Contact: General Communications

Beth Ann Bayus

All-New 2005 Dodge Magnum - The Heart and Soul of a Performance Car

February 29, 2004, Auburn Hills, Mich. -

- Diverse powertrain offering creates distinctly different models
- First use of Chrysler Group 5-speed automatic for best combination of performance, fuel economy and smoothness
- Industry first: Multi-Displacement System saves fuel while retaining HEMI® power

Dodge Magnum was engineered to provide style, comfort, performance and utility in a sports wagon. The powertrain systems were optimized to deliver the best combination of these attributes.

Three engines and two transmissions were developed to provide the optimum powertrain options for Dodge Magnum SE, Magnum SXT and Magnum RT. The 2.7-liter DOHC V-6 provides the Magnum SE with outstanding combination of performance, fuel economy, quietness and durability. The Magnum SXT utilizes the 3.5-liter SOHC V-6 engine with improved performance, fitting a mid-level sports wagon. For the ultimate in performance, the Magnum RT comes standard with the 5.7-liter HEMI® V-8.

Transmissions were matched to the engines to provide the best combination of performance, smoothness and fuel economy. Two transmissions will be available in the Magnum vehicles. A passenger car Chrysler Group five-speed automatic will be offered for the first time ever in the Dodge Magnum. The five-speed automatic transmission will be controlled by Chrysler Group's AutoStick Driver-Selectable Range Control. This shifter accommodates fully-automatic shifting, or the driver can manually select a gear range. The rear-wheel-drive Dodge Magnum SE and Magnum SXT will be equipped with a revised version of a proven Chrysler Group four-speed automatic transmission.

5.7-LITER HEMI® V-8

The modern HEMI engine offers more power and torque than any Chrysler Group vehicle passenger car engine since the legendary 426 HEMI of the '60s and '70s. Today's engine produces 340 hp @ 5000 rpm and 390 lb.-ft. of torque at 4000 rpm.

The new HEMI has been engineered to deliver outstanding performance, and also provide minimal noise, vibration, and harshness, smoothness and low emissions. Fuel economy has also been improved, but not at the expense of performance. Chrysler Group has developed and will be the first to offer to offer Multi-Displacement System (MDS) on a modern, large volume vehicle in North America.

"The Chrysler Group MDS seamlessly alternates between smooth, high fuel economy four-cylinder mode when less power is needed, and V-8 mode when more power from the 5.7L HEMI engine is in demand," said Eric Ridenour, Executive Vice President Product Development Chrysler Group. "This optimizes fuel economy when V-8 power is not needed, without sacrificing vehicle performance—2005 Chrysler 300C and Dodge Magnum RT owners will get the maximum benefit without any compromises."

Owners of the Dodge Magnum RT will receive the powerful benefit of the HEMI engine with the fuel economy that they would only expect from a smaller, less powerful engine.

"The MDS was part of the engine's original design," said Bob Lee, Vice President Powertrain Product Team Chrysler Group. "This resulted 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 Chrysler Group MDS are the speed of electronic controls, the

sophistication of the algorithms controlling the systems and the use of Electronic Throttle Control ETC. The HEMI will be able to transition from eight cylinders to four in 40 milliseconds (0.040 seconds).

The HEMI engine with MDS has completed over 6.5 million customer-equivalent miles through Chrysler Group's development and durability testing. It is covered by the 7-Year/70,000-mile Limited Powertrain warranty.

The HEMI engine that powers the Dodge Magnum RT uses aluminum cylinder heads with hemispherical combustion chambers for 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 quiet operation.

The engine is equipped with ETC which enables several of the technologies used to maximize vehicle smoothness, performance, safety and fuel economy.

3.5-LITER SOHC V-6 ENGINE

The 3.5-liter V-6 engine used to power the Magnum SXT is derived from versions of this engine used in prior Chrysler Group vehicles. An all-new active three-plenum intake manifold provides high power and torque over the entire operating band, with 250 hp at 6400 rpm and 250 lb.-ft. of torque at 4000rpm. This engine provides the perfect blend of performance economy.

A new active three-plenum intake manifold with electronically controlled manifold tuning valve and short-runner valves provides more power to the 3.5-liter. Additionally, ETC is used on this engine in the Dodge Magnum SXT.

2.7-LITER DOHC V-6 ENGINE

The 2.7L-liter V-6 has proven durable in a variety of Chrysler Group applications, and has been revised to power the Dodge Magnum SE. The engine has been improved to produce more low-speed torque at launch and during mid-range operation for strong performance in every-day driving. The engine produces 190 hp at 6400 rpm, and 190 lb.-ft. of torque at 4000 rpm, and it offers good fuel economy in a vehicle of this size.

