

INSTALLING THE NEW HIGH-PERFORMING BANKS SPEEDBRAKE

DIESEL[®]

BUILDER

DMAXX



'39 D-Series Pickup
Stuffed With A 7.3-Liter
Navistar MaxxForce 7

STRIKER

F-350

BOLD & NEW

A Kit To Transform
An F-Series Pickup
Into A Modern
Head-Turner

See How Hulst
Customs
Did It



AMAZING DIESEL SWAPS

- CUMMINS-POWERED DODGE 1500
- POWERSTROKED '96 FORD BRONCO
- CUMMINS POWERED F-250

PLUS



How The Pros
Swap A Cummins
Diesel In A Ford!

HAYES AMERICAN MUSCLE MEET & DRAG RACE



Display Until 10/26/09 JULY/AUGUST 2009

\$5.99US



08>



Banks' speedbrake controls speed by controlling the trans, converter and variable turbo.



down an incline. But that's not all.

The Banks SpeedBrake was engineered to electronically control the transmission, torque converter and factory variable-vane turbocharger, all in an effort to provide additional braking force—of the truck and its heavy load—totally independent of the vehicle's front and rear brake system. A Banks PowerPDA is used as the control center and interface between the Banks software, wire harness and controller, and the factory components in the truck. The PowerPDA is a Palm Tungsten E2 that can be purchased directly from Banks, or, if you wish, you can supply your own. The Palm can still be used for all of its normal PDA functions, even with the SpeedBrake software installed.

Functionally, it features three modes of operation: the "On"

mode activates the SpeedBrake any time you are off the throttle by downshifting the transmission (without over-revving the engine) and closing the turbocharger vanes to achieve braking and slow the truck to approximately 15 mph. In the "Speed Control" mode, the SpeedBrake varies the position of the turbocharger vanes and selects an appropriate gear to best maintain a pre-selected target speed between 25 and 75 mph. In the "Off" mode, the unit has no effect on normal operation of the truck. Additionally, the SpeedBrake has a "Foot Brake Activation" mode. When enabled and in the "On" mode, it will cause the SpeedBrake to become active only when the foot brake is applied, thus effectively making the foot brake also an activation switch for the SpeedBrake func-

tionality. When the SpeedBrake is in "Speed Control" mode and the "Foot Brake Activation" mode is enabled, it will operate in normal "Speed Control" mode, either limiting speed or doing nothing, depending upon vehicle speed and SpeedBrake settings; but when the foot brake is applied—such as when exiting a highway or slowing for traffic—the SpeedBrake will act as though it is in "On" mode, closing the turbo vanes and downshifting the transmission to provide maximum braking according to the strength setting on the SpeedBrake. Another big bonus of using the SpeedBrake is that it will reduce wear and tear on the wheel brakes while

making towing heavier loads safer. What's more, you still have the full functionality of the wheel brakes, which can be used whenever necessary.

The SpeedBrake also features OBD II scan-tool capability, which allows the user to read, interpret and clear diagnostic trouble codes should the "check engine" light come on for any reason. It also has an anti-skid safety program built into its operation. The system is so effective at slowing the truck that consideration needed to be given to operation when driving on slippery roads. The

SPEEDBRAKE INSTALL



2

2 Before starting the installation open the Palm Tungsten E2, plug the wall charger into a wall outlet and then plug the charger into the PDA to allow it to charge while you are working on the truck.



3

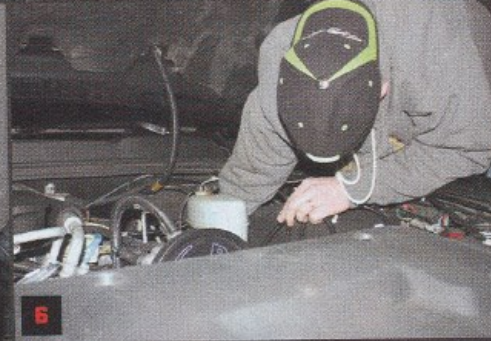


4

3-4 The first step actually performed on the truck is to disconnect the negative battery terminal from both batteries and secure the cables so they do not touch the posts during the installation.



5



6

5-6 Next, place the SpeedBrake harness on the fuse box under the hood on the driver side, locate the 20-pin transmission intercepting connector and route it down to the transmission following the factory transmission harness.



