



POWERTRAIN

BUILT RAM TOUGH FOR THE LONG HAUL

DODGE DEBUTS NEW DYNAMIC DUO: THE RETURN OF A LEGEND AND THE MOST POWERFUL HEAVY-DUTY DIESEL TRUCK ENGINE AVAILABLE

The toughest Dodge Ram pickups ever made need powertrains to match, and nothing less than the legendary HEMI® and Cummins names are worthy enough to power the all-new 2003 Dodge Ram Heavy Duty.

More than just a famous name, the all-new, 345 horsepower, 5.7-liter HEMI Magnum V-8 is a melding of the much revered hemispherical combustion system architecture and modern materials, electronics and manufacturing technology. Designed to create class-leading performance while maintaining heavy-duty truck durability, the new HEMI Magnum boasts best-in-class acceleration and towing.

Powerful and with legions of loyal owners, the name Cummins is as well respected in the heavy-duty market as HEMI is in relation to Chrysler and Dodge. With the new high-pressure, common-rail Cummins Turbo Diesel, the Cummins legend grows. The new 5.9-liter inline six turbo diesel is now simply the most powerful heavy-duty truck diesel engine available. Period.

“The new 5.7-liter HEMI Magnum V-8 engine and the new High Output Cummins Turbo Diesel are essential to the success of the 2500 and 3500 Dodge Rams,” said Rich Schaum, Executive Vice President, Product Development and Quality. “Powertrains and powertrain choice are absolutely critical in this market segment, and Dodge Ram Heavy Duty owners are some of our most technically savvy consumers. They are also the most loyal, making Dodge Ram Heavy Duty the Chrysler Group’s top vehicle for owner loyalty.”

“When you combine the advances we have made in hydroformed frames, chassis design and the class-leading interior packaging, with the new 345 horsepower, 5.7-liter HEMI Magnum gasoline engine and new High Output Cummins Turbo Diesel—which produces the most torque of any production diesel truck engine in its class—you get the best heavy-duty truck on the market,” added Schaum.

RAM V-10 ROUNDS OUT CLASS-LEADING POWERTRAIN OFFERINGS

Rounding out the engine offerings for the all-new Dodge Ram Heavy Duty is the famous 8.0-liter, V-10 Magnum engine. Known for its massive 450 lb.-ft. of torque at 2,800 rpm, the V-10 Magnum provides effortless acceleration and powerful towing capabilities. Ram was the first V-10 powered truck, and the durable V-10 Magnum returns to offer Ram customers one of the most complete powertrain lineups of any manufacturer.



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THE LEGEND RETURNS... THE ALL-NEW 345 HORSEPOWER 5.7-LITER HEMI MAGNUM V-8

The all-new 2003 Dodge Ram 2500 and 3500 herald the return of one of the most legendary names in automotive lore, **HEMI**. The new 5.7-liter HEMI Magnum engine is the standard engine on the all-new Dodge Ram Heavy Duty, producing a class-leading 345 horsepower at 5,600 rpm and 365 lb.-ft. of torque at 4,400 rpm. The 5.7-liter HEMI Magnum provides more power than competitive standard V-8 engines. In fact, versus competitive vehicles with similar size gasoline engines, it provides best-in-class acceleration and towing capability.

Although the name is legendary, the new HEMI is no throwback. It features cross-flow aluminum cylinder heads with hemispherical combustion chambers and investment cast, steel rocker arm actuated splayed valves for high air flow; two spark plugs per cylinder for fast, efficient combustion; and a new direct ignition system with high-power coils ensuring consistent, complete combustion. A fully-balanced, cast, nodular iron crankshaft running in cross-bolted steel main bearing caps reduces deflection and vibration for better drivability.

"Although based on the legendary HEMI engine design, this is one of the most technologically advanced engines ever engineered by the Chrysler Group," said Floyd Allen, Vice President, Product Powertrain Team. "The new 5.7-Liter HEMI Magnum utilizes such advances as a composite integrated air fuel module and electronic throttle control. The hemispherical head design allows the use of larger valves and provides better air flow to the combustion chambers."

To power a Dodge Ram Heavy Duty, an engine needs more than just class-leading power and a great name. Reliability and dependability are hallmarks of Heavy Duty Dodge Rams, and to ensure that the new 5.7-liter HEMI Magnum upholds those traditions, it was subjected to a rigorous reliability program, accumulating more than 7.5 million customer equivalent miles.

"Our owners want a tough, durable truck that gets the job done, no questions asked," said Frank Klegon, Vice President Truck Product Team. "And that is exactly how we designed the all-new Dodge Ram 2500 and 3500."

THE ALL-NEW HIGH PRESSURE COMMON RAIL CUMMINS TURBO DIESEL: TORQUE, TORQUE AND MORE TORQUE!

