

# BRAKING POWER



## Engineered Brake and Transmission Upgrades *For Slowing and Going*

Your truck's wheel brakes are fine for lightly loaded cruising on the flatlands. But when you rely on them to handle a heavy load or a steep grade, you're flirting with disaster. Sustained use overheats braking surfaces. Drums or rotors can literally glow red hot, and composite linings break down, lubricating surfaces where you want friction. By the time you realize what's happening, it's too late.

And it's all downhill from there!

Downshifting won't help, either, because diesels lack the compression-braking characteristics of gasoline engines. That's why Banks Brake® exhaust braking system is such a desirable addition to a diesel pickup. It works by closing a large butterfly valve in the exhaust, which creates backpressure. The engine has to work to compress air against this restriction, which slows the truck. Banks Brake has the added benefit of promoting engine power when not in use.

Towing or hauling heavy loads isn't just tough on your brakes. It also puts a strain on your stock torque converter, which was engineered to do its job with little safety margin for added stresses. However, making it any stronger than absolutely necessary adds cost to a vehicle, and you know how the rest of that story goes. As a result, Banks engineers have also created the diesel-tough, slip-resistant Banks Billet Torque Converter, with more than twice the stock torque converter clutch capacity.



### **Banks Brake® Housing Assembly**

- Giant butterfly valve with fixed orifice design provides highest pressure within Cummins' recommendation
- Large-bore housing promotes engine power
- High-chromium stainless steel assembly withstands heat and won't stick
- Spring-loaded shaft seal prevents soot contamination
- Fail-safe "default open" position prevents power loss
- Factory-tested and calibrated for consistent, reliable performance; never needs calibration
- Machined bead in casting prevents pressure leakage
- Timed valve-closure rate dramatically smooths brake engagement and disengagement
- Pneumatic actuator with protective high-tech coating
- Remote-mounted vent keeps actuator clean and dry
- Quickly installs—NO WELDING REQUIRED



## Banks Brake<sup>®</sup> EXHAUST BRAKE SYSTEM

Banks Brake produces higher, more sustained braking power than conventional exhaust brakes. Its exclusive electronic features improve operation and drivability, and the computerized brake control (CBC) module automatically senses throttle position, controls brake engagement and cuts out annoying brake noises. The fast warm-up function prolongs brake durability. Automated brake disengagement at low speed smooths stop-and-go driving. Built for years of trouble-free service, Banks Brake never needs adjustment.

*(Fits all '03s, and '04 manual trans only)*

### The Brake with a Brain COMPUTERIZED BRAKE CONTROLLER (CBC)

To replace the commonly used idle-detection throttle switch that sticks, Banks invented a sophisticated sensor: Banks Computerized Brake Controller (patent pending). With this technological "brake-through," Banks Brake became the world's only electronically controlled exhaust brake. Not only does Banks CBC accurately sense throttle position, it provides a fast warm-up, and cycles Banks Brake at every cold start to prevent sticking. Perhaps most enjoyable is its ability to disengage Banks Brake below 15 mph, so there's no lag when you accelerate from slow speeds or a standstill.



### Vibration-Resistant Mounting CRADLE-MOUNTED POWER UNIT

This fully pre-assembled module isolates pump vibrations, so all you hear in the cab is a gentle, reassuring "whoosh" as Banks Brake does its job. Banks Cradle-Mounted Power Unit is factory tested and calibrated for consistent performance from Day One, and never requires adjustment.



### High-Tech Details

#### BANKS BRAKE<sup>®</sup> HOUSING ASSEMBLY

Only Banks protects the pneumatic actuator from exposure to harsh extremes with a corrosion-impervious coating. Constructed of high chromium stainless steel, the shaft-and-bearing assembly can stand up to hot temperatures and keep the butterfly operating smoothly. Its spring-loaded seal keeps the shaft clean, so there's never any sticking from soot.

“I'm very impressed with the Banks CBC operation. The automatic warm-up feature is very cool. The overall operation and ease of installation was supreme. Banks has stepped up to the plate, and made another outstanding product improvement. Bravo!”

*Jim of Bothell, WA*

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Highly recommended for trucks with an automatic transmission

“Banks Brake and SmartLock work like a charm. It’s great to be able to take a long downgrade without ruining the seat of your Wranglers.”  
*Anthony Keidis of St. Anthony, ID*