7

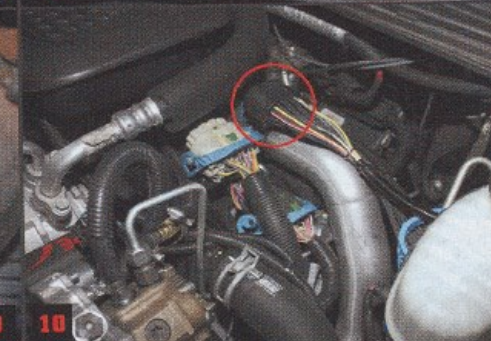


8

7 Carefully route the harness to the passenger side of the transmission, avoiding any areas that might expose the harness to damage from moving or hot parts. The main transmission connector is located in the passenger-side rear corner of the transmission and can be unplugged by applying pressure on both sides and pulling out the connector.



9



10

8 Insert the female connector on the SpeedBrake harness into the transmission connector and then insert the transmission connector from the factory harness into the male connector on the SpeedBrake harness. Make sure the connections are properly oriented and properly seated before moving on to the next step.

9 Secure the SpeedBrake wiring harness with the supplied cable ties. Place them along the factory wiring harness, up the driver's side of the engine to the fuse box.

10 Locate the large black wire harness locking connectors between the brake fluid reservoir and the engine. Lift the blue connector lock and disconnect the black connector.

DIESEL TECH



11-12. Insert the factory male connector into the female connector on the SpeedBrake harness and insert the male connector on the SpeedBrake harness into the female connector on the factory harness. Make sure the blue locks are fully seated on both connectors.

13-14. Next, attach the SpeedBrake harness ground ring terminal to the existing ground bolt on the firewall by removing the nut, sliding the ring over the bolt and then reinstalling the nut. Make sure the ground location is clean—no dirt, grease or corrosion should exist; otherwise the SpeedBrake may not function properly.

15. Locate the rubber grommet on the driver's side of the firewall and carefully cut a 1x1-inch X-shaped incision in the grommet to pass through the SpeedBrake harness. To accomplish this, you will need to make another incision on the inside portion of the grommet. Disconnect the four-pin intercepting connector and route the two-connector in-cab cable from the SpeedBrake harness through the grommet.

16. Remove the fuse access panel from inside the cab.

17-18. Remove the lower knee bolster panel by removing the 10mm bolt at the brake-release lever and the Phillips screws at the lower edge of the panel.

19-20. Gently pull out the panel by grasping it on either side of the steering column and unplug the harness on the backside. Set the panel aside for reinstallation later.

21. Reconnect the four-pin intercepting wire harness to the SpeedBrake in-cab harness and locate the four-pin connector in the factory harness under the steering column.

22. Insert the male four-pin connector from the SpeedBrake harness into the female four-pin connector in the factory harness. Insert the male four-pin connector from the factory harness into the female four-pin connector on the SpeedBrake harness and secure the harness with supplied cable ties. Keep the cables away from pedals where they could become tangled.

SPEEDBRAKE INSTALL

SpeedBrake processor monitors and compares front- and rear-wheel speed, and if a differential in speed of more than 5 kph is detected, the SpeedBrake automatically disengages itself and alerts the driver to apply the foot brake. The Banks anti-skid safety feature is similar to the function of the factory anti-lock braking system.

We wanted to learn more, so when Brad Lett decided to install the Banks SpeedBrake on his '08 Chevy Silverado 2500 HD in his garage at home, we asked to follow along. First, a little background. Lett uses his truck to tow his '69 Camaro in a 35-foot enclosed trailer on a regular basis, so additional stopping power was a welcomed upgrade and a huge safety-margin bonus when towing his prized Camaro. Those are pretty simple ground rules, if you ask us, and when we saw that the entire installation took only about two hours, including time for photography, it naturally leads us to believe that almost any home "mechanic" should be able to finish the installation in roughly the same time using only basic hand tools.

The basic SpeedBrake installation consists of disconnecting the batteries and routing the supplied wiring harness from the factory ECU on the top side of the engine down under the truck to connect to the transmission harness. Another part of the Banks wiring harness routes to the top of the fuse box (on the driver-side fenderwell), where the SpeedBrake module will be mounted. The final leg of the harness is routed inside the truck cab, where it interfaces with the factory harness under the dash. An OBD II interface cable also is supplied and connects to the Banks harness.

