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08

COOL IT OFF

Lowering 6.7L Intake Temps With aFe's Blade Runner Dodge Intercooler

BY DW STAFF
PHOTOGRAPHY: DW STAFF

Some people call it a charge air cooler; others refer to it as an aftercooler. Still others in diesel circles call it an intercooler. Whatever name may be your preference, the job of the intercooler is to cool off the air entering the engine. The more the air is cooled, the denser the intake charge, which also translates into more power. Not only does cooler, denser air make more horsepower, it can also drop exhaust gas temperatures.

If putting a huge intercooler in place of the factory unit means more power and lower EGTs, then why don't people hack the front end and install the biggest, burliest intercooler available? The trade-off is that going too big with an intercooler can result in an excessive pressure drop. Like everything, the properly sized intercooler becomes a balance of available space, efficient design and the right equipment to push the air through it.

For the new 6.7L Dodge Cummins, the engineers at advanced FLOW engineering (aFe) have come out with a bolt-on Blade Runner intercooler, which includes a charge pipe tube upgrade that has shown 20 additional hp and 63 extra lb-ft of torque at 1,750 RPM. The test mule was also equipped with an aFe intake and exhaust, all while holding the pressure drop to less than 1 psi. Testing on the same truck also showed that the aFe Blade Runner intercooler

flowed about 45-percent more air than the factory intercooler.

The Blade Runner intercooler uses patented Multiple MDV technology in the aluminum end tanks. Rather than having an open tube, the end tanks have multiple airfoil vanes incorporated into them. As hot compressed air runs through the vanes, it is distributed evenly through the entire intercooler. The folks at aFe say this even distribution of air helps to greatly reduce exhaust gas temperatures.

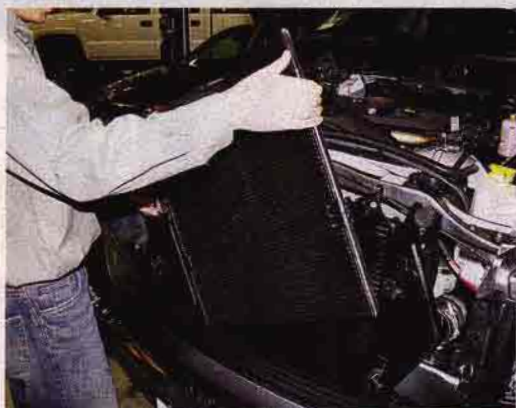
In the kit, aFe also includes a mandrel-bent, 3-inch 409 stainless steel tube upgrade that is powdercoated. For those running high levels of boost, three heavy-duty, five-ply, aramid-reinforced couplings give the upgrade enough strength to handle 200 psi, according to aFe. Everything needed for the installation is included, as well as constant tension T-bolt clamps.

We headed to the aFe headquarters in Corona, Calif., to follow the install of the Blade Runner intercooler on an '08 Dodge Ram. The intercooler and upgraded tube both went in with the use of basic hand tools. From start to finish, the job took less than three hours.





1. Here's the stock intercooler. Disconnect the battery before install, and remove stock air box or intake system the truck from for an easier installation.



3. Rotate the A/C condenser up and out, away from vehicle. Take care to prevent damage to A/C lines.



2. Remove the plastic A/C line protector on passenger side. With a 13mm socket or wrench, loosen the four bolts holding in A/C condenser.



4. With A/C condenser turned 90 degrees, secure it to the vehicles lifted hood using steel wire.



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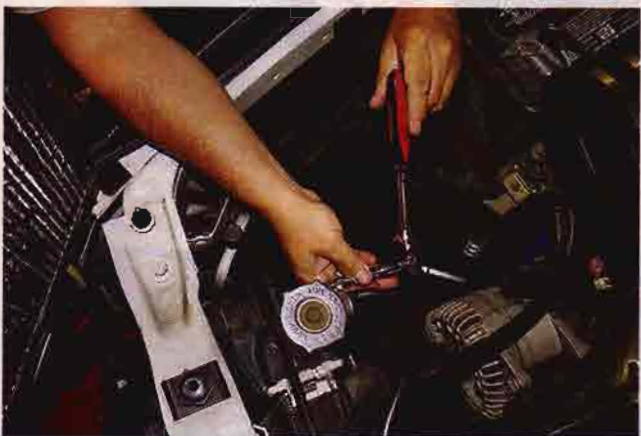
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5. Using a 10mm socket or wrench, remove the two top intercooler attachment bolts connected to upper radiator support.



