

6.4L



DIESEL vs. GAS
TOWING, MPG, DYNO BATTLE

V-10

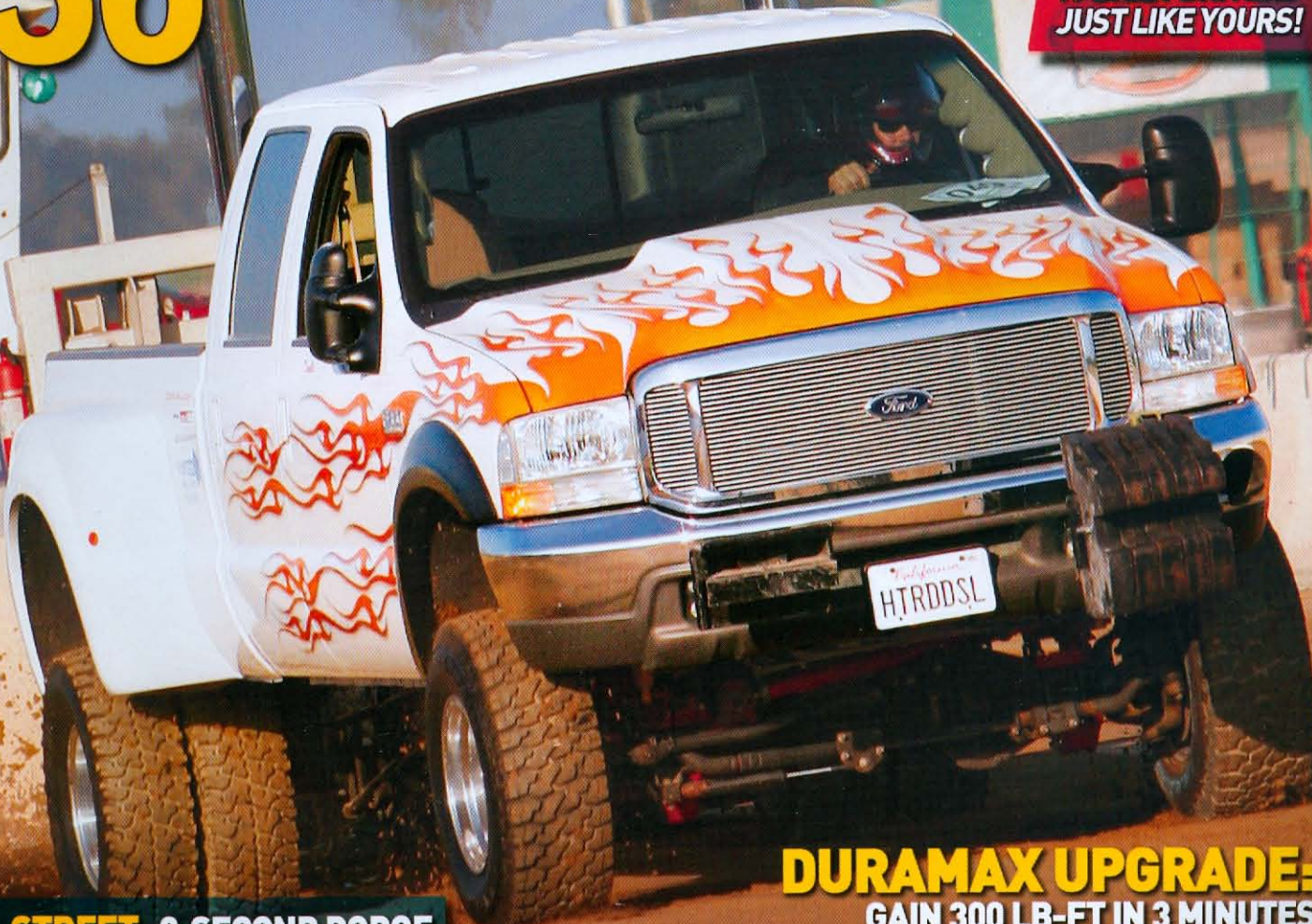


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ONE-DAY INTERIOR UPGRADE

INSTALLING INSULATION
TO REDUCE HEAT
AND NOISE

As diesel truck owners, we're proud of that bass-note burble that forces us to shut down at a drive-thru. ("You want what with that cheeseburger?" is the typical question from the McDonald's intercom.) Truth is, as authoritative as that diesel exhaust tone can be, over time, it can get tiresome and actually add to driver fatigue. If you've been hopping-up your engine, the increase in heat can be a problem as well. Without sufficient insulation from heat and sound, your diesel rig could end up being a hot and noisy ride—or a less than comfortable experience, at best. That may be kind of fun on a short run, but not on a longer drive.

