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POWER STROKE OIL COOLER FIX

6.0 Power Stroke

THE SIMPLE SOLUTION FROM BULLET PROOF DIESEL

BY KEVIN WILSON
PHOTOGRAPHY BY KEVIN WILSON AND DINA COOPER

The 6.0L Power Stroke can be a reliable performer with some simple upgrades that address design flaws.

Oil Cooler Upgrade

The 6.0L Power Stroke has gotten a bad rap over the years, thanks mostly to well-documented oil cooler and EGR cooler failures. Consequently, you can buy a used 6.0L Power Stroke relatively cheaply and the money you save on the purchase price can go towards addressing some of the engine's shortcomings and building it to suit your uses and needs.

As a refresher, the 6.0L Power Stroke was introduced in 2003 after market pressure from Dodge and GM forced Ford to up their diesel power offerings. While the current 7.3L Power Stroke was reliable, Ford needed to counter the common-rail offerings from GM and Dodge and the 6.0L was the answer. Produced by the same folks who built the 7.3L Navistar, legend has it that Ford rushed Navistar to get the 6.0L to market quickly, and once on the road, design flaws started to show up.

Topping the list was failure of the factory EGR cooler. The folks at Bullet Proof Diesel, which is a division of Neal Technologies in Mesa, Arizona, say the EGR cooler failures were symptomatic of a much larger problem and replacing the cooler with another factory one only prolonged the agony and owner frustration. According to Bullet Proof Diesel, the real culprit behind these repetitive EGR cooler failures is not only the design of the stock EGR cooler, but also the truck's oil cooler.

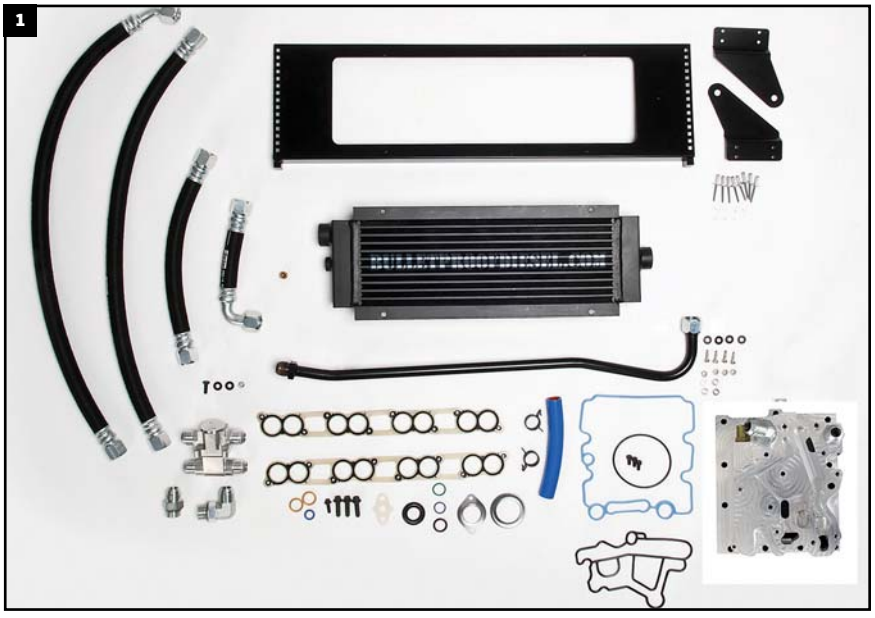
Located at the front of the block, just under the intake manifold, the water to oil intercooler sits in an oil-filled recess in the valley of the motor, and supposedly is used to cool the truck's hot oil by circulating coolant through the cooler. Unfortunately, the sandwich-style design of the cooler features tiny water passages which eventually get clogged with debris from the cooling system. These pathways are so small they catch and stop any large particles suspended in the coolant, blocking the coolant channel and consequently the coolant flow.

"The folks at Bullet Proof Diesel say the EGR cooler failures were symptomatic of a much larger problem and replacing the cooler with another factory one only prolonged the agony and owner frustration."

A plugged engine oil cooler typically leads to a ruptured EGR cooler, overheated engine oil, overheated fuel injectors, loss of coolant, ruptured engine oil cooler and blown head gaskets, they add. Replacing the Ford engine oil cooler with another Ford engine oil cooler is the usual fix, but all that does is put off the problem for another 50,000 miles.

