

COMPONENTS

Found in Banks Power Systems

How Banks Power Works

It's all about airflow...

In the confines of a stock Duramax pickup, your engine's inherent power is limited by factory restrictions in the intake and exhaust. Engine power is wasted by drawing air into a barely breathing intake and expelling gases through a backed-up exhaust. These airflow restrictions are responsible for the poor engine efficiency that soaks up fuel, runs a hot exhaust, compromises performance and shortens engine life.

Banks has spent decades honing the science of engine-airflow improvement. By replacing restrictive factory parts with streamlined, free-breathing components, Banks maximizes engine efficiency, mileage and durability—liberating healthy stores of horsepower and torque.

Monster® Exhaust
VIRTUALLY ELIMINATES BACKPRESSURE
Pages 11-12

Banks Brake®
SAFE DOWNHILL BRAKING (LB7 ONLY)
Pages 31-35

Banks iQ™
DASHBOARD PC
Pages 16-18

BigHead® Wastegate
RAISES PEAK BOOST (LB7 ONLY)
Page 12

DynaFact® Instrumentation
MONITORS YOUR PERFORMANCE
Page 18

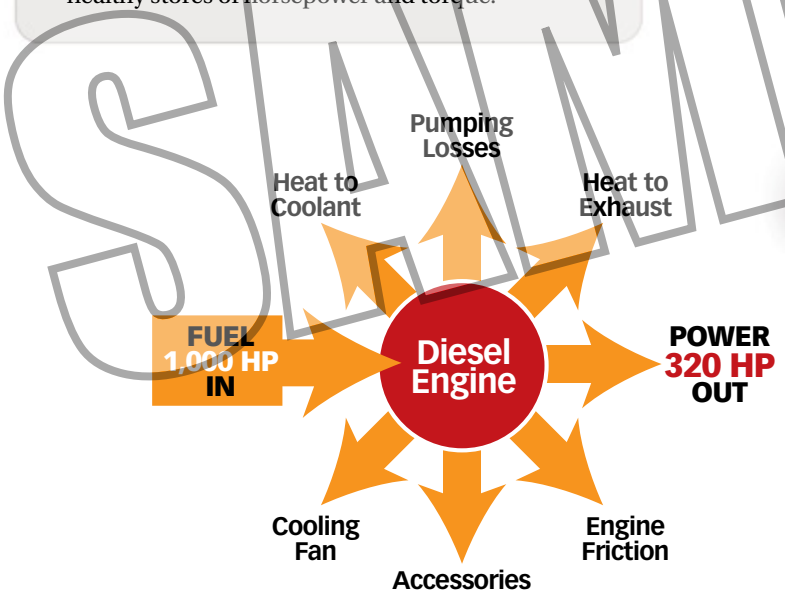
Banks Bullet™
VALUE PRICED TUNING (LB7 ONLY)
Page 13

Advanced Diesel Tuners
SIX-GUN® FOR SPORT ECONOMIND™ FOR WORK
Pages 14-17

Techni-Cooler System
COOLS INTAKE AIR
Page 10

Banks Ram-Air® Intake System
OUTFLOWS COMPETITORS
Page 8-9

Super-Scoop®
RAMS COLD AIR
Page 8-9



How airflow restrictions waste power

Think of an engine as an air pump that produces power. To run it, fuel is needed. In a typical stock vehicle, a gasoline engine produces only about 250 horsepower for every 1,000-horsepower's worth of fuel put in. Diesel engines are more efficient—they put out about 320 horsepower for every 1000 in, only wasting 68%—still leaving lots of room for improvement!

- Intake restrictions cause engine to labor (pumping losses)
- Power is robbed from the crankshaft to expel exhaust (pumping losses)
- Exhaust backpressure generates a tremendous engine heat-load
- Cooling fan runs often, wasting power and making the cab noisy
- Hot, overworked lubricants degrade faster and increase friction
- Excess fuel is wasted, worsening mileage and emissions
- Inadequate airflow chokes engine's power and torque potential

“It's rare to find a collection of bolt-on parts that actually work in harmony and build additional horsepower and torque from an engine, let alone find them all under one manufacturer's banner. Over the years, OFF-ROAD magazine has tested all manner of parts combinations, each one taking a different approach to enhancing a stock engine; some worked and some didn't. This time, we went to the source of diesel-engine performance, Gale Banks Engineering, and struck gold. Not only did it take one stop to buy and have our parts installed, but the parts worked as advertised and the results were awesome.”