Revisions on the 2.7-liter V-6 include an all-new active three-plenum intake manifold that is tuned for improved low-speed torque. In addition, the manifold includes a manifold tuning valve that further adds to low-speed torque during both part-throttle and wide-open throttle operation. This valve increases part-throttle torque eight to 10 percent in the primary driving range of 2100 to 3400 rpm, giving better performance in normal driving.

Another addition to the 2.7-liter for 2005 is the use of ETC. This maintains a more consistent vehicle speed on rolling grades when cruise control is active and interacts with the transmission control system to further minimize gear hunting under these conditions. It also tailors throttle response to pedal movement based on operating conditions. For example, a large pedal motion at a standing start may open the throttle less than the same pedal movement at highway speeds.

FIVE-SPEED AUTOMATIC TRANSMISSION

The Chrysler Group's first five-speed automatic transmission for passenger cars provides a full range of transmission performance to match a great variety of driving styles, situations and road conditions.

"This transmission offers Chrysler Group customers many benefits. The five-speed gear range provides a better balance of performance and fuel economy than a four-speed automatic transmission," said Ridenour. "Fully adaptive electronic control of all shifting makes the powertrain feel responsive without harshness."

The transmission's physical attributes include compact size, robust design for high-torque rating and multiple features providing high efficiency. It also utilizes highly advanced electronic controls such as fully adaptive electronic control and Electronically Modulated Converter Clutch (EMCC).

This five-speed automatic transmission and with all-wheel drive applications is standard equipment with the 5.7-liter HEMI V-8 engine on the 2005 Dodge Magnum RT and with all-wheel-drive applications. It is a DaimlerChrysler transmission built at the Indiana Transmission Plant II in Kokomo, Indiana.

The ratio spread from first to the fifth was selected to minimize fuel consumption and reduce powertrain noise during cruising. An aggressive first-gear ratio provides excellent launch performance, and evenly spaced gear ratios provide smooth acceleration through the gears.

World-class efficiency is achieved through physical and electronic means. This transmission uses bearings to reduce friction in many locations where other transmissions may utilize bushings. The transmission also uses a unique scavenging system that removes oil spun off of the rotating parts by centrifugal force through strategically placed slots in the outside of the case. This saves energy that would be consumed by internal parts rotating in oil. Lubricating holes in the clutches are also positioned to promote quick passage of the transmission fluid through the discs, minimizing viscous losses due to trapped oil.

Fully adaptive electronic control of all shifting makes shifts very smooth. The system monitors the transmission as shifts occur and adjusts hydraulic pressure as needed. In so doing, the controls make the powertrain feel responsive without harshness. Driver recognition software alters shift points based on accelerator pedal usage, brake usage and lateral acceleration. This does not require a compromise between sporty and economical operation, nor is it a question of choosing one or the other.

The Torque Management System uses engine-torque modeling to facilitate smooth transmission shifting. Because of ETC, torque management is more sophisticated and covers a broad torque range.

The shift schedule adapts to individual driving style, driving situation and road conditions, altering shift points based on an accelerator pedal usage, brake usage, lateral acceleration, altitude and load on the car as a result of grades. Electronically controlled engine Torque Management System provides quick wide-open-throttle up shifts and quick two-step (4-2 or 3-1) kick-down shifts that are smoother than would be otherwise possible without this feature.

The transmission ratios are:

- 1st - 3.58
- 2nd - 2.19
- 3rd - 1.41
- 4th - 1.00
- 5th - 0.83
- Reverse - 3.17

Through EMCC, torque converter clutch slippage is electronically modulated and provides for partial engagement in third, fourth or fifth gears. This results in improved shift feel, fuel economy, drivability and cooling. It can be used at lower speeds to provide benefits over a broad speed range. The system disengages as required to provide optimal performance.

FOUR-SPEED AUTOMATIC TRANSMISSION

The 42RLE four-speed automatic transmission is a variant of the 42LE automatic transmission used on previous Chrysler Group vehicles. It was developed for the Dodge Magnum and is included with both V-6 engines on rear-wheel-drive models.

This four-speed automatic features fully adaptive electronic control of all shifting for smooth operation. Similar to the five-speed, it uses the Torque Management System to smoothly execute quick wide-open-throttle up shifts and down shifts. It also uses EMCC to electronically modulate torque converter lockup and provide for partial engagement in third or fourth gears. This results in improved shift feel, fuel economy, drivability and cooling.

The transmission ratios are:

- 1st - 2.84
- 2nd - 1.57
- 3rd - 1.00
- 4th - 0.69
- Reverse - 2.21

-###-

Additional information and news from Stellantis are available at: https://media.stellantisnorthamerica.com