So what's the long-term fix? Over the years, Bullet Proof Diesel has developed an external oil cooler system that utilizes a large spin-on oil filter that replaces the stock setup. They have also developed "bullet proof" EGR coolers with better construction for improved coolant flow.

Their latest offering is an all-new oil cooler system that retains the factory oil filter setup on top of the engine, while still incorporating a billet aluminum engine oil block that replaces the factory oil cooler which sends oil via high-pres-



The new Bullet Proof Engine Oil Cooler/Factory Oil Filter kit comes complete with a billet engine oil block, high-pressure oil lines, external oil cooler and all the gaskets and fasteners you'll need. Pictured here is the optional cold weather kit, which has a thermostatic-controlled flow for faster engine warm-up.

This is the problem child... the factory 6.0L oil cooler. It sits in an oil-filled recess in the valley of the motor, and supposedly is used to cool the truck's hot oil by circulating coolant through the cooler, assuming the coolant passages aren't plugged.

This cut-away of the cooler shows the tiny oil and water passages inside. Debris in the cooling system is what causes the coolant side of the oil cooler to plug up, which can cause major issues downstream, including killing the EGR cooler.

The install starts by removing all the stuff on top of the motor including the turbo and intake manifold.

Fast forward: this is what things should look like when you're done.

sure lines to a front-mounted oil cooler which sits behind the A/C condenser.

The most obvious benefit is replacement of the factory oil cooler, which can rupture and dump coolant in the engine oil. More importantly, the system provides cooler oil to the engine, injectors and high-pressure oil pump, which increases their longevity and performance as well. And for those folks in colder climates, where cold weather warm-up is an issue, the Bullet Proof kit can also be ordered with an in-line thermostat for quicker engine warm-up.

Installation of the kit is labor intensive since the whole top of the engine needs to be removed to access the factory oil cooler. The good news is this is a great time to also replace the factory EGR cooler with an upgraded Bullet Proof unit.

The system is a true bolt-on setup and comes with thorough instructions. There are some quirks associated with assembling and disassembling the top end of a 6.0L that might be best left to the professionals, but any good diesel mechanic should be able to install the system in less than two days, following the instructions to the letter.

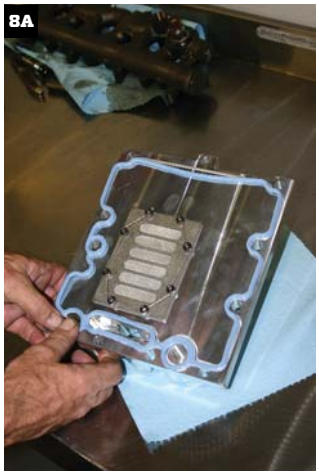
If you own a 6.0L Power Stroke, it's only a matter of time before the factory oil cooler, and EGR cooler, gives up the ghost. Why not get ahead of the game with simple upgrades from Bullet Proof Diesel? **DW**


6

This plastic filter sits in the oil reservoir under the factory oil cooler and is supposed to filter the oil headed to the HPOP. This is another failure area on the 6.0L and will be discarded for the install.


7

This is what the factory oil filter assembly looks like outside of the engine, complete with cap and dirty filter. This setup will be mounted to the new Bullet Proof oil transfer block assembly.


8A


8B

8A-B The new Bullet Proof oil transfer block assembly comes preassembled, complete with a new HPOP screen that's aircraft wired on the bottom. All you have to do is install the new gasket. Another new gasket goes under the factory oil filter base.


9

With the gaskets in place, the factory oil filter assembly can now be bolted to the Bullet Proof Diesel manifold block.


10

The new assembly sits on top of where the old oil cooler was located.


11

Once bolted in place, you can reattach the original sensors and coolant line fitting which runs to the EGR.


12

Now, attention is focused at the front of the truck. Removing the bumper and grille assembly is mandatory to access the trans cooler and A/C condenser. Both are removed from the truck.