Delivering 555 lb.-ft. of torque at 1,400 rpm and 305 horsepower at 2,900 rpm, the new 5.9-liter High Output Cummins Turbo Diesel is the most powerful turbo diesel engine available in the 2500/3500 market. The new High Output Cummins Turbo Diesel also delivers a class-leading trailer towing rating of 23,000 lbs. (Gross Combined Weight Rating).

With nearly 75 percent of Ram 2500/3500s being sold with the Cummins Turbo Diesel engine option, it has developed one of the most devoted followings of any heavy-duty pickup. Cummins owners will accept nothing but the best, and the new high-pressure, common rail fuel-injection turbo diesel delivers.

“Dodge Cummins owners are very exacting in what they want,” said Dennis Hurst, Executive Director, Cummins Engineering. “Simply put, they want the strongest and most durable product available and they will not be disappointed with this engine. We have delivered the most powerful diesel available in this class, while improving the drivability, durability and fuel efficiency. This new engine is also much quieter than its predecessor, but still retains the diesel power, torque and toughness that our customers demand.”



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In fact, the new 5.9-liter Cummins Turbo Diesel is so tough it is certified to a longer engine life compared to the diesels offered by top competitors from Chevrolet and Ford. The Cummins engine has an average major overhaul interval of 350,000 miles, providing a substantial advantage over the competition. An inline six, the new 5.9-liter Cummins has 30 to 40 percent fewer parts than typical V-8 diesels, which means added durability and better reliability.

NEW HIGH-PRESSURE COMMON RAIL INJECTION SYSTEM

More than just the master of big twist, the new Cummins Turbo Diesel has been radically overhauled. Quietness, power and durability are the hallmarks of the new high-pressure, common rail fuel-injected Cummins. The new high-pressure common rail fuel injection systems designed for the 2003 Dodge Ram Heavy Duty utilizes pilot injection—the injection of a small amount of fuel that starts combustion, before the main, power-producing, fuel charge is injected. This has the effect of smoothing out combustion pressure in the cylinder, which can be the primary source of low- and mid-range speed noise in diesel engines.

A gear-driven injection pump delivers fuel to the rail and is electronically controlled to optimize fuel pressure at the individual injectors. The system provides injection pressures up to 23,200 psi (1600 Bar) and is less dependent on engine speed than traditional pump-line injection system. The result is cleaner combustion and higher low-speed torque with better vehicle response and acceleration.

In addition to the use of pilot injection to smooth combustion pressure, the fuel-injection calibration - timing, pressure and quantity- has been refined across the entire range of speeds and loads to ensure smooth, quiet combustion. The use of pilot injection during starting also provides gasoline engine-like cold starting capability (verified at -40 F).

CLASS-LEADING POWER AND WORLD BEATING DURABILITY

Not only is the High Output Cummins Turbo Diesel the most powerful diesel engine available in a full-size pickup, it is also one of the most drivable throughout all operating ranges. Maximum torque for the common rail injected Cummins Turbo Diesel occurs 400 rpm lower than the GM Duramax, and 100 rpm lower than the Ford Power Stroke. The Cummins Turbo Diesel engine also produce 20 percent more torque at 1000 rpm, and 10 percent higher clutch engagement torque than its predecessor. That relates to noticeably better vehicle launch when towing and accelerating, better drivability and fewer and smoother shifts.



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The new High Output Cummins Turbo Diesel engine is as powerful as it is durable, delivering class-leading trailer towing capability (23,000 lbs. GCWR), which is the result of class-dominating torque of 555 lb.-ft. at 1,400 rpm and 305 horsepower at 2,900 rpm. The standard Cummins Turbo Diesel, which also employs high-pressure, common rail injection, boosts its horsepower rating to an impressive 250 horsepower at 2,900 rpm (up from 235 horsepower at 2,700 rpm) and produces an equally impressive 460 lb.-ft. of torque at 1,400 rpm.



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ALL-STAR CHASSIS UPS THE ANTE FOR RIDE, HANDLING AND DURABILITY

THE NEW DODGE RAM 2500/3500—JUST AS TOUGH UNDER THE SKIN

What goes into a Dodge Ram Heavy Duty chassis? First, the stiffest frame available, extensively hydroformed and tough enough to deliver a segment-leading payload rating of 12,000 lbs. (Gross Vehicle Weight Rating). Next, enough innovation to provide the best steering and handling heavy-duty pickup on the market with the introduction of a rack and pinion steering system on 4x2 models. And finally, an independent front suspension for two-wheel drive models and heavy-duty beam front and rear axles for four-wheel drive models, all adding up to a Ram Heavy Duty chassis that can cover ground smoothly both on- and off-road, and take the abuse of hard-working Ram customers.

NEW LEVELS OF RIDE AND HANDLING

Designed as a package, Ram's hydroformed frame, outstanding frame stiffness and standard 17-inch wheels and tires—the largest offered on a heavy-duty pickup—combine to provide excellent ride and handling and reduced noise, vibration and harshness (NVH) characteristics without diminishing durability and load ratings. At 13.9 inches front and rear, Dodge Ram Heavy Duty's standard brake rotors are the largest offered on a heavy-duty pickup. Incorporating standard four-wheel ABS brakes, they deliver best-in-class stopping distances.

