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6.0L POWERSTROKE PROBLEMS AND SOLUTIONS

Installing Bullet Proof Diesel's EGR And Remote Oil-Cooler Kit

BY KEVIN WILSON
PHOTOGRAPHY: KEVIN WILSON AND BULLET PROOF DIESEL

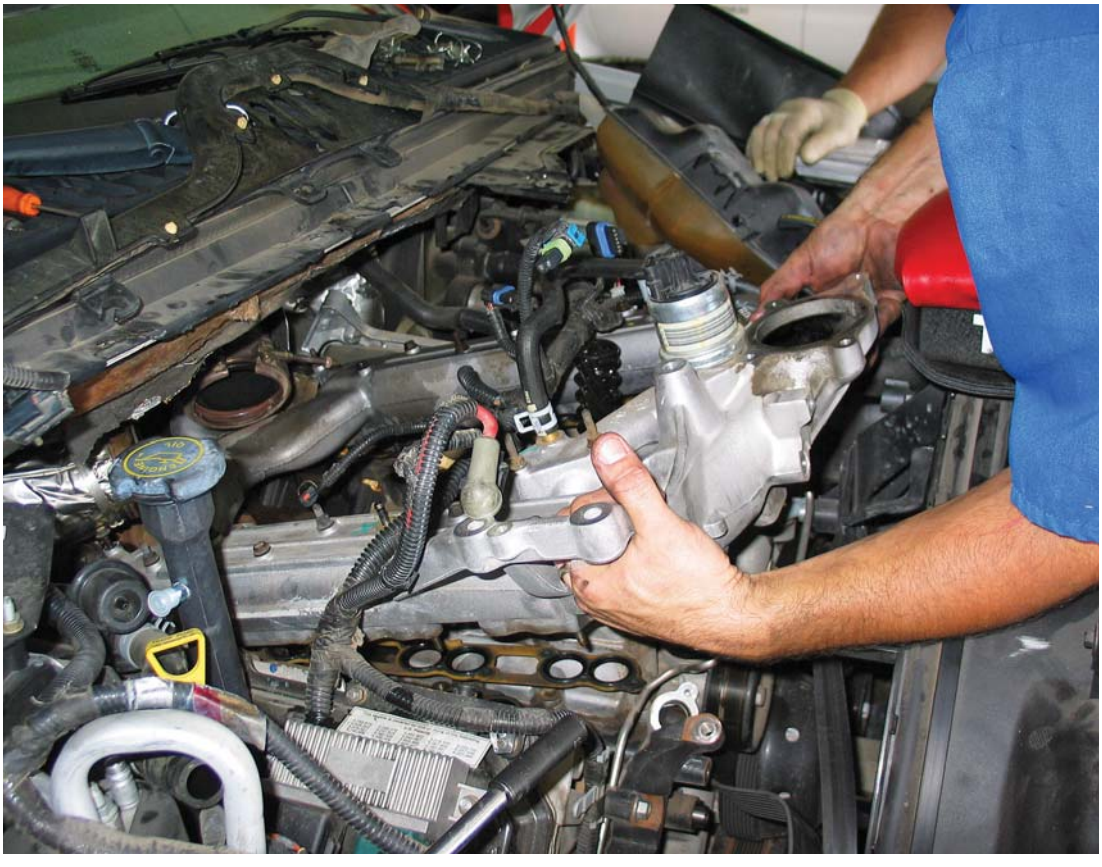
Previously, we gave you the inside scoop on Bullet Proof Diesel's fixes for the 6.0L PowerStroke EGR cooler and oil cooler problems that have plagued the motor since day one. The repetitive failures of the EGR and oil cooler, not to mention issues with head gaskets when you turn up the boost, are the most common problems 6.0L PowerStroke owners will face.

For the folks who bought the truck new, we can bet the dealer has warranteed at least one oil cooler and possibly multiple EGR coolers. Now that nearly all of those trucks are out of warranty, the repairs are coming out of your pocket, not Ford's.

Issues with the 6.0L were so severe, that both Ford and Navistar were embroiled in multiple lawsuits over the problems, and higher-than-normal warranty costs associated with the second-gen PowerStroke. This ultimately became the impetus for Ford to end its relationship with Navistar and design and build its own diesel—code name The Scorpion—which is found in '11 Super Dutys.

