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Geared for Safety, the All-New 2005 Dodge Magnum Offers State-of-the-Industry Performance and Crash Protection Benefits

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The newest vehicle to make its debut in the Chrysler Group 2005 lineup, the Dodge Magnum with rear-wheel-drive technology, is the total package of engineering and technological advancements designed to protect as well as perform.

Many manufacturers of luxury and performance sedans retained rear-wheel drive because of the superior performance and handling characteristics. The RWD configuration of the Dodge Magnum gave designers the freedom and flexibility to create a strong body structure with new dimensions. Advancements in technology enabled Chrysler Group engineers to develop a rear-wheel-drive large-car platform with all-season capability.

Technologies available in the Dodge Magnum such as electronic stability program (ESP), all-speed traction control, anti-lock brake systems (ABS) have reached new levels of advancement over time. These advancements combined with improved tire design provide more overall balance and control of rear-wheel-drive vehicles in a variety of surface and weather conditions.

"Rear-wheel-drive technology is in our DNA," said Burke Brown, Chief Engineer, Dodge Magnum and Chrysler 300. "From end to end, the execution of the Dodge Magnum signifies not only our return to creating outstanding rear-wheel-drive vehicles, but our ongoing commitment to performance and safety."

A Chrysler Group safety first with the Dodge Magnum centers on innovative tire technology. A special sealant in the inner liner of the tires fills punctures up to 5 mm to minimize the loss of air pressure and significantly reduce the probability of a roadside stop due to a flat tire.

"During the development process of the Dodge Magnum, we encouraged a continuous exchange of engineering "best practices" between all DaimlerChrysler partners to leapfrog our own high standards for passenger safety, security and comfort," said Mark Chernoby, Vice President, Advanced Engineering Technology, Chrysler Group.

"As an added result of the design and shared intelligence, we were able to increase the amount of crush space in the Dodge Magnum to create more protection and energy absorption in the event of an accident."

Safety engineers evaluated the Dodge Magnum with tests beyond current government requirements such as 40-mph front offset and 50-mph rear impact-tests. The 40-mph front impact simulates a high speed vehicle-to-vehicle crash while the 50-mph offset rear-impact test measures fuel system integrity when the vehicle is hit at high speeds on the side nearest the fuel filler tube. In addition, Chrysler Group engineers also used the "pole test," which mimics accidents such as hitting a telephone pole or tree, to evaluate the side air bag sensing system. These types of accidents may be severe because the crash forces are concentrated in a relatively small area of the vehicle.

"We strive to achieve the best possible performance in our testing labs and out on the road," Chernoby added.

ACCIDENT AVOIDANCE FEATURES

Significant advancements in the technology inherent with rear-wheel drive created an opportunity to engineer the Dodge Magnum with a longer wheelbase for a safer and more balanced ride. The wider track also provides better stability and handling and traction control in various surface and weather conditions.

To optimize the overall performance of rear-wheel drive, Dodge Magnum offers an Electronic Stability Program (ESP), which helps the driver maintain directional stability on dry pavement, rain, snow, or ice. The all-speed traction control system enhances mobility and helps prevent wheel slip when accelerating on slippery surfaces.

The ABS provides the 2005 Dodge Magnum with excellent stability and steerability during braking on virtually every type of road surface. The vehicles also include Brake Assist, which notifies the active brake booster electronically of the need for increased brake output, helping to provide shorter stopping distances in emergency situations.

CRASH PROTECTION FEATURES

Chrysler Group engineers used state-of-the-art computer technology during the development of the Dodge Magnum similar to that used with the all-new 2004 Chrysler Pacifica and Dodge Durango vehicles. This computer technology was used to anticipate how the components of the Dodge Magnum would work together during a crash to absorb and reduce crash forces sent to passengers. The Dodge Magnum's advanced restraint system encompasses the air bags, seat belts and sensors to optimize occupant protection in the event of a crash.

