

Communiqués

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Refined turbo technology for top performance

Volvo S60 R and V70 R powertrain:

Refined turbo technology for top performance

A quick peak under the hood is enough to tell you that the engine in the new Volvo S60 R and V70 R is far from ordinary.

The engine and camshaft belt covers, for instance, are finished in a brilliant blue, the colour Volvo has used as an accent on all R cars. Instruments and other accents in the new R cars are the same colour. The intake manifold cover is done in a handsome aluminium treatment, matching the wide pipe from the two intercoolers to the prominently displayed twin turbocharger.

The look says power, and the five-cylinder 2.5-litre in-line turbocharged engine, the most powerful in the Volvo range, delivers. With twin camshafts and four valves per cylinder, it produces 300 horsepower at 5,000 rpm and 295 ft-lbs of torque at 1,950 rpm. That puts the R engine among the market leaders in terms of power per litre of engine volume. It also produces maximum torque right up to 5,250 rpm.

The S60 R with a manual transmission accelerates from zero to 100 km/h (62 mph) in just 5.7 seconds. V70 R does it in 5.9 seconds. Top speed on both cars is electronically limited to 250 km/h (155 mph).

The transversely mounted engine is a further development of the 2.3-litre engine in Volvo's T5 models. It is thanks to its increased volume and a new twin turbocharger from KKK that it reaches its maximum torque at a relatively low 1,950 rpm. Two intercoolers are used to cool the turbocharger, which generates about one bar of boost and significantly increases the temperature of intake air.

The engine is equipped with Dual Wide Range CVVT (Continuously Variable Valve Timing) on both the intake and exhaust camshafts. CVVT adjusts the valve opening times to suit the engine speed and load. The end result is better performance, lower fuel consumption and reduced emissions (the R-engine meets U.S. LEV I emission requirements and conforms to the European Euro 4 standard).

Pistons and connecting rods are heavily reinforced to withstand added stresses produced by high boost pressures, and the cylinder head cooling has been improved. The sump also has been redesigned to ensure oil supply to the engine under extreme G-forces.

The newly developed six-speed manual gearbox was specially designed to handle the high torque delivered by the engine. Gearshift travel is short, which makes for fast changes and gives the driver immediate feedback that the gear is engaged.

The five-speed Geartronic automatic transmission provides the best of both worlds - the driver can let the transmission change gears completely automatically, or he/she can change gears manually but without a clutch.

The automatic transmission is also adaptive - in other words, it monitors the driver's driving style and adapts the gear-changing pattern accordingly. It also has a "Sport" mode that upshifts gears

at higher speeds and downshifts faster.

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