According to the folks at Bullet Proof Diesel, which is a division of Neil Technologies, EGR cooler failures are symptomatic of a much larger problem, and replacing the cooler with another factory one only prolongs the agony and owner frustration. According to Bullet Proof Diesel, the real culprit behind these repetitive EGR cooler failures are not only the design of the stock EGR cooler, but also the truck's oil cooler.

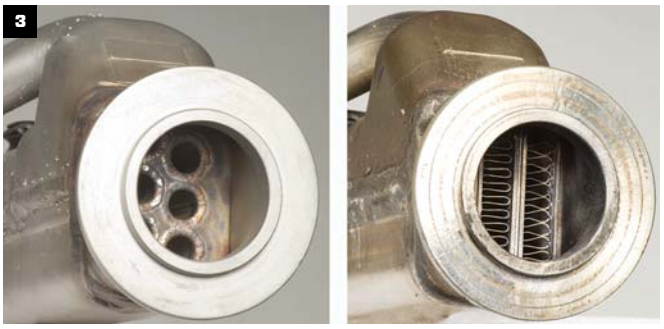
Bullet Proof Diesel has designed solutions to both problems. The first is the company's tubular-designed EGR cooler. Instead of using an internal radiator-style fin design, Bullet Proof Diesel uses a tubular setup inside the EGR cooler that is stronger and less prone to cracking. In fact, Bullet Proof Diesel is so confident its street-legal EGR cooler is superior to the factory part, the company offers a lifetime warranty on it. The unit is a direct replacement, so it bolts in place of the stock part.



Since we now know the root of many problems is the factory oil cooler, replacing that cooler with a remote-style cooler is the long-term fix. Bullet Proof Diesel says its oil-cooler kit offers more effective engine-oil cooling, which translates into

Bullet Proof ADiesel's replacement EGR coolers are not only smog-legal, they also carry a lifetime warranty.

The solution to the oil-cooler issues is Bullet Proof Diesel's engine-oil cooler kit, which deletes the stock oil cooler in favor of a remote-mounted cooler.



Here's a side-by-side comparison of the Bullet Proof Diesel tubular-style, replacement EGR cooler at left, and the stock radiator-fin design factory EGR cooler on the right.

Installation of both the remote oil cooler and EGR starts with disassembly of the top half of the motor.

improved cooling of the EGR cooler, leading to increased EGR cooler longevity. Bullet Proof also says the remote setup reduces engine-oil temperatures.

The Bullet Proof engine-oil cooler kit uses a larger, remote-mount oil-filter setup for better oil filtration, and is offered with an optional oil-bypass filtration kit as well, for even more filtration. Cooler, better-filtered oil for the injectors and high-pressure oil pump increases their longevity and performance as well. The setup also eliminates engine oil in your coolant by way of ruptured engine-oil cooler. For those folks in colder climates, the Bullet Proof oil-cooler kit can also be ordered with an inline thermostat for quicker engine warmup.

In this issue, we hit the highlights of both installations since they are related and you have to essentially take apart the top of the motor, including removal of the intake manifold and turbo, to access both the EGR and oil cooler. We followed the installation at Bullet Proof Diesel's Mesa, Arizona, shop, which took the better part of a day. Since the Bullet Proof Diesel techs were installing both a new EGR and its remote oil-cooler system at the same time, the photos below follow both installs simultaneously.

If you own a 6.0L PowerStroke, you're all too familiar with some of its issues, and have probably sent it to the dealer a few times for warranty work. Now that the repairs are coming out of your pockets and you'd better understand the issues, contact the folks at Bullet Proof Diesel for their down-to-earth solutions to real-world PowerStroke problems. **DW**

5

Access to the intake manifold requires removal of the alternator.

6

Once unbolted from the manifold, the stock oil-filter canister can be slipped off. Set it aside since it will be reused, sans filter, with the new oil manifold.

7

According to Bullet Proof Diesel, another weak point on 6.0L PowerStrokes is this plastic check ball that controls the oil bypass inside the filter.