## Banks SmartLock<sup>®</sup> TRANS BRAKE

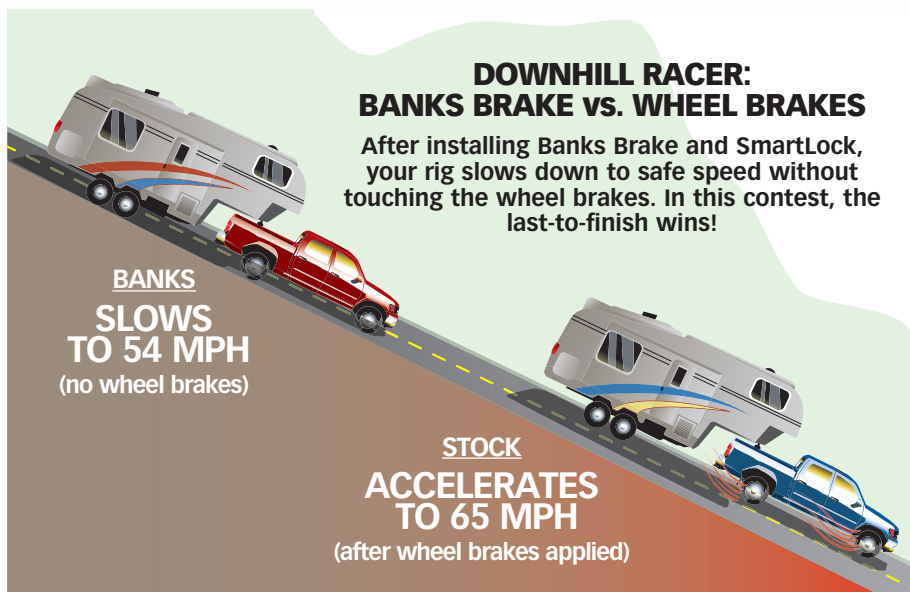
Your automatic’s torque converter is designed to get the truck moving, not to slow it down. Under exhaust brake operation, the torque converter absorbs some of the braking force and generates excess heat that transfers to the transmission. More heat = shorter transmission life.

By maintaining a cool and safe environment in heavy-duty conditions, Banks SmartLock prolongs the life of your automatic transmission. SmartLock electronically senses when to lock the torque converter and raise transmission-line pressure, providing a solid connection, eliminating slippage, and keeping the transmission fluid cool. Less heat = longer transmission life. Easy install! (*Fits '03-04 235/250/305-hp vehicles only*)

“The real test was in the Rocky Mountains. We exited Eisenhower Tunnel at 11,500 elevation and started down a 12-mile, 6-7% grade. Before it took 12-15 minutes of brake mashing. This time I just shifted out of overdrive, left it in drive and Banks Brake and SmartLock kept a steady 55 mph all the way to the bottom of the hill. Didn’t touch the brakes once.

Since a brake job for my truck is over \$500 and one on the trailer over \$300, and figuring I cross the Rockies 10 times a year, as far as I’m concerned Banks Brake and SmartLock have already paid for themselves. This doesn’t even take into consideration the safety aspect. I am very happy and already plan my next Banks purchase.”

*Tom of Springfield, TN*



## Test Results STOCK VS. BANKS BRAKE and SMARTLOCK

The Banks engineers conducted braking comparison tests on a 5-mile stretch of Interstate 5, famously dubbed “the Grapevine” by big-rig drivers who crawl its long, 6% (steep) downgrade into Southern California. To establish a stock baseline, initial runs of the truck-and-trailer combination were conducted with Banks Brake in “off” mode and SmartLock disengaged. Cresting the Grapevine at 60 mph, they descended in 3rd gear, with overdrive turned off.

Without using the wheel brakes, the truck and its load quickly accelerated to an excessive speed. To avoid calamity, the wheel brakes were applied, and 65 mph was maintained for the remainder of the run with constant brake application. With the trailer behind it, the stock truck clearly required heavy use of the wheel brakes to prevent runaway speed.

In addition, the transmission fluid temperature rose 11%, exposing the automatic transmission to additional heat that diminishes its durability.

With Banks Brake and SmartLock engaged, the engineers repeated the test. Beginning the descent at 60 mph in 3rd gear, Banks Brake’s effectiveness was immediate and notable. Without lurching, the truck’s speed eased back to a comfortable 54 mph. Without touching the wheel brakes, the Banks-equipped Dodge led its trailer safely down the hill as it held 54 mph. All along, Banks Brake was nearly silent, with only a soft whooshing sound audible inside the cab while engaged.

SmartLock lived up to its role as automatic transmission protector. The transmission fluid temperature did not rise, and Banks Brake performed optimally.

“As usual, the Banks equipment operates as advertised. Banks Brake works flawlessly, and never sticks. There is a slight delay between the time you lift off the accelerator and the time the brake kicks in. That slight delay allows the brake to be much more drivable, and does not have the “on/off” feel of the Pac Brake.”  
*Stuart of San Jose, CA*

“I’ve noticed a couple of immediate consequences. The system makes you much more aware of the terrain and how much room there is to stop or slow down. But most important, I find I don’t use the service brakes nearly as often, especially as I previously did where ‘riding’ the brakes tended to increase wear and shorten service life. The truck is much more throttle responsive, too.”

*Off-Road Adventures Magazine*

**Off-Road Adventures**

“It was a snap for me to install the Monster Exhaust and Banks Brake on my Cummins-powered Dodge. I can’t believe the difference in the way this truck runs. Friends who were impressed with it stock now compare it to the muscle cars of our youth. And with all this go, comes whoa. Banks Brake saves the brakes when stopping our brick of a camper. Thanks to all of you at Banks for being so exacting in your engineering and quality control.”  
*Christopher of Oakville, CT*

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