extra fuel filtration. More about this TSB in a few moments.

This bulletin gave the service network the part numbers of Mopar kits that could be added to the truck to provide extra fuel filtration.

In the TDR we have discussed that the '03-current HPCR fuel injection operates at as much as 23,000psi. In comparison water jet cutters operate at 50,000psi. The injector tolerances are very tight and clean fuel is paramount to injector life. With average care we are seeing injector life in the 150-180,000 mile range. However, by average life I would have you ask the Chevy Duramax owner (same injection system) or the fellow Turbo Diesel owner who does not get the TDR, how often do *they* change their fuel filter? Yes, contamination caused by lack of filter service will equate to short service life. Considering the real world, I'm thinking that the 150-180K is a good number.

Can we do better?

An ounce of prevention is worth a pound of cure (a set of six HPCR injectors is over $2000). How much does an "ounce of prevention" cost?

Good questions that lead to my article "Fool Transfer Pump – Part Two, Extra Filtration."

Without a bunch of mumbo jumbo, let's get directly to the Q&A.

Can We Do Better

Can we do better? Without a doubt! Witness the factory's TSB 14-004-11 that was released in April of 2011. I missed doing a summary of the bulletin in my annual review of TSBs that was printed in Issue 74. Looking at TSB 14-004-11, it was an update of a previous bulletin that *was* covered in the TDR one year prior (TSB 14-002-10, dated 2/11/10 and summarized in Issue 70, page 55). So, let's start from square one: a review of the original 14-002-10 bulletin.

An ounce of prevention is worth a pound of cure (a set of six HPCR injectors is over $2000). How much does an "ounce of prevention" cost?

14-002-10 '03-'09 (DH, D1)
2/11/10 '07-'09 (DC)

Heavy duty filtration – Mopar retrofit or add on parts available.
This bulletin applies to D1/DH/DR vehicles equipped with a 5.9-liter Cummins engine built from 2003 model year and D1/DH/DC vehicles equipped with a 6.7-liter Cummins engine built from 2007.5 model year. Several fuel system add-on or retrofit parts are available to enhance the filtering capability for customers exposing their vehicles to extremely dirty conditions. The description of parts available for Cummins diesel equipped vehicles is listed below:

6.7-Liter Changes

- New fuel filter. This is the FS2 design. (5 and 10 micron filter-in-filter) fuel filter to retrofit earlier models (shell and element).
  68061633AA – FS2 Element, fuel filter and shell.
  68061634AA – FS2 Element, fuel filter – This filter to supersede the original 5183410AA filter when supplies are exhausted.

6.7-Liter and 5.9-Liter Changes

- Fuel tank vent hose. 5.9 and 6.7 add-on or upgraded fuel tank vent hose kit with vent cap.
  68068997AA – Fuel Tank Vent ($66.10). Must be used in conjunction with the appropriate Fuel Tank Vent Kit listed below:
  68051906AA – Kit, Severe Duty Fuel Tank Ventilation – DC 52 Gallon Tank ($32.95)
  68061341AA – Kit, Severe Duty Fuel Tank Ventilation – D1/DH 35 Gallon Tank ($58.85)
  68061342AA – Kit, Severe Duty Fuel Tank Ventilation – D1/DH 34 Gallon Tank ($63.20)

5.9-Liter Changes

- 5.9 upgraded air filter. This filter is similar in design to the current 6.7-liter air filter. The part number is: 53034249AA – Element, Air Filter – 2003-2007 5.9-liter

For the average TDR owner the take-away from TSB 14-002-10 was the launch of the FS2 design fuel filter for the '07.5-'09 owners. The 2010 trucks came with the FS2 fuel filter. This parts update had been covered in the two previous issues of the TDR magazine. Also, for the 5.9-liter owner, the Mopar air filter (53034249AA) is much more robust than their previous design air filter that was/is made by Fleetguard.

The balance of the TSB discussed fuel tank vent hose kits. Pictured below are the parts.

(L) Mopar HD air filter (MO-249), $27;
(R) Fleetguard air filter (AF26106), $15

Kit 68068997AA fuel tank vent filter and 68061341 vent hose kit.

