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## **All-new 2005 Jeep® Grand Cherokee Rewrites SUV Standards for On- and Off-Road Prowess, Exterior Poise and Interior Sophistication**

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### **OVERVIEW**

- 2005 Jeep® Grand Cherokee is all-new from ground up, and all Jeep from inside out
- Three new full-time 4x4 systems enhance on-road refinement, off-road capability
- First-time availability of 5.7-liter HEMI® V-8 engine provides best-in-class power
- New exterior design, improved interior move Grand Cherokee more upscale

The 2005 Jeep® Grand Cherokee brings new meaning to the four-word descriptor that explains the essence of all Jeep vehicles.

That's because when it comes to "go anywhere, do anything," the all-new 2005 Grand Cherokee handles the outback or the opera with equal aplomb, thanks to the vehicle's new athletic design, its improved ride and handling capabilities and its more sophisticated interior.

"Redesigning and reengineering an icon like the Jeep Grand Cherokee is challenging," said Jeff Bell, Vice President—Jeep. "It's a delicate balance between keeping what customers love about the vehicle, and, at the same time, breaking new ground to improve its design, on- and off-road capability, features and amenities.

"We believe we surpassed our goals with the all-new 2005 Jeep Grand Cherokee, while succeeding at another requirement: holding true to the heritage of the Jeep brand," said Bell. "The result is a Jeep that is all-new from the ground up, and all Jeep from the inside out."

The new exterior design has a more solid and substantial appearance, achieved in part by a higher belt line and a reduced glass-to-body proportion. Signature features of the Grand Cherokee remain, including the seven-slot grille and trapezoidal wheel openings.

Still, the foundation of the Grand Cherokee's reputation is its on-road refinement and off-road capability. To maintain its paved/unpaved dominance and bring-it-on performance, the 2005 Jeep Grand Cherokee has:

- Three new full-time four-wheel drive systems;
- Two new engines, including—for the first time in a Jeep vehicle—the renowned 5.7-liter HEMI® V-8;
- Two new transfer cases;
- All-new suspension;
- Rack and pinion steering for the first time; and
- An all-new five-speed automatic transmission.

And still there is more. New to the two available models, Laredo and Limited, is an updated and more refined interior, plus safety features that are designed in from the start. All this comes in the right-sized package that showcases the Grand Cherokee's nimble handling and maneuverability.

### **EXTERIOR DESIGN**

The 2005 Grand Cherokee's new design offers an athletic and contemporary appearance. Up front, the signature seven-slot grille boldly dominates the front view. On the Grand Cherokee Laredo, the grille will offer a painted body

color look, while a chrome-plated grille will accent the Limited.

“The challenge with Jeep design is to capture that limitless capability and attitude with an appearance that is fresh, fitting and timeless,” said John Sgalia, Director—Jeep Interior and Exterior Design. “Additionally, there are certain elements that can’t change on a Jeep because our customer base is so knowledgeable and has very specific demands.”

High-performance halogen headlamps employ a rounded traditional Jeep appearance and gracefully integrate into a powerful hood form. The hood, air dam and exterior mirrors were developed in the Chrysler Group’s wind tunnel in Auburn Hills, Mich., to minimize wind noise and improve aerodynamics.

The shape of the body has been thoughtfully designed to protect the sides of the vehicle from potential road debris thrown off the tires. The heavy and expensive cladding used on the previous model is replaced with a more efficient bodyside shape and moldings that are incorporated into the design. The bodyside molding also has the integrated Grand Cherokee name for a quality look and feel.

At the rear, larger taillamps feature red and clear lenses for a look that presents a luxurious feel without being gaudy. Badges are now injection-molded and chrome-plated to communicate a richness and sense of precision.

The Grand Cherokee has a 60 percent increase in overall torsional and bending stiffness compared to the prior model, which gives the vehicle excellent on- and off-road performance and allows the body to remain tight and quiet.

### **A MORE UPSCALE INTERIOR**

Taking capability and refinement to new levels, the 2005 Jeep Grand Cherokee proves there is no reason a capable vehicle can’t be comfortable and polished. A new and inviting interior awaits occupants with a rich two-tone instrument panel treatment, new door trims and upscale interior finishes.