The team of Banks engineers developed the SpeedBrake harness using factory mating connectors to intercept the factory signals to make the installation easier and more secure, since the installer does not have to cut and splice any wires on the factory harness. With the intercepting connectors on the SpeedBrake harness, you simply unplug the factory connector, plug it into the female end of the interceptor and plug the male end of the interceptor into the factory connector. By using this method on the harness, the Banks engineers also made sure that you do not make mistakes while installing the unit—such as splicing into the wrong wire or not getting a solid connection with the splice.

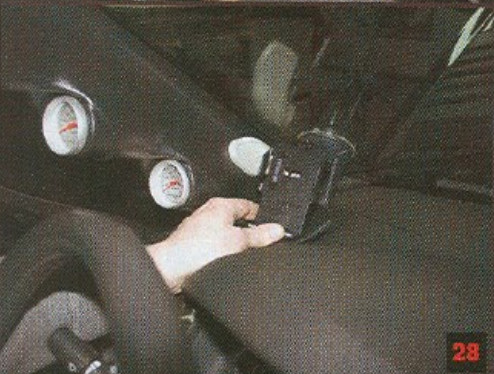
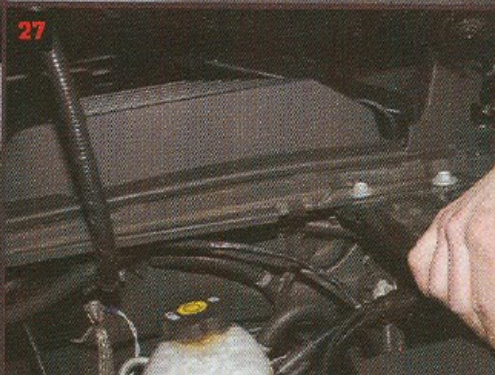
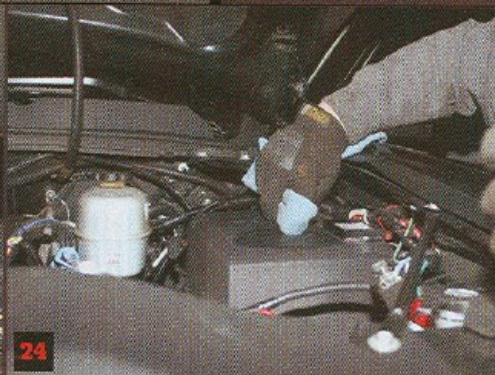
While driving Lett's truck with and without his 35-foot trailer, before and after the SpeedBrake installation, we witnessed a dramatic difference in braking performance. Before the installation, when he let off the throttle, the truck would simply coast, scrubbing off very little speed despite the mass of the rig and the large tires. With the SpeedBrake installed and operating in the "On" mode, when he let off the throttle, it felt as if he applied the brakes heavily, as the truck came almost completely to a stop, and all without once touching the foot brake pedal.

As Lett put it, "I couldn't believe the difference in the stopping power, pulling a heavy load or even when empty—it is as if you don't need brakes at all." He added, "The SpeedBrake is an absolute must for anyone who pulls any size trailer. I saw the ads by Banks, and it did look pretty cool, I admit, but I was not expecting the SpeedBrake to work as effectively as it does. I have driven fire trucks and several 3/4- and 1-ton pickups with your typical exhaust Jake brake, and while they worked well, they made a ton of noise and are time-consuming to install. I believe the Banks SpeedBrake would hold more than its own with any Jake brake on the market." Lett concluded, "I strongly would encourage anyone even thinking of a brake-assist system on a Duramax diesel to consider purchasing the Banks SpeedBrake today." That's how elated he was with the ease of installation and, above all, how well the system works.

Since Lett's truck is lifted, it was easy to crawl under it to attach the harness to the transmission and to take photos. If your truck is stock height or lowered, you will need to lift the truck and properly support it with jackstands before working underneath. In these situations, you should use caution, and always practice safe garage techniques whenever wrenching on, around or underneath your truck. If you do not feel comfortable performing this installation, it can easily be installed by your local diesel performance shop, and Banks has a number of install specialists around the country who sell, install and service Banks systems.

For those of you who plan to install the SpeedBrake on your own, follow along as we witness how Lett installed a typical Banks SpeedBrake system on his '08 Silverado 2500 HD. **DB**

INSTALL CONTINUES



SPEEDBRAKE INSTALL

AUTOMOTIVE HALL OF FAME: GALE BANKS RECEIVES 2009 DISTINGUISHED SERVICE CITATION

Words: Chris Tobin

Photography: Courtesy of
Automotive Hall
of Fame



While it may not be the Canton, Ohio, Hall of Fame, the Dearborn, Michigan-based Automotive Hall of Fame is no less important to those with automotive interests. This year the organization presented its 2009 Distinguished Service Citation awards at its annual awards luncheon, held in conjunction with the National Automobile Dealers Association National Convention (NADA) in New Orleans. The Distinguished Service Citation is the Automotive Hall of Fame's oldest recognition, initiated in 1940, and recognizes an individual, either currently employed or recently retired, who has made significant contributions to the motor vehicle industry or his or her respective organization.

