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Chrysler LLC Introduces All-new Pentastar V-6 Engine

Refined, more fuel-efficient V-6 engine to debut in all-new 2011 Jeep® Grand Cherokee

- The all-new Pentastar V-6 is the most advanced six-cylinder engine in the history of Chrysler, with an ideal integration of select technologies that deliver refinement, fuel efficiency and performance
- All-new flexible-fuel 3.6-liter Pentastar V-6 to replace seven current V-6 engines, resulting in flexibility, efficient operations and significant cost savings to the company
- New Chrysler Pentastar V-6 to deliver fuel efficiency improvement of up to 8 percent on average compared with previous Chrysler V-6 engines
- New Pentastar V-6 will contribute a 2 mpg increase to Chrysler's CAFE by 2015

April 8, 2009, New York - Chrysler LLC introduced today an all-new line of V-6 engines that will improve fuel efficiency across the Chrysler, Jeep® and Dodge lineup by 8 percent on average compared with previous Chrysler V-6 engines. This more refined and fuel-efficient V-6 engine will ultimately replace seven current Chrysler V-6 engines.

The new 3.6-liter V-6 engine—named Pentastar—is part of the company's overall \$3 billion powertrain offensive. It will first be offered in the all-new 2011 Jeep Grand Cherokee, unveiled today at the New York International Auto Show and at the Jeep Safari in Moab, Utah.

"Chrysler's all-new 3.6-liter Pentastar V-6 engine will offer our customers improved fuel economy, refinement and increased performance across the Chrysler, Dodge and Jeep vehicle lineup," said Frank Klegon, Executive Vice President—Product Development, Chrysler LLC. "At the same time, replacing seven current engines with one engine will result in increased flexibility, more efficient operations and significant cost savings to the company."

The Pentastar is an all-new design, featuring double-overhead camshafts (DOHC) and a high-pressure die-cast aluminum cylinder block in a 60-degree configuration.

In the all-new 2011 Jeep Grand Cherokee, the all-new 3.6-liter Pentastar V-6 engine will deliver 280 horsepower (209 kW) at 6,400 rpm and 260 lb.-ft. (353 N•m) of torque at 4,800 rpm—an increase of 33 percent in horsepower and 11 percent in torque over its predecessor—while providing an 11 percent fuel economy improvement.

"The all-new Pentastar is the most advanced six-cylinder engine Chrysler has ever offered," said Bob Lee, Vice President—Powertrain Product Team. "This new family of engines uses an architecture conceived with future technology growth and integration in mind."

The new Pentastar V-6 also will contribute a 2 mpg increase to Chrysler's CAFE by 2015, resulting in fewer greenhouse gas emissions and a reduction in oil dependence.

Customers Benefit: Fuel Efficiency, Refinement, Quality, Low Cost of Ownership

During the initial goal setting for the Pentastar program, Chrysler engineers benchmarked the industry's leading engines to set functional targets. The result is an all-new engine that delivers truly world-class customer attributes.

Chrysler's all-new 3.6-liter Pentastar V-6 engine design features a double-overhead cam (DOHC), narrow included valve angle, cylinder head and high-flow intake and exhaust ports. This design, combined with dual independent cam phasing, allows optimum volumetric and combustion efficiency over the full speed and load range, resulting in an exceptional, flat torque curve along with high specific power—the engine's torque exceeds 90 percent of its peak

value from 1,600 to 6,400 rpm—which will provide customers with outstanding drivability and responsiveness, without the need for premium fuel.

“Similar to what we did with the HEMI® engine, our engineers used the best combination of design features and technologies to create an engine that satisfies customer requirements,” Lee added. “The elegantly simple design maximizes the functionality of each design element rather than adding technology to claim a feature. The result gives our customers everything they demand from an engine today—class-leading levels of refinement, fuel-efficiency, performance and cost of ownership.”

The advanced oil filter system eliminates oil spills and contains an incinerable filter element—more efficient disposal than the typical spin-on filters, which are disposed of in landfill sites. The use of long-life spark plugs and a high-energy coil-on-plug ignition system also helps to reduce cost of ownership.

The Pentastar V-6 is designed to run on regular gasoline, offering a 10 percent reduction in fuel cost compared with premium fueled engines. The engine also is fully flex fuel capable, offering consumers the choice of gasoline or E85 fuel without any degradation in performance or emissions.

The new state-of-the-art Trenton (Mich.) Engine South Plant will be the lead facility for production of the Pentastar V-6 engine. A duplicate, new facility in Saltillo, Mexico, will ramp up for the 2012 model year.

All-new Chrysler 3.6-liter, DOHC, 24-valve Pentastar V-6 Technical Specifications

Displacement: 3.6 liters

Bore x stroke: 96 x 83 mm

Valve train system: Double-overhead cam with roller finger followers and hydraulic lash adjusters. Dual independent cam-torque actuated phasers

Fuel injection: Multi-point port fuel injection

Construction: High-pressure die-cast aluminum cylinder block and semi-permanent mold aluminum cylinder head

Maximum engine speed: 7200 rpm

Fuel requirement: E85 (Ethanol) or unleaded regular, 87 octane (R+M)/2

Emission capability: PZEV

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