



MEDIA INFORMATION

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Chevrolet Epica: New six-speed automatic transmission

- Better fuel economy and improved performance
- Available in combination with all three engines

Zurich/Geneva. Smooth runnings: A completely new six-speed automatic gearbox now is available for Chevrolet Europe's top sedan. The Epica offers the space and drive comfort of the upper medium class but at a much lower price. Chevrolet's dedication to refinement is illustrated with the new gearbox which can be mated to all three engines (2.0 L/143 hp, 2.5 L/156 hp, 2.0 D/150 hp).

The wide 6.14:1 overall ratio of Chevrolet Europe's six-speed automatic transmissions optimizes engine use and delivers improved fuel economy at high speeds compared to typical four-speed automatic transmissions. It also offers smooth, seamless upshifts and downshifts.

Owing to a overdrive sixth gear, the Epica 2.5 equipped with the new transmission delivers up to 15 percent better fuel economy when constantly driven at 90-120 km/h compared to its predecessor with a five-speed automatic transmission. Additionally, the transmission improves 0-40 km/h and 0-60 km/h performance of the Epica by up to 10 percent, respectively.

The new transmission has small steps between its six forward gears. This bolsters both performance and handling. In combination with the wide overall ratio, this also enables a steep 4.58:1 first gear, which helps deliver improved launch and acceleration while ensuring dynamic driving at lower speeds. The small steps also enable a 0.75:1 overdrive sixth gear. This "tall" overdrive gear reduces engine rpm at highway cruising speeds, thereby reducing engine wear and improving fuel economy.

Chevrolet Europe offers two variants of the Hydra-Matic six-speed automatic transmission: the 6T40 for inline six-cylinder gasoline engines and the 6T45 for higher-torque diesel engines. Despite the higher number of gears, both variants are the size of a conventional four-speed transmission, making them among the most compact in their competitive classes. The length/width/height of the 6T40 is 341 mm/537 mm/386 mm and the length/width/height of the 6T45 is 366 mm/537 mm/386 mm.

The compact size has been made possible in part by the mechanical simplicity of the transmissions' advanced clutch-to-clutch operation, which provides smooth shift feel and packaging efficiency. This is achieved through the utilization of three planetary gears, three stationary clutches and two rotating clutches.

A narrow hyper-elliptical torque converter enabled engineers to further minimize the size of the transmissions. Using a single plate lockup clutch and featuring an oval cross-section, it also reduced the weight of the transmissions while improving hydraulic performance.

A 32-bit intelligent controller included in a sophisticated internal Transmission Electro-Hydraulic Control Module (TEHCM) is mounted inside the transmissions, reducing vehicle complexity. The unit operates while bathed in transmission fluid, which protects it from external percussions and facilitates modular design and assembly. The TEHCM also controls the use of "tap shift" Driver Shift Control (DSC). Using DSC, the driver can manually select his or her preferred gear for specific road conditions.

A compact on-axis, fixed-displacement IX Gear-type fluid pump lowers noise, vibration and harshness levels and improves hydraulic efficiency. Electronic safeguards prevent improper shifting, which could damage the engine or affect vehicle control.

The use of DEXRON®-VI premium transmission fluid, which has a more consistent viscosity than similar fluids on the market, further improves durability and shift stability, resulting in improved torque transfer and shift performance. As a benefit to consumers, there is no need to replace the fluid over the life of the transmission during normal use.

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