Five individuals received the citation this year: Gale Banks, President, Gale Banks Engineering; Juliana Terian Gilbert, Chairman of the Rallye Group (automotive dealerships in Roslyn, New York); Derrick Kuzak, Ford Motor Company Group Vice President of Global Product Development; Mark Schienberg, President of the Greater New York Automobile Dealers Association; and Ed Welburn, Vice President of Global Design, General Motors Corporation.

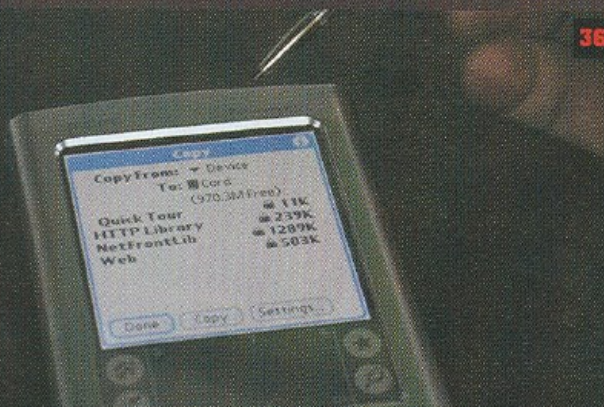
Gale Banks has spent 50 years working on the improvement of internal-combustion technology and the development of modern motor vehicle engines, including complete turbo motors. He and the company bearing his name are known for high-performance engines, both diesel and gasoline, and Banks still holds many speed records in various forms, in addition to making products that appeal to both diesel and gasoline enthusiasts, including the SpeedBrake featured here.

Our congratulations to Banks for this recognition, and our heartfelt thanks for all he has done on behalf of high-performance enthusiasts everywhere. For more information regarding the Automotive Hall of Fame and its many programs, check out www.automotivehalloffame.org.

Gale Banks received the Distinguished Service Citation from the Automotive Hall of Fame, recognizing his more than 50 years of dedication to all facets of high performance—going fast and making power.



23. Reconnect any harnesses disconnected earlier and reinstall the lower knee bolster with the factory hardware. **24.** Clean the top of the fuse-box cover with non-oil-based solvent such as acetone, mineral spirits, denatured alcohol or lacquer thinner to ensure good adhesion of the hook-and-loop interlocking fasteners used to mount the SpeedBrake module. **25.** Attach one side of the adhesive-backed hook-and-loop fasteners to the bottom side of the SpeedBrake module. **26.** Remove the protective paper on the other side of the hook-and-loop fasteners and carefully position the SpeedBrake module on the top of the fuse-box cover and apply light pressure for 60 seconds to create a strong bond between the cover and fasteners. **27.** Insert the SpeedBrake harness 20-pin connector into the plug on the SpeedBrake module and secure the rest of the wire harness away from any heat sources or moving components using the supplied cable ties. **28.** Find a smooth, flat surface inside to mount the PowerPDA. Adjust the angle of the mount, clean the mounting area and suction cup, and install. Lett mounted his PowerPDA in the lower corner of the windshield, where it's out of the way but clearly visible. **29-30.** Install the Banks OBD II interface cable on the OBD II connector and secure it with a cable tie. **31.** Connect the six-pin connector on the OBD II cable to the six-pin connector on the SpeedBrake wire harness, making sure it is fully seated. **32-33.** Route the RJ12 connector (phone-like connector) on the OBD II interface cable under the dash and to the fuse panel access cover, and then up to the top of the dash where it can be plugged into one of the receptacles in the base of the PowerPDA docking station. **34.** Reinstall the fuse panel access cover and reconnect the negative battery terminals to complete the installation. **35-36.** Insert the Banks SpeedBrake SD card into the slot on the top of the Palm Tungsten E2 and follow the instructions to download the Banks Brake software from the SD card to the Palm device. The SD card then can be removed from the slot, but keep the software as a backup.



Note: The PowerPDA used in this article has been upgraded to the new Banks iQ. Call 1-800-601-8072 for details!