

## Press Release

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# Start/Stop Technology is the Automatic Choice

Volvo's fuel saving start/stop technology which reduces emissions of CO<sub>2</sub> by up to 8% has, for the first time, been combined with the six-speed Geartronic transmission. This innovative and industry-leading development delivers the first four models in the Volvo range that can be ordered with an automatic gearbox as well as benefiting from start/stop technology.

The start/stop technology is currently standard in all of Volvo's large cars fitted with manual transmission (except T5) and this is the first time it has been offered on an automatic gearbox. Initially, it is available together with the 2.0-litre D3 turbo diesel, cutting CO<sub>2</sub> emissions by 10g/km - translating into a decrease in fuel consumption of up to 3.6 miles per gallon.

To begin with, this new technology is available as standard in the four of Volvo's models, the all-new S60 and V60, V70 and S80. All four models are available to order now and attract no price increase for this added technology and beneficial decrease in CO<sub>2</sub> and fuel consumption.

"Continuously reducing CO<sub>2</sub> emissions from conventional powertrains is an important part of our DRiVe Towards Zero emission strategy. It is the most effective way to cut CO<sub>2</sub> throughout our model range in the short term. This work is running parallel with our innovative focus on electrification technologies," says Peter Mertens, Senior Vice President, Research and Development at Volvo Car Corporation.

Combining start/stop with automatic gearbox is a larger technology challenge than the manual start/stop version already available in most Volvo models. Without a signal from the clutch pedal as used in manual transmissions with start/stop, the engine must restart instantly when the driver moves his or her right foot from the brake pedal to the accelerator.

### Swift Response

"We have focused on achieving the same response as you get with today's conventional automatic gearbox. The action is so seamless that it feels like the car starts accelerating immediately when the engine restarts," explains Peter Mertens.

The technology uses brake pressure measurement to trigger when to stop and start the engine. The start/stop system is programmed to shut down the engine immediately when the car reaches a standstill (0 mph).

An electric pump keeps oil pressure up in the automatic gearbox while the engine is stopped. The system also includes an upgraded starter motor to cope with the increased number of starts.

### Downsized five-cylinder engine

The two-litre D3 produces 163 hp and 400 Nm of torque. The five-cylinder 2-litre turbo diesel was introduced in 2010 in the all-new Volvo S60 and is now available throughout Volvo Car Corporation's model range.

The five-cylinder D3 is, in principle, the same engine as the well-established 2.4-litre diesel, but its displacement has been reduced with a shorter stroke to optimise fuel consumption.

The piezo-electric fuel injectors minimise consumption with exceptionally rapid and precise

injection pulses under high pressure which results in extremely efficient combustion. As announced with the recent Model Year 12 enhancements, in order to increase the car's drivability, the turbocharger has been fine-tuned to provide high torque from low revs.

### Facts and Figures

Fuel consumption and CO<sub>2</sub> emissions (EU Combined) with automatic gearbox:

Model	With Start/Stop - CO <sub>2</sub> / MPG	Previously - CO <sub>2</sub> / MPG
S60	142 / 52.3	152 / 48.7
V60	149 / 49.6	159 / 47.1
V70	149 / 49.6	159 / 47.1
S80	148 / 50.4	158 / 47.1

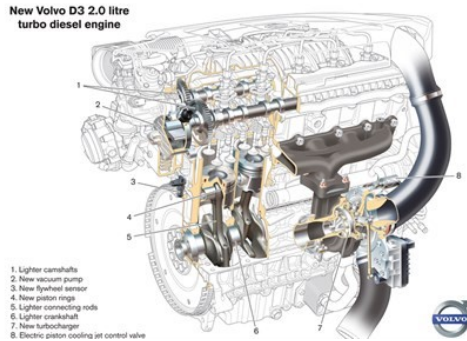
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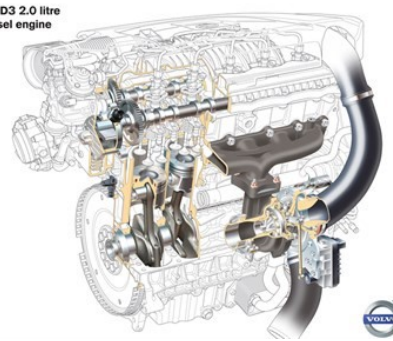
Descriptions and facts in this press material relate to Volvo Car UK's car range. Described features might be optional. All information is correct at time of going to press and may be altered without prior notification.

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New Volvo D3 2.0 litre turbo diesel engine



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