Off-Road Magazine

INTAKE UPGRADES

Gain up to:
+39hp
+69lb-ft
At the Rear Wheels



Duramax LBZ system shown

Banks Ram-Air® >> INTAKE SYSTEM LB7/LLY/LBZ

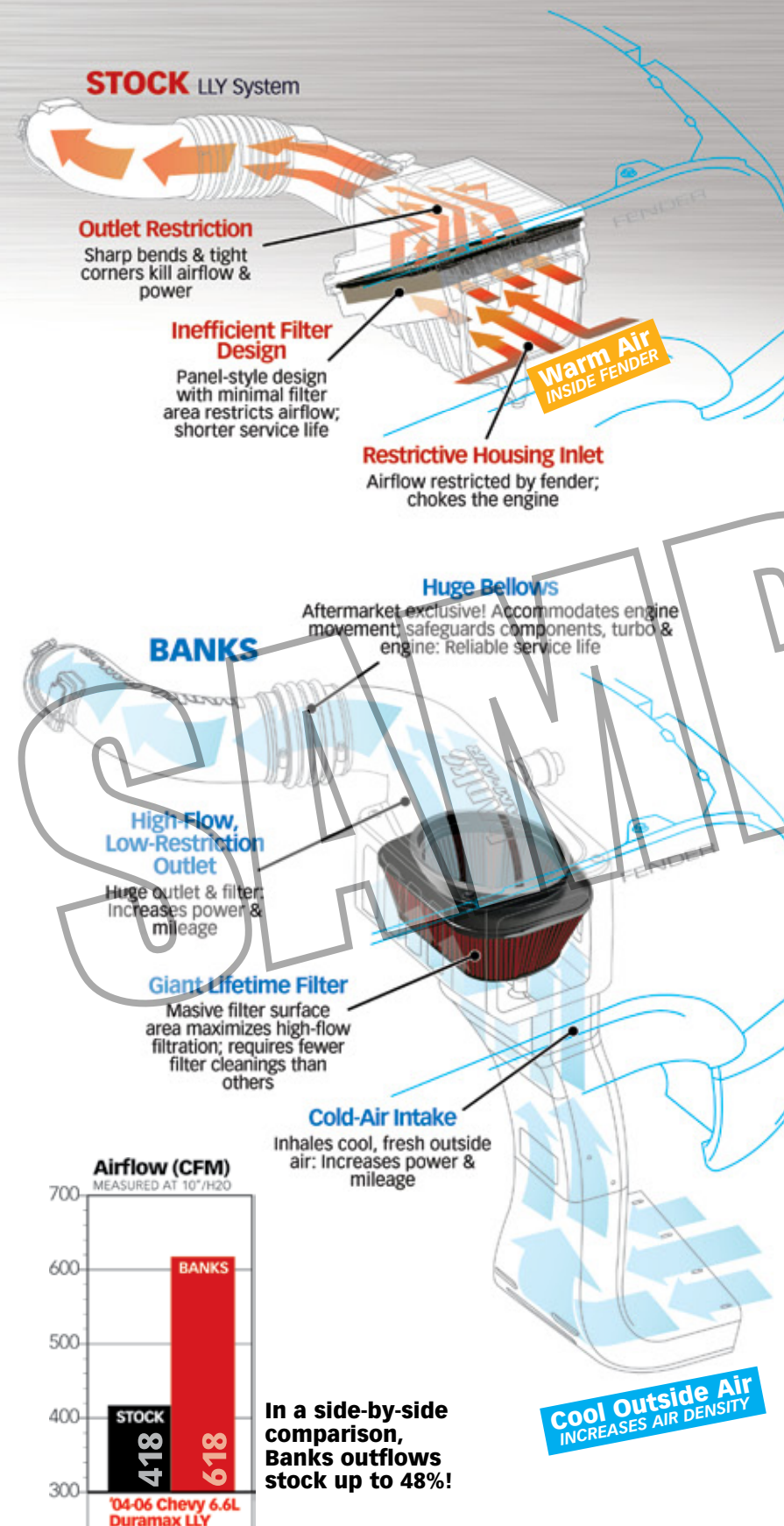
The revolutionary Banks Ram-Air intake system delivers huge gains in air density for more useable power, **adding up to +39 hp and +69 lb-ft** more than a tuner alone! It outflows the others and delivers a stunning **48%** more airflow than stock, thanks in part to the Banks Ram-Air's huge filter area, giant outlet, and the complete air filter housing that directs cool, dense air to the engine. Banks' flowbench-developed and dyno-proven Ram-Air is the only aftermarket intake with 5" bellows (4 1/2" LLY & LB7) to accommodate engine movement. Without bellows, engine movement causes components to separate or rub against and damage each other, allowing destructive particles into the engine and turbo.



