

## Press Release

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# Sporty Volvo S60 rides a wave of success into 2002

For immediate release

Buoyed by a wave of success in its first full year on the market, the Volvo S60 enters 2002 with an expanded list of standard equipment, enhanced options and a new addition to the range (S60 AWD).

The sporty S60 sedan enters the new year as the best selling model in the Volvo line, accounting for more than one quarter of all Volvo car sales in Canada. The addition of the S60 AWD adds additional appeal to the array and brings to four the number of versions of the most popular Volvo: S60 2.4, S60 2.4T, S60 AWD and S60 T5.

The new S60 AWD marks the debut of a new, electronically controlled all-wheel-drive system that automatically distributes power between the front and rear wheels to optimize traction in all conditions for safety and control (see separate release).

An elegant sedan with a coupe profile and a sporting soul, the arrival last year of the Volvo S60 completed the transformation of the styling of the Volvo line and injected new emotion into the company's most popular product segment.

With fluid styling in the new Volvo design language and spirited performance from a range of 5-cylinder engines, the Volvo S60 emphasizes real world driving enjoyment with extraordinary handling. Described as a marriage of safety + sporty, the S60 boasts a full complement of the safety innovations that have made Volvo the industry leader in occupant protection.

While it shares much of the same platform architecture with the S80 and V70, the new S60 has a distinctly sporting character that sets it apart from its siblings. But the taut handling and sport coupe performance do not compromise ride and passenger comfort. The successful balance of comfort and handling is a key part of the S60's success as a performance sedan with a strong Scandinavian character.

A trio of 5-cylinder engines and two transmission choices provide S60 with performance in keeping with a fine European sedan. A normally-aspirated, 168 hp 2.4-litre version mated to a smooth 5-speed manual transmission or available 5-speed electronically-controlled automatic are the heart of the base S60 2.4. The engine in the S60 2.4T and S60 AWD generates 197 hp from the same 2.4-litres, thanks to a low pressure turbocharger with intercooling. The 5-speed automatic is standard equipment. The exhilarating S60 T5 delivers 247 hp performance from 2.3-litres with high pressure intercooled turbo and 5-speed manual or optional 5-speed automatic with sequential shifting Geartronic feature.

For 2002, the turbocharged engines enjoy improved throttle response and driveability. Improvements have also been made to the TRACS traction control system and to the Stability & Traction Control (STC) enhanced stability system. The sophisticated Volvo Dynamic Stability & Traction Control (DSTC) feature will be an available option, beginning in January.

Traditional Volvo safety is a top priority in the S60. Dual-stage driver and front passenger airbags and three-point seat belts with pyrotechnic pre-tensioners, SIPS side impact protection system with side airbags and Inflatable Curtain protection for front- and rear-seat passengers, WHIPS

whiplash protection seating and many other passive safety features are standard equipment, making S60 among the safest Volvos ever made. New this year, electric foldable rear headrests are standard, adding improved visibility.

Other enhancements for 2002 include improved Volvo Navigation System with DVD, larger screen and remote control (Jan. '02) and a new Sport package for the T5 with 17" wheels.

Dual climate controls with optional Interior Air Quality System, adjustable rear air vents on the B-pillar, comfortable seats with an orthopaedic design (including sport seats in the T5) and 60/40 rear fold-down feature, attractive cloth and supple leather trim choices in Scandinavian designs, and a host of small comfort and convenience features confirm the interior of the S60 as a fine European sedan. A CD player is now standard in all S60 versions. Premium audio systems, personal security features and options, and a system that recalls who drove the car and returns the seats and mirrors to the positions they used last make the Volvo S60 easy to enjoy.

Comforting, too, is the knowledge that the Volvo S60 carries the Volvo Car Corporation's commitment to improve the environmental impact of the automobile. In addition to the PremAirJ radiator that converts up to 75 per cent of the ground level ozone it encounters into oxygen and the use of Öko-Tex certified materials inside the car, the S60 with base 2.4 engine meets Ultra Low Emission Vehicle (ULEV) standards while the 2.4T and T5 models are classified as Low Emission Vehicles (LEV). All Volvo S60s come with an Environmental Product Declaration, a "cradle to grave" report on the environmental management measures taken by the company in the design, manufacture, use and subsequent recycling of the car.