The seats are beautifully crafted with contours that are precise, firm and ergonomic, featuring a new robust structure. They are purpose-built and designed for long-distance comfort with trim styles different for each model: Laredo features cloth and optional leather while Limited seats are two-tone leather with perforated leather seat inserts.

The dramatic and elegant instrument panel design offers a high degree of precision. The instrument panel features a dark upper color and lighter lower color. Multiple storage bins were added for additional storage.

“Quality isn’t just the workings of the interior but the perception the customer feels when inside the vehicle. The touch points—the sound the switches make, the fit and finish, the textures and lighter colors—are all vital to a quality perception because that’s where the occupants literally live while traveling,” said Clyde Ney, Jeep Design Manager and the 2005 Jeep Grand Cherokee’s lead interior designer.

A new four-gauge instrument cluster with LED illumination features black gauges surrounded by chrome accent rings (on the Limited model) and red pointers for easy-to-read legibility in all lighting conditions.

Another significant feature is the new gated automatic transmission shifter, which provides smoother gear selection. A high-quality chrome trim bezel surrounds the gated shifter. On models with a two-speed transfer case, the traditional manual case lever is replaced with an electric “T-handle” lever that interacts better with the transfer case. A momentary pull rearward on the toggles selects between 4-Low and 4-Hi, before the lever returns to its original position. There is a parcel bin for cell phones and other such items to the right of the shifter.

In the cargo area, versatility and storage reign. A new reversible load floor panel is carpeted on one side and offers easy-to-clean plastic on the other. The plastic side includes a large shallow tray for additional utility.

### **ENGINES**

Among the many firsts in the 2005 model year for Jeep Grand Cherokee are two engines—the 3.7-liter SOHC V-6 and 5.7-liter HEMI V-8 and two five-speed automatic transmissions.

#### **5.7-LITER HEMI V-8**

The modern HEMI has been engineered to deliver outstanding performance and reduced noise, vibration and harshness (NVH), resulting in a highly refined powerplant. The engine gives the Grand Cherokee best-in-class power and 90 percent of the engine’s peak torque is available from 2,400 through 5,100 rpm for excellent performance. The engine produces 325 horsepower (242 kW) at 5,100 rpm and 370 lb.-ft. (502 N•m) at 3,600 rpm.

“Two legends combine with the introduction of the modern HEMI V-8 in the 2005 Jeep Grand Cherokee,” said Eric Ridenour, Executive Vice President—Product Development. “The HEMI is the most powerful engine ever offered in a Grand Cherokee and easily gives the vehicle best-in-class power.”

Fuel economy has also been improved, but not at the expense of HEMI performance. Chrysler Group has developed the Multi-Displacement System (MDS) that deactivates four cylinders when the V-8 is not needed. The 2005 Grand Cherokee is the first SUV to offer fuel-conserving MDS.

The Chrysler Group MDS seamlessly alternates between smooth and economic four-cylinder mode when less power is needed and V-8 mode when more power from the 5.7-liter HEMI engine is in demand. This optimizes fuel economy when V-8 power is not needed without sacrificing vehicle performance or towing capability.

“The MDS was part of the engine’s original design,” said Bob Lee, Vice President—Powertrain Product Team. “This results in a cylinder deactivation system that is elegantly simple and completely integrated into the engine design. The benefits are fewer parts, maximum reliability and lower cost.”

Some of the significant technologies enabling the MDS are the speed of electronic controls, the sophistication of the algorithms controlling the systems and the use of Electronic Throttle Control. The HEMI is able to transition from eight cylinders to four in 40 milliseconds.

This engine and MDS has completed over 6.5 million customer-equivalent miles through Chrysler Group’s development and durability testing. It is covered by the seven-year/70,000-mile Limited Powertrain warranty.

The HEMI engine that powers the 2005 Jeep Grand Cherokee uses aluminum cylinder heads with hemispherical combustion chambers, creating outstanding airflow leading to high power and torque. Dual ignition (two spark plugs per cylinder) increases peak power and torque, reduces exhaust emissions, increases fuel economy and provides a smooth idle. The combustion system has been refined and the engine uses direct-mount accessories for quieter operation.

#### **4.7-LITER, SOHC V-8 ENGINE**

The 4.7-liter V-8 has been updated and is now the mid-range engine in Grand Cherokee. The engine produces 230 hp (172 kW) at 4,700 rpm and 290 lb.-ft. (393 N•m) of torque at 3,700 rpm. Dual knock sensors have been added for 2005 and enable improved engine calibration for both fuel economy and power output.

