

Press Release

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The all-new Volvo S60 - pure driving pleasure created with hundred percent passion

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One look at the initial design sketches was enough for the chassis experts at Volvo Car Corporation to understand that the challenge was going to be exceptional. What they saw was the embryo of a sporting sedan unlike any previous Volvo vehicle. Now it was up to them to produce a chassis that did the daring design full justice. The result is the all-new Volvo S60 - without a doubt the most dynamic car model Volvo Cars has ever presented.

"This was never going to be a conventional engineering project, not for a single second. It's always been about pure passion for the task of driving Volvo's chassis development expertise to its very pinnacle. We've crossed into territory where we've never been before," says Paul Welander, Senior Vice President Product Development at Volvo Cars.

When asked to summarise the results, Paul says without a moment's hesitation: "Words cannot do the driving properties justice. You simply have to drive the car to understand what it's about. Preferably on a narrow winding country road where every sweeping bend brings a new challenge. That's where the all-new S60 comes into its own and shows off its agility with sparkling enthusiasm."

For the chassis team, the journey to new heights of driving dynamics has been tough and exciting, filled with challenges and new direction for the company. The team chose early on to translate the brief from Volvo Cars' top management into a prototype that served as a test-bench for trying various development techniques.

"Now that we had the chance to take daring initiatives, we seized the opportunity with both hands. For instance, we have matched our technical solutions with the very best competitors to verify that we have truly made it to the very top," says Paul Welander.

Dynamic chassis

The all-new Volvo S60 is 463 cm long, with a wheelbase of 278 cm. The track is 159 cm both front and rear. The sedan can be specified with a choice of two chassis. On the European market, the newly developed dynamic chassis is standard while most markets in North America and Asia will have the comfort chassis as standard with the dynamic variant available as an option.

The difference between the two chassis alternatives is found in the dampers and the front and rear subframes. Here, the comfort variant has a somewhat softer setting to give a smoother ride on poor road surfaces.

"The spotlight was on giving the concept of comfort a whole new dimension. The dynamic chassis has an alert, quick-responding architecture that puts the focus on the driving experience, yet without diluting the impression of a comfortable ride," explains Paul Welander.

Faster steering, thicker spring struts and stiffer bushes

During the development process, the chassis team carved out a holistic perspective that dictated

changes for virtually every detail that influences a car's driving properties.

The steering gear ratio has been made 10 percent faster than in previous models to give enhanced steering feel and sharper response. Thicker tubing in the steering column and stiffer bushes increased torsional rigidity by 100 percent. This contributed to the driver's feeling of direct contact with the wheels and the road.

"Really good steering is intuitive, the car appears to sense your driving intentions even while they are just thoughts in your mind. In this area I feel we have taken a huge step forward," says Paul Welander.

The front spring struts have thicker piston rods compared with the sports chassis in the Volvo S80. The 47 percent increase of stiffness contributes to a chassis that is better able to handle high lateral loads. The springs themselves are shorter and stiffer than before and the Eigen frequency has increased by 10 percent.

The bushings are stiffer than in Volvo's current sports chassis. At the front spring strut mountings, stiffness has increased by 50 percent. The subframe bushings front and rear are approximately twice as stiff when compared with previous models. The link arm bushings have also been optimised for sporty driving with full control.

More damping than ever before

The dampers offer more damping than in any previous Volvo model. The damper mountings at the rear are made of polyurethane instead of rubber, a solution that provides better balance between comfort and dynamic control.

"We spent many weeks fine-tuning the dampers out in the English countryside. We drove on old Roman roads that have only ever received a few layers of tarmac over the centuries. A perfect environment for finding the right damping qualities - well controlled roll and bounce movements," says Paul Welander.

FOUR-C as an option

The software in the All Wheel Drive system has been modified to allow the all-new Volvo S60 to exploit the sporty new chassis to the limit.

The new S60 can also be ordered with the FOUR-C active chassis system. The FOUR-C system has been modified and refined for better control and comfort feel compared to previous Volvo vehicles. The system uses a number of sensors to continuously monitor the car's behaviour and quickly adjust the dampers to suit the current driving situation. With three settings (Comfort, Sport or Advanced), the press a button significantly alters the car's character.

The first sedan with Advanced Stability Control

"We have the world's most advanced system for brake regulation. The Dynamic Stability and Traction Control in the all-new S60 has several sophisticated features that offer a unique blend of improved driving pleasure and safety," says Paul Welander.

The S60 is the first sedan model on the market with Advanced Stability Control (ASC). With a new roll angle sensor, ASC can identify any skidding tendency at a very early stage and adjust the brakes earlier and with greater precision. Advanced Stability Control also assists in dynamic driving conditions involving considerable lateral forces, which improves handling and rapid collision avoidance manoeuvres.