Banks Super-Scoop® >> (OPTIONAL)

Stick your hand out of the window at 60 mph and you'll experience ram air. At speed, ram air acts like a natural supercharger. Banks' exclusive Super-Scoop inlet connects below the front bumper, forcing a big charge of cool, pressurized ram air into the engine. And because the air is drawn from outside the engine compartment, it has greater density and makes more power than warmer, underhood engine air.

Super-Scoop's cooler, denser air also improves fuel economy, reduces smoke and lowers exhaust gas temperatures! Rainwater and debris are funneled out of the bottom.



Airflow Equals Power

When air is drawn into a barely breathing intake, the engine is deprived of power and efficiency. And as you can see from the illustration, the stock intake system is restrictive. The inlet is cramped with tight bends, the filter design is inefficient with minimal filtering area, and the air that the stock intake *does* draw in is warmer, because it lets in the hot engine air. Warmer air is less dense, which means it has less oxygen content and therefore provides less power.

Conversely, the more air you can flow through your engine, the more oxygen will be available for burning fuel. That means greater, more efficient combustion, which results in more power. This is where the Banks Ram-Air Intake System comes in. Instead of a panel-style filter, the Ram-Air Intake uses Banks' exclusive conical 8-ply filter, with a much larger filter area and a giant 7 1/8" outlet. Banks engineers also streamlined the ducting and filter cover to further promote airflow. The cold air box's huge bottom opening and optional Super-Scoop inlet are engineered to inhale cooler, denser air from outside the vehicle. Stock systems don't draw the cooler air from underneath, and many aftermarket "filter on a stick" designs leave the filter wide-open to all the hot underhood air, which robs you of power.

Not only are the Banks Ram-Air Intake System's performance numbers astonishing, the system offers the reliability and durability of a factory intake. The new Ram-Air Intake System is a real breath of fresh, dense air for your Duramax!

INTAKE UPGRADES

Techni-Cooler® INTERCOOLER SYSTEM LB7/LLY/LBZ

The Banks engineers carefully examined the stock Duramax intercooler, and then upgraded everything! The core area of Banks Techni-Cooler is much thicker, with 34% more volume for tremendous cooling capacity. Restrictions are eliminated, starting with the end tanks' bigger inlet and outlet. The all-aluminum end tanks are larger and more streamlined than the stock ones to optimize airflow and air density for improved cooling, higher power output and lower exhaust gas temperatures. Banks' boost tubes are larger and have no kinks or smashed areas; mandrel-bending keeps the air flowing through with a minimum of pressure loss.