Side-curtain air bags and air bag inflators are mounted under the headliner and deploy downward, covering all outboard occupants on the side of impact to provide full-length coverage for vehicle occupants. Advanced multi-stage driver and passenger front air bags deploy at various levels based on the severity of the crash. Two charges in the air bag module are triggered separately. A minor impact triggers a low-power deployment, while a severe impact will deploy a higher powered discharge for greater occupant protection.

The Dodge Magnum is among the first Chrysler Group vehicles to offer advanced air bags with an occupant classification system for the front passenger seat. This system detects the size of an occupant based on weight and determines if there should be no deployment, low deployment or crash severity-based deployment. However, even with this advanced system designed to meet government requirements, the safest place for children is in the back seat. The driver-side air bag works in conjunction with an energy-absorbing steering column to provide supplemental restraints in frontal impacts.

Front seat belts in the Dodge Magnum are equipped with belt pretensioners and constant force retractors. Pretensioners tighten the seat belt to keep the occupant in place while constant force retractors balance the load on the upper body reducing injuries from excessive seat belt forces. Head restraints are standard in every seating position. The driver's side is also equipped with BeltAlert - - an enhanced seat belt reminder system that periodically activates a chime and illuminates a light in the instrument cluster to remind the driver to buckle up.

2005 DODGE MAGNUM SAFETY FEATURES:

- **Auto-reverse windows:** An advanced sensing system automatically engages and reverses the window down to help prevent injuries to children
- **Advanced air bag system:** Enhanced protection for a wider range of occupants, this system is also designed to identify the size of an occupant based primarily on weight for front passenger seat
- **All-Speed Traction Control System:** All-Speed Traction Control, which enhances mobility and prevents wheel slip when accelerating on road surfaces by operating both the brakes and the Electronic Throttle Control (ETC)
- **Anti-lock Brake System:** Equipped with electronic sensors that help prevent wheel lockup, the ABS system offers improved steering control under extreme braking and/or slippery conditions
- **Body Structure:** Crush beads and stiffeners engineered into the vehicle body help absorb energy, while preserving the integrity of the vehicle compartment. These reinforcements provide additional protection in an offset-type impact
- **Child Seat Anchor System (LATCH):** Lower Anchors and Tethers for Children to ease installation of compatible aftermarket child seats
- **Constant Force Retractors (CFR):** The front seat belts include a mechanical device designed to distribute the force of a seat belt according to the load or force exerted on it. CFRs are engineered to force-limit the belt system, and gradually release seat belt webbing in a controlled manner during a severe crash
- **Electronic Stability Program (ESP):** This feature aids the driver in maintaining vehicle directional stability, providing oversteer and understeer control to maintain vehicle behavior on road surfaces

- **Energy-Absorbing Steering Column:** Manual adjust steering columns utilize two hydroformed coaxial tubes that can move relative to each other to allow the column to move forward and provide more energy absorption during a crash. The power adjust steering column employs a calibrated bending element which deforms during column stroke for optimal energy management
- **Enhanced Accident Response System:** In the event of an accident, this system makes it easier for emergency personnel to see and reach the occupants by turning on the interior lighting and unlocking the doors after air bag deployment
- **High Intensity Discharge (HID) Lighting:** This feature provides a larger spectrum of light to increase driver visibility
- **Multi-Stage Air Bags:** Multi-stage air bags deploy at three different rates depending on the severity of the crash. In lower-severity collisions, the air bag deploys with less force, and the force is increased during more severe collisions
- **Pretensioners:** During a collision, the impact sensors initiate the front seat belt pretensioners to immediately remove slack from the seat belts thereby reducing the forward movement of the occupant's head and torso
- **Rear Park Assist:** This rear obstacle detection system signals an audible warning and rear overhead display to aid in collision avoidance
- **Self-Sealing Tires:** A special sealant in the inner liner of the tires fills punctures up to 0.19 inches to minimize the loss of air pressure and significantly reduce the probability of a roadside stop due to a flat tire
- **Side Curtain Air Bags:** The side curtain extends protection to all outboard passengers.
- **Tire Pressure Monitoring:** This advanced system monitors the pressure inside each tire and alerts the driver to improper tire pressure conditions, i.e., the pressure is low.

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