The engine has improved NVH characteristics, which were realized through the use of composite valve covers, structural improvements to the air box and resonator and improved dampening of the heat shields.

#### **3.7-LITER, SOHC V-6 ENGINE**

The 3.7-liter V-6 engine provides the 2005 Jeep Grand Cherokee with an efficient, durable and smooth base engine. It produces 210 hp (157 kW) at 5200 rpm and 235 lb.-ft. (319 N•m) at 4000 rpm. The 3.7-liter, SOHC V-6 will replace and deliver even more peak power than the previous 4.0-liter I-6 in the Jeep Grand Cherokee lineup. The engine was first introduced in the Jeep Liberty and has been continuously refined to provide smooth V-6 power with optimal economy.

Significant changes in the 3.7-liter include a revised cam profile and new valve lash adjusters. These changes improve the engine smoothness at idle. To ensure quiet operation, a thick-wall composite manifold is new for 2005, as are structural improvements to the air box and resonator.

#### **FIVE-SPEED AUTOMATIC TRANSMISSIONS**

An all-new five-speed automatic transmission offers smooth shifts and optimum fuel economy with the 3.7-liter V-6. The 545RFE five-speed automatic has been refined for higher-quality shifts while increasing the Grand Cherokee’s maximum towing capacity.

The all-new five-speed has an Electronically Modulated Converter Clutch, which is electronically modulated and provides partial engagement in third, fourth or fifth gears. This results in improved shift feel, fuel economy, driveability and transmission cooling. It can be used at lower speeds to provide benefits over a broad speed range. The system unlocks the torque converter when optimal performance is required.

The shift schedule for the five-speed used in V-6 applications adapts to individual driving style, driving situation and

road conditions, altering shift points based on accelerator pedal usage, brake usage, lateral acceleration, altitude and load on the car as a result of grades. An electronically controlled engine Torque Management System provides quick wide-open-throttle upshifts and quick two-step (4-2 or 3-1) kick-down shifts that are exceptionally smooth.

The 545RFE five-speed transmission has been refined to offer smoother operation and better economy while improving the performance and towing capability of the vehicle.

To accomplish this, several features were added, including a redesigned solenoid to provide quieter operation when shifting from "park" into "drive." A turbine damper also improves NVH related to torque converter application.

The 545RFE continues to offer dual second-gear ratios to provide a balance of performance and fuel economy. Depending on driving conditions, the transmission will select the more appropriate second gear. A secondary overdrive ratio increases highway fuel economy and reduces engine noise at high speeds.

#### **QUADRA-TRAC® I**

For Jeep Grand Cherokee customers who want the assurance of full-time all-wheel drive and no switches or levers to pull, Quadra-Trac® I is the right system. The system provides for smooth operation of the vehicle over a variety of road surface conditions.

The new NV140 transfer case splits torque 48/52 percent (front/rear) for nearly even distribution of the engine power. The single-speed transfer case has been designed to rigorous Jeep durability standards while offering smooth and quiet operation. The use of Brake Traction Control System (BTCS) with the NV140 transfer case makes the 4x4 system extremely competent in a variety of situations.

#### **QUADRA-TRAC® II**

The Quadra-Trac® II 4x4 system for 2005 Jeep Grand Cherokee gives the customer the benefit of the new NV245 active transfer case and BTCS.

The transfer case is the same one used in the Quadra-Drive® II system (see below). It uses input from a variety of sensors to determine tire slip at the earliest possible moment and takes corrective action. The system also uses Throttle Anticipate—sensing quick movement in throttle from a stop—and takes steps to maximize traction before tire slippage even occurs.

Torque is transferred to the individual wheels as needed by the BTCS to maintain traction in changing road conditions. When the system senses tire slip, it modulates brake pressure to the slipping wheel, which directs torque to the tires with the best traction.

Quadra-Trac II features an electronic shift mechanism for ease-of-use. The transfer case also includes a neutral position for trouble-free towing behind another vehicle.