LB7/LLY Techni-Cooler shown

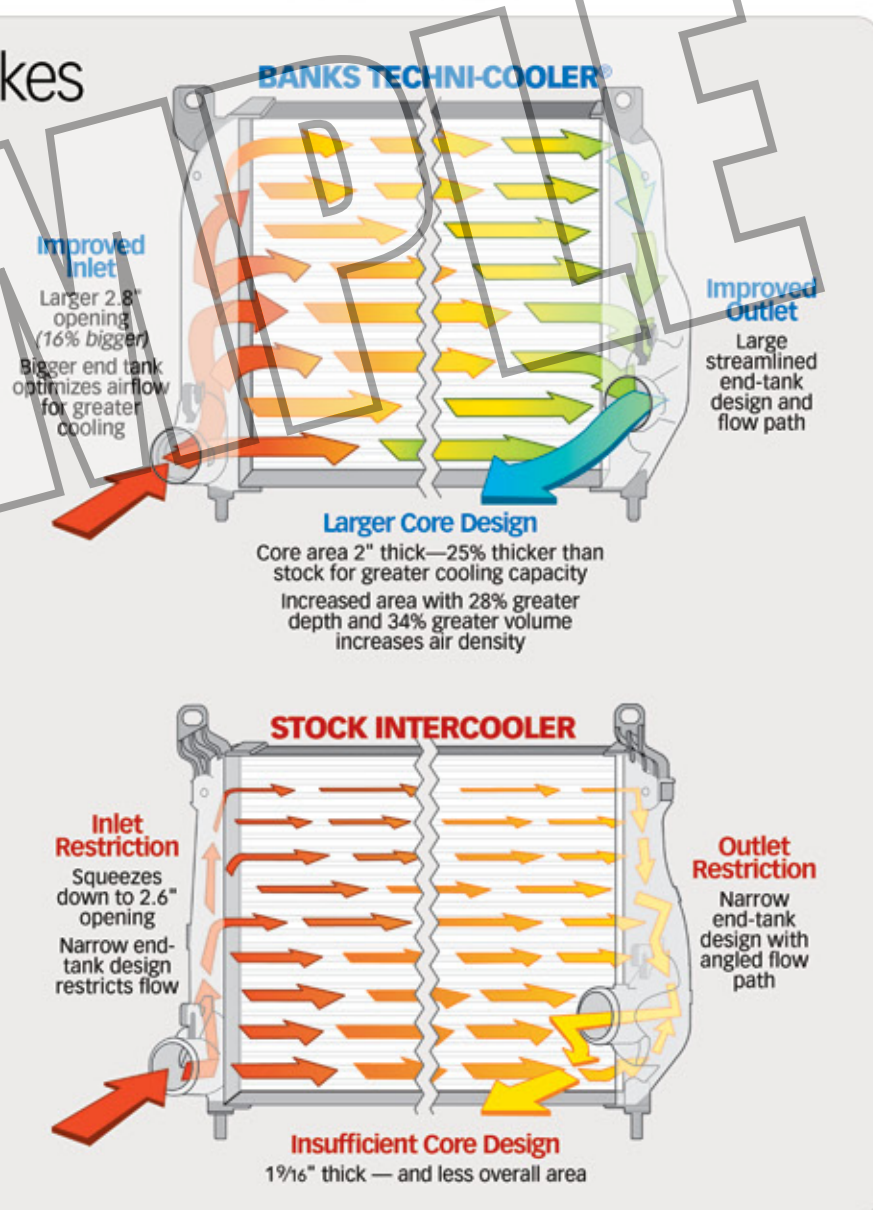
Why Big Density Makes a Big Difference

Increasing a diesel's fuel flow without also adding more air results in incomplete combustion, black smoke, wasted fuel and lost horsepower. It also builds hotter exhaust gas temps (EGTs), causing your tuner to "temp out" and pull back power.

With adequate air, the higher oxygen content allows fuel to properly combust, increasing power without smoke or high EGTs. To get more oxygen to the engine, you need to increase the density of the air. Turbochargers increase airflow, but pressurizing the air raises air temps substantially, killing air density.

The solution: larger, more effective intercoolers substantially lower boost air temperature. The cooler, denser, more oxygenated intake air allows complete fuel combustion and also produces lower EGTs. If EGTs never rise to the level where the tuner limits fuel delivery, all the additional power is always available. Lower EGTs also help to reduce the thermal load on the engine and its cooling system, which keeps them running cooler as well.

Improving airflow and air density makes a lot more power at any EGT than a computer tuner alone would get. Higher continuous power: isn't that what it's all about?



EXHAUST UPGRADES

New Diesel Duals exhaust comes with Banks' exclusive polished-stainless, slash-cut rolled-edge "ob-round" tailpipe tips (patent pending)



Monster® Exhaust SIDE SINGLE OR SPLIT-SIDE DUALS LB7/LLY/LBZ

The 4" Monster exhaust system's streamlined pipes are formed of stainless, heavy-wall tubing with mandrel (constant-diameter) bends to slash backpressure up to 98%. Banks' polished stainless-steel Monster muffler features a straight-through 4"-diameter flow-path with an exclusive expansion chamber (see page 12). Monster muffler delivers a rich, throaty exhaust sound and it doesn't just outflow stock—it flows three times better! Monster exhaust system flows up to 176% better than stock. Huge polished stainless-steel rolled-edge tailpipe tip(s)—awesome! Adjustable clamp for positioning on tailpipe (single system only).

Note: Split-side duals system is designed specifically for single-rear-wheel vehicles, and safely accommodates spare tire, shocks and brake lines.

New! Monster® Sport Exhaust



Monster Sport Exhaust is a modestly priced 100% stainless exhaust system (7" diameter muffler vs regular Monster Exhaust's 8.5" muffler); tip optional

MONSTER SPORT EXHAUST:

- 4" constant-diameter, 100% stainless system with streamlined intermediate pipe and tailpipe
- Free-flowing, polished-stainless 4-inch straight-through Monster muffler (7" diameter) that delivers a more aggressive exhaust note
- Virtually eliminates backpressure
- Nearly triples stock flow
- Lifetime Warranty

Top: Angle-cut exit
Bottom: Optional 5" polished tip

Systems for Work or Play

Banks gives you the best of both worlds: astonishing power and the power of choice. Whether you're looking for a performance boost for your daily driving, daily hauling, weekend towing or tire-scorching-fun, look no farther than Banks. From the easy-on-the-wallet performance enhancement of Banks Monster exhaust to engineered power systems that combine industry's best diesel tuning with comprehensive airflow improvements for incredible power on demand with lower EGTs, increased durability and greater fuel economy, Banks is your source.