Personal comfort aside, high noise and heat levels can also interfere with your reaction time and driving ability. Not only that, with good insulation, your air conditioner will operate more efficiently (thus reducing fuel consumption and the risk of radiator boil-over). To see what's involved in reducing ambient sound and heat in a diesel pickup, we sought out some expert assistance from Tim Cox of Quiet Ride Solutions to help with a '96 Dodge Ram dualie.

WHY TRUCKS ARE LOUD

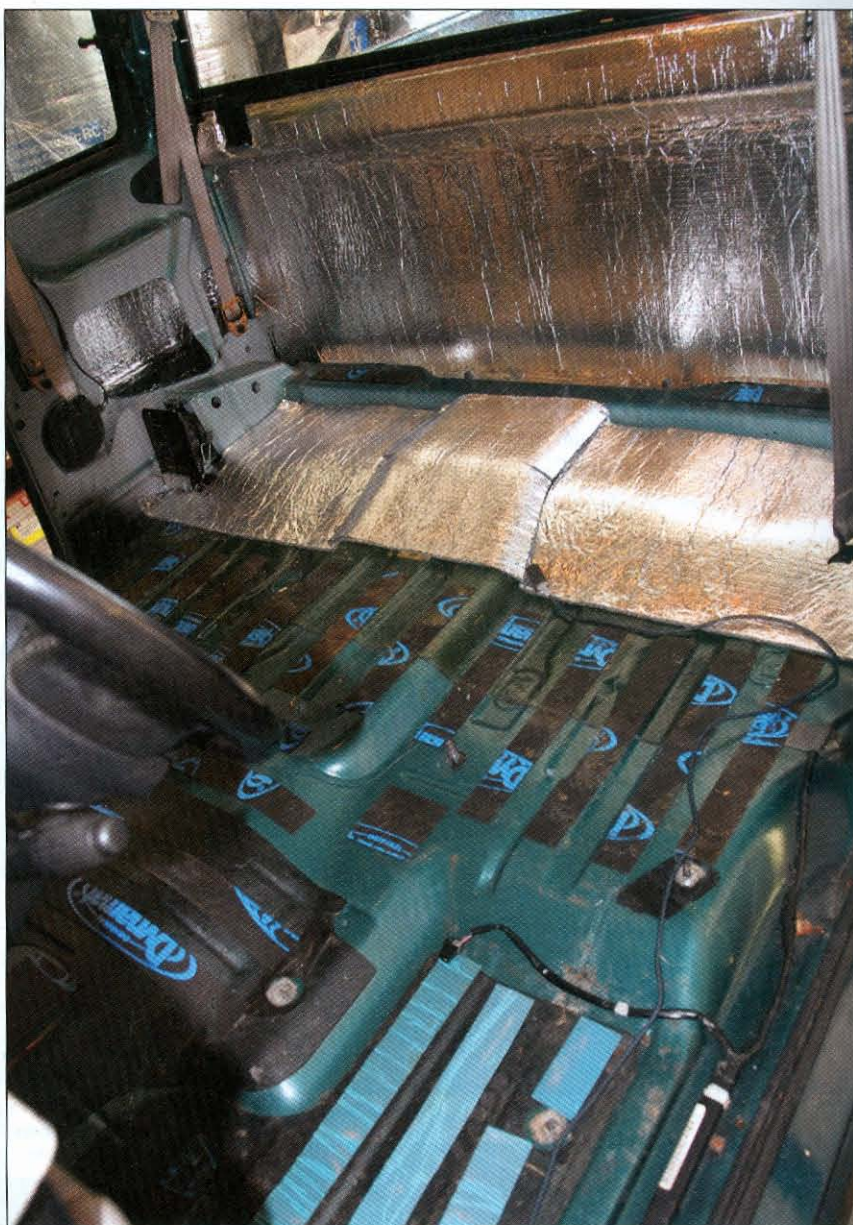
Sound can emanate from a least two different sources: via a solid material (the frame and body panels) and through the air (the exhaust pipe and the air intake). Lowering airborne noise might require toning down that turbo noisemaker under the hood, which is probably not an option on your diesel truck—we don't want to spoil all the fun here.

However, one option is to check the weatherstripping on the windows. If you spot any big cracks or missing chunks, install new rubber. In addition, inspect the floorboard and firewall for any unnecessary openings. These can be filled with spray-on foam that's typically used for filling holes and cracks in home remodeling projects.

HOW TO MAKE IT QUIETER

As for minimizing vibration-borne noise, the basic approach is similar to placing your hand on the skin of a drum. Flat areas of your truck's sheetmetal produce the most sound and need the most attention, but the entire cabin area should be insulated wherever possible. Installing Dynamat, a material composed of synthetic rubber and asphalt, is the rough equivalent of placing your hand on the drumming motion of your vehicle's sheetmetal panels. Quiet Ride, the country's largest distributor of Dynamat, starts an insulation project by putting down intermittent strips of this self-adhesive material on the sheetmetal.