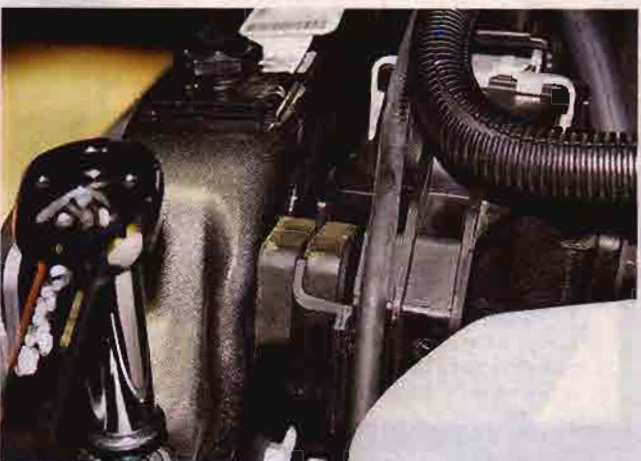
8. Remove the upper radiator support and set it aside on the top of the fan shroud. Loosen clamps on intercooler tubes using 7/16-inch-deep socket. Now remove stock intercooler and factory couplers/clamps out of the vehicle.



6. With a 10mm socket and extension, loosen the two bolts holding in radiator on back of the upper radiator support.



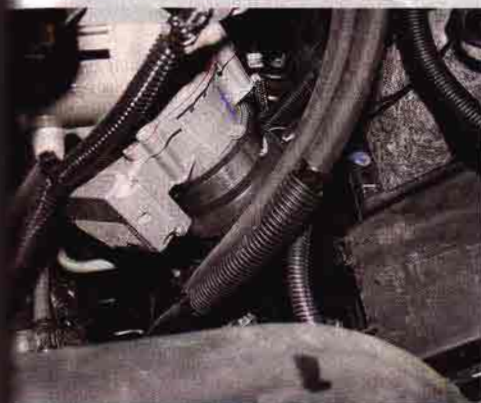
9. With a 7/16-inch-deep socket, loosen clamp on manifold. Push down on intercooler tube and disconnect from manifold.



7. Loosen and remove the four bolts holding in upper radiator support using a 13mm socket or wrench.



10. Install 3 1/2-inch hump coupler to manifold with clamps provided.



11. Install new tube. Tighten and torque clamps to 5 lb-ft.



13. With a 10mm socket or wrench, remove the two top intercooler attachment bolts connected to the upper radiator. Remove the two U-shaped rubber isolators from the stock intercooler and install on the new BladeRunner intercooler. For easier installation, tape isolators in place.



12. Remove the two upper-rubber isolators with spacers from stock intercooler and install them on the new BladeRunner intercooler.






14. Install new 3-inch silicone hump couplers and new clamps provided to intercooler tubes. The 3-inch hump coupler with bead goes on the passenger side tube. Tighten and torque clamps on intercooler tubes to 5 lb-ft. Now install Blade Runner intercooler into the vehicle.

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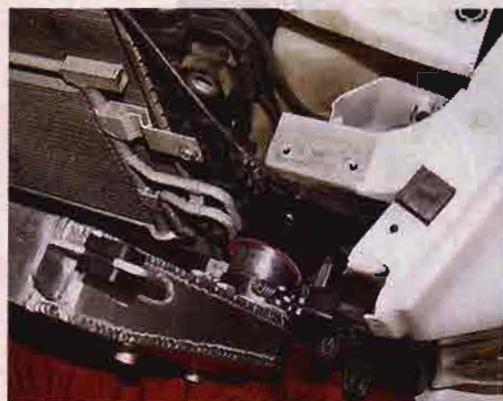
 

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15. Position and make sure intercooler rubber U-shaped isolators sit squarely on the cross beam and did not fold during installation.



16. The intercooler may need to be adjusted for proper alignment. When in position, tighten. Reinstall Radiator support. (See reverse steps 5 through 8). Tighten and torque all clamps to 5 lb-ft. Reinstall A/C condenser to new intercooler using M8 screws, and lock washers provided and tighten.



17. Reattach A/C line protector. Reinstall intake/stock air box and reconnect battery. Your installation is now complete. Check all screws and clamps periodically. Retighten if necessary.

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