STIFFEST FRAME EVER ON A DODGE RAM PICKUP

The frames for the 2500 and 3500 Dodge Rams follow the same formula as the all-new 2002 Dodge Ram 1500, utilizing hydroformed "box" sections that are far stiffer than on the previous-generation Ram, and contribute to reduced NVH and improved steering and handling precision.

The extensive use of hydroformed and boxed sections also simplify the frame manufacturing process and reduce the number of welds, contributing to improvements in dimensional integrity and durability by limiting variations in the manufacturing process. Because 2500 and 3500 series carry much heavier loads than their light-duty siblings, the frames are noticeably more robust.

NEW STEERING SYSTEMS AID HANDLING AND SAFETY

While two-wheel and four-wheel drive versions of the all-new 2003 Dodge Ram Heavy Duty use different steering systems, each designed to provide excellent feedback and precision.



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"We went to great lengths to ensure that the steering feel on these Heavy Duty Rams was second to none," said Frank Klegon, Vice President, Truck Product Team.

Two-wheel drive Dodge Ram Heavy Duty trucks feature a new rack and pinion-type steering system that delivers precision effort, feel and response tuned to give the driver precise control and positive feedback.

Four-wheel drive Dodge Ram Heavy Duty trucks have a redesigned recirculating ball system made to more exacting tolerances than their predecessors. The new system improves on-center steering feel through lower internal friction and responds more precisely, with responsiveness enhanced by a quicker ratio. In fact, at 13.4:1 and 2.75 turns lock-to-lock, heavy-duty four-wheel drive Dodge Rams have the quickest steering ratio in the industry. The faster ratio is especially effective in a heavy-duty truck when turning sharp corners, or maneuvering a trailer in tight quarters.

NEW SUSPENSIONS PROVIDE SMOOTH AND DURABLE HAULING ABILITY

The 2003 Dodge Ram Heavy Duty pickups feature new suspension systems designed to provide better ride and handling, without diminishing Ram's tough work ethic.

Since the majority of Dodge Ram Heavy Duty pickups are ordered with four-wheel drive, Ram's off-road performance is a key selling point. To improve off-road performance, the 2003 Dodge Ram Heavy Duty trucks feature new transfer cases and new beam axles. The beam axle system can sustain the types of off-road load forces the truck will endure, while providing improved load ratings.

Dodge Ram 2500s and 3500s provide a new suspension system for four-wheel drive units. Front suspension on four-wheel-drives is a refined version of the five-link, coil-spring suspension used on the previous-generation Dodge Ram Heavy Duty, with a new front beam axle. The system furnishes an outstanding combination of ride, handling and off-road operating characteristics.

Rear suspension architecture is common to both two-wheel and four-wheel drive models. It continues to use longitudinal leaf springs, but the springs are three inches longer than 2002 models. The added length reduces spring stresses. The standard two-stage springs used on 2500 series have three leaves to carry normal loads while providing a comfortable ride and an additional leaf to support heavy loads.

All 3500 series feature reduced spring rates for unloaded and lightly loaded conditions to improve ride quality. To support the full-rated load, all 3500 series include separate auxiliary leaf springs.

On two-wheel drive Dodge Ram Heavy Duty pickups, a new front suspension geometry delivers caster, camber and toe patterns that remain consistent throughout the full range of travel. A wider lateral rear spring span than on the prior model creates less cornering lean without compromising ride quality. Longer, flatter rear leaf springs and stiffer frames are also found on all new 2003 Dodge Ram Heavy Duty.

BIGGEST BRAKES IN HEAVY-DUTY CLASS

Internal competitive tests show that the Dodge Ram Heavy Duty's four-wheel ABS disc brake system provides best-in-class stopping distance. At 13.9 inches (353 mm) front and rear, Ram pickup's brake rotors are the largest in the heavy-duty segment. These larger rotors, with swept area increases of 42 percent front and 45 percent rear, are made possible by the change to 17 inch wheels and more voluminous linings, which increase braking power, extend lining life, and increase heat dissipation.

A dual-rate vacuum booster, first introduced to the industry in 2002 on the 1500 Dodge Ram, gives the 2500 and 3500 series more stopping ability at high brake pedal loads than single-rate boosters used by competitors. Overall, the Dodge Ram Heavy Duty's brake system gives the driver a sense of confidence that it can handle any situation.

NEW TRANSFER CASE CHOICES

Two new transfer cases are available on 2500 and 3500 four-wheel drive models, a conventional manual shift and new electric shift. The manual-shift unit is standard on ST and SLT models. The electric-shift unit is standard on SLT Plus models. These new transfer cases provide quieter operation and improved quality and durability.



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