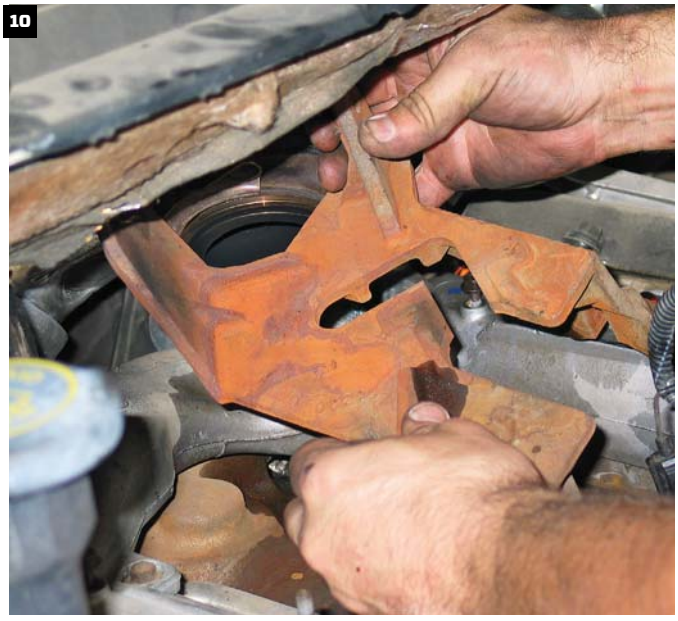
8

They also said this plastic drain-back valve has also been known to have problems. Since you are disassembling the engine, now is a good time to address these issues as well.

9

With the alternator out of the way, the stock turbo can be carefully removed. It's not as easy as it looks here.

10



The turbo pedestal comes out next.

11

This shot shows the location of the stock EGR cooler, which is bolted to the bottom of the intake manifold. The manifold has to come out to do the R&R on the EGR cooler.

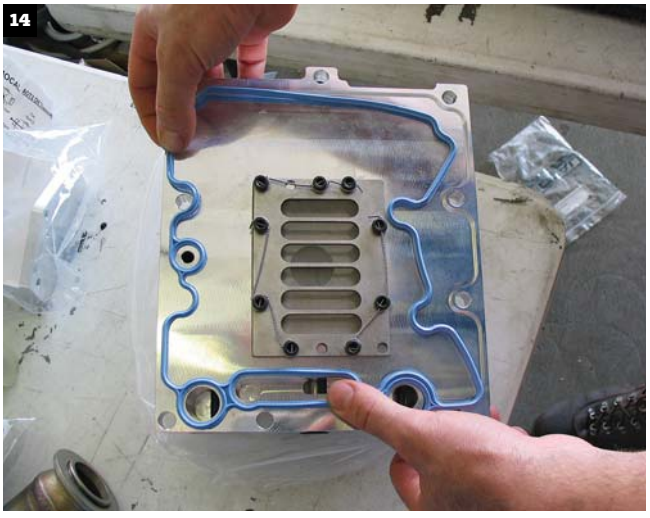
12

At the base of the oil-filter canister is this manifold assembly, which delivers both oil and coolant to the factory oil cooler underneath.

13

The factory oil cooler sits in this oil-filled trough just below the manifold assembly.

14



Bullet Proof Diesel supplies a new billet-aluminum oil manifold, which is the center point of its remote oil-cooler system. This setup also has a larger pickup screen than the stock setup. Note the aircraft-style safety wiring on the bolts. The blue gasket is a factory part.

15

The Bullet Proof Diesel manifold assembly bolts in the stock location.