Gain up to:
+155 hp
+385 lb-ft
At the Rear Wheels



Big Hoss® Bundle LB7/LLY/LBZ

The only way to top a Six-Gun Bundle is to add Banks' gigantic Techni-Cooler intercooler system to the package. Now you've got the Big Hoss Bundle. With its huge mandrel-bent boost tubes, much-thicker core area and superior end tank design, Techni-Cooler flows more cool, dense, oxygen-rich air into the engine than the stock intercooler. The cooler air creates better combustion and lower exhaust gas temps for power that doesn't "temp out" when you need it. It's extreme power *plus* durability! Gains up to **+155 hp** and **+385 lb-ft** at the rear wheels. Compared to a tuner alone, adds up to **50 more hp & 100 more lb-ft torque at any EGT!**

System shown for LB7 engines.

“ I am a mechanic and installed three Big Hoss Bundles on two 2005 Dodge Duallies owned by my buddies...who bought my kit for installing theirs, what a great deal!! I installed the Big Hoss on my 2005 GMC as well, all in one weekend. All three trucks have amazed the sh*t out of us with the performance that we were able to get out of them. I truly believe that we can now walk the dog off of any other vehicle on the road. ...everything fit great, I had no trouble installing anything. Thanks for the fun that we are going to have!! ”

Justin of Hightstown, New Jersey

INCLUDES:

- Six-Gun® Diesel Tuner with Banks iQ™ Dashboard PC
- Techni-Cooler® intercooler system with huge 3" boost tubes
- Banks Ram-Air® cold-air intake system with lifetime filter
- BigHead® wastegate actuator (LB7 engines)
- Polished-stainless, 4" straight-through Monster® muffler with an exclusive internal expansion chamber
- Stainless 4" constant-diameter Monster exhaust with head-pipe assembly (non-cat.-converter equipped vehicles only), intermediate pipe(s) and tailpipe (or new split-side duals Monster exhaust)
- Huge, polished-stainless rolled-edge tailpipe tip(s)
- Comprehensive Owner's Installation Manual

*Note: Palm Tungsten™ E2 not included (sold separately).

“ To build continuous useable power takes an engineered system—and I don't mean a grab-bag of parts thrown together. I mean an engineered, dyno-tested, complete system where each component works together for maximum horsepower and torque gains. ”

Speedway Illustrated Magazine

	TOWING/STREET USE:		SPORT/ HIGH-PERFORMANCE USE:	
	Stinger® System	PowerPack® System	Six-Gun® Bundle	Big Hoss® Bundle
Best horsepower gain (measured at rear wheels)	+75 hp	+100 hp	+155 hp	+155 hp
Best torque gain (measured at rear wheels)	+170 lb-ft	+230 lb-ft	+385 lb-ft	+385 lb-ft
Truck usage	Towing/Work	Towing/Work	Sport/Race	Sport/Race
Improves engine efficiency, durability & mileage	✓	✓	✓	✓
Fuel calibrated to matched airflow improvements	✓	✓		
Choose your own fuel calibration			✓	✓
Engineered power-and-performance package (level)	Mid-level	Top-level	Mid-level	Top-level
Upgradeable to Banks' higher-level systems	✓		✓	

“ What I wanted was a complete system that wouldn't toast my new truck. That narrowed things down. Among the few companies that offered tuning combined with airflow, only Banks offered a system in which all the components are engineered to work together. ”

Sportsman's Gear Magazine

TEST RESULTS

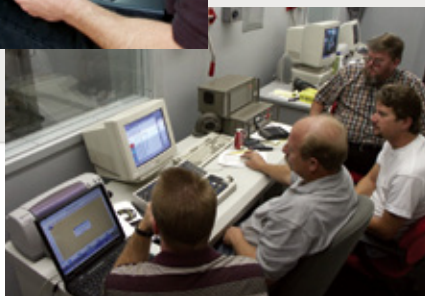


How Banks Proves Its Performance Setting the standards in aftermarket testing

When it comes to testing products, there's the easy way, and then there's the Banks way. The Banks methodology of testing is as grueling as it is time-consuming. Instead of settling for some quick and unrealistically high power numbers from a simple acceleration dyno test and then pronouncing the product ready for sale, Banks makes its products prove their mettle in a variety of sustained tests under some pretty extreme conditions. Conditions above and beyond what most truck owners would ever put their vehicle through. The result is products that can easily stand up to real-world punishment.



Of course, all of the testing in the world wouldn't mean much without the right equipment to do the job. That's why Banks engineers use electronic data acquisition equipment that's on par with the apparatus used by the major automotive manufacturers. Banks' cutting-edge testing is well-known in the automotive industry. In fact, Banks provides data acquisition and engineering expertise to business associates such as DaimlerChrysler, Bosch and Cummins!



More than 30 engineers and technicians take on massive amounts of research and testing to bring each Banks product to fruition. From engine dyno tests, to chassis-dyno tests to on-the-road performance tests, the Engineering department eats, breathes and sleeps power optimization.

