

Contact: General Communications

Beth Ann Bayus

## All-New 2005 Dodge Magnum Designed for World-Class Ride and Handling

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- All-new front and rear suspension
- Short and long arm front independent suspension
- Five-link independent rear suspension

Dodge Magnum will offer customers world-class ride and handling with outstanding utility. The Magnum SX and SXT models are tuned to offer a smooth ride while maintaining a feeling of control and confidence. Effort was focused on minimizing noise, vibration and harshness, resulting in a driving experience that is smooth and quiet.

The Dodge Magnum RT offers athletic and nimble suspension characteristics tuned for greater handling performance. A well damped ride with reduced body roll gives the customer a precise and responsive driving experience.

"We designed the suspension to be very responsive while delivering superb ride and comfort," said Eric Ridenour, Executive Vice President – Product Development, Chrysler Group. "The front and rear suspension are all-new. We used short and long arm design in the front and a sophisticated five-bar link, independent rear suspension. The suspension will delight performance drivers with excellent handling and improved responsiveness while also providing impressively smooth ride characteristics."

### **ALL-NEW FRONT SUSPENSION**

An all-new short and long arm (SLA) front suspension provides excellent handling and ride characteristics. High upper control arms, which place the upper ball joints above the tires, provide suspension articulation that helps keep the tires perpendicular to the road during cornering for high adhesion. Lateral links and tension struts, rather than one-piece lower control arms, position the lower ends of the steering knuckles. These links attach to the steering knuckle via separate ball joints. Multiple bushings offer flexibility to tune for ride and comfort. This architecture creates a virtual pivot point for the tire to reduce reaction to bumps that would otherwise be perceptible at the steering wheel.

### **ALL-NEW REAR SUSPENSION**

The five-link independent rear suspension system allows independent tuning of handling and ride comfort so that each can be maximized. This leads to a no-compromise situation, and the rear suspension has been developed to complement the performance of the front suspension for a very balanced vehicle.

Multiple aluminum links maintain independent control of camber and toe during suspension movement for excellent handling. Multiple bushings offer flexibility to tune for ride and comfort. Stabilizer bar attachments to the knuckles provide maximum response to vehicle lean on the Dodge Magnum RT.

The rear suspension is isolated from the passenger compartment to provide a quiet and smooth ride. All rear suspension components, except the coil springs and shock absorbers, mount on a steel cradle that attaches to the body structure through four large rubber mounts. Premium urethane jounce bumpers provide smooth progressive engagement over sharp bumps to minimize harshness.

### **ALL-WHEEL-DRIVE SUSPENSION**

All-wheel-drive models use an SLA front suspension that is slightly different compared to the rear-wheel drive models to accommodate the front drive axle and related components. The SLA suspension uses a forged upper control arm and single-piece cast-iron lower control arm, efficiently packaged around the front-axle drive system.

The steering gear effort and response, and the suspension characteristics, are tuned to the all-wheel-drive vehicle's

handling characteristics.

#### **POWER RACK AND PINION STEERING**

Power rack-and-pinion steering has an overall ratio of 16.1:1 on all models. The steering effort is varied to balance comfort and ease of operation with feel and responsiveness requirements. The steering gear mounts to the suspension cradle through two spool isolators that are tuned to minimize road noise while delivering steering responsiveness. Friction is minimized to enhance steering precision.

The steering systems deliver light parking efforts, without compromising steering performance at speed. In addition, the systems are also tuned to match the handling capabilities of the vehicles.

#### **FOUR-WHEEL DISC BRAKES**

Four-wheel disc brakes are standard on Dodge Magnum model. Ducts in the front fascia direct cooling airflow to the front brakes, reducing front-brake temperatures by up to 15 percent in heavy use for enhanced performance and longer lining life.

High caliper stiffness facilitates firm pedal feel and linear response with increasing demand for braking effort.

To reduce rolling resistance for better fuel economy, all models use low-drag calipers. New-technology caliper construction allows minimal drag of the pads on the discs. Tight pad clearance to the rotors maintains maximum pedal feel and responsiveness.

The Dodge Magnum RT features twin-piston aluminum calipers and 13.6-inch vented rotors in the front and single-piston aluminum calipers with 12.6-inch vented rotors in the rear.

The calipers are readily visible through the aluminum wheels, and they have a gray anodized coating for corrosion protection and long-term appearance.

Even the base brake system offered on V-6 rear-wheel-drive models offers substantial braking performance and safety. They feature single-piston aluminum calipers and 12.6-inch vented rotors in the front and single-piston aluminum calipers with solid 12.6-inch rotors in the rear.

#### **ABS (ANTI-LOCK BRAKE SYSTEM) AND ALL-SPEED TRACTION CONTROL**

A combined ABS and Traction Control system is standard with the 3.5- and 5.7-liter engines; it is optional with the 2.7-liter V-6. Dodge Magnum SX and Dodge Magnum SXT are the first Chrysler Group vehicles to offer All-Speed Traction Control.

ABS keeps the vehicle straight while retaining steering capability while braking on slippery surfaces by preventing wheel lock-up. It benefits from state-of-the-art electronics that provide faster system response than in the past.

All-Speed Traction Control enhances mobility and prevents wheel slip when accelerating on slippery surfaces. Depending on how slippery, an automatically activated Winter Mode feature will select lower transmission up-shift speeds on the five-speed automatic transmission. It also provides a measure of directional stability control – an advancement beyond prior traction control systems. Using the wheel-speed sensors, it can detect excessive yaw and help keep the car on the intended course, as for instance, when accelerating around a curve.

In addition to braking the slipping wheel in low traction situations, All Speed Traction Control on the Dodge Magnum models can use throttle control as well. This makes the vehicle less reliant on brake application alone to maintain traction, increasing the operating speed range and more closely modulates speed, resulting in smoother operation. With All-Speed Traction Control reducing engine torque as well as applying the brakes, it is possible to achieve almost seamless torque application at the wheels. All-Speed Traction Control also benefits from state-of-the-art electronics that provides much faster system response than in the past.

#### **ELECTRONIC STABILITY PROGRAM**

Electronic Stability Program, which includes a Brake Assist feature, is standard on Dodge Magnum SXT and RT. It is optional on the Dodge Magnum SE. It is offered for the first time on a North American-built Chrysler Group vehicle.

The system enhances driver control and helps maintain directional stability in turns, including uneven surface conditions and patchy snow, ice or gravel. If there is a discernible difference between what the driver asks through the steering and the vehicles path, ESP applies selective braking and throttle input to put the car back onto the driver's

intended path.

The system is calibrated to offer safe control of the vehicle under a variety of conditions, and to operate in a manner that is not intrusive in normal or spirited driving.

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