16

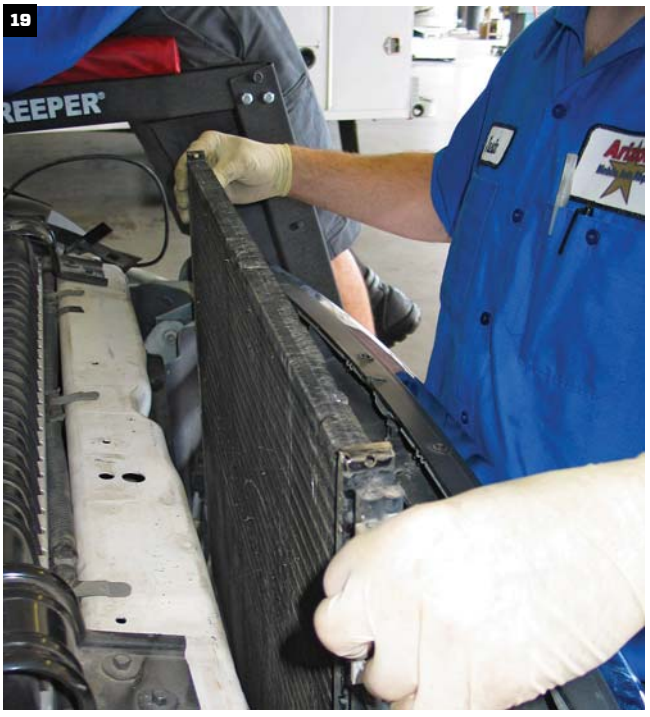
This shot illustrates the relationship of the EGR cooler under the intake manifold. Pictured is the new Bullet Proof Diesel EGR cooler.

17

Once the intake manifold is bolted in place, the EGR cooler line can be attached to the oil-cooler manifold. The round-capped fittings you see on the oil manifold are fittings that connect to the remote cooler lines.

18

Installation of the Bullet Proof Diesel remote oil-cooler kit starts with removal of the stock bumper.

19

The A/C system is evacuated so the condenser can be removed.

20

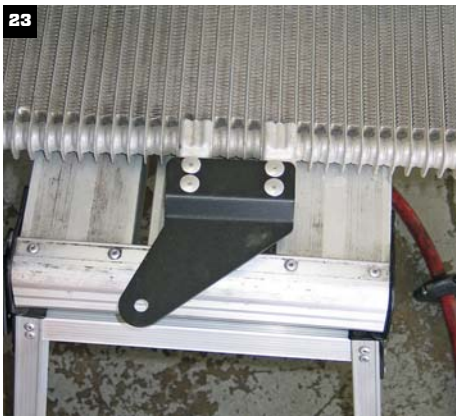
The factory transmission cooler will be lowered to this position via new mounting brackets to make room for the remote oil cooler that is mounted at the top of the A/C condenser.

21

The kit includes this oil-cooler bracket that is mounted to the A/C condenser.

22

The ultra-heavy-duty oil cooler can now be positioned and mounted to the bracket.

23

Here's a shot of the factory trans cooler with the new drop-down brackets attached.

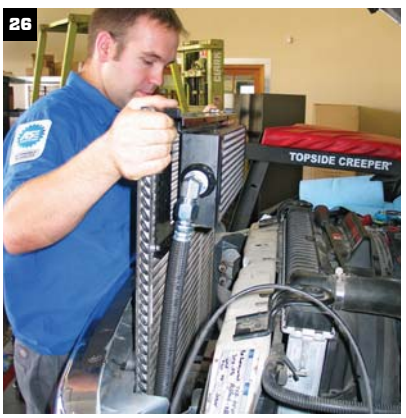
24

The cooler uses AN fittings, which are attached next. The smaller fitting is for an optional bypass filter setup.

25

Braided lines deliver oil to and from the cooler.

26



With the cooler and oil lines attached, it can be carefully relocated inside the truck.

27

This shot illustrates the cooler's relationship between the A/C condenser and radiator. Mounting the cooler behind the condenser insures full A/C operation and puts the cooler in the main airstream for the cooling fan.

28

On this truck, Bullet Proof's optional bypass-filter setup was added. The return line from the bypass filter is mounted in the oil-filler neck.

29

The whole installation looks factory. In this shot, you can see the braided oil lines, which are attached to the billet manifold, that are run safely to the outside and up to the remote oil cooler.

30

The system replaces the stock canister-style oil filter with an industrial-strength spin-on unit that is remotely mounted in behind the bumper.

31

On this application, the bypass oil-filter mounting bracket is mounted on the left side of the truck. Note the smaller line diameter.

SOURCE

Neil Technologies/Bullet Proof Diesel
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