Engine differences in Duramax vehicles

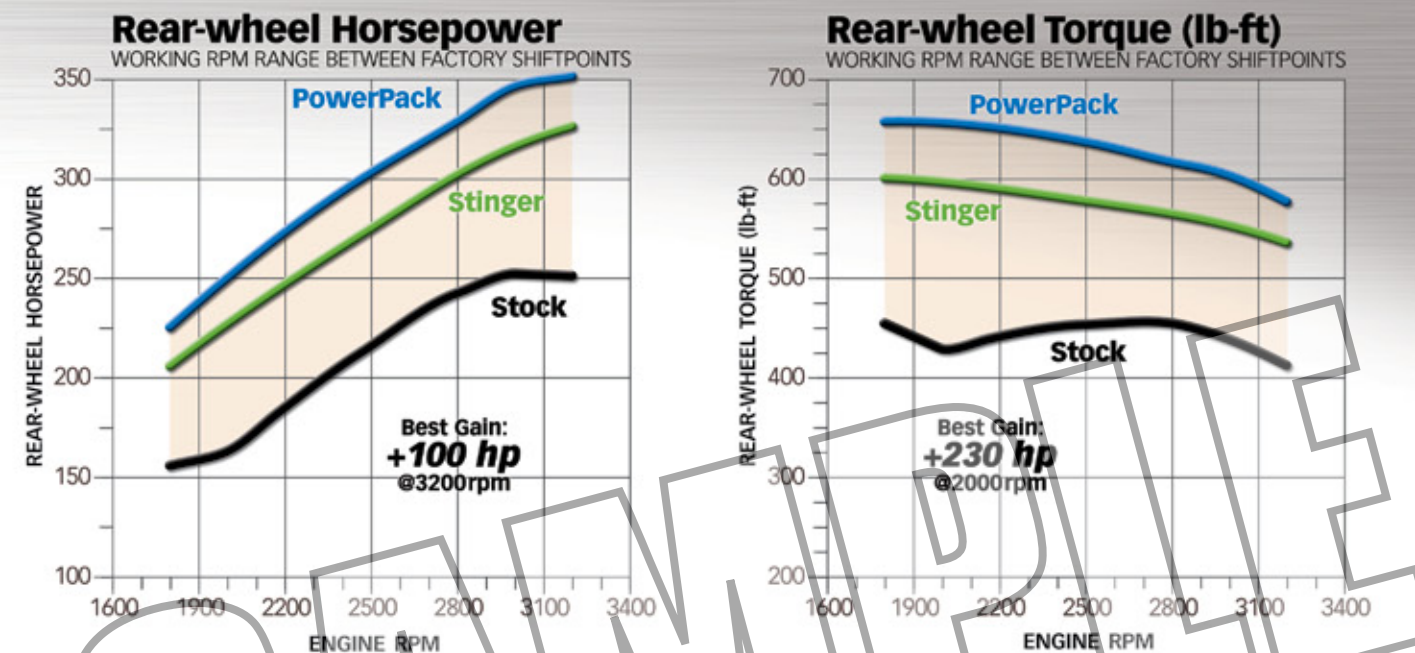
In order to determine which Banks product is right for your truck, it is sometimes necessary to know the proper engine designation (LB7, LLY or LBZ) and sometimes you need to know the year model. In order to verify which vehicle you have, refer to the following chart:

Vehicle Description	8th VIN digit	10th VIN digit
2001 LB7	1	1
2002 LB7	1	2
2003 LB7	1	3
2004 LB7	1	4
2004 LLY	2	4
2005 LLY	2	5
2006 LLY	2	6
2006 LBZ	D	6
2007 LBZ	D	7

