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## **All-New 2005 Jeep® Grand Cherokee 4x4 Systems Enhance On-Road Refinement and Off-Road Capability**

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- Three Full-Time 4x4 Systems Offer Command and Control of All Road Conditions
- Industry-First Use of Electronic Limited Slip Differentials – Front/Rear/Center

With three distinct 4x4 systems that combine the legendary Jeep® off-road capability with refined on-road driving manners, the all-new 2005 Jeep Grand Cherokee sets a new benchmark in the SUV market. Three unique 4x4 systems offer customers the ability to decide what system suits their driving needs.

“The legendary reputation of the Jeep Grand Cherokee is based on its 4x4 systems,” said Craig Love, Vice President, Rear Wheel Drive Product Team and Core Team Leader. “The Jeep engineering team made significant strides to ensure that the 2005 Jeep Grand Cherokee not only maintained its off-road reputation, but also improved its on-road driving manners. Now, customers have the ability to choose a Jeep-engineered 4x4 system that’s almost tailor-made for their driving needs, be it everyday driving or tackling the most difficult off-road terrain.”

### **Quadra-Trac I®**

For Jeep Grand Cherokee customers who want the assurance of full-time, four-wheel drive without any switches or levers to pull, the Quadra-Trac I is the right system. The system provides for smooth operation of the vehicle over a variety of road surface conditions.

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

“Offering a single-speed transfer case attracts a new group of buyers to the Jeep Grand Cherokee lineup and builds on the capable, entry-level, two-wheel drive versions, which currently account for approximately 25 percent of Jeep vehicle sales,” said Love.

### **Quadra-Trac II®**

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

The transfer case is the same one used in the Quadra-Drive II® system. It takes input from a variety of sensors to determine tire slip at the earliest possible moment and take 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 offers 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 it from a completely open state to completely locked, and infinite possibilities in between. The 4-Low gear ratio is 2.72:1.

A key component in the Quadra-Drive II system is the ELSD – an industry-first application – and the new benchmark for automatic traction differentials. The ELSD uses 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.

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.

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