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## **Chrysler's New Dual-clutch Transmission to Debut in International Markets**

- Fuel economy improvement and CO2 emissions reduction of 6 percent
- Offers consumers quick and smooth acceleration
- Set to debut on all-new 2009 Dodge Journey, 2009 Dodge Avenger and 2009 Chrysler Sebring in international markets this spring

April 13, 2008, Auburn Hills, Mich. - Chrysler's new dual-clutch transmission—developed in partnership with Getrag—makes its debut this spring. The new technology—available in international markets on the all-new 2009 Dodge Journey, the 2009 Dodge Avenger and the 2009 Chrysler Sebring—will provide consumers a fuel economy improvement and CO2 emissions reduction of 6 percent.

“Chrysler's new dual-clutch transmission is the next step in transmission technology, offering consumers improved fuel economy along with smoother and quicker shifting,” said Frank Klegon, Executive Vice President – Product Development. “This important new Chrysler technology is one of several initiatives we have in place to directly focus on improving fuel efficiency across our vehicle lineup.”

Chrysler's commitment to dual-clutch transmission technology is part of the Company's powertrain offensive, announced last year.

### **Dual-clutch Transmission Technology**

Chrysler's dual-clutch transmission technology improves fuel economy and CO2 emissions by reducing parasitic losses—first, by eliminating the torque converter, and second, through the use of synchronizers instead of shift clutches.

In its first Chrysler LLC vehicle applications, the new dual-clutch transmission will debut in international markets on the all-new 2009 Dodge Journey, the 2009 Dodge Avenger and the 2009 Chrysler Sebring. It will be mated to a 2.0-liter turbo diesel engine.

The dual-clutch transmission is an automatic transmission which utilizes dual launch and shift clutches with a manual transmission style lay-shaft gear arrangement, instead of a conventional torque converter and planetary gears. One clutch drives the odd numbered gears and reverse, while the other clutch drives the even numbered gears. During shifts, the next gear is anticipated and pre-selected. Then one clutch is opened while the other is closed, allowing shifting without torque interruption. The result is quicker acceleration and refined shift quality. Further, with the lay-shaft arrangement of gears, there is increased flexibility to optimize gear ratio selection for performance and fuel economy.

The all-new dual-clutch transmission does not require a torque converter to transfer engine torque to the transmission. Instead, it uses two wet multi-plate clutches. With the wet multi-plate clutch system, the clutch components are bathed in lubricating/cooling fluid in order to provide adequate thermal capacity.

The wet multi-plate clutch system uses hydraulic pressure to actuate the clutches and provide for gear selection. With this system, the power flow from the engine to the transmission is not interrupted during a shift, resulting in a power-on shift. This means that there is less torque disturbance than a conventional planetary automatic transmission with torque converter. Also, by eliminating the torque converter and reducing the number of shift clutches, parasitic losses are reduced leading to improved fuel economy.

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