Stock vs. Banks Stinger and PowerPack



LB7 Duramax | 2001 CHEVY 3500HD EXT CAB, LONG BED, DUAL REAR WHEELS with ALLISON 5-SPEED AUTOMATIC TRANS



LB7 Data Summary	Stock Truck	Banks Stinger	Banks PowerPack
Rear-Wheel Horsepower:	251.1 hp	326.3 hp	351.5 hp
Best gain	@3200 rpm	@3200 rpm	@3200 rpm
		+75.2 hp	+100.4 hp
		30% more	40% more
Rear-Wheel Torque:	428.8 lb-ft	598.7 lb-ft	659.1 lb-ft
Best gain	@2000 rpm	@2000 rpm	@2000 rpm
		+169.9 lb-ft	+230.3 lb-ft
		40% more	54% more
Rear-Wheel Horsepower:	252.4 hp	326.3 hp	351.5 hp
Peak-to-peak	@3000 rpm	@3200 rpm	@3200 rpm
		+73.9 hp	+99.1 hp
		29% more	39% more
Rear-Wheel Torque:	455.4 lb-ft	601.1 lb-ft	659.1 lb-ft
Peak-to-peak	@2800 rpm	@1800 rpm	@2000 rpm
		+145.7 lb-ft	+203.7 lb-ft
		32% more	45% more
Acceleration: 0-60 mph (Towing, 21,000 lbs. combined weight)	29.14 secs	18.68 secs	16.38 secs
		-10.46 secs	-12.76 secs
		36% quicker	44% quicker
Acceleration: 40-60 mph (Towing, 21,000 lbs. combined weight)	14.97 secs	8.58 secs	7.21 secs
		-6.39 secs	-7.76 secs
		43% quicker	52% quicker
Hillclimb Speed, 6% Grade	49 mph (3rd gear)	56 mph (4th gear)	59 mph (5th gear)
		+7 mph	+10 mph
		14% faster	20% faster
Fuel Economy	12.24 mpg	13.15 mpg	13.49 mpg
		+0.91 mpg	+1.25 mpg
		7% better	10% better

BRAKING POWER

Test vehicle:

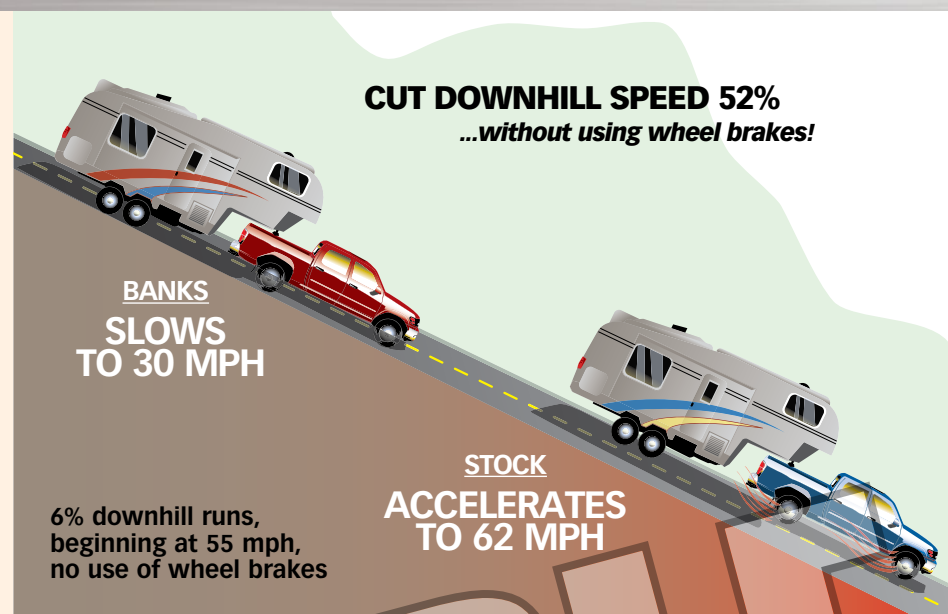
2002 Chevy Duramax crewcab pickup with Allison 5-speed automatic, equipped with Banks Brake

Mode:

Towing @18,650-lb combined weight (9,650-lb trailer + 1200 lbs in truck-bed)

Course:

5-mile 6% downgrade



Test Results **BANKS BRAKE**

Three of the most experienced members from Banks' engineering group ran the braking tests, out on the notorious Grapevine stretch of southern California's I-5. The first test was to obtain the 18,650-lb truck-and-trailer's baseline speed without using the wheel brakes, and with Banks Brake in the off position. Their method was to wait for clear sailing, turn the transmission's Tow/Haul mode on, crest the grade and begin descent. When the speed reached 55 mph, the throttle was released and the transmission manually shifted into 3rd. With more than nine tons rolling down that 6% grade, speed rapidly increased to a terminal velocity of 62 mph. One of the daredevils referred to the trip as an "E-Ticket to Oblivion."

The speed limit on California's freeways is 55 mph, and Banks people are normally law-abiding citizens. But, duplicating the condition of losing use of the truck's wheel brakes demonstrated an important safety risk. You wouldn't pull a trailer down a steep grade anywhere close to the legal limit, yet this rig barreled downhill 7 mph over top speed! Pretty scary. Now, back to the Grapevine to see how it ended ...

When the rig held 62 mph without increasing speed, the Banks team turned on a lighted switch in the dash, and the Banks Brake was instantly activated. They left the transmission in 3rd and continued descending the 6% grade. To their relief, the Banks Brake's effectiveness was immediate and notable. Without lurching, speed smoothly reduced to a safe and sane 30 mph, without ever touching the wheel brakes. All along, the Banks Brake was nearly silent, with only a soft whooshing sound audible inside the cab during braking. Our fearless threesome gladly traded in their E-Ticket for the security of a Banks Brake.