Why not use just one big sheet? Keeping the cost down is one reason, and Cox says those individual strips work just as well. How so? Imagine dropping a stone in a lake, forming ripples. Those waves of water provide a visual analogy to sound waves, and the Dynamat strips act as breakwaters to reduce the motion.



You'll need to strip out the interior of the cabin to properly install Quiet Ride's heat- and sound-deadening materials. At this point, some of the foil-backed padding was already in place in the back of the cabin. Dynamat strips were also installed on the floor.

“Without sufficient insulation from heat and sound, your diesel rig could end up being a hot and noisy ride.”

A layer of Quality Heat Shield, dense padding bonded to a reinforced layer of aluminum foil, is applied next. It's important that the foil be placed on top instead of against the sheetmetal for several reasons. It not only serves as a skin to protect the padding but also creates an air pocket similar to a double-pane thermal window. It's that layer of air that provides the insulation (sound travels more easily through solids).

THE RESULTS

As just one example, we noticed a drop in sound levels of 10 dB or more, depending on the vehicle speed, in our Dodge Ram. Under hard acceleration, the level was about the same (you already knew that diesel vibes are pretty much unstoppable, right?). At idle and cruising speed, though, the sound level became significantly lower, making for a much more pleasant drive on a long haul.

While 10 dB might not sound like a lot, keep in mind they are measured on a logarithmic scale, so a decrease of 20 dB represents approximately a



The blue backing tape peels off to expose the self-adhesive side of the Dynamat.



Then, simply press the Dynamat into position. Strips can work just as well as one solid sheet.



Use a roller to press the Dynamat strips in place so they bond tightly with the sheetmetal.



The factory insulation is pretty minimal, consisting of low-density foam in the foot wells and plastic bags filled with fiberglass wall insulation thrown into the rear quarters of the cabin.



Spray adhesive on the underside of the padding. A double application on the edges is a good idea to ensure a tight bond.

50 percent reduction in sound. As for reducing temperature, the foil also helps to reflect back heat emanating from the engine and exhaust system. According to Quiet Ride, this material acts as a fire retardant and reflects back 97 percent of infrared energy, resulting in a temperature drop of as much as 30 degrees F. As already noted, this reduction can benefit both the passengers and the engine.

FOR THE DO-IT-YOURSELFER

It's fairly easy to put in the materials—it usually takes less than a day—and Quiet Ride offers a wide range of pre-cut kits for trucks, cars, RVs, and other projects. A universal package that you can custom fit is also available. It's important to make sure the sound-deadening materials form a consistent barrier or envelope that's sealed with foil tape at the seams and is securely glued down. **DP**



This close-up shows the top layer of reinforced aluminum foil and dense fabric padding.



Apply the spray-on adhesive to the Dynamat strips.



After adhesive is applied to both surfaces, put the Quality Heat shield on the Dynamat strips.



The insulation can be fitted into partially enclosed areas by folding it.

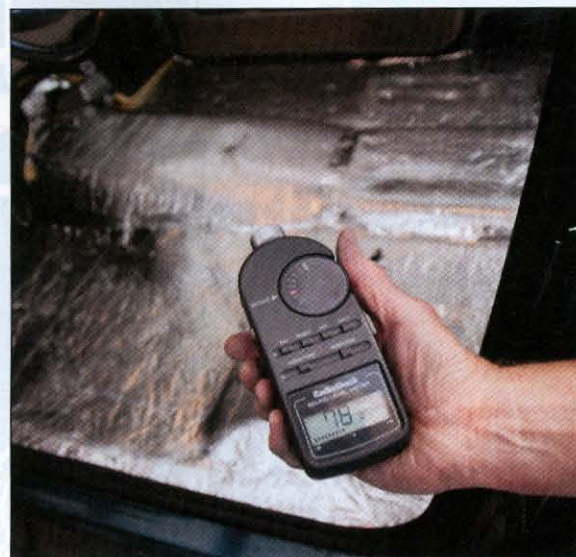
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When the factory carpet was stripped out, we discovered a leak in the cabin. Fortunately, there was no rust damage, but we had wondered where that musty smell was coming from.



Be sure to apply foil tape to all seams.



This decibel meter showed an immediate drop in sound levels after installing just the insulation. Once the interior is reinstalled, the noise level will be reduced even more.



Quiet Ride used our '96 Dodge Ram as a template to create a new precut kit. The company has hundreds of different templates on file to create precut kits for all types of vehicles.



Once all the shielding is in place, it's almost a shame to cover it up with carpet, but we noticed a marked change in the sound level.

Source

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