Trailer Stability Assist helps dampen the weaving or snaking action that may occur when towing a trailer or caravan. The car is stabilised by braking one or more wheels and by reducing engine torque.

Engine Drag Control prevents the wheels from locking during engine braking on a slippery surface.

The DSTC system also has a sports setting that disables the traction control system and allows oversteer to provide an even more dynamic driving experience.

New Corner Traction Control for smoother curves

The chassis in the all-new Volvo S60 is backed up by a range of electronic systems that sharpen

the sporty driving experience. Corner Traction Control is a new feature that uses torque vectoring so the car takes curves more smoothly. This technology is a further refinement of the Dynamic Stability and Traction Control (DSTC).

When taking a curve, the car's inner driven wheel is braked at the same time as more power is transmitted to the outer driven wheel. This allows the driver to take the curve more tightly while reducing any tendency to understeer.

"You can accelerate out of the curve while retaining your grip on the road. This system makes it easier to smoothly maintain your desired line on winding roads, in roundabouts and on wet surfaces. Corner Traction Control is a huge asset when you want to swing out from a small side road to merge with a highway and need to accelerate swiftly to join in with the flow of traffic," says Paul Welander.

Advanced, integrated braking functions

A highly advanced braking system is an important part of the dynamic driving properties of the all-new S60. The sedan is equipped with a number of features that interact to provide the shortest possible stopping distance in all scenarios.

Ready Alert Brakes can predict when swift braking is needed by monitoring throttle input. Should the driver quickly release the throttle, the brake callipers are applied lightly to the brake discs even before the driver presses the brake pedal.

Hydraulic Brake Assist helps the driver brake in the shortest possible distance. In an emergency situation where the driver does not press the brake pedal fast or hard enough, Hydraulic Brake Assist can help utilise the ABS system optimally and thus shorten the overall braking distance.

Optimised Hydraulic Brakes is a system that amplifies uses hydraulics to compensate for low vacuum pressure in the brake servo.

Fading Brake Support uses the hydraulic system to gradually build up brake pressure during long, hard braking. This helps reduce the risk of brake fade and maintains pedal feel.

The all-new S60 is equipped with an Electronic Parking Brake as standard.

More powerful T6

The T6 petrol engine has a displacement of 3.0 litres and has been improved, primarily with lower internal friction. It now produces 304 horsepower (up from 281) and no less than 324 lb.-ft. (440 Nm) of torque (up from 295). Maximum torque is achieved from just 2100 revs and remains available throughout the rev range. This promotes fast acceleration and smooth progress on the road.

At the same time, Volvo Cars' engine specialists have succeeded in cutting fuel consumption by about 10 percent to 9,9 l/100 km (EU Combined, preliminary figure).

The engine's power is delivered to the wheels via a second-generation Volvo six-speed automatic Geartronic transmission. New valves and lower friction result in faster gearchanges than before. All Wheel Drive is standard.

Matches the visual promise

The sporty design of the Volvo S60 functions not only as creative incentive for Volvo Cars' chassis experts, the daring lines also give customers a visual promise that the driving properties are going to be something truly exceptional.

"We know that buyers in this tough segment have really high expectations regarding the driving experience. I am convinced they will be very satisfied indeed by what we've done with the chassis and engine," says Tomas Ahlborg, Project Director for the all-new Volvo S60.

Volvo Cars of Canada Corp. is part of the Volvo Car Corporation of Göteborg, Sweden. The company provides marketing, sales, parts, service, technology and training support to the 41 Volvo automobile retailers across the country. The company's product range includes the stylish and sporty C30, the elegant C70 hardtop convertible, the compact S40 sedan, the S80 flagship sedan and the versatile V50 and V70 wagons. For customers looking for a Volvo vehicle with all-road capability, the company offers the versatile XC60 crossover - equipped with City Safety as

standard equipment - as well as the XC70 and XC90.

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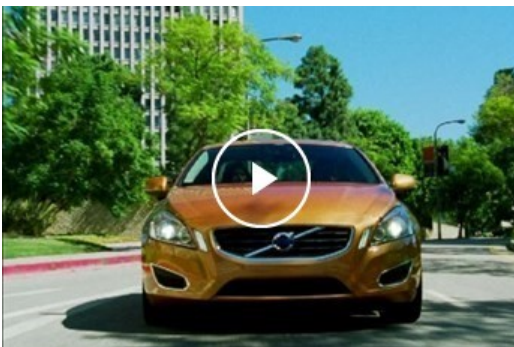
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