Downhill Speeds in Every Gear (6% downhill runs, no use of service brakes)

Gear	Start Speed	Speed without Banks Brake	Speed with Banks Brake
5th	55 mph	Aborted: too dangerous to continue when speed topped 75 mph	72 mph
4th	55 mph	Aborted: too dangerous to continue when speed topped 75 mph	55 mph
3rd	55 mph	62 mph	30 mph
2nd	55 mph	45 mph	25 mph

"I pull a 33 foot fifth wheel camper weighing about 14,000 pounds. The addition of the Banks Brake has made stopping a better experience, with a lot less use of brakes. It has saved me from one accident so far, when going through a two-lane construction zone, a car in the next lane cut in front of me then stopped abruptly. Had I not had the Banks Brake, there is no doubt I would have rear-ended that car with a lot of force, but I was able to stop just inches from it. The Banks Brake is an excellent product and works very well with the Allison Transmission in Tow/Haul mode. I no longer have to be concerned about long downhill 7 to 10 percent mountain grades."

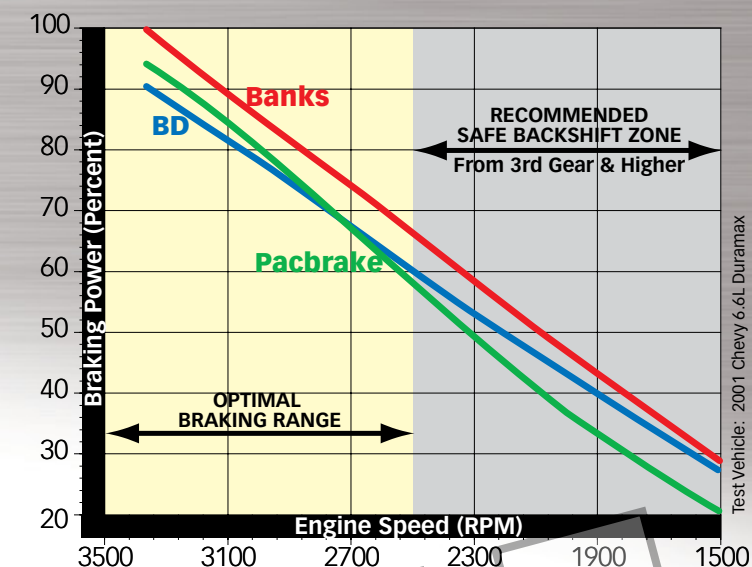
Bruce of Clay Center, Nebraska

AT A GLANCE: Banks Brake vs Others

Pitted against other top-selling exhaust brakes, Banks produces the strongest braking power through the optimal braking range, and maintains the lead after backshifting.

The list of features listed below highlights Banks' uncompromising attention to engineering innovation. Everything about Banks Brake is superior, from the Computerized Brake Controller that replaces the clumsy throttle switch, to the exclusive brake housing assembly with the world's smartest butterfly valve and timed valve closure rate, to the vibration-resistant cradle-mounted power unit that never needs adjustment.

Simply stated, Banks Brake is the most effective supplemental brake product you can buy.



Feature	Pacbrake	BD	Banks
Maximum braking capability Achieves strongest pressure within Duramax specifications	No	No	Yes
Timed valve-closure rate Allows quick brake application without exceeding peak braking pressure • Optimizes turbo efficiency during upshifts • Important with stick shifts	No	No	Yes
Large-bore brake housing No restriction to engine airflow when brake is off	No	Yes	Yes
Computerized Brake Controller Electronically provides smooth brake operation • Automatic fast warm-up	No	No	Yes
High chromium stainless steel shaft-and-bearing Prevents sticking • Withstands hot exhaust temperatures	No	No	Yes
Spring-loaded dynamic seal Prevents valve sticking due to soot contamination	No	No	Yes
Integral O-ring Maintains braking pressure with no leaks	No	No	Yes
High-tech actuator coating Anti-corrosion protection in harsh under-vehicle environment	No	No	Yes
Remote-mounted vent Prevents water, road grime from plugging actuator relief-flow path	No	No	Yes
Cradle-mounted Power Unit Isolates vibrations • Quiets brake operation • Pre-assembled and factory-tested	No	No	Yes
Minimal pump run-time Quiets brake operation • Prolongs pump life	No	No	Yes
EGR-compatible Seamless integration with EGR • Prevents erratic idling	No	No	Yes
Stainless steel adapter No welding necessary • Provides superior corrosion resistance to aluminized adapters	No	No	Yes
Easy installation Quickest time to complete	No	No	Yes
Default fail-safe position In event of failure, brake opens to prevent loss of engine power	No	No	Yes