#### **QUADRA-DRIVE® II**

The Quadra-Drive II Jeep 4x4 system gives customers the ultimate in off-road capability. It combines the NV245 full-time transfer case with Electronic Limited Slip Differentials (ELSD) for best-in-class tractive performance. The system instantly detects tire slip and smoothly distributes engine torque to the tires with traction. In some cases, the vehicle will even anticipate low traction and adjust to proactively limit or eliminate slip.

The heart of the system is the NV245 active transfer case. This transfer case includes a center differential coupled with an electronically controlled clutch pack, varying from a completely open state to completely locked, with infinite possibilities in between. The 4-Low gear ratio is 2.72:1.

Quadra-Drive II features an electronic shift mechanism with a unique engagement switch. The lever is conveniently located on the shift console. Pulling the switch up engages 4-Low. The lever returns to a resting position after activation. The transfer case also includes a neutral position for trouble-free towing, such as behind a motor home.

A key component in the Quadra-Drive II system is the ELSD, the new benchmark for automatic traction differentials. The ELSD use electronically controlled clutch packs to automatically and instantly vary from slip to lock at each axle. This maximizes traction when needed without any of the on-road drawbacks normally associated with such a robust 4x4 system. The 2005 Grand Cherokee is the first vehicle in the industry with front and rear ELSD.

All components of the system work together, continually monitoring needs, to provide smooth and automatic

application of the components for best-in-class tractive performance while improving the day-to-day on-road driving experience. For example, the ELSD releases the clutch packs in the front axle during turns to allow differentiation and prevent crow hop.

### **ALL-NEW FRONT SUSPENSION AND STEERING SYSTEMS**

An all-new short-long arm (SLA) front suspension provides excellent handling and ride characteristics while improving Jeep Grand Cherokee's off-road performance.

Nodular iron, single-piece lower control arms feature an L-shaped geometry designed to provide higher ground clearance at the wheel than most IFS systems. Forged upper control arms provide strength and durability. Tall aluminum steering knuckles provide optimal steering and suspension geometry for excellent on-road handling and maneuverability. Coil-over shocks deliver high-performance control.

Front suspension travel is increased by almost 10 percent (more than one inch) compared to the 2004 Grand Cherokee, further improving the 2005 Grand Cherokee's off-road capability.

The advantages in using this uniquely designed front suspension include improved handling, reduced head toss, a savings of 100 pounds of unsprung mass for further improvement in ride quality, more precise steering and a lower center of gravity.

The 2005 Grand Cherokee rear suspension builds on the success of previous generation Jeep multi-link systems. Four tubular control arms combine with a tubular track bar for total rear-axle control. The shock absorbers are positioned more vertically than in past models for greater body control and reduced head toss. The spring rates and shock dampening have been tuned to complement the front suspension for a highly balanced chassis.

Grand Cherokee's new rack and pinion steering system imparts a more precise steering feel than the former recirculating ball steering system.

### **SAFETY**

The 2005 Jeep Grand Cherokee is among the first Chrysler Group vehicles to offer advanced multi-stage air bags with an occupant classification system for the front seat occupants. This system detects the size of an occupant based on weight and determines if there should be no deployment, low deployment or full deployment. (However, even with this advanced system designed to meet government requirements, the safest place for children is in a back seat.)

Optional side-curtain air bags offer additional side-impact protection to the front and rear seat occupants. Seat belt and air bag systems work in conjunction with the state-of-the-art energy management features of the body structure and chassis.

Additionally, tire pressure monitoring is standard on all Grand Cherokees.

### **INTERIOR FEATURES**

The 2005 Jeep Grand Cherokee can be equipped with a wide range of features and amenities that complement its well-conceived interior appointments. Among them are Auto-Dimming headlamps, UConnect™ hands-free communication, SIRIUS® Satellite Radio, remote rear glass, automatic windshield wipers, adjustable pedals and dual-zone heating, ventilation and air conditioning.

New for this model year are:

- Rear-seat DVD entertainment center;
- Boston Acoustics six-speaker audio system with 276-watt DSP amplifier;
- Full-screen, color navigation system with integral AM/FM stereo radio with six-disc CD/MP3 player (REQ); and
- Eight-way driver and four-way power passenger seats with manual lumbar.

The 2005 Jeep Grand Cherokee will be produced at the Jefferson North Assembly Plant in Detroit, Mich., starting the third quarter of 2004. Assembly for markets outside North America will begin in 2005 at the Magna Steyr assembly plant in Graz, Austria.

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