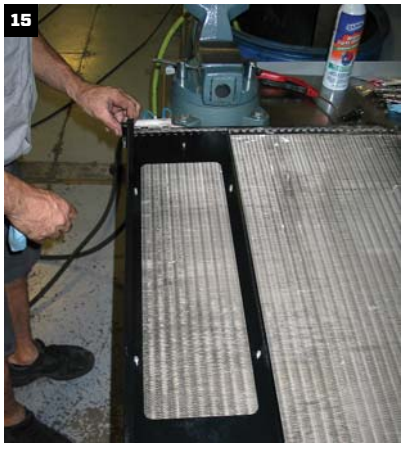
Some 6.0L Super Dutys came with a larger heavy-duty trans cooler. The kit includes new brackets to space it downward to make room for the new oil cooler. Some grinding of rivets is needed to take off the old brackets and bolt on the new ones.


13

This is what the trans cooler looks like with the new lowering brackets attached.


14

As per the instructions, the Bullet Proof Diesel oil cooler mounting bracket is attached to the top of the air conditioning condenser.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Install all the fittings next. Follow the instructions carefully to put the right ones in the right locations.


17

The cooler simply bolts into the mounting bracket using the supplied hardware and aluminum spacers to provide an air gap between the condenser and cooler.


18

Here's what the finished assembly looks like. Not the solid transfer line's location.

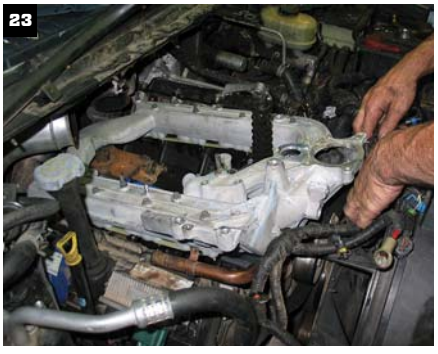

19


20

19-20 Believe it or not, the assembly simply slips in place and looks like a factory install. Better still, the oil cooler is behind the A/C condenser so A/C performance is not affected.

For this truck, Bullet Proof is installing the optional cold weather kit, which utilizes a thermostat block to assist in faster engine warm-up in cold weather. The instructions are very specific on which line goes where.

Before buttoning up the engine, the silicone coolant hose and clamp need to be installed on the block and EGR.

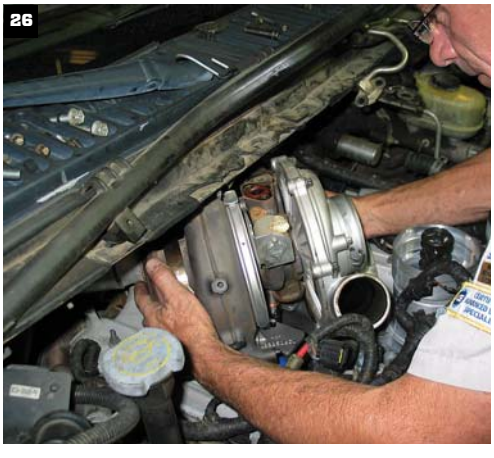


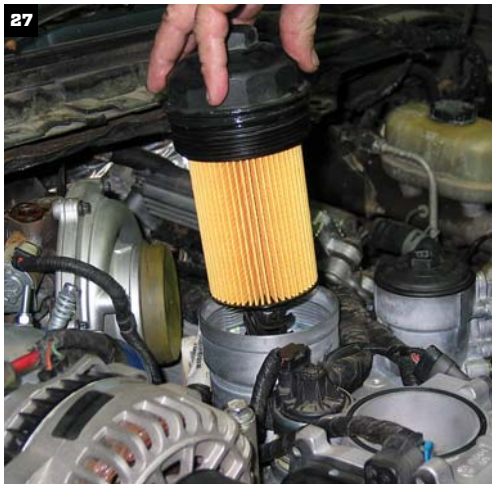
New intake manifold gaskets are included in the kit for re-installation.

With the intake manifold installed, next up is the oil and fuel filter assembly.

The turbo pedestal goes on next as does a new turbo drain line since there's a factory upgrade now available.

The turbo is ready to install. It's heavy and awkward to install at the back of the motor. Once in place, time to connect all the plumbing including oil lines and uppipes.





Finishing touches include a fresh factor oil filter. Make sure your truck has the correct oil filter cap to work with the factory filter.

Running the lines and attaching the thermostat block is all that's left to do under the hood.

The finished install is very stealthy, with the exception of the visible cooler lines.

SOURCE

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