The Volvo S60 is available through authorized Volvo retailers in major markets across Canada, and is protected by a comprehensive 48-month, 80,000-kilometre overall warranty and the standard Volvo On Call 48-month roadside assistance program.

### **New Volvo S60 AWD:**

#### **Electronically controlled all-wheel-drive for all-season safety, control**

Volvo Car Corporation has expanded the appeal of the sporty S60 sedan for 2002 with a new all-wheel-drive system designed to enhance traction in all conditions.

The new Volvo S60 AWD made its public debut at the international Frankfurt Motor Show in Germany in September, showcasing an electronically controlled Active On-Demand (AOD) system which provides nearly instantaneous power distribution between the front and rear wheels.

Like previous Volvo all-wheel-drive systems, the new AWD operates completely automatically, independent of the driver. The advantage of the new system is the speed and sophistication with which it operates.

In normal driving situations, the S60 AWD primarily powers the front wheels. It is only when the system detects that the front wheels have lost traction and have begun to spin that it delivers power to the rear wheels.

The system, created by Haldex of Sweden, uses a mechanical pump and 'wet' multi-plate clutch to distribute the power to the rear wheels. The difference in rotational speed between the slipping front wheels and the rear wheels causes the pump (located at the rear differential) to force oil to the wet clutch plates in the rear differential, pushing the plates together to transfer power to the rear wheels. A small electrical pump is used to "pre-pressurize" the system so that power transfer can occur almost instantly.

The system is electronically controlled through a module mounted on the rear differential. The module controls the electric pump and an oil control valve. The differential module communicates with the engine control module (ECM) and brake control module via a network to determine when the front (driven) wheels begin to lose traction and to anticipate different driving situations. The system is so finely tuned it can react to as little as a quarter turn difference between the input shaft and the output shaft of the differential.

A valve between the pump and the wet clutch pack is controlled by the module, and opens when the module detects a loss of traction. The amount of wheelspin (and resultant difference in rotational speed between front and rear wheels) determines how far the valve opens and the amount of oil pressure applied to the wet clutch by the pump, and dictates how much power is

transferred to the rear wheels.

When all four wheels are rotating at the same speed, the mechanical pump at the differential does not pressurize the system and there is no power transfer.

By measuring front wheel spin, throttle position and other data, the system can determine how quickly to distribute power, and how much power to distribute. When accelerating on a difficult surface like gravel, for example, the rear wheels can be engaged quickly with maximum power transfer. During a low speed cornering or parking maneuver the system knows that the difference in speed between the wheels does not require the rear wheels to be engaged. As a result, the inertia other systems experience in similar circumstances is avoided.

Because it is part of the car's Multiplex computer system, the AWD control system can communicate with other systems (such as the TRACS traction control system) in the car to optimize the all-wheel-drive to match almost any driving situation. Early in the new year, the Dynamic Stability and Traction Control (DSTC) feature will be integrated into the system and DSTC will be offered as an option on the S60 AWD.

The extremely fast speed of engagement and disengagement, and the variable power transfer to suit the driving conditions, is a factor in the safety and security the system provides in the S60 AWD.

"The speed of the system gives what was already a well-balanced car exceptionally good road handling. After all, the owner of a sedan does not use all-wheel-drive for off-road accessibility but for optimal road-holding and stability," says Hans Gustavsson, Senior Vice President of Research, Development & Purchasing at Volvo Car Corporation.

Smooth, seamless power for the S60 AWD comes from the proven 2.4-litre, 5-cylinder aluminum engine with variable valve timing and light-pressure turbocharger. Output is 197 hp at 5,100 rpm and maximum torque is 210 lb./ft. at a low 1,800 rpm. A member of the new generation RN family of engines, extensively modified for improved emissions and fuel economy, it is the same power plant used in the S60 2.4T.

Enhanced engine management software helps the engine deliver impressive power and highly responsive performance - important characteristics that contribute to the S60 AWD's dynamic character.

Production of the Volvo S60 AWD will be limited. Suggested list price for the Volvo S60 AWD is \$43,995 and includes an extensive list of standard equipment.

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Descriptions and facts in this press material relate to Volvo Cars's international car range. Described features might be optional. Vehicle specifications may vary from one country to another and may be altered without prior notification.