The April 2011 Release

As mentioned, the April 2011 TSB release (14-004-11) was an update. The update added a Mopar kit for fuel filtration in severe duty applications. This kit is part number 68083851AA ($395) for cab and chassis applications and 68083853AA ($359) for pickup trucks. If your truck is an '04.5-'07 (with the 5.9-liter engine) you also need a water-in-fuel sensor wiring adapter, 68026934AA ($74). Pictured below are the kit's contents.

The severe duty fuel filter kit (68083853AA).

The Cost of Prevention

How much does an "ounce of prevention" cost? While I have outlined the cost in the preceding text and pictures, a bit of commentary about the various severe duty kits mentioned in the TSB is appropriate.

First, the transition to the FS2 fuel filter: Because part numbers were superseded, this part of the TSB has taken care of itself. All '03-'09 owners have had to move to the new FS2 designed primary fuel filter.

Next up, the various fuel tank vent hose filters. Again, a picture is worth a thousand words and the earlier picture showed the contents of the kit. The parts are not terribly expensive. But, just as in my "Fool Transfer Pump, Part 1" story, it is not easy to add this kit to your fuel tank. Add to this the "Concrete Cowboy" duty cycle of my truck, and the fact that '89-current production trucks have not had this kit, and I am okay without adding it to my truck. However, as was stated at the onset of this article, extra clean fuel is paramount, and if this filter kit keeps contaminants from entering the fuel tank we can assume there is less wear and tear to the fuel transfer pump and less of a job that the truck's FS2 fuel filter has to do.

The folks at the factory who helped develop these fuel tank filter kits tell me that the existing vent tube could end up covered in dirt and debris. As you see from the photos of the vent hose kits back on page 15, the kits simply move the vent to a higher location on the truck.

Next up, the upgraded air filter for the 5.9-liter engine. Again, the earlier picture showed the difference in the air filters. For my money ($27 versus $17), I'll go with the Mopar filter (53034249AA) to give me the best defense against engine wear.

The Mopar Fuel Filter Kit

Finally, to the focus of this article, the Mopar kit for extra fuel filtration: again, I have already presented pictures of this kit and given you the price(s). Bottom line, is the ≈$450 kit worth your investment?

Before I attempt a cost analysis, I would like to give you some background on the kit. As you noted from the earlier picture, the kit gives you a bracket, wiring, fuel heater, water-in-fuel sensor, fuel hose, hose fittings and a Mopar fuel filter element, part number 68083826AA. The kit is installed on the truck's frame rail and it becomes the truck's primary filter. The filter's primary job is to strip out water from the fuel. I know that everyone wants to talk about the kit and "the filter's micron rating." The micron rating thing is a big can of worms. Is the micron number you hear at 90% efficiency, 95% efficiency or 97% efficiency? The factory folks told me it was 25 micron at 97%.

The filter cannot be too restrictive because the factory transfer pump would be over taxed. As we all know, it has only so much oomph.

Now, is there an aftermarket, fuel filter only type kit that can be added to your truck's fuel system? Without a doubt, yes. I've seen discussion of such products at the TDR's web site. As recently as Issue 68, page 123, there was a press release for XX-Fuel's fuel filtration system that offers single or dual elements with prices from $250-$360 (xx-fuel.com). Your local fuel system shop (www.diesel.org, the Association of Diesel Specialist) has long offered extra fuel filter kits at prices less than $250. However, before you run out to your truck to purchase extra filtration, please ask yourself the following: the filtration rating of the filter; will it overtax the existing fuel transfer pump; and what is the cost analysis?

The Cost Analysis

Ding, ding, ding, bottom line, what is the cost analysis? The Mopar kit will cost about $450. From last issue, my "Fool Transfer Pump/Boy Scout" project for the '05 to current trucks cost $625.

The Fool Transfer Pump/Boy Scout project gives you better filtration and a redundant pump for fuel supply. However, its installation requires removal of the fuel tank. Nonetheless, for my peace of mind, I'll spend the $625 and do the extra labor for the fool solution that I presented in Issue 76. Your decision?

Robert Patton
TDR Staff